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Inspection and Assessment in Relation to Bats and Birds

January 2021

29 Larkhill
Brockhall Village
Blackburn
BB6 8AR

National Grid Ref: SD 70431 36254



29 Larkhill, Brockhall Village, Blackburn, BB6 8AR
Inspection & Assessment in Relation to Bats and Birds

Document Title	Inspection & Assessment in Relation to Bats & Breeding Birds
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Executive Summary

As part of a proposed planning application in relation to 29 Larkhill Cottages, Brockhall Village, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in January 2021. The survey was commissioned by David Liversidge and proposals are understood to purely involve the construction of a small dormer to the rear elevation of the residential property.

The following key ecological features and associated recommendations have been identified:-

Bats: Although the existing residential dwelling was subject to a number of minor Potential Roost Features (see Figure 7.1), all of these were sited at least 3.5 metres from the proposed dormer. No impacts are anticipated from the proposed dormer, which is over an area of tight-fitting slate roof pitch. *No recommendations relative to further surveys or Reasonable Avoidance Measures are appropriate.*

<p>Biodiversity Net Gain: A series of biodiversity enhancement measures are recommended within Appendix II which entail recommendations with respect to the provision of wildlife boxes.</p>

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1.0 Introduction & Scope

- 1.1 As part of a proposed planning application in relation to 29 Larkhill Cottages, Brockhall Village, Tyrer Ecological Consultants Ltd carried out a daytime inspection and assessment in relation to bats and breeding birds in January 2021. The survey was commissioned by David Liversidge and proposals are understood to purely involve the construction of a small dormer to the rear elevation of the residential property (see Figure 1.1).
- 1.2 As part of the Local Authority's Planning Policies ecological surveys are generally required, particularly where a specially protected species is or may be present and could be affected by the proposals for which the application seeks consent.

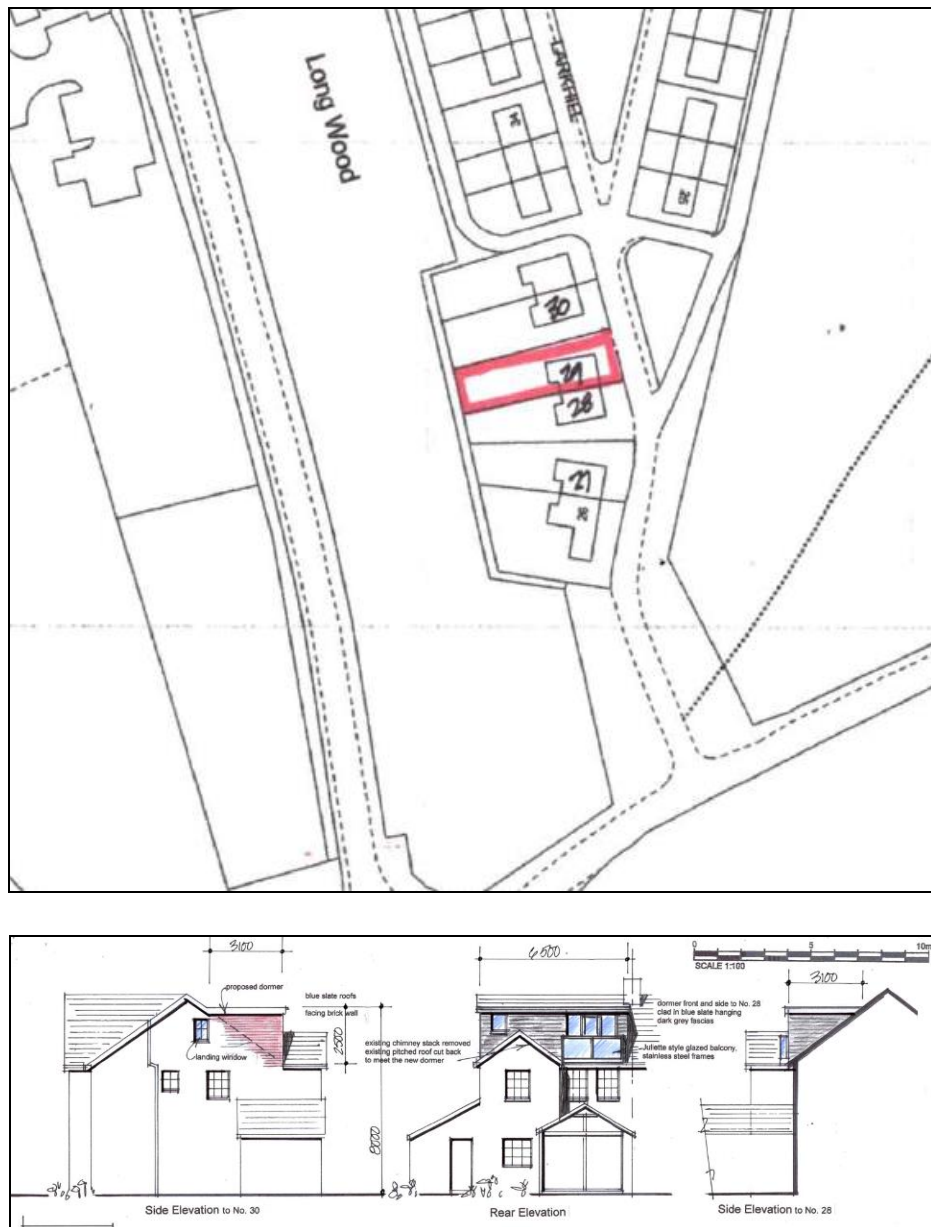


Figure 1.1: Location plan (top) and proposed elevations (bottom) (©David Liversidge)

- 1.3 The aim of the inspection was to ascertain if the building and associated features are of value to important taxa, notably including bats and breeding birds. If the building were found to be suitable for bats or signs of use was located 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 bat/s or their roost/place of rest/shelter is subsequently affected by the work, then a European Protected Species Mitigation Licence (EPSML) would be required to proceed with the development.
- 1.4 The optimum time to investigate buildings for evidence of a bat roost is May – August, however that is not to say they cannot be inspected and assessed outside of that time and frequently the results can be conclusive, which can save time and expense for planning applicants, but it should be borne in mind that equally the inspection can be inconclusive.
- 1.5 In addition to bats the site was assessed for its potential to offer nesting provision for breeding birds; if the survey results indicate that such species may be affected by the proposals then recommendations would be made accordingly.
- 1.6 If additional surveys are required following the initial site visit the report will outline the details of those further requirements.

2.0 Legislation & Policy

- 2.1 All British bats and their ****roosts** are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats and Species (amendment) (EU exit) Regulations (2019). 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 2019 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

2.2 Use of Buildings by Bats

- a) Summer breeding roost.
- b) Hibernation.
- 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 and Species (amendment) (EU exit) Regulations (2019) (Regulation 41) 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.

- 2.3 All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended); birds listed on Schedule 1 e.g. Barn owls (*Tyto alba*) are afforded a greater level of protection. Where nesting birds are present, then work should be timed outside of the main nesting season (March – August) so as to avoid disturbance.

Policy

- 2.4 The National Planning Policy Framework (NPPF) has replaced the existing Planning Policy Guidelines. (PPG's) In relation to wildlife PPG 9 was one of the documents to which Planning Authorities referred to, particularly where a specially protected species is or may be present and will be affected by a development for which a Planning application seeks consent. The aims of the NPPF in relation to species and habitats are that it places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where they may be affected by development. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.

This is supported by a guide to good practice entitled 'Planning for Biodiversity and Geological Conservation: Building in Biodiversity' in which paragraphs 5.34 and 5.35 identify that species such as bats are highly dependant upon built structures for survival and that roosts can be easily incorporated into existing and new developments/conversions to benefit these species.

When determining planning applications, Local Planning Authorities should aim to conserve biodiversity by applying the following principles:

"If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."

- 2.5 Further to mitigating / compensating for the loss of biodiversity, LPAs should also aim to enhance existing biodiversity and provide clear and measurable net gains. Paragraph 174 of the NPPF states the following:

"To protect and enhance biodiversity and geodiversity, plans should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

- 2.6 Policy CS152 of Blackburn's Core Strategy mirrors this and gives that: *"1. The Borough's ecological assets will be protected, enhanced and managed with the aim of establishing and preserving functional networks which facilitate the movement of species and populations."*

- 2.7 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister: Circular 06/2005

"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."

- 2.8 Figure 2.1 below provides a useful and indicative visual representation of how ecological issues are dealt with in the context of the planning process.

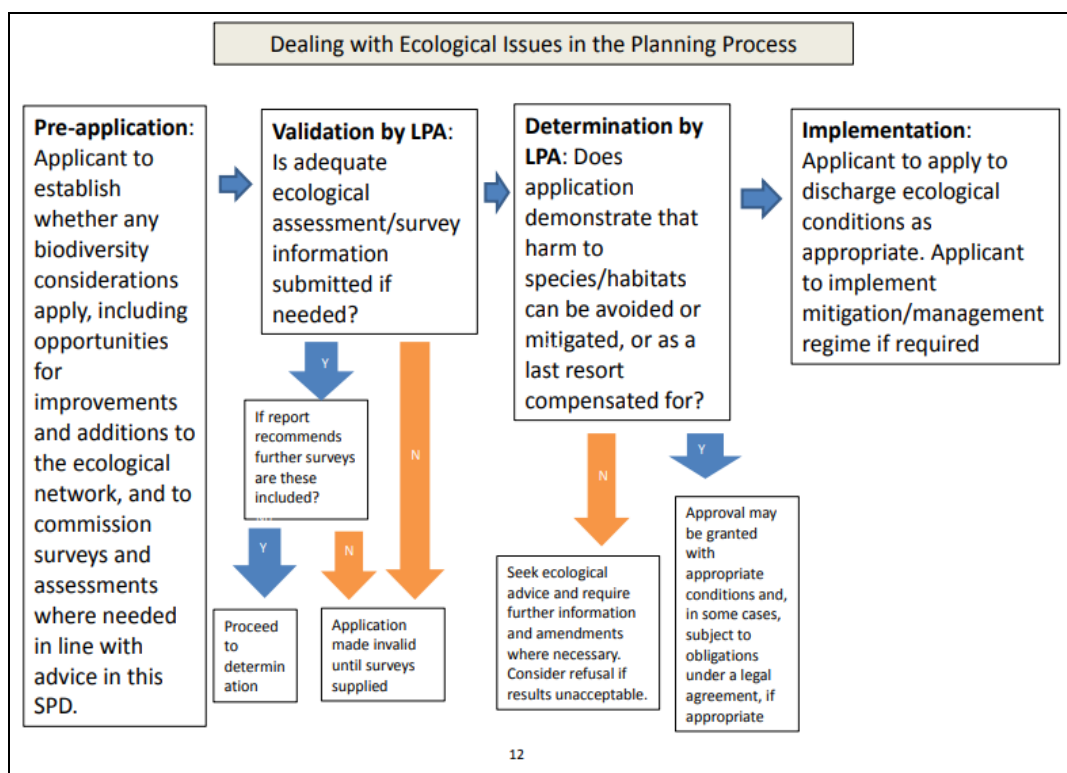


Figure 2.1: Dealing with ecological issues in the planning process (©Chorley Council *et al*, 2015)

3.0 Protected Species in Lancashire

- 3.1 Up to eleven bat species have been recorded in Lancashire, many of which use built structures and trees 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*) and its abundant status in Lancashire is mirrored throughout the UK.
- 3.2 The number of breeding Barn owls (*Tyto alba*) within rural Lancashire 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 Methods

- 4.1 BCT Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' 3rd edition (2016) state:-

"The guidance should be interpreted and adapted on a case-by-case basis, according to the expert judgement of those involved. There is no substitute for knowledge and experience in survey planning, methodology and interpretation of findings, and these guidelines are intended to support these. Where examples are given they are descriptive rather than prescriptive."

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 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. For additional context, a search of the planning portal for applications at the site and nearby was also undertaken.
- 4.3 Satellite imagery was reviewed using sources such as Google Earth (© 2020) 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.

Field Survey

- 4.4 The daytime survey was conducted on 20th January 2021 when the dwelling was inspected for potential places that may be of value to bats and to determine if evidence of use was present. Due to current COVID restrictions and in alignment with guidance around the COVID pandemic, internal aspects of the property were not inspected. All external facets were inspected for viable ingress/egress opportunities and the building was consequently assessed for their suitability for bats in line with the previously mentioned Bat Conservation Trust 'Good Practice Guidelines'.
- 4.5 No trees are to be impacted by the proposals and so none were subject to inspection relative to breeding birds or bats.
- 4.6 The criteria for roost assessment is based upon the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' 3rd edition (2016) (see Figure 4.1).

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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
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

- 4.7 The survey was conducted on 20th January 2021 at a time when bats are outside of their main active season and in their typical hibernation season (November - March) by the following surveyor:

Table 4.1: Surveyor credentials

Name	Description
Joshua Styles BSc. ACIEEM AMRSB	Senior ecologist and botanical specialist with a FISC Level 6; Joshua Styles is an experienced ecologist with over 15 years' biological recording experience and over 5 years' consultancy experience. J. Styles is also an accredited agent on the Class 2 Natural England bat license of Kylee Wildling and somewhat experienced in the identification of various invertebrate taxa. J. Styles is also licenced to survey EPS Floating Waterplantain using destructive methods (2020-49283-SCI-SCI) and has experience across the environmental sector in research, conservation and consultancy, including a number of years involvement in peatland restoration. J. Styles also has a Natural England Class 1 bat survey licence (2020-50830-CLS-CLS).

- 4.8 The UK Guidelines for Accessing and Using Biodiversity Data (CIEEM, 2020) stipulates that *“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”*.

Given the nature of the proposed development and outcomes of the assessment, it has been deemed unnecessary to conduct a data search for protected species or designated sites in the vicinity. Species/habitat information relevant to the application site and its immediate environs was obtained at the time of the survey from habitat information.

- 4.9 The results, conclusions and recommendations are based on multiple factors including:
- Practical experience of surveyor
 - Knowledge of bat/bird species relevant to the site location and geographical range
 - Nature of the immediate and surrounding habitat in relation to foraging/hunting opportunities
 - Condition of the building
 - Presence/absence of a loft space
 - Presence/absence of roost/nesting potential
 - Value of roost/nesting potential – if present
- 4.10 An assessment of the buildings and developmental footprint in relation to breeding birds was conducted in tandem with the investigation for bats, when birds are outside of their main breeding season (March-August inclusive). Exterior elevations of the buildings were inspected for current or historic signs of birds that show a high dependency upon built structures, of which some of these species are in a state of decline. These might include the following:
- **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
- 4.11 Additional to the capacity to support common species of bird for breeding purposes, the application site was also subject to an assessment for its ability to support particularly notable species. This includes specially protected species such as Barn owl (*Tyto alba*), protected under Schedule 1 of the Wildlife & Countryside Act (1981) (as amended).
- 4.12 All aspects of the field survey were undertaken in line with government and CIEEM (2020) standing guidance during the COVID-19 pandemic.

5.0 Limitations

- 5.1 The interior elevations of the occupied house were not inspected in alignment with standing government and CIEEM guidance around field work during the COVID pandemic. Nonetheless, exterior elevations were fully inspected at the time of the survey and an assessment of Potential Roost Features was undergone.

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- 5.2 It is therefore considered that there were no significant constraints that would otherwise hinder the gathering of information on which to base conclusions and recommendations.

6.0 Desk Study Results

- 6.1 The subject building at 29 Larkhill, Brockhall Village is located to the outskirts of Brockhall Village and at a distance of 8.4 kilometres north of Blackburn town centre. The total area of the building impacted by the proposals equates to approximately 8 square metres.
- 6.2 Immediately encompassing the building, the landscape incorporates a combination of residential properties with gardens, alongside areas of permanent agricultural grassland to the east alongside lines of trees and woodlands to the west.
- 6.3 The extending habitat continues in a similar nature to that of the immediate with the addition of further favourable environs including further extensive areas of woodland, alongside the River Ribble which is located at approximately 850 metres north. The previously identified habitats that occur in proximity with the survey area can be considered as being of moderate value for many of the important features for which the survey was undertaken (i.e. bats and breeding birds), subject to them being present in the locality. Where good quality habitat is present close to buildings then the percentage use of those buildings, by bats/birds increases given that roost/nest opportunities are available and vice versa.

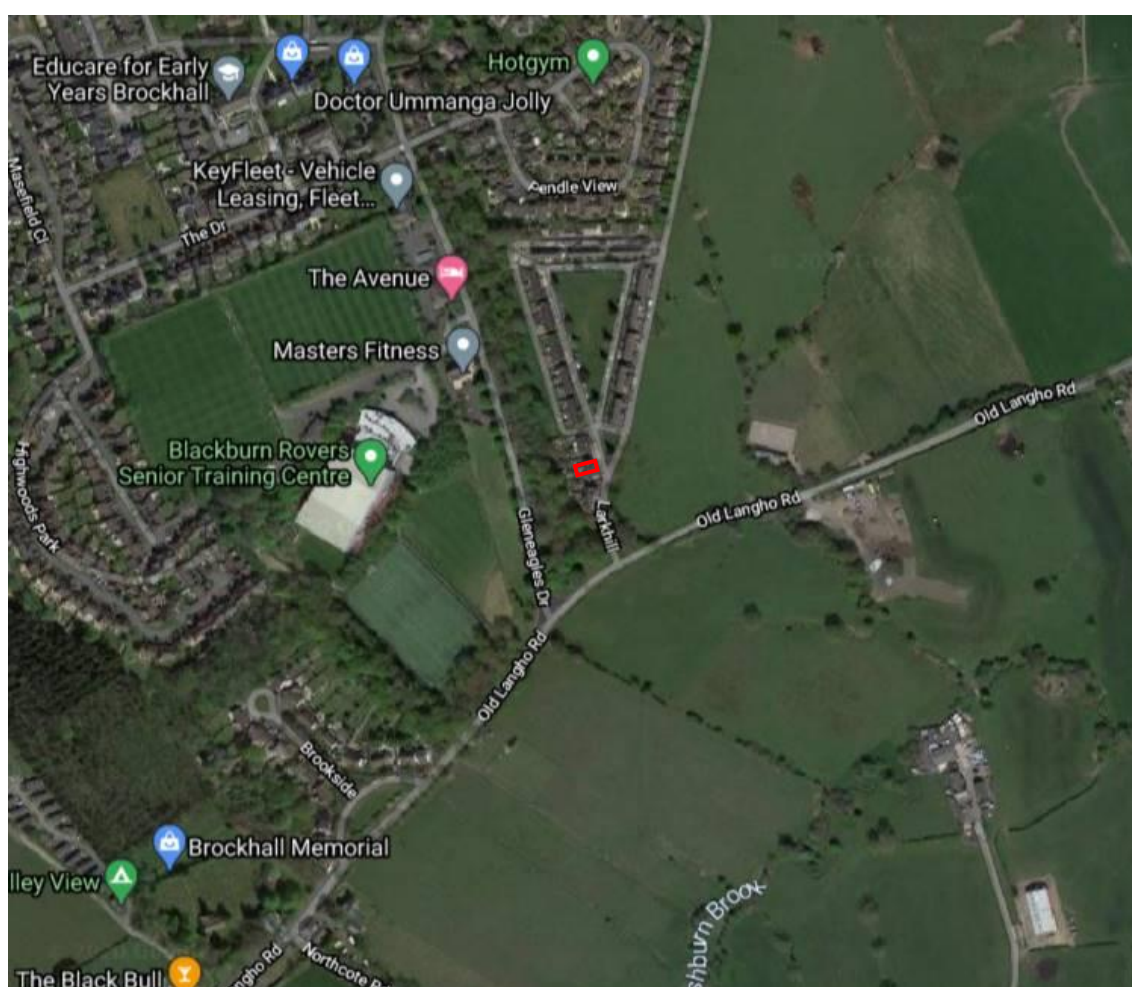


Figure 6.1: Position of the study site within the contiguous landscape (red boundary) (©Google Earth 2020).

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- 6.4 The survey site lies outside the Impact Risk Zones for any designated sites. Where no impact to Sites of Special Scientific Interest (SSSIs) is predicted however, Natural England issue the following advice within their standing advice on SSSI impact zones (NE, 2019): *“It is important to note that the SSSI IRZs only indicate Natural England’s assessment of likely risk to the notified features of SSSIs. Where they indicate such a risk is unlikely, this does not mean that there are no potential impacts on biodiversity or the wider natural environment.”*
- 6.5 The desktop study found no results for EPSMLs within a two kilometre radius of the survey site.

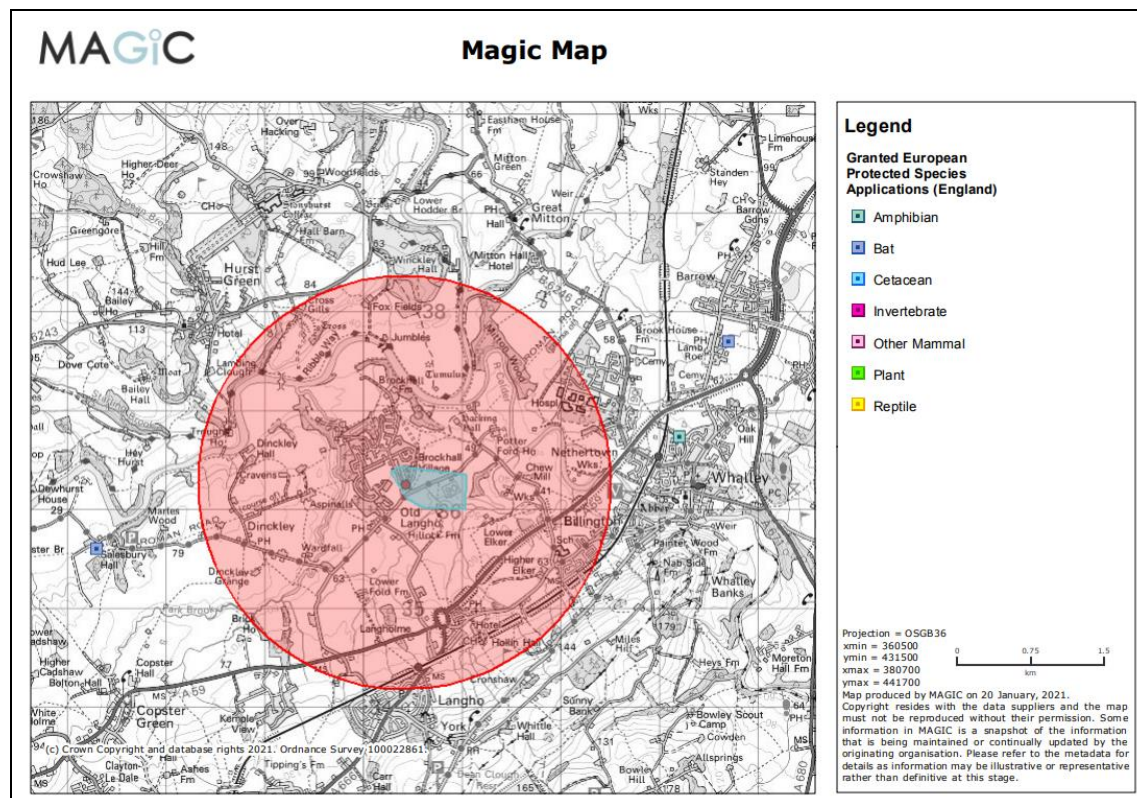


Figure 6.2: MAGiC maps output

7.0 Field Study Results

Bats

- 7.1 The existing dwelling that is currently occupied at the site comprises a two storey, semi-detached dwelling with a converted loft space. The property was noted to be in a reasonable condition aesthetically at the time of the survey to total approximated dimensions equating to 10 metres by 8 metres by 11 metres in height.
- 7.2 No internal inspection was undertaken, however, a number of windows have been incorporated into the roof when the loft has been previously converted. Therefore, it can be concluded that the building is unsuited to the preferred breeding requirements of loft-dwelling species of bat such as the Brown Long-eared (*Plecotus auritus*). This is a species that prefers large, open and darkened loft spaces with consistent thermal qualities for breeding purposes; although this does not necessarily preclude other use by this species dependent upon the availability of viable ingress/egress opportunities.
- 7.3 No evidence of loft-dwelling bats was identified upon appraisal of the structure.
- 7.4 The presence of bitumen or other underlining could not be established at the time of the survey; where present, traditional bitumen 1F underfelt or similar underlining will significantly increase the probability of occupancy by crevice-dwelling species of bat such as the common pipistrelle (*Pipistrellus pipistrellus*), whereby bats are able to roost between external materials and underling material, provided external access opportunities exist. During the investigation, no evidence of crevice-dwelling bats was identified during the inspection of the property; however, this is often the case due to the cavity-inhabiting nature of this species group and absence of crevice-dwelling species cannot solely be relied upon.

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 The external assessment of the building noted, that typical Potential Roost Features (PRFs) favoured by crevice dwelling species for ingress such as roof / ridge tiles, barge boards and wall plate were found to be tight fitting or well pointed with no opportunities for access into roost spaces. Notwithstanding this, it is noted that there are some limited gaps at the roof verges on the eastern, northern and western gable elevations (see Figure 7.1). No other PRFs exist at the property, whilst the area where the proposed dormer will be fitted includes a roof pitch that has tightly fitted slate. Furthermore, the prospective dormer is sited at a distance of over 3.5 metres from any identified PRFs, which will be unaffected by the proposals. Therefore, although potential some suitability exists at 29 Larkhill, no impacts relative to bats are anticipated.



Figure 7.1: Gable elevations with occasional limited gaps at roof verge

Birds

Breeding birds

- 7.6 No evidence of suitability for nesting birds has been identified at the residential property and/or at the area impacted by the proposed dormer. The presence of breeding birds at the building within the nesting period (March-August inclusive) is considered to be unlikely.
- 7.7 No areas considered to be suitable for the breeding habits of any Schedule 1 WCA-listed species were identified on site and no evidence of such species was located across the full extent of the survey area.

8.0 Conclusions & Recommendations

- 8.1 Based on the survey results above, risks to bats are negligible, although Potential Roost Features have been located at eastern, northern and western gable ends of the structure, notably at roof verge across limited portions. The proposed dormer is situated at a significant distance from all PRFs which will go unaffected by the proposed development and will be retained in full.
- 8.2 No further surveys in the form of dusk / dawn emergence / re-entry surveys are recommended. As a general precautionary measure, however, in the highly unlikely event that bat/s or their droppings (see Figure 8.1) are discovered during operations, works must immediately cease and an ecologist contacted for further advice.



Figure 8.1: Bat droppings (left) and pipistrelle bat (right)

- 8.3 The presence of common or Schedule 1 breeding birds associated with buildings is concluded to be unlikely. No further recommendations relative to nesting birds are considered appropriate.
- 8.4 To improve opportunities for bats and nesting birds on site, enhancement is recommended to be incorporated into any new development as per Appendix II.

9.0 Bibliography

- **Bat Conservation Trust (BCT)**, 2018. *Bats and artificial lighting in the UK: Bats and the Built Environment series*. Available from: <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>
- **Chorley Council, Preston City Council, and South Ribble Council**, 2015. *Central Lancashire Biodiversity and Nature Conservation Supplementary Planning Document*. Available from: <https://centrallocalplan.lancashire.gov.uk/media/1049/july-2015-biodiversity-and-nature-conservation-spd-v1.pdf>
- **CIEEM**, 2020. UK Guidelines for Accessing and Using Biodiversity Data.
- **CIEEM et al**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf
- **CIEEM**, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland*, 3rd edition.
- **CIEEM**, 2017. *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Available from: www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- **Collins, J (ed.)**, 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd edition. The Bat Conservation Trust, London.
- **Communities & Local Government (C&LG)**, 2018. *National Planning Policy Framework*. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf
- **Magic Maps Application**, 2020. Available from: www.natureonthemap.naturalengland.org.uk/MagicMap.aspx
- **Mitchell-Jones, A. J.**, 2004. *Bat mitigation guidelines*. External Relations Team, English Nature, Northminster House, Peterborough, PE1 1UA.
- **Mitchell-Jones, A. J. (ed.)**, 1987. *The bat worker's manual*. Dept. BWM, Nature Conservancy Council, Northminster House, Peterborough, PE1 1UA.

Appendix I: Site Photographs



Plate 1: Front elevation of the property with occasional limited gaps at roof verges



Plate 2: Rear elevation with tight-fitting slate pitch roof



Plate 3: Rear elevation with occasional limited gaps at roof verge

Appendix II: Biodiversity Enhancement

Enhancement

Bats

Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees which may include the Beaumaris, low profile woodstone, or Schweglar bat boxes.



House sparrow

The 'Sparrow Terrace' has been designed to help redress the balance of falling house sparrow numbers. The current UK population is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. 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 agricultural buildings such as barns under eaves or overhanging roofs on a North - North East elevation

<http://www.nhbs.com/title/174850/1sp-schwegler-sparrow-terrace>



Swift

The type of entrance possessed by the WoodStone Swift Nest Box is preferred by swifts and discourages competing species such as house sparrows.

This box should be installed at least five metres above ground level , ensuring that there is unobstructed access for birds entering and leaving, preferably being placed in a sheltered locality under eaves or overhanging roofs on a North- North East elevation



<https://www.nhbs.com/woodstone-swift-nest-box>