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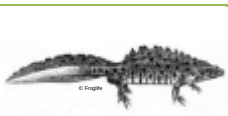
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Inspection & Assessment in relation to Bats & Breeding Birds

October 2021

Barn at Mulsford Farm,
via Mulsford Lane,
Sarn,
Malpas,
SY14 7LP

National Grid Ref: SJ42834477



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Document Title	Inspection & Assessment in relation to Bats & Breeding Birds
Issue	1.0
Prepared for	NJG Design
Prepared by	Tyrer Ecological Consultants Ltd

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Survey Date	10/08/2021
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Date of Issue	18/10/2021

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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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Tyrer Ecological Consultants Ltd will however consider forwarding data that is collected as part of its reports to the relevant wildlife records centre.

Executive Summary

As part of a proposed planning application for a barn at Mulsford Farm, via Mulsford Lane, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in August 2021. The survey was commissioned by Nichola Gibson Architectural Design; proposals are for the conversion of an existing barn for residential use (see Figure 1.1).

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

Bats: Based on the character of the building, evidence of bats found which could indicate foraging inside as described, along with the favourability of the wider habitat for bats, the barn was duly categorised as pertaining to 'Moderate' bat roost potential in line with current Bat Conservation Trust (BCT) guidelines.

Based upon this categorisation and when taking the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' 3rd edition (2016) into consideration then in order to establish if bats are using the barn as a roost site then two suitably spaced apart, dusk emergence or/and dawn re-entry surveys will be required between the months May-September inclusive.

In the event that the presence of roosting bats at the building is initially established then an additional survey may be required and the granting of a European Protected Species Development Licence (EPSDL) from Natural Resources Wales will be required for the development to legally proceed where bat roosts will be destroyed, altered, obstructed or damaged or if bats will be disturbed or capture/exclusion is required prior to demolition. However, it should be noted that if a breeding roost is discovered then work that will result in any of the above actions cannot take place until after the breeding season, which is broadly May- end of August inclusive.

New installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon 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 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.

Breeding Birds: Active evidence of breeding birds in the form of occupied Swallow (*Hirundo rustica*) nest cups were observed in the mezzanine and lower levels, as well as one found to the exterior which is uncommon. In total, six nest cups were encountered attributed to at least six pairs, as well as historic nest cups that had deteriorated. Additionally, House Sparrow (*Passer domesticus*) were observed in the hedgerows adjacent to the barn, though no nest sites were located.

Due to confirmed presence of breeding birds within the barn it is recommended that any conversion works be carried out outside of the breeding bird season (March-September 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 first 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: Mitigation for loss of six Swallow nests are recommended to form a key part of the planning permission. A new dedicated Swallow shelter should be constructed that caters to this species which is faithful to its nest site arriving early spring following late summer migration. The new Swallow shelter should be constructed in an suitable area of the site and provide permanent long term provision to this species. The rear of the shelter should also support House Sparrows utilizing the House Sparrow terrace nest box.

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 for a barn at Mulfsord Farm, via Mulfsord Lane, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in August 2021. The survey was commissioned by Nichola Gibson Architectural Design; proposals are for the conversion of an existing barn for residential use (see Figure 1.1).



Figure 1.1 – Photographs as Existing (©Nicola Gibson Architectural Design)

- 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 stepwise 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 wherever 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.

3.0 Protected Species in Wrexham

- 3.1 Up to twelve bat species have been recorded in North Wales, 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 North Wales is mirrored throughout the UK.
- 3.2 The number of breeding Barn owls (*Tyto alba*) within rural parts of Wrexham is fairly high across areas of countryside where suitable hunting 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 Wrexham 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 10th August 2021 in dry conditions (17°C) wind 1/12 (Beaufort scale), 10% cloud undertaken by Mr. M. Mulholland a seasonal ecological consultant with 21 years' experience of undertaking professional ecology surveys.
- 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 (PRFs) 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 Mature trees within the survey area were assessed for their potential to host roosting bats, with all aspects assessed for the presence of PRFs which typically might include, cracks, rot holes, peeling bark, woodpecker holes, and other crevices.

- 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 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 Mulholland.

5.0 Limitations

- 5.1 The survey was conducted in August which is in the active season of bats; a time when female colonies are dispersing from maternity roosts. Singular, or even small numbers of male bats can often be recorded at buildings, particularly colder structures or at established mating territories where they may fly or call specifically to attract females. As such, survey timing is not considered a constraint.
- 5.2 The survey took place within the breeding bird season (typically March-September), therefore incidental breeding bird behaviour has a greater probability of being encountered. Evidence of breeding birds has a good chance of being found where birds have been breeding recently.
- 5.3 No significant limitations were experienced on site and the surveyor was able to conclusively assess the building 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 site Mulsford Farm (referred to as “the application site”) is located within an extremely rural area just 1.40 kilometres north of the A525, approximately 3.40 km east of Bangor-on-Dee town centre (see Figure 6.1).



Figure 6.1 - Location of the building within the landscape. (Source: Google 2021).

- 6.2 The immediate environment is comprised of intensively managed arable grassland and pasture intersected by wooded hedgerows, scattered trees and modest blocks of broadleaf and mixed woodland.
- 6.3 The wider landscape continues in similarity to the immediate with developments scarce and predominantly agricultural in nature. Villages to the north-west and north east of the site Wothernbury and Threapwood, respectively are the nearest urban areas. There are also modest areas of woodland to the north and east of the site. The woodland to the north of the site is 0.59k from the site boundary and comprised of both broadleaf blocks and mixed blocks, 1.58km the east of the site there is a 3.1ha block of Ancient & Semi-Natural Woodland.
- 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. Most typically the Common Pipistrelle.
- 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 No statutorily designated site features within 2.0 kilometre of the site boundary.

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- 6.6 However the application site falls within the impact zone for Well Rough and Long Plantation (SSSI) 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 two 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) with the closest being 1.48km in 2016 for the destruction of maternity roost of Common pipistrelle (*Pipistrellus pipistrellus*) bats. A search of LRC submitted records held by Tyrer Ecological Consultants Ltd shows the presence of a mixed species roost 1.85km south east of the site. Species detected were as follows; Common pipistrelle, Brandt's Bat (*Myotis brandtii*), Brown Long-eared Bat (*Plecotus auritus*).

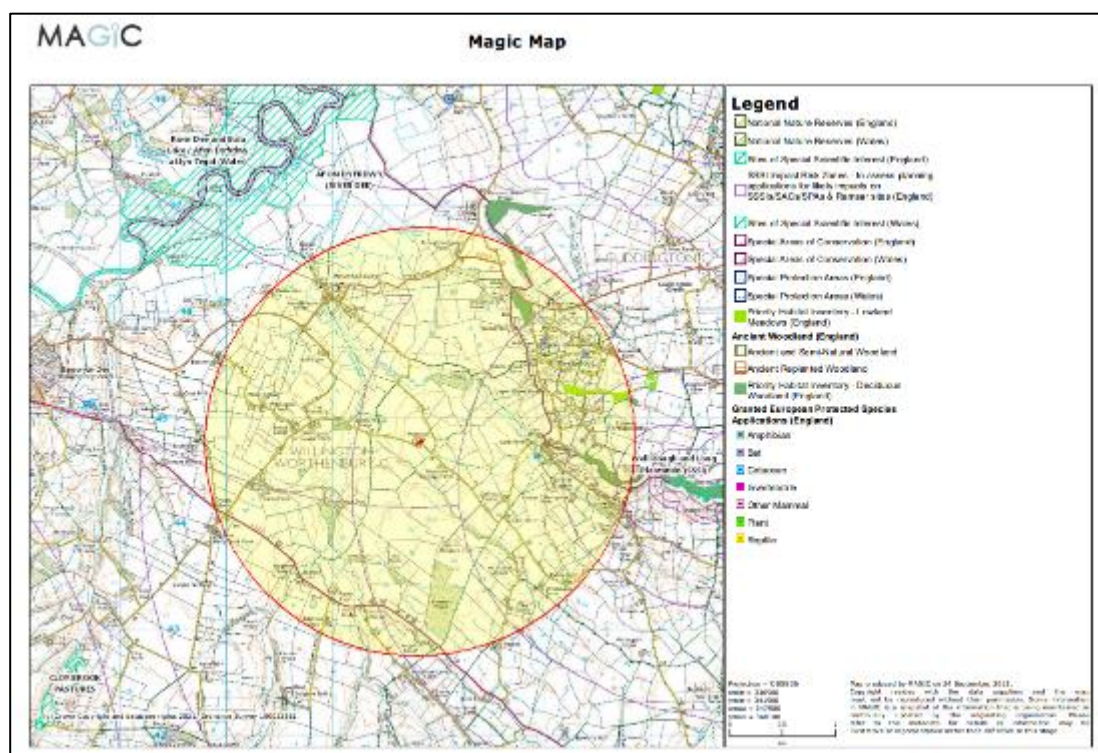


Figure 6.2 – MAGIC Map 2.0km radius desk-top results.

7.0 Field Study Results

Bats

- 7.1 The barn is a rectangular, brick-built, two-storey structure to the approximate dimensions of 34m x 18m x 5.0 metres (length x width x height) with a slate pitched roof and is representative of its purpose as a hayloft. The ground floor is multicompartmental with a flat roof and used for domestic storage; an interconnected upper mezzanine is used as hayloft; there is a central purpose-built open area facing north-west with access openings (allowing bat and bird ingress) into both lower and upper compartments as described. Whilst the surveyor is not qualified to assess the structural condition of the building, it was adjudged to be in an aesthetically sound condition based on absence of any significant damage, dilapidation or vandalism noted.
- 7.2 The hayloft is accessible via ladder to the rear aforementioned central region facing north-west; internal conditions have an approximate height of 2.5 metres and are initially part-illuminated and draughty but become darker and less draughty deeper into the mezzanine to the south-west. The whole mezzanine is interconnected, open spacious, and provides a range of potential roost features such as a linear gap that progresses below the ridge beam creating a long and narrow cavity, various gaps below strips of underfelt, holes in timbers and occasional gaps at wall plate. The building was considered suitable for the breeding requirements of loft-dwelling bat species such as the Brown Long-eared (*Plecotus auritus*) bat; this is a species which prefers dark, unrestrictive loft spaces with room for free flying, and a stable temperature free from draughts; therefore, the middle and back of the mezzanine becomes suited to this requirement versus the opening region. The building may also be suitable for use by such species for other purposes such as a night roost or feeding roost; evidence of loft-dwelling bats was identified in the form of around 100 scattered droppings, as well insect wings that could signify feeding use.
- 7.3 There is a traditional bitumen 1F underfelt lining present beneath certain sections of the roofing slates, whilst others were bare and exposed; where present underlining's typically improves 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. Evidence of crevice dwellings bats was also located within the mezzanine, in the form of droppings at various locations.
- NB: The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings were 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.*
- 7.4 Externally potential roost features (PRF's) were recorded at all elevations; including gaps at some roof edges, in the brickwork, missing/lifted slates and gaps at the eaves. Based on the character of the building, evidence of bats found, which could indicate foraging inside as described along with the favourability of the wider habitat for bats, the barn was duly categorised as pertaining to 'Moderate' bat roost potential in line with current Bat Conservation Trust (BCT) guidelines.
- 7.5 All mature trees within the site boundary were found to be absent of potential roost features.

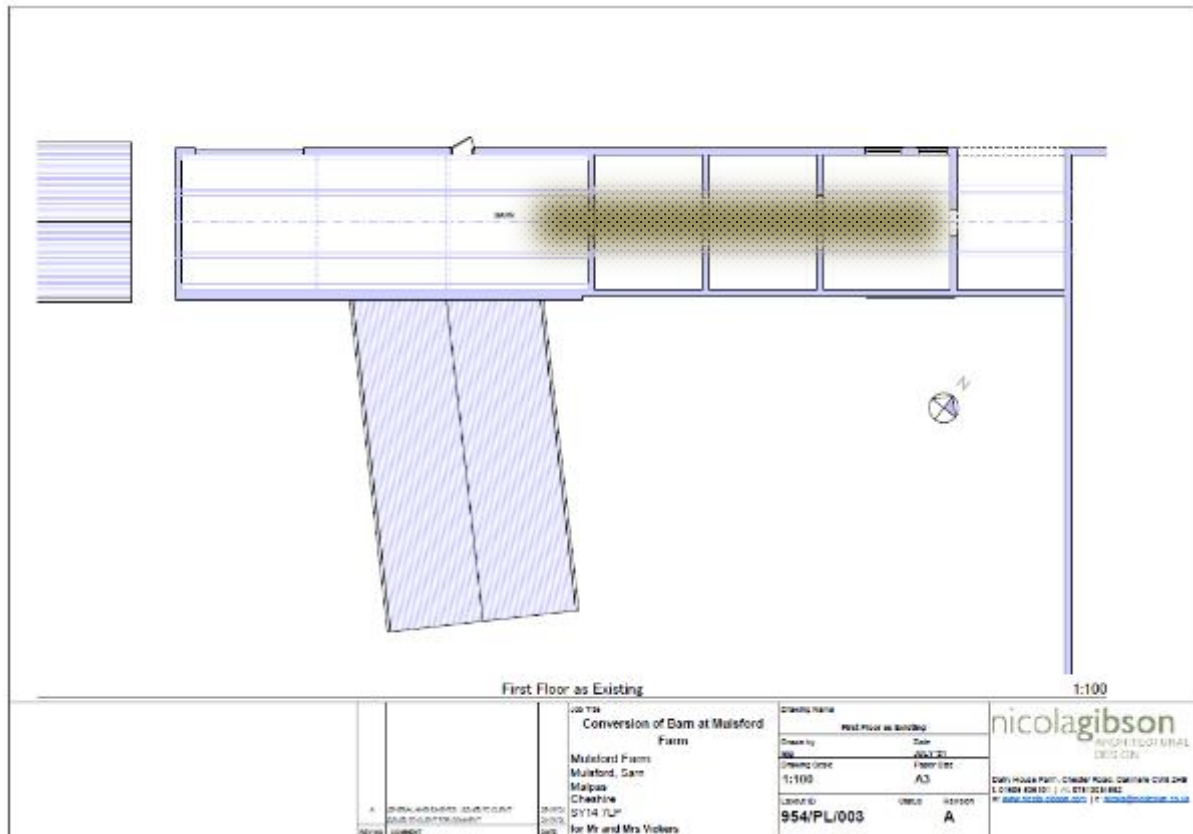


Figure 7.1 - Location of bat droppings inside the barn upper mezzanine

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; The barn and wider site however is suitable for this species breeding requirements.
- 7.7 Active evidence of breeding birds in the form of occupied Swallow (*Hirundo rustica*) nest cups were observed in the mezzanine and lower levels, as well as one found to the exterior which is uncommon. In total, six nest cups were encountered attributed to at least six pairs, as well as historic nest cups that had deteriorated. Additionally, House Sparrow (*Passer domesticus*) were observed in the hedgerows adjacent to the barn, though no nest sites were located.

8.0 Conclusions & Recommendations

- 8.1 Based on the character of the building, evidence of bats found which could indicate foraging inside as described, along with the favourability of the wider habitat for bats, the barn was duly categorised as pertaining to 'Moderate' bat roost potential in line with current Bat Conservation Trust (BCT) guidelines.
- 8.2 Based upon this categorisation and when taking the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' 3rd edition (2016) into consideration then in order to establish if bats are using the barn as a roost site then two suitably spaced apart, dusk emergence or/and dawn re-entry surveys will be required between the months May-September inclusive.

Bat Conservation Trust		
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
^a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category. ^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.		

Figure 8.1: Recommended number of surveys

- 8.3 In the event that the presence of roosting bats at the building is initially established then an additional survey may be required and the granting of a European Protected Species Development Licence (EPSDL) from Natural Resources Wales will be required for the development to legally proceed where bat roosts will be destroyed, altered, obstructed or damaged or if bats will be disturbed or capture/exclusion is required prior to demolition. However, it should be noted that if a breeding roost is discovered then work that will result in any of the above actions cannot take place until after the breeding season, which is broadly May- end of August inclusive.
- 8.4 Natural Resources Wales provide online information and guidance concerning the requirement for EPSDL'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 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 New installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon 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 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.
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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.

- 8.6 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.
- 8.7 Active evidence of breeding birds in the form of occupied Swallow (*Hirundo rustica*) nest cups were observed in the mezzanine and lower levels, as well as one found to the exterior which is uncommon. In total, six nest cups were encountered attributed to at least six pairs, as well as historic nest cups that had deteriorated. Additionally, House Sparrow (*Passer domesticus*) were observed in the hedgerows adjacent to the barn, though no nest sites were located.
- 8.8 Due to confirmed presence of breeding birds within the barn it is recommended that any conversion works be carried out outside of the breeding bird season (March-September 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 first 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.
- 8.9 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 Mitigation for loss of six Swallow nests are recommended to form a key part of the planning permission. A new dedicated Swallow shelter should be constructed that caters to this species which is faithful to its nest site arriving early spring following late summer migration. The new Swallow shelter should be constructed in a suitable area of the site and provide permanent long term provision to this species. The rear of the shelter should also support House Sparrows utilizing the House Sparrow terrace nest box.
- 8.12 Further information is provided within Appendix II.

9.0 Bibliography

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Appendix I: Site Photographs



Plate 1 - Barn, north-west elevation looking south-west

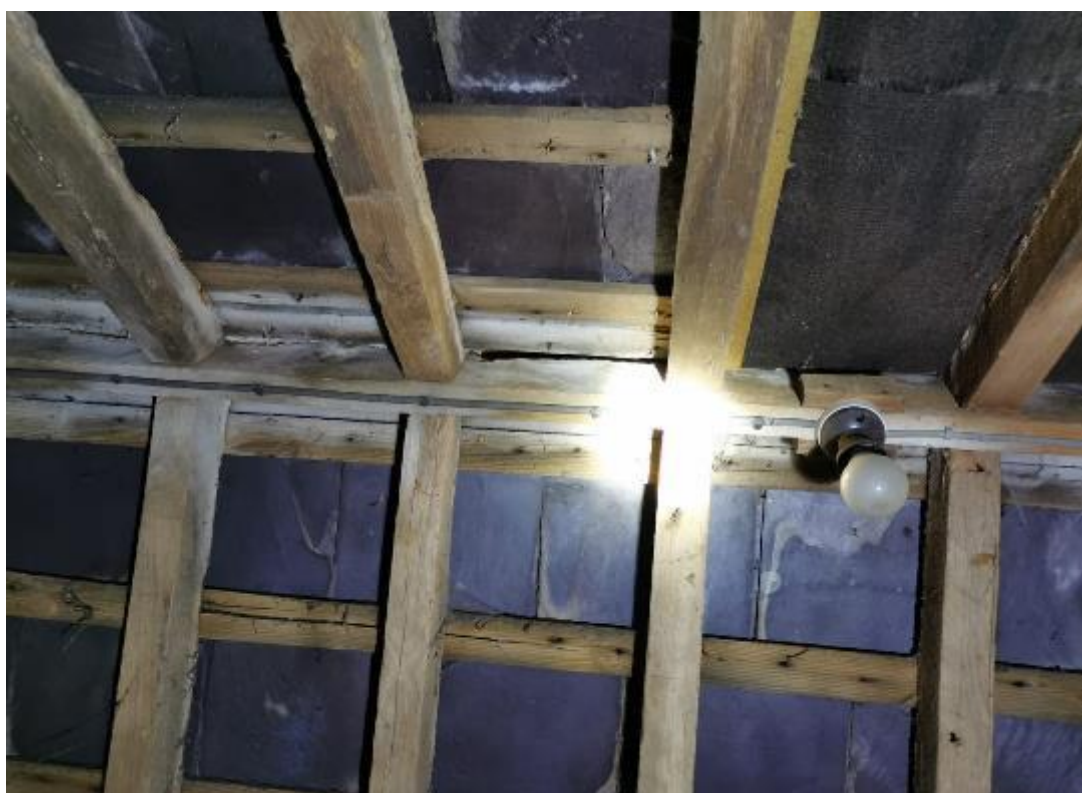


Plate 2 - Gap below the ridge inside the upper mezzanine



Plate 3 – Evidence of bats (*Plecotus auritus*) within the barn mezzanine



Plate 4 – Evidence of bats (*Pipistrellus pipistrellus*) within the barn mezzanine



Plate 5 – Swallows at roost inside the barn lower levels



Plate 6 – Swallow nest cup below a gutter on the barn facing north-west

Appendix II: Biodiversity Enhancement Strategy

Birds

Breeding Birds – Swallow nest cups

Mitigate new nest cups for loss of the Swallow nest site to accommodate the barn conversion.

The Swallow Nest Cup consists of a woodcrete nesting bowl which is attached to a wooden panel of formaldehyde-free chipboard. The nests 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.



Optional shelter



Specification: Swallow nest cups x3 per shelter, one per face

Quantity: 2 shelters open fronted

Timings: Prior to any conversion work, October to March

See: www.nhbs.com/no-10-schwegler-swallow-nest

Proposed location of shelters: Within an open area of the site



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.



Fit to the rear of outbuilding(s) or new shelter(s).