



**envirotech**

Ecological Consultants  
Environmental and Rural Chartered Surveyors

## Preliminary Ecological Appraisal

Land at Orchard Cottage,  
Fluke Hall Lane, Pilling



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## ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

## Quality and Environmental Assurance

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## 1. EXECUTIVE SUMMARY

- 1.1.1 Envirotech NW Ltd were commissioned in April 2023 to carry out a Preliminary Ecological Appraisal of land at Orchard Cottage, Fluke Hall Lane, Pilling. It is proposed that an agricultural building is replaced at the site.
- 1.1.2 A data search and desk study of the site and an area within 2km of the site were undertaken to establish the presence of protected species and notable habitats.
- 1.1.3 The site was then visited by a licenced ecologist from Envirotech NW Ltd on the 9<sup>th</sup> May 2023. A full botanical survey of the site was initially undertaken and this was followed by surveys to establish the presence or absence of notable species at the site or in proximity such that they may be affected by the proposed development.
- 1.1.4 The plant species assemblages recorded at the site are all common in the local area and are considered to be of low ecological value. Sympathetically landscaped open space, offering grassland and/or other habitats is considered to offer habitat of equal or greater ecological value.
- 1.1.5 The hedgerow at the site has greater ecological value and is to be retained. No hedgerow will be lost as part of the proposal.
- 1.1.6 The hedgerow is not considered important under the Hedgerow Regulations (1997).
- 1.1.7 Low numbers of common bat species may forage over the site. It is proposed that some roosting provision for bats will however be incorporated into the new building on site.
- 1.1.8 Birds are likely to utilise hedge and possibly existing building on site for nesting between March and September. Any demolition and vegetation clearance should therefore be undertaken outside of this period.
- 1.1.9 No other notable or protected species were recorded on the site.

## 2. INTRODUCTION

### 2.1 Background

2.1.1 In April 2023 Envirotech NW Ltd were commissioned by ML Planning Ltd to carry out a Preliminary Ecological Appraisal of land at Orchard Cottage, Fluke Hall Lane, Pilling, central grid reference SD 3912 4990 (Figure 1). A site investigation was undertaken and a report compiled which includes recommendations for any future actions and or mitigation required.

2.1.2 The survey was requested in connection with the proposed replacement of an agricultural building with a larger agricultural building to store hay and farm machinery.



## 2.2 Objectives

### 2.2.1 The main objectives of the study were:

- The completion of a Phase 1 Habitat Survey including the preparation of a vegetation and habitat map of the site and the immediate surrounding area.
- The survey and assessment of all habitats for statutorily protected species.
- An evaluation of the ecological significance of the site.
- The identification of any potential development constraints and the specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy and other relevant guidance, and;
- The identification of any further surveys or precautionary assessments that may be required prior to the commencement of any development activities.

### 3. METHODOLOGY AND SOURCES OF INFORMATION

#### 3.1 *Data Search*

- 3.1.1 The Biological Records centre for Lancashire "LERN", the Envirotech dataset, and the Multi-Agency Geographic Information for the Countryside (MAGIC) were searched to establish the presence of any records of statutorily protected, notable or rare species, and any designated sites of international, national, regional or local importance within a 2km radius of the site boundary.
- 3.1.2 The Envirotech dataset is compiled from extensive field surveys from the period 2004-present, as well as records obtained from third parties during this time.
- 3.1.3 Google Earth and Google Street View were consulted to establish the presence of any features of ecological importance within the local area.
- 3.1.4 Due to the scale of development, in accordance with CIEEM guidelines, a data search of the county records centre was not required. The likely presence and impact on protected species could be adequately determined from the level of data search undertaken.

#### 3.2 *Vegetation and Habitats*

- 3.2.1 A vegetation and habitat map was produced for the site and the immediate surrounding area. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2003).
- 3.2.2 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act (1981) and indicators of important and uncommon plant communities. All plant nomenclature follows Stace (2019).
- 3.2.3 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act (1981), namely Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) on terrestrial habitat and aquatic species such as floating pennywort (*Hydrocotyle ranunculoides*), water hyacinth (*Eichhornia crassipes*) and New Zealand pygmyweed (*Crassula helmsii*).
- 3.2.4 The survey was also informed by questioning the landowner/site agent to ascertain the recent history of the site.
- 3.2.5 Habitats of Principal Importance (HPI) were cross referenced with Natural England's inventory against the site boundary and, where found, ground truthed.



### **3.3 Timing and Personnel**

3.3.1 During the visit, weather conditions were suitable for the survey types undertaken being mild and dry in spring.

3.3.2 The site and surrounding land was visited on the 9<sup>th</sup> May 2023 by

- (FW) Miss Flora Whitehead BSc (Hons)  
Natural England Bat Class Licence (Level 2)  
Natural England Barn Owl Licence (Agent)  
Natural England Great Crested Newt Licence (Level 1 Agent)

## 4. SPECIES SURVEY METHODOLOGY

### 4.1 Amphibian

- 4.1.1 Great crested newts (*Triturus cristatus*) are protected under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedule 5 of the Wildlife & Countryside Act (1981).
- 4.1.2 Water-bodies located within or adjacent to the study area were identified and where access was possible were assessed for their potential to support great crested newts.
- 4.1.3 The criteria used in the assessment are based on those contained in the Herpetofauna Workers Manual and Oldham et al, 2000, and in applying these criteria a precautionary approach was adopted. Following the criteria developed by Oldham et al (2000), the HSI tool developed for use with great crested newts and forming part of Natural England's Licensing process was used to determine the suitability of ponds for great crested newts.
- 4.1.4 The pond assessment was undertaken in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.

### 4.2 Badger

- 4.2.1 Badgers (*Meles meles*) and their setts are protected under the Protection of Badgers Act (1992). This legislation arises from animal welfare issues (rather than on the basis of nature conservation grounds) and protects badgers from being killed, injured or disturbed whilst occupying a sett.
- 4.2.2 A disturbance to badgers in their setts may occur as a result of construction operations. Natural England recommends that the use of heavy machinery in proximity of a sett entrance should be avoided, with a 'disturbance free-zone' being established.
- 4.2.3 The degree of disturbance attributed to construction activity is a function of the background level of activity badgers are accustomed to and that which will be attributed to a proposed activity. The "disturbance free zone" is therefore site specific.
- 4.2.4 The survey for badgers comprised an assessment of all suitable habitat within and outside the study area boundary (where this was possible) to a distance of 30m for indications of use by badgers.
- 4.2.5 Signs of badgers which were searched for included:
- Setts - 'D' shaped entrances at least 25cms wide and wider than they are high with large spoil mounds
  - Discarded bedding at sett entrances (this includes grass and leaves)
  - Scratching posts on shrubs and trees close to a sett entrance
  - The presence of badger hairs which are coarse, up to 100mm long with a long black section and a white tip

- Dung pit latrines and footprints
- Habitual runs through vegetation and beneath fences
- Hedgehog carcasses

### **4.3 Bats**

4.3.1 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981), and are included on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, as a Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats;
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts.

4.3.2 The Bat Conservation Trust (Hundt (2012) and Collins, J. (ed) (2016) issued guidelines on bat survey methodology, a key feature of their recommendation is for the undertaking of a pre-survey assessment - an initial desk-study and a walkover assessment of the survey area and its surrounding area to identify the relative value of the habitats present for bats and likely commuting routes. This is to be followed by a survey program that is appropriate to the likely level of bat activity within the survey area to be determined by and based on the experience of the surveyor.

4.3.3 The potential value of the survey area for foraging bats was assessed through consideration of two main factors: professional knowledge of bat ecology and foraging behaviour in combination with the geographical location, topography and habitats present within the survey area and surrounds.

4.3.4 As a result of the potential suitability of the habitat outside the site and along its boundaries for foraging bats but the low potential for impacts upon bat species due to the proposal being on open and exposed grassland, no bat activity survey was deemed necessary.

4.3.5 Trees and structures on and within the survey area boundary were assessed for their potential to support roosting or hibernating bats. This comprised a close inspection of all trees and buildings on the site to allow an assessment of their potential to be used by bats to be made by a licensed surveyor.

4.3.6 Trees were all assessed in accordance with Collins, J. (ed) (2016).

### **4.4 Birds**

4.4.1 All breeding birds, other than pest species, are protected under the Wildlife and Countryside Act of 1981 when building a nest, rearing young or sitting on eggs. Some bird species, such as barn owl (*Tyto alba*), are protected when near an active nest site. Several birds are listed as Species of Principal Importance (SPI).

4.4.2 Bird species and behaviour was noted during the other field surveys. All areas are covered equally, in order to avoid the subjective survey of better quality 'bird habitat'. All birds displaying breeding behaviour were recorded.

4.4.3 The adjacent coastal marshes and fields are known to be used by several species of bird and are designated as a SSSI and RAMSAR for their bird assemblages. None of the habitats on site would be highly suitable for to support birds associated with the SSSI/ RAMSAR site. The land is in close proximity to a dwelling and subject to frequent agricultural activity. The site could not be considered as Functionally Linked Land.

## **4.5 Brown Hare**

4.5.1 The brown hare (*Lepus europaeus*) is an SPI.

4.5.2 The survey method involved walking boundaries and surveying with binoculars. The survey was conducted at a suitable distance to ensure that the hares were not disturbed. Generally, surveys were undertaken throughout the early afternoon and evening when hares are thought to be most active and feeding.

4.5.3 Where present the number of brown hares in each field or hedgerow was recorded, together with the nature and use of the field, climatic conditions and time of day. The presence of forms and faeces where present were also recorded.

## **4.6 Invertebrates**

4.6.1 A general assessment was made of the study area's suitability for supporting invertebrates during the phase 1 survey. The study area's lack of habitat diversity, species-poor composition and uniformity of vegetation structure (i.e., lack of variation in height and microtopography) resulted in our belief that a low diversity of invertebrates would be likely to occur across the site.

4.6.2 The presence of invertebrates was noted during the other surveys which were undertaken. The extent of sampling was limited in that it could be confirmed that no SPI would be likely to be affected by the proposal.

## **4.7 Otter**

4.7.1 Otters (*Lutra lutra*) are given protection by the Wildlife and Countryside Act (1981) as amended and Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

This protection means that it is an offence to deliberately or recklessly:

- Kill or injure otters;
- Destroy, damage or obstruct their dens, and
- Disturb them whilst in the den.

4.7.2 Watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. The banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

## **4.8 Reptiles**

4.8.1 All native reptiles are protected in Britain under the Wildlife and Countryside Act of 1981. It is an offence to intentionally kill, injure, sell or advertise to sell any of the six native species.

4.8.2 The survey for these species was based on assessing the habitat type and suitability of the site. This comprised an assessment of satellite imagery for the site and surrounding area as well as comparison of the results from the records searches with habitat types. The general habitat at the site was evaluated in terms of its suitability to reptiles for foraging or breeding.

4.8.3 Reptile surveys comprising visual encounter surveys were undertaken. Habitat at the site was not considered sufficiently suitable for a full presence/ absence survey to be warranted.

## **4.9 Water Vole**

4.9.1 Water voles (*Arvicola amphibious*) and their habitat are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981). This provides protection from killing or taking by certain prohibited methods and their breeding and resting places are fully protected from destruction or obstruction, it is also an offence to disturb them in these places.

4.9.2 There is a drainage ditch on the west boundary of the site. This watercourse was surveyed and assessed for evidence of the presence of water vole.

4.9.3 This involved intensive searches by wading upstream where possible, and observing from the banks where not; looking for burrows and other signs including footprints, droppings and chewed vegetation. This was undertaken up to 5m from the water course.

## **4.10 Survey limitations**

4.10.1 Due to the habitats present on site there were no significant constraints in respect of identifying the botanical interest of the site. Bats were active at the time of the survey.

4.10.2 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.

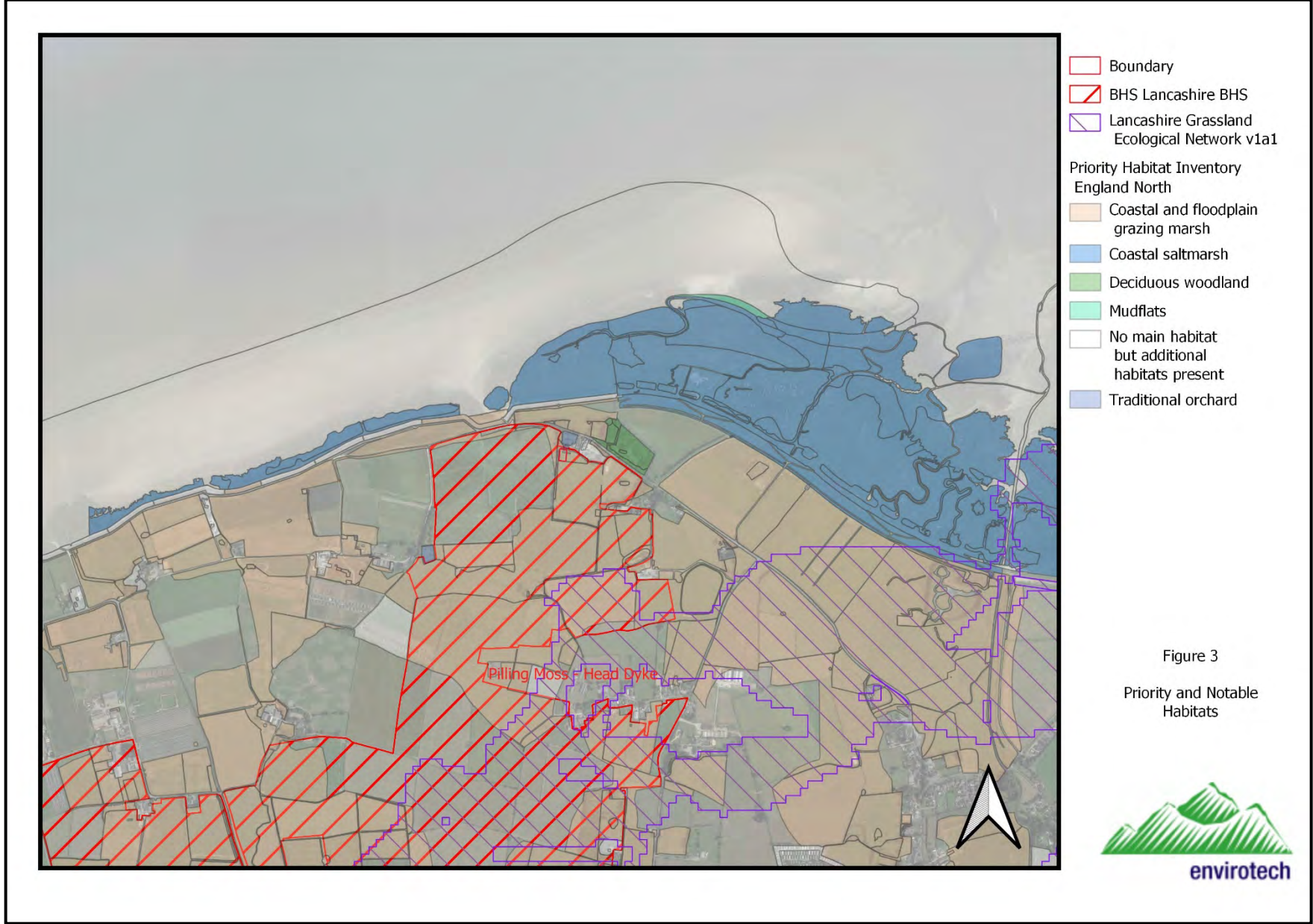
4.10.3 No significant survey limitations were encountered.

## 5. RESULTS

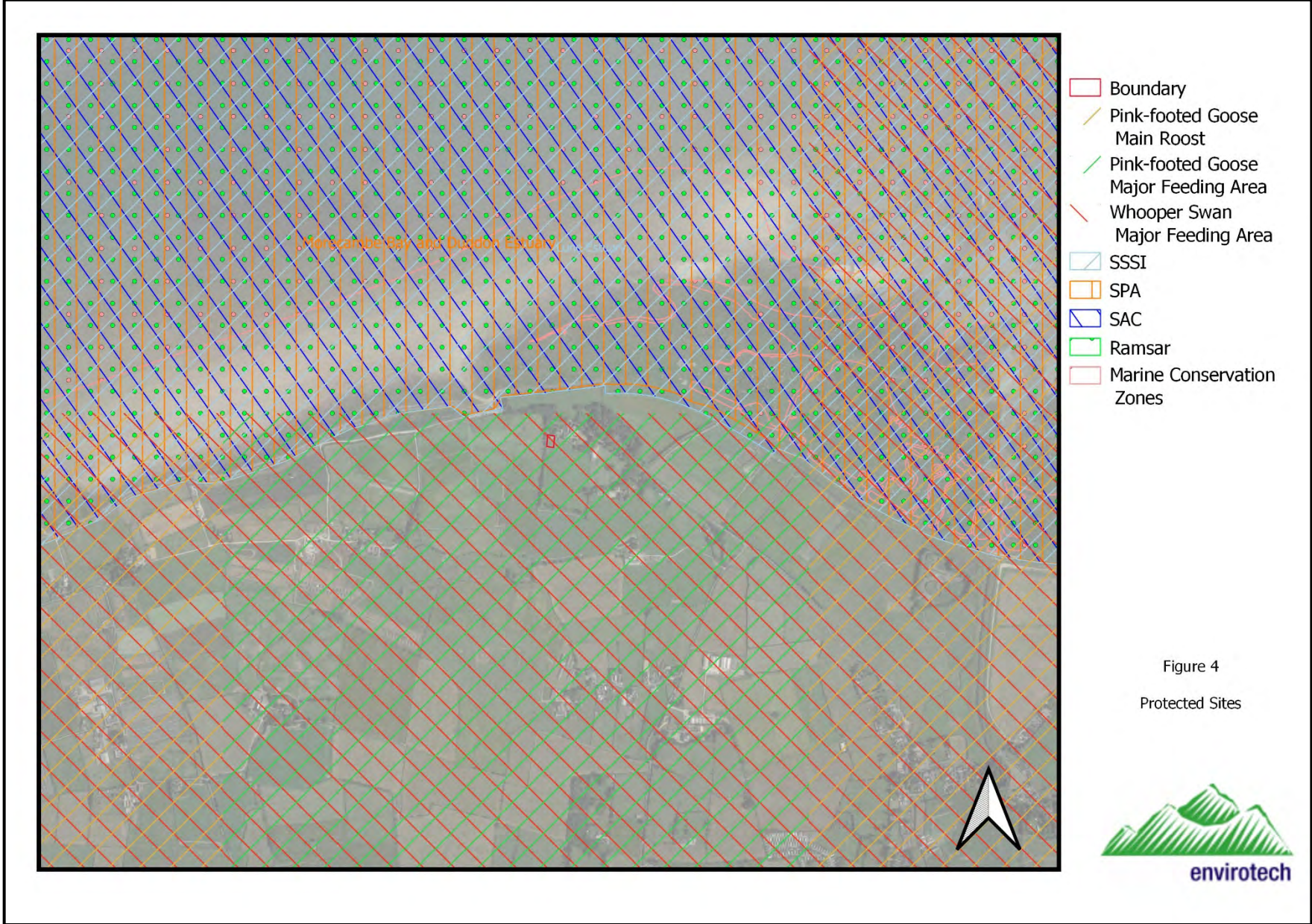
### 5.1 *Data Search*

- 5.1.1 Envirotech holds no records of protected or notable species for the site. There are however records of protected or notable species within 2km (Figure 2). These are discussed in the relevant sections below.
- 5.1.2 The site lies on the north-eastern edge of Pilling Moss BHS, designated for its important feeding habitat for overwintering birds including pink-footed geese and whooper swans. The site also lies within priority habitat designated as coastal and floodplain grazing marsh. This habitat extends across land to the south, east and north. A traditional orchard, also priority habitat, lies immediately to the north of the site. See Figure 3.
- 5.1.3 The site lies within a whooper swan and pink-footed goose major feeding area. The coastal area to the north of the site, approx. 150m at its nearest, comprises the Morecambe Bay Ramsar and Special Area of Conservation, Morecambe Bay and Duddon Estuary Special Protection Area (SPA) and Lune Estuary Site of Special Scientific Interest (SSSI) (Figure 4). These designations relate to the valuable coastal and marine habitats in Morecambe Bay, the second-largest embayment in the UK, and in great importance of these habitats for wading and wintering birds.









## 6. PHASE 1 SURVEY RESULTS

### 6.1 *Habitat Results*

6.1.1 The site comprises poor semi-improved grassland, currently lightly grazed by lambs, with fences to the south and east and a hedge with trees to the west. There is farmland beyond these boundaries. To the north is the farm track with orchard and Fluke Hall Lane beyond. Orchard Cottage and associated buildings lie to the north-east. An existing agricultural building stands on the site (to be replaced with new large building). There is also a large spoil heap of earth and previously buried debris cleared from the farmstead.

6.1.2 See Figure 6 for the Phase 1 Habitat Plan and Table 1 for the descriptive Target Notes.

Target Note	Description	Comment
TN1	Ephemeral/short perennial	The area to the north of the existing building has been recently cleared, and ephemeral/perennial plants are starting to grow. Species found include Nettle ( <i>Urtica dioica</i> ), Cleavers ( <i>Galium aparine</i> ), Hairy Bittercress ( <i>Cardamine hirsuta</i> ), Dandelion ( <i>Taraxacum officinale</i> ), Creeping buttercup ( <i>Ranunculus repens</i> ) and clumps of immature grasses.
TN2	Poor semi-improved grassland	To the south of the existing building there is a field of semi-improved grassland, lightly grazed by lambs. Species found were Perennial Ryegrass ( <i>Lolium perenne</i> ), Meadow Foxtail ( <i>Alopecurus pratensis</i> ), Cocksfoot ( <i>Dactylis glomerata</i> ) and, amid the grass sward, Plantain ( <i>Plantago major</i> ), Ribwort Plantain ( <i>Plantago lanceolata</i> ), Creeping Buttercup, Meadow Buttercup ( <i>Ranunculus acris</i> ), Broad-leaved Dock ( <i>Rumex obtusifolius</i> ), Chickweed ( <i>Stellaria media</i> ) and small patches of Speedwell ( <i>Veronica</i> sp.). Near the field entrance Silverweed ( <i>Potentilla anserina</i> ) was found.  At the western edge where the field is shaded by the hedge there was Bramble ( <i>Rubus fruticosus</i> agg), Nettle, Cleavers, Red Campion ( <i>Silene dioica</i> ) and Bluebell ( <i>Hyacinthoides non-scripta</i> ) as well as hybrid Bluebell ( <i>Hyacinthoides x massartiana</i> ). There were occasional ferns.
TN3	Building	The existing building is a steel-framed building with corrugated metal cladding and roof, used for storage of machinery and hay bales. The front (south) has a wooden door across the eastern bay.
TN4	Other habitat	There is a large pile of soil, rubble and debris which is partially overgrown by Nettle, Dandelion, Cleavers, Chickweed and Hedge Mustard ( <i>Sisymbrium officinale</i> ). It is understood that metal and plastic debris had previously been buried in the recently cleared area to the north of the site.
TN5	Hedge with trees	The hedge comprises a double row of wind-bent Sycamore ( <i>Acer pseudoplatanus</i> ), Hawthorn ( <i>Crataegus monogyna</i> ) and Elderberry ( <i>Sambucus nigra</i> ). Bramble, Bluebell, Nettle, Cleavers and occasional ferns were also found under the trees.
TN6	Running water - dyke	A drainage dyke runs along the far side of the hedge. Water, partially stagnant, was present at the time of the survey, though it is known to dry up in the summer months.
TN7	Birds	Birds are likely to nest in the hedgerow and possibly in the building at the site. An owl nest box was noted within the building, currently disused.

TN8	Bats	The site is relatively exposed, but bats are likely to forage along the hedgerows
<i>Table 1 Details of Target Notes.</i>		



- Boundary
- Target Note
- Building
- Other Habitat
- Poor Semi-Improved Grassland
- Cultivated/Disturbed Land - Ephemeral/short perennial
- ||||| Hedge and Trees - Species-poor
- ||||| Fence
- Running Water

Figure 5  
Phase 1 Habitat Survey  
23/5/23





Early ephemeral/short perennial growth to the north of the site



Existing building is steel framed with metal cladding and roof



Owl box within building



Views of field on which it is proposed replacement building is erected



Soil/debris pile in north-west of site



Hedge with trees along western boundary



Vegetation along hedgerow





Bluebells under the hedgerow trees



Semi-stagnant drainage dyke to west of hedge

Table 2 *Photographs*

## **6.2 Vegetation**

- 6.2.1 Details of the plant species found on site are included in the target notes. Species recorded are all commonly occurring and undoubtedly occur elsewhere in similar habitats in the local area, although the hedgerow habitat in particular is ecologically valuable.
- 6.2.2 The poor semi-improved grassland has a moderate species diversity and ecological value. Whilst the assemblage of species within it is higher than improved pasture, the species are all indicative of regular grazing and disturbance, this habitat does not constitute a Habitat of Principal Importance (HPI).
- 6.2.3 The intact hedge with trees bounding the site to the west is not species-rich in terms of woody plant species, but it is a valuable habitat, offering shelter and foraging opportunities for local wildlife. The size of the trees, despite the exposed location with wind pressure, and the hedgerow flora with native bluebells indicate that the hedge is many years old. All hedgerows are an HPI. They should be retained in any proposed scheme. For reference, where lengths need to be lost, they should be transplanted or new hedges planted as compensation.
- 6.2.4 None of the hedgerows are classified as important under the Hedgerow Regulations (1997) (See Appendix 1).
- 6.2.5 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. No other invasive or notable weed species listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) was identified within the site or adjacent land.

## **6.3 Amphibian**

- 6.3.1 There are no records for amphibians within 2km of the site.
- 6.3.2 The core development area has a low value to amphibians being open and exposed. The boundary hedgerows could be utilised as refuges and/or hibernacula but there are no breeding ponds in proximity to the site. The dyke contained water at the time of the survey, and is understood to be inundated/flowing during heavy rainfall and dried up in summer, making it unsuitable for use by breeding amphibians.
- 6.3.3 A large pond approx. 165m to the east is known to be frequently inundated with saltwater, making it unsuitable for freshwater amphibians.
- 6.3.4 Structural diversity at ground level across the field is poor. The hedgerow and soil heap on site boundaries offer some refuge and/or commuting opportunities.
- 6.3.5 Amphibians would be unlikely to attempt to cross the site as it comprises an area that is mostly open with frequent disturbance. Whilst not a physical barrier to the dispersal of amphibians, the site is regarded as being a potentially hostile environment to them.

6.3.6 The proposed development will not result in the permanent loss of or a substantial negative effect on any waterbodies or foraging areas linked to them. The hedgerow, which may provide foraging or refuge sites, is to be retained.

## **6.4 Badger**

6.4.1 No records of badgers occur within 2km of the site.

6.4.2 Badger setts do not occur on site and a lack of feeding signs or runs across the site would suggest that they do not occur within 30m of site boundaries.

6.4.3 The proposed development will not impact on any existing badger runs or setts. The porosity of the surrounding fields to the passage of badgers will not be affected.

## **6.5 Bats**

6.5.1 There are 13 records of up to two pipistrelle species of bat within 2km of the site.

6.5.2 The foraging habitat at the site is moderate for bat species, as there are trees and hedgerows in the relatively immediate vicinity, but the wider area is exposed, being so close to the coast and comprising open farmland. The poor semi-improved grassland offers low foraging opportunities for bats, but the presence of livestock, hedges and trees improves the habitat for bats around the site.

6.5.3 It is not considered there would be significant degradation of foraging habitat as a result of the proposal so long as the hedgerows and trees are retained and any loss of vegetation is compensated for in any landscaping scheme.

6.5.4 All trees around the site perimeter were also assessed in accordance with Collins ed. (2016) and assigned a risk category. All of the trees on site were category 2 (low) or category 3 (negligible) risk. No indications of roosting or highly suitable roost sites were located within the trees. Larger specimens were very exposed. All of the trees could be adequately inspected. Risk categories from Hundt (2012) and the requirement for mitigation for each tree category are shown on Figure 6.

6.5.5 The existing building has single-skin metal cladding and a steel frame which offer poor insulation and roosting potential for roosting bats. It is not considered suitable or attractive to bats, and no indications of use by bats were found.

6.5.6 We consider bat species are highly unlikely to rely on the site for feeding but may occur in the local area. Roosting by bats will not occur on the site.

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
<b>Known or confirmed roost</b>	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
<b>Category 1*</b> Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence.  <i>A consultant ecologist is required</i>	Avoid disturbance to trees, where possible.  Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures' such as 'soft felling' to minimise the risk of harm to individual bats.
<b>Category 1</b> Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats.  <i>A consultant ecologist required</i>	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment.  Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above.  Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
<b>Category 2</b> Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None.  <i>A consultant ecologist is unlikely to be required</i>	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures.  Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
<b>Category 3</b> Trees with no potential to support bats	None.  <i>A consultant ecologist is not required unless new evidence is found</i>	None.	No mitigation for bats required.

Figure 6 Tree risk categories from Hundt (2012).

## **6.7 Birds**

- 6.7.1 There are 53 records of birds within 2km of the site. Woodpigeon (*Columba palumbus*) were noted on site during the survey.
- 6.7.2 The intact hedgerow to the west of the site offers potential habitat for feeding and nesting birds. The poor semi-improved grassland has a low potential for use by nesting birds as the grassland is frequently grazed and as such is usually short. Trampling risks are also very high within this area of the site.
- 6.7.3 The building offers low nesting potential for birds, either on beams or in the owl box. A woodpigeon was seen leaving the building, though no nest sites were identified.
- 6.7.4 The site is an area designated for its use by overwintering birds, particularly Whooper Swans and Pink-Footed Geese. However the farmstead area in which the site lies is not considered suitable for these species due to it being enclosed by buildings and hedges and undergoing regular disturbance due to activities associated with the family dwelling and farm.
- 6.7.5 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.
- 6.7.6 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.
- 6.7.7 Precautionary mitigation is considered appropriate. The landscaping scheme should include species such as rowan (*Sorbus aucuparia*) which are seed bearing and will provide food for birds in the winter.
- 6.7.8 The habitat on site is not considered to be of anything more than of local significance, habitats present are well represented in the local area. The impact on nesting birds is therefore considered likely to be minor.

## **6.8 Brown Hare**

- 6.8.1 Brown hare are a SPI. There are no records of brown hares within 2km of the site, although the local habitat would support this species.
- 6.8.2 No indication of brown hares was recorded on the site.
- 6.8.3 The site has some potential for brown hares to create forms and forage but use of the site is likely to be limited due to its open and exposed nature and regular human presence.
- 6.8.4 A risk assessment of the site in respect of its future potential for and value to brown hares could be adequately made. We consider the risk to brown hares is very low.

## **6.9 Invertebrates**

- 6.9.1 Notable invertebrates have been recorded within 2km of the site.

- 6.9.2 No deadwood or vegetation in the field at the site was recorded which would provide an important resource for invertebrates in the local area.
- 6.9.3 The hedgerow with trees and drainage dyke does offer an important resource for invertebrates.
- 6.9.4 Impacts on the species are considered likely to be low, with retention of the hedgerow and associated ground flora.
- 6.9.5 A survey for invertebrates including, but not limited to solitary and mining bees and wasps and certain butterflies was triggered as a result of this site lying in proximity to semi-natural vegetation. The method of survey for these species was to assess the habitat type affected by development and therefore its likely importance at the local level to any of these species.
- 6.9.6 Trees on the site boundaries contain comparatively little rotten wood in their canopies.
- 6.9.7 Semi-Improved pasture has some value to species such as common butterflies but this is not considered to be locally significant.
- 6.9.8 The significance of the site to invertebrates is likely to be limited in the local context although the habitat on site will support invertebrate species. Mitigation can be incorporated into the design and landscaping scheme with the careful selection of plant species and substrates for the areas surrounding the new building.

## **6.10 Otter**

- 6.10.1 There are records of otters within 2km of the site.
- 6.10.2 No indication of the presence or past use of the site by otter was found. The dyke is considered unlikely to support fish due to the drying of the dyke each year. There are no waterbodies in proximity to the site which would be attractive to amphibians. This species is considered as being absent from the site.
- 6.10.3 Whilst the hedgerow and dyke at the site may provide commuting and refuge opportunities, this species is considered as being absent from the site and is unlikely to be significantly impacted by site development.
- 6.10.4 The dyke should be retained in the scheme, the hedgerow should be retained on the site boundaries so as to continue to provide suitable refuge/commuting sites in the future. Precautionary mitigation would be appropriate in respect of construction activities which will need to be restricted at night.

## **6.11 Reptiles**

- 6.11.1 There are no records for reptiles within 2km of the site.
- 6.11.2 The majority of the site has a very low value to reptiles being devoid of significant ground cover. There are no areas of the core development area which would be particularly favourable to reptiles. Any open ground that maybe suitable for basking has frequent human disturbance.

6.11.3 Reptiles may occur along the boundary of the site and this provides linkage across the local landscape. This is to be retained within the proposal.

6.11.4 No indication of reptiles was recorded at the site.

6.11.5 As a consequence, precautionary mitigation would be appropriate in respect of construction activities so as to ensure reasonable avoidance measures are taken to avoid the killing or injury of these species.

## **6.12 Water vole**

6.12.1 There are no records of water voles within 2km of the site.

6.12.2 No signs of water voles, such as droppings, feeding piles or footprints were present in along the dyke or surrounding land. We consider this species is likely to be absent from the site and there are no records within 2km of the site. Precautionary mitigation would be appropriate.

## **6.13 Other**

6.13.1 The boundary hedgerow provides habitat for use by hedgehog (*Erinaceus europaeus*). Fragmentation of habitat locally and existing land use do not provide optimal conditions for the free passage of this species across the site.

6.13.2 The site may be crossed by species such as fox (*Vulpes vulpes*) and rabbit (*Oryctolagus cuniculus*) which are known to occur locally.

6.13.3 The boundary hedgerow will provide suitable habitat for small mammals such as field vole (*Microtus agrestis*).

## **6.14 Statutory and Non-Statutory Sites**

### Direct Impacts:

6.14.1 There are no statutory or non-statutory sites which are connected to the site such that site development would directly affect the dispersal of species between them or directly impact upon their integrity.

6.14.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

6.14.3 This small site does not offer suitable feeding habitat for overwintering birds, and the level of activity/human disturbance at the site post-development will similar to the current levels.

### Indirect Impacts:

6.14.4 There are no statutory or non-statutory sites which are connected to the site such that site development would indirectly affect the dispersal of species between them or indirectly impact upon their integrity.

## 7. MITIGATION/RECOMMENDATIONS

### 7.1 *Compensatory planting and habitat enhancement*

- 7.1.1 The roots of trees in the hedgerow on the west boundary should be adequately protected during work in accordance with industry standards. This scheme should not involve the removal of any hedgerow, but for reference any lengths of intact hedgerow to be removed to facilitate development should be transplanted and or replanted in order that there is no net negative impact on this HPI due to development.
- 7.1.2 All trees should as far as possible be retained in the scheme. There should be an adequate tree root protection zone, protecting the roots from compaction/ground disturbance during development. There should also be an ample margin to allow for the continued flourishing of the bluebells and other ground flora along the hedgerow.
- 7.1.3 The landscaping scheme should utilise plants which are native and wildlife friendly. It was noted on site that additional planting has already been undertaken to fill in hedgerow gaps to the north of the site and this should be continued.
- 7.1.4 In terms of flowering plants, in particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges around the fields, to enhance the ecological value of the site and continuity between the site and the wider area.

### 7.2 *Amphibians*

- 7.2.1 There is no requirement for specific mitigation for these species. There are currently no suitable breeding sites on or near the site. However, as a precautionary measure, in the unlikely event that any signs of any amphibian activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.
- 7.2.2 Clean surface and roof water should be channelled into the mill pond to ensure water within it remains clean.
- 7.2.3 In order to further minimise impacts on amphibians the following points should also be followed.
- All work must take place during daylight hours as amphibians are more likely to be commuting over night and this will ensure the risk to any amphibians commuting through the site will be minimised.
  - During the development, measures should be put in place to discourage amphibians from using the development area, the creation of any piles of earth, materials and rubble which could form potential artificial hibernacula and refuge should be avoided at all times. It is recommended that any spoil or rubble will be removed immediately to skips, or on hard standing or short grass. This will ensure that no potential amphibian hibernation or resting sites are created.



- The storage of all loose materials must be palletised or similar so they are off the ground whenever possible.
- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure amphibians are not trapped during work.
- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.

### **7.3 Badger**

7.3.1 Badger setts may occur within 2km of the site. These setts will be undisturbed by work but in order to minimise impacts on badgers passing over the site the following points should also be followed.

- All work must take place during daylight hours as badgers are more likely to be commuting over the site at night and this will ensure the risk to any badgers passing through the site will be minimised.
- Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than of 45 degrees in angle. Ideally, any holes should be securely covered. This will ensure badgers are not trapped during work.
- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling. Back filling should be completed immediately after any excavations, ideally back filling as an on-going process to the work in hand.
- Boundary fences/walls should incorporate gaps at their base to facilitate the passage of badgers across the site.

### **7.4 Bats**

7.4.1 Work at night should be restricted, and light spill onto the boundary should be minimised.

7.4.2 The hedgerow along the west of the site should be retained and maintained with mature, semi-mature and young trees.

7.4.3 New planting within the site should enhance structural diversity.

7.4.4 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site and/or bat boxes could be erected in retained trees.

7.4.5 No trees should be felled as part of this scheme.

7.4.6 Overall it is considered there is more than sufficient scope for mitigation and compensation at the site such that there will be no adverse impact on the favourable conservation status of bats affected by the proposal.

## **7.5 Birds**

7.5.1 Nesting by birds within the development area is considered possible within the existing building. Birds may also nest within the hedgerow on the boundary of the site.

7.5.2 The building should be checked for nesting birds, including within the owl box.

7.5.3 The hedgerow should remain undisturbed by the proposed development. Any vegetation to be trimmed or cleared should be checked for nesting birds before it is removed. Ideally this should occur outside the bird nesting period March- September. If vegetation clearance is to occur in the March-September period a check for nesting birds should be conducted first by a suitably qualified individual.

7.5.4 New planting within the site and the retention of trees and shrubs on the site boundary will maintain the ecological functionality of the site for breeding birds.

7.5.5 Artificial bird nesting sites for swallow could be incorporated into the new buildings under the eaves in suitable locations.

7.5.6 The owl box should be transferred to the new building (if not in use by nesting birds).

7.5.7 If nesting birds are found at the site all site works shall cease and further ecological advice shall be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

## **7.6 Brown Hares**

7.6.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any brown hare activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.6.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for badgers are also applicable to this species.

## **7.7 Invertebrates**

7.7.1 Landscaping should include native or wildlife friendly species including night flowering plants.

7.7.2 Contaminants should not be allowed to enter substrates or the dyke during work. To effect this, spill kits should be provided on site. Re-fuelling of all plant and machinery should be undertaken away from open drains and water courses. Drip trays should be used under static machinery.

7.7.3 The hedgerow and ground flora should be retained under the proposed scheme.

## **7.8 Otter**

7.8.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any otter activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.8.2 The points in respect of not working at night and leaving open trenches with means of escape detailed for amphibians are also applicable to this species which is only likely to pass through the site at night.

## **7.9 Reptiles**

7.9.1 There is no requirement for specific mitigation for these species. However, as a precautionary measure, in the unlikely event that any signs of any reptile activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.9.2 The hedgerow on the edge of the development site should be retained.

7.9.3 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

## **7.10 Water vole**

7.10.1 There is no requirement for specific mitigation for this species. However, as a precautionary measure, in the unlikely event that any signs of any Water vole activity is subsequently found, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

7.10.2 The dyke should be retained with vegetated banks.



Figure 7 Proposed site plan

## 8. CONCLUSION

- 8.1.1 Ecological surveys, site appraisals and impact assessments were carried out with respect to land comprising poor semi-improved grassland with hedgerow and drainage ditch boundary and existing agricultural building. It is proposed a replacement, larger agricultural building will be constructed on the site.
- 8.1.2 Bats and nesting birds are known to occur in the local area, there was however no conclusive evidence of any specifically protected species regularly occurring on the site or the surrounding areas which would be negatively affected by site development following the mitigation proposed.
- 8.1.3 The vegetation to be cleared has a low ecological significance in the local area.
- 8.1.4 The hedgerow on the west boundary is valuable ecological habitat and is to be retained with adequate root protection zone and retention of ground flora.
- 8.1.5 The protection of trees/hedges on the site boundary and landscaping will promote structural diversity in both the canopy and at ground level and will encourage a wider variety of wildlife to use the site than already occurs.
- 8.1.6 Contractors will be observant for protected species and all nesting birds. Should any species be found during construction, all site works should cease and further ecological advice should be sought with a view to a detailed method statement and programme of mitigation measures being prepared and implemented.

## 9. REFERENCES

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## 10. APPENDIX

Hedge		Feature	
TN5	Yes	Yes	Yes
	Length 20m +	Hedge is not bounding the curtilage of dwelling	Hedge established more than 30years
	Yes	Hedge boundary of protected or common land or land used for agriculture or forestry	
<b>ARCHAEOLOGY AND HISTORY</b>			
	No*	Archaeological feature which is included in the schedule of monuments	
	No*	Situated wholly or partly within an archaeological site	
	No*	Boundary of a pre-1600 AD estate	
	No*	Integral part of a field system	
	No	Protected species records	
<b>FEATURES</b>			
	No	Bank or wall	
	Yes	Gaps less than 10%	
	No	Standard trees	
	Yes	Ditch	
	No	Parallel hedge	
	No	Footpath/ Bridleway	
	1	Connection points	
	3	Woody species	
	2	Average ground flora species	
	7 woody species or 6 woody species + 3 features or 5 woody species + 4 features or highway + 4 woody species and 2 features		
	<b>No</b>	<b>HEDGE CLASSIFIED AS IMPORTANT</b>	<b>AS</b>

\* Historic and archaeological records have not been checked for this site.