



## Bat Emergence and Re-entry Surveys

58 Mill Road, Knighton, Powys LD7 1RT

Mr Robert Thomas

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## Executive summary

Arbtech Consulting Ltd was commissioned by Robert Thomas to undertake Bat Emergence and Re-entry Surveys (BERS) at 58 Mill Road, Knighton, Powys LD7 1RT. The surveys were completed on 19/05/2021, 07/06/2021 and 30/06/2021. The aim of the assessment was to confirm the presence/likely-absence of a bat roost and to provide an assessment of the current status of all the survey features. 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 development proposals are for demolition of the existing dwelling. A planning application is being prepared for submission to Powys County Council.

### **Recommendations**

Building 1 is host to a day roost of two soprano pipistrelles. 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.

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## 1.0 Introduction and Context

### 1.1 Background

Arbtech Consulting Ltd. was commissioned by Robert Thomas to undertake Bat Emergence and Re-entry Surveys (BERS) at 58 Mill Road, Knighton, Powys LD7 1RT. The surveys were completed on 19/05/2021, 07/06/2021 and 30/06/2021. 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 Survey report (Arbtech Consulting Ltd. 2021).

### 1.2 Site Context

The site is located at National Grid Reference SO 28152 72031 and has an area of approximately 0.03ha. There is one building within the site boundaries. One building was surveyed as this will be affected by the proposed development.

### 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.
- 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 (where available), and a summary of relevant legislation is presented in Appendix 3.

### 1.4 Project Description

The development proposals are for demolition of the existing dwelling. A planning application is being prepared for submission to Powys County Council.

## 2.0 Methodology

### 2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, biodiversity action plan (BAP) priority habitats and granted EPSML records for bats held on magic.gov.uk 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 report (Arbtech Consulting Ltd. 2021). Please refer to the Preliminary Roost Assessment Survey report (Arbtech Consulting Ltd. 2021).

### 2.2 Site Survey methodology

The survey methods were informed by the recommendations presented in a response for Natural Resources Wales (NRW) with regards to a previous planning application. The response from NRW identified the following survey requirements in line with best practice:

*“Although a Preliminary Ecological Appraisal has been submitted, we consider that there is not enough information to assess potential effects of the proposal on any bats present at this site. We consider that the following additional information is required to assess the extent of adverse effects on the bats:*

*Requirement 1 – Submission of Bat activity surveys The report has identified features on the existing building which may be utilised by bats. To ascertain whether bats are using the building, as recommended by the preliminary report, bat activity surveys undertaken during the appropriate season in accordance with best practice guidance are required”*

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 hand-held 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 Elen Griffin BSc (Hons), MRSB, Consultant - accredited agent to Natural Resource Wales bat licence number: 79422:OTH:CSAC:2018 and was assisted by one other experienced surveyor with several years of bat survey experience. Two surveyors were used to provide sufficient cover of the building during each survey. 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/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

<b>Date</b>	19/05/2021	
<b>Start and End Times</b>	20:45 – 22:30 Sunset: 21:07	
<b>Weather Conditions</b>	<b>Start:</b> Temp: 10°C Relative Humidity: 69% Cloud Cover: 0% Wind: 2mph Rain: None	<b>End:</b> Temp: 9°C Relative Humidity: 80% Cloud Cover: 0% Wind: 1mph Rain: None
<b>Surveyor (position) As shown in Appendix 1</b>	<b>Elen Griffin BSc (Hons), MRSB, Consultant</b> - accredited agent to Natural Resource Wales bat licence number: 79422:OTH:CSAC:2018 (Position 1 – observing the northern and eastern elevation and roof structure of B1) <b>Emma Gray</b> – Three years of experience carrying out bat emergence and re-entry surveys (Position 2 – observing the southern and western elevation and roof structure of B1).	
<b>Building Reference</b>	<b>Surveyor Position</b>	<b>Notes/observations:</b>
B1	1	The first bat activity recorded was a distant pass by a soprano pipistrelle bat at 21:26. The bat was heard but not seen. From the direction of the calls the bat was commuting along the road to the north of the surveyor. A distant pass by a common pipistrelle was recorded at 21:27. The bat was heard but not seen and the calls were very faint. A noctule was seen flying high above B1 from north to south was recorded at 21:21.


		<p><b>An emergence by a soprano pipistrelle via a gap near the guttering along the northern elevation of B1 (pictured below).</b></p>  <p>Constant feeding activity by a common pipistrelle was noted between 21:32 and 21:50. The bat was seen flying around the trees to the left of the surveyor. No further bat activity was recorded.</p>
<p>B1</p>	<p>2</p>	<p>The first bat activity recorded was a pass by a common pipistrelle at 20:50 which flew from behind a property to the north of B1 over the building and along the brook to the south. A further two common pipistrelle bats flew along the same path at 21:25 and 21:27. Common pipistrelle feeding activity behind the surveyor presumably along the brook was recorded at 21:32. No further activity was recorded <b>No bats were seen emerging from B1.</b></p>



Table 3: Survey results

<b>Date</b>		07/06/2021		
<b>Start and End Times</b>		02:50 – 05:15 Sunrise: 04:52		
<b>Weather Conditions</b>		<table border="0"> <tr> <td style="vertical-align: top;"> <b>Start:</b>  Temp: 11°C  Relative Humidity: 93%  Cloud Cover: 0%  Wind: 2mph  Rain: None </td> <td style="vertical-align: top;"> <b>End:</b>  Temp: 11°C  Relative Humidity: 92%  Cloud Cover: 20%  Wind: 1mph  Rain: None </td> </tr> </table>	<b>Start:</b> Temp: 11°C Relative Humidity: 93% Cloud Cover: 0% Wind: 2mph Rain: None	<b>End:</b> Temp: 11°C Relative Humidity: 92% Cloud Cover: 20% Wind: 1mph Rain: None
<b>Start:</b> Temp: 11°C Relative Humidity: 93% Cloud Cover: 0% Wind: 2mph Rain: None	<b>End:</b> Temp: 11°C Relative Humidity: 92% Cloud Cover: 20% Wind: 1mph Rain: None			
<b>Surveyor (position) As shown in Appendix 2</b>		<b>Elen Griffin BSc (Hons), MRSB, Consultant</b> - accredited agent to Natural Resource Wales bat licence number: 79422:OTH:CSAC:2018 (Position 1 – observing the northern and eastern and roof structure of B1) <b>Emma Gray</b> – Three years of experience carrying out bat emergence and re-entry surveys (Position 2 – observing the southern and western elevation and roof structure of B1).		
<b>Building Reference</b>	<b>Surveyor Position</b>	<b>Notes/observations:</b>		
B1	1	<p>The first bat activity recorded was a distant pass by a common pipistrelle at 03:17. The bat was heard but not seen. The calls were extremely faint. Common and soprano pipistrelle feeding was recorded between 03:30 and 03:43. Bats were recorded feeding between the road and trees to the left of the surveyor.</p> <p>A further distant pass by a common pipistrelle was recorded at 04:20. The bat was heard but not seen. By the direction of the calls the bat was commuting along the rows of houses to the rear of the surveyor.</p> <p>No further bat activity was recorded.</p> <p><b>No bats were seen re-entering B1.</b></p>		
B1	2	<p>The first bat activity recorded was a distant pass by a common pipistrelle at 03:30. The bat was heard but not seen and the calls were extremely faint. A further common pipistrelle distant pass was recorded at 03:51. The bat was heard but not seen.</p> <p>A soprano pipistrelle was seen passing from left to right in front of the surveyor at 04:21.</p> <p>Three distant calls by soprano pipistrelle bats were recorded between 04:23 and 04:30.</p> <p>No further bat activity was recorded.</p> <p><b>No bats were seen re-entering B1.</b></p>		

<b>Date</b>		30/06/2021		
<b>Start and End Times</b>		21:15 – 23:07 Sunset: 21:37		
<b>Weather Conditions</b>		<table border="0"> <tr> <td style="vertical-align: top;"> <b>Start:</b>  Temp: 18°C  Relative Humidity: 81%  Cloud Cover: 70%  Wind: 1mph  Rain: None </td> <td style="vertical-align: top;"> <b>End:</b>  Temp: 15°C  Relative Humidity: 87%  Cloud Cover: 100%  Wind: 2mph  Rain: None </td> </tr> </table>	<b>Start:</b> Temp: 18°C Relative Humidity: 81% Cloud Cover: 70% Wind: 1mph Rain: None	<b>End:</b> Temp: 15°C Relative Humidity: 87% Cloud Cover: 100% Wind: 2mph Rain: None
<b>Start:</b> Temp: 18°C Relative Humidity: 81% Cloud Cover: 70% Wind: 1mph Rain: None	<b>End:</b> Temp: 15°C Relative Humidity: 87% Cloud Cover: 100% Wind: 2mph Rain: None			
<b>Surveyor (position) As shown in Appendix 3</b>		<b>Louise Sawrey</b> - Louise Sawrey (Natural England Protected Species Licence Numbers: Bats - 2019-43813-CLS-CLS, accredited agent to Natural Resource Wales bat licence number: 79422:OTH:CSAC:2018) - (Position 1 – observing the southern and western elevations and roof structure of B1) <b>Robert Hughes</b> - Two years of experience carrying out bat emergence and re-entry surveys (Position 2 – observing the northern and eastern elevations and roof structure of B1)		
<b>Building Reference</b>	<b>Surveyor Position</b>	<b>Notes/observations:</b>		
B1	1	<p>The first bat activity was a pass by an unidentified pipistrelle at 21:29. The bat passed from the southern direction by the northeastern gable and headed northeast.</p> <p>Throughout the remainder of the survey, there was constant activity and foraging behaviour by a low number common and soprano pipistrelles. The bats were observed flying up and down the road and around the trees. A distant pass was detected by a noctule bat at 21:57. The bat was heard but not seen.</p> <p>No further activity was recorded</p> <p><b><i>No bats were seen emerging from B1</i></b></p>		
B1	2	<p><b><i>The first bat activity was an emergence by a soprano pipistrelle at 21:25. The bat emerged from a gap between the chimney and timber barge board on the southern corner of the building (pictured below), and flew south towards the woodland.</i></b></p> <p><b><i>A soprano pipistrelle re-entered through the same gap at 21:44.</i></b></p> <p><b><i>The soprano pipistrelle re-emerged at 21:55, and flew south towards the woodland.</i></b></p>		



Throughout the remainder of the survey, there were passes and a low amount of foraging activity by a minimal numbers of soprano and common pipistrelle. The majority of activity was heard on the detector but not seen. The direction of the calls indicated that the bats were behind the surveyor close to the woodland and also the other side of the building close to surveyor 2.

Two distant noctule bat passes were detected at 21:57 and 22:09. The bats were heard on the detector but not seen.

No further activity was recorded.

## 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 Resources Wales.

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 Resources Wales 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 Resource Wales 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 the buildings on site

Ref	Survey conclusions	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1	Confirmed roost of two soprano pipistrelle bats.	As the proposed development involves the full demolition of B1 bat roost near to the chimney will be destroyed. Any bats present during the works could be injured or killed.	<p><b>A European Protected Species Mitigation Licence (EPSML) will be required from Natural Resource Wales prior to the commencement of works, once planning has been granted.</b></p> <p>Detail mitigation required under the Licence:</p> <ul style="list-style-type: none"> <li>• Bat boxes erected on site prior to commencement of works. These will include one of the following: Schwegler 2F Bat Box Schwegler 1FF Bat Box Schwegler 2FN Bat Box Improved Cavity Bat Box</li> </ul> <p>Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.</p> <ul style="list-style-type: none"> <li>• Pre-works inspection of the known roost locations by the licence Named Ecologist or their Accredited Agent immediately prior to the commencement of the destructive search.</li> <li>• Destructive search via soft stripping by hand of the roof structure during re-roofing works.</li> <li>• Any bats located during the pre-works inspection and destructive search will be carefully captured by hand and transported to an appropriate bat box by the Licence Named Ecologist or their Accredited Agent.</li> <li>• Permanent replacement roosting provision will be incorporated into the new developed site this will include bat tubes, bat access tiles, bat loft.</li> <li>• No post-development monitoring is required for low numbers of common species. Evidence to confirm that the bat compensation measures detailed within the EPSML have been installed will be provided by the Licensee for the</li> </ul>	<p>The Local Planning Authority has a duty to ask for enhancements under the NPPF (July 2018)</p> <p>The mitigation/compensation detailed for the EPSML will provide sufficient enhancements of the developed site for bats.</p>

			<p>Licence Return which will be submitted to Natural England within 14 days of the Licence expiration date.</p> <ul style="list-style-type: none"> <li>• Lighting will be controlled across the developed site. Research into the effects of artificial lighting on bats has shown that it can impact upon bat emergence times and lead to a reduced foraging time (particularly for the light sensitive Brown long-eared bat). As bats are faithful to their roost sites, often returning to the same site for many years, the impact of lighting on emergence times and in turn reduced foraging times can ultimately result in the roosts being abandoned.</li> <li>• Key areas of the site which are sensitive to artificial lighting are the site boundaries which consist of hedgerows and tree lines providing foraging and commuting routes for bats.</li> <li>• No lighting will be installed along the site boundaries, thereby maintaining the existing dark areas within the developed site for bats.</li> <li>• 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: <a href="http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting">http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting</a></li> <li>• The lighting on the site will:             <ul style="list-style-type: none"> <li>- Use narrow spectrum light sources to lower the range of species affected by lighting</li> <li>- Use light sources that emit minimal ultra-violet light</li> <li>- 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 short wavelength content they should be of a warm / neutral colour temperature &lt;4,200 kelvin.</li> <li>- Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal.</li> </ul> </li> <li>• Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only.</li> <li>• External lighting will be positioned below the eaves, 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.</li> <li>• 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</li> </ul>	
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			<p>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> <p>All of the above will ensure that the replacement bat roosts within the developed site will not be affected by any external lighting ensuring their long-term use.</p>	
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### **5.0 Bibliography**

- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3<sup>rd</sup> edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
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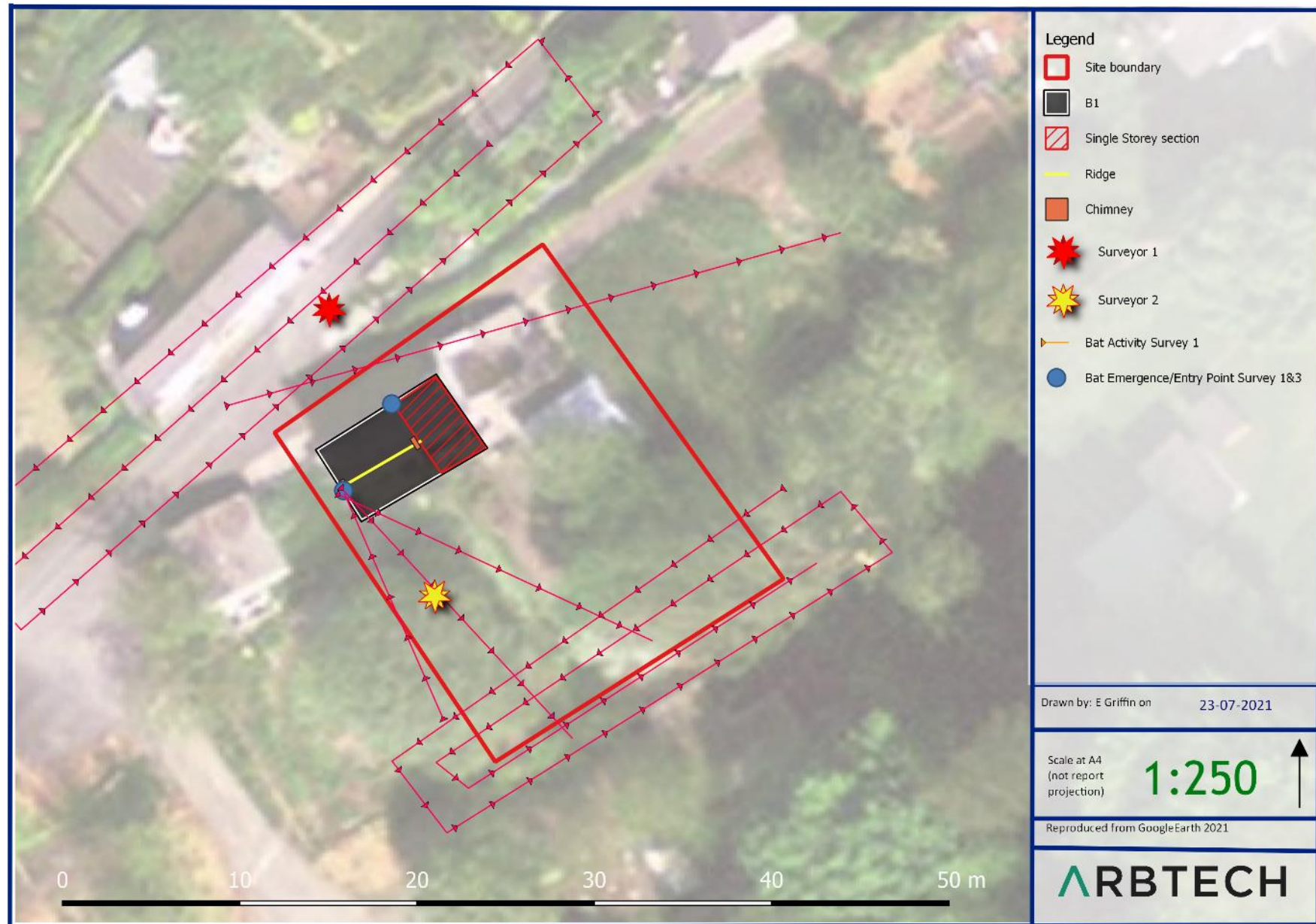
### Appendix 1: Survey Plan BERS 1



### Appendix 2: Survey Plan BERS 2



### Appendix 3: Survey Plan BERS 3



## Appendix 4: 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

#### **Planning Policy Wales (February 2021)**

Paragraph 6.4.3 of the document refers to Biodiversity and Ecological Networks and states:

The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Information contained in SoNaRR, Area Statements and species records from Local Environmental Record Centres should be taken into account. Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;

- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

### **Environment (Wales) Act 2016 and the Biodiversity Duty**

The Environment (Wales) Act introduces a new biodiversity duty, which highlights biodiversity as an essential component of ecosystem resilience. This new duty replaces the biodiversity duty in the Natural Environment and Rural Communities Act 2006 (referred to as the NERC Act). Part 1 of the Act deals with Sustainable management of natural resources including Biodiversity and Resilience of Ecosystems Duty. The Environment Act enhances the current NERC Act duty to require all public authorities, when carrying out their functions in Wales, to seek to “maintain and enhance biodiversity” where it is within the proper exercise of their functions. In doing so, public authorities must also seek to “promote the resilience of ecosystems”. As under the NERC Act the new duty will apply to a range of public authorities such as the Welsh Ministers, local authorities, public bodies and statutory undertakers. This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

### **Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)**

6.4.5 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- diversity between and within ecosystems;
- the connections between and within ecosystems;
- the scale of ecosystems;
- the condition of ecosystems including their structure and functioning; and
- the adaptability of ecosystems.

6.4.6 In fulfilling this duty, planning authorities must have regard to:

- the list of habitats and species of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;
- the SoNaRR, published by NRW; and
- any Area Statement that covers all or part of the area in which the authority exercises its functions.

6.4.7 Planning Authorities should also refer to up to date ecological survey information (where appropriate).

6.4.8 A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities must demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions.

6.4.9 The broad framework for implementing the Section 6 Duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and where circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. More diverse ecosystems are more resilient to external influences (this includes biological, geological and physical diversity on a site). This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity;
- Extent: to ensure mechanisms allow for the identification of potential habitat, the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning decisions should incorporate measures which seek the creation, restoration and appropriate management of green networks and linkages between habitats and maintaining and enhancing other green infrastructure features and networks;
- Condition: Ecosystems need to be in a healthy condition to function effectively, to deliver a range of important ecosystem services. Planning decisions should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution. Planning for the long term management of retained habitats is key to maintaining condition through for example, the use of planning obligations;
- Connectivity: to take opportunities to develop functional habitat and ecological networks within and between ecosystems and across landscapes, building on existing connectivity and quality and encouraging habitat creation, restoration and appropriate management. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors, including transport and river corridors, and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change; and
- Adaptability to change: primarily in the form of climate change, for both species (diversity) and ecosystems requires action to protect the extent, condition and connectivity of habitats, features and ecological networks. Development plans, planning proposals and applications which build on protecting designated sites and securing and enhancing green infrastructure will be key ways of addressing the attributes of ecosystems resilience identified in the Environment Act as well as facilitating social and economic resilience aspirations of the Well-being of Future Generations Act.