Crow Ecology

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Preliminary Roost Assessment Bat Survey Report

Site**:** Proposed Conversion of Barn to a Dwelling – Poplar Farm, Humbleton Road, Lelley, HU12 8SP

Client**:** Piercy Design Ltd. on behalf of their client

Date of Survey**:** 11th March 2024

Prepared by Chris Crow BSc (Hons), ACIEEM.

NE Bat License No: 2015-11015-CLS-CLS
NE Great Crested Newt License No: 2015-18094-CLS-CLS
NE Barn Owl License No: CL29/00149

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Validity of survey data and report. The findings of this report are valid for 24 months from the date of survey. If work has not commenced within this period, an updated survey by a suitably qualified ecologist will be required.

Contents

1. Summary

Crow Ecology was commissioned by Piercy Design Ltd. on behalf of their client to undertake a Bat Preliminary Roost Assessment (PRA). The aim of the PRA survey is to determine the presence/absence of bats, birds and other protected species at the time of the survey. The survey helps determine whether further surveys and/or mitigation are necessary. The survey is required to inform a proposed planning application which is to be lodged with the local planning authority, in this case East Riding of Yorkshire Council.

The project site is a double-storey barn within the property boundary of Poplar Farm, Humbleton Rd, Lelley, HU12 8SP. Copies of the proposed development were provided by: Piercy Design Ltd., 4 Percy Street, Hull, HU2 8HH.
The proposal is:

- Conversion of barn to a dwelling with associated landscaping

The PRA survey was undertaken on the 11/03/24 in suitable weather conditions for such surveys with no limitations.

A desktop study was performed to review the site using data from North and East Yorkshire Ecological Data Centre (NEYEDC) and Multi-Agency Geographic Information for the Countryside (MAGIC). Google maps were used to review the site.

There are no statutory designated sites, no non-statutory designated sites and one form of Priority Habitat within a 1km radius of the project site. The priority habitats will not be affected by the proposed development.

The building has a Moderate bat roosting potential as a small number of bat droppings were identified. The surrounding habitat has a moderate-high bat foraging suitability. The building also has vacated birds' nests present.

The following surveys are required before the proposed development can proceed:

- Emergence/Re-Entry Bat Survey
- Great Crested Newt Habitat Suitability Index and eDNA surveys
- Breeding birds (only if any future works takes place between March 1st and 31st August).

The following provisions are recommended:

- Mammal PWMS

Biodiversity Recommendations include:

- Native Hedgerow Planting

2. Introduction

Crow Ecology was commissioned by Piercy Design Ltd. on behalf of their client to undertake a Bat Preliminary Roost Assessment (PRA). The survey took place on the 11th February 2024 by Chris Crow, ACIEEM of Crow Ecology, and Amelia Bateman-Young QCIEEM. The aim of the PRA is to carry out a detailed inspection of the building both internally and externally and to look for features that bats could use to enter and exit the building, roosting potential and any signs that bats are inhabiting the building[1]. Nesting birds and other protected species were also surveyed for. The remaining area within the development boundary was also surveyed.

Recommendations for mitigation and/or further survey work can be made to reduce the impact on any bat species thereby also reducing potential constraints to any development which may take place.

2.1 - Site Location

The project site is located within the property boundary of Poplar Farm, Humbleton Rd, Lelley, HU12 8SP. Six figure grid reference TA208327[2].

The landscape and land use surrounding the site is predominately agricultural. Beyond the village of Lelley, with its associated residential properties and private gardens, as well as farm buildings, in all bearings are agricultural fields with associated hedgerows, ditches and drains.

Figure 2.1 – Aerial view with project site illustrated within the wider landscape (not to scale). Source – Google maps 2024[3]

2.2 - Site Description

Figure 2.2 - Aerial view of the building under the proposed development (not to scale or accuracy). Source – Google maps 2024[3].

The project site is approximately 0.1ha. The barn is located in the SW corner of the site, with hardstanding driveway area to the SE of the site. In the northern section of the site is the garden, which is mostly tall ruderal and stored items. Along the east boundary is a coniferous hedgerow.

Please see appendix 1 for existing and proposed building layout.

2.3 - Site Proposal

The proposal for this site is as follows:

- Conversion of barn to a dwelling with associated landscaping

Please see appendices 1 and 2 for proposed site layout.

3. Methods

This report has been written following the following guidelines:

- The Bat Conservation Trust: Bat Surveys for Professional Ecologists - Good Practice Guidelines (4th edition 2023)[1]
- Natural England Bat Mitigation Guidelines (2004)[4].
- The current (March 2015) Natural England Standing Advice for bats can be found at: https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects
- Bat Workers Manual 3rd Edition (2004)[5]
- *Great Crested Newt Mitigation Guidelines* (2001) by English Nature[6]
- *Barn Owls and Rural Planning Applications* - a Guide (2015) The Barn Owl Trust[7]
- *Wild birds: Advice for Planning Decisions* Crown Copyright (2022)[8]
- *Badgers: Advice for Planning Decisions* Crown Copyright (2022)[9]

3.1 - Desktop Study

A desktop study was performed using data from the North & East Yorkshire Ecological Data Centre (NEYEDC)[10] to identify any designated sites, priority habitats and protected and/or notable species within the search radius. These searches include all records within 1km of the site from the centre of the project site located at grid reference TA208327. Google maps were used to review and map the site.

3.2 – Personnel

The PRA took place on the 11th March 2024 by Chris Crow BSc (Hons), ACIEEM of Crow Ecology. Chris Crow has over 13 years surveying experience and holds the following Natural England (NE) licences;

Bat Licence No: 2015-11015-CLS-CLS (Class 2)
Great Crested Newt Licence No: 2015-18094-CLS-CLS (Level 2)
Barn Owl Licence No: CL29/00149

Amelia Bateman-Young has a BSc (Hons) in Geography from the University of Hull and after three seasons at Crow Ecology, wishes to pursue a career in Ecology. I am tutoring Amelia in all aspects of ecology.

3.3 - Preliminary Roost Assessment

3.3.1 - Assessment Methodology

This survey involves a detailed inspection of the building both externally and internally. The information collated is used to determine[1]:

- Potential or actual bat entry/exit points
- Potential or actual bat roosting locations
- Any evidence of bat signs
- Number of ecologists needed if further surveys are required

The inspection of both the internal and external was looking for the following evidence:

- Live and or dead specimens
- Potential entrance/exit points
- Potential roosting sites

- Droppings
- Urine splashes or staining
- Fur oil grease marks around potential entrance/exit points
- Feeding remains (e.g., wing fragments of butterflies and moths)
- Scratch marks
- Absence of cobwebs in potential roosting points
- Squeaking noises

The areas in relation to this building that were examined included the following:

- Roofing materials
- Light gaps in roofs indicating access points to the outside.
- Loose fixtures
- Ridge beam and all other beams
- Openings for ventilation
- Walls
- Masonry where there may be holes suitable for bat access
- Suitable crevices in and around exposed brickwork and the mortar
- Rafters/timbers that may catch bat droppings.
- Junctions between supports and walls.
- Behind and around stored items (as safe to do so)

3.3.2 - Limitations

There were no limitations to this survey. All parts of the buildings could be accessed and assessed. It is possible that due to the recent weather conditions that some, if present evidence may have been removed due to rainfall.

3.3.3 - Method Justification

Due to the age, materials and structure of this building and its location within the surrounding landscape the building may have potential for roosting bats. These factors trigger the need for a bat survey[1].

A 1km data search radius was selected as the proposed development is small and therefore, if there are ecological impacts to consider, this impact would only be localised and the proposed development is within the existing property boundary.

4. Survey Results

4.1 - Desktop Study

4.1.1 – Designated Sites

There are no statutory and no non-statutory designated sites within the 1km search radius[10].

4.1.2 – Priority Habitat Data

There are no ancient woodlands or ancient re-planted woodlands present within the 1km search radius. There is one form of Priority Habitats within the 1km search radius: Deciduous Woodland[10]. This is approximately 560m SW from the project site. Please see figure 4.1.

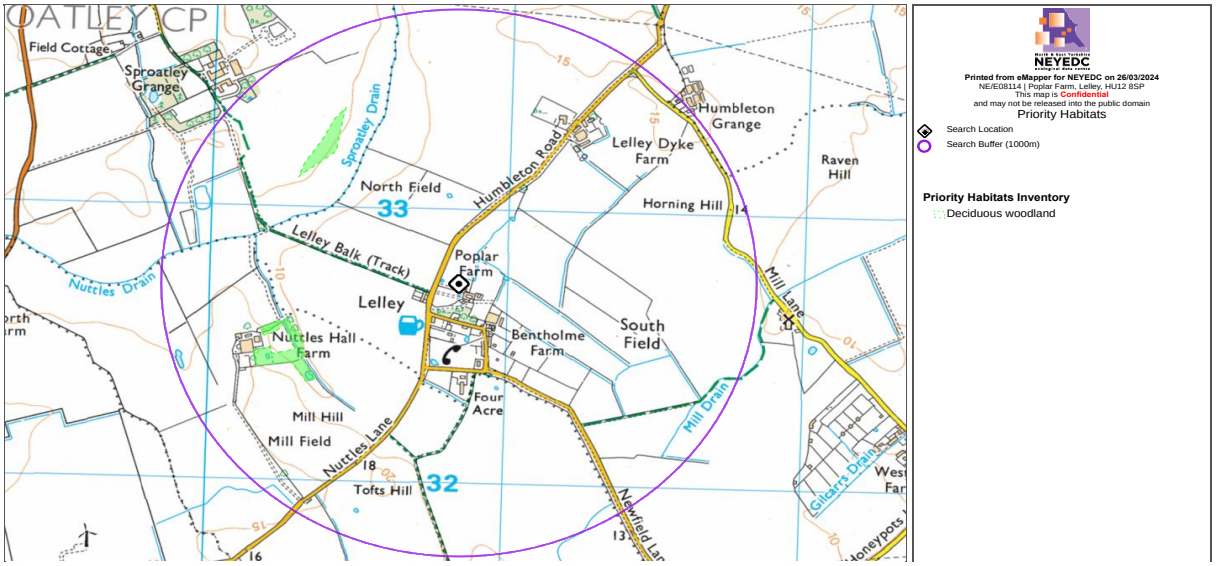

Figure 4.1 – Priority Habitats within 1km of the project site.

4.1.3 - Species Records

Species records were obtained from NEYEDC[1]. Within the 1km search radius of the site, 0 historical records of which have one or more designations as notable and or protected species was identified. This does not equivalate to no any species not present, but the fact that there have been no recordings. There are no GCN or Bat license data within the 1km search radius[11].

4.2 - Preliminary Roost Assessment

4.2.1 - Summary of Preliminary Roost Assessment

Date	Weather	Structure (Numbered if more than 1 structure)	Equipment Used
11/03/24	7ºC 100% Cloud Wind – 1 (Beaufort Scale) No Rain		• Clulite CB2 1 million candle light powered torch • Explorer Premium 8803AL Endoscope • Headtorch • 3.8 metre telescopic ladder

			• Camera • CAT S62 Pro Thermal imaging camera.
Comments – Vacated birds' nests present, No Barn owl evidence present			
Personnel – Ecologist (Chris Crow), Amelia Bateman-Young			

4.2.2 – Assessment of Building

Description of Structure:	The rectangular barn, is made from brick with a double-pitched pantile roof. The building is split in two; with the north end having a first floor and the other end being completely open. There is a large opening on the southern elevation, with a window above it. On the north elevation there is a door on the first floor. There are also doors on the east and west elevations. The roof has partially collapsed in the northern section, leaving a large hole; exposing this section to the prevailing weather conditions. The ground floor room is notably cooler and has limited access from outside.							
External Assessment – Please see plates 4.1 – 4.2								
Walls:	Brick	Metal	Wood	Vents/Puttock holes	Cavity Walls	Windows	Doors	Other
Bat Roosting/Access Potential (YES/NO):	YES	N/A	YES	YES	NO	YES	YES	N/A
Location/Notes:	Gaps in the brick work on east and north elevations		Gaps above the lintel on south elevation. Gaps in timber frame on east elevation.	Gaps in puttock holes on east and west elevations		Missing panes in all windows.	Gaps in doors. Permanent opening on the south elevation	
Roof:	Tiles/ Roof material	Lead Flashing	Eaves	Hanging tiles/Boarding	Ridge tiles	Soffit Boards (Or similar)	Chimney	Other
Bat Roosting/Access Potential (YES/NO):	YES	N/A	YES	N/A	YES	N/A	N/A	N/A
Location/Notes:	Missing tiles. Roof partially collapsed. Gaps in tiles		Gaps along eaves.		Missing ridge tiles			
Bat Evidence:	Bat (dead/alive)	Droppings	Feeding remains	Urine staining	Scratch marks	Staining	Other	
Found (YES/NO):	NO	NO	NO	NO	NO	NO	N/A	
Location/Notes:								
Internal Assessment – Please see plate 4.3 – 4.5								
Roof:	Roof lining	Boarding	Tiles	Ridge beam	Rafters	Brick	Other	
Bat Roosting/Access Potential (YES/NO):	N/A	N/A	YES	YES	YES	N/A	N/A	

Location/Notes:			Missing tiles, roof partially collapsed. Gaps in tiles.	Gaps along ridge beam. Missing ridge tiles.	Spaces between roof and rafters.			
Walls:	Brick	Metal	Wood	Boarding	Timbers	Windows	Doors	Other
Bat Roosting/Access Potential (YES/NO):	YES	N/A	YES	N/A	YES	YES	YES	N/A
Location/Notes:	Gaps in brick with crawl up space.		Gaps between lat lining and roof tiles. Gaps in floor boards.		Gaps in floor boards.	Missing panes in windows.	Gaps around door frame, gaps in door.	
Bat Evidence:	Bat (dead/alive)	Droppings	Feeding remains	Urine staining	Scratch marks	Staining	Other	
Found (YES/NO):	NO	YES	NO	NO	NO	NO	YES	
Location/Notes:		Old bat droppings identified.					Vacated birds' nests.	
Bat Roosting Potential:				MODERATE				
Reasoning:				- Small number of bat droppings identified - Gaps in roof - Gaps in walls - Access through windows and doors - Gaps in floor boards - Space between roof and rafters - Gaps along eaves - Gaps in puttock holes - Gaps in lintel				

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Plate 4.1 – (L) – Southern elevation, (R) – East elevation; highlighting potential access/roosting points

Plate 4.2 – (L) – Northern elevation, (R) – West elevation; highlighting potential access/roosting points

Plate 4.3 – (L) – Internal of room 1, facing south (R) – Internal of room 1, facing north; highlighting potential access/roosting points


Plate 4.4 – (L) – Internal of room 2, first floor, facing North, (R) – Internal of room 2, first floor, facing South; highlighting potential access/roosting points


Plate 4.5 – (L) – Internal of room 2, ground floor, facing West, (R) – Internal of room 2, ground floor, facing East; highlighting potential access/roosting points

4.3 - Bat Habitat Suitability of the Surrounding Landscape

Within the project site, the only suitable foraging habitat is the hedgerow along the eastern boundary of the project site. Therefore, the project site has Low Commuting and foraging.

The immediate area surrounding the buildings are residential properties, old outbuildings and areas of hardstanding. In all bearings there are a number of mature planted trees and a number of scattered trees within the property boundary, and neighbouring property. Further beyond, the habitats are connected to the wider landscape via a network of hedgerows and drains and ditches. There are waterbodies and small parcels of woodland present within the landscape. The neighbouring property having a large pond within the garden. Due to the habitats present, the surrounding area is classed as moderate-high for commuting/foraging bat habitat (see figure 4.2)[1].

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Potential suitability	Description	
	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[a]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[b] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[c]).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[b] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[b] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Figure 4.2 – Guidelines for assessing roost and foraging habitat suitability. Source – Bat Conservation Trust, 2023[1]

4.4 – Remaining Habitats within the project site

The existing habitats within the development boundary consist of Gravel/Hardstanding, Coniferous Hedgerow and Tall Ruderal.

4.4.1 – Gravel/Hardstanding

This habitat is located within the central section of the site from the entrance; adjacent to the building. It has a number of stored items within it. It has negligible ecological value (please see plate 4.6). The items stored may provide refuge for small mammals/reptiles and amphibians, if present within the project site.

4.4.2 – Coniferous Hedgerow

This habitat is along the eastern boundary, separating the project site from the rest of property. This hedgerow is of low ecological value but could support breeding birds and be used as shelter by small mammals such as Hedgehogs *Erinaceus europaeus*. (please see plate 4.7).

4.4.3 – Tall Ruderal

These areas of habitat when created will have started as grassed areas but due to the lack of management and the items stored within it, ruderal species have been able to take over. It has a low ecological value. The area is dominated by Nettle *Urtica dioica*. The items stored may provide refuge for small mammals/reptiles and amphibians, if present within the project site (please see plates 4.7- 4.8).

Plate 4.6 – (L) The hardstanding habitat along the side of the building (R) – The hardstanding habitat continued.


Plate 4.7 – (L) The hedgerow along the eastern boundary and tall ruderal habitat at the front (R) – The hedgerow along the eastern boundary and another area of tall ruderal; both with stored items in


Plate 4.8 – (L) Facing south east, the tall ruderal habitat with stored items (R) – facing north west, the tall ruderal habitat with stored items.

5. Evaluation

5.1 – Designated sites

The project site is not within any statutory or non-statutory designated sites[10].

5.2 – Priority Habitats

There are no ancient woodlands or ancient re-planted woodlands present within the 1km search radius. There is one form of Priority Habitat within the 1km search radius: Deciduous Woodland[10]. This is approximately 560m SW from the project site. The priority habitats or the species associated with them will not be affected by the proposed development.

5.3 – NEYEDC Species Records

Species records were obtained from NEYEDC[11]. Within the 1km search radius of the site, 0 historical records of which have one or more designations as notable and or protected species was identified. There is no GCN or Bat license data within the 1km search radius[11].

5.4 – Project Site

5.4.1 – Bats

The building has Moderate bat roosting potential as there was evidence of a small number of bat droppings identified. These findings correlate with the buildings numerous access and roosting features present. The building has features that are desirable for roosting bats, most notably: the gaps in the walls, and spaces between tiles and lattes. The cracks and crevices present favour crevice dwelling species such as Brandt's bat *Myotis brandti*, Natterer's bat *Myotis nattereri* and Common/Soprano pipistrelle *Pipistrellus pipistrellus/Pipistrellus pygmaeus*. Some cracks and crevices were heavily cobwebbed and generally, bats prefer cobweb free areas[12,13].

The building can also be accessed internally due to the number of large openings such as the slipped/ missing ridge and roof tiles, missing pane and open doors. These openings favour species such as the Brown Long-eared bat *Plecotus auritus* (BLE). BLE's favour large roof voids to fly around and 'warm up' before they exit a building to go and forage. The building is optimal for BLE. The ridge beam and gap between the partition wall and ridge beam is a favourable roosting location for BLE and other bat species.

There were no limitations to this survey as all parts of the buildings were easily accessed and assessed. Therefore, the results obtained are concise and accurate at the time of the survey.

5.4.1.1 - Conclusion

Please see section 6.1 for recommendations.

5.4.2 – Birds

The building had vacated nests presents. Although suitable, the building had no evidence of Barn owl *Tyto alba* present.

5.4.2.1 - Conclusion

Please see section 6.2 for recommendations.

5.5 – Remaining Habitats within the Project Site

5.5.1 – Gravel/Hardstanding

Under the proposed development, this habitat will remain, in the form of gravel/hardstanding. It will be cleared of the stored items.

5.5.1.1 - Conclusion

No further recommendations or enhancements. Please see section 6.3 for recommendations.

5.5.2 – Coniferous Hedgerow

Under the proposed development, this hedgerow will be retained.

5.5.2.1 - Conclusion

No further recommendations or enhancements.

5.5.3 – Tall Ruderal

Under the proposed development, this habitat will be cleared and replaced with a garden area, likely to be an amenity grassland.

5.5.3.1 - Conclusion

No further recommendations or enhancements.

5.6 – Protected or Notable Species within the Project site boundary or Surrounding Landscape

5.6.1 – Great Crested Newt *Triturus cristatus* (GCN) and other Amphibians

The NEYEDC data search produced no records of GCN within the search radius[10]. There are no ponds within the development boundary or property boundary. There is one pond within 500m of the project site; approximately 35m West of the project site. The pond was inaccessible on the day of the survey as it was within another property boundary. The Building is sub-optimal terrestrial habitat but the tall ruderal and stored items are suitable terrestrial habitat.

Conclusion – Please see section 6.4 for recommendations.

5.6.2 – Reptiles

The NEYEDC data search produced no records of reptiles present within the1km search radius[10]. The project site is not suitable for reptiles for the following reasons[15]:

- Vegetation – The vegetation (tall ruderal) within the project site lacks diversity, varying height and structure
- Extent - The habitats within the project site are poor.
- Aspect – There are no south-facing slopes
- Topography – No suitable topography.
- Connectivity – The location of the project site has limited connectivity for reptiles
- History – There are no records of Reptiles present within 1km of the project site.

Conclusion – No further surveys or action required.

5.6.3 – Badgers

The NEYEDC data search produced no records of Badgers within 1km search radius of the project site[10]. Within the development boundary there is no Badger sett and there was no evidence of badger presence within the development boundary. The agricultural fields and surrounding areas of small woodlands would provide a suitable habitat for shelter and foraging. Badgers will not use the buildings or the remaining areas of the project site to forage but they may commute close to it and therefore it has to be considered.

Conclusion – No further surveys are needed but a Precautionary Working Method Statement (PWMS) will be adhered to minimise any potential impact to any potential Mammals. Please see section 6.3 for recommendations.

5.6.4 - Plants

The project site has limited vegetation and there are no protected or notable species present.

Conclusion – No action needed.

5.6.5 – Other Protected or Notable Species

The NEYEDC data search produced no records of Water vole *Arvicola amphibius* or Otter *Lutra lutra* within 1km search radius of the project site[10]. Water vole and Otter do not need to be considered for this proposed development as the development is staying within the existing property boundary and there are no waterbodies within the development boundary.

The NEYEDC data search produced no records of Hedgehog within 1km search radius of the project site[10]. The stored objects in the tall ruderal/hardstanding are a potential shelter for Hedgehogs.

Conclusion – No further surveys are needed but a PWMS will be adhered to minimise any potential impact to any potential Mammals. Please see section 6.3 for recommendations.

6. Recommendations

6.1 - Bats

Before the proposed development can take place, a further bat survey is required as the building has potential for roosting bats during the summer months.

6.1.1 – Emergence/Re-Entry (Presence/Absence) Survey

A Presence/Absence Bat Survey is required due to the roosting potential of the building and the moderate-high commuting/foraging suitability of the surrounding habitat[1].

This survey involves visiting the site at dusk and/or dawn to watch and listen (using a bat detector and Night Vision Aids (NVA's)) and record any bats that enter or exit the building/s in question. The information recorded will illustrate the species, numbers, access points and roost location, the latter two will have already been noted from the preliminary roost assessment[1].

The aims and objectives of the survey are to determine the presence/absence of bats at the time of the surveys and the data collected used to for mitigation to support a development licence if bats are present[1].

6.2 - Birds

No breeding birds were present during the PRA; however, there were vacated birds' nests present.

If breeding birds are present then no works can commence between 1st March-31st August[8]. This is the time when adult birds are rearing their young. It is an offence under the WCA 1981 to in relation to this proposed development to:

- intentionally kill, injure or take birds
- intentionally take, damage or destroy a nest while it's being used or built
- intentionally take or destroy a bird's egg/s

If works need to be carried out during the nesting period (1st March to 31st August) checks should be made by an ecologist for nesting birds, the day before the works are due to commence[8]. Any nesting birds found should be left to complete their breeding cycle (e.g., until the young have fully fledged) before any works can take place.

6.3 – Mammals

The NEYEDC data search produced no records of Badger and no records of Hedgehog. The agricultural fields and surrounding areas of small woodlands would provide a suitable habitat for shelter and foraging. Badgers Hedgehogs will not use the buildings or the immediate area surrounding the project site to forage but they may commute close to it and therefore it has to be considered.

The stored items within the hardstanding habitats have potential for Hedgehogs in the form of a shelter.

To ensure no harm occurs to any Mammals possibly commuting or sheltering within the project site, the following PWMS will be adhered to during the clearing and development phases.

6.3.1 – PWMS

- The stored items are to be removed by hand and not by machinery.
- Before and during the construction phases the contractors and people involved in the development should ensure they do not create temporary refuge sites. This will be done by ensuring heavy machinery only access the areas via the existing hardstanding[16].
- Building materials and associated materials like plastic sheeting should be kept off the ground (e.g., on a pallet)[16].
- Associated building materials should be bagged up and placed on the existing hardstanding[16].
- If by mistake this is not adhered to, then checks should be made each day prior to work commencing.
- Any excavation trenches that will be left overnight should be covered over or equipped with a number of ramps and Hydrophobic material (e.g., Insulation foam) to allow otherwise trapped amphibians/mammals a means of escaping[16,17].
- Any amphibians (excluding GCN) encountered should be released into a suitable refuge depending on the life cycle of the amphibian/s in question. Night releases are optimal due to the lower temperatures but no animal should be held captive against its will. Generally, animals that are found on land should be released to land and vice versa.
- If any animals are found, they will be safely removed and placed along the Northern property boundary as this location has the greatest connectivity to other green areas.
- Machinery left overnight should be placed on the hard-standing areas and fenced off with ground level fencing. The machinery will be checked on a daily basis for Mammals prior to work commencing just in case they have managed to breech the fencing and become trapped in any machinery present[17].

6.3.1.1 – What to do if GCN are Encountered

- In the event that Great Crested Newts are encountered, work will stop immediately and an Ecologist will be notified[6].
- The Ecologist will contact Natural England. Together they will examine a way forward for the site.
- In the highly unlikely case that a solution cannot be found, works will cease until a Natural England License has been granted

6.4 – Great Crested Newt eDNA survey

There is a pond within the neighbouring property boundary that is approximately 35m from the project site. The stored items and tall ruderal habitats are suitable terrestrial habitats for GCN. Therefore, to determine if GCN would be impacted upon by the proposed development a GCN Habitat Suitability Index (HSI) and GCN eDNA survey is recommended.

6.4.1 - Habitat Suitability Index (HSI)

The Habitat Suitability Index (HSI) was developed by Oldham *et al.* (2000)[18]. The survey is used to measure GCN habitat suitability. This survey alone cannot be used as a substitute for GCN surveys. HSI incorporates ten suitability indices all of which are factors thought to affect GCN's. The ten suitability indices are as follows:

- Location
- Pond Area
- Desiccation Rate
- Water Quality
- Shade

- Fowl
- Fish
- Ponds
- Terrestrial Habitat
- Marcophytes

The HSI is a geometric mean of the ten indices. The score is added together and the tenth root of the number is then calculated $(X)^{1/10}$.
The calculated HSI for a pond should be between 0 and 1.
The graph below indicates what the score means with regards to habitat suitability for GCN.

HSI		Pond suitability
<0.5	=	poor
0.5 – 0.59	=	below average
0.6 – 0.69	=	average
0.7 – 0.79	=	good
> 0.8	=	excellent

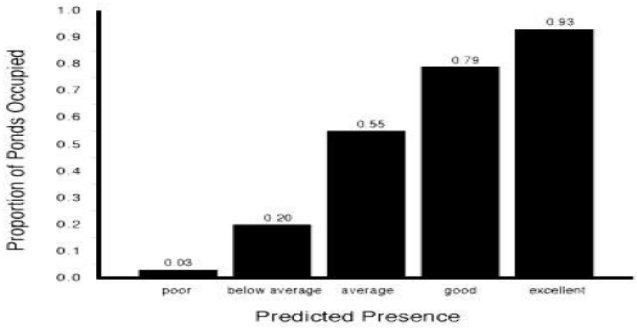


Figure 6.1 Table and Graph representing HSI scores and the predicted presence of GCN. Source – Oldham et al. (2000).

6.4.2 – GCN eDNA Survey

Environmental DNA (eDNA) testing is a technique used to determine the Presence/Absence of Great Crested Newts (GCN) in ponds during the breeding season (mid-April-June). It involves taking water samples of the pond/s in question at multiple sample points. The samples are sent for laboratory analysis.

This survey is performed between April 15th - 30th June. The method involves a daytime inspection of the pond followed by the eDNA sampling technique protocol. If GCN eDNA is present then this will require a further a GCN PWMS or District Level Licensing (DLL) application.

7. Project Site Biodiversity Enhancement Recommendations

To comply with: Natural Environment and Rural Communities Act 2006 (NERC)[19], the National Planning Policy Framework (NPPF)[20] and Local Plan (ENV4)[21], recommendations have been made to fulfil these policies to increase biodiversity of this planning application.

7.1 – Hedgerow Planting

Under the proposed development, a hedgerow will be planted along the Western boundary. This action would boost the biodiversity on-site, post construction.

7.1.1 – Native Hedgerow species

Any of the following species are recommended not only for their biodiversity value but some are also of local providence. It is recommended that at least three different species are to be planted.

- Hazel *Corylus avellana* - The leaves are eaten by some species of moths' caterpillars. It also supports a number of Butterfly species. The flowers are a good source of pollen for bees[22].
- Holly *Ilex aquifolium* - Holly provides protection from the winter weather due to its dense evergreen foliage. The berries provide a food source for many birds. Its flowers provide nectar
- and pollen for insects[22].
- Elder *Sambucus nigra* – Birds will eat the berries and the insects will forage on the nectar[27].
- Wild privet *Ligustrum vulgare* – Supports a number of insects and the nectar is foraged by Butterflies. The berries are also eaten by birds[22].
- Hawthorn *Crataegus monogyna* – Provide a food source for invertebrates and birds. The dense composition also provides nesting opportunities[22].
- Blackthorn *Prunus spinosa* - Provide a food source for invertebrates and birds. The dense composition also provides nesting opportunities[22].
- Common box *Buxus sempervirens* – Its flowers provide nectar for insects and its dense compact growth provides shelter for birds, small mammals and insects[22].

Please follow the manufacturers protocol. Below is a generic guide to planting.

7.1.2 – Timing

January	February	March	April	May	June	July	August	September	October	November	December

The timetable above is the best time to plant hedgerow species. Do not plant if the soil is water logged or is frozen (you cannot get the spade in).

7.1.3 - Planting hedge Species[23]

This is a generic guide, please adhere to the supplier's protocol.

- Choose whips that are small (40-60cm); they are cheaper, grow quicker and have a higher survival rate.
- Prepare the ground along a 1.5m wide strip to provide good soil conditions and as little competition from other vegetation as possible
- Clear the planted area of weeds in August-September prior to planting.

- Work on the basis of 6 plants/m^2; double-row; at least 40cm apart.
- Make a slot with a spade (V-shaped) and place the whip with stake into the slot. Cover over with the dug soil and firm over but do not compact soil.
- Remove undesirable species by spot-treating.
- It is recommended to put biodegradable 'tree guards/shelters' around the whips and stake to prevent them being eaten. Once established take these guards off.
- Trim the newly planted hedge in at least the first 2 years to encourage bushy growth, allowing the hedge to become taller and wider at each cut. The hedgerow should be pruned during the winter months to avoid the breeding bird season. Shrubs are dormant too during the winter and tolerate pruning.

7.1.4 – Watering[24]

- Immediately after planting, water.
- Use a watering can with a rose or a sprinkler head attached to a hose to mimic rainfall.
- Apply to the base of the hedgerow, evenly distributed.
- Water from planting, through spring and summer until the leaves have fallen.
- Maintain a watering programme for at least the first 2 summers. By this point after, the tree roots should be established enough to access water.
- During summer, the trees such be watered every other day with 20L each time. During spring and Autumn this quantity can be reduced according to the weather conditions.

7.1.5 - Maintaining Hedgerow

This is the largest factor to ensure you have healthy hedgerow. The more maintenance you do in the early years will result in less maintenance overall. Below is a timetable of how to maintain a hedgerow;

YEAR 1	
March	Check Shelters
April	Apply foliar acting herbicide
July	Check losses
September	Check Shelters, pull out tall weeds (cut tall weeds between trees)
November	Replace losses
YEAR 2	
March	Check shelters
April	Apply foliar acting herbicide
July	Check losses
September	(cut tall weeds between trees)
November	Replace losses, Check shelters, pull out tall weeds
YEAR 3	

January	(Apply residual herbicide)
March	Check shelters
April	Apply foliar acting herbicide
July	Check losses
September	(Cut tall weeds between trees)
November	(replace losses) Check shelters, pull out tall weeds
YEAR 4	
March	Check shelters
April	(Apply foliar acting herbicide)
YEAR 5 AND ONWARDS	
Gradual removal of stakes and shelters. Occasional spot weeding around any trees still in need.	

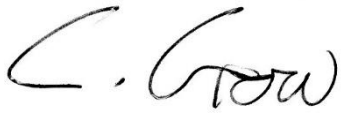
Table 7.1 – Maintenance schedule for shrubs species Source – https://www.britishhardwood.co.uk/planting-and-maintenance-advice

7.1.6 – Pruning

Regular thinning and/or pruning will take place every winter to create and maintain physical and age structure. This is also when the hedgerow species are dormant and can tolerate this maintenance. This timing also avoids the breeding bird season (1st March – 31st August)[6].

If the hedgerow dies within 5-years of planting, this will be replaced with the same species and mor maintenance provided.

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.



Chris Crow, BSc (Hons) ACIEEM. April 2024 For and on behalf of Crow Ecology, 66 Belgrave Drive, Hull, HU4 6DN. Tel – 07813 900097.
Email – info@crowecology.co.uk

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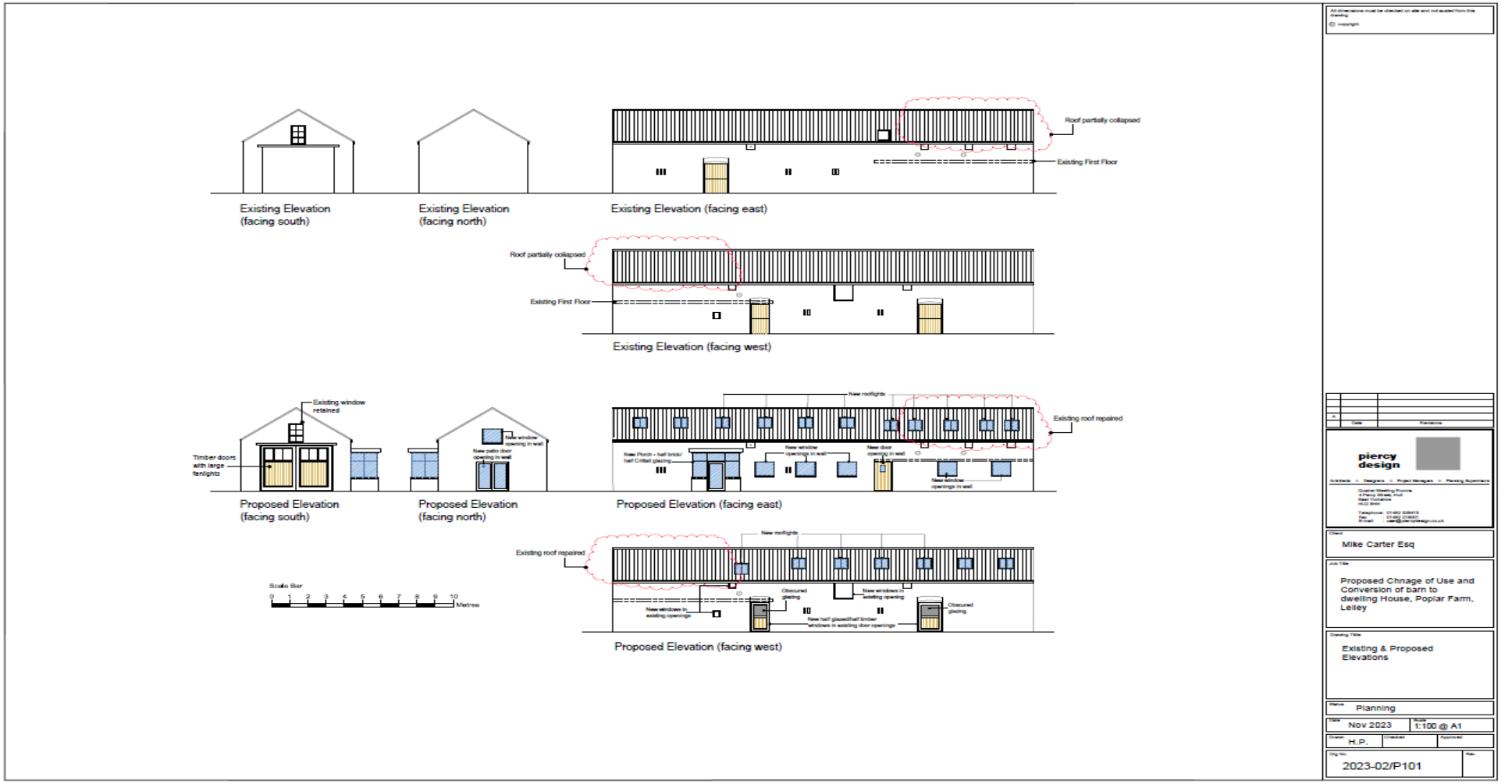
9. Appendices

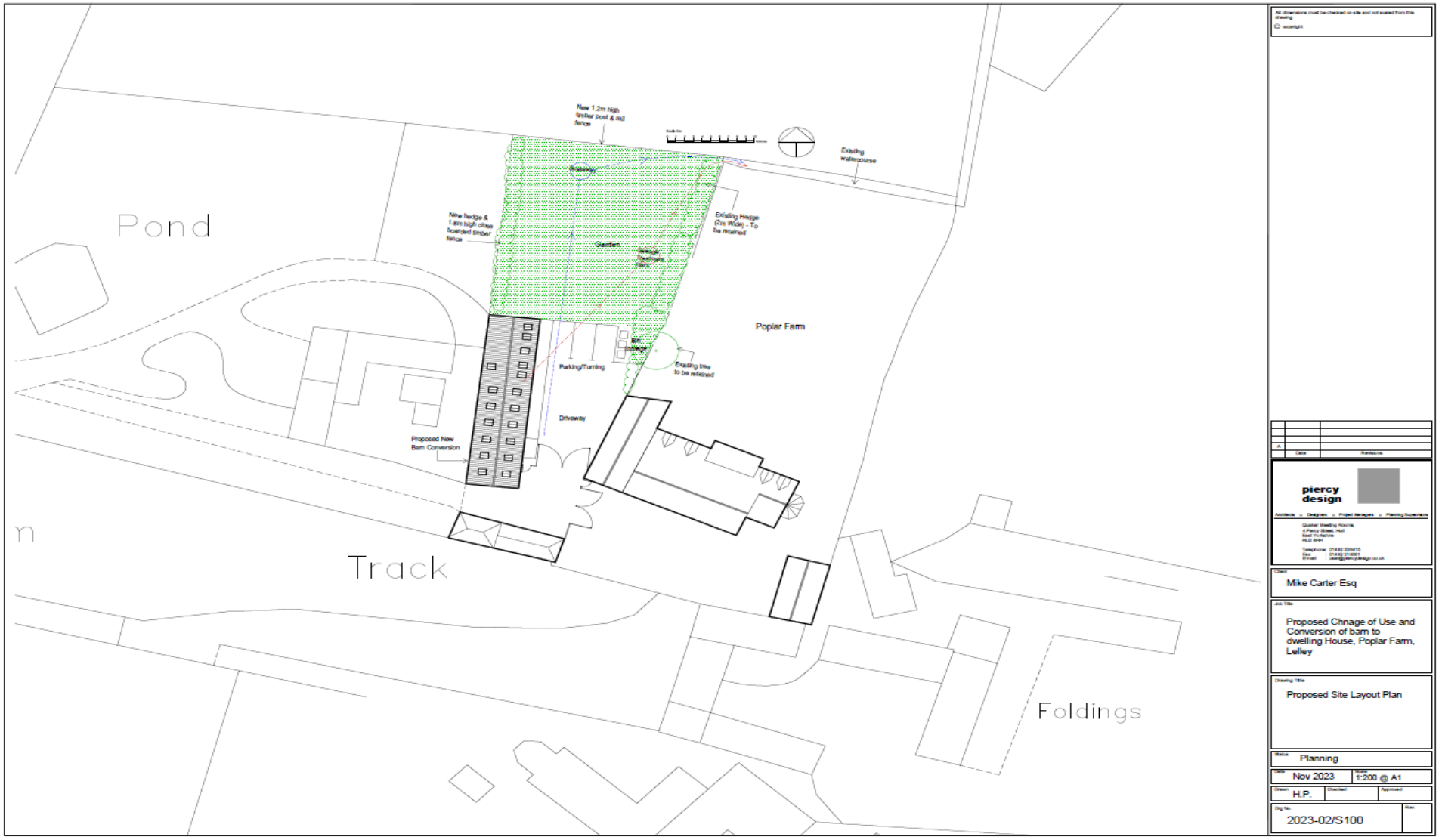
Appendix 1 – Existing and Proposed building layout




6010
23150
High level window opening
High level window opening
Fixed Door
Existing high level window
Existing Ground Floor Plan
Bedroom 1
Jack & Jill Ensuite
Study
Utility/ Boot Room
Door opening blocked up
Hall
Kitchen
Dining
New Porch
Living
Proposed Ground Floor Plan
Wardrobe
Bedroom 2
Store
Landing
Bedroom 3
Bath
Gallery
Proposed First Floor Plan
Scale Bar
0 1 2 3 4 5 6 7 8 9 10
Metres
piercy design
Mike Carter Esq
Proposed Chnage of Use and Conversion of barn to dwelling House, Poplar Farm, Lelley
Existing & Proposed Plans
Planning
Nov 2023
1:50 @ A1
H.P.
2023-02/P100

Crow Ecology
Creating a Nest for your Project & Nature

Appendix 2 – Proposed site layout



Appendix 3 – Wildlife Legislation and Planning Policy

Bats and their roosts are protected by UK and European laws. Bat roosts are protected all through the year, whether or not they are occupying a roost site.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The long title of the WCA 1981 as amended;
An Act to repeal and re-enact with amendments the Protection of Birds Acts 1954 to 1967 and the Conservation of Wild Creatures and Wild Plants Act 1975;

- to prohibit certain methods of killing or taking wild animals;
- to amend the law relating to protection of certain mammals;
- to restrict the introduction of certain animals and plants;
- to amend the Endangered Species (Import and Export) Act 1976;
- to amend the law relating to nature conservation, the countryside and National Parks and to make provision with respect to the Countryside Commission;
- to amend the law relating to public rights of way; and for connected purposes.

Bats are a Schedule 5 listed species. Section 9 of this makes it an offence to:

- deliberately capture, injure or kill bats
- damage or destroy a breeding or resting place
- obstruct access to their resting or sheltering places
- possess, sell, control or transport live or dead bats, or parts of them intentionally
- or recklessly disturb a bat while it's in a structure or place of shelter or protection

Birds

Birds, their eggs and nest are protected under by UK law under the following act:
Wildlife & Countryside Act (as Amended) 1981: Schedules 1-4 and in some cases 9.
To summarise, you would be breaking the law by;

- intentionally kill, injure or take birds
- intentionally take, damage or destroy a nest while it's being used or built
- intentionally take or destroy a bird's egg/s
- possess, control or transport live or dead bird, or parts of them, or their eggs
- sell birds or put them on display for sale
- use prohibited methods to kill or take birds

Birds that are listed as a schedule 1 bird are provided further protection. Additionally, it is an offence to:

- disturb them while they're nesting, building a nest, in or near a nest that contains their young
- disturb their dependent young

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Conservation of Habitats and Species Regulations 2010 is an EU directive and consolidates all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species. These sites form a network termed Natura 2000 and include Special Areas of Conservation and Special Protection Areas. All European bats species and their roosts are listed in Annex IV and some bat

species are also listed in Annex II giving those species even greater protection. Section 41 of this law states that it is an offence to:

- Deliberately capture, injure or kill a bat
- Deliberately disturb a bat and more specifically which is likely:
  - to impair the bats' ability to survive, breed, reproduce, or to rear or nurture their young, or
  - in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
  - to affect significantly the local distribution or abundance of the species to which they belong.
  - Damage or destroy a breeding site or resting place of a bat
  - Possess, control, transport, sell or exchange a bat or body parts of a bat both alive or dead.

The Natural Environment and Rural Communities (NERC) Act (2006)[19]

'An Act to make provision about bodies concerned with the natural environment and rural communities; to make provision in connection with wildlife, sites of special scientific interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes'.
In regards to the planning process sections 40 and 41 are of particular importance:
'Section 40 (1) Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.'
Section 41 lists habitats and species of primary importance to the conservation of biodiversity therefore making these habitats and species a consideration in the planning process.'

National Planning Policy Framework (NPPF) (July 2021)[20]

This policy states under section 15 'Conserving and enhancing the natural environment' that;

174.
Planning policies and decisions should contribute to and enhance the natural and local environment by:
a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

175. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

176. Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

177. When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:
a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and
c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

178. Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.

Habitats and biodiversity
179. To protect and enhance biodiversity and geodiversity, plans should:
a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

180. When determining planning applications, local planning authorities should apply the following principles:
a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

181. The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;
b) listed or proposed Ramsar sites; and
c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

182. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Department for Communities & Local Government Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System

'This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the national planning policy in the National Planning Policy Framework and the Planning Practice Guidance' (Department for Communities and Local Government, 2005).

The 'UK Post-2010 Biodiversity Framework' (July 2012)

The 'UK Post-2010 Biodiversity Framework', published in July 2012, succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach'. It is the result of a change in strategic thinking. The UKBAP is still used as a source of reference with regards to habitats and species. UK Biodiversity Action Plan was a government initiative and contains a list of priority habitats and species of conservation concern in the UK which are the same as those listed within Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006. The plan also outlines biodiversity initiatives designed to enhance their conservation status. The UKBAP requires conservation of biodiversity to be addressed at a county level via a Local BAP and are usually targeted towards species of conservation concern within each separate area.

UK Biodiversity Action Plan (UKBAP) and Local BAP

UK BAP priority species and habitats were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). The original lists of UK BAP priority species and habitats were created between 1995 and 1999, and were subsequently updated in 2007, following a 2-year review of UK BAP processes and priorities, which included a review of the UK priority species and habitats lists.
The aim of the 'Species and Habitats Review' was to ensure that the UK BAP lists of priority species and habitats remained up-to-date and focussed on the correct priorities. This was the first full review of the lists, generated over 10 years previously, and provided an opportunity to take into account emerging new priorities, conservation successes, and the huge amount of new information that had been gathered since the original lists were created. Selection of priority species and habitats for the priority lists followed consideration by expert working groups against a set of selection criteria, based on international importance, rapid decline, high risk, and habitats of importance for key species.
As a result of new drivers and requirements, the' 'UK Post-2010 Biodiversity Framework, published in July 2012, has succeeded the UK BAP. In particular, due to devolution and the creation of country-level biodiversity strategies, much of the work previously carried out under the UK BAP is now focussed at a country level.
The UK BAP lists of priority species and habitats remain, however, important and valuable reference sources.

LBAP have two targets: to reflect and help implement the national priorities identified in the UK Action Plans, and to identify and address local priorities and local distinctiveness.

Protection of Badgers Act 1992

Badgers and their setts are protected by the following legislation: Wildlife & Countryside Act (as Amended) 1981[5]: Schedule 6 and The Badger Protection Act 1992[6].To summarise, it would be illegal to;

- intentionally capture, kill or injure a badger
- damage, destroy or block access to their setts
- disturb badgers in their setts
- treat a badger cruelly
- deliberately send or intentionally allow a dog into a sett
- bait or dig for badgers

You are also breaking the law by doing any of the following;

- have or sell a badger, or offer a live badger for sale
- have or possess a dead badger or parts of a badger (if you got it illegally)
- mark or attach a marking device to a badger

Local Planning Policy[26]

The East Riding Local Plan 2012 – 2029 Strategy Document outlines the council's planning policy targets. Policy ENV4 is the leading planning policy with regards to biodiversity.

Policy ENV4: Conserving and enhancing biodiversity and geodiversity

A. Proposals that are likely to have a significant effect on an International Site will be considered in the context of the statutory protection which is afforded to the site.

B. Proposals that are likely to have an adverse effect on a National Site (alone or in combination) will not normally be permitted, except where the benefits of development in that location clearly outweigh both the impact on the site and any broader impacts on the wider network of National Sites.

C. Development resulting in loss or significant harm to a Local Site, or habitats or species supported by Local Sites, whether directly or indirectly, will only be supported if it can be demonstrated there is a need for the development in that location and the benefit of the development outweighs the loss or harm.

D. Where loss or harm to a National or Local designated site, as set out in Table 9, cannot be prevented or adequately mitigated, as a last resort, compensation for the loss/harm must be agreed. Development will be refused if loss or significant harm cannot be prevented, adequately mitigated against or compensated for.

E. Proposals should further the aims of the *East Riding of Yorkshire Biodiversity Action Plan (ERYBAP)*, designated Nature Improvement Areas (NIAs) and other landscape scale biodiversity initiatives. To optimise opportunities to enhance biodiversity, proposals should seek to achieve a net gain in biodiversity where possible and will be supported where they:

1. Conserve, restore, enhance or recreate biodiversity and geological interests including the Priority Habitats and Species (identified in the *ERYBAP*) and Local Sites (identified in the *Local Sites in the East Riding of Yorkshire)*.
2. Safeguard, enhance, create and connect habitat networks in order to:

   i. protect, strengthen and reduce fragmentation of habitats;
   ii. create a coherent ecological network that is resilient to current and future pressures;
   iii. conserve and increase populations of species; and
   iv. promote and enhance green infrastructure.