Land at Northcote Road, Langho, Ribble Valley, BB6 8BG

ECOLOGICAL SURVEY AND ASSESSMENT

April 2022

[ERAP (Consultant Ecologists) Ltd ref: 2022-019]

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Document Control

Survey Type:	**Surveyor**	**Survey Date(s)**
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Report issued to	Oak Tree Developments	
Version Number	1	

SUMMARY

Introduction and Scope

i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of land at Northcote Road, Langho, Ribble Valley, BB6 8BG. The assessment was requested in connection with proposals to develop the site to housing.

ii. This report presents the results of a desktop study, data search and extended Phase 1 Habitat Survey carried out in February 2022. The scope of survey undertaken is appropriate to identify potential ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the development proposals.

iii. The 0.42 hectare site comprises a field of improved grassland with an ornamental hedgerow at the western site boundary and an area of bare ground beneath Oak trees and a fenced area of poor semi-improved grassland, tall herbs and young trees at the north-eastern corner of the site. An area of plantation woodland is located beyond the north-eastern site boundary, and a row of mature trees is present beyond the eastern site boundary, adjacent to a road.

Results of Survey and Assessment

iv. The proposals will have no adverse effect on statutory or non-statutory designated sites for nature conservation.

v. Only common and widespread plant species were found. No habitats at the site are Priority Habitat and the site supports no habitats which are species-rich or semi-natural. In terms of each habitat's importance in a geographical context, the trees, shrubs and ornamental hedgerow are of 'site' value as they support habitats of value to nesting birds and foraging birds and bats, and will contribute as wildlife links across the site and wider area. The plantation woodland and trees adjacent to the site are of 'local' value for their suitability for nesting birds, foraging bats and birds and possibly roosting bats. The trees within and adjacent to the site will be retained and protected by the development and the ornamental hedgerow will be removed to create access. Recommendations for the protection of the trees and shrubs to be retained, and recommendations for compensatory hedgerow planting are presented at **Sections 5.2** and **5.6**.

vi. Rhododendron, an invasive plant species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is present adjacent to the eastern site boundary. Guidance to prevent the spread of invasive plant species at the site is presented at **Section 5.3**.

vii. Tree 17 supports features of 'moderate' suitability for use by roosting bats; Tree 17 will be retained by the development and provided the measures outlined for the protection of trees presented at **Section 5.2** are adhered to it is considered that no impacts to roosting bats will occur as a consequence of the proposed development. Recommendations for the retention and protection of suitable habitats for use by roosting, foraging and commuting bats is presented at **Section 5.4** and guidance to be followed to protect breeding birds is presented at **Section 5.5**. Ecological enhancements to provide opportunities for nesting birds, roosting bats and other wildlife, including maintaining habitat connectivity through the developed site, are recommended at **Sections 5.4** to **5.6**. No other protected species have been detected.

Recommendations

viii. The recommendations in **Section 5.0** outline all the mandatory measures and additional actions to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.

ix. The proposals will secure an opportunity to implement beneficial measures such as habitat creation that will safeguard habitats for wildlife such as birds and bats, with the aim of providing a net gain in biodiversity in accordance with the principles of the NPPF.

Conclusion

x. It is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. Development at the site will provide an opportunity to secure ecological enhancement for wildlife associated with residential development.

1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Oak Tree Developments to carry out an ecological assessment of land at Northcote Road, Langho, Ribble Valley (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 70742 34566. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).

1.1.2 The assessment was requested in connection with a planning application to develop the site to housing.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken in February 2022 comprised:

a. A desktop study and data search for known ecological information at the site and the local area;

b. An Extended Phase 1 Habitat Survey and assessment;

c. Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);

d. Survey and assessment of all habitats for relevant statutorily protected species[1] and other wildlife including badger (*Meles meles*), bird species and reptiles;

e. A preliminary assessment of the trees for their suitability for use by roosting bats;

f. The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and

g. The identification of any further surveys or precautionary actions that may be required prior to the commencement of any construction activities.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted:

a. MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. Lancashire Environment Record Network (LERN); and

c. Lancashire Biodiversity Action Plan (BAP).

[1] In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance, for example, no ponds are located within an unobstructed 500 metres to the site, and no watercourses are present within or adjacent to the site, therefore the need to survey for great crested newts, water vole or otter is not necessary.

2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Catie Haworth on 8th February 2022. The weather was largely dry with heavy, intermittent showers, a moderate breeze (Beaufort scale 4) and an air temperature of 11°C at 9am.

2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:1000 (refer to **Figure 2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.3 On site habitat mapping was assisted via use of GPS technology and QField on-site mapping software, using *Land off Northcote Road, Langho, Red-line Boundary Plan* (Aspinall Verdi Property Regeneration Consultants, n.d.) and ESRI World Imagery as base plans.

2.2.4 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.

2.2.5 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.

2.2.6 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales: fine scale (25m^2 or 5 metres length) and large scale (400m^2 or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m^2 or 5 metres length is appropriate.

2.2.7 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).

2.2.8 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

Badger

2.3.1 The survey area for badger covered the site (as annotated on **Figures 1** and **2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.

2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).

2.3.3 The following signs of badger activity were searched for:

a. Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;

b. Large spoil heaps outside sett entrances;

c. Bedding outside sett entrances;

d. Badger footprints;

e. Badger paths;

f. Latrines;

g. Badger hairs on fences or bushes;

h. Scratching posts; and

i. Signs of digging for food.

2.3.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

Bat Species

Daylight Survey

Trees

2.3.5 A preliminary assessment of the trees within the site was conducted to assess their suitability for use by roosting bats, and to inform whether further surveys or precautionary measures were required.

2.3.6 Trees were assessed from the ground using binoculars and a high-powered torch. Each tree was searched for the presence of the following features:

Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.

2.3.7 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2nd Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).

Habitat Assessment for Commuting / Foraging Bats

2.3.8 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented at **Table 2.1**, below.

Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.

Suitability	Commuting Habitat	Foraging Habitat
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Bird Species

2.3.9 Bird species observed and heard during the survey were recorded.

2.3.10 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

Reptile Species

2.3.11 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined in **Table 2.2**, below.

Table 2.2: Important Habitat Characteristics for Reptiles

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

Other Wildlife

2.3.12 Evidence of other wildlife (including Priority Species) observed whilst on site (but for which specific surveys were not made) was recorded and has been included in this report where it is considered of relevance to the planning application.

2.4 Survey and Reporting Limitations

2.4.1 The survey was carried out in February when many plant species are dormant or only identifiable by their vegetative characteristics. The surveyor is experienced in surveying plant species from their vegetative characteristics, and it has therefore been possible to reliably identify the habitats and principal plant species present.

2.4.2 No other survey limitations were experienced.

2.4.3 All measurements within this report are approximate only, and have been either measured or estimated whilst on site or internet-based mapping services such as MAGiC and Google Earth.

2.5 Evaluation Methods

2.5.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977) and *Guidelines for the Selection of Biological SSSIs* (Bainbridge, et al., 2013). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.5.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities* (NERC) *Act 2006*. Where suitable, the ecological value of the habitats present has been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2017*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.

2.5.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and / or species listed by the Lancashire BAP Provisional Long List has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

3.1.1 The site does not lie within or adjacent to any statutory designated site for nature conservation.

3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for Harper Clough and Smalley Delph Quarries SSSI which is located 2.7 kilometres to the south of the site and designated for its geological interest. The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development category (Ordnance Survey, 2022):

Planning applications for quarries, including: new proposals, Review of Minerals Permissions, extensions, variations to conditions etc. Oil and gas exploration / extraction.

3.1.3 The proposals do not meet the above category for which the local planning authority must consult with Natural England.

Non-statutory Designated Sites for Nature Conservation

3.1.4 The site does not lie within or adjacent to any non-statutory designated sites for nature conservation.

3.1.5 Eight non-statutory designated sites for nature conservation, termed Biological Heritage Sites (BHS) in Lancashire, are located within 2 kilometres to the site and are summarised in the table below.

Table 3.1: Non-statutory Designated Sites within 2 kilometres

Biological Heritage Site (BHS)	Distance and Direction from the Site (OS Grid Reference)	Reasons for Designation
Cronshaw Chair	800 metres to the south-east (SD714340)	Noteworthy for the presence of invertebrates including the green hairstreak butterfly (*Callophrys rubi*) and the birch sawfly (*Cimbex femoratus*).
Smalley's Farm	870 metres to the east (SD717346)	A complex of species-rich pastures, bounded by hedgerows, streams and small wooded cloughs. The site is notable for its fungi.
Dinckley Bridge Wood	1.3 kilometres to the north-west (SD695354)	Woodland which is ancient semi-natural in character.

Biological Heritage Site (BHS)	Distance and Direction from the Site (OS Grid Reference)	Reasons for Designation
Dean Clough Reservoir	1.4 kilometres to the south (SD713328)	Two adjacent reservoirs and surrounding habitat; the site is important for the presence of breeding little grebe (*Tachybaptus ruficollis*), a scarce breeding bird in Lancashire.
Chew Bank Wood	1.5 kilometres to the north (SD712363)	Woodland which is ancient semi-natural in character.
Park Brook Pastures	1.7 kilometres to the west (SD687347)	Species-rich grassland and additional habitats which supports a diverse flora. Damp grasslands dominate but smaller areas of drier, neutral and acid grassland area also present.
Great Wood and Mill Wood	1.9 kilometres to the north-west (SD695367)	Mixed woodland noteworthy for the presence of Yellow Archangel (*Lamium galeobdolon*) which is listed at sensitive in the *Provisional Lancashire Red Data List of Vascular Plants.*
Dean Wood and Higher Dean Wood	1.9 kilometres to the east (SD732339)	Two semi-natural ancient woodlands listed in the *Lancashire Inventory of Ancient Woodland (Provisional)*.

3.1.6 The presence of the above BHSs is considered further at **Section 4.2**.

Priority Habitats Inventory and Soilscape Information

3.1.7 The Priority Habitats Inventory[2] was checked via MAGiC map; no Priority Habitats are noted for the site or the adjacent land. The north-eastern corner of the site lies within the National Habitat Network: Network Expansion Zone.

3.1.8 In accordance with *Soilscape (England)* as presented on MAGiC Map (National Soil Resources Institute, 2005), the site supports '*slowly permeable seasonally wet acid loamy and clayey soils*', and the characteristic semi-natural habitats associated with the soils comprise '*seasonally wet pastures and woodlands mainly, but not exclusively, on the upland fringe'.*

Protected and Notable Species

3.1.9 LERN hold no records of protected and notable species for the site.

3.1.10 Records of protected and notable species for a 2 kilometre radius of the site are summarised at **Table 3.2** below.

Table 3.2: Records of Protected Species Within a 2 Kilometre Radius of the Site

Taxon Group	Species Name and Designations[1] and Notes
Amphibians	Common toad (*Bufo bufo*): PS & LBAP. 2 records, dated 2018 and 2020; the closest record is 810 metres to the south-east of the site, and from 2020.
	Common frog (*Rana temporaria*): LBAP. 1 record, 1760 metres to the south of the site, and from 1988.
Birds	**WCAs1, PS & LBAP** Black-tailed godwit (*Limosa limosa*).
	WCAs1, & LBAP Merlin (*Falco columbarius*), pintail (*Anas acuta*), spotted crake *(Porzana porzana)* and whooper swan (*Cygnus cygnus*).
	WCAs1 & PS Scaup (*Aythya marila*).
	WCAs1 Fieldfare (*Turdus pilaris*), garganey (*Anas querquedula*), goldeneye (*Bucephala clangula*), green sandpiper (*Tringa ochropus*), greenshank (*Tringa nebularia*), kingfisher (*Alcedo atthis*), osprey (*Pandion haliaetus*), redwing (*Turdus iliacus*) and wood sandpiper (*Tringa glareola*).

[2] A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

Taxon Group	Species Name and Designations[1] and Notes
	PS & LBAP Bullfinch (*Pyrrhula pyrrhula*), cuckoo (*Cuculus canorus*), curlew (*Numenius arquata*), dunnock (*Prunella modularis*), grasshopper warbler (*Locustella naevia*), grey partridge (*Perdix perdix*), herring gull (*Larus argentatus*), house sparrow (*Passer domesticus*), lapwing (*Vanellus vanellus*), reed bunting (*Emberiza schoeniclus*), ring ouzel (*Turdus torquatus*), skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*), spotted flycatcher (*Muscicapa striata*), starling (*Sturnus vulgaris*), tree sparrow (*Passer montanus*), wood warbler (*Phylloscopus sibilatrix*) and yellow wagtail (*Motacilla flava*).
	PS only Lesser redpoll (*Acanthis cabaret*).
	LBAP only Black-headed gull (*Chroicocephalus ridibundus*), common sandpiper (*Actitis hypoleucos*), common tern (*Sterna hirundo*), great black-backed gull (*Larus marinus*), grey heron (*Ardea cinerea*), kestrel (*Falco tinnunculus*), lesser black-backed gull (*Larus fuscus*), meadow pipit (*Anthus pratensis*), oystercatcher (*Haematopus ostralegus*), pochard (*Aythya ferina*), red-breasted merganser (*Mergus serrator*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), shoveler (*Anas clypeata*), snipe (*Gallinago gallinago*), swift (*Apus apus*), teal (*Anas crecca*), whinchat (*Saxicola rubetra*), wigeon (*Anas penelope*) and willow warbler (*Phylloscopus trochilus*).
Bony fishes	Brown trout (*Salmo trutta* subsp. *fario*): LBAP. 1 record, dated 2000, 1590m from the site.
	Brown / sea trout (*Salmo trutta*): PS & LBAP. 2 records, dated in 2000, the closest of which is 1590m from the site.
	European eel (*Anguilla anguilla*): PS & LBAP. 3 records, dated between 1991 and 2011, the closest of which is 1110m from the site.
	Bullhead (*Cottus gobio*): LBAP. 4 records, dated between 1991 and 2011, the closest of which is 1110m from the site.
Flowering plants	Bluebell (*Hyacinthoides non-scripta*): WCAs8. 6 records, dated between 1992 and 2011, the closest of which is 730m from the site.
	LBAP Angular Solomon's-seal (*Polygonatum odoratum*), Green Hellebore (*Helleborus viridis*) and Solomon's-seal (*Polygonatum multiflorum*).
Invertebrates (Butterflies)	Wall (*Lasiommata megera*): PS & LBAP. 2 records, dated in 2004 and 2006, the closest of which is 1730m from the site.
	Ringlet (*Aphantopus hyperantus*): LBAP. 13 records, dated between 2017 and 2020, the closest of which is 1380m from the site.
Invertebrates (Moths)	**PS** Cinnabar (*Tyria jacobaeae*), dusky brocade (*Apamea remissa*), grey dagger (*Acronicta psi*) and white ermine (*Spilosoma lubricipeda*).
	LBAP Chimney sweeper (*Odezia atrata*).
Terrestrial mammals	Common pipistrelle (*Pipistrellus pipistrellus*): EPS, WCAs5 & LBAP. 2 records, both from 1986; the closest record is 370 metres to the south of the site
	Eurasian badger (*Meles meles*): PBA. 1 record, over 900 metres from the site, and from 2017.
	Brown hare (*Lepus europaeus*): PS & LBAP. 9 records, dated between 2012 and 2017, the closest of which is 1370 metres to the south-west of the site, and from 2015.
	West European hedgehog (*Erinaceus europaeus*): PS & LBAP. 7 records, dated between 2010 and 2020, the closest of which is 230 metres to the north-east of the site, and from 2010.
[1]Key to Designation Codes: EPS = European Protected Species under the *Conservation of Habitats and Species Regulations 2017.* WCAs1 = Species receives full protection under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended). WCAs5 = Species receives full protection under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended). WCAs8 = Species receives full protection under Schedule 8 of the *Wildlife and Countryside Act 1981* (as amended). PBA = Protection of Badger Act 1992 PS = Priority Species listed under Section 41 of the NERC Act 2006 LBAP = Species listed on the Lancashire Biodiversity Action Plan Provisional Long List	

3.1.11 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

3.2 Vegetation and Habitats

General Description

3.2.1 The approximately 0.42 hectare site is located within the suburban outskirts of Langho, Blackburn and comprises a field of improved grassland with an ornamental hedgerow at the western site boundary and an area of bare ground beneath Oak trees and a fenced area of poor semi-improved grassland, tall herbs and young trees at the north-eastern corner of the site.

3.2.2 The site lies north of Whalley Road (A666), beyond which lies a railway line and further fields of improved grassland. The western boundary is defined by an ornamental hedgerow with Northcote Road beyond, across which lies existing residential development. The eastern boundary is defined by post-and wire fencing, beyond which is a strip of amenity grassland with trees and shrubs (at its southern end), and a strip of plantation woodland (at its northern end). The northern site boundary is defined by a post and wire fence, beyond which lies a residential property and gardens.

3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**, and can be referred to for all habitat descriptions. Photographs are appended at **Table 8.1**.

Improved Grassland

3.2.4 Refer to **Photos 1** and **2**. Improved grassland occupies 0.38 hectares of the site and is close-mown. The grassland appears to be used for storage and amenity; there is evidence that a bonfire was lit at the site.

3.2.5 The vegetation is characterised by constant and frequent Perennial Rye-grass (*Lolium perenne*), frequent Annual Meadow-grass (*Poa annua*), occasional and very locally abundant moss species and occasional and locally abundant Creeping Buttercup (*Ranunculus repens*) and Creeping Bent (*Agrostis stolonifera*).

3.2.6 The improved grassland is characteristic of an MG7 *Lolium perenne* leys grassland community of the NVC and is described by the UKHab as g4 modified grassland with the following secondary code: 64 mown. A plant species list is appended at **Table 8.2**.

Poor Semi-improved Grassland, Tall Herbs and Young Trees

3.2.7 Refer to **Photos 3** and **4**. The fenced area at the north-eastern corner of the site supports grasses and forbs that are less frequently managed than the rest of the site and that lie within the shaded canopy of the adjacent plantation woodland and on-site Oak trees. The vegetation is characterised by locally abundant False Oat-grass (*Arrhenatherum elatius*), Pendulous Sedge (*Carex pendula*) and Common Nettle (*Urtica dioica*), locally frequent Wood-sedge (*Carex sylvatica*), Cock's-foot (*Dactylis glomerata*), Red Fescue (*Festuca rubra*) and Lesser Celandine (*Ficaria verna*). Young trees and shrubs are present including locally abundant Hawthorn (*Crataegus monogyna*), Ash (*Fraxinus excelsior*), and Goat Willow (*Salix caprea*) and locally frequent Cherry species (*Prunus* sp.).

3.2.8 The area of poor semi-improved grassland, tall herbs and young trees are not characteristic of any NVC community but has affinities with the MG1 *Arrhenatherum elatius* grassland community (Rodwell, 1992), and is described by the UKHab as g3c other neutral grassland with the following secondary codes 11 scattered trees, 17 ruderal / ephemeral and 76 recent management. A plant species list is appended at **Table 8.3**.

Oak Trees over Bare Ground

3.2.9 Five semi-mature to mature Pedunculate Oak (*Quercus robur*) trees are present at the north-eastern corner of the site, with very locally abundant Ivy. The trees shade the ground below which supports sparse vegetation characteristic of the adjacent poor semi-improved grassland. The presence of the Oak trees and their value to wildlife is considered further at **Section 4.3**.

Ornamental Hedgerow

3.2.10 Refer to **Photos 5** and **6**. The western site boundary is defined by a managed, ornamental hedgerow positioned over a mortared stone wall, measuring 42 metres in length, 1.5 metres in height and 1 metre in width, comprising constant and dominant non-native *Acer* species (possibly *Acer saccharinum*, although identification to species was not possible without the plant being in leaf). The ground flora beneath the hedgerow is characterised by frequent Common Nettle and Creeping Bent, frequent and locally abundant mosses and Cock's-foot, occasional Broad Buckler-fern (*Dryopteris dilatata*) and occasional and locally frequent Bracken (*Pteridium aquilinum*) and Lesser Celandine. The woody composition of the hedgerow comprises only one species and the hedgerow defines the curtilage of a garden, therefore an assessment under *The Hedgerows Regulations 1997* is not appropriate.

3.2.11 The ornamental hedgerow is not characteristic of any NVC community and is defined by the UKHab as h2b other hedgerows with the following secondary codes: 48 non-native, 68 mortared wall and 81 flailed hedgerow.

Off-site Vegetation

3.2.12 Plantation woodland lies adjacent to the northern site boundary and is characterised by frequent Sycamore (*Acer pseudoplatanus*), Ash, Elm species (*Ulmus* sp.) and Field Maple (*Acer campestre*).

3.2.13 A row of semi-mature trees lies adjacent to the eastern site boundary over amenity grassland, and comprises frequent Whitebeam (*Sorbus aria*) and occasional Ash.

Invasive Plant Species

3.2.14 No invasive plant species were detected within the site.

3.2.15 Refer to **Photo 7**. As illustrated on **Figure 2**, stands of Rhododendron (*Rhododendron ponticum*) are present adjacent to the eastern site boundary. Rhododendron is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause its spread in the wild. This is considered further at **Section 4.3** below.

3.3 Animal Life

Badger

3.3.1 No evidence of badger was detected at the site or surrounding surveyed area. The presence of badger at the site is reasonably discounted.

Bat Species

Daylight Survey: Trees

3.3.2 Tree 17[3] is located within the group of Oak trees at the eastern boundary (refer to **Figure 2**), and supports dense Ivy and a vertical crack on the western side of its main stem (refer to **Photo 8**). The crack is partially obscured by the Ivy cover.

3.3.3 Tree 17 is determined to be of 'moderate' suitability for use by roosting bats. This is considered further at **Section 4.4** below.

3.3.4 No other trees support any features suitable for use by roosting bats.

[3] In accordance with *Land at Northcote Road, Langho, Blackburn, BB6 8BG, Tree Survey Schedule* (DEP Landscape Architecture Ltd, 2022).

Habitat Assessment for Commuting and Foraging Bats

3.3.5 The trees and ornamental hedgerow within the site are suitable for use by foraging and commuting bats. The improved and poor semi-improved grassland at the site are unlikely to provide an abundance or diversity of invertebrate prey, and are therefore considered to be of low suitability for foraging bats.

3.3.6 The habitats present may be suitable for, and contribute to, a the wider foraging area of low numbers of common species of edge-feeding foraging bats, such as common pipistrelle (*Pipistrellus pipistrellus*), and also low numbers of species known to forage over open habitats and over wide areas such as noctule (*Nyctalus noctula*). The habitats adjacent to the site (plantation woodland and trees) provide links from the site to the wider area and are suitable for foraging and commuting bats.

3.3.7 Overall, the site is considered to be of 'low' suitability for use by foraging and commuting bats.

Bird Species

3.3.8 No birds were detected within the site in February 2022.

3.3.9 The trees, shrubs and ornamental hedgerow are all suitable for use by nesting passerine (i.e. perching) species. This is considered further at **Section 4.4**, below.

3.3.10 The improved grassland field is unsuitable for ground nesting species owing to its small size, regular management and close proximity to busy roads.

Reptiles

3.3.11 The managed habitats within the site provide unsuitable habitat for reptiles. The site is not adjacent or linked to any areas of favourable habitat for reptile species, and there are no records of reptile for the site or the wider area. The presence of reptiles within the site is therefore reasonably discounted.

Other Wildlife

3.3.12 The site supports habitats suitable for foraging and commuting hedgehog (*Erinaceus europaeus*), a Priority Species, as it is likely to provide an abundance of prey species such as earthworms, and is connected to further suitable habitats such as the plantation woodland and gardens to the north. Records of hedgehog are present in the wider area. The possible use of the site by hedgehog is considered further at **Section 4.4**.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

4.1.1 In accordance with *Feasibility Site Layout, Proposed Residential Development Land Adj. The Ferns, Northcote Road, Langho, BB6 8BG, Drawing Number: 2203-SK-01, Revision E* (PAB Chartered Architects Ltd, 2022) hereafter the 'proposals plan', it is proposed to develop the site to housing, with associated gardens and access from Northcote Road. The proposals accommodate the retention of the Oak trees at the northern end of the site, however the ornamental hedgerow will be lost to facilitate access.

4.1.2 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site are evaluated at **Section 4.3**, and protected and notable species are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

4.2.1 The site is sufficiently small and distant to the statutory and non-statutory designated sites in the wider area that adverse impacts as a result of the proposed development can be reasonably discounted.

4.3 Vegetation and Habitats

4.3.1 Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat or are of significant interest in terms of their plant species composition. The NVC communities present are typical of the geographical area and conditions present. No Priority Habitats are present at the site; the ornamental hedgerow is composed of a non-native species and therefore does not qualify as a Priority Habitat[4].

4.3.2 In terms of each habitat's importance in a geographical context[5], the trees, shrubs and ornamental hedgerow are of 'site' value as they support habitats suitable for nesting birds and foraging birds and bats, and will contribute as wildlife links across the site and wider area. The plantation woodland and trees adjacent to the site are of 'local' value for their suitability for nesting birds, foraging bats and birds and possibly roosting bats. The four Oak trees at the site are subject to a temporary Tree Preservation Order (Ribble Valley Borough Council, 2022). The trees at the site and adjacent to the site will be retained and protected by the development and the ornamental hedgerow will be lost to create access. Recommendations for the protection of the trees and shrubs to be retained, and recommendations for compensatory hedgerow planting are presented at **Sections 5.2** and **5.6**.

4.3.3 Rhododendron**,** an invasive species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is present adjacent to the eastern site boundary. Recommendations to avoid the spread of this species during development activities are presented at **Section 5.3**.

4.4 Protected Species and Other Wildlife

4.4.1 Tree 17 supports features of 'moderate' suitability for use by roosting bats. Tree 17, and all other mature and semi-mature trees (including the Oak trees subjected to the TPO) at the site will be retained and protected by the development. Guidance for the protection of retained trees are presented at **Section 5.2**. Provided these measures are adhered to it is not considered that the proposals will impact upon roosting bats during the construction phase of the proposed development.

4.4.2 If any tree is to be removed / affected to facilitate the development, further guidance from an ecologist must be sought; should works to Tree 17 be required, further surveys to determine the presence / absence of roosting bats at the tree will be necessary.

4.4.3 Habitats within and adjacent to the site are suitable for foraging and commuting bats. Inappropriate lighting during the construction and operational phases of the proposed development has the potential to degrade the quality of habitat for foraging and commuting bats. The proposals present an opportunity to enhance habitats within the site for roosting bats. Recommendations for the retention of features suitable for use foraging and commuting bats, and features to enhance habitats for roosting bats at the site, are presented at **Section 5.4**.

4.4.4 The trees, shrubs and ornamental hedgerow at the site provide opportunities for foraging and nesting birds. The proposals will remove areas of suitable habitat during the construction phase of the proposed development. The proposals also present an opportunity to increase the abundance of suitable habitats for nesting birds across the site; consideration of birds including protection of breeding birds and recommendations for enhancements for nesting birds are presented at **Section 5.5**.

4.4.5 The site provides opportunities for foraging and sheltering hedgehog, a Priority Species. The proposals have the potential to harm individual hedgehog during works and create dispersal barriers to hedgehog

[4] To qualify as Priority Habitat hedgerows must be composed of at least 80% or more cover of at least one native woody species.

[5] Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

following the completion of the site. Measures to protect wildlife (including hedgehog) during the construction phase, and recommendations to maintain habitat connectivity throughout the developed site following the completion of works, are presented at **Section 5.6**.

4.4.6 No other protected species have been detected.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

5.1.1 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

5.1.2 In accordance with Chapter 15, paragraph 180(d) of the NPPF:

'opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.

5.1.3 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified.

5.1.4 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use the site post-construction) and take into consideration the end use of the site as a residential development.

5.2 Protection of Existing Vegetation

5.2.1 In accordance with the proposals, the trees within the site will be retained; the retained trees in the site, plantation woodland and trees adjacent to the site will be protected.

5.2.2 During the construction phase, temporary protective demarcation fencing will be used to protect the trees and shrubs to be retained. The fencing must extend outside the canopy of the retained trees and must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.

5.2.3 The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

5.3 Invasive Plant Species

5.3.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Rhododendron in the wild. It is concluded that the preparation of an Invasive Species Management Plan is not necessary in this case and measures to prevent the spread of Rhododendron should be taken during the construction phase of the development. Suitable measures comprise regular monitoring to determine whether any spread of Rhododendron onto the site has occurred and avoiding disturbance to the Rhododendron shrubs during the construction phase (note that the measures outlined to protect trees during works will ensure this is completed during works).

5.4 Bats

Lighting

5.4.1 Paragraph 185(c) in Chapter 15 (conserving and enhancing the natural environment) of the NPPF states that development should:

'limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'

Construction Phase

5.4.2 Any lighting to be used at the site during construction should be directional and screened where possible, this specification should be included within a Construction Environment Management Plan (CEMP), or similar.

Development Lighting Design

5.4.3 The lighting scheme to be implemented at the developed site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the retained trees, the woodland and trees adjacent to the site and any proposed landscape planting as lighting overspill may deter use by wildlife such as foraging bats.

5.4.4 The lighting scheme will be designed with reference to current guidance, namely:

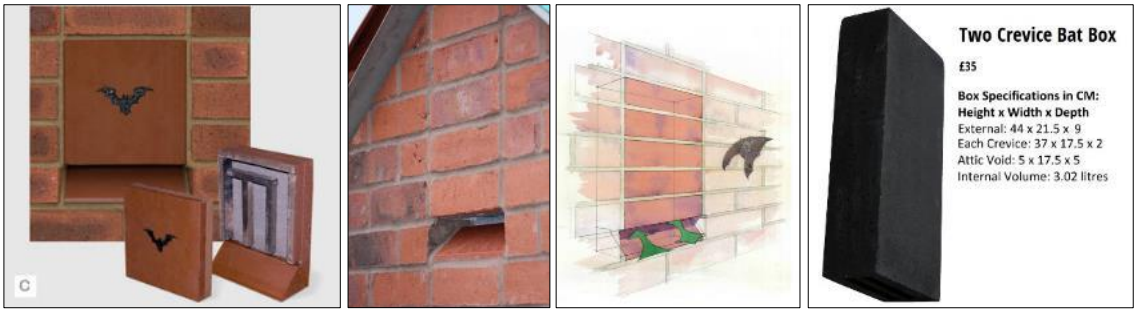
a. *Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and

b. *Bats and lighting: Overview of current evidence and mitigation guidance* (Stone, 2014).

Enhancing Habitats for Roosting Bats

5.4.5 It is recommended that the development incorporates the installation of two bat access panels at the new buildings.

5.4.6 The bat access panels should be sited at least 4 metres above ground level, ideally facing or close to areas of landscape planting or existing linear features, such as the plantation woodland to the north. The access panels should not be positioned over windows or doorways where bat droppings may become a nuisance. An ecologist should advise on appropriate positions for the bat access panels. Suitable bat access panels are available from NHBS Ecology (www.nhbs.com) or Wild Care (www.wildcare.co.uk) and are presented at **Insert 1**, below:



Insert 1: Examples of integrated bat access panels and an externally mounted box[6]

[6] Left to right: IBstock Enclosed Bat Box 'c' (left); Habibat Bat Access Panels (centre left and centre right) and Greenwood's Ecohabitat's two crevice bat box (right). Products with a brick face are illustrated, however the Habibat bat access panels can be supplied unfaced to enable the addition of matching material.

5.4.7 It is recommended that one bat box is erected onto a suitable retained mature tree within the site. An ecologist will advise on the siting of the bat box.

5.4.8 Suitable bat boxes are the Schwegler 1FF, Greenwood Ecohabitat's single or double cavity boxes and Schwegler 1FD, see **Insert 2**, below.

Insert 2: Schwegler 1FF, Greenwood Ecohabitat's single cavity and Schwegler 1FD bat boxes

5.4.9 The bat box should be installed to the following guidelines (Bat Conservation Trust, 2016):

a. At least 4 metres above the ground (where safe installation is possible);
b. Sheltered from strong winds and exposed to the sun for part of the day (usually south or south-west);
c. Located close to unlit linear features, such as lines of trees or hedgerows; and
d. Installed where the bat box entrance is not cluttered or impeded by branches, or accessible to predators (such as cats) by large branches underneath them.

5.5 Birds

Protection

5.5.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive (Natural England, 2015).

5.5.2 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Enhancing Habitats for Nesting Birds

House Sparrow

5.5.3 House sparrows are associated with suburban areas. Monitoring suggests a severe decline in the UK house sparrow population, estimated as halving in rural areas, and dropping by 60% in towns and cities since the mid-1970's (RSPB, 2018).

5.5.4 The installation of two house sparrow terrace nest boxes is recommended at the proposed new housing. The boxes will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct

sunlight, which may cause overheating of chicks in the nest. An example of a suitable house sparrow bird box is given below at **Insert 3**:

Insert 3: Schwegler 1SP House Sparrow Nesting Terrace

5.5.5 Such bird boxes are available from the NHBS (www.nhbs.com) or Wild Care (www.wildcare.co.uk). ERAP (Consultant Ecologists) Ltd will advise on the siting of bird boxes.

Woodland Birds

5.5.6 Two bird boxes associated with woodland bird species are to be installed at the retained mature trees at the northern end the site, located within proximity to the off-site plantation woodland. An ecologist will advise on the siting of the woodland bird boxes whilst on site. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. The boxes should be at least 4 metres from ground level.

5.5.7 Boxes presented at **Insert 4**, below, will be used.

Insert 4: Schwegler 3SV, Schwegler 1N, Schwegler 2M and Schwegler 2H bird boxes, suitable for a variety of woodland birds.

Swift

5.5.8 The swift (*Apus apus*) has recently been added to The Birds of Conservation Concern Red list (Stanbury, et al., 2021) owing to the recorded recent declines and its identified status as a high conservation priority.

5.5.9 The construction of the residential properties provides an opportunity for the installation of additional nesting opportunities for swift to assist their conservation. It is recommended that one swift box is installed onto one of the new properties at the site. The box should be installed beneath the eaves or gable apex at least 4 metres above ground level, integral to the elevation wall; suitable swift nest boxes are illustrated at **Insert 5** below.

Insert 5: Examples of swift nest boxes[7]

5.6 Protection of Wildlife (Including Hedgehog), Habitat Connectivity, Landscape Planting and Provisions for Insects

5.6.1 Owing to the suitability of habitats at the site for foraging and commuting hedgehog, the following Reasonable Avoidance Measures (RAMs) Method Statement will be applied prior to and during the construction phase of the development:

a. All site personnel must be made aware of this RAMs Method Statement;

b. Prior to construction activities, the mowing regime at the site must continue to ensure the grassland does not grow rank which may attract sheltering wildlife;

c. Prior to any soil strip, vegetation will be strimmed to a height of no less than 0.15 metres an all arisings removed;

d. During construction, any holes, trenches or other pits which small mammals could fall into will be covered overnight or have sloped banks or ramps to allow escape;

e. The use of chemicals and other harmful materials will be avoided wherever possible; and

f. If any wildlife, such as hedgehog, are detected, it must be carefully picked up, placed into a clean bucket at moved to an area of suitable habitat beyond the development area, such as the plantation woodland to the north.

Maintenance of Habitat Connectivity Throughout the Developed Site

5.6.2 To ensure habitat connectivity is maintained as part of the development proposals, gaps within the proposed fencing (see **Insert 6**, below, as reproduced from *Hedgehogs and Development* (British Hedgehog Preservation Society / PTES, 2019)) to allow access by other wildlife (including hedgehog) should be incorporated across the site. It is recommended that suitable wildlife gaps (at least 0.1 metre tall and 0.15 metre wide) are installed at suitable intervals around the base of the proposed fencing.

Insert 6: Showing wildlife access gap within fencing

[7] From left to right No. 17A Schwegler Swift Nest Box (Triple Cavity) as installation (left), Manthorpe Swift Nesting Box (centre) and Ibstock Eco-habitat for Swift (right), all available from www.NHBS.com)

Compensatory Hedgerow and Landscape Planting

5.6.3 In accordance with the proposals plan, the ornamental hedgerow will be removed to facilitate development. It is recommended that compensatory hedgerow planting of at least equal length to the length of hedgerow removed (42 metres) is planted within the site to compensate. The planted hedgerow should be composed of native woody species; suitable species are listed at **Table 5.1** below. It is recommended that the hedgerow is appropriately managed for wildlife, i.e. is trimmed once a year in winter (and outside the bird nesting season)[8].

5.6.4 Suitable locations for the hedgerow, in accordance with the proposals plan, include the northern and eastern site boundaries (i.e. to demarcate the rear garden boundaries of the proposed new properties), and / or parallel to the proposed access road.

5.6.5 It is recommended that the landscape planting within the residential site is composed from native species and species known to be of value for the attraction of wildlife.

5.6.6 It is recommended that trees which support blossom and fruit which will attract insects are incorporated into the landscape planting. Suitable species are presented at **Table 5.1**, below.

Table 5.1: Suitable Native Species for Tree and Shrub Planting

Scientific Name	Common Name	Scientific Name	Common Name
Acer campestre	Field Maple	*Prunus spinosa*	Blackthorn
Corylus avellana	Hazel	*Rosa arvensis*	Field Rose
Crataegus monogyna	Hawthorn	*Rosa canina*	Dog-rose
Ilex aquifolium	Holly	*Sambucus nigra*	Elder
Malus sylvestris	Crab Apple	*Sorbus aucuparia*	Rowan
Prunus avium	Wild Cherry	*Ulmus glabra*	Wych Elm
Prunus padus	Bird Cherry	*Viburnum opulus*	Guelder Rose

5.6.7 The understorey and ground cover planting design should be prepared to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.

5.6.8 Planting schemes that include flowering species such as *Viburnum, Ceanothus, Hebe*, *Lavandula*, *Lonicera, Potentilla, Rosmarinus* and *Vinca* can maximise opportunities for feeding invertebrates and for the attraction of foraging bats and birds.

5.6.9 For further plants suitable for the attraction of pollinators please refer to the *Perfect for Pollinators Plant List* (Royal Horticultural Society, 2012). It is recommended that the selection of plant species at the site ensures that a variety of flowering species are available throughout the year.

Insect Boxes

5.6.10 Insect boxes such as those presented at **Insert 7**, below, can provide suitable nesting habitat for solitary bees associated with suburban and urban areas such as the red mason-bee (*Osmia bicornis*), mining bee species (*Andrena* sp.) and other pollinating invertebrates.

[8] For additional guidance on planting and maintaining a wildlife-friendly hedgerow refer to Best Hedges for Wildlife | Planting Hedges - The RSPB (RSPB, 2022)

Insert 7: Bee hotels

5.6.11 Such bee hotels are available from the NHBS (www.nhbs.com) and Wild Care Shop (www.wildcareshop.com).

5.6.12 It is recommended that one insect box is sited on an existing feature such as a mature tree or fence post. Boxes should ideally be sited around waist or chest height. Boxes should be placed facing south and in a sunny position, near an abundance of flowers and shrubs.

6.0 CONCLUSION

6.1 This ecological assessment has demonstrated that a residential development at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.

6.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna such as nesting birds and commuting / foraging bats associated with the site.

6.3 Measures to conserve the habitat connectivity through the site are entirely feasible.

6.4 Development at the site will provide an opportunity to secure ecological enhancement for fauna typically associated with residential areas such as breeding birds and roosting bats.

7.0 REFERENCES

Andrews, H (ed), 2013. *Bat Tree Habitat Key, 3rd Edition.* Bridgewater: AEcol Ltd.

Aspinall Verdi Property Regeneration Consultants, n.d. *Land off Northcote Road, Langho, Red-line Boundary Plan,* s.l.: Aspinall Verdi Property Regeneration Consultants.

Bainbridge, I. et al., 2013. *Guidelines for the Selection of Biological SSSIs.* Peterborough: Joint Nature Conservancy Council.

Bat Conservation Trust, 2016. *Bat Box Information Pack.* [Online]
Available at: https://cdn.bats.org.uk/pdf/Bat-Box-Information-Pack.pdf?mtime=20181101151309
[Accessed 22 February 2022].

British Hedgehog Preservation Society / PTES, 2019. *Hedgehogs and Development,* Ludlow: British Hedgehog Preservation Society / PTES.

BSI, 2012. *Trees in relation to design, demolition and construction. Recommendations.* London: BSI Standards Limited.

BTHK, 2018. *Bat Roosts in Trees - A Guide to Identification and Assessment for Tree-Care and Ecology Professionals,* Exeter: Pelagic Publishing.

Butcher, B. et al., 2020. *UK Habitats Classification User Manual Version 1.1,* Stockport: UKHab Ltd.

CIEEM, 2018. *Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1,* Winchester: Chartered Institute of Ecology and Environmental Management.

Collins, J. (ed), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* London: The Bat Conservation Trust.

DEP Landscape Architecture Ltd, 2022. *Land at Northcote Road, Langho, Blackburn, BB6 8BG, Tree Survey Schedule,* Manchester: DEP Landscape Architecture Ltd.

Edgar, P., Foster, P & Baker, J., 2010. *Reptile Habitat Management Handbook.* Bournemouth: Amphibian and Reptile Conservation.

Institution of Lighting Professionals & Bat Conservation Trust, 2018. *Guidance Note 8: Bats and Artificial Lighting in the UK.* [Online]
Available at: https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/
[Accessed 22 February 2022].

JNCC, 2010. *Handbook for Phase 1 Habitat Survey: A technique for Environmental Audit.* Peterborough: NCC.

Maddock, A (ed), 2008. *UK Biodiversity Action Plan: Priority Habitat Descriptions.* [Online]
Available at: http://jncc.defra.gov.uk/page-5718

Ministry of Housing, Communities & Local Government, 2005. *Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System,* London: Office of the Deputy Prime Minister.

Ministry of Housing, Communities and Local Government, 2021. *National Planning Policy Framework.* London: H.M.S.O.

National Soil Resources Institute, 2005. *Soilscape (England) ,* Cranfield: National Soil Resources Institute.

Natural England, 2007. *Badgers and Development,* Peterborough: Natural England.

Natural England, 2011. *The Reptile Mitigation Guidelines.* Peterborough: Natural England.

Natural England, 2015. *Badgers: Surveys and mitigation for development projects.* [Online]
Available at: https://www.gov.uk/guidance/badgers-surveys-and-mitigation-for-development-projects
[Accessed 7 February 2022].

Natural England, 2015. *Wild birds: surveys and mitigation for development projects.* [Online]
Available at: https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects
[Accessed 22 February 2022].

Ordnance Survey, 2022. *Site Check Report Centroid Grid Ref: SD70743456.* [Online]
Available at: http://magic.defra.gov.uk/magicmap.aspx
[Accessed 15 February 2022].

PAB Chartered Architects Ltd, 2022. *Feasibility Site Layout, Proposed Residential Development Land Adj. The Ferns, Northcote Road, Langho, BB6 8BG, Drawing Number: 2203-SK-01, Revision E,* Leigh: PAB Chartered Architects Ltd.

Ratcliffe, D. A., 1977. *A Nature Conservation Review.* Cambridge: Cambridge University Press.

Ribble Valley Borough Council, 2022. *The Langho 2022 Tree Preservation Order dated 16 February 2022.* Clitheroe: Ribble Valley Borough Council.

Rodwell, J. S., 1992. *British Plant Communities: Volume 3, Grasslands and Montane Communities.* Cambridge: Cambridge University Press.

Roper, T., 2010. *Badger (Collins New Naturalist Library, Book 114).* Glasgow: Harper Collins.

Royal Horticultural Society, 2012. *Perfect for Pollinators, Garden Plants.* [Online]
Available at: https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators

RSPB, 2018. *Population Trends: The Recent Decline of House Sparrows.* [Online]
Available at: https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/house-sparrow/population-trends/
[Accessed 22 February 2022].

Stace, C. A., 2010. *New Flora of the British Isles 3rd Edition.* Cambridge: Cambridge University Press.

Stanbury, A. et al., 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of exctinction risk for Great Britain. *British Birds,* Issue 114, pp. 723-747.

Stone, E. L., 2014. *Bats and Lighting: Overview of current evidence and mitigation guidance.* Bristol: University of Bristol.

8.0 APPENDIX: TABLES AND FIGURES

8.1 Photographs

Table 8.1: Photographs

Photo 1: Improved grassland within site, facing north-west.

Photo 2: Improved grassland within site, facing north-east.

Photo 3: Poor Semi-improved grassland, tall herbs and young trees within fenced area, facing west.

Photo 4: Poor Semi-improved grassland, tall herbs and young trees within fenced area, facing south.

Photo 5: Ornamental hedgerow at western boundary, facing north (site-side).

Photo 6: Ornamental hedgerow at western boundary, facing north (road-side).

Photo 7: Stand of Rhododendron adjacent to eastern boundary.

Photo 8: Tree 17, showing vertical crack in main stem and Ivy cover (moderate suitability).

8.2 Plant Species Lists

Table 8.2: Plant Species List for Improved Grassland

Scientific Name	Common Name	DAFOR[1]	Cover
Agrostis stolonifera	Creeping Bent	O/LA	<1%
Cardamine flexuosa	Wavy Bitter-cress	R	<1%
Lolium perenne	Perennial Rye-grass	F*	50%
Plantago lanceolata	Ribwort Plantain	O	1%
Poa annua	Annual Meadow-grass	F	40%
Ranunculus repens	Creeping Buttercup	O/LA	2%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Senecio jacobaea	Common Ragwort	O	<1%
Stellaria media	Common Chickweed	O	<1%
	Moss species	O/VLA	10%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

Table 8.3: Plant Species List for Poor Semi-improved Grassland, Tall Herbs and Young Trees

Scientific Name	Common Name	DAFOR[1]	Cover
Woody Species			
Crataegus monogyna	Hawthorn	LA	1%
Fraxinus excelsior	Ash	LA	2%
Prunus sp.	Cherry species	LF	1%
Quercus robur	Pedunculate Oak	LF	2%
Salix caprea	Goat Willow	LA	1%
Herb Species			
Arrhenatherum elatius	False Oat-grass	LA	1%
Bellis perennis	Daisy	R	<1%
Carex pendula	Pendulous Sedge	LA	1%
Carex sylvatica	Wood-sedge	LF	1%
Cirsium arvense	Creeping Thistle	R	<1%
Dactylis glomerata	Cock's-foot	LF	1%
Festuca rubra	Red Fescue	LF	<1%
Ficaria verna	Lesser Celandine	LF	1%
Geranium robertianum	Herb-Robert	R	<1%
Hedera helix	Ivy	O/LA	1%
Heracleum sphondylium	Hogweed	LF	<1%
Juncus effusus	Soft-rush	VLF	<1%
Rumex acetosa	Common Sorrel	R	<1%
Taraxacum officinale agg.	Dandelion	LF	<1%
Urtica dioica	Common Nettle	LA	2%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

8.3 Figures

Figure 1: Aerial Image of the Site and Surrounding Habitats

Figure 2: **Phase 1 Habitat and Vegetation Map**