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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

April 2021

ESP Hill Farm

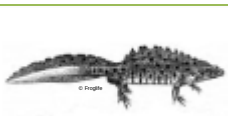
Frog Lane

Holt

Wrexham

LL13 9SU

National Grid Ref: SJ40235399



ESP Hill Farm, Frog Lane, Holt, Wrexham, LL13 9SU
Inspection & Assessment in Relation to Bats & Breeding Birds

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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 ESP Hill Farm in Holt, Wrexham, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in February 2021. The survey was commissioned by Blueprint Architectural Ltd; proposals are for the conversion of the existing barn building for residential use as an extension of the existing adjacent farmhouse.

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

Bats: Based upon the findings of the survey covered through sections 6.0-7.0 of the report and supported by Appendix I, whilst following best practice guidance, the storage barn at ESP Hill Farm holds 'High' bat roost suitability in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

It is therefore recommended that two dusk emergence and one dawn re-entry survey are conducted during the active season of bats (May - August) in order to establish if the building is being used by bats, and if so, identify the species, abundance, roost locations and flight lines around site during any emergence/re-entry. Three surveyors would be required to accurately monitor the identified access points. Applicant should be aware that where bat(s) or their roost(s) are found and will be impacted, then an EPSML may be required to legally commence with the works. See section 8.0 for more information.

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

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 historic evidence of Barn Swallow nesting was recorded within the barn. 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.

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 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 ESP Hill Farm in Holt, Wrexham (see Figure 1.1), Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in February 2021. The survey was commissioned by Blueprint Architectural Ltd; proposals are for the conversion of the existing barn building for residential use as an extension of the existing adjacent farmhouse.



Figure 1.1 – Proposed site layout (adapted ©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.

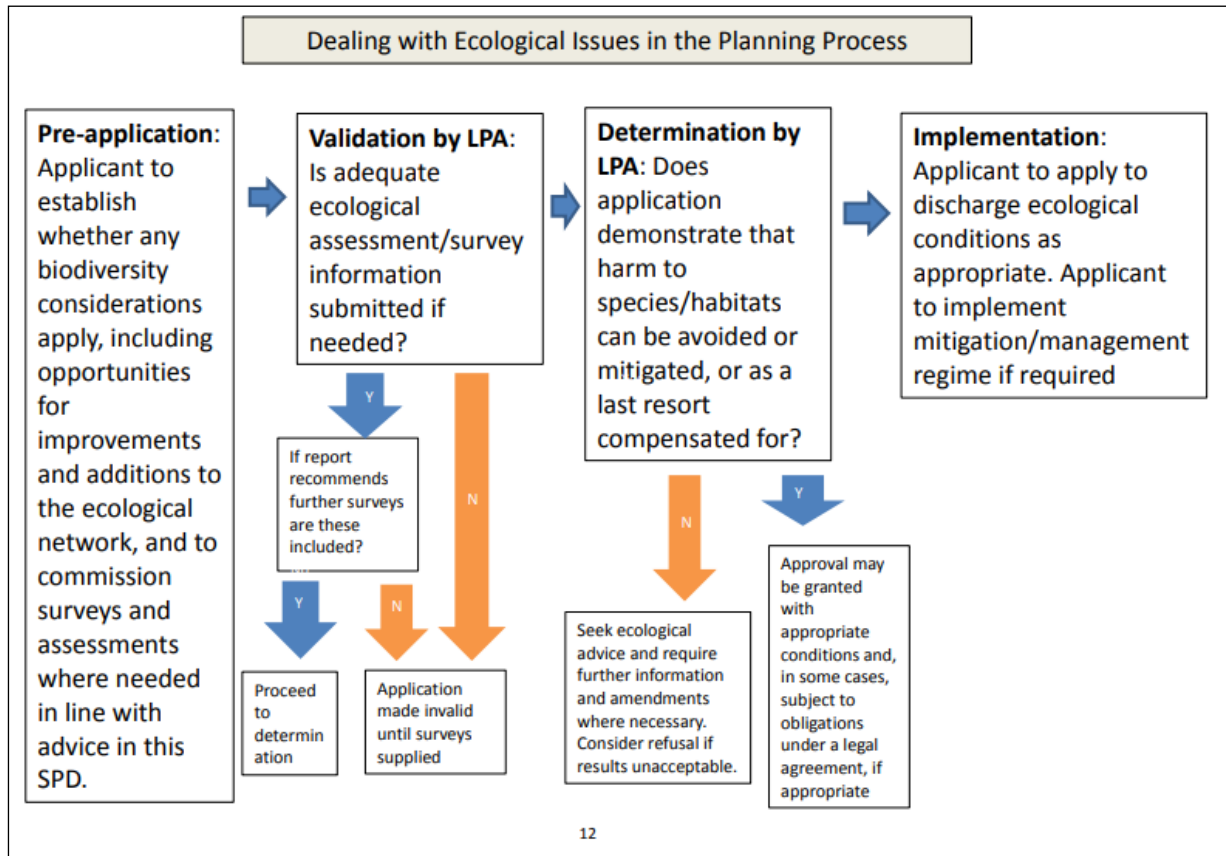


Figure 2.1 - Dealing with ecological issues in the planning process

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 12th February 2021 in sporadic snow (2°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 outside of their active season and are within the hibernation season, a period when bat activity is significantly reduced. Evidence of bats can be less apparent in April particularly on external features exposed to wind and rain, however bat roost potential and suitability of potential roost features can be adjudged as conclusively as within the active season of bats at most structures, saving time and unnecessary delay to applicants; thus, frequently the assessment can be as conclusive as if carried out within the active season though the applicant should be aware of the risks. Survey timing is not considered a constraint in this instance.
- 5.2 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 building at ESP Hill Farm (referred to as “the application site”) is located within the wider ESP Hill Farm complex which includes a number of residential and agricultural buildings and is accessed via Frog Lane, approximately 8.0 km north-east of Wrexham town centre (see Figure 6.1).



Figure 6.1 - Location of the building within the landscape (Source: Google 2018).

- 6.2 The immediate environment is comprised of intensely managed agricultural fields which appear from aerial imagery to be arable, and which are intersected by access track and paths and hedgerows; scattered trees are also present around the ESP Hill Farm complex and occasionally within the aforementioned hedgerows.
- 6.3 The wider landscape continues in similarity with agricultural land in all directions, broken up by small lanes and B-roads, with the A534 Wrexham Road to the south, and the town and village of Holt and Farndon respectively to the east. Along with the roads and hedgerows, and network of drainage ditches is present along with the Devon Brook to the west and the River Dee in its lower-mid course to the east. Small ponds and pools are distributed frequently in the area; however other semi-natural environments are rare and limited to small sections of deciduous woodland to the north-east and south-east.
- 6.4 A variety of bat species are associated with rural 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 Two statutorily designated sites feature within 2.0 kilometres (Table 6.1)

Table 6.1 - Designated sites in proximity to the survey area

Site name	Designation type	Interest features
Afon Dyfrdwy / River Dee 927m SW	Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC)	This site forms SSSIs in both Wales and England, and is notified for its transition through a range of river types from mesotrophic to eutrophic and for the species it supports which include Atlantic Salmon (<i>Salmo salar</i>), Otter (<i>Lutra lutra</i>), and Club-tailed Dragonfly (<i>Gomphus vulgatissimus</i>).
Dee Cliffs, Farddon 955m NW	SSSI	The Dee Cliffs are designated for the geology of the site which includes exposed Lower Triassic Chester Pebble Beds Formation strata.

6.6 The application site falls within the impact zone for the aforementioned statutorily designated sites; 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 two European Protected Species Mitigation licences (EPSMLs) in relation to bats has been granted within a 2.0km radius of the application site (Figure 6.2); these pertain to breeding and non-breeding roost of Common Pipistrelle bats and are located 1.9km and 1.5km to the north-west respectively.

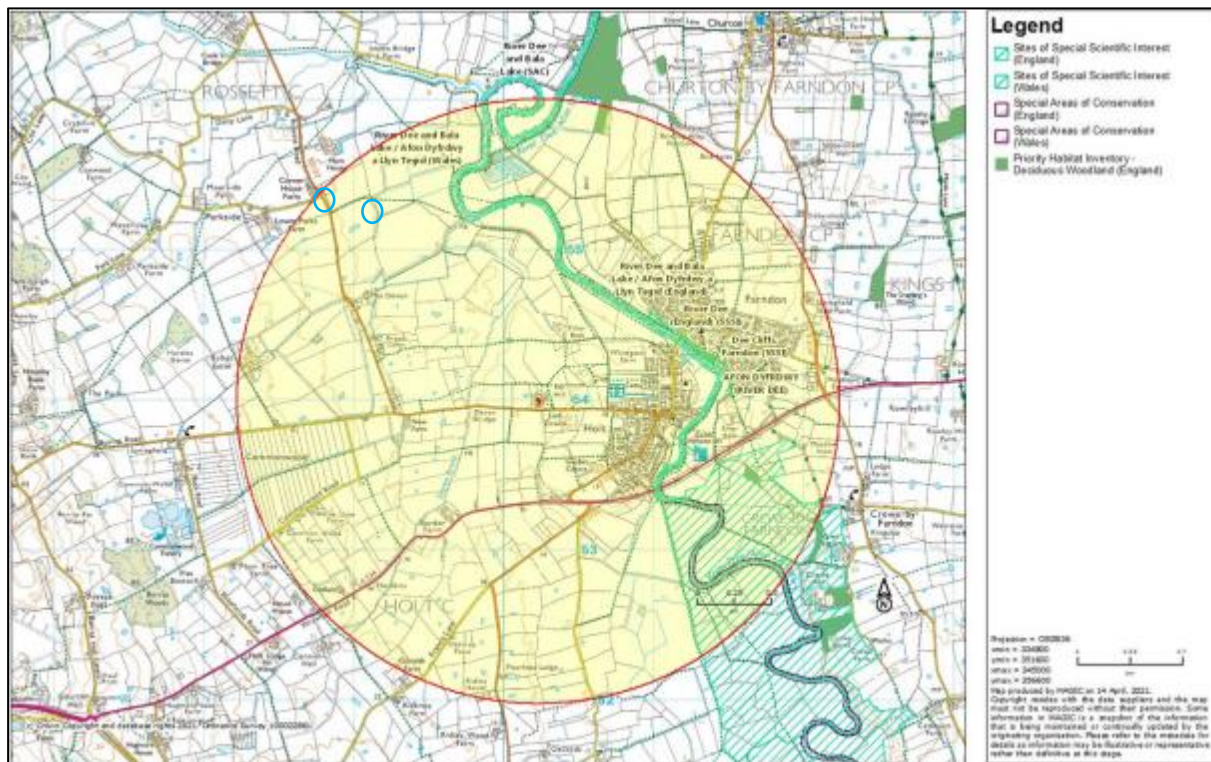


Figure 6.2 – MAGIC Map 2.0km radius desk-top results. Granted EPSMLs in relation to bats have been highlighted with a blue circle

7.0 Field Study Results

Bats

- 7.1 The building at ESP Hill Farm “the barn” is a brick-built single-storey structure currently functioning in part as a storage area, boot room, and home gym, with a multi-pitched slate roof and to the approximate maximum dimensions of 31m x 20m x 4m. A lean-to covered area is also present along the western half of the northern elevation, with an asbestos roof and plastic barn doors. Whilst the surveyor is not qualified to assess the structural condition of the barn, it was adjudged to be in an aesthetically poor condition with some signs of external dereliction. The barn is connected to an existing dwelling located immediately to the west at ground-floor level.



Figure 7.1 – ESP Hill Farm barn

- 7.2 No traditional loft space is present internally however a hanging wooden board false-ceiling sits above the south-eastern wing. Internally the barn was found to be open, illuminated, cold and draughty, with some cobwebs present on the roofing timbers which suggest an absence of loft-dwelling bats which would have disturbed them.
- 7.3 The barn is therefore considered broadly unsuitable 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. This does not necessarily discount the building from being used by such species for other purposes than breeding, and evidence of use by this species was encountered throughout the eastern wing of the building in the form of feeding remains including the wings of Small Tortoiseshell (*Aglaia urticae*) and Large Yellow Underwing Moth (*Noctua pronuba*) which are typical prey species of Brown Long-eared bats, along with abundant (100 – 200) droppings attributed to this species.

- 7.4 There is a traditional bitumen 1F underfelt lining present beneath the roofing slates in a highly degraded condition; 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. Additionally, internal crevices within the brickwork and wooden timbers were observed throughout the barn. Several (5-10) droppings attributed to *Pipistrelle* bats were recorded in the western wing of the building; these droppings are often hidden due to the crevice-dwelling nature of these species and the low numbers of droppings identified are not necessarily indicative of the relative abundance of these bats.

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 presents potential roost features (PRF's) to all elevations that include lifted ridge tiles and slates, gaps in the external brickwork and around the window lintels; notably the southernmost barn door is surrounded by abundant cracks in the brick- and woodwork. The lean to section to the north allows free entry into the building from that direction which might be favoured by loft-dwelling species. On the basis of the PRF's identified on the exterior of the building in combination with the droppings found attributable to at least two species of bat, the dwelling has been duly categorised as pertaining to 'High' 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 barn was found to possess a number of platforms that might typically be used by nesting birds, including upon the roof itself and within bushy vegetation on the south-west walls. Internally evidence was found of current and historic use by nesting birds, with feathers on the floor in the eastern wing, fresh and old droppings throughout, and three Barn Swallow (*Hirundo rustica*) nests located in the rafters. It was not possible to ascertain at the time of survey whether the nests were occupied, however an individual mature Barn Swallow was recorded flying through the barn.

8.0 Conclusions & Recommendations

- 8.1 Based upon the abundance of Potential Roost Features (PRFs) identified along with the confirmed evidence of bat use by a minimum of two species as covered through sections 6.0-7.0 of the report and supported by Appendix I, whilst following best practice guidance, the barn at ESP Hill Farm holds 'High' bat roost suitability in accordance with the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) (see Figure 8.1). It is therefore recommended that two dusk emergence and one dawn re-entry survey are conducted during the active season of bats (May - August) in order to establish if the building is being used by bats, and if so, identify the species, abundance, roost locations and flight lines around site during any emergence/re-entry. Three surveyors would be required to accurately monitor the identified access points.

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

Figure 8.1 - Bat Conservation Trust (BCT) extract on Moderate roost potential requirements

- 8.2 Applicants should be aware that where bat(s) or their roost(s) will be affected, then an EPSML may be required to legally commence with the works.
- 8.3 Natural Resources Wales provide online information and guidance concerning the requirement for EPSML's and the following extract is included in that guidance:

When would works require a licence?

"A licence is required for anything that would be an offence under the Regulations (covered in section 2.9 of this report). For example, this could include works which would disturb (as defined in the legislation) bats, damage a bat roost, or damage or destroy a breeding site.

NRW can only grant a licence if the following three tests are met:

- 1) The purpose of the work is for preserving public health or public safety or other imperative reasons of over-riding public interest (IROPI) including those of a social or economic nature and beneficial consequences of primary importance for the environment,
- 2) There is no satisfactory alternative,
- 3) 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; this last test might require that the work is modified to avoid or minimise adverse effects (mitigation), or that an alternative breeding site/resting place or habitat is provided instead to safeguard the FCS (compensation). Either way, you will need the advice of an ecological consultant. Along with filling in the licence application form, the ecological consultant will need to write a method statement (within the EPSML) explaining how the work will be done to minimise any detrimental effects.

If the consultant ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed then no licence is required. However, in these circumstances Natural Resources Wales would urge that reasonable precautions be taken to

minimise the effect on European protected species should they be found during the course of the activity. If protected species are found, cease the work until you have assessed whether you can proceed without committing an offence.

When might I work without a licence?

There might be situations in which you could continue without a licence. If the work can be organised in such a way that there would be no offences committed (i.e. no damage or destruction of a breeding site/resting place, no capturing, killing or injuring of individuals) then there is no need for a licence. This is a difficult area legally and your ecological consultant will be able to advise you further.

Developers should be aware that if work is held up or modified and there is a possibility that animals will be disturbed, or a breeding site / resting place will be unavailable to them (even if only temporarily), they should apply for a licence in good time.

Example: If a building with a bat roost requires re-roofing or repair work, you would not need a licence if:

- the existing materials are replaced like-for-like (i.e. similar type of roofing slates, similar felt or membrane),
- the same access points are retained and there are no structural changes made to the roost,
- the work is done whilst bats are absent and is completed before they would normally return to the roost.

NB: *Where more detailed bat surveys are recommended, following an initial investigation, then Local Authorities on the advice of their ecological advisors, may not determine the application until such time that all relevant information is gathered, i.e. by conducting dusk/dawn surveys. The advice that is provided by the ecological advisors is also in accordance with the obligations placed upon Local Authorities by way of its duties under the Conservation of Habitats & Species Regulations 2017. Therefore it would be prudent to make enquiries to the relevant departmental Planning Officer before submitting a Planning Application that includes an ecological survey report that recommends more detailed surveys.*

- 8.4 Where more detailed bat surveys are recommended following an initial daytime survey, then Local Authorities on the advice of their ecological advisors, may not determine the application until such time that all relevant information is gathered, i.e., by conducting dusk/dawn surveys. The advice that is provided by the ecological advisors is also in accordance with the obligations placed upon Local Authorities by way of its duties under the Conservation of Habitats & Species Regulations 2019 (as amended). Therefore, it would be prudent to make enquiries to the relevant departmental Planning Officer before submitting a Planning Application that includes an ecological survey report that recommends more detailed surveys.
- 8.5 No remaining vegetation has any potential to host roosting bats and no further surveys in relation to this vegetation is required.
- 8.6 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.

- 8.7 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.
- 8.8 In relation to common birds, evidence of historic occupancy was identified during the survey along with current presence of individual adult birds, and the building provides abundant platforms internally and externally which might be used by breeding birds associated with rural and garden environments.
- 8.9 It is thus recommended that any demolition and clearance 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; this would typically include a 10-metre buffer where no works could be undertaken surrounding identified occupied nests.
- 8.10 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.*
- 8.11 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 and invertebrate provisions,

Further information is provided within Appendix II.

9.0 Bibliography

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Appendix I: Site Photographs



Plate 1 – Southern elevation of the western wing of the barn at ESP Hill Farm



Plate 2 – Gap beneath ridge tiles on the western wing



Plate 3 – Western elevation of the -eastern wing of the barn, with bushy vegetation that may be used by nesting birds



Plate 4 – Southern elevation of the eastern wing with abundant PRFs around the wooden barn door



Plate 5 – Eastern elevation of the eastern wing with open wing



Plate 6 – Northern elevation of the eastern wing with gaps in the brickwork



Plate 7 – Northern elevation of the western wing with asbestos-roofed lean to



Plate 8 – Area between eastern and western wings, with gaps beneath slates



Plate 9 – Internal character of the boot room which adjoins the adjacent dwelling



Plate 10 – Internal character of the western wing with bitumen 1F underfelt and internal crevices



Plate 11 – Open ingress point via the lean to on the north-western wing



Plate 12 – Bird droppings within the barn



Plate 13 – Droppings attributed to *Pipistrellus* sp. bats, located in the western wing

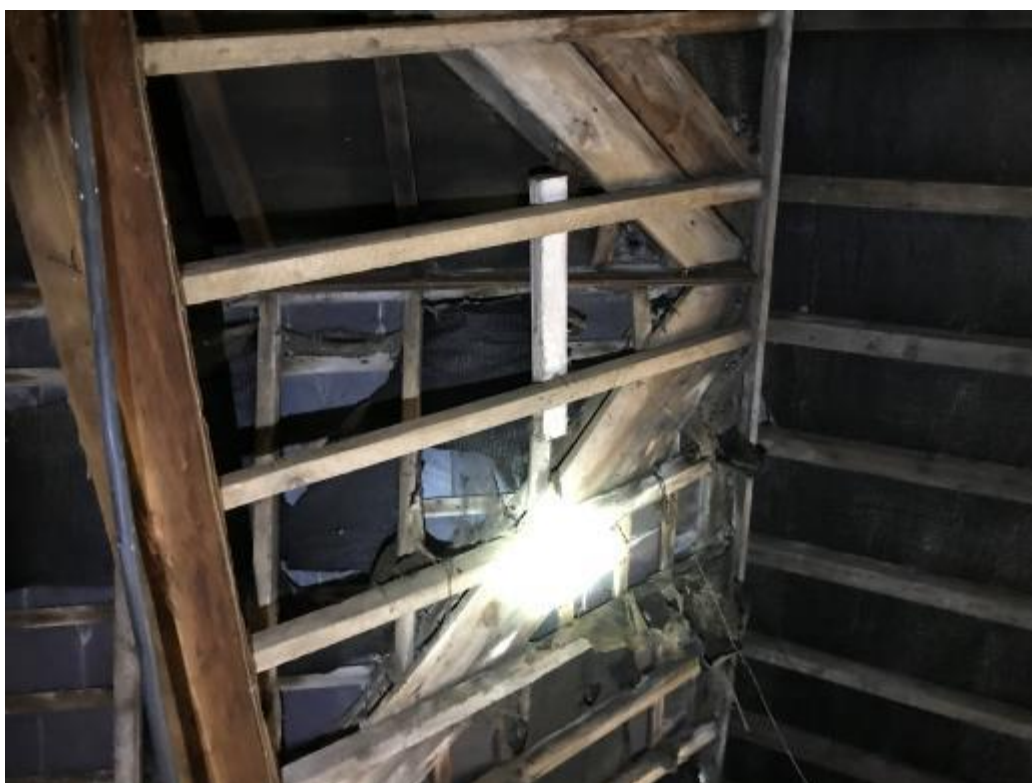


Plate 14 – Character of the roof displaying the dilapidated felt



Plate 15 – Abundant droppings attributed to Brown Long-eared bats, located in the eastern wing



Plate 16 – Feeding remains in the form of Large Yellow Underwing wings



Plate 17 – Feeding remains in the form of Small Tortoiseshell wings



Plate 18 – Internal character of the eastern wing

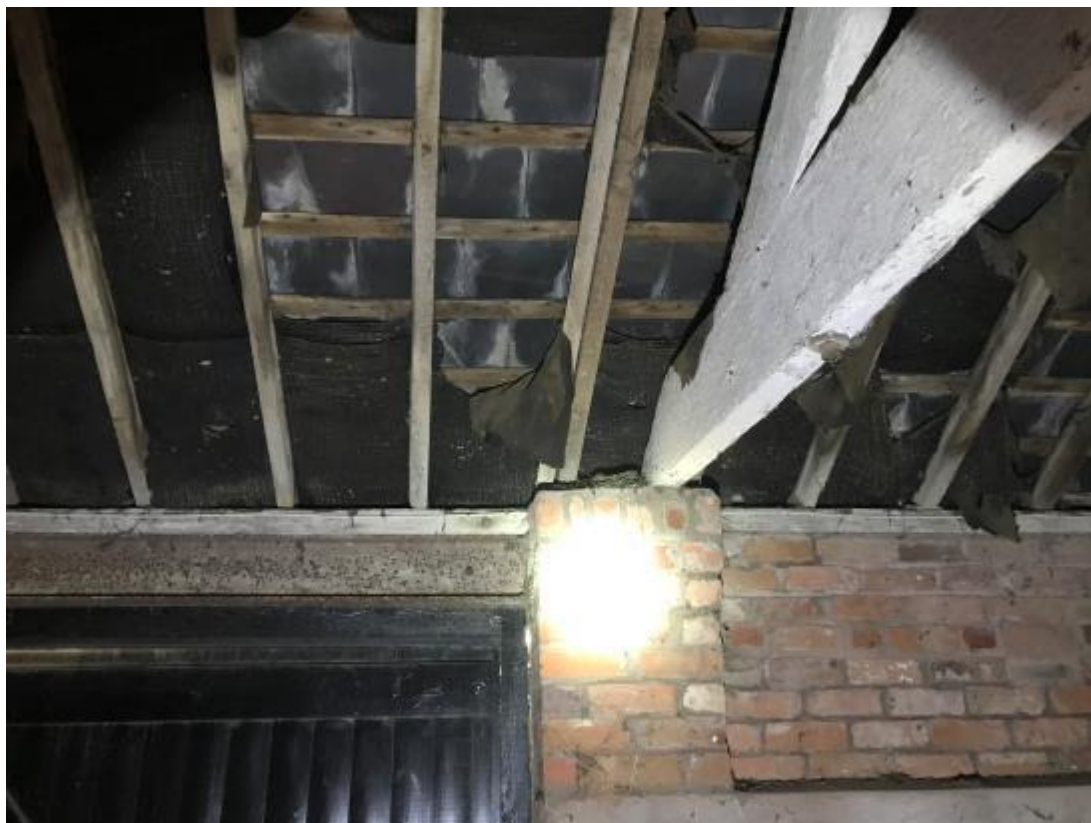


Plate 19 – Historic bird nest

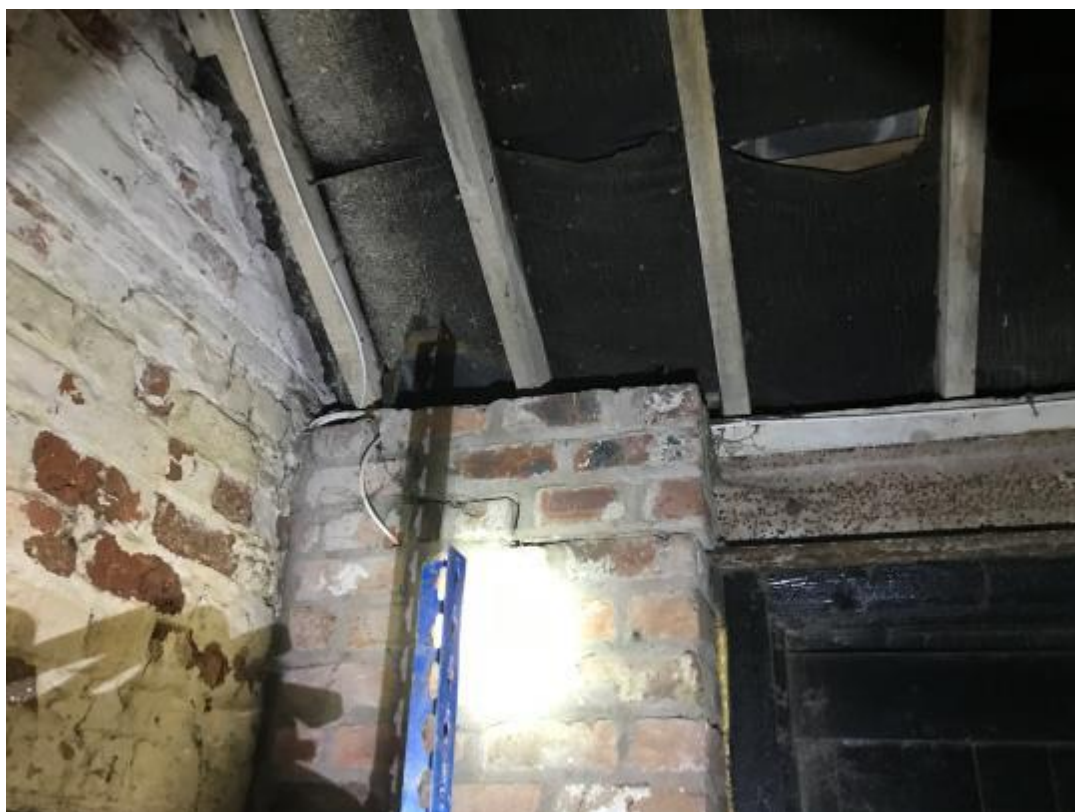


Plate 20 – Internal crevice within the eastern wing



Plate 21 – Swallow nest in the eastern wing



Plate 22 – Feathers on the floor of the eastern wing

Appendix II: Biodiversity Enhancement Strategy

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 – Barn Swallow

The Swallow Nest consists of a woodcrete nesting bowl which is attached to a wooden panel of formaldehyde-free chipboard. The nests (x3) should be placed inside outbuildings such as sheds, barns or stables leaving a distance of at least 6cm between the top of the nest and the ceiling. You should ensure there is always access for the birds through an open window or sky-light. Swallows are sociable birds but multiple nests should not be placed at less than 1m intervals. Cleaning of the bowl is recommended, although not absolutely necessary.



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>)	