

**PRELIMINARY ECOLOGICAL
APPRAISAL**

**at
5 Woodside Lane
Huddersfield
West Yorkshire
HD2 2FD**

**Client:
John Arnold**

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21/11/22**



Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
Planning	16/11/22	Amy Donaldson	17/11/22	Amy Donaldson	21/11/22	Amy Donaldson	01/12/22	Helen Chambers
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This report has been prepared and provided in accordance with the *British Standard 42020: Biodiversity – Code of practice for planning and development 2018* and the *CIEEM's Code of Professional Conduct*.

Risk Assessment Completed	
Bio-security Procedure Completed	
Lone Worker Procedure Completed	



Summary

JCA Limited has been commissioned by **John Arnold** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **5 Woodside Lane**. The site is located at Ordnance Survey (OS) National Grid Reference **SE 14661 19859** with nearby postcode **HD2 2FD**.

A desk study and field survey were undertaken in order to assess the potential of the site to support protected habitats and species and species of conservation concern. Recommendations for further survey, avoidance, mitigation and enhancement – where appropriate - have been made and are summarised in Table 1 on the following page and are detailed in full in Chapter 6 of this report.



Table 1: Summary of ecological receptors at the site and recommended mitigation.

Receptor	Potential Risk to Project if No Action Taken	Cause of Impact Description of Effect	Further Survey Required	Mitigation Required
Designated sites				
Statutorily protected	Negligible	None	No	N/A
Non-statutorily protected	Negligible	None	No	N/A
S41 habitat	Moderate	A parcel of ancient deciduous woodland is present within 10m of the site. Construction works could result in adverse impacts to the woodland.	No	A Construction and Environment Management Plan (CEMP) is required to prevent adverse impacts occurring in relation to the priority woodland.
Protected species				
Flora (WCA Sch 8, CHSR Sch 5)	Negligible	None	No	N/A
Invertebrates	Moderate	Favourable vegetation will be lost under the proposed development, reducing local invertebrate numbers and foraging opportunities for local animals that feed on invertebrates. Ragwort, the food plant of the priority species the cinnabar moth caterpillars, will be removed under the proposed development.	No	Native and wildflower planting, including ragwort, should be undertaken to mitigate loss of habitat. Insect towers could also be utilised to provide alternate habitat. A Biodiversity Enhancement Plan (BEP) is recommended.
White-clawed crayfish	Negligible	None	No	N/A
Fish	Negligible	None	No	N/A
Great crested newt	Negligible	None	No	N/A
Reptiles	Negligible	None	No	N/A



Birds	Moderate	The removal of any urban trees, woodland, scrub or hedgerows onsite has the potential to cause disturbance to breeding birds, resulting in a breach of legislation.	No	A preconstruction site walkover is required prior to any vegetation removal commencing. If removal occurs outside of the breeding bird period (1 st February until 31 st August) and birds are found, the removal must cease immediately, and a suitably competent ecologist contacted.
Bats	Moderate	The site could be utilised by foraging and commuting bats. Bats could be deterred by artificial lighting within the development. Any disturbance to bats or disruption of a roost results in a breach of legislation.		Artificial lighting within the Development should follow guidance from Institution of Lighting Professionals (2018).
Badgers	Negligible	None	No	N/A
Beavers	Negligible	None	No	N/A
Otters	Negligible	None	No	N/A
Water voles	Negligible	None	No	N/A
Other Species e.g. S41 species	Moderate	The shrub onsite provides suitable nesting habitat for hedgehogs. The development will see the removal of the shrub, and hedgehogs may be killed or injured during this process. Hedgehogs are legally protected during	No	Any shrub to be removed should be hand searched immediately prior to removal by a suitably qualified and experienced ecologist, to ensure no hedgehogs are currently nesting in vegetation. Hedgehog holes are to be



		their hibernation period and while raising their young.		implemented in any walls or fences within the proposed development.
Invasive Species (WCA Sch 9) Injurious Weeds (Weeds Act, 1959)				
Pontic rhododendron, yellow archangel, montbretia, rockspray cotoneaster.	High	The spread of a Schedule 9 species due to inappropriate management and handling, resulting in the unwanted spread to the wider environment, is in breach of legislation.	No	A method statement for the safe management and removal of these species is required.
Key: S41 habitat/species – habitats and species listed as priority for conservation importance under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. WCA Sch – Wildlife and Countryside Act 1981 (as amended) Schedule CHSR Sch – Conservation of Habitats and Species Regulations 2017 Schedule				



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1. Introduction

1.1 Background

1.1.1 In November 2022, JCA Limited was instructed by **John Arnold** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **5 Woodside Lane**, hereafter referred to as 'the site'. The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed works, hereafter referred to as 'the scheme', have the potential to adversely affect any protected or notable habitats or species.

1.2 Scheme Description and Location

1.2.1 The site is located at Ordnance Survey (OS) National Grid Reference **SE 14661 19859**, with nearby postcode **HD2 2FD**. The site is bordered to the north by a large parcel of woodland, and to the east, south and west by residential properties.

1.2.2 The scheme is for the erection of a detached single-storey residential property, with associated access and soft landscaping.

1.3 Aims and Objectives

1.3.1 The purpose of the survey is to establish a baseline of ecological information and assess whether the proposed development activities have the potential to adversely affect any protected or notable habitats or species. The following tasks have been undertaken:

- Desktop study – a review of environmental records for the surrounding area to obtain existing information on statutory and non-statutory designated sites of nature conservation interest, and the presence of protected and notable habitats and species within the site and its environs.
- Field surveys – a UKHab Habitat survey involving a site visit to record habitat types and dominant vegetation, including any invasive species. During this survey evidence of protected or notable fauna and habitats or habitat capable of supporting protected or notable fauna was recorded.
- Ecological report – an assessment of the potential ecological constraints to the proposed works at the site and recommendations for



further survey, avoidance, mitigation, and enhancement where appropriate. Locations of any features constituting ecological constraints or of other ecological interest and vegetation recorded on and around the development are included in an accompanying UKHab Habitat Map (**Appendix 1**). This report and the maps are supported by photographs (**Appendix 3**) and information regarding current legislation (**Appendix 6**).

- Biodiversity Metric Baseline Assessment – condition scoring the habitats onsite and assigning each habitat a numerical value. This calculation is done in an excel worksheet and attached with the report.



2. Methodology

2.1 Desktop Study

2.1.1 The desktop study involved conducting database searches for statutory and non-statutory designated sites and European Protected Species (EPS) licensing applications within a 2km radius of the site. The baseline conditions are based on a review of existing available information including:

- MAGIC (Multi-Agency Geographical Information for the Countryside) website (to identify statutory designated sites and EPS licences).
- Ordnance Survey mapping (to identify potentially notable habitats including ponds).
- Aerial photography (to identify potentially notable habitats).
- Data search for records of protected/notable species on and within 2km of the site within the last ten years (exempting bat roosts, of which all records are included) obtained from West Yorkshire Ecology Services (WYES), the local environmental records centre for Huddersfield, along with information for non-statutory wildlife sites.

2.1.2 The records were checked against species listed as priority species under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, the Calderdale Biodiversity Action Plan (CBAP) and the Kirklees Biodiversity Action Plan (KBAP) to assess national and regional habitat and species status.

2.2 Field Survey

2.2.1 A UKHab Habitat survey of the site was conducted on 17/11/22. All areas of the site were investigated and areas around the site where access permitted.

2.2.2 The vegetation and habitat types within the site were noted during the survey in accordance with the categories specified for a UKHab Vegetation and Habitat Survey (The UK Habitat Classification, Habitat Definitions Version 1.1, UKHab, 2020), and using the Minimum Mappable Units (MMU) of 25m² and 5m. Dominant and abundant plant species were recorded for each habitat present.



2.2.3 The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the Wildlife & Countryside Act (WCA) 1981 (as amended), including those given a higher level of legal protection under the NERC Act 2006 and Countryside & Rights of Way (CRoW) Act 2000, and those listed on the LBAP. The following species were considered:

- Invertebrates (including white-clawed crayfish *Austropotamobius pallipes*).
- Great crested newt *Triturus cristatus* freshwater habitat potential within 500m of the site.
- Reptile habitat within the site.
- Nesting and foraging habitat for birds within the site.
- Bat roost potential and foraging habitat within the site.
- Badger *Meles meles* setts within 30m of the site, where accessible.
- Otters *Lutra lutra* and suitable habitat within 30m of the site, where accessible.
- Water vole *Arvicola amphibius* habitat within 20m of the site, where accessible.
- Eurasian beaver *Castor fiber* and suitable habitat within 30m of the site, where accessible.
- Other notable species.
- Invasive species.

2.3 Baseline Biodiversity Metric

2.3.1 A baseline biodiversity metric was carried out during the field survey on 17/11/22.

2.3.2 To comply with Kirklees Council Planning policy, developments will be required to ensure a biodiversity net gain of at least 10% from November 2023, which will be determined from the baseline biodiversity units. Should the development fall short of the required 10% biodiversity net gain, further enhancement and mitigative measures will be necessary.



- 2.3.3 The Biodiversity Metric 3.1 provides a way of measuring and accounting for biodiversity losses and gains resulting from development or land management change. The first calculation of the metric (included in this report) assigns a baseline numeric value for biodiversity units present onsite pre-development, assessed whilst onsite. A full metric would then determine whether the proposed development meets the target increase in biodiversity units.
- 2.3.4 The metric uses habitat features as a proxy measure for capturing the value and importance of nature, which are recorded during the survey. It uses a calculation that takes into account the importance of these features for nature: their size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site (Natural England, 2022).

2.4 Survey Constraints

- 2.4.1 To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, the survey undertaken focused on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2018), especially those given protection under UK wildlife legislation.
- 2.4.2 The optimum time of year for completing the survey is between April and September, as many plant species have a seasonal expression in spring and summer only. The survey was undertaken on 17/11/22. This is considered a slight constraint to the findings of the report, however given the scale of development and the nature of the site, this was not deemed to be significant.
- 2.4.3 The weather during the survey was cloudy with rain, however this is not expected to present a significant limitation to the findings of the report.
- 2.4.4 The details of this report will remain valid for a period of 18 months. If works have not commenced within this period or land use on site changes, it is recommended that a new review of the ecological conditions is undertaken.



3. Desk Study Results

3.1 Statutory Designated Sites

3.1.1 The MAGIC website revealed no internationally designated sites within 2km of the site.

3.1.2 The MAGIC website revealed no nationally designated sites within 2km of the site.

3.2 Non-statutory Designated Sites

3.2.1 Records received from WYES revealed four non-statutory designated sites within 2km of the site, detailed in Table 2 below.

Table 2: Non-statutory designated sites within 2km of the site, returned from WYES.

Site Name	Distance (m) and Direction from Site	Reasons for Designation
Bradley Park Woods LWS	1306 NE	Wd5 – Dense native bluebell cover.
Sir John Ramsden Canal LWS	1551 SE	Sw5 - standing open water. Van11 - value for appreciation of nature.
Grimescar Wood LWS	1750 SW	Wd5 - High native bluebell cover.
Key: LWS – Local Wildlife Site		

3.3 Section 41 of the NERC Act 2006 Priority Habitat Inventory

3.3.1 The MAGIC website revealed the following habitats within 2km of the site:

- Ancient woodland – ten parcels, with the nearest being 7m from the site.
- Deciduous woodland – 143 parcels, with the nearest being 7m from the site.
- Traditional orchard – two parcels, with the nearest being 1281m from the site.

3.4 Protected and Notable Species



3.4.1 European Protected Species (EPS) Licence Applications

- The MAGIC website revealed three EPS licence applications within 2km of the site;
 - A licence granted in January 2016 and ending in January 2021 to allow for the damage of a resting place and destruction of a breeding site used by common pipistrelles. Licence reference: 2015-18632-EPS-MIT.
 - A licence granted in March 2017 and ending in March 2022 to allow for the destruction of a resting place used by common pipistrelles. Licence reference: 2017-28521-EPS-MIT.
 - A licence granted in January 2019 and ending in October 2019 to allow for the damage of a resting place used by common pipistrelles. Licence reference: 2018-38484-EPS-MIT.

3.4.2 Records of Protected and Notable Species

3.4.3 Flora

Five records of bluebell *Hyacinthoides non-scripta*, a Schedule 8 (WCA, as amended) and Kirklees BAP designated species, were returned from WYES. The latest record was made in 2017, and the closest record was 744m from the site.

3.4.4 Invertebrates (including white-clawed crayfish)

No records of protected or notable invertebrates were returned from WYES.

3.4.5 Fish

No records of protected or notable fish were returned from WYES.

3.4.6 Amphibians

One record of common toad *Bufo bufo*, a Schedule 5 (WCA, as amended), UKBAP, WYBAP and Kirklees BAP designated species, was returned from WYES.

One record of common frog *Rana temporaria*, a Schedule 5 (WCA, as amended) and WYBAP designated species, was also returned from WYES. Both records were made in 2018 and were 1591m from the site.

3.4.7 Reptiles



No records of protected or notable reptiles were returned from WYES.

3.4.8 Birds

The following records were received from WYES:

Table 3: Bird Records Received from WYES.

Scientific name	Common name	Designation	Latest Date	Number of records	Distance from site (m)
<i>Apus apus</i>	Swift	WYBAP	2019	2	1737
<i>Carduelis carduelis</i>	Linnet	UKBAP WYBAP CBAP	2019	2	1562
<i>Carduelis chloris</i>	Goldfinch	KBAP	2018	6	1000
<i>Columba oenas</i>	Stock dove	WCA Sch 1 WYBAP CBAP	2019	3	1737
<i>Hirundo rustica</i>	Swallow	WYBAP CBAP	2019	2	1618
<i>Motacilla cinerea</i>	Grey wagtail	CBAP	2018	1	1669
<i>Motacilla flava</i>	Yellow wagtail	UKBAP WYBAP CBAP	2019	1	1843
<i>Passer domesticus</i>	House sparrow	S41 UKBAP WYBAP KBAP	2019	10	1067
<i>Passer montanus</i>	Tree sparrow	UKBAP WYABP CBAP	2019	1	1876
<i>Phylloscopus trochilus</i>	Willow warbler	CBAP	2018	1	1256
<i>Prunella modularis</i>	Dunnock	UKBAP WYBAP CBAP	2019	10	927
<i>Pyrrhula pyrrhula</i>	Bullfinch	UKBAP WYBAP KBAP	2018	2	949
<i>Sturnus vulgaris</i>	Starling	UKBAP WYBAP CBAP	2019	5	1591
<i>Turdus philomelos</i>	Song thrush	UKBAP WYBAP KBAP	2019	9	873
<i>Tyto alba</i>	Barn owl	WCA Sch 1 WYBAP	2021	1	1983

Key:

WCA: Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)

S41: Section 41 of the NERC Act 2006

UKBAP: United Kingdom Biodiversity Action Plan



WYBAP: West Yorkshire Biodiversity Action Plan

CBAP: Calderdale Biodiversity Action Plan

KBAP: Kirklees Biodiversity Action Plan

3.4.9 Bats

The site falls within the Kirklees Bat Alert Zone. The following records were received from WYES:

Table 4: Bat Records Received from WYES.

Scientific Name	Common Name	Designation	Latest Date	Number of records	Distance from site (m)
<i>Myotis</i>	Unidentified <i>Myotis</i> sp.	EPS WCA Sch 5	2019	12	957
<i>Myotis nattereri</i>	Myotis nattereri	EPS WCA Sch 5 WYBAP KBAP	2018	1	1646
<i>Nyctalus leisleri</i>	Leisler's bat	EPS WCA Sch 5 LBAP	2017	2	957
<i>Nyctalus noctula</i>	Noctule bat	EPS WCA Sch 5 S41 KBAP CBAP	2021	36	445
<i>Pipistrellus</i>	Pipistrelle bat	EPS WCA Sch 5	2021	2	1407
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS WCA Sch 5 WYBAP KBAP CBAP	2021	61	110
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	EPS WCA Sch 5 S41 KBAP CBAP	2019	16	110
<i>Plecotus auritus</i>	Brown long-eared bat	EPS WCA Sch 5 S41	2018	8	1152



		WYBAP KBAP CBAP			
<i>Vespertilionidae</i>	Unidentified bat	EPS WCA Sch 5	2018	2	1636

Key:

EPS: European Protected Species: Species listed under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

WCA: Wildlife & Countryside Act 1981 (as amended)

S41: Section 41 of the NERC Act 2006

WYBAP: West Yorkshire Biodiversity Action Plan

CBAP: Calderdale Biodiversity Action Plan

KBAP: Kirklees Biodiversity Action Plan

3.4.10 Bat Roosts

The following records were received from WYES:

Table 5: Bat Records Received from WYES:

Scientific Name	Common Name	Roost type	Date	Distance from Site (m)
<i>Nyctalus noctula</i>	Noctule bat	Hibernation	2012	264
<i>Pipistrellus</i> sp.	Pipistrelle bat	Maternity	2021	445
<i>Pipistrellus</i> sp.	Pipistrelle bat	Excluded	2019	1927
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Possible	2021	445
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity	2021	445
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity	2013	650
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Single adult	2006	1967
<i>Vespertilionidae</i> sp.	Vesper bat species	Possible	2007	1650
<i>Vespertilionidae</i> sp.	Vesper bat species	Possible	2006	510
<i>Vespertilionidae</i> sp.	Vesper bat species	Bachelor	2004	1778
<i>Vespertilionidae</i> sp.	Vesper bat species	Tree	2012	1988



3.4.11 Badgers

The nearest badger sett is over 1900m from the site, and the site does not fall within the area of increased probability of badger activity.

3.4.12 Otters

No records of otters were returned from WYES.

3.4.13 Water Voles

No records of water voles were returned from WYES.

3.4.14 Other Notable Species

No records of any other protected or notable species were returned from WYES.

3.4.15 Invasive Species

The following species are designated under Schedule 9 (WCA, as amended):

Table 6: Invasive Species Records Received from WYES.

Scientific name	Common name	Latest Date	Number of records	Distance from site (m)
<i>Crocasmia x crocosmiiflora</i>	Montbretia	2016	1	1450
<i>Fallopia japonica</i>	Japanese knotweed	2015	7	1615
<i>Impatiens glandulifera</i>	Himalayan balsam	2016	3	884
<i>Lamiastrum galeobdolon subsp. argentatum</i>	Yellow archangel	2016	2	1591
<i>Rhododendron ponticum</i>	Rhododendron ponticum	2018	2	734
<i>Sciurus carolinensis</i>	Eastern grey squirrel	2019	2	744



4. Field Survey Results

4.1 Habitats

4.1.1 Other broadleaved woodland – w1g

A parcel of broadleaved woodland is present to the north of the site. Canopy species include sessile oak *Quercus petraea* and sycamore *Acer pseudoplatanus*. The understory is comprised of white meadowsweet *Spiraea alba*, wood avens *Geum urbanum*, petty spurge *Euphorbia peplus*, montbretia *Crocsmia x crocosmiiflora*, yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*, elmleaf blackberry *Rubus ulmifolius*, herb Robert *Geranium robertianum*, and collared earthstar *Geastrum triplex*.

A parcel of the woodland understory is concrete hard standing, used as a walked pathway.

4.1.2 Hedgerow (priority habitat) - h2a

Two hedgerows border the eastern and western boundary of the site. The eastern hedgerow is comprised almost entirely of European beech *Fagus sylvatica*, with small amounts of holly *Ilex aquifolium*, montbretia, herb Robert, English ivy *Hedera helix* and rose of Sharon *Hibiscus syriacus*. The western hedgerow is mixed, with woody species including European beech, hawthorn *Crataegus monogyna*, holly, rockspray cotoneaster *Cotoneaster horizontalis*, and sessile oak saplings.

4.1.3 Other neutral grassland – g3c

Tussocky sward (121)

Other neutral grassland runs through the majority of the site, the grassland is very overgrown with a distinctly tussocky sward. Dominant grass species include wavy hair grass *Deschampsia flexuosa* and Yorkshire fog *Holcus lanatus*, with occasional grass species including bentgrass *Agrostis stolonifera* and perennial rye grass *Lolium perenne*. Other species within the grassland include white clover *Trifolium repens*, dandelion *Taraxacum officinale*, creeping buttercup *Ranunculus repens*, little bindweed *Convolvulus arvensis*, rosebay willowherb *Chamaenerion angustifolium*, English ivy, sowthistle *Sonchus oleraceus*, ragwort *Jacobaea vulgaris*, nipplewort *Lapsana communis*, creeping thistle *Cirsium arvense*, herb Robert, and hawthorn saplings.

Ruderal/ ephemeral (17)



A small parcel of ephemeral vegetation is present towards the south of the site, which is dominated by yellow archangel. Small amounts of creeping buttercup, elmleaf blackberry, common selfheal *Prunella vulgaris*, English ivy and Franchetts *Cotoneaster franchetii* are also present.

4.1.4 Urban trees – u

Two urban trees are present on site; an American hornbeam *Carpinus caroliniana* tree is present within the ephemeral vegetation to the south of the site, and a bird cherry *Prunus padus* tree is present within the introduced shrub in the centre of the site.

4.1.5 Buildings – u1b5

A small wood-built shed is present towards the east of the site. It is in poor condition, with missing panelling to the east and west of the building. The roof is wood with roofing felt covering, however there is no space between roofing materials to support roosting bats. Whilst bats could have access to the interior, the building is deemed to be too open to support roosting bats.

4.1.6 Built-up areas and gardens – u1

Introduced shrub (1160)

Introduced shrub is scattered throughout the site, with large parcels along the eastern border. A full list of species found within the shrub can be found in Table 7.

Table 7: Species recorded within the introduced shrub on site:

Common name	Scientific name	Common name	Scientific name
Herb Robert	<i>Geranium robertianum</i>	Smoke tree	<i>Cotinus coggygria</i>
Drooping sedge	<i>Carex pendula</i>	Spanish dagger	<i>Yucca gloriosa</i>
Cherry laurel	<i>Prunus laurocerasus</i>	Evergreen spindle	<i>Euonymus japonicus</i>
Japanese meadowsweet	<i>Spiraea japonica</i>	Honeysuckle	<i>Lonicera periclymenum</i>
Pontic rhododendron	<i>Rhododendron ponticum</i>	Lawsons cypress	<i>Chamaecyparis lawsoniana</i>
Ragwort	<i>Jacobaea vulgaris</i>	Green alkanet	<i>Pentaglottis sempervirens</i>
Wintercreeper	<i>Euonymus fortunei</i>	Wood avens	<i>Geum urbanum</i>
Japanese laurel	<i>Aucuba japonica</i>	Orpine	<i>Hylotelephium telephium</i>
Sneezeweed	<i>Helenium autumnale</i> <i>L. var. autumnale</i>	Canada yew	<i>Taxus canadensis</i>
Common juniper	<i>Juniperus communis</i>	Hydrangea	<i>Hydrangea</i>



Common holly	<i>Ilex aquifolium</i>	California privet	<i>Ligustrum ovalifolium</i>
Endres cranesbill	<i>Geranium endressii</i>	Bittersweet	<i>Celastrus scandens</i>

4.2 Protected and Notable Species

4.2.1 Flora

No notable or protected flora were identified onsite. As such, flora will not be mentioned further in this report.

4.2.2 Invertebrates (including white-clawed crayfish)

Whilst a range of generalist invertebrates were identified onsite, no notable or protected invertebrates were noted. The site contains favourable vegetation to invertebrates such as grassland and shrub. Ragwort was also identified onsite, which is the food source of cinnabar moth caterpillars. Cinnabar moths are a species of principle importance for the conservation of biodiversity in England.

4.2.3 Fish

No habitat suitable to support fish was identified on site. Fish will, therefore, not be mentioned further in this report.

4.2.4 Amphibians

No habitat suitable to support amphibians was identified on site. Amphibians will, therefore, not be mentioned further in this report.

4.2.5 Reptiles

No habitat suitable to support reptiles was identified on site. Reptiles will, therefore, not be mentioned further in this report.

4.2.6 Birds

The urban trees, grassland, shrub, woodland and hedgerows identified on site provide high nesting potential for birds. Furthermore, the site is directly adjacent to a large parcel of ancient deciduous woodland which could support a number of birds. The birds in the woodland could be utilising the site for foraging or commuting purposes.

4.2.7 Bats



The building on site was not deemed suitable for roosting bats and was therefore afforded negligible roosting potential. Furthermore, the trees on site had no cracks or crevices to support roosting bats. However, the introduced shrub on site may attract a range of invertebrates that bats could forage on, and the site acts a dark corridor within an urban area which could be utilised by commuting bats.

4.2.8 Badgers

No habitat suitable to support badgers was identified on site, and the nearest badger sett is over 1900m from the site. Whilst this is within commuting distance for badgers, the site is bordered by dense hedgerows and fencing which forbid access. As such, badgers will not be mentioned further in this report.

4.2.9 Otters

No habitat suitable to support otters was identified on site. Otters will, therefore, not be mentioned further in this report.

4.2.10 Water Voles

No habitat suitable to support water voles was identified on site. Water voles will, therefore, not be mentioned further in this report.

4.2.11 Beavers

No habitat suitable to support beavers was identified on site. Beavers will, therefore, not be mentioned further in this report.

4.2.12 Other Notable Species

The grassland on site may provide suitable foraging and commuting habitat for hedgehogs. Furthermore, the shrub habitat on site could be utilised by nesting and hibernating hedgehogs.

4.2.13 Invasive Species

A number of invasive species were identified on site, including pontic rhododendron, yellow archangel, rockspray cotoneaster and montbretia. These species are designated under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), meaning there is a legal obligation to prevent their spread.

4.3 Baseline Biodiversity Metric



- 4.3.1 A Biodiversity Metric 3.1 baseline calculation has been undertaken as to fully inform this assessment. The calculation has been processed in a Microsoft Excel workbook, which accompanies this report. However, a summary of the main findings is provided below.
- 4.3.2 The total habitat area of the site is **0.05 hectares**, consisting of broadleaved woodland (classified as 'poor condition), other neutral grassland (classified as 'good' condition), introduced shrub (condition assessment N/A), urban trees (classified as 'moderate' and 'good' condition) and two native hedgerows (classified as 'poor' condition). The resulting ecological baseline is returned **at 0.49 total habitat units and 0.18 hedgerow units.**



5. Assessment

5.1 Designated Sites

5.1.1 Statutory designated sites

There are no statutory designated sites within 2km of the proposed development and so no adverse impacts are anticipated.

5.1.2 Non-statutory designated sites

The non-statutory designated sites listed in **Section 3.2.1** are all over 1200m from the proposed development. Due to the distance to site, and the small-scale nature of the proposed development, no adverse impacts are expected to occur.

5.1.3 S41 NERC Priority Habitat Inventory

A parcel of ancient deciduous woodland is present within 10m of the site. Due to the close proximity to site, adverse impacts are likely to occur in relation to the priority woodland.

5.2 Habitats

5.2.1 The most valuable habitats for biodiversity within the development site boundary are the broadleaved woodland, other neutral grassland, introduced shrub, ephemeral vegetation, urban trees and hedgerows. The proposed works will see the removal of much of these habitats.

5.2.2 The other habitats described in Chapter 4, Section 4.1 have lower biodiversity and provide less opportunity to support protected or notable species. The flora recorded in these habitats is considered to be locally common and widespread and they do not fall into any of the NERC S41 or Local BAP Priority Habitat descriptions.

5.3 Protected and Notable Species

5.1.1 Invertebrates (including white-clawed crayfish)

The grassland and shrub onsite provide sheltering and foraging opportunities for invertebrates, which would be removed or reduced under the proposed development. The development may also see the removal of ragwort, the food source of the cinnabar moth caterpillars. As such, further recommendations are provided in **Section 6.2.1**.



5.1.2 Birds

The woodland, grassland, shrub, urban trees and hedgerows were deemed to have high nesting bird potential, and the overall site could be utilised by foraging and commuting birds. Recommendations are therefore provided for the removal of these habitats, regarding nesting birds (see **Section 6.2.2**).

5.1.3 Bats

Records from WYES show nine species of bat and eleven roosts within 2km of the site, with the closest roost being only 264m from the site. The site is also within the Kirklees Bat Alert Zone. Therefore, the site is deemed to hold high potential to support foraging and commuting bats. Further recommendations are provided in **Section 6.2.3**.

5.1.4 Other Notable Species

The introduced shrub on site was deemed to hold potential for nesting and hibernating hedgehogs. As well as this, the grassland and shrub may provide foraging and commuting opportunities for hedgehogs. The proposed development will see the removal of the grassland and shrub on site and is likely to restrict the movement of hedgehogs locally. Hedgehogs could be killed or injured during vegetation removal, as such further recommendations are provided in **Section 6.2.4**.

5.1.5 Invasive Species

Pontic rhododendron, yellow archangel, montbretia and rockspray cotoneaster are listed under Schedule 9 (WCA, as amended). There is the legal requirement to ensure the safe removal and disposal of these species, and such removal will be of benefit to the site. If construction works begin before removal, there is the risk of transporting and distributing these species (see **Section 6.2.5**).



6 Recommendations

6.1 Habitats

- 6.1.1 Trees should be retained but, if this is not feasible, the number of felled trees must be replaced with native species of local provenance on a three-for one-basis. Under the current development plans, parts of the hedgerow are to be retained, and to improve their condition should be enhanced. If not possible, the hedgerows should be replaced like for like. Further recommendations are provided in **Section 6.2** in relation to protected species the trees could support. A **Construction and Environment Management Plan (CEMP)** should be produced which outlines mitigation measures in relation to the priority woodland to the north of the site, retaining the hedgerow and line of trees, and potential effects on birds and hedgehogs.
- 6.1.2 A **Biodiversity Enhancement Plan (BEP)** must be designed pre-construction to be implemented post construction during the landscaping phase of the development. This would be performed alongside the Biodiversity Metric 3.1 Calculation that is required by all developments to demonstrate a biodiversity net gain of at least 10% post development. The biodiversity enhancement plan will provide opportunities for local wildlife and aim to retain or enhance LBAP priority habitats, to ensure the development does not have a significant detrimental impact on local or national wildlife populations.
- 6.1.3 The proposed works provide an opportunity to institute enhancement for biodiversity through native plant species planting and the addition of faunal boxes. A landscaping plan should be devised which incorporates, as far as practicable, native species with known benefits to wildlife common in the area.

6.2 Protected and Notable Species

6.2.1 Invertebrates

Native scrub and wildflower planting, including ragwort, is recommended to mitigate for the loss of habitat and floral variety which will affect many invertebrate species noted on site, and species which may forage on invertebrates such as bats and birds. Insect towers may also be implemented to mitigate any loss. A BEP (**See Section 6.1.4**) is



suggested which would provide further details on such recommendations.

6.2.2 Birds

The woodland, grassland, shrub, urban trees and hedgerows provide nesting potential for breeding bird species. In the UK, the key breeding period for birds is from 1st February until 31st August (depending on species and behaviour). Disturbance of a nesting bird would result in a breach of legislation. Therefore, a preconstruction site walkover no more than 24 hours prior to any vegetation removal is required, and if removal occurs outside of the breeding bird period and birds are found, the removal must cease immediately, and a suitably competent ecologist contacted.

6.2.3 Bats

Artificial light is known to deter bats from entering lit areas. Therefore, the development must incorporate a wildlife sensitive lighting scheme. In particular, obtrusive light is to be prevented from reaching potential foraging and commuting routes, both from new exterior and interior lights. Guidance published by the Institution of Lighting Professionals (2018) is to be followed when designing the lighting scheme for the development.

It is important to avoid:

- Uniform levels of luminance across the site.
- Metal halide and florescent lighting.
- Upward tilting lighting that increases skyline luminance.

Instead, the following should be installed:

- Dark buffer zones.
- Screening in the form of vegetation, fences and structures.
- Appropriately designated darkened areas.
- Luminaries absent of UV elements.
- LED luminaries with a sharp cut-off, low intensity and good rendition.
- A warm white spectrum (<2700 kelvin) to reduce blue light.
- Peak luminaire wavelength at a minimum of 550nm.



- Downward directional luminaires with upward light ratios of 0%.
- Lower light columns to limit light spill.
- Recessed internal light fixtures.
- Window glazing treatments or automated blind systems.

6.2.4 Other notable species

The introduced shrub onsite provides nesting opportunities for hedgehogs, which are legally protected during hibernation and while raising their young. Any removal of this habitat must take place under the supervision of an Ecological Clerk of Works (ECoW). Should any hedgehogs be found, the ECoW will remove them to a place of safety with habitat suitable for this species. As nesting habitat will be removed from site, mitigation in the form of alternate nesting provision must be provided.

The construction of any walls or fences included within the proposed development will reduce the movements of hedgehogs locally. This is to be mitigated through creating localised habitat fragmentation for the species. Hedgehog holes measuring a minimum of 13cm x 13cm must be installed within any newly created walls or fences. Hedgerows permitting hedgehog commuting can be used alternatively to artificial barriers within the development.

6.2.5 Invasive species

A method statement for the safe management and removal of the yellow archangel, montbretia and rockspray cotoneaster on site will be required before works can commence. To prevent any invasive species being planted within the developed sites, all soft planting should be of native provenance.



7 References

Guidelines for surveys and report writing:

British Standards Institute (BSI), (2013) *BS 42020:2013, Biodiversity - Code of practice for planning and development*. London.

Chartered Institute of Ecology and Environmental Management (CIEEM), (2015) *Guidelines for Ecological Report Writing*. Winchester.

UKHab (2020), *The UK Habitat Classification, Habitat Definitions Version 1.1*

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Ministry of Housing, Communities and Local Government (2018) *National Planning Policy Framework*.

Websites:

Advice on protected species is consolidated at:

Environmental management: Wildlife and habitat conservation - GOV.UK (2016) *Gov.uk*.

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Magic Map Application (2016) *Magic.defra.gov.uk*. Available at:

<http://magic.defra.gov.uk/MagicMap.aspx>

The RSPB (2016). Available at: <http://www.rspb.org.uk/>

Surveys and mitigation plans: protected species - Detailed guidance (2015) *Gov.uk*. Available at: <https://www.gov.uk/guidance/surveys-and-mitigation-plans-protected-species>

Within this detailed guidance on surveys and mitigation information is available on the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

Wildlife licences: when you need to apply - Detailed guidance (2014) *Gov.uk*. Available at: <https://www.gov.uk/guidance/wildlife-licences>

Within this detailed guidance on licensing information is available on licences for the following protected species:

- Bats
- Natterjack toads
- Otters
- Reptiles
- Water voles
- White-clawed crayfish
- Wild birds
- Hazel dormice
- Great crested newts
- Badgers

As well as:

- Non-native Bumblebee species
- Deer
- Freshwater fish
- Invertebrates
- Mink, coypu, muskrat and grey squirrel



- Plants

Species Specific Information:

Badgers:

Natural England, (2007) Badgers and Development: A Guide to Best Practice and Licensing.

Competencies for Species Survey: Badger, Chartered Institute of Ecology and Environmental Management CIEEM, 2013

Bats:

Bat Conservation Trust, (2007) Bats, Development & Planning in England. London.

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Edgar, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook. 1st ed. Bournemouth: Amphibian and Reptile Conservation.



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Stoddart, D.M. (1970), *Individual range, dispersal in a population of water voles (Arvicola terrestris (L.))*. *Journal of Animal Ecology* 39, 403-425.

Strachan, R. (2009), *Populations and Persistence – Developing a Strategy for Conserving Water Voles in the UK*, Presentation to Warwickshire Wildlife Trust, 2nd April 2009, Environment Agency, Wales

Strachan, R. and Holmes-Ling, P (2003), *Restoring water voles and other biodiversity to the wider countryside*. Wildlife Conservation Research Unit, Oxford.

Strachan, R., Moorehouse, T. and Gelling, M. (2011), *Water Vole Conservation Handbook*, 3rd Edn, WILDCRU

White-clawed Crayfish:

Peay, S. (2002) *Guidance on Habitat for White-clawed Crayfish and its Restoration*. Kendal: English Nature

Relevant Legislation:

Wildlife and Countryside Act 1981, (c. 69) (as amended). Available at:
<http://www.legislation.gov.uk/ukpga/1981/69>

Countryside and Rights of Way Act 2000 (c.37). Available at:
<http://www.legislation.gov.uk/ukpga/2000/37/contents>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at:
<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

Conservation of natural habitats and of wild fauna and flora Council Directive (92/43/EEC) (The Habitats Directive) (as amended) Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>

Protection of Badgers Act 1992 (c. 51). Available at:
<http://www.legislation.gov.uk/ukpga/1992/51/contents>

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Appendices



Appendix 1: UKHab Habitat Map



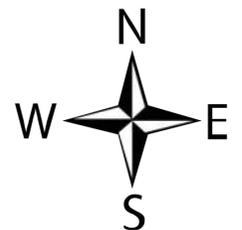
UKHab Habitat Map: 5 Woodside Lane



 Red Line Boundary

Habitats:

-  Other neutral grassland - g3c
Ruderal/ ephemeral (17)
Tussocky sward (161)
-  Buildings - u1b5
-  Suburban/ mosaic of developed/ natural surface - u1d
Introduced shrub (1160)
-  Other broadleaved woodland - w1g
-  Urban trees - u
-  Priority hedgerow - h2a



Appendix 2: Proposed Development Plan





2 Location Plan
1 : 1250

1 Proposed Level 0 Floor Plan
1 : 100

Location Plan North Point

The contractor must verify all dimensions on site before commencing any work on fabrication drawings. If this drawing exceeds the quantities taken in any way Unite Designs are to be informed before the work is initiated. Only figured dimensions are to be taken from this drawing. Do not scale off this drawing. Drawings are based on Ordnance Survey and / or existing record drawings - design and drawing content is subject to detailed Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals. Authorised reproduction from Ordnance Survey Map with permission of the Controller of Her Majesty's Stationery Office Crown Copyright reserved. Unite Designs Copyright.

Drawing Notes:

Layout Indicative for outline purpose only

Rev.	Description	Revised By:	Issue Date:

Project:
5 Woodside

Drawing
Proposed Ground Floor Plan

Scale: As indicated@A1 Original Issue Date:
Original Drawn MI Original Checked

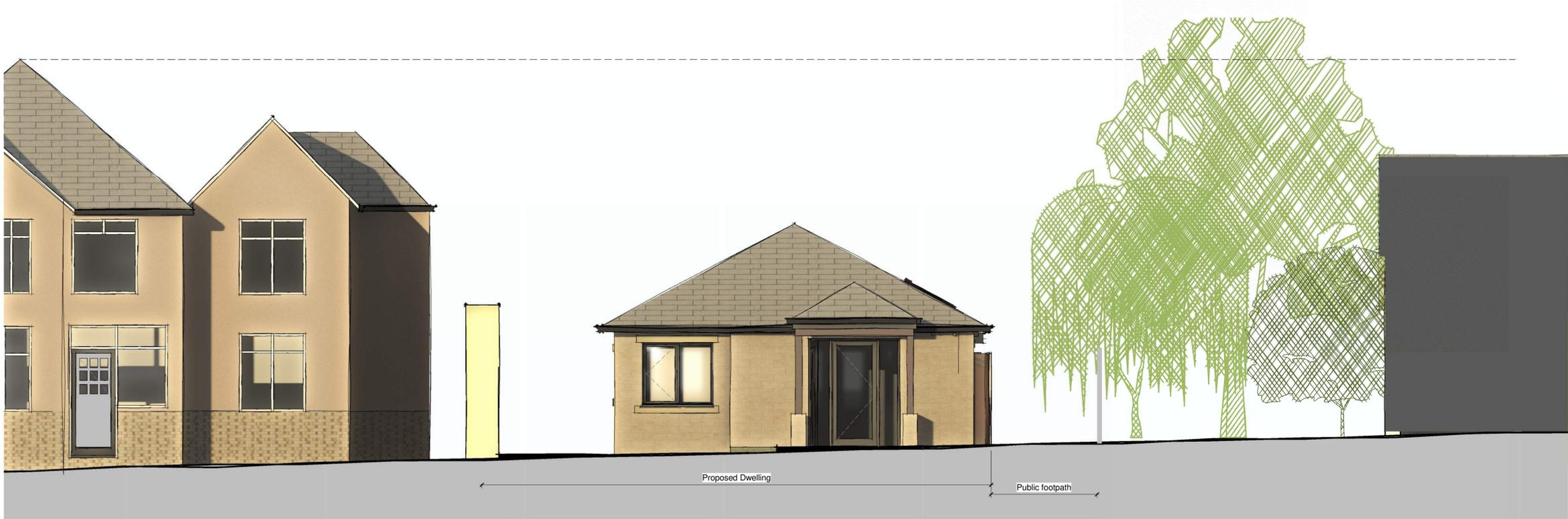
Drawing UD-488-01 Revision:

Reason For Issue:
PLANNING

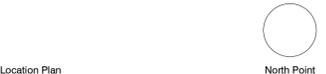
Unite Designs
T: 07858606182
Mannan_i@hotmail.co.uk



1 Proposed Rear Elevation
1 : 50



2 Proposed Front Elevation
1 : 50



Location Plan
North Point

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Drawing Notes:

Indicative Elevation
For Scaling and massing purpose only

Rev.	Description	Revised By:	Issue Date:

Project: 5 Woodside	Client: John Arnold
-------------------------------	-------------------------------

Drawing
Front And Rear Elevations

Scale: 1 : 50@A1	Original Issue Date:
Original Drawn MI	Original Checked JA

Drawing
UD-488-03

Reason For Issue:
PLANNING

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1 Proposed Side Elevation
1 : 100



3 Proposed Side Elevation 2
1 : 100



2 Street Elevation
1 : 100

Highly dense greenery dwelling
not visible

Existing Laurel Bush

Public Passage Way

Stone Wall

Highly dense greenery dwelling
not visible



Location Plan
North Point

The contractor must verify all dimensions on site before commencing any work or fabrication drawings. If this drawing exceeds the quantities taken in any way Unite Designs are to be informed before the work is initiated. Only figured dimensions are to be taken from this drawing. Do not scale off this drawing. Drawings are based on Ordnance Survey and / or existing record drawings - design and drawing content is subject to detailed Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals. Authorised reproduction from Ordnance Survey Map with permission of the Controller of Her Majesty's Stationery Office Crown Copyright reserved. Unite Designs Copyright.

Drawing Notes:

Indicative Elevation
For Scaling and massing purpose only

Rev.	Description	Revised By:	Issue Date:

Project:
5 Woodside

Drawing
Proposed Elevations

Scale: 1 : 100@A1
Original Issue Date:

Original Drawn: MI
Original Checked:

Drawing: **UD-488-02**
Revision:

Reason For Issue:
PLANNING

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Appendix 3: Photographic Evidence



Photo 1: Other neutral grassland running through the site.



Photo 2: Introduced shrub to the south of the site.



Photo 3: The hedgerow on the western boundary.



Photo 4: The hedgerow on the eastern boundary. In the background, the ephemeral vegetation parcel can be seen surrounding an urban tree.



Photo 5: The woodland understory to the north of the site.



Photo 6: The woodland canopy to the north of the site.





Photo 7: The building on site.



Photo 8: The developed land; sealed surface to the north of the site.



Appendix 4: Bat Survey Calendar

Figure 1: Survey timings calendar (taken from BCT: Bat surveys for professional Ecologists, Good Practice Guidelines; 3rd Edition).

Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Preliminary ecological appraisal - fieldwork												
Preliminary roost assessment - structures ^a												
Emergence/re-entry ^a survey for maternity or summer roosts ^b												
Emergence/re-entry ^a survey for transitional roosts ^b												
Emergence survey for mating roosts ^b												
Hibernation survey - structures ^a												
Preliminary ground level roost assessment - trees ^d												
Potential roost feature (PRF) inspection survey - trees												
Ground level bat activity survey - transects and automated/static												
Pre-, during and post-hibernation - automated/static bat activity survey												
Swarming survey												
Back-tracking survey												
Trapping survey ^e												
Radio tagging and tracking survey ^e												

= optimal period
 = sub-optimal period
 = weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October surveys are not acceptable in Scotland.

^a Not including trees



Appendix 5: Glossary

Activity surveys - are used to assess the level of bat activity at a site. This can be done either by using equipment such as an AnaBat device, or manually walking around a site with a heterodyne detector, documenting the number of bat passes and interceptions.

Dawn surveys - begin around 2 hours before and up to sunrise when bats are returning to their roosts from foraging, and swarming behaviour can be seen close to roost entrances.

Dusk surveys - begin around 30 minutes before sunset and up to 2 hours afterwards. These are done in order to see bats emerging from their roost sites at night.

Echolocation – is a system similar to sonar that allows bats to travel and forage even in total darkness. Bats make a call and then listen to the returning echoes in order to build up a map of their surrounding area. This allows bats to gauge the identity and distance of an object by how long the echo takes to return to them.

Habitat - the ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism.

Hibernation - is a state of inactivity and metabolic depression characterized by lower body temperature, slower breathing, and lower metabolic rate. Hibernating animals conserve energy, especially during winter when food is short, tapping energy reserves, i.e. body fat, at a slow rate.

Hibernacula - typically consist of underground sites, such as caves and cellars, which remain relatively cold and humid. Bats will hibernate to conserve energy over the winter months when falling temperatures cause a drop in the abundance of insects. These will typically be colonised around November to around March.

Insectivorous – is when an organism feeds exclusively on insects.

Nocturnal - a behaviour characterized by being active during the night and sleeping during the day.

Maternity roosts – colonised around late May early June and consist of mature females and their young. These roosts need to be warm and quiet, and are used up until around August, with females typically leaving first and then the young.

Mating roosts – mating begins around late October to November. Males of most species use special mating calls to attract females. These can include purrs, clicks and buzzing.

Roost – a site where bats live during the day, rear young and hibernate. These can be in man made structures, such as buildings, bridges, tunnels, cellars and mines, or natural features such as mature trees and caves.

Roosts in buildings – many types of buildings will be used by bats. The most likely sites are agricultural buildings (e.g. farmhouses and barns), buildings with exposed wooden beams (greater than 20cm thick), buildings with weather boarding and/or hanging tiles, and buildings close to woodland and/or water.

Roosts in trees – these are typically in mature trees with deep sheltered cracks, under loose sections of bark, or in woodpecker holes.

Species – a group of organisms in which all members can interbreed and produce viable offspring.

Summer roosts (non-breeding) - these are generally occupied by groups of males and immature females during the summer, and are usually only occupied for a short period before the group moves to another location.

Swarming – a behaviour exhibited by bats returning to their roost sites at dawn. Bats can be seen repeatedly flying to and from the roost entrance, making it much easier for consultants to identify where roosts are on a building or structure.



Temporary/Transitory roosts – These are used after hibernation (March – April) before mature females disperse to maternity roosts and male/immature females colonise summer (non-breeding) roosts. Similarly, temporary roosts form before hibernation (August -October).

Underground Roosts – these are typically used during the winter and can be mines, caves, tunnels or cellars.



Appendix 6: Protected Species Information

The following species are fully protected in UK law, under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019:

- All UK bat species
- Dormouse
- Great Crested Newt and Natterjack Toad
- Large Blue Butterfly
- Otter
- Pine Marten
- Polecat
- Scottish Wild Cat
- Smooth Snake and Sand Lizard
- Various aquatic and plant species

These species are afforded the highest protection in the UK. Under this protection it is an offence to; deliberately capture, injure or kill any wild animal of a European protected species; deliberately disturb wild animal of any such species; deliberately take or destroy the eggs of such an animal, or damage or destroy a breeding site or resting place of such an animal.

In addition to this it is an offence to be in possession of, or to control, transport, sell or exchange, or to offer for sale or exchange, a European Protected species.

The following species are protected under UK law, such as the Wildlife and Countryside Act 1981 (as amended):

- Badger
- Nesting birds
- Red Squirrel
- Reptiles (Adder, Common lizard, Grass snake, Slow worm)
- Water Vole
- White Clawed Crayfish
- Various bird species i.e. Barn Owl
- Various plant species

Therefore under this protection it is an offence to; kill, injure or take any of the above species.

Nesting birds are only protected during the breeding season whilst on their nest. In addition to the adults being protected, the eggs, young and nest itself whilst in use are protected.

The Wildlife and Countryside Act 1981 also contains measures to prevent the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales (e.g. Japanese Knotweed and Himalayan Balsam).



Badgers are protected under The Protection of Badgers Act 1992. Under this legislation it is an offence to; take, injure, kill, or cruelly ill-treat a badger; interfere with a badger sett; sell or possess a live badger; or mark or ring a badger.

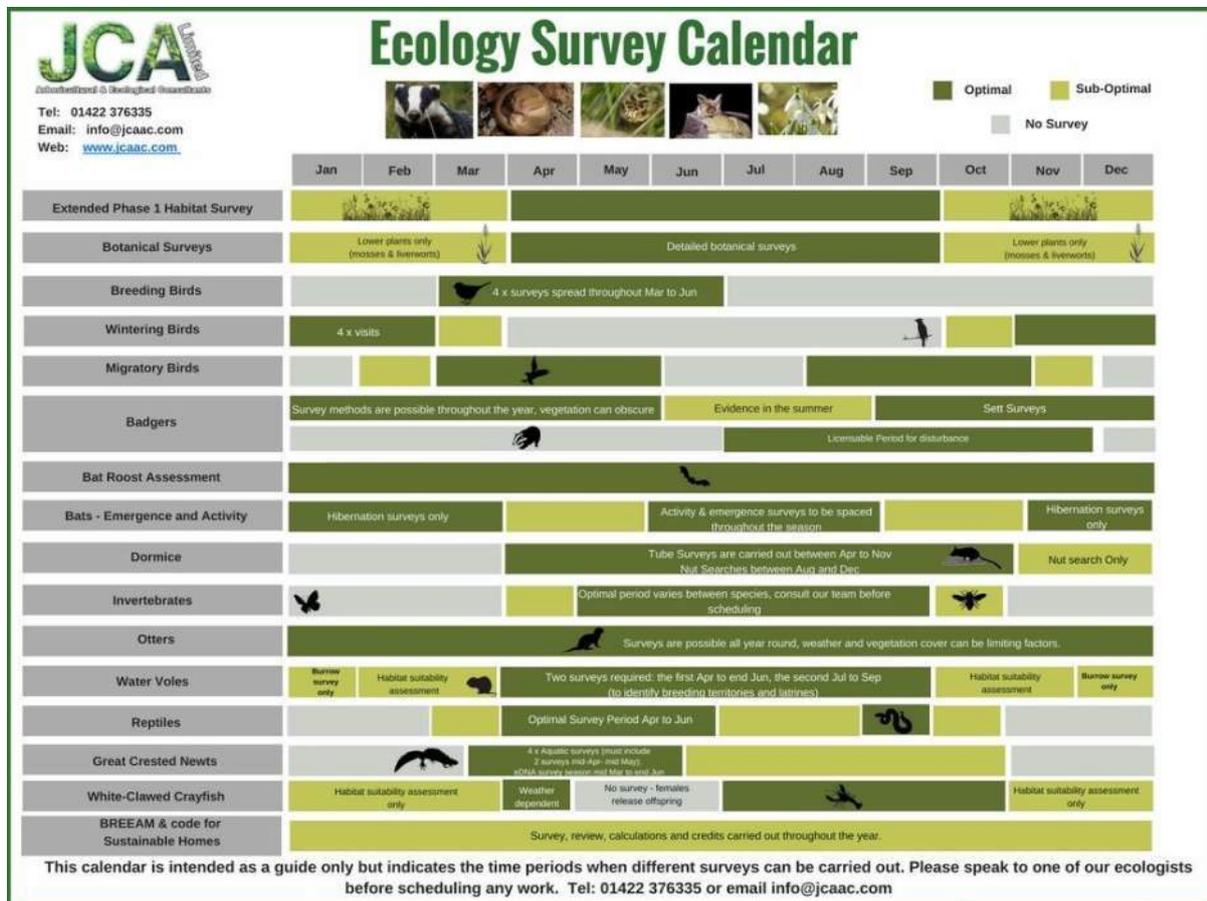
The following habitat types are protected under UK Law:

- Habitats that are used by protected species
- Habitats that fall within designated sites
- Hedgerows
- Individual trees/woods can be protected under Tree Preservation Orders



Appendix 7: Survey Calendar

Figure 2: Survey calendar for protected species and habitat surveys.



Appendix 8: Author Qualifications

Adam West, Principal Ecologist

BSc (Hons) Animal and Wildlife Management

Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Bachelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

Audrey Bourdais Paull, Graduate Ecologist

BSc (Hons) Zoology

Audrey graduated in 2020 in Zoology at the University of Leeds and joined JCA in 2022. Audrey volunteered for many years with various wildlife conservation and rescue organisations, as well as working on various projects to develop a variety of field survey techniques, report writing and data analysis skills. Audrey is looking forward to developing her ecology consultancy experience with JCA, as well as combining her previous dog training and detection work with ecology to expand into ecology detection dogs.

Helen Chambers, Graduate Ecologist

MSc by Research in Environmental Studies, BSc (Hons) Wildlife Conservation with Zoo Biology

Helen joined JCA in 2022 after completing her master's by research degree at the University of Salford. In 2019 Helen graduated with First Class Honours BSc Wildlife Conservation with Zoo Biology, where she gained theoretical knowledge of, and practical experience with, wildlife monitoring and wildlife legislation. She is hoping to further develop her ecological surveying and report writing skills at JCA.

Amy Donaldson, Graduate Ecologist

Bsc (Hons) Zoology (International).

Amy joined JCA in 2022 after graduating with a First Class Honours from the University of Leeds. Amy volunteered for numerous years with the Northumberland wildlife trust to develop a variety of field surveying skills. In 2020 Amy began bat surveying, where she gained practical knowledge and experience in the field. Amy is looking forward to developing her report writing and data analysis skills with JCA, and is working towards her Level 1 bat survey class licence.

Eve Goodwin, Graduate Ecologist

BSc (Hons) Plant Biology

Eve gained her Royal Society of Biology accredited undergraduate degree in 2019 from Aberystwyth University in Plant Biology. She has good plant identification skills which were developed through her academic studies and field work. She has since worked as a CAD technician and has joined JCA in 2022 where she hopes to develop her field skills further.



The Information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed

.....

Amy Donaldson

21/11/22

Reviewed by

.....

01/12/22

Reviewed and authorised by

.....

Adam West *ACIEEM*

01/12/2022



For and on behalf of **JCA Ltd**

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ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes
- Butterfly & Insect Surveys

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)
- Planting Schemes
- Monitoring of bird or bat boxes.

ARBORICULTURAL SERVICES

Guidance for Architects & Developers

- British Standard 5837 Surveys.
- Arboricultural Implications Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control



HEAD QUARTERS

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