Land at Alston's Dairy, Alston Lane, Preston PR3 3BN: Dairy Extension

ECOLOGICAL SURVEY AND ASSESSMENT (Including a Licensed Bat Survey)

June 2024

ERAP (Consultant Ecologists) Ltd Reference: 2023-130

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Document Control

Survey Type:	**Surveyors[1]**	**Survey Date(s)**
Phase 1 Habitat and Daylight bat survey	Brian Robinson B.Sc. (Hons) MCIEEM	24th July 2023
Dusk emergence Survey Repetition 1	Ian Nelson, Catie Haworth and Rachel Brown	3rd August 2023
Dusk emergence Survey Repetition 2	Brian Robinson, Aidan Pickering and Marie Pickering	17th August 2023
Reporting	**Personnel**	**Date**
Author	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	**Version 1:** 27th July 2023 **Version 2:** 30th August 2023
Signature(s)		
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Report issued to	James Hall & Co (Properties) Ltd	
Version Number	**3:** Updated to include reference to the current landscape proposals plan.	

[1] *Licence reference numbers*

Bats

Brian Robinson Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-13161-CLS-CLS

Great crested newt

Brian Robinson Natural England Class Survey Licence (Level 1) Registration Number 2017-30960-CLS-CLS

SUMMARY

i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of land at Alston's Dairy, Alston Lane, Preston PR3 3BN. The assessment was requested in connection with proposals to extend the existing dairy buildings to the north and create additional car parking and access.

ii. This report presents the results of a desktop study, data search, extended Phase 1 Habitat Survey and licensed bat survey carried out in July 2023, and two dusk emergence surveys completed at Building 2 in August 2023. The scope of survey undertaken is appropriate to identify potential ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the development proposals.

iii. The site comprises a field of improved grassland, amenity grassland, ornamental shrubs, hard standing and buildings, a single ornamental hedgerow and one tree line. Two further hedgerows are located adjacent to the site boundaries and have been included for completeness.

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

v. Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present. Hedgerow 1 is a Priority Habitat.

vi. In terms of each habitat's importance in a geographical context, the hedgerow, improved and amenity grassland and introduced shrubs are considered to be of 'site' importance. The buildings and hard standing are not considered to hold any importance in a geographical context.

vii. No invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected within the site.

viii. Building 1 is unsuitable for use by roosting bats; the presence of roosting bats is reasonably discounted at Building 1. No bats or signs of bats were detected at Building 2, however features suitable for use by roosting bats are present, and the building is considered to be of 'moderate' suitability for use by roosting bats. Further surveys completed at Building 2 did not detect the presence of roosting bats; the presence of roosting bats is reasonably discounted at the site.

ix. Building 2, the ornamental shrubs, the hedgerows and the tree line are suitable for use by nesting birds; measures for the protection of nesting birds are presented at **Section 5.2**. Measures to enhance habitats within the site for nesting birds as part of the proposed development are presented at **Section 5.3**. The site supports suitable habitat for foraging hedgehog, which is a Priority Species. Measures for the protection of hedgehog and other wildlife during the construction phase of the proposed development are presented at **Section 5.2**.

x. The presence of protected or notable species is otherwise reasonably discounted at the site.

xi. 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.

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

xiii. It is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. The proposed development at the site 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 James Hall & Co (Properties) Ltd to carry out an ecological assessment of Land at Alston's Dairy, Alston Lane, Preston PR3 3BN (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 60193 35465. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).

1.1.2 The assessment was requested in connection with a planning application to extend the existing dairy buildings to the north and create additional car parking and access.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken in July 2023 comprised:

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

b. An Extended Phase 1 Habitat Survey and assessment;

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

d. Survey and assessment of all habitats for relevant statutorily protected species[1] and other wildlife including badger (*Meles meles*), barn owl (*Tyto alba*), great crested newt (*Triturus cristatus*), bird species and reptiles;

e. A licensed daylight bat survey of the buildings and trees;

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

g. The identification of any further surveys or precautionary actions that may be required to inform the progression of the site through the planning process or prior to the commencement of any construction activities.

1.2.2 Two dusk emergence surveys were completed at Building 2 to determine the presence or absence of roosting bats at the site in August 2023.

[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 bodies or water courses within or adjacent to 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:

a. 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;

b. Lancashire Environment Record Network (LERN); and

c. 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 Brian Robinson on 24th July 2023. The weather was dry and sunny with a light air (Beaufort scale 1) and an air temperature of 17°C.

2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:1,1250 and is appended at **Figure 2**. The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.3 On site habitat mapping was assisted via use of GPS technology using *ESRI World Imagery* as a base plan.

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

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

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

2.2.7 Hedgerows were assessed in accordance with *The Hedgerows Regulations 1997* wildlife and landscape criteria (H.M.S.O., 1997).

2.2.8 The tree, tree group and hedgerow references used in *Alston Dairy, Alston, Preston: Tree Survey and Root Protection Area Dwg No. 7274.01* (Trevor Bridge Associates Ltd, 2023) and *Alston Dairy, Preston Road, Longridge: Tree Survey Report* (Trevor Bridge Associates Ltd, 2023), hereafter the 'TBA tree survey report' are presented in the habitat descriptions of report for ease of cross-referencing between documents.

2.2.9 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).

2.2.10 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: advice for making planning decisions* (Natural England, 2022).

2.3.3 The following signs of badger activity were searched for:

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

b. Large spoil heaps outside sett entrances;

c. Bedding outside sett entrances;

d. Badger footprints;

e. Badger paths;

f. Latrines;

g. Badger hairs on fences or bushes;

h. Scratching posts; and

i. Signs of digging for food.

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

Bat Species

Daylight Survey

Survey Personnel

2.3.5 The site was assessed for its suitability to support roosting bats by Brian Robinson, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-13161-CLS-CLS. The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Buildings

2.3.6 The surveys were 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).

2.3.7 An inspection of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into 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.

2.3.8 The internal survey involved an examination of the accessible internal areas (including roof voids) to find roosting bats or evidence of past use of the buildings by bats such as droppings and prey remains.

2.3.9 A list of equipment used is detailed at **Table 2.1**:

Table 2.1: 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

2.3.10 The suitability of each building 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 building (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.

Trees

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

2.3.12 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).

Habitat Assessment for Commuting / Foraging Bats

2.3.14 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented at **Table 2.2**.

Table 2.2: 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.

Presence / Absence Surveys: Dusk Emergence Surveys

2.3.15 Two dusk emergence surveys, supplemented by night vision aids (NVAs), were conducted at Building 2 in August 2023. Both surveys were conducted under suitable conditions and commenced at least 15 minutes before sunset, and continued for at least 1.5 hours after sunset.

2.3.16 Surveyors, experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the building 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.

2.3.17 Anabat Scout bat 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). Echolocation calls were recorded and analysed after the survey using Anabat Insight bat call analysis software.

2.3.18 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 24** to **26**.

2.3.19 In accordance with *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys* (Bat Conservation Trust, May 2022)*:*

'The 4th edition of the survey guidelines will therefore transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys, in favour of dusk surveys supported by NVAs.'

2.3.20 NVAs were used at each survey position for each of the surveys completed. It has therefore been considered that no dawn re-entry survey (as could have been required in accordance with *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016)) is necessary to inform the survey results.

2.3.21 The dates of the surveys, surveyors, equipment used and weather conditions are presented at **Table 2.3**, below.

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

Date	**3rd August 2023**	**17th August 2023**
Sunset time:	21:05	20:37
Start & end time	20:50 until 22:35	20:20 until 22:10
Weather	16^{0}C and dry with a light air (Beaufort scale 1)	19^{0}C and dry with a light air (Beaufort scale 1)
Survey Position	**Surveyor, Detector and NVA**	**Surveyor, Detector and NVA**
1	Ian Nelson, Anabat Scout & Canon XA60	Brian Robinson, Anabat Scout & Panasonic VX870K
2	Catie Haworth, Anabat Scout & Canon XA60	Aidan Pickering, Anabat Scout & Canon XA20
3	Rachel Brown, Anabat Scout & Canon XA60	Marie Pickering, Anabat Scout & Canon XA20

Bird Species

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

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

[2] Canon XA20, Canon XA60 and Panasonic VX870K camcorders.

2.3.24 All visible and audible birds were recorded during the site survey following the standard recording methodology and codes of the *British Trust for Ornithology (BTO) Common Birds Census* (Marchant, 1983).

2.3.25 During the internal inspection on 24th July 2023 both buildings were searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).

Great Crested Newt

Desktop Search for Ponds

2.3.26 In accordance with *Great crested newts: advice for making planning decisions* (Natural England, 2022) all ponds within an unobstructed 500 metres of a site should be considered for their suitability to support breeding great crested newts. 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.

2.3.27 The search of habitats in the wider area up to a distance of 500 metres from the site boundary revealed the presence of nine ponds, as detailed in **Table 2.3**.

Table 2.4: Ponds within 500 metres of the Site

Pond Reference	OS Grid Reference	Distance and Direction from the Site
Pond 1	SD 60165 35702	130 metres to the north
Pond 2	SD 60119 35608	56 metres to the north
Pond 3	SD 60085 35649	113 metres to the north-west
Pond 4	SD 59979 35697	218 metres to the north-west
Pond 5	SD 59933 35671	248 metres to the north-west
Pond 6	SD 59883 35633	279 metres to the north-west
Pond 7	SD 59896 35730	287 metres to the north-west
Pond 8	SD 60607 35349	354 metres to the east
Pond 9	SD 60560 35263	334 metres to the south-east

Consideration of Requirement for Further Survey

2.3.28 The requirement for further survey 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.

Presence of Dispersal Barriers

2.3.29 Preston Road is located to the west of the site and is a 10 metres wide main thoroughfare which supported a constant flow of traffic during the Phase 1 Habitat Survey. It is considered that the road presents a significant dispersal barrier to amphibian species; the road is likely to form a dispersal barrier to any amphibian species associated with Ponds 1 to 7, all of which are located to the west of the road.

2.3.30 No significant dispersal barrier is present between Ponds 8 and 9 and the site; although the ponds lie across the existing farm buildings and hard standing associated with Alston's Dairy it is considered these buildings represent only a minor dispersal barrier.

Consideration of Distance of Ponds from Site and Relative Size of Site

2.3.31 To inform the requirement for further surveys, the Natural England Rapid Risk Assessment tool from *GCN Method Statement WML-A14-2 (Version April 2020* (Natural England, 2020) has been completed, as presented at **Table 2.4**.

2.3.32 The tool has been completed based on the distances of the ponds from the site, and the size of the development site (1.87 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	0.00
Land within 100m of any breeding pond(s)	No effect	0.00
Land 100-250m from any breeding pond(s)	No effect	0.00
Land >250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.04
Individual great crested newts	No effect	0
	Maximum:	0.04
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

2.3.33 The results of the Natural England Rapid Risk Assessment indicate that the site is sufficiently small and distant from all ponds (which do not lie across significant dispersal barriers) that any proposed development is highly unlikely to impact upon great crested newt populations (if present). Impacts to great crested newt are reasonably discounted.

Reptile Species

2.3.34 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined in **Table 2.5**.

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

2.3.35 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. Habitats have been assessed for their suitability for Priority Species identified in the data search results where this is considered relevant to the application.

2.4 Survey and Reporting Limitations

2.4.1 The whole site was accessible and the survey was completed at a suitable time of year. No survey limitations were experienced.

2.4.2 All measurements within this report are approximate only, and have been either measured (using QField) or 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) and *Guidelines for the Selection of Biological SSSIs* (Bainbridge, et al., 2013). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

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

2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2023) 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 is not and does not form part of any statutory designated site for nature conservation.

3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for Red Scar and Tun Brook Woods SSSI located 1.6 kilometres to the north-east of the site and are designated for Red Scar and Tun Brook Woods SSSI, which is located 1.6 kilometres to the south-west of the site.

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. Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

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

c. Large non-residential developments outside existing settlements / urban areas where the footprint exceeds 1 hectare.

d. Any residential development of 100 or more houses outside existing settlements / urban areas.

e. Any industrial / agricultural development that could cause air pollution (includes industrial processes, livestock and poultry units with a floorspace greater than 500m², slurry lagoons and digestate stores greater than 200m² and manure stores greater than 250 tonnes).

f. General combustion processes greater than 20 megawatts energy input. Includes energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works and other incineration / combustion.

g. Landfill. Includes inert landfill, non-hazardous landfill and hazardous landfill.

h. Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Includes open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

i. Any discharge of water or liquid waste of more than 5m³ per day to ground (i.e. to seep away) or to surface water, such as a beck or stream.

j. Large infrastructure such as warehousing / industry where the total net additional gross internal floorspace following development is 1,000m² or more.

Non-statutory Designated Sites for Nature Conservation

3.1.4 The site is not and does not form part of any non-statutory designated site for nature conservation, called 'Biological Heritage Sites' or 'BHS' in Lancashire.

3.1.5 Thirteen BHS are located within a 2 kilometres radius from the centre of the site, and are summarised at **Table 3.1**.

Table 3.1: BHS Within a 2 Kilometre Radius from the Centre of the Site

BHS Name	Distance and Direction from the Site	Reasons for Designation
Alston Reservoirs	0.34 kilometres to the north-east	Two neighbouring reservoirs which support high diversity and good numbers of wintering wildfowl. The embankments support species-rich grassland.
Grimsargh Reservoirs	0.96 kilometres south-west	Reservoir supports large numbers (over 60 species) of breeding and wintering birds and reservoir banks support species-rich grassland.
Wood Top Wood	1.07 kilometres south-west	Semi-natural, broad-leaved woodland alongside Tun Brook. Part of the woodland is included in the *Lancashire Inventory of Ancient Woodland (Provisional*).
Norcross Grassland	1.11 kilometres east	Site runs along both sides of the stream to the north of Norcross Wood BHS. Supporting semi-improved grassland, much of which is species-rich.
Norcross Wood	1.15 kilometres south-east	Semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.
College Wood	1.38 kilometres north-east	Semi-natural woodland with a stream running through. The woodland is listed in the *Lancashire Inventory of Ancient Woodland (Provisional).*
Norcross Pond	1.38 kilometres east	Small pond with surrounding vegetation. Common Club-rush present at the pond margins and is included in the *Provisional Lancashire Red Data List of Vascular Plants.*
King Wood	1.41 kilometres south-east	Semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.
Whittingham Mires and Ponds	1.58 kilometres west	Two areas of wetland complexes supporting great crested newt, common frog and a good range of invertebrates.
Gib Holme Wood	1.60 kilometres south	Ancient, semi-natural woodland which is included in the Lancashire Inventory of Ancient Woodland (Provisional). Three species included in the *Provisional Lancashire Red Data List of Vascular Plants* are present; yellow star-of-Bethlehem, thin-spiked wood-sedge and yellow archangel. Wet woodland is present, which is a UK BAP priority habitat.
Alston Wood	1.60 kilometres south	Steeply sloping, semi-natural wood situated on the bank of the River Ribble, listed in the Inventory of Ancient Woodland. The woodland is important for breeding birds.
Leece's Wood	1.80 kilometres east	Semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.
Big Wood	1.85 kilometres south	Ancient, semi-natural woodland with a stream running through. Site is included in the *Lancashire Inventory of Ancient Woodland (Provisional).*

3.1.6 The presence of the BHS is considered further at **Section 4.2**. The site is located within a Forestry Commission (FC) / British Trust for Ornithology (BTO) Wader Zonal Map. This is also considered further at **Section 4.2**.

Priority Habitats Inventory and Soilscape Information

3.1.7 The Priority Habitats Inventory[3] was checked via MAGiC Maps. No Priority Habitats are identified at the site by the inventory.

3.1.8 In accordance with *Soilscape (England)* as presented on MAGiC Maps (National Soil Resources Institute, 2005), the site supports '*slowly permeable seasonally wet, slightly acid but base-rich loamy and clayey soils*', and the characteristic semi-natural habitats associated with the soils comprise '*lowland seasonally wet pastures and woodlands'*.

[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.

Protected and Notable Species

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

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

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

Taxon Group	Species Name and Designations[1] and Notes
Amphibians	Common frog (*Rana temporaria*): WCAs5 (sale only) & LBAP. 103 records, dated between 1997 and 2020. The closest record is 460 metres to the north-west, and from 2011.
	Common toad (*Bufo bufo*): WCAs5 (sale only), PS & LBAP. 62 records, dated between 2006 and 2011. The closest record is 495 metres to the north-west, and from 2011.
	Great crested newt (*Triturus cristatus*): EPS, WCAs5, PS & LBAP. 145 records, dated between 1997 and 2017. The closest record is 350 metres to the north-east, and from 2003.
	Palmate newt (*Lissotriton helveticus*): WCAs5 (sale only). 13 records, all from 2006. The closest record is 1625 metres to the south.
	Smooth newt (*Lissotriton vulgaris*): WCAs5 (sale only). 68 records, dated between 2006 and 2017. The closest record is 460 metres to the north-west, and from 2011.
Birds – WCAs1	Barn owl (*Tyto alba*): WCAs1. 2 records, dated 2006 and 2009. The closest record is 1300 metres to the south-west, and from 2009.
	Brambling (*Fringilla montifringilla*): WCAs1. 15 records, dated between 1995 and 1996. The closest record is 1475 metres to the south-east, and from 1996.
	Goldeneye (*Bucephala clangula*): WCAs1. 5 records, dated between 1990 and 2006. The closest record is 625 metres to the north-east, and from 1990.
	Green sandpiper (*Tringa ochropus*): WCAs1. 1 record from 2006, located 1300 metres to the south-west.
	Greenshank (*Tringa nebularia*): WCAs1. 1 record from 2006, located 1300 metres to the south-west.
	Hobby (*Falco subbuteo*): WCAs1 & LBAP. 1 record from 2009, located 1300 metres to the south-west.
	Little ringed plover (*Charadrius dubius*): WCAs1 & LBAP. 11 records, dated between 2006 and 2013. The closest record is 995 metres to the north, and from 2013.
	Long-tailed duck (*Clangula hyemalis*): WCAs1. 1 record from 1990, located 1180 metres to the north-east.
	Pintail (*Anas acuta*): WCAs1 & LBAP. 2 records, dated 1990 and 2006. The closest record is 1180 metres to the north-east, and from 1990.
	Redwing (*Turdus iliacus*): WCAs1. 11 records, dated between 1995 and 1997. The closest record is 1475 metres to the south-east, and from 1997.
	Ruff (*Calidris pugnax*): WCAs1 & LBAP. 1 record from 1990, located 1180 metres to the north-east.
	Scaup (*Aythya marila*): WCAs1 & PS. 1 record from 2006, located 1300 metres to the south-west.
	Whimbrel (*Numenius phaeopus*): WCAs1 & LBAP. 6 records, dated between 2006 and 2010. The closest record is 1300 metres to the south-west, and from 2010.
Birds – PS & LBAP	**PS & LBAP:** Skylark (*Alauda arvensis*), cuckoo (*Cuculus canorus*), reed bunting (*Emberiza schoeniclus*), herring gull (*Larus argentatus*), yellow wagtail (*Motacilla flava*), curlew (*Numenius arquata*), house sparrow (*Passer domesticus*), tree sparrow (*Passer montanus*), grey partridge (*Perdix perdix*), dunnock (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), and lapwing (*Vanellus vanellus*). **PS Only:** Lesser redpoll (*Acanthis cabaret*), linnet (*Linaria cannabina*) and marsh tit (*Poecile palustris*). **LBAP Only:** Common sandpiper (*Actitis hypoleucos*), shoveler (*Anas clypeata*), teal (*Anas crecca*), wigeon (*Anas penelope*), gadwall (*Anas strepera*), meadow pipit (*Anthus pratensis*), grey heron (*Ardea cinerea*), pochard (*Aythya ferina*), dunlin (*Calidris alpina*), knot (*Calidris canutus*), ringed plover (*Charadrius hiaticula*), black-headed gull (*Chroicocephalus ridibundus*), kestrel (*Falco tinnunculus*), snipe (*Gallinago gallinago*), oystercatcher (*Haematopus ostralegus*), lesser black-backed gull (*Larus fuscus*), great black-backed gull (*Larus marinus*), yellow wagtail (*Motacilla flava* subsp. *flavissima*), willow warbler

Taxon Group	Species Name and Designations[1] and Notes
	(*Phylloscopus trochilus*), whinchat (*Saxicola rubetra*), shelduck (*Tadorna tadorna*) and redshank (*Tringa totanus*).
Flowering plants	**LBAP Only:** Bog Pimpernel (*Anagallis tenella*), Barberry (*Berberis vulgaris*), Wild Cabbage (*Brassica oleracea*), Thin-spiked Wood-sedge (*Carex strigosa*), Wood Crane's-bill (*Geranium sylvaticum*), Sheep's-bit (*Jasione montana*), Bristly Oxtongue (*Picris echioides*), Red Pondweed (*Potamogeton alpinus*), Blunt-leaved Pondweed (*Potamogeton obtusifolius*), Wintergreen (*Pyrola rotundifolia* subsp. *maritima*), Pond Water-crowfoot (*Ranunculus peltatus*) and Round-leaved Dog-rose (*Rosa obtusifolia*).
Insects – Butterflies	**PS & LBAP:** Wall (*Lasiommata megera*).
Insects – Moths	**PS & LBAP:** Garden tiger (*Arctia caja*), figure of eight (*Diloba caeruleocephala*) and brindled beauty (*Lycia hirtaria*). **PS Only:** Grey dagger (*Acronicta psi*), knot grass (*Acronicta rumicis*), green-brindled crescent (*Allophyes oxyacanthae*), ear moth (*Amphipoea oculea*), dusky brocade (*Apamea remissa*), centre-barred sallow (*Atethmia centrago*), mottled rustic (*Caradrina morpheus*), haworth's minor (*Celaena haworthii*), latticed heath (*Chiasmia clathrata*), small square-spot (*Diarsia rubi*), small phoenix (*Ecliptopera silaceata*), dusky thorn (*Ennomos fuscantaria*), autumnal rustic (*Eugnorisma glareosa*), spinach (*Eulithis mellinata*), ghost moth (*Hepialus humuli*), rustic (*Hoplodrina blanda*), rosy rustic (*Hydraecia micacea*), dot moth (*Melanchra persicariae*), powdered quaker (*Orthosia gracilis*), large wainscot (*Rhizedra lutosa*), shaded broad-bar (*Scotopteryx chenopodiata*), white ermine (*Spilosoma lubricipeda*), feathered gothic (*Tholera decimalis*), cinnabar (*Tyria jacobaeae*), oak hook-tip (*Watsonalla binaria*), dark-barred twin-spot carpet (*Xanthorhoe ferrugata*) and heath rustic (*Xestia agathina*). **LBAP Only:** Northern deep-brown dart (*Aporophyla lueneburgensis*), gold spangle (*Autographa bractea*), puss moth (*Cerura vinula*), burnet companion (*Euclidia glyphica*), netted pug (*Eupithecia venosata*) and chimney sweeper (*Odezia atrata*).
Reptiles	Grass snake (*Natrix helvetica*): WCAs5, PS & LBAP 1 record from 1995. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference.
Spiders	**LBAP:** *Halorates distinctus* and *Moebelia penicillate.*
Terrestrial Mammals	Brown long-eared bat (*Plecotus auritus*): EPS, WCAs5, PS & LBAP. 2 records, dated 2015 and 2019. The closest record is 1275 metres to the south-west, and from 2015.
	European otter (*Lutra lutra*): EPS, WCAs5, PS & LBAP. 2 records, dated 1970 and 2017. The closest record is 1070 metres to the south-west, and from 2017.
	Noctule bat (*Nyctalus noctula*): EPS, WCAs5, PS & LBAP. 5 records, dated between 2009 and 2019. The closest record is 1170 metres to the south-west, and from 2017.
	Bats (Order *Chiroptera*): EPS, WCAs5 & LBAP. 4 records, dated between 1999 and 2017. The closest record is 545 metres to the north, and from 2017.
	Daubenton's bat (*Myotis daubentonii*): EPS, WCAs5 & LBAP. 4 records, dated between 2009 and 2019. The closest record is 1170 metres to the south-west, and from 2017.
	Long-eared bat species (*Plecotus* sp.): EPS, WCAs5 & LBAP. 1 record from 2017, located 1170 metres to the south-west.
	Common pipistrelle (*Pipistrellus pipistrellus*): EPS, WCAs5 & LBAP. 8 records, dated between 1986 and 2018. The closest record is 410 metres to the south-west, and from 2013.
	Brown hare (*Lepus europaeus*): PS & LBAP. 11 records, dated between 1970 and 2020. The closest record is 470 metres to the north-east, and from 2012.
	West European hedgehog (*Erinaceus europaeus*): PS & LBAP. 12 records, dated between 2009 and 2020. The closest record is 515 metres to the north-west, and from 2011.
	Eurasian badger (*Meles meles*): PBA 1 record from 2019. An accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference.

[1]Key to Designation Codes::
EPS = European Protected Species under *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.*
WCAs1 = Species receives full protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
WCAs5 = Species receives full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
PBA = Protection of Badger Act 1992.
PS = Priority Species listed under Section 41 of the NERC Act 2006.
LBAP = Species listed on the Lancashire Biodiversity Action Plan Provisional Long List.

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

3.2 Vegetation and Habitats

General Description

3.2.1 The approximately 1.87 hectares site is located within rural surroundings and comprises a field of improved grassland, amenity grassland, ornamental shrubs, hard standing and buildings, a single ornamental hedgerow (Hedgerow 1) and one tree line (Tree Line 1).

3.2.2 The northern site boundary is located within a field of improved grassland. The northern end of the eastern site boundary is defined by a post and wire fence, beyond which lies a hedgerow (Hedgerow 2) and further fields of improved grassland. The southern end of the eastern site boundary is defined by existing buildings and hard standing associated with Alston's Dairy. The southern site boundary is located in an area of hard standing beyond which lies an outbuilding, gardens and improved grassland. The western site boundary is defined by a hedgerow (Hedgerow 3) and fencing at its southern end, and (moving north) by the edge of the access road to Alston's Dairy.

3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2**, and can be referred to for all habitat descriptions. Photographs are appended at **Section 8.3**.

Improved grassland

3.2.4 Refer to **Photo 1**. The improved grassland is located at the northern end of the site and is characterised by constant and abundant Perennial Rye-grass (*Lolium perenne*), occasional and locally frequent Spear Thistle (*Cirsium vulgare*), Greater Plantain (*Plantago major*) and White Clover (*Trifolium repens*), occasional Common Bent (*Agrostis capillaris*), Creeping Bent (*Agrostis stolonifera*), Annual Meadow-grass (*Poa annua*) and Smooth Meadow-grass (*Poa pratensis*), very locally frequent Pineappleweed (*Matricaria discoidea*), Broad-leaved Dock (*Rumex obtusifolius*) and Common Nettle (*Urtica dioica*) and rare Creeping Thistle (*Cirsium arvense*), Yorkshire-fog (*Holcus lanatus*) and Knotgrass (*Polygonum aviculare*). A plant species list is appended at **Table 8.1**.

3.2.5 The habitat is typical of the Phase 1 habitat type 'B4 Improved grassland' and is indicative of an *MG7 Lolium perenne leys and related grasslands* (Rodwell, 1992) of the NVC. The habitat is described by the UKHab as g4 modified grassland with the secondary code(s) 75 active management and 59 cattle grazed.

Amenity grassland

3.2.6 Refer to **Photo 2**. The amenity grassland is located at the eastern margin of the access track, at the southern boundary of the improved grassland field, and to the north-west of Building 1. It is characterised by constant and abundant Perennial Rye-grass, occasional and locally frequent Daisy (*Bellis perennis*), Red Fescue (*Festuca rubra*), Yorkshire-fog, Selfheal (*Prunella vulgaris*) and White Clover, occasional Creeping Bent, Wavy Bitter-cress (*Cardamine flexuosa*), Common Mouse-ear (*Cerastium fontanum*), and Dandelion (*Taraxacum officinale* agg.) and rare Crab Apple (*Malus sylvestris*), False Oat-grass (*Arrhenatherum elatius*) and Common Field-speedwell (*Veronica persica*). A plant species list is appended at **Table 8.2**.

3.2.7 The habitat is typical of the Phase 1 habitat type 'J1.2 Cultivated / disturbed land - amenity grassland' and is indicative of a *MG7 Lolium perenne leys and related grasslands* (Rodwell, 1992) of the NVC. The habitat is described by the UKHab as g4 modified grassland with the secondary code(s) 64 mown.

Introduced shrub

3.2.8 Refer to **Photo 3**. The introduced shrub (3G in the TBA tree survey report) is located at the south-western site boundary and characterised by occasional Garden exotics, locally abundant Cherry Laurel (*Prunus laurocerasus*) and Leyland Cypress (*X Cuprocyparis leylandii*), locally frequent Box (*Buxus sempervirens*)

and very locally frequent Garden Lady's-mantle (*Alchemilla mollis*). A plant species list is appended at **Table 8.3**.

3.2.9 The habitat is typical of the Phase 1 habitat type 'J1.4 Introduced shrub' and is not typical of any NVC community. The habitat is described by the UKHab as h3h mixed scrub with the secondary code(s) 48 non-native and 75 active management.

Buildings and Hard standing

3.2.10 Refer to **Photo 4**. The hard standing within the site is characterised by concrete slab and compacted stone, and forms the access road, car parks, walkways and yard areas associated with the existing buildings. Sparse vegetation colonising the hard standing areas is characterised by occasional Procumbent Pearlwort (*Sagina procumbens*), very locally frequent Broad-leaved Willowherb (*Epilobium montanum*), rare Creeping Bent, Garden Lady's-mantle, Ivy-leaved Toadflax (*Cymbalaria muralis*), Petty Spurge (*Euphorbia peplus*) and Pineappleweed. A plant species list is appended at **Table 8.4**.

3.2.11 The habitat is typical of the Phase 1 habitat type 'J4 Bare ground' and is not typical of any NVC community. The habitat is described by the UKHab as u1b6 other developed land with the secondary code(s) 17 ruderal/ephemeral.

3.2.12 No assemblage of plant species was noted at the buildings on site, which are described in detail in relation to their suitability for use by roosting bats at **Section 3.4** below.

3.2.13 The buildings are typical of the Phase 1 habitat type 'J3.6 Buildings' and are described by the UKHab as u1b5 buildings; no secondary codes were noted.

Tree Line 1 and Hedgerows 1 to 3

Tree Line 1

3.2.14 Refer to **Photo 5**. Tree Line 1 (12G in the TBA tree survey report) is located at the eastern verge of the access road and is characterised by constant and frequent young to semi-nature Silver Birch (*Betula pendula*).

3.2.15 The habitat is not typical of any Phase 1 Habitat type and is not indicative of any NVC Community. The habitat is described by the UKHab as w1g6 line of trees; no secondary codes were noted.

Hedgerow 1

3.2.16 Refer to **Photo 6**. Hedgerow 1 (14H in the TBA tree survey report) is 70 metres long, 0.5 metres wide and 0.5 metres tall. It is located at the southern end of the improved grassland field and is characterised by constant and abundant Beech (*Fagus sylvatica*) with locally frequent Cherry Laurel.

3.2.17 The ornamental hedgerow is typical of the Phase 1 habitat type 'J2.1.2 Intact hedge, native species-poor' and is not indicative of any NVC community. The habitat is described by the UKHab as h2a hedgerow (Priority Habitat) with the secondary code(s) 75 active management.

3.2.18 The hedgerow supports only 1 woody species on average and is therefore not ‘important’ in accordance with *The Hedgerows Regulations 1997* Wildlife and Landscape criteria. The hedgerow, being composed of 80% or more of a native woody species, is considered a Priority Habitat (Beech is identified as a qualifying woody species by the Hedgerows Regulations 1997).

Hedgerow 2

3.2.19 Refer to **Photo 7**. Hedgerow 2 (16H in the TBA tree survey report) is located outside the site but in proximity to its eastern boundary and has been included for completeness.

3.2.20 The 125 metres long section adjacent to the site boundary forms part of a 250 metres long hedgerow which is characterised by constant and abundant Hawthorn (*Crataegus monogyna*) with locally frequent Blackthorn (*Prunus spinosa*). A single mature Ash (*Fraxinus excelsior*) is located within the hedgerow. The hedgerow supports only 2 woody species on average and is therefore not 'important' in accordance with *The Hedgerows Regulations 1997* Wildlife and Landscape criteria. The hedgerow, being composed of 80% or more of a native woody species, is considered a Priority Habitat.

3.2.21 Hedgerow 2 is described by the UKHab as h2a hedgerow (Priority Habitat) with the secondary codes 11 scattered trees and 75 active management, and holds characteristics of a *W21 Hawthorn - Ivy scrub* (Rodwell, 1991) NVC community.

Hedgerow 3

3.2.22 Refer to **Photo 8.** Hedgerow 3 (2H in the TBA tree survey report) is a short, 14 metres long section of garden hedgerow characterised by constant and abundant Hawthorn and Blackthorn with locally abundant Plum (*Prunus* sp.) and Wild Cherry (*Prunus avium*) trees. The hedgerow is less than 20 metres long and therefore cannot be defined as 'Priority Habitat', and cannot be 'important' in accordance with *The Hedgerows Regulations 1997* Wildlife and Landscape criteria as it forms part of a garden curtilage.

3.2.23 Hedgerow 3 is described by the UKHab as h2b other hedgerows with the secondary codes 11 scattered trees and 75 active management, and holds characteristics of a *W21 Hawthorn - Ivy scrub* (Rodwell, 1991) NVC community.

Invasive Plant Species

3.2.24 No invasive plant species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) were detected within the site.

3.3 Animal Life

Badger

3.3.1 No badger or signs of badger were detected within the site or within the access 50 metres around the site. The presence of badger is reasonably discounted.

Bat Species

Habitat Assessment for Commuting and Foraging Bats

3.3.2 The hedgerow, tree line and grassland habitats present may be suitable for and contribute to the wider foraging area of low numbers of common species of edge-feeding foraging bats, such as common pipistrelle (*Pipistrellus pipistrellus*), and also low numbers of species known to forage over open habitats and over wide areas, such as noctule (*Nyctalus noctula*).

3.3.3 A diverse range of species and / or a large number of bats are considered unlikely at the site owing to the absence of habitats such as woodland or tree-lined watercourses within the site.

3.3.4 Overall the habitats within the site are considered to be of 'low' suitability for use by foraging and commuting bats.

Daylight Survey: Buildings

3.3.5 Refer to **Photos 9** to **15**. Building 1 adjoins Building 2 at its southern elevation and is located at the southern end of the site. The building is constructed from walls of corrugated metal sheeting with a section of well-sealed mortared stone at its south-western end, and a twice pitched roof of corrugated metal sheeting.

3.3.6 Externally the building is well sealed throughout. No gaps suitable for access by bats were noted.

3.3.7 Internally the building is used as an operational food production facility and office. The building is largely one storey however a two-storey mezzanine area (which is used for storage) is present at the buildings north-eastern end. Internally the building's walls are single ply and partially sealed with insulating foam.

3.3.8 No bats or signs of bats were detected, and no features suitable for use by roosting bats were detected. The building is considered to be of negligible suitability for use by roosting bats.

3.3.9 Refer to **Photos 16** to **23**. Building 2 is located at the southern end of Building 1 and is joined internally. It has been described separately in this report due to differences in its construction and its suitability for use by roosting bats. It is also used as an operational food preparation facility.

3.3.10 The western elevation of Building 2 is characterised by corrugated metal sheeting, however the southern elevation is constructed from mortared stone, with gaps suitable for access by bats present at the stonework. The building supports a two storey section at its western end and a single-storey section at its eastern end; both sections support pitched roofs of slate with concrete ridge tiles. Gaps suitable for access by bats are present under the ridge tiles at the western section of the roofing, under lifted slates at both roofs, and at the eaves of the east-facing gable at the two-storey section.

3.3.11 Further gaps suitable for access by bats are present behind a timber fascia at the southern elevation of the building.

3.3.12 The building supports a lean-to extension plant roof which supports a single-pitch roof of slate. No bats or signs of bats were noted at the plant room, which is open and lit due to open slats in the timber walls.

3.3.13 The remainder of Building 2 supports voids above the working area which could not be directly accessed to search for signs of bats. Photographs were taken through the hatches where possible.

3.3.14 The building supports features suitable for use by roosting bats, although no bats or signs of bats were detected during the survey. Taking into account the suitability of the habitats in the wider area for foraging and commuting bats the building is assessed to be of 'moderate' suitability for use by roosting bats. The results of the further surveys completed at Building 2 are presented below.

Trees

3.3.15 No features suitable for use by roosting bats were detected at any of the trees within the site. The potential for roosting bats at the trees within the site is reasonably discounted.

3.3.16 The Ash tree within Hedgerow 2 (15T in the TBA tree survey report) supports damage and features which may be suitable for use by roosting bats; this tree is outside the site boundary however and will not be affected by the proposed development.

Dusk Emergence Surveys

3rd August 2023

3.3.17 No roosting bats were detected.

3.3.18 Common pipistrelle were detected between 21:16 and 22:32, with the first recording 11 minutes after sunset. Noctule were detected between 21:29 and 21:51, with the first recording 25 minutes after sunset. A Myotis species was detected at 21:55, with the one recording 51 minutes after sunset. No other species were detected. Raw data are presented at **Table 8.5**.

17th August 2023

3.3.19 No roosting bats were detected.

3.3.20 Common pipistrelle were detected between 21:03 and 22:02, with the first recording 26 minutes after sunset. Noctule were detected between 21:50 and 21:51, with the first recording 74 minutes after sunset. No other species were detected. Raw data are presented at **Table 8.6**.

Summary of Results

3.3.21 A summary of the survey results presented above is provided at **Table 3.3**.

Table 3.3: Summary of Bat Survey Results

Building/Tree Ref	Suitability for Use by Roosting Bats	Requirement for Further Survey
Building 1	Negligible	No requirement for further survey
Building 2	Moderate	2 dusk emergence surveys completed; no roosting bats detected.
Trees	Negligible	No requirement for further survey

Bird Species

3.3.22 Birds detected in the site in July 2023 are listed in **Table 3.4**.

Table 3.4: Bird species Detected on 24th July 2023

Scientific Name	Common Name	BOCC Status[1]
Carduelis carduelis	Goldfinch	Green
Columba palumbus	Wood pigeon	Amber
Erithacus rubecula	Robin	Green
Hirundo rustica	Swallow	Green
Motacilla alba	Pied wagtail	Green
Panurus biarmicus	Bearded tit	Amber
Passer domesticus	**House sparrow**	**Red**
Streptopelia decaocto	Collared dove	Green
Troglodytes troglodytes	Wren	Green
Turdus merula	Blackbird	Green

[1]BOCC: Birds of Conservation Concern (Stanbury, et al., 2021).
Priority Species are presented in **bold**.

3.3.23 The trees, shrubs and hedgerow are all suitable for use by nesting passerine (i.e. perching) species, including those detected within the site during the survey. This is considered further at **Section 4.4**, below. Old swallow (*Hirundo rustica*) nests were noted in the lean-two extension at Building 2.

3.3.24 The improved grassland is considered to be of poor suitability for use by ground nesting species such as lapwing (*Vanellus vanellus*) and curlew (*Numenius arquata*), due to its proximity to existing buildings and grazing regime. The site is not considered to support any habitats typically used by wader species on a regular basis.

3.3.25 No sign of nesting or roosting barn owl was detected during the internal inspection of the buildings, and no suitable access points for barn owl were detected at the buildings. The presence of barn owl is reasonably discounted at the site.

Reptiles

3.3.26 Debris suitable for sheltering and basking reptiles was examined during the survey; no reptile species were detected. The regularly disturbed and heavily managed habitats within the site provide poor quality habitat for sheltering, basking and hibernating reptiles. The site supports an even topography and there are no piles of garden waste or other suitable debris for use by sheltering or hibernating reptiles. The species-poor habitats within the site are reasonably unlikely to support a large population or a variety of invertebrate prey.

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

Other Wildlife

3.3.28 The site supports habitats suitable for use by foraging hedgehog (*Erinaceus europaeus*), a Priority Species. It is considered that the site is unlikely to provide core or important habitat for hedgehog however. The species-poor habitats within the site are reasonably unlikely to support a large population or a variety of invertebrate prey, and there are limited opportunities for sheltering hedgehog within the managed habitats of the site.

3.3.29 The presence of hedgehog within the site is considered further at **Section 4.4**.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

4.1.1 In accordance with *Alston Diary: Proposed Site Plan PL-05* (Harry Walters & Livesey Ltd, 2023) it is proposed to extend the existing dairy buildings to the north and create additional car parking and access.

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

4.2 Designated Sites for Nature Conservation

4.2.1 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 adverse direct or indirect effect upon them.

4.2.2 The habitats are not complementary or linked to the Red Scar and Tun Brook Woods SSSI and will not contribute to the nature conservation value of the SSSI.

4.2.3 The site does not support suitable habitat for waders and the proposals will not impact upon the FC / BTO Wader Zone identified by the data search for the site.

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. The NVC communities present are typical of the geographical area and conditions present. Hedgerow 1 is a Priority Habitat.

4.3.2 In terms of each habitat's importance in a geographical context[4], the hedgerow, improved and amenity grassland and introduced shrubs are considered to be of 'site' importance as they are unlikely to contribute meaningfully to the nature conservation value of the local area but will provide habitats of some value to wildlife within the site. The buildings and hard standing are not considered to hold any importance in a geographical context.

4.3.3 In accordance with *Alston Dairy, Alston, Preston, Lancashire: Landscape Proposal Dwg. No, 7274.03 Rev. C* (TBA Landscape Architecture, 2024) the proposals will remove Hedgerow 1 to facilitate development; the

[4] 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.

proposals must incorporate an equal or greater length of hedgerow composed of native woody species within the landscape design of the site. A number of trees along the access road will be removed; it recommended that compensatory trees are planted for the trees to be lost.

4.3.4 Hedgerows 2 and 3 will be retained by the proposed development.

4.3.5 Recommendations relating to the requirement for compensatory planting are presented at **Section 5.3**. Measures for the protection of Tree Line 1, the ornamental shrubs and habitats adjacent to the site during works are presented at **Section 5.2**.

4.4 Protected Species and Other Wildlife

4.4.1 Building 2 is considered to be of 'moderate' suitability for use by roosting bats; the further surveys completed did not detect the presence of roosting bats however, and the presence of roosting bats is reasonably discounted at the site. If works have not commenced by the next bat activity survey season (i.e. May 2024) an updated survey will be required to ensure this finding remains accurate; the requirement for an updated survey if works have not commenced by May 2024 is presented at **Section 5.2**.

4.4.2 Habitats within and adjacent to the site are suitable for foraging and commuting bats. Recommendations relating to the retention of features suitable for use by foraging and commuting bats are presented at **Section 5.2.** Features to ensure the proposals do not impact upon habitats suitable for use by foraging and commuting bats during the operational phase of the proposed development, and to enhance habitats for roosting bats at the site, are presented at **Section 5.3.**

4.4.3 The trees, shrubs, hedgerow and Building 2 provide suitable foraging and nesting habitat for the species of birds detected within the site and the wider area via the records search (including house sparrow, a Priority Species). Recommendations for the protection of nesting birds during the construction phase of the proposed development are presented at **Section 5.2**. Recommended enhancements for nesting birds are presented at **Section 5.3**.

4.4.4 Measures for the protection of hedgehog (and other wildlife) during the construction phase of the proposed development are presented at **Section 5.2**.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

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

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

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

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

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

5.2 Protection of Habitats and Wildlife and Recommendations in Relation to Site Layout

Landscape Planting

5.2.1 To compensate for the loss of Hedgerow 1 it is recommended that the proposals include an equal or greater length of hedgerow composed of native woody species, which is to be managed in the long-term for its benefits to wildlife. Suitable woody species are presented at **Table 5.1** below.

5.2.2 It is also recommended that, where possible, the proposal incorporate swales of wildflower grassland to compensate for the loss of improved and amenity grassland to facilitate the development.

Protection of Trees and Shrubs

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

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

Bats

Survey Validity

5.2.5 If works have not commenced at the site by the next bat activity survey season (i.e. May 2024) a single dusk emergence survey will be required prior to the commencement of works to ensure the findings of this report remain accurate.

Lighting During the Construction Phase

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

Protection of Nesting Birds

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

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

Protection of Hedgehog and Other Wildlife

5.2.9 It is recommended that the following Reasonable Avoidance Measures (RAMs) for the protection of hedgehog and other wildlife are adopted during the construction phase of the proposed development.

a. All site personnel must be made aware of this RAMs, and the RAMs should be made part of the site induction for all personnel involved in soil strip, ground clearance, or other relevant activities;

b. The improved grassland and amenity grassland will continue to be managed in a similar fashion to ensure they do not become tall, rank dense grassland which could provide greater shelter to hedgehog and other wildlife species;

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

d. During construction, any holes, trenches or other pits which hedgehog (or other wildlife) could fall into will be covered overnight, or have sloped banks or ramps top allow escape; and

e. If any wildlife species (such as a hedgehog) is detected, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the development area.

5.3 Ecological Enhancements

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.'

Development Lighting Design

5.3.2 The lighting scheme to be implemented at the developed site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the areas of ecological enhancement and any landscape planting, 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:

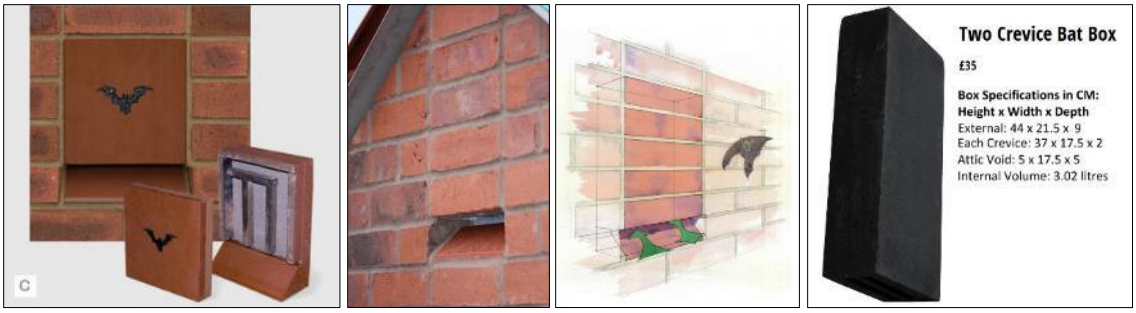
a. *Guidance Note 08/23: Bats and Artificial Lighting at Night* (Institution of Lighting Professionals & Bat Conservation Trust, 2023); and

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

Enhancing Habitats for Roosting Bats

5.3.4 It is recommended that the development incorporates the installation of one bat access panel at the new building.

5.3.5 The bat access panel should be sited at least 4 metres above ground level, ideally facing or close to areas of landscape planting or existing linear features. The access panel should not be positioned over windows or doorways where bat droppings may become a nuisance. Once the development layout has been finalised, an ecologist should advise on appropriate positions for the bat access panel. Suitable bat access panels are available from NHBS Ecology (www.nhbs.com), Wild Care (www.wildcare.co.uk) and / or Greenwood's Ecohabitats (www.greenwoodsecohabitats.co.uk) and are presented at **Insert 1**, below:



Insert 1: Examples of integrated bat access panels and an externally mounted box[5]

Enhancing Habitats for Nesting Birds

House Sparrow

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

5.3.7 The installation of one house sparrow terrace nest box is recommended at the proposed new building. The box will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest.

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

5.3.9 An example of a suitable house sparrow bird box is given below at **Insert 2**:

Insert 2: Schwegler 1SP House Sparrow Nesting Terrace

[5] 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.

Small Bird Boxes

5.3.10 Bird boxes suitable for use by a variety of small birds typically associated with garden habitats should be installed within the site. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. The boxes should be at least 2 metres from ground level.

5.3.11 One of each of the boxes presented at **Insert 3**, below, will be used. The boxes are available from www.NHBS.com and / or Wild Care (www.wildcare.co.uk).

Insert 3: Vivara Pro 28mm Seville Woodstone Box suitable for a variety of garden birds.

Maintenance of Habitat Connectivity Throughout the Developed Site

5.3.12 To ensure habitat connectivity is maintained as part of the development proposals, gaps within the proposed fencing to allow access by other wildlife (including hedgehog) should be incorporated across the site; example accesses are presented at **Insert 4**, below, as reproduced from *Hedgehogs and Development* (British Hedgehog Preservation Society / PTES, 2019). It is recommended that appropriate wildlife gaps (at least 0.1 metre tall and 0.15 metre wide) are installed at suitable intervals around the base of the proposed fencing.

Insert 4: Showing wildlife access gap within fencing

Landscape Planting

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

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

Table 5.1: Suitable Native Species for Tree and Shrub Planting

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

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

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

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

6.0 CONCLUSION

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

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

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

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

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8.0 APPENDIX: TABLES, PHOTOGRAPHS AND FIGURES

8.1 Plant Species Lists

Table 8.1: Plant Species List for Improved Grassland

Scientific Name	Common Name	DAFOR	% Cover
Agrostis capillaris	Common Bent	O	<1%
Agrostis stolonifera	Creeping Bent	O	5%
Cirsium arvense	Creeping Thistle	R	<1%
Cirsium vulgare	Spear Thistle	O/LF	<1%
Holcus lanatus	Yorkshire-fog	R	<1%
Lolium perenne	Perennial Rye-grass	A*	90%
Matricaria discoidea	Pineappleweed	VLF	<1%
Plantago major	Greater Plantain	O/LF	<1%
Poa annua	Annual Meadow-grass	O	5%
Poa pratensis	Smooth Meadow-grass	O	5%
Polygonum aviculare	Knotgrass	R	<1%
Rumex obtusifolius	Broad-leaved Dock	VLF	<1%
Trifolium repens	White Clover	O/LF	<1%
Urtica dioica	Common Nettle	VLF	<1%

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

Table 8.2: Plant Species List for Amenity Grassland

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
Malus sylvestris	Crab Apple	R	<1%
Herb Species			
Agrostis stolonifera	Creeping Bent	O	<1%
Arrhenatherum elatius	False Oat-grass	R	<1%
Bellis perennis	Daisy	O/LF	5%
Cardamine flexuosa	Wavy Bitter-cress	O	<1%
Cerastium fontanum	Common Mouse-ear	O	<1%
Cirsium arvense	Creeping Thistle	O	<1%
Dactylis glomerata	Cock's-foot	R	<1%
Equisetum arvense	Field Horsetail	R	<1%
Festuca rubra	Red Fescue	O/LF	5%
Holcus lanatus	Yorkshire-fog	O/LF	5%
Lolium perenne	Perennial Rye-grass	A*	80%
Plantago lanceolata	Ribwort Plantain	R	<1%
Plantago major	Greater Plantain	R	<1%
Poa trivialis	Rough Meadow-grass	R	<1%
Prunella vulgaris	Selfheal	O/LF	5%
Ranunculus acris	Meadow Buttercup	R	<1%
Ranunculus repens	Creeping Buttercup	O	<1%
Rumex acetosa	Common Sorrel	R	<1%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Senecio jacobaea	Common Ragwort	R	<1%
Senecio vulgaris	Groundsel	R	<1%
Taraxacum officinale agg.	Dandelion	O	<1%
Trifolium dubium	Lesser Trefoil	R	<1%
Trifolium repens	White Clover	O/LF	5%
Urtica dioica	Common Nettle	R	<1%
Veronica persica	Common Field-speedwell	R	<1%

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

Table 8.3: Plant Species List for Introduced Shrubs

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
	Garden exotics	O	<1%
Abies sp.	Fir species	R	<1%
Acer campestre	Field Maple	R	<1%
Buxus sempervirens	Box	LF	20%
Fraxinus excelsior	Ash	R	<1%
Prunus avium	Wild Cherry	R	<1%
Prunus laurocerasus	Cherry Laurel	LA	40%
Rosa sp.	Rose species	R	<1%
Salix caprea	Goat Willow	R	<1%
X Cuprocyparis leylandii	Leyland Cypress	LA	30%
Herb Species			
Agrostis stolonifera	Creeping Bent	R	<1%
Alchemilla mollis	Garden Lady's-mantle	VLF	1%
Aquilegia vulgaris	Columbine	R	<1%
Carex pendula	Pendulous Sedge	R	<1%
Epilobium ciliatum	American Willowherb	R	<1%
Galium aparine	Cleavers	R	<1%
Hydrangea macrophylla	Hydrangea	R	<1%
Lysimachia nummularia	Creeping-jenny	LA	20%
Meconopsis cambrica	Welsh poppy	R	<1%
Tropaeolum majus	Nasturtium	LA	10%
Urtica dioica	Common Nettle	R	<1%
[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table 8.4: Plant Species List for Vegetation Colonising Hard Standing

Scientific Name	Common Name	DAFOR	% Cover
Agrostis stolonifera	Creeping Bent	R	<1%
Alchemilla mollis	Garden Lady's-mantle	R	<1%
Cymbalaria muralis	Ivy-leaved Toadflax	R	<1%
Epilobium montanum	Broad-leaved Willowherb	VLF	<1%
Euphorbia peplus	Petty Spurge	R	<1%
Matricaria discoidea	Pineappleweed	R	<1%
Plantago major	Greater Plantain	R	<1%
Poa annua	Annual Meadow-grass	R	<1%
Prunella vulgaris	Selfheal	R	<1%
Sagina procumbens	Procumbent Pearlwort	O	<1%
Senecio vulgaris	Groundsel	R	<1%
Sonchus asper	Prickly Sow-thistle	R	<1%
[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

8.2 Raw Data from Dusk Emergence Surveys at Building 2

Table 8.5: Dusk Emergence Survey 1, 3rd August 2023, Sunset Time 21:05, Start Time 20:50

Survey Position 1: Ian Nelson

Time	Species	Notes
21:22 until 22:16	Common pipistrelle	No emergence detected. Foraging activity detected around building
21:29 until 21:50	Noctule	No emergence detected. Occasional brief passes, heard not seen
21:55	Myotis species	Brief pass, heard not seen
The Anabat Scout made the following recordings: 7 recordings of common pipistrelle between 21:22 and 22:16. 11 recordings of noctule between 21:29 and 21:50. 1 recording of a Myotis species at 21:55.		

Survey Position 2: Catie Haworth

Time	Species	Notes
21:22 until 22:32	Common pipistrelle	No emergence detected. Foraging activity detected around building
21:29 until 21:51	Noctule	No emergence detected. Occasional brief passes, heard not seen
21:55	Myotis species	No emergence detected. Brief pass, heard not seen
The Anabat Scout made the following recordings: 10 recordings of common pipistrelle between 21:22 and 22:32. 11 recordings of noctule between 21:29 and 21:51. 1 recording of a Myotis species at 21:55.		

Survey Position 3: Rachel Brown

Time	Species	Notes
21:16 until 22:32	Common pipistrelle	No emergence detected. Foraging activity detected around building
21:31 until 21:51	Noctule	No emergence detected. Occasional brief passes, heard not seen
21:55	Myotis species	No emergence detected. Brief pass, heard not seen
The Anabat Scout made the following recordings: 11 recordings of common pipistrelle between 21:16 and 22:32. 5 recordings of noctule between 21:31 and 21:51. 1 recording of a Myotis species at 21:55.		

Table 8.6: Dusk Emergence Survey 2, 14th August 2023, Sunset Time 20:37, Start Time 20:20

Survey Position 1: Brian Robinson

Time	Species	Notes
21:07 until 21:50	Common pipistrelle	No emergence detected. Foraging activity detected around building
21:51	Noctule	No emergence detected. One brief pass, heard not seen
The Anabat Scout made the following recordings: 9 recordings of common pipistrelle between 21:07 and 21:50 1 recording of noctule at 21:51		

Survey Position 2: Aidan Pickering

Time	Species	Notes
21:07 until 22:02	Common pipistrelle	No emergence detected. Foraging activity detected around building
The Anabat Scout made the following recordings: 9 recordings of common pipistrelle between 21:07 and 22:02		

Survey Position 3: Marie Pickering

Time	Species	Notes
21:03 until 22:02	Common pipistrelle	No emergence detected. Foraging activity detected around building
21:50	Noctule	No emergence detected. One brief pass, heard not seen
The Anabat Scout made the following recordings: 19 recordings of common pipistrelle between 21:03 and 22:02 1 recording of noctule at 21:50		

8.3 Photographs

Photo 1: Improved grassland

Photo 2: Amenity grassland

Photo 3: Introduced shrubs

Photo 4: Hard standing

Photo 5: Tree Line 1 and amenity grassland

Photo 6: Hedgerow 1 and amenity grassland

Photo 7: Hedgerow 2

Photo 8: Hedgerow 3

Photo 9: Building 1, eastern elevation

Photo 10: Building 1, northern elevation

Photo 11: Building 1, western elevation, northern end

Photo 12: Building 1, western elevation, southern end

Photo 13: Building 1, internal area, northern end

Photo 14: Building 1, internal area, southern end

Photo 15: Building 1, internal area, southern end

Photo 16: Building 2, western elevation

Photo 17: Building 2, southern elevation, western end

Photo 18: Building 2, southern elevation, eastern end

Photo 19: Plant within single-storey lean to extension at south-western end of Building 2

Photo 20: Internal area of Building 2

Photo 21: Roof void at Building 2

Photo 22: Void between working area and ceiling, Building 2

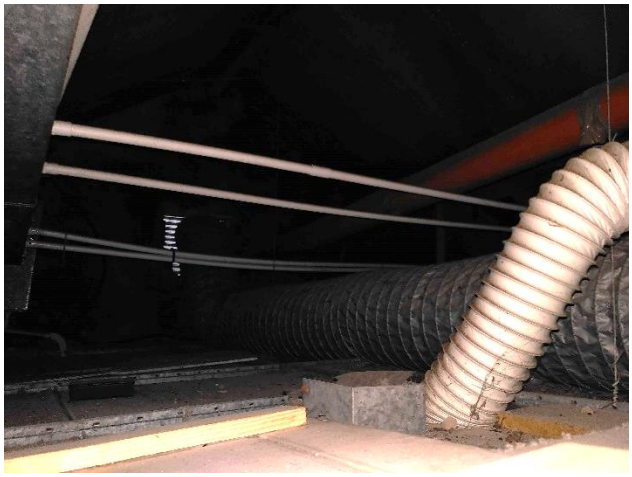

Photo 23: Void above working area at single-storey section of Building 2

Photo 24: Dusk emergence survey position 1 view

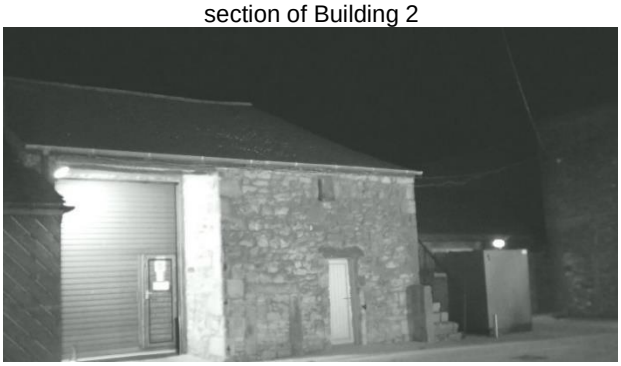

Photo 25: Dusk emergence survey position 2 view

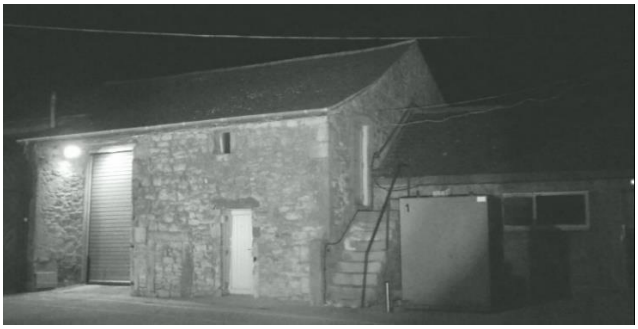

Photo 26: Dusk emergence survey position 3 view

8.4 Figures

Figure 1: Aerial Image of the Site and its Surroundings

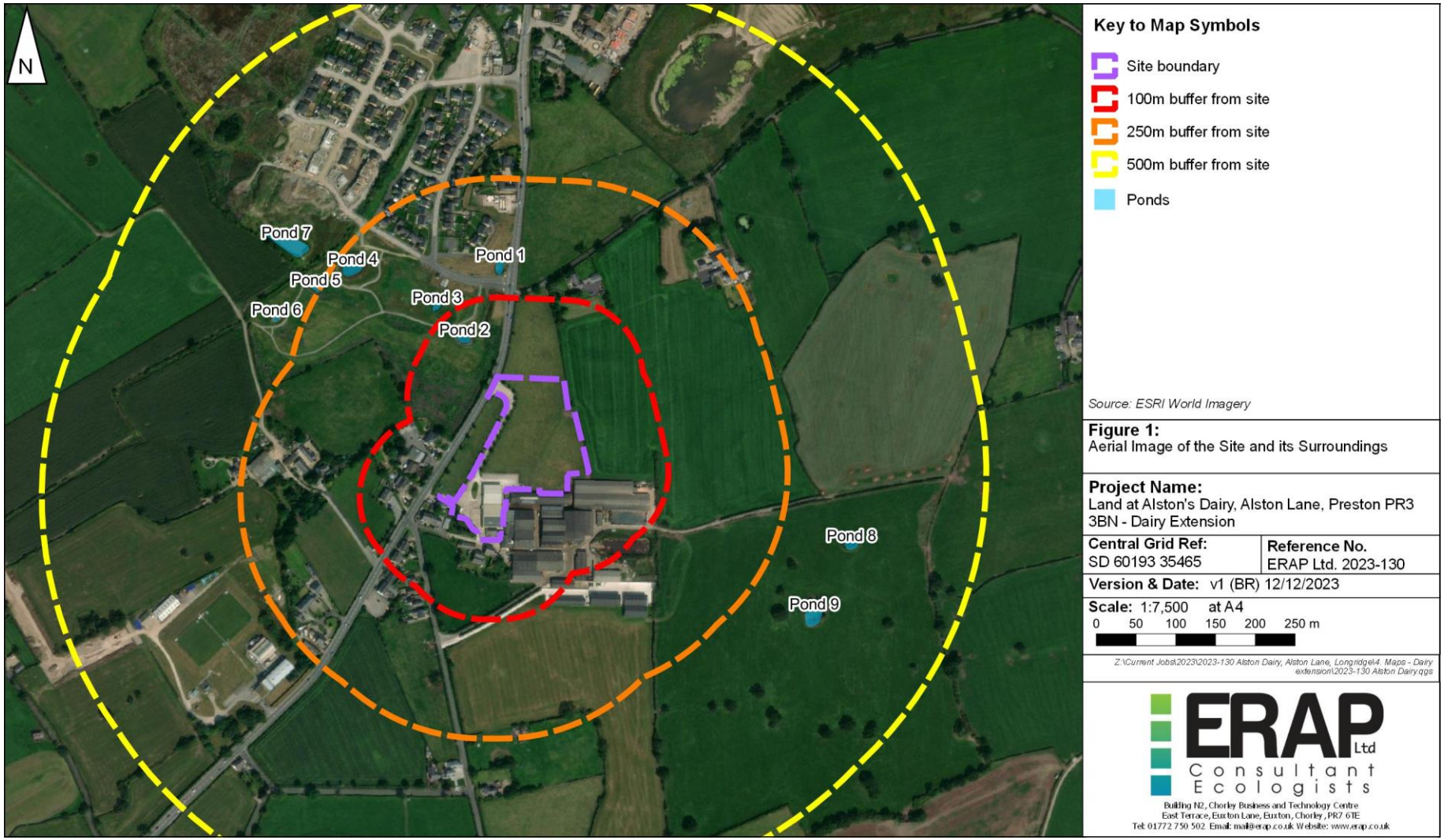

Figure 2: **Phase 1 Habitat and Vegetation Map**

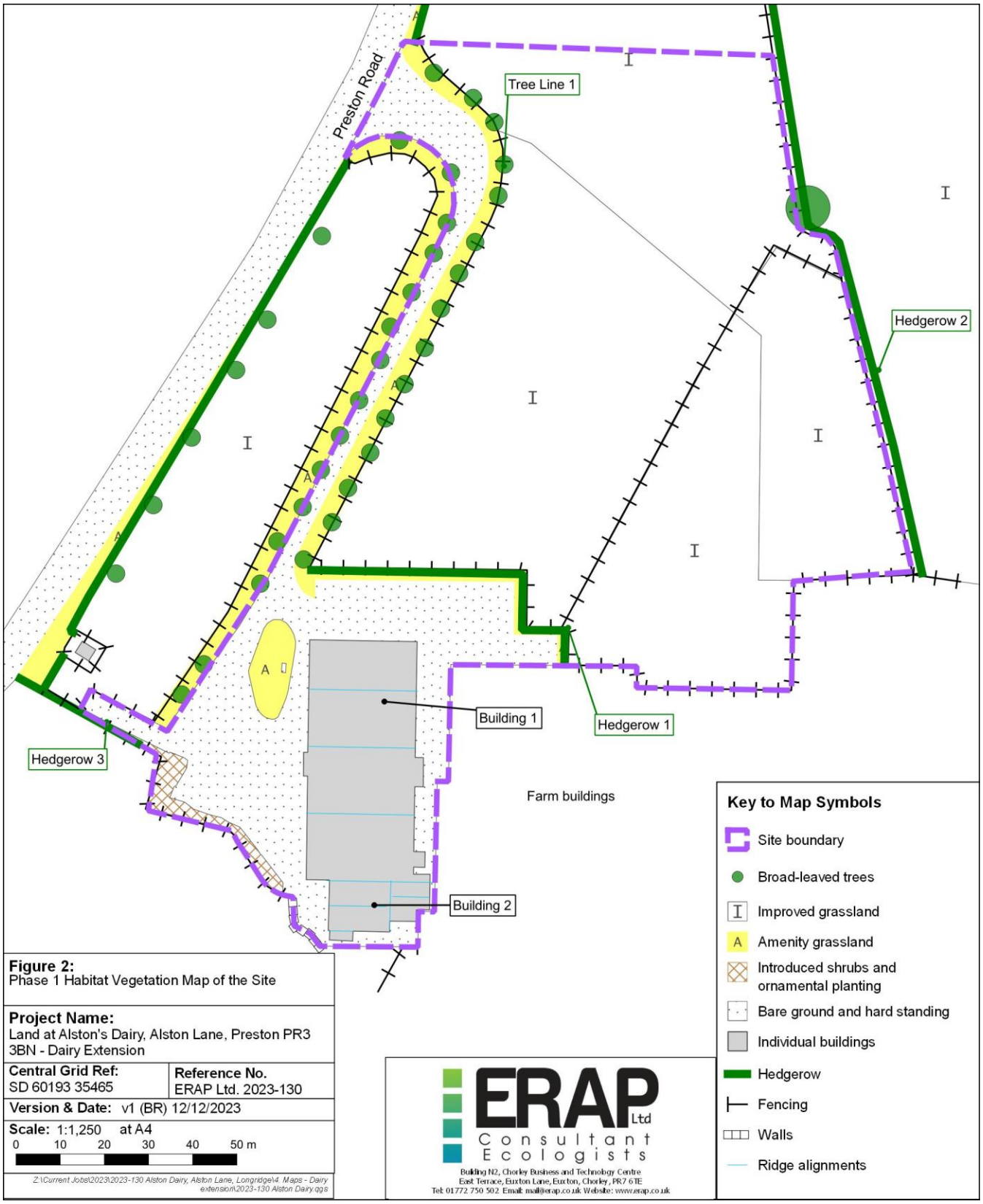

Figure 3: Bat Surveyor and NVA Locations and Results of Dusk Emergence Surveys