



Ecological Consultants  
Environmental and Rural Chartered Surveyors

## Preliminary Ecological Appraisal

### Griffin Close, Frizington, CA26 3SH



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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 Envirotech NW Ltd were commissioned in June 2022 to carry out a Preliminary Ecological Appraisal of land at Griffin Close, Frizington. It is proposed the site is built on to form new housing.
- 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.
- 1.3 The site was first visited by a licenced ecologist from Envirotech NW Ltd on 1<sup>st</sup> September 2022. 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.
- 1.4 The site was subsequently revisited by Envirotech on 17<sup>th</sup> May 2024 following revision of the development proposal. Habitats remain largely identical; the ecological significance between site visits unchanged.
- 1.5 The majority of the site comprises an area of '*other neutral grassland*'. This habitat parcel is rough and unmanaged, possessing a moderate diversity of graminoids and forbs. There are however signs of regular disturbance in some areas of the site, as evidenced by the mown/trampled path and encroachment of garden and ruderal flora.
- 1.6 The site is fringed by ornamental shrub and hardstanding; a thin belt of broad-leaved woodland to the north and west of the site.
- 1.7 At this stage, a number of trees (T1, T3 and potentially T2) may need to be removed from the site to facilitate the development proposal. Recommendations have been made regarding the best use of compensatory planting.
- 1.8 Montbretia (*Crocasmia x crocosmiiflora*), an invasive, non-native plant, listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) is present in low quantities in the north-east of the site. It is an offence to plant this species or permit it to grow in the wild. Whilst it is not an offence for this species to be present on private property, at a minimum, this species should not be further spread through the site or adjacent land. Advice has been issued regarding its removal.
- 1.9 Badgers, birds, otters and common species of bats 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.
- 1.10 The development proposal will result in the substitution of rough and unmanaged grassland with new housing and garden areas. It is advised the site is developed sympathetically via compensatory tree planting, establishment of public open space (where possible) and the inclusion of bird and bat boxes/features.



## 2. INTRODUCTION

### 2.1 Background

- 2.1.1 In June 2022, Envirotech NW Ltd were commissioned by Architects Plus (UK) Ltd to carry out a Preliminary Ecological Appraisal of a small parcel of land at Griffin Close, Frizington, central grid reference NY 03359 17377 (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 construction of new housing.
- 2.1.3 The site was subsequently revisited by Envirotech on 17<sup>th</sup> May 2024 following revision of the development proposal. Habitats remain largely identical; the ecological significance between site visits unchanged.



## 2.2 Objectives

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

- The completion of a UKHabs Version 2 (UKHab Ltd (2023)) 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 Envirotech dataset and the National Biodiversity Network (NBN) 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 UKHabs V2 survey and reporting methodology.
- 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 land- the site having previously been a care home, which was demolished some years ago.

### **3.3 *Timing and Personnel***

3.3.1 During the visit, weather conditions were suitable for the survey types undertaken.

3.3.2 The site and surrounding land were visited on 1<sup>st</sup> September 2022 by: -

(BF) Mr Bradley Foster MEnv (Hons)  
Natural England Bat Class Licence (Level 1 Agent)  
Natural England Barn Owl Licence (Agent)  
Natural England Great Crested Newt Licence (Level 1 Agent)

3.3.3 The site was subsequently revisited by Mr Bradley Foster on 17<sup>th</sup> May 2024 following revision of the development proposal.

## 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 Where relevant, ponds were assessed in order to determine which water-bodies, based on their potential to support great crested newts, should be subject to presence/absence surveys.
- 4.1.5 There are no ponds within a 500m radius of the site, the nearest pond being 800m to the south-east, and isolated by a number of single carriageway roads.

### 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 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.

4.3.5 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 UK and or County BAP species.

4.4.2 All bird species and behaviour were noted during the field survey of the site.

## **4.5 Otter**

- 4.5.1 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.

- 4.5.2 Where relevant, watercourses were assessed for their suitability and for the presence of otters within 10m of the banks. Banks and scrub vegetation were carefully searched for spraints, feeding remains, runs, prints and couches/holts.

## **4.6 Reptiles**

- 4.6.1 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.

- 4.6.2 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.

## **4.7 Survey limitations**

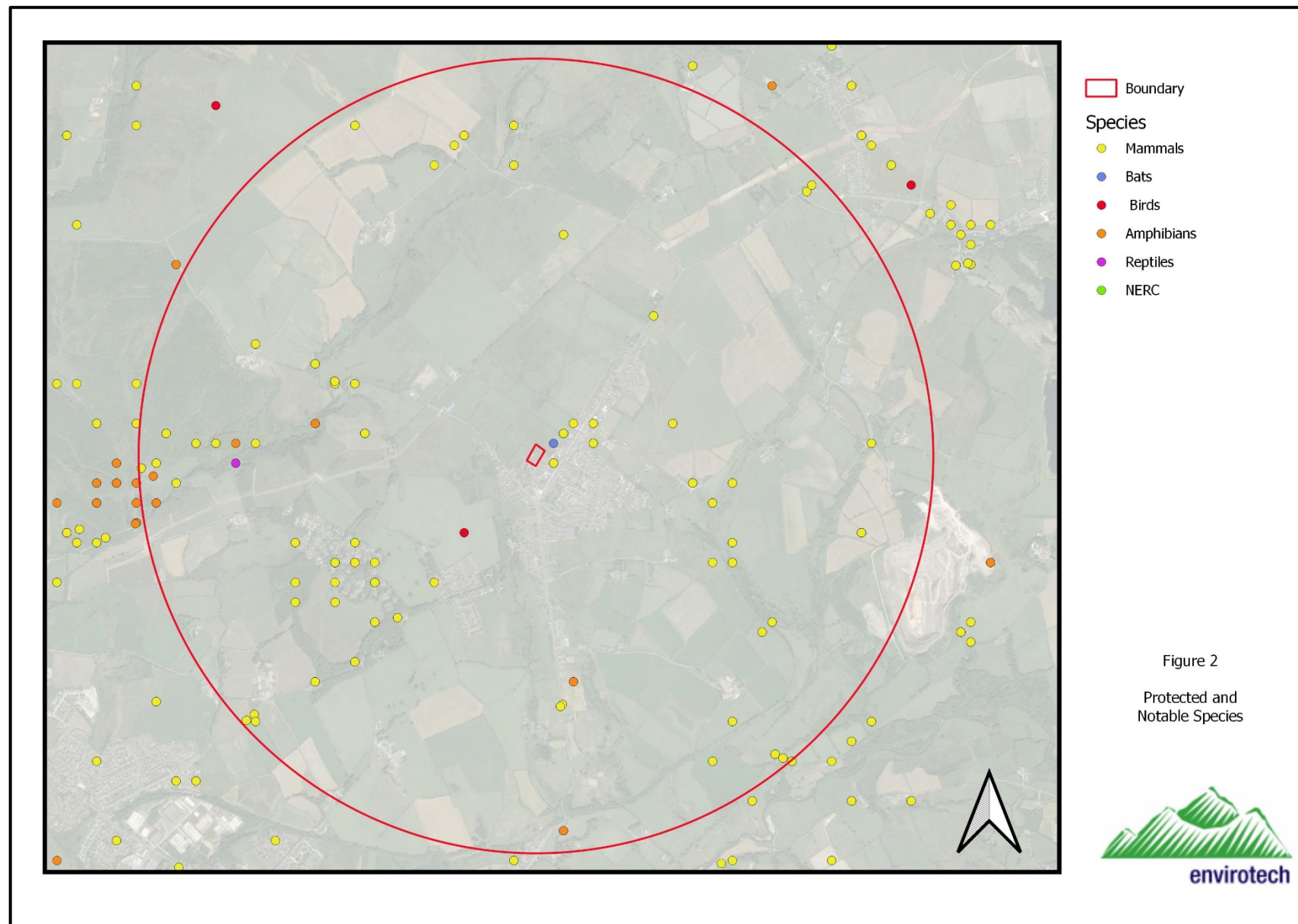
- 4.7.1 Given the habitats present onsite, there were no significant constraints in respect of identifying the botanical interest of the site.
- 4.7.2 The duration, extent and scope of the surveys were considered sufficient to plan appropriate mitigation and recommend additional precautionary survey work required prior to the commencement of work.
- 4.7.3 Surveys at the site have been undertaken over a number of years and as survey results remain similar, it is considered the level of use of the site by species targeted for survey has been determined.
- 4.7.4 No significant survey limitations were encountered.

## 5. RESULTS

### 5.1 *Data Search*

- 5.1.1 Envirotech and the NBN hold no records of protected or notable species for the site. There are however records of protected or notable species within 2km- the nearest being 60m north-east of the site (Figure 2). These are discussed in the relevant sections below.
- 5.1.2 The nearest non-statutory protected site is a small area of deciduous woodland approximately 300m south-west of the site (Figure 3). This is isolated from the site by the centre of Frizington.
- 5.1.3 The nearest statutory protected site is Yeathouse Quarry 700m south-east of the site- a Site of Special Scientific Interest (SSSI) (Figure 4). This is located on the outer edge of Frizington, adjacent Winder Beck.







- Boundary
- Ancient\_Woodland\_England
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Purple moor grass and rush pastures

Figure 3  
BAP and Notable Habitats







- SSSI
- SAC
- Boundary

Figure 4  
Protected Sites



## 6. UKHABS V2 SURVEY RESULTS

### 6.1 *Habitat Results*

- 6.1.2 A drone was overflown the site during the ecology survey on 17<sup>th</sup> May 2024. This produced a number of images which were stitched together to form an orthomosaic map, providing up to date aerial imagery of the site from which UKHabs habitat mapping has been based. Figure 5a shows the hi-resolution imagery overlain Google Earth.
- 6.1.3 Figures 5b and 5c show panoramic views of the site from opposing directions.
- 6.1.4 The site comprises an area of regenerated '*other neutral grassland*', interspersed with pockets of amenity grass, tall ruderal vegetation, ornamental garden shrubs and hardstanding ground.
- 6.1.5 Montbretia (*Crocasmia x crocosmiiflora*), an invasive, non-native plant, listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended) is present in low quantities in the north-east of the site.
- 6.1.6 The site can be openly accessed to the south and east; situated directly adjacent a medical centre and small housing estate. The northern and western boundaries of the site are lined with a thin belt of woodland. The wider area to the north consists of scrub and rough grassland, with grazing land/pasture located to the west.
- 6.1.7 See Figure 6 for the UK Habs V2 Plan and Table 1 for the descriptive Target Notes.





 Red Line Boundary

Figure 5a

Orthomosaic map using  
drone imagery taken on

17th May 2024





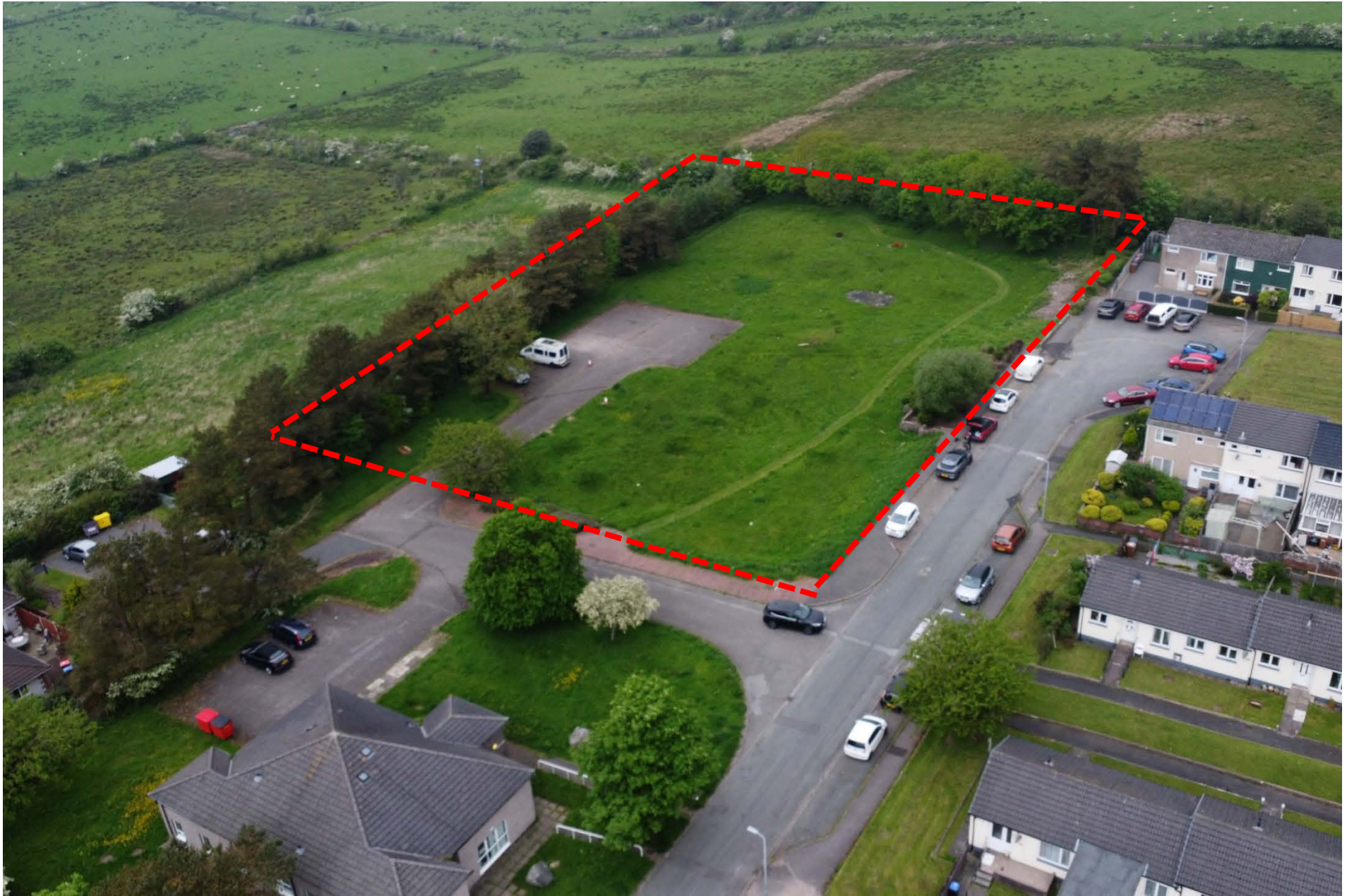


Figure 5b- Panoramic view of the site (looking north-west)





Figure 5c- *Panoramic view of the site (looking south-east)*

Target Note	Description	Comment
TN1	Other Neutral Grassland	The majority of the site comprises an open area of ' <i>other neutral grassland</i> '- the site comprising the former landscaped grounds of Greenvale Court Care Home, which was demolished approximately 15 years ago. Graminoids include Timothy-grass ( <i>Phleum pratense</i> ), False oat grass ( <i>Arrhenatherum elatius</i> ), Cocksfoot ( <i>Dactylis glomerata</i> ), Sweet Vernal Grass ( <i>Anthoxanthum odoratum</i> ), Crested Dog's-Tail ( <i>Cynosurus cristatus</i> ), Rough-stalked Meadow Grass ( <i>Poa trivialis</i> ) and Meadow foxtail ( <i>Alopecurus pratensis</i> ). The sward height of this habitat parcel ranges from approximately 2-3cm to 40cm. Other species include Red Clover ( <i>Trifolium pratense</i> ), Bush vetch ( <i>Vicia sepium</i> ), Greater Birds-foot-trefoil ( <i>Lotus pedunculatus</i> ), Small flower hairy willowherb ( <i>Epilobium parviflorum</i> ), Gardens lady mantle ( <i>Alchemilla mollis</i> ), Common Vervain ( <i>Verbena officinalis</i> ), Bitter Fleabane ( <i>Erigeron acer</i> ), Meadow Buttercup ( <i>Ranunculus acris</i> ), Ribwort Plantain ( <i>Plantago lanceolata</i> ) and Common birds-foot-trefoil ( <i>Lotus corniculatus</i> ). The grassland is indicative of some improvement, given the presence of Perennial Ryegrass ( <i>Lolium perenne</i> ), Annual Meadow Grass ( <i>Poa annua</i> ), White Clover ( <i>Trifolium repens</i> L.) and Creeping Buttercup ( <i>Ranunculus repens</i> ). Patches of tall ruderal species are also interspersed throughout the site, including Ragwort ( <i>Senecio jacobaea</i> ), Hogweed ( <i>Heracleum sphondylium</i> ), Plantain ( <i>Plantago major</i> ), Nettle ( <i>Urtica dioica</i> ), Dandelion ( <i>Taraxacum officinale</i> ) and Broad-leaved Dock ( <i>Rumex obtusifolius</i> ). Stands of Soft Rush ( <i>Juncus effusus</i> ) and Yellow flag ( <i>Iris pseudacorus</i> ) frequent damper hollows within the sward.
TN2	Path	A pathway has been mown/trampled into the grass, which traverses the perimeter of the site. Dog walkers were seen utilising the path during the survey.
TN3	Ornamental Garden Shrubs	Being within the landscaped gardens of a former care home, some of the site consists of ornamental garden shrubs, as seen in the east of the site adjacent the path. Species include Honeysuckle ( <i>Lonicera periclymenum</i> ), Japanese Barberry ( <i>Berberis thunbergii</i> <i>Ranunculales</i> ) and Pampas Grass ( <i>Cortaderia Selloana</i> ), with a small area of scrubby Hawthorn ( <i>Crataegus monogyna</i> ), Bramble ( <i>Rubus fruticosus</i> agg), Goat Willow ( <i>Salix caprea</i> ) and Elderberry ( <i>Sambucus nigra</i> ). A Willow ( <i>Salix</i> sp.) tree oversails an area of the ornamental shrub in the east of the site.



TN4	Field Margins	Montbretia ( <i>Crocsmia x crocosmiiflora</i> )- an invasive non-native plant, was recorded along the north-eastern field margins of the site during the walkover in September 2022.
TN5	Mixed Woodland	Three small Scots Pine ( <i>Pinus sylvestris</i> ) are present in the very north-east of the site on top of the banking. The remaining trees along the northern boundary consist of a mix of Hornbeam ( <i>Carpinus betulus</i> ), Beech ( <i>Fagus sylvatica</i> ), Ash ( <i>Fraxinus excelsior</i> )- which is suffering from dieback in many places- Holly ( <i>Ilex aquifolium</i> ), Oak ( <i>Quercus Sp</i> ) and Common Sallow ( <i>Salix x reichardtii</i> ), an understorey of Hawthorn, Rowan ( <i>Sorbus aucuparia</i> ) and Holly. The groundflora consists of mostly Fern ( <i>Polypodiopsida sp.</i> ) and Bramble ( <i>Rubus fruticosus agg</i> ), although notable groundflora includes Ramsons ( <i>Allium ursinum</i> ), Lords and ladies ( <i>Arum maculatum</i> ), Hybrid Bluebell ( <i>Hyacinthoides x massartiana</i> ), Pendulous Sedge ( <i>Carex pendula</i> ) and Greater Wood-rush ( <i>Luzula sylvatica</i> ).
TN6	Mixed Woodland	Along the western boundary of the site is a narrow, linear treeline, comprised of a diverse mix of smaller trees. Species include Pussy Willow ( <i>Salix caprea</i> ), Hawthorn, Elderberry ( <i>Sambucus nigra</i> ), Beech, Oak, Ash, Sycamore ( <i>Acer pseudoplatanus</i> ) and mature Scots Pine ( <i>Pinus sylvestris</i> ).
TN7	Hardstanding	A hardstanding area/driveway is present in the south-west of the site.
TN8	Cherry Tree	A Bird Cherry ( <i>Prunus padus</i> ) tree is set within a small planting bed in the south of the site, bordered by European Cinquefoil ( <i>Potentilla reptans</i> ) and St John's Wort ( <i>Hypericum perforatum</i> ).
Table 1 Details of Target Notes.		



- Red Line Boundary
- Target Notes
- Trees
- g3c Other Neutral Grassland
- h3h Mixed Scrub
- u1b Developed Land  
Sealed surface
- W1h5 other woodland- mixed  
(mainly broadleaved)

Figure 6  
UK Habitats Survey  
Map





### 2022 site survey

Looking over the central area of the site (facing north).



The south-eastern field margin, adjacent the footpath.



Ornamental garden vegetation in the east of the site.





Montbretia (*Crocosmia x crocosmiiflora*) was previously interspersed throughout the north-east area of the site, grading into bramble scrub and woodland ground flora adjacent.



The belt of mixed woodland bounding the north of the site.





In September 2022, ground flora beneath the northern belt of woodland primarily comprised Ferns (*Polypodiopsida sp.*), Bramble (*Rubus fruticosus agg*) and French Cranes Bill.



The average sward height in the west of the site in 2022 was slightly shorter and interspersed with a higher density of Broad-leaved Dock (*Rumex obtusifolius*).



The hardstanding driveway area in the south-west of the site.



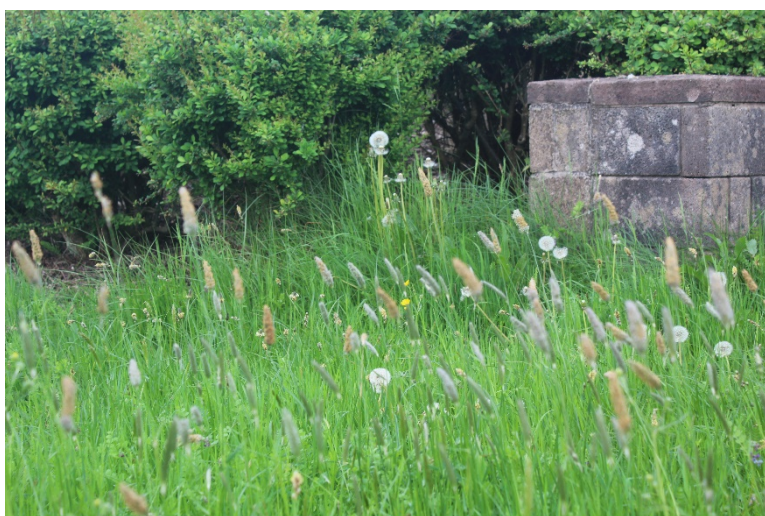


The Bird Cherry tree adjacent the driveway.



### 2024 Site Survey

The site continues to be dominated by an assemblage of neutral grasses.



The sward height is varied, ranging from 2-3 to 40cm.





Frequently occurring herbaceous flowering plants include Ribwort Plantain, Buttercup sp, Red Clover, White Clover, Common birds-foot-trefoil and Bush Vetch.



The belt of mixed woodland to the north of the site.

The access track is frequented by dog walkers and members of the general public.



Looking east within the northern belt of woodland.



The woodland extends as a narrow belt of trees, widening to its south-eastern extent adjacent the area of hardstanding.

**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.
- 6.2.2 The '*other neutral grassland*' possesses a moderate species diversity and ecological value, comprising a good mix of mesotrophic graminoids and flowering herbaceous plants. This habitat is commonly reflected along railway embankments, unmanaged road verges and unkempt pastures. This habitat however is not associated with any especially rare/endangered flora and is not a Habitat of Priority Importance (HPI).
- 6.2.3 No hedgerows are present on site, the northern and western edges of the site bounded by a narrow belt of mixed woodland.
- 6.2.4 Being set within the former landscaped grounds of a care home, a proportion of the field boundaries contain ornamental shrubs and garden escapees.
- 6.2.5 There is no evidence of Japanese knotweed, giant hogweed or Himalayan balsam on the site. Montbretia (*Crocsmia x crocosmiiflora*) is however present in the north-east area of the site, interspersed amongst the semi-improved neutral grassland and the scrub adjacent. Montbretia is an invasive, non-native plant, listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended). It is an illegal offence to plant or cause to grow this species in the wild.

## **6.3 Amphibian**

- 6.3.1 There are records for amphibians within 2km of the site, the nearest amphibian record being a Common Toad (*Bufo bufo*) 2.3km east of the site.
- 6.3.2 There are no known great crested newt records within 2km of the site.
- 6.3.3 The core development area has a low to moderate value to amphibians, being partly composed of hardstanding and short, trampled grass. However, the tussocky grass and boundary scrub/shrub could all be utilised as refuges and/or hibernacula.
- 6.3.4 There are no breeding ponds in proximity to the site, the nearest pond being 800m south-east of the site and isolated by a series of single carriageway roads.
- 6.3.5 Structural diversity at ground level across the site is moderate, the sward height of the neutral grassland ranging from 2-3cm to 40cm. There are no areas within the central area of the site that contain log, rubble piles or compost heaps which would be particularly favourable to amphibians.
- 6.3.6 The boundaries of the site do however contain small piles of deadwood, dense scrub and ornamental shrub, the base of which is covered with wood chipping, providing damp burrowing material.
- 6.3.7 Amphibians would be unlikely to attempt to cross the central area of the site as it comprises an area that is mostly open and somewhat disturbed by human activity (such as

turning cars in the hardstanding area). Whilst not a physical barrier to the dispersal of amphibians, the site is regarded as being a potentially hostile environment to them.

- 6.3.8 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. Boundary areas which may provide foraging or refuge sites, are to be retained as part of the site's landscaping plan.

## **6.4 Badger**

- 6.4.1 There are two records of badgers occur within 2km of the site. Both these records occur approximately 1500m north-west 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. There are no runs cutting across or between the mown/trampled path already onsite.
- 6.4.3 The proposed development will not impact 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 six records of two species of bat within 2km of the site.
- 6.5.2 The foraging habitat over the neutral grassland itself is of a limited quality to bats given its open and exposed characteristics.
- 6.5.3 The site boundaries to the north and west do however offer suitable foraging and commuting routes. The treelines are prominent and structurally diverse, helping connect the site to other green corridors, such as the double hedgerow to the north-west, linking the site to Lingla Beck.
- 6.5.4 Some of the ornamental garden shrubs such as Honeysuckle (*Lonicera periclymenum*) may also attract bats to the fringes of the site, given their night scented characteristics. These habitat areas are in close proximity to housing estate adjacent and so may only attract the most light-resistant species of bat such as Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*).
- 6.5.5 It is not considered there would be significant degradation of suitable foraging habitat onsite as a result of the proposal, so long as the trees and other shrubs are retained and/or their loss is compensated for in any landscaping scheme.
- 6.5.6 All trees to be potentially removed (T1, T3 and potentially T2) were assessed in accordance with Collins ed. (2016) and assigned a risk category. Each of these trees were category 2 (low) or category 3 (negligible) risk (Figure 8). No indications of roosting or highly suitable roost sites were located within the trees. 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 7.

6.5.7 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 in any of the trees to be removed onsite.

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 <sup>3</sup> 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 than 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 7 Tree risk categories from Hundt (2012).

## 6.6 **Birds**

- 6.6.1 There are 837 records of birds within 2km of the site.
- 6.6.2 The trees along the northern and western boundaries of the site offer suitable habitat for feeding and nesting birds. The neutral grassland has a low potential for use by nesting birds, although opportunistic ground foraging birds such as Blackbird (*Turdus merula*), Robin (*Erithacus rubecula*) and Song Thrush (*Turdus philomelos*) may utilise the tallest elements of the sward where an undergrowth is developing.
- 6.6.3 The site is likely frequented by common garden birds and those indicative of urban and farmland fringes such as Chaffinch (*Fringilla Coelebs*), House Sparrow (*Passer domesticus*), Dunnock (*Prunella modularis*) and Blue tit (*Cyanistes Caeruleus*), with records identified within the local area.
- 6.6.4 There were no rot holes or cracks in the trees within the site boundary which would support tree hole nesting species such as woodpeckers.
- 6.6.5 A risk assessment of the site in respect of its future potential for and value to nesting birds could be adequately made.
- 6.6.6 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.
- 6.6.7 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.

## 6.7 **Otter**

- 6.7.1 There are three records of otters within 2km of the site. The nearest of these records is 1400m to the north.
- 6.7.2 No indication of the presence or past use of the site by otter was found. There are no waterbodies in proximity to the site which would be attractive to Amphibians- the nearest freshwater pond is 800m to the south-east with inundated drainage ditches also absent onsite. This species is considered as being absent from the site.
- 6.7.3 No indication of the presence or past use of the site by otters was found.
- 6.7.4 Whilst the site may provide occasional foraging and refuge opportunities, with lunk holes providing otters with dispersal routes through the local landscape, this species is considered absent from the site and is unlikely to be significantly impacted by site development.

## 6.8 **Reptiles**

- 6.8.1 There is a single reptile record within 2km of the site. This relates to a Slow Worm (*Anguis fragilis*) record approximately 1500m west of the site.

- 6.8.2 No indication of reptiles was recorded at the site.
- 6.8.3 The majority of the site has a low value to reptiles. Whilst the neutral grassland possesses a tall sward height and is cover rich, there is a poor mosaic of secondary habitats at ground-level. These include semi-shaded pockets of bare ground, thick undergrowth, encroaching scrub, heath and well-drained south facing banks. Habitat piles, deadwood and brash are also absent.
- 6.8.4 Given the surrounding land use type and degree of access/disturbance, the core development area is not considered to be of any significance for reptiles.
- 6.8.5 Reptiles may occur along the boundary of the site, providing linkages across the local landscape.
- 6.8.6 No specific mitigation for these species is considered necessary.

## **6.9 *Statutory and Non-Statutory Sites***

### Direct Impacts:

- 6.9.1 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.
- 6.9.2 The habitats on site do not represent or are linked to those found in any of the statutory or non-statutory sites locally.

### Indirect Impacts:

- 6.9.3 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 on the site and its boundaries should be adequately protected during work in accordance with industry standards. All trees and scrub should as far as possible be retained in the scheme, other than those highlighted in the tree survey as being unsuitable for retention in the development proposal.
- 7.1.2 All trees to be removed from the site (T1, T3 and potentially T2) should be compensated for via the planting of (at least) an identical number of trees. We recommend planting either identical trees or a native mix of broad-leaved species. These could include (but are not restricted to) the use English Oak (*Quercus robur*), Beech (*Fagus sylvatica*), Alder (*Alnus glutinosa*), Hazel (*Corylus avellana*), Field maple (*Acer campestre*), Silver Birch (*Betula pendula*) and Downy Birch (*Betula pubescens*).
- 7.1.3 The use of smaller 'garden' trees bearing attractive flowers, seed and fruit such as Rowan (*Sorbus aucuparia*), Cherry, Damson (*Prunus domestica*) and Apple (*Malus x domestica*) may be more ideal/appropriate in some of the more space-confined areas of the site.
- 7.1.4 The belt of woodland bounding the northern and western extent of the site should be retained post development. Where possible, pockets of existing neutral grassland could be retained in areas of public open space or along verge areas.
- 7.1.5 The landscaping scheme should utilise plants which are native and wildlife friendly. In particular night flowering species would be beneficial to bats. Wildflower seed could be used to plant verges to enhance the ecological value of the site and continuity between the site and the wider area.
- 7.1.6 Montbretia (*Crocasmia x crocosmiiflora*) is a non-native, invasive ornamental garden plant, listed on Schedule 9 (Section 14) of the Wildlife and Countryside Act (1981) (as amended). This species outcompetes native plants, spreading rapidly via corms and long creeping rhizomes. It is a criminal offence to plant or permit this species to grow in the wild. However, it is not an offence to have this species on private land. Control methods are as follows: -
- Plants can be physically excavated but it is essential that all plant material- including corms and the surrounding soil- are removed. If the corms are broken or left in-situ, then the infected soils will continue to repopulate with this plant. All excavated material should be removed from site and be disposed of as controlled waste at a licensed landfill. Removal should occur before full flowering occurs in Summer.
  - Infestations can also be controlled via herbicide treatment. Complete eradication however may take a number of years, requiring multiple visits.
  - Care should be taken not to further spread this species through the site and adjacent land- whether this is as a result of its removal or inadvertently during proposed works. Small fragments of the plant can be spread unintentionally via shoes, clothes and agricultural/construction equipment.

## **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 Consider the use of SUDS on site to provide new aquatic habitat during development. Such areas would be best placed in public open space where connectivity to the site boundaries and wider area is improved, such as in the south-west of the development site.
- 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 overnight 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 are known to 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. The new planting of night-scented flowers could also be considered. Species such as Cherry pie (*Heliotropium arborescens*), Evening primrose (*Oenothera biennis*), Honeysuckle (*Lonicera periclymenum*) and White jasmine (*Jasminum officinale*) could be planted in the garden area of the property, providing bats with additional foraging opportunities by attracting night-flying insects to the site.
- 7.4.2 New roosting provision for crevice dwelling bats could be incorporated into the buildings on site. For example, bat access slates, bat bricks or gaps along the wall tops under the eaves should be considered. Alternatively, bat boxes could be installed under the eaves on the Southern elevation of buildings (where the number of daylight hours is greatest), or on the trunks of the larger Oak, Beech or Scots Pine trees to the site boundaries. Bat boxes should not be installed above windows or in areas which are subject to light spill.
- 7.4.3 A sensitive light scheme should be considered for the site, so as not to deter bats from commuting/feeding along the boundaries of the site. For example: -
- Passive infrared sensors could be used on security lighting, which can then be activated for safety purposes only.
  - Consider the use of LED luminaires, which shine with a lower intensity and higher dimming capability.
  - Utilise shades of warm white (which appear more yellow/orange in appearance) over cold white light. Cold white light contains a greater degree of blue light, which attracts insects that then cannot be preyed upon by bats (which are hypersensitive to these wavelengths of light).
  - Low level illuminated lights/signs will significantly reduce the amount of upward light spill, in addition to light spill onto boundary features, such as trees and hedges.
- 7.4.4 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 core development area is considered unlikely. Birds may however nest along the periphery of the site, such as along the field margins and within the trees and scrub onsite.
- 7.5.2 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.
- 7.5.3 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.
- 7.5.4 Artificial bird nesting sites for swallow, swifts and/or house martins could be incorporated into the new buildings under the eaves in suitable locations.
- 7.5.5 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 Otter**

- 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 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.
- 7.6.2 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.

## **7.7 Reptiles**

- 7.7.1 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.
- 7.7.2 Dense scrub and woodland on the edge of the development site should be retained such that it is in proximity to open areas of ground which will also be suitable for basking.
- 7.7.3 The points in respect of not leaving open trenches without means of escape detailed for badgers are also applicable to these species.

## 8. REFERENCES

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