

Teewood Farm, Slaidburn Road, Waddington BB7 3JJ

UPDATED LICENSED BAT SURVEY AND ECOLOGICAL ASSESSMENT

October 2022

[ERAP (Consultant Ecologists) Ltd ref: 2022-251]

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Document Control

Survey Type:	Surveyors ¹	Survey Date(s)
Updated Phase 1 Habitat Survey and daylight bat survey and assessment	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM	11 th August 2022
Dawn re-entry survey for bat activity	Victoria Burrows and assistants	11 th August 2022
Dusk emergence survey for bat activity	Victoria Burrows and assistants	7 th September 2022
Reporting	Personnel	Date
Author	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Principal Ecologist	7 th October 2022
Signature(s)		
Checked	Rachel Platt B.Sc. (Hons) M.Sc. Graduate Ecologist	8 th October 2022
Revised and issued	Victoria Burrows	10 th October 2022
Version	1	
Report issued to	Mr M. Hurst	
¹ Licence reference numbers Bats Victoria Burrows, Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-10390-CLS-CLS Barn owl Victoria Burrows Natural England Class Survey Licence Registration Number CL29/00061		

SUMMARY

Introduction and Scope

- i. ERAP (Consultant Ecologists) Ltd carried out an ecological survey and assessment (including licensed bat and barn owl surveys) of the buildings and curtilage at Teewood Farm, Slaidburn Road, Waddington BB7 3JJ in July and August 2018. The assessment was required to inform a planning application proposing “*Demolition of modern agricultural buildings and conversion and extension of two barns to form one new two-storey dwelling with separate two-storey annexe building in curtilage including construction of new access, drainage and landscaping*” (Ribble Valley Borough Council reference: 3/2019/1034).
- ii. The results of the ecological surveys carried out in 2018 are presented in the *Ecological Survey and Assessment Including a Licensed Bat and Bird Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2019) and are summarised as:
 - The shippon was assessed to be of ‘low’ suitability for use by roosting bats; no evidence of use of the shippon by roosting bat was detected;
 - The detached barn and the attached barn were assessed to be of ‘moderate’ suitability for use by roosting bats;
 - The bat activity surveys (dusk and dawn) detected the presence of a common pipistrelle bat day roost at the attached barn [Roost 1] and a common pipistrelle bat day roost at the detached barn [Roost 2] (all bat species and their roosts have protection under European and UK wildlife legislation);
 - Use of a timber hopper in the shippon by roosting and (possibly nesting) barn owl (a bird species protected under the *Wildlife and Countryside Act 1981* (as amended)) was detected;
 - The shippon has been used by nesting swallow (all nesting birds are protected under the *Wildlife and Countryside Act 1981* (as amended));
 - The site supports Indian Balsam, an invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); and
 - It was advised that appropriate survey effort and assessment had been carried out to discount the presence of / reasonably discount adverse effects of the proposals on other relevant protected species (including badger, great crested newt and reptiles).
- iii. Mitigation strategies outlining the actions to be applied to ensure the protection and conservation of protected species at the site and compliance with relevant wildlife legislation, Natural England guidance, relevant planning policy and best practice were prepared and planning permission for the proposals, subject to conditions, was approved in April 2020.
- iv. In 2022 ERAP (Consultant Ecologists) Ltd was commissioned to carry out updated ecological surveys at the site to serve the purpose of informing a new planning application proposing the “*Demolition of modern agricultural buildings and conversion and extension of two barns to form one new two-storey dwelling with separate two-storey annexe building in curtilage including construction of new access, drainage and landscaping. Single storey link extension to connect two barns*” (Ribble Valley Borough Council reference: 03/2022/0777).
- v. This report presents the results of an updated daylight licensed bat and barn owl survey and assessment, bat activity surveys and a general ecological assessment carried out in August and September 2022. The surveys were carried out by a licensed, qualified and experienced ecologist with assistants and in accordance with standard recognised survey guidelines.

Results of Survey and Assessment

- vi. As advised and accepted in 2019, adverse direct and indirect impacts on statutory and non-statutory designated sites for nature conservation will be avoided by the proposals. Similarly, none of the habitats

within the site are semi-natural habitat or are Priority Habitat. The site contains only common and widespread plant species. The mature trees bordering the site to the south will be retained by the proposals and protected during construction.

- vii. The updated licensed bat and barn owl surveys in 2022 detected the following:
- Continued use of Roost 1 by one common pipistrelle bat;
 - Use of two holes in the stonework at the west elevation of the detached barn by two soprano pipistrelle bats [Roost 3 with two accesses];
 - Presence of a common pipistrelle day roost (one bat) behind a timber fascia at the southern elevation of the off-site farmhouse [Roost 4];
 - Common pipistrelle, soprano pipistrelle and *Myotis* species foraging activity around the site and within the attached barn; and
 - Continued use of the timber hopper in the shippon by barn owl.
- viii. No evidence of use of the buildings by a bat maternity roost or a roost of high conservation significance was detected.
- ix. In the absence of mitigation, the renovation works (particularly the re-roofing and any re-pointing works) will disturb bats and will destroy, obstruct access to and modify Roosts 1 and 3 (and Roost 2 recorded in 2018). The barn owl roost / nest site will also be removed.
- x. Owing to the relevant wildlife legislation and the protection afforded to bats and their roosts, works at the detached and attached barn must only be carried out under a relevant Natural England European Protected Species Mitigation licence. **Section 5.3** of this report presents a bat mitigation strategy, that has been discussed and agreed with the architect and client, to demonstrate how the proposals can be achieved whilst protecting roosting bats and ensuring there is no net loss of roosting opportunity at the site in the long-term.
- xi. Mitigation measures comprising the completion of pre-work surveys to determine the barn owl status at the site and provisions for long-term conservation of barn owl at the site will be necessary; further information is presented at **Section 5.4**.
- xii. The surveys confirmed the continued presence of Indian Balsam and the preparation of an Invasive Plant Species Management Plan is recommended (refer to **Section 5.6**). The surveys also detected the presence of hedgehog and brown hare (both Priority Species) in the grounds of the farm.
- xiii. Adverse effects of the proposals on other protected species are reasonably discounted. **Sections 5.4 to 5.5** provide best practice guidance to be adhered to in relation to nesting birds and other wildlife such as brown hare and hedgehog, including a description of how the proposals maximise opportunities for biodiversity.

Conclusion

- xiv. This ecological assessment has demonstrated that the renovation works at the site are feasible and acceptable in accordance with ecological considerations, Natural England guidance, National Planning Policy Framework and best practice.
- xv. The comprehensive protected species mitigation strategies outlined in **Section 5.0** and **Figure 3** demonstrate that mitigation for roosting bats and barn owl and the conservation of roosting / nesting and foraging opportunities at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* (as amended) will be met and the appropriate Natural England licence will be obtained to facilitate the works.

1.0 INTRODUCTION

1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned to carry out an updated licensed bat and barn owl survey and ecological assessment of the buildings and curtilage at Teewood Farm, Slaidburn Road, Waddington BB7 3JJ, hereafter referred to as the 'site', in summer 2022. The Ordnance Survey (OS) grid reference at the centre of the site is SD 72221 45477. An aerial image of the site is appended at **Figure 1**.
- 1.1.2 This report presents an update of previous ecological survey and assessment carried out by ERAP (Consultant Ecologists) Ltd at the site in July and August 2018. The original assessment was required to inform a planning application proposing "*Demolition of modern agricultural buildings and conversion and extension of two barns to form one new two-storey dwelling with separate two-storey annexe building in curtilage including construction of new access, drainage and landscaping*" (Ribble Valley Borough Council reference: 3/2019/1034).
- 1.1.3 The results of the ecological surveys carried out in 2018 are presented in the *Ecological Survey and Assessment Including a Licensed Bat and Bird Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2019) and are summarised as:
- The shippin was assessed to be of 'low' suitability for use by roosting bats; no evidence of use of the shippin by roosting bat was detected;
 - The detached barn and the attached barn were assessed to be of 'moderate' suitability for use by roosting bats;
 - The bat activity surveys (dusk and dawn) detected the presence of a common pipistrelle bat day roost at the attached barn [Roost 1] and a common pipistrelle bat day roost at the detached barn [Roost 2] (all bat species and their roosts have protection under European and UK wildlife legislation);
 - Use of a timber hopper in the shippin by roosting and (possibly nesting) barn owl (a bird species protected under the *Wildlife and Countryside Act 1981* (as amended)) was detected;
 - The shippin was used by nesting swallow (all nesting birds are protected under the *Wildlife and Countryside Act 1981* (as amended));
 - The site supports Indian Balsam, an invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); and
 - It was advised that appropriate survey effort and assessment had been carried out to discount the presence of / reasonably discount adverse effects of the proposals on other relevant protected species (including badger, great crested newt and reptiles).
- 1.1.4 Mitigation strategies outlining the actions to be applied to ensure the protection and conservation of protected species at the site and compliance with relevant wildlife legislation, Natural England guidance, relevant planning policy and best practice were prepared and planning permission for the proposals, subject to conditions, was approved in April 2020.
- 1.1.5 In 2022 ERAP (Consultant Ecologists) Ltd was commissioned to carry out updated ecological surveys at the site to serve the purpose of informing a new planning application proposing the "*Demolition of modern agricultural buildings and conversion and extension of two barns to form one new two-storey dwelling with separate two-storey annexe building in curtilage including construction of new access, drainage and landscaping. Single storey link extension to connect two barns*" (Ribble Valley Borough Council reference: 03/2022/0777).

- 1.1.6 This updated survey and assessment report is therefore required to serve two purposes:
- To provide an update on the ecological status of the site to inform the current planning application; and
 - To ensure that recent bat survey data are available to inform the registration of the site under the relevant Natural England European Protected Species Mitigation (EPSM) licence.

1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken in August and September 2022 comprised:
- A desktop study for known ecological information at the site and the local area;
 - A licensed daylight bat survey of the building and trees and an assessment of their suitability to support roosting bat species at any time of year followed by the relevant scope of bat activity survey;
 - Survey and assessment of the habitats for use by nesting birds including species listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended) and Priority Species;
 - Survey and assessment of all habitats for relevant statutorily protected species¹ and other wildlife including badger (*Meles meles*);
 - Provision of guidance in accordance with wildlife legislation, *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016), and best practice in relation to the proposed works;
 - Identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

- 2.1.1 The following sources of information and ecological records were consulted:
- MAGiC Maps: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;
 - MARIO Maps: Lancashire County Council's interactive mapping website; and
 - Lancashire Biodiversity Action Plan.
- 2.1.2 In addition, the *Ecological Survey and Assessment Including a Licensed Bat and Bird Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2019), prepared for the site in 2019 (hereafter referred

¹ In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no water bodies or water courses within or adjacent to the site; there has been no requirement to consider great crested newt (*Triturus cristatus*), water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment and this was accepted in 2020 in consideration of the approved application.

to as the '2019 ecology report') and the consultation responses submitted in relation to the approved previous application at the site were consulted for background information.

2.2 Vegetation and Habitats

- 2.2.1 An updated walkover survey of the site was carried out by Victoria Burrows on 11th August 2022; the weather conditions were sunny and dry with a light air (Beaufort scale 1) and an air temperature during the survey of 17°C.
- 2.2.2 An updated plant species list for the land within site boundary was prepared with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.
- 2.2.3 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.
- 2.2.4 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).
- 2.2.5 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Updated Licensed Bat Survey and Assessment

Daylight Survey and Assessment

Survey Area

- 2.3.1 The survey area comprised the buildings to be affected by the works namely the shippon, the attached barn, the detached barn and the immediate curtilage, refer to **Figure 2**.

Surveyor and Survey Date

- 2.3.2 The daylight licensed bat survey and assessment was carried out by Victoria Burrows, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-10390-CLS-CLS, on 11th August 2022 and 7th September 2022. Victoria's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Survey Guidelines

- 2.3.3 The survey was carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

Habitat Assessment for Commuting / Foraging Bats

- 2.3.4 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented below.

Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	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 or patch of scrub.
Moderate	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 linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Daylight Survey: Buildings

- 2.3.5 An inspection and assessment of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into crevices / internal areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.
- 2.3.6 The interior of the buildings were searched for roosting bats and evidence of previous use of the buildings by bats such as droppings and prey remains.
- 2.3.7 The current suitability of the buildings for use by roosting bats was assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the buildings (including crevice dwelling species and species which can roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

Daylight Survey: Trees

- 2.3.8 A group of young trees to the north of the shippon building are identified to be removed. The trees were examined from the ground using binoculars and a high-powered torch and assessed for their suitability for use by roosting bats. Each tree was searched for the presence of the following features:

Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which

cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.

2.3.9 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2nd Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).

2.3.10 The requirement for further presence / absence surveys at each tree was then considered.

Equipment

2.3.11 A list of equipment used is provided below.

Table 2.2: Survey Equipment Used / Available for Use During Daylight Bat Survey

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-300

Bat Activity: Presence / Absence and Roost Characterisation Surveys

2.3.12 In accordance with the guidance at Table 7.3 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn) (Collins, J. (ed), 2016), two bat activity surveys were recommended at the buildings to replicate the survey effort applied in 2018 and to determine the current presence (or absence) of roosting bats at the buildings.

2.3.13 Surveyors experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the elevations and roofs of the buildings and identified potential roost features to determine any entry into or exit by roosting bats. Surveyor positions are annotated at **Figure 2**. All surveys were conducted under suitable conditions.

2.3.14 Heterodyne detectors were used to determine any bat detected to species or group (*Myotis* species often cannot be reliably separated to species via their echolocation calls, for example). Recording bat detectors units (Anabat Express and Anabat Scout) were also used to record and analyse echolocation calls after the survey using AnalookW and Anabat Insight call analysis software.

2.3.15 Night vision aids (NVA)², supplemented with additional infra-red lighting (comprising LED infra-red floodlights) were used at the surveyor positions described in **Table 2.3** and shown on **Figure 2**.

2.3.16 Photographs showing each survey position from the darkest point of the surveys are appended at **Photos 17** to **19**. Any bat emergence or re-entry activity was recorded, with brief notes relating to bat activity at each survey position collated at the end of the survey. Recorded infra-red camera footage was subsequently reviewed using VLC Media Player to determine any emergence / re-entry at the buildings.

2.3.17 The survey information is presented below.

² Canon XF105 and SANNCE CCTV DVR system supplemented with LED infra-red floodlights.

Table 2.3: Bat Activity Survey Dates, Weather Conditions and Surveyors

Date	11 th August 2022	7 th September 2022
Survey type	Dawn re-entry	Dusk emergence
Sunrise / set	Sunrise: 05:38	Sunset: 19:45
Start time	03:34	19:30
End time	05:53	21:22
Wind	Beaufort scale 1 (light air) throughout	Beaufort scale 0 (calm)
Precipitation	Dry	Dry, overcast after a day of heavy rain
Air temperatures	15°C throughout	17°C at 19:30 falling to 15°C at 21:15
Surveyor Position	Surveyor, Detector and NVA	Surveyor, Detector and NVA
1	Victoria Burrows Batbox Duet and Anabat Express	Victoria Burrows Batbox Duet and Anabat Express SANNCE CCTV camera supplemented with LED infra-red lamp.
2	Marisa Hensey Batbox Duet and Anabat Express	Natalie Coffey Anabat Scout SANNCE CCTV camera supplemented with LED infra-red lamp.
3	Leah Hart Anabat Scout	Marie Pickering Batbox Duet and Anabat Express
4	Rachel Brown Batbox Duet and Anabat Express	Aidan Pickering Batbox Duet and Anabat Express
5	Anabat Express only	Anabat Express and Canon XF105 with LED infra-red lamp
6	Natalie Coffey Batbox Duet and Anabat Express	- (Not required)

2.4 Other Relevant Protected Species and Animal Life

Bird Species

- 2.4.1 The buildings were searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).
- 2.4.2 Bird species observed and heard during the survey were recorded.
- 2.4.3 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

Badger

- 2.4.4 The survey area for badger covered the site (as annotated on **Figure 2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.
- 2.4.5 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).
- 2.4.6 The following signs of badger activity were searched for:

- a. Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
- b. Large spoil heaps outside sett entrances;
- c. Bedding outside sett entrances;
- d. Badger footprints;
- e. Badger paths;
- f. Latrines;
- g. Badger hairs on fences or bushes;
- h. Scratching posts; and
- i. Signs of digging for food.

2.4.7 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

Reptile Species

2.4.8 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined below.

Table 2.4: Important Habitat Characteristics for Reptiles

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

2.5 Survey and Reporting Limitations

- 2.5.1 Owing to the presence of rotten timbers at the first floor at the detached barn this surface was viewed from the access ladder only (various positioned used to enable a view of the entire floor). This access limitation has been addressed by the completion of the bat activity surveys in 2018 and 2022.
- 2.5.2 All other areas of the site were accessed. No other survey limitations were experienced.
- 2.5.3 All measurements within this report are approximate only, and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC Maps and Google Earth.

2.6 Evaluation and Assessment Methods

- 2.6.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

- 2.6.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present have been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, September 2018).
- 2.6.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, February 2019) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2017*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.
- 2.6.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of species listed by the Lancashire BAP Provisional Long List has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.1 As reported in the 2019 ecology report, the site and immediate surrounds are not afforded any statutory designation for nature conservation.
- 3.1.2 The property lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the West Pennine Moors, located a minimum of 1.9 kilometres to the west of the site and designated for supporting extensive mosaic of upland and upland-fringe habitats that support a diversity of farmland and ground nesting birds.
- 3.1.3 The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2022):
- Infrastructure: Airports, helipads and other aviation proposals.*
- Air Pollution: Livestock & poultry units with floorspace greater than 500m², slurry lagoons greater than 4000m².*
- Combustion: General combustion processes greater than 50MW energy input. Including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works, other incineration / combustion.*
- 3.1.4 The proposals at the site do not involve any of the actions listed above and therefore do not meet the criteria to require consultation with Natural England in relation to the likely risks of impacts on the designated sites.

Non-statutory Designated Sites for Nature Conservation

- 3.1.5 The site and immediate surrounds are not afforded any non-statutory designation for nature conservation.

Priority Habitats Inventory

- 3.1.6 The Priority Habitats Inventory³ was checked via MAGiC Maps. There are no Priority Habitats identified on the property or immediate surrounds.

3.2 Vegetation and Habitats

General Description

- 3.2.1 Refer to **Figures 1** and **2**. As reported in the 2019 ecology report, the cluster of buildings at Teewood Farm are located to the west of Slaidburn Road approximately 1.6 kilometres to the north of Waddington.
- 3.2.2 Immediately west of the buildings (and attached to the attached barn) is an occupied farmhouse with associated garden. North of the farm buildings is sheep grazed semi-improved grassland. South of the site is a linear wooded copse with mature Beech trees.
- 3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**. Photographs are appended at **Table 8.1**.

Vegetation Around the Curtilage of the Buildings

- 3.2.4 The habitats at the site remain similar to those reported in the 2019 ecology report. Since the surveys carried out in 2018 the extent of Indian Balsam has increased, as indicated on **Figure 2** and described below.
- 3.2.5 The hard-standing, cobbled yard and compacted ground around the curtilage of the buildings is colonised by sparse ruderal herbs characterised by frequent and constant Willowherb (*Epilobium* sp.) with frequent Yorkshire-fog (*Holcus lanatus*), locally frequent Annual Meadow-grass (*Poa annua*), Cock's-foot (*Dactylis glomerata*) and Perennial Rye-grass (*Lolium perenne*). The vegetation is not characteristic of a specific NVC community. A plant species list for the vegetation is appended at **Table 8.2**.

Trees and Shrubs

- 3.2.6 Mature Beech (*Fagus sylvatica*) trees lie to the south of the farm buildings and a cluster of young Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*) and Beech is present to the north of the shippon, as annotated on **Figure 2**.

Invasive Plant Species

- 3.2.7 Indian Balsam, an invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is locally very abundant between the eastern elevation of shippon and Slaidburn Road, refer to **Photos 1** and **2** and **Figure 2**.

³ A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

3.3 Licensed Bat Survey and Assessment

Habitat Assessment for Commuting / Foraging Bats

- 3.3.1 As reported in the 2019 ecology report, the site is surrounded by favourable habitats for the attraction of foraging bats such as semi-improved grassland and the tree lined stream valley at Feazer Wood and Hospital Wood (300 metres to the east). The site and surrounds are assessed to be of moderate to high suitability for the attraction of foraging bats, in accordance with Table 4.1 of the *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

Daylight Survey: Buildings

Condition in 2022

- 3.3.2 The condition of the buildings is similar to that reported on in the 2019 ecology report. Some of the timber doors and window shutters on the detached barn have been removed / fallen, however, all of the stonewalls and roofs remain intact. The internal areas of the buildings are in a similar condition to that reported on in 2019. For completeness the descriptions of the buildings are presented below and updated photographs are provided at **Table 8.1**.

Detached Barn

- 3.3.3 Refer to **Photos 3 to 6**. Immediately adjacent to Slaidburn Road is a two storey detached stone barn with a pitched slate covered roof. The stone barn is 9.5 metres long and 5.5 metres wide. The ridge is set at 6.5 metres above ground level and has a north / south alignment.
- 3.3.4 Internally the walls are cement pointed and painted with white wash. Examination of the first floor confirmed the absence of sarking or undertile felt; the underside of the slates are visible.
- 3.3.5 No bats or evidence of previous use of the detached barn by roosting bats was detected in 2018 or in 2022. Features with suitability for use by roosting bats at the detached barn comprise:
- a. Frequent gaps in the stone elevation walls, particularly externally;
 - b. Gaps between the slates and beneath the ridge copings, particularly where sections of bedding mortar are absent;
 - c. Gaps at the roof verge, between the wall tops and the slates, particularly at the northern elevation gable;
 - d. At a gaps between the stone lintels and frames at the doorways and window apertures, particularly on the western elevation; and
 - e. Within a large crack in the stone wall from ground level to the eaves on the southern elevation gable (south-western corner).
- 3.3.6 Gaps around the exterior and the interior of the barn were inspected with the endoscope; no bats or droppings were detected however not all the cracks and crevices were accessible or viewable.
- 3.3.7 The roof verge at the northern elevation of the detached barn supported a common pipistrelle day roost (one bat) in 2018 [Roost 2]. In consideration of the frequency of potential roost features and the 'moderate' to 'high' suitability of the surrounding habitats for the attraction of bats, the detached barn is assessed to be of 'moderate' suitability for use by roosting bats, particularly crevice roosting species.

Attached Barn

- 3.3.8 Refer to **Photos 7 to 10**. Attached to the eastern elevation of the farmhouse is a stone barn with a pitched stone tile covered roof. Attached to the northern elevation is a single storey stone and concrete block annex with a monopitch corrugated sheet covered roof. A fascia at the eastern elevation provides gaps suitable for bat access to the crevice between the fascia and the stone wall.
- 3.3.9 Internally the barn has cement pointed and / or white washed stone walls. A timber hayloft is present in the central area. The presence of windows and frequent skylights creates a light internal area. No undertile felt is present beneath the roof tiles.
- 3.3.10 No bats were found inside the barn in 2018 or 2022.
- 3.3.11 Potential roost features observed at the attached barn comprise:
- Frequent gaps in the external side of the stone elevation walls;
 - Gaps between the roof tiles and beneath the ridge copings, particularly where sections of bedding mortar are absent;
 - Gaps at the roof verge, between the wall tops and the stone tiles; and
 - At a crack in the stone wall beneath canopy at the barn door on the southern elevation.
- 3.3.12 A gap between the roof slates at the roof verge on the western elevation of the attached barn supported a common pipistrelle bat day roost (1 bat) [Roost 1] in 2018. The attached barn is assessed to be of 'moderate' suitability for use by roosting bats, particularly crevice roosting species.

Shippon

- 3.3.13 Refer to **Photos 11 to 16**. Attached to the northern elevation of the attached barn is a concrete block and concrete rendered single storey shippon with hipped and pitched corrugated sheet covered roofs.
- 3.3.14 The shippon has metal framed windows; the majority of the glass panes are absent.
- 3.3.15 The internal side of the walls are painted and smooth and a timber plank at the wall plate covers any gaps or accesses to any voids at the hollow concrete block walls; no opportunities for roosting bats were found inside the shippon.
- 3.3.16 No bats or evidence of previous use of the detached barn by roosting bats was detected. Potential features for use by roosting bats are limited to the possible presence of gaps beneath the cement ridge copings. The shippon is assessed to be of 'low' suitability for use by roosting bats.
- 3.3.17 To comply with the guidance at Table 7.3 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn) (Collins, J. (ed), 2016), further bat activity surveys were carried out / are scheduled out at the building to collate relevant survey data to facilitate the characterisation of the type of brown long-eared roost present in the roof void and to determine the presence or absence of other roosting bats elsewhere.

Daylight Survey: Trees

- 3.3.18 One of the trees to the north of the shippon supports a sparse cover of ivy; examination did not detect any features with suitability for use by roosting bats. No other trees / shrubs within the site support

features suitable for use by roosting bats; all trees / shrubs, are assessed to be of negligible suitability for use by roosting bats.

Bat Activity Surveys

Dawn Re-entry Activity Survey: 11th August 2022

3.3.19 **Table 8.3**, appended, provides a summary of the observations made during the dawn re-entry survey and the results of the recording bat detectors.

3.3.20 In summary:

- a. One common pipistrelle entered **Roost 1** at the roof verge on the attached barn at 04:53;
- b. One common pipistrelle entered a gap behind the timber fascia on the south-facing elevation of the farmhouse (off-site) at 05:01 [**Roost 4**];
- c. From 05:15 onwards between one and two soprano pipistrelle were observed flying around the exterior of the detached barn, one bat entered a gap in the stonewall at the western elevation of the detached barn at 05:18 and a second entered a nearby gap at 05:25 [**Roost 3** with accesses 3a and 3b]; and
- d. In addition to common and soprano pipistrelle activity, *Myotis* bats were recorded during the survey. Analysis indicates that the calls are most indicative of Natterer's bat (*Myotis nattereri*).

Dusk Emergence Survey: 7th September 2022

3.3.21 **Table 8.4**, appended, provides a summary of the observations made during the dusk emergence survey and the results of the recording bat detectors.

3.3.22 The first bat activity was at 19:41 (4 minutes before sunset) and comprised a soprano pipistrelle bat emergence from **Roost 3**.

3.3.23 No other bat emergence or re-entry activity was detected.

3.3.24 At the end of the survey one *Myotis* bat was observed flying inside the attached barn, review of the infra-red camera footage shows a *Myotis* bat flying / foraging in and out of the large barn door in the southern elevation of the attached barn. Based on examination of the survey evidence available and the timings of the bat calls it is advised that the *Myotis* bats entered the site from the wider area and was foraging inside the barn.

3.3.25 Review of the infra-red camera footage did not identify any other emergence (or entry) activity. No other bat species was detected or recorded by the recording detectors.

3.4 Other Relevant Protected Species and Animal Life

Bird Species

3.4.1 A barn owl was observed flying around and over the site during both the dawn and dusk bat surveys. The owl was observed and heard in the timber hopper (where activity was detected in 2018) of the dawn survey in August 2022. Examination of the interior of the hopper confirmed the presence of fresh pellets and droppings beneath the damaged and sagging plywood sheet and likely need site (refer to **Figure 2** and **Photos 20** and **21**).

3.4.2 No evidence of current use of the barn by nesting swallow was detected in August and September 2022. One old swallow nest was detected at a doorframe inside the shippon in 2022 (although no evidence of current use was found) (refer to **Photo 22**).

3.4.3 The buildings, trees and shrubs at the site remain suitable for use by nesting birds and guidance is provided in relation to the proposals in this report.

Badger

3.4.4 No badger setts or evidence of badger was detected at the site or survey area / zone of potential influence of the building renovation proposals.

Reptiles

3.4.5 The hard-standing and garden habitats in the curtilage surrounding the farm buildings are sub-optimal habitats for use by reptile species. There is no direct habitat connectivity between the known records of common lizard at Waddington Fell and Browsholme Moor BHS at the site. No other known records of reptile species were reported by the data search; the presence of reptile species is reasonably discounted.

Other Wildlife

3.4.6 At the end of the dawn re-entry survey for bat activity two brown hare (Priority Species) were observed feeding in the garden of the farmhouse to the west.

3.4.7 A hedgehog (Priority Species) was detected emerging from the timber debris to the east of the shippon by surveyor 4 during the dawn re-entry survey.

4.0 EVALUATION AND ASSESSMENT

4.1 Description of Proposals

4.1.1 The revised proposals at Teewood Farm comprise the conversion of the detached and attached barns to a dwelling including the construction of a link between the two barns. As illustrated on the 'Proposals Plans' (drawings 046_PLN_200, 201, 202, 203, 300 and 301 prepared by Define Architects) the proposals involve:

- a. Demolition of the shippon;
- b. Conversion of the detached and attached barns to a dwelling;
- c. Construction of a single storey extension at the northern elevation of the attached barn; and
- d. Creation of an access off Slaidburn Road to the north of the buildings and landscaping works at the grounds to create garden habitat.

4.1.2 It is understood that no mature trees will be removed to facilitate the proposals.

4.1.3 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species, including roosting bats, are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

- 4.2.1 Owing to the small scale nature of the proposals, the distance between the site and any statutory and non-statutory designated sites for nature conservation and the absence of any direct habitat or hydrological connectivity, direct and indirect adverse effects on designated sites for nature conservation as a result of the proposal are reasonably discounted.

4.3 Vegetation and Habitats

- 4.3.1 None of the habitats within the site are representative of semi-natural habitat or are Priority Habitat. The site contains only common and widespread plant species and habitats that are typical of the conditions present.
- 4.3.2 The mature Beech trees to the south of the barns are established and provide habitat structural diversity and opportunities for wildlife; it is understood that no mature trees will be affected by the proposals.
- 4.3.3 The presence of Indian Balsam, an invasive plant species, is a consideration and guidance is provided at **Section 5.6**.
- 4.3.4 Guidance / recommendations of features to accommodate at the renovated site for the attraction of wildlife to the garden at the post-development stage are provided at **Section 5.2**.

4.4 Protected Species

Bats

- 4.4.1 Following the completion of comprehensive licensed bat surveys in 2018 and 2022 the following roosts have been detected at the site:
- Roost 1:** Common pipistrelle bat day roost between the slates and the roof verge on the western elevation of the attached barn (maximum of one bat in 2018 and 2022);
 - Roost 2:** Common pipistrelle bat day roost at the wall top / roof verge on the north-facing gable end of the detached barn (one bat entered in 2018);
 - Roost 3:** Soprano pipistrelle bat day roost in two holes in the stonewall at the west-facing wall of the detached barn. Two accesses (3a and 3b) with one bat in each entrance; and
 - Roost 4:** Off-site common pipistrelle bat roost behind a timber fascia on the south-facing elevation of the farmhouse.
- 4.4.2 No evidence to indicate that the site is used by a roost of a high conservation significance as defined by Figure 4 of the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004)⁴ has been found in 2018 or in 2022.
- 4.4.3 The buildings at Teewood Farm do not include any underground features, cellars or adits that may provide thermally stable conditions for use by roosting bats in the hibernation season. However, the use of features such as gaps in the stone walls / gaps beneath the roof coverings by single bats in the winter period cannot be discounted and best practice to be applied during the works is described at **Section 5.3**.

⁴ i.e. no signs of a maternity roosts were detected

- 4.4.4 In the absence of mitigation, the renovation works (particularly the re-roofing and any re-pointing works) will disturb bats and will destroy, obstruct access to and modify Roosts 1, 2 and 3.
- 4.4.5 Works at the buildings must only be carried out under a relevant Natural England European Protected Species Mitigation licence issued under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017* (as amended). It is advised that appropriate mitigation in accordance with relevant Natural England guidance and licensing requirements is entirely feasible within the remit of the proposals. A Bat Mitigation Strategy is presented at **Section 5.3** and the strategy details the measures to be applied to ensure bats are protected during the proposed works and also to ensure there is no net loss of roosting opportunity at the site in the long-term and that habitats remain suitable for use by roosting bats as a consequence of the proposed development.
- 4.4.6 The proposals will not sever or fragment habitats suitable for use by roosting bats nor cause the isolation of a roost.
- 4.4.7 In consideration of post-development interference impacts, the site will be occupied by one family at the post-development stage. Subject to the avoidance lighting and / or implementation of an appropriate lighting strategy as recommended at **Section 5.2**, there is minimal risk of an increase in disturbance to roosting / foraging bats associated with human activity at the property.
- 4.4.8 In accordance with the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004) and the *Bat Mitigation Class Licence*, the destruction and modification of day roosts used by a low number of common and widespread⁵ species of bat is a 'low' scale impact.

Barn Owl and Nesting Birds

- 4.4.9 It is assumed that the site is still in use by nesting barn owl (a protected species listed under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended)). The demolition of the shippon will cause the loss of the nest and roost site. **Section 5.4** of this report outlines a Barn Owl Mitigation Strategy including mitigation and compensatory measures in accordance with wildlife legislation and recognised conservation handbooks (namely the *Barn Owl Conservation Handbook* (Barn Owl Trust, 2012)).
- 4.4.10 Use of the buildings by other nesting birds, namely swallow, is a consideration and further guidance to ensure compliance with relevant wildlife legislation and best practice is provided at **Section 5.4**.

Other Animal Life

- 4.4.11 In the absence of appropriate actions the site preparation and clearance works may adversely affect hedgehog sheltering in the timber piles / debris to the east of the shippon. Best practice guidance in relation to these works is outlined at **Section 5.5**.
- 4.4.12 Appropriate and proportionate survey effort and / or assessment, in accordance with standard survey guidelines has been applied to discount adverse effects on other relevant protected species. No further surveys for other protected species are necessary to support a planning application.

⁵ The conservation status of soprano and common pipistrelle bats is reported to be favourable in the *European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018* (JNCC, 2018)

5.0 MITIGATION STRATEGY AND RECOMMENDATIONS

5.1 Introduction

- 5.1.1 The recommendations described below aim to ensure that the proposals are implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021), local planning policy and best practice.

5.2 Protection of Existing Features and Site Design

Protection of Existing Trees

- 5.2.1 During the construction phase, temporary protective demarcation fencing will be used to protect the trees and shrubs to be retained. The fencing must extend outside the canopy of the retained trees and must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.
- 5.2.2 The fencing will be in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations (BSI, 2012).

Appropriate Use of Lighting

- 5.2.3 In consideration of the presence of the bat roosts, use of the site by at least three species of bat for foraging, use of the site and local area by crepuscular species such as barn owl, tawny owl, hedgehog and brown hare, and paragraph 185(c) in Chapter 15 (conserving and enhancing the natural environment) of the NPPF which states that development should:

“limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation”,

it is advised that any external lighting to be installed at the site must be minimised as much as possible. Where external lighting is necessary the design must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the recommended roost provisions and accesses (see below), the retained boundary vegetation and other habitats outside the curtilage of the residential property, as lighting overspill may deter use by wildlife such as foraging bats.

- 5.2.4 The lighting scheme will be designed with reference to current guidance, namely:
- Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and
 - Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2014).

Garden Landscape Design

- 5.2.5 It is recommended that the landscape planting within the garden is composed from native species and species known to be of value for the attraction of wildlife.
- 5.2.6 Planting native hedgerows and use of shrubs and plants that are attractive to invertebrates in any borders and planters are recommended. Suitable species for shrub and herbaceous borders comprise Lavender (*Lavandula*), *Hebe*, *Ceanothus*, Foxglove (*Digitalis purpurea*) and *Allium* species.

- 5.2.7 The use of native plant species and species known to be of value for the attraction of wildlife, including foraging bats, in the landscaping scheme is recommended. Appropriate plants comprise night-scented flowers; a list of suggestions is presented below.

Table 5.1: Recommended plants for use in gardens to attract bats⁶

Flowers for Borders		Herbs
Aubretia (spring to early summer)	Mexican aster (summer to autumn)	Angelica
Candytuft (summer to autumn)	Michaelmas daisy	Bergamot (summer to early autumn)
Cherry pie (summer to autumn)	Night-scented stock (summer)	Borage (spring to early autumn)
Corncockle	Ox-eye daisy (summer)	Coriander (summer)
Cornflower	Phacelia (summer to autumn)	English marigolds
Corn marigold	Poached egg plant (summer)	Fennel (summer to early autumn)
Corn poppy	Primrose (spring)	Feverfew (summer to autumn)
Echinacea	Red campion (spring)	Hyssop (summer to early autumn)
English Bluebell (spring)	Red valerian	Lavenders
Evening primrose	Scabious (summer)	Lemon balm
Field poppies (summer)	St John's wort (spring)	Marjoram (summer)
Honesty (spring)	Sweet William (summer)	Rosemary (spring)
Ice plant 'Pink lady' (early autumn)	Tobacco plant	Sweet Cicely
Knapweed (summer to autumn)	Verbena (summer to autumn)	Thyme (summer)
Mallow (summer to autumn)	Wallflowers	

- 5.2.8 In addition to the landscaped areas of the garden it is recommended that a log pile or similar is created to replicate the habitats to be lost and to provide a long-term habitat for use by sheltering hedgehog.

5.3 Bat Mitigation Strategy

Natural England Licence

- 5.3.1 Works that will affect the known roosts must only be carried out in the presence of an appropriate European Protected Species Mitigation (EPSM) licence issued by Natural England.
- 5.3.2 To achieve the licence / registration of the site the applicant must be able to demonstrate to Natural England that the following three tests of Regulation 55 of *The Conservation of Habitats and Species Regulations 2017* (as amended) will be satisfied.

Test 1: That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range [Regulation 55 (9)(b)];

Test 2: Demonstration that the proposals for which a licence is sought are for the purposes of 'preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment' [Regulation 55(2)(e)]; and

Test 3: Consideration of '*There is no satisfactory alternative*' including the implications of the '*do-nothing*' option [Regulation 55(9)(a)].

⁶ Extracted from the BCT publication '*Encouraging bats, A guide for bat-friendly gardening and living*' (Bat Conservation Trust, 2016).
ERAP Ltd. 2022-251Teewood Farm, Slaidburn Road, Waddington BB7 3JJ: Updated Licensed Bat Survey and Ecological Assessment October 2022 21

5.3.3 The Bat Mitigation Strategy outlined below aims to demonstrate that compliance with Test 1 and demonstrates how bats will be accommodated at the site and is considered to be appropriate to inform the planning decision. Tests 2 and 3 are also considered.

Resources

- 5.3.4 This mitigation strategy draws on the following resources:
- Current Natural England guidance;
 - Information presented in the *BCT Mitigation Conference Proceedings* (Bat Conservation Trust, 2017) and the *Mitigation Case Studies Forum* (Bat Conservation Trust, 2017);
 - Implemented and monitored activities / specifications carried out by ERAP (Consultant Ecologists) Ltd at other sites / properties; and
 - Information presented on the ‘Roost’ website provided by the Bat Conservation Trust.

Survey Validity

5.3.5 The bat survey data collated in 2022 will remain valid to support a Natural England licence application / site registration until summer 2023; if works are scheduled to commence after this date a supplementary survey may be required.

Licensed Works

5.3.6 The licensed works comprise actions that will directly affect (or have the risk of impacting) the detected roosts only. Where there is no risk of an offence under wildlife legislation other works can be carried out outside the licence, as required, subject to consideration of nesting birds, planning guidelines and restrictions imposed by the planning consent.

Compensatory Provision to be Provided for Roosting Bats Prior / Throughout Works

5.3.7 Prior to the commencement of licensed actions and to ensure there is no net loss of roost opportunity at the site, and to ensure a suitable feature is present at the site to receive any bats found during the works, two bat boxes will be installed within the site this is likely to comprise boxes mounted on the external wall of the buildings to be retained.

5.3.8 Suitable box specifications are detailed below:



Single Crevice Bat Box

Box Specifications in CM:
 Height x Width x Depth
 External: 44 x 21.5 x 6
 Internal: 42 x 17.5 x 2
 Volume: 1.47 litres

Insert 1: Schwegler 1FF and Greenwood Ecohabitat’s single cavity bat boxes

Timing of Works

5.3.9 Based on the type of roosts present there is no restriction on the timing of works at the roosts (subject to the absence of nesting birds; measures relating to the protection of nesting birds, including barn owl, are presented at **Section 5.4**).

Toolbox Talk

5.3.10 Prior to the commencement of works the licensed ecologist will inform all contractors of the following:

- a. The wildlife legislation and protection afforded to bats and their roosts;
- b. The presence of the licence and the associated method statement and the need to abide by the content;
- c. The licensable actions;
- d. Good working practices (i.e. lifting (rather than sliding) of ridge copings and roof tiles and turning to check for the presence of bats before discard or stacking);
- e. The presence of any provisions for roosting bats installed in advance of the works and the need for them to remain undisturbed;
- f. The protocol to be followed if a bat is discovered when the licensed ecologist is not on site; and
- g. An outline of the proposals, including specific measures to be accommodated for bats and timescales.

Licensed Actions / Capture and Exclusion to be Carried Out During Works

Roosts 1 and 2: Common Pipistrelle Day Roosts

5.3.11 Roosts 1 and 2 at the roof verges of the detached and attached barns will be removed during the re-roofing operations. In accordance with the terms and conditions of the Natural England licence, the licensed ecologist must be on-site to supervise the removal of the roof tiles in these locations (and any other areas assessed to be suitable for use by roosting bats).

5.3.12 When the roof coverings are reinstated the gaps at Roosts 1 and 2 will be replicated. To avoid any risk of bat entanglement it is mandatory that the roof voids at the converted barns are lined with hessian backed bitumastic undertile felt (Type 1F) or a breathable roofing membrane product that is approved by Natural England. Details are annotated on **Figure 3**.

Roost 3: Soprano Pipistrelle Day Roost

5.3.13 Examination of the proposals and the position of the proposed single storey link between the barns indicates that the holes in the stonework at accesses 3a and 3b (refer to **Figures 2 and 3**) will be covered / excluded by the works.

5.3.14 Roost 3 will be excluded prior to works to construct the link and the holes in the stonework will be replicated elsewhere on the western elevation of the detached barn *and* at the whole property (refer to **Figure 3**).

Discovery of a Bat

- 5.3.15 If at any time during the works a bat is discovered or suspected when the licensed bat surveyor is not on site all contractors must withdraw from the area and ERAP (Consultant Ecologists) Ltd (01772 750502) or the Bat Conservation Trust must be contacted for further guidance.

Enhancement of Features for Roosting Bats

- 5.3.16 The use of random rubble stone as annotated on the elevation proposals for the proposed link extension provides an opportunity to create additional crevices and gaps for use by roosting bats. It is advised that six new crevices are provided, as annotated on **Figure 3**.

Mechanism for Ensuring Implementation / Success

- 5.3.17 If the licensed ecologist has any concerns regarding the quality of workmanship or there is non-compliance with the Natural England licence, the Mitigation Strategy and / or guidance provided by the licensed ecologist then this will result in additional site visits to make inspections.
- 5.3.18 It is always the intention to ensure all parties are aware of the importance of the Natural England licence and compliance with the Mitigation Strategy and this is achieved through good communication. However, in extreme / significant cases of non-compliance the licensed bat surveyor will report the issue to Natural England and further action may be taken.

Post-development Interference Impacts and Mitigation

- 5.3.19 The risk of post-development interference impacts has been minimised by designing in the provisions for roosting bats in liaison with the property owners and by providing guidance to the property owners on the protection afforded to bats and their roosts and nesting birds.

Consideration of Tests 2 and 3

- 5.3.20 In consideration of the demonstration that the proposals are for imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment [Regulation 55(2)(e)] the following information is of relevance:
- a. The principle of the redevelopment proposals, including an impact on common pipistrelle day roosts (Roosts 1 and 2) (and barn owl) has been accepted by Ribbles Valley Borough Council based on the extant planning consent at the site;
 - b. The proposals provide an appropriate use for a cluster of derelict farm buildings in the greenbelt; the current condition of the site, particularly the shippon, is detracting from the aesthetics of the local area;
 - c. The works will ensure that the building is brought up to modern day regulations to enhance its sustainability;
 - d. The purpose-designed conversion will meet the current needs of the applicant; and
 - e. In addition, it is proposed to use local professional and construction resources during the works which will be of benefit to the local economy.
- 5.3.21 The renovation and extension of the existing property (rather than demolition and re-build) is considered to be the most appropriate and environmentally-friendly approach that will also minimise the duration of impacts on bats and their habitats.

5.3.22 The 'do-nothing option' is not feasible as this would not enable the applicant and their family to meet their identified needs and effectively 'save' this property to enable it to contribute to the local area in the long-term.

5.4 Barn Owl and Nesting Birds

Mitigation Strategy: Barn Owl

5.4.1 The presence of nesting barn owl does not preclude the conversion proposals provided an appropriate Barn Owl Mitigation Strategy, as outlined below, is applied. The outlined strategy is in accordance with relevant wildlife legislation, the NPPF and the guidance in the *Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owls and Rural Planning Applications "What needs to happen" - A Guide for Planners* (Ramsden, 2009) and best practice.

Alternative Provision for Use by Roosting / Nesting Barn Owl

5.4.2 Prior to the works an alternative provision suitable for use by nesting barn owl must be provided within proximity to the site. This may involve any (or a combination) of the options outlined below:

- a. **Option 1:** Installation of a barn owl nest box in a partitioned off void in the store at the northern end of the converted detached barn. Access to be provided by a cowl covered 'pop hole' at the northern gable end;
or;
- b. **Option 2:** Installation of an externally mounted barn owl box on the western elevation wall of the converted attached barn or the northern elevation of the converted detached barn;
or;
- c. **Option 3:** Installation of a barn owl box within a suitable outbuilding at an adjacent farm;
or;
- d. **Option 4:** Installation of a barn owl box on a tree on the edge of the wooded copse to the immediate south of the site (with the owner's permission). Barn owl were detected flying along the edge of the wooded during the bat activity surveys in 2022.

5.4.3 In accordance with the relevant guidelines the alternative provisions for barn owl must be provided a minimum of 30 days prior to removal / exclusion of the current areas (i.e. the hopper) used by barn owl.

Access for Monitoring

5.4.4 Regardless of the mitigation / compensation measure provided, access for monitoring and removal of debris will need to be provided.

Timing of Commencement of Works / Exclusion of Barn Owl

5.4.5 Works at the site must be preceded by a pre-work inspection for nesting barn owl. In accordance with best practice it is advised that works are not scheduled to commence between March and August inclusive. Unless:

- a. It is suitably demonstrated by an appropriately licensed ecologist that no evidence of nesting barn owl (or other bird species) is present;

or, (importantly to enable the timing constraints in relation to bats to be accommodated);

- b. Once the pre-work inspection has confirmed an absence of barn owl *and* the alternative provision for use by barn owl is installed, the barn / hopper is boarded up and excluded to barn owl access.

Nesting Birds

- 5.4.6 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive.
- 5.4.7 If breeding birds are detected / present it is recommended that the area is left undisturbed until it is confirmed that the young birds have fledged / the nest is no longer active. Guidance from an ecologist should be sought, as needed.

5.5 Reasonable Avoidance Measures for the Protection of Wildlife

- 5.5.1 To secure the protection of fauna such as hedgehog and brown hare, the following Reasonable Avoidance Measures Method Statement (RAMMS) will be applied prior and during to the construction phase of the development:
 - a. All construction site personnel must be made aware of this RAMMS;
 - b. During works it is recommended that the timber debris stacked along the eastern elevation of the shippon is carefully dismantled and removed as this area is suitable for use by sheltering hedgehog; avoidance of clearance of this area in the hibernation season is recommended;
 - c. All arising waste / timber must be either removed from the area or placed in a skip to avoid the accumulation of materials that may create suitable habitat and shelter for wildlife;
 - d. During construction, bricks etc. must ideally be stored on pallets or raised from the ground in another suitable manner in order that no suitable habitat for wildlife is created;
 - e. Any pipes must be stored with caps on (to prevent animal entry);
 - f. No fires must be lit at the site;
 - g. The use of chemicals (such as fertilisers and herbicides) harmful to wildlife should be avoided wherever possible; and
 - h. If a hedgehog is found on site, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the working area.

5.6 Invasive Plant Species

- 5.6.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to spread or to cause the spread of Indian Balsam in the wild.
- 5.6.2 To ensure all contractors are appropriately advised of the protocol and biosecurity measures to be applied in relation to an invasive plant species it is recommended that an Invasive Plant Species Management Plan is prepared.

6.0 CONCLUSION

- 6.1 This ecological assessment has demonstrated that the conversion and extension works at Teewood Farm are feasible and acceptable in accordance with ecological considerations, Natural England guidance, National Planning Policy Framework and best practice.
- 6.2 The comprehensive protected species mitigation strategies outlined in **Sections 5.3** and **5.4** demonstrate that mitigation for roosting bats and barn owl and the conservation of roosting / nesting and foraging opportunities at the site in the long-term is entirely feasible. The ‘three tests’ of The *Conservation of Habitats and Species Regulations 2017* (as amended) will be met and the appropriate Natural England licence will be obtained to facilitate the works.
- 6.3 Other actions for the protection of wildlife and enhancement of opportunities for biodiversity, will be achieved and secured by the works in accordance with wildlife legislation and best practice.

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8.0 APPENDIX 1: TABLES

Table 8.1: Photographs Taken August / September 2022

(refer to 2019 ecology report (ERAP (Consultant Ecologists) Ltd, 2019) for additional photos)

<p>Photo 1: Eastern and northern elevations of detached barn (left), attached barn (centre) and shippon (right)</p>	<p>Photo 2: Eastern and northern elevations of the attached barn showing extent of Indian Balsam</p>
<p>Photo 3: Northern and western elevations of detached barn and location of Roost 3 (soprano pipistrelle day roost)</p>	<p>Photo 4: Southern and eastern elevations of detached barn and Beech tree (to be retained)</p>
<p>Photo 5: Northern elevation of detached barn and location of Roost 2 (common pipistrelle day roost only detected in 2018)</p>	<p>Photo 6: Interior of detached barn (ground floor)</p>



Photo 7: Southern elevation of attached barn and location of Roost 4 (off-site common pipistrelle day roost)



Photo 8: Eastern elevation of attached barn



Photo 9: Interior of attached barn



Photo 10: Underside of roof at attached barn showing roof lights



Photo 11: Southern and eastern elevations of the shippon



Photo 12: Northern elevation of the shippon



Photo 13: Wester elevation of the shippon



Photo 14: Interior of the shippon



Photo 15: Interior of the shippon



Photo 16: Interior of the shippon



Photo 17: View of NVA 1 at over 1 hour after sunset (20:49) (showing location of Roost 1 at attached barn)



Photo 18: View of NVA 2 at over 1 hour after sunset (20:49) (north-western corner of the detached barn)



Photo 19: View of NVA 5 inside attached barn



Photo 20: Barn owl pellets and faecal splashes beneath the plywood hopper inside the shippon



Photo 21: View of barn owl pellets and faecal splashes inside hopper and beneath the likely nest position



Photo 22: Old swallow nest inside shippon

Table 8.2: Plant Species List for the Vegetation Around the Curtilage of the Buildings

Scientific Name	Common Name	DAFOR ¹	% Cover
Woody Species			
<i>Acer pseudoplatanus</i>	Sycamore	O	<1%
<i>Fagus sylvatica</i>	Beech	LF	2%
<i>Fraxinus excelsior</i>	Ash	R	<1%
Herb Species			
<i>Alliaria petiolata</i>	Garlic Mustard	VLA	<1%
<i>Arrhenatherum elatius</i>	False Oat-grass	VLA	1%
<i>Cerastium fontanum</i>	Common Mouse-ear	O	<1%
<i>Dactylis glomerata</i>	Cock's-foot	LF	1%
<i>Epilobium ciliatum</i>	American Willowherb	F*	1%
<i>Geranium robertianum</i>	Herb Robert	VLF	<1%
<i>Hedera helix</i>	Ivy	VLA	<1%
<i>Heracleum sphondylium</i>	Common Hogweed	O	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F	1%
<i>Impatiens glandulifera</i>	Indian Balsam	A	20%
<i>Lolium perenne</i>	Perennial Rye-grass	LF	1%
<i>Myosotis</i> sp.	Forget-me-not species	VLF	<1%
<i>Plantago major</i>	Greater Plantain	R	<1%
<i>Poa annua</i>	Annual Meadow-grass	VL	<1%
<i>Poa trivialis</i>	Rough Meadow-grass	LF	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	VLF	<1%
<i>Rumex conglomeratus</i>	Clustered Dock	O	<1%
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	R	<1%
<i>Tanacetum parthenium</i>	Feverfew	R	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O	<1%
<i>Trifolium repens</i>	White Clover	VLF	<1%
<i>Urtica dioica</i>	Common Nettle	VLF	<1%
¹ Key to DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table 8.3: Bat Activity Survey 1, 7th September 2022, Sunrise Time 05:38, Start Time 03:34

Surveyor Position 1: Victoria Burrows

Time	Species	Notes
04:24	Myotis	Passes
04:53	Common pipistrelle	One bat entered Roost 1 at the gap at the roof verge between the roof tiles
05:01	Common pipistrelle	Entered Roost 4 (off-site) at a gap behind the timer fascia on the south elevation of the adjacent house (west of the downpipe)
05:18	Soprano pipistrelle	Between 1 and 2 bats foraging over yard and along western elevation of detached barn. One bat entered gap in stonewall on west facing elevation of detached barn [Roost 3a]
05:25	Soprano pipistrelle	One bat entered gap in stonewall on west facing elevation of detached barn [Roost 3b]
05:30	Brown hare	Two brown hare feeding in adjacent garden
05:53	-	End
<p>The Anabat Express made the following recordings: 16 Myotis recordings between 03:50 and 04:38; 88 common pipistrelle recordings between 03:52 and 05:11; and 9 soprano pipistrelle recordings between 04:45 and 05:25.</p>		

Surveyor Position 2: Marisa Hensey

Time	Species	Notes
04:24	Myotis	Passes. Also observed circling north facing gable end of detached barn but did not enter.
05:18	Soprano pipistrelle	Between 1 and 2 bats foraging over yard and along western elevation of detached barn. One bat entered gap in stonewall on west facing elevation of detached barn [Roost 3a] Note: Same bat as observed by surveyor 1)
05:25	Soprano pipistrelle	One bat entered gap in stonewall on west facing elevation of detached barn [Roost 3b] Note: Same bat as observed by surveyor 1)
05:53	-	End
<p>The Anabat Express made the following recordings: 10 Myotis recordings between 03:50 and 04:55; 47 common pipistrelle recordings between 03:49 and 05:11; and 2 soprano pipistrelle recordings at 04:47 and 05:05.</p>		

Surveyor Position 3: Leah Hart

Time	Species	Notes
04:00 to 04:46	Common pipistrelle and Myotis	Bats foraging over yard and beneath the trees.
05:16 to 05:18	Soprano pipistrelle	Foraging
-	-	No emergence or re-entry observed.
05:53	-	End
<p>The Anabat Express made the following recordings: 74 Myotis recordings between 04:09 and 04:37; 83 common pipistrelle recordings between 03:23 and 04:59; and 20 soprano pipistrelle recordings between 04:02 and 05:24.</p>		

Surveyor Position 4: Rachel Brown

Time	Species	Notes
-	-	No emergence or re-entry observed.
05:53	-	End
The Anabat Express made the following recordings: 17 Myotis recordings between 04:12 and 04:38; 73 common pipistrelle recordings between 03:54 and 05:11; and 8 soprano pipistrelle recordings between 04:45 and 05:25.		

Surveyor Position 5: Anabat Express only

The Anabat Express made the following recordings: 23 common pipistrelle recordings between 03:54 and 04:12.

Surveyor Position 6: Natalie Coffey

Time	Species	Notes
-	-	No emergence or re-entry observed.
05:53	-	End
The Anabat Express made the following recordings: 14 Myotis recordings between 04:12 and 04:36; 64 common pipistrelle recordings between 03:54 and 05:11; and 5 soprano pipistrelle recordings between 04:45 and 05:23.		

Table 8.4: Bat Activity Survey 2, 7th September 2022, Sunset Time 19:45, Start Time 19:30

Surveyor Position 1: Victoria Burrows

Time	Species	Notes
19:56	Common pipistrelle	Pass along western elevation of detached barn
20:04	Myotis	Pass and entered attached barn via open doorway on southern elevation
20:14	Myotis	Pass and entered attached barn via open doorway on southern elevation
-	Tawny owl	Audible in Beech trees to south during survey
21:22	-	End
The Anabat Express made the following recordings: 2 Myotis recordings at 20:04 and 20:14; 27 common pipistrelle recordings between 19:56 and 21:22; and 4 soprano pipistrelle recordings between 20:31 and 21:21.		

Surveyor Position 2: Natalie Coffey

Time	Species	Notes
19:41	Soprano pipistrelle	Emerged from Roost 3 (access 3b).
21:22	-	End
The Anabat Scout made the following recordings: 1 Myotis recording at 20:05; 88 common pipistrelle recordings between 19:56 and 20:14; and 8 soprano pipistrelle recordings between 19:41 and 20:13.		

Surveyor Position 3: Marie Pickering

Time	Species	Notes
19:56	Common pipistrelle	Entered survey area from the south
-	Common pipistrelle	Foraging around building throughout survey
21:22	-	End

The Anabat Express made the following recordings:
 7 Myotis recordings at 20:03 and 21:02;
 40 common pipistrelle recordings between 19:56 and 21:12; and
 13 soprano pipistrelle recordings between 20:05 and 20:54.

Surveyor Position 4: Aidan Pickering

Time	Species	Notes
19:56	Common pipistrelle	Pass along western elevation of detached barn
20:04	Myotis	Pass
20:14	Myotis	Pass
-	Tawny owl	Audible in Beech trees to south during survey
21:22	-	End

The Anabat Express made the following recordings:
 1 Myotis recording at 20:58;
 67 common pipistrelle recordings between 19:58 and 21:13; and
 12 soprano pipistrelle recordings between 16:42 and 20:54.

Surveyor Position 5: Anabat Express and Canon NVA only

<p>The Anabat Express made the following recordings: 12 Myotis recordings between 20:03 and 20:17; these recordings coincide with the timings of recordings of Myotis species outside the attached barn and is indicative of foraging inside the barn.</p>
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9.0 APPENDIX 2: FIGURES

Figure 1: Aerial Image to Show Site and Surrounds



Figure 2: Plan to Show Results of Licensed Bat and Bird Surveys in 2018 and 2022



Figure 3: Bat and Barn Owl Mitigation Strategy

