



CAFFI WYLFA, CHIRK:

BAT AND NESTING BIRD SURVEY

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
09/11/2022	Hannah Taylor	Keymar Wake	V1	

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Executive Summary

Site	Caffi Wylfa/Glyn Wylfa, Castle Road, Chirk LL14 5BS Grid Reference: SJ 28730 37559
Surveyors	Keymar Wake (Licence holder S091201/1), Jane Kingsley and Hannah Taylor.
Proposed work	An extension to tie in to the existing roof pitch of Building 1.
Area/structures affected	A single storey building comprised of two joined buildings (Buildings 1 and 2) used as a café.
Type of survey	Preliminary Roost Assessment (PRA) (22 nd August 2022); Emergence Surveys 22 nd August and 8 th September 2022 - Static detector survey between this period.
Main results of survey	- The site had several Potential Roost Features (PRF's) for bats, primarily in the form of gaps under the ridge tiles that appeared to give access into the loft spaces via tears in the felt lining as well as gaps in the apex barge boards. - Droppings characteristic of pipistrelle were found within loft space of Building 1. There were no droppings found in the loft space of Building 2. - Emergence surveys showed the roof of Building 1 was used as roost for pipistrelle bats. An adjacent building (not proposed for works) was a roost (potentially maternity) for brown long eared bats (BLE). - Very limited potential for nesting birds within the site – only available areas are behind fascias and no evidence was found. - Surrounding habitat was of high suitability for bats due to its high quality and connectivity.
Survey conclusions	- The site as a whole is considered to have high potential for bats. The surrounding habitat is well connected and comprised of quality habitats for bats. The building itself, with the available roosting features would be regarded as highly suitable due to the abundance of suitable surrounding habitat. - The building is considered to be a day roost for common and soprano pipistrelle bats; with the potential to be a maternity roost. The building also offers roosting opportunities for the neighbouring BLE roost.
RAMs and Mitigation	- As the building is a bat roost a licence will be required from NRW before any works can commence. - The current loft space will be retained. The loft space in the new extension will be enhanced for BLE and crevice dwelling bats. - Access slates and raised ridge tiles will provide additional roosting opportunities for crevice dwelling bats, as well as enhancements within the loft space. - Bird boxes should be erected to provide additional nesting provisions. - Reasonable avoidance and mitigation measures will be implemented at all times.

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1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by Matthew Gregory of TACP Architects Ltd to carry out a Preliminary Roost Assessment (PRA) and two bat emergence surveys of Caffi Wylfa, Chirk. The proposed works will comprise an extension to the northern elevation of Building 1 of the existing café building (Building 2 is not proposed for works).
- 1.2 The surveys were commissioned to determine whether the proposed works would affect protected species, specifically bats and nesting birds. The survey work to inform this report was carried out in August and September 2022. This report is valid for a period of 18 months from the latter date in accordance with best practice.
- 1.3 All British bats (and roost sites) are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). In addition, all bats are classified as European Protected species by The Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation, it is an offence to kill, injure or disturb a bat, or to destroy any place used as a shelter by bats.
- 1.4 All birds (and their nests) are legally protected under the Wildlife and Countryside Act 1981 and it is an offence to intentionally take, damage or destroy the nest of any wild bird while it is in use or being built (as well as kill or injure wild birds or their eggs).

2.0 Site Description

2.1 Survey Area

- 2.1.1 The site comprised two attached single storey rectangular shaped buildings, with a detached veranda off the southern elevation of building 1. Immediately surrounding the buildings was a front (southern) garden of amenity grassland and pathways, and parking area of hardstanding to the north and south. The building was immediately adjacent to a collection of residential buildings to the east. To the west of the building were residential buildings and gardens, bordered by a fence/conifer hedgerow. The survey area is shown in Figure 2.1.



FIGURE 2.1. THE SITE AND SURVEYED BUILDING (RED). BASE IMAGE © GOOGLE EARTH 2022

2.1.2 The site was located in the South of Wrexham County Borough, in the town of Chirk. The town/city of Wrexham was located approximately 10 miles north of the site and the town of Oswestry was located approximately 5 miles south of the site. There were small strips of woodland to the north-west, south-west, south, and south-east of the site, the closest being approximately 400m away. The immediate area was residential, with the surrounding area comprised of rural pastoral agricultural land, rivers/streams, grazed parkland, and mixed/deciduous woodland; the River Dee flowed approx. 330m south of the survey area, at its closest point. There were three small strips of woodland to the north and west of the site, the closest being approx. 500m away. The wider area around the survey boundary is shown in Figure 2.2.



FIGURE 2.2. THE WIDER LANDSCAPE - THE SURVEY SITE IS SHOWN BY RED STAR. BASE IMAGE © GOOGLE EARTH 2022

2.2 *Designated and Notable Sites*

- 2.2.1 There were two statutory designated sites within a 1km radius of the survey area, Chirk Castle and Parkland and the River Dee, both were Sites of Special Scientific Interest (SSSI) and the River Dee a Special Area of Conservation (SAC). The site locations and descriptions are shown in Figure 2.3 and Table 2.1 respectively. The Chirk Castle SSSI is a maternity roost for Lesser Horseshoe bats (LHS) and other bat species are recorded.

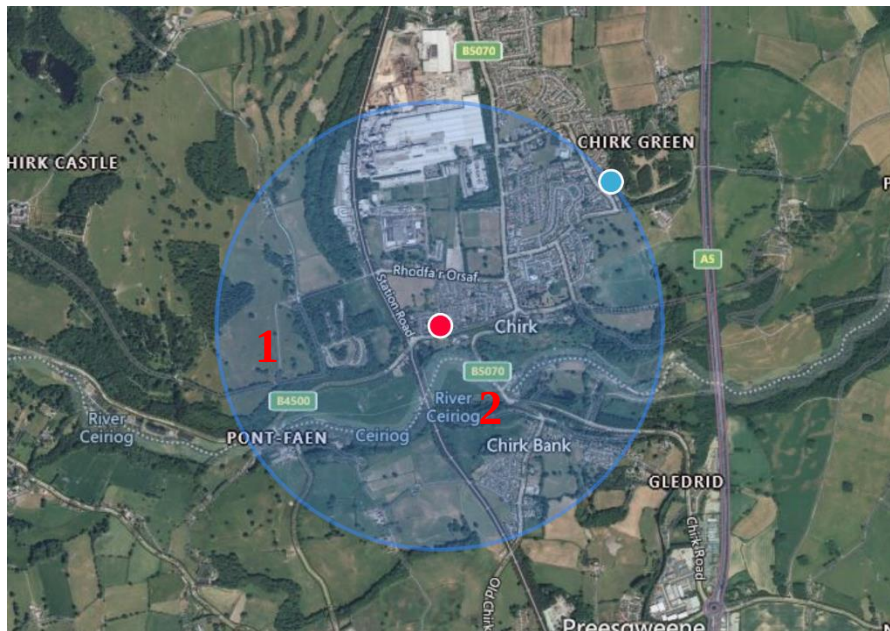


FIGURE 2.3 DESIGNATED SITES WITHIN 1KM OF THE SURVEY AREA; SURVEY AREA IS SHOWN BY RED DOT, STATUTORY DESIGNATED SITES SHOWN BY RED NUMBERS.
© CALC MAPS 2022

TABLE 2.1 DESIGNATED SITES WITHIN 1KM OF THE SURVEY AREA

Name and Designation	Approximate distance from survey area at closest point	Reason for designation
1. Chirk Castle and Parkland SSSI	550m	Designated as a maternity roost for LSH bats.
2. River Dee SSSI and SAC (River Ceiriog as tributary)	330m	Designated for its range of river habitat types and its role as a habitat for Atlantic salmon and floating water plantain.

3.0 Methodology

3.1 *Preliminary Roost Assessment*

- 3.1.1 The buildings were assessed for any signs of bats; these include droppings, feeding remains, and other indicative marks, plus features of potential use to bats such as crevices, cracks and other holes, and any potential access points into the building. High powered torches were used to inspect any identified features. Both the exterior and interior of the buildings were examined.

3.2 *Survey Details*

- 3.2.1 The external and internal building inspections were carried out on the 22nd August 2022 by Keymar Wake (accredited agent on Bat Licence No. licence S087351/1) and Hannah Taylor. Potential roost assessments were carried out following the guidelines set by the Bat Conservation Trust, 'Bat Surveys – Good Practice Guidelines' (Collins, 2016). Photographic evidence was taken where necessary.

3.3 *Dusk Emergence Survey*

- 3.3.1 Two bat emergence surveys were carried out during August and September 2022; led by Keymar Wake (Licence holder S091201/1) and two assistants; surveyors were positioned to be able to observe and monitor all elevations of the building, using Anabat scout detectors. Records were taken of any bats observed emerging from the building, and of any other bat activity taking place in the area during the survey. The survey began approximately half an hour before sunset and continued for 90 minutes after sunset.
- 3.3.2 The bat call data was analysed using Anabat Insight Software with the BatClassify plugin set at 70% confidence to auto analyse the bat calls; all of the calls were then reviewed and re-assessed as required.

3.4. *Static Detector Survey*

- 3.4.1 Static bat detectors (Anabat Express) were left within the loft space of Building 1 for two weeks between the two emergence surveys to record any bat activity within this area.

3.5 *Limitations*

- 3.5.1 Bats are highly mobile animals and it is possible that they may move into a building after the survey has occurred. Therefore, absence of bats cannot be absolutely guaranteed.
- 3.5.2 The PRA survey was carried out in August 2022, and the emergence surveys carried out in August and September 2022, which were within the appropriate survey windows as per the 2016 bat survey guidelines (Collins, 2016). This is however after peak bat season (May-

August) so it is possible that maternity roosts may have already dispersed prior to the surveys and the actual number of bats occupying the roost may be more than recorded. The roost will be retained and mitigation will be put in place with the assumption that the roost is a maternity roost, so it is not considered that the timing of the surveys has not negatively impacted the outcomes of the report.

4.0 Survey Results

4.1 Building Descriptions

- 4.1.1 The building proposed for works comprised two adjoining single-story rectangular buildings used as a café. For the purposes of this report the buildings have been described as Buildings 1 and 2 for the building proposed for works and the adjoining section respectively. The basic layout of the buildings is shown in Figure 4.1 and the details of the external and internal areas (where applicable) are described in Table 4.1.

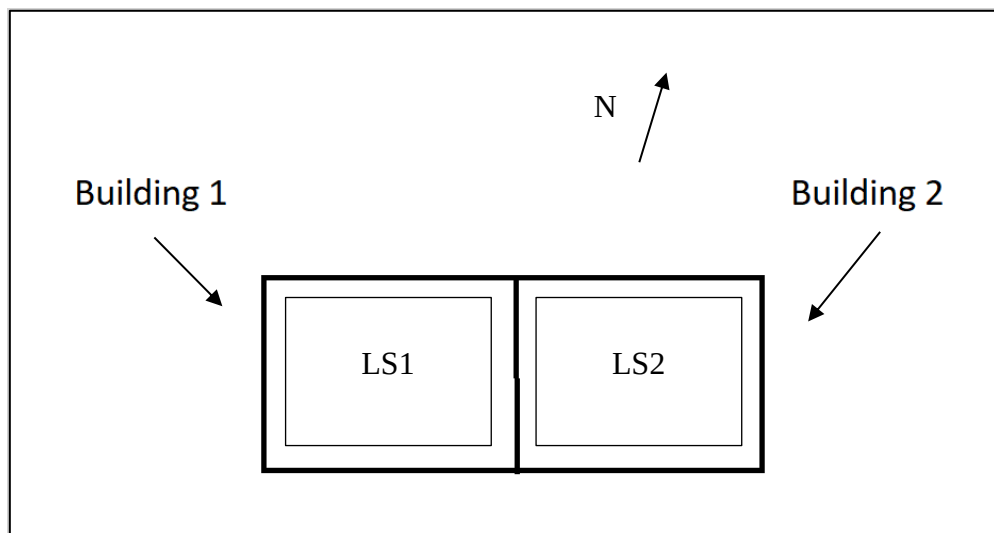
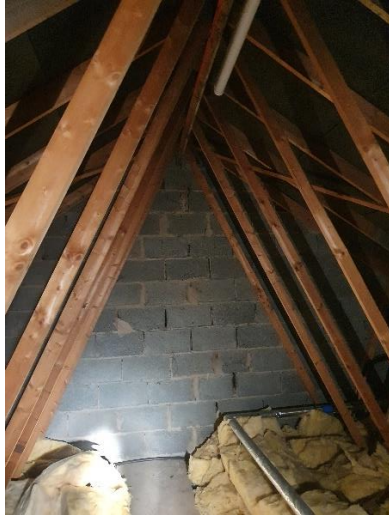
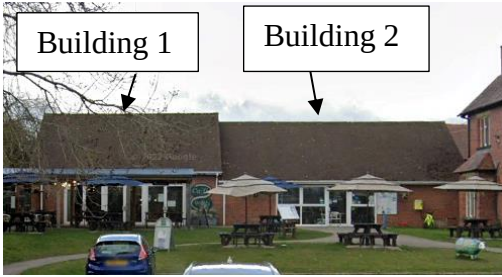


FIGURE 4.1: BASIC PLAN OF BUILDING (NOT TO SCALE) LS = LOFT SPACE

TABLE 4.1: BUILDING DESCRIPTIONS

Building 1			
External Description	External Photo	Internal Description	Internal Photo
Building 1 had brick walls with a tiled roof and concrete ridge tiles. Building 2 was attached to the eastern gable end of Building 1, with the roof pitch Building 1 being slightly higher. The fascias were wooden and the door and window frames were new plastic. Soffits to the north were wooden and plastic to the south.	 SOUTH ELEVATION  NORTH ELEVATION	The loft space of Building 1 was approximately 10m x 10m x 3.75m high, and had breezeblock gable ends with a wooden frame. The loft space was lined with felt with insulation on floor. The loft space was warm with little air flow and no light.	 LOFT SPACE 1

Caffi Wylfa, Chirk; Bat and Nesting Bird Surveys

Building 2			
External Description	External Photo	Internal Description	Internal Photo
Building 2 was of similar design to Building 1 with exterior brick walls. The roof was pitched with concrete ridge tiles; it was set lower than the roof of Building 1 and adjoined the eastern gable end of Building 1. The fascias were wooden and the door and window frames were new plastic. Soffits to the north were wooden and plastic to the south.	 NORTH ELEVATION  SOUTH ELEVATION	Internally the loftspace was approximately 12m x 10m x 3.5m high, and also had breezeblock gables with a wooden frame. The western gable end of Building 2 was connected to Building 1, however the separating wall between the two buildings was completely sealed. There was a boiler unit in LS2. There were few light spots and low air flow.	 AREA WHERE BOTH SECTIONS ATTACH FROM INSIDE LOFT SPACE 1.  LOFT SPACE 2

4.2 PRA Results

4.2.1 The roof tiles and walls of both buildings were well sealed. There were a small number of Potential Roosting Features (PRF's) for crevice dwelling bats around Building 1, in the form of missing mortar under roof tiles and gaps under the barge boards on the western gable that provided access into the loft space and the cavity wall at this gable end. There were limited PRF's available on Building 2, primarily one light gap observed around the chimney on the northern roof pitch. While there were some gaps under the fascias, these did not appear to provide access into the loft space as the internal inspection showed the eaves of the loft spaces were boarded over and well-sealed with no light gaps; however, the insulation covering the floor may have obstructed the view of some smaller access points. There were also gaps under the fascias of Building 1 that appeared to be boarded at the top preventing access into the loft space from the eaves. Internally, there were several areas of torn felt that exposed the slates in both Loft Space 1 and 2; there were no gaps in the separating wall of the two loft spaces that would provide access for bats between them.

There was one distinct pile of droppings found within Loft Space 1; they were situated under the ridge beam at the western gable end and stuck to the wall of the gable end, around the apex of the gable where there was access from underneath the barge board into the loft. The droppings were characteristic of pipistrelle bats in their size, shape and position around the roost entrance, with the pile containing around 50 droppings. No droppings, or evidence of bats was found in Building 2. The locations of the bat droppings are shown in Figure 4.2. The external and internal PRF's are described in Table 4.2.

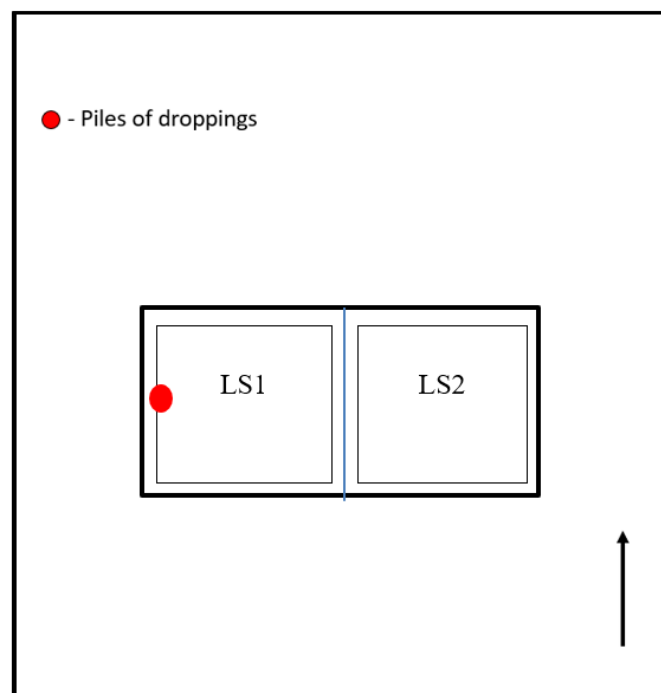


FIGURE 4.2 PLAN OF BUILDINGS (NOT TO SCALE) SHOWING LOCATIONS OF BAT DROPPINGS

TABLE 4.2 POTENTIAL FEATURES FOR BATS AND BIRDS

Location	Description	Example Photos
Building 1	Gap in mortar under tile on western gable	
Building 1	Gaps in barge boards at the apex of the western gable, providing access into the loft space	
Building 1	Gaps under barge boards on eastern gable, above where Building 2 attaches. The gaps were shallow and exposed and did not appear to give access into the loft space.	

Location	Description	Example Photos
Building 2	Gaps behind the fascias and soffits; the gaps were quite narrow and did not appear to give access into the loft space.	
INTERNAL - Building 2	One light gap where felt had torn around the chimney	
INTERNAL – Western gable end of Building 1	Pile of droppings characteristic of pipistrelle on the floor and stuck on the gable wall next to the entrance from under the barge boards at the apex.	

Location	Description	Example Photos
INTERNAL – Western gable end of Building 1	Cavity wall gap (approx. 10cm)	

4.3 Bat Activity Survey Results – Emergence Survey 22nd August 2022

4.3.1 As there were PRF's, access points and droppings found in the PRA survey, emergence surveys were carried out to try and determine how the bats were using the building and in what numbers. Both loft spaces were inspected prior to the survey and no bats were found. Table 4.3, provides details of the first dusk survey, including timing and weather conditions and Table 4.4 provides details of any emergences and general bat activity during the survey.

TABLE 4.3 SUMMARY OF SURVEY DETAILS

Start time	Sunset time	End time	Temp. at start	Weather
19:53	20:23	21:53	22.5°C	Dry, humid with a moderate breeze; had rained ~1.5hrs prior to survey

TABLE 4.4 SUMMARY OF EMERGENCES AND DUSK SURVEY ACTIVITY

Emergences			
Time	Species	Emergence Location	Photo
20:20	Soprano pipistrelle	From the gap in the apex of the western gable (A)	
20:42	Soprano pipistrelle	Emerged from western gable (B)	
20:51	Common pipistrelle	Emerged from gap in mortar under a tile on the western gable (C)	
General Activity			
- The first bat to be detected was a noctule at 20:35, passing high above the site. There were infrequent passes by this species throughout the survey, all commuting high over the site. - There were a small amount of passes by soprano and common pipistrelle around the site, approximately six and five calls recorded respectively until 21:47. - A brown long eared (BLE) bat was recorded at 21:01, followed by another three bats. Their behaviour suggested they were emerging from a neighbouring building to the east, before flying over the building to be surveyed and off to the west. - No other bat species were recorded during the survey.			

4.4 Bat Activity Survey Results – Emergence Survey 9th September 2022

- 4.4.1 The loft space of Building 1 was again inspected prior to the survey when the static detector was collected, and no bats were observed. Table 4.5, provides details of the dusk survey, including timing and weather conditions and Table 4.6, provides details of any emergences and general bat activity during the survey.

TABLE 4.5 SUMMARY OF SURVEY DETAILS

Start time	Sunset time	End time	Temp. at start	Weather
19:12	19:42	21:12	17°C	Dry with a light breeze

TABLE 4.6 SUMMARY OF DUSK SURVEY ACTIVITY

Emergences
No emergences were recorded during the survey.
General Activity
- The first bat recorded was a soprano pipistrelle to the north of the site at 19:21; the bat was not seen. At 20:04, two soprano pipistrelles were observed flying from the west of the site over the building. Two further passes from this species were recorded during the survey. - Common pipistrelle were recorded foraging to the north of the site between 19:58 and 20:08; there were three further passes recorded from this species to the west of the site during the survey. - BLE were recorded to the east at 20:25, 20:34, and 20:55, with another four bats observed but not recorded. Again, they were appearing around a neighbouring building and heading west, suggesting they were roosting within the building. - No other bat species were recorded during the survey.

4.5 Bat Activity Survey Results – Static Detector Surveys

- 4.5.1 Static detectors were placed in Loft Space 1 from the 22nd August 2022 to 9th September 2022, to record any potential bat activity within the building. The weather throughout the static survey period was generally agreeable with typical bat survey conditions.
- 4.5.2 No bats were detected within the loft space during this period.

4.7 Nesting Birds

- 4.7.1 There were no nests or signs of previous bird nesting activity within the site. The buildings did not provide highly suitable habitat for nesting birds; there were no access points big enough into the loft spaces available to birds and little-no opportunities to nest within the building exteriors. The surrounding trees and hedgerows provided suitable nesting bird habitat but these areas will not be impacted by the proposed works.

5.0 Discussion and Conclusions

5.1 Proposed Works

- 5.1.1 The proposed works comprise an extension to the northern elevation of Building 1 which will tie into the roof pitch but the loft space of Building 1 will be retained largely as it is. This extension will be lined with Bitumen 1F felt. The proposed extension will result in a larger final loft space than the original building offered. Building 2 will not be impacted by the works (see figure 5.1).

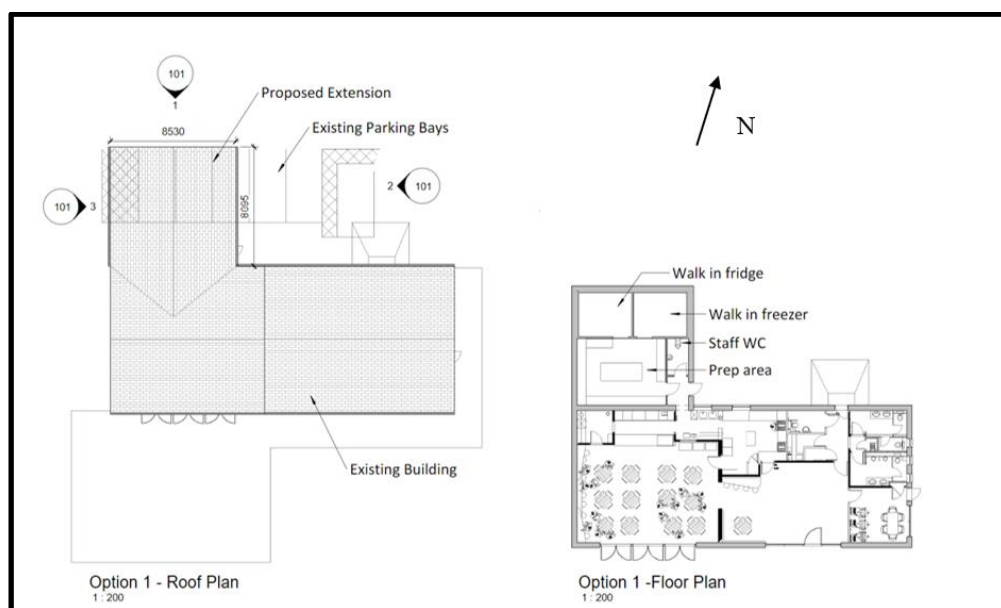


FIGURE 5.1: PROPOSED PLANS. BASE IMAGE ©TACP ARCHITECTS LTD

5.2 Designated Sites

- 5.2.1 The proposed works will not have any impact on any of the designated sites within 1km of the survey area as the closest site is still over 300m away. Chirk Castle SSSI is designated for its LHS populations but the buildings surveyed offered no roosting potential for LHS bats so the designated site, or species that are listed as a feature, will not be impacted by the proposed works. There were two pipistrelle maternity roosts recorded within 600m, the closest being 520m away, with over 600 individuals recorded. The existing roost will be

retained, with the proposed works causing only temporary disturbance. The extension will be constructed on the current concreted section of the back yard/car park and no other vegetation or habitats will be removed.

5.3 *Bats*

- 5.3.1 The buildings had a small number PRF's for bats, primarily on the western gable of Building 1, with some shallow areas under fascias and a small gap around the chimney on Building 2. The PRF's on Building 1 did provide access into a loft space and cavity wall that was highly suitable for crevice dwelling bats, including BLE's. There was a pile of droppings at the western gable end in Building 1, on the floor and stuck on the wall around the access point at the apex, the droppings were characteristic of pipistrelle bats and the identification was confirmed by the emergence surveys. No droppings, or evidence of bats, were found in Building 2.
- 5.3.2 The surrounding habitat had high suitability for bats with other residential and commercial buildings providing roosting opportunities and several woodland blocks, pasture fields and the River Dee all providing suitable foraging, commuting and roosting habitats.
- 5.3.3 Under the Good Practice Guidelines (Collins, 2016), the site is regarded as having a **high** suitability for roosting bats. This is defined as "A structure or tree with one or more potential roost sites which are suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods due to their size, shelter, protection, conditions and surrounding habitat" (Collins, 2016). There are roosting opportunities within the cavity wall, as well as available access into the loft spaces; the surrounding habitat is highly suitable and there are multiple maternity roosts recorded within 500m of the site, and a potential BLE maternity roost in the neighbouring building.
- 5.3.4 During the first emergence survey, two soprano pipistrelles and a common pipistrelle were recorded emerging from the western gable end of Building 1. Four brown long eared bats (BLEs) were detected during the survey, their behaviour suggested they were emerging from a building to the east and commuting over the survey site. The second emergence survey showed no emergences from either building but common and soprano pipistrelles were active within the site. BLEs were again observed passing from east to west early in the survey, suggesting they are roosting in a nearby building to the east. There were no calls recorded on the static detector over the two-week period between the emergence surveys; as there were bats observed emerging from Building 1 during the first night that the static was in situ, it suggests that the bats could be primarily using the cavity wall, as opposed to the whole loft space and therefore not getting recorded on the detector.
- 5.3.5 Building 1 is a day roost for a small number of common and soprano pipistrelles, it also has the potential to be used by BLE's from the neighbouring roost on occasion. There is also the potential for the building to be used as a maternity roost due to the size of the available roosting areas in the cavity wall and loft space, and the records of pipistrelle maternity roosts

within 600m. As the emergence surveys were conducted late in the season any maternity roosts may have started dispersing. The number of droppings found during the PRA didn't suggest a maternity roost was present, but bats were likely using the cavity wall and so there may be more droppings not visible.

- 5.3.6 As the building is a known bat roost, a licence will be required from NRW before any works can commence. The proposed works will not have a negative impact on the favourable conservation status of bat populations within the area as long as mitigation and compensation measures are in place, as well as timing constraints of works and specific working method. The known area of the site that is a roost for individual/small numbers of bats (Building 1) will be retained and the proposed extension will increase the amount of loftspace available to bats. There are also several other buildings nearby to the site that offer the same/similar roosting opportunities. Details of mitigation and compensation measures will be provided in detail within the licence method statement but some are included (but not limited to) in Section 6.

5.4 *Nesting Birds*

- 5.4.1 The buildings provided very limited suitable nesting bird habitat; the access points into the loft spaces were considered too small for birds to use and there was no evidence of birds having used the building. There were low potential areas in the larger gaps behind the fascias but there were no signs of birds using these areas however. Reasonable Avoidance Measures (RAMs) to reduce risk to nesting birds and compensatory nesting recommendations and enhancements are provided in Section 6.

6.0 Mitigation, Compensation and Reasonable Avoidance Measures (RAMs)

6.1 *Bats*

- 6.1.1 **As the building is a known bat roost, no works to the building can commence until a licence has been obtained from NRW. A licence can only be applied for following the granting of planning permission and the discharge of any ecology related conditions. Once submitted, the licence application takes 40 working days to be processed by NRW (or more if any there are any queries).** In order to apply for a licence a suitable method statement detailing the specific working method and proposed mitigation for any loss of habitat or disturbance to bats must be created by a suitable qualified ecologist and submitted to NRW.
- 6.1.2 It cannot be discounted that the site is a maternity roost for pipistrelles and/or used by individuals from both the pipistrelle and BLE maternity roosts within the vicinity of the site. Following the bat mitigation guidelines (Mitchell-Jones, 2004), the mitigation requirements for the maternity sites of common species includes 'Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred'.
- 6.1.3 Mitigation measures and recommendations will be included in the licence application, and are also included below:
- As the building has the potential to be used as a maternity roost, the works must be carried out between September and April to avoid maternity season. Whilst it is unlikely, it cannot be ruled out that the site is not a hibernation site, should any destructive work be carried out during the winter months, then mitigation and compensation for hibernating bats will be in place in the form of supervision and a bat box suitable for hibernating bats.
 - Prior to works being carried out, a toolbox talk will be given to all construction workers informing them of the species involved and specific working methods to adhere to. A log of participants will be kept.
 - The removal of all of the roof structures including ridge tiles, slates, bargeboards and soffits will be undertaken by hand and supervised by a licensed ecologist who is named on and authorised to act under the specific licence granted by NRW for this works. The loft space, as well as any other areas that can be inspected, such as any spaces under the slates once the scaffold is up, will be looked at with a torch and/or endoscope prior to works commencing by the licenced ecologist. If a bat is found and accessible it should be captured and placed in an appropriate bat box that will be made available onsite prior to works commencing. If a bat is found and is not accessible, works will start from the furthest point from the bat and continue in a directional manner to encourage the bat to leave of its own accord.

- In the new extension, **only** Bitumen 1F felt is to be used as breathable membranes can be fatal to bats when they get caught in the fibres and starve to death.
- The cavity wall and access points on the gable end of building 1 where bats emerged from will not be impacted by the works and will remain available throughout the works. The existing loft space, roosting areas and access will be retained, and the extension will also create further available loft space in the building, enhancing the suitability for bats. Further roosting opportunities for crevice dwelling bats will also be provided via access slates on the extension roof pitch. Enhancements for bats (including BLEs) within the loft space will also be made.
- All mitigation measures will be inspected by an ecologist to ensure compliance with measures detailed in the licence method statement. An Ecological Compliance Audit will be completed during and after the works to document and show evidence that the method statement has been followed. Monitoring of the roosts will be carried out during the first bat activity season (May-August) after completion of the works (Year 1); if the results are unfavourable then further monitoring surveys will be carried out in Year 3.

6.1.4 *Lighting*

6.1.4.1 The immediate surrounding habitats of the site are suitable for bats and the emergence survey showed small numbers of bats using these areas to commute and forage. Therefore, any lighting associated with the building during and after the works has the potential to impact bats and nocturnal birds. To reduce the potential impact of any light spillage on commuting bats during the construction and post construction phases of the development, lighting design for the site (both during the works and of the completed building) should seek to minimise the levels of light along any areas used by bats. The following recommendations should be used when forming the lighting plan for the proposed development (Bat Conservation Trust (20018) and Stone, (2013)):

General Lighting Guidance

- There must be no lights focused on the hedgerows and trees to the west and east of the site. There will be no illumination of the recommended bat mitigation and bird boxes (see below), including the western gable end of Building 1, once the works are complete (see Figure 6.1).
- As the new extension proposes additional lighting (in the form of additional windows), internal luminaires in all new rooms should be designed to minimise light spill and glare via the windows and sky lights; either through being recessed, using dimmer switches, lamp shades, directed away from the windows and/or through the use of blinds and curtains during the summer months.

- Construction should start at least one hour after dawn and finish at least hour before dusk during the summer months (May – August) to prevent light and noise levels disturbing the bats using the site.
- Any external or security lighting should be limited to provide some dark periods during the night. The lighting should be motion activated, and not stay on longer than one minute, in order to provide maximum darkness when not needed as well as providing safe lighting conditions of residents when required.

6.1.4.2 The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for the proposed development.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.



FIGURE 6.1. PROPOSED DARK ZONES (BLUE). BASE IMAGE © MAGIC MAPS 2022

6.1.5 *Mitigation – Compensation and Enhancements*

6.1.5.1 The proposed works will not result in the destruction of a bat roost but will cause temporary disturbance and modification of the existing loft space. In line with Planning Policy Wales, and following the Environment Wales Act (Section 6) and guidance provided in the recent letter by the Chief Planner in Wales, there is a requirement to ensure that a **net benefit for biodiversity** is also provided in all applications for planning in Wales; and that applications are to be refused if they cannot show a gain of biodiversity. The licence method statement will detail measures to be followed to mitigate for the disturbance to bat roosting areas; and to enhance the site for bats; and will include (but not be limited to):

- The existing roosting area in the cavity wall of Building 1 will be retained, as will the loft space. The existing loft space will also be increased in size by the extension.
- Only pre-treated timbers must be used or if timber treatment is needed, only timber treatments listed on Natural England Technical Information Note TIN092 will be used.
- The roof of the new extension will be lined with a non-breathable membrane (Bitumen 1F felt) and constructed using a truss that provides a large open void, with a minimal number of struts/ties.
- The existing access points on the western gable of Building 1 will be retained. Further access will be provided into the extension loft via two access slates (see Figure 6.2 for locations and Figure 6.3 for examples).

An additional ridge beam will be installed into the extension to provide roosting opportunities for BLEs. The loft spaces of the existing building will further be enhanced with two Kent style bat boxes to be put on the internal gable ends to increase crevice dwelling opportunities: Instructions to make a Kent bat box - <http://www.kentbatgroup.org.uk/kent-bat-box.pdf> . A panel box should also be included on the internal gable end of the new extension; this will comprise a piece of plywood board fitted to 1inch x 1inch timbers with a gap on the underside only so bats can access the space from underneath.

- The existing loft hatch will be retained; however this is for **emergency access only** (following liaison with ecologists) and for **monitoring purposes by licenced persons only**. The loft will not be accessed regularly or used for storage.
- To provide additional roosting features between the slates and the wooden cladding, two access slates and two raised ridge tiles will be installed onto the roof of the extension (see Figure 6.4). Proposed locations are shown in Figure 6.2.

- Building 2 will be retained as it is and all available PRF's and loft space will continue to be available to bats in the area throughout and following the works.

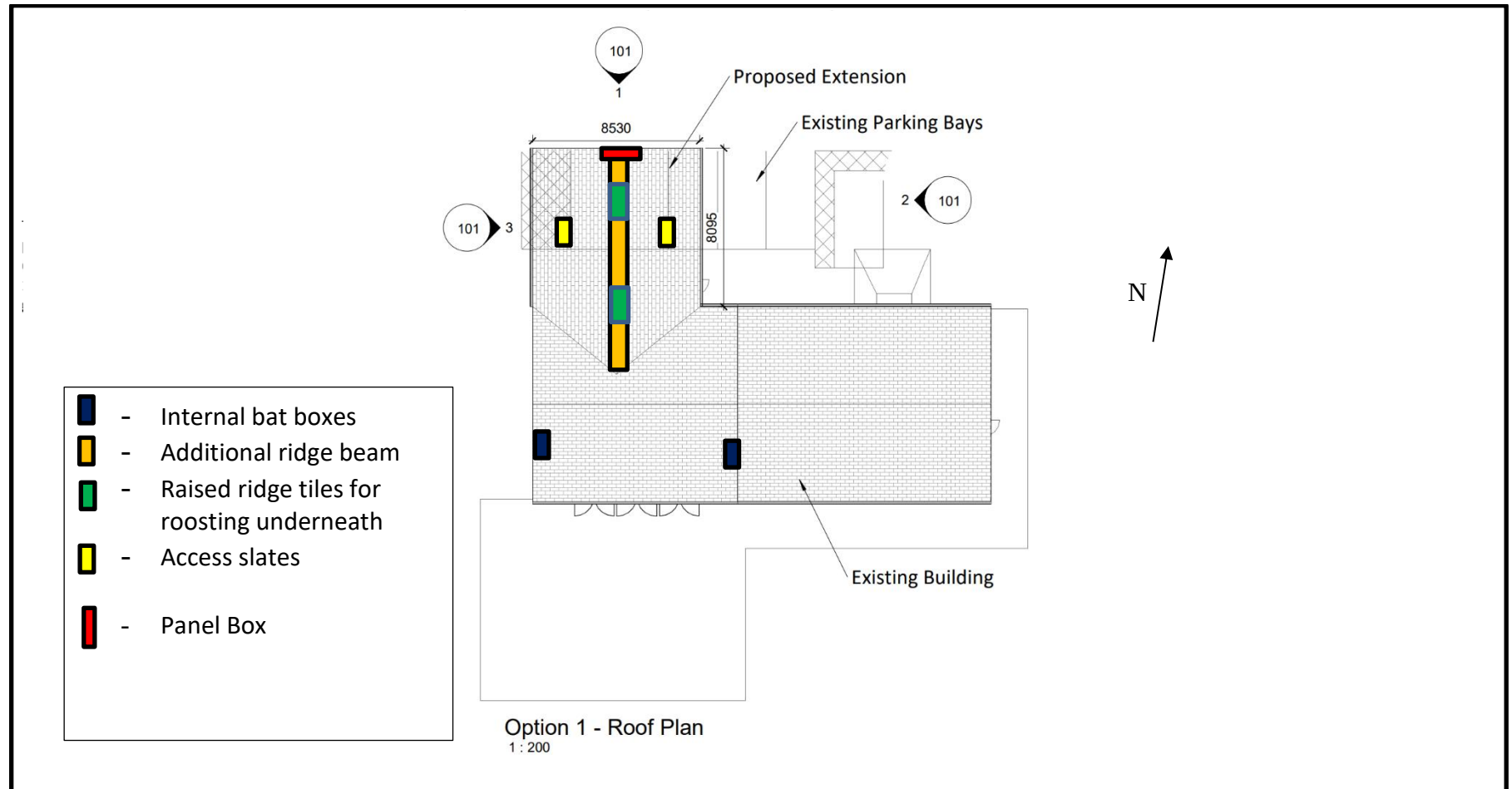


FIGURE 6.2: PROPOSED LOCATIONS OF BAT MITIGATION. BASE IMAGE © TACP ARCHITECTS LTD

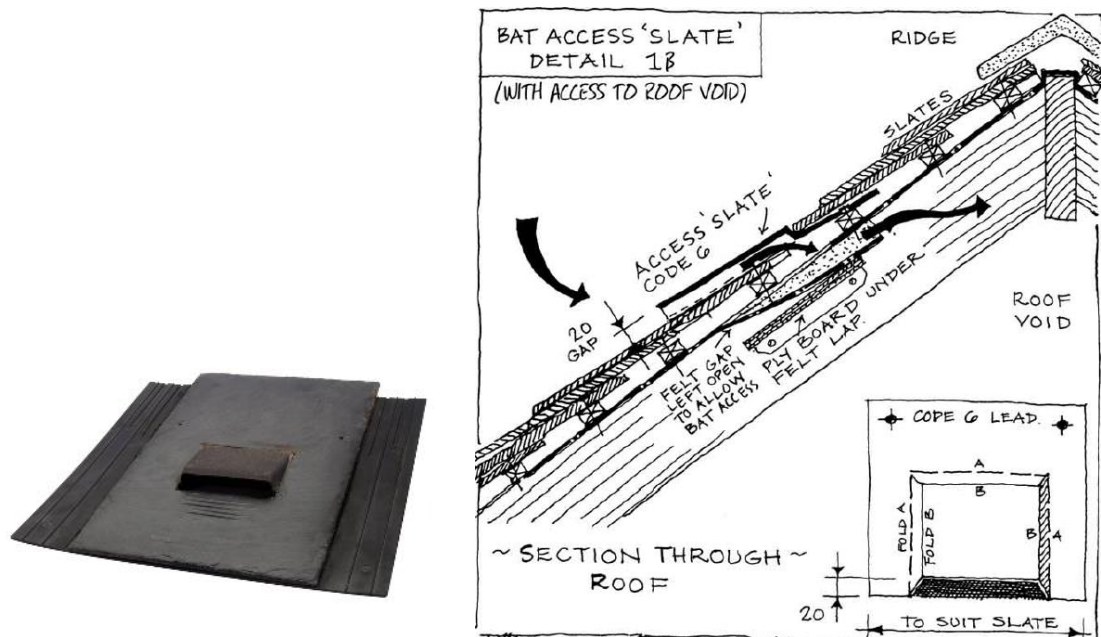


FIGURE 6.3: A) EXAMPLE OF ACCESS SLATE; B) ACCESS SLATE INSTALLATION TO PROVIDE ACCESS INTO BAT LOFT

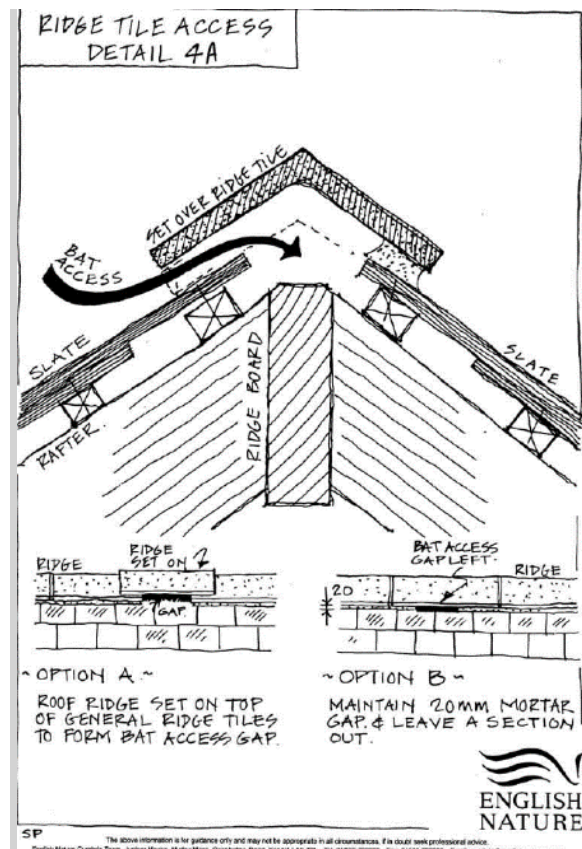


FIGURE 6.4: A) EXAMPLE OF RIDGE TILE ACCESS

6.2 *Nesting Birds*

- 6.2.1 The building provided very limited suitable nesting bird habitat; the access points into the loft spaces were considered too small for birds to use and there was no evidence of birds having used the building. There were low potential areas in the larger gaps behind the fascias; there were no signs of birds using these areas however. If the destructive works to the roof are carried out during the nesting bird season (March – September inclusive) then a nesting bird check will need to be carried out immediately prior to (within 48 hours) of works starting. If active nests are found then all work in the vicinity of the nest **must be delayed** until all chicks have fledged.
- 6.2.2 To enhance the site for birds; bird nesting opportunities will be provided by including bird boxes around the site. A minimum of two boxes suitable for small birds need to be erected on site, - one suitable for *Passer domesticus* (house sparrows) with a 32 mm entrance and one for smaller birds (28 mm). Examples of suitable bird boxes are: vivara pro woodstone house sparrow nest-box; vivara pro seville 28mm woodstone nest-box. Woodstone nest boxes are more durable and require less maintenance than wooden boxes. The boxes should be erected onto buildings or trees within the site, at a minimum height of 2m on a northern or eastern elevation, away from any doors or windows.

6.3 *General Reasonable Avoidance Measures*

- 6.3.1 Suitable Reasonable Avoidance Measures (RAMS) will be implemented to reduce the potential to impact to bats, nesting birds and other species that may be found on site.

The following measures should be implemented at all times during the works:

- Working areas should be kept to the minimum required.
- Works should be avoided within 1 hour of dawn and dusk where possible to avoid disturbance to nocturnal animals. If works outside this time are needed, all lighting should be directional and be directed away from the woodland areas, i.e. onto the site from the perimeter.
- If at any point in the works a reptile or amphibian is found all works in the vicinity of the sighting must immediately cease; if a common species is found it can be picked up (with gloves) and moved to a safe area off the site.
- Any terrestrial mammals, for example badgers, seen must be allowed to leave the area on their own. If this is not possible e.g. the animal is injured or trapped then an ecologist must be called.

7.0 Legislation

7.1 *Bats*

The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species in the UK. All UK bat species are fully protected under the 1981 Act through inclusion on Schedule 5. All bats are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) which transcribes the EC Habitats Directive into UK law. In combination, this legislation makes it an offence to:

- Deliberately or recklessly take, injure or kill a bat;
- Deliberately or recklessly damage or destroy a place or structure used by bats for shelter or protection;
- Deliberately or recklessly obstruct access to a bat roost; or
- Deliberately or recklessly disturb bats while occupying a roost.

Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Under both laws the Welsh Government and D.E.F.R.A. are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

7.2 *Birds*

In addition, under the Wildlife and Countryside Act, 1981 (as amended) and the Countryside and Rights of Way, 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

7.3 *Biodiversity Net Gain – Relevant sections of legislation*

- Section 6 of the Environment (Wales) Act 2016:

Biodiversity and resilience of ecosystems duty

(1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.

(2) In complying with subsection (1), a public authority must take account of 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);
- (e) the adaptability of ecosystems.

.... (5) In complying with subsection (1), a public authority other than a Minister of the Crown or government department must have regard to—

- (a) the list published under section 7;....

- Section 7 of the Environment (Wales) Act 2016:

Biodiversity lists and duty to take steps to maintain and enhance biodiversity

(1) The Welsh Ministers must prepare and publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

(2) Before publishing a list under this section the Welsh Ministers must consult the Natural Resources Body for Wales (“NRW”) as to the living organisms or types of habitat to be included in the list.

(3) Without prejudice to section 6, the Welsh Ministers must—

- (a) take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and
- (b) encourage others to take such steps

8.0 References and Information Sources

Bat Conservation Trust (2018) Bats and artificial lighting in the UK- bats and the built environment series www.bats.org.uk

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