



Preliminary Ecological Appraisal

- Land at: Pendle Avenue, Bacup, Rossendale, OL13 9DW -

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A report for

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PART 1 INTRODUCTION:

1.1 REASONS FOR SURVEY:

PENNINE Ecological have been commissioned to undertake a Preliminary Ecological Appraisal and protected species survey / assessment of Land at: Pendle Avenue, Bacup.

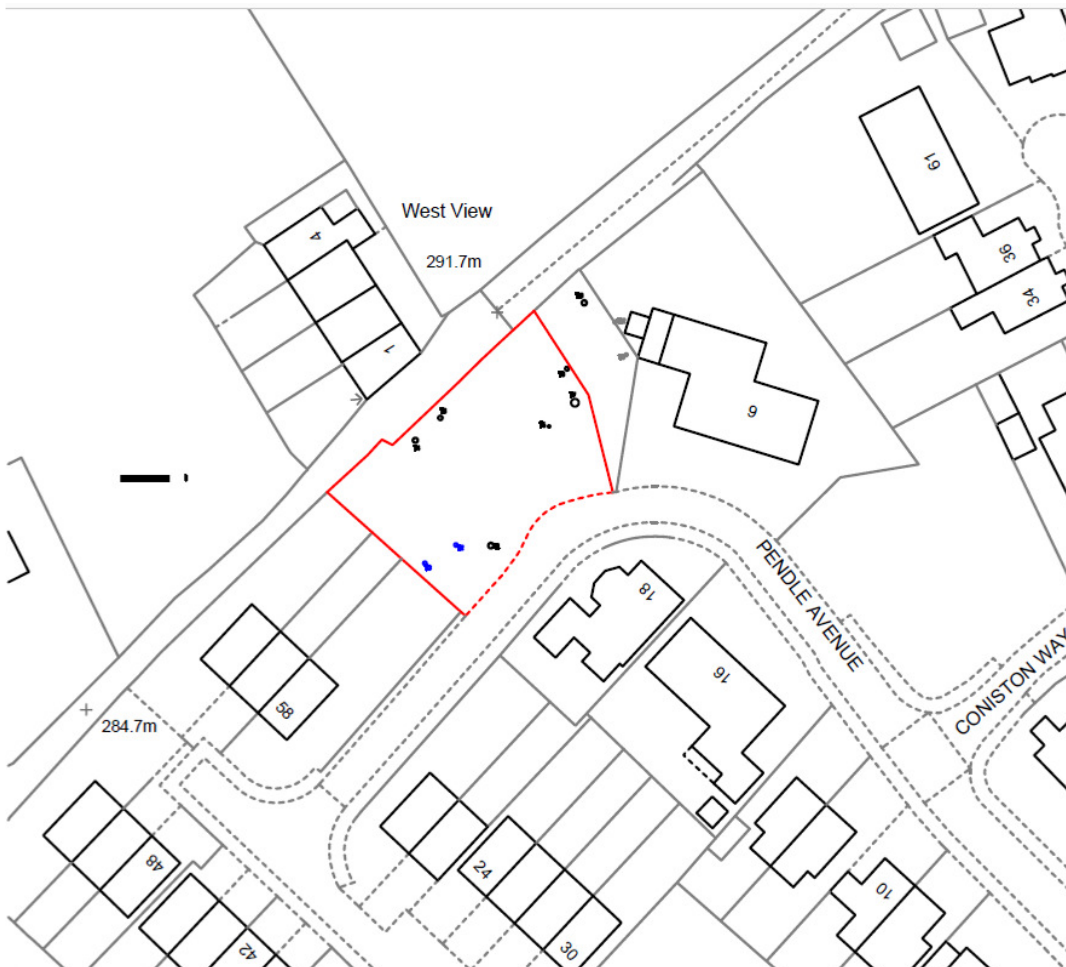
The study includes a desk top study of the governments Magic data base, vegetation survey, preliminary bat roost assessment and badger survey together with assessment for other potential protected species issues.

The report includes a full evaluation of the ecological significance of the survey findings. The surveys are required due to proposals for residential development of the site.

1.2 SITE LOCATION:

The site is located within a sub-urban residential area of new developments on the northern edge of Bacup, approximately 550m north/north east of the town centre. The site forms a sloping area of ground on a corner plot between existing residential development. The sites central National Grid Reference is NGR: SD 8703 2354

The site is shown below, outlined in red.



An aerial photograph of the site is shown below;



1.3 SITE STATUS:

A desk top study was not undertaken for non-statutory sites or data. Searches for statutory data were undertaken as outlined below.

1.3.1 Statutory Sites:

Details of statutory sites were sought from the Natural England web site search:

<http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>

There are no statutory designated sites within 500m of the site.

Site of Special Scientific Interest (SSSI) Impact Risk Zones (IRZ's):

The site falls within a distant SSSI Impact Risk Zones (IRZ's) associated with the South Pennine Moors SSSI which is approximately 6.5km to the east of the site. However the nature / size and scale of the development does not require notification to Natural England.

1.3.2 Non-Statutory Sites:

There are no known County Biological Heritage Site (*BHS*) within 500m of the sites boundaries, however this would require verification from a desk top survey with Lancashire Environment Record Network.

1.3.3 Protected Species / Habitat Data:

Section 41 Habitats of Principal Importance in England (NERC) Act 2006;

There are no Section 41 Habitats of Principal Importance in England (NERC) Act 2006 or Lancashire Biodiversity Action Plan Habitats associated with the site.

Section 41 Species of Principal Importance in England (NERC) Act 2006;

There were no Section 41 species recorded during the survey.

1.4 SURVEY CONSTRAINTS:

The site survey was conducted on 01/03/23, which is a sub-optimal time for Extended Phase 1 Habitat Survey and protected species survey / assessment. However given the nature of the habitats on site (poor semi-improved grassland types) this is not considered to be a significant constraint, albeit some plant species will have been absent due to seasonal dieback. All the habitats within the survey area have been defined / classified accurately and sufficiently assessed. All parts of the site were accessible.

PART 2 SURVEY RESULTS:

2.1 EXTENDED PHASE 1 HABITAT SURVEY:

2.1.1 Extended Phase 1 Habitat Survey Methodology:

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of the study area was undertaken on 1st March 2023. The site's habitats were mapped and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

D	=	Dominant
A	=	Abundant
F	=	Frequent
O	=	Occasional
R	=	Rare

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

2.1.2 Habitats Present:

- A3.1 Scattered broad-leaved trees / saplings
- B6 /C3.1 Poor semi-improved grassland / Tall ruderal herb mosaic
- J1.4 Introduced shrub
- J2.4 Fence
- J2.5 Wall
- J3.6 Buildings
- J4 Bare ground

2.1.3 General Description:

This small site has maximum dimensions of approximately 30m x 20m forming a plot of land between recent residential development. The site supports five mature sycamore and one mature beech tree along with several sapling beech and sycamore. There are scattered small stands of introduced shrub on the sites frontage with Pendle Avenue. The remainder of the site is dominated by a mosaic of rank unmanaged poor semi-improved grassland and colonising tall ruderal herbs.

Several informal paths are present with bare earth exposed.

On the sites north western boundary a small fenced off area is present used for storing building materials.

The sites south western boundary is fenced.

The north western boundary is defined by a dry stone wall with a missing section / gap at the southern end.

All other boundaries are open.

It is relevant / useful to understand the recent origins of the land. Imagery from Google Earth Street View taken in March 2009 shows the site originating from mown amenity grassland management beneath the scattered trees. Soon after this date it would appear that mowing management ceased. This has allowed the development of coarse tussocky rank grassland and allowed natural colonisation of tall ruderal species such as common nettle and curled dock. In addition some scattered non-native introduced shrubs have been planted along with what appear to be several clumps of the non-native Spanish bluebell at the base of several of the mature trees.

Google Earth Street View images from March 2009.



2.1.4 Target Notes:

Target Note 1: Whole Site / All Habitats:

The site is relatively homogenous and small therefore a species list was recorded from the whole site. The following species were recorded;

<u>Species:</u>	<u>Abundance:</u>
Reed canary-grass	VLA
Cock's-foot	A
Yorkshire-fog	A
Dandelion species	F
Creeping buttercup	F
Curled dock	LF
Red fescue	LF
Common nettle	LF
Non-native shrub species	VLF
Spanish bluebell	VLF
Common sorrel	O
Sycamore	O
Annual meadow-grass	O
Bent species	O
Beech	O/R
Tufted hair-grass	R

Target Note 2: Dead tree stump:

A dead standing tree stump has two holes at around 3m above ground level. One hole is on the north east elevation, whilst the other hole is on the southern elevation. The holes have bat roost potential (see section 2.2.2).

2.2 PROTECTED SPECIES SURVEYS:

During the Phase 1 Habitat Survey additional surveys were undertaken where appropriate for the presence of other potential protected species. The following surveys were undertaken.

2.2.1 Badger Survey:

Method:

A badger survey was undertaken of the site. The badger survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines
- Foraging areas
- Scratching posts
- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Results:

Sett Search:

The survey found no setts on site.

Search for Foraging Signs and Pathways:

The site was thoroughly searched for badger pathways and signs of foraging. No sign of badger activity was found therefore it can be concluded that the species is not using this area for foraging or commuting.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines. The search found no evidence to suggest badger activity along any of the site boundaries.

The absence of any activity signs indicates that badgers are not entering the site. The absence of latrines indicates a lack of territorial activity in the near vicinity of the site.

2.2.2 Bats:

During the survey an assessment of bat roost potential and foraging habitats was undertaken.

All trees on site were assessed for features offering potential for bat roosts.

There is a dead standing tree stump (Target Note 2) which has two holes at around 3m above ground level. One hole is on the north east elevation, whilst the other hole is on the southern elevation. The holes have low to moderate bat roost potential.

There are no other trees or structures on site that offer potential for roosting bats.

The site is located on the edge of open countryside which extends immediately to the north of the site. This includes, open pasture, intermittent hedgerows, dry stone walls, waterbodies and stream corridors all of which offer moderate - high quality foraging habitat for bats. Suitable bat foraging habitats are also present to the south of the site, including open spaces within residential areas and gardens.

2.2.4 Other Protected Species:

Issues in relation to other potential protected species where no specific survey was undertaken are assessed in the following section.

PART 3 ECOLOGICAL EVALUATION & RECOMMENDATIONS:

3.1 EVALUATION OF SURVEY & RECOMMENDATIONS:

The following section evaluates the site in relation to statutory/non-statutory sites, protected species and species/habitats listed on the former UK Biodiversity Action Plan Priority List, Section 41 Species/Habitats of Principal Importance in England (NERC) Act 2006, and Greater Manchester Biodiversity Habitats.

3.1.1 Statutory Sites:

There are no statutory wildlife sites associated with the site or within 1km of the site.

3.1.2 Non-statutory Sites:

There are no known County Biological Heritage Site (*BHS*) within 500m of the sites boundaries, however this would require verification from a desk top survey with Lancashire Environment Record Network.

3.1.3 Sites Habitats & Higher Plant Species:

There are no Section 41 Habitats of Principal Importance in England (NERC) Act 2006 affected by the proposed work. Plant species recorded on site are common and widespread and are considered to be of site value only.

The habitats on site are of low distinctiveness and in poor condition (Natural England, 2022). The only habitats to be lost will be small areas of poor semi-improved grassland / tall ruderal herb mosaic and introduced shrub.

Recommendations: Habitats:

Habitats of 'low' distinctiveness or above would require appropriate compensation to ensure an overall biodiversity net gain is achieved from the development (Panks et al., 2022).

The habitats present at this site are very small in area and of low distinctiveness / artificial. However in the interests of biodiversity enhancement several measures have been recommended.

The proposals include planting native boundary hedgerows with four new native trees (light standards) and extensive native woodland bulb planting. These features will ensure a measurable net gain in habitat biodiversity from the existing site conditions.

In addition, extensive permanent provision for bats and birds will be incorporated into the scheme design (see following sections below) which will contribute to an overall net gain.

Overall the proposals are considered to provide a notable net gain in biodiversity. A comprehensive biodiversity net gain Defra Metric Version 3.1 assessment is not considered necessary for this proposal due to the small site area and the baseline habitats comprising of low distinctiveness habitats. However in line with planning policy and biodiversity enhancement the proposed scheme design includes creation of new semi-natural habitats and protected species provision.

Recommendations: Habitats & Higher Plant Species:

There are no requirements for further surveys.

Habitat Creation / Enhancement:

A new native hedgerow will be planted along the SW / NW and NE site boundaries. The total length of new hedgerows is approximately 80m. The hedgerows will be double row, staggered planted, at a density of 1m centers. The hedge will also include (in addition to the below) 2 no. Rowan (*Sorbus aucuparia*) and 2 no. Crab apple (*Malus sylvestris*), these trees will be planted as Light Standards. Recommended hedge species composition is as follows;

<u>Species:</u>	<u>Proportions:</u>
Hawthorn (<i>Crataegus monogyna</i>)	50%
Crab apple (<i>Malus sylvestris</i>)	20%
Guelder-rose (<i>Viburnum opulus</i>)	10%
Hazel (<i>Corylus avellana</i>)	10%
Dog rose (<i>Rosa canina</i>)	5%
Holly (<i>Ilex aquifolium</i>)	5%

Native woodland bulb planting:

At the bases of the new hedgerows swathes of native woodland bulbs will be planted. The total planting area will be approximately 250m².

The following species are recommended. The bulbs should be planted in random solid blocks of the same species with approximately 50 – 100 bulbs in each block / swathe. Intermixing of different species of bulbs in the same block must be avoided.

Woodland bulbs:

<u>Species:</u>	<u>No. of bulbs:</u>	<u>No. of bulbs in each block:</u>
Bluebell (<i>Hyacinthoides non-scripta</i>)	1000	50 – 100
Wood anemone (<i>Anemone nemorosa</i>)	1000	50 – 100
Ramsons (<i>Allium ursinum</i>)	500	50 – 100
Lesser Celandine (<i>Ranunculus ficaria</i>)	500	50 – 100

Native bulbs are available from many suppliers including Nature Scape; <https://www.naturescape.co.uk/>

See Appendix 2, Figure 1, for locations of new habitats and biodiversity enhancements.

3.1.3 Protected Species:

Badgers:

Badgers are protected under Schedule 6 of the Wildlife and Countryside Act 1981, and under the Protection of Badgers Act 1992, which prohibits deliberate interference with the animal or its sett.

The survey found no evidence of historic, recent or current use of the site by badgers for foraging, commuting or occupation and the species is considered to be absent.

Recommendations: Badgers:

There are no issues in relation to badgers arising from the development. No further surveys are required.

Bats:

Bats are comprehensively protected by European legislation.

A dead standing tree stump (Target Note 2) / T3 of the tree report, has two holes at around 3m above ground level. The holes have low to moderate bat roost potential.

Recommendations: Bats:

It is proposed that Target Note 2 / T3 of the tree report with bat roost potential is to be removed this will need to be inspected by a licensed bat handler using torch and endoscope aided by a tree climber. Further recommendations would be made following these inspections, if applicable.

Illumination of the sites boundaries and trees with artificial bat roosts installed must be avoided. Where lighting is required this must be low level, directed downwards / internally within the site away from the boundaries / artificially installed roosts and of low intensity. The following principles will apply;

- Where and if lighting is required this will be directed internally within the site avoiding spillage towards the boundaries / artificial roosts.
- The use of low powered sodium lights or similar will be used and these will be fitted with cowls / covers that prevent lateral light spillage towards the boundaries / artificial roosts.
- Wherever possible and only if required low level (1-1.5m high) bollard lighting will be used.
- If required lights will be fitted with timer controls that minimise the duration of lighting.

Lighting requirements will follow guidance provided by the Bat Conservation Trust.

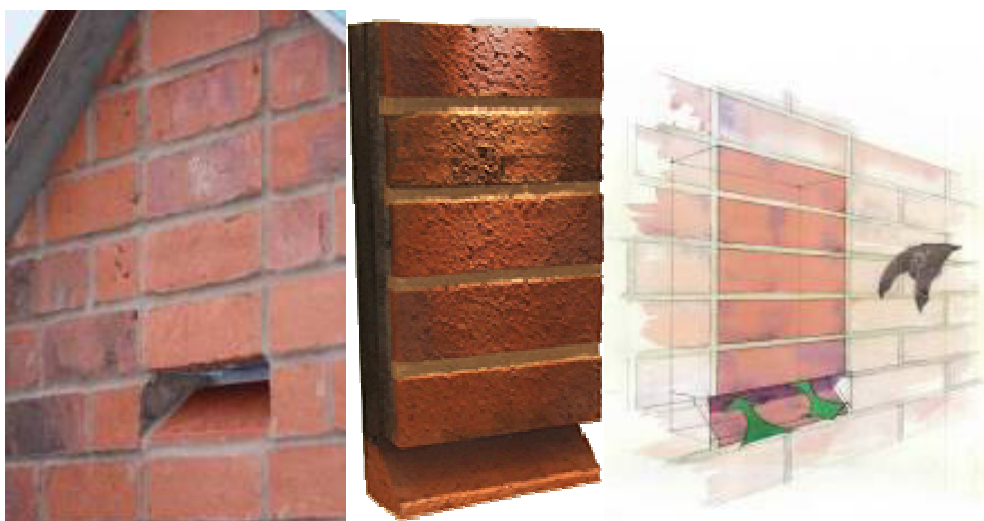
<https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

Enhancement for bats:

Integrated artificial bat roosts:

It is recommended that **two** integrated artificial roosts are provided within the new property as shown on Figure 1, Appendix 2. Full instructions in relation to installation and positioning are provided via the link below.

In particular, the Habibat Bat Box is recommended and is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings.



<https://www.wildcare.co.uk/wildlife-nest-boxes/bat-boxes/wall-integrated.html>

Provision of bat boxes on trees:

It is recommended that **three** bat boxes on trees are provided. **One Mirimare Bat Box and two Eco Kent Bat Boxes will be erected.** The locations of these bat boxes are shown in Appendix 2, Figure 1 at the end of this report.

Eco Kent Bat Boxes:

Suitable boxes include the Eco Kent Bat Box. Two of these will be installed as shown on Appendix 2, Figure 1.



Information regarding installation of these boxes is provided here; <https://www.wildcare.co.uk/10691-eco-kent-bat-box.html>

Mirimare Bat Boxes:

One Mirimare bat box will be installed on the southern elevation of an existing sycamore tree within the site as shown in Appendix 2, Figure 1.



The Mirimare bat box is designed to reproduce a natural roost site in a hollow tree and has 4 internal roosting compartments and 3 grooved wooden panels inside to accommodate a large number of bats. It is painted black to absorb the heat of the sun and provide the warmth that the bats need.

See Appendix 2, Figure 1 for the locations of integrated bat roosts and boxes.

Great Crested Newt:

Great crested newt (GCN) is comprehensively protected under European legislation.

There are no ponds or suitable waterbodies within the species terrestrial range of the site.

Recommendations: Great Crested Newt;

There are no issues in respect of great crested newts. The species is considered absent from the site beyond reasonable doubt. No further action is required.

Birds:

All birds are offered various levels of protection under the Wildlife and Countryside Act (1981) as amended.

The trees (including the dead stump, Target Note 2) and introduced shrubs on site are the only habitats that have potential to support breeding birds.

Recommendations: Birds;

No further surveys are required.

If the above features are affected then before any development and in order to minimize impacts on birds any site disturbance including any removal of these features should take place outside of the breeding season, i.e. between September 1st and February 28th. Following the felling of trees/scrub/shrubs, piles of brush should be removed from the site, failure to do so could provide potential nest sites if left in situ until the following breeding season.

If removal of the above features is envisaged during the breeding season (*March 1st to August 31st*), then checks should be made to establish any nesting or breeding activity, prior to removal.

Enhancing the site for Birds:

Integrated bird boxes within the new building;

One integrated double chamber house sparrow nest box (Vivara Pro) will be installed on the upper NE elevation of the new property, see Appendix 2, Figure 1.

The following box is recommended;

House sparrow nest box (Vivara Pro), Double chamber:

House sparrows (*Passer domesticus*) are sociable opportunists that survive in most UK habitats, from towns and cities to farmland and countryside. Substantial declines in both urban and rural populations (estimated 71% decrease between 1977 and 2008) have led to concerns for this species.

This House Sparrow Nest Box is manufactured from WoodStone - a mix of concrete and FSC wood fibres. This material is strong and highly insulating which helps to provide a thermally stable environment within the box. It also protects against damage from predators such as cats, woodpeckers and squirrels. The two breeding chamber version is particularly suitable for house sparrows as they prefer to nest in colonies.

The House Sparrow Nest Box will be integrated into the wall of the new property on the NE elevation at upper floor level.



These are available here, or, from other suppliers; <https://www.nhbs.com/vivara-pro-woodstone-house-sparrow-nest-box>

Bird Boxes suitable for the semi-mature / mature trees;

Three bird boxes will be installed on existing sycamore and beech trees, see Appendix 2, Fig. 1. All bird boxes should be at least 3m above ground level sheltered from prevailing wind, rain and strong sunlight. Ideally a north eastern aspect is recommended.

The following boxes are recommended;

Schwegler 1B Nest Box –The 1B nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes. The nest box can be attached to the tree or wall using an aluminium nail or by hanging over a branch and is made from Woodcrete to ensure that it lasts for decades. The front panel is removable for inspection and cleaning.

<https://www.nhbs.com/1b-schwegler-nest-box>



Vivara Pro Seville Woodstone Nest Box – These WoodStone boxes provide a well insulated interior with a more consistent internal temperature than an ordinary wooden box, and can be fixed at a height of 3 metres to both garden and woodland trees.

<https://www.nhbs.com/vivara-pro-seville-28mm-woodstone-nest-box>



PART 4 REFERENCES:

4.1 REFERENCES:

Nature Conservancy Council (1990) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*. Nature Conservancy Council.

Rose, F. (1981) *The Wildflower Key*. Warne.

Stace, C., (1997) *New Flora of the British Isles (Second edition)*. Cambridge University Press.

Web Sites:

Google Earth.

Natural England – Nature on the Map.

APPENDIX 1:

*Map 1: Extended Phase 1 Habitat Survey
(Separate file)*

Site Photographs

APPENDIX 2:

Figure 1: On Site Ecological Enhancement Measures

APPENDIX 1: SITE PHOTOGRAPHS: 1st March 2023



Looking north across the site from the road frontage. Showing T1 of the tree survey (sycamore) to be removed.



Looking NW into the site from the road frontage.



Looking NW along the sites SW boundary. Showing T3 of the tree survey (dead stump) to be removed.



Looking SW along the sites road frontage. Showing T1 of the tree survey (sycamore) to be removed.



NE site boundary (red line).



Looking south across the site from the northern corner.

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Looking SW along the sites NW boundary.



Looking north across the site south.



Looking SW along the sites NW boundary.



Looking north across the site south. Showing T3 of the tree survey (dead stump) to be removed.



Looking NE along the sites NW boundary.



SW part of the site viewed from the road frontage. Showing T1 of the tree survey (sycamore) to be removed.



Target Note 2: Dead tree stump with two holes providing low-moderate bat roost potential. T3 of the tree survey (dead stump) to be removed.



Looking SW along the sites road frontage. Showing T1 of the tree survey (sycamore) to be removed.



Target Note 2: Dead tree stump with two holes providing low-moderate bat roost potential. T3 of the tree survey (dead stump) to be removed.

APPENDIX 2: Figure 1: On Site Ecological Enhancement Measures



- Protected species survey & licensing
- Habitat survey
- Habitat creation & management
- Arboricultural survey & impact assessment
- Invasive species survey & control
- Management plans

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Key: On Site Ecological Enhancement Measures:

- New Native hedgerow (approx. 80m length). To include 2 No. Crab apple (*Malus sylvestris*) and 2 No. Rowan (*Sorbus aucuparia*).
- Native woodland bulb planting (3000 bulbs / 250m²).
- Habitat Integrated bat boxes x 2.
- Mirimare bat box x 1 on existing sycamore tree.
- Eco Kent bat boxes x 2 on existing sycamore trees.
- Integrated house sparrow nest box x 1.
- Bird boxes x 3 on existing sycamore / beech trees.

Refer to report for details / specifications.

