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Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

Inspection & Assessment in relation to Bats & Breeding Birds

May 2021

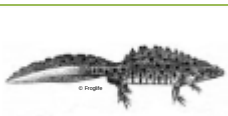
33 Moss Hill

Moss

Wrexham

LL11 6ES

National Grid Ref: SJ30725369



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This report aims to provide general advice on ecological constraints associated with any development of the site and includes recommendations for further survey; it is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development

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Executive Summary

As part of a proposed planning application at 33 Moss Hill in Moss, Wrexham, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in May 2021. The survey was commissioned by Blueprint Architectural Ltd; proposals are for the demolition of the existing dwelling to allow for the subsequent creation of two new dwellings with associated landscaping and access.

Detailed methods, findings, conclusions and recommendations are presented throughout the report; however, the reader should be aware of the following Key points:

Bats: The dwelling 33 Moss Hill Road has been found to be absent of Potential Roost Features (PRFs), and as such the structure has consequently been categorised to possess 'negligible' roost suitability in accordance with current Bat Conservation Trust (BCT) guidance. Based upon this categorisation and when taking the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' 3rd editions (2016) into consideration, no further surveys are required in relation to bats.

Breeding Birds: In relation to common birds, the dwelling provides nesting platforms that might be used by birds associated with rural and garden environments, and current evidence of House Sparrow nesting was recorded within the guttering/roof. In considering this, there is a possibility birds could use the barn for nesting purposes during the breeding bird season.

It is thus recommended that any demolition work is carried out outside of the breeding bird season (March-August inclusive). For works within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing. If birds are found nesting any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally.

Additionally, it is recommended that a minimum of one Sparrow Terrace is incorporated into the proposed new dwellings.

Biodiversity Enhancement: As a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions such as:

- *Native species only when landscaping / tree re-planting,*
- *Bird, bat, and invertebrate provisions,*

Further information is provided within Appendix II.

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1.0 Introduction & Reason for Survey

- 1.1 As part of a proposed planning application at 33 Moss Hill in Moss, Wrexham (see Figure 1.1), Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in May 2021. The survey was commissioned by Blueprint Architectural Ltd; proposals are for the demolition of the existing dwelling to allow for the subsequent creation of two new dwellings with associated landscaping and access.



Figure 1.1 – Proposed site layout (©Blueprint Architectural Ltd)

- 1.2 The aim of the inspection was to ascertain if the building is of value to bats whilst an assessment for birds was also carried out; trees where present were also considered; if found to be suitable for bats, or signs of use were observed, then more detailed surveys would be recommended i.e. dusk/dawn emergence/re-entry surveys during the main active season of bats which is May – August. If it is determined that bat(s) or their roost/place of rest/shelter will be subsequently affected by the works then a European Protected Species Mitigation Licence (EPSML) would be legally required to proceed with the development. If evidence indicated breeding birds may be impacted by proposals, then recommendations would be made accordingly.
- 1.3 If additional surveys are required following the initial site visit this report will outline the details of those further requirements.
- 1.4 As part of the local authority's planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted where protected/priority habitats and species are, or may be present, that could be affected by the proposals for which the application seeks consent. Where more detailed surveys are recommended by the ecologist, following an initial daytime investigation, then Local Planning Authorities (LPA) on the advice of their ecological advisors, may not grant permission until such time that all relevant information is gathered.
- 1.5 In accordance with *Biodiversity Net Gain: Good practice principles for development* (CIEEM et al, 2019) the site visit also aims to identify enhancement opportunities for biodiversity in line with national and local planning policy.

2.0 Protected Species & Their Requirements

2.1 Planning Policy Wales, 11th Edition (2021) is the Welsh Government's policy document and it describes the land use context for using land sustainably. The document supports every strategy published by the Welsh Government and it is supplemented by a variety of Technical Advice Notes (TAN's) and any circulars.

2.2 There are several plans, strategies and national, sub-regional and local policy statements which provide a framework for development in the Plan area. The Planning and Compulsory Purchase Act (2004) makes it a requirement for local planning authorities in Wales to prepare a Local Development Plan (LDP) for their areas.

Wrexham Borough Council prepared a plan, namely the 'Wrexham Unitary Development Plan (1996 – 2011)', which was formally adopted in February 2005 and supersedes any previous development plans for the area. A new plan, the 'Wrexham Local Development Plan 2 (2013 - 2028)', which will replace the current adopted plan, is currently under review. Until this new plan is adopted, the Wrexham Unitary Development Plan remains in effect.

2.3 Planning authorities must therefore follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.

2.4 The first priority for planning authorities is therefore to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or pro-gain have been fully considered.

2.5 Planning authorities should ensure that features and elements of biodiversity value are retained on site, and enhanced or created where ever possible, by adopting best practice site design and green infrastructure principles. The provision of up to date ecological survey information will assist in this process. Where necessary, planning authorities should seek to modify the development proposal through discussion with the applicant at the earliest possible stage. Biodiversity and green infrastructure modifications should draw on the issues and opportunities identified in a preliminary assessment. In some circumstances, it will be appropriate to attach planning conditions, obligations or advisory notes to a permission, to secure biodiversity outcomes.

2.6 When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought. This should normally take the form of habitat creation, or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity.

Where the adverse effect on the environment clearly outweighs other material considerations, the development should be refused.

2.7 The Environment (Wales) Act 2016 ("the Act") - requires local planning authorities to have regard to area statements in the development of Local Development Plans.

Part 1 of the Act promotes sustainable management of natural resources, and in Part 1 section 6 states:

"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."

2.8 This is supported by Policy EC6 of the Wrexham Unitary Development Plan, which states:

“Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.”

2.9 All British bats and their **roosts are afforded protection under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2017. When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2017 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

2.10 The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.

2.11 Use of Buildings by Bats

- a) Summer breeding roost
- b) Hibernation roost
- c) Transitional or temporary roost

Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance, climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

** The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations 2017 (Regulation 43 (d) the term roost is not used but refers to “a *breeding site or resting place of such an animal*” and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used is legally protected whether or not bats are in occupation.

2.12 All wild birds no matter how common, their eggs, young and nests whilst being built or occupied are protected under both the Wildlife and Countryside Act (1981) and Natural Environment and Rural Communities Act (NERC Act 2006). Any work that would damage an occupied nest, eggs or young of breeding birds must be avoided and any damage to nests that may occur as a result of the development should be outside of the main breeding bird season (March-August) as long as it can be conclusively established by a suitably experienced ecologist that the nest/s is/are no longer in use. On occasions nests can become unoccupied during the main breeding season but the status of the nest/s should be determined by a suitably experienced ecologist before any damage takes place.

2.13 Figure 2.1 is a process model that surmises how ecological issues should be dealt with in the context of the planning process.

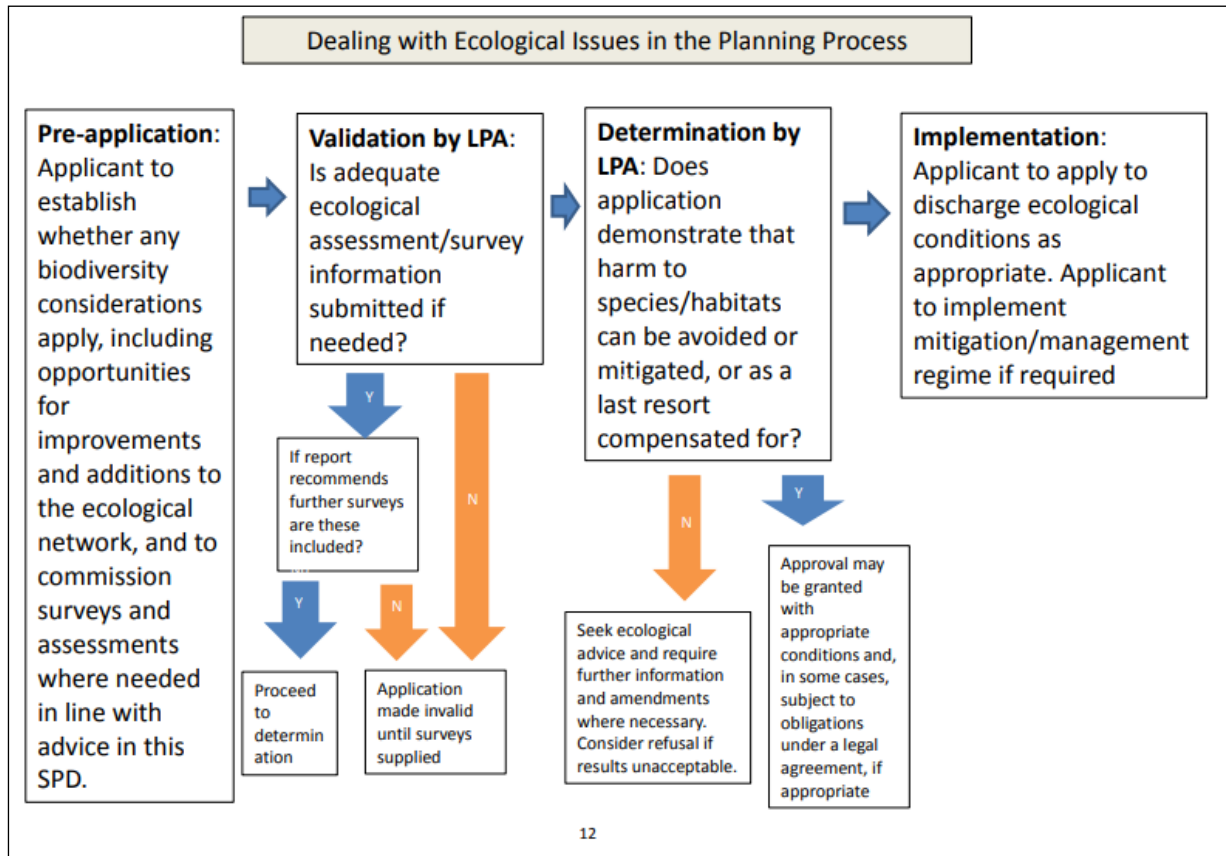


Figure 2.1 - Dealing with ecological issues in the planning process

3.0 Protected Species in Wrexham

- 3.1 Up to eleven bat species have been recorded in Wrexham, many of which use built structures for roosting. A variety of building types and features are utilised by bat species at different times of year ranging from occupied residential dwellings to disused barns and bridges. The most frequently encountered species is the common pipistrelle bat (*Pipistrellus pipistrellus*); its abundant status in Wrexham is mirrored throughout the UK.
- 3.2 The number of breeding Barn owls (*Tyto alba*) within rural parts of Wrexham is moderately high across areas of countryside where suitable environs exist; they are constantly under threat from loss of habitat and nesting opportunities.

4.0 Survey Methodology

- 4.1 As part of the Inspection & Assessment for Bats & Breeding Birds report, a desk-top and field-based study is conducted. Methods for both components of the appraisal are given below.

Desktop Study

- 4.2 Prior to a site visit a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2.0km of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGIC – provided by DEFRA) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSML) to further inform conclusions concerning such species in the context of the study site and its proposed development.
- 4.3 Satellite imagery was reviewed using sources such as Google Earth (© 2019/20) to determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.
- 4.4 A commercial data request to the Local Environment Records Centre serving the area Cofnod has not been sourced and is justified through application of the following recent guidance:

1) The Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK (CIEEM, 2020) states:

“It is generally expected that a desk study, including a data search, will be a key part of the ecological surveys or reports produced to inform a planning application. Freely available web-based sources of data and contextual information should always be used; in some cases, it may be acceptable to not undertake a data search with the LERC or other relevant NSS or local interest groups, for example:

ii) Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development. The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact. It can be very difficult to demonstrate that a data search would not have provided relevant information without obtaining and reviewing those data.

*iii) In some cases for Preliminary Roost Assessments of buildings in **low impact / small-scale scenarios**, such as an extension to a residential property, loft conversions (full or partial), installation of Velux/dormer windows, single modern agricultural or similar building conversion or demolition; however, it should not be assumed that data searches are never required for such scenarios and this must be judged on a case by case basis and justified accordingly.*

2) The Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) also states:

*“Very occasionally it might be possible to carry out a robust PEA without obtaining LERC/NBDC/CEDaR data; this will usually only apply to low impact or **small-scale projects** (e.g. by virtue of size, extent, duration of works, magnitude and locality), and should be determined on a case-by-case basis.”*

- 4.5 As exemptions as made **bold** above can be applied at the application site, in good practice, it is considered unnecessary to conduct a commercial data request following the desk study effort and daytime assessment at this time which offers a proportionate level of survey effort, however, if a data search is considered to be necessary by the Local Authority to inform the ecological impact assessment following any further surveys recommended in this report, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued/updated report.

Field Survey

- 4.6 In context with the above a diurnal inspection and assessment of the property in relation to bats and breeding birds was conducted on 11th May 2021 in dry conditions (16°C) wind 2/12 (Beaufort scale), 60% cloud, by Mr. J. Pescod Qualifying CIEEM, a Consultant Ecologist of four years who is additionally an accredited agent on the Class 2 Natural England bat licence of Mrs. K. Wilding (CLS-14227).
- 4.7 Bat Conservation Trust (BCT) - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) states:
- "The guidelines should be interpreted and adapted on a case-by-case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive."*
- 4.8 The bat and breeding bird survey was conducted in tandem; the building was inspected for potential places that may be of value to bats or breeding birds, and to determine if evidence of use by either group was present; the interior assessed with the aid of a high powered torch for evidence of bat use which mainly includes bat droppings and/or prey items, or incidental presence of live or dead animals, for example, and investigated for evidence of breeding birds which broadly involves a search for nesting materials, presence of pellets or accumulated faeces and/or dead juveniles/hatchlings, for example.
- 4.9 External elevations were investigated with the aid of high-powered torch and close focus binoculars (where necessary) for places that can be used as a roost by bats or as a means of ingress for bats and birds leading to areas of roosting/nesting potential. These features are typically referred to as potential roost features (PRF) concerning bats. All external features were able to be surveyed without constraint.
- 4.10 The surrounding habitat was also considered in terms of general suitability for bat and bird species associated with the local habitat types.
- 4.11 No mature trees are present on site or adjacent to site; no trees were therefore assessed for suitability to host roosting bats or breeding birds as a part of this survey.
- 4.12 Criteria for roost assessment are based upon the determinants given in the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016): (see Figure 4.1).

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Figure 4.1 - BCT guidelines extract

4.13 An assessment of the building was conducted when birds are within their breeding season (this is typically March-August inclusive). Elevations were inspected for evidence of birds that show a high dependency upon built structures, many of which are in a state of decline. These might include the following species for example:

- Starling (*Sturnus vulgaris*): Birds of Conservation Concern (BoCC) red status
- House Sparrow (*Passer domesticus*): BoCC red status
- House Martin (*Delichon urbica*): BoCC amber status
- Swift (*Apus apus*): BoCC amber status
- Swallow (*Hirundo rustica*): BoCC green status

4.14 Additional to the site's capacity to support common species of bird, the area was subject to an assessment for capacity to support specially protected species such as Barn Owl, a species protected under Schedule 1 of the Wildlife & Countryside Act (1981) (as amended).

4.15 The results, conclusions and recommendations are based on a number of factors i.e.

- Practical experience of surveyor,
- Knowledge of bat/bird species relevant to the site location and geographical range,
- Nature of immediate/surrounding habitat in relation to foraging/commuting,
- Condition of the building,
- Presence/absence of a loft space or cellar and reasonable practicality of use,
- Presence/absence of roost potential,
- Value of roost potential – if present.

- 4.16 All aspects of the field survey were undertaken in line with government and CIEEM (2020) standing guidance during the COVID-19 pandemic.
- 4.17 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, the Director of Tyrer Ecological Consultants Ltd, and her assessment is consistent with that of Mr. Pescod.

5.0 Limitations

- 5.1 The survey was conducted at a time when bats are within their active season when evidence of bats is most apparent. Survey timing is not considered a constraint in this instance.
- 5.2 Some vegetation clearance works had occurred at the northern end of the site prior to the attending ecologist arriving; however, from historic images this appears to have been comprised entirely of heavily mown amenity grassland and low-cut Leyland Cypress (*Cupressus x leylandii*) hedge, which are of limited value to the species for which this survey was undertaken and is therefore not considered to have affected the results of the survey.
- 5.3 No access limitations were experienced on site and the surveyor was able to conclusively assess the building and trees for field signs at an appropriate time of the year; therefore having considered possible survey constraints no significant limitations were experienced that might adversely influence the results, conclusions and recommendations of this report.

6.0 Desk Study Results

- 6.1 The existing dwelling 33 Moss Hill (referred to as “the application site”) is located within a sparsely developed region of Moss in the rural north-western outskirts of Wrexham, at the junction of Pendwll Road and Moss Hill, approximately 4.3 km north-west of Wrexham town centre (see Figure 6.1).



Figure 6.1 - Location of the building within the landscape. Activity records held by Tyrer Ecological Consultants Ltd have been marked with a green dot (Source: Google 2018).

- 6.2 The immediate environment is comprised of a mixture of residential properties with associated gardens and parkland interspersed with strips of woodland in the Moss Valley, and which are intersected by minor access roads and hedgerows; Moss Wood is located just to the east of the site, and Moss Quarry to the south.
- 6.3 The wider landscape continues in similarity to the immediate with the villages of Brymbo to the west and Summerhill to the east, and Moss extending south through the valley. Between the developed areas are parkland and woodland habitats, including the Alyn Waters Country Park to the north-east containing Broadleaved Woodland, and Moss Valley Golf Course to the north. The River Cegidog runs to the north, and to the south are two small lakes at Pool Mouth.
- 6.4 A variety of bat species are associated with rural and sub-urban habitat such as that which surrounds the application site, utilising hedgerows and ditches for commuting and foraging purposed, and farm houses.

NB: *Where quality habitat is present close to buildings then the percentage use of those buildings, by bats, increases given that roost opportunities are available and vice versa.*

6.5 One statutorily designated site features within 2.0 kilometres (Table 6.1)

Table 6.1 - Designated sites in proximity to the survey area

Site name	Designation type	Interest features
Coedwig Ffossil / Brymbo Fossil Forest 1.2 km W	Site of Special Scientific Interest (SSSI)	This site is designated for containing the only known fossil forest in Wales, with trees aged to approximately 300 million years old.

6.6 The application site falls within the impact zone for the aforementioned statutorily designated site; it is however considered highly unlikely that the proposed development at will have any impact upon nearby designated sites or the qualifying species species/habitats for which they have been designated due to the low impact nature of the works.

6.7 An online search of MAGIC maps revealed no European Protected Species Mitigation licences (EPSMLs) in relation to bats have been granted within a 2.0km radius of the application site (Figure 6.2); however a search of records held by Tyrer Ecological Consultants Ltd revealed one activity record pertaining to Common Pipistrelle (*Pipistrellus pipistrellus*) located approximately 600m to the south-west of the site. This record dates back to 2015 and has been submitted to the LERC for the area.



Figure 6.2 – MAGIC Map 2.0km radius desk-top results.

7.0 Field Study Results

Bats

- 7.1 The dwelling 33 Moss Hill “the building” is an occupied brick-built single-storey bungalow with a tiled pitched roof and a flat-roofed garage on the northern elevation, to the approximate maximum dimensions of 16m x 8m x 5m. Whilst the surveyor is not qualified to assess the structural condition of the building, it was adjudged to be in an aesthetically good condition given an absence of any obvious dereliction or vandalism.



Figure 7.1 – 33 Moss Hill Road viewed from the south

- 7.2 A traditional loft space is present internally following the footprint of the building, excluding the garage, with a maximum height of 2m at the apex. Internally the loft was found to be relatively open, warm and draught free, and entirely unilluminated, with occasional cobwebs present on the roofing timber.
- 7.3 The building is therefore considered suitable for the breeding requirements of loft-dwelling bat species such as the Brown Long-eared (*Plecotus auratus*) bat; this is a species which prefers dark, unrestrictive loft spaces with room for free flying, and a stable temperature free from draughts. The building is also suitable for use by such species for other purposes than breeding, however no evidence of loft-dwelling bats was identified anywhere within the loft space despite a meticulous search of the entire space.
- 7.4 There is a traditional bitumen 1F underfelt lining present beneath the roofing slates; where present such under linings typically improve a buildings value to bats notably for crevice-dwelling bats of the *Pipistrellus* genus, whereby the bats roost between linings and the roof cover material provided external access opportunities exist. No evidence of such bats was found; however this is often the case due to the crevice-dwelling nature of these species.

NB: The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings where the warm, dry conditions favour the requirements of a maternity colony but other structures are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.

- 7.5 Externally the building was found to be tightly sealed and entirely absent of any potential roost features (PRF's) that might typically be utilised by roosting bats; including the roof of the main dwelling and garage, with all roofing tiles and ridge tiles in good condition and closely fitted, and all soffits absent of gaps. Despite the suitability of the loft space to host roosting bats, on the basis of the absence of PRF's identified anywhere on the exterior of the building in combination with the paucity of bat records in the wider area, the dwelling has been duly categorised as pertaining to 'Negligible' bat roost potential in line with current Bat Conservation Trust (BCT) guidelines.

Breeding Birds

- 7.6 In relation to WCA Schedule 1 specially protected bird species such as Barn Owl, no evidence was found to suggest any form of site use or historic nesting; and the dwelling and wider site is wholly unsuitable for this species breeding requirements.
- 7.7 Externally the dwelling was found to possess platforms that might typically be used by nesting birds, in the form of areas of gutted with overhanging roofing tiles; current evidence of nesting by House Sparrow (*Passer domesticus*) was identified in the south-eastern corner of the building with chicks heard and adults observed entering and leaving.

8.0 Conclusions & Recommendations

- 8.1 Based on the site-specific assessment as described, risks of impacts to bats can be considered highly unlikely and the building is duly categorised as offering 'Negligible' bat roost potential in accordance with Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016) (see Figure 6); no further surveys are required in relation to bats. Enhancement is recommended for bats in Appendix III.

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

Figure 8.1 - Bat Conservation Trust (BCT) extract

- 8.2 Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging/commuting bats in the landscape, particularly if increased light spillage occurs in areas of that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the surrounding treelines. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Lighting Guidelines for further information.

Type of lamp (light source): The impact on bats can be minimized by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Predicting where the light cone and light spill will occur: There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels: The light should be as low as guidelines permit. If lighting is not needed in any particular area, do not light. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site.

Please refer to the 'Landscape and urban design for bats and biodiversity' (Gunnell et. al., 2012, Bat Conservation Trust) for further information.

- 8.3 No impacts are applicable in relation to any Sch.1 (WCA) specially protected bird species such as Barn Owl and no further surveys or recommendations are necessary in relation to specially protected birds at this time.
- 8.4 In relation to common birds, evidence of current occupancy was identified during the survey in the form of a House Sparrow nest within the guttering at the south-eastern corner of the building; it is therefore recommended that a minimum of one 'Sparrow Terrace' (see

Appendix II) should be incorporated into the two new dwellings to support the population of this species in the area and to mitigate for the loss of nesting bird habitat.

8.5 Additionally, due to the confirmed presence of breeding birds within the site along with the identified suitability of the site for birds associated with rural and garden habitats, it is recommended that any demolition and clearance works are carried out outside of the breeding bird season (March-August inclusive). For works undertaken within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing. If birds are found nesting any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally.

8.6 Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as *“a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.”*

NB: *All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected from destruction, damage and disturbance under the Wildlife & Countryside Act 1981 (as amended). It is a punishable offence to interfere in any way with an active nest.*

8.7 As a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions such as:

- Native species only when landscaping / re-planting,
- Bird, bat, and invertebrate provisions,

Further information is provided within Appendix II.

9.0 Bibliography

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- **Mitchell-Jones, A.J. and McLeish, A.P.** (Eds) (2004). *Bat Workers' Manual*, Joint Nature Conservation Committee, Peterborough.

Appendix I: Site Photographs



Plate 1 – Front elevation of the dwelling 33 Moss Hill



Plate 2 – Rear elevation



Plate 3 – A view of the flat-roofed garage



Plate 4 – Tightly sealed soffit box on the rear elevation



Plate 5 – South-facing elevation

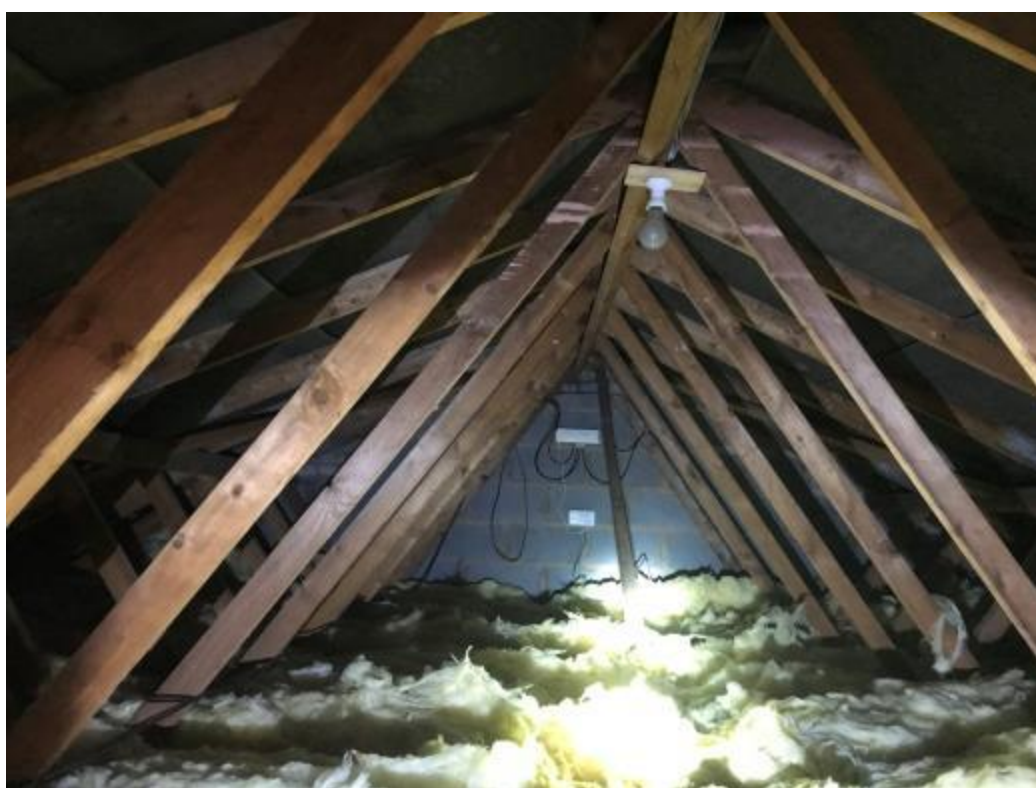


Plate 6 – A view of the loft space



Plate 7 – Bitumen 1F underfelt roof lining



Plate 8 – Internal character of the garage



Plate 9 – Area of decking with a wooden shelter to the rear of the dwelling

Appendix II: Biodiversity Enhancement Strategy

Bats

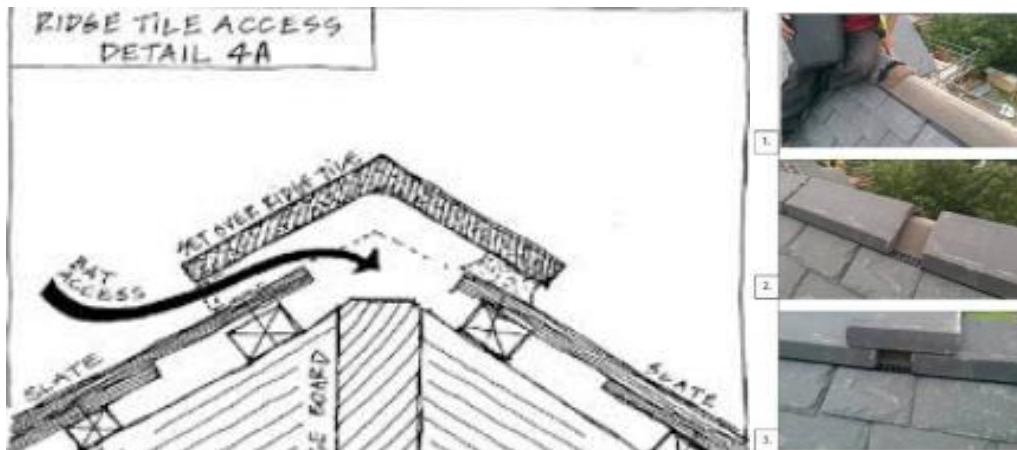
Integrated bat box

The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



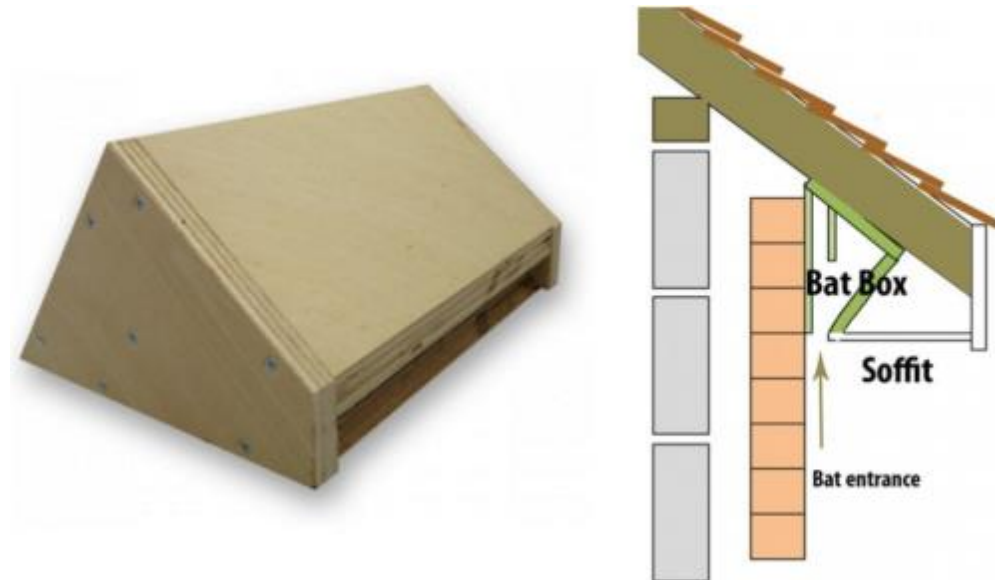
Ridge access

Where appropriated, ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.



Soffit access

Where soffits are instated at gable elevations, roost provision may be instated in the form of a soffit bat box with internal roosting space.



Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees may include the Eco Kent Bat Box.



Birds

Breeding Birds - House Sparrow

The Sparrow Terrace has been designed to help redress the balance of falling House Sparrow numbers. The current UK population is now half of what it previously was in 1980 and this is widely attributed to habitat destruction and lack of suitable nesting spaces. House Sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of buildings.



Breeding Birds - Other

This traditional design has proved to be highly effective in attracting Robins, as well as other small species such as Black Redstart, Spotted Flycatcher and Wren. It is designed to be installed on the walls of houses, barns, garden sheds or other buildings and should be hung so that the entrance is to one side (at an angle of 90° to the wall). The front panel can be easily removed for cleaning.

This type of box should not be made conspicuous on a tree or bush because small predators can enter through the unprotected opening. By hanging on a wall, predators won't be able to reach the box. Alternatively hide the box in Ivy, Honeysuckle or other climbing plants.



Invertebrates

Invertebrates - Bee bricks

The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Alternatively, it can be used as a standalone bee house in your garden or wild patch. It will provide much needed nesting space for solitary bee species such as red mason bees and leafcutter bees, both of which are non-aggressive.



Each Bee Brick contains cavities in which solitary bees can lay their eggs before sealing the entrance with mud and chewed-up vegetation. The offspring will emerge the following spring and the cycle will begin again. Each cavity goes part way into the brick, which is solid at the back. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used.

Available in a choice of four colours: white grey, dark grey, yellow and red.

Specification

- * Material: Concrete
- * Origin: Cornwall, UK
- * Dimensions: W 215mm x D 105mm x H 65mm
- * Weight: 2.9kg
- * Colours: White grey, yellow, dark grey and red

Native Planting and/or Landscaping

New feature landscaping should incorporate native woody plants as opposed to non-native species that are of significantly less benefit to biodiversity. Species such as Blackthorn (*Prunus spinosa*), Honeysuckle (*Lonicera periclymenum*), Rowan (*Sorbus aucuparia*), Guelder-rose (*Viburnum opulus*) and Hawthorn (*Crataegus monogyna*) are native and will provide a valuable resource for a myriad of wildlife as opposed to non-native, exotic species which are generally much less effective, particularly to pollinator groups including bees, butterflies and moths.

Trees	Woody Shrubs
English Oak (<i>Quercus robur</i>)	Hawthorn (<i>Crataegus monogyna</i>)
Rowan (<i>Sorbus aucuparia</i>)	Honeysuckle (<i>Lonicera periclymenum</i>)
Wild Service Tree (<i>Sorbus torminalis</i>)	Guelder Rose (<i>Viburnum opulus</i>)
Silver Birch (<i>Betula pendula</i>)	Elder (<i>Sambucus nigra</i>)
Ash (<i>Fraxinus excelsior</i>)	Wild Privet (<i>Ligustrum vulgare</i>)
Goat Willow (<i>Salix caprea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	