



Lagan Homes

Land West of Ratby, Leicestershire

BAT REPORT

December 2024

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1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment & Design Ltd. on behalf of Lagan Homes and details the findings of a suite of bat surveys undertaken during 2024 on Land West of Ratby, Leicestershire (Central grid ref: SK 50744 06004).

Site Location and Context

- 1.2 The site is approximately 33 ha in size, dominated by farmland including arable fields and pastureland, bound, and divided by hedgerows. Field compartments to the north of Burroughs Road comprised temporary grass and clover ley, with woodland and willow plantation present to the northwest. Habitats to the south of Burroughs Road were dominated by grassland, with cattle present to the south. Several mature trees were noted within hedgerows and field compartments. The surrounding landscape is dominated by woodland, arable and pastureland with the village of Ratby located to the north and east. A small stream is located between the two redline compartments, which flows under Burroughs Road and through mature woodland bordering the site to the southwest.

Development Proposals

- 1.3 Proposals include an outline planning application (with all matters reserved apart from access) for a phased, mixed-use development comprising about 470 dwellings (Use Class C3) or, in the alternative, about 450 dwellings and care home (Use Class C2). Provision of land for community hub (Use Class F2); provision of land for 1FE primary school (Use Class F1); and associated operations and infrastructure including but not limited to site re-profiling works, sustainable urban drainage system, public open space, landscaping, habitat creation, internal roads/routes, and upgrades to the public highway.

2.0 LEGISLATION

- 2.1 Bats are afforded full protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).
- 2.2 Under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) it is illegal to:
- Deliberately capture, injure or kill any wild animal of a European Protected Species (EPS),
 - Deliberately disturb wild animals of an EPS (affecting ability to survive, breed or rear young) – disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,
 - Deliberately disturb wild animals of an EPS (impairing ability to migrate or hibernate) – disturbance of animals includes in particular any disturbance which is likely to impair their ability in the case of hibernating or migratory species to hibernate or migrate,
 - Deliberately disturb wild animals of an EPS (affecting local distribution and abundance) – disturbance of animals includes in particular any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong,

- Deliberately disturb wild animals of an EPS (whilst occupying a structure of place used for shelter or protection) – intentionally or recklessly disturb any wild animal while it is occupying a structure or place which it uses for shelter or protection,
- Damage or destroy a breeding site or resting place of a wild animal an EPS.

2.3 Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to:

- Recklessly or intentionally kill, injure or take any wild animals included in Schedule 5.
- Recklessly or intentionally damage or destroy, or obstruct access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection,
- Recklessly or intentionally disturb any such animal while it is occupying a structure or place which it uses for shelter or protection.

2.4 If impacts to bats or their roosts cannot be avoided a European Protected Species Licence from Natural England is required in order to allow proposals to derogate from the Legislation (Licences cannot be obtained to provide protection against offences under the Wildlife & Countryside Act 1981 (as amended)). As part of the application process a number of 'Tests' have to be met by the application.

2.5 Natural England Guidance Note: European Protected Species and the Planning Process – Natural England's Application of the 'Three Tests' to Licence Applications (March 2011) states:

"In determining whether or not to grant a licence Natural England must apply the requirements of Regulation 53⁵ of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b)⁶.

*(1) **Regulation 53(2)(e)** states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".*

*(2) **Regulation 53(9)(a)** states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".*

*(3) **Regulation 53(9)(b)** states: the appropriate authority shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."*

2.6 Conservation status is defined as *"the sum of the influences acting on the species concerned that may affect the long term distribution and abundance of its population within its territory"*. It is assessed as favourable when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, or will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.

- 2.7 These tests must not only reach agreement with Natural England when assessing a Licence application, they must also be assessed by the planning authority when determining a planning application.

3.0 METHODOLOGY

Desktop Study

- 3.1 A desk study was undertaken to collate existing information for the site and its surroundings in relation to bat species. This included a review of:
- Biological records requested from Leicestershire and Rutland Environmental Records Centre;
 - Granted EPS licences for bats from The Multi Agency Geographic Information for the Countryside (MAGIC) website¹
 - Statutory designated sites that include bat species as part of their designation from MAGIC
 - Publicly available aerial imagery showing connectivity across the site and to the wider landscape.
- 3.2 Bat records were searched for at a resolution of 2km around the site and were limited to records from within the last 20 years.

Field Surveys

Tree Surveys

Ground-Based Tree Assessments

- 3.3 Preliminary Roost Assessments (PRA) were undertaken from ground level, with the aid of binoculars on the 12th – 14th February 2024 by a suitably experienced ecologist from FPCR. Potential Roosting Features (PRFs) (based on p.16, British Standard 8596:2015 Surveying for bats in trees and woodland, October 2015) which were sought included:
- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar;
 - Man-made holes (e.g. cavities that have developed from flush cuts or cavities created by branches tearing out from parent stems;
 - Woodpecker holes;
 - Cracks/splits in stems or branches (horizontal and vertical);
 - Partially detached, loose or platy bark;
 - Cankers (caused by localised bark death) in which cavities have developed;
 - Other hollows or cavities, including butt rots;
 - Compression of forks with occluded bark, forming potential cavities;
 - Crossing stems or branches with suitable roosting space between;

¹ www.magic.gov.uk

- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk); and
 - Bat or bird boxes.
- 3.4 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings, and its location in respect to other features may enhance or reduce the potential value.
- 3.5 Using professional judgement, the ground-based PRA assessment classified any trees identified based upon the presence of suitable features as set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 2023²) in which the general bat roost potential groups are defined (refer Table 4.2 of the guidelines).
- 3.6 Each PRF was then categorised as outlined in Table 1.

Table 1: Bat Classification and Survey Requirements for Bats in Trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
Negligible/ No potential	Negligible/no habitat features likely to be used by roosting bats	None.
Likely PRF-I	A tree with one or more Potential Roosting Features that are suitable for only individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats. Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.	No further survey is required but appropriate compensation must be provided in advance of impacts and a precautionary working method statement must be applied. ^A
Likely PRF-M	A tree with PRF's which could support multiple bats and may therefore be used by a maternity colony. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Three aerial assessments of PRF's by appropriately licensed/ accredited tree climbers to determine presence or likely absence of roosting bats ^B . Surveys were undertaken between May and September (with at least two surveys between May and August and spread at least three weeks apart). ^C If roost sites are confirmed and the roost is affected by proposals a licence from Natural England will likely be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary pre-felling survey or working method statement may still be appropriate.

^A In circumstances where there are lots of trees grouped together with PRF-I then further surveys may still be appropriate.

^B Nocturnal surveys using NVA's may be appropriate if a tree or PRF cannot be sufficiently accessed or fully assessed.

² Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London.

^c If the initial aerial inspection was undertaken during the optimum survey period, this can count as one of the three surveys

- 3.7 Where features suitable to be used as a roost site were identified, evidence that bats had used the site as a roost where features, where accessible, was sought. Such evidence comprises live or dead bats, droppings, urine staining, and grease/scratch marks on wood.

Habitat Assessment

- 3.8 This assessment was undertaken to identify the suitability of the site to foraging and commuting bats or areas which may be important for exhibiting various social behaviours. This was informed by the results of the initial UKHab survey and also from information gathered in the desk study to ensure that potential effects are considered in the context of the onsite habitats within the wider area.
- 3.9 The site was also categorised for its habitat suitability for bats, which would inform the necessary survey effort. The habitat suitability was assessed using guidance from 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Bat Conservation Trust, 4th Edition, 2023). Table 4.1 of those guidelines provides an outline for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape. This should be applied using professional judgement. This groups a site into five categories based on habitat suitability for foraging and commuting bats which has been further summarised in 2, below.

Table 2: Criteria for Assessing Habitat Suitability for Commuting and Foraging Bats - Based on Table 4.1 (Collins, 2023)

Categories	Description for Habitats	Proposed Further Survey Requirements
High Suitability	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.	Automated static detector monitoring on a monthly basis and night-time bat walkover surveys (flight path and transect) on a seasonal* basis.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.	Automated static detector monitoring on a monthly basis and night-time bat walkover surveys (flight path and transect) on a seasonal* basis.
Low Suitability	Habitat that could be used by small numbers of bats as flight-paths 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 (not in a parkland situation) or a patch of scrub.	Automated static detector monitoring and night-time bat walkover surveys (flight path and transect) on a seasonal* basis.
Negligible Suitability	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.	No further surveys required

Categories	Description for Habitats	Proposed Further Survey Requirements
No Suitability	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).	No further surveys required
*Seasonal surveys should be increased to monthly where Annex II species are expected/ detected or if significant commuting routes are identified.		

Bat Activity Surveys

- 3.10 Bat activity surveys were undertaken because the site was considered to provide moderate suitability for bats. These surveys were undertaken to identify the value of the site to foraging and commuting bats or areas which may be important for exhibiting various social behaviours so that the effects of the proposals can be assessed.
- 3.11 In order to inform an impact assessment, where possible the bat activity surveys aim to identify:
- The presence or absence of bats, abundance and species using the site whilst away from the roost;
 - The usage of the habitats on the site by bats;
 - The temporal (both seasonally and nightly) and spatial distribution of recorded bat activity on site and any associations in terms of timings or particular features;
 - Any connectivity in terms of habitats within the site and/or the surrounding area;
 - The effect of any existing lighting on the existing bat population.
- 3.12 Bat activity surveys were designed and lead by an ecologist with expertise meeting the BCT level 3 competency.

Static Monitoring

- 3.13 Static (passive) monitoring was undertaken using an automated logging system (Wildlife Acoustics Inc. Song Meter® SM4BAT FS bat detectors with SMM-U2 microphones), positioned within the site to record bat registrations for at least five consecutive nights per month.
- 3.14 The number of static detectors used and location of deployment was determined to allow a representative sample of all habitats within the site to be monitored. The locations were subjectively predetermined using professional judgment in consideration of likely impacts and were positioned at least 15m away from any known or likely roosts. To provide rigorous analysis, static detectors were placed in the same location during each survey; locations are shown on Figure 1.
- 3.15 The devices were deployed for 5 consecutive nights during suitable weather conditions that were typical for the season/ month of deployment and were programmed to activate 30 minutes before sunset and record continuously until 30 minutes following sunrise.
- 3.16 A total of four static detectors were deployed each month during the following periods (to date);
- 18th to 23rd April 2024 (Position D redeployed 25th – 30th April due to technical malfunction);
 - 15th to 20th May 2024;
 - 12th to 17th June 2024;

- 10th to 15th July 2024;
- 7th to 11th August 2024;
- 4th to 9th September 2024; and
- 9th to 14th October 2024.

3.17 The data was analysed as soon as possible after retrieval of the static units using the SonoBat UK software package to assess the amount of bat activity on site based on the number and species composition of bat registrations recorded. Auto-analysis using SonoBat Classifier was undertaken, and subsequent manual vetting was then carried out based on internal statistical analysis to ascertain a robust confidence level in the auto-analysis process. The vetting process took measurements including peak frequency, inter-pulse interval, call duration and end frequency were taken to aid in species identification. This analysis was completed by a suitably experienced ecologist (analysts are audited internally for quality control purposes and to maintain consistent results).

Night-time Bat Walkover (Flightpath / Transects Surveys)

- 3.18 In line with current guidance (Collins, 2024) night-time bat walkovers are undertaken in two parts. The first part is undertaken by stationary surveyors positioned on habitat features most likely to be utilised as commuting routes by bats. Once conditions become too dark to see or once commuting activity has been observed, and has largely ended, surveyors begin a walked transect sampling all areas and habitats within the site, noting any bat activity that is heard or observed along the way. Whilst this includes two elements it is one survey designed to record information to provide further context to elements that static detectors cannot always identify such as bat behaviour or abundance of bats.
- 3.19 The first part of the survey to observe flightpaths involved 4 surveyors being positioned at predetermined locations as shown on Figure 1. The survey started just before sunset and lasted for between 30 minutes and one hour after sunset. After this the walked transect was started and continued until two to three hours after sunset. The route followed during each transect was repeated on each survey occasion, however the starting point was varied throughout the season. Figure 2 shows the route of the transect and the start/ end points of each survey.
- 3.20 Due to the size of the site, two transect routes were walked during the night-time bat walkover, with bat activity across the site noted during the survey.
- 3.21 Surveyors were equipped with Wildlife Acoustics Inc. Echo Meter Touch® bat detectors in conjunction with Echo Meter Touch® app and Samsung Galaxy Tab Active 3® during the night-time bat walkover surveys to detect bats and aid species identification.

Table 3: Night-time Bat Walkover Timings

Survey Date	Sunset Time	Start Time (commuting)	Start Transect		End Transect	
			North Route	South Route	North Route	South Route
25.04.24	20:22	20:22	21:37	21:28	23:07	22:58
20.08.24	20:18	20:18	21:23	21:23	22:23	22:28
25.09.24	18:55	18:55	20:08	19:59	21:08	20:59

Table 4: Night-time Bat Walkover Conditions

Survey Date	Start Temp	Wind Beaufort Scale	Rain	Cloud cover (%)
25.04.24	8°C	1	Dry	75%
20.08.24	16°C	1	Dry	15%
25.09.24	13°C	0	Moderate	100%

- 3.22 The data from the night-time Bat Walkover survey was analysed as soon as possible after the survey using the Kaleidoscope Viewer® (Wildlife Acoustics, Inc.) software package to assess the amount of bat activity on site by recording the number of bat registrations. Measurements including peak frequency, inter-pulse interval, call duration and end frequency were taken to aid in species identification. This analysis was completed by a suitably experienced ecologist (analysts are audited internally for quality control purposes and to maintain consistent results).

Limitations

- 3.23 To ensure the security of static detectors, these were not positioned in open habitats due to the presence of cattle and several public footpaths across the site.
- 3.24 Where calls could not be identified to species level, for example due to the lower quality of those recordings or where there are overlapping call parameters between species echolocation calls (particularly for *Myotis* and *Nyctalus* species bats) making a definite identification difficult, contacts were identified to genus only.
- 3.25 The analysis of the SM4Bat FS files recorded can highlight the presence of more than one bat if they are recorded simultaneously on the same sound file. However, it is not possible to determine whether consecutive sound files have been recorded as the result of multiple single bats passing the detector or a single individual repeatedly triggering the detector as it forages in close proximity for an extended period. Therefore, each sound file is counted as a single bat registration.
- 3.26 Whilst the static data cannot be used to estimate total bat numbers, calculation of the number of bat registrations per hour does reflect the relative importance of the detector location to foraging/commuting bats.
- 3.27 Owing to the difficulty of detecting brown long-eared bats, *Plecotus auritus*, due to the low volume of their calls it is considered that the nocturnal data may represent an underestimation of brown long-eared bat activity levels and numbers present.
- 3.28 The spring transect was undertaken in April when the night-time air temperature was a couple of degrees below optimal survey conditions. April is a 'shoulder' month, and it is recommended that professional judgement is applied to determine whether surveys are completed. The survey was undertaken during the bat active period, on what is considered to be a typical night during April this year, which overall was a wet and cold spring. Bats were recorded during the survey, indicating that although sub-optimal, temperatures were suitable.
- 3.29 The autumn transect was undertaken in adverse weather conditions with rain measured as being moderate to heavy during the survey. It is considered that the weather conditions are reflective of the time of year and as bats were recorded during the survey it is considered that the weather conditions pose no constraint to the validity of the survey results.

- 3.30 Technical difficulties relating to one of the June static bat detector units (Unit 2) resulted in a lack of static data for this unit. It is considered that, given the other data recorded across the site for June in combination with the data across the other months, this does not pose a constraint to the survey results and an accurate impact assessment of the development of the site on bats can still be undertaken.
- 3.31 Due to a technical error, the relative locations of the July statics cannot be determined. As such the data from these units will be considered in a geographical context of the site as a whole, rather than in relation to a specific location. As the data recorded for the four predetermined locations is available for the other monthly surveys, this limitation is not considered a significant constraint.

4.0 RESULTS

Desktop Study

- 4.1 Numerous records of bat species were identified from LRERC within 1km of the site, however, no records were returned for the site itself. Records of species included brown long-eared bats *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, long-eared bat species *Plecotus* sp., *Myotis* species, *Pipistrellus* species, and unidentified bat species *Chiroptera*; locations are shown on Figure 3. The majority of these records were located in association with the woodland to the north of the site. Full desk study results are presented in the Ecological Appraisal for the site.
- 4.2 Two records of granted bat European Protected Species Licences (EPSL) were recorded within 1km of the site boundary, which are as follows:
- Approximately 50m east of the site, Natural England reference 2014-3975-EPS-MIT – Common pipistrelle, non-breeding site. Licence valid between October 2014 and October 2015.
 - Approximately 50m east of the site, Natural England reference 2014-3975-EPS-MIT-1 – Common pipistrelle, non-breeding site. Licence valid between April 2015 and October 2015.
- 4.3 These EPSL are for the same location.

Field Surveys

Tree Surveys

Ground-Based Assessment of Trees

- 4.4 18 trees were assessed as likely PRF-M and 6 trees were assessed as likely PRF-I as shown in Figure 4. Appendix A summarises the features which were identified during the ground-based assessment.

General Habitat Suitability

- 4.5 The onsite hedgerows were considered to have value for commuting and foraging bats, providing dispersal corridors around the site and into to the wider environment, including to suitable off-site habitats including the woodland and stream to the southwest. The modified grassland and arable fields were considered to be of low value to bats, due to the lack of floristic diversity which would likely result in limited numbers of invertebrate prey. Other onsite habitats of value to bats included

the other neutral grassland, scrub parcels, broadleaved woodland, willow plantation to the west of the site, and the onsite ponds.

- 4.6 Several mature trees were identified as having potential to provide roosting habitat for bats.

Bat Activity Surveys

Static Monitoring

- 4.7 Unit locations onsite are shown on Figure 1 and a summary of results per unit is provided within Table 5 below. Please note, in this context, the term 'registration' refers to a unique sound files created over the course of a number of seconds. Based on this, one 'registration' does not necessarily refer to one bat as one bat can create a number of registrations, for example a bat which is foraging in the area surrounding the microphone for a sustained period of time

Table 5: Static Detector Results

Survey Period	Position	Unit Number	Avg. Registrations per Hour	Total Registrations	Most Recorded Species (number of registrations)	Other Species Recorded (number of registrations)
April 18 th – 23 rd / 25 th – 30 th	A	4	3.796	201	Common Pipistrelle 180	Soprano Pipistrelle 8 Noctule 8 <i>Myotis</i> Species 2 Nathusius' pipistrelle 1 <i>Nyctalus</i> Species 1 Brown Long-eared Bat 1
	B	15	4.306	228	Common Pipistrelle 218	Brown Long-eared Bat 5 Soprano Pipistrelle 2 Noctule 2 <i>Myotis</i> Species 1
	C	17	33.237	1760	Common Pipistrelle 1663	Soprano Pipistrelle 54 Noctule 16 Brown Long-eared Bat 10 <i>Myotis</i> Species 8 <i>Nyctalus</i> Species 4 Nathusius' pipistrelle 3 <i>Nyctalus</i> / <i>Eptesicus</i> 2
	D	8	1.853	94	Common Pipistrelle 84	Soprano Pipistrelle 4 Noctule 3 <i>Nyctalus</i> / <i>Eptesicus</i> 2 <i>Myotis</i> Species 1
May 15 th – 20 th	A	15	23.483	1059	Common Pipistrelle 933	<i>Myotis</i> Species 61 Nathusius' pipistrelle 20 <i>Nyctalus</i> Species 14 Soprano Pipistrelle 11 Brown Long-eared Bat 9 Noctule 8 <i>Nyctalus</i> / <i>Eptesicus</i> 2 <i>Pipistrellus</i> Species 1
	B	4	50.980	2299	Common Pipistrelle 2255	Soprano Pipistrelle 27 Nathusius' pipistrelle 6 Brown Long-eared Bat 5 Noctule 3 <i>Myotis</i> Species 3

Survey Period	Position	Unit Number	Avg. Registrations per Hour	Total Registrations	Most Recorded Species (number of registrations)	Other Species Recorded (number of registrations)
	C	16	23.018	1038	Common Pipistrelle 646	Brown Long-eared Bat 247 <i>Nyctalus</i> / <i>Eptesicus</i> 46 <i>Nyctalus</i> Species 33 Noctule 31 Soprano Pipistrelle 24 <i>Myotis</i> Species 6 Nathusius' pipistrelle 3 <i>Pipistrellus</i> Species 1 Serotine 1
	D	14	17.363	783	Common Pipistrelle 741	Noctule 12 Soprano Pipistrelle 9 Nathusius' pipistrelle 7 Brown Long-eared Bat 6 <i>Nyctalus</i> Species 5 <i>Nyctalus</i> / <i>Eptesicus</i> 2 <i>Myotis</i> Species 1
June 12 th to 17 th	A	3	2.550	104	Common Pipistrelle 73	Noctule 11 Brown Long-eared Bat 9 Soprano Pipistrelle 5 Nathusius' pipistrelle 2 <i>Nyctalus</i> Species 2 <i>Nyctalus</i> / <i>Eptesicus</i> 1 <i>Myotis</i> Species 1
	B	2 (Failed)	N/A	N/A	N/A	N/A
	C	1	62.803	2561	Common Pipistrelle 2293	Noctule 108 <i>Nyctalus</i> Species 70 Soprano Pipistrelle 58 Brown Long-eared Bat 18 <i>Myotis</i> Species 10 Nathusius' pipistrelle 2 <i>Nyctalus</i> / <i>Eptesicus</i> 2
	D	4	7.749	316	Common Pipistrelle 307	Noctule 6 Soprano Pipistrelle 2 <i>Myotis</i> Species 1

Survey Period	Position	Unit Number	Avg. Registrations per Hour	Total Registrations	Most Recorded Species (number of registrations)	Other Species Recorded (number of registrations)
July 10 th to 15 th	-	1	3.583	154	Common Pipistrelle 135	Noctule 7 Soprano Pipistrelle 4 Brown Long-eared Bat 4 <i>Myotis</i> Species 2 <i>Nyctalus</i> Species 1 <i>Nyctalus</i> / <i>Eptesicus</i> 1
	-	2	6.492	279	Common Pipistrelle 218	Noctule 20 Brown Long-eared Bat 14 Soprano Pipistrelle 12 <i>Myotis</i> Species 7 <i>Nyctalus</i> Species 6 Nathusius' pipistrelle 1 <i>Nyctalus</i> / <i>Eptesicus</i> 1
	-	3	19.988	859	Common Pipistrelle 813	Brown Long-eared Bat 18 Soprano Pipistrelle 12 <i>Myotis</i> Species 7 Nathusius' pipistrelle 5 Noctule 4
	-	4	23.385	1005	Common Pipistrelle 829	<i>Nyctalus</i> Species 84 Noctule 52 Brown Long-eared Bat 17 Soprano Pipistrelle 13 <i>Myotis</i> Species 8 <i>Nyctalus</i> / <i>Eptesicus</i> 2
August 7 th to 12 th	A	3	25.291	1267	Common Pipistrelle 1157	Soprano Pipistrelle 68 <i>Myotis</i> Species 18 Brown Long-eared Bat 14 Noctule 7 <i>Nyctalus</i> Species 3
	B	4	45.173	2263	Common Pipistrelle 2178	Soprano Pipistrelle 55 <i>Myotis</i> Species 17 Brown Long-eared Bat 7 Noctule 4 <i>Nyctalus</i> Species 2

Survey Period	Position	Unit Number	Avg. Registrations per Hour	Total Registrations	Most Recorded Species (number of registrations)	Other Species Recorded (number of registrations)
	C	2	39.883	1998	Common Pipistrelle 1765	Brown Long-eared Bat 73 Soprano Pipistrelle 61 Noctule 45 <i>Myotis</i> Species 26 <i>Nyctalus</i> Species 22 <i>Nyctalus</i> / <i>Eptesicus</i> 5 <i>Pipistrellus</i> Species 1
	D	1	34.234	1715	Common Pipistrelle 1654	<i>Myotis</i> Species 26 Soprano Pipistrelle 18 Noctule 9 <i>Nyctalus</i> Species 5 Brown Long-eared Bat 2 <i>Nyctalus</i> / <i>Eptesicus</i> 1
September 4 th to 9 th	A	6	8.436	499	Common Pipistrelle 359	Soprano Pipistrelle 54 <i>Myotis</i> Species 41 Brown Long-eared Bat 19 <i>Nyctalus</i> Species 13 Noctule 11 <i>Pipistrellus</i> Species 1 Barbastelle 1
	B	5	77.240	4569	Common Pipistrelle 4466	<i>Myotis</i> Species 57 Soprano Pipistrelle 29 Brown Long-eared Bat 9 Noctule 7 <i>Pipistrellus</i> Species 1
	C	16	13.896	822	Common Pipistrelle 577	Soprano Pipistrelle 76 <i>Nyctalus</i> Species 68 Brown Long-eared Bat 67 Noctule 13 <i>Pipistrellus</i> Species 9 <i>Myotis</i> Species 6 <i>Nyctalus</i> / <i>Eptesicus</i> 3 Barbastelle 3
	D	17	39.676	2347	Common Pipistrelle 2258	Soprano Pipistrelle 60 Brown Long-eared Bat 15 <i>Myotis</i> Species 7 <i>Nyctalus</i> Species 4 Noctule 3

Survey Period	Position	Unit Number	Avg. Registrations per Hour	Total Registrations	Most Recorded Species (number of registrations)	Other Species Recorded (number of registrations)
October 9 th to 14 th	A	21	1.341	95	Common Pipistrelle 74	<i>Myotis</i> Species 9 Brown Long-eared Bat 6 Soprano Pipistrelle 5 Noctule 1
	B	23	20.631	1465	Common Pipistrelle 1381	Soprano Pipistrelle 74 <i>Myotis</i> Species 6 Brown Long-eared Bat 4
	C	22	4.661	331	Common Pipistrelle 307	Soprano Pipistrelle 24
	D	20	3.577	254	Common Pipistrelle 244	Soprano Pipistrelle 4 Brown Long-eared Bat 4 <i>Myotis</i> Species 2

- 4.8 Relative usage of the site per species, as shown by percentage of all bat registrations recorded over the duration of the static monitoring period, is shown in Table 6 below.

Table 6: Species Recorded During Static Detectors Surveys

Species	Total Registrations	Percentage (%)
Common Pipistrelle	27808	91.579%
Soprano Pipistrelle	773	2.546%
Brown Long-eared Bat	583	1.920%
Noctule	391	1.288%
Nyctalus Species	337	1.110%
Myotis Species	334	1.100%
Nyctalus / Eptesicus	70	0.231%
Nathusius' pipistrelle	50	0.165%
Pipistrelle Species	14	0.046%
Barbastelle	4	0.013%
Serotine	1	0.003%

Static Monitoring Survey Summary

- 4.9 Common pipistrelle was the most frequent bat species recorded over the static monitoring surveys comprising approximately 92% of the contacts. Soprano pipistrelle was the second most common species recorded with unidentified *Pipistrellus* species, barbastelle *Barbastella barbastellus*, and serotine *Eptesicus serotinus* the least common.
- 4.10 Activity was spread across the site with more activity recorded in association with static Positions B and C than A and D. The units that recorded the highest activity were Positions B in September and Position C in June with 4569 and 2561 registrations respectively. The units that recorded the lowest activity were Position C in April and Position A in October with 94 and 95 registrations respectively.

Night-time Bat Walkover (Flightpath / Transect Surveys)

Spring 25th April 2024

Flightpath Surveys

- 4.11 Flightpath locations and commuting bats observed are detailed in Figure 5.
- 4.12 Position 1 recorded a non-visual commuting common pipistrelle at 20:57.
- 4.13 Position 2 recorded a common pipistrelle at 20:54 commuting in a northwestern direction along the urban edge/hedge H20.
- 4.14 Position 3 recorded one foraging common pipistrelle at 20:56 moving in a southerly direction along hedge H2, two commuting common pipistrelle (of which one was non-visual recorded at 21:04 and

one was commuting east along hedgerow H1 at 21:10), and one non-visual commuting brown long-eared bat at 21:06.

- 4.15 Position 4 recorded two common pipistrelle at 20:41 and 20:58 respectively (both of which were commuting in a westerly direction along the southern boundary of the site).

Activity Transect Surveys

- 4.16 No bat contacts were recorded during the transect survey on either route and as such no figure is provided for the walked transect survey.

Summer 20th August 2024

Flightpath Surveys

- 4.17 Flightpath locations and commuting bats observed are detailed in Figure 6a.
- 4.18 Position 1 recorded five common pipistrelle (of which three were commuting and two were foraging), four commuting soprano pipistrelle *Pipistrellus pygmaeus*, one commuting noctule *Nyctalus noctula* and one commuting brown long-eared bat.
- 4.19 Position 2 recorded eight common pipistrelle (of which four were commuting and four were foraging), three soprano pipistrelle (of which two were foraging and one was commuting), and one commuting noctule.
- 4.20 Position 3 recorded thirteen common pipistrelle (of which eight were foraging and five were commuting), four foraging soprano pipistrelle, three commuting noctule, two foraging unidentified *Myotis* species, and two brown long-eared (of which one was commuting and one was foraging).
- 4.21 Position 4 recorded six common pipistrelle (of which three were commuting and three were foraging).
- 4.22 The earliest recorded bat was a common pipistrelle recorded by Position 4 at 20:20. The earliest record of brown long-eared bat was at 20:58 by Position 3.

Activity Transect Surveys

- 4.23 The walked transect routes and bat contacts are detailed in Figure 6b.
- 4.24 During the walked transects, twenty bat contacts were recorded. These comprised seventeen common pipistrelle, one noctule, one serotine, and one brown long-eared bat.

Autumn 25th September 2024

Flightpath Surveys

- 4.25 No flightpaths were observed and as such no figure is provided for the flightlines portion of the survey.
- 4.26 Position 1 recorded no bats during the flightpath survey. Position 2 recorded one non-visual commuting common pipistrelle. Position 3 recorded two common pipistrelle (of which one was commuting and one was foraging). Position 4 recorded one non-visual commuting common pipistrelle.
- 4.27 The earliest recorded bat was a common pipistrelle recorded by Position 2 at 19:48.

Activity Transect Surveys

- 4.28 The walked transect routes and bat contacts are detailed in Figure 7.
- 4.29 During the walked transects, no bats were recorded on the northern transect route.

Night-time Bat Walkover Survey Summary

- 4.30 The night-time bat walkovers low levels of bat activity across the site. Features with the most recorded activity included the hedgerows and woodland edge habitats to the west. No activity was recorded in association with the central open areas of field compartments. Common and soprano pipistrelle made up most of the activity, with low levels of noctule, brown long-eared, and serotine also recorded. Behaviours recorded comprised commuting and foraging bats.

5.0 DISCUSSION & RECOMMENDATIONS

Impact Assessment

Trees

- 5.1 Twenty four trees with potential to support roosting bats were identified onsite; of which 18 had features which were suitable for use by multiple bats or maternity roosts (PRF-M), and six were identified with features which were suitable for use by individual or a small number of bats (PRF-I). All trees are currently proposed for retention, following ecological input into the masterplan, and they will be suitably buffered from development impacts such that there will be no/negligible impacts on tree roosting species and no further survey of trees is considered necessary.
- 5.2 Providing a sensitive lighting strategy should be implemented to avoid any indirect impacts. It is recommended that a lighting plan showing LUX levels and light spill is provided once detailed proposals are finalised, to confirm there will be no lighting impacts on trees. Additional advice on lighting is detailed below within the Artificial Lighting Section.
- 5.3 Should proposals change at the detailed design stage, requiring any trees to be removed or pruned, or where trees may be lit by artificial lighting, then further survey will be required. In line with new guidance, further survey should include aerial inspection (May-August/September). Alternatively, where trees cannot be safely climbed, nocturnal surveys (May-August/September) would be required. Should a roost be identified a Natural England European Protected Species Licence (EPSL) would be required.

General Habitat Assessment/ Bat Activity

- 5.4 The site provides potential foraging and commuting habitats to the local bat population, with mature tree lines, hedgerows, woodland edge, and scrub offering higher value habitats. The site was dominated by large open field compartments comprising grass ley and modified grassland, considered to provide minimal foraging value, however the presence of cattle onsite may attract insects associated with livestock, offering a very localised foraging resource. Potential suitable roosting habitat was present in the form of mature trees.
- 5.5 Across the static surveys completed to date, a total of eleven species or genera were identified using the site, five of which were also recorded during the night-time bat walkovers. Species assemblage comprised common pipistrelle, soprano pipistrelle, brown long-eared, noctule, *Nyctalus* species, *Myotis* species, *Nyctalus* / *Eptesicus* species, Nathusius' pipistrelle *Pipistrellus nathusii*, *Pipistrellus* species, barbastelle, and serotine.

- 5.6 Common pipistrelle is one of the UK's most common species and was the most frequently encountered across the site during the static bat detector surveys and the night-time bat walkover surveys. Brown long-eared bats comprised c. 2% of static registrations and *Myotis* species made up approximately 1%; both of which are considered more sensitive to artificial light. *Nathusius'* pipistrelle, unidentified *Pipistrellus* species, and serotine were recorded at a low frequency rate across the site. Four registrations of barbastelle, also a light sensitive species, were recorded across two of the September statics.
- 5.7 Activity levels during the spring and autumn night-time bat walkover surveys were very low overall. Bats were noted commuting along hedgerows, with six registrations for common pipistrelle and a single registration for a brown-long eared bat recorded in the spring, and six registrations for common pipistrelle recorded in the autumn. Activity levels were higher on the summer night-time bat walkover with 52 bat contacts recorded across all four surveyor locations during the flightline survey. Based on the size of site and habitat present the level of activity is also considered to be low overall. Of these contacts, 19 were visual and the flightpaths indicate movement in all directions across the site.
- 5.8 No significant levels of commuting activity by bats indicating the presence of a maternity roost were recorded in association with any hedgerows or linear habitat features.
- 5.9 No bats were recorded during the walked transect part of the April night-time bat walkover survey, suggesting that during April the site is used for commuting, offering limited foraging value to bats in spring. Habitats associated with bat activity in summer and autumn comprised hedgerows, urban edge, woodland, and woodland edge habitats, with the majority of activity concentrated along boundary hedgerows and the woodland edges. This level of activity is what would be expected of such features; with the woodland and tributaries of Rothley brook supporting invertebrate species and therefore providing a foraging resource for bats. Annex II and Notable Species
- 5.10 One species listed as Annex II under the Habitats Directive, barbastelle, was recorded onsite.
- 5.11 Barbastelle bats are an Annex II species of the Habitats Directive and a species of Principal Importance under S41 of the NERC Act (2006). JNCC note that: "*The barbastelle is widely distributed across southern England and across Wales but is likely to have been significantly under-recorded within its range.*"
- 5.12 Four registrations of barbastelle were identified in September during the static detector survey, of which one was recorded at Position A and three were at Position C: association with the willow plantation and woodland along the western site boundary. Barbastelles are known to become far more transitory in their nature during the autumn months as summer nursery roosts disperse and adult male bats begin mating behaviour and therefore can have much larger ranges in the autumn months. In addition, juvenile male bats can be pushed out of the nursery woodlands in the autumn period by the maternity colony to establish their own home ranges. Very small numbers (<5) of registrations on the same night in autumn, such as found on this Site, is most likely to represent an individual male commuting or foraging along the boundary and hedgerows.
- 5.13 Barbastelle records are present in all three of the surrounding counties (Leicestershire, Derbyshire and Nottinghamshire) and as barbastelles are known to have much larger ranges in Autumn it is not unexpected to have recorded them on this site as it is located in an area of green space that provides connectivity between the counties. The boundary features to the west of site are to be retained and buffered under current proposals and should be maintained as a dark corridor. Where

lighting of footpaths in proximity to these habitats is required, a sensitive approach should be implemented as outlined in the below lighting strategy.

- 5.14 As all four registrations were recorded on the same night in September, it is probable that these registrations relate to a single individual commuting across the site. As such, the development is not considered likely to have any significant impact on barbastelle populations.
- 5.15 Two notable species were recorded onsite, Nathusius' pipistrelle and serotine. Nathusius' pipistrelle were recorded on ten of the statics (Position A in April, May & June, Position B in May & July, Position C in May, June & July, and Position D in May), but not during the night-time walkovers. Two records of serotine were recorded onsite, one on the summer night-time bat walkover and one on the May static survey (Position C). Both records were in association with the woodland to the west of the site. The level of activity associated with these species is consistent with their known abundance at a regional and national scale and is not considered to be significant.
- 5.16 Based on the above, it is considered that proposals are likely to result in a minor impact on the local bat population at a site level. Levels of activity and species composition is typical for a site of this size and the habitats present within and bounding the site. The majority of species recorded are common and widespread generalists that will continue to use the site once the development is complete. The more notable Nathusius' pipistrelle and serotine were recorded at very low frequencies, and it is reasonable to assume that these species are using the site infrequently and largely to commute. As such, the site is likely to comprise a minor part of these species' ranges, and consequently the development of the site will have negligible impact on the favourable conservation status of both species.

Potential Impacts

- 5.17 Higher value habitats to bats, including the woodland parcels and hedgerows, are proposed for retention. This, in addition to the proposed newly planted hedgerows across the site and the scrub planting to act as a buffer to the woodland and watercourse along the western boundary, will allow the continued provision of commuting opportunities; retaining connectivity across the site and to the surrounding landscape. To ensure the woodland and hedgerows can continue to be utilised for commuting bats they will need to be retained as dark corridors, in accordance with the sensitive lighting scheme detailed below. The grassland and arable land will be lost under proposals, however, the proposed green infrastructure (GI) and National Forestry Contribution planting will more than mitigate for this loss. Habitats along the west and south of the site will consist of a mosaic of habitats including scrub, broadleaved woodland, wildflower grassland, and Sustainable Urban Drainage (SUDs) features. These habitats are of greater value to bats than the arable fields and modified grassland currently present onsite; the increased floristic diversity of these habitats will likely attract and provide microhabitats for a more diverse assemblage of invertebrates, increasing foraging opportunities for the local bat population.
- 5.18 Under current proposals, most of the internal hedgerows and the boundary features are to be retained. The retention of these features as green corridors and landscape buffers will allow bats to enter the development area and continue to utilise the area for foraging and commuting. However, this is dependent on minimising disturbance to these areas, particularly where segments of hedgerow are to be removed, as described below in the hop-overs and lighting sections. This is particularly important due to the presence of brown long-eared bats, *Myotis* and barbastelle bats

within the site as these are a light-sensitive species and require an adequate amount of canopy cover.

- 5.19 Green infrastructure should seek to provide habitats of greater value to bats, with areas of herb rich grassland and scrub to provide a foraging resource, with well-structured linear wood-edge habitats to provide movement corridors. Any trees felled as part of the development should be used to create a number of log piles located in the greenspaces and along the retained hedgerows. This will provide additional habitat for insects which will increase the number of prey items available to foraging bat species. It is considered that with the above recommendations the green infrastructure being created is not only sufficient for the existing bat species populations onsite but will increase the foraging opportunities available for the local bat population.
- 5.20 It is recommended that up to 135 bat boxes are included in the development to increase the availability of suitable roosting sites for bats. Bat boxes should be located on existing mature trees or integrated into suitably located houses/ garages at the development peripheries or next to habitat corridors.
- 5.21 Boxes will be installed following advice from an ecologist, at least 4m from the ground on buildings and 3m high on existing mature trees. Boxes should be positioned on south-eastern or south-western aspects, away from artificial light sources. This should include the provision of boxes in close proximity to newly created habitats within the onsite greenspace.
- 5.22 A range of models should be used consisting of the below types, or similar, to suit a range of species. These should include types suitable for use by *Pipistrellus* species, due to the levels of activity from this species group recorded onsite during surveys to date. Examples of suitable boxes include the 2F Schwegler Bat Box, 1MF Schwegler Bat and Swift Box, Beaumaris Woodstone Bat Box and the Low Profile WoodStone Bat Box. The provision of such features would be in accordance with National and Local Planning Policy helping to enhance biodiversity within the local area.

Hop-overs

- 5.23 In order to minimise any potential impact to commuting and foraging routes, in the event that any hedgerows are to be broken, such as H1, H5, and H9 (e.g., to incorporate proposed accesses/roads), the retained hedgerows should be reinforced with native species planting to create hop-overs to aid crossing of these breaks for bats. These measures are detailed in Highways Agency Interim Advice Note Nature Conservation Advice in Relation to Bats and require the retention or planting of semi-mature / standards to grow above the level of vehicle movement. Where the proposed breach of the hedgerow exceeds 7m in length the planting will also include the implementation of standard trees adjacent to the road/footpath which will grow to be above the level of vehicle movement. The lower branches of such trees should be regularly pruned back to the trunk to ensure that the most suitable flight line is above the maximum traffic height (where applicable low-level lighting columns may also be used in this instance to reduce the likelihood of the bats using the lower tree regions). The trees growth merges with that of the existing hedgerow to create an alternative route over the road. The implementation of such 'hop-overs' will allow continued echolocation across the break thereby allowing continued usage of the hedgerow as a foraging/commuting area. It will also reduce the potential for road traffic accidents to bats (and for birds).

- 5.24 Whilst the hop-overs will take a time to establish, the tree standards to be used shall be of an appropriate size and will be planted early in the development cycle. Whilst the breach will be present during the construction period until the hop-over is established due to the small size of the proposed breaches the impacts upon bats potentially commuting along them is considered to be minor.

Artificial Lighting

- 5.25 In particular, the presence of light sensitive species including brown long-eared, *Myotis* species, and barbastelle is of particular concern and must be accommodated accordingly, including with an adequate amount of canopy cover.
- 5.26 Illumination either of external lighting or light spill from the development may impact on bats commuting and foraging along the retained site boundaries, ponds and newly created habitats. The lighting and layout of the proposed development will be designed to minimise light-spill onto habitats both within and adjacent to it that are used by the local bat population foraging or commuting. This will be achieved by ensuring that the design of lighting is based upon guidelines presented in the Bat Conservation Trust 'Guidance Note GN08/23 Bats and Artificial Lighting At Night'³. Therefore, the lighting scheme will include the following:
- During the construction period no lighting is present at night.
 - Any upward lighting should be avoided.
 - The strategic use of landscaping and planting to avoid light spill on sensitive habitats (particularly hedgerows and woodland plantations)
 - The avoidance of direct lighting of existing hedgerows, trees, scrub, woodland, or proposed areas of habitat creation / landscape planting.
 - Unnecessary light spill will be controlled through a combination of directional lighting, low lighting columns, hooded / shielded luminaires or strategic planting.
 - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
 - Lighting that is incorporated into the development design should be LED luminaires due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
 - Where appropriate, luminaires on the site boundary will be fitted with light baffles to prevent light spill.
- 5.27 It is considered the above measures will be sufficient to ensure that any potential indirect impacts on the local bat population will be negligible. The implementation of a sensitive lighting plan, retention and buffering of all major habitat corridors, creation of new seminatural habitats, and the national forestry planting scheme will preserve and enhance the overall suitability of the site to support bats. Providing the above mitigation and recommendations are implemented, it is considered there will be no impact on the favourable conservation status of bats in the locality post-development.

³ Bat Conservation Trust (2023) Guidance Note GN08/23 Bats and Artificial Lighting At Night, Bat Conservation Trust [online] Available from: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

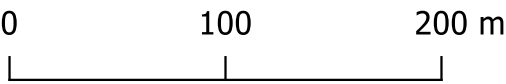



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Key

- Site Boundary
- Static Locations
- Flightline Surveyor Locations
- Flightline Viewing Directions





client
Lagan Homes

project
Land West of Ratby,
Leicestershire

drawing title
STATIC DETECTOR AND FLIGHTLINE
SURVEYOR LOCATION PLAN

scale @ A3
1:3500

drawn
KGF

issue date
5/9/2024

drawing / figure number
Figure 1

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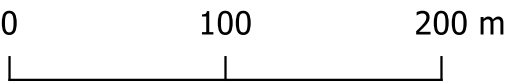
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Key

- Site Boundary
- Transect Route North
- Transect Route South

Start Points

- Spring
- Summer
- Autumn





client
Lagan Homes

project
Land West of Ratby,
Leicestershire

drawing title
WALKED TRANSECT ROUTE PLAN

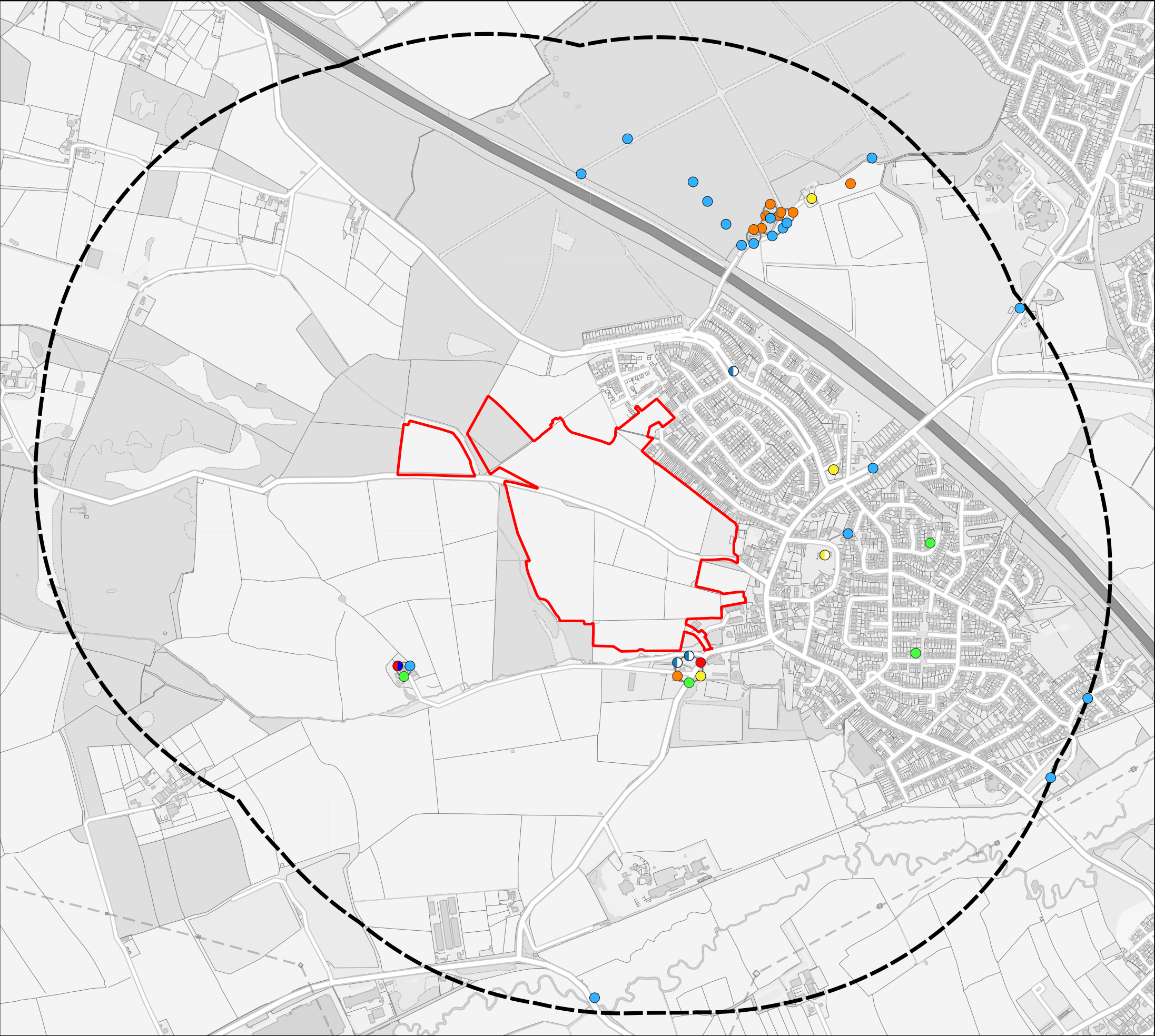
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2/12/2024

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Figure 2











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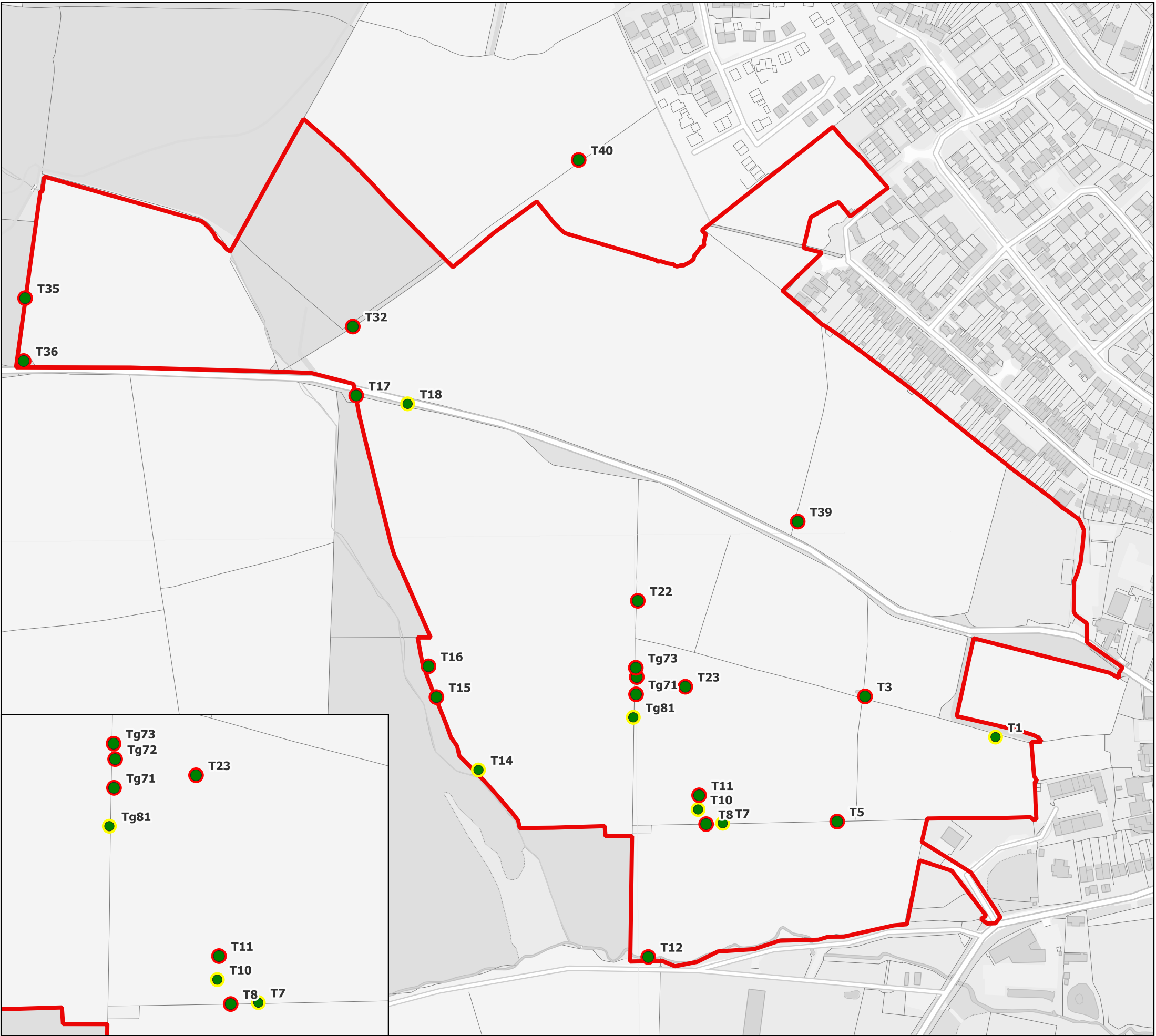
Key

-  Site Boundary
-  1km Buffer
-  Unidentified Bat Species
-  Brown Long-eared Bat
-  Common Pipistrelle
-  Unidentified Long-eared Bat Species
-  Unidentified Myotis Bat Species
-  Noctule
-  Unidentified Pipistrelle Bat Species
-  Soprano Pipistrelle



Key

- Site Boundary
- Trees with PRF-I
- Trees with PRF-M





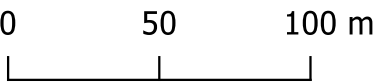
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Key

- Site Boundary
- Flightline Surveyor Location
- Bat Contacts
 - Common Pipistrelle
- Flight Arrow

Time	Plan Reference	Species	Behaviour	Passes	Direction
20:41	1	Common Pipistrelle	Commuting	1	West
20:54	2	Common Pipistrelle	Commuting	1	Northwest
20:56	3	Common Pipistrelle	Foraging	3	South
20:57	Non-Visual	Common Pipistrelle	Commuting	1	Unknown
20:58	4	Common Pipistrelle	Commuting	1	West
21:04	Non-Visual	Common Pipistrelle	Commuting	1	Unknown
21:06	Non-Visual	Brown Long-Eared	Commuting	1	Unknown
21:10	5	Common Pipistrelle	Commuting	1	East





client

Lagan Homes

project

Land West of Ratby,
Leicestershire

drawing title

FLIGHTLINES SURVEY RESULTS PLAN -
SPRING

scale @ A3

1:2500

drawn

KGf

issue date

5/9/2024

drawing / figure number

Figure 5

rev

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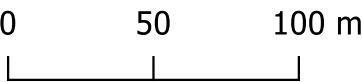
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Key

- Site Boundary
- Flightline Surveyor Location
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Noctule
- Flight Arrow

Bat contacts are provided on a separate page below.





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Lagan Homes

project
Land West of Ratby,
Leicestershire

drawing title
FLIGHTLINES SURVEY RESULTS PLAN -
SUMMER

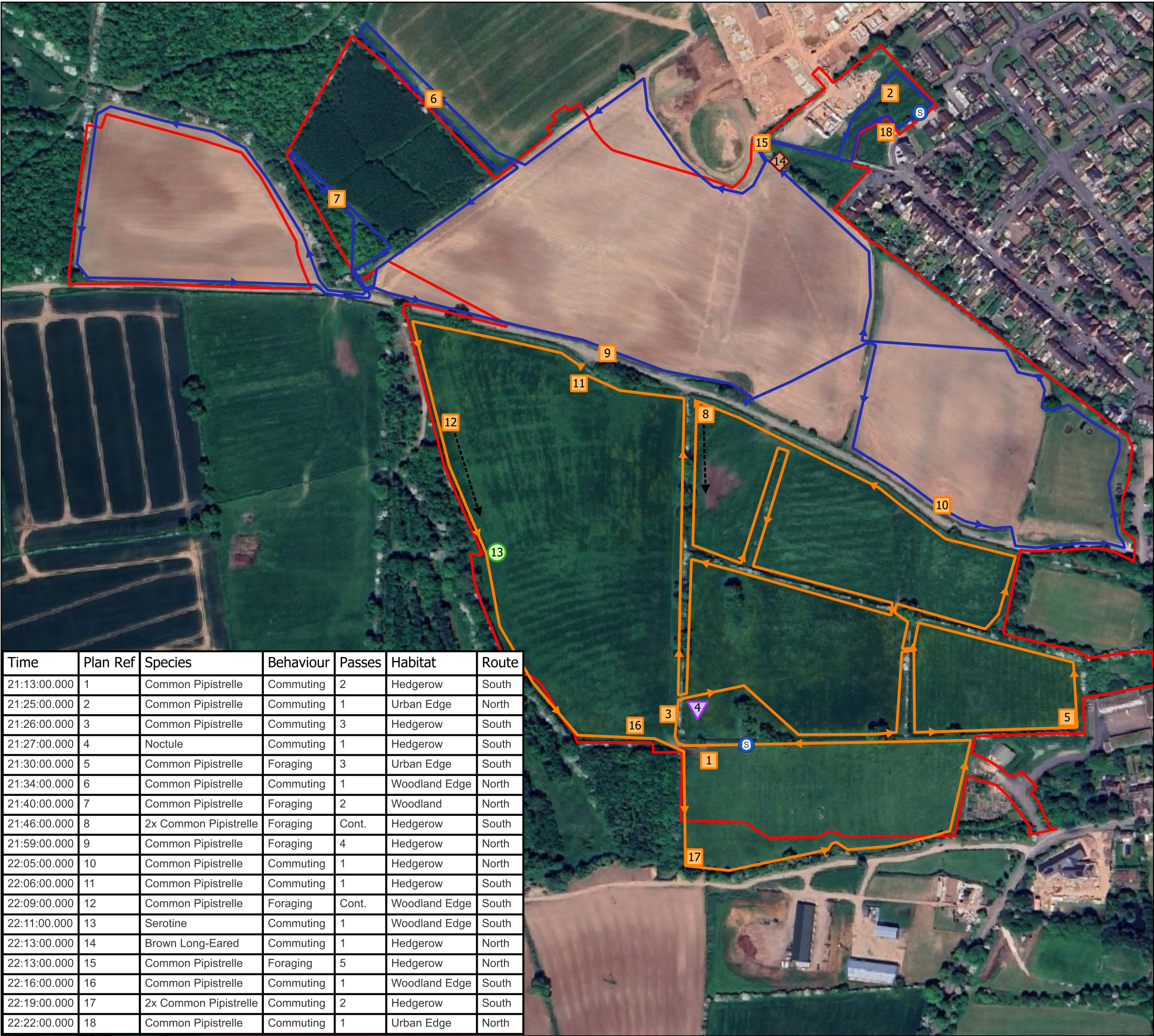
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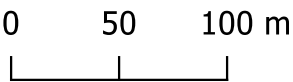
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Figure 6a



Time	Plan Ref	Species	Behaviour	Passes	Habitat	Route
21:13:00.000	1	Common Pipistrelle	Commuting	2	Hedgerow	South
21:25:00.000	2	Common Pipistrelle	Commuting	1	Urban Edge	North
21:26:00.000	3	Common Pipistrelle	Commuting	3	Hedgerow	South
21:27:00.000	4	Noctule	Commuting	1	Hedgerow	South
21:30:00.000	5	Common Pipistrelle	Foraging	3	Urban Edge	South
21:34:00.000	6	Common Pipistrelle	Commuting	1	Woodland Edge	North
21:40:00.000	7	Common Pipistrelle	Foraging	2	Woodland	North
21:46:00.000	8	2x Common Pipistrelle	Foraging	Cont.	Hedgerow	South
21:59:00.000	9	Common Pipistrelle	Foraging	4	Hedgerow	North
22:05:00.000	10	Common Pipistrelle	Commuting	1	Hedgerow	North
22:06:00.000	11	Common Pipistrelle	Commuting	1	Hedgerow	South
22:09:00.000	12	Common Pipistrelle	Foraging	Cont.	Woodland Edge	South
22:11:00.000	13	Serotine	Commuting	1	Woodland Edge	South
22:13:00.000	14	Brown Long-Eared	Commuting	1	Hedgerow	North
22:13:00.000	15	Common Pipistrelle	Foraging	5	Hedgerow	North
22:16:00.000	16	Common Pipistrelle	Commuting	1	Woodland Edge	South
22:19:00.000	17	2x Common Pipistrelle	Commuting	2	Hedgerow	South
22:22:00.000	18	Common Pipistrelle	Commuting	1	Urban Edge	North




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Key

- Site Boundary
- Transect Route North
- Transect Route South
- Start Points
- Common Pipistrelle
- Brown Long-eared
- Noctule
- Serotine
- Flight Arrow



client

Lagan Homes

project

Land West of Ratby,
Leicestershire

drawing title

WALKED TRANSECT SURVEY RESULTS PLAN -
SUMMER

scale @ A3

1:3500

drawn

KGf

issue date

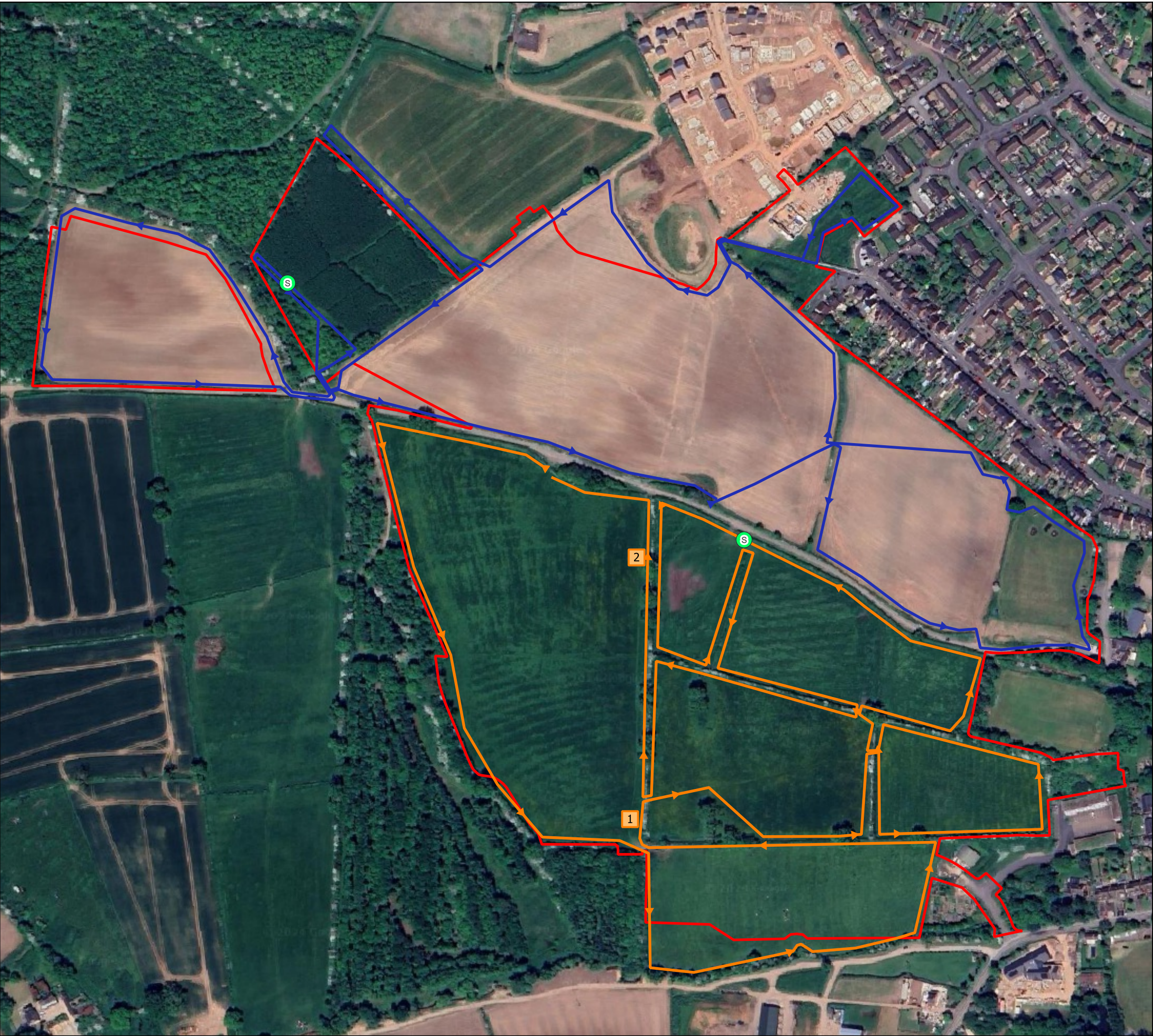
5/9/2024

drawing / figure number

Figure 6b

rev

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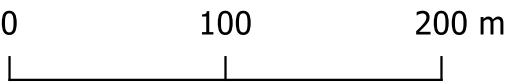
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Key

- Site Boundary
- Transect Route North
- Transect Route South
- Start Points
- Common Pipistrelle

Time	Reference	Species	Behaviour	Passes	Habitat
20:15	1	Common Pipistrelle	Foraging	2	Hedgerow
20:26	2	Common Pipistrelle	Foraging	Cont.	Hedgerow





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WALKED TRANSECT SURVEY RESULTS PLAN -
AUTUMN

scale @ A3

1:3500

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Figure 7

rev

-

APPENDIX A: GROUND BASED TREE ASSESSMENT RESULTS

Tree reference	Tree species	Feature	Roosting Feature Potential
T1	Ash, <i>Fraxinus excelsior</i>	Small knot hole (natural) 4m up on southeastern aspect.	PRF-I
T3	Ash, <i>Fraxinus excelsior</i>	4 knot holes (natural) 5m up on southern aspect. Branch tear out with potential cavities 3m up on western aspect.	PRF-M
T5	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole 9m up on southwestern aspect. Large split below woodpecker hole 7m up on the southwestern aspect. Hazard beam with apparent rot holes on underside 6m up on southeastern aspect. Possible knot hole (natural) above hazard beam on eastern aspect 8m up. Woodpecker hole 10m up on northern aspect.	PRF-M
T7	Ash, <i>Fraxinus excelsior</i>	Two large knot holes (natural) 5m up on western aspect.	PRF-I
T8	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole 5m up on southern aspect, had blue tits showing interest. Large rot hole behind ivy on southern aspect 4m up.	PRF-M
T10	Ash, <i>Fraxinus excelsior</i>	Knot hole (natural) 5m up on southeastern aspect.	PRF-I
T11	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole 4m up on northeastern aspect. Small hazard beam 4m up on western aspect.	PRF-M
T12	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole 5m up on north aspect.	PRF-M
T14	English Oak, <i>Quercus robur</i>	Knot hole (natural) facing east 11m up.	PRF-I
T15	Ash, <i>Fraxinus excelsior</i>	Rot holes in the base of a broken limb on southern aspect 7m up. Dead limb with rot holes on the eastern aspect 10m up.	PRF-M
T16	English Oak, <i>Quercus robur</i>	Knot hole (natural) 8m up near end of pruned limb on north aspect. Knot hole (natural) 6m up on eastern aspect widened by woodpecker. Knot hole (natural) 7m up on northeast that looks like may extend upwards.	PRF-M
T17	Ash, <i>Fraxinus excelsior</i>	A couple of knot hole/ cavity (from pruning) 6m up on west aspect. Butt rot on west aspect that has large opening into a hollow trunk.	PRF-M
T18	English Oak, <i>Quercus robur</i>	Knot hole (natural) 5m up on west aspect.	PRF-I
T22	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole on underside of limbs 5m up on southern aspect.	PRF-M
T23	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole 4m up on eastern aspect.	PRF-M

T32	English Oak, <i>Quercus robur</i>	Hazard beam close to the trunk with a gap 9m up on western aspect. Rot hole from pruning with possible cavity 4m up on western aspect. 4 holes from pruning wounds 4m up on northwestern aspect. Knot hole on northwest limb on the western aspect 6m up. Three other holes on the northwest limb on the northern aspect 6m up. Knot hole cavity from pruning 3m up on eastern aspect.	PRF-M
T35	Ash, <i>Fraxinus excelsior</i>	Butt rot with possible cavities in heart wood on eastern aspect. Rot in the remains at top of trunk 3m up on eastern aspect.	PRF-M
T36	Ash, <i>Fraxinus excelsior</i>	Knot hole (natural) 6m up on southern aspect. Butt rot with a number of rot holes 1m up on northern aspect.	PRF-M
T39	English Oak, <i>Quercus robur</i>	Knot hole (natural) 2m up on eastern aspect. Knot hole (natural) into cavity 3m up on western aspect.	PRF-M
T40	Ash, <i>Fraxinus excelsior</i>	Large knot holes (natural) 3m up on base of eastern limb, one on each side on the northeastern aspect.	PRF-M
TG71	Ash, <i>Fraxinus excelsior</i>	Large branch tear out with a cavity at the top, nesting material was present – possibly old squirrel dray 5m up on southern aspect.	PRF-M
TG72	Ash, <i>Fraxinus excelsior</i>	A couple of woodpecker holes 6m up on southern aspect.	PRF-M
TG73	Ash, <i>Fraxinus excelsior</i>	Woodpecker hole and a rot hole 6m up on eastern aspect.	PRF-M
TG81	Ash, <i>Fraxinus excelsior</i>	Split in a fork with rot 4m up on the northern aspect.	PRF-I