



Preliminary Ecological Appraisal

Land at:

- Esteban Barn, Altcar Lane,**
- Downholland, Lancashire, L39 7HN -**

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A report for

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PART 1 INTRODUCTION:

1.1 REASONS FOR SURVEY:

PENNINE Ecological have been commissioned to undertake a Preliminary Ecological Appraisal and protected species survey / assessment of land at: Esteban Barn, Altcar Lane, Downholland, Lancashire, L39 7HN.

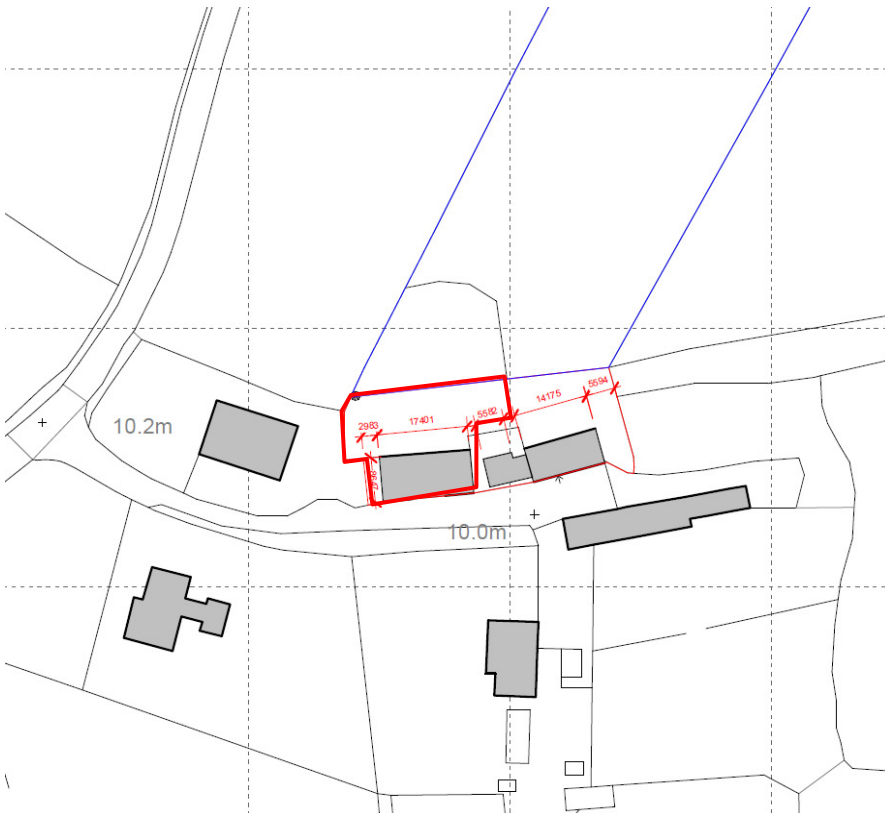
The study includes; desk top study, vegetation survey, preliminary bat roost assessment, barn owl, badger and water vole survey together with assessment for other potential protected species issues.

The report includes a full evaluation of the ecological significance of the survey findings. The surveys are required due to proposals for replacing a steel frame Dutch barn with a residential property on the same footprint as the existing barn and of the same dimensions.

1.2 SITE LOCATION:

The site is located in a rural location approximately 50m to the east of the B5195 Altcar Lane which is approximately 450m west of the A5147 Mairsough Lane. The sites central National Grid Reference is NGR: SD361 30642

The site is shown below, outlined in red.



An aerial photograph of the site is shown below;



1.3 SITE STATUS:

A desk top study was commissioned as part of the survey. This included searches for both statutory protected sites and non-statutory sites and records of protected species within 500m radii of the site survey boundary. Lancashire Environment Record Network (LERN), were consulted to provide details of non-statutory sites and protected species records. LCC now provide data up to a 2km search radii as standard, this is also included in Appendix 2.

1.3.1 Statutory Sites:

Details of statutory sites were sought from the Natural England web site search:

<http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>

There are no statutory wildlife sites within 500m of the site.

Site of Special Scientific Interest (SSSI) Impact Risk Zones (IRZ's):

The site does not fall within SSSI Impact Risk Zones (IRZ's).

1.3.2 Non-Statutory Sites:

There are no County Biological Heritage Sites (BHS) within 500m of the sites boundaries.

1.3.3 Protected Species / Habitat Data:

Section 41 Habitats of Principal Importance in England (NERC) Act 2006;

There are no Section 41 Habitats of Principal Importance in England (NERC) Act 2006 associated with the site that are affected by development.

Section 41 Species of Principal Importance in England (NERC) Act 2006;

There were no Section 41 species recorded during the survey.

N.b. Refer to Appendix 2 for full details of protected species records and other species within the wider landscape.

The data search does not include any records that relate to the site or in close proximity to the works. Details of all other species within 2km of the site are included in Appendix 2 Desk Top Study.

Records within 500m of the site include the following.

<u>Species:</u>	<u>Distance from site (approx.):</u>
Corn bunting	260m NE
Fieldfare	280m W
Water vole	300m S
Red squirrel	400m S
Mediterranean gull	400m NW
Mallard	500m SW

A full list of species within the wider search area is shown in the interactive .pdf file in Appendix 2.

Other Designations:

The site falls within the Sensitive Waterbird Area (SWA)* for pink-footed goose and whooper swan.

*The Sensitive Waterbird Area is defined based on tetrad counts over the period winter 2008/09 to winter 2017/18**

*The Sensitive Waterbird Area includes all tetrads with a greatest regular use class of at least '1% Lancashire & North Merseyside Population', plus any adjacent tetrads that are regularly flown over by Geese and Swans.**

*See LERN Sensitive Waterbird Area v3a 22/11/2018

1.4 SURVEY CONSTRAINTS:

The survey was conducted on 5th August 2022 which is an optimal time for ecological surveys. There were no constraints to protected species surveys / assessments and the site was fully accessible.

PART 2 SURVEY RESULTS:

2.1 Phase 1 Habitat Survey:

*Refer to photographs at the end of this report which illustrate features described below. Due to the small size of the site and the relatively uniform nature of the habitats, a Phase 1 Habitat map was not produced. **The site development is simply replacement of the existing Dutch barn with a residential property on the same footprint. There are no habitats lost or affected other than bare ground and disturbance of amenity grassland during construction.** The habitats and features present can be sufficiently described by the following description and reference to the site photographs.*

The survey was undertaken by Robert Leatham on August 5th 2022. There were no constraints to the survey and all parts of the site were accessible.

Habitats Present Within the Red Line Survey Area:

- A2.1 Scattered broad-leaved tree (sapling fruit tree on lawn, unaffected)
- G1 Standing water (Pond, unaffected)
- J1.2 Amenity grassland (largely unaffected)
- J1.3 Ephemeral / short perennial (garage driveway)
- J1.4 Introduced shrub (unaffected)
- J2.4 Fence
- J3 Buildings (Dutch barn and potentially garage to be removed)
- J4 Bare ground

Site Description:

The surveyed site forms a small plot of existing garden approximately 0.09 hectares in size. However the only impacts relate to removal of a Dutch barn 13.767 x 9.150m in size (approximately 130m² in size), the small garage may also be removed.

The plot of land surrounding the barn is part of the existing formal garden area of a property to the east. The plot is entirely dominated by amenity grassland with planted boundaries of immature cherry laurel.

A pond is present within the garden. The pond was created by the owner 4 years ago in 2018 to rear ornamental ducks. These are still present in abundance along with wild ducks (mallard). The pond margins are heavily grazed by ducks. There is no aquatic marginal or true aquatic vegetation present and the pond is highly eutrophic due to duck populations.

No invasive plant species were recorded.

Refer to Site Photographs, Appendix 1 which show the habitats present.

2.2 PROTECTED SPECIES SURVEYS:

Surveys were undertaken where appropriate for the presence of other potential protected species. The following surveys were undertaken.

2.2.1 Badger Survey:

Method:

A badger survey was undertaken of the site. The badger survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines
- Foraging areas
- Scratching posts
- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Results:

Sett Search:

The survey found no setts on site.

Search for Foraging Signs and Pathways:

The site was thoroughly searched for badger pathways and signs of foraging. No sign of badger activity was found therefore it can be concluded that the species is not using this area for foraging or commuting.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines. The search found no evidence to suggest badger activity along any of the site boundaries.

The absence of any activity signs indicates that badgers are not entering the site. The absence of latrines indicates a lack of territorial activity in the near vicinity of the site.

2.2.2 Bats:

During the survey an assessment of bat roost potential and foraging habitats was undertaken.

The Dutch barn is of steel girder construction with asbestos cladding and roof. The roof is supported by 'A' frame wooden trusses. There is no loft space. The barn is 'open' on the southern and eastern elevations, all other elevations are clad with asbestos sheeting. The barn is used for materials storage.

There are no potential bat roost features (PRF's) associated with the barn, therefore roost potential is defined as **negligible** bat roost potential.

The site forms part of a hamlet of converted farm buildings and barns with nearby mature trees, a pond on site and a pond surrounded by woodland approximately 90m to the west. Although the site lies within a wider intensely farmed arable landscape, there are field boundaries and hedgerows extending into the wider landscape. Together with the site, the wider landscape provides good foraging habitats for bats.

2.2.3 Water Vole:

Survey Methodology:

Although the on-site pond is not affected by the proposed development a water vole survey of the pond was undertaken. The survey was based on the standard methodology as outlined in the Dean, M., Strachan, R. Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series).

Searches were made for the following signs;

- Sightings of individual animals
- Latrines
- Feeding stations
- Burrows
- Runs

Survey Constraints:

There were no constraints to the survey, the pond was fully accessible.

Survey Results:

No evidence, in terms of; burrows, feeding stations/remains, latrines, runs etc. was found.

2.2.4 Barn Owl:

The Dutch barn was surveyed for evidence of barn owl, searches were made for evidence of nests, feathers, splashing and pellets.

Survey Results:

No evidence of the species was found.

There are two wooden boxes (vegetable boxes) that were placed in the two internal western corners of the barn by the previous owners.

The owner states that these boxes have never been used by barn owls but support breeding wood pigeon on a frequent basis. At the time of the survey both boxes were absent of breeding birds. However pigeon feathers (likely wood pigeon) and white broken egg shells (likely wood pigeon) were located beneath the box in the NW corner of the barn.

2.2.5 Other Protected Species:

Issues in relation to other potential protected species where no specific survey was undertaken are assessed in the following section.

PART 3 ECOLOGICAL EVALUATION & RECOMMENDATIONS:

3.1 EVALUATION OF SURVEY & RECOMMENDATIONS:

The following section evaluates the site in relation to statutory/non-statutory sites, protected species and species/habitats listed on the former UK Biodiversity Action Plan Priority List, Section 41 Species/Habitats of Principal Importance in England (NERC) Act 2006, and the Lancashire Biodiversity Action Plan.

3.1.1 Statutory Sites:

There are no statutory wildlife sites associated with the site or within 3km of the site.

3.1.2 Non-statutory Sites:

There are no non-statutory sites (*Biological Heritage Sites*) within 500m of the site.

3.1.3 Sites Habitats & Higher Plant Species:

There are no Section 41 Habitats of Principal Importance in England (NERC) Act 2006 affected by the proposed work.

Plant species recorded on site are common and widespread and are considered to be of site value only.

Recommendations: Habitats & Higher Plant Species:

There are no requirements for further surveys.

3.1.3 Protected Species:

Badgers:

Badgers are protected under Schedule 6 of the Wildlife and Countryside Act 1981, and under the Protection of Badgers Act 1992, which prohibits deliberate interference with the animal or its sett.

The survey found no evidence of historic, recent or current use of the site by badgers for foraging, commuting or occupation and the species is considered to be absent.

Recommendations: Badgers;

There are no issues in relation to badgers arising from the development. No further surveys are required.

Bats:

Bats are comprehensively protected by European legislation.

The Dutch barn and wooden garage do not support any features suitable for supporting bat roosts. The Dutch barn and wooden garage are therefore defined as having **Negligible bat roost suitability**.

The site forms part of a hamlet of converted farm buildings and barns with nearby mature trees, a pond on site and a pond surrounded by woodland approximately 90m to the west. Although the site lies within a wider intensely farmed arable landscape, there are field boundaries and hedgerows extending into the wider landscape. Together with the site, the wider landscape provides good foraging habitats for bats.

Recommendations: Bats;

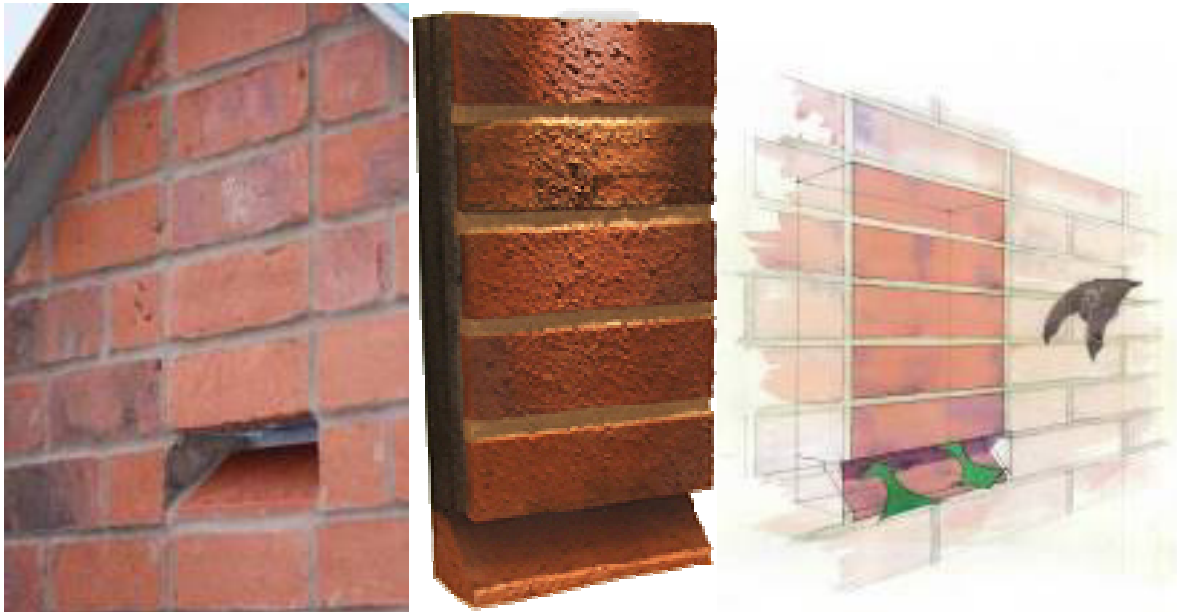
Notwithstanding the absence of features suitable for roosting bats, the proposed development should include measures for enhancement, in accordance with local and national planning policy.

Enhancing the site for Bats:

It is recommended that at least two of the following artificial roosts are provided;

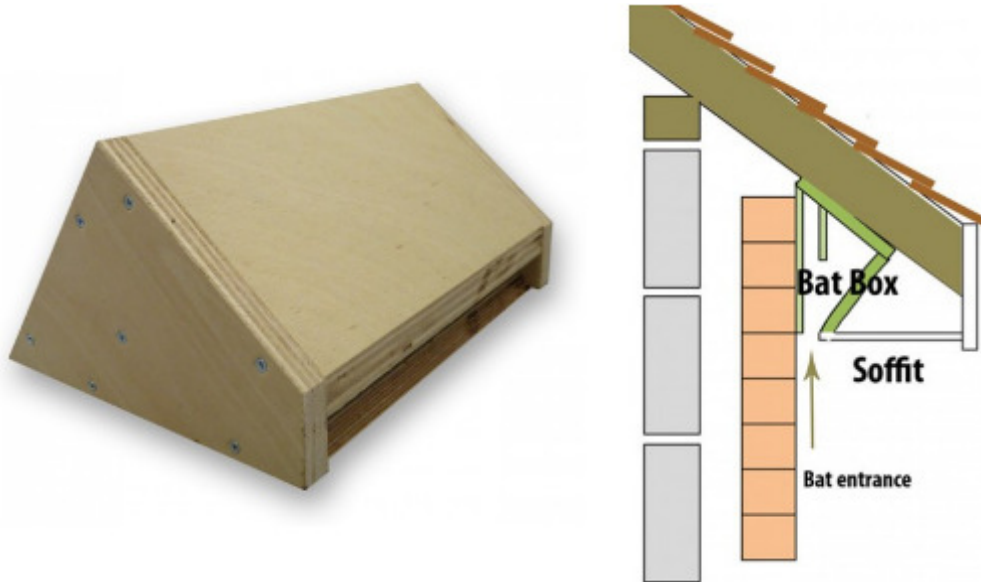
Integrated bat box

The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



Soffit access

Where soffits are instated at gable elevations, roost provision may be instated in the form of a soffit bat box with internal roosting space.



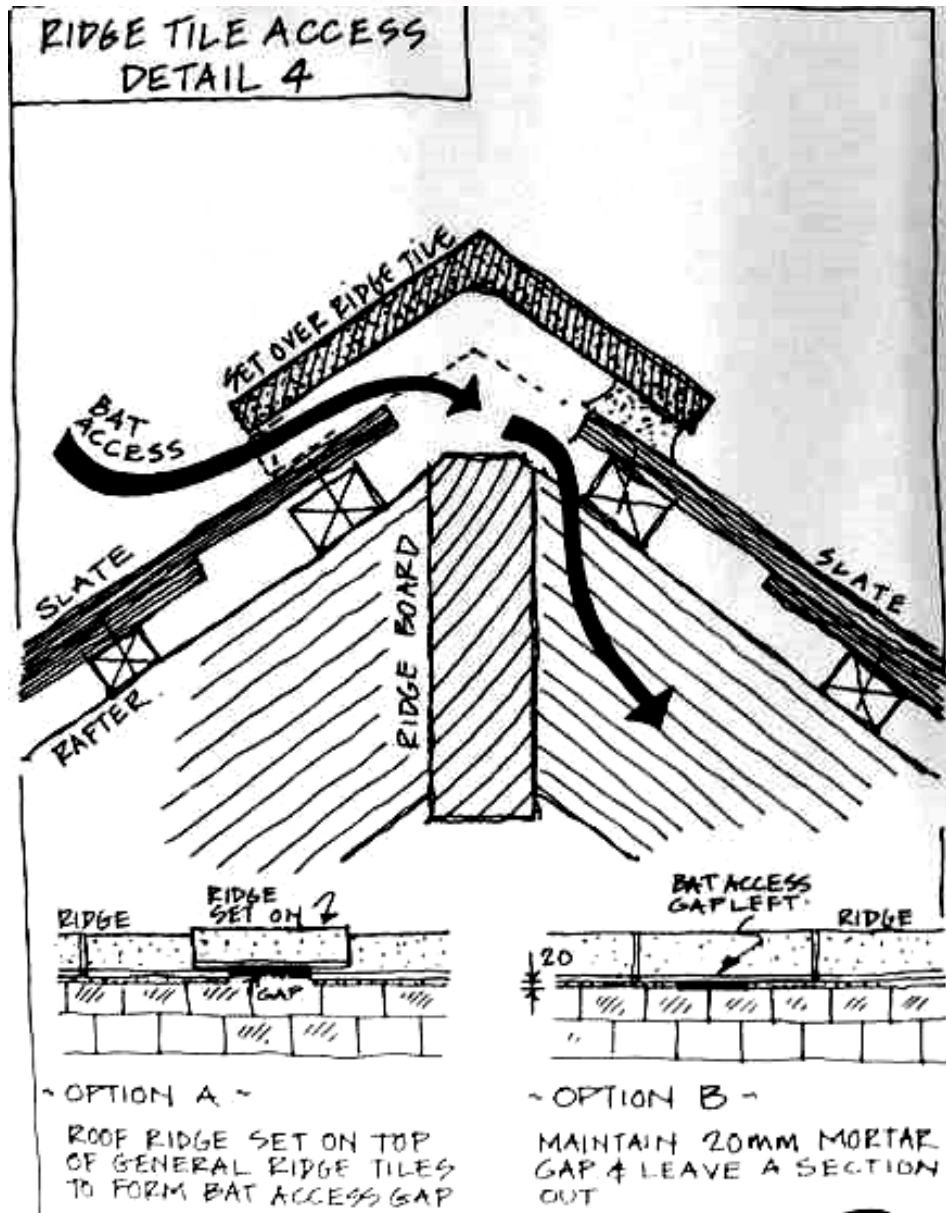
Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees may include the Eco Kent Bat Box.



Ridge access

Ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.



Issues in Relation to Lighting:

Illumination of the adjacent land must be avoided / minimised. Where lighting is required this must be low level, directed downwards and of low intensity. The following principles will apply;

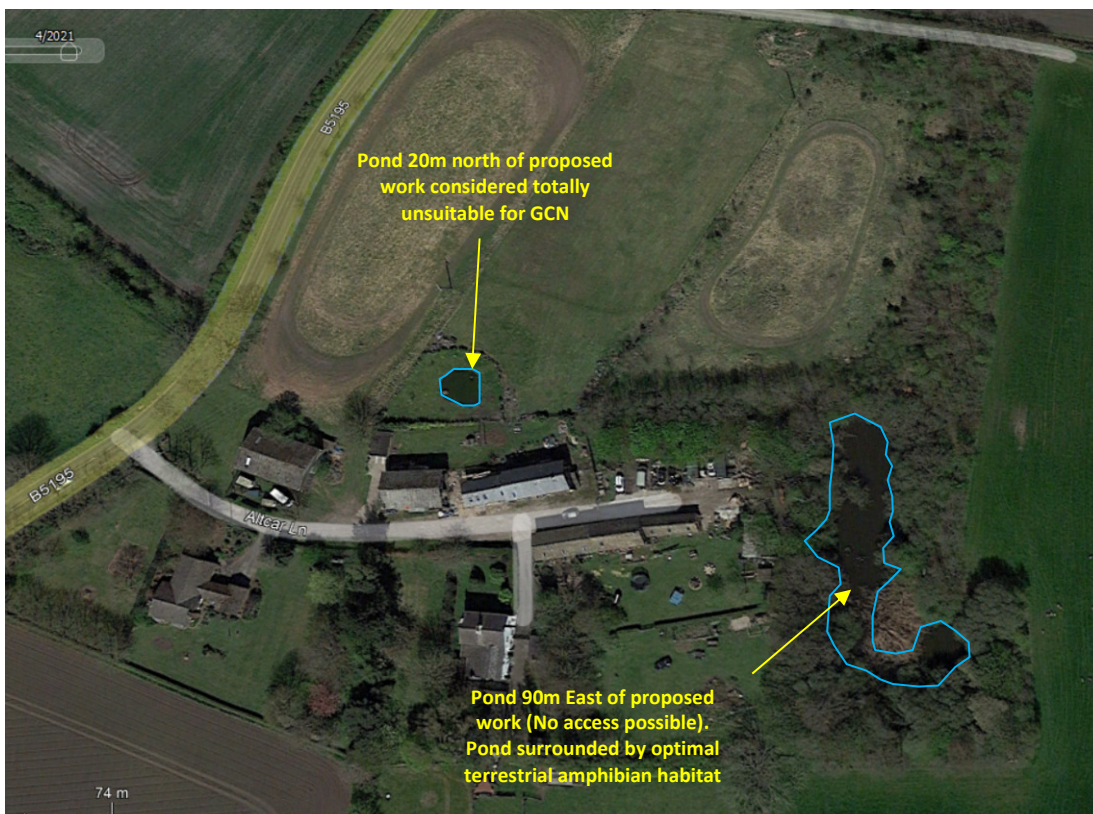
- Where and if lighting is required this will be directed internally within the site avoiding spillage towards boundary habitats.
- The use of low powered sodium lights or similar will be used and these will be fitted with cowls / covers that prevent lateral light spillage towards boundary habitats.
- Wherever possible and only if required low level (1-1.5m high) bollard lighting will be used.
- If required lights will be fitted with timer controls that minimise the duration of lighting.

Lighting requirements will follow guidance provided by the Bat Conservation Trust.

<https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

Great Crested Newt:

Great crested newt is comprehensively protected under European legislation. There is one pond created by the owner 4 years ago in 2018 and approximately 20m north of the proposed work. In addition a large pond lies approximately 90m east of the proposed development within an area of woodland. These are shown below;



The pond 20m north of the proposed development is considered to be totally unsuitable for the species since it supports large populations of waterfowl, is highly eutrophic, supports little or no aquatic vegetation and possibly supports fish populations. This waterbody is therefore scoped out of the survey.

Risk Assessment: Great Crested Newts (*GCN hereafter*):

The sites evaluation is based primarily on the surveyor's expert knowledge of the species, its terrestrial habits and breeding requirements.

Surveyor experience:

The surveys and assessment were undertaken by Robert Leatham, a highly experienced ecological consultant and surveyor with approximately 30 years' experience in a wide range of ecological survey and assessment.

Key skills include the following.

- Extended Phase 1 Habitat Survey and National Vegetation Classification Survey.
- Highly proficient field botanist, including some difficult plant groups.
- Mammal surveys including surveys for badger, water vole*, otter*, brown hare and preliminary bat surveys.

*Over 300km of river reaches surveyed in England for the National Rivers Authority / Environment Agency.

- Extensive experience in great crested newt (*GCN*) survey, evaluation, licensing and mitigation. Natural England Class Licence WML-CL08 held.
- Over 25 Great Crested Newt development licences held (*Natural England / Defra licences*).
- ¹Contributor to English Nature (*Natural England*) research papers in respect of great crested newt licensing and mitigation issues.
- Several Great Crested Newt Conservation Licences (*Natural England*) held, including extensive work at Hic Bibi Local Nature Reserve to safeguard a high population of Great Crested Newts.
- Ecological Evaluation and Impact Assessments in association with large scale commercial development and civil engineering.

¹ *English Nature (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (*Triturus cristatus*)*. English Nature Research Report 576. PENNINE Ecological were contributors to this study.

Site Evaluation:

Data Records:

There are no records of the species within at least 2km of the site. The only records provided by the data search relate to two 10km² records (SD30) from 1939 and recorded as being in Sefton.

Assessment:

Apart from the pond 20m north of the proposed development which is considered to be totally unsuitable for the species, there is one pond approximately 90m to the east.

The pond to the east was not accessible for assessment. However this pond is surrounded on all sites by immediate high quality amphibian refuge and potential hibernation habitats. These will act as a 'terrestrial sponge' effect, since where suitable habitats are present in close proximity (*within 100m*) of a pond, it has been ²demonstrated that they usually support the majority of the breeding population. The following statement from English Nature Research Report 576* below is particularly relevant in this respect. NE state that;

*'The most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is appropriate within 50m of the breeding pond. It will almost always be necessary to actively capture newts 50-100m away. However, at distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality.'**

Great Crested Newt Conclusions:

Based on the above evaluation, the absence of species records in the locality and our extensive experience of amphibian ecology, survey and licensing we consider that there is no risk to great crested newts as a result of this development. There is some potential risk to other amphibians which may be present in both ponds.

In order to address potential impacts on other amphibians, namely; common frog, common toad and smooth /palmate newts a programme of precautionary measures will be applied at this site before development begins.

In the highly unlikely / remote risk that GCN are encountered then all work will cease and further advice will be sought from the acting ecologist.

The precautionary measures are detailed on the following page.

² English Nature (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (Triturus cristatus)*. English Nature Research Report 576. PENNINE Ecological were contributors to this study.

*** AMPHIBIAN PRECAUTIONARY MEASURES METHOD STATEMENT:**

***(These measures only relate to amphibians other than Great Crested Newt).**

In order to address the potential for impacts on common frog, common toad / smooth / palmate newts outlined in the previous section of this report the following measures will apply.

Item 1: Ground excavations:

Any excavations or trenches will be either covered at the end of the day before nightfall or checked for amphibians the following morning before work commences. Scaffold boards or similar or spoil ramps will be provided in trenches/excavations if left overnight.

Item 2: Building aggregates and materials storage:

In order to prevent the possibility of amphibians colonising piles of materials, the following will be observed. Throughout the duration of the work all building aggregates and construction materials will be stored on pallets / in bags or large containers within areas of cleared vegetation. There will be no loose piling of building aggregates or materials.

Notes:

1. In the highly unlikely event that GCN are discovered during the implementation of the avoidance measures or during site development, then all work will stop and further advice will be sought from the acting ecologist and Natural England.

Birds:

All birds are offered various levels of protection under the Wildlife and Countryside Act (1981) as amended.

The Dutch barn is known to support breeding pigeon species (probably wood pigeon). It could support other species although no evidence of this was found.

The wooden garage has two nest boxes at each end of the eastern elevation.

Barn Owl:

No evidence of current/historical barn owl use was recorded during the survey.

Whilst barn owl activity was not recorded, the vegetable boxes located in the upper inside NW and SW corners of the barn have roosting potential, albeit the lip structure of these boxes and restricted height above the boxes is far from ideal. It is likely that the previous owner who erected the vegetable boxes was trying to attract barn owls, however the current owner has stated that these have only ever supported pigeons. The current owner states that he erected a barn owl box on the outside northern elevation of the barn but this only ever supported pigeons so he subsequently removed the box.

At this site there are significant road hazards present locally, which have a bearing on what if any enhancements for barn owl should be applied on site. Therefore, Barn Owl Trust guidance was referred to in respect of the suitability of any enhancement for barn owls. This is outlined below.

The 15-year research project undertaken by David J Ramsden for the Barn Owl Trust* provides the following statement.

'Major roads cause the complete absence of breeding Barn Owls within 0.5 km either side of the road, severe depletion of their population within 0.5 - 2.5 km of the road and some depletion within 2.5 - 8 km of the road. It is not until 25 km from a road that no effect of its presence on Barn Owl populations can be detected. Since almost the entire area of lowland Britain lies within 25 km of a major road it is highly probable that almost the entire British Barn Owl population is to some extent suppressed by the presence of major roads.'*

*Barn Owls and Major Roads. David J Ramsden - Barn Owl Trust.

Based on the above research, the current advice provided by the Barn Owl Trust is as follows.

- Do not encourage Barn Owls to live near unscreened major roads.
- Don't erect a Barn Owl nest box within 1 km of a major road, unless the road has continuous screens on both sides.

The B5195 Altcar Lane is 50m west of the site with no continuous screening.

The very busy and dangerous A5147 Mairscough Lane lies approximately 465m east of the proposal site at its nearest point, doesn't have a continuous screen along both sides of the road, and much of the road is more or less at the same level as the surrounding land. This represents a serious hazard to barn owls.

In addition, the very busy A59 dual carriageway which potentially represents a serious hazard to barn owls attempting to cross the road, lies 3.9km to the south-east, with no continuous screening.

Therefore, based on the absence of barn owl evidence in the barn affected, combined with the advice provided by the Barn Owl Trust, nest box provision is not considered to be appropriate in this instance.

Wintering Birds:

The site falls within the Sensitive Waterbird Area (SWA)* for pink-footed goose and whooper swan.

*The Sensitive Waterbird Area is defined based on tetrad counts over the period winter 2008/09 to winter 2017/18**

*The Sensitive Waterbird Area includes all tetrads with a greatest regular use class of at least '1% Lancashire & North Merseyside Population', plus any adjacent tetrads that are regularly flown over by Geese and Swans.**

*See LERN Sensitive Waterbird Area v3a 22/11/2018

As the boundary of the SWA is defined on a tetrad (2x2km squares) basis, it also contains land that is not regularly utilised by PFG, or is unsuitable for those species. Consequently, whilst the site is located in the SWA, this doesn't mean that all of the land within the SWA is used by wintering birds.

This is the case with the proposal site which is composed entirely of habitats that are unsuitable for foraging wintering PFG and swans.

As well as crop type, areas of land used or avoided by PFG and whooper swan is influenced by other factors that include the following.

- Field size.
- Contiguity of suitable habitat.
- Presence of boundary features.
- Levels of human disturbance.
- Crop protection/deterrents.
- Topography.

The site is located within a hamlet of buildings with mature trees and woodland all in very close proximity. Furthermore the proposed replacement building is approximately the same size and volume as the existing Dutch barn (*see diagram on following page*). Therefore there can change in impact arising from replacing an existing building with a new building of almost identical size/volume and in the same location.

Recommendations: Birds;

No strategic bird surveys are required.

The Dutch barn is known to support breeding pigeons and could support other breeding birds. The garage has two nest boxes. Before any development and in order to minimize impacts on birds any disturbance / building removal should take place outside of the breeding season, i.e. between September 1st and February 28th. However since pigeons can breed throughout the year, checks will still need to be made irrespective of the timing of works.

Bird Boxes

In the interests of biodiversity enhancement at least 3 of either of the following boxes will be installed on the new building or trees in the clients ownership. The boxes should face between north and east;

<https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/making-and-placing-a-bird-box/#:~:text=Unless%20there%20are%20trees%20or,in%20front%20of%20the%20entrance.>

Schwegler 1B Nest Box –The 1B nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes. The nest box can be attached to the tree or wall using an aluminium nail or by hanging over a branch and is made from Woodcrete to ensure that it lasts for decades. The front panel is removable for inspection and cleaning.

<https://www.wildcare.co.uk/schwegler-1b-bird-box-26mm.html>

Vivara Pro Seville Woodstone Nest Box – These WoodStone boxes provide a well insulated interior with a more consistent internal temperature than an ordinary wooden box, and can be fixed at a height of 1.5 – 3 metres to both buildings and trees.

<https://www.nhbs.com/vivara-pro-seville-32mm-woodstone-nest-box>

Water Voles:

Water voles (*Arvicola terrestris*) are protected by the Wildlife & Countryside Act (1981) as amended. In 1998 particular emphasis of protection was given to the water voles burrow in respect of Section 9(4) of the above act.

Water vole is protected under Section 41 of the NERC Act and is a species listed as of principle importance for the conservation of biological diversity in England.

No evidence in terms of; burrows, feeding stations/remains, latrines, runs etc. was found associated with the pond.

Recommendations:

No further action is required.

PART 4 REFERENCES:

4.1 REFERENCES:

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- Youngs and White (2008) *Wind Turbines, Sensitive Bird Populations and Peat Soils: A Spatial Planning Guide for on-shore wind farm developments in Lancashire, Cheshire, Greater Manchester and Merseyside*. RSPB and Lancashire Wildlife Trust (July 2008).

APPENDIX 1:

Site Photographs

APPENDIX 2:

LERN Desk Top Study Data files (separate files)

Appendix 1: Site Photographs August 5th 2022:



Dutch barn showing open east elevation and asbestos clad northern elevation.



Internal area of barn showing wooden truss roof structure.



Dutch barn showing asbestos clad western elevation and open southern elevation.



Wooden vegetable box in top NW corner of barn with recent evidence of breeding pigeons (probably wood pigeon)



Internal area of barn showing wooden truss roof structure.



Broken pigeon egg below wooden vegetable box in top NW corner of barn, (probably wood pigeon).



Pigeon feathers caught on cobwebs below wooden box in top NW corner of the barn.



Northern asbestos clad elevation of the Dutch barn with surrounding amenity grassland.



Photograph of the pigeon feathers with grey tips.



Northern asbestos clad elevation of the Dutch barn with surrounding amenity grassland.



Looking north through the gap between the Dutch barn and Esteban Barn residential property to the east.



Northern asbestos clad elevation of the Dutch barn with surrounding amenity grassland / wooden garage in background and cherry laurel hedge north of the barn.



Wooden garage with corrugated roof on the sites western boundary.



Ornamental duck pond, supporting non-native ducks and mallard.



Ornamental duck pond, supporting non-native ducks and mallard.



Wooden garage with corrugated roof on the sites western boundary. Bird boxes are present on the northern and southern ends of the eastern elevation.



Ornamental duck pond, supporting non-native ducks and mallard.



Wooden garage with corrugated roof on the sites western boundary. Bird boxes are present on the northern and southern ends of the eastern elevation.



Wooden garage with corrugated roof on the sites western boundary, showing the western elevation.



Amenity grassland lawn and young cherry laurel to the north of the barn.