

Former Dog and Partridge, Hesketh Lane, Chipping PR3 2TH

ECOLOGICAL SURVEY AND ASSESSMENT

ERAP (Consultant Ecologists) Ltd ref: 2023-006

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Document Control

Survey Type:	Surveyors ¹	Survey Date(s)
Phase 1 Habitat Survey	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Rachel Brown B.Sc. (Hons)	13 th March 2023
Daylight bat survey	Victoria Burrows	13 th March 2023
Dusk emergence bat activity survey	Amy Sharples, Rachel Brown, Catie Haworth and Ian Nelson	3 rd July 2023
Reporting	Personnel	Date
Author	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM	24 th July 2023
Signature(s)		
Checked	Rachel Brown B.Sc. (Hons)	26 th July 2023
Revised and issued	Victoria Burrows	26 th July 2023
Report issued to	Black Barn Architecture / The QS Company	
Version Number	2: Version 1 updated 26 th July 2023 by Rachel Brown To present results and data from a bat emergence activity survey (3 rd July 2023) and to revise the evaluation and recommendations to reflect the additional survey information.	
Version 2 reviewed and issued	Victoria Burrows	26 th July 2023
¹ Licence reference numbers		
Bats Victoria Burrows, Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-10390-CLS-CLS		
Barn owl Victoria Burrows Natural England Class Survey Licence Registration Number CL29/00061		

SUMMARY

Introduction and Scope

- i. ERAP (Consultant Ecologists) Ltd was commissioned to carry out an ecological survey and assessment of the property and land at the former Dog and Partridge public house, Hesketh Lane, Chipping PR3 2TH. The assessment was requested to inform a planning application proposing the conversion and extension of Building 1 for residential use (Plots 2 to 7), demolition of outbuildings (Buildings 2 to 4) and the construction of four residential properties (Plots 8 to 11).
- ii. This report presents the results of a desktop study and data search, a daylight licensed bat survey and assessment, and a general ecological assessment carried out in March 2023. The report has been updated to present the results of the recommended dusk emergence bat activity survey completed on 3rd July 2023. The survey was carried out by a licensed, qualified and experienced ecologist and is in accordance with recognised survey guidelines.
- iii. **Appendices 2 and 3** of this report provides and *Preliminary Assessment of Biodiversity Net Gain* to demonstrate compliance with the National Planning Policy Framework (NPPF) and good practice.

Results of Survey and Assessment

- iv. The approximately 0.25 hectare (ha) site lies on the north side of Hesketh Lane and is approximately 2 kilometres to the south of Chipping. The site comprises the former public house building (Building 1) and outbuildings (Buildings 2 to 4) bordered by hard-standing and mown amenity grassland with introduced shrubs. The northern site boundary is defined by a stone wall beyond which lie fields of sheep-grazed improved grassland. The eastern and western site boundaries are demarcated by a fence separating the site from the neighbouring properties. The southern site boundary is demarcated by Hesketh Lane.
- v. In consideration of the distances, and the absence of any direct habitat and hydrological connectivity between the site and any statutory and non-statutory designated sites for nature conservation in the wider area, it is advised that the redevelopment works will have no direct or indirect effect on any designated sites for nature conservation and their features of special interest.
- vi. No Priority Habitat, semi-natural or irreplaceable habitats will be affected by the proposals. Wall Cotoneaster and Montbretia, both invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected at the site; further guidance on the management of these species during site clearance is provided in **Section 5.4**.
- vii. No evidence of the current use of the buildings by roosting bats was detected during the daylight survey. Two very old bat droppings were found in the roof void of the public house and section 1a of Building 1 is assessed to be of 'low' suitability for use by roosting bats, particularly for single / low numbers of crevice roosting species. A nocturnal bat activity survey was recommended to comply with relevant survey guidance, to determine the presence / likely absence of roosting bats and to inform the works. The dusk emergence survey for bat activity was completed on 3rd July 2023; no evidence of a bat roost was detected. The current / recent presence of roosting bats at Building 1 is reasonably discounted and no further survey is required to comply with the survey guidelines and to inform a planning application.
- viii. The outbuildings are assessed to be of 'negligible' suitability for use by roosting bats. None of the trees and shrubs within the site / on the site boundaries support features with suitability for use by roosting bats; all are of 'negligible' suitability.
- ix. Inappropriate use of artificial lighting around the exterior of the redeveloped site may have an adverse effect on use of the local area by foraging bats and other wildlife. Guidance to avoid a significant impact on foraging bats is provided at **Section 5.3**.
- x. Mandatory measures to be applied to ensure the protection of nesting birds during and prior to the site preparation works are described at **Section 5.5**.

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- xi. Appropriate and proportionate survey effort and / or assessment, in accordance with standard survey guidelines has been applied to discount adverse effects on other relevant protected species. No further surveys for other protected species are necessary to inform a planning application.

Recommendations

- xii. The recommendations in **Section 5.0** outline all the mandatory measures and additional actions to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice. **Sections 5.3** and **5.4** provide guidance in relation to site design and the landscape proposals to avoid adverse effects on wildlife and to maximise opportunities for wildlife and to secure gains for biodiversity.
- xiii. As demonstrated at **Section 5.4** and **Appendices 2** and **3**, subject to the adherence of the parameters and recommendations identified the site proposals can achieve a net gain for biodiversity in accordance with the *Biodiversity Metric Calculation Tool* and the *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).

Conclusion

- xiv. This ecological assessment has demonstrated that the redevelopment works at the site are feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework. Conversion of the building will provide an opportunity to secure ecological enhancement for wildlife associated with the wider area.

1.0 INTRODUCTION

1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Black Barn Architecture / The QS Company to carry out an ecological survey and assessment of the Dog and Partridge, Hesketh Lane, Chipping PR3 2TH (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 6188 4133. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.1.2 The assessment was required to inform a planning application proposing the conversion and extension of Building 1 for residential use (Plots 2 to 7), demolition of outbuildings (Buildings 2 to 4) and the construction of four residential properties (Plots 8 to 11).

1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken in March 2023 comprised:
- A desktop study and data search for known ecological information at the site and the local area;
 - An Extended Phase 1 Habitat Survey and assessment;
 - Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);
 - Survey and assessment of all habitats for relevant statutorily protected species¹ and other wildlife including badger (*Meles meles*), barn owl (*Tyto alba*), great crested newt (*Triturus cristatus*), bird species and reptiles;
 - A licensed daylight bat survey and assessment of the buildings and trees;
 - The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance;
 - The identification of any further surveys or precautionary actions that may be required to inform the progression of the site through the planning process or prior to the commencement of construction activities; and
 - Collation of appropriate information including habitat condition assessments to inform the implementation of the *Defra Biodiversity Metric Calculation Tool* (version 3.1), refer to **Appendices 2 and 3**.
- 1.2.2 Further to the recommendations of the daylight licensed bat survey and assessment and to comply with relevant survey guidelines (*Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016)) to determine presence / absence of roosting bats, one dusk emergence survey was completed at Building 1 on 3rd July 2023. This report has been updated to present the results of the survey.

¹ In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no water courses within, adjacent to or within a zone of potential influence of the proposals to redevelop the site; there has been no requirement to consider water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

- 2.1.1 The following sources of information and ecological records were consulted:
- MAGiC Maps: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;
 - Lancashire Environment Record Network (LERN); and
 - Lancashire Biodiversity Action Plan (BAP).

2.2 Vegetation and Habitats

- 2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM and Rachel Brown B.Sc. (Hons) on 13th March 2023. The weather conditions were dry and overcast with a moderate breeze (Beaufort scale 4) and an air temperature of 10°C.
- 2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area (refer to **Figure 2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.
- 2.2.3 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.
- 2.2.4 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.
- 2.2.5 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales: fine scale (25m² or 5 metres length) and large scale (400m² or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m² or 5 metres length is appropriate.
- 2.2.6 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).
- 2.2.7 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

Badger

- 2.3.1 The survey area for badger covered the site (as annotated on **Figure 2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.
- 2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).

- 2.3.3 The following signs of badger activity were searched for:
- a. Setts entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
 - b. Large spoil heaps outside sett entrances;
 - c. Bedding outside sett entrances;
 - d. Badger footprints;
 - e. Badger paths;
 - f. Latrines;
 - g. Badger hairs on fences or bushes;
 - h. Scratching posts; and
 - i. Signs of digging for food.

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

Bat Species

Daylight Survey

- 2.3.5 The daylight licensed bat survey and assessment was carried out by Victoria Burrows, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-10390-CLS-CLS, on 13th March 2023 (the weather conditions were as reported in **Section 2.3**). Victoria's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Survey Guidelines

- 2.3.6 The survey was carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

Habitat Assessment for Commuting / Foraging Bats

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

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

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Daylight Survey: Buildings

- 2.3.8 An inspection and assessment of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into crevices / internal areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.
- 2.3.9 The internal survey involved an examination of the accessible internal areas to find roosting bats or evidence of previous use of the buildings by bats such as droppings and prey remains.
- 2.3.10 The suitability of each of the buildings for use by roosting bats has been assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the buildings (including crevice dwelling species and species which can roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

Daylight Survey: Trees and Shrubs

- 2.3.11 Trees and shrubs within the site were examined and assessed for their suitability for use by roosting bats, and to inform whether further surveys or precautionary measures were required.
- 2.3.12 Trees were assessed from the ground using binoculars and a high-powered torch. Each tree was searched for the presence of the following features:

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

- 2.3.13 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2nd Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).
- 2.3.14 The requirement for further presence / absence surveys at each tree was then considered.

Equipment

- 2.3.15 A list of equipment used is provided below.

Table 2.2: Survey Equipment used during Daylight Bat Survey

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-100

Presence / Absence Survey: Dusk Emergence Survey

- 2.3.16 Further to the recommendations of the daylight licensed bat survey (i.e. assessment of Building 1 to have 'low' suitability for use by roosting bats, and to comply with relevant survey guidelines (*Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016)) to determine presence / absence of roosting bats, one dusk emergence survey, supplemented by night vision aids (NVAs), was completed at Building 1 on 3rd July 2023
- 2.3.17 The survey was conducted under suitable conditions, commenced 15 minutes before sunset, and continued until at least 1.5 hours after sunset.
- 2.3.18 Surveyors, experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of Building 1 (and Building 5 which adjoins Building 1) to determine any entry or emergence by roosting bats. Any bat emergence or re-entry activity was recorded, with brief notes relating to bat activity at each survey position collated at the end of the survey.
- 2.3.19 Anabat Scout and Anabat Express detectors were used to determine any bat detected to species or group (*Myotis* species, for example, often cannot be reliably identified to species from their echolocation calls) and to record and analyse echolocation calls after the survey using Anabat Insight bat call analysis software.
- 2.3.20 Night vision aids (NVA)², supplemented with additional infra-red lighting (comprising Nightfox XB5 torches and infra-red floodlights) were used at the surveyor positions described in **Table 2.3** and shown on **Figure 3**. Footage was subsequently reviewed using VLC Media Player to determine any emergence / re-entry at the building. Photographs showing each survey position from the darkest point of the surveys are appended at **Photos 31 to 34**.

Table 2.3: Dusk Emergence Survey Date, Weather Conditions and Surveyors

Date	3rd July 2023
Sunset time:	21:45
Start & end time	21:30 until 23:25
Weather	Dry, cloudy and calm (Beaufort scale 0), 12°C
Survey Position	Surveyor, Detector and NVA
1	Rachel Brown, Anabat Scout & Canon XA60
2	Amy Sharples, Anabat Express & Canon XA40
3	Catie Haworth. Anabat Express & Canon XA10
4	Ian Nelson, Anabat Express & Canon XA60

Great Crested Newt and Amphibians

Desktop Search for Ponds

- 2.3.21 In accordance with current Natural England guidance (Natural England, 2020) all ponds within an unobstructed 500 metres of a site should be considered for their suitability to support breeding great crested newts (and other amphibian species). The potential of the proposed development to impact upon any great crested newt population(s) whose breeding ponds are within 500 metres must be considered.
- 2.3.22 The search of habitats in the wider area up to a distance of 500 metres from the site boundary revealed the presence of four ponds, as detailed below.

² Canon camcorders.

Table 2.4: Ponds within 500 metres of the Site

Pond Reference	OS Grid Reference	Distance from Site Boundary	Location (refer to Figure 1)
1	SD 61746 41201	156 metres	Field south of Hesketh Lane
2	SD 61974 41806	453 metres	Associated with a farm to the north of site
3	SD 61734 41829	481 metres	In a field margin to the north of the site
4	SD 61394 41175	484 metres	South-west of site

Consideration of Requirement for Further Survey

2.3.23 The requirement for further survey / assessment at each pond was then assessed using the following criteria:

- a. Presence of dispersal barriers to great crested newt movements between ponds and the site, as detected during the walkover survey;
- b. Distance of ponds from the site, and the potential influence of the proposed development of the site on any populations of great crested newt (if present at ponds), using the Natural England rapid risk assessment tool; and
- c. Presence of other ponds which may form metapopulations and / or alter the influence of the site on ponds at greater distances.

2.3.24 The Natural England Rapid Risk Assessment tool from *GCN Method Statement WML-A14-2 (Version April 2020)* (Natural England, 2020) has been completed based on the distances of the ponds from the site, and the size of the development site (0.25 hectares, or 'ha'). The rapid risk assessment tool assumes that great crested newt are present.

Table 2.5: Rapid Risk Assessment Result

Component	Likely Effect	Notional Offence Probability Score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

2.3.25 The Natural England Rapid Risk Assessment indicates that even if great crested newt were present at Ponds 1 to 4, the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed.

2.3.26 On balance and in consideration of the conditions at the site (i.e. high cover of hard-standing / habitats with negligible suitability for use by sheltering amphibians and the presence of a solid stone wall around the western, northern and eastern site boundaries that act to impede the mitigation of amphibians to the site), it is advised that the risk of an adverse impact on great crested newt, other amphibians and their habitats is negligible and no further surveys are required to inform a planning application.

Reptile Species

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

Table 2.6: Important Habitat Characteristics for Reptiles

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

Other Wildlife

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

2.4 Survey and Reporting Limitations

2.4.1 The Phase 1 Habitat Survey was conducted in March when many plant species are not yet in flower. The surveyor is experienced in surveying plant species from their vegetative characteristics, and it has been possible to reliably identify the habitats and principal plant species present .

2.4.2 No significant survey limitations on the intended and scope of survey outlined in **Section 1.2** were experienced.

2.4.3 All measurements within this report are approximate only, and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC Maps and Google Earth.

2.5 Evaluation Methods

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

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

2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.

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

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.1 The site and adjacent land have no statutory designation for nature conservation.
- 3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the overlapping Bowland Fells SSSI and Bowland Fells Special Protection Area (SPA), located 3.6 kilometres north of the site. The Bowland Fells are designated for supporting the largest expanse of blanket bog and heather moorland in Lancashire and providing suitable habitat for a diverse upland breeding bird community (including hen harrier, merlin and peregrine).
- 3.1.3 The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2023):
 - a. Airports, helipads and other aviation proposals;
 - b. Any industrial / agricultural development that could cause air pollution (including industrial processes, livestock and poultry units with floorspace greater than 500m², slurry lagoons and digestate stores greater than 750m² and manure stores greater than 3500 tonnes;
 - c. General combustion processes greater than 50 megawatts energy input, including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works and other incineration / combustion; and
 - d. Any discharge of water or liquid waste of more than 20m³ / day to ground (i.e. to seep away) or to surface water such as a beck or stream;
- 3.1.4 It is considered that the proposals do not meet the criteria which would require the local planning authority to consult with Natural England in respect of likely risks to the statutory designated sites as a consequence of the proposed development.

Non-statutory Designated Sites for Nature Conservation

- 3.1.5 The site and adjacent land have no non-statutory designation for nature conservation, termed Biological Heritage Site (BHS) in Lancashire.
- 3.1.6 Two BHS lie within 2 kilometres of the site summarised in **Table 3.1** below.

Table 3.1: BHS within 2 Kilometres of the Site

BHS	Distance and Direction from site	Reasons for Designation
Arbour Quarry	435 metres south	A small disused limestone quarry situated 2.5 km south of Chipping which supports a mosaic of semi-natural habitats including neutral grassland, limestone grassland, mire and open water. The site is also notable for the presence of three species included in the <i>Provisional Lancashire Red Data List of Vascular Plants</i> , namely Lesser Tussock-sedge (<i>Carex diandra</i>), Red Pondweed (<i>Potamogeton alpinus</i>) and Grass-of-Parnassus (<i>Parnassia palustris</i>).
Chipping Moss	1090 metres north-east	A cluster of fields situated just to the southeast of Chipping. The fields are of significant ornithological interest supporting good numbers of breeding waders. The fields are reported to regularly support at least 12 pairs of breeding lapwing and 4 pairs of breeding curlew with breeding snipe and redshank.

- 3.1.7 The presence of the non-statutory designated sites is considered further at **Section 4.2** below.

Priority Habitats Inventory and Soilscape Information

- 3.1.8 The Priority Habitats Inventory³ was checked via MAGiC Maps. No Priority Habitats have been identified within or adjacent to the site.
- 3.1.9 In accordance with *Soilscape (England)* as presented on MAGiC Maps (National Soil Resources Institute, 2005), the site supports 'slowly permeable seasonally wet acid loamy and clayey soils', and the characteristic semi-natural habitats associated with the soils comprise 'seasonally wet pastures and woodlands mainly, but not exclusively, on the upland fringe'.

Protected and Notable Species

- 3.1.10 LERN hold no records of protected and notable species for the site.
- 3.1.11 Records of protected and notable species for a 2 kilometre radius of the site are summarised below.

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

Taxon Group	Species Name and Designations ¹ and Notes
Amphibians	Great crested newt (<i>Triturus cristatus</i>): EPS, WCAs5, PS & LBAP. 8 records, all from 2006. The closest record is 1720 metres to the south.
	Palmate newt (<i>Lissotriton helveticus</i>): WCAs5. 1 record from 2006, located 1720 metres to the south.
	Smooth newt (<i>Lissotriton vulgaris</i>): WCAs5. 15 records, all from 2006. The closest record is 585 metres to the south.
	Common toad (<i>Bufo bufo</i>): WCAs5, PS & LBAP. 6 records, all from 2006. The closest record is 490 metres to the south.
	Common frog (<i>Rana temporaria</i>): WCAs5 & LBAP. 22 records, all from 2006. The closest record is 305 metres to the north.
Birds – WCAs1 Species	Kingfisher (<i>Alcedo atthis</i>): WCAs1. 1 record from 2019, located 1590 metres to the north.
Birds – PS & LBAP	PS & LBAP: Skylark (<i>Alauda arvensis</i>), cuckoo (<i>Cuculus canorus</i>), reed bunting (<i>Emberiza schoeniclus</i>), spotted flycatcher (<i>Muscicapa striata</i>), curlew (<i>Numenius arquata</i>), house sparrow (<i>Passer domesticus</i>), tree sparrow (<i>Passer montanus</i>), grey partridge (<i>Perdix perdix</i>), dunnock (<i>Prunella modularis</i>), bullfinch (<i>Pyrrhula pyrrhula</i>), starling (<i>Sturnus vulgaris</i>), song thrush (<i>Turdus philomelos</i>) and lapwing (<i>Vanellus vanellus</i>). PS Only: Lesser redpoll (<i>Acanthis cabaret</i>) and linnet (<i>Linaria cannabina</i>). LBAP Only: Meadow pipit (<i>Anthus pratensis</i>), swift (<i>Apus apus</i>), kestrel (<i>Falco tinnunculus</i>), snipe (<i>Gallinago gallinago</i>), oystercatcher (<i>Haematopus ostralegus</i>), willow warbler (<i>Phylloscopus trochilus</i>) and redshank (<i>Tringa totanus</i>).
Bony Fish (Actinopterygii)	Atlantic salmon (<i>Salmo salar</i>): PS & LBAP. 13 records, dated between 1993 and 2015. The closest record is 930 metres to the north-east, and from 1998.
	Brown/sea trout (<i>Salmo trutta</i>): PS & LBAP. 17 records, dated between 1993 and 2015. The closest record is 710 metres to the west, and from 1998.
	European eel (<i>Anguilla anguilla</i>): PS & LBAP. 9 records, dated between 1993 and 2015. The closest record is 575 metres to the west, and from 2011.
	Brown trout (<i>Salmo trutta subsp. fario</i>): LBAP. 2 records, both from 1998. The closest record is 710 metres to the west.
	Bullhead (<i>Cottus gobio</i>): LBAP. 9 records, dated between 1993 and 2015. The closest record is 315 metres to the south-east, and from 2011.
Flowering Plants	Bluebell (<i>Hyacinthoides non-scripta</i>): WCAs8. 9 records, dated between 1964 and 2013. The closest, most recent record is 910 metres west of the site and from 2000.

³ A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

Taxon Group	Species Name and Designations ¹ and Notes
	LBAP Only: Green-winged Orchid (<i>Anacamptis morio</i>), Lesser Tussock-sedge (<i>Carex diandra</i>), Northern Marsh-orchid (<i>Dactylorhiza purpurella</i>), Slender Spike-rush (<i>Eleocharis uniglumis</i>), Grass-of-Parnassus (<i>Parnassia palustris</i>), Red Pondweed (<i>Potamogeton alpinus</i>), Pond Water-crowfoot (<i>Ranunculus peltatus</i>), Thread-leaved Water-crowfoot (<i>Ranunculus trichophyllus</i>) and Greater Bladderwort (<i>Utricularia vulgaris</i>).
Insect - Butterflies	PS & LBAP: Wall (<i>Lasiommata megera</i>).
Insect - Moths	PS & LBAP: Garden tiger (<i>Arctia caja</i>), figure of eight (<i>Diloba caeruleocephala</i>) and v-moth (<i>Macaria wauaria</i>). PS Only: Mouse moth (<i>Amphipyra tragopoginis</i>), dusky brocade (<i>Apamea remissa</i>), centre-barred sallow (<i>Atethmia centrago</i>), small phoenix (<i>Ecliptopera silaceata</i>), grey mountain carpet (<i>Entephria caesiata</i>), ghost moth (<i>Hepialus humuli</i>), dot moth (<i>Melanchra persicariae</i>), oblique carpet (<i>Orthonama vittata</i>) and white ermine (<i>Spilosoma lubricipeda</i>). LBAP Only: Common plain neb (<i>Monochroa tenebrella</i>), chimney sweeper (<i>Odezia atrata</i>) and wood tiger (<i>Parasemia plantaginis</i>).
Jawless (Agnatha) Fish	LBAP Only: Brook lamprey (<i>Lampetra planeri</i>).
Terrestrial Mammals	European otter (<i>Lutra lutra</i>): EPS, WCAs5, PS & LBAP. 2 records, dated 2018 and 2019. The closest record is 645 metres to the south-east, and from 2018. Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>): EPS, WCAs5, PS & LBAP. 4 records, all from 2018. The closest record is 1145 metres to the south-east. Brandt's bat (<i>Myotis brandtii</i>): EPS, WCAs5 & LBAP. 4 records, all from 2018. The closest record is 1145 metres to the south-east. Common pipistrelle (<i>Pipistrellus pipistrellus</i>): EPS & WCAs5. 4 records, all from 2018. The closest record is 1145 metres to the south-east. Brown hare (<i>Lepus europaeus</i>): PS & LBAP. 17 records, dated between 2002 and 2018. The closest record is 100 metres to the west, and from 2015. West European hedgehog (<i>Erinaceus europaeus</i>): PS & LBAP. 1 record from 2017, located 885 metres to the east.
¹Key to Designation Codes: EPS = European Protected Species under <i>The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</i> . WCAs1 = Species receives full protection under Schedule 1 of the <i>Wildlife and Countryside Act 1981</i> (as amended). WCAs5 = Species receives full protection under Schedule 5 of the <i>Wildlife and Countryside Act 1981</i> (as amended). WCAs8 = Species receives full protection under Schedule 8 of the <i>Wildlife and Countryside Act 1981</i> (as amended). PS = Priority Species listed under Section 41 of the NERC Act 2006. LBAP = Species listed on the Lancashire Biodiversity Action Plan Provisional Long List.	

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

3.2 Vegetation and Habitats

General Description

3.2.1 The approximately 0.25 hectare site is in a rural location on the north side of Hesketh Lane and is approximately 2 kilometres to the south of Chipping. The site comprises the former public house (Building 1) and outbuildings (Buildings 2 to 4) bordered by hard-standing and mown amenity grassland with introduced shrubs.

3.2.2 The northern site boundary is defined by a stone wall beyond which lie fields of sheep-grazed improved grassland. The eastern and western site boundaries are demarcated by stone walls and fences separating the site from the neighbouring properties. The southern site boundary is demarcated by Hesketh Lane.

3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**. Photographs are appended at **Section 8.2**.

Buildings and Hard-standing

3.2.4 Refer to **Photo 1**. The site contains four buildings which are described in **Section 3.3**. The buildings are devoid of vegetation with the exception of Building 1 which supports a climbing *Hydrangea* species at the northern elevation and Ivy (*Hedera helix*) at the southern (roadside) elevation.

- 3.2.5 The buildings are bordered by cobble and asphalt covered hard-standing that is typically devoid of vegetation. Ruderal herbs that have colonised the gaps between the cobbles comprise very locally abundant Procumbent Pearlwort (*Sagina procumbens*) and Common Whitlow-grass (*Draba verna*) with locally abundant liverwort species and occasional Wavy Bittercress (*Cardamine flexuosa*), Common Mouse-ear (*Cerastium fontanum*) and rare Scentless Mayweed (*Tripleurospermum inodorum*).
- 3.2.6 The buildings are described by the UKHab as 'u1b5 buildings'. The hard-standing is described by the UKHab as 'u1b6 other developed land; sealed surface' and supports the OV20 *Poa annua* - *Sagina procumbens* community of the NVC.

Amenity / Modified Grassland

- 3.2.7 Refer to **Photo 2**. An area of managed / mown amenity grassland is present to the rear (north) of Building 1. The grassland is characterised by constant and abundant Perennial Rye-grass (*Lolium perenne*), abundant moss and Creeping Buttercup (*Ranunculus repens*) with frequent Annual Meadow-grass (*Poa annua*), Dandelion (*Taraxacum officinale* agg.), Cuckooflower (*Cardamine pratensis*) and occasional Yorkshire fog (*Holcus lanatus*), Daisy (*Bellis perennis*), White Clover (*Trifolium repens*) and Great Willowherb (*Epilobium hirsutum*), particularly at the margins. A plant species list is appended at **Table 8.2**.
- 3.2.8 The amenity grassland is characteristic of an MG7 *Lolium perenne* ley community of the NVC (Rodwell, 1992) and is described by the UKHab as g4 modified grassland with the secondary code 66 frequently mown.
- 3.2.9 An area of Bramble (*Rubus fruticosus* agg.) scrub lies in the north-western corner of the amenity grassland. The Bramble is characteristic of the W24 *Rubus fruticosus* – *Holcus lanatus* community of the NVC and is described by the UKHab as 'h3d Bramble'.
- 3.2.10 At the south-eastern edge of the grassland is a damaged polytunnel with bare ground beneath.

Ornamental / Introduced Shrub and Scattered Trees

- 3.2.11 Refer to **Photos 3 and 4**. The boundaries and planting at the edge of the car park comprise of ornamental non-native trees and shrubs. To the east of the car park entrance is a flower bed containing Montbretia (*Crocsmia crocosmiiflora*), Snowdrops (*Galanthus* spp.), Ground Elder (*Aegopodium podagraria*), and young Cherry trees (*Prunus* spp.) and various planted shrubs including conifers.
- 3.2.12 Refer to **Photos 7 and 8**. Planted Conifer shrubs occur along the length of the fence that separates the amenity grassland and polytunnel area from the asphalt covered car park. Gaps in the conifer shrubs are planted with Wall Cotoneaster (*Cotoneaster horizontalis*) and Columbine (*Aquilegia* sp.).
- 3.2.13 Other shrub and herbaceous borders within an adjacent to the site boundary contain shrubs such as Spotted Laurel (*Aucuba japonica*) and Dogwood (*Cornus sanguinea*) with understorey planting of Italian Arum (*Arum italicum*), Hellebore (*Hellebore* sp.), and Lesser Periwinkle (*Vinca minor*). Native plant species in the borders include frequent Common Nettle (*Urtica dioica*) with very locally abundant Herb-Robert (*Geranium robertianum*) and Cleavers (*Galium aparine*) with occasional Hedge Mustard (*Sisymbrium officinale*).
- 3.2.14 The ornamental planting is not characteristic of an NVC community. The beds of ornamental shrubs are described by the UKHab as 'h3h - mixed scrub' with the secondary code 48 non-native.

Tall-herb Vegetation

- 3.2.15 To the rear (north of Building 2) is an area used for the deposition of grass cuttings. The area is colonised by tall-herb vegetation characterised by abundant Common Nettle with Cleavers (*Galium aparine*).
- 3.2.16 This tall-herb vegetation is characteristic of an OV24 *Urtica dioica* – *Galium aparine* community of the NVC and is described by the UKHab as 'g3c other neutral grassland' with the secondary code 16 tall-herb.

Invasive Plant Species

- 3.2.17 No Japanese Knotweed is present at the site.
- 3.2.18 As illustrated on **Figure 2**, stands of Wall Cotoneaster was detected along the eastern side of the fence dividing the garden from the car park and Montbretia is present in the border at the edge of the car park and eastern fence. These species are listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause their spread in the wild. This is considered further at **Section 4.3** below.

3.3 Animal Life

Badger

- 3.3.1 No signs of badger such as setts, snuffle holes, tracks or hairs were detected at the site and survey area. The stone wall boundary around the site boundaries and the high cover of hard-standing within the site does not provide optimum conditions for badger access and / or use by foraging badger. The presence of badger is reasonably discounted.

Bat Species

Habitat Assessment for Commuting / Foraging Bats

- 3.3.2 The relatively small area occupied by the site (0.25ha) which comprises a high percentage cover of buildings and non-vegetated hard-standing is assessed to be of low suitability for use by foraging bats. As illustrated on **Figure 1**, the site lies within a wider expanse of large fields of improved grassland with hedgerows and wooded copses which provide habitats assessed to be of low to moderate suitability for use by foraging bats.

Daylight Survey: Buildings

Building 1: Former Public House

- 3.3.3 Refer to **Photos 9 to 21**. The former Dog and Partridge public house building has a number of sections as described below.

Eastern / Oldest Section (1a)

- 3.3.4 The eastern / oldest section of the building has two storeys with a double pitched slate covered roof and clay ridge copings. Stone chimney stacks with lead flashing at the base are present. The stone elevation walls are well pointed; no gaps or opportunities for bat access were found. The timber framed windows are well sealed within the stone sills and lintels. Timber fascia and soffits are present; close examination indicates that these features are tightly sealed; no potential roost accesses / features were found.
- 3.3.5 A single storey porch with a pitched slate covered roof and terracotta ridge copings is attached to the southern elevation. Lead flashing is present where the porch attaches to the southern elevation of Section 1a; no gaps behind the flashing / potential roost features were found.
- 3.3.6 Inspection of the roof voids confirmed that the eastern section has traditional roof timbers with no undertile felt (refer to **Photo 15**) and fibreglass insulation on the floor of the void. The void is heavily cobweb covered and dusty. No bats or fresh droppings were found in the roof void. Two very old⁴ bat droppings were found on the surface of the fibreglass insulation at the eastern end.
- 3.3.7 The western section supports a mix of traditional torching beneath the slates and also breathable roof membrane with fibreglass insulation. No bats or bat droppings were detected in the western section.

⁴ It is not possible to accurately age droppings. However, 'fresh' droppings left in recent years are typically darker in colour and can have a shiny appearance and have not typically accumulated a cover of dust.

Section 1b

- 3.3.8 Attached to the eastern elevation of Section 1a is a single storey extension with a pitched slate covered roof. The construction is similar to Section 1a. No roof void is present and the underside of the slates is board lined inside.

Section 1c

- 3.3.9 Attached to the northern elevation of Section 1a is a more modern extension with an east to west ridge alignment and a pitched slate covered roof. This section of the building has rendered elevation walls. A timber fascia at the northern elevation was examined; no gaps or opportunities for bat access were found.
- 3.3.10 At the western end of Section 1c is a roof with a north-south alignment; a gap beneath the roof slates at the wall top at the north-facing gable end was found. Closer inspection confirmed that the gap does not enter a deeper cavity or provide a suitable feature for use by roosting bats.

Section 1d

- 3.3.11 At the northern side of the building is a more modern extension with concrete block walls and stone clad and render covered walls and a pitched slate covered roof. The roof void has pre-fabricated roof trusses with a breathable membrane undertile felt and fibreglass insulation on the floor. No bats or bat droppings were found in the roof void.

Building 1 Summary

- 3.3.12 No evidence of the current or previous use of Building 1 by roosting bats was detected. Features with suitability for use by roosting bats (particularly individual and small numbers of crevice roosting species) were detected at the following positions:
- Beneath the ridge copings, particularly at Section 1a;
 - At the wall tops, particularly at Section 1a; and
 - Beneath the lead flashing associated with the chimney stacks.
- 3.3.13 In consideration of the limited number of features with suitability for access by roosting bats and the assessment of the surrounding habitats it is advised that Building 1 is of 'low' suitability for use by roosting bats.

Building 2

- 3.3.14 Refer to **Photos 24** and **25**. Building 2 is a single storey timber framed building with a brick based wall and timber clad elevations and a pitched corrugated sheet covered roof. The building is open to the underside to the roof covering inside; no roof void and no insulation is present.
- 3.3.15 No evidence of the current or previous use of Building 2 by roosting bats was detected; Building 2 is assessed to be of 'negligible' suitability for use by roosting bats.

Building 3

- 3.3.16 Refer to **Photo 26**. Building 3 comprises two pre-fabricated garages with corrugated acrylic sheet covered roofs. The garages have partially collapsed.
- 3.3.17 No evidence of the current or previous use of Building 3 by roosting bats was detected; Building 3 is assessed to be of 'negligible' suitability for use by roosting bats.

Building 4

- 3.3.18 Refer to **Photos 27** to **30**. Building 4 is a single storey concrete block structure with a flat corrugated sheet covered roof. The roadside (southern) and part of the western elevation walls are stone clad. The other walls are painted concrete blocks that are well-pointed with no gaps or opportunities for bat access.

3.3.19 Features / gaps that were inspected with the endoscope to search for bats and bat droppings and to examine their suitability for use by roosting bats comprised a split in the timber lintel at the western elevation (over the garage door) (refer to **Photo 30**) and gaps at the wall top (between the corrugated sheet roof cover and the mortared wall) (refer to **Photo 29**). No bats or evidence of previous use by roosting bats were detected in these features; it is advised that the gaps are too shallow and do not extend deep enough to provide a suitable roost feature.

3.3.20 Building 4 is assessed to be of 'negligible' suitability for use by roosting bats.

Building 5

3.3.21 Refer to **Photo 22**. Building 5 is attached to the western side of Building 1, this building was examined for completeness. Building 5 is a single storey stone clad structure with a pitched slate covered roof with clay ridge tiles. The roof covering appears to be in good condition and no broken, lifted or missing slates were noted. The elevation walls are well-pointed; no gaps were found with the exception of a drilled hole at a height of approximately 1.2 metres at the north-western corner (refer to **Photo 23**). Closer examination of the hole did not detect any bats or droppings.

3.3.22 The timber fascia around the roof line of the building is well-sealed; no gaps or opportunities for bat access were found.

3.3.23 No roof void is present at Building 5; the underside of the roof is lined and skylights are present.

3.3.24 Based on its sealed condition Building 5 is assessed to be of 'negligible' suitability for use by roosting bats.

Greenhouse and Polytunnel

3.3.25 Refer to **Photo 3**. The greenhouse and polytunnel have no features with suitability for use by roosting bats; both these buildings are of 'negligible' suitability.

Trees

3.3.26 No trees or shrubs within the site or on the boundary support any features suitable for use by roosting bats. All trees and shrubs are of 'negligible' suitability.

Dusk Emergence Survey: 3rd July 2023

3.3.27 No bat droppings were found around the external elevations of Buildings 1 and 5 and the outbuildings prior to the commencement of the dusk emergence survey.

3.3.28 No bat emergence was detected at Building 1 (or the adjoining Building 5). Subsequent review of the NVA footage did not detect any emergence or re-entry activity.

3.3.29 Common pipistrelle (*Pipistrellus pipistrellus*) were detected between 22:15 and 23:15, with the first recording 30 minutes after sunset, and soprano pipistrelle (*Pipistrellus pygmaeus*) were detected between 22:38 and 23:01 with the first recording 53 minutes after sunset. Noctule bat passes were detected between 22:24 and 23:15, with the first recording 39 minutes after sunset and a Myotis species was / were detected between 22:49 and 22:59 with the first recording 64 minutes after sunset.

3.3.30 The survey data from the 3rd July 2023 are appended at **Section 8.1**.

Bird Species

3.3.31 No evidence of the previous use of the buildings by nesting birds was detected.

3.3.32 The opportunities for nesting passerine birds are limited to the ornamental shrubs around the curtilage of the buildings.

Reptiles

- 3.3.33 A large proportion of the site comprises of buildings and hardstanding and the amenity grassland is heavily managed. The habitats within the site provide poor quality habitat for sheltering, basking and hibernating reptiles.
- 3.3.34 The site is not adjacent or linked to any areas of favourable habitat for reptile species, and there are no reported records of reptile for the site or the wider area. The presence of reptiles within the site is reasonably discounted.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

- 4.1.1 The proposals, as illustrated on drawing package BBA_189_P05 to P22 (Black Barn Architecture, 2023), comprise:
- Demolition of Buildings 2 to 4 and site clearance;
 - Extension of Building 1 to the north (Plots 2 to 7); and
 - Construction of four detached residential properties with associated landscaping (Plots 8 to 11).
- 4.1.2 Building 5 will be converted to a residential property (Plot 1); this proposal lies outside the current redline boundary.
- 4.1.3 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

Statutory Designated Sites for Conservation

- 4.2.1 It is considered that the site is sufficiently small and distant from all designated sites for nature conservation that the proposed development will have no direct or indirect impact on the designated sites in the local area and their features of special interest.

4.3 Vegetation and Habitats

- 4.3.1 Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat, are Priority Habitat or are classed as irreplaceable habitat⁵. The NVC communities present are typical of the geographical area and conditions present.
- 4.3.2 In terms of each habitat's importance in a geographical context⁶, the habitats at the site are of 'site' value only.
- 4.3.3 The presence of Wall Cotoneaster and Montbretia, both invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is a consideration. It is an offence under this legislation to cause the spread of these species in the wild. Best practice guidance and actions to be applied to ensure the spread of these species in the wild is avoided are described at **Section 5.4**.

⁵ As defined by <https://www.gov.uk/guidance/national-planning-policy-framework/annex-2-glossary>.

⁶ Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

4.3.4 Guidance / recommendations of features to be accommodated at the redeveloped site for the attraction of wildlife to the garden habitats at the post-development stage are provided at **Section 5.2**.

4.4 Protected Species and Other Wildlife

4.4.1 No evidence of use of the buildings in the site boundary by roosting bats was detected during the daylight survey and assessment carried out in March 2023. Building 1 section 1a is assessed to be of 'low' suitability for use by roosting bats.

4.4.2 In accordance with the survey guidelines one dusk emergence presence / absence survey was carried out at Building 1 at an optimum time of year; no bat emergence or evidence of a roost was detected. The current / recent presence of roosting bats is reasonably discounted at Building 1 and no further survey is required to comply with the survey guidelines and to inform a planning application.

4.4.3 All other buildings and the trees and shrubs are assessed to be of 'negligible' suitability for use by roosting bats and no further survey is required.

4.4.4 At least four species of bat were recorded flying near / over the site during the survey and July 2023 and in consideration of post-development interference impacts, subject to the avoidance lighting and / or implementation of an appropriate lighting strategy as recommended at **Section 5.3**, there is minimal risk of an increase in disturbance to roosting / foraging bats associated with human activity at the site.

Other Animal Life

4.4.5 The buildings (including the climbing plants on the elevation walls), ornamental shrubs and Bramble scrub provide opportunities for use by nesting birds, including Priority Species (i.e. house sparrow). Recommendations and actions to be applied to ensure the protection of nesting birds during the site preparation and construction period and to provide compensatory habitats for use by nesting birds are described at **Sections 5.3** and **5.5**.

4.4.6 Appropriate and proportionate survey effort and / or assessment, in accordance with standard survey guidelines has been applied to discount adverse effects on other relevant protected species. No further surveys for other protected species are necessary to support a planning application.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

5.1.1 The recommendations described below aim to ensure that the proposals are implemented in accordance with the mitigation hierarchy, relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021), local planning policy and best practice.

5.1.2 The recommendations aim to ensure compliance with Chapter 15, paragraph 180(d) of the NPPF which states:

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

5.2 Survey Validity for Roosting Bats

5.2.1 If works have not commenced before the next bat activity survey season (i.e. May / June 2024) then an updated survey will be required to ensure that the findings of this assessment remain accurate for the site.

5.3 Site Design

Appropriate Use of Lighting

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

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

5.3.2 It is advised that any external lighting to be installed at the site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the habitats outside the curtilage of the residential properties and areas of planting / habitat creation, as lighting overspill may deter use by wildlife such as foraging bats.

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

- a. *Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and
- b. Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2014).

Accommodation of Opportunities for Nesting Birds

5.3.4 To compensate for the loss of nesting opportunities for use by nesting birds at the buildings the following is recommended:

- a. Planting of native trees and shrubs (see below); and
- b. Installation of **two** house sparrow terraces at the new buildings, refer to **Insert 1**. Boxes should not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. Examples of a suitable house sparrow bird box is given below at **Insert 1**:

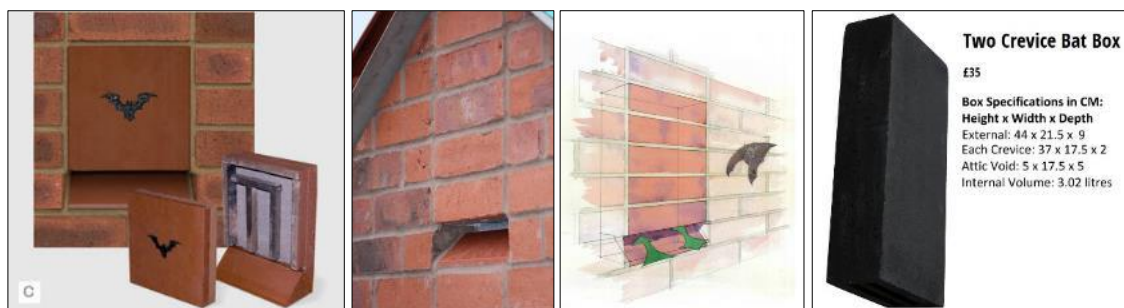


Insert 1: Schwegler 1SP House Sparrow Nesting Terrace (left) and Vivara Pro WoodStone House Sparrow Box (right). Both are available from www.NHBS.com

Enhancing Habitats for Roosting Bats

5.3.5 In accordance with best practice, it is recommended that the development incorporates the installation of **four** bat access panels at the new buildings.

5.3.6 The bat access panels should be sited on south-east to south-west facing elevations and at least 4 metres above ground level, ideally facing or close to areas of landscape planting or existing linear features. The access panels should not be positioned over windows or doorways where bat droppings may become a nuisance. An ecologist should advise on appropriate positions for the bat access panels. Suitable bat access panels are available from NHBS Ecology (www.nhbs.com), Wild Care (www.wildcare.co.uk) and / or Greenwood’s Ecohabitats (<https://www.greenwoodsecohabitats.co.uk>) and are presented below.



Insert 2: Examples of integrated bat access panels and an externally mounted box⁷

Green Roofs

- 5.3.7 To maximise the opportunities for biodiversity the roofs of the new properties (Plots 8 to 11) will be seeded with the ER1: Turf Roof Mixture⁸ (or similar) which contains grassland and herbs, including a number of butterfly larvae food plants such as Sheep's Sorrel (*Rumex acetosella*), Common Bird's-foot-trefoil (*Lotus corniculatus*) and food plants such as Heather (*Calluna vulgaris*) which provide invertebrate feeding opportunities in the late Summer.

Landscape Proposals

- 5.3.8 It is recommended that the landscape planting within the gardens and areas of open space is composed from native species and species known to be of value for the attraction of wildlife. Suitable trees and shrubs (subject to the distance to the buildings) are detailed at **Table 5.1** below.

Table 5.1: Suitable Native Species for Tree and Shrub Planting

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

- 5.3.9 Use of shrubs and plants that are attractive to invertebrates in any borders and planters is recommended, suitable species comprise Lavender (*Lavandula*), *Hebe*, *Ceanothus*, Foxglove (*Digitalis purpurea*) and *Allium* species.
- 5.3.10 The use of native plant species and species known to be of value for the attraction of wildlife, including foraging bats, in the landscaping scheme is recommended. Appropriate plants comprise night-scented flowers; a list of suggestions is presented below.

⁷ Left to right: IBstock Enclosed Bat Box 'c' (left); Habibat Bat Access Panels (centre left and centre right) and Greenwood's Ecohabitat's two crevice bat box (right). Products with a brick face are illustrated, however the Habibat bat access panels can be supplied unfaced to enable the addition of matching material.

⁸ <https://wildseed.co.uk/mixtures/view/54/turf-roof-mixture> as supplied by Emorsgate Seeds

Table 5.2: Recommended plants for use in gardens to attract bats⁹

Flowers for Borders		Herbs
Aubretia (spring to early summer)	Mexican aster (summer to autumn)	Angelica
Candytuft (summer to autumn)	Michaelmas daisy	Bergamot (summer to early autumn)
Cherry pie (summer to autumn)	Night-scented stock (summer)	Borage (spring to early autumn)
Corncockle	Ox-eye daisy (summer)	Coriander (summer)
Cornflower	Phacelia (summer to autumn)	English marigolds
Corn marigold	Poached egg plant (summer)	Fennel (summer to early autumn)
Corn poppy	Primrose (spring)	Feverfew (summer to autumn)
Echinacea	Red campion (spring)	Hyssop (summer to early autumn)
English Bluebell (spring)	Red valerian	Lavenders
Evening primrose	Scabious (summer)	Lemon balm
Field poppies (summer)	St John's wort (spring)	Marjoram (summer)
Honesty (spring)	Sweet William (summer)	Rosemary (spring)
Ice plant 'Pink lady' (early autumn)	Tobacco plant	Sweet Cicely
Knapweed (summer to autumn)	Verbena (summer to autumn)	Thyme (summer)
Mallow (summer to autumn)	Wallflowers	

5.4 Preliminary Assessment of Biodiversity Net Gain

5.4.1 A preliminary assessment of biodiversity net gain is presented at **Appendices 2 and 3**.

5.4.2 A landscape proposals plan is not available for the site at the current time. It is advised that the parameters detailed in **Table 9.3** and annotated on **Figure 3** are applied during the preparation of the detailed landscape proposals and planting schedule, this includes:

- a. Specification of wildflower grassland (and appropriate long-term management);
- b. Planting of small trees within the areas of open space; and
- c. Planting of an area of native mixed scrub.

5.4.3 As demonstrated at **Section 5.4** and **Appendices 2 and 3**, subject to the adherence of the parameters and recommendations identified the site proposals can achieve a net gain for biodiversity in accordance with the *Biodiversity Metric Calculation Tool and the Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).

5.5 Protection of Features During Construction

Invasive Plant Species

5.5.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Wall Cotoneaster and Montbretia in the wild. These species must not be taken off site; it is recommended that the Wall Cotoneaster and Montbretia are grubbed out by the roots / corms during site clearance and disposed of by burying on site.

Protection of Nesting Birds

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

⁹ Extracted from the BCT publication '*Encouraging bats, A guide for bat-friendly gardening and living*' (Bat Conservation Trust, 2016).

- 5.5.3 If breeding birds are detected / present it is recommended that the area is left undisturbed until it is confirmed that the young birds have fledged / the nest is no longer active. Guidance from an ecologist should be sought, as needed.

6.0 CONCLUSION

- 6.1 This ecological assessment has demonstrated that the redevelopment works at the site are feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.2 The proposals will secure benefits for biodiversity including habitat creation and installation of opportunities for roosting bats and nesting birds to demonstrate compliance with the principles of biodiversity net gain and relevant planning policy.
- 6.3 As demonstrated at **Section 5.4** and **Appendices 2** and **3**, the site proposals achieve a net gain for biodiversity in accordance with the *Biodiversity Metric Calculation Tool* and the *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016).

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8.0 APPENDIX 1: TABLES AND FIGURES

8.1 Raw Data from Dusk Emergence Survey

Table 8.1: Dusk Emergence Survey, 3rd July 2023, Sunset Time 21:45, Start Time 21:30

Survey Position 1: Rachel Brown

Time	Species	Notes
22:16 until 23:15	Common pipistrelle	No emergence detected. Foraging activity detected over hedgerow and fields adjacent to Building 1
22:25 until 22:25	Noctule	Brief pass
22:49 until 22:52	Myotis sp.	Brief passes
The Anabat Scout made the following recordings: 19 recordings of common pipistrelle between 22:16 and 23:10 1 recording of noctule between 22:25 and 22:25 3 recordings of Myotis species between 22:49 and 22:52		

Survey Position 2: Amy Sharples

Time	Species	Notes
22:15 until 23:18	Common pipistrelle	No emergence detected. Foraging activity detected over the site
22:24 until 22:24	Noctule	Brief pass
The Anabat Express made the following recordings: 16 recordings of common pipistrelle between 22:15 and 23:18 2 recordings of noctule between 22:24 and 22:24		

Survey Position 3: Catie Haworth

Time	Species	Notes
22:37 until 23:09	Common pipistrelle	No emergence detected. Foraging activity detected over rear garden
22:38 until 23:00	Soprano pipistrelle	Brief passes over site
23:15 until 23:15	Noctule	Brief passes over site
22:59 until 22:59	Myotis sp.	Brief pass
The Anabat Scout made the following recordings: 10 recordings of common pipistrelle between 22:37 and 23:09 2 recordings of soprano pipistrelle between 22:38 and 23:00 3 recordings of noctule between 23:16 and 23:17 1 recording of Myotis species between 22:59 and 22:59		

Survey Position 4: Ian Nelson

Time	Species	Notes
22:18 until 23:15	Common pipistrelle	No emergence detected. Foraging activity detected around Building 1 and along hedgerow behind surveyor
22:38 until 23:01	Soprano pipistrelle	Brief passes, foraging over hedgerow to rear of surveyor
22:25 until 22:25	Noctule	Brief passes
The Anabat Scout made the following recordings: 23 recordings of common pipistrelle between 22:18 and 23:16 5 recordings of soprano pipistrelle between 22:38 and 23:01 3 recordings of noctule between 22:25 and 22:25 6 recordings of Myotis species between 22:29 and 23:11		

8.2 Photographs



Photo 1: View of the southern margin of the site from Hesketh Lane (showing Buildings 1 and 5 (offsite))



Photo 2: Amenity grassland



Photo 3: Hard-standing and greenhouse



Photo 4: Asphalt covered hard-standing and Buildings 2 to 4



Photo 5: Stone wall at the northern site boundary



Photo 6: Tall-herb vegetation to the north of Building 2



Photo 7: Row of conifers



Photo 8: Conifers just outside the western site boundary



Photo 9: Southern and eastern elevations of Building 1 (sections 1a and 1b)



Photo 10: Southern elevation of Building 1 section 1a



Photo 11: Porch attached to Building 1 section 1a



Photo 12: Tight fitting timber fascia at southern elevation of Building 1 section 1a



Photo 13: Ridge copings at Building 1 section 1a



Photo 14: Building 1 section 1b



Photo 15: Roof void at Building 1 section 1a



Photo 16: Roof void at Building 1 section 1a



Photo 17: Building 1 section 1c (northern elevation)



Photo 18: Building 1 section 1c (northern and western elevations)



Photo 19: Building 1 section 1c (northern elevation)



Photo 20: Building 1 section 1d (northern elevation)



Photo 21: Roof void at Building 1 section 1d



Photo 22: Western and southern elevations of Building 5



Photo 23: Hole in the western elevation of Building 5



Photo 24: Building 2



Photo 25: Interior of Building 2



Photo 26: Building 3



Photo 27: Western and southern elevations of Building 4



Photo 28: Northern and western elevations of Building 4



Photo 29: Gaps at the roof line of Building 4; inspected with endoscope



Photo 30: Gap in timber above garage door at Building 4; inspected with endoscope



Photo 31: NVA recording at Survey Position 1 (from the darkest point of the survey)



Photo 32: NVA recording at Survey Position 2 (from the darkest point of the survey)



Photo 33: NVA recording at Survey Position 3 (from the darkest point of the survey)



Photo 34: NVA recording at Survey Position 4 (from the darkest point of the survey)

8.3 Plant Species List

Table 8.2: Plant Species List for Amenity Grassland

Scientific Name	Common Name	DAFOR ¹	Cover
<i>Cardamine pratensis</i>	Cuckooflower	F	<1%
<i>Cirsium arvense</i>	Creeping Thistle	R	<1%
<i>Digitalis purpurea</i>	Foxglove	R	<1%
<i>Ficaria verna</i>	Lesser Celandine	R	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F	1%
<i>Juncus inflexus</i>	Hard Rush	R	<1%
<i>Lolium perenne</i>	Perennial Rye-grass	A*	96%
<i>Narcissus pseudonarcissus</i>	Daffodil	VLA	<1%
<i>Poa annua</i>	Annual Meadow-grass	F	1%
<i>Prunella vulgaris</i>	Self-heal	R	<1%
<i>Rumex acetosa</i>	Common Sorrel	R	<1%
<i>Veronica persica</i>	Common Field-speedwell	R	<1%

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

8.4 Figures

Figure 1: Aerial Image to Show Site, Ponds and Designated Sites within 500 metres

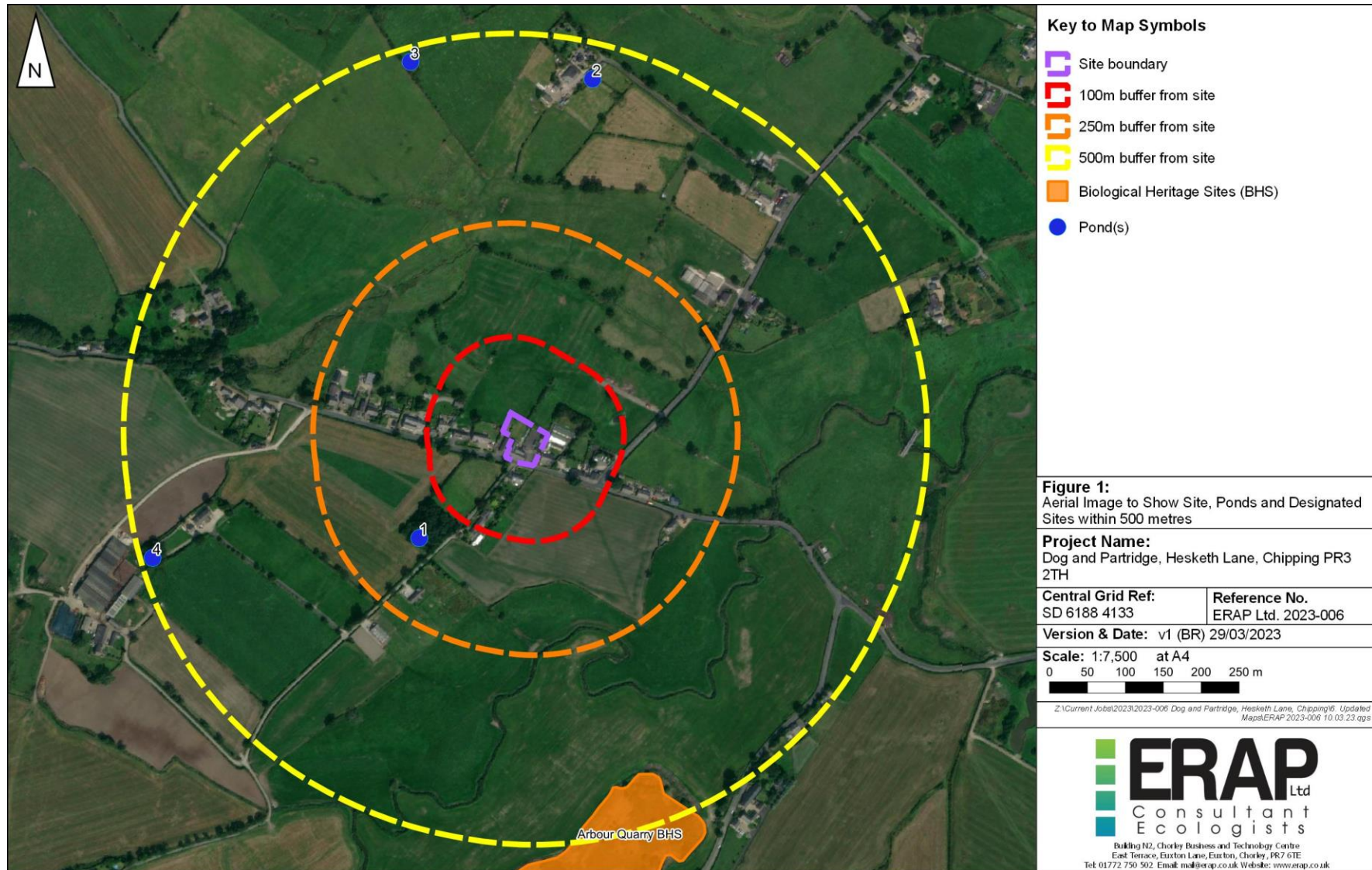


Figure 2: Phase 1 Habitat and Vegetation Map

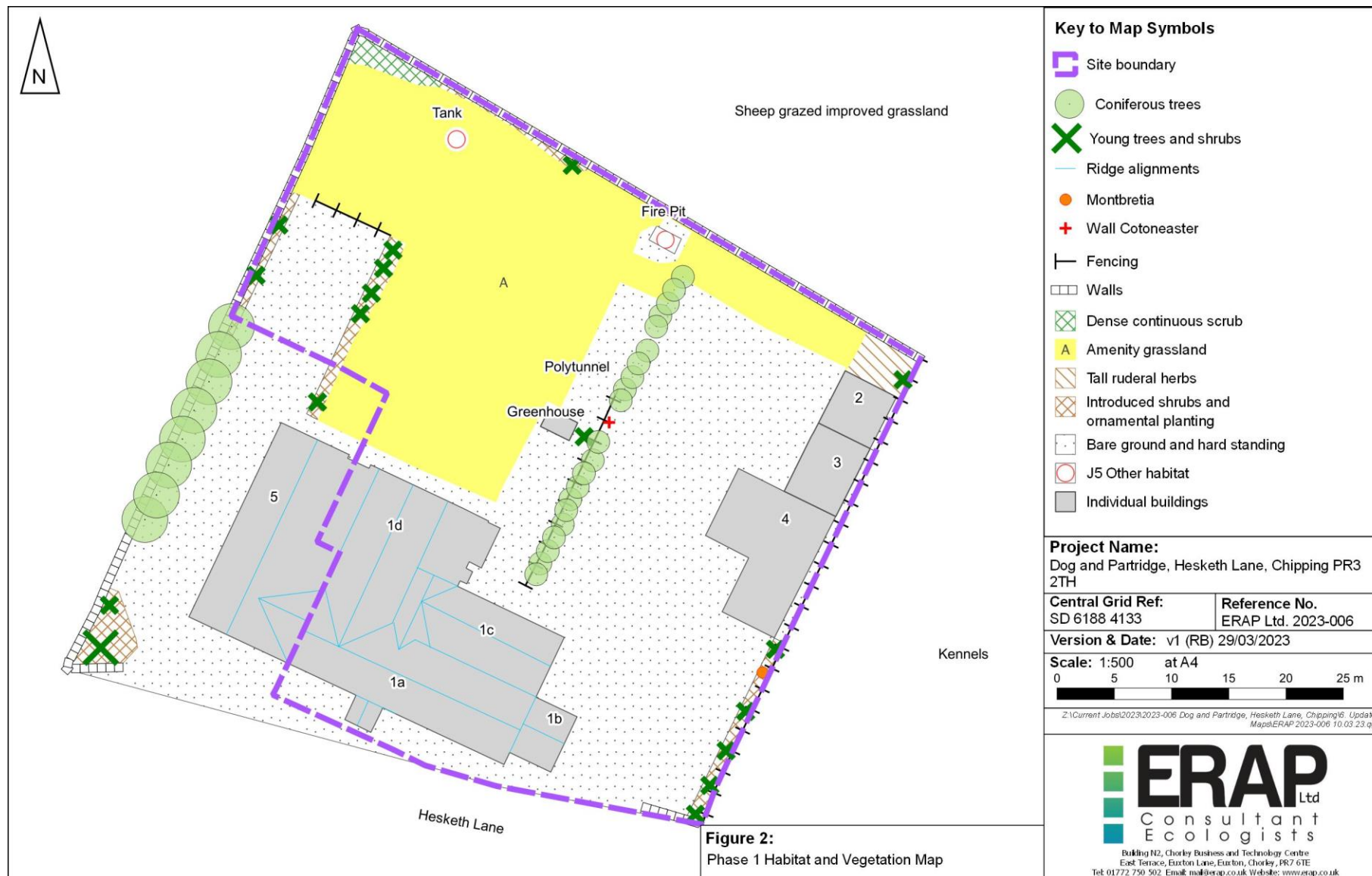


Figure 3: Dusk Emergence Survey Surveyor and NVA Positions (3rd July 2023)

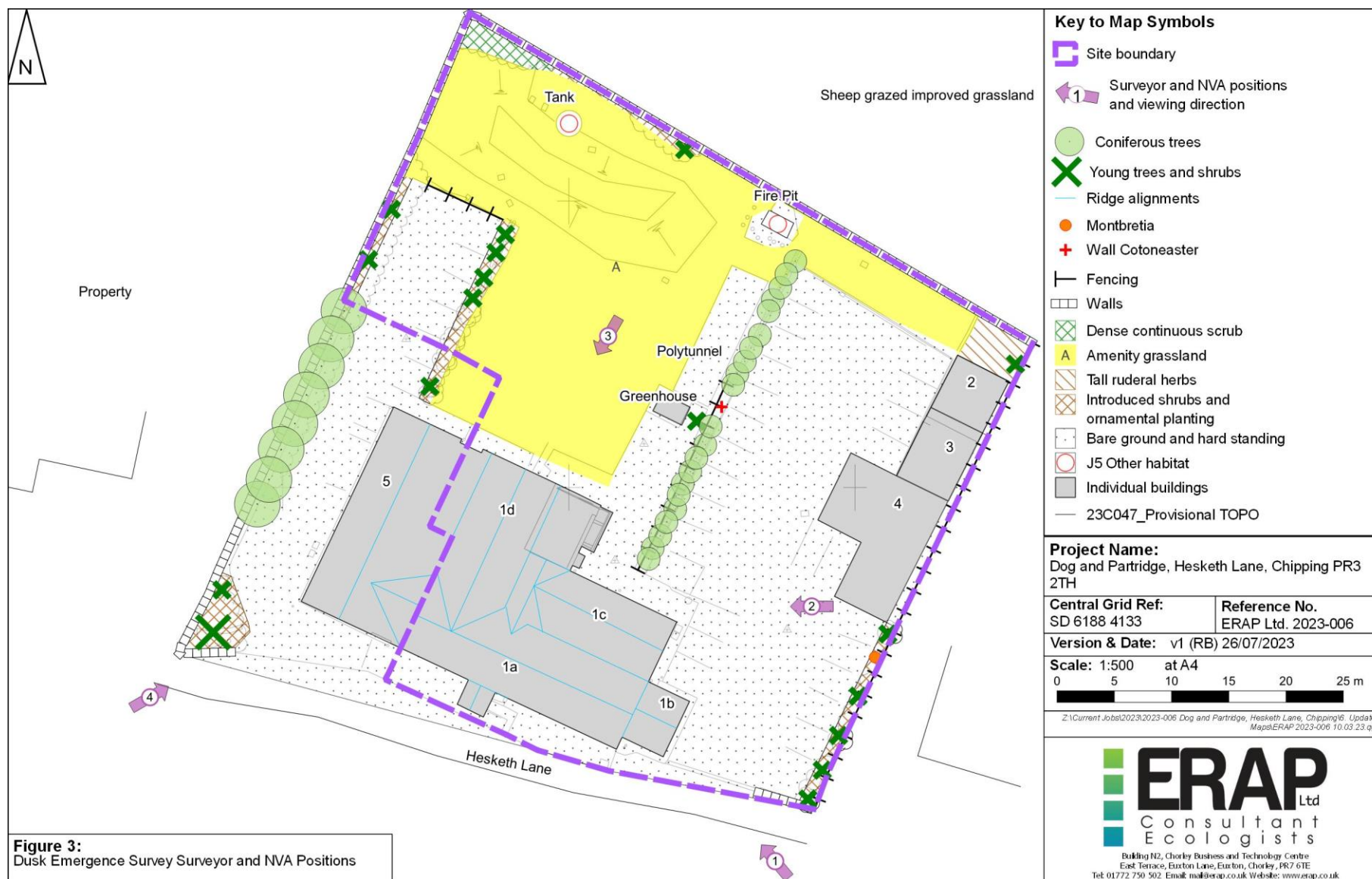


Figure 3:
Dusk Emergence Survey Surveyor and NVA Positions

9.0 APPENDIX 2: ASSESSMENT OF BIODIVERSITY NET GAIN

9.1 Background

- 9.1.1 ERAP (Consultant Ecologists) Ltd carried out an ecological survey and assessment of the land at the Dog and Partridge, Hesketh Lane, Chipping in spring 2023. The Ordnance Survey (OS) grid reference at the centre of the site is SD 6188 4133.
- 9.1.2 To complement the ecological survey and assessment and to demonstrate compliance with the *Biodiversity Net Gain: Good Practice Principles for Development* (CIEEM, 2016) this report presents the results of a preliminary assessment of the proposals in accordance with the *Defra Biodiversity Metric Calculation Tool* (version 3.1).

9.2 Methods

Baseline Vegetation and Habitats

- 9.2.1 The baseline assessment includes a Phase 1 Habitat Survey and an assessment of each habitat in accordance with the UK Habitats Classification / UKHab, in order that appropriate BNG habitat types could be assigned for the metric.
- 9.2.2 The UK Habitat Classification (or 'UKHab') has been designed to function at two scales: fine scale (25m² or 5 metres length) and large scale (400m² or 20m length). It is considered for the purposes of this survey (where the UKHab has been used to inform the BNG calculation of a relatively small area) that a finer scale of 5m² is appropriate for the classification of habitats.
- 9.2.3 Condition Assessments in accordance with *The Biodiversity Metric 3.1: Auditing and accounting for biodiversity: technical supplement* (Panks, et al., April 2022) were completed at each habitat within the site during the visit on 13th March 2023.

Evaluation and Measurements

- 9.2.4 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*.
- 9.2.5 QGIS has been used to calculate the total area of each baseline habitat present within the site. The total site area has been measured on QGIS.

9.3 Baseline Survey Results

Site Description and Assessment of Habitats: Baseline

- 9.3.1 The condition assessments for each habitat are presented at **Section 9.6**, below. Figures are appended at **Section 9.7**.
- 9.3.2 The total site area **0.25 hectares**.
- 9.3.3 **Table 9.1** below provides a summary of the baseline habitats present, their condition assessment result and their area within the site. Refer also to **Figure 2**.

Table 9.1: Summary of Baseline Area-based Habitats within the Site

Habitat	UK Habitat Classification Type	BNG Habitat Equivalent	Phase 1 Habitat Equivalent	Condition Assessment Result	Area (ha) to 4 decimal places
Habitat 1: Buildings	u15 buildings	Urban – developed land; sealed surface	J3.6 Buildings	N/A	0.0534
Habitat 2: Hard-standing	u1b6 other developed land	Urban – developed land; sealed surface	J4 Hard-standing	N/A	0.1061
Habitat 3: Lawn	g4 modified grassland with the secondary code 66 frequently mown	Grassland – modified grassland	J1.2 Amenity grassland	Moderate	0.0752
Habitat 4: Bramble scrub	h3d Bramble scrub	Heathland and shrub – Bramble scrub	A2.1 dense continuous scrub	N/A	0.002
Habitat 5: Introduced shrub	h3h - mixed scrub with the secondary code 48 non-native	Urban – Introduced shrub	N/A	N/A	0.0071
Habitat 6: Neutral grassland	g3c other neutral grassland with the secondary code 16 tall-herb	Grassland – other neutral grassland	C3.1 Other tall-herb and fern	Poor	0.0022
Total					0.25ha

9.3.4 The on-site baseline score for the site in biodiversity units is provided at **Section 9.5**, below.

9.4 On-site Post-intervention

9.4.1 A landscape proposals plan is not available for the site at the current time. Correspondence with the architect has confirmed the areas of habitat that will lie outside of private ownership and will be managed by a management company.

9.4.2 The *Proposed Site Plan* (BBA_189_P05) has been used to prepare the UKHab: Post-development plan at **Figure 3**. It is advised that the parameters detailed in **Table 9.3** and annotated on **Figure 3** are applied during the preparation of the detailed landscape proposals and planting schedule.

Table 9.2: Summary of Habitat Areas Proposed and Target Conditions

Habitat Type	BNG Equivalent Habitat	Target Condition	Hectare to 4 decimal places
Created Habitats			
Habitat A: Buildings and hard-standing	Urban – Developed land; sealed surface	N/A	0.1316
Habitat B: Vegetated gardens	Urban – Vegetated gardens	N/A	0.0379
Habitat C: Green roof	Urban – Other Green roof	N/A	0.04
Habitat D: Amenity grassland	Grassland - Modified grassland	Moderate	0.0323
Habitat F: Other neutral grassland [wildflower seeding]	Grassland – Other neutral grassland	Good	0.0039
Habitat G: Native scrub planting	Heathland and shrub – Mixed scrub	Poor	0.0033
Total			0.25ha
Habitat E: Urban tree 10 'small' urban trees proposed	Urban – Urban tree	Moderate	0.0407*
<p><i>*Urban trees do not count towards the total site area owing to the way the habitat is measured in the BNG metric. The area of urban trees has been determined using the Urban Tree Helper on the BNG Worksheet. The size classes for newly planted trees have been determined by projecting size at 30 years from planting (as advised in paragraph 7.11 of the Biodiversity Metric 3.1 Auditing and Accounting for Biodiversity User Guide (Panks, S. et al, April 2022)).</i></p>			

9.4.3 Criteria for target conditions to be achieved by the created habitats area are presented at **Tables 9.4 to 9.9**.

9.5 Headline Results

9.5.1 The headline results of the BNG calculation (as appended in the separate document *Appendix 3: ERAP 2023-006 Biodiversity Metric 3.1 29.03.2023*) are presented below.

Table 9.3: Results of BNG Calculation (from Headline Results Tab of BNG Calculator)

On-site Baseline	Habitat units	0.33
	Hedgerow units	0.00
	River units	0.00
On-site Post Intervention	Habitat units	0.43
	Hedgerow units	0.00
	River units	0.00
Total Net Unit Change	Habitat units	0.10
	Hedgerow units	0.00
	River units	0.00
Total Net % Change	Habitat units	+30.30%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules satisfied?		Yes

9.5.2 It is confirmed that based on the proposals as presented on **Figure 3** that biodiversity net gain can be achieved at the site in accordance with the metric. It is also confirmed that the trading rules can be satisfied. This is in addition to the habitat enhancement and creation measures outlined in **Sections 5.2** and **5.4** of the ecological survey and assessment report.

9.6 Condition Assessment Tables

Baseline Habitats

Table 9.4: Condition Assessments for Amenity / Modified Grasslands

Condition Assessment Criteria	Habitat 3: Modified Grassland
1. There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate condition.	✓
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	x
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	✓
4. Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	x
5. Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	✓
6. Cover of bracken less than 20%.	✓
7. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended).	✓
Good: Passes 6 or 7 of 7 including essential criterion 1	x
Moderate: Passes 4 or 5 of 7 criteria including essential criterion 1	✓
Poor: Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion 1	x

Table 9.5: Condition Assessments for Tall-herb Vegetation / Neutral Grassland

Condition Assessment Criteria	Habitat 6: Tall-herb Vegetation
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. <i>NB – this criterion is essential for achieving moderate condition for non-acid grassland types only.</i>	x
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	x
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	x
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	✓
5. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended). Combined cover of undesirable species ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	x
6. <i>Additional Group – non-acid grassland types only</i> There are greater than 9 species per metre squared. <i>NB – this criterion is essential for achieving good condition (non-acid grassland types only)</i>	x
Acid Grassland Types	
Good: passes 5 of 5 criteria	-
Moderate: passes 3 or 4 of 5 criteria	-
Poor: passes 0, 1 or 2 of 5 criteria	-
Non-acid Grassland Types	
Good: passes 5 of 6 criteria, including essential criteria 1 and 6	x
Moderate: passes 3 or 4 of 5 criteria passes 3 of 6 criteria, including essential criterion 1	x
Poor: passes 0, 1 or 2 of 5 criteria OR passes 3 or 4 criteria excluding criterion 1 and 6	✓
Additional Information:	
¹ Footnote 1: Species considered undesirable for this habitat type include: Creeping Thistle (<i>Cirsium arvense</i>), Spear Thistle (<i>Cirsium vulgare</i>), Curled Dock (<i>Rumex crispus</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Greater Plantain (<i>Plantago major</i>), White Clover (<i>Trifolium repens</i>), Cow Parsley (<i>Anthriscus sylvestris</i>).	

Post-intervention New Habitats / Target Conditions

Table 9.6: Target Condition Assessments for Grassland Habitats

Condition Assessment Criteria	Habitat D: Modified Grassland
1. There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition.	✓
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	X
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	✓
4. Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	X
5. Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	✓
6. Cover of bracken less than 20%.	✓
7. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended).	✓
Good: Passes 6 or 7 of 7 including essential criterion 1	X
Moderate: Passes 4 or 5 of 7 criteria; OR passes 4 or 5 criteria including essential criteria 1	✓
Poor: Passes 0, 1, 2 or 3 of 7 criteria OR passes 4, 5 or 6 but failing criterion 1	X

Table 9.7: Target Condition Assessments for Other Neutral Grassland / Wildflower Grassland

Condition Assessment Criteria	Habitat F: Wildflower Grassland
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB – this criterion is essential for achieving moderate condition for non-acid grassland types only.	✓
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	✓
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	✓
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	✓
5. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended). Combined cover of undesirable species ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	✓
6. <i>Additional Group – non-acid grassland types only</i> There are greater than 9 species per metre squared. NB – this criterion is essential for achieving good condition (non-acid grassland types only)	✓
Acid Grassland Types	
Good: passes 5 of 5 criteria	-
Moderate: passes 3 or 4 of 5 criteria	-
Poor: passes 0, 1 or 2 of 5 criteria	-
Non-acid Grassland Types	
Good: passes 5 of 6 criteria, including essential criteria 1 and 6	✓
Moderate: passes 3 or 4 of 5 criteria passes 3 of 6 criteria, including essential criterion 1	X
Poor: passes 0, 1 or 2 of 5 criteria OR passes 3 or 4 criteria excluding criterion 1 and 6	X
Additional Information: ¹ Footnote 1: Species considered undesirable for this habitat type include: Creeping Thistle (<i>Cirsium arvense</i>), Spear Thistle (<i>Cirsium vulgare</i>), Curled Dock (<i>Rumex crispus</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Common Nettle (<i>Urtica dioica</i>), Creeping Buttercup (<i>Ranunculus repens</i>), Greater Plantain (<i>Plantago major</i>), White Clover (<i>Trifolium repens</i>), Cow Parsley (<i>Anthriscus sylvestris</i>).	

Table 9.8: Target Condition Assessments for Mixed Scrub

Condition Assessment Criteria	Habitat G: New Native Mixed Scrub
1. Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	✓
2. There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	x
3. There is an absence of invasive non-native species listed on Schedule 9 of <i>Wildlife and Countryside Act 1981</i> (as amended) and undesirable species ¹ make up less than 5% of ground cover.	✓
4. The scrub has a well-developed edge with scattered scrub and tall grassland and / or herbs present between the scrub and adjacent habitat(s).	x
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.	x
Good: passes 5 of 5 criteria	x
Moderate: passes 3 or 4 of 5 criteria	x
Poor: passes 0, 1 or 2 of 5 criteria	✓
Additional Information:	
¹ Species considered undesirable for this habitat type include: Creeping Thistle (<i>Cirsium arvense</i>), Common Nettle (<i>Urtica dioica</i>), Cherry Laurel (<i>Prunus laurocerasus</i>), Snowberry (<i>Symphoricarpos</i> spp.), Buddleia (<i>Buddleja</i> spp.), Cotoneaster (<i>Cotoneaster</i> spp.), and Spanish Bluebell (<i>Hyacinthoides hispanica</i>) (or hybrids).	

Table 9.9: Target Condition Assessments for Urban Trees

Condition Assessment Criteria	Habitat E: Urban Tree
1. The tree is a native species (or more than 70% within the block are native species)	✓
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓
3. More than 50% of trees are mature ² or veteran ³ .	x
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.	✓
5. Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	x
6. More than 20% of the tree canopy area is oversailing vegetation beneath.	✓
Good: Passes 5 or 6 of 6 criteria	x
Moderate: Passes 3 or 4 of 6 criteria	✓
Poor: Passes 0, 1 or 2 of 6 criteria	x
Additional information / definitions:	
<p>Footnote 1 - This covers all trees in artificial urban habitats such as private gardens, private land, institutional land and land used for transport functions; roads, streets, canals, rail, footpaths etc. Trees in urban areas can under the right conditions provide a large range of habitat opportunities, supporting lichens, invertebrates and birds. Tree planting in urban areas has for over two hundred years also introduced non-native species into towns and cities. In the context of biodiversity native species are the preferred option. However, non-native tree species can contribute positively to biodiversity richness particularly in relation to providing a seasonal food source for nectar feeders and other invertebrates as well as supporting vertebrates that feed on species that are hosted by non-native trees. Examples are early and late flowering species of Prunus and aphids on varieties of Acer providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species</p> <p>Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.</p> <p>Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:</p> <ol style="list-style-type: none"> 1. Rot sites associated with wounds which are decaying >400cm²; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter; 3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs; 5. Fruit bodies of fungi known to cause wood decay. 	

9.7 Figures







10.0 APPENDIX 3: BIODIVERSITY METRIC CALCULATION TOOL

Separate document