

**PRELIMINARY ECOLOGICAL
APPRAISAL**

**at
Land off Willows Lane
Milnrow
Rochdale
Greater Manchester
OL16 4BL**

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Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
Planning	28/11/22	Eve Goodwin	16/11/22	Audrey Bourdais Paul, Amy Donaldson & Eve Goodwin	01/12/22	Eve Goodwin	12/12/22	Helen Chambers
							15/12/22	Adam West
Rev1	N/A	N/A	N/A	N/A	20/03/23	Eve Goodwin	20/03/23	Adam West

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 to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **Land off Willows Lane, Milnrow**. The site is located at Ordnance Survey (OS) National Grid Reference **SD 91976 12908** with nearby postcode **OL16 4BL**.

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.

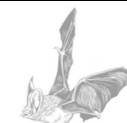


Table 1: summary of ecological receptors at the site and recommended mitigation.

Receptor	Potential Risk to Project if No Action Taken	Cause of Impact Description of Effect	Further Survey Required	Mitigation Required
Designated sites				
Statutorily protected	Low	Rochdale canal SSSI is within 1km of the site. Adverse impacts could occur as a result of indirect effects from the development.	No	Consult Natural England prior to works commencing.
Non-statutorily protected	Low	Stanney Brook and Slopes by river Beale, Fir Grove farm are within 1km of the site. Adverse impacts could occur as a result of indirect effects from the development.	No	Consult Rochdale Council prior to works commencing.
S41 habitat	Negligible	None	None	N/A
Other habitats	Moderate	Removal of priority hedgerow could adversely impact nesting bird species and commuting hedgehogs.	If clearance occurs between (1st February until 31st August) a nesting bird survey is required.	Consult Rochdale Council prior to works commencing.
Protected species				
Flora (WCA Sch 8, CHSR Sch 5)	Negligible	None	No	N/A
Invertebrates	Moderate	Removal of the dry stone wall and hedgerow habitats present on site could adversely impact a range of generalist invertebrates, as well as species which feed on invertebrates.	No	Native scrub and wildflower planting, inclusive of ragwort, is recommended to compensate for any loss. 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	High	The removal of any hedgerow habitat onsite has the potential to cause disturbance of breeding birds, resulting in a breach of legislation.	If clearance occurs between (1st February until 31st August) a nesting bird survey is required.	Dependent on time of removal. If removal occurs outside of the breeding bird period and birds are found, the removal must cease immediately, and a suitably competent ecologist contacted.
Bats	Moderate	Inappropriate, obtrusive lighting from the development would affect the ability of bats to use the site as a foraging and commuting habitat.	No	For artificial lighting within the development, guidance from Institute of Lighting Professionals (2018) should be followed.
Badgers	Negligible	None	No	N/A
Otters	Negligible	None	No	N/A
Water voles	Negligible	None	No	N/A
Beaver	Negligible	None	No	N/A
Other Species e.g., S41 species	Moderate	The hedgerows provide favourable habitat of hedgehogs. The removal of this habitat could injure or kill hedgehogs. Hedgehogs are legally protected during their hibernation period and while raising their young.		A precautionary approach should be adopted to include an Ecological Clerk of Works (ECoW) being present. Log pile to be removed should be hand searched immediately by a suitably qualified and experienced ecologist prior to removal, to ensure no hedgehogs



				are currently nesting in vegetation.
Invasive Species (WCA Sch 9) Injurious Weeds (Weeds Act, 1959)				
Montbretia	High	The spread of these Schedule 9 species under the WCA due to inappropriate management and handling, resulting in the unwanted spread to the wider environment and thus an offence would be committed.	None	Method statement for the safe management and removal of this Schedule 9 species.
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 – Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019				



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1. Introduction

1.1 Background

1.1.1 In November 2022, JCA Limited was instructed by **Nigel Longshaw** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **Land off Willows 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 **SD 91976 12908**, with nearby postcode **OL16 4BL**. The site is bordered in all directions by residential properties.

1.2.2 The scheme is the development of six semi-detached dwellings with associated gardens and parking facilities.

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 UK Hab 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 (see accompanying spreadsheets).



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 GMLRC, the local environmental records centre for Greater Manchester, 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 and the Greater Manchester Biodiversity Action Plan (Greater Manchester Biodiversity Project, 2009) to assess national and regional habitat and species status.

2.2 Field Survey

2.2.1 A UKHab survey of the site was conducted on 16/11/22. 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 Vegetation and Habitat Survey (The UK Habitat Classification, Habitat Definitions Version 1.1, UK Hab, 2020). 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* 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 16/11/22.

2.3.2 To comply with the planning policy of Rochdale Metropolitan Borough Council, developments are now required to ensure a biodiversity net gain, which will be determined from the baseline biodiversity units. Should the development fall short of the required 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 et al., 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 16/11/2022. This is considered a significant constraint and will be discussed further in **Section 6**.
- 2.4.3 The survey was undertaken on a clear dry day with good visibility.
- 2.4.4 The site has undergone recent clearance from fly tipping, which has included some vegetation clearance. However, this does not pose a significant constraint on the survey as reasonable assumptions for the grassland, hedgerows and trees can be made based on what was identifiable.
- 2.4.5 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 one internationally designated site within 2km of the site. Rochdale Canal, Special Area of Conservation (SAC), located approximately 1313m away from the site. The site is designated because it supports a significant population of floating water-plantain *Luronium natans* in a botanically diverse water plant community and also holds a wide range of pondweeds *Potamogeton* spp. The canal has predominantly mesotrophic water. This population of *Luronium* is representative of the formerly more widespread canal populations of north-west England.
- 3.1.2 The MAGIC website revealed one nationally designated site within 2km of the site. Rochdale canal is a Site of Special Scientific interest (SSSI), located approximately 753m away from the site. It is designated because it contains important habitats for submerged aquatic plants and emergent vegetation, including extensive colonies of the nationally scarce SAC species floating water plantain *Luronium natans*. The site also supports a diverse assemblage of aquatic flora, notably its assemblage of pondweeds, *Potamogeton* spp; the nine species of which found in the canal represent a balanced community which reflects the quality of water.

3.2 Non-statutory Designated Sites

- 3.2.1 Records received from GMLRC 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 GMLRC.

Site Name	Distance (m) from Site	Reasons for Designation
Stanney Brook – SBI	708	Gr2 – Semi-natural grassland GSG – General Species – Mud snail Fw4 – Running Water Habitats Br5 – Birds – UK Priority Species Intrinsic Appeal – Accessibility & Usage
Slopes by river Beale, Fir Grove farm – SBI	938	Wetland habitat supports many amphibian species. Yellow flag iris, branched bur-reed and bulrush. Site supports high number of breeding reed bunting (UKBAP species).



Shaw moss – SBI	1660	Improved pasture with areas of marsh, open water and a bulrush dominated swamp. There is also an area of heathland. The designation is because of ornithological interest, including at least eight UKBAP Species
Hollingworth lake surrounds – SBI	1840	An area of acid grassland, which includes purple moor-grass, wavy hair-grass, heath bedstraw and lemon-scented fern. Stands of bilberry and heather occur rarely within the grassland.
Key: SBI – Site of Biological Importance		

3.3 Section 41 of the NERC Act 2006 Priority Habitat Inventory

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

- Lowland fens – 31 parcels with the closest being located approximately 490m away from the site.
- Deciduous woodland – 57 parcels with the closest being located approximately 600m away from the site.
- Open mosaic habitat – six parcels with the closest being located approximately 870m away 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 14/04/2015 and ending in 31/07/2017 to allow for the damage and destruction of a resting place used by great crested newt. Licence reference: 2015-7848-EPS-MIT.
- a licence granted in 20/03/2015 and ending in 31/05/2021 to allow for the destruction of a resting place used by common pipistrelle and brown long-eared bats. Licence reference: 2015-7854-EPS-MIT.
- a licence granted in 15/02/2011 and ending in 31/07/2013 to allow for the destruction of a resting place used by common pipistrelle and soprano pipistrelle bats. Licence reference: EPSM2011-2750.



3.4.2 Records of Protected and Notable Species

3.4.3 Flora

No records of protected or notable flora were returned by GMLRC.

3.4.4 Invertebrates (including white-clawed crayfish)

The following invertebrate records were received from GMLRC:

Table 3: Invertebrate records within 2km of the site, returned from GMLRC.

Scientific name	Common name	Designation	Latest Date	Number of records	Distance from site (m)
<i>Amphipoea oculea</i>	Ear moth	S41, UKBAP	2015	1	887
<i>Acronicta psi</i>	Grey dagger	S41, UKBAP	2014	3	823
<i>Apamea remissa</i>	Dusky brocade	S41, UKBAP	2019	3	1527
<i>Acronicta rumicis</i>	Knot grass moth	S41, UKBAP	2018	3	823
<i>Caradrina morpheus</i>	Mottled rustic	S41, UKBAP	2019	1	729
<i>Coenonympha pamphilus</i>	Small heath butterfly	S41, UKBAP	2020	5	811
<i>Diarsia rubi</i>	Small square-spot	S41, UKBAP	2014	7	823
<i>Ecliptopera silaceata</i>	Small phoenix	S41, UKBAP	2018	8	736
<i>Eugnorisma glareosa</i>	Autumnal rustic moth	S41, UKBAP	2015	4	823
<i>Eulithis mellinata</i>	The Spinach	S41, UKBAP	2014	2	823
<i>Hoplodrina blanda</i>	Rustic	S41, UKBAP	2018	8	823
<i>Hepialus humuli</i>	Ghost moth	S41, UKBAP	2014	4	823
<i>Hydraecia micacea</i>	Rosy rustic moth	S41, UKBAP	2014	1	823
<i>Melanchra persicariae</i>	Dot moth	S41, UKBAP	2017	27	823
<i>Mythimna comma</i>	Shoulder-striped wainscot	S41, UKBAP	2014	1	823
<i>Melanchra pisi</i>	Broom moth	S41, UKBAP	2012	1	823
<i>Omphiscola glabra</i>	Mud snail	S41, UKBAP	2019	1	1150
<i>Orthosia gracilis</i>	Powdered quaker moth	S41, UKBAP	2017	1	846
<i>Spilosoma lubricipeda</i>	White ermine	S41, UKBAP	2018	16	823
<i>Spilosoma luteum</i>	Buff ermine	S41, UKBAP	2018	21	823
<i>Tyria jacobaeae</i>	Cinnabar moth	S41, UKBAP	2019	14	576



<i>Xanthorhoe ferrugata</i>	Dark-barred twin-spot carpet	S41, UKBAP	2017	3	823
<i>Xanthia icteritia</i>	Sallow	S41, UKBAP	2014	1	823

Key:

S41: Section 41 of the NERC Act 2006

LBAP: Local Biodiversity Action Plan

UKBAP: UK Biodiversity Action Plan

3.4.5 Fish

No records of fish were returned by GMLRC.

3.4.6 Amphibians

Four records of great crested newt *Triturus cristatus*, a UKBAP and Greater Manchester BAP species was received from GMLRC. The most recent record was made in 2017 and the closest was approximately 593m away from the site.

Two records of common toad *Bufo bufo* a UKBAP and S41 species were received from GMLRC. The most recent record was made in 2018 and the closest was approximately 736m away from the site.

3.4.7 Reptiles

No records of reptiles were returned by GMLRC.

3.4.8 Birds

The following records were received from GMLRC:

Table 4: Bird Records Received from GMLRC.

Scientific name	Common name	Designation	Latest Date	Number of records	Distance from site (m)
<i>Acanthis cabaret</i>	Lesser redpoll	S41 UKBAP	2019	52	519
<i>Alauda arvensis</i>	Skylark	S41, UKBAP	2021	106	532
<i>Alcedo atthis</i>	Kingfisher	WCA	2019	14	317
<i>Anthus trivialis</i>	Tree pipit	S41, UKBAP	2013	1	1025
<i>Charadrius dubius</i>	Little ringed plover	WCA	2017	62	1025
<i>Emberiza schoeniclus</i>	Reed bunting	S41, UKBAP	2020	181	272
<i>Falco peregrinus</i>	Peregrine falcon	WCA	2013	6	1025
<i>Falco subbuteo</i>	Hobby	WCA	2016	2	1025



<i>Larus argentatus</i>	Herring gull	S41, UKBAP	2017	38	729
<i>Linaria cannabina</i>	Linnet	S41, UKBAP	2020	60	923
<i>Limosa limosa</i>	Black-tailed Godwit	S41, UKBAP, WCA	2013	2	1025
<i>Locustella naevia</i>	Common grasshopper warbler	UKBAP	2020	52	225
<i>Motacilla flava</i>	Yellow wagtail	S41, UKBAP	2020	14	1025
<i>Muscicapa striata</i>	Spotted flycatcher	S41, UKBAP	2017	10	1779
<i>Numenius arquata</i>	Eurasian curlew	S41	2016	13	736
<i>Passer domesticus</i>	House sparrow	S41, UKBAP	2020	350	320
<i>Perdix perdix</i>	Grey partridge	S41, UKBAP	2016	3	1394
<i>Prunella modularis</i>	Dunnock	UKBAP	2020	396	380
<i>Pyrhula pyrrhula</i>	Bullfinch	S41, UKBAP	2020	173	736
<i>Sturnus vulgaris</i>	Common starling	S41, UKBAP	2019	408	320
<i>Turdus philomelos</i>	Songthrush	S41, UKBAP	2020	81	505
<i>Tyto alba</i>	Barn owl	WCA	2020	8	736
<i>Vanellus vanellus</i>	Northern lapwing	S41, UKBAP	2020	225	476

Key:

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

S41: Section 41 of the NERC Act 2006

LBAP: Local Biodiversity Action Plan

UKBAP: UK Biodiversity Action Plan

3.4.9 Bats

The following records were received from GMLRC:

Table 5: Bat Records Received from GMLRC.

Scientific Name	Common Name	Designation	Latest Date	Number of records	Distance from Site
Unidentified bat of the order <i>Chiroptera</i>	Unidentified bat	EPS LBAP	2013	2	1335
<i>Nyctalus leisleri</i>	Leisler's bat	EPS LBAP	2019	3	736
<i>Nyctalus noctula</i>	Noctule bat	EPS S41	2019	11	736



		LBAP			
<i>Pipistrellus nathusii</i>	Nathusius's pipistrelle	EPS S41	2018	2	908
<i>Pipistrellus</i>	Pipistrelle bat	EPS LBAP	2019	20	736
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS LBAP	2019	37	436
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	EPS S41 LBAP	2012	1	654

Key:

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

S41: Section 41 of the NERC Act 2006

LBAP: Local Biodiversity Action Plan

3.4.10 Bat Roosts

The following records were received from GMLRC:

Table 6: Bat Records Received from GMLRC.

Scientific Name	Common Name	Roost type	Date	Distance from Site (m)
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Single adult	2010	1947
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2009	1947
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	20 Mixed Sex	2007	1689
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	107 individuals	2005	1862
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	100 individuals, mixed sex	2007	1538
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Two juvenile males	2003	1967
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity roost	2011	1520
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2014	916
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2013	612



<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity roost	2014	949
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	Maternity roost	2012	654
<i>Pipistrellus</i>	Pipistrelle bat	Maternity roost	2001	424
<i>Pipistrellus</i>	Pipistrelle bat	Maternity roost	2011	1324
<i>Pipistrellus</i>	Pipistrelle bat	Not recorded	2007	1424
<i>Pipistrellus</i>	Pipistrelle bat	Not recorded	2007	1424
<i>Plecotus auritus</i>	Brown long-eared bat	Not recorded	1999	1426
<i>Vespertilionidae</i>	Unidentified bat	Not recorded	2007	1887
<i>Vespertilionidae</i>	Unidentified bat	Hibernation	2013	1335

3.4.11 Badgers

Five records of European badger *Meles meles* were received from GMLRC, including one sett within 2km. The most recent record was made in 2017 and the closest was approximately 700m away from the site.

3.4.12 Otters

No records of otters were returned by GMLRC.

3.4.13 Water Voles

Six records of water voles *Arvicola amphibius*, a UKBAP and Greater Manchester BAP species were received from GMLRC. The most recent record was made in 2019 and the closest was approximately 413m away from the site.

3.4.14 Beaver

No records of Eurasian beaver were returned by GMLRC.

3.4.15 Other Notable Species

117 records of European hedgehog *Erinaceus europaeus*, a UKBAP and S41 species were received from GMLRC. The most recent record was made in 2020 and the closest was approximately 736m away from the site.

Two records of feral ferret were received from GMLRC. The most recent record was made in 2019 and the closest was approximately 1527m away from the site.



3.4.16 Invasive Species

No records of invasive species were returned by GMLRC.



4. Field Survey Results

4.1 Habitats

4.1.1 g4 – Modified grassland

The site has undergone recent clearance and, as per the guidance from Natural England, the site has been assessed based on what vegetation remained and what it is assumed would have been true prior to any vegetation clearance taking place. The site is surrounded by residential properties with gardens that back on to site. The species composition of this habitat is typical of modified grassland with a variety of ornamental garden plants which have encroached from the surrounding environment.

The species present within this habitat include creeping bent *Agrostis stolonifera*, Chinese asterbale *Astilbe chinensis*, ladies mantle *Alchemilla* sp., common columbine *Aquilegia vulgaris*, Diel's cotoneaster *Cotoneaster dielsianus*, montbretia *Crocsmia x crocosmiiflora*, cocksfoot *Dactylis glomerata*, fringed willowherb *Epilobium ciliatum*, wood spurge *Euphorbia amygdaloides*, wild strawberry *Fragaria vesca*, cleavers *Galium aparine*, wood aven *Geum urbanum*, orpine *Hylotelephium telephium*, tutsan *Hypericum androsaemum*, holly *Ilex aquifolium*, ragwort *Jacobaea vulgaris*, perennial rye grass *Lolium perenne*, cherry laurel *Prunus laurocerasus*, dandelion *Taraxacum* sp., common tansy *Tanacetum vulgare* and white clover *Trifolium repens*.

The site has recently undergone clearance from fly tipping incidents and has included vegetation clearance. This is evidenced by the large pile of soil with large amounts of vegetation present (**Appendix 1, Target Note 3; Appendix 3, Photo 2**).

Towards the western boundary there is a rubbish pile present, likely remaining from the recent incidents of fly tipping (**Appendix 1, Target Note 4; Appendix 3, Photo 3**).

4.1.2 67 – Dry stone wall

At the north west corner of the site there is a small dry stone wall separating the gardens of the existing surrounding properties from the site. Present along the length of the dry stone wall is English ivy *Hedera helix* (**Appendix 3, Photo 4**).

4.1.3 69 – Fence



Bordering the site on the western boundary there is a wooden fence present along the length of the site (**Appendix 3, Photo 5**).

4.1.4 73 – Bare ground

There is a large swathe of bare ground located centrally within the site for which the secondary code 73 is applied. The bare ground present is the result of vegetation clearance, which is further evidenced by visible tyre tracks (**Appendix 3, Photo 6**).

4.1.5 h2a Hedgerow (priority habitat)

The site is bordered along the southern boundary of the site by a hedgerow predominantly comprised of European beech *Fagus sylvatica*. There is also holly, bramble and Franchett's cotoneaster, *Cotonoeaster franchetti* present in small amounts (**Appendix 3, Photo 7**).

4.1.6 h2b – Other hedgerows

The site is bordered to the east by a partially felled ornamental non-native hedgerow, consisting of a single species Lawson's cypress *Chamaecyparis lawsoniana*. Honey fungus *Armillaria mellea* was present along the bottom of the hedge, indicating a potential poor state of health (**Appendix 1, Target Note 6; Appendix 3, Photos 8 & 9**).

4.1.7 u1b – Developed land, sealed surface

At the south eastern corner of the site there is a small area of developed land, sealed surface leading in from the existing gated entrance (**Appendix 3, Photo 10**).

4.1.8 1170 – Urban trees

There are two recently felled urban trees present on site, located at both the north west and western boundary of the site (**Appendix 3, Photo 11**).

4.2 Protected and Notable Species

4.2.1 Flora

No records of notable or protected flora were received from GMLRC. Only generalist flora was noted on site, therefore flora will not be mentioned further in this report.



4.2.2 Invertebrates (including white-clawed crayfish)

Within the grassland habitat, ragwort was identified, which is a food plant of various invertebrate species, with particular relevance to the cinnabar moth, a UKBAP and S41 species. In addition, the native beech hedgerow holds the potential to support a range of invertebrate species.

4.2.3 Fish

No records of fish within 2km of the site were received from GMLRC and no suitable habitat that could support fish was present on site. Therefore, fish will not be mentioned further in this report.

4.2.4 Amphibians

Four records of great crested newt and two records of common toad were returned by GMLRC. The hedgerows, grassland and dry stone wall identified on site hold the potential to support amphibian species. However, due to the lack of interconnecting habitat, particularly from the nearby Kingsway industrial estate and railway it is unlikely amphibians are present on site. Therefore, amphibians will not be mentioned further in this report.

4.2.5 Reptiles

No records of reptiles within 2km of the site were received from GMLRC the dry stone wall was identified as a suitable habitat to support reptiles. However, given the lack of interconnecting habitat and local records it is unlikely reptiles are utilising the site. Therefore, reptiles will not be mentioned further in this report.

4.2.6 Birds

The records returned by GMLRC revealed 23 bird species to be present within 2km of the site. Both hedgerows identified on site hold the potential to support nesting bird species, and it is likely the felled trees also offered nesting potential. There were several birds present on site during the survey, utilising puddles to bathe and foraging in the bare ground. The species noted onsite were European robin *Erithacus rubecula* and Eurasian blackbird *Turdus merula*.

4.2.7 Bats

While the site does not offer roosting opportunities for bat species, it is likely bats are utilising the site for foraging and commuting. The hedgerows and



grassland habitat both support a range of invertebrate species on which bat species are known to forage.

4.2.8 Badgers

The data search revealed the presence of badgers within 2km of site, including one sett. The hedgerows identified on site hold potential to support foraging and commuting badgers. However, beyond the hedgerows there is a chain link fence with no visible mammal holes indicating it is unlikely that badgers are gaining access to the site. Therefore, badgers will not be mentioned further in this report.

4.2.9 Otters

No records of otters within 2km were received from GMLRC and no suitable habitat that could support otters was present on site. Therefore, otters will not be mentioned further in this report.

4.2.10 Water Voles

Six records of water voles were received from GMLRC. However, no suitable habitat that could support water voles was identified on site. Therefore, water voles will not be mentioned further in this report.

4.2.11 Beaver

No records of beavers within 2km were received from GMLRC and no suitable habitat that could support beavers was present on site. Therefore, beavers will not be mentioned further in this report.

4.2.12 Other Notable Species

The data search revealed 117 records of hedgehogs within 2km of the site. The hedgerows and log pile identified on site provide a favourable habitat to support nesting and hibernating hedgehogs.

4.2.13 Invasive Species

No records of invasive species were received from GMLRC. However, Montbretia, a WCA (as amended) schedule 9 invasive species was identified on site in large amounts (**Appendix 1, Target Note 1**).



4.3 Biodiversity Baseline 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 (**see accompanying Excel Workbooks**). However, a summary of the main findings is provided below.
- 4.3.2 The total habitat area of the site is **0.16 hectares**, consisting of modified grassland (classified 'good'), developed land; sealed surface (condition assessment N/A), urban trees (classified 'good'), native hedgerow (classified 'good') and non-native ornamental hedgerow (classified 'poor'). The resulting ecological baseline is returned at **0.94 total habitat units** and **0.38 hedgerow units** (see accompanying spreadsheets).
- 4.3.3 Due to the recent clearance of site, reasonable assumptions have been made with regards to the condition assessment of the habitat types, as per the guidance from Natural England. As the grassland was recently cleared condition is automatically classified as 'good'. Due to the recent felling of the trees, the condition score is automatically classified as 'good' as per the guidance from Natural England.



5. Assessment

5.1 Designated Sites

5.1.1 Statutory designated sites

Along the Rochdale Canal there are two statutory designated sections, one internationally designated Rochdale canal SAC and one nationally designated Rochdale Canal SSSI.

The internationally designated SAC is located approximately 1313m away from the site. Due to limited interconnecting habitat and the medium scale nature of the development, the SAC is not deemed vulnerable to impacts from the proposed development.

The Rochdale canal nationally designated SSSI is within 1km of the site. Due to the proximity to site, the designated site could be adversely impacted as a result of the development.

5.1.2 Non-statutory designated sites

The desk study revealed four non-statutory designated sites within 2km from the site. Shaw moss and Hollingworth lake surrounds SBIs are not deemed vulnerable to adverse impacts from the proposed development due to the distance to the designated sites, the limited connecting habitat, and the medium-scale nature of the proposed development.

Stanney Brook and Slopes by river Beale, Fir Grove farm SBIs are both within 1km of the site. The proximity of the SBIs to the site provides connecting habitats for local wildlife, which may be affected by the planned development. Due to the proximity to site,

5.2 Habitats

5.2.1 The most valuable habitats for biodiversity within the development site boundary is the native beech hedgerow and the dry stone wall. The proposed works will impact the native beech hedgerow by its removal.

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

5.3.1 Invertebrates (including white-clawed crayfish)

The vegetation and drystone wall onsite provide sheltering and foraging opportunity for invertebrates. The development will see the removal of vegetation and dry stone wall. Ragwort has also been identified on site which is the food plant for the caterpillars of the cinnabar moth, which is a priority species. Therefore, further recommendations are provided in **Section 6.3.1**.

5.3.2 Birds

Both hedgerows, particularly the beech, identified on site are a favourable habitat for many bird species including the songthrush, a UKBAP and S41 species. The modified grassland was identified to support foraging bird species, as evidenced on site through birds foraging and bathing in puddles. If vegetation clearance to facilitate development takes place within bird nesting season (1st February to 31st August), nesting birds may be negatively impacted (**see Section 6.3.2**).

5.3.3 Bats

The field survey revealed no suitable habitat to support roosting bats was present onsite, however it is likely that bats are utilising the site for foraging and commuting purposes. The desk study revealed the presence of six species of bat within 1km of site, including one roost within 500m of site. Therefore, recommendations are provided to limit the disturbance of foraging and commuting bats on site (**see Section 6.3.3**).

5.3.4 Other Notable Species

The hedgerows identified on site act as commuting passages to allow hedgehogs access on to the site. The log pile onsite provide suitable habitat for nesting and hibernating hedgehogs. Hedgehogs could be killed or injured during removal of these habitats (**see Section 6.3.4**).

5.3.5 Invasive Species

Montbretia is listed as Schedule 9 (WCA, as amended) species. There is the legal requirement to ensure the safe removal and disposal of the species listed, and such removal will be a benefit to the site. If construction works begin before its removal, there is the risk of transporting and distributing the species. It was evident that a large amount of montbretia had already been cleared as evidenced by bulbs being present in the soil pile on site. Additional care must



be taken in the disposal of this soil pile to prevent the further spread of a Schedule 9 invasive species (**see Section 6.3.5; Appendix 3, Photo 12**).



6 Recommendations

6.1 Habitats

- 6.1.1 On completion of works, the number of felled trees – including those that have already been removed – must be replaced with native species of local provenance on a three-for one-basis.
- 6.1.2 Under the current development plans, the hedgerows are to be removed. The native beech hedgerow should be replaced on a like for like basis. Further recommendations are provided in **Section 6.3** in relation to protected species the beech and other hedgerows could support.
- 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.
- 6.1.4 The timing of the survey was considered a significant constraint to the findings of the report. Should the proposed development go ahead, it will require a Biodiversity Metric 3.1 Calculation. For the purpose of this calculation, a re-survey of the site is highly recommended between April to October when the vegetation is more readily identifiable.
- 6.1.5 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 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.



6.2 Designated Sites

6.2.1 As a result of the development the statutory designated SSSI and the non-statutory designated SBIs Stanney Brook and Slopes by river Beale, Fir Grove farm could be adversely impacted. Natural England must be consulted regarding potential impacts and necessary mitigation.

6.3 Protected and Notable Species

6.3.1 **Invertebrates** - Native scrub and wildflower planting (including ragwort species) is recommended to mitigate for the loss of habitat and floral variety which will affect many invertebrate species noted to be abundant on site and species which may forage on invertebrates such as bats and birds.

6.3.2 **Birds** - The 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.

6.3.3 **Bats** – According to the Bat Conservation Trust (BCT) all species of bat in the UK are protected. It is a criminal offence to deliberately take, injure or kill a wild bat, intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of 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.

6.3.4 Other notable species - The log pile onsite provides ideal nesting habitat for hedgehogs, which are legally protected during hibernation and while raising their young. The hedgerows provide commuting passages for hedgehogs. 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 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.

6.3.5 Invasive species – A method statement for the safe management and removal of montbretia 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.



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

- | | |
|-----------------------|-------------------------|
| • Badgers | • Otters |
| • Bats | • Reptiles |
| • Beavers | • Water voles |
| • Dormice | • White-clawed crayfish |
| • Great crested newts | • Wild birds |
| • Natterjack toads | |

As well as:

- | | |
|---------------------------------------|--------------------------|
| • Invasive non-native (alien) species | • <u>Freshwater fish</u> |
| • <u>Deer</u> | • <u>Invertebrates</u> |
| | • <u>Plants</u> |

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Appendices



Appendix 1: UKHab Habitat Map

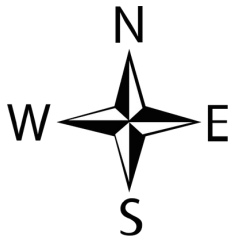
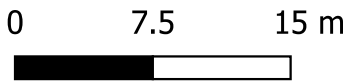


Land off Willows Lane, Milnrow - Habitat Map



Legend

- Red line boundary
- g4 - Modified grassland
- 67 - Dry stone wall
- 69 - Fence
- 73 - Bare ground
- u1b - Developed land; sealed surface
- h2a - Hedgerow (Priority habitat)
- h2b - Other hedgerow
- u 1170 - Urban trees
- Target notes
 - 1 - Montbretia
 - 2 - Log pile
 - 3 - Soil pile
 - 4 - Rubbish pile
 - 5 - Drain
 - 6 - Honey fungus



Appendix 2: Proposed Development Plan





Side Elevation

Rear Elevation

Front Elevation



Side Elevation

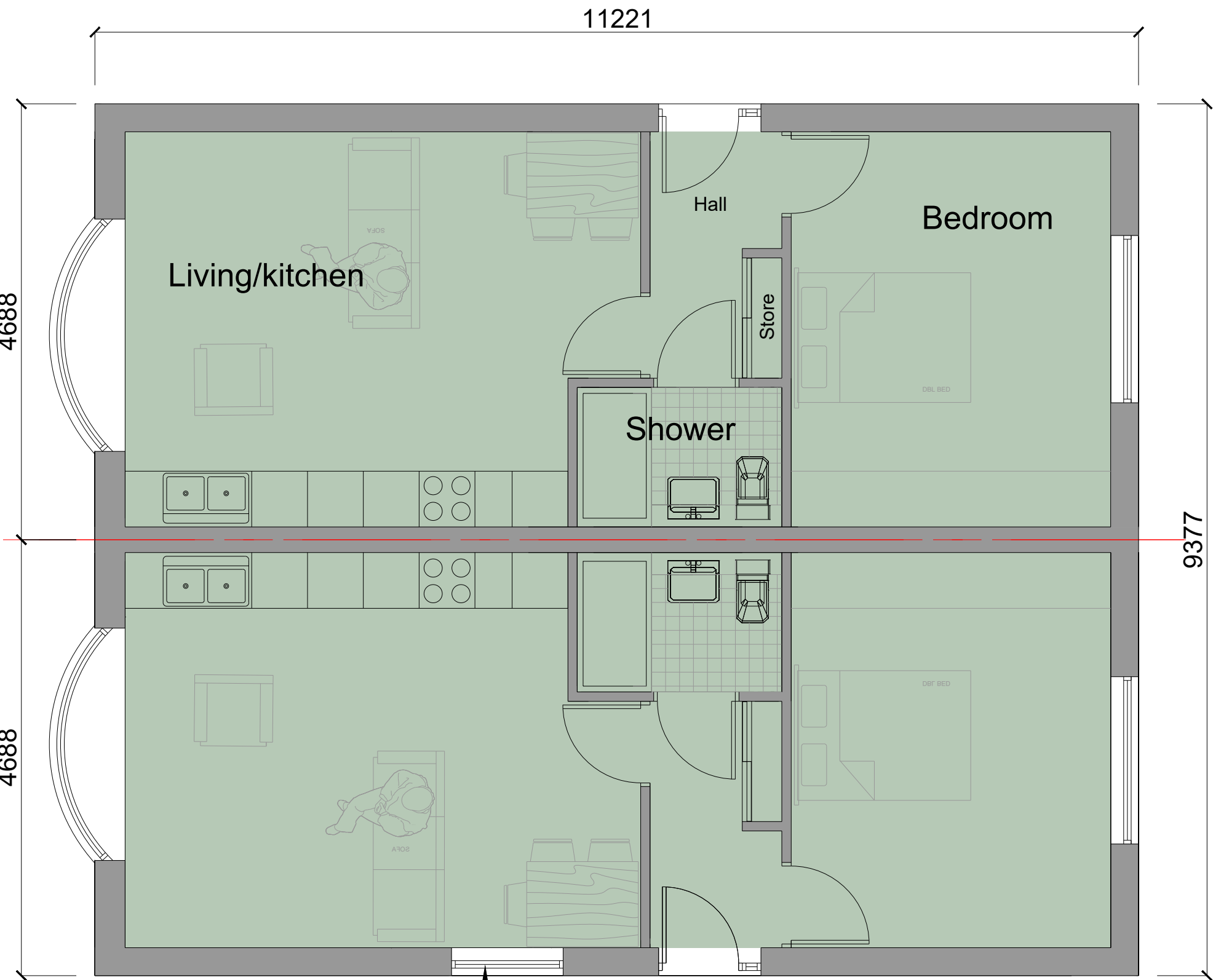
Side windows to plots
1 and 6 only



EXISTING SITE PLAN 1:500 - see location plan for red edge application site



PROPOSED SITE PLAN 1:200
(To be read in conjunction with SCP technical note)



Floor Plan

Side windows to plots
1 and 6 only

General Notes;

- Facing brickwork to outer walls to L.A. approval.
- Concrete interlocking roofing tiles to L.A. approval
- Contrasting colour brick heads and sills to openings where shown.
- Black finish UPVC double glazed windows.
- Insulated composite doors with double glazed panels.
- Anthracite gray UPVC fascia's soffits and barge boards.
- Black plastic gutters and downpipes.
- Permeable tarmac surface to access drive - subject to site conditions and engineers recommendations.

C 20-7-23 Revised proposals - semi detached 1 bed bungalow
B 16-6-23 Site layout amended now based on topographical survey received 15-6-23
A 15-2-23 Road amended and bin store shown
rev: date: description

ajc
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Project:
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at rear of Willows Lane, Milnrow
Proposals

Client: Mr. J.R.Grievess

scale: 1:100/1:50

date: Sept. 2022

drawn: NL

Dwg. Nr. H473-01-C

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CDM:
Clients and contractors must fulfil their duties under the CDM regulations 2015. The client is required to notify the HSE of any projects lasting more than 30 days or involving more than 500 person days.

Appendix 3: Photographic Evidence



Photo 1: View from the east of site, showing general composition of site.



Photo 2: Large pile of soil and log pile located at the north eastern boundary of site.



Photo 3: Rubbish pile located centrally in the western side of the site.



Photo 4: View of the dry stone wall at the northern boundary of the site.



Photo 5: Wooden fence forming the western boundary of the site.



Photo 6: Large swathe of bare ground located centrally within the site.





Photo 7: Native beech hedgerow on the southern boundary of the site.



Photo 8: Non-native ornamental hedge located on the eastern boundary of the site.



Photo 9: Honey fungus on the non-native ornamental hedge at the east of the site.



Photo 10: Developed land; sealed surface located at the south eastern corner of site.



Photo 11: Stump remaining from recently felled urban tree on the western boundary of site.



Photo 12: Close up image of the soil pile showing cleared montbretia and its bulbs.



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 survey for maternity or summer roosts ^b												
Emergence/re-entry 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 ^c												
Radio tagging and tracking survey ^c												

= 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.

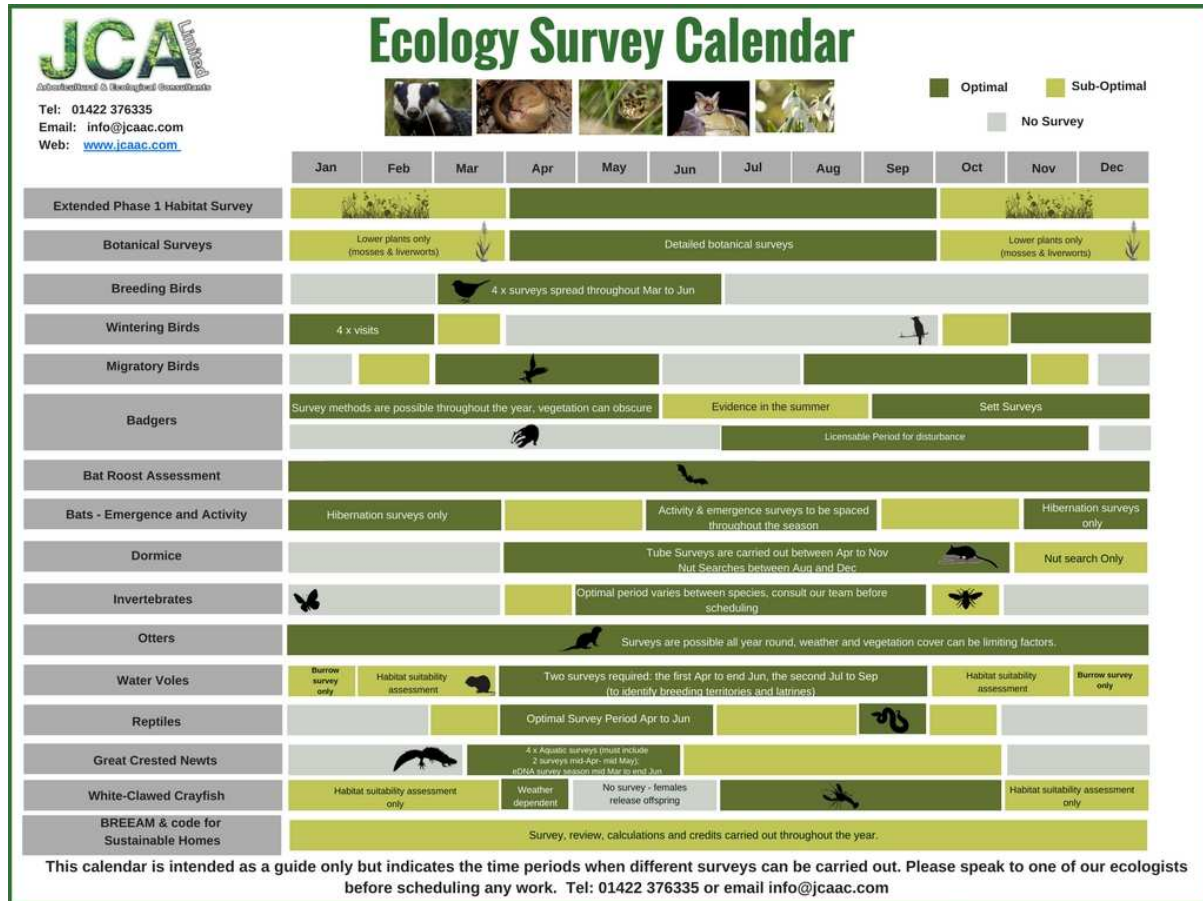
The following habitat types are protected under UK Law:

- 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 and a Natural England Level 2 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.

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.



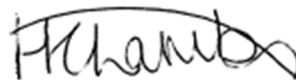
The Information and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and bona fide opinions.

Signed



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Revised: 20/03/23

Reviewed by



.....
Helen Chambers

12/12/22

Approved by



.....
Adam West *ACIEEM*

15/12/2022



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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



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