

**PROTECTED SPECIES SURVEYS –BUILDINGS AT MILL
FARM, SKERNE ROAD, WANSFORD, DRIFFIELD, YO25
8NQ**

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EXECUTIVE SUMMARY

Site Address	Mill Farm, Skerne Road, Wansford, Driffield, YO25 8NQ
Grid Reference	TA06345610 (approximate centre)
Site Area	Approximately 0.1 ha
Current Site Use	Traditional red brick outbuildings associated hard standing and close mown amenity lawns.
Proposed Development	The work entails the proposed redevelopment of the buildings into a domestic dwelling under a planning application to be submitted to East Riding of Yorkshire Council.
Results	<p>The site was found to support a bat roost in Building 2 (as described). Buildings 1, 3 & 4 were found not to support a bat roost.</p> <p>Nesting and roosting bird activity (common species only) was found on site.</p> <p>No Schedule 1 bird activity was recorded on site.</p>
Requirements	<p>Appropriate mitigation and required conservation measures have been outlined within the report to ensure that the development meets legal requirements and delivers ongoing biodiversity gains.</p> <p>Due to the presence of a bat roost and in consideration of the proposed works, it will be necessary to obtain a European Protected Species Licence (EPSL) from Natural England prior to the start of works impacting Building 2 only should planning permission be granted.</p>

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PROTECTED SPECIES SURVEYS – BUILDINGS AT MILL FARM, SKERNE ROAD, WANSFORD, DRIFFIELD, YO25 8NQ

1 INTRODUCTION

Ecology and Forestry Ltd was commissioned by Edwardson Associates Ltd to undertake protected species surveys of buildings at Mill Farm, Skerne Road, Wansford, Driffield, YO25 8NQ. The survey is required in connection with a planning application for residential conversion to be submitted to East Riding of Yorkshire Council.

This report details the methods used, describes the habitats and species found on the site, discusses the results and makes recommendations for further work. Annotated photographs are given in the text.

1.1 Accurate lifespan of ecological data

The majority of ecological data remains valid for only short periods of time due to the inherently transient nature of the subject. Where the species/group being surveyed for is present within the site, the data is considered to be accurate for two years. However, an update may be needed in order to obtain a European Protected Species licence, if such a licence is required. Where absent, although the data is considered accurate for two years, an update may be required if the habitats surrounding the site are of a quality that are likely to encourage the species to move into the site in the interim.

2 SITE DESCRIPTION

2.1 Site communities and habitats

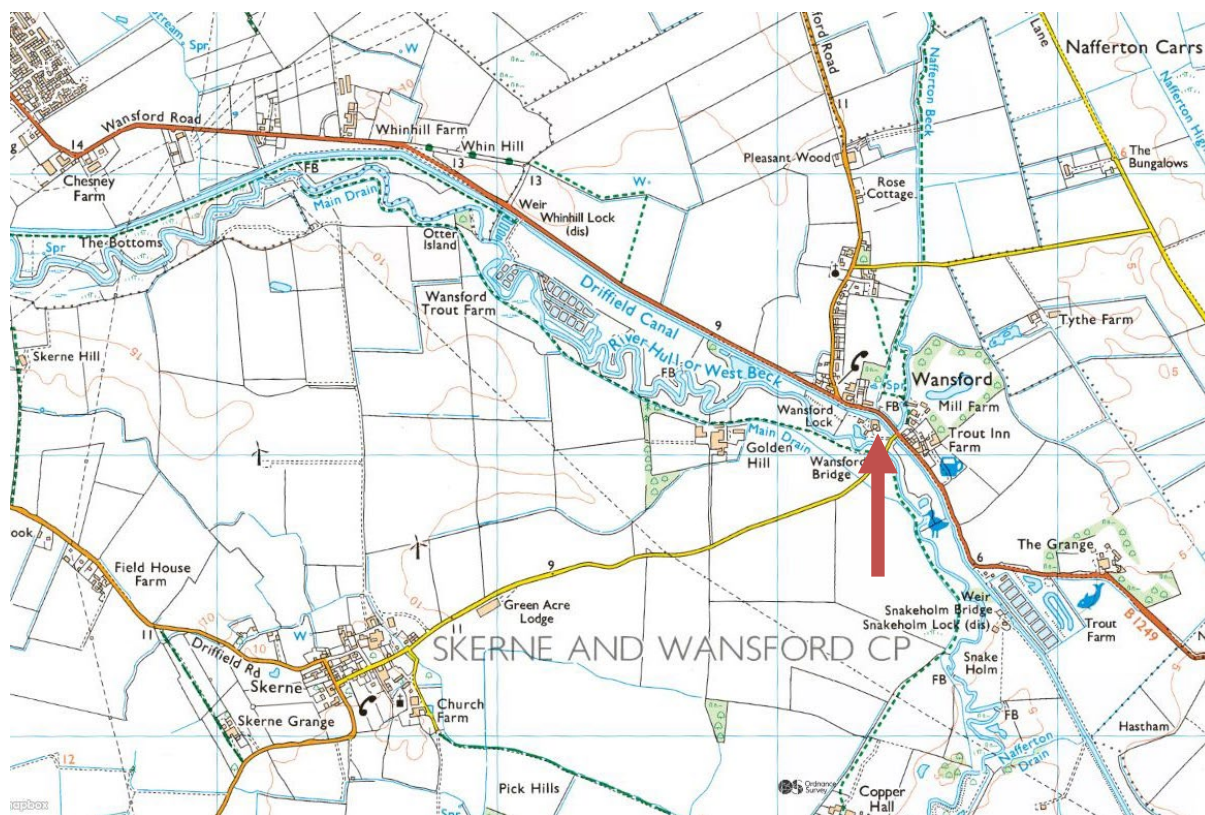
Mill Farm is located on the southern extremities of Wansford village, in a semi-rural location, situated between the Driffield Canal immediately north and West Beck, to the south. The buildings surveyed are situated on a footprint comprised entirely of sealed and unsealed hard standing. Close mown amenity grass immediately borders to the east, and further hard standing to the immediate west and south. The surveyed buildings are set within the extensive grounds of two substantial, detached domestic dwellings and further associated outbuildings. The grounds are comprised of hard standing vehicular driveways, close mown amenity lawns, flower beds and shrubberies. The grounds are mature in nature and contain a number of mixed age and mature trees.

Site location is shown below in Figure 1.

The buildings surveyed are arranged in a 'U' shaped, crew yard layout and are all semi-detached from one another. The buildings were extensively renovated, (re-pointed, replacement windows, replacement doors etc), and re-roofed circa 2003 (pers comm Mr

Nichols). A site plan is given in Appendix 1 as Figure 2.

Figure 1: Site location



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2.2 Building 1

A tall but single storey, open plan, red brick barn, supporting a timber framed roof, covered by clay pantiles. The building is gable ended and the roof of equal pitch. The roof is in good condition, with only a single slipped tile present on the western aspect, having been re-roofed approximately 20 years ago including some new roof timbers. Internally the building is open to the apex, with no internal ceilings present and is underdrawn utilising a modern breathable membrane throughout. Both the eastern and western elevations contain opposing, tall vehicular openings. Elevated but timber shuttered window openings are also present. Integral air vents are present in the southern gable and western walls. A large pedestrian opening connects Building 1 to Building 2. Historic ivy *Hedera helix* and current Virginia creeper *Parthenocissus quinquefolia* growth is present externally. No cladding, hanging tiles, soffits, barge boards, fascias or eaves are present. Limited structural defects were noted, with only very minor settlement cracks present.

The building is currently used for domestic storage associated with grounds maintenance.

Ambient light, draught and detritus levels were recorded as high throughout the structure.



Photograph 1: Representative views of the Building 1, south eastern aspect (left) and internal (right)

2.3 Building 2

A low, single storey, red brick, former stable block, supporting a timber framed roof, covered by clay and occasional translucent pantiles of equal pitch. The roof is in good condition, again having been in receipt of maintenance in recent decades including some new roof timbers. Only two raised/slipped tiles were present at the time of survey on the western aspect. Any lead flashing work adjacent to Buildings 1 and 3 is tight and contains only very minor gaps. Internally the building is open to the apex throughout, with no internal ceilings present and is underdrawn utilising both a modern breathable membrane whilst retaining some areas of original wooden lathe, (no plaster). The building is subdivided by solid brick walls which extend into the apex, into three adjoining compartments. A number of glazed windows and tightly fitted timber pedestrian doorways are present. External and internal pointing is good, with significant internal elements being whitewashed. Virginia creeper *Parthenocissus quinquefolia* growth is present externally and has ingressed internally on the eastern aspect. No cladding, hanging tiles, soffits, barge boards, fascias or eaves are present.

The building is currently used for domestic storage.

Ambient light levels were recorded as high throughout the structure, detritus levels moderate and ambient draught levels low.



Photograph 2: Representative external views of the Building 2, eastern aspect (left) and western aspect (right).

2.4 Building 3

A tall, two storey, red brick barn, supporting a timber framed roof, covered by clay pantiles and a solar panel arrangement on the southern elevation. The building is gable ended and the roof of equal pitch. The roof is in good condition, with no slipped, lifted or absent tiles present having been re-roofed approximately 20 years ago including timbers. Internally the building is open to the apex, above the first floor, (a single board on beam, exposed beneath), with no internal ceilings present and is underdrawn utilising a modern breathable membrane throughout. It is open plan throughout. Any timber doors are tightly fitting and windows glazed with the exception of a pair of elevated timber granary hatch doors in the apex of the western gable end which contained significant gaps. An exterior recessed door is built into the western gable end wall. The recess is covered by small gauge wire mesh. No cladding, hanging tiles, soffits, barge boards, fascias or eaves are present. Limited structural defects were noted, with only very minor settlement cracks and occasional gaps between door frames and brickwork present. The building is currently used for domestic storage. Both ambient light and detritus levels were recorded as moderate on the ground floor and high on the first floor. Draught levels were recorded as low throughout the structure with extensive fine cobwebbing present on the ground floor.



Photograph 3: Representative external views of Building 3 southern aspect (left) and northern aspect beyond Driffield Canal (right).



Photograph 4: Representative internal views of Building 3 first floor (left) and ground floor (right).

2.5 Building 4

A single storey, 'L' shaped red brick barn, supporting a timber framed roof, covered by clay and translucent pantiles which adjoins Building 3 to the west. It has a gable ended and the roof of equal pitch. The roof is in good condition, with no slipped, lifted or absent tiles present having been re-roofed approximately 20 years ago including many new timbers. Internally the building is open to the apex throughout and is underdrawn utilising bitumen felt throughout. The building is subdivided internally by solid brick walls which extend to the apex. The northern element of the building is open sided and exposed to the elements having three south facing former waggon bays. The eastern/southern element is comprised of a series of former stables. Any timber doors are tightly fitting and windows glazed. No cladding, hanging tiles, soffits, barge boards, fascias or eaves are present. Limited structural defects were noted, again, with only very minor defects noted. The building is currently used for domestic storage. Ambient light, detritus and draught levels were recorded as high throughout the open sided northern element and low draught levels and moderate detritus and light levels were recorded in the eastern/southern element.



Photograph 5: Representative external view of Building 4 southern aspect (left) and internal view adjacent open waggon bays (right).

2.6 Additional structures

The immediate area is dominated by concrete hard standing currently utilised for the storage of firewood and building materials and is surrounded by further mixed hard standing and close mown amenity lawns. The wider site contains two large detached dwellings and associated garages/outbuildings which fall outside the application site boundary and as such were not surveyed.

2.7 Surrounding habitats

The immediate locality is comprised of permanent pasture to the south of West Beck and Wansford village to the north of Driffield Canal. The wider locality is dominated conventionally farmed, (utilising artificial fertilisers and pesticides), low lying pastoral and arable land, also containing occasional mature trees and often extensive mixed woodland plantations.

2.8 Proposed work

The work entails the proposed redevelopment of the buildings into a domestic dwelling under a planning application to be submitted to East Riding of Yorkshire Council.

3 METHODS

The site was surveyed 14 August 2023 (daytime inspection), 14 August 2023 (evening bat activity survey) and 09 September 2023 (evening bat activity survey). All habitats and plant communities within and adjacent to the site were recorded and mapped. Representative photographs were taken. 100% of the building was accessible for survey purposes. During the initial appraisal of the site the protected species considered likely to occur on site were identified. These were:

- Bats
- Common species of birds
- Water voles
- Otters

The methods used to survey for these species are detailed below.

3.1 Surveyors

Lead ecologist Rod Strawson who has worked in ecological consultancy for 20 years, formerly for 6 years with a leading ecological consultancy firm, and is appropriately licensed to undertake this type of survey work, holding: (Natural England bat licence number 2016-11496-CLS-CLS and great crested newt licence number 2016-19648-CLS-CLS).

Assisting with all surveys was Kevin Johnson MCIEEM (Natural England bat licence number 2018-34450-SCI-SCI and great crested newt licence number 2015-16749-CLS-CLS). Kevin is

an independent ecological consultant, (K J Ecology Ltd), and a full member of the Chartered Institute of Ecology and Environmental Management. He has in excess of 25 years' experience in ecological work and has had formal training at a long established, leading environmental consultancy. Kevin has undertaken thermal imaging training with WildlifeTek delivered by Dr Kayleigh Fawcett-Williams.

3.2 Desk study

A professional data search was purchased from the North and East Yorkshire Ecological Records Centre (NEYEDC). Online Ordnance survey maps and satellite imagery was also utilised to gain further insight into adjacent habitat types and land use. The planning portal was also searched for sites in the immediate locality which had been subject to ecological appraisal in the previous two years.

3.3 Bats

Aided where necessary by the use of a powerful torch, ladders and an endoscope, a visual search was made internally and externally of all cracks and fissures in the walls and the undersides of the roofs (where still present) of all structures on site for bats. Where accessible, all surfaces were inspected for evidence of past and present occupation by bats in the form of: droppings, urine or fur staining, feeding remains, scratch marks and the bodily remains of bats. An individual buildings categorization was then made by placing the building into one of the following categories in Table 1 below:

TABLE 1. BAT ROOSTING POTENTIAL ASSESSMENT - BUILDINGS (COLLINS, 2016).

CATEGORY	DESCRIPTION
Negligible	A structure with no potential bat roosting features.
Low	A structure with one or more potential roost sites. However, the potential roost sites do not provide suitability for a large numbers of bats (i.e. for maternity or hibernation) and would only provide suitability for occasional use.
Moderate	A structure with one or more potential roosting features, which could support bats, but is of a suitability meaning that it would be unlikely to support a roost of high-conservation status.
High	A structure with several potential roosting features which would be able to support a large number of bats on a regular basis and for longer periods of time.

3.3.1 Bat tree survey

Trees on and adjacent to the proposed development site were assessed for potential suitability for bat roosts by means of a walkover survey. All trees were inspected to assess their potential to hold bat roosts; the following signs were looked for:

- Holes, frost cracks, splits in branches/trunk
- Fissures, hollow sections of trunk, branches and roots
- Broken Limbs and loose bark
- Dense ivy
- Urine staining, droppings, fur rubbing and scratch marks
- Audible squeaking, strong smell of ammonia and flies around potential access points

The trees were inspected with the aid of close focusing binoculars (Minox BL 10 X 42 BR). Bat surveys of trees can be undertaken throughout the year.

Any trees were categorised for their bat roosting potential (Collins, 2016) as described in Table 2:

TABLE 2. BAT ROOSTING POTENTIAL ASSESSMENT – TREES (COLLINS, 2016).

CATEGORY	DESCRIPTION
Negligible	A tree with no potential bat roosting features. (Usually young trees without any deadwood or holes).
Low	A tree of sufficient size and age to contain potential roost features, but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roosting features, which could support bats, but is of a suitability meaning that it would be unlikely to support a roost of high-conservation status. (Such as holes, cracks and crevices and loose bark suitable for roosting bats but no obvious roost signs such as staining and droppings at entrances).
High	A tree with several potential roosting features which would be able to support a large number of bats on a regular basis and for longer periods of time. (Trees within this category will contain all the obvious roost features such as holes, cracks and crevices and loose bark and will also contain staining and droppings at the roost entrance or have been identified as a roost via a visual sighting of an exiting bat).

3.3.2 Bat Activity survey

Evening activity surveys were undertaken utilising both surveyors and thermal imaging cameras. The use of thermal imaging cameras potentially negating the need for a dawn re-entry survey follows the publication of the '*Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys*' (Bat Conservation Trust 2022) which states that *This note supersedes the 3rd edition (Collins, 2016)*. A copy of the BCT interim guidance can be found in Appendix 2.

The aim of the surveys was:

- To establish whether any additional enclosed places or niches within the buildings which could not be fully inspected during the daylight inspection were used by bats for

roosting or as a place of shelter and to confirm the exact locations of any bat entry/exit points within the structures.

Utilising the findings of the diurnal building inspections, surveyor positions were chosen to get a clear view of both the building eaves and any ridge tiles against a clear skyline.

The surveyors were equipped with hand held ultrasonic bat detectors to electronically detect and identify bats and a sample of the bat calls were recorded onto a digital recorder. These calls were later analysed using computer software.

Four tripod mounted Guide TrackIR Pro 19 thermal imaging cameras paired with Anabat 'Swifts' were set to record throughout the surveys with footage analysed post survey.

Surveyor and thermal imaging camera locations are shown in Figure 3 found in Appendix 3.

Levels of bat activity are strongly correlated with climatic conditions due to the influence these factors have on the abundance of insect prey. The climatic conditions throughout the survey were also recorded.

3.4 Common species of birds

All habitats were assessed for their potential to support nesting birds. All bird species seen or heard were noted. All disused and active nests were recorded.

3.5 Schedule 1 species of birds (Barn Owls)

An inspection was made of the buildings for the presence of barn owls and the signs indicative of their past or present use. These signs include:

- Regurgitated pellets
- Faecal deposits
- Feathers
- Discarded prey items

The places that could potentially be used as breeding locations, including roof voids and horizontal surfaces at first floor level, were also checked for any signs of current or former nesting attempts. These signs included brooding adult birds, concentrations of accumulated flattened pellet nest debris, faecal encrustation, eggs or eggshell remains, surplus prey items, bodily remains of chicks or infant down feathers.

3.6 Schedule 1 species of birds (Kingfishers)

An inspection of the Driffield Canal bank section immediately adjacent to and approximately 10 metres either side of the northern site boundary for the presence of kingfisher nesting tunnels. A kingfisher requires vertical banks of compact sand or earth to excavate its 2m long nesting tunnel and nest chamber. Stony or rock/reinforced banks prevent the birds from excavating their nesting tunnels.

3.7 Water voles

The site was assessed for the potential to support water voles and a search was made for signs of use by water voles including feeding stations, burrows, latrine sites/droppings, runs through the vegetation, characteristic 'plop' sound as the animals enter the water and cropped grass around burrow entrances.

3.8 Otter

The site was assessed for any potential to support otters and a search was made for signs of use by otters *Lutra lutra* including prints, mud slides, feeding remains, spraints and holts. (A holt is essentially a hole in the ground which is used by an otter for sleeping and resting. The most common type of holt is a hole leading to a cavity under the roots of a bankside tree. However, otters are very versatile and can also form holts in log piles or cavities in rocky banks or caves (CIEEM 2023)).

3.9 Other statutorily protected species

As part of the extended walkover of the site and its environs; consideration to and a search for signs of use by other statutorily protected species was also undertaken.

3.10 Survey Constraints

There were no constraints to the survey, with full access available to the building and adjacent land.

It should be noted that the absence of protected or rare species within the survey does not rule out them being present on site. There is always a risk of protected or rare species being over-looked, either owing to the timing of the survey or the scarcity of the species at the site.

The survey undertaken was a protected species appraisal, therefore species lists recorded would not be complete for the site; although sufficient information was gathered to determine the character of the habitat types present and species lists were compiled for each of the habitat types present.

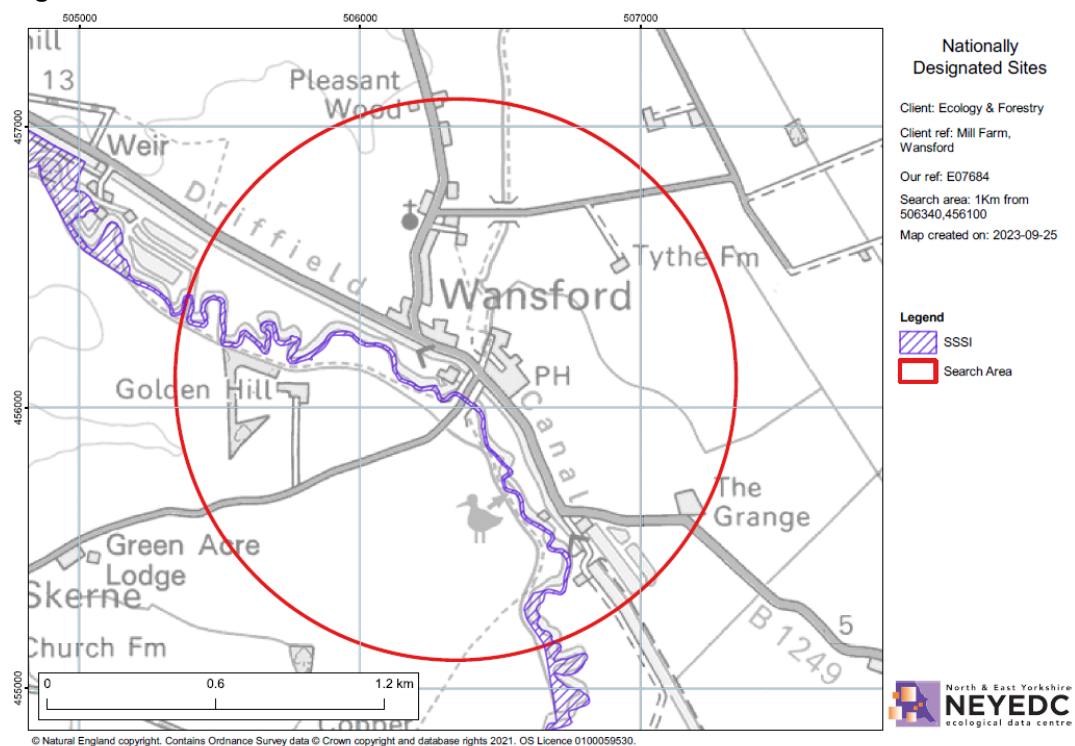
4 RESULTS

4.1 Data search results

4.1.1 Statutorily protected sites

- The River Hull Headwaters SSSI is located throughout search area.
- ,Greater Wash Special Protection Area, (SPA), is located approximately 450 metres east of site. Skipsea Bail Mere Site of Special Scientific Interest, (SSSi), is located approximately >950 metres north west of site and Withow Gap, Skipsea SSSI is located approximately 500 metres south east of site. See Figure 4 overleaf:

Figure 4.



4.1.2 Non statutorily protected sites

No Local Wildlife Sites (LWS) or Local Nature Reserves (LNR) are found within the search area. Snakeholm Pastures and Skerne Wetlands, both Yorkshire Wildlife Trust Reserves are found within the search area. Golden Hill Wood, a deleted LWS is also found within the search area. There are no woodlands identified on the Ancient Woodland Inventory in or partly within the search area. Priority Habitat Inventory: Deciduous Woodland, is located adjacent to Snakeholm and significant areas of Pastures and Coastal floodplain grazing marsh are present around Driffield Canal and River Hull Headwaters. See Figures 5 and 6 overleaf:

Figure 5.

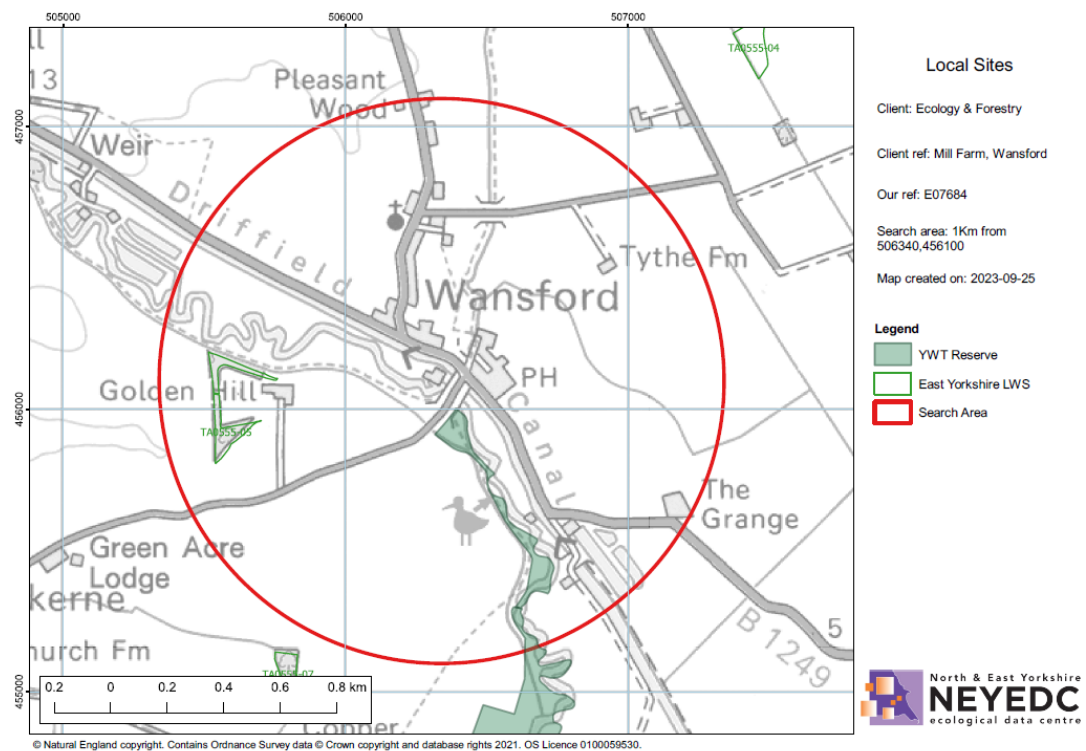
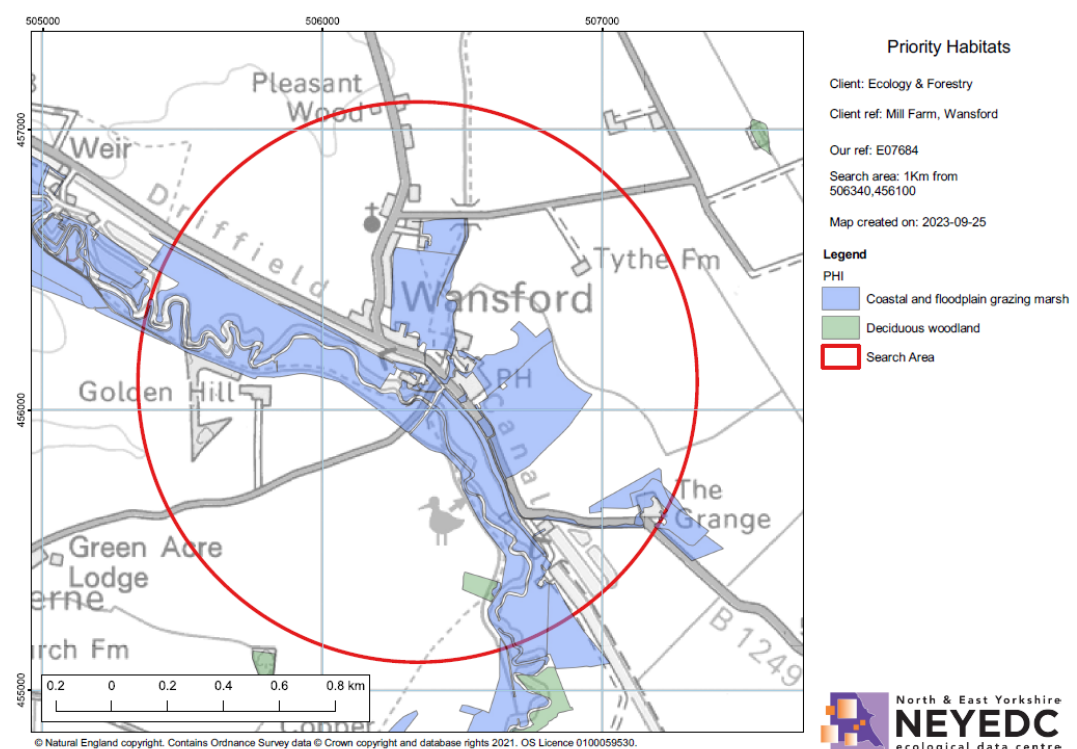


Figure 6.



4.2 Habitats and plant species

The habitat types and plant species recorded **on site** are common and widespread in East Yorkshire. There are no habitats or plants of local importance or significance. None of the plant species recorded on site appear on Schedule 8 of the Wildlife and Countryside Act 1981

(as amended). No nationally rare or scarce plants as defined by Wiggington (1999) and Stewart *et al* (1994) respectively were found. No connectivity to site with notable habitat types, highlighted Local Wildlife Sites or statutorily protected wildlife sites is present.

4.2.1 Protected Species

Protected species records obtained from the NEYEDC included:

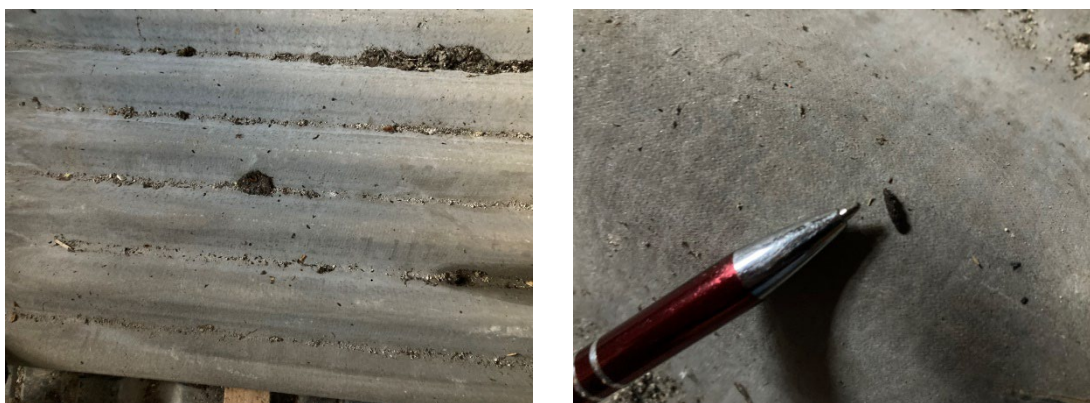
- 45 records relating to water vole
- 17 records relating to otter
- 1 record relating to grass snake
- 2 records relating to kingfisher
- 3 records relating to 'pipistrelle' bats
- 2 records relating to 'bats'

4.3 Bats

4.3.1 Building survey

All potential niches, (where accessible), were carefully inspected with an endoscope where necessary:

- Building 1: No bats or associated bat roost field signs were recorded.
- Building 2: Circa 15 mixed age bat droppings and occasional small tortoiseshell *Aglais urticae* and peacock *Aglais io* butterfly wings were located in the northern element of Building 2, deposited over an approximately 1 m² area beneath the central ridge beam. This is thought to indicate the presence of either a 'Day Roost' or 'Feeding Roost'.
- Building 3: No bats or associated bat roost field signs were recorded.
- Building 4: Two degraded bat droppings, not associated with any further field signs associated with bat roosting activity were found inside the open waggon bays of the northern element of the structure. These are believed to have been voided in flight by a pipistrelle *Pipistrellus sp.* species of bat. No bats or evidence of bat roosting activity was recorded. No bats or associated bat roost field signs were recorded in the eastern/southern element.



Photograph 6: Representative views of bat droppings in Building 2 (left) and close up (right).

4.3.2 Building categorisation

The ranges of buildings are traditional red brick and pantile farm buildings which have been extensively renovated and re-roofed circa 2003. The buildings display limited defects and extensive breathable membrane utilised is not considered conducive to bat occupation. However, significant areas are present and within the range of buildings which offer potential climatic stability and areas between tiles and underlay could not be inspected. It was determined that the range of buildings as a whole offered 'moderate potential'. Building 2, due to the confirmed bat roosting activity was categorised as having 'high potential'.

Activity surveys were therefore undertaken on all buildings to confirm presence/absence of bats by two surveyors and four thermal cameras and broad spectrum ultrasonic detectors to ensure that all required vantage points were covered.. See Figure 3 in Appendix 3.

4.3.3 Bat tree survey

There were no trees on site, or scheduled to be impacted by proposed works with the age or features necessary to support roosting bats. Woodland and farmland within the locality of site was thought to offer additional potential roosting and foraging opportunities for bats.

4.3.4 Bat activity survey – 14/08/23

A plan showing surveyor locations is given as Figure 3 in Appendix 3.

Evening Emergence Survey: 20.22 – 22:07hrs (Sunset 20.37hrs)

TIME	OBSERVATIONS
20.44 – 21.57hrs	Incidental records of commuting and feeding individual Soprano pipistrelle <i>Pipistrellus pygmaeus</i> and common pipistrelle <i>Pipistrellus pipistrellus</i> bats (up to 3 in number) over or adjacent to site. (>100 recorded passes)
20.58, 21.56 & 22.03 hrs	Single passes over/adjacent to site by noctule <i>Nyctalus noctula</i> bats
21.20hrs	Single passes by Nathusius pipistrelle <i>Pipistrellus nathusii</i> north of site
21.14, 21.25 & 21.52 hrs	Single passes by a brown long-eared <i>Plecotus auritus</i> bat south west of site, feeding under trees
20.45 hrs	Brown long-eared bat emerges from Building 2
21.20 – 22.00 hrs	17 passes by individual Brandt's <i>Myotis brandtii</i> bats foraging and commuting adjacent to site
21.28, 21.33, 21.53 & 21.57 hrs	Single passes along Driffield Canal by Daubenton's <i>Myotis daubentonii</i> bats
22.32 hrs	Single pass north of site by a noctule <i>Nyctalus noctula</i> bat.

Climatic Conditions:

Start of Emergence Survey

Air Temperature: 18°C

Precipitation: 0mm (clear skies)

Wind: 18km/h (peak gusts) south/south easterly

A single brown long-eared bat was observed emerging from the west side of Building 2 at 21.45hrs adjacent to Building 1 – See thermal camera photograph 7 below:



Photograph 7: Representative external view of Building 2 showing approximate bat emergence point

All other records are incidental and relate to foraging and commuting bat activity. The first incidental bat record near the buildings was captured only 7 minutes after sunset. Typical emergence time for this species, (a pipistrelle bat is regarded as being approximately 20 minutes after sunset), therefore indicating very early emergence on that date and likely close proximity to a roost.

4.3.5 Bat activity survey – 09/09/23

A plan showing surveyor locations is given as Figure 3 in Appendix 3.

Evening Emergence Survey: 19.20 – 21.06hrs (Sunset 19.36hrs)

TIME	OBSERVATIONS
19.45 – 20.55 hrs	6 passes over/adjacent to site by noctule <i>Nyctalus noctula</i> bats
19.49 – 21.05 hrs	Individual common pipistrelle <i>Pipistrellus pipistrellus</i> and Soprano pipistrelle <i>Pipistrellus pygmaeus</i> bats, intermittently feeding/commuting within proximity of site (>50 recorded passes). Social calling was noted.
20.02 & 20.37 hrs	Single passes by a brown long-eared <i>Plecotus auritus</i> bats west of site, feeding under trees
21.14 hrs	Brown long-eared bat emerges from Building 2
20.03 – 20.45 hrs	17 passes recorded west & north of site relating to Natterer's <i>Myotis nattereri</i> bats
20.06 & 20.21 hrs	2 passes by individual Brandt's <i>Myotis brandtii</i> bats foraging and commuting adjacent to site
20.28 hrs	Single passe along Driffield Canal by a Daubenton's <i>Myotis daubentonii</i> bat
20.58, 21.02 & 22.02 hrs	Single passes north and east of site by noctule <i>Nyctalus noctula</i> bats.

Climatic Conditions:
Start of Emergence Survey Air Temperature: 24.0°C Precipitation: 0mm (clear skies) Wind: 6km/h (peak gusts) south/south easterly

A single brown long-eared bat was observed for the second time emerging from the west side of Building 2 at 21.14hrs adjacent to Building 1 – See thermal camera photograph 7 above.

The first bat recorded near the building was recorded 9 minutes after sunset. Typical emergence time for this species, (a pipistrelle bat is regarded as being approximately 20 minutes after sunset), therefore indicating repeated behaviour of very early emergence on that date and further evidence of likely close proximity to a roost.

4.4 Birds

A typical assemblage of common British birds was recorded on the site and in the immediate environs of the site. A total of 6 species were noted; these are listed below in Table 3.

Table 3.

English Name	Latin Name	Birds of conservation concern status - 4
Blackbird	<i>Turdus merula</i>	Green list
Barn swallow	<i>Hirundo rustica</i>	Green list
Feral pigeon	<i>Columba livia domestica</i>	Green list
Great tit	<i>Parus major</i>	Green list
House Sparrow	<i>Passer domesticus</i>	Red list
Woodpigeon	<i>Columba palumbus</i>	Green list

Red and Amber list species are compiled by the Royal Society for the Protection of Birds (RSPB, 2015) to identify species that have experienced a significant decline in range or population over the past 25 years. Typically Red list species have declined by more than 50% in the past 25 years, and Amber list species by more than 25%.

Small passerine species roosting activity in the form of both concentrated and scattered droppings was wide spread throughout the range of buildings.

Significant numbers of feral pigeons and large quantities of associated historic droppings accumulation and nesting activity was evident in Buildings 1 and the first floor of Building 3.

A disused blackbird nest was noted in Building 4.

Mixed age and use buildings, gardens, mature and semi-mature woodland, mature trees, hedgerows and grassland are found in proximity to site, potentially providing suitable nesting and foraging habitat for breeding birds.

4.4.1 Schedule 1 birds (Barn owls)

No barn owl nesting activity was recorded on site.

4.4.2 Schedule 1 birds (Kingfishers)

The bank of the Driffield Canal, immediately adjacent to the northern site boundary was upon found not to contain any kingfisher nesting tunnels and was considered sub-optimal for occupation by kingfishers being too low, heavily vegetated and containing hard standing in the substrate associated with the site buildings. Kingfishers are found along rivers, canals and at still water bodies such as lakes and ponds. The nest is a deep tubular tunnel; eggs are laid between May and July with broods consisting of 5-7 eggs and up to three broods per season. River engineering measures, e.g. reinforcement of banks, is one of the features that can greatly reduce the availability of suitable nesting sites, as it prevents kingfishers tunnelling into the banks.

4.5 Water voles

The bank of the Driffield Canal was considered to offer some potential for water vole inhabitation. However, no evidence of water vole occupation and activity was recorded on or adjacent to site.

4.6 Otter

No otter, otter holt, spraints, feeding remains, prints or mud slides were recorded on or adjacent to site.

4.7 Other statutorily protected species

The potential for any other statutorily protected species likely to be affected by the development is considered to be very low and no further work is recommended. No evidence of an otter holt or otter activity was recorded on or adjacent to site.

5 DISCUSSION AND RECOMMENDATIONS

5.1 Biodiversity and Government Policy

In addition to the relevant protected species legislation given below in Section 5, which is in place to safeguard species such as bats (and their roosts) and barn owls, there is also legislation and policy which imposes duties to take account of statutorily protected species such as bats and also to undertake action to prevent loss of biodiversity and species/habitats which have been identified as priorities for the UK. In England and Wales, the Natural

Environment and Rural Communities (NERC) Act 2006, imposes a duty on all public bodies (including Local Authorities and statutory bodies) to conserving biodiversity – including the restoration and/or enhancement of a population or habitat. In addition, government planning policy guidance throughout the UK, provided in OPDM Circular 06/2005, states that Protected Species are a 'material consideration' when assessing development proposals and requires that local planning authorities must take account of protected species issues prior to determining planning applications. Section 15 of the NPPF further supports this: section 174. d) states that '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*'; and section 180. D) further states that '*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*'.

5.2 Bats

5.2.1 Legal protection

In England, Scotland and Wales, all bats are strictly protected under the Wildlife and Countryside Act 1981 (and as amended); in England and Wales this legislation has been amended and strengthened by the Countryside and Rights of Way (CRoW) Act 2000.

Bats are also protected by European legislation; the EC Habitats Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 – often referred to as 'The Habitat Regs'. Taken together, all this legislation makes it an offence to:

- Deliberately capture (or take), injure or kill a bat
- Intentionally or recklessly disturb a group of bats where the disturbance is likely to significantly affect the ability of the animals to survive, breed, or nurture their young or likely to significantly affect the local distribution or abundance of the species whether in a roost or not
- Damage or destroy the breeding or resting place of a bat
- Possess a bat (alive or dead) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost
- Sell (or offer for sale) or exchange bats (alive or dead) or parts of bats

A roost is defined as being 'any structure or place that is used for shelter or protection', and since bats regularly move roost site throughout the year, a roost retains such designation whether or not bats are present at the time.

5.2.2 Recommendation Building 2

Field signs recorded during diurnal inspection suggested recent low level roosting activity, (Day Roost or Feeding Roost) by brown long-eared bats. During the two activity surveys undertaken, on both surveys, a brown long-eared bat was seen to emerge from Building 2, confirming the presence of a bat roost and negating the need for a third presence/absence survey.

The proposed development works on Building 2 may result in a breach of legislation protecting bats and their roosts given that the proposed alteration/restoration works for Building 2 could result in the loss of the roost, the proposal has the potential to harm the long-term conservation status of brown long-eared bats.

The proposed works entails the conversion of the roof void into living space and potential obstruction of current roost access points. This could result in the injuring and/or killing bats and destruction of a known bat roost.

Due to the presence of a bat roost and in consideration of the proposed works, it will be necessary to obtain a European Protected Species Licence (EPSL) from Natural England prior to the start of works impacting Building 2.

European Protected Species Licence (EPSL)

In order for Natural England to grant an EPSL, the project will need to meet the three requirements of Regulation 53 (Natural England, 2011) as outlined below.

- Regulation 53(2)(e) states: a licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.
- Regulation 53(9)(a) states: the appropriate authority shall not grant a licence unless they are satisfied “that there is no satisfactory alternative”.
- Regulation 53(9)(b) states: the appropriate authority shall not grant a licence unless they are satisfied “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.”

The EPS licence application process will require:

- Up to three activity surveys, post planning permission, in the survey season for which

the licence is applied. These must be undertaken between May and September

- A site inspection will be undertaken within 3 months of the last activity survey to ensure that conditions have not changed, should a licence application not have been made within the original time frame. Details of any changes to structures or site conditions will be documented.
- The licence application will require the preparation of a detailed mitigation strategy. This will include a Method Statement which will need to demonstrate that the bats will remain at a 'favourable conservation status' and requires a well-considered mitigation strategy that ensures that the bats will suffer no adverse short or long term effects as a result of the works.

The mitigation strategy comprises consideration of appropriate timing, pre-development checks and appropriate roost provision as well as post development monitoring to assess the success of the mitigation. The strategy aims to satisfy the 'favourable conservation status' test.

The key points are:

- to ensure that the works are timed correctly
- roost areas and the main access points are retained or re-instated.

Following implementation of post planning surveys on Building 2, it is likely that the site is found to meet the criteria for a Natural England Bat Mitigation Class Licence, (previously a Bat Low Impact Licence), whereby low impact and low numbers of roosting bats, (i.e. not hibernation or maternity roosts), not more than three separate roosts of the seven most common and wide spread bat species. This will reduce application paperwork, scrutiny of the 'three tests' prior to the licence being granted and reduce licence application determination time from the statutory 6 – 10 week period down to 5 – 15 working days.

5.2.3 Recommendation Buildings 1, 3 & 4

The level of activity recorded does not suggest that Buildings 1,3 & 4 are used as an established place of shelter for bats. The survey results indicate that these buildings are not key to the overall conservation status of bats in the local area and the development of the buildings would not alter the ability of bats to survive and reproduce; therefore there is no constraint on the redevelopment of Buildings 1,3 & 4 and no requirements for any mitigation or further survey work is required. The 'ecological functionality' of bats in the local area will not be adversely affected by the development of Buildings 1,3 & 4.

Given the presence of foraging bats within the survey site, it is anticipated that the Local Planning Authority concerned will require some mitigation as part of any future development

to Buildings 1, 3 & 4.

The following best working practice should be followed;

- All contractors working on the buildings will be briefed on the legal protection afforded to bats and their places of shelter and on how to proceed if a bat is discovered during the course of the work. A procedure to follow in the event of discovering bats on site is provided as Appendix 4. A copy of this will be available on site during the development.

The following conservation measure is also suggested for the redeveloped building:

- Three bat roosting units (Swhegler 1FR, **or similar**) will be incorporated within the redeveloped structures. An example image of these can be found in Appendix 5.
- The boxes are to be erected at as high as possible (a minimum height of 2m or greater) and be located where it will receive the maximum amount of sunlight. In the northern hemisphere this will be the southerly aspects/orientation (south, south-west and south-east).
- Installation should take place during the construction phase.

The provision of such mitigation will provide bat populations with potential long term roosting opportunities and access to potential roost sites experiencing differing climatic conditions to help meet species specific requirements and provide a potentially longer annual opportunity for occupation. The location will provide access in proximity to existing and developing tree cover for any emerging bats and will avoid any direct impact from any existing or proposed lighting and potential disturbance from regular activities such as traffic movement.

5.2.4 Mitigation measure – Lighting

The ecological effect of artificial lighting in the countryside is a topic of increasing concern. Recent estimates have shown a 24% increase in light pollution in the UK between 1993 and 2000. Lighting schemes can damage bat foraging habitat directly through loss of land and fragmentation, or indirectly by severing commuting routes from roosts.

In accordance with the Bat Conservation Trust's publication *Bats and lighting in the UK* (BCT, 2008) any proposed security lighting on site should comply with the following:

1. No woodland edge, (site perimeters) are to receive direct illumination or be subject to light spillage. Roads or trackways should contain stretches left unlit. These unlit stretches should be 10 metres in length either side of commuting route.

2. Lighting units chosen, (suitable examples are shown below in Figure 4), must be fitted with a 'dimming' mechanism and be set at the lowest light level practicable. This should be below 3 lux at ground level where possible. The selected units are considered appropriate due to the 'down lighting' nature of the products and the low level of the chosen lighting bollards.
3. Accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only can be utilised on surface mounted chalet lights. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.
4. The times during which the lighting is on should be limited to provide some dark periods. Sensors should be used where possible.

Figure 4: Appropriate lighting examples



Image 1: MIA Worldlight 'Ship Bollard'



Image 2: Apollo 'Roman' LED surface mounted

5.2.5 Mitigation measure – Timber treatments

Certain timber treatments can be toxic to bats and other species. In the potential advent of bats occupying any proposed timber structures or timber elements within structures in the future, guidance given by Natural England should be followed. A link to which can be obtained online at: <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

5.2.6 Mitigation measure – Roofing membrane

Non-bitumen-coated roofing membranes (formerly known as breathable roofing membranes, modern roofing membranes, BRMs or MRMs) should not be installed into a roof that is used by bats as these are made from spun-bond polypropylene/polyethylene filaments. The long fibres that make up non-bitumen-coated roofing membranes can be pulled out by roosting bats and pose an entanglement threat to the bats and can result in fatalities.

As a precautionary measure, it is recommended that any roofing membrane utilised in all proposed newly built areas should be 'Bat Safe'. As the name suggests, it has been marketed to consumers based on claims that it is 'bat friendly'. 'TLX Bat Safe Breather Membrane' is one such example. Further information is available at: <https://tlxinsulation.co.uk/tlx-batsafe/>

5.3 Birds

5.3.1 Legal protection

All common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended). Under this legislation it is an offence to:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

5.3.2 Recommendations

Since the building is clearly used for nesting by species of common birds, any future redevelopment building work should ideally avoid the active nesting season, (March – September inclusive). If work commences during the bird breeding season, a search for nests should be carried out before they begin, and active nests should be protected until the young fledge.

5.3.3 Recommended conservation measures – House Sparrows

House sparrows have been noted within the locality of the survey site. This species is included on the UK Biodiversity Action Plan and on the Red List under the criteria set out in Birds of Conservation Concern 3: (Eaton M A et al, 2009), as their breeding population has suffered declines of over 50% in the last 25 years. As a conservation measure, it is recommended that a minimum of 2 artificial nest places will be provided, within (or adjacent on neighbouring agricultural buildings under the ownership/control of the applicant), the new redevelopment: **Schwegler 1SP** (245mm x 430mm x 200mm) are recommended. See Photograph 6:

Details of nest boxes for house sparrows can be obtained from a variety of specialist online suppliers.



Photograph 8: Schwegler 1SP Bird Box
Measures 245mm x 430mm x 200mm and
weighs 13kgs.

Details of nest boxes for house martins can be obtained from a variety of specialist online suppliers.

5.4 Water vole

5.4.1 Legal protection

Water vole is a mammal species which in the United Kingdom typically inhabits well vegetated banks of slow flowing rivers, ditches, dykes and other water bodies such as ponds and lakes. They feed on fringe vegetation and live in extensive burrow systems in banks and densely matted vegetation along the margins of such water bodies.

In recent years water voles have undergone a substantial decline in their numbers in many parts of the United Kingdom as a result of habitat degradation, pollution and predation by introduced American mink *Mustela vison*.

The protection to water vole under the Wildlife & Countryside Act 1981 (as amended) has been extended since 6 April 2008. This means that water vole is now fully protected under section 9 of the WCA. This legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole;
- possess or control a live or dead water vole, or any part of a water vole;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place;
- sell, offer for sale or advertise for live or dead water voles.

5.4.2 Recommendations

No evidence of occupation by water voles was recorded on or adjacent to site. No mitigation is required in relation to this species.

5.5 Otter

5.5.1 Legal protection

Rivers are the best natural habitats for otters, although they also inhabit small streams, ditches, ponds, lakes, canals and marshes and can be found in coastal areas and estuaries. They also need lots of dense cover as provided by trees, fenland and reeds. Road mortality and loss and deterioration of habitat are two major factors affecting otters.

Activities potentially harmful to otters include; road schemes, maintenance of water bodies and associated features e.g. bridges, culverts, etc., ditch management, bank side habitat management e.g. removal of dense vegetation, removal of materials (dead wood, rubble etc.), spoil deposition near a holt, coppicing/pollarding/thinning and pollution.

Otters are designated and protected as European protected species (EPS). EPS are protected under the Conservation of Habitats and Species Regulations 2017. It is an offence to:

- deliberately kill, injure, disturb or capture them
- damage or destroy their breeding sites and resting places - even if otters are not present
- possess, control or transport them (alive or dead)

It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly:

- disturb otters while they occupy a structure or place used for shelter or protection
- obstruct access to a place of shelter or protection

In addition the otter is listed as a Priority Species in the UK Biodiversity Action Plan 5 and a globally threatened species on the IUCN6 Red Data List. Special Areas of Conservation (SACs) can be designated on the basis on the presence of otters.

5.5.2 Recommendations

No evidence of otter was found in the Driffield Canal immediately adjacent to site. No evidence of spraints, feeding remains or an otter holt was found.

The proposals will not physically impact Driffield Canal. It is considered unlikely that the proposed development or ongoing activities will cause disturbance to otters. Otters are largely nocturnal being active dawn to dusk. The proposed development will see no physical change to the canal and it is considered that proposals and current utilisation of the beck channel by otters will remain unhindered.

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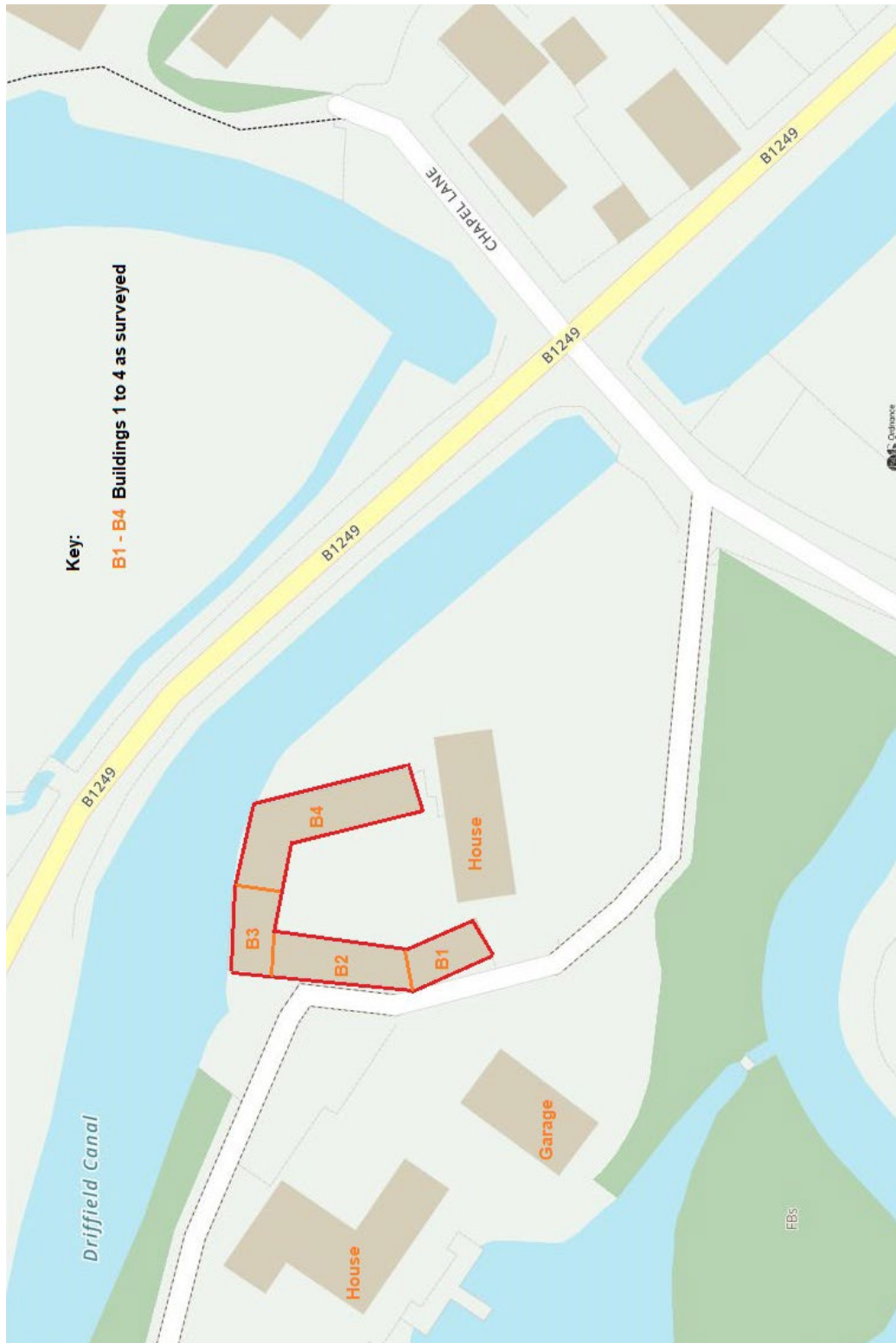
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**APPENDIX 1
FIGURE 2 Site plan**



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APPENDIX 2

Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys

Bat Conservation Trust

**Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys****Bat Conservation Trust, May 2022**

This Interim Guidance Note aims to provide clarification regarding the role of night vision, infrared and thermal imaging cameras (night vision aids or NVAs) in bat emergence surveys, pending the publication of Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition, now predicted to be in summer 2022. This note supersedes the 3rd edition (Collins, 2016). The text has been prepared by Bat Conservation Trust (BCT), discussed and agreed with the Statutory Nature Conservation Body (SNCB) mammal specialists and the Technical Review Board for the 4th edition of the survey guidelines have also been given the opportunity to comment.

Separate, more technical guidance on the use of infrared cameras for bat surveys is also in preparation, the final content of which has not been reviewed by BCT or the SNCBs at this time, however for further information see Richard Crompton's presentation delivered at the National Bat Conference in 2021 (found here: <https://battraining.info/betterbat>).

Existing publications

Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd edition (Collins, 2016) advise the use of NVAs as a complementary method to increase precision during emergence surveys, particularly where there is potential for late-emerging species and in dark conditions. However, the current edition of the guidelines states that, whilst this equipment is useful as a complementary technique, *it shouldn't be used to replace surveyors to any significant degree.*

The Thermal Imaging Guidelines (Fawcett-Williams, 2021) state that *cameras can be used to replace one or more surveyors providing the right equipment is deployed correctly by suitably trained personnel.*

The beta version of the Bat Mitigation Guidelines (CIEEM, 2021) states that *the use of visual aids such as infrared or thermal imaging cameras is strongly recommended for tree emergence surveys.*

Available research

Recent research (Davidson-Watts, 2021) reviewed the results of emergence surveys of 74 known roosts in trees (found by radio tracking) comparing those carried out by sight by surveyors and those supported by infrared cameras. The study found that surveyors could not see potential roost features (PRFs) on average 20 minutes after sunset in woodlands and 29 minutes after sunset outside of woodlands. When all the data was pooled, *bats emerged on average 8 minutes after PRFs could no longer be seen by surveyors*, meaning that bats were not seen in 78% of these surveys. Although surveys saw some bats emerging in conditions light enough for surveyors to see them in the remaining 22%, this finding was species-specific, with a much higher probability of observing the emergence of noctule and soprano pipistrelle than any of the other species recorded (note that common pipistrelle wasn't present in the study).

NVAs have become much more accessible and affordable, and the above research demonstrates their efficacy. Similar research is not available for buildings, however where potential bat access points on buildings are shaded, and the species involved emerge late and call quietly, similar results are anticipated.

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Use of NVAs and the guidelines

For these reasons, the 4th edition of the survey guidelines will shift the emphasis to using NVAs as a standard protocol rather than as an optional or complementary method for both building and tree emergence surveys. There will be a move towards NVAs *being used on all emergence surveys*, with justification required in consultant's reports as to *why they have not been used*, if this is the case.

This requires high-quality cameras paired with recording bat detectors, operated by trained and experienced surveyors. There are limitations to different camera set-ups and weaker units may only be useful for a single small entry or exit point at very close range, which may be adequate for roost characterisation surveys but is less useful for presence/absence, which requires a higher specification camera and better illumination in order to view a larger area, such as one elevation of a building. Cameras need to be set up appropriately and footage should be recorded for analysis back at the office. Reports should describe the equipment used, relevant specifications, how the equipment was deployed and monitored in the field, and the approach used to analyse the videos. They should also include a screenshot from the camera from the darkest point of the survey to illustrate the field of view and visibility.

Can NVAs replace surveyors?

On the topic of whether or not infrared or thermal imaging cameras can replace surveyors, this depends on each individual scenario and the equipment used. The survey guidelines and technical guidance on the use of infrared cameras will cover this topic in more detail.

Cost and training

It is recognised that NVAs can be costly to buy and maintain, and use of them requires training and experience. Therefore this approach, as the basis for good practice, will be phased in over a period of two years starting with the publication of this interim guidance note.

Dawn surveys

Radio tracking studies show that dawn return times are significantly variable both between and within species (Andrews & Pearson, 2022 provides a detailed review of the literature). The average return times quoted in the study are more than two hours before sunrise (the timing advised for dawn surveys in the current guidelines) for many species (Andrews & Pearson, 2022). Froidevaux *et al.* (2020) found that bat detection probability was not affected by whether a survey was carried out at dusk or dawn¹.

The research outlined above creates questions about the efficacy of dawn surveys for determining the presence or likely absence of bats and the value of these over dusk surveys for this specific purpose. Alongside this are health and safety concerns relating to dawn surveys, which can arise from sleep deprivation, particularly if carried out in conjunction with dusk/evening surveys on the same night.

The use of NVAs has the potential to improve the quality of dusk surveys, providing clarity on exact emergence points and bat counts that might not otherwise be available because of the limitations of

¹ This result should be viewed with caution, however, as there were few dawn surveys in the sample and this was not the aim of this research. More research is needed to determine the value of dawn surveys.

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the human eye. Whilst dawn surveys can reward surveyors with displays of dawn swarming behaviour, there is a concern that bats that have returned early will be missed. Of course, where dawn surveys are carried out they can be similarly improved through using NVAs but this does not address the risk of missing bats that have already returned.

The 4th edition of the survey guidelines will therefore transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys, in favour of dusk surveys supported by NVAs. This does not mean that dawn surveys will become obsolete – it is recognised that they can provide useful information (on entrance points, which are sometimes different from the exit points in complex buildings and for some species) for a known roost or in very specific situations. As always, methods selected by professional ecologists should be based on sound ecological reasoning and in consideration of published evidence which should be stated within the survey reports methods section.

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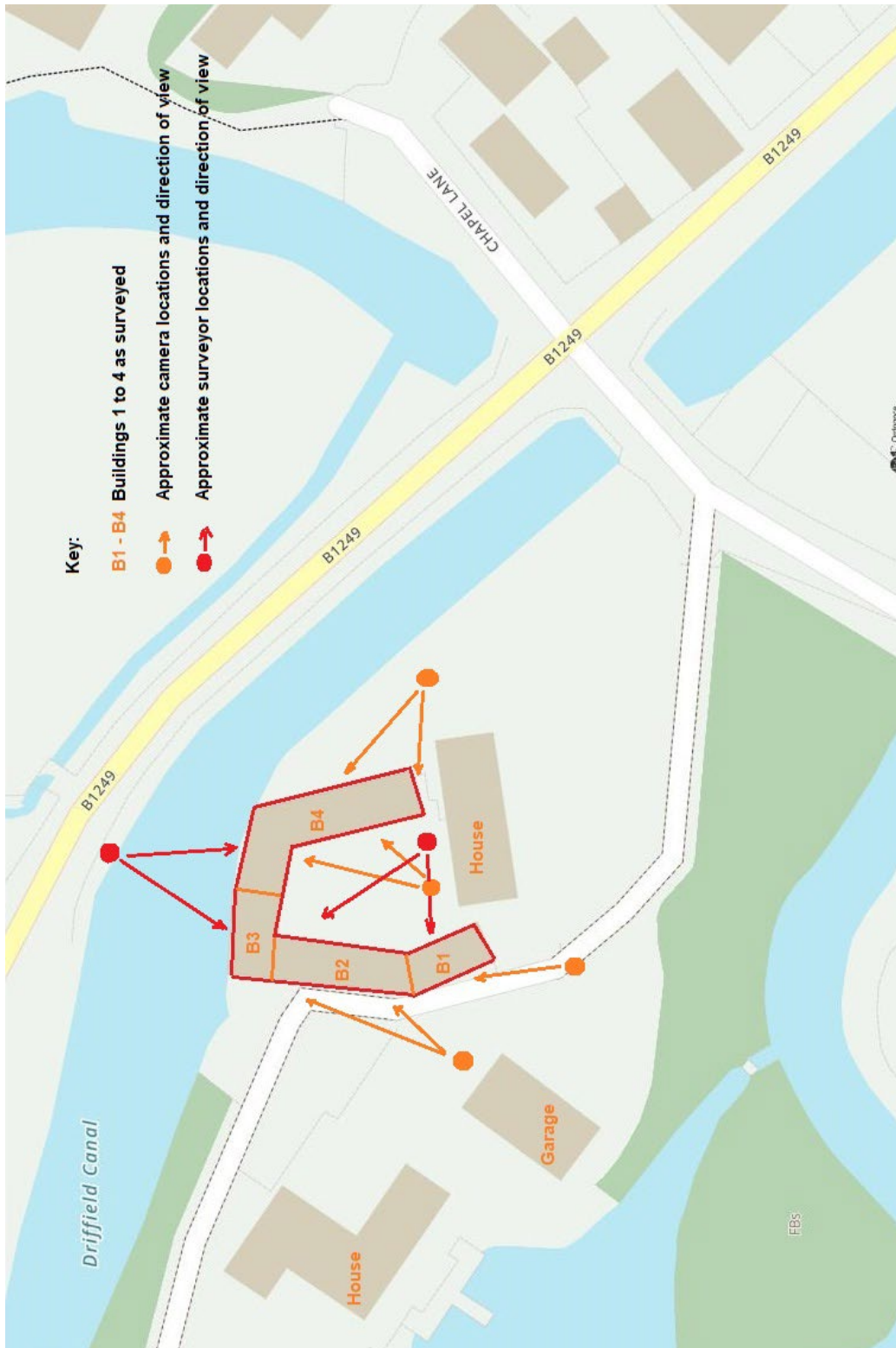
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APPENDIX 3

Figure 3: Approximate surveyor emergence watch locations



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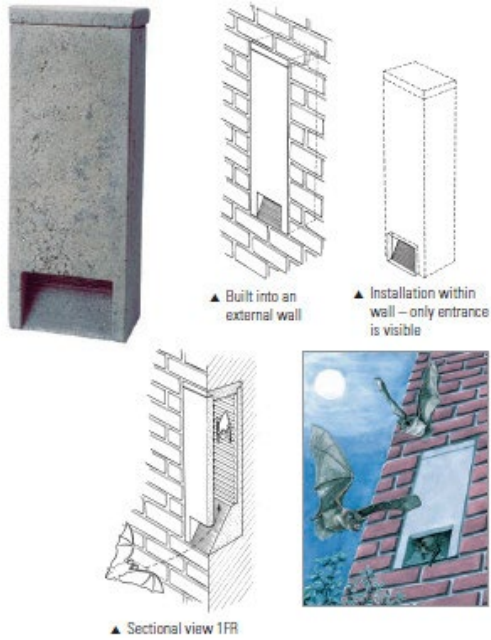
APPENDIX 4

Procedure to follow if bats are discovered during works

- If at any point during the works, bats are discovered then contractors must immediately stop work in the relevant area concerned and telephone Rod Strawson 07881 666215.
- An appropriately licensed bat worker will liaise directly with Natural England. Actions will then be taken following advice given. This may include removal of bats, but only where direct written or verbal permission is gained from Natural England.
- Only when Natural England is satisfied that there is no further risk to bats will works recommence.
- Should it transpire that the operation being carried out is of more risk to bats than was originally thought, then works will be stopped until they can be supervised by an appropriately licensed bat worker.
- If a bat is found under a tile or in any other aperture, works will stop immediately (as above). If the bat does not voluntarily fly out, then the aperture will be carefully covered over to protect the bat(s) from the elements, leaving a small gap for the bat to escape voluntarily. Any covering should be free from grease or other contaminants, and should not be a fibreglass-based material.
- Any injured bats should be gently placed in a secure ventilated box in a cool, quiet dark place (e.g. cardboard box with a sealed lid) by the contractor while wearing gloves for the bat's protection whilst awaiting the arrival of the licensed person.

APPENDIX 5 Examples of bat roost units

Schwegler 1FR:



Schwegler 2FR:

