

**PRELIMINARY ECOLOGICAL
APPRAISAL**

**at
Land at Birchinley Manor
Rochdale
Lancashire
OL16 3DG**

**Client:
CJ Partnership**

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**Date of Report:
25/11/2024**



Quality Assurance

Version	Desktop Survey Completed:		Site Surveyed:		Report Completed:		Reviewed:	
	Date	Name	Date	Name	Date	Name	Date	Name
001	19/11/24	Alex Donovan	08/11/24	Alex Donovan Rick Westwood Grace Bramley	20/11/24	Alex Donovan	22/11/24 25/11/24	Rick Westwood 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 **CJ Partnership** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **Land at Birchinley Manor, Rochdale**. The site is located at Ordnance Survey (OS) National Grid Reference **SD 93105 13786** with nearby postcode **OL16 3DG**.

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	None	None	None	None
Non-statutorily protected	Low	Shaw Moss SBI is located within 500m of the site.	None	Consult with Rochdale Metropolitan Borough Council regarding potential impacts and necessary mitigation.
S41 habitat	None	None	None	None
Other habitats	None	None	None	None
Protected species				
Flora (WCA Sch 8, CHSR Sch 5)	None	None	None	None
Invertebrates	Low	Removal of the habitats present on site could adversely impact a range of generalist invertebrates, as well as species which feed on invertebrates.	None	Native scrub and wildflower planting is recommended to compensate for any loss. A Biodiversity Enhancement Plan (BEP) is recommended.
White-clawed crayfish	None	None	None	None
Fish	None	None	None	None
Amphibians	Low	The habitats on site provide may support amphibians. The works may disturb, injure, or kill amphibians, including great crested newts, resulting in a breach of legislation.	None	A precautionary approach should be adopted to include an Ecological Clerk of Works (ECOW) being present. Any excavation of the site should be covered overnight, or if not possible, a safe exit route provided for badgers to leave the site, such as an artificial ramp to aid their exit.
Reptiles	Low	The habitats on site provide may support reptiles. The works may disturb, injure, or kill reptiles, resulting in a breach of legislation.	None	A precautionary approach should be adopted to include an Ecological Clerk of Works (ECOW) being present. Any excavation of the site should be covered overnight, or if not possible, a safe exit route provided for badgers to leave the site, such as an artificial ramp to aid their exit.



Birds	Low	Potential breach of legislation from destruction of nests or disturbance of nesting birds.	Dependent on timing of works.	A preconstruction site walkover is required prior to any vegetation removal or works close to potential nesting areas. If works occurs outside of the breeding bird period (1st February until 31st August) and birds are found, the works must cease immediately, and a suitably competent ecologist contacted.
Bats	Low	Inappropriate, obtrusive lighting from the development would affect the ability of bats to forage and commute onsite.	None	For artificial lighting within the development, guidance from Institute of Lighting Professionals (08/23) should be followed.
Badgers	Low	Potential to disturb any foraging or commuting badgers which may be utilising the site.	None	Any excavation of the site should be covered overnight, or if not possible, a safe exit route provided for badgers to leave the site, such as an artificial ramp to aid their exit.
Otters	None	None	None	None
Water voles	None	None	None	None
Beaver	None	None	None	None
Other Species e.g. S41 species	Low	The habitats on site provide may support hedgehogs and brown hares. The works may disturb, injure, or kill hedgehogs or brown hares.	None	A precautionary approach should be adopted to include an Ecological Clerk of Works (ECOW) being present. Any excavation of the site should be covered overnight, or if not possible, a safe exit route provided for badgers to leave the site, such as an artificial ramp to aid their exit.
Invasive Species (WCA Sch 9) Injurious Weeds (Weeds Act, 1959)				
None onsite. Himalayan balsam, Japanese knotweed, and montbretia identified in wider offsite area.	Low	Invasive species located away from the development area, but will likely spread naturally.	None	An Invasive Species Method Statement for the safe management and removal of the Schedule 9 species. Consultation with specialist contractor regarding eradication of these 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 Regulations 2017				



Contents

1. Introduction	7
1.1 Background	7
1.2 Scheme Description and Location	7
1.3 Aims and Objectives	7
2. Methodology	9
2.1 Desktop Study	9
2.2 Field Survey	9
2.3 Survey Constraints	10
3. Desk Study Results.....	12
3.1 Statutory Designated Sites	12
3.2 Non-statutory Designated Sites	12
3.3 Section 41 of the NERC Act 2006 Priority Habitat Inventory	13
3.4 Protected and Notable Species	13
4. Field Survey Results.....	20
4.1 Habitats	20
4.2 Protected and Notable Species	22
5. Assessment.....	25
5.1 Designated Sites	25
5.2 Habitats	25
5.3 Protected and Notable Species	25
6. Recommendations	28
6.1 Habitats	28
6.2 Protected and Notable Species	28
7. References.....	31
Appendix 1: UKHab Habitat Map.....	35
Appendix 2: Proposed Development Plan	38
Appendix 3: Photographic Evidence	40
Appendix 4: Bat Survey Guidelines.....	42
Appendix 5: Glossary	44
Appendix 6: Protected Species Information	45
Appendix 7: Survey Calendar	47
Appendix 8: Author Qualifications	48



1. Introduction

1.1 Background

1.1.1 In November 2024, JCA Limited was instructed by **CJ Partnership** to undertake a Preliminary Ecological Appraisal (PEA) of a site located at **Land at Birchinley Manor**, 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 93105 13786**, with nearby postcode **OL16 3DG**. The site is located to the east of Rochdale and north of Milnrow. The surrounding area consists of agricultural fields, grassland, and pockets of woodland. Hollingworth Lake is located to the north of the site.

1.2.2 The scheme is the construction of a single residential dwelling and associated 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, including the results of recent ecological surveys in the area.
- 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**).



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. In addition, international sites designated for bats within 30km of the site were searched for. 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 Greater Manchester Ecology Unit (GMEU), 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 (GMBAP) to assess national and regional habitat and species status.

2.2 Field Survey

2.2.1 A UK Hab survey of the site was conducted on 08/11/2024. 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 2.01, UKHab, 2023). 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 Regulations (CHSR) 2017 (retained in UK law by CHSR (amendment) (EU exit) 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 Survey Constraints

2.3.1 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.



- 2.3.2 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 08/11/2024.
- 2.3.3 The weather during the survey was 9°C, mostly clear, with no rain, 8kmh E winds, and 81% humidity. The weather in the days leading up to the survey had similar conditions. The weather is unlikely to have impacted the survey results.
- 2.3.4 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 **two** internationally designated sites within 2km of the site, detailed in **Table 2** below.

Table 2: Internationally designated sites within 2km of the site, identified on MAGIC.

Site Name	Designation	Distance (m) from Site	Reasons for Designation
Rochdale Canal	SAC	1085	Contains important habitats for submerged aquatic plants and emergent vegetation, including extensive colonies of the nationally scarce SAC species floating water plantain <i>Luronium natans</i> (WCA Schedule 8). The site supports a range of aquatic flora, fish, invertebrates, and birds, including kingfisher <i>Alcedo atthis</i> (WCA Schedule 1).
South Pennine Moors / South Pennine Moors Phase 2	SAC SPA (Phase 2)	1960	Large unenclosed moorland containing diverse and extensive upland plant communities. Includes habitats such as blanket bog, species-rich acidic flushes and mires, wet and dry heaths and acid grasslands. Supports moorland breeding bird assemblages including merlin <i>Falco columbarius</i> , golden plover <i>Pluvialis apricaria</i> , curlew <i>Numenius Arquata</i> , and twite <i>Carduelis flavirostris</i> .
Key: SAC – Special Area of Conservation SPA – Special Protection Area			

3.1.2 The MAGIC website revealed **two** nationally designated sites within 2km of the site, detailed in **Table 3** below.

Table 3: Nationally designated sites within 2km of the site, identified on MAGIC.

Site Name	Designation	Distance (m) from Site	Reasons for Designation
Rochdale Canal	SSSI	1085	See Table 2
South Pennine Moors	SSSI	1960	See Table 2
Key: SSSI – Site of Special Scientific Interest			

3.2 Non-statutory Designated Sites

3.2.1 Records received from GMEU revealed **six** non-statutory designated sites within 2km of the site, detailed in **Table 4** below.



Table 4: Non-statutory designated sites within 2km of the site, returned from GMEU.

Site Name	Designation	Distance (m) from Site	Reasons for Designation
Shaw Moss	SBI	230	Reedbed, swamp, and fen habitats Bird assemblages Schedule 1 birds
Hollingworth Lake & Surrounds	SBI	750	Not given
Slopes by River Beal, Fir Grove Farm	SBI	850	Not given
Rochdale Canal	SBI	1085	See Table 2
Stanney Brook	SBI	1770	Not given
Disused Reservoir at Tunshill Hill	SBI	1965	Not given
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 **no** priority habitats within the site, and the following within 500m of the site:

- Deciduous woodland – 400m NE

3.4 Protected and Notable Species

3.4.1 European Protected Species (EPS) Licence Applications

The MAGIC website revealed **two** EPS licence applications within 2km of the site:

- a licence granted on 14/04/2015 and ending on 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 on 20/03/2015 and ending on 31/05/2021 to allow for the destruction of a resting place used by brown long-eared bat and common pipistrelle. Licence reference: 2015-7854-EPS-MIT.

3.4.2 Records of Protected and Notable Species

3.4.3 Flora

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



3.4.4 Invertebrates (including white-clawed crayfish)

The following records were received from GMEU:

Table 5: Invertebrate Records Received from GMEU.

Scientific name	Common name	Designation	Latest Date	Number of records	Closest distance from site (m)
<i>Acronicta psi</i>	Grey dagger moth	S41	2014	3	570
<i>Acronicta rumicis</i>	Knot grass moth	S41	2018	3	570
<i>Amphipoea oculatea</i>	Ear moth	S41	2015	1	570
<i>Amphipyra tragopoginis</i>	Mouse moth	S41	2020	1	570
<i>Apamea remissa</i>	Dusky brocade moth	S41	2019	4	570
<i>Caradrina morpheus</i>	Mottled rustic moth	S41	2019	1	569
<i>Ceramica pisi</i>	Broom moth	S41	2014	2	570
<i>Coenonympha pamphilus</i>	Small heath butterfly	S41	2022	29	568
<i>Diarsia rubi</i>	Small square-spot moth	S41	2014	8	570
<i>Ecliptopera silaceata</i>	Small phoenix moth	S41	2018	7	570
<i>Eugnorisma glareosa</i>	Autumnal rustic moth	S41	2020	5	570
<i>Eulithis mellinata</i>	Spinach moth	S41	2014	3	570
<i>Hepialus humuli</i>	Ghost moth	S41	2014	5	570
<i>Hoplodrina blanda</i>	Rustic moth	S41	2018	8	570
<i>Hydraecia micacea</i>	Rosy rustic moth	S41	2014	1	570
<i>Lasiommata megera</i>	Wall butterfly	S41	2021	1	572
<i>Leucania comma</i>	Shoulder-striped wainscot moth	S41	2014	1	570
<i>Melanchra persicariae</i>	Dot moth	S41	2022	23	570
<i>Orthosia gracilis</i>	Powdered quaker moth	S41	2017	1	570
<i>Spilosoma lubricipeda</i>	White ermine	S41	2018	16	570
<i>Spilosoma luteum</i>	Buff-ermine moth	S41	2018	21	570
<i>Timandra comae</i>	Blood-vein moth	S41	2022	1	571
<i>Tyria jacobaeae</i>	Cinnabar moth	S41	2020	22	568
<i>Xanthia icteritia</i>	Sallow moth	S41	2020	3	570
<i>Xanthorhoe ferrugata</i>	Dark-barred twin-spot carpet moth	S41	2018	3	570

Key:

S41: Section 41 of the NERC Act 2006

GMBAP: Greater Manchester Biodiversity Action Plan



3.4.5 Fish

No records of protected or notable fish were returned by GMEU.

3.4.6 Amphibians

13 records of great crested newt *Triturus cristatus* were returned by GMEU. Great crested newt are a European Protected Species designated under CHRS 2017 Schedule 2, with additional protection under WCA Schedule 5. They are also a NERC S41 and GMBAP priority species. The most recent record was from 2017, and the closest record was located 161m from the site. The highest count was of 11 individuals.

Eight records of common toad *Bufo bufo* were returned by GMEU. Common toad are WCA Schedule 5 (in respect of Section 9(5) only - offence to buy, sell, advertise, transport or be in possession for the purpose of sale) and NERC S41 species. The most recent record was from 2021, and the closest record was located 570m from the site. The highest count was of 72 individuals.

3.4.7 Reptiles

No records of protected or notable reptiles were returned by GMEU.

3.4.8 Birds

The following records were received from GMEU:

Table 6: Bird Records Received from GMEU.

Scientific name	Common name	Designation	Latest Date	Number of records	Closest distance from site (m)
<i>Acanthis cabaret</i>	Lesser redpoll	S41	2021	169	568
<i>Alauda arvensis</i>	Skylark	S41	2021	84	568
<i>Alcedo atthis</i>	Kingfisher	WCA	2023	139	569
<i>Anthus trivialis</i>	Tree pipit	S41	2014	2	572
<i>Aythya marila</i>	Scaup	WCA S41	2016	2	572
<i>Botaurus stellaris</i>	Bittern	WCA S41	2016	1	572
<i>Branta bernicla bernicla</i>	Dark-bellied brent goose	S41	2021	3	571
<i>Charadrius dubius</i>	Little ringed plover	WCA	2022	110	568
<i>Cuculus canorus</i>	Common cuckoo	S41	2017	5	572
<i>Emberiza schoeniclus</i>	Reed bunting	S41 GMBAP	2022	168	568
<i>Falco peregrinus</i>	Peregrine	WCA	2020	3	572
<i>Falco subbuteo</i>	Hobby	WCA	2016	1	571
<i>Larus argentatus</i>	Herring gull	S41	2022	208	568



<i>Limosa limosa</i>	Black-tailed godwit	WCA S41	2018	1	572
<i>Linaria cannabina</i>	Linnet	S41	2022	75	568
<i>Linaria flavirostris</i>	Twite	S41 GMBAP	2014	1	572
<i>Locustella naevia</i>	Grasshopper warbler	S41	2020	38	568
<i>Melanitta nigra</i>	Common scoter	WCA S41	2018	22	571
<i>Motacilla flava</i>	Yellow wagtail	S41	2020	7	568
<i>Muscicapa striata</i>	Spotted flycatcher	S41	2017	23	571
<i>Numenius arquata</i>	Curlew	S41	2021	40	570
<i>Passer domesticus</i>	House sparrow	S41	2022	245	568
<i>Perdix perdix</i>	Grey partridge	S41	2016	7	570
<i>Prunella modularis</i>	Dunnock	S41	2022	272	568
<i>Pyrrhula pyrrhula</i>	Bullfinch	S41	2022	240	568
<i>Sturnus vulgaris</i>	Starling	S41	2021	304	568
<i>Turdus philomelos</i>	Song thrush	S41	2021	111	568
<i>Turdus torquatus</i>	Ring ouzel	S41	2020	8	572
<i>Tyto alba</i>	Barn owl	WCA	2021	17	149
<i>Vanellus vanellus</i>	Lapwing	S41	2022	264	568

Key:

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

S41: Section 41 of the NERC Act 2006

GMBAP: Greater Manchester Biodiversity Action Plan

3.4.9 Bats

The following records were received from LERC:

Table 7: Bat Records Received from GMEU.

Scientific Name	Common Name	Designation	Latest Date	Number of records	Closest distance from site (m)
<i>Nyctalus leisleri</i>	Leisler's bat	EPS WCA GMBAP	2021	4	700
<i>Nyctalus noctula</i>	Noctule bat	EPS WCA S41 GMBAP	2021	16	700
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	EPS WCA	2020	4	990
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	EPS WCA GMBAP	2021	44	247
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	EPS WCA S41 GMBAP	2021	2	1476
<i>Pipistrellus sp.</i>	Unidentified pipistrelle bat	EPS WCA	2021	20	631



<i>Vespertilionidae</i>	Unidentified bat in the Vesper family	EPS WCA	2021	4	1251
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Key:

EPS: European Protected Species: Species listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017.

WCA: Schedule 5 and 6 of the Wildlife & Countryside Act 1981 (as amended)

S41: Section 41 of the NERC Act 2006

GMBAP: Greater Manchester Biodiversity Action Plan

3.4.10 Bat Roosts

The following records were received from GMEU:

Table 8: Bat Records Received from GMEU.

Scientific Name	Common Name	Roost type	Date	Distance from Site (m)
<i>Myotis daubentonii</i>	Daubenton's	Not recorded	2001	1673
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2014	645
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2013	1374
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity – 66 counts	2014	612
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity – 99 counts	2015	1017
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2018	951
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Not recorded	2014	1018
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Hibernation	2014	1035
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Maternity – 20 counts	2019	1630
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	Maternity – 6 counts	2012	775
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	Transitional – 2 counts	2016	1476
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Maternity	2001	1131
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	1999	1271
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded – 30 counts	1996	1226
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	2004	1318
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Maternity – 65 counts	1998	1411
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	2010	1547
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded – 14 counts	1996	1547
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	1999	1645



<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded – 100 counts	1999	1645
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Maternity – 17 counts	2009	1022
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Maternity – 2 counts	2015	1420
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Maternity	2011	903
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded – 5 counts	2007	930
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded – 16 counts	2007	930
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	2007	1882
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	2003	864
<i>Pipistrellus</i> sp.	Unidentified pipistrelle bat	Not recorded	2003	864

3.4.11 Badgers

Records of badger *Meles meles* activity and setts **were** returned by GMEU. Badgers are protected under WCA Schedule 6, with additional protections for badgers as well as their setts under the Protection of Badgers Act 1992.

3.4.12 Otters

One record of Eurasian otter *Lutra lutra* was returned by GMEU. Otter are a European Protected Species designated under CHRS 2017 Schedule 2, with additional protection under WCA Schedules 5, 6, and 6ZA. They are also a NERC S41 priority species. The record was from 2018, and was located 571m from the site.

3.4.13 Water Voles

Three records of water vole *Arvicola amphibius* were returned by GMEU. Water vole are protected under WCA Schedule 5, and are a NERC S41 and GMBAP priority species. The most recent record was from 2017, and the closest record was located 1806m from the site.

3.4.14 Beaver

No records of beaver were returned by GMEU.

3.4.15 Other Notable Species

212 records of European hedgehog *Erinaceus europaeus* were returned by GMEU. Hedgehogs are a WCA Schedule 6 and NERC S41 species. The most



recent record was from 2017, and the closest record was located 569m from the site.

Three records of brown hare *Lepus europaeus* were returned by GMEU. Brown hare are a NERC S41 and GMBAP priority species. The most recent record was from 2021, and the closest record was located 570m from the site. The highest count was of 10 individuals.

3.4.16 Invasive Species

No records of invasive species were returned by GMEU.



4. Field Survey Results

4.1 Habitats

Onsite – within red line boundary

4.1.1 g3c – other neutral grassland: 10 – scattered scrub, 16 – tall forbs, 32 – scattered trees, 81 – ruderal/ephemeral.

The majority of the site is made up of an area of other neutral grassland (**Appendix 3, photo 2**). Species identified include bentgrass sp. *Agrostis* sp., bramble *Rubus fruticosus*, broad-leaved dock *Rumex obtusifolius*, cock's foot *Dactylis glomerata*, common hogweed *Heracleum sphondylium*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum officinale*, field maple *Acer campestre*, ragwort *Jacobaea vulgaris*, ribwort plantain *Plantago lanceolata*, silver birch *Betula pendula*, spear thistle *Cirsium vulgare*, teasel *Dipsacus fullonum*, timothy grass *Phleum pratense*, willowherb sp., *Epilobium* sp., and Yorkshire fog *Holcus lanatus*.

4.1.2 w1g – other woodland – broadleaved: 10 – scattered scrub.

A small parcel of woodland occurs to the northeast of the site, extending into the offsite area (**Appendix 3, photo 2**). Species identified in the area include Bebb's willow *Salix bebbiana*, bentgrass sp. *Agrostis* sp., bramble *Rubus fruticosus*, broad-leaved dock *Rumex obtusifolius*, cock's foot *Dactylis glomerata*, and goat willow *Salix caprea*.

4.1.3 u1c – artificial unvegetated, unsealed surface

A small area of gravel pathway occurs to the southwest of the site (**Appendix 3, photo 1**).

Offsite – within blue line boundary

4.1.4 g3c – other neutral grassland: 10 – scattered scrub, 14 – scattered rushes, 16 – tall forbs, 32 – scattered trees, 81 – ruderal/ephemeral, 114 – dry-stone walls.

The onsite grassland area extends to cover the majority of the offsite area (**Appendix 3, photo 3**). This grassland area contains old dry-stone walls (**Appendix 3, photos 8, 11**). In addition to the species identified onsite, the following species were also identified within the offsite grassland area: holly *Ilex aquifolium*, Leyland cypress *Cupresses x leylandii*, reed canary grass *Phalaris arundinacea*, and soft rush *Juncus effusus*.



4.1.5 w1g – other woodland – broadleaved: 10 – scattered scrub, 114 – dry-stone wall, 524 – invasive non-native species.

Several areas of woodland parcels occur around the borders of the offsite area. The parcel to the northwest of the offsite area is the continuation of the onsite parcel. Small parcels also occur the south, southwest, and northeast of the area, and a larger strip of woodland occurs along the majority of the eastern border (**Appendix 3, photos 2, 4, 9**). The southwest parcel contained two invasive species: **Himalayan balsam** *Impatiens glandulifera* (**Appendix 3, photo 5**) and **Japanese knotweed** *Fallopia japonica* (**Appendix 3, photo 6**). Other species identified across the woodland parcels include ash *Fraxinus excelsior*, Bebb's willow *Salix bebbiana*, bentgrass sp. *Agrostis* sp., bramble *Rubus fruticosus*, broad-leaved dock *Rumex obtusifolius*, cock's foot *Dactylis glomerata*, coltsfoot *Tussilago farfara*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, dogrose *Rosa canina*, field bindweed *Convolvulus arvensis*, goat willow *Salix caprea*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, holly *Ilex aquifolium*, lady fern *Athyrium filix-femina*, oak sp. *Quercus* sp., purple foxglove *Digitalis purpurea*, spear thistle *Cirsium vulgare*, sycamore *Acer pseudoplatanus*, willow sp. *Salix* sp., and yellow flag iris *Iris pseudacorus*.

4.1.6 h3d – bramble scrub: 32 – scattered trees, 114 – dry-stone walls.

Two small patches of bramble scrub occur to the south and southwest of the offsite area (**Appendix 3, photo 7**). Species identified in these areas include box-leaf honeysuckle *Lonicera pileate*, bramble *Rubus fruticosus*, broad-leaved dock *Rumex obtusifolius*, cock's foot *Dactylis glomerata*, coltsfoot *Tussilago farfara*, common comfrey *Symphytum officinale*, common nettle *Urtica dioica*, common snowberry *Symphoricarpos albus*, dogrose *Rosa canina*, goat willow *Salix caprea*, hawthorn *Crataegus monogyna*, spear thistle *Cirsium vulgare*, and willowherb sp. *Epilobium* sp.

4.1.7 h3h – mixed scrub: 524 – invasive non-native species.

A patch of mixed scrub occurs to the northeast of the offsite area (**Appendix 3, photo 10**). Species identified in this area include bentgrass sp. *Agrostis* sp., bramble *Rubus fruticosus*, cock's foot *Dactylis glomerata*, common heather *Calluna vulgaris*, hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, **montbretia** *Crocasmia x crocosmiiflora* (**Appendix 3, photo 12**), oak sp. *Quercus* sp., purple foxglove *Digitalis purpurea*, and willowherb sp. *Epilobium* sp.



4.2 Protected and Notable Species

4.2.1 Flora

No records of protected or notable plant species were returned by GMEU. **No** protected or notable plant species were identified. Flora will, therefore, not be mentioned further in this report.

4.2.2 Invertebrates (including white-clawed crayfish)

Records of **25** protected or notable invertebrate species were returned by GMEU. **No** protected or notable invertebrates were identified onsite, but the site has the potential to support protected or notable invertebrates, as well as more generalist species, such as pollinators.

No records of white-clawed crayfish were returned by GMEU. **No** signs of white-clawed crayfish were observed during the survey and **no** suitable habitats were identified. White-clawed crayfish will, therefore, not be mentioned further in this report.

4.2.3 Fish

No records of protected or notable fish species were returned by GMEU. **No** protected or notable fish species were identified onsite, and **no** suitable habitats were identified. Fish will, therefore, not be mentioned further in this report.

4.2.4 Amphibians

Records of **two** amphibians were returned by GMEU, including records of great crested newts within 200m of the site. **No** signs of amphibians were observed during the survey. The site contains habitats that may potentially support amphibians. The grassland, scrub, and woodland area offer commuting and foraging opportunities. The dry-stone walls offer resting and hibernation opportunities.

4.2.5 Reptiles

No records of reptiles were returned by GMEU. **No** signs of reptiles were observed during the survey. The site contains habitats that may potentially support reptiles. The grassland, scrub, and woodland area offer commuting and foraging opportunities. The dry-stone walls offer resting and hibernation opportunities.



4.2.6 Birds

Records of **30** protected or notable bird species were returned by GMEU, including **nine** WCA Schedule 1 species. The site contains habitats that may support nesting, commuting, and foraging birds. **No** protected or notable bird species was identified on or around the site, however, all nesting birds, including their nests and eggs, are protected under the WCA, with certain species having additional protections under Schedule 1. The nesting bird season lasts from 1st February to 31st August.

4.2.7 Bats

Records of activity of at least **five** bat species and roosts of at least **three** bat species were returned by GMEU. **No** signs of roosting opportunities were identified during the survey, but the site contains habitats that may support commuting and foraging bats.

4.2.8 Badgers

Records of badger activity and setts **were** returned by GMEU. **No** signs of badgers were observed during the survey, but the site contains suitable habitats that may support resting, foraging, and commuting badgers.

4.2.9 Otters

One record of otters were returned by GMEU. **No** signs of otters were observed during the survey and **no** suitable habitats were identified. Otters will, therefore, not be mentioned further in this report.

4.2.10 Water Voles

Three records of water voles were returned by GMEU. **No** signs of water voles were observed during the survey and **no** suitable habitats were identified. Water voles will, therefore, not be mentioned further in this report.

4.2.11 Beaver

No records of beavers were returned by GMEU. **No** signs of beavers were observed during the survey and **no** suitable habitats were identified. Beavers will, therefore, not be mentioned further in this report.

4.2.12 Other Notable Species

212 records of hedgehogs and **three** of brown hares were returned by GMEU. **No** signs of hedgehogs or brown hares were observed during the survey, but



the site contains suitable habitats that may support resting, foraging, and commuting hedgehogs and brown hares.

4.2.13 Invasive Species

No records of invasive species were returned by GMEU. **No** invasive species were identified within the onsite area, and **two** invasive species were identified within a woodland parcel in the offsite area.



5. Assessment

5.1 Designated Sites

5.1.1 Statutory designated sites

Two internationally designated sites and **two** nationally designated site are located within 2km of the site, although both over 1km away from the site. Due to the distance from the site and the small scale of the works, the designated sites are not anticipated to be affected by the development. Consultation with Natural England is **not** required.

5.1.2 Non-statutory designated sites

Records from GMEU revealed **six** non-statutory designated sites within 2km of the site, including **one** within 500m of the site. Shaw Moss SBI is located approximately 230m from the site. The small scale is unlikely to affect nearby non-statutory designation sites, however, consultation with Rochdale Metropolitan Borough Council **is** recommended to advise on any potential negative impacts.

5.2 Habitats

5.2.1 The most valuable habitats for biodiversity within the development site boundary is the area of broad-leaved woodland and scattered trees. The proposed works will not impact these habitat..

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

The loss of flowering plants will negatively impact the local pollinator populations, and also reduce foraging opportunities for other species, such as birds and bats. Further recommendations are made in **Section 6.2.1**.

5.3.2 Amphibians



The site contains foraging and commuting opportunities for amphibians, with resting opportunities provided by the dry-stone walls in the offsite area. The site is well connected to the wider area, allowing access to the site. Further recommendations are made in **Section 6.2.2**.

5.3.3 Reptiles

The site contains foraging and commuting opportunities for reptiles, with resting opportunities provided by the dry-stone walls in the offsite area. The site is well connected to the wider area, allowing access to the site. Further recommendations are made in **Section 6.2.2**.

5.3.4 Birds

The woodland and individual trees offer nesting opportunities for birds. If works occur within the bird nesting season (1st February – 31st August) there is the potential for disturbance. Further recommendations are therefore provided in **Section 6.2.4**.

5.3.5 Bats

The site does not contain any potential roosting features, but the site may be utilised by commuting and/or foraging bats from the wider area. The scheme will likely result in increased levels of lighting. All bat species are light adverse, and therefore, this will impact the availability of 'dark corridors' which are used by bats as navigation tools. Therefore, without the appropriate mitigation measures, the development has the potential to disturb the local bat population, including foraging and commuting bats. Further recommendations are therefore provided in **Section 6.2.5**.

5.3.6 Badgers

The site is well connected to suitable habitats for badgers and provides suitable commuting and foraging habitat for this species. Further recommendations are therefore provided in **Section 6.2.2**.

5.3.7 Other Notable Species

The woodland, grasslands and scrub onsite have the potential to be suitable habitat for commuting, foraging and resting hedgehogs and brown hares. The development has the potential to hinder the free movement and dispersal during the development and operational phases. Further recommendations are therefore provided in **Section 6.2.2**.



5.3.8 Invasive Species

No invasive species were identified onsite; however, two species were identified within the offsite area. The area containing these species will not be affected proposed development, however these species will likely spread if left unmanaged. Further recommendations are, therefore, provided in **Section 6.2.8.**



6. Recommendations

6.1 Habitats

6.1.1 The proposed works provide an opportunity to institute enhancement for biodiversity through native 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. A **Biodiversity Enhancement Plan (BEP)** should be designed pre-construction to be implemented post construction during the landscaping phase of the development. The biodiversity enhancement plan will provide opportunities for local wildlife and aim to retain or enhance Local Biodiversity Action Plan priority habitats, to ensure the development does not have a significant detrimental impact on local or national wildlife populations.

6.2 Protected and Notable Species

6.2.1 Invertebrates

Native wildflower planting is recommended to mitigate for the loss of habitat and floral variety which will affect many invertebrate species on site and species which may forage on invertebrates such as bats and birds. Guidance on planting and species should be included in a **BEP**.

6.2.2 Amphibians, Reptiles, Badgers, and Other Notable Species

The site has the potential to support resting, foraging, and commuting amphibians, reptiles, badgers, hedgehogs, and brown hare. To permit the migration and safe passage of these species through the site, any excavations created during the development stage must be covered at night or appropriate escape routes implemented. Planks are to be placed at a 45-degree angle for badgers to escape safely. Any pipes left open overnight must also be capped.

Vegetation clearance must be carried out under the supervision of an **Ecological Clerk of Works (ECoW)**. The **ECoW** will hand search any area where any of these might be present before they are cleared. They will be encouraged offsite or captured by the **ECoW** (where appropriate) and relocated to a safe place with suitable habitat.

6.2.3 Birds



The woodland and individual trees onsite have the potential to support nesting birds. Works in close proximity to potential nesting areas should ideally take place outside of the bird nesting season (**1st Feb-31st Aug**). If works occur within this time, a preconstruction site walkover by a suitably competent ecologist should occur no more than **24 hours** prior to construction nearby to potential nesting areas. The ecologist will inspect the trees, any vegetation to be removed, and areas adjacent to any construction for evidence of nesting birds. Additional nesting provision is recommended and should be included in a **BEP**.

6.2.4 Bats

No potential roosting features were observed during the survey; therefore, **no** dusk emergence surveys are required. Roosting provision is recommended and should be included in a **BEP**.

All lighting must consider wildlife and be in accordance with the ILP Guidance GN01 and GN09 (2023). A key point is the avoidance of internal and external light spill. Where possible, lighting should be timed, or on sensors and avoid the hours between sunset and sunrise, when bats are out foraging.

Lighting Scheme: The development will likely increase lighting levels. All lighting must consider wildlife and be in accordance with the ILP Guidance GN01 and GN09. A key point is the avoidance of internal and external light spill. Where possible, lighting should be timed, or on sensors and avoid the hours between sunset and sunrise, when bats are out foraging.

Artificial light is known to deter bats from entering lit areas. 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 (2023) 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.

6.2.5 Invasive Species

An **Invasive Species Method Statement** for the safe management and removal of the Himalayan balsam, Japanese knotweed, and montbretia is recommended.



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.

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Advice on protected species is consolidated at: *Environmental management: Wildlife and habitat conservation* - GOV.UK (2016) Gov.uk. Available at: <https://www.gov.uk/topic/environmental-management/wildlife-habitat-conservation>

Magic Map Application (2016) 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*.

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Bats:

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

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Great Crested Newts:

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Reptiles and Amphibians:

Baker, J., Beebee, T., Buckley, J., Gent, T. and Orchard, D. (2011) *Amphibian Habitat Management Handbook*. 1st ed. Bournemouth: Amphibian and Reptile Conservation.

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

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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

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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 (WCA) 1981 (as amended)

- <http://jncc.defra.gov.uk/page-3614>
- <https://www.legislation.gov.uk/ukpga/1981/69/contents>

The Conservation of Habitats and Regulations (CHSR) 2017.

- <https://www.legislation.gov.uk/ukxi/2017/1012/contents/made>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

- <https://www.legislation.gov.uk/ukxi/2019/579/contents/made>

Natural Environment and Rural Communities (NERC) Act 2006

- <https://www.legislation.gov.uk/ukpga/2006/16/contents>

Environment Act 2011

- <https://www.legislation.gov.uk/ukpga/2011/30/contents/enacted>

Protection of Badgers Act 1992

- <https://www.legislation.gov.uk/ukpga/1992/51/contents>

Countryside and Rights of Way Act 2000

- <https://www.legislation.gov.uk/ukpga/2000/37/contents>



Appendices



Appendix 1: UKHab Habitat Map





Site name & address

Land at Birchinley Manor
Rochdale
OL16 3DG

Key

- Blue Line Boundary
- Red Line Boundary

Habitats

- g3c - other neutral grassland
- w1g - other woodland-broadleaved
- u1c - artificial unvegetated unsealed surface

Secondary codes:

- 10 - Scattered scrub
- 14 - Scattered rushes
- 16 - Tall forbs
- 32 - Scattered trees
- 81 - Ruderal or ephemeral
- 114 - Dry-stone wall
- 524 - Invasive non-native species

- Trees



Site	Land at Birchinley Manor	Client	CJ Partnership
Project	22482 PEA	Author	ADo
Plan ref	22842/ADo	Revision	001

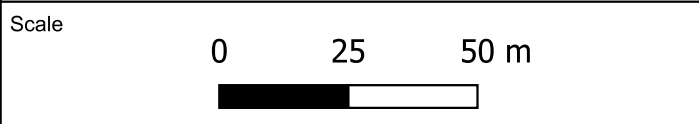
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Site name & address
Land at Birchinley Manor
Rochdale
OL16 3DG

Key

- Blue Line Boundary
- Red Line Boundary
- Habitats**
 - g3c - other neutral grassland
 - w1g - other woodland-broadleaved
 - h3d - bramble scrub
 - h3h - mixed scrub
 - u1c - artificial unvegetated unsealed surface
- Secondary codes:**
 - 10 - Scattered scrub
 - 14 - Scattered rushes
 - 16 - Tall forbs
 - 32 - Scattered trees
 - 81 - Ruderal or ephemeral
 - 114 - Dry-stone wall
 - 524 - Invasive non-native species
- Trees
- Dry-Stone Wall
- Invasive Species
 - 1 - Himalayan balsam
 - 2 - Japanese knotweed
 - 3 - Montbretia



Site Land at Birchinley Manor	Client CJ Partnership
Project 22482 PEA	Author ADo
Plan ref 22842/ADo	Revision 001

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Appendix 2: Proposed Development Plan





landscaping

Paul Keighley and Sarah Mcdowell Land at Birchinley Manor Wildhouse Lane Milnrow Rochdale	Site Plan as Proposed SK01	contract no	drawing no	revision	preliminary	Blue Pit Mill Queensway Castleton Rochdale OL11 2PG +44 (0)1706 631347 info@cjpartnership.com www.cjpartnership.com	CJ PARTNERSHIP ENVIRONMENTAL ARCHITECTS	
	work to figured dimensions	3611	09					
	© CJ Partnership owns the copyright of this design / drawing which must not be reproduced in whole or in part without the written permission of CJ Partnership	drawn by	date	scale @ A3				
			June 2024	1:500	Revisions: A.			

Appendix 3: Photographic Evidence



Photo 1: View of onsite area from gravel path to the southwest of the site.



Photo 2: View of onsite grassland area and edge on woodland parcel.



Photo 3: Wider offsite grassland area.



Photo 4: View from within small woodland parcel to the southwest of the offsite area.



Photo 5: Evidence of previous growth of Himalayan balsam within the southwest offsite woodland parcel.



Photo 6: Evidence of previous growth of Japanese knotweed within the southwest offsite woodland parcel.





Photo 7: Patch of bramble scrub to the southwest of the offsite area.



Photo 8: Dry-stone wall to the south of the offsite area.



Photo 9: Strip of woodland along the eastern boundary of the offsite area.



Photo 10: Mixed scrub with scattered scrub to the northeast of the offsite area.



Photo 11: Dry-stone wall to the northeast of the offsite area.



Photo 12: Montbretia within the mixed scrub to the northeast of the offsite area.



Appendix 4: Bat Survey Guidelines

Figure 1: Guidelines used for assessing the bat roosting suitability of a site (taken from Collins, 2023, Tables 4.1, 4.2, 6.2)

Roosting Suitability	Potential Roosting Features (PRFs) Present
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e., a complete absence of crevices/suitable shelter at all ground/underground levels). Trees: Either no PRFs in the tree or highly unlikely to be any.
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roosting opportunities that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats, to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats). Trees: PRF-I (Individual) – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g., maternity or classic cool/stable hibernation site. Trees: PRF-M (Multiple) – PRF is suitable for multiple bats may therefore be used by a maternity colony.

Figure 2: Recommended minimum number of survey visits for presence/likely absence surveys (taken from Collins, 2023, Tables 7.1 and 7.2).

Negligible roost suitability	Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
No further survey required	One survey visit. One dusk emergence survey, May to August (structures). No further surveys required (trees).	Two separate dusk emergence survey visits. May to September, with at least one survey between May and August.	Three separate dusk emergence survey visits. May to September, with at least two surveys between May and August
September surveys are both weather- and location-dependent. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season.			



September surveys are likely to miss maternity roosts due to dispersal before this time but may pick up mating roosts.

Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced out at **least three weeks apart**, preferably more. Survey timings **should consider the prevailing conditions in the year of survey, which will vary geographically**. In years with a cold spring, the surveys should not be started in early May, or all completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the **optimum coverage includes the pre-parturition, post-parturition, and mating periods**.

Structures that have been categorised as low potential can be problematic, and the number of surveys required should be judged on a case-by-case basis. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

Figure 3: Survey timings calendar (taken from BCT: Bat Surveys for Professional Ecologists: Good Practice Guidelines; 4th Edition).

Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Daytime Bat Walkover (DBW)												
PRA – structures ^a												
Emergence survey for maternity or summer roosts ^b												
Emergence survey for transitional/occasional roosts ^b												
Re-entry surveys ^c												
Emergence survey for mating roosts ^b												
Hibernation survey – structures ^a												
GLTA ^d												
PRF inspection survey – trees												
Ground-level bat activity survey – night-time walkover surveys and automated/static												
Pre-, during and post-hibernation – automated/static bat activity survey												
Swarming survey ^e												
Back-tracking survey												
Trapping and radio-tagging survey ^f												

= 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 emergence surveys are not acceptable in Scotland.

= it is not acceptable to trap bats when they are heavily pregnant and have dependent pups. Mothers need to optimise foraging due to the physiological demands of pregnancy and lactation, and pups need to be regularly fed. Interrupting these activities could potentially have an impact on breeding success in the year in question. The timing of birth can vary between years – it may be as early as the end of May or as late as the start of August, therefore caution should be exercised and local information gained on birth dates before trapping activities are carried out during the summer months. Any information gained and decisions made should be kept as a record.



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 are European Protected Species, and are fully protected in UK law, under **Schedule 2 (Animals)** and **Schedule 5 (Plants)**, detailed in **Part 3: Protection of Species** (Regulations 42-49) of the **Conservation of Habitats and Species Regulations (CHSR) 2017**, retained in UK law post-Brexit by **CHSR (Amendment) (EU Exit) 2019**:

- All UK bat species
- All UK dolphin, porpoise, and whale species
- Other mammals: Scottish wild cat, hazel dormouse, and otter
- Amphibians: great crested newt, pool frog, and natterjack toad
- Reptiles: smooth snake, sand lizard, and marine turtles
- Fish: sturgeon
- Invertebrates: large blue butterfly, fisher's estuarine moth, lesser whirlpool ram's-horn snail
- Plants: shore dock, Killarney fern, early gentian, lady's-slipper, creeping marshwort, slender naiad, fen orchid, floating-leaved water plantain, and yellow marsh saxifrage

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.

In addition to these, the following species are protected under **Schedule 4 (Animals which may not be captured or killed in certain ways)** of **CHSR 2017** as detailed under Regulation 45:

- Mammals: mountain hare, pine martin, polecat, bearded seal, common seal, grey seal, harp seal, hooded seal, and ringed seal.
- Fish: barbel, grayling, river lamprey, Atlantic salmon, allis shad, twaite shad, vendace, and whitefish.

The following species are protected under UK law, such as the **Wildlife and Countryside Act 1981 (as amended)** (note that this list is not exhaustive):

- 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

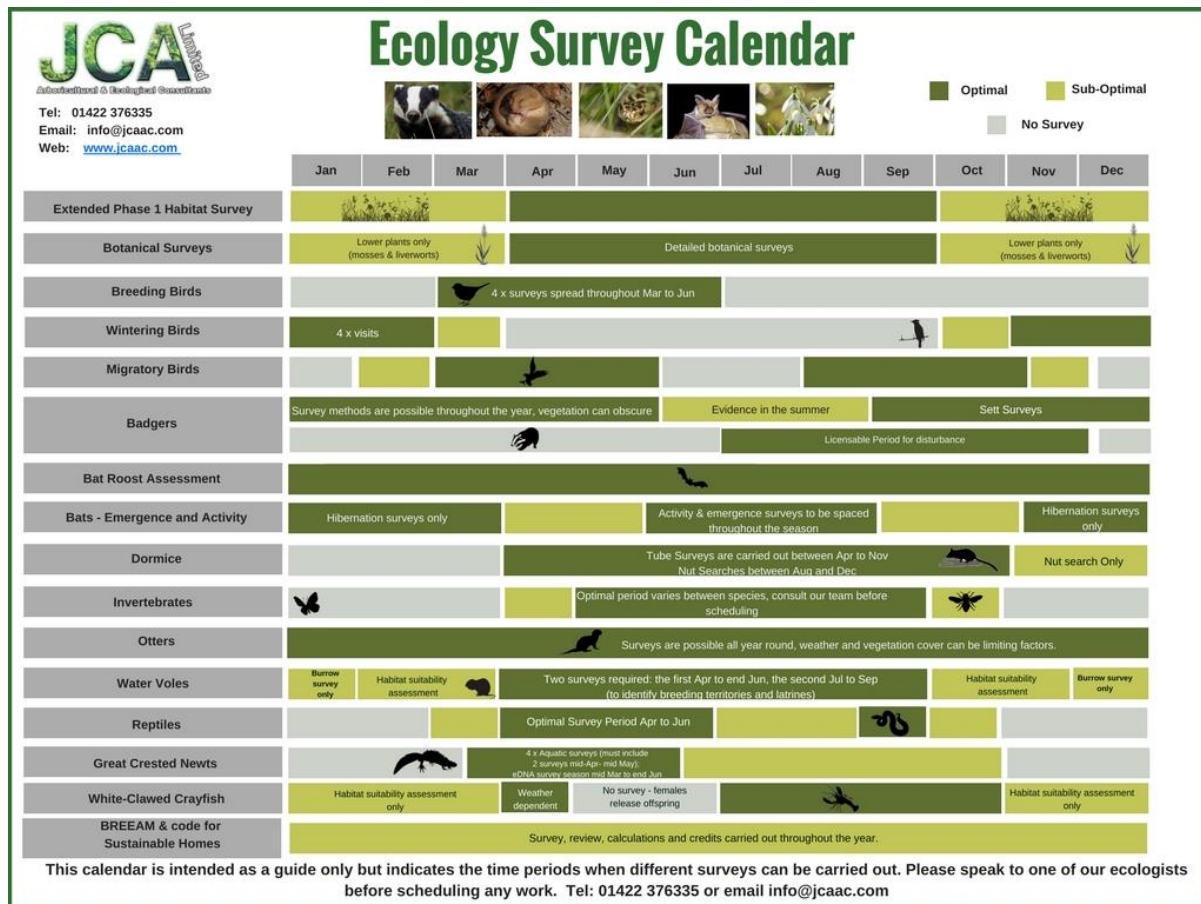
Additionally, several habitats and species are listed as priority habitats or species under **Section 41** of the **Natural Environment and Rural Communities (NERC) Act 2006**, designating them as species of principal importance for the purpose of conserving biodiversity in England. A full list of S41 designated habitats and species is available from:

<https://www.gov.uk/government/publications/habitats-and-species-of-principal-importance-in-england>



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.

Alex Donovan, Assistant Ecologist

MBiol, BSc Biology (Industrial).

Alex joined JCA in 2023 after graduating from the University of Leeds with a First Class Honours Integrated Master's degree in Biology. As part of his degree programme, Alex spent an industrial placement year working in the Uplands Research Department of the Game and Wildlife Conservation Trust, assisting on various ecological surveys and projects. Alex is a registered Trainee Bird Ringer, licensed through the BTO and is experienced in conducting preliminary ecological surveys, bat roost assessments and emergence surveys, Biodiversity Net Gain, and has knowledge of wildlife legislation. Alex is a CIEEM Qualifying Member and is currently working towards a Natural England level 1 bat licence, level 1 great crested newt licence, and a barn owl survey licence.

Richard Westwood, Graduate Ecologist

BA (Hons) History and Politics

Rick gained his undergraduate degree in History and Politics in 2001 from Leeds Metropolitan University before going on to complete a PGCE in History at the University of Leeds in 2003. After 18 years in secondary education and the NHS, Rick began assisting on bat emergence surveys in 2023, after which, he gained employment as a Graduate Ecologist at JCA Ltd.

Grace Bramley, Graduate Ecologist

BSc (Hons) Design and Innovation with Environmental Science

Grace joined JCA in 2024 after completing her degree from The Open University with a first-class honour's degree in design and environmental science. She is learning about UKHAB classification and conducting Preliminary Ecological Appraisal and Biodiversity Net Gain Assessments.



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



.....
Alex Donovan *MBIOL BSc (Hons)*

20/11/2024

Reviewed by



.....
Richard Westwood

22/11/2024

Approved by



.....
Adam West *BSc (Hons), ACIEEM*

25/11/2024



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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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