Buildings at Moorcock Farm, Clitheroe Road, Moor Nook PR3 2YT

ECOLOGICAL SURVEY AND ASSESSMENT
(including a Daylight Licensed Bat and Barn Owl Survey and Bat Activity Surveys)

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Document Control

Survey Type:	**Surveyors[1]**	**Survey Date(s)**
Extended Phase 1 Habitat survey and daylight licensed bat and barn owl survey	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Principal Ecologist	18th May 2020
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Dawn re-entry survey	Victoria Burrows	7th July 2020
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[1] *Licence reference numbers*

Bats

Victoria Burrows Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-10390-CLS-CLS

Great crested newt

Victoria Burrows Natural England Class Survey Licence (Level 1) Registration Number 2015-16651-CLS-CLS

Barn owl

Victoria Burrows Natural England Class Survey Licence Registration Number CL29/00061

SUMMARY

Introduction and Scope

i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of the complex of farm buildings and curtilage at Moorcock Farm, Clitheroe Road, Moor Nook, near Longridge. The assessment was requested to inform a planning application to redevelop the site for residential use involving partial demolition and conversion of buildings.

ii. This report presents the results of a desktop study and data search, an extended Phase 1 Habitat Survey and a licensed bat and barn owl survey and assessment carried out between May and August 2020. The surveys were carried out by an appropriately experienced, qualified and licensed ecologist with assistants. Surveys were carried out in accordance with recognised, standard survey guidelines. No significant survey limitations were experienced.

iii. The approximately 0.24 hectare site is located within rural surroundings and comprises a complex of seven agricultural buildings bordered by a yard colonised by sparse ruderal herbs and Indian Balsam. An area of improved grassland and tall-herb vegetation is present to the south and a small area of dense Bramble with scattered trees is present to the north-east. Clitheroe Road lies to the south-west, cattle grazed improved grasslands are present to the south and east. Land to the north is occupied by off-site residential properties beyond which lie areas of agriculturally improved grassland.

Results of Survey and Assessment

iv. Adverse direct and indirect impacts on statutory and non-statutory designated sites for nature conservation will be avoided by the proposals.

v. The site contains only common and widespread plant species. None of the habitats within the site are representative of semi-natural habitat.

vi. Retention, protection and enhancement of the ecological value of the short section of hedgerow (Priority Habitat) at the roadside site boundary is recommended. If removal is unavoidable to create a safe vehicular access it is considered that appropriate compensatory planting can be accommodated by the proposals, refer to **Sections 5.1** and **5.6** and **Figure 5**.

vii. Indian Balsam, an invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is present at the site. The proposals provide an opportunity to achieve the control and management of this species to minimise the risk of further spread into the wild.

viii. The complex of farm buildings range between negligible to high suitability for use by roosting bats. Comprehensive bat activity surveys detected the presence of a soprano pipistrelle bat day roost (1 bat) in the south-eastern elevation wall at B5 (Roost 1). An off-site brown long-eared bat roost is suspected.

ix. In the absence of mitigation, the redevelopment will result in the disturbance and loss of Roost 1. In accordance with Natural England's standing advice this would represent a low scale of impact.

x. A bat mitigation strategy describing how the proposals can be achieved whilst protecting roosting bats, ensuring there is no net loss of roosting opportunity at the site in the long-term and describing how any post-development interference impacts will be avoided is provided at **Section 5.4**. Works at building B5 may only be carried out under a Natural England European Protected Species Mitigation (EPSM) licence issued under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017*.

xi. The barn at B3 is used by nesting and roosting barn owl (listed under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended)) and has been previously used by nesting swallow. Mitigation measures and compensatory measures will be necessary as part of any proposal to convert the barn. A barn owl and nesting bird mitigation strategy is outlined at **Section 5.5** and **Figure 5**.

xii. Appropriate survey effort and assessment has been carried out to discount the presence of other relevant protected species (including badger, great crested newt and reptiles). No further surveys for other species are necessary to inform the design of the proposals and a planning application.

Recommendations and Conclusion

xiii. The recommendations in **Section 5.0** identify all the mandatory measures and ecological recommendations to be applied to ensure compliance with relevant wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.

xiv. This ecological survey and assessment has demonstrated that the development proposals at Moorcock Farm can be achieved with no adverse effect on designated sites for nature conservation and ecologically valuable habitats.

xv. The comprehensive mitigation strategy outlined in **Sections 5.4** and **5.5** demonstrates that mitigation for roosting bats and barn owl and conservation of habitats for these species at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* will be met and the appropriate Natural England licence will be obtained to facilitate the works.

xvi. Measures to protect other features at the site namely trees and actions to be implemented to achieve a net gain for biodiversity to achieve compliance with the NPPF are feasible and outlined in **Section 5.0**.

1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned to carry out an ecological survey and assessment of the agricultural buildings and associated curtilage at Moorcock Farm, Clitheroe Road, Moor Nook, PR3 2YT (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 65295 37864.

1.1.2 The survey and assessment were requested in connection with a planning application to redevelop the buildings for residential use.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken comprise:

a. A desktop study and data search for known ecological information at the site and the local area;

b. An Extended Phase 1 Habitat Survey and assessment;

c. Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);

d. Survey and assessment of all habitats for relevant statutory protected species[1] and other wildlife including badger (*Meles meles*), great crested newt (*Triturus cristatus*), barn owl (*Tyto alba*) and reptiles;

e. A licensed daylight bat survey and assessment of the buildings and trees and relevant scope of bat activity surveys;

f. The 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; and

g. The identification of any further surveys or precautionary actions that may be required to inform a planning application and prior to the commencement of any development activities.

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:

a. MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. Lancashire Environmental Record Network (LERN); and

[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.

c. Lancashire Biodiversity Action Plan (BAP).

2.2 Extended Phase 1 Habitat Survey

Survey Date and Conditions

2.2.1 The extended Phase 1 Habitat Survey and licensed daylight bat survey was carried out by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM on 18th May 2020. The weather conditions were overcast with light showers and sunny intervals, a light breeze (Beaufort scale 2) and an air temperature of 12°C.

2.2.2 An updated walkover of the site was carried out on 7th July 2020 after the dawn re-entry survey for bat activity (weather conditions are presented below).

Survey Method

2.2.3 A Phase 1 Habitat Survey map was prepared for the site and the immediate surrounding area, refer to **Figure 3**. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.4 The plant species within the site boundary were determined 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.

2.2.5 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.

2.2.6 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).

2.2.7 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 Animal Life

Badger

2.3.1 The survey area for badger covered the site and extended to accessible land within a radius of 50 metres from the site boundary.

2.3.2 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, 2021).

2.3.3 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.

2.3.4 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).

Bat Species

Habitat Assessment for Commuting / Foraging Bats

2.3.5 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

Survey Personnel and Relevant Guidelines

2.3.6 The first daylight licensed bat survey and assessment of the buildings and trees was carried out by Victoria Burrows (Natural England Level 2 licence number is 2015-10390-CLS-CLS) on 18th May 2020 (and updated prior to the dusk emergence surveys / after the dawn re-entry surveys carried out between June and August, as outlined below). The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

2.3.7 The survey and assessment were 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).

Buildings

2.3.8 An inspection of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into 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 carried out.

2.3.9 The internal survey involved an examination of the accessible internal areas to find roosting bats or evidence of previous use of the buildings by bats such as droppings and prey remains.

2.3.10 A list of equipment used is detailed 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

2.3.11 The suitability of each building has been 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.

Trees

2.3.12 Trees were assessed from the ground using binoculars and a high-powered torch. 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.

2.3.13 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).

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

Presence / Absence Surveys: Bat Activity Surveys

2.3.15 Three bat activity surveys were carried out at the relevant buildings between June and August 2020.

2.3.16 Between two and five surveyors, experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the buildings to determine any entry into or exit from the buildings by roosting bats. 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 detector units[2] were used to record and analyse echolocation calls after the survey using AnalookW call analysis software.

2.3.17 The dawn re-entry survey commenced approximately 1.5 hours before sunrise and ended 15 minutes after sunrise, provided all bat activity had ceased by this point. The dusk emergence surveys commenced at least 15 minutes before sunset and continued until at least 1.5 hours after sunset.

2.3.18 Surveyor positions are annotated on **Figure 4**. Any bat emergence or re-entry activity was recorded. All surveys were conducted under suitable conditions. The dates of the surveys, surveyors and equipment used and weather conditions present are below.

[2] i.e. Anabat SD2 and Anabat Express

Table 2.3: **Dusk Emergence and Dawn Re-entry Survey Dates, Weather Conditions and Surveyors**

Date	**4th June 2020**	**7th July 2020**	**20th August 2020**
Sunset / rise	21:34	04:49	20:27
Start time	21:10	03:00	20:02
End time	23:10	05:04	21:53
Wind	Beaufort scale 3 (gentle breeze)	Beaufort scale 0 to 1 (calm to light air)	Beaufort scale 2 to 3 (light to gentle breeze)
Precipitation	Dry	Dry	Dry
Air temperature	12°C throughout	14°C throughout	20°C at 20:30 falling to 15°C at end of survey
Surveyor Position	**Surveyor and Detector**	**Surveyor and Detector**	**Surveyor and Detector**
1	Victoria Burrows Echometer Touch 2 Pro and Anabat Express	Martyn Barnes Batbox III and Anabat Express	-
2	Victoria Burrows Batbox Duet and Anabat Express	Victoria Burrows Batbox Duet and Anabat Express	Amy Sharples Batbox III and Anabat Express
3	Amy Sharples Batbox III and Anabat Express	-	-
4	Leah Hart Batbox III and Anabat Express	Leah Hart Batbox III and Anabat Express	-
5	Catie Haworth Anabat Scout	Sue Lonsdale Batbox Duet and Anabat Express	Victoria Burrows Batbox Duet and Anabat SD2
6 (inside building B3)	-	Amy Sharples Batbox III and Anabat Express	Anabat Express only

Bird Species

2.3.19 All visible and audible birds were recorded during the site visits. The recording followed the standard recording methodology and codes of the *British Trust for Ornithology (BTO) Common Birds Census* (Marchant, 1983).

2.3.20 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.

Barn Owl

2.3.21 The buildings were searched for barn owl, 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).

Great Crested Newt

Desktop Search for Ponds

2.3.22 In accordance with current Natural England guidance (Natural England, 2015) all ponds within an unobstructed 500 metres of a site should be considered for their suitability to support breeding great crested newts. For schemes which may have a low impact, such as the redevelopment of the farm buildings, it is acceptable to limit the radius of search for ponds to 250 metres.

2.3.23 There are no ponds within the site. Examination of OS and MAGiC maps indicated the possible presence of six ponds within a radius of 250 metres from the site boundary, as summarised below.

Table 2.4: **Ponds within 250 metres of the Site**

Pond Reference	OS Grid Reference	Distance and Direction from Site Boundary	Location (refer to Figure 2)
1	SD 65395 37736	123 metres to the south	Within a wooded copse on the opposite side of Clitheroe Road
2	SD 65273 37706	127 metres to the south-west	Within a wooded copse on the opposite side of Clitheroe Road
3	SD 65410 37722	145 metres to the south	Within a wooded copse on the opposite side of Clitheroe Road
4	SD 65306 38141	218 metres to the north	Across a field of improved grassland
5	SD 65174 37655	219 metres to the south-west	Within a wooded copse on the opposite side of Clitheroe Road
6	SD 65536 37965	246 metres to the east	On the edge of a woodland

Note: This table includes ponds which occur on OS maps but were found to be dry upon surveying, details of ponds are presented in **Section 3.3**.

Consideration of Requirement for Further Survey

2.3.24 The requirement for further survey at each pond was then assessed using the following criteria:

a. Results of the desktop study and data search;

b. Presence of dispersal barriers to great crested newt movements between ponds and the site, as detected during the walkover survey;

c. Distance of ponds from the site, the size of the construction site and the potential influence of the proposed development of the site on any populations of great crested newt (if present at ponds), using the Natural England rapid risk assessment tool; and

d. Presence of other ponds which may form metapopulations and/or alter the influence of the site on ponds at greater distances.

Reptile Species

2.3.25 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 2.5: **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

2.4 Survey and Reporting Limitations

2.4.1 The interior of building B5 was not accessible as the structure was locked. The scope of nocturnal bat activity surveys carried out at this building appropriately addresses this limitation.

2.4.2 No other survey limitations or access restrictions were experienced.

2.4.3 All measurements within this report are approximate and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC and Google Earth.

2.5 Evaluation Methods

2.5.1 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.

2.5.2 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, 2018).

2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 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.

2.5.4 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 considered in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

3.1.1 The site and adjacent land have no statutory designation for nature conservation.

3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the Bowland Fells Special Protection Area (SPA) and SSSI located 8.6 kilometres to the north, the Red Scar and Tun Brook Woods SSSI located 7.2 kilometres to the south-west and the River Hodder Section SSSI located 5 kilometres to the north-east.

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, 2021):

"Infrastructure	*Airports, helipads and other aviation proposals.*
Air Pollution	*Livestock and poultry units with floorspace greater than 500m², slurry lagoons greater than 4000m².*
Combustion	*General combustion processes greater than 50 megawatt energy input, including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works, other incineration / combustion.*
Discharges	*Any discharge of water or liquid waste of more than 20m³ per day to ground (i.e. to seep away) or to surface water, such as a beck or stream (this does not include discharges to mains sewer which are unlikely to pose a risk at this location)."*

Non-statutory Designated Sites for Nature Conservation

3.1.4 The site has no non-statutory designation for nature conservation.

3.1.5 The site lies within 2 kilometres to 10 Biological Heritage Sites (BHS), as summarised below:

Table 3.1: **Non-statutory Designated Sites for Nature Conservation with a 2 kilometre Radius**

Biological Heritage Site	OS Grid Reference	Distance and Direction from Site	Reason for Designation
Over Hey Wood and Hougher Fall Wood BHS	SD654383	0.2km east of the site	Woodland listed in the *Lancashire Inventory of Ancient Woodland (Provisional).*
Duddel Wood BHS	SD658366	0.3km east of the site	Semi-natural woodland adjoining both sides of Duddle Brook, listed in the Inventory of Ancient woodland and supports the UK BAP Species of invertebrate *Lipsothrix nigristigma.*

Biological Heritage Site	OS Grid Reference	Distance and Direction from Site	Reason for Designation
Davies Gate Wood BHS	SD650372	0.3km south-west of the site	Semi-natural woodland along Stydd Brook and two tributary cloughs. Species comprise Ash (*Fraxinus excelsior*), Alder (*Alnus glutinosa*), Sycamore and occasional Oak (*Quercus* sp.), Wych Elm (*Ulmus glabra*).
Stydd Wood BHS	SD651367	0.8km south-west of the site	Ancient semi-natural woodland. Tree species comprise Oak, Ash, Alder, Hawthorn (*Crataegus monogyna*), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), and Rowan (*Sorbus aucuparia*).
Longridge Fell BHS	SD650401	1.4km north of the site	Heathland with Bilberry (*Vaccinium myrtillus*), Bell Heather (*Erica cinerea*) and Crowberry (*Empetrum nigrum*). Notably, Bog-rosemary (*Andromeda polifolia*) is present, a species listed in the *Provisional Lancashire Red Data List of Vascular Plants.*
Hoardsell Meadow BHS	SD638383	1.4km north-west of the site	Neutral grassland and hay meadow and a small area of adjacent pasture. The meadow is species-rich and is characterised by Crested Dog's-tail (*Cynosurus cristatus*), Sweet Vernal Grass (*Anthoxanthum odoratum*), Meadow Fescue (*Festuca pratensis*), Common Sorrel (*Rumex acetosa*) and Meadow Buttercup (*Ranunculus acris*).
Clough Bank Wood BHS	SD673370	1.4km south-east of the site	Ancient semi-natural woodland.
Buckley Wood and Dale Hey Wood BHS	SD640363	1.5km south-west of the site	Ancient semi-natural woodland, dominated by Birch (*Betula* sp.), with frequent Ash and Hazel.
Little Stydd Wood BHS	SD640363	1.6km south of the site	Ancient semi-natural woodland, species comprise Oak, Ash, Alder, Elm (*Ulmus* sp.), Sycamore (*Acer pseudoplatanus*) and Field Maple (*Acer campestre*).
Ragden Wood Heronry BHS	SD669368	1.8km south-east of the site	The site comprises a block of woodland to the southeast of Grindlestone House Farm, Dutton. The tree tops support a nesting colony of 9-10 pairs of grey heron.

Priority Habitat Inventory

3.1.6 No areas of the site are identified as Priority Habitat on MAGiC map.

Protected and Notable Species

3.1.7 LERN hold no records of protected and notable species for the site. Records of protected and notable species for a 2-kilometre radius of the site are summarised below.

Table 3.2: Records of Protected Species Within a 2 Kilometre Radius of the Site

Taxon Group	Species Name and Designations[1] and Notes
Amphibian	Great crested newt (*Triturus cristatus*): EPS, WCAs5, PS & LBAP. 1 record, dated 2002, 1880m from the site.
	Common toad (*Bufo bufo*): PS & LBAP. 1 record, dated 2015, 1530m from the site.
	Common frog (*Rana temporaria*): LBAP. 6 records, dated between 2017 and 2018, the closest of which is 1500m from the site.
Bird	Barn owl (*Tyto alba*): WCAs1. 2 records, dated between 2016 and 2019, the closest of which is 700m from the site.
	Kingfisher (*Alcedo atthis*): WCAs1. 2 records, dated between 1997 and 1998, the closest of which is 880m from the site.
	PS & LBAP Cuckoo (*Cuculus canorus*), curlew (*Numenius arquata*), grey partridge (*Perdix perdix*), house sparrow (*Passer domesticus*), lapwing (*Vanellus vanellus*), spotted flycatcher (*Muscicapa striata*), tree pipit (*Anthus trivialis*), tree sparrow (*Passer montanus*), yellowhammer (*Emberiza citrinella*), bullfinch (*Pyrrhula pyrrhula*), dunnock (*Prunella modularis*), lesser spotted woodpecker (*Dendrocopos minor*), skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*) and starling (*Sturnus vulgaris*).
	LBAP only Grey heron (*Ardea cinerea*), kestrel (*Falco tinnunculus*), meadow pipit (*Anthus pratensis*), oystercatcher (*Haematopus ostralegus*), redshank (*Tringa totanus*), swift (*Apus apus*) and willow warbler (*Phylloscopus trochilus*).
Bony fish	**PS & LBAP.** Brown/sea trout (*Salmo trutta*), European eel (*Anguilla anguilla*)
	LBAP only Bullhead (*Cottus gobio*)
Fern	Killarney fern (*Trichomanes speciosum*): EPS & LBAP. 1 record, dated 1964, 880m from the site.
Flowering plant	Bluebell (*Hyacinthoides non-scripta*): WCAs8. 36 records, dated between 1964 and 2017, the closest of which is 10m from the site.
	LBAP Grass-of-Parnassus (*Parnassia palustris*), Herb-paris (*Paris quadrifolia*), Marsh Lousewort (*Pedicularis palustris*), Northern Yellow-cress (*Rorippa islandica*), Sheep's-bit (*Jasione montana*) and Tasteless Water-pepper (*Persicaria mitis*).
Insect (butterfly)	**PS & LBAP** Small heath (*Coenonympha pamphilus*) and wall (*Lasiommata megera*)
	PS Anomalous (*Stilbia anomala*), autumnal rustic (*Eugnorisma glareosa*), cinnabar (*Tyria jacobaeae*), ear moth (*Amphipoea oculea*), flounced chestnut (*Agrochola helvola*), green-brindled crescent (*Allophyes oxyacanthae*), grey mountain carpet (*Entephria caesiata*), Haworth's minor (*Celaena haworthii*), heath rustic (*Xestia agathina*), knot grass (*Acronicta rumicis*), mouse moth (*Amphipyra tragopoginis*), neglected rustic (*Xestia castanea*), shaded broad-bar (*Scotopteryx chenopodiata*), small phoenix (*Ecliptopera silaceata*) and white ermine (*Spilosoma lubricipeda*).

Taxon Group	Species Name and Designations[1] and Notes
	LBAP Brown rustic (*Rusina ferruginea*), common plain neb (*Monochroa tenebrella*), dusky groundling (*Aroga velocella*), gold spangle (*Autographa bractea*), golden-rod brindle (*Xylena solidaginis*), northern deep-brown dart (*Aporophyla lueneburgensis*), wood tiger (*Parasemia plantaginis*).
Reptile	Common lizard (*Zootoca vivipara*): WCAs5, PS & LBAP. 1 record, dated 2010, 1970m from the site.
Spider	*Bolyphantes alticeps*: LBAP. 3 records, dated in 1981, the closest of which is 190m from the site.
Terrestrial mammal	Bats (Chiroptera): EPS, WCAs5 & LBAP. 2 records, dated between 1996 and 2014, the closest of which is 1330m from the site.
	European otter (*Lutra lutra*): EPS, WCAs5, PS & LBAP. 3 records, dated between 2017 and 2018, the closest of which is 1470m from the site.
	Pipistrelle bat species (*Pipistrellus*): EPS, WCAs5 & LBAP. 2 records, dated between 2015 and 2016, the closest of which is 1720m from the site.
	Common pipistrelle (*Pipistrellus pipistrellus*): EPS, WCAs5 & LBAP. 2 records, dated between 1991 and 2015, the closest of which is 1440m from the site.
	Eurasian badger (*Meles meles*): PBA. 4 records, dated between 2012 and 2018, the closest of which is 1590m from the site.
	Brown hare (*Lepus europaeus*): PS & LBAP. 4 records, dated between 2015 and 2018, the closest of which is 410m from the site.
	European hedgehog (*Erinaceus europaeus*): PS & LBAP. 1 record, dated 2016, 900m from the site.

[1]Key to Designation Codes:
EPS = European Protected Species under the *Conservation of Habitats and Species Regulations 2017*.
WCAs1 = Species receives full protection under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended).
WCAs5 = Species receives full protection under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended).
WCAs8 = Species receives full protection under Schedule 8 of the *Wildlife and Countryside Act 1981* (as amended).
PS = Priority Species listed under Section 41 of the NERC Act 2006.
LBAP = Species listed on the Lancashire Biodiversity Action Plan Provisional Long List.
PBA = Protection of Badgers Act 1992.

3.1.8 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

3.2 Vegetation and Habitats

General Description

3.2.1 Refer to **Photos 1** to **3**. The approximately 0.24 hectare site is located within rural surroundings to the north-east of Clitheroe Road, Moor Nook, near Longridge. The site comprises a complex of seven agricultural buildings bordered by a yard colonised by sparse ruderal herbs and Indian Balsam. An area of improved grassland and tall-herb vegetation is present to the south and a small area of dense Bramble with scattered trees is present to the north-east. Clitheroe Road lies to the south-west, cattle grazed improved grasslands are present to the south and east. Land to the north is occupied by off-site residential properties beyond which lie areas of agriculturally improved grassland.

3.2.2 A Phase 1 Habitat Survey map is appended at **Figure 3**. A plant species list for the whole site is appended at **Table 8.2**. Photographs are appended at **Table 8.1**.

Buildings and Yard

3.2.3 The buildings are described in terms of their suitability for use by roosting bats in **Section 3.3**.

3.2.4 The yard surrounding the buildings supports sparse ruderal herbs of locally abundant Common Nettle (*Urtica dioica*), White Dead-nettle (*Lamium album*) with locally frequent Creeping Buttercup (*Ranunculus repens*), frequent Annual Meadow-grass (*Poa annua*) and very locally frequent Pineappleweed (*Matricaria discoidea*) and White Clover (*Trifolium repens*). Indian Balsam is very locally abundant in the yard.

3.2.5 The vegetation in the yard has affinities with the *OV19 Poa annua – Matricaria discoidea* community of the NVC (Rodwell, 2000).

Improved Grassland

3.2.6 South of the yard is an area of improved grassland with abundant and constant Perennial Rye-grass (*Lolium perenne*), frequent and constant Yorkshire-fog (*Holcus lanatus*), Rough Meadow-grass (*Poa trivialis*) and Meadow Foxtail (*Alopecurus pratensis*). The grassland is characteristic of *MG7 Lolium perenne* grassland ley of the NVC (Rodwell, 1992). In the south-eastern corner of the grassland and site is a mature Alder (*Alnus glutinosa*) tree (refer to **Photo 4**).

Roadside Hedgerow

3.2.7 The southern end of the south-western site boundary parallel to Clitheroe Road is a short (12 metre) length of trimmed Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*) hedgerow with an understorey of occasional Cow Parsley (*Anthriscus sylvestris*), Dandelion (*Taraxacum officinale* agg.), Ivy (*Hedera helix*) and Common Nettle. No trees are present.

Bramble Scrub with Trees

3.2.8 Located at the northern end of the site is a copse of dense Bramble with (*Rubus fruticosus* agg.) with single trees of Ash (*Fraxinus excelsior*) and an Apple (*Malus* sp.). The trackway that extends through this area to lead to the fields to the north is lined with Ash trees.

Invasive Plant Species

3.2.9 No Japanese Knotweed is present at the site.

3.2.10 Indian Balsam is very local abundant around the less disturbed areas of the yard, as illustrated on **Figure 3**. This species is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) it is therefore an offence to spread this species in the wild, refer to **Section 5.3**.

3.3 Animal Life

Badger

3.3.1 No evidence of badger activity was detected at the site; the proposals can be achieved with no adverse effect on badger.

Bat Species

Habitat Assessment for Commuting and Foraging Bats

3.3.2 The yard with artificial illumination (particularly at the northern area associated with the occupied buildings), limited vegetation cover and an absence of habitats favourable for the attraction of foraging bats such as woodland margins, open water and species-rich grassland is assessed to be of low suitability for use by foraging and commuting bats in the context of the surrounding habitats. For example, the extensive linear woodland habitats to the east of the site are assessed to be of high suitability for the attraction of *Pipistrellus* species, noctule, *Myotis* species and possibly brown-long-eared bats.

Daylight Survey

B1: Steel-framed Barn

3.3.3 Refer to **Photos 5 to 6.** Attached to the southern elevation of building B2 is a single storey, three-sided steel-framed barn with corrugated sheet walls and roof. No bats or bat droppings were detected around or inside the building. B2 is assessed to be of negligible suitability for use by roosting bats.

B2: Cattle Shed

3.3.4 Refer to **Photos 7 to 14.** Building B2 is a 21 metres long by 7 metres wide stone and brick cattle shed with a pitched slate covered roof with stone ridge copings and terracotta vents. Stone lintels and sills are present around the timber window and door frames.

3.3.5 Opportunities for bat access to roost opportunities and the interior of the shed are present via the open doorway apertures at the north-eastern and south-eastern elevations (via B1), beneath the ridge copings and between the slates.

3.3.6 Internally the cattle stalls remain present and the concrete floor is covered with manure and straw. The internal sides of the walls are covered with concrete render and / or white-washed. No insulation is present. Glass skylights are present to create a light internal area. The visible roof timbers appear to be well-sealed; no gaps or opportunities for bat access were found.

3.3.7 No bats or bat droppings were detected around the exterior or inside B2. The building is assessed to be of low suitability for use by roosting bats, particularly crevice roosting species.

B3: Barn

3.3.8 Refer to **Photos 15 to 24**. B3 is a large (16 metres by 8 metres) roadside stone barn with a pitched slate covered roof. Externally the stone walls are typically well-pointed although pop holes / vents and crevices in the stone walls are present on the south-eastern and north-western gable end walls. Stone sills and lintels are present around the timber framed windows and doors.

3.3.9 Opportunities for roosting bats and bat access to the interior of the barn are present via the open doorway apertures, beneath the ridge copings, between the slates, behind a timber fascia at the north-eastern and south-western (roadside) elevations and at the gaps / crevices / pop hole vents in the stone walls at the north-western and south-eastern elevations.

3.3.10 The internal inspection confirmed that the underside of the slates is not lined and skylights are present in the roof to create a light internal area. The barn is open to the underside of the ridge internally with the northern end supporting a hayloft with stalls below.

3.3.11 Careful inspection of the ridge board and rafters with a high powered torch and binoculars during all site visits did not detect any bats.

3.3.12 Owing to the number of features present and the structure of the barn, B3 is assessed to be of high suitability for use by roosting bats.

B4: Lean-to

3.3.13 Refer to **Photos 25** and **26**. Attached to the north-eastern elevation of the cattle shed (B2) is a timber framed lean-to with stone walls and a sloping corrugated sheet covered roof.

3.3.14 The external and internal side of the stone walls is well-pointed. No bats or bat droppings were found.

3.3.15 It is recognised that structures such as this can be used as night roosts / feeding roosts by species such as brown long-eared bats. No bat droppings or prey remains were found inside the lean-to to indicate the presence of such roosts.

3.3.16 B4 is assessed to be of low suitability for use by roosting bats.

B5: Store

3.3.17 Refer to **Photos 27** to **32**. Building B5 is a single storey stone store with a pitched slate and stone tile covered roof. A timber fascia is present at the south-western elevation and there are gaps in the stone wall at the south-eastern elevation. One bat dropping was found on the lid of a plastic tank located adjacent to the southern gable end.

3.3.18 Skylights are present in the roof to indicate a light internal area (unfortunately the interior of this building was not accessible).

3.3.19 B4 is assessed to be of moderate suitability for use by roosting bats.

B5a: Lean-to

3.3.20 Refer to **Photos 33** and **34**. Attached to the north-eastern elevation of B5 is a timber framed lean-to building with concrete block walls and a sloping corrugated sheet covered roof. No bats or bat droppings were found around the exterior or inside this structure. B5a is assessed to be of low suitability for use by roosting bats.

B6: Garage

3.3.21 B6 is a detached concrete block garage located to the north-east of the yard and other buildings. The timber framed building supports a sloping corrugated sheet covered roof.

3.3.22 No bats or bat droppings were found around the exterior or inside this structure. A timber fascia present at the roof edge was examined; it is confirmed that this feature is tightly sealed against the concrete block wall and provides no opportunities for bat access. B6 is assessed to be of negligible suitability for use by roosting bats.

B7: Kennel

3.3.23 Refer to **Photos 35** to **38**. B7 is a timber frame and wire kennel of negligible suitability for use by roosting bats.

Daylight Survey and Assessment: Trees

3.3.24 No bats or evidence of previous use by roosting bats was detected at the trees at the site.

3.3.25 A mature Alder at the south-eastern corner of the site supports dead wood and splits. The tree is assessed to be of moderate suitability for use by roosting bats.

3.3.26 All other trees at the site are assessed to be of negligible suitability for use by roosting bats.

Bat Activity Surveys

3.3.27 Refer to **Tables 8.3** to **8.5**, appended.

3.3.28 At 21:54 on 4th June 2020 one soprano pipistrelle (*Pipistrellus pygmaeus*) emerged from a gap in the stonework at the south facing gable end of building B5. The bat flew low across the yard and then over the roof of building B2.

3.3.29 No other bat emergence activity was recorded during all three bat activity surveys between June to August. No bats were recorded flying inside buildings B2 or B3 during the dawn re-entry survey on 7th July 2020 or the dusk emergence survey on 20th August 2020.

3.3.30 However, of note, during the dawn re-entry survey on the 7th July 2020, Surveyor 5 observed bats (no echolocation registering on the detectors) passing over the site and heading northwards at 03:38, 03.45, 03:48, 03:50 and 03:53. A maximum of two of these bats were observed briefly circling the north-eastern elevation wall of B3 (above the roof of B2). Within the same period Surveyor 2 observed up to two brown long-eared bats circling the north-eastern gable end of an off-site building to the north. Based on the behaviour of the bats and the time of the observation (including the end of brown long-eared bat call recordings at 03:58 (51 minutes before sunrise)) it is very likely that the roof at the off-site property to the north supports a brown long-eared bat roost (refer to **Photo 40**). As the bats were observed by Surveyor 2 crossing the yard between building B3 and the off-site building to the north it is very likely that the bats were using building B3 as a swarming position or for navigation. However, to ensure all efforts were made to detect the presence of a roost at building B3, the third bat activity of B3 and the roof of B2 was carried out on 20th August 2020. No bat emergence activity was detected at B2 and B3 during this third survey.

3.3.31 In addition to the activity described above, the surveyors and recording bat detectors recorded:

a. Passes of common pipistrelle, particularly along hedgerow associated with Clitheroe Road;

b. Occasional passes of noctule, including frequent passes of bats flying southwards high over the site within 30 to 20 minutes to sunrise to indicate the likely presence of a roost in suitable habitats to the south of the site (off-site); and

c. Occasional records / passes of *Myotis* species.

Bird Species

Barn Owl

3.3.32 Evidence of barn owl use (pellets, faecal splashes and one adult bird) was found inside building B3. An active barn owl nest was found amongst the hay in the first floor hayloft at building B3 on the first survey date (18th May 2020).

3.3.33 To minimise disturbance the nest was not directly observed during future visits in June, July and August 2020. On all visits the young owlets were audible inside B3 and the adult owls were observed accessing

the barn with food via the gaps / pop hole vets on the north-western and south-eastern gable end walls. Building B3 is a confirmed barn owl[3] nest site.

3.3.34 No barn owl or evidence of use of the other buildings by nesting barn owl was detected.

Other Bird Species

3.3.35 No other bird species were recorded at the site in 2020. Old swallow nests were found inside building B3 but no signs of use were detected during the site visits in 2020.

Habitat Assessment

3.3.36 The hedgerow, trees and shrubs within the site and on the site boundaries provide suitable habitat for nesting and foraging passerine (perching) bird species, including Priority Species

Great Crested Newt and Other Amphibians

3.3.37 To inform the assessment in relation to great crested newt, **Table 3.3**, below, has been updated to confirm the status of Ponds 1 to 6 within 250 metres of the site.

Table 3.3: Status of Ponds within 250 metres of the Site

Pond Reference	OS Grid Reference	Distance and Direction from Site Boundary (refer to Figure 2)	Status
1	SD 65395 37736	123 metres to the south	Not present
2	SD 65273 37706	127 metres to the south-west	Dry on survey visit
3	SD 65410 37722	145 metres to the south	Not present
4	SD 65306 38141	218 metres to the north	Across a field of improved grassland HSI score of good (refer to **Table 8.6**, appended)
5	SD 65174 37655	219 metres to the south-west	Not visited
6	SD 65536 37965	246 metres to the east	Not visited

3.3.38 Observations during the site visits confirmed that Ponds 1 and 3 are no longer present, Pond 2 is dry and Pond 4 achieves a 'good' HSI score.

3.3.39 In accordance with the Natural England rapid risk assessment tool (which assumes that great crested newt is present at the relevant ponds) for a site of less than 0.3 hectares of suitable habitat for use by great crested newt the outcome is 'green: offence highly unlikely', refer to **Table 3.4**, below.

[3] The barn owl is included in Schedule 1 of the *Wildlife & Countryside Act 1981* (as amended) which affords them protection against disturbance whilst nesting in addition to the basic level of protection of Barn Owls afforded to most wild birds. Specifically, under Part 1, Section 1 (5) it is an offence punishable with imprisonment for a period of up to 6 months to intentionally *or recklessly*: Disturb a Barn Owl while it is building a nest or is in, on or near a nest containing eggs or young and / or Disturb a Barn Owl's dependent young.

Table 3.4: **Natural England Rapid Risk Assessment Tool**[4]

Component	Likely Effect	Notional Offence Probability Score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

3.3.40 This assessment is further supported by the fact that, as much of the site is occupied by buildings and hard-standing, a much smaller area of the site that 0.3 hectares is assessed to be suitable habitat for use by sheltering great crested newt. For this reason, it is considered that the risk of harm to individual great crested newt, risk of the destruction or damage of habitats used by great crested newt habitat, and the risk of an offence under wildlife legislation is negligible. It is considered that great crested newt presence / absence surveys are not required to support a planning decision.

Reptiles

3.3.41 There are no reported records of reptiles for the site or the nearby land (the common lizard record reported by LERN and summarised at **Table 3.2** is reported for a location over 1.9 kilometres from the site). The site is not adjacent to or linked to any areas of favourable habitat for reptile species. The presence of reptiles within the site is reasonably discounted.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

4.1.1 The site proposals as outlined on John Coward Architects drawing 20011_01 Rev B comprise:

a. Demolition / removal of buildings B1, B5, B5a, B6 and B7;

b. Conversion of buildings B2, B3 and B4 to residential; and

c. The construction of residential buildings over the footprint of buildings B5 and B5a and a new detached garage over the footprint of building B6.

4.1.2 **Sections 4.2** to **4.4** of this report identify the ecological considerations based on the results of the baseline ecological surveys. This evaluation has informed the guidance, recommendations and mitigation strategies provided at **Section 5.0**.

[4] Extracted from *GCN Method Statement WML-A14-2 (Version April 2020)* (Natural England, 2020)

4.2 Designated Sites for Nature Conservation

4.2.1 Owing to the distance between the site and any statutory and non-statutory designated sites for nature conservation within the wider area and the absence of habitat and hydrological connectivity, direct and indirect effects on any statutory and non-statutory designated sites are reasonably discounted.

4.3 Vegetation and Habitats

4.3.1 The site contains only common and widespread plant species. The National Vegetation Classification (NVC) communities present are typical of the geographical area and the agriculture-related use of the site. None of the habitats within the proposed development site are representative of semi-natural habitat.

4.3.2 Hedgerows are Priority Habitat. Retention, protection and enhancement of the ecological value of the short section of hedgerow at the site is recommended. However, if removal is unavoidable to ensure a safe site access can be created it is considered that appropriate compensatory planting can be accommodated by the proposals, refer to **Sections 5.1** and **5.5** and **Figure 5**.

4.3.3 The presence of Indian Balsam, an invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), within the site boundary is an essential consideration in connection with the development proposals. The proposals provide an opportunity to achieve the control and management of this species to minimise the risk of further spread into the wild.

4.4 Protected Species and Other Wildlife

Bat Species

4.4.1 Building B5 supports one soprano pipistrelle roost (Roost 1) used by a maximum of one bat. The off-site brown long-eared roost will not be affected by the proposals, although the best practice measures described in **Sections 5.2** and **5.6** in relation to appropriate use of lighting and landscape planting will ensure adverse effects on the off-site roost are avoided.

4.4.2 All survey evidence is consistent with the presence of one soprano pipistrelle day roost. No evidence to indicate that buildings B1 to B7 are used by a roost of a high conservation significance as defined by Figure 4 of the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004)[5] has been found.

4.4.3 As the works will result in the loss / disturbance of Roost 1 the works 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*. It is advised that mitigation for the bat day roost in accordance with relevant Natural England guidance and licensing requirements are entirely feasible within the remit of the proposals, refer to **Section 5.4**.

4.4.4 In accordance with the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004) and current Natural England guidance[6] the destruction of a day roost of a common species of bat is a low scale of impact.

[5] i.e. no signs of a maternity roosts were detected

[6] https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects#assess-the-impacts

Survey Effort

4.4.5 Based on the bat survey activity recorded in 2020 it is considered that appropriate and proportionate survey effort has been carried out to inform the feasibility of the proposals, characterise the detected roost and inform the preparation of a bat mitigation strategy and planning decision, refer to **Section 5.4**.

4.4.6 Dependent on the proposed date of commencement of works, updated bat activity surveys in the appropriate survey season may be required to inform a future Natural England licence application (once planning permission is obtained).

Nesting Birds

4.4.7 The presence of nesting barn owl (listed under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended)) at building B3 is a significant consideration. The conversion proposals will result in the permanent loss of the nesting site. Mitigation and compensatory measures in accordance with recognised conservation handbooks (namely the *Barn Owl Conservation Handbook* (Barn Owl Trust, 2012)) are necessary, and is described further at **Section 5.5**.

4.4.8 The guidance at **Sections 5.2** and **5.6** in relation to the sympathetic use of lighting and the landscape proposals aims to ensure that the development proposals do not adversely affect the opportunities for foraging barn owl (and bats) at the site and local area.

4.4.9 The buildings hedgerow, trees and shrubs within the site and on the site boundaries provide suitable habitat for nesting and foraging passerine (perching) bird species, including Priority Species. Mandatory actions to protect nesting birds during site clearance and measures to provide compensatory opportunities for nesting birds are recommended at **Sections 5.5** to **5.6** and **Figure 5** and can be achieved by the proposals.

Other Protected Species

4.4.10 Appropriate survey effort and / or assessment in accordance with standard guidance, has been carried out to reasonably discount adverse effects on other relevant protected species namely badger, great crested newt and reptile species.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

5.1.1 The recommendations described below aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

5.1.2 The recommendations are appropriate and proportionate to the scale of the proposals and the ecological baseline conditions. Where possible, opportunities to enhance the habitat connectivity and achieve benefits for biodiversity through appropriate landscape planting and habitat creation have been identified, as required by the NPPF and other relevant planning documents.

5.2 Recommendations in Relation to General Site Design and Protection of Existing Habitats

Tree and Shrub Protection

5.2.1 It is recommended that the existing trees and shrubs on the site boundary are retained, where possible.

5.2.2 During the construction phase, and where works will be carried out in proximity to the trees and shrubs to be retained, temporary protective demarcation fencing will be used to protect the trees and shrubs and their associated root protection zone. The fencing must extend outside the canopy of the retained trees and must remain in position until works are completed to ensure protection is provided throughout the construction phase.

5.2.3 The fencing will be installed in accordance with *BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

Commitment to Supplementary Planting

5.2.4 To enclose the site and provide screening, to compensate for the removal of the section of roadside hedgerow to accommodate a safe access, and to enhance the opportunities for wildlife at the site such as foraging bats and nesting birds the whole length of the southern site boundary (40 metres) will be planted with native shrubs. Guidance in relation to plant species selection for the hedgerow is provided at **Section 5.6**.

Lighting Design

5.2.5 Paragraph 180, bullet point 'c' in Chapter 15 (conserving and enhancing the natural environment) of the NPPF states that development should:

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

Development Lighting Design

5.2.6 The lighting scheme to be implemented at the site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the retained trees and shrubs, new habitats, and habitats / compensatory habitats for roosting bats and nesting birds, as lighting overspill may deter use by wildlife such as foraging bats.

5.2.7 The lighting scheme will be designed with reference to current guidance, namely:

a. *Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2021); and

b. Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2014).

5.3 Invasive Plant Species

5.3.1 The proposals provide an opportunity to achieve the local control of Indian Balsam to prevent further spread into the wild. A development proposal will need to be accompanied by an Invasive Plant Species Management Plan commitment (which can be secured by planning condition).

5.4 Bats

Natural England Licensing Requirements

5.4.1 Owing to the presence of one soprano pipistrelle day roost and the protection afforded to bats and their roosts, the works at building B5 must only be carried out under an appropriate Natural England licence granted under Regulation 55 of *The Conservation of Habitats and Species Regulations 2017* (as amended). The licence permits the destruction of the roosts and disturbance of bats which would otherwise be an offence.

5.4.2 Owing to the small-scale nature of the proposals and the presence of only one roost used by a low number of bats of a common bat species, the site is eligible to be registered under Victoria Burrows' Bat Mitigation (Low Impact) Class Licence (BMCL).

5.4.3 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* 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)].

5.4.4 The outlined mitigation strategy below aims to demonstrate that compliance with Test 1 is achievable. Input from a planning consultant will be required in consideration of Tests 2 and 3 (at the current time there is no reason to indicate that these tests cannot be met).

5.4.5 The bat mitigation strategy outlined below demonstrates how bats will be accommodated at the site and is appropriate to inform the planning decision.

5.4.6 An application to register the site under the BMCL can only be carried out once planning permission has been obtained and all wildlife-related conditions have been discharged.

Mitigation Strategy

Introduction

5.4.7 This mitigation strategy draws on the following resources:

a. Current Natural England guidance;

b. Information presented in the *BCT Mitigation Conference Proceedings* (BCT, January 2017) and the *Mitigation Case Studies Forum* (BCT, January 2017);

c. Implemented and monitored activities / specifications carried out by ERAP (Consultant Ecologists) Ltd at other sites / properties; and

d. Information presented on the 'Roost' website provided by the Bat Conservation Trust.

Timing of Works

5.4.8 In accordance with the BMCL there is no restriction on the timing of works (subject to the absence of nesting birds, refer to **Section 5.5**). Although owing to the suitability of the deeper crevices in the stone elevation walls for use by roosting bats in the winter period it is recommended that any re-pointing works between November and February is avoided.

Works to Be Carried Out Prior to Commencement

5.4.9 Prior to the commencement of works and to ensure a suitable feature is present at the site to receive any bats found during the works, one bat box will be installed on a suitable tree within the site, refer to **Figure 5**.

Toolbox Talk

5.4.10 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;
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 and timescales.

Capture and Exclusion During Works

Roost 1

5.4.11 The licensed ecologist must be present during the careful removal / soft strip of the roof coverings and wall in the vicinity of Roost 1 and all other features with suitability for use by roosting bats. Roof tiles / slates and ridge copings must be lifted (rather than slid) and the underside of the roof coverings and backside of the stones will be checked for bats prior to discard / stacking.

Other Areas

5.4.12 If a bat is present or found in other areas of the site during the demolition / conversion the licensed ecologist will carefully collect the bat (using a hand held static net or by direct handling), place the bat in an appropriate container and transfer the bat(s) to the bat box or release at the site later the same day.

Discovery of a Bat

5.4.13 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.

Installation of Bat Roost Provisions at the Converted Buildings

5.4.14 To secure the conservation of opportunities for roosting bats it is recommended that provisions for roosting bats are provided at the converted buildings. Appropriate products and specifications are annotated on **Figure 5**, appended.

Mechanism for Ensuring Implementation / Success

5.4.15 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.

5.4.16 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

5.4.17 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.

Monitoring

5.4.18 There is no post-works monitoring requirement under the BMCL.

5.5 Nesting Birds

Legal Protections

General Birds

5.5.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is an offence to kill, injure or take any wild bird, take damage or destroy the nest for any wild bird whilst the nest is in use or being built and take or destroy the egg or any wild bird.

5.5.2 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Barn Owl

5.5.3 Barn owl is listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended) and therefore they are also protected against disturbance whilst nesting. It is an offence to intentionally or recklessly disturb any wild bird included on Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young and disturb dependent young of such a bird.

Mitigation Strategy: Barn Owl

5.5.4 The presence of nesting barn owl does not preclude the conversion / redevelopment 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 and Exclusion

5.5.5 Prior to the conversion works an alternative provision suitable for use by nesting barn owl must be provided within proximity to the site. At this site, the following approach is recommended (also refer to **Figure 5**):

a. Installation of a barn owl box on a suitable tree to the north of the site;

b. The provision of a dedicated 'Barn Owl Loft' at the southern end of the new garage building. The loft will be constructed in accordance with the guidance at *Barn Owls and Rural Planning Applications "What needs to happen" - A Guide for Planners* (Ramsden, 2009); relevant extracts are presented at **Appendix 3** for ease of reference. The Barn Owl Loft will be a permanent feature which will not be removed;

c. To increase the likelihood of uptake barn owl pellets collected from inside the building B3 will be placed inside the Barn Owl Loft.

5.5.6 The above works must be in place for as long as possible (but a minimum of 30 days) prior to the exclusion of barn owl from building B3 by boarding up the pop hole vents and doorways (outside the nesting season and provided the absence of nesting activity is confirmed).

Access for Monitoring

5.5.7 Access to the Barn Owl Loft for monitoring and removal of debris will need to be provided.

Timing of Commencement of Works

5.5.8 The conversion works at B3 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 it is appropriately demonstrated by an appropriately licensed ecologist that no evidence of nesting barn owl (or other bird species) is present.

Long-term Maintenance and Monitoring

Ownership

5.5.9 The occupier of the property must be made aware of the protected afforded to barn owl and the nest provisions provided.

Maintenance and Monitoring

5.5.10 General maintenance will comprise:

a. Ensuring the barn owl entrance to the Barn Owl Loft is free from obstructions including climbing plants; and

b. Clearing out of the Barn Owl box every 3 to 4 years in the winter months.

5.5.11 Signs of use will be reported to the LERN to contribute to their long-term record database.

Enhancing Opportunities for Nesting Birds

5.5.12 The proposals provide an opportunity to accommodate provisions for nesting birds at the new building as part of good design.

5.5.13 The specification will be provided when the site proposals are finalised; suggestions are provided on **Figure 5.**

5.6 Landscape Planting

New Native Hedgerow

5.6.1 The new hedgerow at the southern site boundary should be composed from native species. Suitable tree and shrub species are presented at **Table 5.1.**

Table 5.1: Suitable Native Species for Tree and Shrub Planting

Scientific Name	Common Name	Scientific Name	Common Name
Acer campestre	Field Maple	*Prunus spinosa*	Blackthorn
Corylus avellana	Hazel	*Rosa arvensis*	Field Rose
Crataegus monogyna	Hawthorn	*Rosa canina*	Dog-rose
Ilex aquifolium	Holly	*Sambucus nigra*	Elder
Malus sylvestris	Crab Apple	*Sorbus aucuparia*	Rowan
Prunus avium	Wild Cherry	*Ulmus glabra*	Wych Elm
Prunus padus	Bird Cherry	*Viburnum opulus*	Guelder Rose

Grassland to the South

5.6.2 To enhance the opportunities at the site for the attraction of wildlife including invertebrates and feeding birds and bats feeding the feasibility of overseeding the grassland to the south of the buildings with a wildflower mix should be explored. This may comprise a mix with a high percentage component of Yellow Rattle (*Rhinanthus minor*) which is semi-parasitic on grass species and will act to control grass cover to facilitate the growth of wildflowers.

Landscape Planting Within the Residential Curtilage

5.6.3 Suitable plant species for the attraction of wildlife within a garden habitat are detailed at **Table 5.2.**

Table 5.2: Recommended Plants For Use in Gardens to Attract Bats[7]

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

[7] Extracted from *Encouraging bats, A guide for bat-friendly gardening and living* (Bat Conservation Trust, August 2015)

Flowers for Borders		Herbs
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	

6.0 CONCLUSION

6.1 This ecological survey and assessment has demonstrated that the development proposals at Moorcock Farm can be achieved with no adverse effect on designated sites for nature conservation and ecologically valuable habitats. Mitigation for protected species namely roosting bats and barn owl is feasible.

6.2 The comprehensive mitigation strategy outlined in **Sections 5.4** and **5.5** demonstrates that mitigation for roosting bats and barn owl and conservation of habitats for these species at the site in the long-term is entirely feasible. The 'three tests' of *The Conservation of Habitats and Species Regulations 2017* 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, namely nesting birds, can be secured by an appropriately worded planning condition / informative. Measures to protect other features at the site namely trees and actions to be implemented to achieve a net gain for biodiversity to achieve compliance with the NPPF are feasible and outlined in **Section 5.0**.

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8.0 APPENDIX 1: TABLES

Table 8.1: **Photographs**

Site and Surrounds

Photo 1: View of south-western and south-east elevations of B1 and B2 from Clitheroe Road

Photo 2: View of north-eastern elevations of B2, B3 and B4 from yard (B6 to the right)

Photo 3: View of north-eastern elevations of B2, B3 and B4 from field of improved grassland to the east (B6 to the right)

Photo 4: Alder tree at south-eastern corner of site

B1: Steel-framed Barn

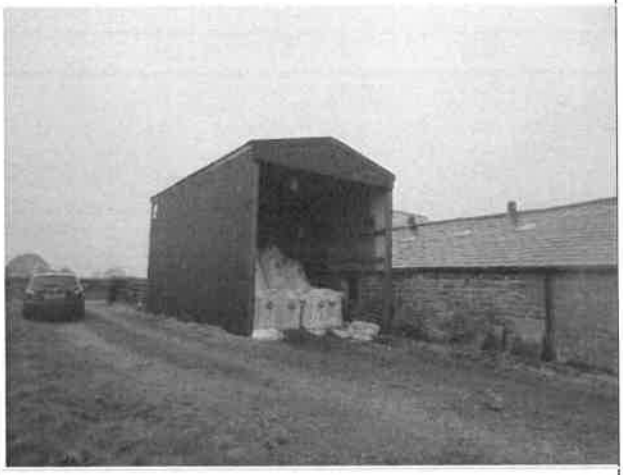


Photo 5: South-eastern and north-eastern elevations of B1

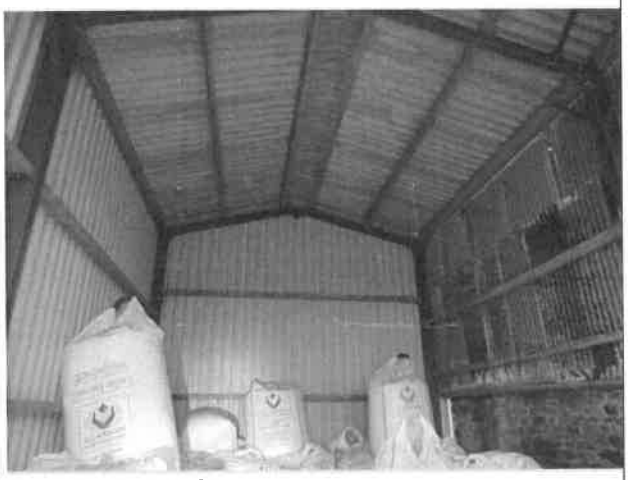


Photo 6: Interior of B1

B2: Cattle Shed

Photo 7: North-eastern elevation of B2 (and B4 to right)

Photo 8: South-eastern and north-eastern elevations of B2

Photo 9: South-eastern elevation and roof of B2

Photo 10: Gaps beneath slates at B2

Photo 11: Gaps beneath ridge copings at B2

Photo 12: Interior of B2 showing white-washed walls

Photo 13: Interior of B2 showing roof trusses

Photo 14: Interior of B2; no gaps for bat access between window lintels

B3: Barn

Photo 15: South-western and south-eastern elevations of B3

Photo 16: North-eastern and north-western elevations of B3

Photo 17: North-western and south-western elevations of B3 (B5 in background to left)

Photo 18: Gaps in the stone wall at the south-eastern elevation of B3

Photo 19: Roof at B3 in good condition

Photo 20: Interior of B3 showing skylights

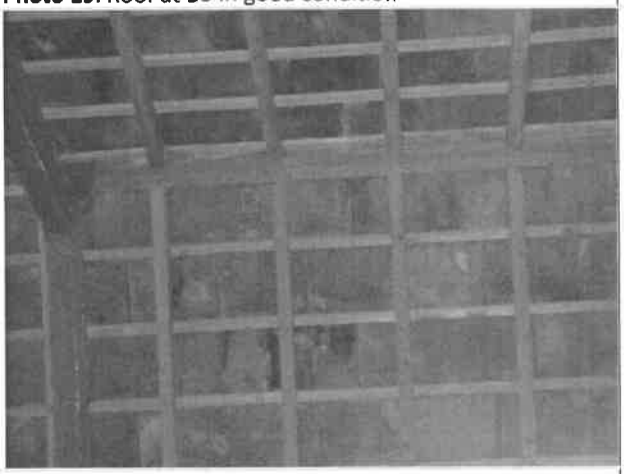


Photo 21: Underside of ridge board and rafters at B3

Photo 22: Interior of B3 showing hayloft

Photo 23: Location of barn owl nest (photo not taken of actual nest to avoid excessive disturbance at a critical time)

Photo 24: Barn owl pellets and droppings on floor of B3

B4: Lean-to

Photo 25: B4 taken from yard to south-west

Photo 68: Interior of B4

B5: Store

Photo 27: South-western elevation of B5

Photo 28: South-western and south-eastern elevations of B5

Photo 29: Stone tile roof of B5 and corrugated sheet covered roofs at B4 (left) and B5a (right)

Photo 30: Timber fascia at south-western elevation of B5

Photo 31: South-eastern elevation of B5

Photo 32: South-eastern elevation of B5 and location of Roost 1 (soprano pipistrelle day roost)

B5a: Lean-to

Photo 33: North-western elevation of B5a (B7 to left and B5 to right)

Photo 34: Interior of B5a

B6: Garage

Photo 35: North-western and south-western elevations of B6

Photo 36: South-western elevation of B6

Photo 37: South-eastern elevation of B6

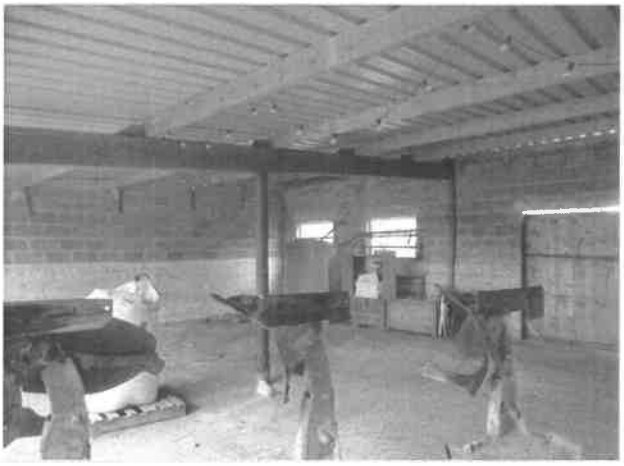


Photo 38: Interior of B6

B7: Kennel

Photo 39: B6 (right), B7 (centre) and B5a (right)

Photo 40: Likely location of off-site brown long-eared roost

Table 8.2: **Plant Species List for the Yard and Curtilage of the Buildings**

Scientific Name	Common Name	DAFOR[1]	Cover
Woody Species			
Alnus glutinosa	Alder	R	<1%
Crataegus monogyna	Hawthorn	LF	1%
Fraxinus excelsior	Ash	O	<1%
Ilex aquifolium	Holly	R	<1%
Prunus spinosa	Blackthorn	LF	1%
Herb Species			
Agrostis stolonlifera	Creeping Bent	LF	2%
Alopecurus geniculatus	Marsh Foxtail	LF	5%
Alopecurus pratensis	Meadow Foxtail	F	10%
Anthriscus sylvestris	Cow Parsley	O	<1%
Arrhenatherum elatius	False Oat-grass	LA	5%
Carex pendula	Pendulous Sedge	R	<1%
Cirsium arvense	Creeping Thistle	O	<1%
Dactylis glomerata	Cock's-foot	O	<1%
Epilobium hirsutum	Great Willowherb	LA	20%
Epilobium montanum	Broad-leaved Willowherb	LF	2%
Equisetum sp.	Horsetail species	VLA	<1%
Hedera helix	Ivy	LF	1%
Holcus lanatus	Yorkshire-fog	F*	10%
Impatiens glandulifera	Indian Balsam	VLA	5%
Lamium album	White Dead-nettle	LA	10%
Lolium perenne	Perennial Rye-grass	LA	5%
Matricaria discoidea	Pineappleweed	VLF	<1%
Phalaris arundinacea	Reed Canary-grass	LA	10%
Poa annua	Annual Meadow-grass	F	2%
Poa trivialis	Rough Meadow-grass	F	5%
Ranunculus repens	Creeping Buttercup	LF	2%
Rubus fruticosus agg.	Bramble	LA	20%
Taraxacum officinale agg.	Dandelion	O	<1%
Trifolium pratense	Red Clover	R	<1%
Trifolium repens	White Clover	VLF	<1%
Urtica dioica	Common Nettle	LA	5%

[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: **Activity Survey 1, Date: 4th June 2020, Sunset time: 21:34 Start time: 21:10**

Surveyor Position 1: Richard Lowe

Time	Species	Number	Notes
22:12	Common pipistrelle	1	Commuting along hedgerow at Clitheroe Road
22:18	Common pipistrelle	1	Commuting along hedgerow at Clitheroe Road
22:20	Common pipistrelle	1	Commuting along hedgerow at Clitheroe Road
22:23	Common pipistrelle	1	Commuting along hedgerow at Clitheroe Road
22:25	Common pipistrelle	1	Pass
22:40	Soprano pipistrelle	1	Pass
23:10	End		
The Anabat Express recorded: 1 noctule pass at 22:07; 7 common pipistrelle passes between 22:11 and 22:31; 2 soprano pipistrelle passes at 22:18 and 22:56; and 2 brown long-eared passes at 22:10 and 22:34.			

Surveyor Position 2: Victoria Burrows

Time	Species	Number	Notes
21:54	Soprano pipistrelle	1	Emergence from the south-east facing gable end of building B5
22:11	Common pipistrelle	1	Flew over yard north to east
22:18	Common pipistrelle	1	Not seen
22:23	Common pipistrelle	1	Pass
22:40 onwards	Barn owl	1	Adult bird actively feeding young – entering and leaving via holes in north elevation wall of building B3
23:10	End		
The Anabat Express recorded: 1 noctule pass at 22:07; 3 common pipistrelle passes at 22:11, 22:21 and 22:31; and 2 soprano pipistrelle passes at 22:22 and 22:24.			

Surveyor Position 3: Amy Sharples

Time	Species	Number	Notes
22:10	Common pipistrelle	1	Pass
23:10	End		
The Anabat Express recorded: 1 noctule pass at 22:07; 2 common pipistrelle passes at 22:10 and 22:18; and 3 soprano pipistrelle passes at 21:54, 22:18 and 22:57.			

Surveyor Position 4: Leah Hart

Time	Species	Number	Notes
22:13	Common pipistrelle	1	Pass
22:17	Common pipistrelle	1	Pass
22:21	Common pipistrelle	1	Pass
22:25	Common pipistrelle	1	Pass
22:28	Common pipistrelle	1	Pass
22:30	Common pipistrelle	1	Pass
22:34	Common pipistrelle	1	Pass
22:40	Common pipistrelle	1	Foraging over car park and tree margin. Flew west towards canal.
23:10	End		
The Anabat Express recorded: 1 noctule pass at 22:07; 11 common pipistrelle passes between 22:12 and 22:31; and 1 soprano pipistrelle pass at 22:39.			

Surveyor Position 5: Catie Haworth

Time	Species	Number	Notes
-	-	-	No emergence
23:10	End		
The Anabat Scout recorded: 1 noctule pass at 22:07; 6 common pipistrelle passes between 22:18 and 22:31; and 2 soprano pipistrelle passes at 22:35 and 22:39.			

Table 8.4: **Activity Survey 2, Date: 7th July 2020, Sunrise time: 04:49 Start time: 03:00**

Surveyor Position 1: Martyn Barnes

Time	Species	Number	Notes
03:27	Barn owl	1	Adult bird flew out of building B3 via pop holes in southern elevation wall
04:23	Noctule	1	Pass north to south
04:26	Noctule	1	Pass north to south
05:04	End		
The Anabat Express recorded: 1 noctule passes at 04:22 to 04:24 and at 04:27.			

Surveyor Position 2: Victoria Burrows

Time	Species	Number	Notes
On arrival	Barn owl	1	Owlets audible from nest inside building B3
03:41	Soprano pipistrelle	1	Pass
03:45	Brown long-eared	1	Observed flying over yard towards off-site buildings to the immediate north
03:50 to 03:58	Brown long-eared	2	Circling the north-eastern facing gable end of the off-site adjacent property to the north. Presence of a roost at this building likely.
04:20	Noctule	1	Pass north to south
04:23	Noctule	1	Pass north to south
04:27	Noctule	1	Pass north to south
05:04	End		
The Anabat Express recorded: 2 noctule passes at 04:23 and 04:27; 1 soprano pipistrelle pass at 03:41; and 1 brown long-eared pass at 03:51.			

Surveyor Position 4: Leah Hart

Time	Species	Number	Notes
03:39	Common pipistrelle	1	Pass
03:41	Soprano pipistrelle	1	Pass
03:45	Common pipistrelle	1	Pass
03:46	Common pipistrelle	1	Pass
03:49	Common pipistrelle	1	Pass
03:51	Bat	1	Pass
05:04	End		
The Anabat Express recorded: 2 noctule passes at 04:23 and 04:27; 1 soprano pipistrelle pass at 03:41; 2 brown long-eared passes at 03:16 and 03:51; and 1 *Myotis* species pass at 03:15.			

Surveyor Position 5: Sue Lonsdale

Time	Species	Number	Notes
03:38	Bat	1	Flew over; no echolocation
03:45	Bat	1	Flew over south to north; no echolocation
03:48	Bat	1	Flew over south to north; no echolocation
03:50	Bat	1	Flew over south to north; no echolocation
03:53	Bat	1	Flew over south to north; no echolocation
04:17	Barn owl	1	Adult entered building B1
04:23	Noctule	1	Pass
04:34	Barn owl	1	Flew over site
05:04	End		
The Anabat Express recorded: 1 noctule pass at 04:24; and 1 soprano pipistrelle pass at 03:40.			

Surveyor Position 6: Amy Sharples

Time	Species	Number	Notes
-	-	-	No bats observed inside building B3 or B2
05:04	End		
The Anabat Express made no recordings of bat calls.			

Table 8.5: **Activity Survey 3, Date: 20th August 2020, Sunset time: 20:27 Start time: 20:02**

Surveyor Position 2: Amy Sharples

Time	Species	Number	Notes
20:57	Common pipistrelle	1	Brief call
21:05	Common pipistrelle	1	Pass
21:09	Bat	1	Pass from north over B2 north to south no echolocation
21:53	End		
The Anabat Express recorded: 5 common pipistrelle passes between 21:09 and 21:45.			

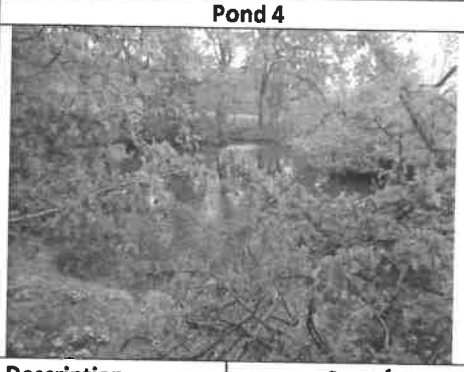
Surveyor Position 5: Victoria Burrows

Time	Species	Number	Notes
20:38	Common pipistrelle	1	Pass. Bat foraged inside building B1 then flew out and away
21:05	Common pipistrelle	1	Pass
21:26	Common pipistrelle	1	Pass
21:53	End		
The Anabat SD2 recorded: 1 soprano pipistrelle pass at 21:50; 16 common pipistrelle passes between 20:38 and 21:53; and 1 *Myotis* species pass at 21:48.			

Surveyor Position 6: Anabat Express only

The Anabat SD2 recorded: 1 soprano pipistrelle pass at 21:49; and 14 common pipistrelle passes between 20:37 and 21:52. **Note:** The number and times of the recorded calls the same as those made by the detector on the exterior of the building to indicate the detector picked up bats outside the buildings, rather than inside the barn.

Table 8.6: **HSI Assessment of Pond 4**

	Pond 4	
Photograph		
Suitability Index Criteria	**Description**	**Score[1]**
SI_1 Geographical location	Optimal	1.0
SI_2 Pond area	830m^2	0.98
SI_3 Pond drying	Never dries	0.9
SI_4 Water quality	Moderate	0.67
SI_5 Shade	50%	1.0
SI_6 Fowl	Minor	0.67
SI_7 Fish	Possible	0.67
SI_8 Abundance of other ponds[2]	9 / 3.14 = 2.8 (3)	0.95
SI_9 Quality of terrestrial habitat	Moderate	0.67
SI_{10} Macrophyte cover	5%	0.35
Assessment result:	**Good**	**0.75**

[1]Calculated by (SI1 x SI2 x SI3 x SI4 x SI5 x SI6 x SI7 x SI8 x SI9 x SI10)1/10
[2]Ponds within an unobstructed one kilometre radius divided by 3.14 (the number given above is the number of ponds already divided by 3.14)

9.0 PPENDIX 2: FIGURES

Figure 1: Aerial Image Showing Designated Sites within a 2 kilometre Radius

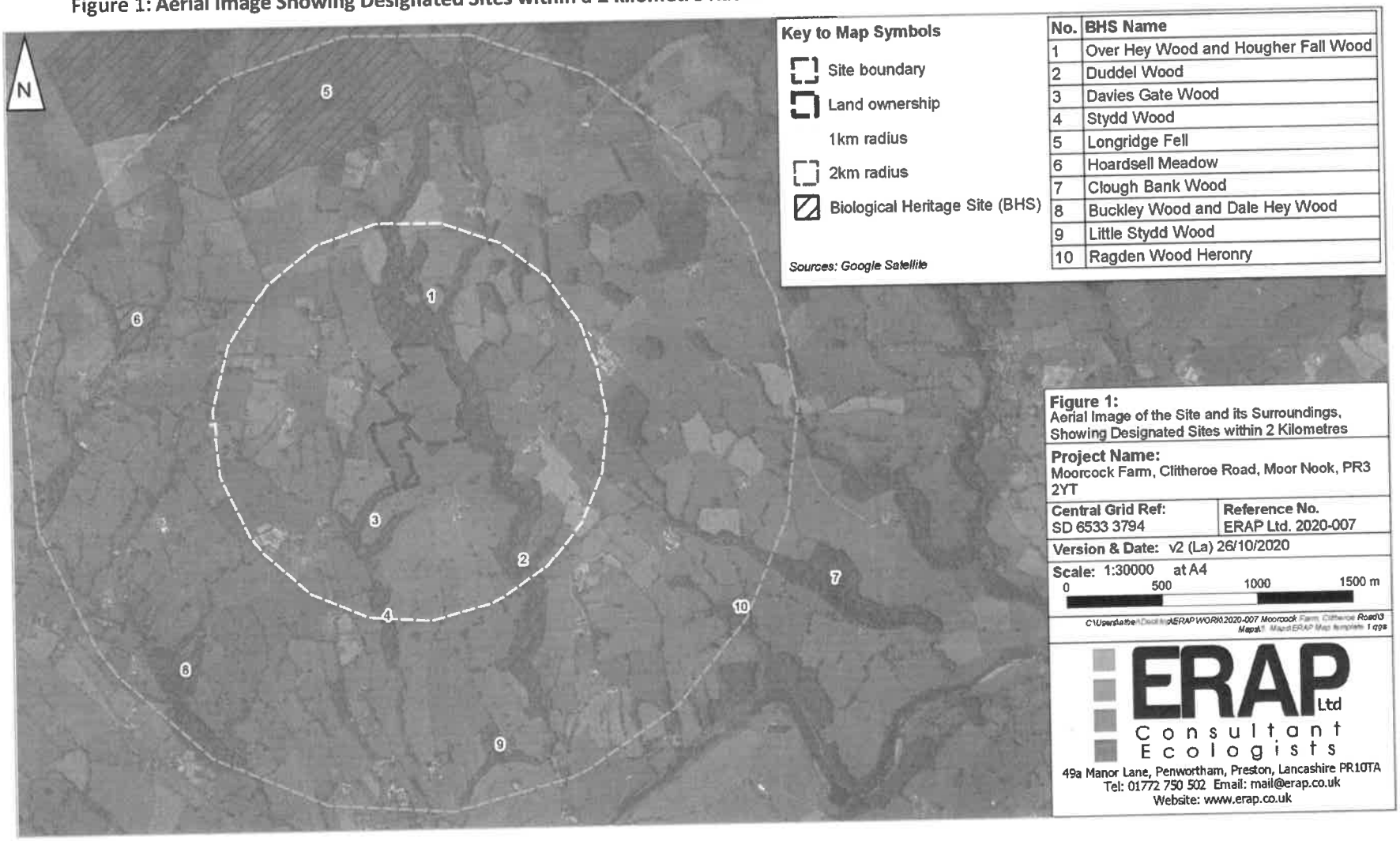


Figure 2: **Aerial Image Showing Ponds and BHS within a 250 metre Radius**

Key to Map Symbols

- Site boundary
- Land ownership
- 100m radius from site boundary
- 250m radius from site boundary
- Biological Heritage Site (BHS)
- Ponds

Figure 2:
Aerial Image Showing Ponds and BHS within a 250m Radius

Project Name:
Moorcock Farm, Clitheroe Road, Moor Nook, PR3 2YT

Central Grid Ref:	**Reference No.**
SD 6533 3794	ERAP Ltd. 2020-007

Version & Date: v2 (La) 26/10/2020

Scale: 1:4500 at A4

0 50 100 150 200 m

C:\Users\admin\Desktop\ERAP WORK\2020-007 Moorcock Farm, Clitheroe Road\3 Maps\3. Maps\ERAP Map Template 1.qgs

ERAP Ltd Consultant Ecologists
49a Manor Lane, Penwortham, Preston, Lancashire PR1 0TA
Tel: 01772 750 502 Email: mail@erap.co.uk
Website: www.erap.co.uk

Figure 3: **Phase 1 Habitat and Vegetation Map**

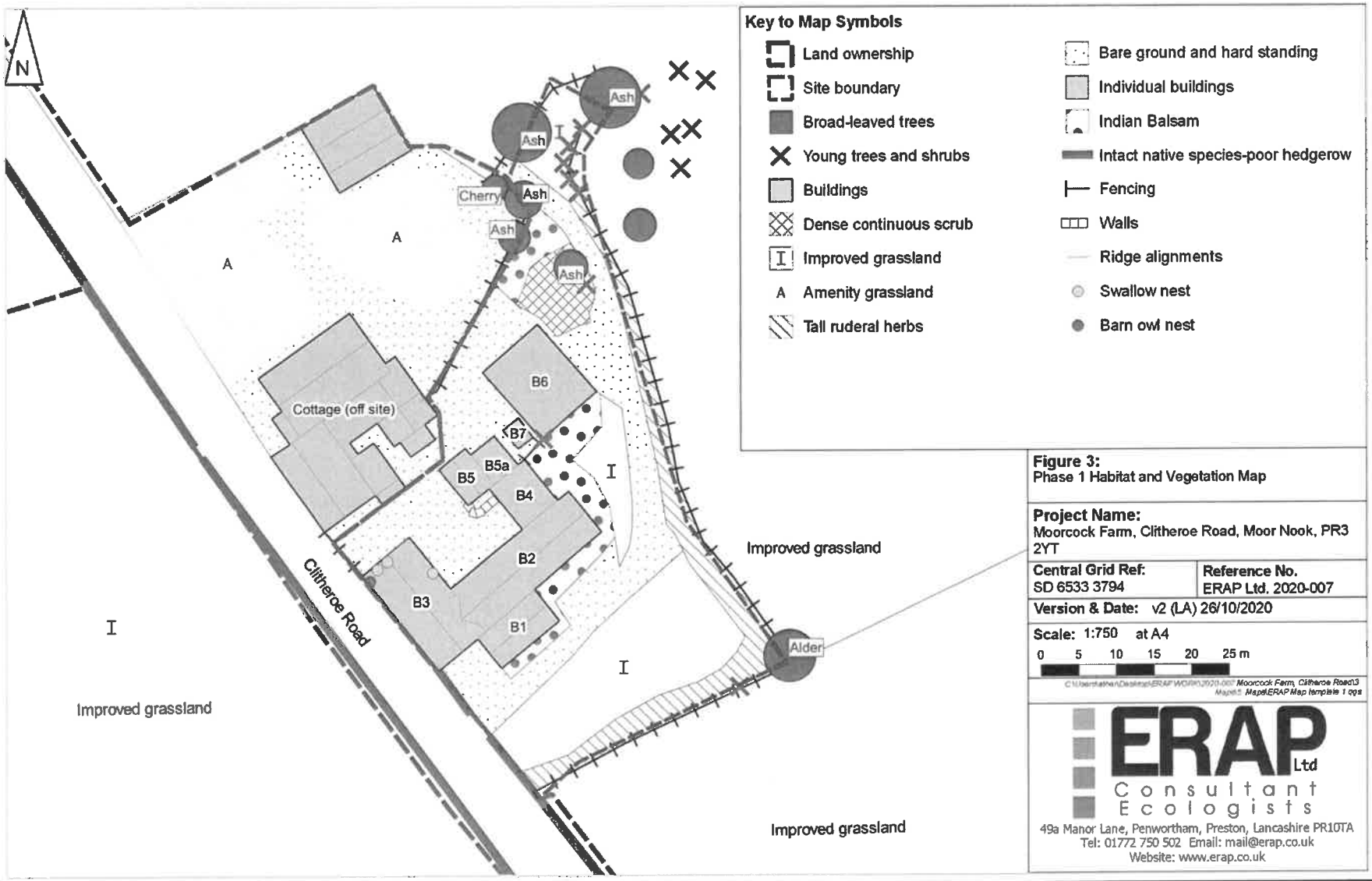


Figure 4: **Plan to Show Surveyor Locations During Bat Activity Surveys and Location of Roosts**

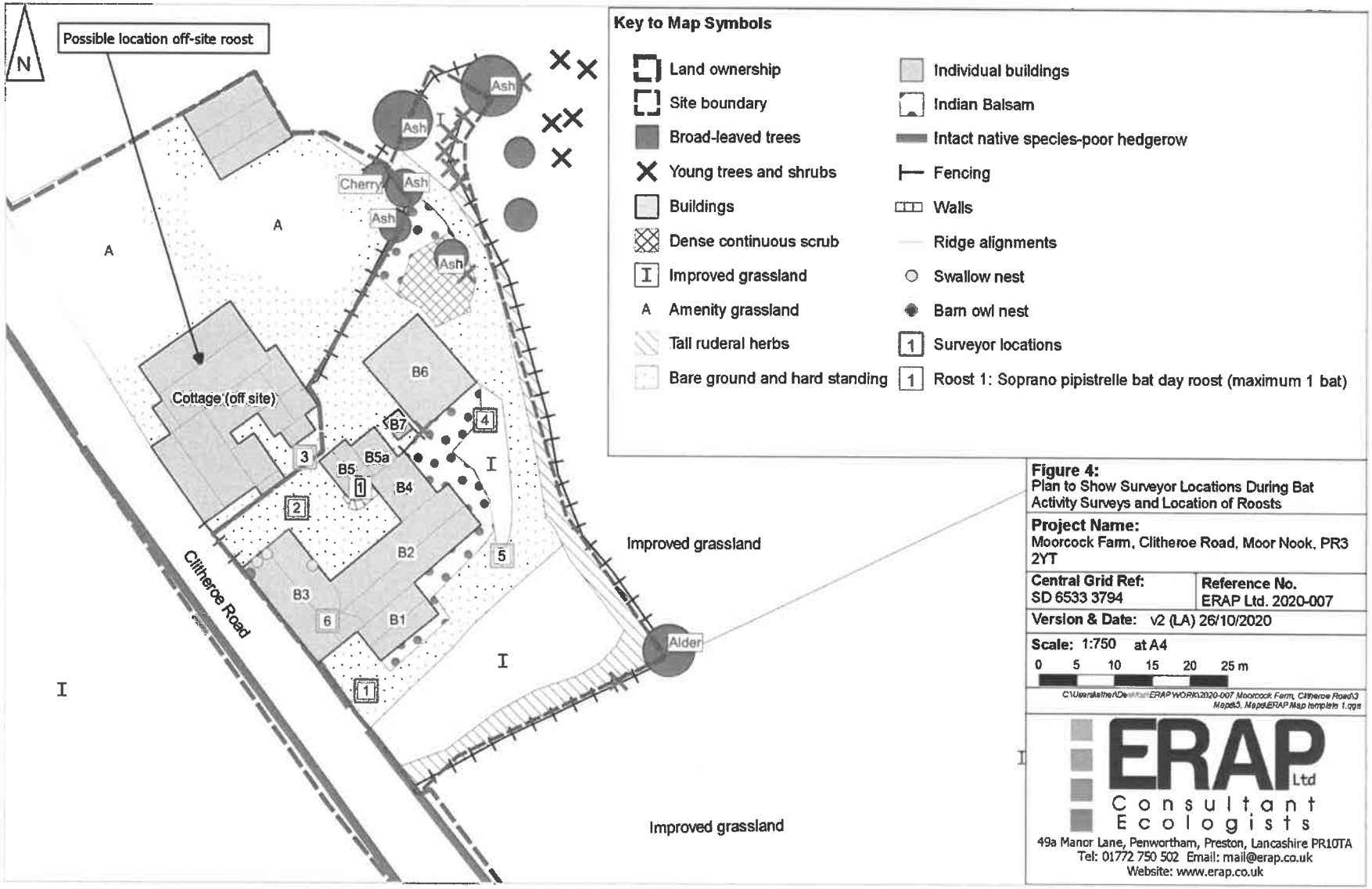
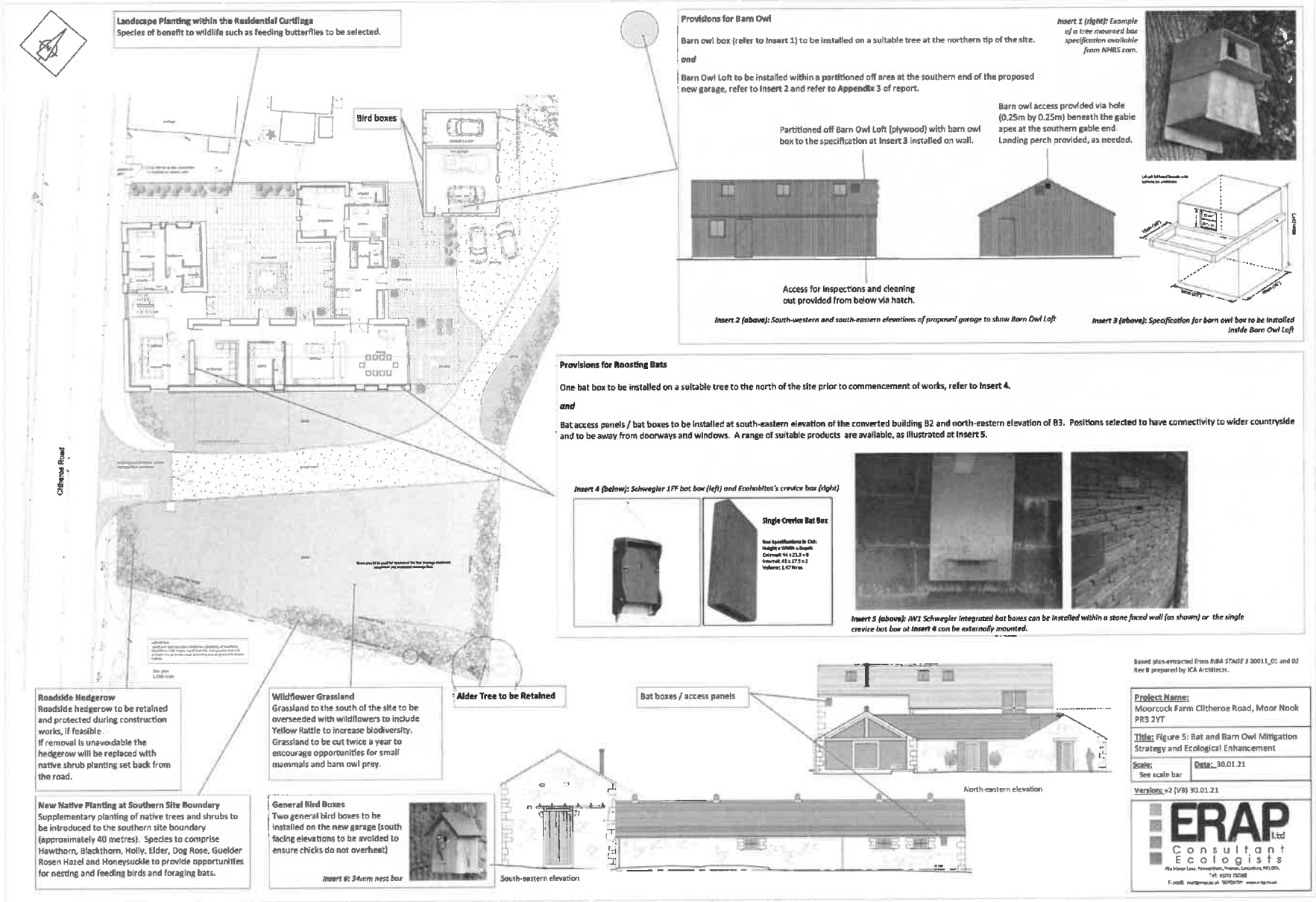


Figure 5: **Bat and Barn Owl Mitigation Strategy and Ecological Enhancement**



10.0 APPENDIX 3: PROVISIONS FOR BARN OWL

Extracted from *Barn Owls and Rural Planning Applications "What needs to happen" - A Guide for Planners* (Ramsden, 2009)

PERMANENT PROVISION

How to make permanent provision for Barn Owls in a barn conversion or other development

Background

The loss of traditional agricultural buildings through unsympathetic conversion into dwellings has frequently resulted in the loss of roosting and nesting sites, many of which were available to Barn Owls for hundreds of years. Far from being the worst-case scenario, re-development can be a potential lifeline, safeguarding the site for future generations. Experience shows that Barn Owls can continue to use sites during the development phase and adapt to radical alterations, provided that their needs are catered for.

Barn Owls have lived alongside man for thousands of years and some old farmhouses have had owls in the attic for countless generations. Although they are rather shy, Barn Owls will readily occupy dwellings, or any other type of building, provided they can enter and hide unseen. The range of site-types they will use includes: churches and chapels, barns, houses, modern farm buildings, industrial units, ruins, hollows in trees, rock crevices and occasionally even mine shafts. For many years Barn Owls were actively encouraged into buildings, evidence of which can still occasionally be seen in the form of owl windows, usually in the gable ends of traditional agricultural buildings.

Not every building or tree is suitable and some basic requirements must be met. Obviously the birds must be able to get in and will sometimes use surprisingly small entrance holes. They must be able to perch out of sight somewhere that is always dry and for nesting they need an adequately-sized dry ledge or cavity. The vast majority of holes, perches and nests used by Barn Owls are more than three metres above ground level and low-level opportunities are generally ignored.

PLEASE NOTE: provision for Barn Owls should not normally be made within 1km of a motorway, dual-carriageway, or similar (if in doubt please seek advice info@barnowltrust.org.uk)

The importance of making a space for owls INSIDE one of the developed buildings

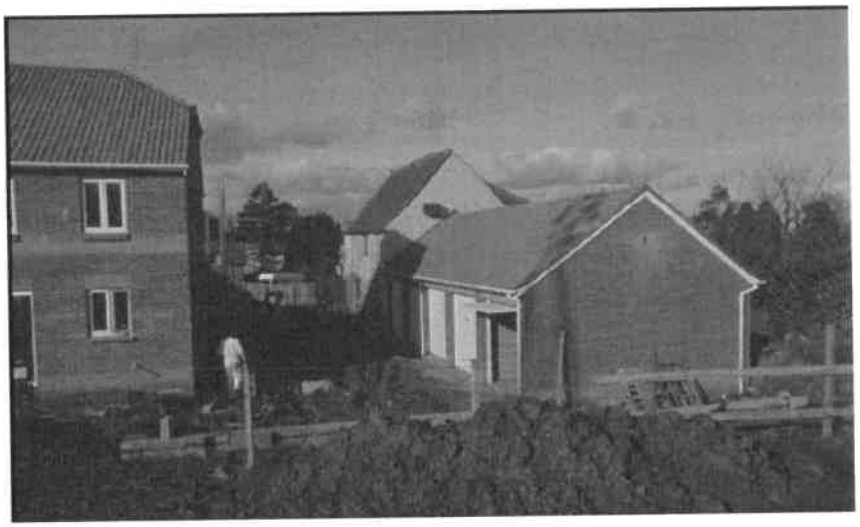
You may think that the best way to provide a long-term nesting place is to fix a wooden nestbox on the outside of one of the buildings or perhaps on a nearby tree. However, an outdoor nestbox will, at best, last about fifteen years so cannot be considered as permanent provision. You cannot be certain that such boxes will ever be replaced. Most traditional barns have been available for Barn Owls to use for hundreds of years. Making permanent provision means making sure the site continues to be available for at least another hundred years and this is why it really needs to be inside a permanent structure. However, there are lots of different ways in which permanent provision can be made and provided that the owls' needs are taken into account, you can choose exactly where and how you do it within your development.

PERMANENT PROVISION cont.

Deciding on the best way to do it
First of all, check your wildlife survey report. If you employed an ecological consultant he/she should have recommended where permanent provision is made within the development. You may wish to take further advice or simply proceed once you've read the "essential requirements" and "positioning" information below.

In a single-building development it's simply a question of choosing the best place for the hole - the most suitable gable end, or part of the roof. In a group of buildings you should be choosing one of the tallest. However, provided that it is high enough (and meets the other requirements) the provision could be made in a new or redeveloped outbuilding such as a garage overlooking open countryside. Although most holes are incorporated into walls, owl holes have been successfully made through re-thatched roofs and through slate/tile roofs either by constructing a miniature dormer or fashioned in lead. The hole itself is quite small (see below) and the nesting space can be immediately inside the hole, you can create a tunnel that leads to the nesting space, or in the case of a large loft, the birds can fly from the entrance hole to a conventional indoor nestbox. If necessary, a tunnel or passageway can slope upwards to discourage the ingress of rainwater, or downwards, or turn horizontally. Where a nesting space is being built-in, you can make it any shape provided that it meets the "essential requirements" (see below).

If there is no residual loft space, then the box can be partly contained within the wall and the remainder incorporated into a room as an interesting feature. Provided that it is done properly there are no health, nuisance, or condensation problems. For viewing the owls, one-way glass and peep holes can be problematic. However, where a range of barns are converted for holiday accommodation, customers will often return year after year to watch the owls through a CCTV system or webcam. Please note that artificial lighting of nests or nest inspections have licence implications and the relevant Country Agency must be consulted.



PERMANENT PROVISION cont.

Positioning requirements - for permanent provision in barn conversions etc.

The owl hole should be at a height of not less than 3 metres above ground level and positioned so that it is easily noticed by a bird flying past over open ground (i.e. - not screened by other buildings or trees).

At sites with evidence of occupation by Barn Owls, the position of the owl hole and the proximity of the new nest-place should replicate (as far as possible) those already used by the bird(s). However, where birds may have been "forced" to use one of the lower buildings (because, for example, the larger buildings had no owl hole or no nest-ledge) the permanent provision should be made in one of the tallest buildings irrespective of which building birds are currently using.

Essential design requirements - for incorporating a nesting space (for Barn Owls) into barn conversions, other redeveloped buildings and new build

- Entrance hole: minimum size 100mm wide x 200mm high, optimum size 130mm W x 250mm H, maximum size 200mm W x 300mm H.
- Floor area of nest chamber: absolute minimum 0.4m^2, ideal size is 1m^2 (These dimensions are bigger than those for nestboxes because built-in provision usually lacks external exercise areas that would permit maximum wing stretching prior to fledging).
- Depth from bottom of entrance hole to floor of nesting area must be not less than 460mm.
- Interior must remain dry during prolonged heavy rain coming from any direction.
- Human access for easy clearing-out of nest debris is essential (probably once every 3-4 years or less).
- Measures aimed at reducing the chances of entry by other species (such as Jackdaws) are to be encouraged provided that they do not significantly reduce the box's suitability for Barn Owls.
- Should be substantially constructed and well-insulated against condensation and noise.
- Should not be constructed from tropical hardwood unless the timber is certified as sustainably grown (FSC).
- Hipped roofs, and pitched roofs where optimal siting of the access is through the roof rather than the wall/gable end, will require the use of a specially built miniature dormer or owl-hole 'tile'.
- Where the access is in a vertical structure such as a wall or gable end, there should be an external landing platform or perch below the entrance hole to facilitate the Barn Owls' arrival and departure.
- Owners of buildings with permanent provision in the roof space should also be aware of the following subjects: foraging habitat requirements, the need for clearing out debris so as to maintain internal depth, what to do if a young Barn Owl is found and human safety issues. See barnowltrust.org.uk