

Kingsway Parcel W, Broad Lane, Rochdale OL16 4NZ

UPDATED ECOLOGICAL SURVEY AND ASSESSMENT (Including a Licensed Bat Survey)

February 2023

ERAP (Consultant Ecologists) Ltd ref: 2019-300g

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Document Control

Survey Type:	Surveyors ¹	Survey Date(s)
Phase 1 Habitat Survey	Luke Atherton B.Sc. (Hons) M.Sc.	21 st October 2019
Updated Phase 1 Habitat Survey and Daylight Bat Inspection	Luke Atherton B.Sc. (Hons) M.Sc. and Brian Robinson B.Sc. (Hons) MCIEEM	16 th December 2019
2020 Dusk Emergence and Dawn Re-entry Surveys at Building 1	Catie Haworth, Luke Atherton, Brian Robinson, Fiona Megarrell, Richard Lowe, Sarah Clementson and Amy Sharples	6 th May 2020 19 th June 2020 and 25 th August 2020
2021 Dusk Emergence Survey at Building 1	Brian Robinson, Leah Hart, Luke Atherton and Amy Sharples	5 th July 2021
Updated Phase 1 Habitat Survey	Brian Robinson B.Sc. (Hons) MCIEEM	16 th December 2021
Updated Phase 1 Habitat Survey and Daylight Bat Inspection	Brian Robinson B.Sc. (Hons) MCIEEM	10 th June 2022
2022 Dusk Emergence Survey at Buildings 1, 2 and 3	Jordan Prendergast, Amy Sharples, Aiden Pickering, Danielle Rowlands, Marie Pickering, Catie Haworth, Ian Nelson, Vin Greenall, Rachel Platt and Brian Robinson	21 st June 2022
2022 Dusk Emergence Survey at Buildings 2 and 3	Vin Greenhall, Leah Hart, Aidan Pickering, Danielle Rowlands, Marie Pickering, Rachel Platt and Brian Robinson	5 th July 2022
2022 Dawn Re-entry Survey at Buildings 2 and 3	Brian Robinson, Leah Hart, Aidan Pickering, Danielle Rowlands, Marie Pickering, Marisa Hensey, Amy Sharples and Rachel Platt	21 st July 2022
Reporting	Personnel	Date
Author	Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	27 th June 2022
Signature(s)		
Checked	Rachel Platt B.Sc. (Hons) M.Sc. Catie Haworth B.Sc. (Hons) M.Sc. Ecologist	27 th June 2022 29 th June 2022
Revised and issued	Rachel Platt B.Sc. (Hons) M.Sc. Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	10 th February 2023 Version 1: 29 th June 2022 Version 2: 8 th February 2023
Report issued to	David Wilson Homes / Barratt Homes	
Version Number	2: Updated February 2023 to include data collecting during the 2022 bat activity surveys	
¹ Licence reference number		
Bats		
Brian Robinson Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-13161-CI S-CI S		

SUMMARY

Introduction and Scope

- i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of Kingsway Parcel W, Broad Lane, Rochdale OL16 4NZ. The assessment was requested in connection with proposals to develop the site to residential housing with associated access, gardens and Public Open Space (POS). Buildings 2 and 3 will be retained and converted to residential dwellings. Buildings 1 and 4 will be demolished to facilitate the development.
- ii. This report presents the results of a desktop study, data search, extended Phase 1 Habitat Surveys and licensed bat surveys carried out between October 2019 and July 2022. 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 two tree lines, areas of plantation broadleaved woodland at the site boundaries, marshy grassland at the north-eastern end of the site, unmanaged grassland and tall-herb vegetation, areas of scrub (including woody scrub and Bramble scrub) and a former farmyard comprising four buildings, hard standing with colonising ruderal herbs and areas of unmanaged grassland tall-herb.

Results of Survey and Assessment

- iv. The proposals will have no adverse effect on statutory or non-statutory designated sites for nature conservation.
- v. Only common and widespread plant species were detected and none of the habitats within the site are Priority Habitat. The mature trees and plantation woodland are considered to be of 'local' value in terms of their geographical context as they contribute to the diversity of habitats within the wider area and will provide suitable habitat for foraging bats and foraging and nesting birds. The unmanaged and marshy grassland are considered to be of 'site' value.
- vi. The proposals will retain the majority of the mature trees associated with Tree Line 1 and retained areas of the plantation woodland within the site. The proposals provide an opportunity to secure the enhancement and management of these habitats. Compensation for losses of unmanaged and marshy grassland associated with the proposals will be created via the provision of wildflower grassland and native scrub planting within the proposed landscape planting at the site.
- vii. Montbretia, an invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) was detected. It is an offence to cause the spread of this species in the wild. Guidance on its control and management is described in the report (**Section 5.3**).
- viii. Buildings 1, 2 and 3 support features suitable for use by roosting bats; surveys have been completed at Building 1 in 2019, 2021 and 2022; no roosting bats have been detected and the presence of roosting bats is reasonably discounted at Building 1. Surveys were completed to determine the presence or absence of roosting bats at Buildings 2 and 3 in 2022; no roosting bats were detected and the presence of roosting bats is reasonably discounted at Buildings 2 and 3. Building 4 is considered to be of negligible suitability for use by roosting bats. Tree 1 is considered to be of low suitability for use by roosting bats; suitable measures to be adopted during the proposed removal of Tree 1 are presented at **Section 5.4**.
- ix. Barn owl have been detected at Building 2, with survey evidence indicative of nesting barn owls found in 2019 and 2022; note that access to the internal areas of Building 2 is not possible for reasons of health and safety. It is not considered that suitable compensation for barn owl can be provided on site in the long term; the proposals will not retain suitable foraging habitat for barn owl within the site and it is known that industrial units are proposed at land to the north (currently comprising marshy and unmanaged grassland) under the Kingsway Parcel J2 proposals. Short term compensation for the loss of the barn owl nest is feasible at the northern end of the site, facing onto the area of unmanaged grassland (Parcel J2 of the Kingsway development site) although it is recognised that, due to the proposed development of this area, this would

not represent a long-term solution. It is therefore recommended that the Manchester Raptor Group and Greater Manchester Ecology Unit are consulted to determine whether off-site provision can be created, as funded by the proposed development (refer to **Section 5.5**). Mandatory actions and best practice guidance for the protection of other species of nesting birds, and recommendations to enhance the site for nesting birds, are presented at **Section 5.5**.

- x. No other protected species were detected.

Recommendations

- 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 management and 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.

Conclusion

- xiii. It is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. Development at the site will provide an opportunity to secure ecological enhancement for wildlife associated with residential development.

1.0 INTRODUCTION

1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by David Wilson Homes / Barratt Homes to carry out an ecological assessment of Kingsway Parcel W, Broad Lane, Rochdale OL16 4NZ (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 91205 11236. 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 develop the land to residential housing with associated access, gardens and Public Open Space (POS). Buildings 2 and 3 will be retained and converted to residential dwellings. Buildings 1 and 4 will be demolished to facilitate the development.

1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken between October 2019 and July 2022 comprised:
- A desktop study and data search for known ecological information at the site and the local area;
 - Extended Phase 1 Habitat Survey and assessments (completed in October and December 2019 and updated in December 2021 and June 2022);
 - 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*), bird species and reptiles;
 - A licensed daylight bat survey and assessment, and bat activity surveys of the buildings and trees (note the site boundary was revised in 2022 to include Buildings 2, 3 and 4);
 - 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
 - The identification of any further surveys or precautionary actions that may be required to inform the progression of the site through the planning process and / or prior to the commencement of any construction activities.

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 ponds within 500 metres of the site, and no ditches or watercourses within or in proximity to the site; there has therefore been no requirement to consider great crested newt (*Triturus cristatus*), 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;
 - Greater Manchester Local Record Centre (GMLRC); and
 - Greater Manchester Biodiversity Action Plan (BAP).
- 2.1.2 Details of the surveys and results presented in *2019-300 Kingsway Parcel, Broad Lane, Rochdale OL16 4NZ: Ecological Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2019), *2019-300c Kingsway Parcel, Broad Lane, Rochdale OL16 4NZ: Bat Activity Surveys* (ERAP (Consultant Ecologists) Ltd, 2020) and *2019-300d Kingsway Parcel, Broad Lane, Rochdale OL16 4NZ: Results of Updated Bat Activity Surveys 2021* (ERAP (Consultant Ecologists) Ltd, 2021), hereafter the 'previous ecology reports', are presented within this report for ease of reference.

2.2 Vegetation and Habitats

- 2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Luke Atherton B.Sc. (Hons) M.Sc. on 21st October 2019. The weather was sunny with light showers, a light breeze (Beaufort Scale 2) and 11°C at 10am rising to 13°C in the afternoon. An updated survey of a densely vegetated area was completed on 16th December 2019 by Luke Atherton. The weather was dry and overcast, with a light air (Beaufort scale 1) and 7°C at midday.
- 2.2.2 The Extended Phase 1 Habitat Surveys were updated by Brian Robinson B.Sc. (Hons) MCIEEM on 16th December 2021 and 10th June 2022. Conditions were dry on both surveys with a light air (Beaufort scale 1); air temperatures were 10°C on 16th December 2021 and 19°C on 10th June 2022.
- 2.2.3 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:1,500 (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.
- 2.2.4 On site habitat mapping was assisted via use of GPS technology and QField on-site mapping software, with the 2021 and 2022 surveys using *Proposed Development, Broad Lane, Rochdale: Topographical Survey 02043/01 Rev. B* (Geomatic Surveys Ltd, 2018) and ESRI World Imagery as base plans.
- 2.2.5 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.
- 2.2.6 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.
- 2.2.7 During the 2021 and 2022 surveys, 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.
- 2.2.8 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).

- 2.2.9 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:
- Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
 - Large spoil heaps outside sett entrances;
 - Bedding outside sett entrances;
 - Badger footprints;
 - Badger paths;
 - Latrines;
 - Badger hairs on fences or bushes;
 - Scratching posts; and
 - 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 Building 1, Tree 1 and the other mature trees within the site were assessed for their suitability to support roosting bats by Brian Robinson, as assisted by Luke Atherton, on 16th December 2019.
- 2.3.6 Buildings 2, 3 and 4 and the trees within the site were assessed by Brian Robinson on 10th June 2022. Brian holds a Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-13161-CLS-CLS.
- 2.3.7 The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Buildings

- 2.3.8 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).
- 2.3.9 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.
- 2.3.10 Note that access to the internal areas of Buildings 1 and 2 is not possible for reasons of health and safety. Internal inspections of Buildings 3 and 4 were possible on 10th June 2022.
- 2.3.11 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.
- 2.3.12 A list of equipment used is detailed at **Table 2.1**, below:

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

- 2.3.13 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

- 2.3.14 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.
- 2.3.15 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.

- 2.3.16 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).
- 2.3.17 Each feature was then examined by Brian Robinson at height using (where suitable) ladders, a high-powered torch, rope access equipment and a video borescope. The following signs of roosting bats were searched for:

Bats, bat droppings (in, around or below the feature), odours emanating from the feature, audible squeaking, staining below the feature, and the presence of smoothed surfaces within the feature, indicative of regular passage by small mammals.

2.3.18 The requirement for further presence / absence surveys at each tree was then considered.

Habitat Assessment for Commuting / Foraging Bats

2.3.19 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**, below.

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.

2020 Presence / Absence Surveys: Dusk Emergence and Dawn Re-entry Surveys at Building 1

2.3.20 Three bat activity surveys were conducted at Building 1 in 2020, comprising two dusk emergence surveys and one dawn re-entry survey. Four surveyors, experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the building to determine any emergence and / or re-entry into the building by roosting bats. Heterodyne detectors were used to determine any bat detected to species or group (*Myotis* species often cannot be reliably separated to species via their echolocation calls, for example). Recording bat detector units² were used to record and analyse echolocation calls after the survey using AnalookW and Anabat Insight call analysis software.

2.3.21 The dusk emergence surveys commenced approximately 15 minutes before sunset and ended at least 1.5 hours after sunset. The dawn re-entry survey commenced approximately 2 hours before sunrise and ended 15 minutes after sunrise, provided all bat activity had ceased by this point.

2.3.22 Surveyor positions are annotated on **Figure 3**. Any bat emergence or re-entry activity was recorded. All surveys were conducted under suitable conditions. The dates of the surveys, surveyors, equipment used and weather conditions present are presented at **Table 2.3** below.

² i.e. Anabat SD2, Anabat Express, Anabat Walkabout, Peersonic RPA3 and Echometer Touch Pro 2

Table 2.3: 2020 Dusk Emergence and Dawn Re-entry Survey Dates, Weather Conditions and Surveyors

Date	6 th May 2020	19 th June 2020	25 th August 2020
Sunrise / Sunset	20:48	04:38	20:16
Start time	20:30	02:25	20:00
End time	22:15	04:45	21:10
Wind	Calm (Beaufort scale 0)	Calm (Beaufort scale 0)	Light air (Beaufort scale 1)
Precipitation	Dry	Dry	Dry
Air temps	12°C	12°C	16°C
Survey Position	Surveyor and Detector	Surveyor and Detector	Surveyor and Detector
1	Catie Haworth, Anabat Scout	Catie Haworth Anabat Scout	Catie Haworth Anabat Scout
2	Luke Atherton Anabat Scout	Luke Atherton Anabat Scout	Sarah Clementson Anabat Scout
3	Brian Robinson Peersonic RPA3	Brian Robinson Peersonic RPA3	Luke Atherton Anabat Express and Duet
4	Fiona Megarrell Anabat SD2 & Duet	Richard Lowe Anabat Express and Duet	Amy Sharples Anabat Express and Batbox III

2021 Presence / Absence Survey: Dusk Emergence Survey at Building 1

- 2.3.23 One dusk emergence survey was conducted at Building 1 on 5th July 2021.
- 2.3.24 The methodology used was the same as that described for the surveys completed in 2020 and detailed above.
- 2.3.25 Surveyor positions are annotated on **Figure 4**. Any bat emergence activity was recorded. The survey was conducted under suitable conditions; the survey date, surveyors and equipment used and weather conditions present are presented at **Table 2.4**, below.

Table 2.4: 2021 Dusk Emergence Survey Date, Weather Conditions and Surveyors

Date	5 th July 2021
Sunset:	21:39
Start & end time	21:20 until 23:15
Weather	14°C and overcast leading to a heavy downpour at 23:00 with a light air (Beaufort scale 1)
Survey Position	Surveyor and Detector
1	Brian Robinson (Peersonic RPA3)
2	Leah Hart (Batbox III & Anabat Express)
3	Luke Atherton (Anabat Scout)
4	Amy Sharples (Batbox III & SD2)

2022 Presence / Absence Survey: Dusk Emergence and Dawn Re-entry Surveys at Buildings 1, 2 and 3

- 2.3.26 Two dusk emergence surveys and one dawn re-entry survey have been completed at the site. The first survey covered Buildings 1, 2 and 3, and the two following re-entry surveys have covered Buildings 2 and 3.
- 2.3.27 Up to 10 surveyors, experienced in conducting bat surveys, were positioned at suitable locations to maximise the coverage of the buildings to determine any emergence or re-entry by roosting bats.
- 2.3.28 Survey methods were as described for the surveys completed in 2020 and described above, with the addition of night vision aids (NVAs) to supplement surveyor effort.
- 2.3.29 The dusk emergence surveys commenced at least 15 minutes before sunset, and continued for at least 1.5 hours after sunset. The dawn re-entry survey commenced approximately 2 hours before sunrise and ended 15 minutes after sunrise, provided all bat activity had ceased by this point.

- 2.3.30 Surveyor positions are annotated on **Figure 5**. 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.
- 2.3.31 NVAs were used at each survey position around Buildings 2 and 3, with one used at Building 1, and surveys were conducted in accordance with *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys* (Bat Conservation Trust, 2022): Footage was subsequently reviewed using VLC Media Player to determine any emergence / re-entry at the building.
- 2.3.32 The surveys were conducted under suitable conditions.
- 2.3.33 The date of the survey, surveyors, equipment used and weather conditions are presented at **Table 2.5** below.

Table 2.5: 2022 Dusk Emergence Survey Dates, Weather Conditions and Surveyors

Date	21 st June 2022	5 th July 2022	21 st July 2022
Sunset / Sunrise time:	21:42	21:43	05:07
Start & end time	21:20 until 23:15	21:20 until 23:15	03:00 until 05:25
Weather	17°C and dry with a light air (Beaufort scale 1)	15°C and dry with a light air (Beaufort scale 1)	14°C and dry with a light air (Beaufort scale 1)
Survey Position	Surveyor, Detector and NVA	Surveyor, Detector and NVA	Surveyor, Detector and NVA
1	Jordan Prendergast, Anabat Scout & Nightfox Red	Vin Greenhall, Anabat Scout & Nightfox Red	Brian Robinson, Peersonic RPA3 & Nightfox Red
2	Amy Sharples, Anabat Scout & Nightfox Red	Leah Hart, Anabat Scout & Panasonic VX870K	Leah Hart, Anabat Scout & Nightfox Red
3	Aidan Pickering, Anabat Scout & Nightfox Red	Aidan Pickering, Anabat Scout & Canon XA20	Aidan Pickering, Anabat Scout & Canon XA20
4	Danielle Rowlands, Batbox Duet, Anabat Express* & Panasonic VX870K	Danielle Rowlands, Batbox Duet, Anabat Express* & Nightfox Red	Danielle Rowlands, Anabat Scout * & Nightfox Red
5	Marie Pickering, Batbox Duet & Anabat Express*	Marie Pickering, Batbox III, Anabat Express* & Canon XA20	Marie Pickering, Batbox Duet, Anabat Scout * & Panasonic VX870K
6	Catie Haworth, Batbox III, Anabat Express* & SANNCE CCTV system	Brian Robinson, Anabat Scout* & SANNCE CCTV system	Amy Sharples, Anabat Scout* & SANNCE CCTV system
7	Ian Nelson, Batbox III, Anabat Express* & SANNCE CCTV system	Anabat Scout* SANNCE CCTV system (footage subsequently reviewed by Brian Robinson)	Marissa Hensey, Anabat Scout* & SANNCE CCTV system
8	Rachel Platt, Batbox Duet, Anabat Express & Canon XA20	Rachel Platt, Batbox Duet, Anabat Express & Canon XF10	Rachel Platt, Anabat Scout & Canon XA20
9	Vin Greenall, Batbox III, Anabat SD2 & SANNCE CCTV system	-	-
10	Brian Robinson, Peersonic RPA3	-	-

*Note that only one recording bat detector was used at survey positions 4 and 5 and another at survey positions 6 and 7; these survey positions are located close to each other, facing opposing gable ends, and it was considered that any bat emerging from either gable end would be recorded by the shared detector. No NVA was located at survey position 5 during the first survey as it was considered this corner was covered by the NVAs positions at survey positions 7 and 8. Additional cover was provided by the second and third surveys for completeness however.

Bird Species

- 2.3.34 Bird species observed and heard during the surveys were recorded.

- 2.3.35 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.
- 2.3.36 The presence of any sign of barn owl within the buildings was searched for during the internal inspection conducted on 10th June 2022 (note that no internal access to Buildings 1 and 2 was possible for reasons of health and safety). 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).
- 2.3.37 Any barn owl activity at the site was noted during the dusk emergence / dawn re-entry surveys for bats.

Reptile Species

- 2.3.38 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 2.6**, 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

- 2.3.39 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 initial Phase 1 Habitat surveys were conducted in autumn and winter, when many plant species are in a state of senescence (i.e. dying back). The surveyors are experienced in surveying plant species from their vegetative characteristics, and it has been possible to reliably identify the habitats and principal plant species present. Updated surveys have been completed at the site at times when plant species are in full growth, therefore the timing of the initial surveys are not considered to be a significant limitation.
- 2.4.2 Areas within the young trees and scrub in the south eastern corner of the site were inaccessible in October 2019 due to the density of the vegetation present. An updated, full survey (including a search for signs of badger) was completed on 16th December 2019 and subsequently in December 2021 and June 2022.
- 2.4.3 An internal inspection of Buildings 1 and 2 was not possible as both buildings are dangerous to enter. This limitation has informed the scope of bat activity surveys required to determine the presence or absence of roosting bats at the building within the site. It has also informed the assessment in relation to barn owl at the site.
- 2.4.4 Due to the locks on the main gates being changed over prior to the dawn bat activity survey completed on 19th June 2019, and therefore limiting access into the site, surveyors were placed in sub-optimal positions and the start time of the survey was delayed. Surveyors had a full or partial view of Building 1 despite the limitations.

- 2.4.5 Heavy rain commenced at 23:00 during the 2021 dusk emergence survey, approximately 1 hour and 20 minutes after sunset. As bats had already been detected foraging around the site, and due to the time of the commencement of the rain (10 minutes from when the survey was scheduled to finish) it is not considered that this is a significant survey limitation.
- 2.4.6 One surveyor could not attend at short notice during the second 2022 dusk emergence survey completed on 5th July 2022 due to a vehicle failure. This survey position was covered by an NVA, and the footage was subsequently reviewed by Brian Robinson; it is considered that any emergence from bats from the buildings viewed by this survey position would have been detected by this method.
- 2.4.7 No further survey limitations were experienced.
- 2.4.8 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, 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 Greater Manchester Biodiversity Action Plans has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Designated Sites for Nature Conservation, Site Designations and Allocations

Site Allocations

- 3.1.1 The site forms Plot W of the wider Kingsway Business Park development, which holds Outline Planning Permission (over the total area of the Kingsway Business Park development) for the following under Rochdale Borough Council Planning Application reference 14/00542/OUT (note this reference is a renewal of permissions previously granted at the site):

'Outline application, with all matters reserved, for a mixed use business park comprising buildings within development plots as shown on the site location plan for General and Light Industrial Uses (Classes B1 and B2), Offices in the Use Class B1, Distribution and Storage Uses (Class B8), Research and Development Uses in Use Class B1, Car Showrooms (Sui Generis Use), Hotels in Use Class C1, Ancillary Retail and Leisure in Use Classes A1 - A5 and D2, and Residential in Use Class C3'

- 3.1.2 It is proposed to develop Plot W to housing, with buildings associated with the former Silverhill Farm either converted to residential dwellings (Buildings 2 and 3) or demolished (Buildings 1 and 4).

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.3 The site is not and does not form part of any statutory designated site for nature conservation.
- 3.1.4 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the Rochdale Canal Special Area of Conservation (SAC) and SSSI, located 1.11 kilometres to the north-west of the site and designated for its assemblage of aquatic plants, including Floating Water-plantain (*Luronium natans*). 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, 2022):
- Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals;
 - Planning applications for quarries, including: new proposals, Review of Minerals Permissions, extensions, variations to conditions etc. Oil and gas exploration / extraction;
 - Large non-residential developments outside existing settlements / urban areas where footprint exceeds 1 hectare;
 - Any residential development of 100 or more houses outside existing settlements / urban areas;
 - Any industrial / agricultural development that could cause air pollution, (including 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);
 - General combustion processes greater than 20 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;
 - Landfill, including inert landfill, non-hazardous landfill and hazardous landfill;
 - Any composting proposal with more than 75000 tonnes maximum annual operational throughput, including open windrow composting, in-vessel composting, anaerobic digestion and other waste management;
 - 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; and
 - Large infrastructure such as warehousing / industry where the total net additional gross internal floorspace following development is 1,000m² or more.

- 3.1.5 The proposals are for fewer than 100 houses, and do not meet any of the criteria which would require further consultation with Natural England in respect of potential impacts to the Rochdale Canal SSSI and SAC.
- 3.1.6 The presence of the Rochdale Canal SSSI and SAC in the wider area is considered further at **Section 4.2** below.

Non-statutory Designated Sites for Nature Conservation

- 3.1.7 The site is not and does not form part of any non-statutory designated site for nature conservation, called Sites of Biological Importance or 'SBIs' in Greater Manchester).
- 3.1.8 Seven SBIs are located within 2 kilometres of the site; the SBIs are summarised in terms of their proximity to the site and reasons for designation at **Table 3.1**, below.

Table 3.1: SBIs Within 2 Kilometres of the Site

SBI Name	Distance and Direction from the Site	Reasons for Designation
Marsh near Turf Hill	420 metres to the north-east	Grassland (Gr2) and Mud snail (GSG1)
Sudden Brook (West)	555 metres to the south	Grassland (Gr2)
Stanney Brook	910 metres to the north-east	Grassland (Gr2); Water Vole (Mm1); Birds
Rochdale Canal (Scowcroft to Warland)	1110 metres to the north	Canal (Fw3); Floating Water Plantain (GGSG1)
Sudden Brook (East)	1260 metres to the east	Grassland (Gr2)
Meadow North of Moss Gate	1770 metres to the east	Grassland (Gr2)
A627M by Tandle Hill	1825 metres to the south-west	Grassland (Gr2)

- 3.1.9 The presence of the SBIs within the wider area has been considered further at **Section 4.2**.

Priority Habitats Inventory and Soilscape Information

- 3.1.10 The Priority Habitats Inventory³ was checked via MAGiC Maps. No Priority Habitats are reported for the site.
- 3.1.11 In accordance with *Soilscape (England)* as presented on MAGiC Maps (National Soil Resources Institute, 2005), the site supports '*freely draining slightly acid loamy soils*', and the characteristic semi-natural habitats associated with the soils comprise '*acid dry pastures; acid deciduous and coniferous woodlands*'.

Protected and Notable Species

- 3.1.12 GMLRC were contacted in 2019 for data relating to protected and notable species within the site and up to two kilometres from the site.
- 3.1.13 No records of protected or notable species are held for the site.
- 3.1.14 Records of protected and notable species for a 2 kilometre radius of the site are summarised at **Table 3.2** below.

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.

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 and GMBAP. One record, 1.8km from the site.
Birds	PS Only: Black-tailed godwit (<i>Limosa limosa</i>), bullfinch (<i>Pyrrhula pyrrhula</i>), curlew (<i>Numenius arquata</i>), brent goose (<i>Branta bernicla</i>), dunnoek (<i>Prunella modularis</i>), grasshopper warbler (<i>Locustella naevia</i>), grey partridge (<i>Perdix Perdix</i>), herring gull (<i>Larus argentatus</i>), house sparrow (<i>Passer domesticus</i>), lapwing (<i>Vanellus vanellus</i>), lesser redpoll (<i>Carduelis cabaret</i>), linnet (<i>Linaria cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>), skylark (<i>Alauda arvensis</i>), song thrush (<i>Turdus philomelos</i>), starling (<i>Sturnus vulgaris</i>), tree pipit (<i>Anthus trivialis</i>), twite (<i>Linaria flavirostris</i>) and yellow wagtail (<i>Motacilla flava</i>). WCAs1: Barn owl (<i>Tyto alba</i>), little ringed plover (<i>Charadrius dubius</i>) and peregrine (<i>Falco peregrinus</i>).
Flowering Plants	Floating Water-plantain (<i>Luronium natans</i>): EPS, PS & LBAP A total of three records, the closest of which is 1.4km from the site.
Reptiles	Common lizard (<i>Zootoca vivipara</i>): WCAs5, PS & GMBAP. One record, 1.9km from the site.
Terrestrial Mammals	European badger (<i>Meles meles</i>): PBA. A total of four records, the closest of which over 500m from the site. Brown hare (<i>Lepus europaeus</i>): PS & GMBAP A total of five records, the closest of which is 640m from the site. European water vole (<i>Arvicola amphibius</i>): WCAs5 & GMBAP. A total of 24 records, the closest of which is 370m from the site. European hedgehog (<i>Erinaceus europaeus</i>): PS. A total of 6 records, the closest of which is 600m from the site. Pipistrelle species (<i>Pipistrellus sp</i>): EPS, WCAa5 & GMBAP. A total of 53 records, the closest of which is 240m from the site. Brown Long-eared bat (<i>Plecotus auritus</i>): EPS, WCAa5 & GMBAP. A total of one record, 900m from the site. Bat species (Order <i>Chiroptera</i>): EPS, WCAa5 & GMBAP. A total of three records, the closest of which is 530m from the site.
¹Key to Designation Codes: EPS = European Protected Species under the <i>Conservation of Habitats and Species Regulations 2017</i> (as amended).. 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). PBA92 = Protection of Badger Act 1992 PS = Priority Species listed under Section 41 of the NERC Act 2006 GMBAP = Species listed on the Greater Manchester Biodiversity Action Plan	

3.1.15 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 2.4 hectare site is located within suburban surrounds and comprises two tree lines, areas of plantation broadleaved woodland at the site boundaries, marshy grassland at the north-eastern end of the site, unmanaged grassland and tall-herb vegetation, areas of scrub (including woody scrub and Bramble scrub) and a former farmyard comprising four buildings, hard standing with colonising ruderal herbs and areas of unmanaged grassland tall-herb vegetation.
- 3.2.2 The north-western site boundary is defined by fencing and lies adjacent to Lower Lane, beyond which lies residential housing and gardens. The north-eastern boundary is not defined by a boundary feature but lies within an area of marshy and unmanaged grassland, with marshy grassland to the north-east and landscape planting associated with the distribution centre located to the east. The southern site boundary is defined by fencing beyond which lies residential gardens and housing. The western boundary is defined by fencing beyond which lies Broad Lane, housing and gardens.

3.2.3 Investigation of historic Google Earth aerial imagery indicates that the site was farmed until 2005, but from 2013 onwards has been unmanaged. The habitats within the site have remained as described in 2019 on the following updated surveys completed in 2021 and 2022.

3.2.4 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**.

Buildings and Yard

3.2.5 Buildings 1 to 4 are described in greater detail in relation to their suitability for use by roosting bats at **Section 3.3**. No significant plant assemblage is associated with the buildings.

3.2.6 Refer to **Photo 1**. The yard is composed of concrete hard standing, with locally abundant colonising ruderal herbs and areas of locally abundant Common Nettle (*Urtica dioica*) and Bramble scrub present to the south-east and south-west of Building 1. The tall-herb, scrub and colonising ruderal herbs appear to be managed via occasional strimming.

3.2.7 The colonising ruderal herbs are characterised by constant and frequent Creeping Bent (*Agrostis stolonifera*), Creeping Buttercup (*Ranunculus repens*) and Yorkshire-fog (*Holcus lanatus*), constant, frequent and locally abundant Common Nettle, constant, occasional and locally abundant White Clover (*Trifolium repens*), occasional and locally frequent Perennial Rye-grass (*Lolium perenne*) and occasional and locally abundant Cleavers (*Galium aparine*). A plant species list is appended at **Table 8.1**.

3.2.8 The habitat holds characteristics of an *MG1a Arrhenatherum elatius* grassland, *Festuca rubra* sub-community (Rodwell, 1992) with areas of the OV24 *Urtica dioica* – *Galium aparine* tall herb community (Rodwell, 2000) and is described by the UKHab as g3c other neutral grassland with the secondary codes 10 scattered scrub and 16 tall-herb.

Plantation Woodland at Site Boundary

3.2.9 Refer to **Photos 2 to 4**. The plantation woodland is located at the southern, western and north-western site boundaries, including the margins of the yard area. The plantation woodland, in accordance with Google Earth historical aerial imagery, was planted between 2005 and 2013, and is therefore between 9 and 17 years old. Plastic guards remain present throughout the woodland which is between approximately 3 and 5 metres in height and provides a dense, close cover of young trees and shrubs. Tree Line 1 (refer to **Photo 12**) is located within the plantation woodland at the site's north-western and western site boundaries; the tree line is distinct from the surrounding plantation woodland due to the difference in the age of the trees, which are mature and predate the plantation woodland.

3.2.10 The woody species are characterised by constant and frequent and locally abundant Goat Willow (*Salix caprea*), frequent and locally abundant Hawthorn (*Crataegus monogyna*), occasional and locally abundant Alder (*Alnus glutinosa*) and Holly (*Ilex aquifolium*), occasional and locally frequent Sycamore (*Acer pseudoplatanus*) and occasional Aspen (*Populus tremula*), Dog-rose (*Rosa canina*), Elder (*Sambucus nigra*), Hazel (*Corylus avellana*) and Rowan (*Sorbus aucuparia*).

3.2.11 The ground flora is characterised by constant and abundant Common Nettle, frequent Rough Meadow-grass (*Poa trivialis*), occasional and locally abundant Bramble, occasional and locally frequent Cleavers and Great Willowherb (*Epilobium hirsutum*) and occasional Broad Buckler-fern (*Dryopteris dilatata*), Dandelion (*Taraxacum officinale* agg.) and Field Horsetail (*Equisetum arvense*). A plant species list is appended at **Table 8.2**.

3.2.12 The vegetation is not typical of any NVC community, and is described by the UKHab as w1h5 other woodland; mixed; mainly broadleaved with the following secondary codes: 36 plantation, 77 neglected (unmanaged for 3 to 10 years) and 56 young trees – planted.

Unmanaged Grassland and Marshy Grassland

- 3.2.13 Refer to **Photos 5, 6 and 11**. The unmanaged grassland which forms the majority of the site was, in accordance with Google Earth historical aerial imagery, improved grassland until 2005.
- 3.2.14 The grassland is characterised by constant and frequent Cock's-foot (*Dactylis glomerata*), False Oat-grass and Yorkshire-fog, constant, frequent and locally abundant Great Willowherb, occasional and locally abundant Creeping Thistle, Bramble, Common Nettle and Cleavers, occasional and locally frequent Common Couch (*Elytrigia repens*), Creeping Buttercup, Rough Meadow-grass and Timothy (*Phleum pratense*) and occasional Soft-rush (*Juncus effusus*), Broad-leaved Dock (*Rumex obtusifolius*), Broad-leaved Willowherb (*Epilobium montanum*), Meadow Buttercup (*Ranunculus acris*), Red Clover (*Trifolium pratense*) and White Clover (*Trifolium repens*). A plant species list is appended at **Table 8.3**.
- 3.2.15 The grassland is typical of a *MG1 Arrhenatherum elatius* grassland (Rodwell, 1992) with areas of *W24 Rubus fruticosus* – *Holcus lanatus* underscrub (Rodwell, 1991), and the *OV24 Urtica dioica* – *Galium aparine* and *OV26 Epilobium hirsutum* tall herb communities (Rodwell, 2000). The habitat is described by the UKHab as g3c5 Arrhenatherum (Oat-grass) neutral grassland with the following secondary codes: 10 scattered scrub, 16 tall herb, 161 tall or tussocky sward and 77 neglected (unmanaged for 3 to 10 years).
- 3.2.16 Refer to **Photos 7 and 8**. Land, which formerly supported farmed fields and was cleared (circa 2013) to facilitate the development of the Asda distribution centre to the north-east of the site, has developed to support an area of marshy grassland.
- 3.2.17 The vegetation is characterised by constant and frequent Soft-rush, Yorkshire-fog and Tufted Hair-grass (*Deschampsia cespitosa*), constant, frequent and locally abundant Great Willowherb, occasional and locally abundant Creeping Thistle, occasional and locally frequent Rough Meadow-grass and Creeping Bent and occasional Common Couch, Hard Rush (*Juncus inflexus*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Creeping Buttercup (*Ranunculus repens*) and Tufted Vetch (*Vicia cracca*). A plant species list is appended at **Table 8.4**.
- 3.2.18 The marshy grassland holds characteristics of an *MG9 Holcus lanatus* – *Deschampsia cespitosa* grassland (Rodwell, 1992) and is described by the UKHab as g3c7 Deschampsia (Hair-grass) neutral grassland with the following secondary codes: 10 scattered scrub, 16 tall herb, 14 scattered rushes, 161 tall or tussocky sward, 77 neglected (unmanaged for 3 to 10 years) and 119 seasonally wet.

Scrub

- 3.2.19 Refer to **Photos 9 and 10**. An area of dense scrub is developing at the northern end of the site, to the immediate east of the yard area. This area formerly supported agricultural buildings which were demolished between 2005 and 2013.
- 3.2.20 The woody species are characterised by constant and abundant Goat Willow (*Salix caprea*), locally abundant Grey Willow (*Salix cinerea*) and rare Beech (*Fagus sylvatica*) and Pedunculate Oak (*Quercus robur*). The ground flora is characterised by constant and frequent Rough Meadow-grass and Yorkshire-fog, occasional Broad-leaved Dock, Creeping Buttercup and Dandelion and locally abundant Hedge Woundwort (*Stachys sylvatica*). A plant species list is appended at **Table 8.5**.
- 3.2.21 The scrub is not typical of any NVC community and is described by the UKHab as h3h mixed scrub with the following secondary codes: 77 neglected (unmanaged for 3 to 10 years).

Tree Lines 1 and 2

- 3.2.22 Refer to **Photos 12 and 13**. Tree line 1 is located at the western and southern site boundary and is composed of mature trees which predate the plantation woodland at the site. The tree line is composed of locally abundant Sycamore and Beech; the habitat beneath is composed of the broad-leaved plantation woodland described above.

- 3.2.23 Refer to **Photo 14**. Tree Line 2 is located at a former field boundary within the site and is composed of two Sycamore and one Beech tree.
- 3.2.24 Neither tree line is typical of an NVC community, and both are described by the UKHab as w1g6 line of trees.

Invasive Plant Species

- 3.2.25 As illustrated on **Figure 2**, Montbretia (*Crocasmia x crocosmiiflora*) is present within the mixed scrub to the east of the yard area. This species is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause its spread in the wild. This is considered further at **Section 4.3** below.

3.3 Animal Life

Badger

- 3.3.1 No badger or signs of badger were detected within the site or within the accessible 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 tree lines, plantation woodland and areas of scrub are suitable for use by foraging bats and provide habitat connectivity across the site.
- 3.3.3 The habitats present are likely to be suitable for and contribute to a wider area of foraging habitat for 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*). The site is not linked to any areas of high suitability for use by foraging bats, such as tree-lined watercourses, however and the site does not lie between any areas considered to be of high suitability for use by foraging bats.
- 3.3.4 Overall the habitats within the site and wider area are considered to be of moderate suitability for use by foraging and commuting bats.

Daylight Survey: Buildings

Building 1

- 3.3.5 Refer to **Photos 15** and **16**. Building 1 remains as described in the previous ecology reports but is increasingly dilapidated. Building 1 is a single-storey former cattle shed which adjoins Building 2 at its north-western end; ERAP (Consultant Ecologists) Ltd are informed that the two buildings are linked internally.
- 3.3.6 Building 1 is constructed from cavity walls of mortared brick and supports a pitched roof of slate. As determined by holes in the roofing, the slates are lined with bitumastic roofing felt internally. The building's windows and doors have been sealed with mortared blockwork and no internal access is possible.
- 3.3.7 No bats or signs of bats were detected at the building's external elevations. Gaps suitable for access by bats are present throughout the unoccupied and derelict building, notably at the eaves and roof line where missing mortar is present, around the sealed windows and the building's stone lintels, at missing mortar in the ridge tiles and under lifted roofing slates, at a section of the outer skin of the cavity wall which has fallen away, behind lead flashing where the building keys into the adjoining stone barn and at gaps in the mortar of the brickwork throughout.

- 3.3.8 The building supports features suitable for use by crevice dwelling species, such as common pipistrelle, and may also support features suitable for use by species which are known to roost in the open in voids, such as brown long-eared bats.
- 3.3.9 Taking into account the suitability of the habitats present in the wider area for foraging and commuting bats, and the degraded nature of the building generally, the building is assessed to be of 'moderate' suitability for use by roosting bats.

Building 2

- 3.3.10 Refer to **Photos 17 to 21**. Building 2 adjoins Building 1 at its south-eastern elevation, and is constructed from mortared stone walls which support a pitched roof of slate. Two single-storey extensions constructed from mortared brick with single-pitch slate roofs on timber frames are present at the building's north-western end.
- 3.3.11 No bats or signs of bats were detected at the external elevations of the building. The building supports suitable features for access by bats at the roof line of the gable ends, at the eaves, at missing mortar in the walls, under lifted roofing slates and at the owl hole at the south-eastern gable end of the building. As with Building 1, the former doorways have been sealed with mortared blockwork.
- 3.3.12 An internal inspection of the building is not possible due to the dilapidated nature of the building; photographs of the internal area of the building (taken in 2014) were provided by the client and are presented at **Photos 20 and 21**.
- 3.3.13 Taking into account the suitability of the habitats present in the wider area for foraging and commuting bats, the building is assessed to be of 'high' suitability for use by roosting bats.

Building 3

- 3.3.14 Refer to **Photos 22 to 27**. Building 3 is a detached two storey former dwelling constructed from mortared stone walls which support a pitched roof of slate. The building's windows have been sealed with mortared blockwork.
- 3.3.15 The building supports features suitable for access by bats at the roof line of the gable ends, at the eaves, at missing mortar in the walls and under lifted roofing slates.
- 3.3.16 Internally the building supports two voids, at the north-western and south-eastern ends of the building. The north-eastern void is 1.3 metres tall (from the ridge beam to the void floor), and uninsulated. The unlined roofing slates are supported on traditional timber purlins and rafters.
- 3.3.17 The south-eastern void is approximately 2.5 metres tall (from the ridge beam to the floor) and uninsulated. The unlined roofing slates are supported on traditional timber purlins and rafters.
- 3.3.18 No bats or signs of bats were detected at the building's exterior or interior.
- 3.3.19 Taking into account the suitability of the habitats present in the wider area for foraging and commuting bats, and the degraded nature of the building generally, the building is assessed to be of 'high' suitability for use by roosting bats.

Building 4

- 3.3.20 Refer to **Photos 28 to 38**. Building 4 is a complex of adjoining single-storey barns. Section 4.1 is constructed from walls of mortared blockwork with a single-pitch roof of corrugated metal sheeting and plastic skylights supported on metal cross-beams and timber rafters. Gaps suitable for access by bats are present at the roof line and at an area of timber slats at the north-western elevation of the building section, however no dark, sheltered cavities suitable for use by roosting bats are present at the building section.

- 3.3.21 Section 4.2 is constructed from mortared blockwork and supports a pitched roof of corrugated asbestos sheeting supported on metal trusses and timber purlins. A roof void is present and is approximately 1.3 metres tall (from the ridge to the void floor). The void is well lit due to gaps at the wall-tops; no dark, sheltered cavities suitable for use by roosting bats are present at the building section.
- 3.3.22 Section 4.3 is constructed from mortared brick and supports a pitched roof of slate. A roof void is present which is 1.5 metres tall (from the ridge to the void floor). The unlined slates are supported on timber purlins and rafters. The void is brightly lit due to the numerous holes in the degraded roofing; it is not considered that the void supports any features suitable for use by roosting bats.
- 3.3.23 Section 4.4 is constructed from mortared blockwork walls and supports a single-pitch roof of corrugated metal sheeting supported on timber cross beams. No features suitable for use by roosting bats are present at the building section.
- 3.3.24 Section 4.5 is constructed from walls composed of a base of mortared blockwork with single-ply corrugated metal sheeting above, and a pitched roof of corrugated asbestos sheeting and skylights. The unlined roof is supported on metal trusses and timber purlins. No dark, sheltered cavities suitable for use by roosting bats are present at the building section.
- 3.3.25 The presence of roosting bats is reasonably discounted at Building 4, which is considered to be of 'negligible' suitability for use by roosting bats.

Trees

- 3.3.26 A single Sycamore (Tree 1), to the north of the centre of the site, supports a large split down the middle leading to a cavity which appears suitable for use by roosting bats (refer to **Figure 2** and **Photos 39** and **40**); during the initial inspection in October 2019 this tree was considered to be of 'moderate' suitability for use by roosting bats. Further investigation in December 2019 and June 2022 using ladders, a high powered torch and a video borescope to investigate the features revealed that the large cavity is open to the elements throughout and does not provide any crevices / sheltered areas typically used by roosting bats; the presence of roosting bats is reasonably discounted at Tree 1, which is reclassified as being of 'low' suitability for use by roosting bats.
- 3.3.27 Minor features such as knot holes and tear outs were noted at the trees facing onto Broad Lane however all were considered to be blind (i.e. not leading to cavities or other suitable features for use by roosting bats) on closer inspection.
- 3.3.28 All other trees within the site are currently classed as being of 'negligible' suitability for use by roosting bats.

Dusk Emergence / Dawn Re-entry Surveys

Summary of Surveys Completed in 2020 at Building 1

- 3.3.29 Survey positions are shown at **Figure 3**.
- 3.3.30 No bat emergence or re-entry was detected at Building 1 during the three surveys completed.
- 3.3.31 Common pipistrelle bats were detected foraging and commuting at the site during all three bat activity surveys. Soprano pipistrelle (*Pipistrellus pygmaeus*) were detected during the 19th June and 21st August surveys. No other species were detected.
- 3.3.32 The 6th May 2020 dusk emergence survey recorded common pipistrelle bats at the site between 21:06 and 22:20. Raw data are appended at **Table 8.6**.
- 3.3.33 The 19th June 2020 dawn re-entry survey recorded common pipistrelle bats at the site between 03:30 and 04:16. One pass by soprano pipistrelle was recorded at the site at 03:38 Raw data are appended at **Table 8.7**.

- 3.3.34 The 25th August 2020 dusk emergence survey recorded common pipistrelle bats at the site between 20:17 and 21:42. Soprano pipistrelle bats were recorded between 20:34 and 21:21. Raw data are appended at **Table 8.8**.

Summary of Survey Completed in 2021 at Building 1

- 3.3.35 No emergence or re-entry activity was detected.
- 3.3.36 Common pipistrelle were detected between 22:12 and 22:57, with the first recording 33 minutes after sunset. No other species were detected. Raw data are appended at **Table 8.9**.

Surveys Completed in 2022 at Buildings 1, 2 and 3

21st June 2022

- 3.3.37 No bat emergence or re-entry activity was detected.
- 3.3.38 Common pipistrelle were detected between 22:03 and 23:31, with the first recording 21 minutes after sunset. No other species were recorded. Raw data are appended at **Table 8.10**.

5th July 2022

- 3.3.39 No bat emergence or re-entry activity was detected.
- 3.3.40 Common pipistrelle were detected between 21:52 and 23:32, with the first recording 33 minutes after sunset. No other species were recorded. Raw data are appended at **Table 8.11**.

21st July 2022

- 3.3.41 No bat emergence or re-entry activity was detected.
- 3.3.42 Common pipistrelle were detected between 03:15 and 04:54, with the last recording 12 minutes before sunrise. No other species were recorded. Raw data are appended at **Table 8.12**.

Summary of Results

- 3.3.43 A summary of the survey results presented above is provided at **Table 3.3** below. The results are evaluated at **Section 4.4** below.

Table 3.3: Summary of Bat Survey Results

Building /Tree Ref	Suitability for Use by Roosting Bats	Results of Activity Surveys
Building 1	Moderate	Surveys completed in 2020, 2021 and 2022 have not detected the presence of roosting bats. The presence of roosting bats is reasonably discounted at the building.
Building 2	High	Surveys completed in 2022 have not detected the presence of roosting bats. The presence of roosting bats is reasonably discounted at the building.
Building 3	High	Surveys completed in 2022 have not detected the presence of roosting bats. The presence of roosting bats is reasonably discounted at the building.
Building 4	Negligible	The building is considered unsuitable for use by roosting bats; the presence of roosting bats is reasonably discounted at the building.
Tree 1	Low	No requirement for further survey, appropriate procedures must be followed during any works to the trees (refer to Section 5.4).

Bird Species

- 3.3.44 Birds detected in the site in October 2019, December 2021 and June 2022 are listed in **Table 3.4**, below.

Table 3.4: Bird species Detected on 21st October 2019, 16th December 2021 and / or 10th June 2022

Scientific Name	Common Name	BOCC Status ¹
<i>Carduelis carduelis</i>	Goldfinch	Green
<i>Columba palumbus</i>	Wood pigeon	Green
<i>Cyanistes caeruleus</i>	Blue tit	Green
<i>Erithacus rubecula</i>	Robin	Green
<i>Fringilla coelebs</i>	Chaffinch	Green
<i>Hirundo rustica</i>	Swallow	Green
<i>Passer domesticus</i>	House sparrow	Red
<i>Pica pica</i>	Magpie	Green
<i>Troglodytes troglodytes</i>	Wren	Amber
<i>Turdus merula</i>	Blackbird	Green
¹ BOCC: Birds of Conservation Concern (Stanbury, et al., 2021). Priority Species are presented in bold .		

3.3.45 The buildings, trees, shrubs and scrub are all suitable for use by nesting passerine (i.e. perching) bird species. This is considered further at **Section 4.4**, below.

3.3.46 The field unit is considered to be too small to be favourable for use by ground nesting birds; no ground nesting birds were detected at the site in June 2022.

Barn Owl

3.3.47 No internal access was possible to Buildings 1 or 2. No sign of barn owl was detected during the internal inspection of Buildings 3 and 4; the presence or roosting or nesting barn owl is reasonably discounted at these buildings.

3.3.48 Two adult barn owls were observed on all three bat activity surveys, with up to two juveniles being detected on the two dusk emergence surveys completed in 2020. Barn owl were observed emerging from the owl hole at the south-eastern gable end of Building 2 (refer to **Photo 41** and **Figures 3, 4 and 5**).

3.3.49 No barn owl were detected during the 2021 bat activity survey.

3.3.50 No signs of barn owl were detected at the external elevations of Building 2 during the daylight bats survey completed at the building in 2022. The following barn owl activity was detected during the bat activity surveys:

- One barn owl emerged from the owl hole at 22:50 on 21st June 2022;
- One barn owl emerged from the owl hole at 22:22 on 5th July 2022; and
- One barn owl emerged from the owl hole at 03:03:44 on 21st July 2022.

3.3.51 Barn owl activity at Building 2 was indicative of nesting behaviour in 2020, and it is considered likely that barn owl continue to nest at the building in 2022. This is considered further at **Section 4.4** below.

Reptiles

3.3.52 The site, until 2013, was regularly managed as farm land and will have supported habitats of poor suitability for use by sheltering and foraging reptiles. 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 immediate surrounding area; the nearest record (for common lizard) is 1.9 kilometres from the site. The presence of reptiles within the site is reasonably discounted.

Other Wildlife

- 3.3.53 The site supports suitable habitat for foraging and sheltering hedgehog (*Erinaceus europaeus*), a Priority Species, although it is unlikely to form core or important habitat for this species. Potential impacts to hedgehog during the construction and operational phases of the proposed development are considered further at **Section 4.4** below.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

- 4.1.1 In accordance with *Kingsway Rochdale: Landscape Masterplan Drawing GL1670 01B* (Golby + Luck, 2022), hereafter the 'landscape masterplan', it is proposed to develop the site to residential dwellings with associated gardens, access and POS. Buildings 2 and 3 will be retained and converted to residential dwellings. Buildings 1 and 4 will be demolished to facilitate the development.
- 4.1.2 Sections of Tree Line 1 and broad-leaved plantation woodland will be retained, wildflower grassland and native shrubs are proposed within the POS.
- 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

- 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 impact upon them.
- 4.2.2 The proposals, which are for 64 residential units, do not require further consultation with Natural England in respect of potential impacts to the statutory designated sites present in the wider area.

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. No Priority Habitats are present.
- 4.3.2 The mature trees and plantation woodland are considered to be of 'local' value in terms of their geographical context as they contribute to the diversity of habitats within the wider area and will provide suitable habitat for foraging bats and foraging and nesting birds. The unmanaged and marshy grassland are considered to be of 'site' value.
- 4.3.3 The proposals will retain the majority of the mature trees associated with Tree Line 1 and retained areas of the plantation woodland within the site. The proposals provide an opportunity to secure the enhancement and management of these habitats. Compensation for losses of unmanaged and marshy grassland associated with the proposals will be created via the provision of wildflower grassland and native scrub planting within the proposed landscape planting at the site.
- 4.3.4 Montbretia, an invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) was detected. It is an offence to cause the spread of this species in the wild. The proposals represent an opportunity to eradicate Montbretia from the site during the construction phase of the proposed development. Guidance is described in the report (**Section 5.3**).

4.4 Protected Species and Other Wildlife

Bats

- 4.4.1 Buildings 1, 2 and 3 support features suitable for use by roosting bats; surveys have been completed at Building 1 in 2019, 2021 and 2022, and at Buildings 2 and 3 in 2022; no roosting bats have been detected and the presence or roosting bats is reasonably discounted at the buildings.
- 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, and to ensure artificial lighting does not negatively impact upon the retained habitats and habitats in the wider area which are suitable for use by foraging and commuting bat are presented at **Section 5.4**. Notwithstanding any recommendations which are made upon the completion of the ongoing surveys for roosting bats at Buildings 2 and 3, measures to enhance habitats for use by roosting bats at the site as part of the proposed development are presented at **Section 5.4**. Tree 1 is assessed to be of 'low' suitability for use by roosting bats. Tree 1 will be removed by the proposed development. Reasonable avoidance measures to be adopted during the removal of the tree are also presented at **Section 5.4**.

Barn Owl

- 4.4.3 Barn owl, which are listed under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended), have been detected at Building 2, with survey evidence indicative of nesting barn owls found in 2019 and 2022.
- 4.4.4 It is not considered that suitable compensation for barn owl can be provided on site in the long term; the proposals will not retain suitable foraging habitat for barn owl within the site and it is known that industrial units are proposed at land to the north (currently comprising marshy and unmanaged grassland) under the Kingsway Parcel J2 proposals. Short term compensation for the loss of the nest, via the installation of a tree or pole mounted barn owl box, is feasible at the northern end of the site, facing onto the area of unmanaged grassland. It is however recognised that, due to the proposed development of the grassland surrounding the site, such compensation would not represent a long-term solution. It is therefore recommended that the Manchester Raptor Group and Greater Manchester Ecology Unit are consulted to determine whether off-site provision can be created, as funded by the proposed development. Recommendations in relation to barn owl are made at **Section 5.5**. A Method Statement for protection of barn owl during the proposed renovation works to Building 2 is appended at **Section 9.0**.

Other Birds

- 4.4.5 The trees, shrubs and buildings provide favourable 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). Consideration of birds (including protection of breeding birds and recommended enhancements for Priority Species) are presented at **Section 5.5** of this report.

Other Wildlife

- 4.4.6 The habitats within the site are suitable for use by foraging and sheltering hedgehog. Measures for the protection of hedgehog (and other wildlife) prior to and during the construction phase of the proposed development are presented at **Section 5.6** of this report. Measures to ensure hedgehog are able to access the proposed garden habitats within the site are also presented at **Section 5.6**.

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 as a residential development.

5.2 Protection of Existing Vegetation

- 5.2.1 During the construction phase, temporary protective demarcation fencing will be used to protect the trees and areas of plantation woodland 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.
- 5.2.2 The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

5.3 Invasive Plant Species

- 5.3.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Montbretia in the wild. It is concluded that the preparation of an Invasive Species Management Plan is not necessary in this case and this species is grubbed out by the roots during site clearance and disposed of either by burying on site or removal to a suitable tip.

5.4 Bats

Survey Validity

- 5.4.1 If works have not commenced by the start of the next bat active season (i.e. May 2023) it is recommended that an updated activity survey is completed to ensure the survey results presented in this report remain accurate.

Lighting

- 5.4.2 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.'*

Construction Phase

- 5.4.3 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.

Development Lighting Design

- 5.4.4 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 retained tree line and plantation woodland, areas of ecological enhancement and any landscape planting, as lighting overspill may deter use by wildlife such as foraging bats.
- 5.4.5 The lighting scheme will be designed with reference to current guidance, namely:
- Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and
 - Bats and lighting: Overview of current evidence and mitigation guidance* (Stone, 2014).

Reasonable Avoidance Measures to be Observed During Felling of Tree 1

- 5.4.6 It is recommended that the following measures are adopted during the proposed removal of Tree 1.
- The optimal time for tree removal is between September and late February inclusive, to avoid the bird nesting season;
 - Tree 1 must be carefully section-felled under the supervision of a licensed bat worker. The sectioning must avoid cutting through or close to any cavities; this is likely to involve climbing the tree;
 - Cut sections will be lowered to the ground with the use of ropes;
 - Once on the ground the cavity will be inspected by the licensed bat surveyor and guidance issued;
 - All felled sections will be left to lie on the ground for 24 hours before removing Ivy and snedding (removing side branches); and
 - If at any time during the works a bat is discovered or suspected all contractors must withdraw from the area and ERAP Ltd (01772 750502) or Natural England must be contacted for further guidance.

Enhancing Habitats for Roosting Bats

- 5.4.7 It is recommended that the development incorporates the installation of 6 bat access panels at the new buildings.
- 5.4.8 The bat access panels should be sited at least four 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. Once the development layout has been finalised, an ecologist should advise on appropriate positions for the bat access panels. Suitable bat access panels are available from NHBS Ecology (www.nhbs.com) or Wild Care (www.wildcare.co.uk) and are presented at **Insert 1**, below:



Insert 1: Examples of integrated bat access panels and an externally mounted box⁴

- 5.4.9 It is recommended that 5 bat boxes are erected onto suitable retained mature trees within the site. An ecologist will advise on the siting of the bat boxes whilst on site.
- 5.4.10 Suitable bat boxes are the Schwegler 1FF, Greenwood Ecohabitat's single or double cavity boxes and Schwegler 1FD, see **Insert 2**, below.



Insert 2: Schwegler 1FF, Greenwood Ecohabitat's single cavity and Schwegler 1FD bat boxes

- 5.4.11 Bat boxes should be installed to the following guidelines (Bat Conservation Trust, 2016):
- At least 4 metres above the ground (where safe installation is possible);
 - Sheltered from strong winds and exposed to the sun for part of the day (usually south or south-west). Ideally several bat boxes will be installed to provide a variety of different thermal options for bats. Grouping a number of boxes each with a different aspect can achieve this; while a number of boxes is preferable to one, a single box is still viable and may be used by roosting bats;
 - Located close to unlit linear features, such as lines of trees or hedgerows; and
 - Installed where the bat box entrance is not cluttered or impeded by branches, or accessible to predators (such as cats) by large branches underneath them.

5.5 Birds

Protection of Nesting Barn Owl

- 5.5.1 A Method Statement for the protection of barn owl during the proposed renovation of Building 2 is appended at **Section 9.0**.

⁴ 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.

- 5.5.2 As described in **Section 4.4** above, it is not considered that long-term provision for barn owl is feasible at the site. The potential for off-site compensation will be discussed with the Manchester Raptor Group and Greater Manchester Ecology Unit, and the suitability for short-term compensation via the provision of a tree or pole mounted barn owl box at the northern end of the site will be discussed with Greater Manchester Ecology Unit.

Protection of Other Nesting Birds

- 5.5.3 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 and building demolition / renovation 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 (Natural England, 2015).
- 5.5.4 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.

Enhancing Habitats for Nesting Birds

House Sparrow

- 5.5.5 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).
- 5.5.6 The installation of 4 house sparrow terrace nest boxes is recommended at the proposed new housing. The boxes 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. An example of a suitable house sparrow bird box is given below at **Insert 3**:



Insert 3: Schwegler 1SP House Sparrow Nesting Terrace

- 5.5.7 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.

Swift

- 5.5.8 The swift (*Apus apus*) has recently been added to The Birds of Conservation Concern Red list (Stanbury, et al., 2021) owing to the recorded recent declines and its identified status as a high conservation priority.
- 5.5.9 The construction of the residential properties provides an opportunity for the installation of additional nesting opportunities for swift to assist their conservation. Suitable swift nest boxes are illustrated at **Insert 4** below.



Insert 4: Examples of swift nest boxes⁵

- 5.5.10 It is recommended that at least 5 swift boxes are installed within the proposed residential dwellings at the site.

Other Birds

- 5.5.11 Five bird boxes associated with a variety of bird species are to be installed at the retained mature trees / plantation woodland within the site. An ecologist will advise on the siting of the woodland bird boxes whilst on 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 4 metres from ground level.
- 5.5.12 A selection of each of the boxes presented at **Insert 5**, below, will be used (or other suitably long-lasting boxes of similar design and quality).



Insert 5: Schwegler 3SV, Schwegler 1N, Schwegler 2M and Schwegler 2H bird boxes, suitable for a variety of woodland birds.

5.6 Enhancement and Management of Retained Habitats, Habitat Connectivity and Landscape Planting

Enhancement and Management of the Retained Habitats

- 5.6.1 It is recommended that the retained belts mature trees and plantation woodland are brought into active management for biodiversity and to promote the longevity of the habitat. A Habitat Management Plan would be prepared to include the following:
- Specification of the removal / control and safe disposal of invasive plant species;
 - Installation of bird boxes including boxes of a design for specific species such as nuthatch (*Sitta europaea*) and robin (*Erithacus rubecula*);

⁵ From left to right No. 17A Schwegler Swift Nest Box (Triple Cavity) as installation (left), Manthorpe Swift Nesting Box (centre) and Ibstock Eco-habitat for Swift (right), all available from www.NHBS.com

- c. Creation of dead wood habitat piles for colonisation by invertebrates, fungi and small mammals including hedgehog (a Priority Species); and
- d. Plug planting of woodland herbs such as native Bluebell (*Hyacinthoides non-scripta*).

Maintenance of Habitat Connectivity Throughout the Developed Site

- 5.6.2 To ensure habitat connectivity is maintained as part of the development proposals, gaps within the proposed fencing (see **Insert 6**, below, as reproduced from *Hedgehogs and Development* (British Hedgehog Preservation Society / PTES, 2019)) to allow access by other wildlife (including hedgehog) should be incorporated across the site. It is recommended that suitable 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 6: Showing wildlife access gap within fencing

Landscape Planting

- 5.6.3 It is recommended that the landscape planting within the residential site is composed from native species and species known to be of value for the attraction of wildlife.
- 5.6.4 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 5.2**, 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

- 5.6.5 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.
- 5.6.6 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.
- 5.6.7 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 a residential development at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.2 An off-site solution will be investigated to compensate for the loss of barn owl nesting habitat in the long term; it is recognised that only short-term compensation is possible at the site in accordance with the wider development proposals for the habitats to the north of the site. Otherwise 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 Development at the site will provide an opportunity to secure ecological enhancement for fauna typically associated with residential areas such as breeding birds and roosting bats.

7.0 REFERENCES

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8.0 APPENDIX 1: TABLES, PHOTOGRAPHS AND FIGURES

8.1 Plant Species Lists

Table 8.1: Plant Species List for Vegetation Colonising Hard Standing in Yard Area

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
<i>Acer pseudoplatanus</i>	Sycamore	R	<1%
<i>Salix caprea</i>	Goat Willow	VLF	<1%
<i>Sambucus nigra</i>	Elder	LA	<1%
Herb Species			
<i>Agrostis stolonifera</i>	Creeping Bent	F*	5%
<i>Arrhenatherum elatius</i>	False Oat-grass	O	<1%
<i>Chamerion angustifolium</i>	Rosebay Willowherb	R	<1%
<i>Dryopteris filix-mas</i>	Male-fern	R	<1%
<i>Equisetum arvense</i>	Field Horsetail	VLA	5%
<i>Galium aparine</i>	Cleavers	O/LA	5%
<i>Geranium robertianum</i>	Herb-Robert	VLF	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	10%
<i>Juncus effusus</i>	Soft-rush	R	<1%
<i>Lapsana communis</i>	Nipplewort	O	<1%
<i>Lolium perenne</i>	Perennial Rye-grass	O/LF*	20%
<i>Myosotis arvensis</i>	Field Forget-me-not	R	<1%
<i>Odontites vernus</i>	Red Bartsia	O	<1%
<i>Orchis mascula</i>	Early-purple Orchid	R	<1%
<i>Plantago lanceolata</i>	Ribwort Plantain	O/LF	<1%
<i>Prunella vulgaris</i>	Selfheal	O	<1%
<i>Ranunculus acris</i>	Meadow Buttercup	R	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	F*	5%
<i>Rumex crispus</i>	Curled Dock	R	<1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<1%
<i>Senecio jacobaea</i>	Common Ragwort	O	<1%
<i>Symphytum officinale</i>	Common Comfrey	R	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O/LF	5%
<i>Trifolium repens</i>	White Clover	O/LA*	5%
<i>Tussilago farfara</i>	Colt's-foot	O	<1%
<i>Urtica dioica</i>	Common Nettle	F/LA*	10%
<i>Vicia cracca</i>	Tufted Vetch	O	<1%
<i>Vicia tetrasperma</i>	Smooth Tare	R	<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 Broadleaved Plantation Woodland

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
<i>Acer pseudoplatanus</i>	Sycamore	O/LF	5%
<i>Alnus glutinosa</i>	Alder	O/LA	10%
<i>Betula pendula</i>	Silver Birch	LF	<1%
<i>Corylus avellana</i>	Hazel	O	5%
<i>Crataegus monogyna</i>	Hawthorn	F/LA	30%
<i>Fraxinus excelsior</i>	Ash	VLF	<1%
<i>Ilex aquifolium</i>	Holly	O/LA	10%
<i>Lonicera nitida</i>	Wilson's Honeysuckle	R	<1%
<i>Populus tremula</i>	Aspen	O	5%
<i>Quercus robur</i>	Pedunculate Oak	R	<1%
<i>Rosa canina</i>	Dog-rose	O	<1%
<i>Salix caprea</i>	Goat Willow	F/LA*	50%
<i>Sambucus nigra</i>	Elder	O	5%
<i>Sorbus aucuparia</i>	Rowan	O	<1%
<i>Tilia</i> sp.	Lime species	VLF	<1%
Herb Species			
<i>Alliaria petiolata</i>	Garlic Mustard	VLF	<1%
<i>Alopecurus pratensis</i>	Meadow Foxtail	VLF	<1%
<i>Anthriscus sylvestris</i>	Cow Parsley	VLF	<1%
<i>Arrhenatherum elatius</i>	False Oat-grass	VLF	<1%
<i>Cirsium arvense</i>	Creeping Thistle	R	<1%
<i>Dactylis glomerata</i>	Cock's-foot	VLF	<1%
<i>Dryopteris dilatata</i>	Broad Buckler-fern	O	<1%
<i>Epilobium hirsutum</i>	Great Willowherb	O/LF	<1%
<i>Equisetum arvense</i>	Field Horsetail	O	<1%
<i>Galium aparine</i>	Cleavers	O/LF	<1%
<i>Geranium robertianum</i>	Herb-Robert	LF	<1%
<i>Hyacinthoides hispanica</i>	Spanish Bluebell	R	<1%
<i>Juncus effusus</i>	Soft-rush	R	<1%
<i>Poa trivialis</i>	Rough Meadow-grass	F	<1%
<i>Rubus fruticosus</i> agg.	Bramble	O/LA	5%
<i>Sisymbrium officinale</i>	Hedge Mustard	R	<1%
<i>Symphytum officinale</i>	Common Comfrey	VLF	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O	<1%
<i>Urtica dioica</i>	Common Nettle	A*	10%
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 Unmanaged Grassland

Scientific Name	Common Name	DAFOR	% Cover
<i>Agrostis stolonifera</i>	Creeping Bent	VLF	<1%
<i>Alopecurus pratensis</i>	Meadow Foxtail	LA	10%
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	VLF	<1%
<i>Arrhenatherum elatius</i>	False Oat-grass	F*	30%
<i>Cirsium arvense</i>	Creeping Thistle	O/LA	10%
<i>Dactylis glomerata</i>	Cock's-foot	F*	5%
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	VLF	5%
<i>Elytrigia repens</i>	Common Couch	O/LF	5%
<i>Epilobium hirsutum</i>	Great Willowherb	F/LA*	20%
<i>Epilobium montanum</i>	Broad-leaved Willowherb	O	<1%
<i>Festuca rubra</i>	Red Fescue	VLF	<1%
<i>Galium aparine</i>	Cleavers	O/LA	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	40%
<i>Iris pseudacorus</i>	Yellow Iris	R	<1%
<i>Juncus effusus</i>	Soft-rush	O	5%
<i>Phalaris arundinacea</i>	Reed Canary-grass	VLA	5%
<i>Phleum pratense</i>	Timothy	O/LF	5%

Scientific Name	Common Name	DAFOR	% Cover
<i>Poa trivialis</i>	Rough Meadow-grass	O/LF	5%
<i>Ranunculus acris</i>	Meadow Buttercup	O	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	O/LF	5%
<i>Rubus fruticosus</i> agg.	Bramble	O/LA	20%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<1%
<i>Senecio jacobaea</i>	Common Ragwort	O	<1%
<i>Trifolium pratense</i>	Red Clover	O	<1%
<i>Trifolium repens</i>	White Clover	O	<1%
<i>Urtica dioica</i>	Common Nettle	O/LA	20%
<i>Vicia cracca</i>	Tufted Vetch	O	<1%
<i>Vicia parviflora</i>	Slender Tare	R	<1%
<i>Vicia sativa</i>	Common Vetch	O	<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 Marshy Grassland

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
<i>Salix viminalis</i>	Osier	VLA	1%
Herb Species			
<i>Agrostis stolonifera</i>	Creeping Bent	O/LF	10%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	VLF	<1%
<i>Cirsium arvense</i>	Creeping Thistle	O/LA	10%
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	F*	30%
<i>Elytrigia repens</i>	Common Couch	O	5%
<i>Epilobium hirsutum</i>	Great Willowherb	F/LA*	30%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	20%
<i>Juncus effusus</i>	Soft-rush	F*	20%
<i>Juncus inflexus</i>	Hard Rush	O	5%
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	O	<1%
<i>Phalaris arundinacea</i>	Reed Canary-grass	VLA	<1%
<i>Phleum pratense</i>	Timothy	O	<1%
<i>Poa trivialis</i>	Rough Meadow-grass	O/LF	5%
<i>Ranunculus repens</i>	Creeping Buttercup	O	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O	<1%
<i>Trifolium pratense</i>	Red Clover	O	<1%
<i>Trifolium repens</i>	White Clover	VLF	<1%
<i>Tussilago farfara</i>	Colt's-foot	R	<1%
<i>Vicia cracca</i>	Tufted Vetch	O	<1%
<i>Vicia parviflora</i>	Slender Tare	O	<1%
<i>Vicia sepium</i>	Bush Vetch	O	<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 8.5: Plant Species List for Mixed Scrub

Scientific Name	Common Name	DAFOR	% Cover
Woody Species			
<i>Fagus sylvatica</i>	Beech	R	<1%
<i>Fraxinus excelsior</i>	Ash	O	<1%
<i>Populus tremula</i>	Aspen	O	<1%
<i>Quercus robur</i>	Pedunculate Oak	R	<1%
<i>Salix caprea</i>	Goat Willow	A*	80%
<i>Salix cinerea</i>	Grey Willow	LA	20%
<i>Salix fragilis</i>	Crack-willow	VLF	5%
<i>Salix viminalis</i>	Osier	VLF	5%
<i>Sorbus aucuparia</i>	Rowan	O	<1%
Herb Species			
<i>Calystegia sepium</i>	Hedge Bindweed	R	<1%
<i>Crocsmia x crocosmiiflora</i>	Montbretia	LF	<1%
<i>Dactylis glomerata</i>	Cock's-foot	LF	<1%
<i>Epilobium hirsutum</i>	Great Willowherb	LF	<1%
<i>Epilobium montanum</i>	Broad-leaved Willowherb	VLF	<1%
<i>Equisetum arvense</i>	Field Horsetail	R	<1%
<i>Geranium robertianum</i>	Herb-Robert	VLF	<1%
<i>Geum urbanum</i>	Wood Avens	LF	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	<1%
<i>Iris pseudacorus</i>	Yellow Iris	R	<1%
<i>Lathyrus pratensis</i>	Meadow Vetchling	R	<1%
<i>Phalaris arundinacea</i>	Reed Canary-grass	LF	5%
<i>Plantago lanceolata</i>	Ribwort Plantain	O	<1%
<i>Poa trivialis</i>	Rough Meadow-grass	F*	<1%
<i>Prunella vulgaris</i>	Selfheal	VLF	<1%
<i>Ranunculus acris</i>	Meadow Buttercup	R	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	LF	<1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O	<1%
<i>Stachys sylvatica</i>	Hedge Woundwort	LA	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	O	<1%
<i>Trifolium pratense</i>	Red Clover	VLF	<1%
<i>Trifolium repens</i>	White Clover	VLF	<1%
<i>Vicia cracca</i>	Tufted Vetch	R	<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 Bat Activity Surveys, 2020 to 2022

Surveys Completed in 2020 at Building 1

Table 8.6: Activity Survey 1, 6th May 2020, Sunset Time 21:31, Start Time 21:00

Survey Position 1: Catie Haworth

Time	Species	Notes
21:39 until 22:14	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 6 recordings of common pipistrelle between 21:28 and 22:14		

Survey Position 2: Luke Atherton

Time	Species	Notes
21:18 until 22:16	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 37 recordings of common pipistrelle between 21:18 and 22:16		

Survey Position 3: Brian Robinson

Time	Species	Notes
21:06 until 22:10	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Peersonic RPA3 made the following recordings: 73 recordings of common pipistrelle between 21:06 and 22:10		

Survey Position 4: Fiona Megarrell

Time	Species	Notes
21:11 until 22:20	Common pipistrelle	No emergence detected. Constant foraging activity near Building 1 during the times noted.
The Anabat SD2 made the following recordings: 192 recordings of common pipistrelle between 21:06 and 22:20		

Table 8.7: Activity Survey 2, 19th June 2020, Sunrise Time 04:38, Start Time 02:25

Survey Position 1: Catie Haworth

Time	Species	Notes
03:38 until 04:09	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 8 recordings of common pipistrelle between 03:38 and 04:09		

Survey Position 2: Richard Lowe

Time	Species	Notes
03:38 until 04:09	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Express made the following recordings: 8 recordings of common pipistrelle between 03:38 and 04:09.		

Survey Position 3: Brian Robinson

Time	Species	Notes
03:28 until 04:03	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Peersonic RPA3 made the following recordings: 6 recordings of common pipistrelle between 03:48 and 04:03		

Survey Position 4: Luke Atherton

Time	Species	Notes
03:30 until 04:16	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 24 recordings of common pipistrelle between 03:30 and 04:16; and 1 recording of soprano pipistrelle at 03:38		

Table 8.8: Activity Survey 3, 25th August 2020, Sunset Time 20:16, Start Time 20:00

Survey Position 1: Catie Haworth

Time	Species	Notes
20:24 until 21:34	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 43 recordings of common pipistrelle between 20:17 and 21:34		

Survey Position 2: Sarah Clementson

Time	Species	Notes
21:01 until 21:42	Common pipistrelle x 2	No emergence detected. Constant foraging activity near Building 1 during the times noted.
The Anabat Scout made the following recordings: 96 recordings of common pipistrelle between 20:01 and 21:42		

Survey Position 3: Luke Atherton

Time	Species	Notes
20:33 until 21:21	Common pipistrelle	No emergence detected. Frequent foraging activity near Building 1 during the times noted.
The Anabat Express made the following recordings: 82 recordings of common pipistrelle between 20:33 and 21:21; and 2 recordings of soprano pipistrelle between 20:34 and 21:21		

Survey Position 4: Amy Sharples

Time	Species	Notes
20:24 until 21:37	Common pipistrelle	No emergence detected. Constant foraging activity near Building 1 during the times noted.
The Anabat Express made the following recordings: 91 recordings of common pipistrelle between 20:21 and 21:37		

Survey Completed in 2021 at Building 1

Table 8.9: Bat Activity Survey, 5th July 2021, Sunset Time 21:45, Start Time 21:15

Survey Position 1: Brian Robinson

Time	Species	Notes
22:21 until 22:36	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The RPA3 made the following recordings: 2 recordings of common pipistrelle at 22:31 and 22:36		

Survey Position 2: Leah Hart

Time	Species	Notes
21:54 until 22:22	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 10 recordings of common pipistrelle between 21:54 and 22:22		

Survey Position 3: Luke Atherton

Time	Species	Notes
21:54 until 22:25	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 20 recordings of common pipistrelle between 21:54 and 22:44		

Survey Position 4: Amy Sharples

Time	Species	Notes
21:57 until 22:25	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 27 recordings of common pipistrelle between 21:57 and 22:57		

Surveys Completed in 2022 at Buildings 1, 2 and 3

Table 8.10: Bat Activity Survey Repetition 1, 21st June 2022, Sunset Time 21:42, Start Time 21:20

Survey Position 1: Jordan Prendergast

Time	Species	Notes
22:15 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Scout made the following recordings: 28 recordings of common pipistrelle between 22:15 and 23:15		

Survey Position 2: Amy Sharples

Time	Species	Notes
22:03 until 23:17	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Scout made the following recordings: 47 recordings of common pipistrelle between 22:03 and 23:17.		

Survey Position 3: Aidan Pickering

Time	Species	Notes
22:03 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Scout made the following recordings: 36 recordings of common pipistrelle between 22:03 and 23:15.		

Survey Position 4: Danielle Rowlands

Time	Species	Notes
22:04 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 18 recordings of common pipistrelle between 22:04 and 23:15. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 4 and 5.		

Survey Position 5: Marie Pickering

Time	Species	Notes
22:04 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 18 recordings of common pipistrelle between 22:04 and 23:15. Note that due to the proximity of the survey positions the same recording detector was used at Survey Positions 4 and 5.		

Survey Position 6: Catie Haworth

Time	Species	Notes
22:17 until 23:31	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 11 recordings of common pipistrelle between 22:17 and 23:31. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 7: Ian Nelson

Time	Species	Notes
22:17 until 23:31	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat Express made the following recordings: 11 recordings of common pipistrelle between 22:17 and 23:31. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 8: Rachel Platt

Time	Species	Notes
22:15 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
22:50	Barn owl	1 bird emerged from the owl hole at the south-eastern gable end of Building 2
23:03	Barn owl	1 bird in flight over Building 2 and across site
The Anabat Express made the following recordings: 21 recordings of common pipistrelle between 22:24 and 23:23		

Survey Position 9: Vin Greenall

Time	Species	Notes
22:17 until 22:59	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The Anabat SD2 made the following recordings: 29 recordings of common pipistrelle between 22:17 and 22:59		

Survey Position 10: Brian Robinson

Time	Species	Notes
22:17 until 22:52	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 1.
The RPA3 made the following recordings: 12 recordings of common pipistrelle between 22:17 and 22:52		

Table 8.11: Bat Activity Survey Repetition 2, 5th July 2022, Sunset Time 21:43, Start Time 21:20

Survey Position 1: Vin Greenhall

Time	Species	Notes
21:55 until 23:18	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 87 recordings of common pipistrelle between 21:55 and 23:18.		

Survey Position 2: Leah Hart

Time	Species	Notes
21:52 until 23:18	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 371 recordings of common pipistrelle between 21:52 and 23:18.		

Survey Position 3: Aidan Pickering

Time	Species	Notes
21:52 until 23:16	Common pipistrelle	No emergence detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 449 recordings of common pipistrelle between 21:52 and 23:16.		

Survey Position 4: Danielle Rowlands

Time	Species	Notes
21:55 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Express made the following recordings: 333 recordings of common pipistrelle between 21:55 and 23:15. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 4 and 5.		

Survey Position 5: Marie Pickering

Time	Species	Notes
21:55 until 23:15	Common pipistrelle	No emergence detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Express made the following recordings: 333 recordings of common pipistrelle between 21:55 and 23:15. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 4 and 5.		

Survey Position 6: Brian Robinson

Time	Species	Notes
21:56 until 23:32	Common pipistrelle	No emergence detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Scout made the following recordings: 76 recordings of common pipistrelle between 21:56 and 23:32. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 7: Brian Robinson (review of SANNCE CCTV footage subsequent to survey)

Time	Species	Notes
21:56 until 23:32	Common pipistrelle	No emergence detected upon review of SANNCE CCTV data. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 76 recordings of common pipistrelle between 21:56 and 23:32. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 8: Rachel Platt

Time	Species	Notes
21:58 until 23:09	Common pipistrelle	No emergence detected. Occasional foraging activity near Buildings 1 and 2.
22:22	Barn owl	1 bird emerged from the owl hole at the south-eastern gable end of Building 2
The Anabat Express made the following recordings: 188 recordings of common pipistrelle between 21:58 and 23:09.		

Table 8.12: Bat Activity Survey Repetition 3, 21st July 2022, Sunrise Time 05:07, Start Time 03:00

Survey Position 1: Brian Robinson

Time	Species	Notes
03:15 until 04:53	Common pipistrelle	No re-entry detected. Occasional foraging activity near Building 3.
The Peersonic RPA3 made the following recordings: 207 recordings of common pipistrelle between 03:15 and 04:53.		

Survey Position 2: Leah Hart

Time	Species	Notes
03:15 until 04:54	Common pipistrelle	No re-entry detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 219 recordings of common pipistrelle between 03:15 and 04:54.		

Survey Position 3: Aidan Pickering

Time	Species	Notes
03:17 until 04:54	Common pipistrelle	No re-entry detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 132 recordings of common pipistrelle between 03:17 and 04:54.		

Survey Position 4: Danielle Rowlands

Time	Species	Notes
03:21 until 04:54	Common pipistrelle	No re-entry detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Express made the following recordings: 160 recordings of common pipistrelle between 03:21 and 04:54. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 4 and 5.		

Survey Position 5: Marie Pickering

Time	Species	Notes
03:21 until 04:54	Common pipistrelle	No re-entry detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Express made the following recordings: 160 recordings of common pipistrelle between 03:21 and 04:54. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 4 and 5.		

Survey Position 6: Amy Sharples

Time	Species	Notes
03:18 until 04:53	Common pipistrelle	No re-entry detected. Occasional foraging activity near Buildings 2 and 3.
The Anabat Scout made the following recordings: 83 recordings of common pipistrelle between 03:18 and 04:53. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 7: Marissa Hensey

Time	Species	Notes
03:18 until 04:53	Common pipistrelle	No re-entry detected. Occasional foraging activity near Building 3.
The Anabat Scout made the following recordings: 83 recordings of common pipistrelle between 03:18 and 04:53. Note that due to the proximity of the survey positions the same recording bat detector was used at Survey Positions 6 and 7.		

Survey Position 8: Rachel Platt

Time	Species	Notes
03:19 until 04:42	Common pipistrelle	No re-entry detected. Occasional foraging activity near Buildings 1 and 2.
03:44	Barn owl	1 bird emerged from the owl hole at the south-eastern gable end of Building 2
The Anabat Scout made the following recordings: 124 recordings of common pipistrelle between 03:19 and 04:42.		

8.3 Photographs

Vegetation and Habitats



Photo 1: Yard with colonising ruderal herbs



Photo 2: Plantation woodland at the site boundary



Photo 3: Plantation woodland at the site boundary

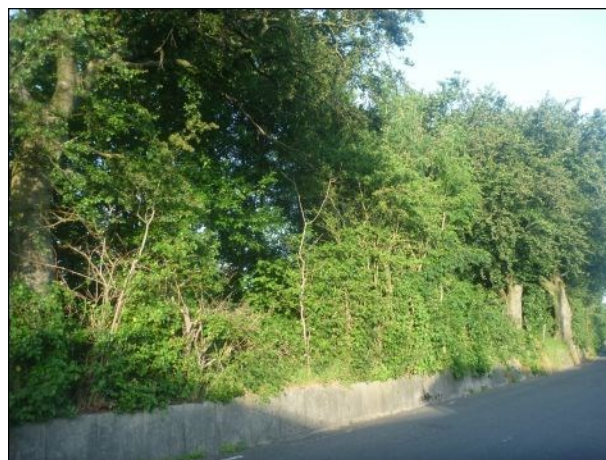


Photo 4: Plantation woodland at the site boundary



Photo 5: Unmanaged grassland and tall-herb



Photo 6: Unmanaged grassland and tall-herb



Photo 7: Marshy grassland at the north-eastern end of the site



Photo 8: Marshy grassland at the north-eastern end of the site



Photo 9: Mixed scrub



Photo 10: Mixed scrub



Photo 11: Bramble scrub

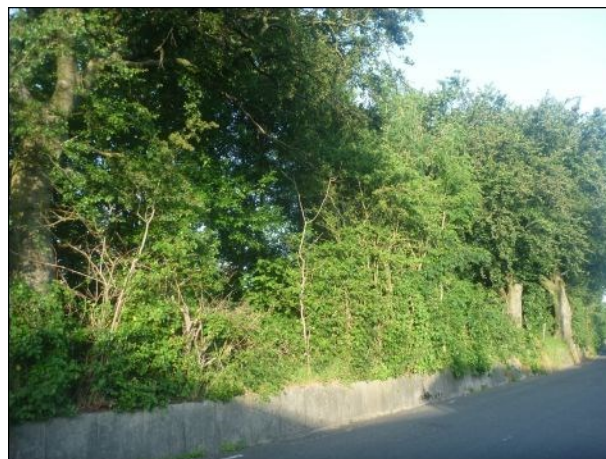


Photo 12: Tree Line 1



Photo 13: Tree Line 1



Photo 14: Tree Line 2

Buildings and Tree 1



Photo 15: Building 1, south-eastern gable end and north-eastern elevation



Photo 16: Building 1, south-western elevation



Photo 17: Building 2, south-eastern gable end and north-eastern elevation



Photo 18: Building 2, north-western gable end and single-storey extension



Photo 19: Building 2, single-storey extension



Photo 20: Building 2 internal area (photograph taken in 2014 and provided by the client)



Photo 21: Building 2 internal area (photograph taken in 2014 and provided by the client)



Photo 22: Building 3, south-eastern and north-eastern elevations



Photo 23: Building 3, south-eastern and south-western elevations



Photo 24: Building 3, north-western elevation



Photo 25: Building 3, north-eastern elevation



Photo 26: Building 3, roof void at north-western end of the building



Photo 27: Building 3, roof void at south-eastern end of the building



Photo 28: Building 4, section 4.1, south-eastern and north-eastern elevations



Photo 29: Building 4, section 4.1, north-eastern elevation



Photo 30: Building 4, sections 4.1, 4.2, 4.3 and 4.4, south-western and north-western elevations



Photo 31: Building 4, section 4.5, south-western and north-western elevations



Photo 32: Building 4, section 4.5, north-eastern elevation



Photo 33: Building 4, section 4.1, internal area



Photo 34: Building 4, section 4.2 roof void



Photo 35: Building 4. Section 4.3 internal area



Photo 36: Building 4, section 4.3 roof void



Photo 37: Building 4, section 4.4 internal area



Photo 38: Building 4, section 4.5 internal area

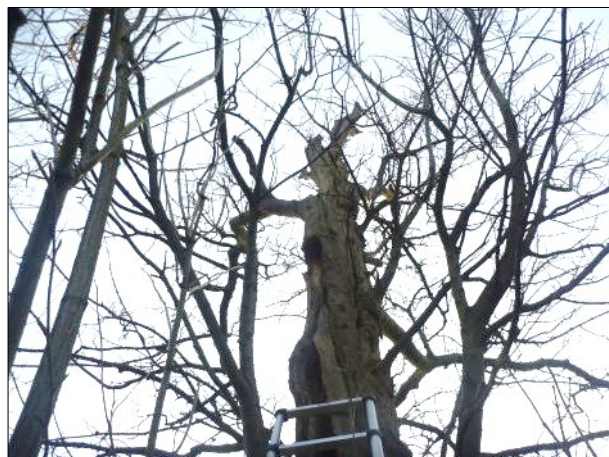


Photo 39: Tree 1, December 2019

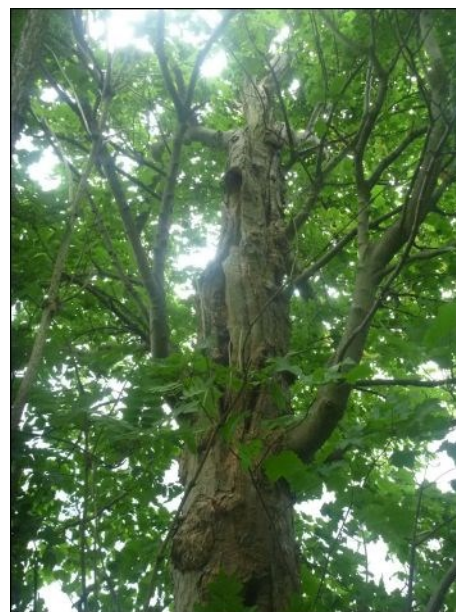


Photo 40: Tree 1, June 2022

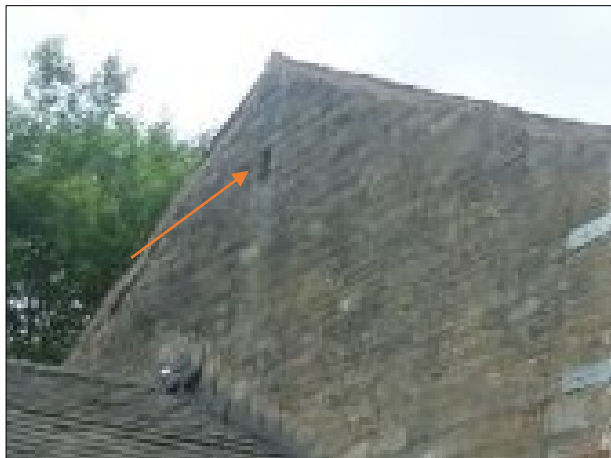


Photo 41: Barn owl emergence noted in 2020 and 2022

8.4 Figures

Figure 1: Aerial Image of the Site and its Surroundings



Figure 2: Phase 1 Habitat and Vegetation Map of the Site

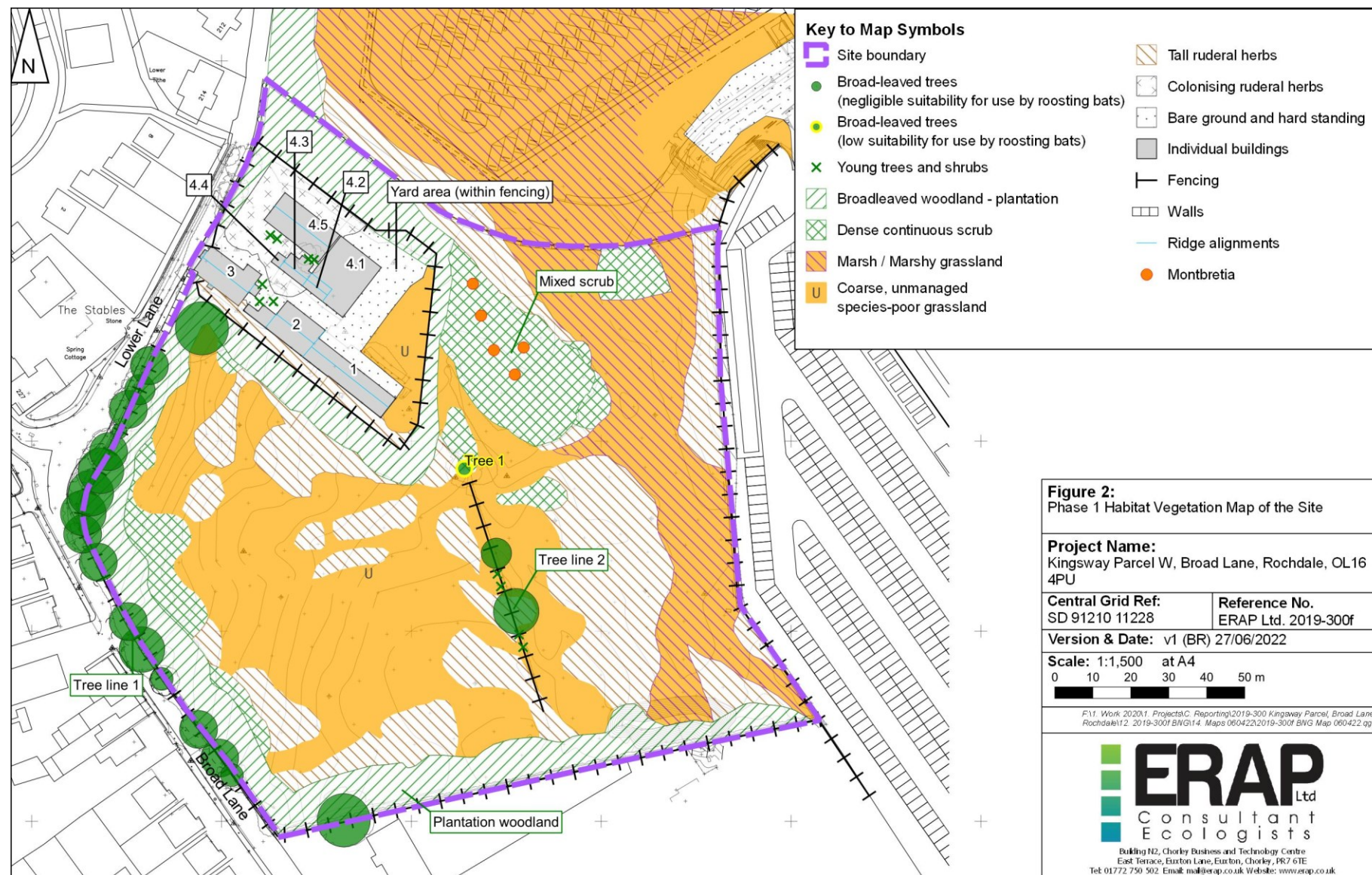


Figure 3: Surveyor Locations During 2020 Bat Activity Surveys

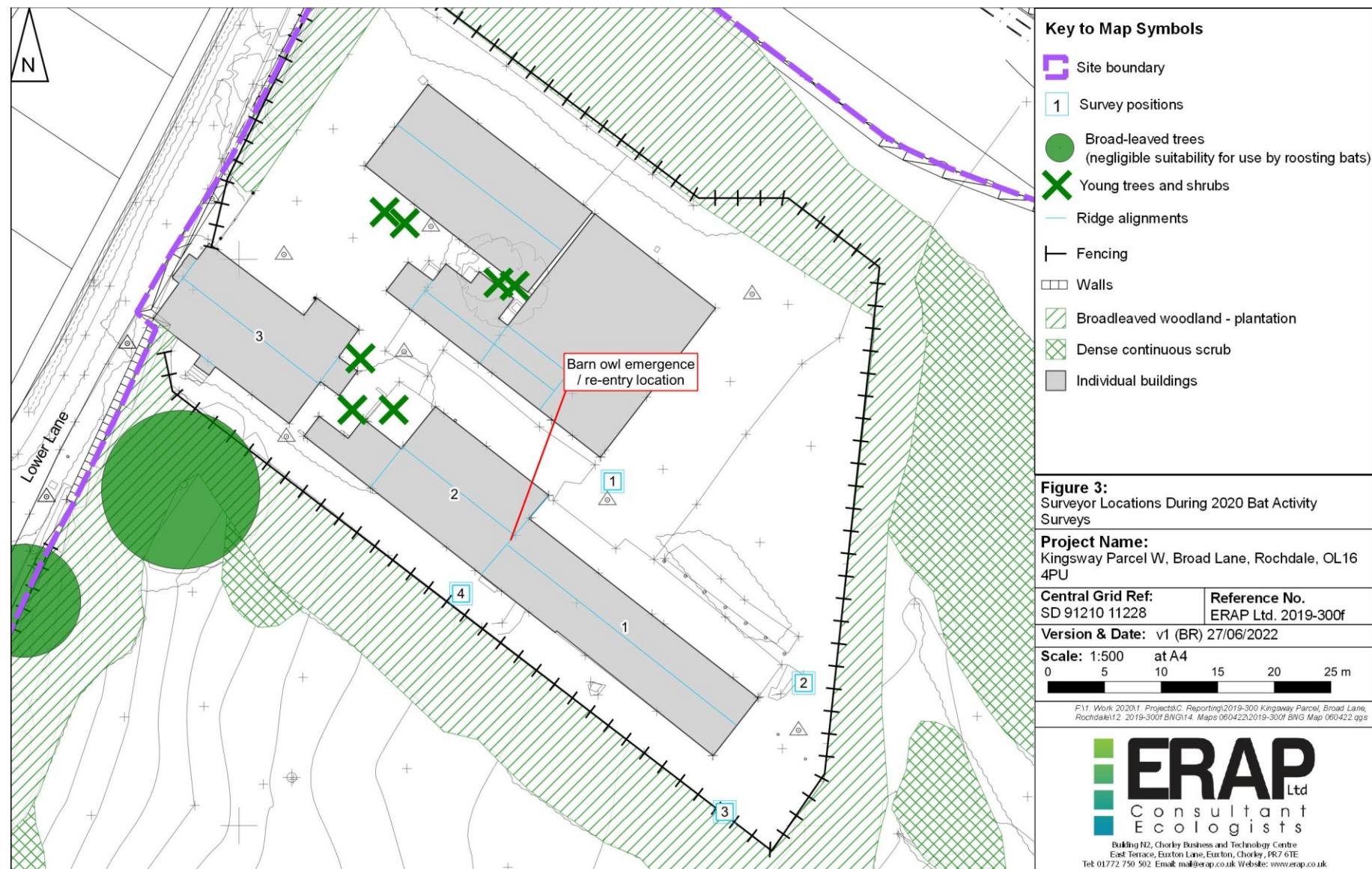


Figure 4: Surveyor Locations During 2021 Bat Activity Survey

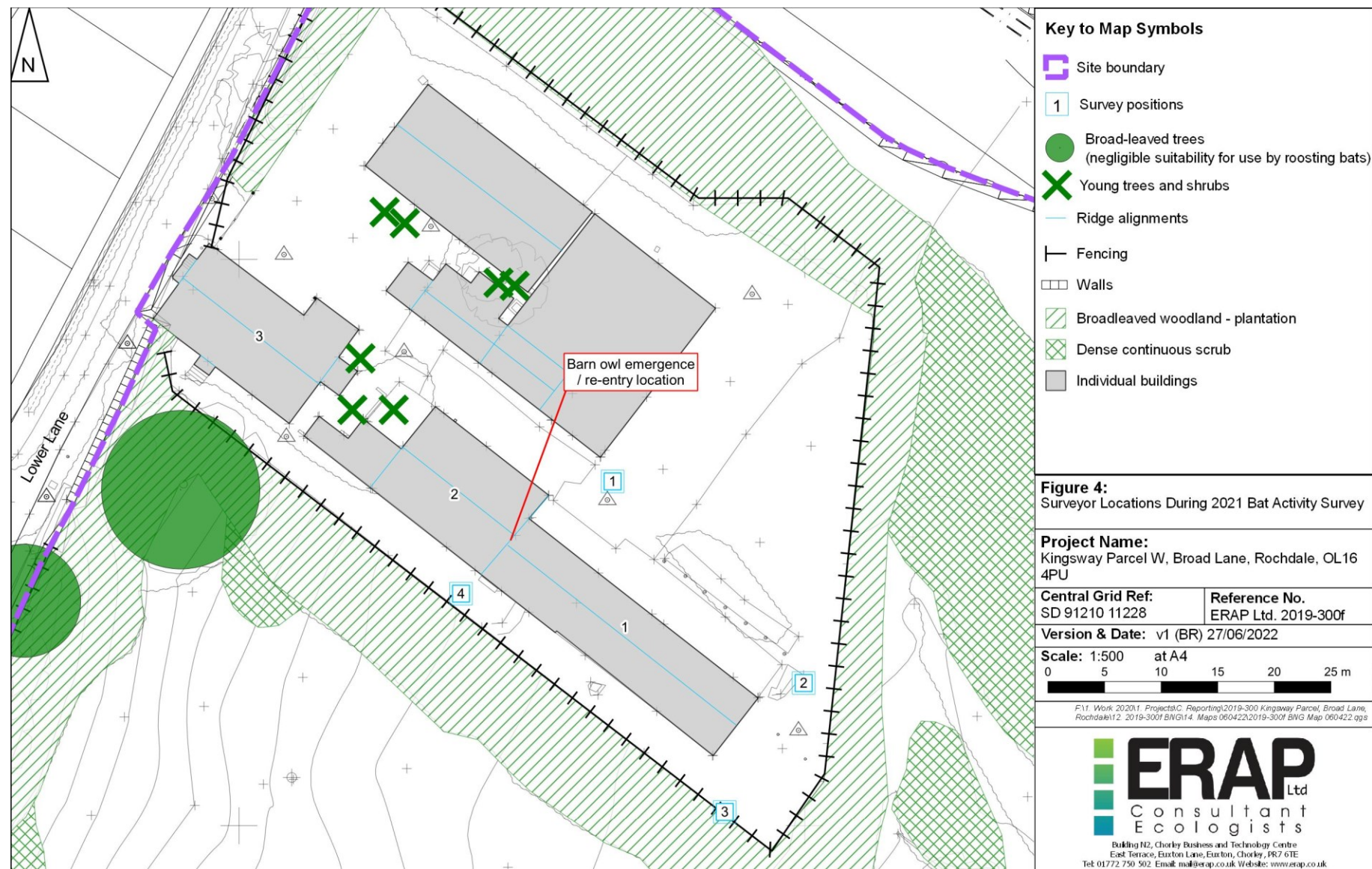
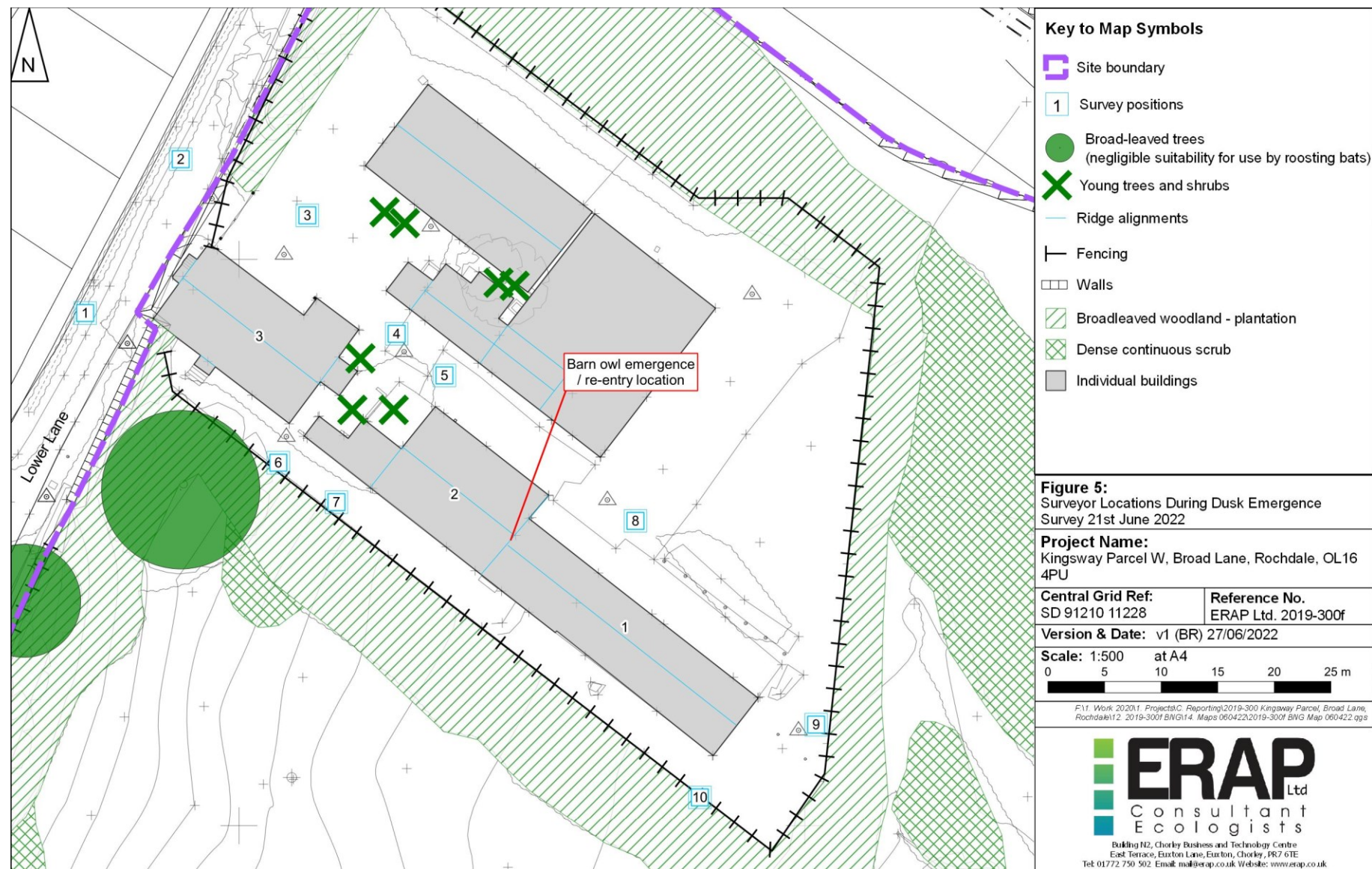


Figure 5: Surveyor Locations During 2022 Bat Activity Surveys



Note: Survey Positions 9 and 10 used on first repetition only

9.0 APPENDIX 2: METHOD STATEMENT FOR THE PROTECTION OF BARN OWL

9.1 Introduction

- 9.1.1 The results of the 2020 and 2022 surveys confirmed the presence of nesting barn owl at Building 2. The proposals will renovate Building 2 to a residential dwelling, and develop the unmanaged grassland to the east and south of the building; suitable habitat for foraging barn owl will not be retained in proximity to Building 2 and it is not considered that retaining the nest at Building 2 is feasible.
- 9.1.2 Suitable foraging habitat for barn owl is located to the north of the site, however this area is denoted at Parcel J2 of the wider Kingsway development and industrial units are proposed at this location; any compensatory roosting habitat provided will not provide long-term compensation for barn owl.
- 9.1.3 It is therefore recommended that off-site compensation is sought with the assistance of Manchester Raptor Group and the Greater Manchester Ecology Unit.
- 9.1.4 This Method Statement provides an outline on how temporary compensatory nesting habitat can be provided as part of the scheme (if necessary) and also how barn owl will be protected during the commencement of works at Building 2 (or the adjacent Building 1).

9.2 Provision of Compensatory Habitat Prior to Commencement of Works

- 9.2.1 The development must be conducted in order that barn owl will have access to roosting habitats throughout the proposed works, and that works do not reduce the availability of roosting / nesting habitat during the construction phase.
- 9.2.2 If off-site compensation cannot be found in the short term, one barn owl nesting box will be installed at a suitable mature tree at the northern site boundary (if a suitable mature tree is not present then a box can be mounted on a pole). The appended **Figure 6** provides an indicative location for the box, facing onto unmanaged and marshy grassland. Suitable barn owl nest boxes can be purchased from NHBS ecology (refer to **Insert 10.1**, below) or may be constructed to the specifications presented at the Barn Owl Trust website (<http://www.barnowltrust.org.uk/barn-owl-nestbox/owl-boxes-for-trees/#tree-box-criteria>);



Insert 10.1: Barn Owl Nest Box Suitable for Trees

- 9.2.3 No works can commence at Building 2 until either the alternative nesting provision has been in place for at least 30 days or an agreement has been reached with Greater Manchester Ecology Unit and Manchester Raptor Group regarding off-site compensation.

9.3 Measures for the Protection of Barn Owl During Works

- 9.3.1 The following measures are proposed for the protection of nesting and roosting barn owl at the site during works to the buildings within the site.
- a. All personnel must be made aware of the presence of barn owl within the site, and their protected status;
 - b. All site personnel will be made aware of the presence of nesting barn owl at Building 2. Although it is recognised that barn owl can nest at any time of year, any works to Buildings 1 or 2 should avoid the bird nesting season (March to September inclusive);
 - c. Immediately prior to the commencement of works at Buildings 1 or 2 a pre-works survey for any evidence of use by nesting barn owl (and other birds) will be carried out. The survey will be carried out by an appropriately experienced (and if necessary licensed) ecologist;
 - d. If no evidence of nesting barn owl (or other birds) is detected the instruction will be provided to proceed with the works at the buildings. The entrance hole will be blocked to avoid barn owl investigating the building once works have commenced;
 - e. If evidence of nesting birds is detected at a building, that building must remain undisturbed until it is confirmed by an ecologist that the young birds have fledged; and
 - f. If barn owl are suspected to be present during works to the buildings, all works must cease and ERAP (Consultant Ecologists) Ltd. must be contacted for further advice on 01772 750 502.

Figure 6: Plan to Show Suitable Location for Temporary Barn Owl Compensation During Works

