



Crow Ecology
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Preliminary Roost Assessment & Emergence/Re-Entry Bat Survey Report

Site: 21/02407/AGRNOT - Change of use of agricultural building to dwelling with associated works - Orchard Farm, Main Street, Great Kelk, East Yorkshire, YO25 8HN

Client: RDA Ltd. on behalf of their client

Date of Surveys: 16th July – 28th August 2021

**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 12 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.

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1. Summary

Crow Ecology was commissioned by RDA Ltd. on behalf of their client to undertake a Preliminary Roost Assessment (PRA) and consequently an Emergence/Re-Entry (Presence/Absence) Bat Survey. The aim of the PRA survey is to determine either the presence/absence of bats or the bat roosting potential of the building. Birds and other protected species are also surveyed for. Following this PRA, the building was deemed to have a moderate/high bat roosting potential. The aim of the Emergence-Re-Entry bat survey is to determine the presence/absence of bats at the time of the survey and the need for further surveys and/or mitigation. 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 redundant agricultural outbuilding, currently used for storage purposes within the property boundary of Orchard Farm, Main Street, Great Kelk, East Yorkshire, YO25 8HN. Copies of the proposed development were provided by: Copies of site plans and the proposed development were provided by RDA Ltd, 14 High Street, Bridlington, East Yorkshire, YO16 4PX.

The proposal is:

- Change of use of agricultural building to dwelling with associated works

The PRA survey was undertaken on the 16/07/21 in suitable weather conditions for such surveys with no limitations.

The Emergence/Re-Entry surveys were undertaken on: 16/07/21 (Dusk), 07/08/21 (Dawn) and 28/08/21 (Dusk). The surveys were undertaken in suitable weather conditions for this type of survey.

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 Habitats within a 1km radius of the project site. The priority habitat will not be affected by the proposed development.

The building has a Moderate/High bat roosting potential predominately due to the structure of the roof; the large roof void and bat droppings were identified in the old machinery storage area on the ground floor (room 3).

The bat roost present on site is a day roost. The maximum count of the roost was 1 bat. The roost is occupied by Common pipistrelle.

A number of bats foraged and commuted between the buildings north and east elevation and the adjacent tree-lined hedgerow.

As bats are roosting on the project site a Bat Low Impact Class Licence (BLICL) will be required subject to planning approval.

All proposed developments, known to contain bat roosts, require a licence from Natural England. Under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, provision 43 and of the Wildlife and Countryside Act (1981) (as amended) Section 9 it is an offence for anyone without a licence to:

- to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally.
- intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

The licence will include a method statement to inform all associated contractors of the site how the work WILL be carried out.

As part of the BLICL, Biodiversity enhancements have also been recommended in the form of:

- Bat boxes
- Bird boxes
- Hedgehog box
- Planting

2. Introduction

Crow Ecology was commissioned by RDA Ltd. on behalf of their client to undertake a Preliminary Roost Assessment (PRA) and consequently an Emergence/Re-Entry (Presence/Absence) Bat Survey. The PRA survey took place on the 16th July 2021 by Chris Crow BSc (Hons), ACIEEM of Crow Ecology. The aim of the PRA is to carry out a detailed inspection of the building/s 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/s¹. Nesting birds and other protected species were also surveyed for.

Following this PRA, the building was deemed to have a moderate/high bat roosting potential, predominately due to the roof structure, bat droppings identified in the old machinery storage area on the ground floor and the surrounding landscape. The aim of this survey is to determine the presence/absence of bats at the time of the surveys and the need for further survey and/or mitigation. The Emergence/Re-Entry survey involves visiting the site at dusk and dawn to watch, listen and record any bats entering or exiting the building/s of interest.

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

2.1 Site Location

The project site is located within the property boundary of Orchard Farm, Orchard Farm, Main Street, Great Kelk, East Yorkshire, YO25 8HN. Six figure Grid Reference TA103582². The landscape and land use surrounding the site is predominately agricultural. In all bearings are agricultural fields with associated hedgerows drains/ditches. To the north are a number of dwellings with agricultural buildings. There are small parcels of planted scattered trees, woodland and waterbodies present too within this bearing. To the immediate south is the main village of Great Kelk with its associated stone/brick residential dwellings, private gardens and agricultural buildings. Again, there are small parcels of planted scattered trees lining property boundaries. Waterbodies are present too within this bearing. To the west is predominately agricultural fields with associated hedgerows drains/ditches and again, there are small parcels of planted scattered trees, woodland and waterbodies present too within this bearing.



Figure 2.1 - Aerial view with project site illustrated within the wider landscape (not to scale). Source – Google maps 2021³

2.2 Site Description



Figure 2.2 - Aerial view of the building under the proposed development (not to scale or accuracy). Source – Google maps 2021³.

The redundant outbuilding has double-pitched hipped pantile roof. On the west elevation, the a single-storey outbuilding is joined to the outbuildings brickwork. The proposed car parking area consists of amenity grassland. To the north is amenity grassland followed by a hedge and tree-lined hedgerow. To the east is the amenity grassland lawn of the property. To the south is an area of hardstanding followed by a hedge and tree-lined hedgerow. To the west is amenity grassland and hardstanding followed by the dwelling of Orchard farm.

See appendices 1 for existing layout.

2.3 Site Proposal

The proposal for this site is as follows:

- Change of use of agricultural building to dwelling with associated works

See appendices 2 for proposed layout.

3. Methods

This report has been written following the following guidelines:

- The Bat Conservation Trust: Bat Surveys for Professional Ecologists - Good Practice Guidelines (3rd edition 2016)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 Nature⁶
- *Barn Owls and Rural Planning Applications - a Guide* (2015) The Barn Owl Trust⁷
- *Wild birds: surveys and mitigation for development projects* Crown Copyright (2015)⁸
- *Badgers: surveys and mitigation for development projects* Crown Copyright (2015)⁹

3.1 - Desktop Study

A desktop study was performed using data from Multi-Agency Geographic Information for the Countryside (MAGIC)¹⁰ This data search was used to identify any designated sites and priority habitats and North & East Yorkshire Ecological Data Centre (NEYEDC)¹¹. This data search is for protected and notable species. These searches include all records within 1km of the site from the centre of the project site located at grid reference TA103582. Google maps were used to review and map the site.

3.2 - Preliminary Roost Assessment

3.2.1 - Assessment Methodology

This survey involves a detailed inspection of the building both externally and internally. The information collated is used to determine¹:

- 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)

3.2.2 - Limitations

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

3.2.3 - 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 survey¹.

A 1km data search radius was selected as the proposed development is small and staying within the existing footprint 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.

3.3 - Emergence/Re-Entry – Presence/absence Survey

The Emergence/Re-Entry surveys were undertaken on: 16/07/21 (Dusk), 07/08/21 (Dawn) and 28/08/21 (Dusk). The surveys were undertaken in suitable weather conditions for this type of survey.

3.3.1 - Survey Methodology¹

This survey involves visiting the site at dawn and or dusk to watch and listen (using a bat detector) and record any bats that enter or exit the building/s in question. The information

recorded should illustrate the species, numbers, access points and roost location, the latter two will have already been noted from the preliminary roost assessment.

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 to recommend further surveys and or mitigation.

If bats are present then a roost characterisation survey may need to be carried out depending on how much information your presence/absence survey has gleaned.

A Presence/Absence survey is triggered by the following¹:

- The preliminary roost assessment has not ruled out the likelihood of a roost been present due to some or all of the features highlighted in the assessment
- A detailed assessment of the building/s was not possible due to restricted access but the building may suggest there is a likelihood of a roost
- A PRF (Potential Roost Feature) of the trees has highlighted a moderate-high suitability but no definitive record of a roost has been identified
- There is the possibility that some bat evidence has been removed by the weather or by human activities

The access points and potential roost locations are where the main focus of the survey concentrates although observation on other areas should be performed as bats can be unpredictable. These access points also dictate the number of surveyors needed to adequately complete the survey to a satisfactory standard. Before the start of the survey, the lead ecologist briefs each surveyor about the area they are surveying and highlights the access points of interest. Briefing each surveyor prevents overlap and the potential for double counting. Another way to avoid this is using radio contact so each surveyor can discuss any sightings.

Surveyor coverage is crucial to accurately access all access points. Simple structure buildings require fewer surveyors but always a minimum of two and vice versa for larger/complex buildings. If there are not enough surveyors another visit will be required this time with surveyors standing at other access points of interest. Surveyors should remain stationary and as close as possible without sacrificing coverage throughout the survey to avoid any bats being missed. This is especially important during dusk as bats tend to exit straight away and fly off. At dawn they tend to swarm near the access point so it makes it a little easier to identify the access point.

The surveyors then record any bat activity on the recording forms. They indicate on the building plan the point at which the bat emerged/re-entered, the time and the species. Bats passing by are also recorded on the recording forms as this information may be useful for mitigation purposes.

3.3.2 - Method Justification

The building has moderate/high roosting potential due to the following factors:

- Small number of bat droppings present below joist puttock hole on the south elevation wall.
- Small number of droppings present on items stored with the ground floor room (Room 3)
- Gaps in Ridge tiles
- Gaps in roof tiles

- Gaps in the eaves
- Gaps around doors and door frames
- Gaps in roof lining
- Gaps along wall plate
- Gaps between plasterboard and partition wall
- Gaps between brickwork and puttock holes
- Trusses creating a suitable feeding perch

The surrounding habitat has high suitability for foraging and commuting bats. The surveys were performed at these timings to co-inside with the peak active season from May to mid-September¹.

3.3.3 - Areas Surveyed and Justification

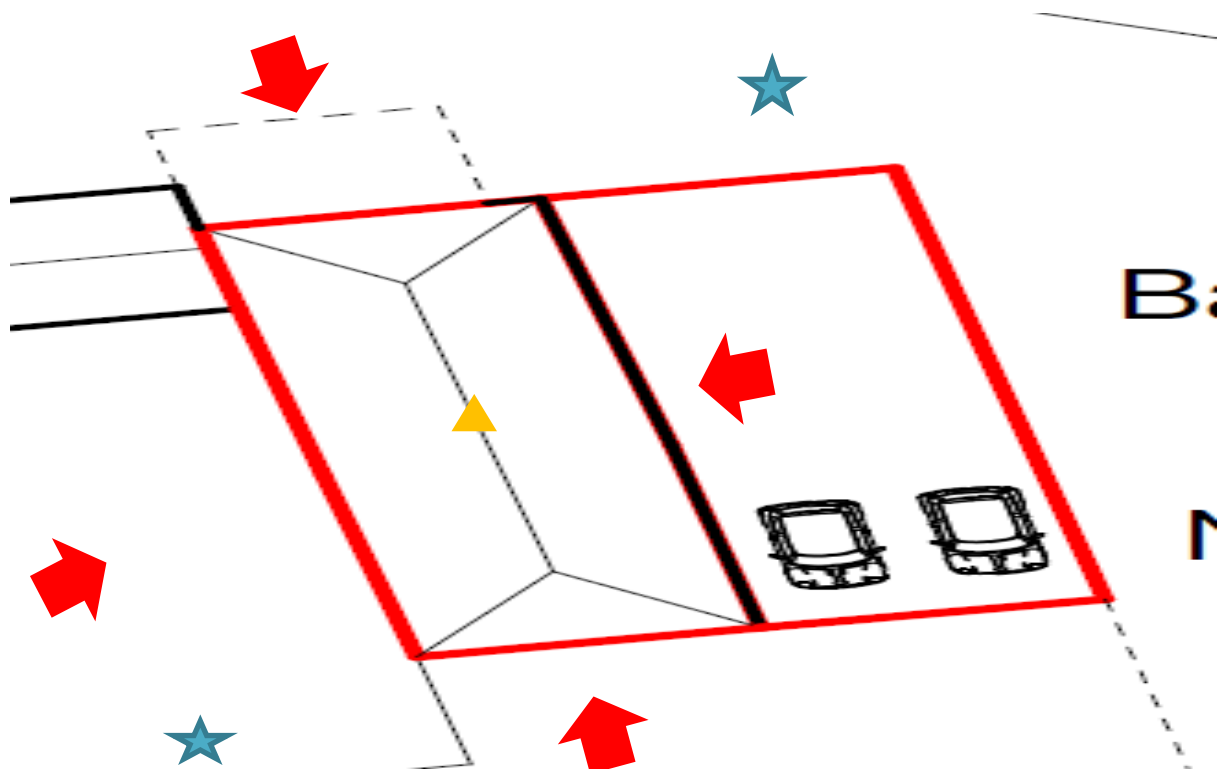


Figure 3.1 – Survey positions for surveys.

- ★ Survey positions
- ↑ SANNCE IR Cameras
- ▲ Petterson M500-384 Ultrasound microphone bat detector

The surveyor positions cover all elevations of the building that have points of interest as do the SANNCE IR cameras. The Petterson M500-384 Ultrasound microphone bat detector was located inside the building on the ground floor, to detect any internal bat flight.

3.3.4 – Personnel

The PRA took place on the 16th July 2021 by Chris Crow BSc (Hons), ACIEEM of Crow Ecology. Chris Crow has 10 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

In addition to Chris Crow (CC), the following other surveyor took part in this survey:

Amelia Bateman-Young (ABY) – Amelia is currently studying a BSc in Geography at the University of Hull. Amelia was looking for work experience to see what career she could possibly go into after University. After travelling to Canada, Amelia realised working with animals and seeing animals in the wild was something she would like to push her career towards. Amelia is passionate about 'saving the planet' and helping wildlife is one step towards that goal. I have been tutoring Amelia this season in all aspects of ecology, including bat activity surveys.

3.3.5 - Limitations

There were no limitations to the survey and therefore the information gained is accurate at the time of the survey.

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 radius¹⁰. Please see figure 4.1.

MAGiC Designated & Priority Habitat Sites within 1km

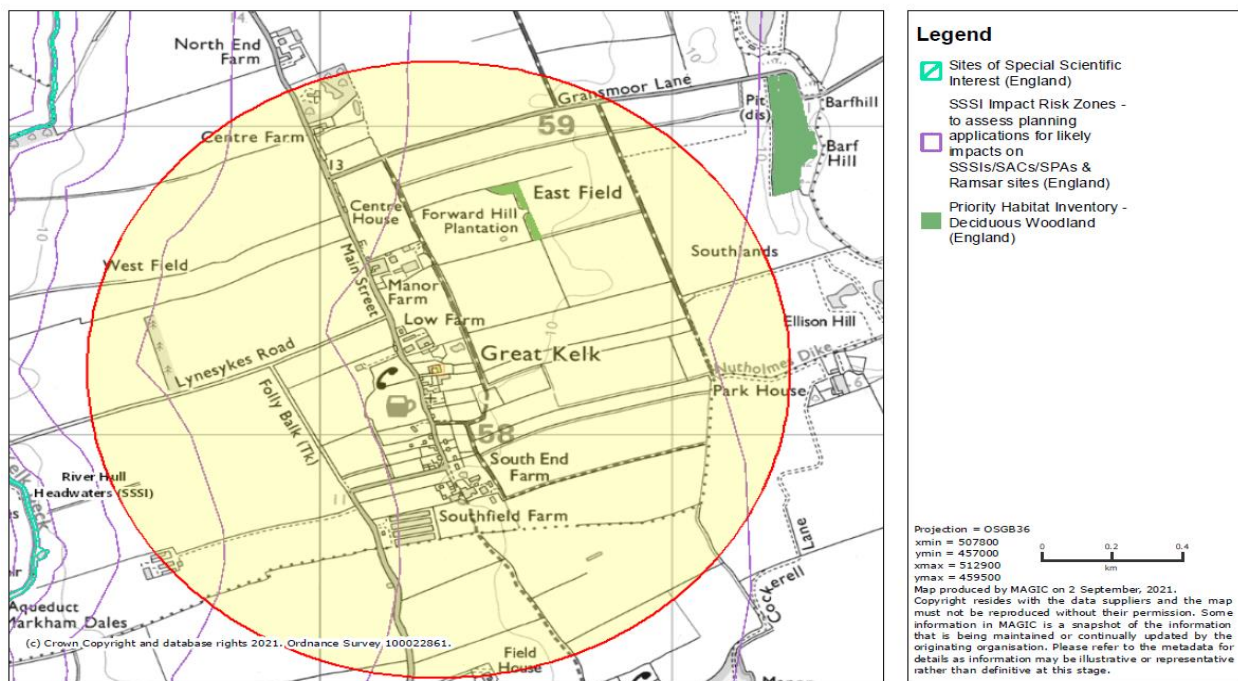


Figure 4.1 – Pre-Existing Site designations¹¹

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 Habitat within the 1km search radius: Deciduous Woodland. This priority habitat is approximately 500m NE of the project site¹⁰. Please see figure 4.1.

4.1.3 - Species Records

Species records were obtained from NEYEDC¹¹. Within the 1km search radius of the site, 44 historical records of which have one or more designations as notable and or protected species was identified. None of the 44 records are of significant interest to this project site. There were no bats records. Crow Ecology has carried out surveys in Little Kelk, approximately 1.3km north of the project site and recorded bats foraging and commuting. Therefore, it is likely that bats are

The full list of historical records for this 1km search radius is available upon request.

4.2 - Preliminary Roost Assessment

4.2.1 - Summary of Preliminary Roost Assessment

Date	Weather	Structure (Numbered if more than 1 structure)	Equipment Used
16/07/21	20°C 0% Cloud Wind – 1 (Beaufort Scale) No Rain	Agricultural barn	<ul style="list-style-type: none"> • Clulite CB2 1 million candle light powered torch • Explorer Premium 8803AL Endoscope • Headtorch • 3.8 metre telescopic ladder • Camera • CAT S61 Thermal imaging camera.
Comments – N/A			
Personnel – Ecologist (Chris Crow)			

For the purpose of the following assessment the buildings have been numbered as follows:

4.2.2 – External Assessment of Building

The outbuilding has a double-pitched hipped pantile roof. Some of the ridge tiles have gaps present where mortar has failed. There are gaps in the roof tiles too where they have slipped over time. The eaves have gaps present between the roof tiles and the wall plate. The brickwork on all elevations is in good condition with cracks or crevices present but these cracks and crevices were heavily cobwebbed. The brick 'grilles' on the North, South and West elevations have been sealed with bricks to prevent prevailing weather access into the building. In these 'grilles' there were no bats present or evidence of bat presence. The ground floor south elevation has large openings where machinery/storage would have been housed. The arches and pillars of these openings are in excellent condition with no crevices present. The window panes and window frames are intact and are in good condition with again no suitable gaps present. The doors and doorframes again, are intact and are in good condition but due to the age of both structures the door has warped and there is a gap between the top of the doors and doorframes. Please see plates 4.1 – 4.2.



Plate 4.1 – (L) North elevation, (R) – East elevation. Highlighting potential access/roosting points.



Plate 4.2 – (L) South elevation, (R) – West elevation. Highlighting potential access/roosting points.

4.2.3 – Internal Assessment of Building

The building has 3 rooms. Entrance to the largest room (Room 1) is via either the west or elevation doors. The roof lining is a mixture of part latte/plasterboard on the west elevation and bitumen felt on the east elevation. There are openings in both latte/plasterboard and bitumen felt linings. There are gaps around the puttock holes of the trusses, purlins and the north elevation hipped braces. There is a gap between the plasterboard and the partition wall. There are gaps around the wall plate; though a large number of these gaps are heavily cobwebbed. There were no bats present or evidence of bat presence in the forms of: droppings, feeding remains, urine splashes or staining, grease marks around potential entrance/exit points or scratch marks in this room.

The south elevation has a first-floor room (Room 2). Again, this rooms roof was a mixture of lining with latte on the west elevation, bitumen felt on the east elevation and adjacent to the

ridge beam was plasterboard. There are openings between the latte lining and the roof tiles. There is a suitable gap between the plasterboard and roof tiles too. There were no bats present or evidence of bat presence in the forms of: droppings, feeding remains, urine splashes or staining, grease marks around potential entrance/exit points or scratch marks in this room.

The 3rd 'room' is accessed via the arches on the east elevation. There are caps between the timber ceiling and brickwork. There are gaps between joist, hanging beam and strutting beam puttock holes and brickwork. There was bat droppings directly below a joist puttock hole on the south elevation. An endoscope was used but no bat/s were present. In addition, there were droppings on the items stored within this room, suggesting that bats are either foraging and/or roosting in this room. There were two vacated nests present; one a Swallow *Hirundo rustica* and the other likely a Robin *Erithacus rubecula* due to the nest material used. There was no other evidence of bats in the forms of: feeding remains, urine splashes or staining, grease marks around potential entrance/exit points or scratch marks in this room. Please see plates 4.3 – 4.5.



Plate 4.3 – (L) – Facing north, (R) – Facing south. Room 1 highlighting potential roosting points





Plate 4.5 – (L) – Facing SW, Room 3 highlighting potential roosting points (R) – Bat droppings highlighted in the joist puttock hole on the south elevation.

4.2.4 – Bat Roosting Potential of Building

Overall due to the factors mentioned above this building has a Moderate-High Roosting potential for the following reasons:

- Small number of bat droppings present below joist puttock hole on the south elevation wall.
- Small number of droppings present on items stored with the ground floor room (Room 3)
- Gaps in Ridge tiles
- Gaps in roof tiles
- Gaps in the eaves
- Gaps around doors and door frames
- Gaps in roof lining
- Gaps along wall plate
- Gaps between plasterboard and partition wall
- Gaps between brickwork and puttock holes
- Trusses creating a suitable feeding perch

4.3 - Bat Habitat Suitability of the Surrounding Landscape

Within the development boundary the habitats are building and amenity grassland. These habitats provide negligible foraging and commuting habitats(see figure 4.2)¹.

Beyond the development boundary and within the property boundary, to the north is amenity grassland followed by a followed by a hedge and tree-lined hedgerow. To the east is the amenity grassland lawn of the property. To the south is an area of hardstanding followed by a hedge and tree-lined hedgerow. To the west is amenity grassland and hardstanding followed by

the dwelling of Orchard farm. Within the property boundary there is moderate foraging and commuting suitability (see figure 4.2)¹.

Beyond the property boundary the landscape and land use surrounding the site is predominately agricultural. In all bearings are agricultural fields with associated hedgerows drains/ditches. To the north are a number of dwellings with agricultural buildings. There are small parcels of planted scattered trees, woodland and waterbodies present too within this bearing. To the immediate south is the main village of Great Kelk with its associated stone/brick residential dwellings, private gardens and agricultural buildings. Again, there are small parcels of planted scattered trees lining property boundaries. Waterbodies are present too within this bearing. To the west is predominately agricultural fields with associated hedgerows drains/ditches and again, there are small parcels of planted scattered trees, woodland and waterbodies present too within this bearing. Due to the habitats present, the surrounding area is classed as 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.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.
^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.
^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Figure 4.2 – Guidelines for assessing roost and foraging habitat suitability. Source – Bat Conservation Trust, 2016¹

4.4 – Proposed Car parking area

The location of the proposed car parking area is adjacent to the southern section of the east elevation. The habitat present is amenity grassland which is of negligible ecological value. Please see plate 4.6.



Plate 4.6 – The location of the proposed car parking area (not to scale or accuracy).

4.5 – Presence/Absence Survey Results

4.5.1 - Summary of Survey Information

Date	Timings	Weather	Structure (Numbered if more than 1 structure)	Equipment used
16/07/21	Dusk – 21.25 Start time – 21.10 End Time – 23.10	Start temp - 18°C End temp - 16°C Wind – 1 (beaufort scale) Rain - None Cloud – 0%	Building (see figure 3.1).	<ul style="list-style-type: none"> • SANNCE CCTV Camera System 4CH 1080N CCTV DVR with 10.1" HD Monitor • 4x 1080P Day Night Weatherproof Security Cameras, P2P, Motion Alert, • 4x KKmoon 96 LEDS IR Illuminator Array Infrared Lamps Night Vision Outdoor Waterproof For CCTV Security Camera • Clulite CB2 1 million candle light powered torches • Echo Meter Touch 2 Pro Bat detectors • Magneta Bat 5 Bat Detectors • Head torches

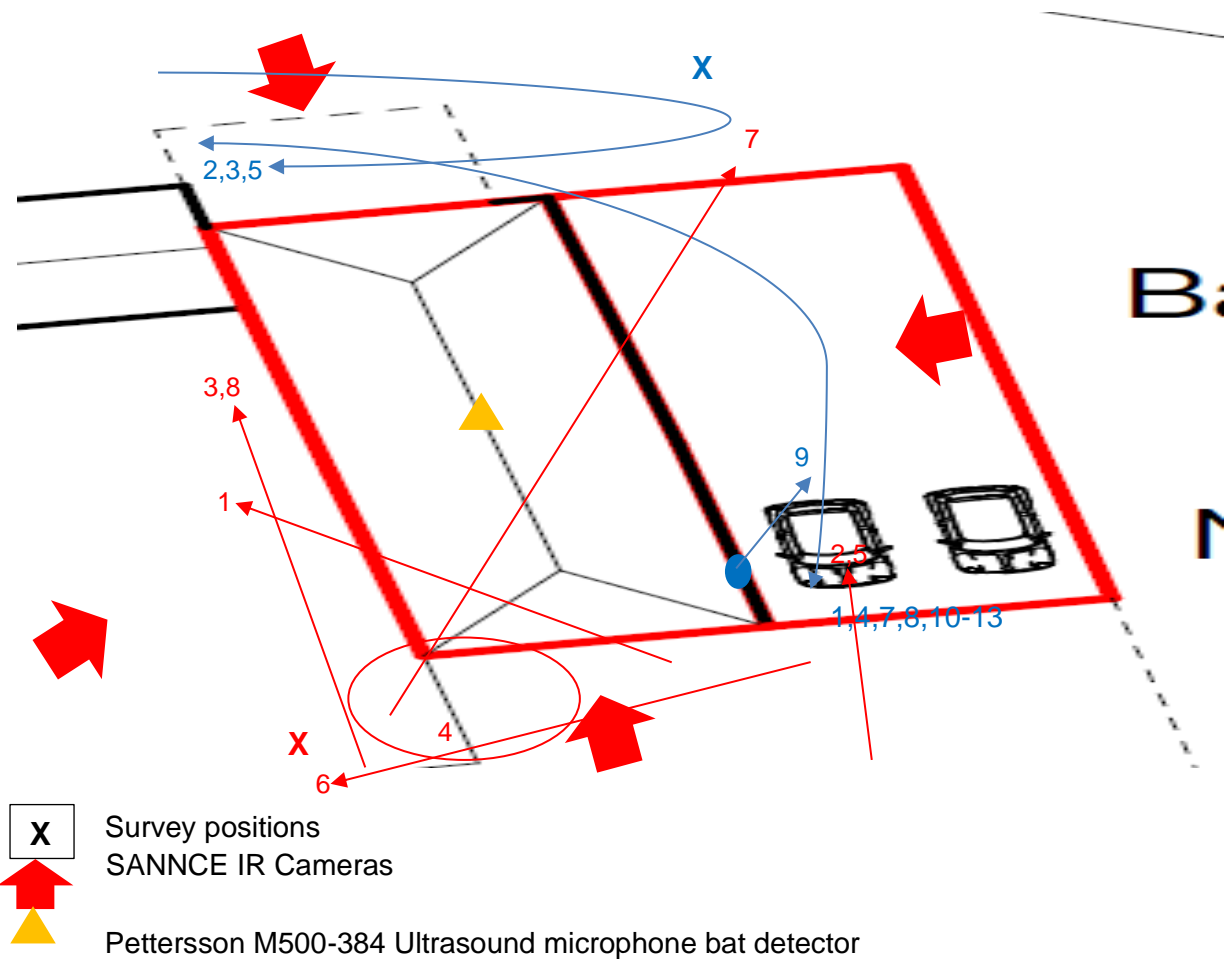


				<ul style="list-style-type: none"> • Digital thermometer • Bat recording forms • Cobra MT645 Walkie Talkie Radios • Ladders • CAT S61 Camera
Comments –				
07/08/21	Dawn – 05.24 Start time – 03.35 End Time – 05.39	Start temp - 12°C End temp - 11°C Wind – 2 (beaufort scale) Rain - None Cloud – 00%	Building (see figure 3.1).	<ul style="list-style-type: none"> • SANNCE CCTV Camera System 4CH 1080N CCTV DVR with 10.1" HD Monitor • 4x 1080P Day Night Weatherproof Security Cameras, P2P, Motion Alert, • 4x KKmoon 96 LEDS IR Illuminator Array Infrared Lamps Night Vision Outdoor Waterproof For CCTV Security Camera • Clulite CB2 1 million candle light powered torches • Echo Meter Touch 2 Pro Bat detectors • Magneta Bat 5 Bat Detectors • Head torches • Digital thermometer • Bat recording forms • Cobra MT645 Walkie Talkie Radios • Ladders • CAT S61 Camera
Comments –				
28/08/21	Dusk – 19.59 Start time – 19.44 End Time – 21.45	Start temp - 16°C End temp - 14°C Wind – 1 (beaufort scale) Rain - None Cloud – 100%	Building (see figure 3.1).	<ul style="list-style-type: none"> • SANNCE CCTV Camera System 4CH 1080N CCTV DVR with 10.1" HD Monitor • 4x 1080P Day Night Weatherproof Security Cameras, P2P, Motion Alert, • 4x KKmoon 96



				<p>LEDS IR Illuminator Array Infrared Lamps Night Vision Outdoor Waterproof For CCTV Security Camera</p> <ul style="list-style-type: none"> • Clulite CB2 1 million candle light powered torches • Echo Meter Touch 2 Pro Bat detectors • Magneta Bat 5 Bat Detectors • Head torches • Digital thermometer • Bat recording forms • Cobra MT645 Walkie Talkie Radios • Ladders • CAT S61 Camera
<p>Comments –</p>				

4.5.2 - Dusk Survey Report Map Summary 16.07.21



4.5.3 - Dusk Record Sheet Summary 16.07.21

Surveyor & Map Points	Time		Bat Species	No.	Behaviour**	Comments
	From	Until				
CC 1	21.45	21.45	C. pip	1	For	Constant foraging between building and tree-lined hedgerow
CC 2	21.57	21.57	C. pip	1	For	
CC 3	21.59	21.59	C. pip	1	For	
CC 4	22.01	22.01	C. pip	1	For	
CC 5	22.02	22.02	C. pip	1	For	
CC 6	22.05	22.05	C. pip	1	For	
CC 7	22.10	22.10	C. pip	1	For	
CC 8	22.13	22.13	C. pip	1	For	
CC 9	22.16	22.16				Sannce IR Camera identified bat emerged from the ground-floor east elevation archways.
CC 10	22.17	22.17	S. pip	1	For	Constant foraging between building and tree-lined
CC 11	22.25	22.25	C. pip	1	For	

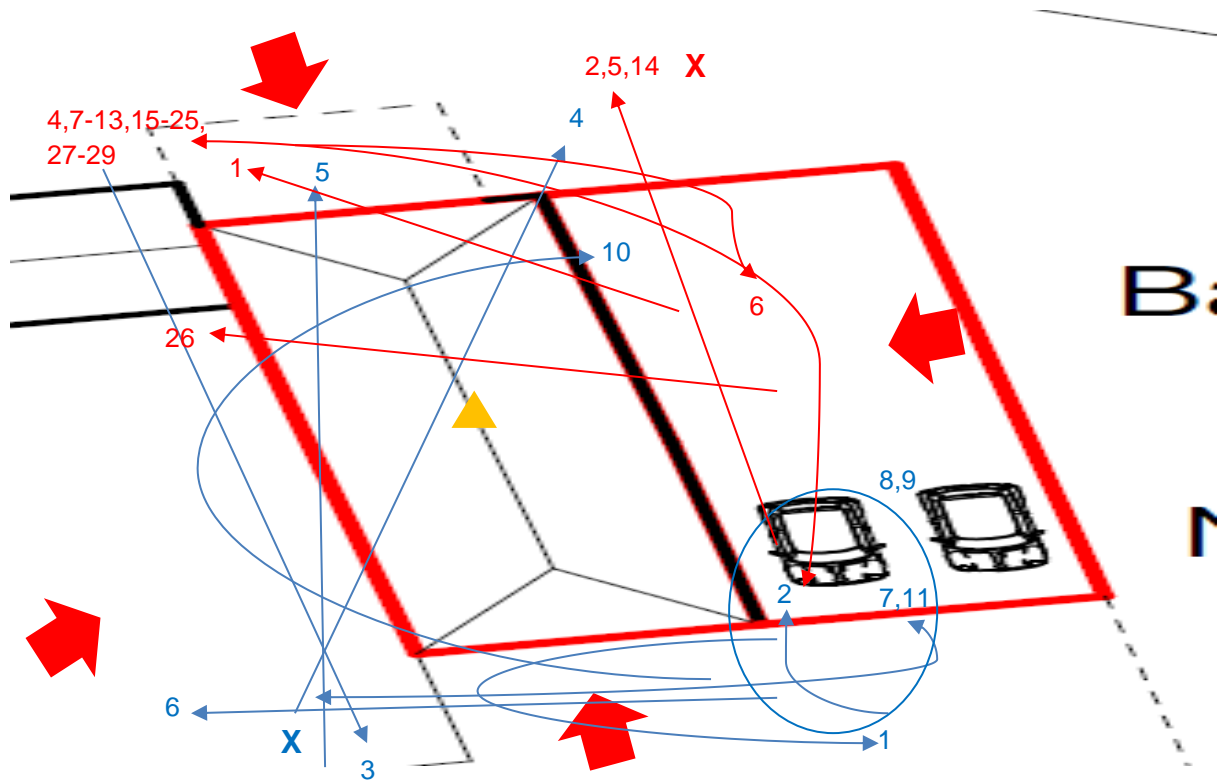


CC 12	22.26	22.26	C. pip	1	For	hedgerow
CC 13	22.28	22.28	C. pip	1	For	
ANV	22.32	22.32	S. pip	1	For	
ANV	22.58	22.58	C. pip	1	For	
ANV	23.01	23.01	C. pip	1	For	
ANV	23.03	23.03	C. pip	1	For	
ABY 1	21.55	21.55	C. pip	1	Comm	
ABY 2	21.58	21.58	C. pip	1	Comm	
ABY 3	22.07	22.07	C. pip	1	Comm	
ABY 4	22.15	22.15	C. pip	1	Comm	
ABY 5	22.17	22.17	C. pip	1	Comm	
ABY 6	22.27	22.27	C. pip	1	Comm	
ABY 7	22.28	22.28	C. pip	2	Comm	
ABY 8	22.29	22.29	C. pip	1	Comm	
ANV	22.17	22.17	C. pip	1	Comm	
ANV	22.21	22.21	C. pip	1	Comm	
ANV	22.30	22.30	C. pip	1	Comm	
ANV	22.58	22.58	C. pip	1	Comm	
ANV	22.59	22.59	C. pip	1	Comm	
ANV	23.01	23.01	C. pip	1	Comm	
ANV	23.02	23.02	C. pip	1	Comm	

** Comm – Commuting, For – Foraging/Feeding, Swr – Swarming, Soc – Socialising, Emrg/Ent – Emerge/Enter roost feature

Abbreviations – ANV – Audio no visual, C. pip – Common pipistrelle, S. pip – Soprano pipistrelle,

4.5.4 - Dawn Survey Report Map Summary 07.08.21



- X Survey positions
- ↑ SANNCE IR Cameras
- ▲ Petterson M500-384 Ultrasound microphone bat detector

4.5.5 - Dawn Record Sheet Summary 07.08.21

Surveyor & Map Points	Time		Bat Species	No.	Behaviour**	Comments
	From	Until				
CC 1	03.43	03.43	C. pip	2	For	
CC 2	04.14	04.14	C. pip	1	For	
CC 3	04.21	04.21	S. pip	1	Comm	
CC 4	04.25	04.25	BLE	2	For	
CC 5	04.28	04.28	C. pip	1	Comm	
CC 6	04.31	04.31	C. pip	2	Comm	
CC 7	04.33	04.33	C. pip	2	Comm	
CC 8	04.33	04.33	BLE	1	Comm	
CC 9	04.37	04.39	C. pip	2	For	
CC 10	04.40	04.40	C. pip	2	For	
CC 11	04.58	04.58	C. pip	2	Comm	
ANV	03.42	03.42	C. pip	1	For	
ANV	03.42	03.42	BLE	1	Comm	

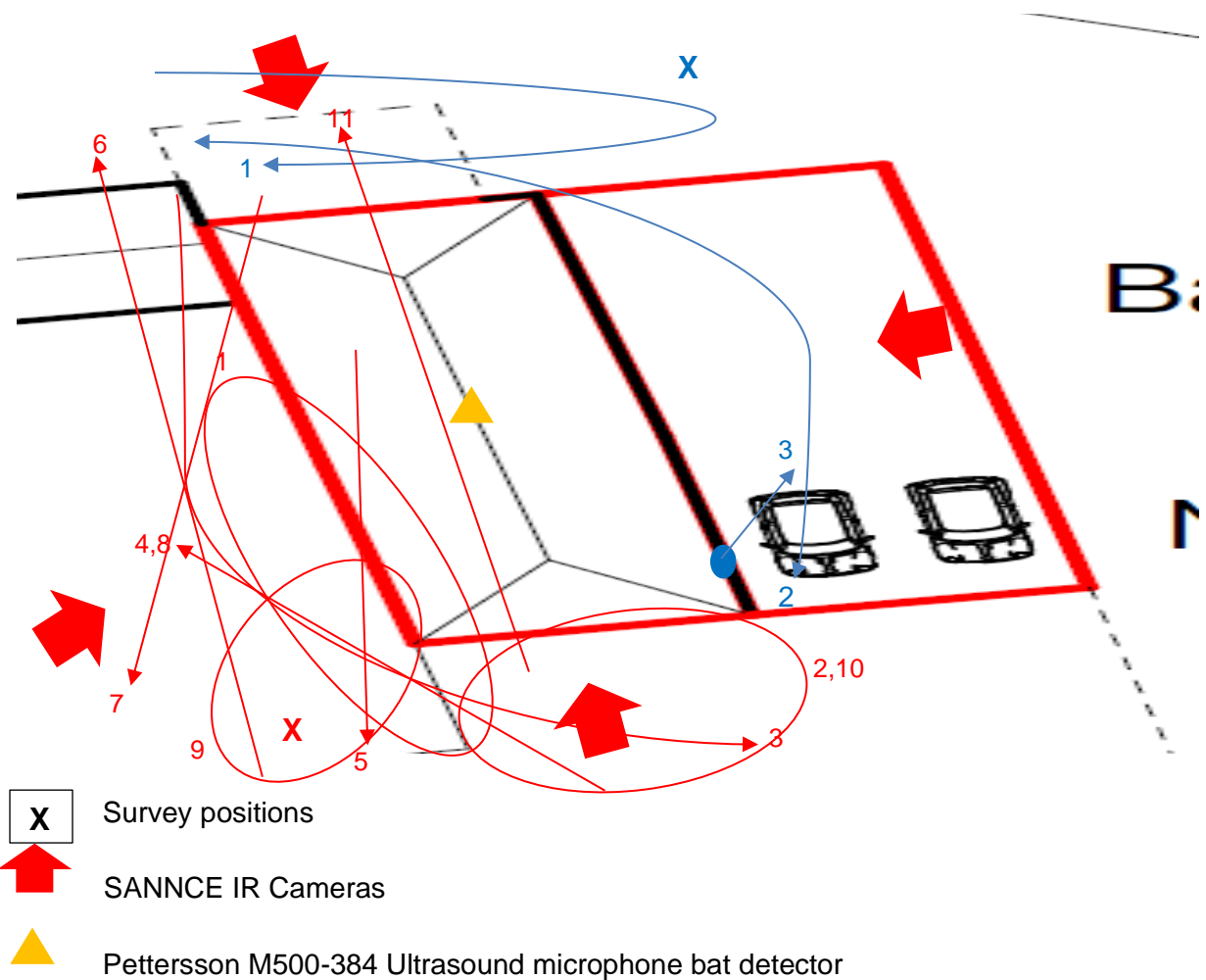
ANV	03.43	03.43	C. pip	2	For	
ANV	03.55	03.55	C. pip	1	Comm	
ANV	03.56	03.56	C. pip	1	For	
ANV	04.01	04.01	BLE	1	For	
ANV	04.13	04.13	C. pip	1	Comm	
ANV	04.23	04.23	S. pip	1	Comm	
ANV	04.55	04.55	C. pip	1	Comm	
ABY 1	03.38	03.38	C. pip	1	Comm	
ABY 2	04.24	04.24	C. pip	1	Comm	
ABY 3	04.26	04.26	C. pip	1	For	Constant foraging between building and tree-lined hedgerow
ABY 4	04.28	04.28	C. pip	1	For	
ABY 5	04.29	04.29	C. pip	1	Comm	
ABY 6	04.31	04.31	C. pip	2	Comm	
ABY 7	04.33	04.33	C. pip	1	For	Constant foraging between building and tree-lined hedgerow
ABY 8	04.35	04.35	C. pip	2	For	
ABY 9	04.37	04.37	C. pip	2	For	
ABY 10	04.39	04.39	C. pip	1	For	
ABY 11	04.39	04.39	C. pip	2	For	
ABY 12	04.42	04.42	C. pip	3	For	
ABY 13	04.43	04.43	C. pip	1	For	
ABY 14	04.43	04.43	C. pip	1	Comm	
ABY 15	04.45	04.45	C. pip	2	For	Constant foraging between building and tree-lined hedgerow
ABY 16	04.46	04.46	C. pip	3	For	
ABY 17	04.47	04.47	C. pip	2	For	
ABY 18	04.49	04.49	C. pip	2	For	
ABY 19	04.50	04.50	C. pip	1	For	
ABY 20	04.51	04.51	C. pip	2	For	
ABY 21	04.54	04.54	C. pip	1	For	
ABY 22	04.57	04.57	C. pip	1	For	
ABY 23	04.58	04.58	C. pip	1	For	
ABY 24	05.00	05.01	C. pip	2	For	
ABY 25	05.01	05.02	C. pip	2	For	
ABY 26	05.03	05.03	C. pip	1	Comm	
ABY 27	05.05	05.05	C. pip	1	For	
ABY 28	05.06	05.07	C. pip	1	For	
ABY 29	05.08	05.09	C. pip	1	For	
ANV	03.37	03.37	C. pip	1	For	
ANV	03.39	03.39	C. pip	1	For	
ANV	03.43	03.43	C. pip	1	For	
ANV	03.55	03.55	C. pip	1	For	
ANV	03.57	03.57	C. pip	1	For	
ANV	03.59	03.59	C. pip	1	For	
ANV	04.00	04.00	C. pip	1	For	
ANV	04.11	04.11	C. pip	1	For	
ANV	04.12	04.12	C. pip	1	For	

ANV	04.13	04.13	C. pip	1	For	
ANV	04.18	04.18	C. pip	1	For	
ANV	05.13	05.13	C. pip	1	Comm	
ANV	05.18	05.18	C. pip	1	Comm	

** Comm – Commuting, For – Foraging/Feeding, Swr – Swarming, Soc – Socialising, Emrg/Ent – Emerge/Enter roost feature

Abbreviations – BLE – Brown long-eared, C. Pip – Common pipistrelle, S. pip – Soprano pipistrelle, Myo sp – Myotis species

4.5.6 - Dusk Survey Report Map Summary 28.08.21



4.5.7 - Dusk Record Sheet Summary 28.08.21

Surveyor & Map Points	Time		Bat Species	No.	Behaviour**	Comments
	From	Until				
CC 1	20.20	20.20	C. pip	1	Comm	
CC 2	20.21	20.55	C. pip	20+	For	Constant foraging between building and tree-lined hedgerow

CC 3	20.54	20.54	C. pip	1	Emrg	Sannce IR Camera identified bat emerged from the ground-floor east elevation archways.
ANV	21.13	21.13	C. pip	1	Comm	
ANV	21.15	21.15	Natt	1	Comm	
ANV	21.21	21.21	C. pip	1	For	
ANV	21.23	21.23	C. pip	2	For	
ANV	21.26	21.26	C. pip	1	For	
ANV	21.29	21.29	C. pip	1	For	
ANV	21.33	21.33	C. pip	1	For	
ABY 1	20.27	20.27	C. pip	1	For	
ABY 2	20.29	20.29	C. pip	1	For	
ABY 3	20.29	20.29	C. pip	1	For	
ABY 4	20.31	20.31	C. pip	1	Comm	
ABY 5	20.32	20.32	C. pip	2	Comm	
ABY 6	20.36	20.36	C. pip	1	Comm	
ABY 7	20.37	20.37	C. pip	1	Comm	
ABY 8	20.40	20.40	C. pip	1	Comm	
ABY 9	20.43	20.43	S. pip	1	For	
ABY 10	20.48	20.48	C. pip	2	For	
ABY 11	20.51	20.51	C. pip	1	Comm	
ANV	20.35	20.35	C. pip	1	For	
ANV	20.38	20.38	C. pip	1	For	
ANV	20.40	20.40	C. pip	1	For	
ANV	20.44	20.44	C. pip	1	For	
ANV	20.46	20.46	C. pip	1	For	
ANV	20.49	20.49	C. pip	1	For	
ANV	20.52	20.52	C. pip	1	For	
ANV	20.53	20.53	C. pip	1	For	
ANV	21.04	21.04	Noc	1	For	
ANV	21.05	21.05	C. pip	1	For	
ANV	21.15	21.15	C. pip	1	For	
ANV	21.19	21.19	C. pip	1	For	
ANV	21.23	21.23	S. pip	1	For	
ANV	21.26	21.26	C. pip	1	For	
ANV	21.28	21.28	C. pip	1	For	
ANV	21.30	21.30	S. pip	1	For	
ANV	21.32	21.32	C. pip	1	For	
ANV	21.34	21.34	C. pip	1	For	
ANV	21.38	21.38	C. pip	1	For	

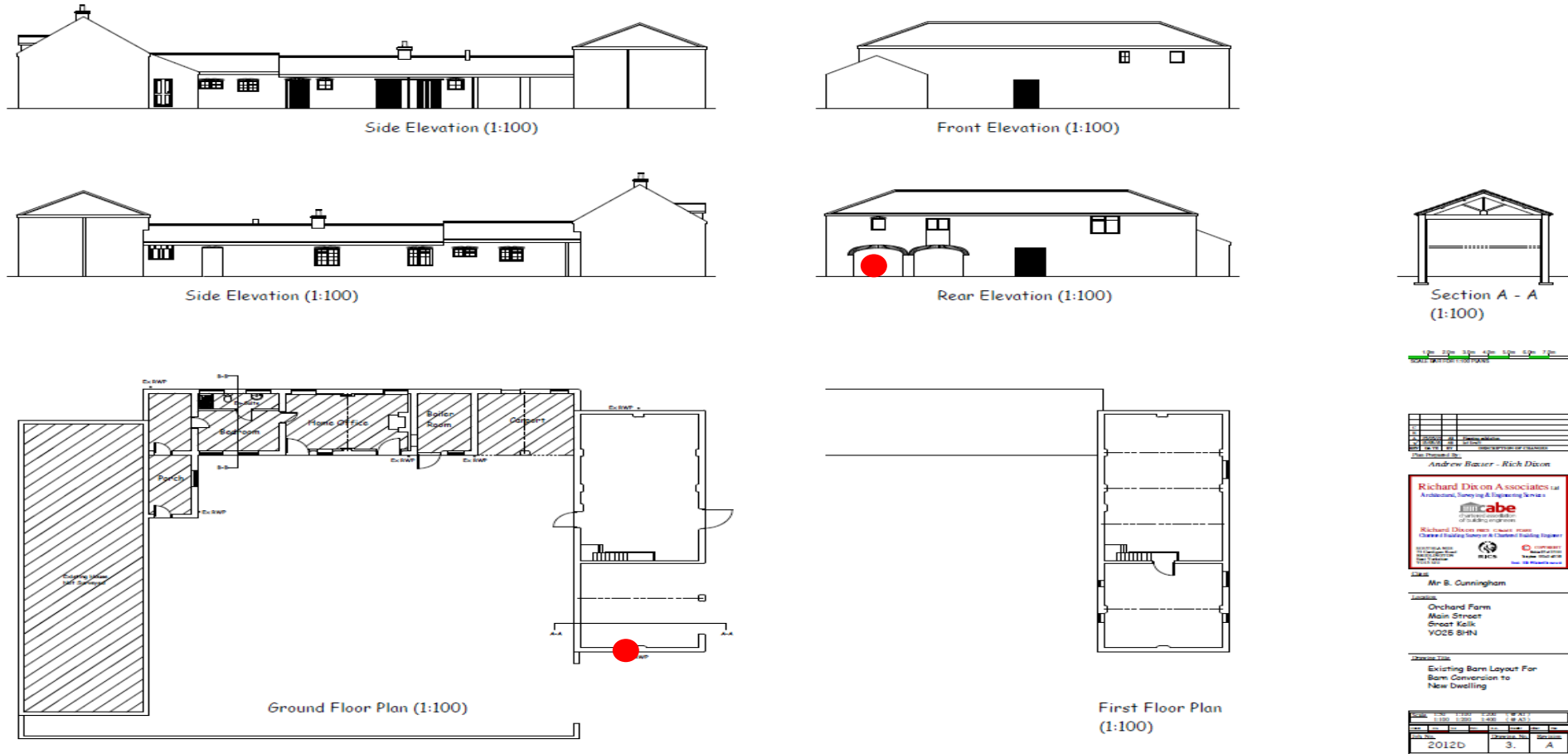
** Comm – Commuting, For – Foraging/Feeding, Swr – Swarming, Soc – Socialising, Emrg/Ent – Emerge/Enter roost feature

Abbreviations – ANV – Audio no visual, C. Pip – Common pipistrelle, Natt – Natterers, S. pip – Soprano pipistrelle

Raw Data Recording Maps and Forms are available upon request.

4.3 – Roost Locations

The identified roost location within the building:



Key - ● Roost 1 – One Common pipistrelle day roost (see plate 4.7 and 4.8)
 Figure 4.1 – Roost locations within the Project site

4.4 – Photographs of Roost Locations



Plate 4.7 – East Elevation - Roost 1. Access point into the Common pipistrelle day roost via the arches.



Plate 4.8 – (L) – Facing SW, Room 3 highlighting potential roosting points (R) – Bat droppings highlighted in the joist puttock hole on the south elevation. It is highly likely that this is the roost location but there are more bat droppings below other joist puttock holes on the south elevation wall.

4.5 – Commuting routes

Bats were predominately commuting West to East in between the north elevation and tree-lined hedgerow and then South along the east elevation and beyond and vice versa during dawn.

In all bearings are agricultural fields with associated hedgerows drains/ditches. To the north are small parcels of planted scattered trees, woodland and waterbodies. To the south are private gardens with planted scattered trees lining property boundaries and waterbodies. To the west is

PRA & Emergence/Re-Entry Report - 21/02407/AGRNOT –
Change of use of agricultural building to dwelling with
associated works - Orchard Farm, Main Street, Great Kelk, East Yorkshire, YO25 8HN
predominately agricultural fields with associated hedgerows drains/ditches, small parcels of
planted scattered trees, woodland and waterbodies.
All of the above habitats, eco-tones are optimal foraging and commuting routes for bats.



Figure 4.3 - Aerial view with project site illustrated within the wider landscape (not to scale). Source – Google maps 2021³

5. Evaluation

5.1 – Designated sites

There are no statutory and no non-statutory designated sites within the 1km search radius¹⁰. The proposed development does not qualify under the SSSI impact risk zones too: *Rural Residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units*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. This priority habitat is approximately 500m NE of the project site¹⁰. The priority habitats will not be affected by the proposed development.

5.3 – NEYEDC Species Records

Species records were obtained from NEYEDC¹¹. Within the 1km search radius of the site, 44 historical records of which have one or more designations as notable and or protected species was identified. None of the 44 records are of significant interest to this project site. There were no bats records. Crow Ecology has carried out surveys in Little Kelk, approximately 1.3km north of the project site and recorded bats foraging and commuting. Therefore, it is likely that bats are present within this location; they have just not been recorded. There is no GCN or Bat license data within the 1km search radius¹⁰.

5.4 – Bats and the Building

No bats were present during the PRA survey¹ but there was a small number of droppings present below a joist puttock hole on the south elevation wall in room 3 and droppings present on items stored within Room 3.

The building was checked internally and externally before each survey for any bat evidence. All cracks and crevices (where safe to do so) were checked for bat presence/evidence prior to surveys. New evidence was present on the 28/08/21 dusk survey; there were droppings below more joist puttock holes on the south elevation wall in room 3. No other evidence was present in the remaining areas of the building. It is possible that due to the low number of bats present, the prevailing weather conditions may have eroded some evidence. Most cracks and crevices were still heavily cobwebbed. Bats prefer cobweb free areas^{12,13}. The roof was scanned with thermal imaging equipment that can detect any thermal abnormalities, which may indicate the presence of a single bat or a colony. There were no abnormal heat patterns present. There were no grease marks on the roof tiles or walls and no urine splashes; again, this could be due to the low number of bats present or the prevailing weather conditions eroding them.

There was one roost location discovered during this survey, however there are more bat droppings below other joist puttock holes on the south elevation wall; this could be the same bat using multiple roost sites. The species roosting was Common pipistrelle *Pipistrellus pipistrellus* and the roost classification is a day roost.

Roost 1 access point is via the open arches on the ground-floor of the east elevation. The roost location is a gap between the joist puttock hole and brickwork of the south elevation wall. Droppings are present below the likely roost as are other gaps between other joist puttock holes and brickwork of the south elevation wall.

The low numbers and lack of significant bat evidence suggest there is no maternity roost present on-site. The roost identified had a maximum count of 1 bat. These low levels of bats roosting in a building that has a moderate/high roosting potential may suggest that the neighbouring dwellings/buildings may have more bats present during the active months as the dwellings will remain warm and stable throughout the active months. This type of environment would be more preferable to more conservation significant roosts such as a Maternity roost⁴. In addition, bats were first seen commuting/foraging from the west of the building past the north elevation approximately 20mins after dusk which again suggests there is a roost/s close to the project site.

5.5 – Digital Recorders

5.5.1 – EMT Touch Pro 2

All surveyors had these detectors. The data from these bat detectors was analysed using Kaleidoscope software. The raw data recordings performed by the surveyors and their times largely correlate with the data collected from these devices. The bats species recorded correlate with the age and structure of the building and also the buildings' location within the wider landscape.

It should be noted that while these detectors are accurate to certain levels of confidence, their Auto-ID function sometimes mis-record species and this is why the data has been analysed using Kaleidoscope software to reduce these possible errors.

5.5.2 – SANNCE CCTV Camera System IR equipment

The IR equipment was set up to cover all elevations of the building with points of interest. Bats and insects were seen passing by the building on the IR cameras and emerging the building. This correlates with the activity observed by the surveyors.

5.5.3 - Pettersson M500-384 Ultrasound microphone bat detector

The digital recorder (Pettersson M500-384 Ultrasound Microphone) was placed in the room 1 of the building for the surveys. The recorder was located in this position to detect any internal flight from such species as Brown Long Eared *Plecotus auritus* bat or any other bat species. No

5.6. – Limitations

All aspects and points of interest were covered by surveyors were safe to do so; therefore, the information gained is accurate at the time of the surveys.

5.7 – Project Site Species

5.7.1 – Bat Species

The following bat species roosting in the project site at the time of the surveys was as follows:

- Common pipistrelle

Common pipistrelle are crevice dwelling species that use buildings and sometimes trees to roost². The roosts identified, their access points and roost characteristics typify these species.

5.7.2 – Commuting & Foraging Bats

The same species listed in 5.7.1 were also recorded foraging or commuting throughout the project site. In addition, the following species were also recorded: Noctule *Nyctalus noctula*, Soprano pipistrelle *Pipistrellus pygmaeus*, BLE and Natterers *Myotis nattereri*. Noctule is a tree dwelling species¹. Soprano pipistrelle are crevice dwelling species that use buildings and sometimes trees to roost¹. BLE roost in trees, old buildings with large roof voids usually at the apex where the roof timbers meet the brick/stonework. They also use feeding perches that are separate to the roost¹. Natterers roost in buildings and trees and the roost characteristics are diverse ranging from crevices between timber and brickwork to cracks in mortar¹.

5.7.3 – Birds

There were no breeding birds present during the survey.

5.8 – Commuting Routes

Bats were predominately commuting West to East in between the north elevation and tree-lined hedgerow and then South along the east elevation and beyond and vice versa during dawn.

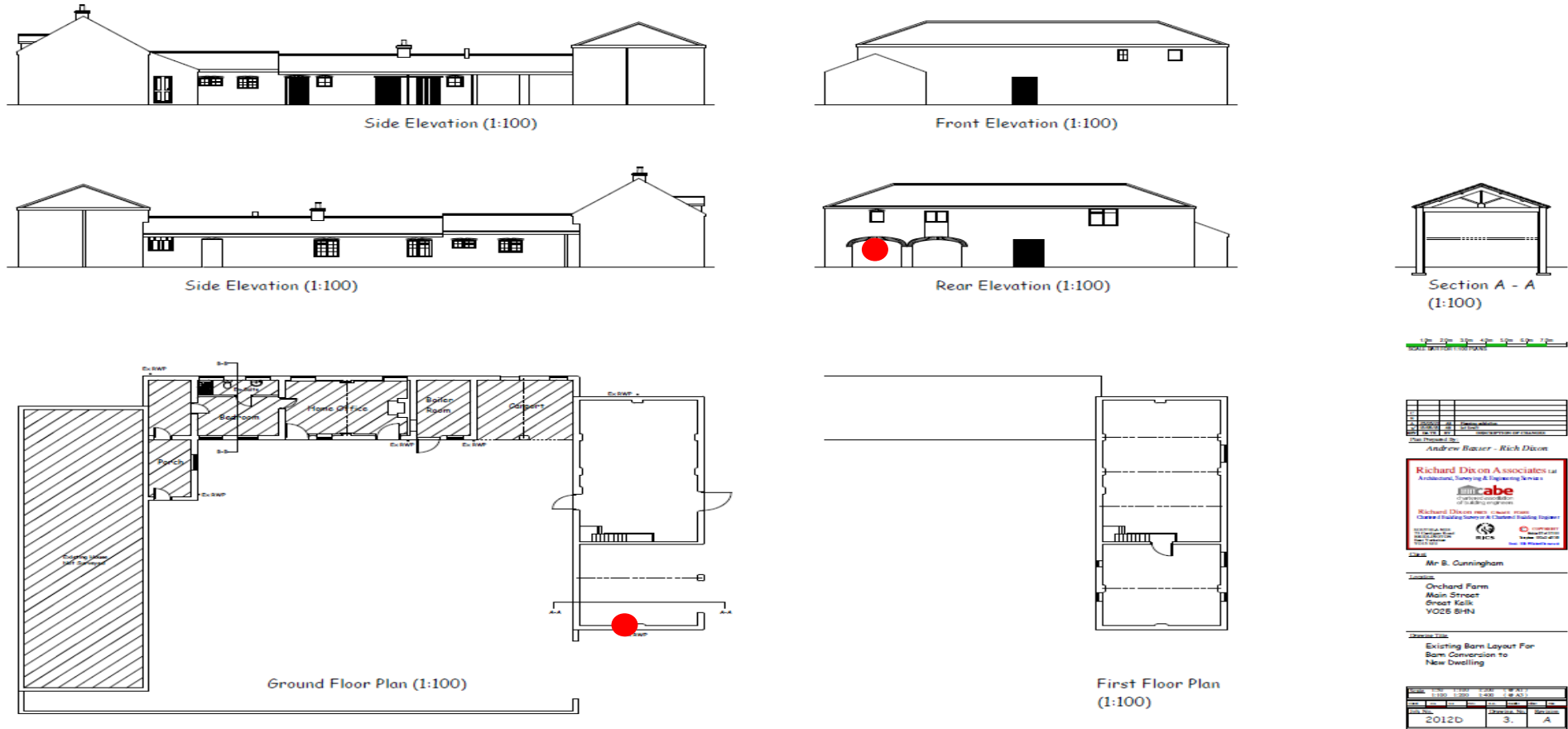
Bats were seen foraging and commuting along these routes approximately 20mins after dusk and dawn activity lasted until 15mins before dawn. The number of bats commuting and foraging, the timings of activity suggest there is a roost of significant conservation status (e.g. maternity roost) close to the project site, possibly within one of the neighbouring properties/outbuildings situated in a westerly direction.



In all bearings are agricultural fields with associated hedgerows drains/ditches. To the north are small parcels of planted scattered trees, woodland and waterbodies. To the south are private gardens with planted scattered trees lining property boundaries and waterbodies. To the west is predominately agricultural fields with associated hedgerows drains/ditches, small parcels of planted scattered trees, woodland and waterbodies.

All of the above habitats, eco-tones are optimal foraging and commuting routes for bats including Common pipistrelle¹.

5.9 – Roost Characterisation



Key –

● Roost 1 - 1 Common pipistrelle day roost. Access was via the ground-floor east elevation archways on the 16/07/21 and 28/08/21. The roost location is a gap between the joist puttock hole and brickwork of the south elevation wall. Droppings are present below the likely roost as are other gaps between other joist puttock holes and brickwork of the south elevation wall.

Figure 5.1 – Roost characterisations of each roost location



The table below describes the roost characterisation of the roost recorded. See section 4.4 to view photographs of roost locations

Roost Number & Location	Roost Characterisation Factors					Roost Type	
	Size & Nature of Roost (LxW)	Roosting surfaces	Aspect & Orientation	Temperature & Humidity	Lighting	Habitat	Roost classification
1) Gap between the joist puttock hole and brickwork	Access was via the ground-floor east elevation archways. The roost location is a gap between the joist puttock hole and brickwork of the south elevation wall (70mm x 25mm)	The roost surface is r brick and timber	North-facing.	The temperature & humidity of the roost is unknown but due to this room (room 3) has open archways, it would suggest it to be cool and a relatively un-stable temperature throughout the year.	There is sporadic (broken) PIR sensor LED security light illuminating the entrance to the archways when activated.	The surrounding area of the project site are agricultural fields with associated hedgerows drains/ditches, small parcels of planted scattered trees, woodland and waterbodies.	Common pipistrelle Day roost – Maximum count = 1

5.10 - Evaluation Conclusion

- The building has 1 roost locations; gap between the joist puttock hole and brickwork of the south elevation wall on the ground-floor of room 3.
- Bat species roosting are: Common pipistrelle
- Roost present on the project site is Day roost
- Bas roost is North facing bearing.
- Bats were predominately commuting West to East in between the north elevation and tree-lined hedgerow and then South along the east elevation and beyond and vice versa during dawn.
- There are numerous optimal foraging areas surrounding the project site, habitats such as: agricultural fields with associated hedgerows drains/ditches, small parcels of planted scattered trees, woodland and waterbodies.
- Another roost/s is likely to be close to this project site as bats were seen commuting and foraging 20mins after dusk. It is likely bats are roosting in the neighbouring buildings/dwellings.

The project site will require a Bat Low Impact Class License (BLICL) for this development as discussed in chapter 8.

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

5.11.1 – Great Crested Newt (GCN) and other Amphibians

The NEYEDC data search produced 39 records of GCN within the 1km search radius¹⁰. All the records are approximately 800m NW of the project site.

There are no ponds within the development boundary or property boundary. There is a pond approximately 55m NE of the project site in a neighbouring garden. This pond is surrounded by optimal terrestrial habitat in the forms of woodland/shrubs, tall ruderal vegetation and decaying vegetation. However, it is highly unlikely that GCN would seek refuge within the development boundary because of the following factors:

- The project site is: buildings, hard-standing and a small area of amenity grassland. These habitats are not suitable sub-optimal. GCN prefer refuges/hibernacula such as: rough grassland, scrub, woodland, hedgerows, 'wasteground' or quarry floors; none of these habitats are present within the project site boundary⁶.
- There is no waterbody present within the development or property boundaries for GCN to breed in, therefore it is unlikely for GCN to commute through the project site and towards the sub-optimal habitats present.
- In-between the pond and the project site is amenity grassland both within the property boundary and neighbouring property boundary and a small area of Trees/shrubs. The

trees/shrubs are optimal but to commute there would result in GCN commuting across the amenity grassland which would leave them exposed to predation and desiccation⁶.

- Materials brought into develop the building will use the existing track which is a sub-optimal habitat and therefore it is highly unlikely for GCN to be present on the tracks and within the development boundary.

Conclusion – No further surveys required but please see the Precautionary Method of Working Statement (PMWS) which will be adhered to. Please see section 8.6.

5.11.2 – Reptiles

The NEYEDC data search produced no records of reptiles present within the 1km search radius¹¹. The project site is not suitable for reptiles for the following reasons¹⁴:

- Vegetation – The vegetation (amenity grassland) within the project site lacks diversity, varying height and structure
- Extent - The habitats within the project site are poor sub-optimal.
- Aspect – There are no south-facing slopes
- Topography – No suitable topography.
- Connectivity – The location of the project site is within the property boundary has limited connectivity for reptiles
- History – There are no records of Reptiles present within 1km of the project site¹¹.

Conclusion – No further surveys needed.

5.11.3 – Badgers

The NEYEDC data search produced no records of Badgers within 1km search radius of the project site¹¹. 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 immediate area surrounding the project site to forage but they may commute close to it and therefore it has to be considered.

Conclusion – No further surveys required but please see the Precautionary Method of Working Statement (PMWS) which will be adhered to. Please see section 8.7.

5.11.4 - Plants

The project site is an existing building with existing tracks/roads and amenity grassland and therefore no plants will be affected.

Conclusion – No action needed.

5.11.5 – Other Protected or Notable Species

The NEYEDC data search produced 2 records of Water vole *Arvicola amphibius* and no records of Otter *Lutra lutra* within 1km search radius of the project site¹¹. Water vole and Otter do not need to be considered for this proposed development as the development is staying within the existing footprint and there are no waterbodies within the development boundary or property boundary.

The NEYEDC data search produced no records of Hedgehog *Erinaceus europaeus* within 1km search radius of the project site¹¹. Due to the habitats present within the project site it is highly unlikely for Hedgehogs to be present within the project site.

Conclusion – No further surveys required but please see the Precautionary Method of Working Statement (PMWS) which will be adhered to. Please see section 8.7.

6. 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.

6.1 - The Wildlife and Countryside Act (WCA) 1981 (as amended)¹⁵

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.

6.1.1 – Animals

Animals are protected under Schedule 5 of the WCA. It is illegal to;

- capture, kill, disturb or injure animals deliberately
- damage or destroy a breeding or resting place
- obstruct access to their resting or sheltering places (deliberately or by not taking enough care)
- possess, sell, control or transport live or dead animals, or parts of them
- take eggs

6.1.2 - 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

6.2 - The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹⁶

The Conservation of Habitats and Species Regulations 2017 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 43 of this law states that it is an offence to:

- capturing, killing, disturbing or injuring European protected species deliberately
- damaging or destroying a breeding or resting place
- obstructing access to their resting or sheltering places (deliberately or by not taking enough care)
- possessing, selling, controlling or transporting live or dead protected species, or parts of them
- taking eggs

6.3 - The Natural Environment and Rural Communities (NERC) Act (2006)¹⁷

'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.'

6.4 - National Planning Policy Framework (NPPF) (July 2021)¹⁸

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 Framework⁵⁸; 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 Broads⁵⁹. 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 development⁶⁰ 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 biodiversity⁶¹; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation⁶²; 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 reasons⁶³ 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 sites⁶⁴; 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.

6.5 - Department for Communities & Local Government Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System¹⁹

'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).

6.6 - The 'UK Post-2010 Biodiversity Framework' (July 2021)²⁰

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.

6.7 - UK Biodiversity Action Plan (UKBAP) and Local BAP^{21,22}

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.

6.8 - The Badgers Act 1992²³

Badgers and their setts are protected by the following legislation: The Badger Protection Act 1992. 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

But there are exceptions. Licences to undertake some actions can be issued if it is justified, for example where a badger sett is found on a proposed site for a road or housing development.

6.9 - Local Planning Policy²⁴

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.

Figure 6.1 – Planning policy ENV 4 of East Riding Local Plan 2012 – 2029 Strategy

7. Impact Assessment – In the Absence of Mitigation

The building has one Common pipistrelle day roost. The building is proposed to be renovated into a new dwelling. If un-supervised work was to go ahead pre and during renovation then it would result in the loss of this day roost which would have a Medium-Low impact on the bat species currently roosting at site level⁴.

7.1.1 – Short term Impacts

7.1.1.1 - Disturbance

- Increased human presence, resulting in increased noise levels
- Associated work by-products such as;
 1. Scaffolding blocking access points
 2. Automated works creating increased levels of noise, vibrations and dust
 3. Lighting levels increased. Work may take place during the evening/night, lighting from artificial sources may disturb and confuse the bats usual emerging and foraging instincts; resulting in temporary abandonment of roost.

7.1.1.2 - Injure/Death

The following actions would result in a high negative impact on the bats present on the project site.

- Bats maybe injured as a result of a worker dropping or standing on roof tiles unknown that bats maybe occupying them.
- Removing roof timbers forcefully may result in injury or death.
- Removing large objects with force from their setting such as doors and windows may result in bats being injured or killed.

7.1.2 – Long Term Impacts

7.1.2.1 – Roost Modification

Not applicable for this project but in the absence of mitigation, the following works could have a low negative impact on the bats present via disturbance and or death/injury.

- The removal of the roofs and associated structures - would cause major disturbance and the potential hazard of killing or injuring.
- Pointing up brickwork and any cracks or crevices where a bat may be roosting would result in entombing them in resulting in death.
- Internal renovations in the form of plaster boards may block access points
- Setting and sealing new windows and doors may block an access points

7.1.2.2 - Roost Loss

In the absence of mitigation, the renovation will result in the permanent loss of one day roost.

- The loss of the day roost would have a MEDIUM impact at site level.

7.1.2.3 - Fragmentation and Isolation of Roost

The main foraging area: between the north elevation and tree-lined hedgerow will remain undeveloped. The biodiversity enhancements recommended in this report (see chapter 9) will further enhance the site, not only for bats but other species too.

7.1.2.4 - Post-development interference impacts

- There will be an increase in human activity due to the proposed development been created as a dwelling.
- As a result of more humans been present on site they may be a need for more external lighting. This may have a potential impact on the roost and the bats commuting/foraging routes.

The tables below summarise the impacts at site level on the different types of roosts bats use³. Some bat species accept changes to their roosts better than others. Pipistrelle research data suggests that they are more adaptable than some other species as their roost preferences (crevices) are more widespread than for example a Brown Long-eared bats². The roosts present on this site are highlighted in red.

Maternity roosts	Impact
Destruction	High
Fragmentation and isolation	High
Post-development interference	High
Partial destruction or modification	Medium
Temporary disturbance	Low (if you do work out of breeding season)
Major hibernation roosts	Impact
Destruction	High
Fragmentation and isolation	High
Post-development interference	High

Major hibernation roosts	Impact
Partial destruction or modification	Medium
Temporary disturbance	Low (if you do work out of hibernation season)
Minor hibernation roosts	Impact
Destruction	High
Fragmentation and isolation	High
Post-development interference	Medium
Partial destruction or modification	Medium
Modified management, e.g. changes to light, temperature or noise which will affect bats	Medium
Temporary disturbance	Low (if you do work out of hibernation season)
Mating roosts	Impact
Destruction	Medium
Fragmentation and isolation	Medium
Partial destruction or modification	Medium
Modified management, e.g. changes to light, temperature or noise which will affect bats	Medium
Post-development interference	Low
Temporary destruction followed by reinstatement	Low
Swarming roosts	Impact
Destruction	High
Fragmentation and isolation	High
Partial destruction or modification	Medium
Modified management, e.g. changes to light, temperature or noise which will affect bats	Medium
Post-development interference	Low

Swarming roosts	Impact
Temporary destruction	Low
Temporary destruction then reinstatement	Low
Night roosts, day roosts or feeding roosts	Impact
Destruction	Medium
Fragmentation and isolation	Medium
Partial destruction or modification	Low
Modified management, e.g., changes to light, temperature or noise which will affect bats	Low
Post-development interference	Low
Temporary destruction then reinstatement	Low
Temporary destruction	Low
Transitional roosts	Impact
Destruction	Low
Fragmentation and isolation	Low
Partial destruction or modification	Low
Post-development interference	Low
Temporary destruction	Low
Satellite roosts	Impact
Destruction	Medium
Fragmentation and isolation	Medium
Partial destruction or modification	Medium
Post-development interference	Low
Temporary destruction	Low

8. Recommendations

8.1 – Bat Low Impact Class License (BLICL)

Bat roosts are protected throughout the year, whether bats are present or not.

8.1.1 – Legal protection of Roosts

All proposed developments, known to contain bat roosts, require a licence from Natural England. Under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹⁶, provision 43 and of the Wildlife and Countryside Act (1981) (as amended) Section 9¹⁵ it is an offence for anyone without a licence to:

- to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally.
- intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

8.1.2 – BLICL licence

The building has one Common pipistrelle day roost. As such, any works associated with development that will disturb, modify or result in permanent loss of roosts will require a Natural England BLICL²⁵.

The licence will be obtained from Natural England following their approval before any of the following associated works commence on this building:

- Bat exclusion
- Renovation
- Roof stripping
- Erection of scaffolding

The bat 'low impact' licence (CL21) is a mitigation class licence. You should consider what impact your actions will have on bats. If you cannot avoid affecting them at a site, you can use this licence:

- to disturb and capture up to 3 'common or widespread' bat species (which are those listed in each annex)
- to damage or destroy up to 3 'low conservation status roosts' (these are: feeding, day, night and transitional roosts)
- if you're a registered ecological consultant ('registered consultant')
- if your action has a low or temporary impact on bats or their roosts
- if sites are registered before you start work

The roosts within this building are under Annex A of the CL21 BLICL. For more information please see: <https://www.gov.uk/government/publications/bats-licence-to-interfere-with-bat-roosts-cl21>

- Additional bat activity survey/s prior to works commencing
- A walk over survey/site check within 3 months prior to the BLICL application to check the conditions have not changed since the last survey took place. Any changes to habitats and or structures will be documented.
- The submission of the BLICL to undertaken such actions as disturbance, destroy roosts and or resting places of bats present on the project site.
- A Method Statement will also accompany the BLICL licence application. This will include a detailed work programme that the developers will follow. Copies will firstly be sent to Natural England for assessment and to the client, architect if applicable and the contractors on site.

A Reasoned statement will accompany the BLICL application as this provides the justification the proposed development and associated activities will meet the requirements of Conservation of Habitats and Species (Amendment) (EU Exit) regulations 55(2)(e-g) and 55(9)(a-b) (see section 6.2 for full description).

The application timescale of the BLICL licence is generally 15 working days from the receipt acknowledgement from Natural England.

The BLICL is valid for 6 months so works have to be completed within this timeframe.

The following chapters are **provisional guidelines** as to how the mitigation and method statement will give an insight of how the works will provisionally look. **The BLICL development licence will give the exact details of the Mitigation and Method statement.**

8.2 – Mitigation

Mitigation is compulsory in these situations and its aim is to avoid or reduce the impact of the proposed development to the roosting and foraging bats present on the project site. Mitigation is tailored to the species roosting on the project site. Mitigation proposals as defined by English Nature (now Natural England) *Bat Mitigation Guidelines (2004)*. The key principles of mitigation are⁴:

- Mitigation - which, in this strict sense, refers to practices which reduce or remove damage (e.g., by changing the layout of a scheme, or altering the timing of the work)

See below Natural England's guidelines from the Bat Mitigation Guidelines (2004) for proportionate mitigation⁴. Highlighted is the roost status on the project site with the associated mitigation requirements.



Low	Roost status	Mitigation/compensation requirement (depending on impact)
Conservation significance High	Feeding perches of common/rarer species Individual bats of common species Small numbers of common species. Not a maternity site	Flexibility over provision of bat-boxes, access to new buildings etc. No conditions about timing or monitoring
	Feeding perches of Annex II species	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements
	Small numbers of rarer species. Not a maternity site	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
	Hibernation sites for small numbers of common/rarer species	
	Maternity sites of common species	
	Maternity sites of rarer species	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Significant hibernation sites for rarer/rarest species or all species assemblages	
	Sites meeting SSSI guidelines	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
	Maternity sites of rarest species	

Figure 4. Guidelines for proportionate mitigation. The definition of common, rare and rarest species requires regional interpretation.

8.2.1 – Project site relevance

Common pipistrelle are common and widespread throughout the UK and Yorkshire²⁶. The Common pipistrelle is listed on the LBAP²². Common pipistrelle are not threatened and populations have increased since 1999²⁶. The day roost of the project site are of **low conservation** significance.

8.3 – Method Statement Template

This is only a template of the method statement as the precise method statement will be included in the BLICL application. The following statement has been guided by the *Bat Mitigation Guidelines (2004)*⁴ and the *Bat Workers Manual 3rd Edition (2004)*⁵.

8.3.1 - Timings

There are no mandatory timing constraints when low numbers of summer roosting bats (day roosts in this case) have been recorded, however works are usually undertaken when bats are less vulnerable to disturbance (spring and/or autumn).

8.3.2 – Pre-Survey Works

- A dawn or dusk survey under suitable weather conditions (No rain, no strong winds and a temperature >8°C) will be performed to gauge activity.
- Bats will not be left without a suitable roost during the breeding season (April-September) and therefore the provision of a tree-mounted bat box will be required if bats are discovered pre-during renovation. The specification of box will be listed in the BLICL.
- An inspection of roof timbers, associated roof structures and brickwork will take place prior to renovation work commencing using an endoscope. This examination is used to determine if any bats are present. Cracks and crevices that have no bats present will be blocked using pipe insulation during the examination. In order to perform the examination survey thoroughly and safely; scaffolding or a cherry picker (mobile work platform) may-be be required of which the client will provide.
- An ecological site induction in the form of a 'tool box talk' will be given to all contractors and associated workers prior to renovation work commencing. The contractors and associated workers will be told about the bats on the project site, where they were found during the presence/absence survey and maybe found if found unexpectedly. If any bats or bat droppings are found, work must cease immediately and the foreman (or equivalent) will promptly contact a licenced bat ecologist for advice.

8.3.3 – Exclusion of Roosts

The pre-works survey/s will determine the bat activity of the building in question. If bats are roosting, then a method of excluding bats from their roost will be performed. This approach aims to exclude the bats from the roost by closing access points by allowing them to emerge normally but not to re-enter. This should reduce/eliminate the bats from their roost and therefore ensuring the bats come to no harm during the renovation.

8.3.3.1 - Exclusion methods

An apparatus will be used to exclude all roosts on the project site if necessary. The exclusion apparatus used will be what the *Bat Workers Manual 3rd Edition (2004)*⁵ p88-90 recommends (see figure 8.1). Typically, the exclusion material is in the form of a one-way 'gate'. This will allow bats to freely emerge but not to re-enter. The apparatus is either a plastic acetate sheet (or similar) or a smooth drainage pipe. The plastic acetate sheet will be attached to the access points (wall/fascia/soffit) securely using adhesive. Once the bat ecologist is confident that the roost is empty, the access point will be sealed with pipe insulation.

Other openings such as windows and doors that are potential access points into the building will be sealed/boarded up during the exclusion process. For this project site, the windows could be sealed using a timber frame with heavy gauge plastic sheeting and the ground-floor openings the same application too. During the works any possible openings will be closed and sealed if necessary (cracks around doors), 30minutes before dusk until dawn.

Once the ecologist is confident that all bats have been excluded the access points will be blocked using expansion foam/pipe insulation.

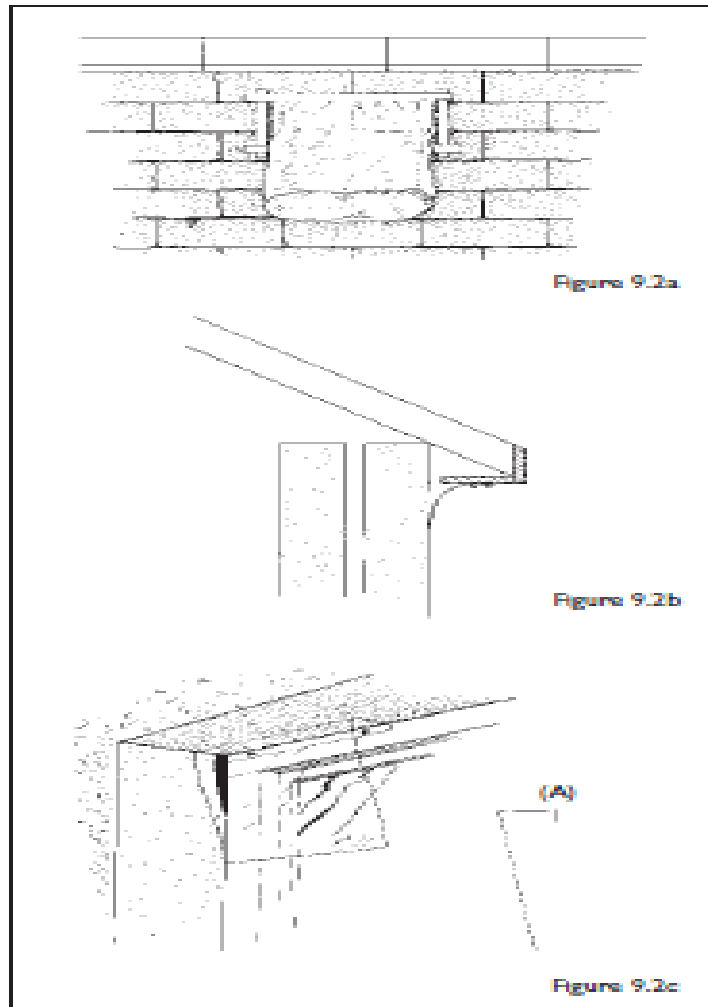


Figure 9.2
a. Plastic bag with bottom cut off fixed over roost entrance. The bag can be taped over the entrance.
b. A sheet of acetate or similar stiff plastic pinned under the soffit. The plastic should be flexible enough to allow the bats to push past it, but be stiff enough to spring back into place.
c. An A4 sheet of acetate bent to profile (A) then taped or pinned along its short edge to the top of the window frame adjacent to the roost entrance.

Figure 8.1 – Methods of Exclusion. Source – Bat Workers Manual 3rd Edition (2004)⁵

8.3.4 – Hand capture

Hand capture is not a method planned and will be used only as a last resort.

8.3.5 – Post exclusion search

Once the bats have been excluded and the access points sealed, to minimise any further potential disturbance and injury/death, prior to the start of renovation, the following places must be checked⁵:

These include:

- All the roof structure - trusses, puttock holes, rafters, purlins.
- Crevices in brick work and gaps in mortar
- Mortise joints

- Gaps in eaves
- Window Frames
- Behind any boarding
- Gaps in lintels

During the works, careful removal by hand of all fittings and fixtures will be exercised. The roof will remain in place and undeveloped.

8.3.6 – Bat discovery during works

In the unlikely event that bats or bat droppings are present at the start or during the renovation work, work must be halted until a licensed bat holder can attend the site and give further advice where necessary. The bats will be placed in a dark, ventilated holding box containing water by the glove wearing ecologist who will then place the bat/s directly into the provided tree-mounted bat box on the project site.

8.3.7 - Bat discovery & temperature

If the temperatures are <8°C any torpid bats (mentally or physically inactive state) will be removed by hand and taken into care following the *Bat Workers Manual 3rd Edition (2004) guidelines*⁵. The bat will be fed and hydrated until the weather conditions are suitable (>8°C night temperature).

8.4 – Lighting²⁷

Although the foraging and commuter routes of bats are not legally protected it would be good practice to follow lighting guidelines in relation to bats as bats try to avoid light. This could affect their roost locations and create habitat fragmentation if erected in the wrong places.

Mitigation Strategy	Impact
No Light	The best solution for bats but probably not for the public
Variable lighting regimes (VLR)	This is controlled by a CMS (Central Monitoring System). This involves switching off or dimming lights for a period in the night at set times. This would be useful for high periods of bat activity for example, emergence and commuting.
Spacing and Height	Lights should be spaced as far apart as possible but not at the expense of coverage. The height should be as low as possible to the ground and there-by reducing the illuminated light.
Reducing Intensity	This will have the same effect as dimming and will result in less light pollution.
Changing the Light Type	Avoid lights that have a short blue/white wavelength. Long wavelength types such as warm white will be suitable. Avoid lights with a high UV content. Use UV filters or glass housings to reduce UV emittance.
Reduce Spill	This can be done by using reducing the angle under 70° or by installing accessories to direct the light. The 'shield' option of accessories will be suitable for the following areas. This will be useful where lighting is close

	to commuting routes
--	---------------------

Table 8.1 – Mitigation strategies to reduce the impact of lighting on bats

8.4.1 – Project site

If external security (or otherwise) lighting is to be fitted then lighting will be downlighting only with cowling on the top to reduce light spill as bats were observed foraging/commuting past all elevations. Any external lighting on the east elevation will follow the same specification but will be operated on a PIR sensor. It is recommended that no external lighting to be erected on the north elevation.

8.5 - Breeding birds

No breeding birds were present during the surveys. However, if breeding birds are present prior to works commencing then no works can commence between 1st March-31st August⁸. 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 commence⁸. 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.

8.6 – Amphibians

8.6.1 – Amphibian PWMS

This PWMS has been guided by: *Great Crested Newt Mitigation Guidelines* [PDF] English Nature⁶ and *Template for Method Statement to support application for licence under Regulation 53(2)e of The Conservation of Habitats and Species Regulations 2010 (as amended) in respect of great crested newts Triturus cristatus. Form WML-A14-2 (Version December 2015)* [Excel Spreadsheet] Natural England²⁸.

- Before and during the ground works, people involved in the development should ensure they do not create temporary refuge sites. Heavy machinery left overnight will be left on the hardstanding areas only.
- Building materials and associated materials like plastic sheeting should be kept off the ground.
- Rubble and other associated building materials should be bagged up and placed on the on the hardstanding areas only.
- 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 boards (e.g., wall insulation) to allow otherwise trapped amphibians/mammals a means of escaping^{28,29}.
- Any amphibians (excluding GCN) encountered should be released into a suitable refuge (or a pond) 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.

8.6.1.1 – What to do if GCN are Encountered

- In the highly unlikely event that Great Crested Newts are encountered, **work will cease immediately and an Ecologist will be notified⁶**.
- 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

8.7 – Badger and other Mammals

Badger foraging and commuting routes are not legally protected²³ but under the Animal Welfare Act 2006 animals must still be able to exhibit normal behaviour, e.g., foraging for food and water. It is likely that, due to increased human occupation the project site will be unfavourable post-construction but pre-during construction, Badgers and other mammals may still commute/forage within or close to the project site.

The following guidelines will be adhered to minimise any potential impact to any potential Badgers and other mammals commuting through the project site and other species during the proposed development, please see below.

8.7.1 – PWMS Mammals – Construction Phase

- Any 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 animals prior to work commencing just in case they have managed to breach the fencing and become trapped in any machinery present²⁹.
- If, by mistake this is not adhered to, then checks should be made each day prior to work commencing.
- Perimeter fencing should be installed around any ground works and fitted tightly to the ground so any animals cannot get under the fencing²⁹. The ground works will be checked on a daily basis for animals just in case they have managed to breach the fence.
- Any excavations that will be left overnight should be covered over or equipped with a number of ramps and hydrophobic boards to allow otherwise trapped mammals/amphibians/reptiles a means of escape^{28,29}.

9. Biodiversity Enhancements

To increase the net gain to biodiversity and to comply with national (NPPF¹⁸ & NERC¹⁷) and local planning policies (ENV4)²⁴ please see below.

9.1 Bats

As part of the BLICL a bat box will be required. The below boxes are suitable for this project.

9.1.1 – Two Crevice Tree Mounted Bat box

Prior to the renovation work, a tree mounted bat box will need to be erected within the property boundary to potentially place bats discovered during the renovation works. Please see appendices 3 for an example of this box.

9.1.1.1 – Specification & Location

The recommended location of this box is as follows:

- A mature tree within the property boundary close to the project site; an ideal location would be on one of the trees on the northern property boundary (see plate 9.1).
- The box will be located at least 4m above the ground on a tree with a south-facing bearing³⁰.
- The box is 'self-cleaning' so very little maintenance is needed.

9.1.1.2 – Location Justification

The box selected will accommodate crevice dwelling species such as: Pipistrelle sp., Natterer's, Whiskered, and Brandt's bats that are present within this rural setting. The entrance is in a South facing bearing which is a favoured bearings for bats¹, especially during the Summer months.

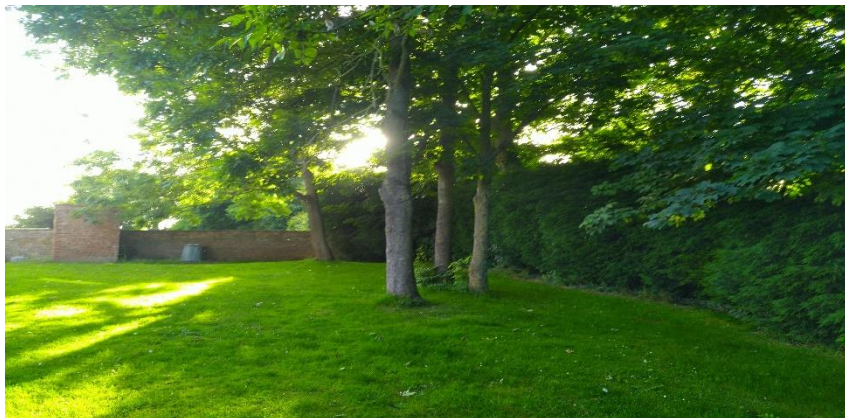


Plate 9.1 – Mature trees adjacent to the northern boundary; suitable for the 2-crevice tree-mounted bat box

9.1.2 – External Maxi Beaumaris Woodstone Bat Box

This box will accommodate crevice dwelling bats commonly found in buildings within rural locations. Species such as: Pipistrelle sp., Natterer's, Whiskered, and Brandt's bats will use these boxes. Please see appendices 4 for examples of these boxes.

9.1.2.1 – Specification & Location

- The box will be located as close as possible to the top of the west elevation.
- The eaves of the building will also provide a level of protection from rainfall²¹.
- This box is 'self-cleaning' so very little maintenance is needed.

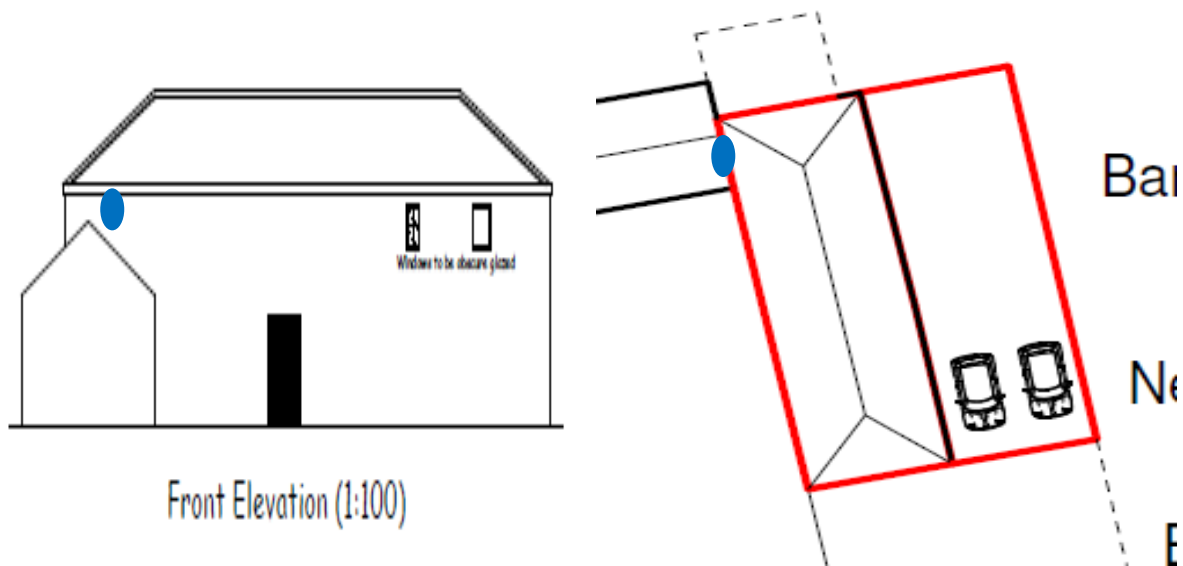


Figure 9.1 - Location of the Maxi Beaumaris Woodstone Bat Box

9.1.2.2 – Location Justification

The entrance is in a West-facing bearing which is one of the favoured bearings for bats¹, especially during the Summer months. The citing is close to the foraging/commuting route; in between the north elevation and tree-lined hedgerow. In addition, this location has also been selected because there are no windows or doors directly below the box.

9.2 – Bird boxes

Bird boxes are recommended to be erected on the mature trees within the property boundary. This will compensate for the renovation of the Building and the loss of a potential nest site, as vacated nests were present in building. Each box will provide nesting opportunities for a number of species. Please see appendices 5 for examples of the boxes to be erected.

The 25mm and 32mm Eco Small Bird Boxes should be cited 2-4m high³¹. The variation in hole diameter will allow a greater diversity of birds to access the boxes.



The open-fronted Robin and Blackbird box should be cited on trees that have dense foliage and provide a level of cover from predators. These boxes should be sited 2m high³¹ and all boxes will be cited in a NW-NE facing bearing to avoid strong sunlight and prevailing wind and rain³¹.

9.3 – Hedgehog box

Hedgehogs are in a state of decline. Since 2000, rural populations have declined by at least a half and urban populations by up to a third in the same period³². Hedgehogs are listed on the UKBAP²¹ and LBAP²² (see appendices 6 for an example of a suitable box). This box could be placed anywhere along the northern, eastern or southern property boundaries. The location of this box minimises them commuting through the project site post-construction and away from the road and more directly onto more optimal foraging habitats of the arable fields and hedgerows.

9.4 – Planting

Under the current proposals, there are opportunities for planting species that provide a food-source for bats. This planting could take place in newly created beds along the north and west elevations or simply in pots within the project site. This planting will further boost the biodiversity on-site post development. Please see³³:

https://cdn.bats.org.uk/pdf/Resources/Encouraging_Bats.pdf?mtime=20181101151549 for more details on the best plants to grow.

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. September 2021 For and on behalf of Crow Ecology, 66
Belgrave Drive, Hull, HU4 6DN. Tel – 07813 900097.

Email – info@crowecology.co.uk

Report printed on recycled paper

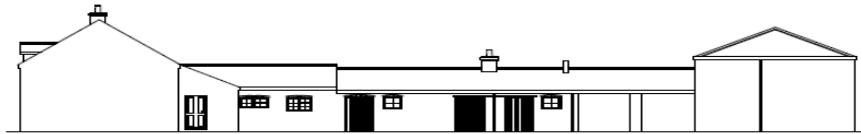
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11. Appendices

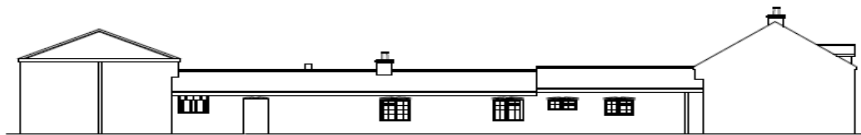
Appendix 1 – Existing site layout



Side Elevation (1:100)



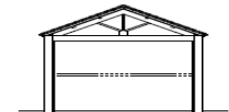
Front Elevation (1:100)



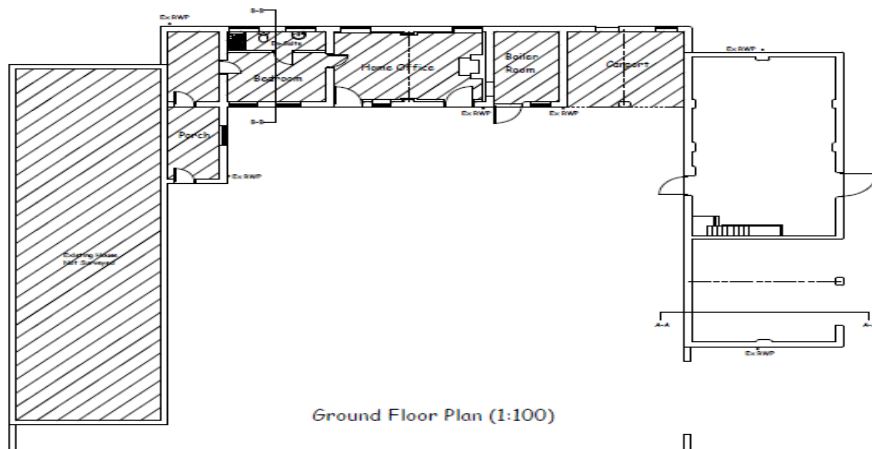
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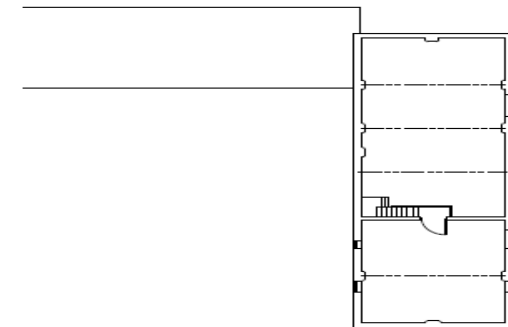
Rear Elevation (1:100)



Section A - A
 (1:100)



Ground Floor Plan (1:100)



First Floor Plan
 (1:100)

Andrew Baxter - Rich Dixon

Richard Dixon Associates Ltd
 Architects, Planning & Engineering Services

Richard Dixon 1983, Stuart Mann
 Chartered Building Surveyors & Chartered Planning Engineers

100% RIBA Approved
 100% RICS Approved
 100% NICEIC Approved

Mr. B. Cunningham

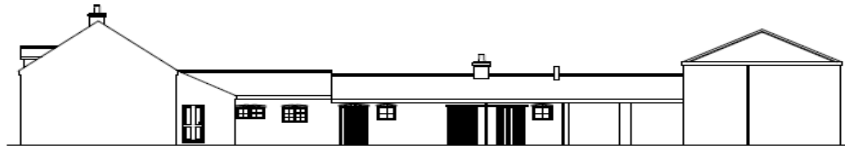
Location:
 Orchard Farm
 Main Street
 Great Kelk
 YO25 8HN

Drawing Title:
 Existing Barn Layout For
 Barn Conversion to
 New Dwelling

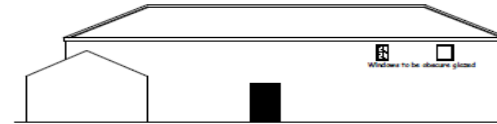
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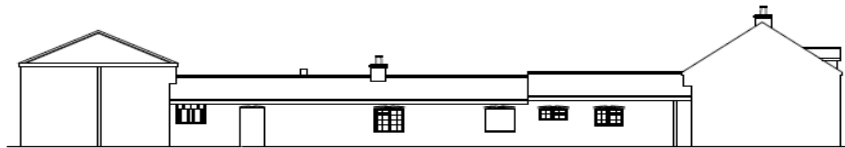
Appendix 2 – Proposed site layout



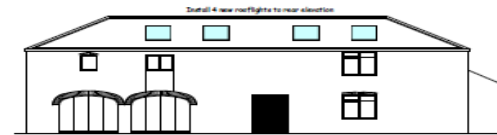
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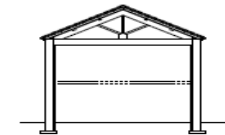
Front Elevation (1:100)



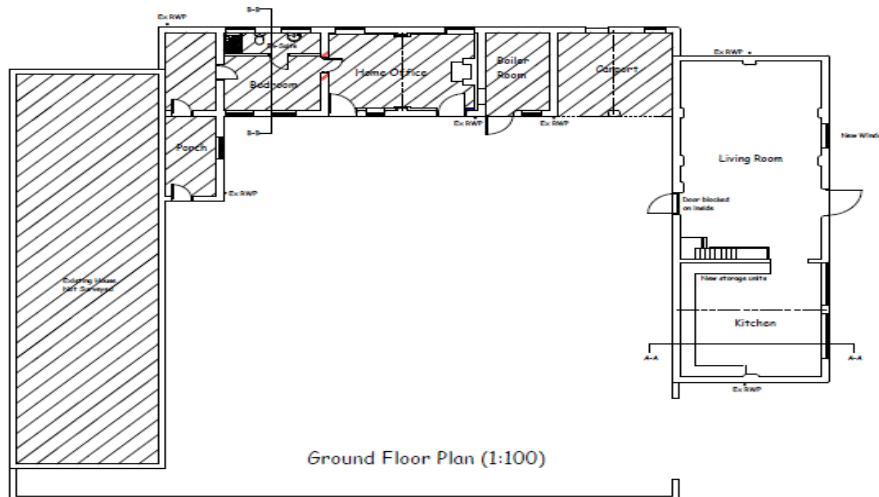
Side Elevation (1:100)



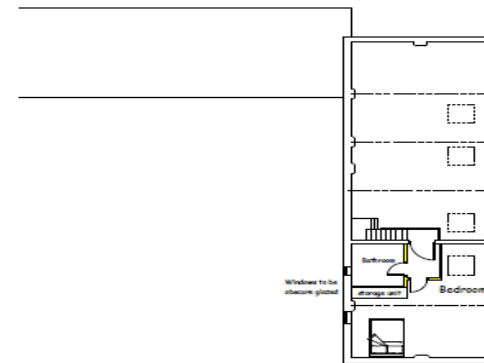
Rear Elevation (1:100)



Section A - A
(1:100)



Ground Floor Plan (1:100)



First Floor Plan
(1:100)

Andrew Baxter - Rich Dixon



Mr B. Cunningham

Orchard Farm
 Main Street
 Great Kelk
 YO25 8HN

Proposed Alterations to
 Farm Barn Conversion to
 New Dwelling

DATE	TYPE	ISSUED	BY
2012D	4	A	



Appendix 3 – Tree Bat box Specification

TWO CREVICE BAT BOX



£48

Individually Handmade - Specifications are in
CM and approximate.

External: 43 high x 21.5 wide x 6.8 deep.

Internal: 41 x 16.5 x 1.8 crevices @ 2.

t Made with small groups of crevice dwelling bat
species in mind, such as pipistrelles. Approx.
6.75kg

Source – <https://www.greenwoodsecohabitats.co.uk/shop> Please note – this product is an
example of the bat boxes required; other brands are available.

Appendix 4 – External Wall Mounted Bat box

Beaumaris Woodstone Bat Box

Manufacturer: [CJ Wildlife](#)

- Suitable for external walls
- Single narrow cavity for crevice-dwelling species
- Available in two sizes



£41.95
#231797

Additional images



About this product

This bat box is made entirely from Woodstone, a robust material comprising concrete and wood fibres. This means that, not only does the box have excellent insulating properties maintaining a more consistent temperature throughout the year, it also provides excellent protection from predators. The Beaumaris box has a single narrow cavity which makes it suitable for crevice roosting bats such as the common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Brandt's bat and whiskered bat. The interior of the box has a rough surface for bats to cling to and the front of the box features a subtle but attractive imprint of a bat in flight.

Suitable for attaching to external walls and available in two sizes: the Midi and the Maxi.

Specification

Maxi:

- * Height: 50cm
- * Width: 38cm
- * Depth: 7cm
- * Weight: 8kg

Source – www.nhbs.com

Please note – This is an example of a suitable box, other brands and companies are available.

Appendix 5 – Bird Boxes

Eco Small Bird Box **PLEASE NOTE – A 25mm & a 32mm Opening is recommended**

- Provides a robust, long lasting home for most common garden birds
- Made from eco-friendly recycled plastic and FSC Certified OSB
- Available with three different hole sizes



- **32mm Entrance Hole In stock**

£22.99

#241638

Selected product:£22.99

About this product

This nest box consists of a weatherproof outer shell made from UV stabilised 100% recycled plastic. Inside the outer shell is a wooden nest box to provide the ideal environment for birds to nest in. The wooden box has drainage holes in the base and can be removed from the plastic case. The outer shell has been precision cut and uses an ingenious system of tabs to hold it together. This further extends the lifespan by ensuring that there are no metal fixings that could rust or degrade over time.

The internal compartment is constructed from FSC-Certified Oriented Strand Board, which is made from flakes of wood waste or from saplings thinned from forests to make space for larger trees. If you need to check or clean the box, simply twist the fastening at the bottom and the wooden nesting chamber will slide out. The outer shell is made from recycled board which is itself made from discarded bale wrap, fertiliser bags and other plastic waste, gathered mostly from farms across the UK.

These nest boxes are available with a choice of three hole sizes: 25mm, 28mm and 32mm. The 25mm hole is primarily suitable for the smallest tit species such as blue tits, coal tits and marsh tits. The 28mm hole will attract all of these species as well as great tits, crested tits and tree sparrows. The larger 32mm hole will attract a large range of species including blue tits, coal tits, marsh tits, house sparrows, great tits, nuthatches and pied flycatchers.

Fixing to the wall or tree is easy using the three concealed mounting holes in the back of the box (located opposite the entrance hole for easy access). Often this is the only fixing needed, but a further hole is provided at the base if required for stability. The easiest way to mount the box is to remove the inner compartment, fix the outer shell onto the tree or wall then slide the inner roost chamber back into the box and secure it in place.

Specification

- * Materials: Recycled LDPE plastic and FSC Certified OSB
- * Finish: Non-toxic water-based stain and preservative
- * Dimensions: 26cm x 17cm x 17xcm (H x W x D)
- * Weight: 1.1kg
- * Fixing: Three concealed keyholes and further fixing hole at base

Eco Robin (Open-Fronted) Nest Box

SPECIAL OFFER

- Long-lasting eco-friendly design
- Made from recycled plastic and FSC Certified OSB
- Suitable for robins, wrens and pied wagtails



• In stock

£22.99

#241640

Price:£22.99

About this product

This eco-friendly nest box consists of a weatherproof outer shell made from UV stabilised 100% recycled plastic. Inside the outer shell is a wooden nesting chamber which provides the ideal environment for birds to nest in. The outer shell has been precision cut and uses an ingenious system of tabs to hold it together. This further extends the lifespan ensuring that there are no metal fixings that could rust or degrade over time. The removable wooden nesting chamber has drainage holes and is constructed from FSC Certified Oriented Strand Board, which is made from flakes obtained from wood waste or from saplings thinned from forests to make space for larger trees. If you need to check or clean the box it's simply a case of twisting the fastening at the bottom and the wooden nesting chamber slides out.

The robin box is an open-fronted nest box. As well as providing a suitable nest box for robins, it's also ideal for other birds that use open-fronted boxes such as wrens, pied wagtails and spotted flycatchers.

Fixing to the wall or tree is easy with three concealed mounting holes in the back of the box (located opposite the entrance hole for easy access). Often this is the only fixing needed, but a further hole is provided at the base for additional stability. The easiest way to mount the box is to remove the inner, fix the outer shell onto the tree or wall, then slide the inner roost chamber back into the box and secure it in place.

Specification

- * Materials: Recycled LDPE plastic & FSC Certified OSB
- * Finish: Non-toxic water-based stain and preservative
- * Dimensions: 26cm x 17cm x 17xm (H x W x D)



* Weight: 0.8kg

* Fixing: Three concealed keyholes and further fixing hole at base

Blackbird FSC Nest Box

Manufacturer: [CJ Wildlife](#)



£19.99

#193079

Price:£19.99

Additional images

About this product

Environmental changes such as urbanisation and deforestation have contributed to a shortage of natural nesting sites and has played a part in the decline of many UK native bird species. This FSC-certified wood nest box provides a man-made alternative to help conserve our wild birds.

With its open front and larger size, this nest box has been specially designed for blackbirds, but you may find that robins and wrens are also attracted to this box. Blackbirds can have up to five successful broods in one year so don't remove any old nests until the breeding season is over (October onwards).

Where to Site

Choose a sheltered, shaded spot at least 2 m above ground. Fix to a tree or wall using the hanger at the top of the box.

Cleaning and Hygiene

To ensure late-breeding birds are not disturbed in the nest, leave cleaning until October. Completely remove all nest material from the box. If further cleaning is required, use hot water, not pesticides. The use of gloves is recommended, washing hands afterwards.

Specification

* Dimensions: 185 mm wide x 250 mm deep x 215 mm high

* Weight: 1.9kg

* Material: FSC softwood

* Fixings: Tree-friendly aluminium nail, wall plug, and standard screw included

Source – <http://www.nhbs.com/>

Please note – This is just an example of the type of suitable boxes. Other companies and brands are available.

Appendix 6 – Hedgehog Box

Hedgehog House

Manufacturer: [Wildlife World](#)

- Provide shelter for hedgehogs in your garden
- Waterproof roof
- Predator protection tunnel



In stock

£29.99 ~~£41.99~~

#234035

Price: £29.99

About this product

Hedgehog numbers are rapidly declining across the UK and providing a refuge in your garden with the Wildlife World Hedgehog Haus will help to protect hedgehogs from predators and disturbance. Underneath the textured brushwood finish there is a sturdy steel frame covered with a waterproof felt lining. The wooden entrance door is manufactured from FSC wood and forms a short predator defence tunnel, small enough to deter access by dogs or badgers. The edges of the house can be pegged down using tent pegs to provide extra security. To encourage hedgehogs to use the house site it in a quiet corner of the garden and cover with leaves for extra camouflage. The edges of the hedgehog house are finished with decorative rattan and the box is supplied in a decorative hedgehog gift box, making it an ideal gift.

Specification

Dimensions: (H) 210 x (W) 380 x (D) 490mm

Weight: 1.9kg

Material: Steel frame, waterproof felt roof, brushwood exterior, FSC wooden door (painted brown), rattan edge

Source – www.nhbs.com

Please Note – This is an example of a suitable hedgehog box, other boxes are available