



Bat Emergence and Re-entry Surveys

Cartref, Bedwell Road, Cross Lanes, Wrexham LL13 0TS

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Arbtech Consulting Ltd was instructed by Mike Baker to undertake Bat Emergence and Re-entry Surveys (BERS) at Site Name (hereafter referred to as “the site”). The survey was required to inform a planning application for the renovation of the existing residential dwelling (including re-roofing) and an extension to the rear (hereafter referred to as “the proposed development”).

No bats were seen emerging from or re-entering the buildings during the surveys. As such it is considered likely that bats are absent from the buildings. However due to the presence of a small number of droppings (less than 10) found during the Preliminary Roost Assessment a precautionary working method will be implemented, as detailed in Table 5 of this report. Requirements for a sensitive lighting strategy and opportunities for enhancement are also outlined in Table 5.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Mike Baker to undertake Bat Emergence and Re-entry Surveys (BERS) at Cartref, Bedwell Road, Cross Lanes, Wrexham LL13 OTS (hereafter referred to as “the site”). The survey was required to inform a planning application for the renovation of the existing residential dwelling (including re-roofing) and an extension to the rear (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

The aim of the BERS was to determine the presence or likely absence of roosting bats and to characterise any roosts present. This has been undertaken with due consideration to the “Bat Surveys for Professional Ecologists —Good Practice Guidelines” publication (Collins, 2016).

The BERS have been informed by a Preliminary Roost Assessment (PRA) which was completed by Arbtech Consulting Limited on 28th September 2021. The survey results are summarised in Table 1 below.

Table 1: Results of the PRA and subsequent survey requirements

Feature	Survey conclusions (with justification)	Foreseen impacts	Recommendations
B1	B1 is a confirmed roost as droppings were found internally. There were external suitable roosting features for crevice-dwelling bats across the building.	As the proposals include the extension and re-roof of B1, the roost will be destroyed. This could result in death or injury of bats.	(B1) Three bat emergence and re-entry surveys are required during the active bat season (May – September) to characterise the roosts present. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive.
B2	B2 has low habitat value for supporting roosting bats due to the presence of small number of suitable external roosting features for crevice-dwelling bats.	As the proposals include the extension and removal of the roof structure of B2, any bat roosts present would be destroyed. This could result in death, injury or disturbance of bats.	(B2) One bat emergence or re-entry survey is required during the active bat season (May – September) to confirm presence or likely-absence of a bat roost in the building. The survey must be completed during the optimal survey period mid-May to August inclusive.

1.2 Site Context

The site is located at National Grid Reference SJ 37387 47736 and has an area of approximately 0.1ha. The site consists of two buildings with a garden at the front of the site (eastern side of the site) and a poor semi-improved grassland field at the rear (western side of site).

A site location plan is provided in Appendix 2.

1.3 Scope of the Report

This report provides a description of the bat activity observed and recorded during BERS. The aim of the surveys was to determine the presence or likely absence of bats and 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. The report provides information on possible constraints to the proposed development as a result of bats and summarises the requirements for any mitigation proposals, including a European Protected Species Licence (EPSL), where appropriate, to achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- BERS of built structures has been undertaken to determine the presence or likely absence of bat roosts.
- An outline of potential impacts on any confirmed or unidentified roosts has been provided, based on the proposed development.
- Recommendations for mitigation have been made, along with advice on the requirements for a European Protected Species Licence (EPSL) application if appropriate.
- Opportunities for the enhancement of the site for roosting, foraging and commuting bats have been set out.

2.0 Methodology

2.1 BERS

Two BERS, comprising one dusk emergence and one dawn re-entry survey, were undertaken of B1 & B2, as per the information requested by the local planners. The surveys involved surveyors positioned around the buildings 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. 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 Echo Meter Touch detectors connected to iPads or Android tablets. 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.

An infrared recording kit was set up to monitor the building during the BERS. This comprised Nightfox Red Goggles set up on a tripod with two separate infrared lamps on a second tripod to provide additional illumination. Analysis of the footage was subsequently undertaken to detect roosting activity.

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 (greater than 5m/s), as these adverse weather conditions can impact upon bat emergence and foraging behaviour. Periods of high moon illuminance (>80%) were also avoided insofar as possible as this can reduce bat activity.

2.2 Surveyors

The lead surveyor was Mel Reid (accredited agent Natural Resource Wales Bat Licence Number: 79422:OTH:CSAC:2018) who was assisted by two surveyors, each with several years of bat survey experience. Three surveyors were used to provide sufficient cover of the buildings 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 3.

2.3 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 buildings, and the site as a whole by bats, at all times cannot be established based on this information. Bats are highly mobile creatures that switch roosts regularly and therefore the usage of a site by bats can change over a short period of time.

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 (first visit)

Date		10/05/2022
Start and end times		20:30 – 22:15 Sunset: 20:55
Weather conditions		Start: Temp: 14°C Relative Humidity: 57% Cloud Cover: 90% Wind: 10mph Rain: None Moon illuminance: 0% End: Temp: 13°C Relative Humidity: 65% Cloud Cover: 100% Wind: 11mph Rain: None Moon illuminance: 0%
Surveyor (position) As shown in Appendix 3		Mel Reid - accredited agent Natural Resource Wales Bat Licence Number: 79422:OTH:CSAC:2018 (Position 1 – observing the southern elevation and roof structure of B1 and the southern and eastern elevation and roof structure of B2) Jon Roberts – Several years' experience conducting bat surveys (Position 2 – observing the eastern and northern elevation and roof structure of B1) Dale Blackburn – 1 years' experience conducting bat surveys (Position 3 – observing the western elevations and roof structures of B1 & B2)
Building reference	Surveyor position	Notes/observations:
B1 & B2	1	No bats were seen emerging or re-entering the buildings during the survey. The first bat activity recorded was a commuting pass by a noctule bat at 21:15, which was seen flying north to south over B1. Common pipistrelle passes were recorded from 21:33 until 21:51, some of which were heard not seen and some of which were seen commuting east to west across the site. A distant myotis pass was recorded 22:30 which was heard and not seen. The last bat recorded was a distant pass by a brown long-eared at 22:06. No further bat activity was recorded during the survey.
B1	2	No bats were seen emerging or re-entering the buildings during the survey. The first bat activity recorded was a commuting pass by a noctule bat at 21:15, which was observed flying north to south over B1. A soprano pipistrelle was recorded at 21:28, observed flying east to west over the site.

		Numerous common pipistrelle bat passes were recorded from 21:39 to 22:12, some of which were seen and not heard and some of which were observed along east to west over the site. Common pipistrelle feeding was recorded at 21:51 over the front garden area. The last bat activity was a distant common pipistrelle at 22:12 which was heard and not seen. No further bat activity was recorded during the survey.
B1 & B2	3	<i>No bats were seen emerging or re-entering the buildings during the survey.</i> The first bat activity recorded was a commuting pass by a noctule bat at 21:15, which was seen flying north to south over B1. A soprano pipistrelle bat was recorded at 21:28 which was heard and not seen. Numerous common pipistrelle passes were recorded from 21:32 to 21:51 most of which were heard not seen. Common pipistrelle feeding was observed at 21:33 along the tree line to the north of the site. The last bat activity was a distant pass by a common pipistrelle bat at 21:51. No further bat activity was recorded during the survey.

Table 3: Survey results (second visit)

Date		27/05/2022
Start and end times		03:30 – 05:15 Sunrise: 04:57
Weather conditions		Start: Temp: 11°C Relative Humidity: 69% Cloud Cover: 40% Wind: 7mph Rain: None Moon illuminance: 0% End: Temp: 10°C Relative Humidity: 69% Cloud Cover: 70% Wind: 7mph Rain: None Moon illuminance: 0%
Surveyor (position) As shown in Appendix 3		Selina Royle – 1 years' experience conducting bat surveys (Position 1 – observing the southern elevation and roof structure of B1 and the southern and eastern elevation and roof structure of B2) Jon Roberts – Several years' experience conducting bat surveys (Position 2 – observing the eastern and northern elevation and roof structure of B1) Mel Reid - accredited agent Natural Resource Wales Bat Licence Number: 79422:OTH:CSAC:2018 (Position 3 – observing the western elevations and roof structures of B1 & B2)
Building reference	Surveyor position	Notes/observations:
B1 & B2	1	No bats were seen emerging or re-entering the buildings during the survey. The first bat activity recorded was a distant pass by a soprano pipistrelle at 03:39 which was heard and not seen. Further soprano pipistrelle passes were heard until around 03:41, all of which were heard and not seen. A myotis pass was recorded at 03:45 observed flying from the north to the west around the corner of B1. The last bat activity recorded was a distant pass by a common pipistrelle at 03:52 which was heard on the detector but not seen. No further bat activity was recorded during the survey.
B1	2	No bats were seen emerging or re-entering the buildings during the survey. The first bat activity recorded was a commuting pass by a soprano pipistrelle at 03:39 which was observed flying east to west past the northern elevation of B1. A number of common and soprano pipistrelle passes were recorded from this time until 04:08 when the last bat activity recorded was a commuting pass by a soprano pipistrelle observed flying north to south past the eastern elevation of B1. No further bat activity was recorded during the survey.
B1 & B2	3	No bats were seen emerging or re-entering the buildings during the survey. The first bat activity recorded was feeding by a soprano pipistrelle at 03:37 which was heard and not seen.

		Multiple common and soprano pipistrelle passes were recorded from the start of the survey until 04:22 with the last bat activity recorded at 04:22 being a commuting pass by a soprano pipistrelle observed flying east to west along the tree line to the north. Feeding was recorded along this tree line at 03:53 and 04:08 also. No further bat activity was recorded during the survey.
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4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Bats are protected under the Wildlife and Countryside Act and the Conservation of Habitats and Species Regulations 2017 (amended by the Conservation of Habitats and Species Regulations (amendment) (EU Exit) Regulations 2019).

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 Licence (EPSL) 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 (BCT) publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, 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.

An EPSL **will not be required** to enable the proposed works to be lawfully undertaken. Appropriate justification for this assessment is provided in Table 4 of this report.

Bat Emergence and Re-entry Surveys

4.2 Evaluation

Taking the field survey results into account, Table 4 presents an evaluation of the value of the buildings for roosting bats in relation to the proposed development which will comprise the renovation of the existing residential dwelling (including re-roofing) and an extension to the rear.

Table 4: Evaluation of buildings on site for roosting bats

Feature	Survey conclusions (with justification)	Foreseen impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>	Enhancements <i>The Local Planning Authority has a duty to ask for enhancements under the PPW (2021)</i>
B1 & B2	No bats were seen emerging from or re-entering the building during the surveys. As such it is considered likely that bats are absent from the building. However due to the presence of a small number of droppings (less than 10) found during the PRA a precautionary approach to the works is advised.	Bats are very unlikely to be roosting within this building or tree and as such, there are not anticipated to be any impacts on bats in this location as a result of the proposed development. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A precautionary working method will be implemented during and post-development. This will include the following measures: - The potential roost features will be removed by hand (where a risk still remains following the pre-commencement inspection) prior to any mechanical demolition. - The provision of a toolbox talk to contractors prior to works on site. - In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice. - The installation of one bat boxes at the site (one bat box per bat species) prior to works commencing to form a receptor site for any bats found during the works. These boxes may be installed on buildings or trees but must be in an undisturbed location and will need to be maintained in this location post-development. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: - 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	The installation of a minimum of two bat boxes on mature trees around the site boundaries or on retained buildings will provide additional roosting habitat for bats e.g. 2F Schwegler Bat Box (trees) 1FF Schwegler Bat Box (trees) 2FN Schwegler Bat Box (trees) Beumaris Bat Box (buildings) Vivara Pro Woodstone Bat Box (buildings) Or a similar alternative brand. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the

			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, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. 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 'dimmable' 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.	entrance, away from artificial light. Alternatively, bat boxes could be incorporated into new buildings on the site e.g. Habibat Bat Box Schwegler 1FR Bat Tubes Bat tubes should be inserted into the fabric of the building during construction, positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance and facing landscapes areas, away from artificial light.
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Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: Bat Survey Plan



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*** (as amended) 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 (WALES)

Environment (Wales) Act 2016 and the Biodiversity Duty

The Environment (Wales) Act 2016 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.

Planning Policy Wales (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.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- a) Diversity between and within ecosystems;
- b) The connections between and within ecosystems;
- c) The scale of ecosystems;
- d) The condition of ecosystems (including their structure and functioning); and
- e) The adaptability of ecosystems.

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

- a) The list of habitats of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;

- b) The State of Natural Resources Report (SoNaRR), published by NRW; and
- c) Any Area Statement that covers all or part of the area in which the authority exercises its functions.

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

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 should 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.

The broad framework for implementing the duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and that circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. This means development should provide a net benefit for biodiversity, and at the very least, with no 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 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 choices should incorporate measures which seek the creation and restoration 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.

Good Practice Guide GPG 3 (October 2015) NRW Approach to Bats and Planning

As explained in Planning Policy Wales (Chapter 5 - Conserving and Improving Natural Heritage and the Coast), the presence of a European protected species is a material consideration for a development proposal that would be likely to result in disturbance or harm to the species or its breeding sites or resting places. Planning Policy Wales also explains that planning authorities should seek the advice of Natural Resources Wales for all planning applications likely to result in disturbance or harm to bats and should always consult them before granting permission. Local Planning Authorities address this by screening applications to identify when there is a reasonable likelihood that bats may be present and, therefore, when to require a bat survey and report that will confirm if bats are present and if they likely to be disturbed or harmed by the proposal. The overall requirement on Local Planning Authorities, Natural Resources Wales and developers is to avoid harm or disturbance to bats and their breeding sites and resting places, unless Natural Resources Wales has given a licence to allow the harm or disturbance. Natural Resources Wales may only give a licence if the requirements for derogation are met, including that disturbance or harm to individual bats (or to their breeding sites and resting places) would not be detrimental to the maintenance of the population.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by Natural Resources Wales 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 Wales and 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:

- 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; and,
- conserving wild animals.

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