



## Bat Mitigation Plan

Tallet Cottage, Aldsworth, Cheltenham, GL54 3QZ.

Mr Allan Costley

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## 1.0 Introduction and Context

### 1.1 Background

Arbtech Consulting Ltd. was commissioned by Mr Allan Costley to prepare a Bat Mitigation Plan for Tallets Cottage, Aldsworth, Cheltenham, GL54 3QZ, following the identification of day roosts for common pipistrelle *Pipistrellus pipistrellus*, brown long-eared bat *Plecotus auritus* and Natterer's *Myotis nattereri* within the barn on the site following a preliminary roost assessment (PRA) survey in June 2021 (Arbtech Ltd) and subsequent Bat Emergence and Re-entry Surveys (BERS)(Arbtech, September 2021) . It is believed the bats are accessing the building from underneath the roof tiles on the southern roof aspect and from under the eaves of the north-west aspect of the building. A BMCL application from Natural England was applied for to enable the works on site and it was registered on 23<sup>rd</sup> November 2021.

### 1.2 Proposed Development

The proposed development comprises the renovation of the existing barn into a residential dwelling. It is noted that the barn is already partially renovated in association with a previous planning application. Works that have already been undertaken broadly include re-pointing of stonework internally, roof renovation works including new tiles on the north and east aspect, the filling of the eaves with mortar internally. A planning application is being prepared for submission to Gloucestershire County Council.

### 1.3 Development Site Location

The site is located at National Grid Reference SP 15680 10088 and has an area of approximately 0.01ha. There is one building (hereafter referred to as B1) within the site boundary that will be impacted by the proposed works; a stone barn that is surrounded by residential dwellings and their associated gardens on all aspects. The area surrounding the village of Aldsworth is predominantly agricultural and is dominated by arable fields and their associated hedgerows, ditches, and tree lines.

### 1.4 Scope of the Report

The following Bat Mitigation Plan has been designed to detail a lighting strategy to be used in conjunction and alongside the details within the BMCL licence for the site. The below plan will be understood and followed by all workers on site, and a copy will be kept on site. By following the below plan, there is an acceptably small risk of impacting known roosts sites within the building, and there is no breach of legislation anticipated:

- *Inappropriate lighting in the vicinity of bat roosts can cause disturbance to bat populations and individuals and could be constituted as an offence under the Wildlife and Countryside Act 1981. Due to the roosts present on site and bats using the wider landscape, lighting of the proposed development must be carefully considered to avoid light spill.*

This report also details other precautionary working methods and enhancements proposed on site.

## 2.0 Bat Mitigation Plan

**Table 1: Mitigation, Capital Works, and Enhancements in Year 1**

Works	Specification
Surrounding habitats	<p data-bbox="396 539 450 563"><u>Dust</u></p> <p data-bbox="396 587 1126 611">Typical fall-out zone for aerially mobilised construction dust is 50m.</p> <p data-bbox="396 635 835 659">To limit the creation of dust the site will;</p> <ul data-bbox="443 683 2130 1018" style="list-style-type: none"> <li data-bbox="443 683 1249 707">• Ensure loading and unloading of materials is at the lowest drop height</li> <li data-bbox="443 730 1787 754">• Ensure vehicles carrying dusty materials e.g., muck away, skips etc are securely and properly sheeted before leaving site</li> <li data-bbox="443 778 1059 802">• Avoid dust creating activities during hot, dry periods</li> <li data-bbox="443 826 1305 850">• Activities creating dust will be damped down, especially during dry weather</li> <li data-bbox="443 874 2130 962">• Ensure there is a supply of water to the site to enable damping down, if this is not possible, arrange for an alternative source of water or dust suppressant and have it on stand-by should it be required.</li> <li data-bbox="443 986 1395 1010">• Locate stockpiles out of the wind, or provide wind breaks to minimise dust creation</li> </ul> <p data-bbox="396 1082 461 1106"><u>Noise</u></p> <p data-bbox="396 1129 1323 1153">Best practice will be used on site to avoid unacceptable levels of noise and vibrations.</p> <p data-bbox="396 1201 483 1225"><u>Lighting</u></p> <p data-bbox="396 1249 1043 1273">A bat lighting plan has been produced as part of this report.</p> <p data-bbox="396 1345 510 1369"><u>Mitigation</u></p>

	<p>As part of the licence, it is recommended that one suitable bat box should be installed for each common pipistrelle bat, brown long-eared bat and natterer's bat roost destroyed as a result of the proposed development. The removal of the internal bat roosts recorded (see 2021 PRA for locations) and any external roosting features that may be destroyed will be carried out under ecological supervision, and any bats found will be moved by hand to a pre-installed bat box. There will be no timing restriction on the works. Should any works be undertaken to the roof internally, no breathable membranes can be used throughout the barn conversion. If replacement roofing felt is needed, then type 1f bitumen only is suitable for use in bat roosts.</p>
Lighting Strategy	<p><b><u>Lighting strategy</u></b></p> <p>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. As bats are faithful to their roost sites and commuting routes, often returning to the same site for many years so the impact of lighting on emergence times and in turn reduced foraging times can ultimately result in the roosts and foraging habitat being abandoned with impacts on survival and fecundity.</p> <p>Key areas of the site which are sensitive to artificial lighting are the bat roost area, key flight paths and site boundaries which consist of the darkened road along the western site boundary and the northern boundary of the site. Research has shown that if lighting is increased by more than 1 lux (equivalent to full moonlight) this could have an adverse impact upon bat commuting routes (Stone, E.L. (ed.) [2013] Bats and Lighting: Overview of Current Evidence and Mitigation. Bats and Lighting Research Project, University of Bristol). Therefore, the new lighting will be strictly confined to the new buildings and existing hard standing areas, thereby leaving dark corridors of not more than +1 lux, and preventing light spilling outside of the site boundary.</p> <p>The following recommendations have also been made to prevent light spilling onto this area of the site, hence protecting the bat foraging areas and commuting routes:</p> <ul style="list-style-type: none"> <li>• No lighting will be installed within or shining into the emergence/re-entry area of the roof or bat boxes, thereby maintaining the existing dark areas within the developed site for bat commuting and roosting. There must be no artificial lighting that illuminates the bat roost area or key flight paths.</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> </ul> <p>The lighting on the site will:</p> <ul style="list-style-type: none"> <li>• Use narrow spectrum light sources to lower the range of species affected by lighting</li> </ul>

	<ul style="list-style-type: none"> <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 shortwave length 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> <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 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 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.</li> </ul> <p>These measures will ensure that existing bat foraging areas and commuting routes are protected from light from the developed site. It will also ensure the recurrent usage of the bat boxes that are to be placed around the site. The recommendations are further to those recommended within the original PRA and Bat Emergence and Re-Entry Survey Reports (Arbtech Consulting Ltd, 2021).</p>
Bat boxes	<p>As shown in Appendix 2 and 3, there are at least four bat boxes of two types (2F and 1FF or similar) to be installed in order to provide bat roosting habitat during and post development. These must face south/southwest, be at least 3m above ground, be unobstructed by branches or foliage and be unlit by artificial light, including light spill from windows which will impact upon bat emergence times. These boxes are providing mitigation for the loss of roosts. Additional boxes could be placed around the site for enhancement.</p>



Figure 1: Flat 1FF style bat box and 2F style bat box and alternatives to Schwegler boxes that are suitable for Pipistrelle, brown long eared and Natterer's bats

The bat lighting plan (App. 2) will ensure that the new bat roosts within the site will not be affected by any external lighting ensuring their long-term use.

Bird boxes

As shown in Appendix 2 and 3, a Sparrow Terrace box should be installed on the building on the western elevation. The following box or similar should be installed in the position stated.

- Schwegler 1SP Sparrow Terrace

Sparrow terraces should be positioned at the eaves and can be incorporated into the fabric of the building during development. All nest boxes should be positioned at least 3m above ground level where they will be sheltered from prevailing wind, rain, and strong sunlight.





Figure 2: Sparrow terrace box example

Signage	<p>Prior to the start of work, a sign will be added to the exterior of the building, in particular the northern elevation to read the following:                  'No entry by unlicensed or unauthorised persons. Bat roosts present within building. If a bat is discovered at any time, all works should cease and Arbtech must be contacted immediately on 01244661170 for further advice'.</p>
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On site management and responsibility during construction	<p><b>On Site Structure and Responsibility</b></p> <p>It is the responsibility of the applicant and the contractors to ensure the above measures are carried out. A copy of this document should be kept on site, as well as the contact details for Arbtech Consulting Ltd. All contactors must be made aware that there are bat roosts present and that this is protected by law. All details prescribed within the BMCL should be adhered to fully.</p> <p>If at any time during the works, bats or other protected species are discovered, all works should cease, and Arbtech must be contacted immediately to provide further advice.</p>
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Table 2 - Post Development Monitoring, Management and Maintenance

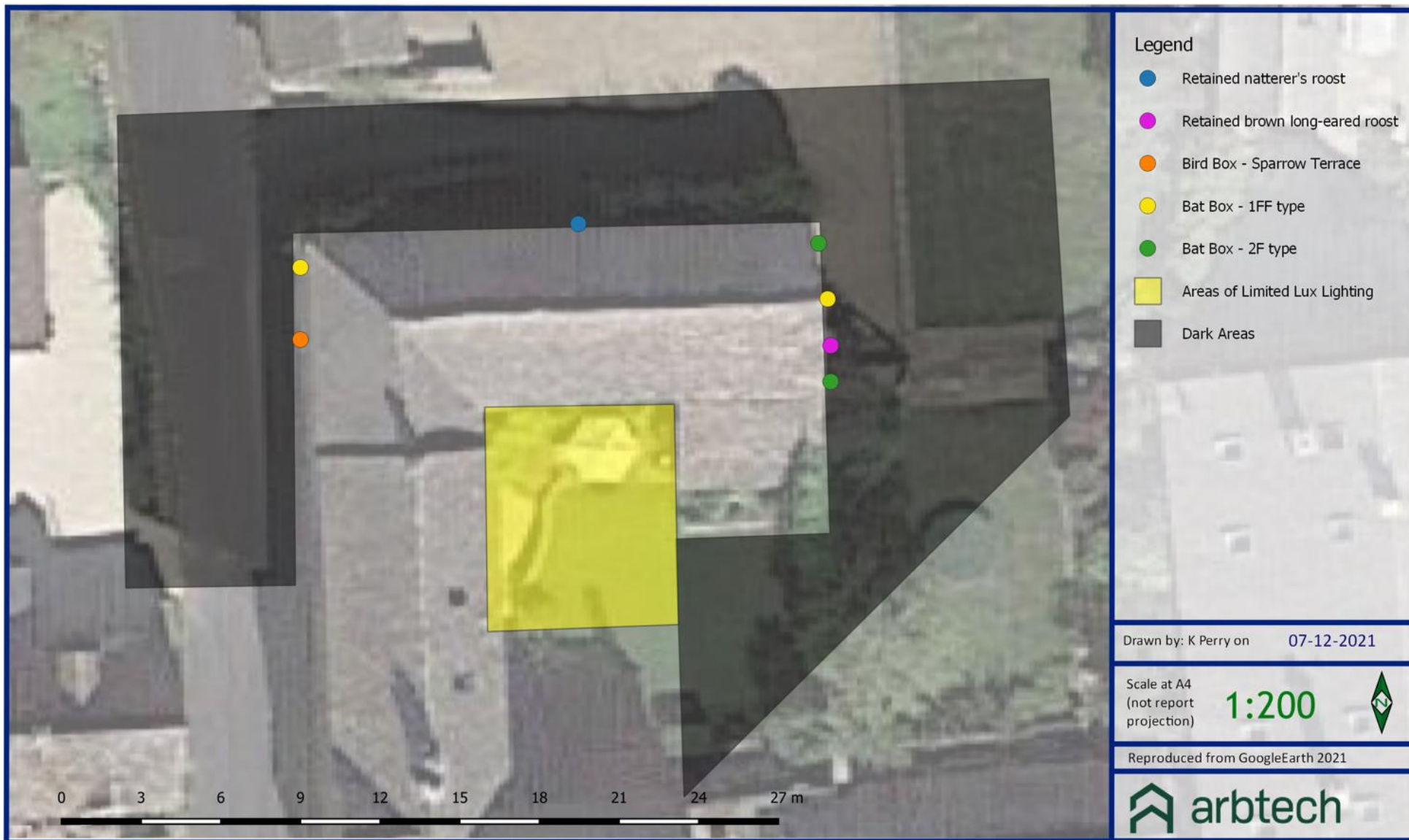
Activity	Year 1	Years 2 onwards
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Post development check	On completion of the development and prior to occupation, an ecologist will visit the site to ensure the implementation of the above mitigation, compensation, and enhancement. A letter can then be submitted to the planning department to discharge any related conditions.	N/A
Bat and bird boxes	Habitat boxes will be replaced if they become damaged or fall.	As year 1.
Lighting	The location and suitability of the external lighting will be checked by a bat licenced ecologist upon completion of the development. Recommendations for improvements will be made where applicable.	Check lighting annually to maintain approved lighting levels across the developed site. No changes will be made until advice has been sought from a bat licenced ecologist.

**Appendix 1: Proposed Plans**

None provided

### Appendix 2: Site Lighting Plan and Mitigation Locations



### Appendix 3: Bat and Bird Mitigation Locations

**West elevation**

**East elevation**

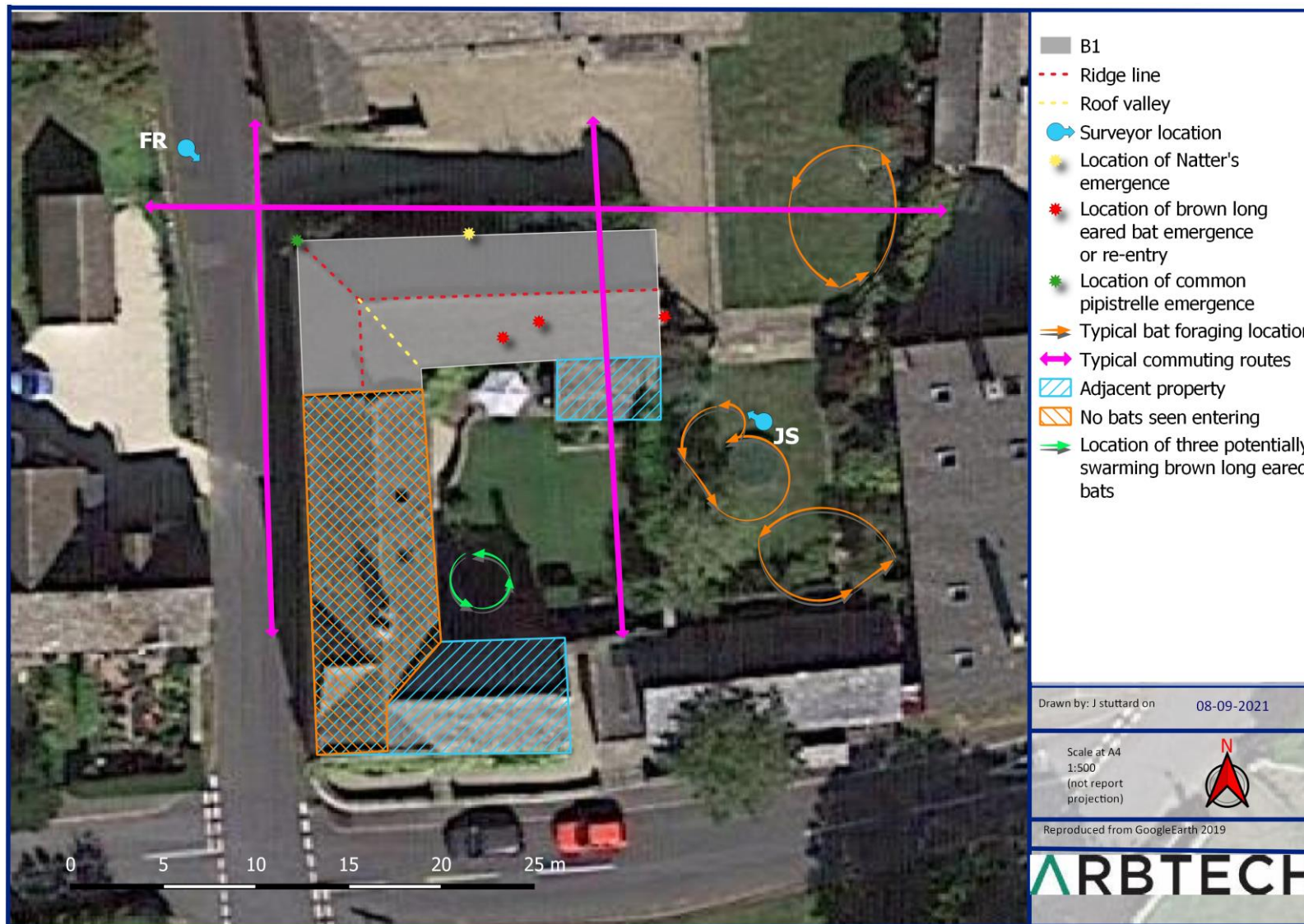
**Side elevation**

- ▲ Bat box - Schwegler 2F type suitable to support common pipistrelle, brown long-eared and natterer's
- ▲ Bat box - Schwegler 1FF - Suitable for common pipistrelle and natterer's
- ◆ Bird Box - Schwegler 1SP Sparrow Terrace - Suitable for house sparrows
- Confirmed long-eared bat roost - Stone disused grain shoot to be retained
- Confirmed natterer's roost - cavity between timber lintel and stonework to be retained

Drawn by: J Stuttard on 29-09-2021

**ARBTECH**

### Appendix 4: Emergence and Re-entry Locations on Site



## Appendix 5: Legislation and Planning Policy

### 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)* 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 2021**

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:

- 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.