



Redrow

Land South of Burbage

ECOLOGICAL APPRAISAL

November 2023

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1.0 INTRODUCTION

- 1.1 Redrow commissioned FPCR Environment and Design Ltd. to complete an ecological appraisal of an area of land located to the south of Coventry Road, north of the M69 and to the east of Bullfurlong Lane, Burbage, Leicestershire (central OS grid reference SP 439 915).
- 1.2 The objective of the study was to determine habitats and species present within a defined boundary (hereafter referred to as the 'Site') and to make an initial assessment of their ecological importance and any potential ecological constraints to future development for a proposed residential development. Additional objectives were, where appropriate, to identify the need for additional surveys and to consider opportunities for ecological mitigation and enhancements within any future development design.

Site Location and Context

- 1.3 The site is located on the southern edge of the town of Burbage and comprises Burbage Fields Farm and the surrounding arable and pasture fields. Bullfurlong Lane and pasture fields border the site to the east, the southern boundary comprises a fence line, beyond which lies the M69 and associated barrier planting whilst the western boundary is bordered by playing fields and further arable and pasture fields. Coventry Road borders the north of the site with the existing residential area of Burbage extending beyond. In the wider landscape arable and pasture fields extend to the south, east and west with an urbanised area to the north.
- 1.4 The site comprised nine grassland field compartments (eight supporting improved grassland and one semi-improved), Burbage Fields farm buildings and the properties and associated gardens of 65 and 65a Coventry Road. Most field compartments were enclosed by hedgerows, some hedgerow with associated trees, whilst a brook ran ESE through the site to the southern boundary. Additional habitats present within the site included small areas of dense and scattered scrub, small area of marshy grassland, bare ground, standard trees, hardstanding track/roads and a small area of amenity grassland in the east.

Development Proposals

- 1.5 The proposals for the site are for a Hybrid planning application for; (a) a full planning application for 422 dwellings, public open space and associated infrastructure and (b) an outline planning application for a residential care home and up to 11no. self-built plots.

2.0 METHODOLOGY

Desk Study

- 2.1 In order to compile existing baseline information for the study area, relevant ecological information was requested from the Leicestershire and Rutland Environmental Records Centre (LRERC). In addition, the following resources were interrogated for additional information and context:
- Multi Agency Geographic Information for the Countryside (MAGIC) website¹;
 - Colour 1:25,000 OS base maps²; and
 - Aerial photographs from Google Earth³.
- 2.2 The geographical extent of the search area for biodiversity information was related to the significance of sites and species and potential zones of influence which might arise from development within the site. The consultation exercise was completed using the following scales:
- 15km around the site boundary for sites of International Importance (e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites);
 - 2km around the site boundary for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSI), National or Local Nature Reserves (NNR/LNR)); and
 - 1km around the site for non-statutory designated sites of County Importance (e.g. Local Wildlife Sites (LWS)) and protected or otherwise notable species recorded (including species of Principal Importance under S41 of the Natural Environment and Rural Communities (NERC) Act (2006))⁴, with data from the last 20 years used.

Field Survey

Flora

Extended Phase 1 Habitat Survey

- 2.3 An initial ecological site survey was completed on 4th November 2020 with update surveys undertaken on 4th August 2021 and 9th January 2023 by experienced botanists from FPCR with Field Identification Skills Certificate (FISC) levels 4 (2020/21) and 3 (2023).
- 2.4 An Extended Phase 1 Habitat Survey was undertaken which involved classification of the broad habitat types present using the system published by the UK Joint Nature Conservation Committee⁵, but with additional information collected beyond that required to determine the Phase 1 Habitat type where considered appropriate. The survey was also extended to assess the suitability of the habitats and other features to support protected and notable fauna species.
- 2.5 This involved a systematic walk over of the site by an experienced ecologist to classify broad habitat types and to particularly identify any Habitats of Principal Importance for the conservation of biodiversity as listed within Section 41 (S41) of the NERC Act (2006). The abundance of species was

¹ [Online]. <http://www.magic.gov.uk/>

² [Online]. www.ordnancesurvey.co.uk

³ [Online]. www.maps.google.co.uk

⁴ *The Natural Environment and Rural Communities Act 2006*. [Online]. London: HMSO Available at: <http://www.legislation.gov.uk/ukpga/2006/16/contents>

⁵ JNCC. 1990. *Handbook for Phase 1 habitat survey – a technique for environmental audit*. Peterborough: JNCC

quantified using the DAFOR scale, ranging from Dominant (>75%) through Abundant (75-51%), Frequent (50-26%) and Occasional (25-11%) to Rare (10-1%). Whilst the plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types.

Hedgerows

- 2.6 Hedgerows were surveyed using the Hedgerow Evaluation and Grading System (HEGS)⁷. The aim of the assessment is to allow the rapid recording and ecological appraisal of any given site in the UK, and to allow the grading of the individual hedgerows present, in order to identify those which are likely to be of greatest significance for wildlife. This method of assessment includes noting down: canopy species composition, associated ground flora and climbers; structure of the hedgerow including height, width and gaps and associated features including number and species of mature tree and the presence of banks, ditches and grass verges.
- 2.7 Using the HEGS methodology each hedgerow can then be given a grade. These grades are used to assign a nature conservation value to each hedgerow as follows:
- Grade -1, 1, 1+ High to Very High Value
 - Grade -2, 2, 2+ Moderately High to High Value
 - Grade -3, 3, 3+ Moderate Value
 - Grade -4, 4, 4+ Low Value
- 2.8 Hedgerows graded -2 or above are suggested as being a nature conservation priority.
- 2.9 The hedgerows were also assessed for their potential ecological value under the Hedgerow Regulations 1997 (Statutory Instrument No: 1160). Briefly, each hedgerow is evaluated by determining both the average number of woody native species present per 30m and the number of hedgerow associated features. These results were compared against the nature conservation criteria of the Hedgerow Regulations to ascertain whether a hedgerow is classed as 'Important' under these regulations. An assessment of archaeological importance as defined under the Hedgerow Regulations 1997 was beyond the scope of this assessment.
- 2.10 All hedgerows were also assessed as to whether they qualified as Habitats of Principal Importance (Priority Habitats), i.e. whether they consisted of 80% or more native woody species.

Fauna

- 2.11 During the survey, observations, identification and signs of any species protected under the following list of Acts and Regulations were noted:
- Part 1 of the Wildlife and Countryside Act 1981 (*as amended*)⁸;
 - The Protection of Badgers Act 1992⁹;

⁷ Clements, D. and Toft, R. 1992. *Hedgerow Evaluation and Grading System (HEGS), A methodology for the ecological survey, evaluation and grading of hedgerows.*

⁸ *The Wildlife and Countryside Act 1981 (as amended).* [Online]. London: HMSO Available from <http://www.legislation.gov.uk/ukpga/1981/69>

⁹ *The Protection of Badgers Act 1992 (as amended).* [Online]. London: HMSO Available from: <http://www.legislation.gov.uk/ukpga/1992/51/contents> .

- The Conservation of Habitats and Species Regulations 2017 (*as amended*)¹⁰; and
 - The NERC Act 2006 S41 Species of Principal Importance for the conservation of biodiversity.
- 2.12 Given the nature of the habitats within and immediately surrounding the study area, particular consideration was given to the potential presence of birds, bats, badger, amphibians and reptiles. In addition to evidence of field signs, the suitability of habitats to support these species was assessed, for example the suitability of mature trees to support roosting bats.
- 2.13 Additional species records were made where appropriate in order to make an initial appraisal of the presence of other species of nature conservation importance. For example, birds present within the study area were noted to determine the presence of any species of conservation concern¹¹.

Badgers *Meles meles*

- 2.14 The standard methodology as recommended by Harris, Creswell and Jefferies¹² was followed to complete a thorough search for evidence which would indicate the presence of badgers both on the site and locally (where accessible). Evidence of badger occupation and activity sought included:
- Setts: including earth mounds, evidence of bedding and runways between setts;
 - Latrines: often located close to setts, at territory boundaries or within favoured feeding areas;
 - Prints and paths or trackways;
 - Hairs caught on rough wood or fencing;
 - Other evidence: including snuffle holes, feeding and playing areas and scratching posts.

Bats

- 2.15 Trees were assessed on 4th November 2020, with update assessments in August 2021 and January 2023, from ground level for potential to support roosting bats and to enable recommendations with respect to the proposed works. During the survey Potential Roosting Features for bats such as the following were sought (based on p16, British Standard BS 8596:2015)¹³:
- 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;

¹⁰ *The Conservation of Habitats and Species Regulations 2017 – Statutory Instrument 2017 No.1012*. [Online]. London: HMSO. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>.

¹¹ Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. 2015. Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108:708-746.

¹² Harris, S., Creswell, P. & Jefferies, D. 1989. *Surveying for badgers. Occasional Publication of the Mammal Society No. 9.*

¹³ British Standard BS 8596:2015. *Surveying for Bats in Trees and Woodland – Guide*, October 2015.

- Compression of forks with occluded bark, forming potential cavities;
- Crossing stems or branches with suitable roosting space between;
- Ivy stems with diameters $\geq 50\text{mm}$ 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);
- Bat or bird boxes; and
- Other suitable places of rest or shelter not listed above.

2.16 Based on the above, trees were classified into general bat roost potential groups based on the presence of these features. Table 1 is broadly based upon Table 4.1 within Chapter 6 in the Bat Conservation Trust (BCT) Good Practice Guidelines and classifies the potential categories in accordance with the relevance of features present.

Table 1: Bat survey protocol for trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence. Works to a tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence. However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.
High Potential	A tree with one or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc.) and surrounding habitat. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Where the tree(s) will likely be affected by development a combination of aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree may be upgraded or downgraded based on findings. If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from Natural England will be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.
Moderate Potential	A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status).	Where the tree(s) will likely be affected by development a combination of aerial assessment by roped access bat workers and / or nocturnal survey during appropriate period (May to August). Following additional assessments, a tree may be upgraded or downgraded based on findings. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work
	Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.	If a roost site/s is confirmed a licence from Natural England will be required.
Low Potential	A tree of sufficient size and age to contain Potential Roosting Features but with none seen from ground or features seen only very limited potential. Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.	No further survey required but a precautionary working method statement may be appropriate.
Negligible / No potential	Negligible / no habitat features likely to be used by roosting bats	None.

* The Conservation of Habitats & Species Regulations 2017 (as amended) affords protection to “breeding sites” and “resting places” of bats. The EU Commission’s Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, February 2007 states that these are places “where there is a reasonably high probability that the species concerned will return”.

Tree Nocturnal Surveys

- 2.17 Two nocturnal (pre-dawn) surveys were completed on T5 as this tree will potentially be affected by the proposed development. For both surveys two surveyors were positioned to cover all potential roost features, with surveys undertaken from approximately 90 minutes prior to sunrise until 15 minutes after sunrise. The number and species of bats observed emerging or entering the tree was recorded.
- 2.18 Echo Meter Touch® Pro bat detectors were utilised in conjunction with the Echo Meter Touch® app to aid species identification. All of the nocturnal surveys were conducted in appropriate conditions, i.e. ambient temperature exceeding 10°C and little wind / rain (see Table 2).

Table 2: Tree Nocturnal Survey Conditions T5

Date	Sunrise	Wind (0-12)	Temperature °C	Cloud Cover %	Rain (0-5)
01.07.21	04:46	1	12-11	60-70	0
05.08.21	05:46	0	14-13	90-10	0

Buildings

Building Inspections

- 2.19 A building assessment was undertaken by a licensed bat ecologist (Natural England Class Licence Registration Number: 2015-10587-CLS) on 7th June 2021. This involved examination of the structure exteriors to determine their potential to support roosting bats. From this, any areas of likely / potential value for bats were assessed, and a decision made over the selection of locations for more detailed work if required. A note was made of any potential bat access points observed or suitable roost features. The building assessments were based on survey effort described by guidance provided by the BCT¹⁴ and Joint Nature Conservation Committee (JNCC)¹⁵.

¹⁴ Collins, J. (ed.) 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust.

¹⁵ Mitchell-Jones, A.J., & McLeish, A.P. Ed. 2004. *Bat Workers' Manual*. 3rd Edition. JNCC.

- 2.20 The building interiors were also visually assessed for evidence of bat activity and/or for the potential to be used by bats. Evidence of a roost is determined as the presence of a dead or live bat(s), concentrated piles or scattered droppings, food remains such as insect wing fragments as well as scratch marks and/or staining. This methodology takes in to account the statutory guidance (Natural England, 2001)¹⁶ and updated guidelines introduced by the BCT and JNCC.

Building Nocturnal Surveys

- 2.21 Those buildings considered to have potential to support roosting bats were subsequently surveyed via a series of nocturnal emergence / re-entry surveys.
- 2.22 During these surveys surveyors were positioned around the buildings such that all suitable access points previously identified could be observed. If bats were identified emerging from or returning to roost within the buildings the species, location of the roost and number of animals using the roost was recorded. General bat activity was also recorded over these surveys. Building surveys were completed from 15 minutes prior to sunset until 90 minutes following sunset and from 105 minutes prior to sunrise to 15 minutes after sunrise.
- 2.23 Echo Meter Touch® Pro bat detectors were utilised in conjunction with the Echo Meter Touch® app to aid species identification. Both nocturnal surveys were conducted during appropriate conditions, i.e. with ambient temperature exceeding 10°C and little wind / rain (Table 3).

Table 3: Building Nocturnal Survey Conditions

Date	Building	Sunset/Sunrise	Wind (0-12)	Temperature °C	Cloud Cover %	Rain (0-5)
04.08.21	B1, B2, B3, B4, B65	20:53	0-2	19-17	50-80	0
26.08.21	B1, B2, B3, B4	06:06	3-4	15-14	90-85	0

Foraging /Commuting – Activity Transects

- 2.24 Walked activity transect surveys were undertaken in May, July and September 2021. The primary objectives were to identify bat foraging areas, commuting routes and species utilisation of the site and adjacent areas. The transect routes were determined prior to survey in order to sample different areas of the study area. Point count stops were incorporated to provide further information regarding bat activity levels. Each point count was a minimum of five minutes long, during which time all bat activity at that location was recorded. The transects each commenced at sunset and lasted a minimum of 2 hours.
- 2.25 Transects were walked at a steady pace and when a bat passed by the species, time and behaviour was recorded on a study area plan. This information helps to form a general view of the bat activity present within the study area and highlights which habitat types are associated with bat activity. A Wildlife Acoustics Inc. Echo Meter Touch® bat detector was used in conjunction with an Echo Meter Touch® app and Apple Inc. iPad® to detect and record activity data.
- 2.26 The transects were undertaken when conditions were suitable (i.e. when the ambient air temperature exceeded 10°C and there was little wind and no rain) (Table 4).

¹⁶ English Nature 2001. *Bat Mitigation Guidelines*.

Table 4: Bat Activity Transect Survey Conditions

Survey Date	Sunset / Sunrise	Start / Finish	Temperature (°C)	Rain	Wind (1-5)	Cloud %
26.05.21	21:11	21:11 – 23:11	10	0	0	35
12.07.21	21:25	21:25 – 23:25	14	0	1	50
14.09.21	19:24	19:24 – 21:24	13	0	2	100

- 2.27 Post-survey, bat calls were analysed using Kaleidoscope© (Wildlife Acoustics) software package, by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. From this, the level of bat activity across the study area in relation to the abundance of individual species foraging and commuting along habitats was assessed.

Foraging / Commuting – Automated Surveys

- 2.28 A static passive recording broadband detector (Wildlife Acoustics Inc. Song Meter® SM4BAT FS bat detector) was deployed during August and September 2020 (as part of survey work for a separate application on the south eastern field within the site), and May, July and September 2021 for five consecutive nights on each occasion (Table 5). The static detector was placed along linear feature considered suitable to be used as commuting corridors by bats (Figure 10).
- 2.29 Passive monitoring was undertaken via an automated logging system with the output saved to an internal storage device. The detector was programmed to activate 30 minutes before dusk and record continuously until 30 minutes following sunrise.

Table 5: Automated Survey Conditions

Date	Timing and Weather conditions
26 th – 31 st August 2020	Sunset 19:54 to 20:03. Sunrise 06:16 to 06:10 Temperatures 7°C to 12°C (dropped below 10°C on 3 nights) Average wind speed 2 to 17km/h Heavy rainfall on one night, light rain on one night, and three nights no rain.
17 th – 22 nd September 2020	Sunset 19:12 to 19:02. Sunrise 06:53 to 06:46 Temperatures 7 to 12°C (dropped below 10°C on two nights) Average wind speed 3 to 17km/h No rain during the five nights.
27 th May – 1 st June 2021	Sunset 21:14 to 21:18. Sunrise 04:51 to 04:47 Temperatures 7°C to 21°C (dropped below 10°C on three nights) Average wind speed 4mph No rain during five nights
12 th – 17 th July 2021	Sunset 21:23 to 21:16. Sunrise 04:59 to 05:07 Temperatures 10 to 26°C Average wind speed 5mph A short period of rain occurred on the evening of the 13 th
14 th – 19 th September 2021	Sunset 19:20 to 19:10. Sunrise 06:41 to 06:48 Temperatures 10 to 23°C Average wind speed 3mph No rain during the five nights

- 2.30 The recorded data was analysed using the Kaleidoscope© software package.
- 2.31 If the detector recorded for more than five nights, only data from the first five nights are provided within this report, however the remaining nights were checked for any additional species recorded, including notable (e.g. Annex II) species.

Great Crested Newt *Triturus cristatus*Habitat Suitability Index

- 2.32 All waterbodies for which access was granted were subject to a Habitat Suitability Index (HSI) assessment in order to evaluate their suitability to support great crested newt (GCN). This provides a measure of the likely suitability that a water-body has for supporting breeding GCN^{18,19}. Whilst not a direct indication of whether or not a water body would support the species, generally those with a higher score are more likely to support GCN than those with a lower score, and there is a positive correlation between HSI scores and ponds in which GCN are recorded.
- 2.33 Ten separate attributes are assessed for each waterbody to assess their suitability to support GCN:
- | | |
|---------------------|------------------------|
| Geographic location | Presence of water-fowl |
| Pond area | Presence of fish |
| Pond drying | Number of linked ponds |
| Water quality | Terrestrial habitat |
| Shade | Macrophytic coverage |
- 2.34 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Pond suitability is then determined according to the scale set out in Table 6.

Table 6: HSI score and suitability for supporting GCN

HSI score	Pond Suitability
<0.5	Poor
0.5 - 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

- 2.35 An assessment of the suitability of terrestrial habitats within the site to support GCN was also completed. Suitable terrestrial habitat includes shelter habitat such as scrub and rank vegetation and habitat that could provide suitable hibernation sites such as rubble piles or tussock grassland.

Aquatic Surveys

- 2.36 Surveys to confirm the presence/absence of GCN in accessible waterbodies were completed in 2021 following methodologies recommended by Natural England and as set out in the GCN Mitigation Guidelines (English Nature, 2001)²⁰. This requires the completion of four survey visits between mid-March and mid-June, with two of these falling within the peak breeding survey season of mid-April to mid-May.
- 2.37 Aquatic surveys were conducted by experienced surveyors from FPCR on ponds where access was granted during suitable survey conditions with nightly temperatures of 5°C or above. On each survey occasion, bottle trapping and torching methodologies were undertaken, with egg searches

¹⁸ Oldham et al., 2000. *Evaluating the Suitability of Habitats for the Great Crested Newt (Triturus cristatus)*, *Herpetological Journal* 10 (4).

¹⁹ ARG UK Advice Note 5 Great Crested Newt Habitat Suitability Index, *Amphibian and Reptile Groups of the UK*, May 2010.

²⁰ English Nature 2001. *Great Crested Newt Mitigation Guidelines*.

conducted on those ponds in which GCN eggs had not already been confirmed. A summary of each method is provided below, and the survey condition details are provided in Table 7.

Table 7: Aquatic Survey Visit Schedule and Conditions

Date of Survey	Pond Surveyed	Temperature °C	Wind (0-5)	Rain (0-5)
08.04.21	P2, P3, P7, P8, P9, P10	5-10	1-2	0
19.04.21	P2, P3, P7, P8, P9, P10	3-14	0	0
28.04.21	P2, P3, P7, P8, P9, P10	4-10	1	1
10.05.21	P2, P3, P7, P8, P9, P10	12-16	0	0

Bottle Trapping

- 2.38 Bottle traps were set within the waterbodies in the evening at densities of one trap per 2m of shoreline (where feasible) and left overnight for inspection in the morning. Traps were partially submerged in the water leaving an air bubble in the bottle and secured by a cane marked with a high visibility tape to ensure relocation the following day. Care was taken to ensure that trapping did not occur during excessively warm weather, when the temperature inside the trap could rise considerably, reducing oxygen levels and potentially suffocating the newts.

Torching

- 2.39 Torching involved searching the waterbody after dusk using high-powered torches to scan the margins and potential display areas for newts. The perimeter of the pond was walked slowly recording any newts observed. Torch surveys are unsuitable within heavily vegetated and/or turbid ponds or after periods of heavy rain as visibility is diminished.

Egg Searching

- 2.40 Newts lay single eggs on leaves of aquatic plants or other suitable pliable material, after which the material is folded over the egg to protect it. GCN eggs can be distinguished from those of the other newts by their size, shape and colour. Submerged vegetation was examined for newt eggs and folded leaves gently opened to check for eggs. Once a GCN egg is identified, no further leaves need to be examined to minimise any further potential disturbance.
- 2.41 Appropriately licensed FPCR ecologists completed the aquatic surveys during suitable weather conditions i.e. when the ambient air temperature exceeded 5°C, with little/no wind and rain.

eDNA

- 2.42 An eDNA survey was carried out on a single pond (P22) as access was only granted by the landowner for an eDNA survey. The eDNA sampling was carried out to determine the presence/absence of GCN in accordance with industry guidance. This methodology has been approved by Natural England for the determination of GCN presence/absence.
- 2.43 Sampling was completed on 21st April 2021 by appropriately licenced ecologists who collected water samples using kits obtained from ADAS. The methodology comprised taking samples of agitated water from 20 locations around the pond perimeter and mixing thoroughly. 15ml of this water was then placed into each of 6 sterile sample tubes containing preservative, precipitates and a DNA sequence that was used for degradation control. The sample was stored in accordance with the protocols provided by the laboratory. The sample was then transported under suitable

conditions to the ADAS laboratory for analysis. Following analysis, results provided by the laboratory could have one of three outcomes which are described in Table 8 below.

Table 8: Description of Possible Results of eDNA Analysis

Result	Description
Positive	A positive result means that eDNA from GCN was detected, confirming the species has been present within the water in the 20 days preceding sampling. An eDNA score would be provided indicating the number of positive replicates from a series of twelve.
Negative	DNA from GCN was not detected; in the case of negative samples the DNA extract is further tested for PCR inhibitors and degradation of the sample.
Inconclusive	Controls indicate degradation or inhibition of the sample, therefore the lack of detection of GCN DNA is not conclusive evidence for determining the absence of the species in the sample provided. Inhibition can occur through unexpected chemicals in the sample.

Birds

- 2.44 An initial scoping Winter Bird Survey (WBS) was undertaken in November 2020. The results of this survey identified a typical assemblage of wintering bird species which would be unlikely to undergo a particularly adverse impact as a result of development.
- 2.45 An update WBS was then undertaken in December 2022 to determine whether the bird assemblage had undergone a significant change. During this survey, previously un-recorded species were noted which were more likely to be negatively impacted by proposals. It was therefore considered pertinent to undertake an additional three surveys during the winter season 2022-23.
- 2.46 The survey methodology employed was broadly based on that of territory mapping²¹ as used for the British Trust for Ornithology (BTO) Common Bird Census (CBC). Standard BTO species codes and symbols for bird activities were used to identify birds, and denote activity, sex and age where appropriate.
- 2.47 On each occasion the survey area was walked during a one-day period by an ecologist experienced in bird survey, between 08:00 and 16:00. Routes were mapped out prior to the surveys being undertaken, and where possible utilised footpaths. Surveys paid particular attention to open field interiors as these provide valuable winter foraging habitat for farmland birds. Linear features, such as hedgerows, tree lines and watercourses, and natural features such as areas of scrub were also regarded during surveys. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results.
- 2.48 A scoping breeding bird survey was undertaken in April 2021, during which it was determined that a full suite of breeding bird surveys was not necessary. An update survey was then carried out in May 2023. The breeding bird survey methodology broadly followed that of the wintering bird survey methodology, except that surveys commenced at dawn.

Limitations

- 2.49 During the static detector bat surveys, overnight temperatures fell below 10°C on one of the five nights during the May 2021 survey. In addition, there was overnight rain on one occasion during the July 2021 survey. These weather conditions were however typical of the respective months. The resultant dataset is therefore considered to be representative of bat activity at these times and the weather conditions do not constitute a constraint.

²¹ Bibby, C.J., N.D. Burgess & D.A. Hill, 2000. *Bird Census Techniques*. 2nd Edition. London: Academic Press

- 2.50 Where bat calls could not be identified to species level, for example due to a low call quality or where there are similarities between species echolocation calls (particularly for *Myotis* sp. and *Nyctalus* sp. bats) making a definite identification difficult, contacts were identified to family only.
- 2.51 The SM4BAT FS device records sound files of up to 12 seconds in length before a new file is created. The analysis of the resulting files can highlight the presence of more than one bat if they are recorded simultaneously on the same sound file. It is not generally possible however to determine whether consecutive sound files have been recorded as the result of multiple bats passing the detector, or by one bat repeatedly triggering the detector as it forages in close proximity for an extended period. Therefore, each sound file is counted as a single bat pass. The number of bat passes, for example, as expressed as an hourly average, does however provide an indication of the relative importance of the location sampled by the detector.

3.0 RESULTS

Desk Study

- 3.1 Locations of statutory and non-statutory sites referred to in the following section are illustrated on Figure 1, with summary details set out in Table 9.

Statutory Designated Sites

- 3.2 A single national level statutory designation was identified within 15km of the site: Ensor's Pool SAC. This designation is located approximately 8.8km west of the site and is designated for supporting the Annex II species white-clawed crayfish *Austropotamobius pallipes*. The site encompasses a waterbody within an abandoned clay pit, and marginal grassland.
- 3.3 Burbage Woods and Aston Firs SSSI, an ash-oak-maple semi-natural woodland, is located approximately 2km north east of the site, of which the southern part is also designated within Burbage Common & Woods LNR.
- 3.4 No other national statutory designations were identified within 2km.

Non-statutory Sites

- 3.5 A number of candidate, potential and historic LWS and a number of ECOSITES (Warwickshire designation) were identified within 1km of the site boundary (Table 9).

Table 9: Non-Statutory Designated Sites

Site Name (Ref: Fig 1)	Designation/s	Location	Summary Description
Stretton Croft	LWS, Ecosite	c. 530m SW	The site contains a wide diversity of habitats including bare soils, pioneer grassland, dry semi-improved and marshy grassland, vegetated spoil mounds, extensive tall herb, open and closed scrub, a stream, hedgerows and mature deciduous woodland. Habitats support a range of fauna and flora, including locally important populations of butterflies.
Burbage, Workhouse Lane Veteran Ash and Field Maple	Candidate LWS	c. 15m E	Veteran field maple <i>Acer campestre</i> and an ash <i>Fraxinus excelsior</i> considered to be of high arboricultural value.
Burbage, Land East of Lutterworth Road	Candidate LWS	c. 195m NE	A large complex of species rich grassland, a mature ash standard and a number of species rich hedgerows.
Three Pots Grassland	Candidate LWS	c. 390m NW	Grassland including marshy area in south.
Soar Brook Fields	Candidate LWS	c. 930m SE	Parish-level grassland which includes area of semi-improved neutral grassland. Not accessible.
Aston Lane Green Hedgerow	Candidate LWS	c. 935m NE	Species-rich hedgerow with trees.
Lash Hill Path Willow Tree	Candidate LWS	c. 975m N	Mature <i>Salix</i> sp. standard in boundary hedgerow at bottom of garden/alongside PROW.
Lash Hill Path Ash Tree	Candidate LWS	c. 980m N	Mature ash standard in hedgerow alongside footpath.
Hedgerow Oak Tree	Potential LWS	Located within the site boundary in hedgerow H9.	Mature oak <i>Quercus</i> sp. standard in hedgerow. Girth estimated >3m. Dead wood. No close access.

Site Name (Ref: Fig 1)	Designation/s	Location	Summary Description
Long Field Hedgerow	Potential LWS	Located along the northwest boundary of the site (H12).	Hedgerow with standards. No close access.
Horse Field Hedgerow	Potential LWS	Located along the northwest boundary of the site immediately southwest of Longfield Hedgerow (H25).	Hedgerow, no close access. No close access.
Farm Track Hedgerows	Potential LWS	Located within the west of the site (H22 and H27).	Hedgerow.
Burbage, Bullfurlong Lane Track Hedge (West)	Potential LWS	c. 5m W	Details not provided
Bullfurlong Lane Grassland	Potential LWS	c. 15m NW	The grassland contains 9 LWS indicator species and approximately 1ha of predominantly native scrub.
Burbage, M69 Roundabout Hedge	Potential LWS	c. 335m w	Details not provided
Burbage, Hedgerows North of the A5	Potential LWS	c. 120m S	Details not provided
Workhouse Lane Hedgerow 3	Potential LWS	c. 230m SE	Hedgerow
Workhouse Lane Hedgerow	Potential LWS	c. 320m SE	Hedgerow with trees.
Triangle Fields Ash Tree	Potential LWS	c. 320m W	Mature <i>Fraxinus excelsior</i> standard in hedgerow.
Lutterworth Road Oak Tree 3	Potential LWS	c. 535m SE	Mature oak <i>Quercus robur</i> standard in line of more recently planted trees.
Lutterworth Road Hedgerow, Oak and Ash	Potential LWS	c. 630m SE	Hedgerow, including mature oak and ash.
Lutterworth Road Hedgerow	Potential LWS	c. 940m SE	Hedgerow with ditch.
Island Hotel Lake	Potential LWS	c. 490m S	Standing water, comprising ornamental lake with mostly reinforced banks and surrounded by amenity grassland.
Ash Pole Spinney	Potential LWS, Ecosite, ASNW	c. 725m S	The area contains a wide mix of habitats, such as a marshy area, a number of areas of woodland and some improved pasture.
Woodland Extension	Potential LWS, Ecosite	c. 840m SW	As above
Workhouse Lane Hedgerow 2	Potential LWS	c. 250m E	Hedgerow.
Burbage, Lychgate Lane (South) Hedgerow	Potential LWS	c. 580m NE	Hedgerow.
Lychgate Lane Hedgerow	Potential LWS	c. 680m NE	Hedgerow with ditch and old layers.

Site Name (Ref: Fig 1)	Designation/s	Location	Summary Description
Burbage, Aston Lane Green Lane Hedge (North)	Potential LWS	c. 855. NE	Details not provided
Boundary Beech Tree	Potential LWS	c. 805m N	Mature beech <i>Fagus sylvatica</i> standard.
Playing Field Hedgerow	Potential LWS	c. 775m NW	Relic hedgerow with ditch and trees.
Sketchley Lane Oak Tree	Potential LWS	c. 855m NW	Mature oak standard on verge.
Pond	Historic LWS	c. 390m W	Details not provided
Pond in Improved Grassland	Historic LWS	c. 530m E	Details not provided
Grassland	Historic LWS	c. 780m E	Details not provided
Stream Flowing Through Semi-Improved Grassland	Historic LWS	c. 860m SE	Details not provided

Protected and Notable Species

Badger

- 3.6 Two badger records were identified during the desk study, both located approximately 650m south of the site.

Bats

- 3.7 A number of bat records were returned from within 1km of the site, comprising brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus* Daubenton's bat *Myotis daubentonii*, noctule *Nyctalus noctula*, unidentified *Pipistrellus* sp., soprano pipistrelle *Pipistrellus pygmaeus*, whiskered / Brandt's bat *Myotis* sp. and unidentified bats *Chiroptera*. The existing records included a brown long-eared bat roost associated with building B65 in the north of the site.

Water Vole and Otter

- 3.8 A single water vole *Arvicola amphibius* record was returned during the desktop study, located approximately 700m south of the site and dated 2016.
- 3.9 No records of otter *Lutra lutra* were returned from within 1km of the site.

Reptiles

- 3.10 The desktop study returned no reptile records from within 1km of the site.

Amphibians

- 3.11 A number of amphibian records were returned, comprising common frog *Rana temporaria*, common toad *Bufo bufo* and smooth newt *Lissotriton vulgaris*. The closest of which was a record of all three species located approximately 110m northeast of the site and dated 2013.

Notable Invertebrates

- 3.12 No records of notable invertebrates were identified within 1km of the site from the last 20 years.

Other Mammals

- 3.13 A number of hedgehog records were identified during the desk study, the closest of which was located approximately 270m north of the site and was dated 2020.

Birds

- 3.14 A number of bird records were returned from within 1km of the site, including notable species which could potentially make use of the habitats present on site such as barn owl *Tyto alba*, dunnoek *Prunella modularis*, house sparrow *Passer domesticus*, starling *Sturnus vulgaris*, swift *Apus apus*, brambling *Fringilla montifringilla*, fieldfare *Turdus pilaris*, hawfinch *Coccothraustes coccothraustes*, redwing *Turdus iliacus*, song thrush *Turdus philomelos* and swallow *Hirundo rustica*. The closest record to site is song thrush, located adjacent to the north western site boundary and dated 2021.

Field Survey

Phase 1 Habitat Survey (Figure 2 & Appendix A)

- 3.15 Habitat descriptions from the site are provided below, with habitat locations shown in Figure 2. A list of botanical species recorded is provided in Appendix A.

Grassland

Improved Grassland

- 3.16 The majority of the site comprised improved grassland field compartments which at the time of the surveys had a short homogenous sward approximately 5-10cm in height. A taller sward was noted within the two northern field compartments up to 40cm in height in 2021, however at the time of the initial survey and again in January 2023 these were grazed by cattle and heavily poached adjacent to field access gates.
- 3.17 The sward had a similar species composition across the site, being dominated by common grasses with low forb abundances. Perennial rye-grass *Lolium perenne* was the dominant grass species, with occasional creeping bent *Agrostis stolonifera*, locally occasional cock's-foot *Dactylis glomerata*, soft brome *Bromus hordeaceus* and Yorkshire fog *Holcus lanatus*, and with rare occurrence of crested dog's-tail *Cynosurus cristatus*, timothy *Phleum pratense*, sweet vernal grass *Anthoxanthum odoratum*, red fescue *Festuca rubra* agg. and rough meadow-grass *Poa trivialis*. White clover *Trifolium repens* formed locally occasional to locally frequent patches, while other herb species were rare in occurrence and included common mouse-ear *Cerastium fontanum*, dandelion *Taraxacum* sp. agg., fat hen *Chenopodium album*, greater plantain *Plantago major*, meadow buttercup *Ranunculus acris* and scentless mayweed *Tripleurospermum inodorum*. Creeping buttercup *Ranunculus repens* was recorded in damper areas, where the sward also supported occasional ruderal species such as nettle *Urtica dioica*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare*.
- 3.18 A number of the field compartments supported areas of tall ruderal vegetation at the margins. These areas largely comprised common nettle and creeping thistle.

Poor Semi-Improved Grassland

- 3.19 The north-eastern field compartment supported a greater diversity of grasses and herb species and more closely resembled species-poor semi-improved grassland. The sward height was c.20-40cm at the time of the 2021 survey and was more tussocky in structure than the other field compartments. The sward supported a lower abundance of perennial rye-grass and a higher abundance of common and creeping bent. Additional grass species comprised tufted hairgrass *Deschampsia cespitosa* and false-oat grass *Arrhenatherum elatius* occurring rarely within the sward, and additional herb species included rare occurrence of common cat's-ear *Hypochaeris radicata*, common sorrel *Rumex acetosa*, hard rush *Juncus inflexus*, soft rush *J. effusus* and great willowherb *Epilobium hirsutum*. At the time of the 2021 survey locally frequent broad-leaved dock was also noted throughout.
- 3.20 The update survey undertaken in 2023 confirmed this grassland had not significantly changed.

Marshy Grassland

- 3.21 The ground towards the south of the north-eastern field compartment supported an area of low-lying marshy grassland within a poorly drained area which was noted to be heavily poached at the edges during all survey visits. Species comprised locally frequent patches of brooklime *Vernonica beccabunga*, reed canary grass *Phalaris arundinacea*, redshank *Persicaria maculosa*, floating sweet-grass *Glyceria fluitans*, occasional great willowherb and Yorkshire-fog, with locally occasional patches of soft rush and creeping buttercup. Additional species recorded in rare occurrence comprised common ragwort *Jacobaea vulgaris*, creeping thistle and hard rush.

Amenity Grassland

- 3.22 Small area of amenity grassland were present in the east of the site and gardens of the properties in the north of the site, and adjacent to the farmhouse in the south-west. These areas were mown very short at the time of surveys (<3cm) and were dominated by perennial rye-grass with frequent springy turf moss *Rhytidiadelphus squarrosus*, occasional white clover, Yorkshire-fog, red fescue, creeping buttercup, and rare occurrence of common chickweed *Stellaria media* and dandelion.

Hedgerows and Tree Lines

- 3.23 The network of hedgerows bounding the overall site and individual fields is formed by 28 individual hedgerows. These were typically species-poor, and with the majority regularly managed to a height of 2-4m. All hedgerows excluding H4 and H15 were considered to qualify as both habitats of Principal Importance under S41 of the NERC Act (2006) and as local BAP habitat, supporting over 80% native species.
- 3.24 Hedgerows H1, H2, H4, H8, H9, H10, H12, H14, H19, H25 and H28 were assessed as being of 'moderately high to high' ecological value (scores of -2, 2 or 2+), whilst the remaining hedgerows were assessed as being of 'moderate' ecological value (scores of -3, 3 or 3+) against the HEGS assessment.
- 3.25 Hedgerows H9 and H13 were considered to be important under the Hedgerow Regulations due to their location adjacent to public rights of way (PRoW) and supporting priority features. A summary of the extent and ecological value of the hedgerows is provided in Table 10.

Table 10: Hedgerow Survey Summary

Ref	Canopy Species	Height / Width (m)	Length (m)	Sp. per Av. 30m	Associated Features	HEGS Grade	Import. HR ¹
H1	<i>Ps, Cm, Sn, Ac, Rc, Ia, Um</i>	2-4 / >3	135	3	no gaps, trees per 50m, ditch	2	No
H2	<i>Cm, Ps, Ia, Ca, Um, Fe</i>	>4 / 1-2	120	4	<10% gaps, trees per 50m, ditch	2	No
H3	<i>Cm, Fe, Ca, Ps, Sa</i>	2-4 / 1-2	75	3	<10% gaps, trees per 50m, ditch	-3	No
H4	<i>Ap, Sa, Cm, Ps, Fe, Um, Cl, Ah, Pc</i>	>4 / 1-2	75	4	<10% gaps, trees per 50m, ditch	2+	No
H5	<i>Cm, Ia</i>	1-2 / 1-2	135	3	<10% gaps	-3	No
H6	<i>Cm, Ps, Rc, Sn</i>	1-2 / 1-2	197	2.5	<10% gaps	3	No
H7	<i>Cm, Fe, Ps, Sn, Up</i>	2-4 / 1-2	78	3	<10% gaps	3	No
H8	<i>Ac, Ca, Cm, Fe, Ia, Lo, Pp, Rc, S sp., Sn</i>	2-4 / 1-2	141	4.5	<10% gaps, trees per 50m, ditch	2+	No
H9	<i>Ac, Cm, Cs, Ps, Qr</i>	1-2 / 2-3	95	4	Adjacent PRow, <10% gaps, ditch	-2	Yes
H10	<i>Cm, Fe, Rc, Up</i>	1-2 / 2-3	130	3	Adjacent PRow, no gaps, ditch	-2	No
H11	<i>Cm, Fe, Md, Sn, Up</i>	2-4 / 2-3	58	3	Adjacent PRow, trees per 50m, ditch	3	No
H12	<i>Ac, Ca, Cm, Fe, Ps, Rc, Sn, Up</i>	2-4 / 2-3	206	5.5	<10% gaps, trees per 50m, species-rich	2	No
H13	<i>Ap, Fe, Ps, Sn</i>	2-4 / 2-3	100	4	Adjacent PRow, <10% gaps, trees per 50m	3	Yes
H14	<i>Ac, Cl, Cm, Ia, Ps</i>	2-4 / 2-3	68	4	<10% gaps, trees per 50m	2+	No
H15	<i>Cl, Ia, Lo,</i>	1-2 / 0-1	15	3	<10% gaps	-3	No
H16	<i>Cm, Fe, Ia, Ps</i>	2-4 / 2-3	100	2	Adjacent PRow, no gaps, ditch	3	No
H17	<i>Cm, Cs, Ps, Rc, Sn, Up</i>	2-4 / 1-2	128	3.5	-	-3	No
H18	<i>Cm, Ia, Ps, Qr, Rc</i>	1-2 / 2-3	130	2.5	No gaps	3+	No
H19	<i>Ca, Cm, Fe, Ia, Ps, Rc, Sn, Up</i>	2-4 / 1-2	208	3.5	<10% gaps	-2	No
H20	<i>Cm, Fe, Rc, Up</i>	2-4 / 1-2	79	3	No gaps	3+	No
H21	<i>Ac, Cm, Fe, Ia, Lo, Rc, Up</i>	1-2 / 1-2	168	3	Ditch	-3	No
H22	<i>Ac, Cm, Ps, Sc, Up</i>	1-2 / 1-2	165	3	Adjacent PRow, no gaps	3	No
H23	<i>Ac, Cm, Ia</i>	1-2 / 1-2	81	2	Adjacent PRow, <10% gaps	3	No
H24	<i>Ac, Cm, Fe, Ps</i>	1-2 / 1-2	165	2	Adjacent PRow, defunct hedgerow	3	No
H25	<i>Ac, Ca, Cm, Fe, Ps, Sn, Up</i>	2-4 / 2-3	133	3	<10% gaps, trees per 50m, ditch	2+	No
H26	<i>Ac, Cm, Ia, Ps, Up</i>	1-2 / 2-3	142	2	<10% gaps, trees per 50m, ditch, heavily flailed	3	No
H27	<i>Ac, Cm, Cs, Fe, Ia, Rc, Sn, Up</i>	2-4 / 2-3	220	4.7	<10% gaps, species-rich	3+	No
H28	<i>Ap, Cs, Fe, Ps, Sc, Sn</i>	2-4 / >3	107	3	<10% gaps, trees per 50m,	2+	No

Species Key: *Ac* *Acer campestre* – field maple; *Ap* *Acer pseudoplatanus* – sycamore; *Ca* *Corylus avellana* – hazel; *Cl* *Cupressocyparis leylandii* – Leyland cypress; *Cm* *Crataegus monogyna* – hawthorn; *Cs* *Cornus sanguinea* – dogwood; *Fe* *Fraxinus excelsior* – ash; *Ia* *Ilex aquifolium* – holly; *Lo* *Ligustrum ovalifolium* – garden privet; *Ps* *Prunus spinosa* – blackthorn; *Qr* *Quercus robur* – English oak; *Rc* *Rosa canina* – dog-rose; *S* sp. *Salix* sp. – willow; *Sc* *Salix caprea* – goat willow; *Sn* *Sambucus nigra* – elder; *Up* *Ulmus procera* – English elm.

- 3.26 Hawthorn *Crataegus monogyna* and/or blackthorn *Prunus spinosa* were the dominant species within the majority of the hedgerows, with occasional elder *Sambucus nigra*, English elm *Ulmus procera*, field maple *Acer campestre* and holly *Ilex aquifolium* also occurring. A small number of mature tree standards were present within boundary hedgerows, with species including ash *Fraxinus excelsior* and English oak *Quercus robur*.
- 3.27 Typical of arable hedgerows, the ground flora was largely ruderal in its composition with occasional common nettle, hogweed *Heracleum sphondylium*, cleavers *Galium aparine* and bramble *Rubus fruticosus* agg. Additional climbing species included locally occasional ivy *Hedera helix*.
- 3.28 A small number of tree lines were also present within the site, including a line of predominantly field maple in the east of the site which extended further north and south of the site boundary. The section within the site comprised mature field maple with hawthorn, dog-rose *Rosa canina* and blackthorn growing at the base.
- 3.29 Two tree lines are present in the west of the site comprising a line of goat willow *Salix caprea*, ash and sycamore *Acer pseudoplatanus* on a raised mound adjacent to hedgerow H28, and a line of conifers along a raised mound in the farmyard area.

Trees and Scrub

- 3.30 Small areas of bramble scrub were present at the north-western and north-eastern corners of the south-eastern field compartment. A larger area of dense scrub comprised of blackthorn, hawthorn, field maple and bramble with some young hornbeam *Carpinus betulus* and Norway spruce *Picea abies* trees was present in the north of the site, separating two field compartments.
- 3.31 In addition, scattered scrub, largely comprising blackthorn, hawthorn and encroaching bramble was present along the southern boundary. Additional mature and semi-mature trees were also present across the site associated with the boundary hedgerows, gardens and around the farm complex which included mature stands of Leyland cypress *Cupressocyparis lelandii*, hybrid black poplar *Populus x canadensis*, holly and silver birch *Betula pendula*.
- 3.32 A small number of standard trees were present to the south of the site, which largely comprised semi-mature to mature specimens including oak and ash. Three young silver birch were also present in the east of the site in an area of amenity grassland.

Watercourse

- 3.33 A brook flowed east-southeast across the site from Bullfurlong Lane in the northwest to the M69 at the southern site boundary. The watercourse is culverted at its southern end, with a small section with concrete sides and base that extends under the M69. The channel varied from approximately 0.5 to 2m width, with the banks varying between c.0.5 -1m height. The watercourse supported a shallow (<20cm) depth of gently flowing water at the time of the surveys, with the channel largely overshadowed/covered by adjacent hedgerows and associated scrub. At the time of the update survey in 2021 some marginal/aquatic vegetation was recorded which included frequent fool's water-cress *Apium nodiflorum* and rare occurrence of brooklime, water dock *Rumex hydrolapathum*, bittersweet *Solanum dulcamara* and gypsywort *Lycopus europaeus*, with locally occasional creeping buttercup along poached edges.
- 3.34 Parts of the watercourse have the appearance of a hedgerow ditch where it flows at the base of the associated hedgerow in a narrow, shallow channel.

- 3.35 During the survey work undertaken in 2021, the section along hedgerow H10 was dry.

Pond

- 3.36 Three ponds were present within the site. These comprised two small ornamental garden ponds in the north of the site (P21 and P22) and a field pond in the south of the site (P7).
- 3.37 Pond P7 supported a shallow depth of water during the surveys undertaken (c.20cm) and was recorded to support frequent water starwort *Callitriche* sp., occasional brooklime and floating sweet-grass. The pond was heavily shaded by an adjacent thicket of hawthorn and blackthorn on all sides.
- 3.38 Pond P21 comprised a small pond (<1m²) set within an area of hardstanding within a garden. This pond was largely covered in duckweed during survey work undertaken in 2020 and was noted to have dried out in spring 2021.
- 3.39 Pond P22 comprised a slightly larger garden pond (c.1m x 0.5m) which was set within a garden against a boundary fence, and was surrounded by mature trees, shrubs and a managed lawn. This pond was approximately 30cm deep and covered by mesh to prevent leaf litter entering the pond. No aquatic / marginal vegetation was recorded at the time of the survey.

Buildings, Hardstanding and Gardens

- 3.40 Two small sections of hardstanding were present within the east of the site. One comprised a section of tarmac road whilst the other comprised a section of brick road. Both supported negligible vegetation at the time of survey.
- 3.41 A farm complex and associated farmyard was present in the south-west of the site which comprised hardstanding and ten buildings used for agricultural, commercial and residential purposes. Further descriptions of the buildings are provided below in relation to roosting bats. Sparsely growing herbs and arable weeds were recorded along the edges of the agricultural buildings, and from cracks in the hardstanding. Species included occasional annual meadow-grass *Poa annual*, locally occasional willowherb, and rare occurrence of common knotgrass *Polygonum aviculare*, groundsel *Senecio vulgaris* and spear thistle.
- 3.42 Two residential properties were present at the northern site boundary, encompassing buildings, associated gardens and hardstanding in the form of driveways and patios.

Fauna

Badger

- 3.43 No evidence of badger, such as setts, latrines or tracks, was recorded within the site or within 30m (where accessible) during the survey work undertaken in 2020, 2021 or 2023.

Bats - Roosting

Trees

- 3.44 The majority of trees within the site were recorded to be of good health and were considered to have negligible suitability to support roosting bats (in accordance with Table 1). Eight trees within

the site or at the site boundaries however were identified as presenting features suitable to potentially support roosting bats (Table 11 and Figure 2).

Table 11: Tree Roost Assessment Summary

Tree	Species	Roost features	Potential to support roosting bats
T1	English oak	Knot hole at c.4m elevation Gap around felled limb on SW aspect	Moderate
T2	Ash	Hollow in broken limb on SW aspect	Low
T3	Ash	Split limb at c.6m elevation, heavy ivy covering	Low
T4	English Oak	Vertical split in dead branch at c.5m elevation on the E aspect Loose bark on felled limb at c. 4m elevation, W aspect Knothole with hollow in branch c.7m elevation, N aspect	Moderate
T5	Ash	Knot hole with cavity at c.7m elevation, E aspect Cavity in torn limb on the SE aspect	Moderate
T6	Ash	Dense ivy	Low
T7	Ash	Knot hole on the SW aspect	Low
T8	Willow	Cavity at c.2m elevation on the S aspect	Moderate

Tree nocturnal surveys

- 3.45 No bats were observed to emerge or return to roost within tree T5 during either of the nocturnal surveys undertaken. Bat activity in the vicinity of the tree was limited to common pipistrelle, soprano pipistrelle and noctule foraging and commuting behaviour including along hedgerow H8.

Buildings

Building Assessments (Figure 3 and Appendix D)

- 3.46 B1a was a single-storey timber framed outbuilding, with a corrugated sheet lean-to roof adjoined to B1b. Potential bat access points were observed via a large open side on the northwest aspect which left the building open to wind. *B1a was assessed to have negligible potential to support roosting bats.*
- 3.47 B1b was a single-storey brick-built outbuilding with a pitched slate tiled roof. Potential bat access points were observed via gaps around the door, along the timber lintels, in amongst the gable verges and under the tiles and ridge tiles. *B1b was assessed to have low potential to support roosting bats.*
- 3.48 B2a was a single-storey brick-built outbuilding with a lean-to corrugated metal sheet roof adjoined to B2b. Potential bat access points were observed via gaps in the door frame. *B2a was assessed to have low potential to support roosting bats.*
- 3.49 B2b was a single-storey brick-built outbuilding with a pitched interlocking composite tiled roof. Structural features of note were present in the form of gables and soffits. Potential bat access points were observed via gaps in the soffits on the southeast aspect, the open doors and windows on the northern aspect, gaps along the timber beams, in the gable verges and under the tiles and ridge tiles. The slate tiles were not internally lined. *B2b was assessed to have low potential to support roosting bats.*

- 3.50 B2c was a single-storey brick-built outbuilding with a flat composite corrugated sheet roof adjoined to B2b. Potential bat access points were observed via gaps along the door frames door and beneath the corrugated roof sheets. *B2c was assessed to have negligible potential to support roosting bats.*
- 3.51 B3a was a two-storey brick-built barn with a pitched clay tiled roof. Part of the northwest aspect of the roof had been repaired with a corrugated sheet. Potential bat access points were observed via the air bricks, an open gable window, stable doors, gaps along the timber beams and gaps under the tiles and ridge tiles. Internally the slate tiles were not backed. *B3a was assessed to have moderate potential to support roosting bats.*
- 3.52 B3b was a single-storey brick-built barn with a pitched clay tiled roof adjoined to B3a. Potential bat access points were observed via the stable doors, gaps along the timber beams, and gaps under the tiles and ridge tiles. *B3b was assessed to have low potential to support roosting bats.*
- 3.53 B3c was a single-storey timber framed outbuilding with a corrugated sheet lean-to roof adjoined to B3b. Potential bat access points were observed via large openings that exposed the building interior to the weather. *B3c was assessed as having negligible potential to support roosting bats.*
- 3.54 B4a was a three-storey brick-built farmhouse with a slate tiled hipped roof. Potential bat access points were observed via gaps under the slate tiles and ridge tiles, gaps in the brickwork and along timber lintels, and under the flashing around the chimney. Internal access for survey of the building interior was not possible. *B4a was assessed as having moderate potential to support roosting bats.*
- 3.55 B4b was a three-storey brick-built farmhouse adjoined to B4a with a pitched slate tiled roof. Potential bat access points were observed via gaps in the brickwork, and gaps under the tiles, ridge tiles and window lintels. Internal access for survey was not possible. *B4b was assessed as having moderate potential to support roosting bats.*
- 3.56 B4c was single-storey brick-built annex to B4b with a mono-pitched slate tiled roof. Potential bat access points were observed via gaps in the brickwork, and gaps under the tiles and window lintels. Internal access for survey was not possible. *B4c was assessed as having low potential to support roosting bats.*
- 3.57 B5a was a large steel framed barn with a curved corrugated sheet roof. This building was completely open on two sides leaving the building open to wind. *B5a was assessed as having negligible potential to support roosting bats.*
- 3.58 B5b was a small steel framed annex to B5a with corrugated sheet walls and a corrugated lean-to roof. The building was completely open on its southern aspect leaving it open to the weather. *B5b was assessed as having negligible potential to support roosting bats.*
- 3.59 B5c was a large timber framed agricultural building with a flat corrugated metal sheet roof. Structurally the building was single skinned with corrugated metal sheets and timber panels. Building 5d was a smaller timber framed corrugated metal sheet annex to B5c. Potential bat access points were observed via large openings on both buildings that left these structures open to the elements. *Buildings 5c and 5d were considered to offer negligible potential to support roosting bats.*
- 3.60 Buildings B6, B7, B8 and B9 were a series of steel and timber framed farm buildings with corrugated sheet roofs. These buildings were completely open on one or more sides and were assessed as having *negligible potential to support roosting bats.*

- 3.61 B65 was a two-storey brick-built house with a pitched slate tiled roof. Internally the tiled roof was lined with an under sheet. Potential access points for bats were limited to occasional gaps under the roof tiles and ridge tiles.
- 3.62 The desk study returned a pre-existing record of a brown long-eared roost for this building dated 2016 and relating to ecological data submitted as part of a previous planning application 16/00726/OUT (refused). Surveys undertaken by Echolocation in 2016 recorded evidence of a small transient brown long-eared bat roost within the roof space, however nocturnal surveys recorded no evidence of current bat occupation.
- 3.63 The building assessment undertaken by FPCR in June 2021 recorded the roof to be in good condition, with signs of relatively recent repair/replacement. No evidence of roosting bats was observed internally or externally during the assessment. *B65 was therefore assessed as having low potential to support roosting bats.*
- 3.64 The single-storey brick-built garage associated with B65 had a pitched tiled roof backed internally with roofing felt. This building was assessed as having *negligible potential to support roosting bats.*
- 3.65 B65a was a single-storey brick-built bungalow with a tiled roof. A roof void was present internally and the tiled roof was felt backed. *B65a was assessed as having negligible potential to support roosting bats.*

Nesting birds

- 3.66 Incidental evidence of nesting birds in the form of disused nests was observed in B65, B3 and B5.

Building nocturnal surveys

- 3.67 No bats were observed to emerge or return to roost within any of the surveyed buildings (B1, B2, B3, B4 and B65) during either of the nocturnal surveys. Bat activity in the vicinity comprised common pipistrelle, soprano pipistrelle and noctule foraging and commuting behaviours.

Bats - Commuting and Foraging

Activity Transect Surveys

May 2021 Transect Survey (Figure 7)

- 3.68 Bat activity during the spring transect survey was generally low level (13 bat contacts) and dominated by common pipistrelle, with occasional noctule and limited *Myotis* sp. activity also recorded. Common pipistrelle activity comprised foraging and commuting behaviour primarily along the brook corridor. Noctule activity comprised commuting and foraging behaviour along H8 and around point counts A and F. A single *Myotis* sp. individual was recorded foraging around point count G approximately two hours after sunset.

July 2021 Transect Survey (Figure 8)

- 3.69 Bat activity during the summer transect was again dominated by common pipistrelle (12 of the 18 contacts), with occasional noctule passes also recorded. Common pipistrelle activity comprised foraging, commuting and social behaviour along field boundary hedgerows, including those along the brook corridor. Noctule activity was recorded within the north and east of the site.

September 2021 Transect Survey (Figure 9)

- 3.70 Bat activity during the autumn transect was limited to common pipistrelle (9 contacts) and soprano pipistrelle (3 contacts), with activity primarily concentrated along the boundary hedgerows and brook corridor and comprised commuting, social and foraging activity.

Automated Static Bat Detector Surveys

- 3.71 The static detectors deployed within the site across in 2020 and 2021 recorded generally low levels of activity, with the highest count rate being 1443 registrations recorded along hedgerow H1 during the five-day recording period in September 2020.
- 3.72 Activity recorded across the statics was dominated by common pipistrelle (c.75% of total recorded across all surveys) along with occasional *Myotis* sp. (c.12% of total registrations across all surveys) and rarely recorded noctule, soprano pipistrelle, Nathusius' pipistrelle *Pipistrellus nathusii*, unidentified *Pipistrellus* sp. and *Nyctalus* / *Eptesicus* sp.

Table 12: Summary of Static Detector Results

Bat Species	Date and Location (Hedgerow Number)				
	August 2020 (H1)	September 2020 (H1)	May 2021 (H3)	July 2021 (H19)	August 2021 (H28)
Common pipistrelle	266	791	684	341	938
Myotis species	27	413	42	3	12
Brown long-eared bat	11	157	1	0	59
Noctule	12	59	20	47	24
Soprano pipistrelle	1	11	1	0	40
Pipistrellus species	0	10	4	40	7
Nathusius' pipistrelle	0	1	0	0	0
<i>Nyctalus/Eptesicus</i>	0	1	1	0	1
Total Registrations	317	1443	753	431	1081

Water Vole and Otter

- 3.73 The majority of the watercourse within the site was heavily shaded and it generally lacked aquatic or marginal species at the time of survey. The brook was considered to be sub-optimal for use by both water vole and otter, largely due to the shallow depth of water and high levels of overshadowing. No evidence for the presence of either species was recorded during the survey work undertaken.

White Clawed-Crayfish

- 3.74 The bed of the watercourse largely comprised silt and lacked cobbles/boulders. In addition, parts of the watercourse were noted to be dry during the survey work undertaken in 2021. Therefore, the watercourse is considered to provide negligible opportunities for white clawed-crayfish.

Reptiles

- 3.75 The short grassland recorded within the site provided negligible shelter and only sub-optimal foraging opportunities for reptile species.
- 3.76 The grassland was short-grazed right up the hedgerows, of which several had limited vegetation along their bases such that the hedgerow network within the site is also considered to be sub-optimal habitat for reptiles.

Great Crested Newt

Terrestrial Habitats

- 3.77 The improved grassland that characterised much of the site was of sub-optimal value to GCN, providing minimal shelter and no hibernating opportunities. The hedgerow bases did provide both dispersal and hibernation opportunities for the species, but were largely restricted to the site boundaries, with some suitable hedgerows in the south eastern extent of the site. Other habitats such as the areas of marshy grassland did offer some suitable, though limited foraging and commuting opportunities for GCN.

Aquatic Habitats – HSI Assessment

- 3.78 Examination of OS maps / publicly available aerial photographs and previous survey work undertaken in the vicinity of the site identified 22 waterbodies on or within 500m of the site (P1-P22, Figure 11). Of these, two on-site ponds indicated on OS mapping were confirmed to no longer exist (P4 and P6) during the phase 1 survey in 2021, with P4 representing a widening of a hedgerow ditch which supported shallow flowing water.
- 3.79 No access was granted to pond P5 (though this was observed through the hedgerow to be dry during the phase 1 survey in 2021), or ponds P11 or P12. As such, no survey work was undertaken on these three ponds.
- 3.80 Ponds P15-P20 were located to the south of the M69 which was considered a barrier to dispersal and as such no survey work was undertaken.
- 3.81 Ponds P1, P13, P14 and P21 were recorded to be dry at the time of the aquatic surveys undertaken.
- 3.82 A summary of access and results of HSI, aquatic and eDNA surveys are provided in Table 13, with the raw data used in the calculation of the HSI scores provided in Appendix C.

Table 13: Summary of access and survey work undertaken on waterbodies within 500m.

Pond	HSI	GCN Survey
P1	Dry	Dry
P2	0.53 Below Average	Presence/absence survey – no GCN
P3	0.58 Below Average	Presence/absence survey – no GCN
P4	None-existent (widening in ditch channel)	Non-existent (widening in ditch channel)
P5	No access – observed to be dry through hedge	No access
P6	None-existent	Non-existent
P7	0.58 Below Average	Presence/absence survey – no GCN
P8	0.46 Poor	Presence/absence survey – no GCN
P9	0.86 Excellent	Presence/absence survey – no GCN

Pond	HSI	GCN Survey
P10	0.90 Excellent	Presence/absence survey – no GCN
P11	No access	No access
P12	No access	No access
P13	No access	Yes
P14	No access	Yes
P21	0.57 Below Average	Dry
P22	0.61 Average	eDNA - negative

GCN Results summary

- 3.83 No GCN were identified within any of the waterbodies surveyed during the aquatic surveys carried out by FPCR in 2021. Ponds P1, P13, P14 and P21 remained dry throughout the survey period. As an incidental result of these aquatic surveys, smooth newts were identified within ponds P2, P3, P9 and P10 (peak count 16). Access was only granted to obtain a water sample for pond P22, which returned a negative result for the presence of GCN eDNA (Appendix E).

Birds

- 3.84 A full analysis of bird surveys is provided in the standalone Bird Report (FPCR, 2023), however a summary of survey information is provided below.

Breeding Birds

- 3.85 A total of 25 bird species were recorded within the site during the breeding bird survey. Of these, seven were considered notable species as they appear on one or more of the following:
- Schedule 1 of WCA
 - Species listed as SPI in NERC S.41; or
 - Birds of Conservation Concern (BoCC) Red or Amber lists.
- 3.86 Of the 25 species recorded, three were confirmed as breeding, including house sparrow *Passer domesticus*, a notable species which was observed carrying food for young. Two species were considered probable breeders, both of which were species of low conservation concern. The remaining 20 species recorded were considered possible breeders (18) or non-breeders (2).
- 3.87 During the 2023 update breeding bird survey, a total of 25 species were recorded. Of these, 13 were considered notable species. Six species were confirmed as breeding within the site, including notable species starling, song thrush, dunnock and greenfinch. A further five species were considered probable breeders, including notable species house sparrow and linnet *Linaria cannabina*. Figure 11 shows the general recorded locations of breeding birds and a full list of results is provided in Appendix F.
- 3.88 The internal areas of the grassland fields provided limited breeding opportunities for birds, however some species such as song thrush *Turdus philomelos* and starling *Sturnus vulgaris* did utilise these areas for foraging. The hedgerows and scrub provided breeding and foraging opportunities for common and widespread generalist species, with notable species including song thrush, dunnock *Prunella modularis*, house sparrow and linnet *Linaria cannabina*. Other species utilising these

habitats include blackbird *Turdus merula*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, woodpigeon *Columba palumbus* and a range of common/widespread warbler, finch and tit species.

- 3.89 Several bird species were just recorded flying over the site, including notable species greylag goose *Anser anser*.

Winter Birds

- 3.90 A total of 38 bird species were recorded within the survey area during the 2022-23 winter bird surveys. Of these, 21 were considered notable. Figure 12 shows their general recorded locations, while a full list of results is provided in Appendix G.
- 3.91 The internal parts of the grassland fields provided foraging opportunities for wintering birds, including woodpigeon, song thrush, redwing *Turdus iliacus* and fieldfare *Turdus pilaris*. The hedgerows and scrub a provided foraging opportunity for common and widespread generalist species, with notable species including song thrush, dunnoek, wren and greenfinch *Chloris chloris*. Other species utilising these habitats included blackbird, robin and a range of common and widespread warbler, finch and tit species.
- 3.92 Several bird species were just recorded flying over the site, including notable species black-headed *Chroicocephalus ridibundus* gull and lesser black-backed gull *Larus fuscus*.

4.0 DISCUSSION AND RECOMMENDATIONS

Statutory Designations

- 4.1 Ensor's Pool SAC is located approximately 8.8km west of the site and as such will not be directly impacted as a result of the proposed development. This SAC is designated for the presence of white-clawed crayfish, with the pressures on this population identified within the Site Improvement Plan²⁸ being 'changes in distributions'. The application site is not directly linked to this SAC via watercourses and given the intervening distance and modest scale of the development, no significant impact to the conservation status of the crayfish population is anticipated as a result of the proposed development. As such, the proposed development is considered very unlikely to significantly impact the resident white-clawed crayfish population or the functional integrity of the SAC.
- 4.2 Burbage Woods and Aston Firs SSSI is located approximately 2km north east of the site and at this distance no direct effects are anticipated as a result of the construction works associated with the proposed development.
- 4.3 In terms of the completed development, the site is not highlighted within Natural England's SSSI Impact Risk Zones as having any likely risks to this SSSI as a result of residential development. The SSSI encompasses many established walking routes and footpaths and a car park such that it is well set up for recreational use. Furthermore, the proposed scheme incorporates an area of public open space which will provide alternative on-site recreational activities, including dog walking.
- 4.4 No significant negative impacts are therefore anticipated on any statutory designations as a result of the proposed development.

Non-statutory Designations

- 4.5 Several potential Local Wildlife Sites were identified within 1km of the site including Hedgerow Oak Tree pLWS, Long Field Hedgerow pLWS and Horse Field Hedgerow pLWS which are each located within or immediately adjacent to the application site boundaries. These are to be retained within the proposals and will be protected during the constructions using heras fencing around appropriate root protection areas.
- 4.6 There are also a number of candidate Local Wildlife Sites within 1km of the site, the nearest of which is Burbage, Workhouse Lane Veteran Ash and Field Maple cLWS located to the east of the site.
- 4.7 A single LWS was identified within 1km to the west of the site. Stretton Croft LWS and Ecosite is designated for the diversity of its habitats as well as for populations of locally important butterfly and bird species it supports, including spotted flycatcher *Muscicapa striata*, a Red List species.
- 4.8 No LWS will be subject to land take or any other direct effects as a result of the construction phase. The provision of areas of open space for recreational activities such as dog walking is included within the proposals, and as such it is considered unlikely that there will be any significant increases in recreational pressures on the LWSs identified.

²⁸ Natural England. 2014. *Site improvement Plan Ensor's Pool*.

- 4.9 There are therefore no foreseeable impacts on the functional integrity or ecological value any of the identified non-statutory ecological designations, and as such these sites are not considered to pose a constraint to the proposed development of the site.

Habitats

- 4.10 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland and linear habitats in the National Planning Policy Framework (NPPF), or non-statutory site designation),
 - Identification as a Habitat of Principal Importance for biodiversity under the NERC Act (2006) and consequently identification as a Priority Habitat within the LBAP.
- 4.11 Under the NPPF, development should seek to contribute a net gain in biodiversity with an emphasis on improving ecological networks and linkages where possible.
- 4.12 The improved grassland, tall ruderal vegetation, hardstanding and scrub at the site are all considered to hold no more than low ecological value or botanical interest. As such, the loss of these habitats is not considered to pose a constraint to the proposed development.
- 4.13 Habitats of more significant ecological value are present at the site in the form of marshy grassland, poor semi-improved grassland and pond. The marshy grassland and pond will be retained within the proposed development, whilst incorporation of an extensive area of public open space will provide opportunities for habitat enhancement in the form of the following:
- wildflower grassland creation and management within areas of public open space (areas of grassland to be retained and enhanced where possible);
 - native tree and scrub planting;
 - attenuation features to be designed to benefit wildlife; and
 - management of retained and created habitats for the long-term benefit of biodiversity.
- 4.14 Several hedgerows were recorded across the site including hedgerows assessed as having 'moderately high to high' ecological value under the HEGS assessment. The majority of the existing hedgerow network on site is to be retained under the proposals and will be suitably protected during construction using standard best practice guidance, including BS583729 for trees and hedgerows. Retained hedgerows will be buffered within the scheme as part of the green infrastructure where possible.
- 4.15 Hedgerows H13 and H6 will be lost to the proposed development in order to facilitate the provision of units and associated roads within the scheme. H13 was assessed as being important under the Hedgerow Regulations (wildlife and landscape criteria) due to its location adjacent to a public rights of way (PRoW), the number of species and supporting features, while H6 was assessed as being of high ecological value under the HEGS assessment. The loss of these two hedgerows, along with small sections of H11, H24, H19, H1 and H2 (largely for access and internal roads) will be compensated via the creation of new native hedgerow planting that will exceed in length the total extent of hedgerow lost.

²⁹ BS 5837:2012 Trees in relation to design, demolition and construction- Recommendations.

- 4.16 The on-site watercourse is also to be retained under the proposed development and will be largely buffered by a buffer zone of minimum width 5m, except some areas near hedgerow H9 and H10 (where the watercourse is more representative of a ditch within the hedgerow). To ensure this feature is protected and to prevent pollution/siltation, all construction works must follow good practice guidance set out within Guidance for Pollution Prevention 5 (GPP5): Works and maintenance in or near water³⁰.

Fauna

- 4.17 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2017 (as amended). Some species, for example badgers, also have specific protective legislation (Protection of Badgers Act 1992). The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.
- 4.18 This guidance states that as the presence of protected species is a material consideration in any planning decision, it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.
- 4.19 In addition to protected species, there are those that are otherwise of conservation merit, such as species of principal importance for the purpose of conserving biodiversity under the NERC Act (2006). These are recognised in the NPPF which advises that when determining planning applications, LPAs should aim to conserve and enhance biodiversity.

Badger

- 4.20 No evidence of badger was recorded during the survey work undertaken. As such, badgers are not considered to pose a constraint to the proposed development.

Bats

Roosting Bats

- 4.21 All the trees assessed as being suitable to support roosting bats within the site are to be retained by the proposed development and will be largely buffered from the built development (within hedgerow buffers or areas of public open space). Tree T5 will be retained with a hedgerow that is to form a garden boundary, however no evidence of any bat roosting behaviour was recorded in association with the tree during the surveys undertaken in 2021.
- 4.22 No evidence of any bat roosting behaviour was recorded in association with any of the buildings on the site during the surveys undertaken in 2021.
- 4.23 On the basis of the above, roosting bats are not considered to pose a constraint to the proposed development.

³⁰ 2017 Guidance for Pollution Prevention – Works and maintenance in or near water. Available from: <https://www.netregs.org.uk/media/1303/gpp-5-works-and-maintenance-in-or-near-water.pdf>

- 4.24 Due to the highly transitory nature of bat roosts, in the event works are not carried out within two years of the most recent nocturnal surveys being undertaken, assessments should be updated to ensure that bats have not occupied the surveyed buildings during the interim period.
- 4.25 The opportunity exists to enhance the site for roosting bats through the provision of bat boxes on retained trees and within new dwellings. Suitable designs include (but are not limited to): Schwegler 1FF, Vivara Pro Low Profile WoodStone Bat Box, or Beaumaris Woodstone Midi or Maxi Bat Boxes or integrated designs available from Schwegler, Vivara, Obstock and Habibat, amongst others.

Foraging and Commuting Bats

- 4.26 The transect surveys identified low numbers of bats utilising the site, primarily common pipistrelle and noctule with less frequently encountered *Myotis* species and soprano pipistrelle, all widespread and common/relatively common species. Overall activity was primarily noted along hedgerows at the north-eastern and western boundaries, with some activity also along the internal hedgerows and particularly along the brook and adjacent hedgerows.
- 4.27 The automated surveys identified the following bat species/families using the site: common pipistrelle, noctule, soprano pipistrelle, brown long-eared bat and Nathusius' pipistrelle, *Myotis* sp., *Nyctalus* and *Nyctalus/Eptesicus* species. No Annex II bat species were recorded within the site.
- 4.28 Very little bat activity was recorded along the two hedgerows scheduled to be lost to the proposed development (H6 and H13), with only a single occasion of foraging pipistrelle at the northern end of H13 during the May transect, and a commuting soprano pipistrelle along H6 during the September transect. Similarly, very low levels of bat activity were recorded along the other hedgerows where sections will be lost, with the activity recorded comprising species commonly recorded within urban environments.
- 4.29 Overall the majority of hedgerow habitat is to be retained within the proposed development, and will be buffered from the main development footprint by gardens and open space. Suitable commuting routes for bats will therefore continue to exist through and round the perimeter of the site, including along the brook corridor. The proposed hedgerow planting within the site, together with the buffer planting along the southern site boundary will furthermore provide enhanced foraging and commuting opportunities as this boundary currently comprises a fence.

Lighting

- 4.30 Development can result in increased light pollution leading to the disturbance or loss of roost sites and commuting routes, disturbance of bat foraging behaviour, and an increased risk of predation³¹.
- 4.31 The construction lighting and the lighting scheme for the development must therefore ensure that greenspace including hedgerows/vegetation corridors and ponds/attenuation ponds are not illuminated. Lighting considerations and constraints to be implemented to ensure minimal resulting light spill include:
- No use of lighting at night during the construction period in areas where this will illuminate retained or created suitable commuting or foraging habitats including hedgerows/trees, the brook corridor and ponds.

³¹ Institute of Lighting Professionals (ILP) and Bat Conservation Trust (BCT), 2023. Guidance Note GN08/23 Bats and Artificial Lighting at Night.

- The lighting scheme including road lighting will direct lighting to where it is needed, using deflectors where appropriate to minimise light spill beyond the intended target area.
- Any upward lighting will be avoided or otherwise minimised via the use of baffles/cowls.
- Dark corridors (<1.0 lux) will be designed to incorporate retained habitats of value to bats for foraging, potential roosting and commuting purposes including the brook corridor and hedgerows. Newly created tree/shrub/hedgerow planting and ponds will also be sufficiently buffered to ensure a similarly a low light level is maintained in the vicinity of these features.
- Lighting will be appropriately designed to avoid light spill onto buffer zones.
- Lighting will either comprise LED luminaires as these have a sharp cut-off, lower intensity, good colour rendition and dimming capability, or low-pressure sodium lights or alternate design that emits light at one wavelength and as such has a low attraction to insects.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats³⁰.
- All luminaires should lack UV elements when manufactured. The use of metal halide, fluorescent sources will be avoided³⁰.

Summary (bats)

- 4.32 Given the low level of use by common bat species, the retention of continuous green corridors including most of the existing hedgerow network, on-site enhancement via new native species structural planting, and the implementation of an appropriate lighting scheme, it is not anticipated the proposed development and associated loss of suitable foraging/commuting habitat from the site would have a significant impact on local bat populations.

Water Vole and Otter

- 4.33 The brook is considered sub-optimal to support water vole and otter, with no evidence for the presence of these species recorded during site visits. In addition, no otter records were returned during the desk top study, and the only known water vole record was returned, located approximately 700m south of the site, from a brook which is not connected to the on-site watercourse.
- 4.34 The brook section within the site is to be retained under the proposed scheme and largely buffered from the built development by soft landscaping, and with pollution control mechanisms implemented throughout construction as outlined in the habitat section above.
- 4.35 As such, no significant impacts to the watercourse or any notable aquatic/semi-aquatic fauna are anticipated, and water vole and otter are not considered to pose a constraint to the proposed development.

White-Clawed Crayfish

- 4.36 The watercourse on site was assessed as being of negligible suitability for white-clawed crayfish, and no records of this species were returned during the desktop study. On this basis, white-clawed crayfish are not considered to pose a constraint to the proposed development.

Reptiles

- 4.37 No reptiles records were returned from within 1km of the site during the desktop study, and the intensely grazed improved grassland that dominates the site is considered to offer negligible

opportunities to this species group as it does not provide the structural heterogeneity favoured by these species. In addition, the hedgerow network is considered to provide sub-optimal habitat due to the limited base vegetation which was grazed right up the hedgerow edges, and was not considered sufficient to support a viable reptile population. Reptiles are therefore not considered to pose a constraint to the proposed development.

Great Crested Newts

- 4.38 No GCN were recorded within the on-site ponds or any of the neighbouring ponds surveyed. As such GCN are not considered to pose a constraint to the proposals.

Birds

- 4.39 The Wildlife and Countryside Act 1981 (*as amended*) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law, and it is an offence, with certain exceptions to recklessly or intentionally:
- Kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while in use or being built;
 - Take or destroy the egg of any wild bird.
- 4.40 Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (*as amended*) are specially protected at all times. In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK²⁸.
- 4.41 The habitats within the survey area supported small numbers of common and widespread bird species during both the breeding and winter seasons that were typical of the habitats present.
- 4.42 The loss of open grassland habitats will somewhat reduce the site's foraging value for species such as starling and song thrush during the breeding season, and for species such as redwing, fieldfare and woodpigeon over the winter. This loss will however be largely compensated through the provision of open grassland habitats within the GI and residential gardens. The incorporation of new native hedgerow, scrub and tree planting within the POS areas will furthermore mitigate for the minor hedgerow losses and provide suitable foraging and nesting opportunities for many bird species. Suitable foraging and breeding habitat for these species will additionally continue to be widely available within the surrounding area, further reducing the scale of any impact.
- 4.43 The anticipated increase in domestic animals, particularly cats, once the site is operational may lead to an increased predation impact on small bird populations. However, although some species may be more susceptible to predation than others, it is considered unlikely that the increased abundance of cats would alter the conservation status of any of the breeding or winter bird assemblages in this instance, with the magnitude of any such impact reduced by the retention and creation of hedgerow habitat which will continue to provide cover and screening from potential predators.
- 4.44 To avoid disturbance or destruction of active nests during construction the removal of suitable nesting vegetation should occur outside of the bird breeding season (i.e. avoiding March to August/September inclusive). If this is not possible, such vegetation must be checked prior to removal by a suitably experienced ecologist. If active nests are found, vegetation must be left

untouched and suitably buffered from works until all birds have fledged. Specific advice should be sought prior to undertaking site clearance.

- 4.45 Full analysis of bird survey data and recommendations relating to birds are provided in the standalone Bird Survey Report (FPCR, 2023).

5.0 SUMMARY AND CONCLUSION

- 5.1 Ensor's Pool SAC is located c.8.8km west of the site and as such will not be directly impacted by the proposals. No significant impact to the conservation status of the resident white-clawed crayfish population is anticipated as a result of the proposed development. As such the proposed development is considered unlikely to significantly impact the ecological integrity of the SAC.
- 5.2 Burbage Woods and Aston Firs SSSI is located c.2km northeast of the site, and at this distance no direct effects are anticipated as a result of the construction works associated with the proposed development. Residential development of the site is not highlighted within Natural England's SSSI Impact Risk Zones as representing a likely risk to this SSSI. The SSSI is well set up for recreational use and the proposed scheme incorporates an area of public open space which will provide alternative on-site recreational activities, including dog walking. No significant negative impacts are therefore anticipated on any statutory designations as a result of the proposed development.
- 5.3 Several non-statutory sites were identified within 1km of the site. These include three on-site pLWSSs, which will all be retained under the proposals and protected during the constructions using heras fencing around the root protection areas. There will therefore be no adverse impacts to any non-statutory sites including potential /candidate wildlife sites during the construction phase. With the provision of on-site recreational space it is therefore considered unlikely that there will be any significant impacts post development as a result of increased recreational pressures.
- 5.4 The application site comprises several improved grassland fields and smaller areas of habitat considered of low ecological value. Some limited areas of higher value habitats such as marsh grassland and a watercourse are also present. Several hedgerows are present. including those that were assessed to have moderately high to high ecological value under the HEGS assessment and those assessed as being important under the Hedgerow Regulations.
- 5.5 The habitats of greatest value are to be largely retained under the proposed development, whilst the retention, enhancement and creation of additional habitats within areas of green infrastructure are incorporated within the proposed scheme. The minor hedgerow losses will be mitigated through the creation of new species-rich native hedgerows, whilst retained hedgerows will be largely buffered within areas of green infrastructure or adjacent to gardens.
- 5.6 No bat roosts were recorded within the site during the survey work undertaken. It is recommended survey work is updated if significant time (>18 months) elapses prior to building demolition.
- 5.7 The site was recorded to support low levels of common bat species (no Annex II species recorded). As the majority of the hedgerow network is to be retained, and new structural planting provided, the site will continue to provide foraging opportunities and commuting routes through and round the site. A sensitive lighting scheme is recommended in order to maintain dark commuting corridors. Given the above, the minor hedgerow loss will therefore not have a significant impact on local bat populations.
- 5.8 The site was recorded to support common and widespread bird species in small numbers, typical of the habitats present and size of site. Therefore precautionary working methods are set out for vegetation clearance. New planting within areas of public open space and garden habitats will enhance opportunities for this species group in the long term.
- 5.9 No other protected or notable species are considered likely to be present / utilising the habitats within the site.

APPENDIX A: BOTANICAL SPECIES LIST

Key: D: Dominant, A: Abundant, F: Frequent, O: Occasional, R: Rare, LF: Locally Frequent

Common Name	Scientific Name	Abundance (DAFOR)
Improved Grassland		
Annual meadow-grass	<i>Poa annua</i>	R
Bramble	<i>Rubus fruticosus</i> agg.	R
Bristly ox-tongue	<i>Helminthotheca echioides</i>	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	R
Brooklime	<i>Veronica beccabunga</i>	LF
Chickweed	<i>Stellaria media</i>	R
Cleavers	<i>Galium aparine</i>	R
Cocks foot	<i>Dactylis glomerata</i>	LO/R
Common bent	<i>Agrostis capillaris</i>	R/LO
Common knotgrass	<i>Polygonum aviculare</i>	R
Common mouse-ear	<i>Cerastium fontanum</i>	R
Common nettle	<i>Urtica dioica</i>	LO/R
Common ragwort	<i>Jacobaea vulgaris</i>	R
Cow parsley	<i>Anthriscus sylvestris</i>	R
Creeping bent	<i>Agrostis stolonifera</i>	O/LF
Creeping buttercup	<i>Ranunculus repens</i>	LO/R
Creeping thistle	<i>Cirsium arvense</i>	R
Crested dogs-tail	<i>Cynosurus cristatus</i>	R
Dandelion	<i>Taraxacum</i> sp. agg.	R
Doves-foot	<i>Geranium molle</i>	R
False-oat	<i>Arrhenatherum elatius</i>	R
Fat hen	<i>Chenopodium album</i>	R
Greater plantain	<i>Plantago major</i>	R
Groundsel	<i>Senecio vulgaris</i>	R
Hard rush	<i>Juncus inflexus</i>	R
Hedge mustard	<i>Sisymbrium officinale</i>	R
Hogweed	<i>Heracleum sphondylium</i>	R
Meadow buttercup	<i>Ranunculus acris</i>	R
Meadow foxtail	<i>Alopecurus pratensis</i>	R
Mugwort	<i>Artemisia vulgaris</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	A
Pineapple weed	<i>Matricaria discoidea</i>	R
Potato	<i>Solanum tuberosum</i>	R
Prickly sow-thistle	<i>Sonchus asper</i>	R
Red dead nettle	<i>Lamium purpureum</i>	R
Red clover	<i>Trifolium pratense</i>	R
Red fescue	<i>Festuca rubra</i>	R/LF
Redshank	<i>Persicaria maculosa</i>	R
Rough meadow-grass	<i>Poa trivialis</i>	R

Common Name	Scientific Name	Abundance (DAFOR)
Scentless mayweed	<i>Tripleurospermum inodorum</i>	R
Shepherds purse	<i>Capsella bursa-pastoris</i>	R
Silverweed	<i>Argentina anserina</i>	R
Smooth meadow-grass	<i>Poa pratensis</i>	R
Smooth sow-thistle	<i>Sonchus oleraceus</i>	R
Soft brome	<i>Bromus hordeaceus</i>	R/LO
Soft rush	<i>Juncus effusus</i>	LO
Spear thistle	<i>Cirsium vulgare</i>	R
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	R
Timothy	<i>Phleum pratense</i>	R
Tufted hairgrass	<i>Deschampsia cespitosa</i>	R
White clover	<i>Trifolium repens</i>	LO/LF
Willowherb	<i>Epilobium</i>	LO
Yorkshire-fog	<i>Holcus lanatus</i>	LO
Poor Semi-Improved Grassland		
Annual meadow-grass	<i>Poa annua</i>	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	LF
Cocks foot	<i>Dactylis glomerata</i>	R
Common bent	<i>Agrostis capillaris</i>	LF
Common cat's-ear	<i>Hypochaeris radicata</i>	R
Common mouse-ear	<i>Cerastium fontanum</i>	R
Common nettle	<i>Urtica dioica</i>	R
Common poppy	<i>Papaver rhoeas</i>	R
Common ragwort	<i>Jacobaea vulgaris</i>	R
Common sorrel	<i>Rumex acetosa</i>	R
Creeping bent	<i>Agrostis stolonifera</i>	F
Creeping buttercup	<i>Ranunculus repens</i>	LO
Creeping thistle	<i>Cirsium arvense</i>	R
Crested dogs-tail	<i>Cynosurus cristatus</i>	R
Curled dock	<i>Rumex crispus</i>	R
False-oat	<i>Arrhenatherum elatius</i>	R
Germander speedwell	<i>Veronica chamaedrys</i>	R
Great willowherb	<i>Epilobium hirsutum</i>	R
Hard rush	<i>Juncus inflexus</i>	R
Meadow foxtail	<i>Alopecurus pratensis</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	LF
Self-heal	<i>Prunella vulgaris</i>	R
Soft rush	<i>Juncus effusus</i>	R
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	R
Timothy	<i>Phleum pratense</i>	R
Tufted hairgrass	<i>Deschampsia cespitosa</i>	R
Wall barley	<i>Hordeum murinum</i>	R
White clover	<i>Trifolium repens</i>	R

Common Name	Scientific Name	Abundance (DAFOR)
Yorkshire-fog	<i>Holcus lanatus</i>	R
Marshy Grassland		
Brooklime	<i>Veronica beccabunga</i>	LF
Cocks foot	<i>Dactylis glomerata</i>	R
Common ragwort	<i>Jacobaea vulgaris</i>	R
Creeping buttercup	<i>Ranunculus repens</i>	LO
Creeping thistle	<i>Cirsium arvense</i>	R
Crested dogs-tail	<i>Cynosurus cristatus</i>	R
Floating sweet-grass	<i>Glyceria fluitans</i>	LF
Great willowherb	<i>Epilobium hirsutum</i>	O
Hard rush	<i>Juncus inflexus</i>	R
Meadow foxtail	<i>Alopecurus pratensis</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	R
Redshank	<i>Persicaria maculosa</i>	LF
Reed canary grass	<i>Phalaris arundinacea</i>	R
Soft rush	<i>Juncus effusus</i>	LO
Tufted hairgrass	<i>Deschampsia cespitosa</i>	R
Yorkshire-fog	<i>Holcus lanatus</i>	O
Tall Ruderal Vegetation		
Bristly ox-tongue	<i>Helminthotheca echioides</i>	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	R
Common nettle	<i>Urtica dioica</i>	F
Common ragwort	<i>Jacobaea vulgaris</i>	R
Creeping thistle	<i>Cirsium arvense</i>	F
Greater plantain	<i>Plantago major</i>	R
Mullein	<i>Verbascum</i> sp.	R
Perennial rye-grass	<i>Lolium perenne</i>	O
Scentless mayweed	<i>Tripleurospermum inodorum</i>	R
Smooth sow-thistle	<i>Sonchus oleraceus</i>	R
Yorkshire-fog	<i>Holcus lanatus</i>	O
Hedgerows and Trees		
Ash	<i>Fraxinus excelsior</i>	R
Bittersweet	<i>Solanum dulcamara</i>	R
Black bryony	<i>Dioscorea communis</i>	R
Blackthorn	<i>Prunus spinosa</i>	LD
Bramble	<i>Rubus fruticosus</i> agg.	O
Broad-leaved dock	<i>Rumex obtusifolius</i>	R
Cleavers	<i>Galium aparine</i>	LO
Cock's-foot	<i>Dactylis glomerata</i>	R
Common nettle	<i>Urtica dioica</i>	LF
Cow parsley	<i>Anthriscus sylvestris</i>	LO
Creeping thistle	<i>Cirsium arvense</i>	O
Dog-rose	<i>Rosa canina</i> agg.	R

Common Name	Scientific Name	Abundance (DAFOR)
Dogwood	<i>Cornus sanguinea</i>	R
Elder	<i>Sambucus nigra</i>	O
English elm	<i>Ulmus procera</i>	F/LA
English oak	<i>Quercus robur</i>	R
False oat-grass	<i>Arrhenatherum elatius</i>	LO
Field maple	<i>Acer campestre</i>	R
Garden privet	<i>Ligustrum ovalifolium</i>	LO
Goat willow	<i>Salix caprea</i>	R
Great willowherb	<i>Epilobium hirsutum</i>	R
Hawthorn	<i>Crataegus monogyna</i>	LD
Hazel	<i>Corylus avellana</i>	O
Hedge bindweed	<i>Calystegia sepium</i>	R
Hedge mustard	<i>Sisymbrium officinale</i>	R
Hogweed	<i>Heracleum sphondylium</i>	O
Hogweed	<i>Heracleum sphondylium</i>	R
Holly	<i>Ilex aquifolium</i>	LO
Hybrid black poplar	<i>Populus x canadensis</i>	R
Ivy	<i>Hedera helix</i>	LO
Leyland cypress	<i>Cupressocyparis leylandii</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	R
Rough meadow-grass	<i>Poa trivialis</i>	R
Sycamore	<i>Acer pseudoplatanus</i>	R
Willow	<i>Salix</i> sp.	R
Wood forget-me-not	<i>Myosotis sylvatica</i>	R
Scrub		
Bramble	<i>Rubus fruticosus</i> agg.	LF
Blackthorn	<i>Prunus spinosa</i>	O
Field maple	<i>Acer campestre</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Hornbeam	<i>Carpinus betulus</i>	R
Common nettle	<i>Urtica dioica</i>	LF
Norway spruce	<i>Picea abies</i>	R
Pond		
Blackthorn	<i>Prunus spinosa</i>	O
Brooklime	<i>Veronica beccabunga</i>	O
Floating sweet-grass	<i>Glyceria fluitans</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Water starwort	<i>Callitriche</i> sp.	F
Willowherb	<i>Epilobium</i> sp.	R
Watercourse		
Brooklime	<i>Veronica beccabunga</i>	LO
Fool's water-cress	<i>Apium nodiflorum</i>	R
Floating sweet-grass	<i>Glyceria fluitans</i>	O

Common Name	Scientific Name	Abundance (DAFOR)
Great willowherb	<i>Epilobium hirsutum</i>	LO
Gypsywort	<i>Lycopus europaeus</i>	R
Reed canary grass	<i>Phalaris arundinacea</i>	LO
Soft rush	<i>Juncus effusus</i>	R
Water dock	<i>Rumex hydrolapathum</i>	R
Hardstanding		
Annual meadow-grass	<i>Poa annua</i>	O
Bramble	<i>Rubus fruticosus</i> agg.	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	R
Cleavers	<i>Galium aparine</i>	R
Common chickweed	<i>Stellaria media</i>	R
Common knotgrass	<i>Polygonum aviculare</i>	R
Common nettle	<i>Urtica dioica</i>	R
Creeping thistle	<i>Cirsium arvense</i>	R
Greater plantain	<i>Plantago major</i>	R
Groundsel	<i>Senecio vulgaris</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	F
Red dead-nettle	<i>Lamium purpureum</i>	R
Red fescue	<i>Festuca rubra</i>	R
Redshank	<i>Persicaria maculosa</i>	R
Spear thistle	<i>Cirsium vulgare</i>	R
Sun spurge	<i>Euphorbia helioscopia</i>	R
White clover	<i>Trifolium repens</i>	LO
Willowherb	<i>Epilobium</i>	LO
Garden		
Anemone	<i>Anemone</i> sp.	R
Bamboo	<i>Phyllostachys</i> sp.	R
Bay laurel	<i>Laurus nobilis</i>	R
Chickweed	<i>Stellaria media</i>	R
Cleavers	<i>Galium aparine</i>	R
Common comfrey	<i>Symphytum officinale</i>	R
Common ragwort	<i>Jacobaea vulgaris</i>	R
Cosmos	<i>Cosmos</i> sp.	R
Cotoneaster	<i>Cotoneaster</i> sp.	R
Cow parsley	<i>Anthriscus sylvestris</i>	R
Cranesbill	<i>Geranium</i> sp.	R
Creeping buttercup	<i>Ranunculus repens</i>	LF
Cyclamen	<i>Cyclamen</i> sp.	R
Dahlia	<i>Dahlia</i> sp.	R
Dandelion	<i>Taraxacum</i> sp. agg.	R
Doves-foot	<i>Geranium molle</i>	R
Elder	<i>Sambucus nigra</i>	R
English lavender	<i>Lavandula angustifolia</i>	R

Common Name	Scientific Name	Abundance (DAFOR)
Euonymus	<i>Euonymus</i> sp.	R
Forget-me-not	<i>Myosotis</i> sp.	R
Fox-glove	<i>Digitalis purpurea</i>	R
Fuchsia	<i>Fuchsia</i> sp.	R
Groundsel	<i>Senecio vulgaris</i>	R
Hebe	<i>Hebe</i> sp.	R
Ivy	<i>Hedera helix</i>	R
Lesser celandine	<i>Ficaria verna</i>	LO
Nasturtium	<i>Tropaeolum</i> sp.	R
Nipplewort	<i>Lapsana communis</i>	R
Pansy	<i>Viola</i> sp.	R
Passion flower	<i>Passiflora</i> sp.	R
Perennial rye-grass	<i>Lolium perenne</i>	F
Primrose	<i>Primrose vulgaris</i> var.	R
Red dead nettle	<i>Lamium purpureum</i>	R
Red fescue	<i>Festuca rubra</i>	LO
Rose	<i>Rosa</i> sp.	R
Shepherds purse	<i>Capsella bursa-pastoris</i>	R
Smoke bush	<i>Cotinus coggygria</i>	R
Smooth sow-thistle	<i>Sonchus oleraceus</i>	R
Springy turf moss	<i>Rhytidiadelphus squarrosus</i>	F
Viburnum	<i>Viburnum</i> sp.	R
Wallflower	<i>Erysimum</i> sp.	R
White clover	<i>Trifolium repens</i>	LO
Willowherb	<i>Epilobium</i> sp.	R
Yellow toadflax	<i>Linaria vulgaris</i>	R
Yorkshire-fog	<i>Holcus lanatus</i>	O

APPENDIX B: STATIC DETECTOR RESULTS

Survey Dates	Survey Hours	Total Avg. per hour	Total Registrations	Common Pipistrelle			Noctule			Brown Long-eared Bat			Myotis Species			Pipistrellus Species			Soprano Pipistrelle			Nyctalus Species			Nyctalus / Eptesicus		
				Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour	Period Total	Peak Count	Avg. per hour
26 th – 31 st August 2020	56:10	5.95	334	266	102	4.74	12	3	0.21	28	11	0.5	27	13	0.48	0	0	0.00	1	1	0.02	0	0	0.00	0	0	0.00
17 th – 22 nd Sept. 2020	63:32	26.12	1660	791	267	12.45	59	23	0.93	374	157	5.89	413	154	6.5	10	8	0.16	11	4	0.17	1	1	0.02	0	0	0.00
27 th May- 1 st June 2021	42:45	17.76	759	684	251	16	20	8	0.47	1	1	0.02	42	27	0.98	4	3	0.09	1	1	0.02	6	2	0.14	1	1	0.02
12 th -17 th July 2021	43:25	9.93	431	341	109	7.85	47	29	1.08	0	0	0	3	1	0.07	40	28	0.92	0	0	0	0	0	0	0	0	0
14 th -19 th Sept 2021	62:27	17.31	1081	938	667	15.02	24	9	0.38	59	15	0.94	12	4	0.19	7	2	0.11	40	28	0.64	1	1	0.02	0	0	0

Survey Dates	Nathusius' Pipistrelle		
	Period Total	Peak Count	Avg. per hour
26 th – 31 st August 2020	0	0	0.00
17 th – 22 nd Sept. 2020	1	1	0.02
27 th May- 1 st June 2021	0	0	0.00
12 th -17 th July 2021	0	0	0.00
14 th -19 th Sept 2021	0	0	0.00

APPENDIX C: BUILDING ASSESSMENT PHOTOS



Building B1a



Building B1b



Building B2a



Building B2b



Building B2c



Building B3a



Building B3b



Building B3c



Building B4a



Building B4b



Building B4c



Building B5a



Building B5b



Building B5c



Building B5d



Building B6



Building B7



Building B8



Building B9



Building B10



Building 65



Building 65a

APPENDIX D: POND HSI DATA

	SI -1	SI - 2	SI -3	SI -4	SI -5	SI -6	SI -7	SI -8	SI -9	SI -10	HSI score	Pond Suitability for Breeding GCN
Pond Number	Geographical Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Ponds	Terrestrial Habitat	Macrophytes		
P2	1	0.05	0.5	0.2	1	1	1	1	0.33	1	0.53	Below Average
P3	1	0.05	1	0.67	0.9	1	0.67	1	0.33	0.7	0.58	Below Average
P7	1	0.05	1	0.33	0.6	1	1	1	0.67	0.65	0.58	Below Average
P8	1	0.05	0.1	0.67	0.6	1	1	1	0.67	0.35	0.46	Poor
P9	1	1.00	0.5	0.67	1	1	1	1	0.67	0.95	0.86	Excellent
P10	1	0.60	0.9	1	1	1	1	1	0.67	0.95	0.90	Excellent
P21	1	0.05	0.5	0.67	1	1	1	1	0.67	0.3	0.57	Below Average
P22	1	0.05	1	0.33	1	1	1	1	0.67	0.65	0.61	Average

APPENDIX E: eDNA RESULTS

Client: Hayley Tomlin,
FPCR Environment and Design Ltd



ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

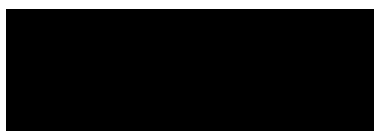
Tel: 01159 516747
Email: Helen.Rees@adas.co.uk
www.adas.uk

Sample ID: ADAS-0497 Condition on Receipt: Low Sediment Volume: Passed
Client Identifier: p21 9685 Description: pond water samples in preservative
Date of Receipt: 23/04/2021 Material Tested: eDNA from pond water samples

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	28/04/2021
Degradation Control [§]	Within Limits	Real Time PCR	28/04/2021
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	28/04/2021
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10 ⁻⁴ ng/μL) [#]	4 of 4	Real Time PCR	As above for GCN

Report Prepared by: Dr Helen Rees Report Issued by: Dr Ben Maddison

Signed:



Signed:



Position: Director: Biotechnology Position: MD: Biotechnology

Date of preparation: 29/04/2021 Date of issue: 29/04/2021

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[#] Additional positive controls (10⁻¹, 10⁻², 10⁻³ ng/μL) are also routinely run, results not shown here.

Appendix 1: Interpretation of results

Sample Condition

Upon sample receipt we score your samples according to quality: good, low sediment, medium sediment, high sediment, white precipitate, and presence of algae.

There are three reasons as to why sediment should be avoided:

1. It is possible for DNA to persist within the sediment for longer than it would if it was floating in the water which could lead to a false positive result i.e. in this case GCN not recently present but present a long time ago
2. In some cases sediment can cause inhibition of the PCR analysis used to detect GCN eDNA within samples which could lead to an indeterminate result.
3. In some cases sediment can interfere with the DNA extraction procedure resulting in poor recovery of the eDNA which in turn can lead to an indeterminate result.

Algae can make the DNA extraction more difficult to perform so if it can be avoided then this is helpful.

Sometimes samples contain a white precipitate which we have found makes the recovery of eDNA very difficult. This precipitate can be present in such high amounts that it interferes with the eDNA extraction process meaning that we cannot recover the degradation control (nor most likely the eDNA itself) at sufficient levels for the control to be within the acceptable limits for the assay, therefore we have to classify these type of samples as indeterminate.

What do my results mean?

A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that DNA from the great crested newt has not been detected in your sample.

On occasion an inconclusive result will be issued. This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process. A re-test could be performed but a fresh sample would need to be obtained. We have successfully performed re-tests on samples which have had high sediment content on the first collection and low sediment content (through improved sample collection) on the re-test. If water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

The results will be recorded as indeterminate if the GCN result is negative and the degradation result is recorded as:

1. evidence of decay - meaning that the degradation control was outside of accepted limits
2. evidence of degradation or residual inhibition - meaning that the degradation control was outside of accepted limits but that this could have been due to inhibitors not being removed sufficiently by the dilution of inhibited samples (according to the technical advice note)

Appendix F: Burbage – 2021 Breeding Bird Survey Results & EOAC Criteria for Categorisation of Breeding Status

Species: British Common Name	Species: Scientific name	Survey 1	Conservation Status & Protection	Breeding status ¹
Greylag goose	<i>Anser anser</i>	2 flyovers	Amber list WCA Sch.1 (Pt. 2)	Non-breeder F
Sparrowhawk	<i>Accipiter nisus</i>	1 + 1 flyover	Green list	Possible H
Woodpigeon	<i>Columba palumbus</i>	11 + 15 flyovers	Green list	Possible H, S
Green woodpecker	<i>Picus viridis</i>	4	Green list	Probable A
Magpie	<i>Pica pica</i>	10	Green list	Possible H
Jackdaw	<i>Corvus monedula</i>	1	Green list	Possible H
Carrion crow	<i>Corvus corone</i>	16 + 9 flyovers	Green list	Possible H
Goldcrest	<i>Regulus regulus</i>	1	Green list	Possible H, S
Blue tit	<i>Cyanistes caeruleus</i>	18	Green list	Possible H, S
Great tit	<i>Parus major</i>	10	Green list	Possible H, S
Chiffchaff	<i>Phylloscopus collybita</i>	2	Green list	Possible H, S
Blackcap	<i>Sylvia atricapilla</i>	1	Green list	Possible H, S
Wren	<i>Troglodytes troglodytes</i>	13	Green list	Possible H, S
Starling	<i>Sturnus vulgaris</i>	43 + 45 flyovers	Red list NERC S.41	Possible H
Blackbird	<i>Turdus merula</i>	29 + 1 flyover	Green list	Confirmed FF
Song thrush	<i>Turdus philomelos</i>	9	Red list NERC S.41	Possible H, S
Mistle thrush	<i>Turdus viscivorus</i>	1	Red list	Possible H
Robin	<i>Erithacus rubecula</i>	19	Green list	Possible H, S
Dunnock	<i>Prunella modularis</i>	22	Amber list NERC S.41	Possible H, S
House sparrow	<i>Passer domesticus</i>	12 + 1 colony	Red list NERC S.41	Confirmed FF

¹European Ornithological Atlas Committee, 1979. *Categories of Breeding Bird Evidence*. European Ornithological Atlas Committee.

Species: British Common Name	Species: Scientific name	Survey 1	Conservation Status & Protection	Breeding status ¹
Pied wagtail	<i>Motacilla alba</i>	1 flyover	Green list	Non-breeder F
Chaffinch	<i>Fringilla coelebs</i>	14 + 2 flyovers	Green list	Confirmed FF
Greenfinch	<i>Chloris chloris</i>	11	Green list	Probable S, A
Linnet	<i>Linaria cannabina</i>	6	Red list NERC S.41	Possible H
Goldfinch	<i>Carduelis carduelis</i>	2 + 2 flyovers	Green list	Possible H
Total No. Species	25			

Breeding Status evidence can be broken down into four sections, each with their own codes, as defined by the European Ornithological Atlas Committee:

Confirmed breeder

DD – distraction display or injury feigning

UN – used nest or eggshells found from this season

FL – recently fledged young or downy young

ON – adults entering or leaving nest-site in circumstances indicating occupied nest

FF – adult carrying faecal sac or food for young

NE – nest containing eggs

NY – nest with young seen or heard

Probable breeder - Evidence accumulated during the survey indicates that the bird species is breeding on site.

P – pair in suitable nesting habitat

T – permanent territory (defended over at least 2 survey occasions)

D – courtship and display

N – visiting probable nest site

A – agitated behaviour

I – brood patch of incubating bird (from bird in hand)

B – nest building or excavating nest-hole

Possible breeder - Evidence accumulated during the survey indicates that the bird species could be breeding on site, but the evidence is less conclusive than that obtained for probable breeders.

H – observed in suitable nesting habitat

S – singing male

Non-breeder

F – flying over

M – migrant

U – summering non-breeder

UH – observed in unsuitable nesting habitat

APPENDIX G: 2020 WINTERING BIRD SURVEY RESULTS

Species: British Common Name	Species: Latin name	Survey 1	Conservation Status & Protection
Canada Goose	<i>Branta canadensis</i>	6	Not Listed
Woodpigeon	<i>Columba palumbus</i>	50	Amber List
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	4	Amber List
Lesser Black-backed Gull	<i>Larus fuscus</i>	4	Amber List
Magpie	<i>Pica pica</i>	7	Green List
Jackdaw	<i>Coloeus monedula</i>	2	Green List
Carrion Crow	<i>Corvus corone</i>	19	Green List
Blue Tit	<i>Cyanistes caeruleus</i>	6	Green List
Long-tailed Tit	<i>Aegithalos caudatus</i>	1	Green List
Wren	<i>Troglodytes troglodytes</i>	10	Amber List
Song Thrush	<i>Turdus philomelos</i>	1	Amber List NERC S.41
Redwing	<i>Turdus iliacus</i>	71	Amber List WCA Sch.1
Blackbird	<i>Turdus merula</i>	11	Green List
Fieldfare	<i>Turdus pilaris</i>	12	Red List WCA Sch.1
Robin	<i>Erithacus rubecula</i>	7	Green List
Dunnock	<i>Prunella modularis</i>	1	Amber List NERC S.41
Chaffinch	<i>Fringilla coelebs</i>	2	Green List
Greenfinch	<i>Chloris chloris</i>	1	Red List
Goldfinch	<i>Carduelis carduelis</i>	1	Green List
Total No. Species		19	

Key

- Site Boundary
- 1km Buffer
- 2km Buffer
- 5km Buffer
- 10km Buffer
- Local Wildlife Site (LWS)
- Candidate Local Wildlife Site (cLWS)
- Potential Local Wildlife Site (pLWS)
- Potential Local Wildlife Site - Historic (pLWS.hist)
- ECOSITE
- Site of Special Scientific Interest (SSSI)
- Ancient Semi-Natural Woodland (ASNW)

- 1 - Stretton Croft LWS, ECOSITE
- 2 - Burbage, Workhouse Lane Veteran Ash and Field Maple cLWS
- 3 - Burbage, Land East Of Lutterworth Road cLWS
- 4 - Three Pots Grassland cLWS
- 5 - Soar Brook Fields cLWS
- 6 - Aston Lane Ash Trees cLWS
- 7 - Lash Hill Path Willow Tree cLWS
- 8 - Lash Hill Path Ash Tree cLWS
- 9 - Hedgerow Oak Tree pLWS
- 10 - Long Field Hedgerow pLWS
- 11 - Horse Field Hedgerow pLWS
- 12 - Farm Track Hedgerows pLWS
- 13 - Burbage, Bullfurlong Lane Track Hedge (West) pLWS
- 14 - Bullfurlong Lane Grassland pLWS
- 15 - Burbage, M69 Roundabout Hedge pLWS
- 16 - Burbage, Hedgerows North Of A5 pLWS
- 17 - Workhouse Lane Hedgerow 3 pLWS
- 18 - Workhouse Lane Hedgerow pLWS
- 19 - Triangle Fields Ash Tree pLWS
- 20 - Lutterworth Road Oak Tree 3 pLWS
- 21 - Lutterworth Road Hedgerow, Oak and Ash pLWS
- 22 - Lutterworth Road Hedgerow pLWS
- 23 - Island Hotel Lake pLWS
- 24 - Ash Pole Spinney pLWS, ECOSITE, ASNW
- 25 - Woodland Extension pLWS, ECOSITE
- 26 - Workhouse Lane Hedgerow 2 pLWS
- 27 - Burbage, Lychgate Lane (South) Hedge pLWS
- 28 - Lychgate Lane Hedgerow pLWS
- 29 - Burbage, Aston Lane Green Lane Hedge (North) pLWS
- 30 - Boundary Beech Tree pLWS
- 31 - Playing Field Hedgerow pLWS
- 32 - Sketchley Lane Oak Tree pLWS
- 33 - Pond pLWS.hist
- 34 - Pond in an Improved Grassland pLWS.hist
- 35 - Grassland pLWS.hist
- 36 - Stream Flowing Through Semi-Improved Grassland pLWS.hist
- 37 - Burbage Wood and Aston Fir SSSI, ASNW
- 38 - Ensor's Pool SAC



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Bats

- Brown Long-eared (Roost)
- Common pipistrelle
- Daubenton's
- Noctule
- Pipistrelle sp.
- Soprano Pipistrelle
- Unidentified bat sp. (Roost)
- Whiskered/Brandt's

Birds

- Barn Owl
- Brambling
- Bullfinch
- Cetti's Warbler
- Dunnock
- Fieldfare
- Greylag Goose
- Hawfinch
- Hobby
- House Martin
- House Sparrow
- Peregrine
- Red Kite
- Redwing
- Reed Bunting
- Ring Ouzel
- Skylark
- Song Thrush
- Starling
- Swallow
- Swift
- Turtle Dove

Herpetofauna

- Common Frog
- Common Toad
- Smooth Newt

Herpetofauna

- Harlequin Ladybird
- Japanese Knotweed
- Wall Cotonesther

Mammals

- Badger
- Hedgehog
- Water Vole

Notable Invertebrates

- Blood-vein
- Rosy Rustic
- Small Square-spot
- Figure of Eight
- Shoulder-striped Wainscot
- Wall
- Grey Dagger
- Solomon's-seal

Notable Plants

- Chamomile
- Columbine
- Common Bistort
- Chicory
- Common Mouse-ear

- Species within SP4393: Harlequin ladybird; Hybrid bluebell
- Species within SP4493: Bluebell; Bogbean; Buck's-horn plantain; Himalayan balsam; Japanese knotweed; Linnet
- Species within SP4292: Black poplar; Bluebell; Yellow loosestrife
- Species within SP4392: Cotton thistle
- Species within SP4391: Deep-brown dart
- Species within SP4491: Common mouse-ear; Hybrid bluebell; Lesser hawkbit
- Species within SP4490: Bluebell; Brown long-eared; Bullfinch; Common pipistrelle; Daubenton's; Dunnock; Fieldfare; House martin; Linnet; Myostis sp.; Nathusius's pipistrelle; Noctule; Redwing; Reed bunting; Skylark; Song thrush; Soprano pipistrelle; Starling; Swallow; Swift; Water vole; Yellowhammer
- Species within SP4590: Common mouse-ear

Species within SP49L: Bluebell; Cherry laurel; Chicory; Columbine; Common cornsalad; Common mouse-ear; Greater celandine; Himalayan balsam; Hybrid bluebell; Rye brome; Small-leaved lime; Spanish bluebell; Variegated yellow archangel; Wall cotoneaster; White stonecrop

fpcr drawing title
**SITE LOCATION AND CONSULTATION
RESULTS PLAN - SPECIES RECORDS**

scale @ A3
1:15,000

drawn
LG / HET

issue date
16/11/2023

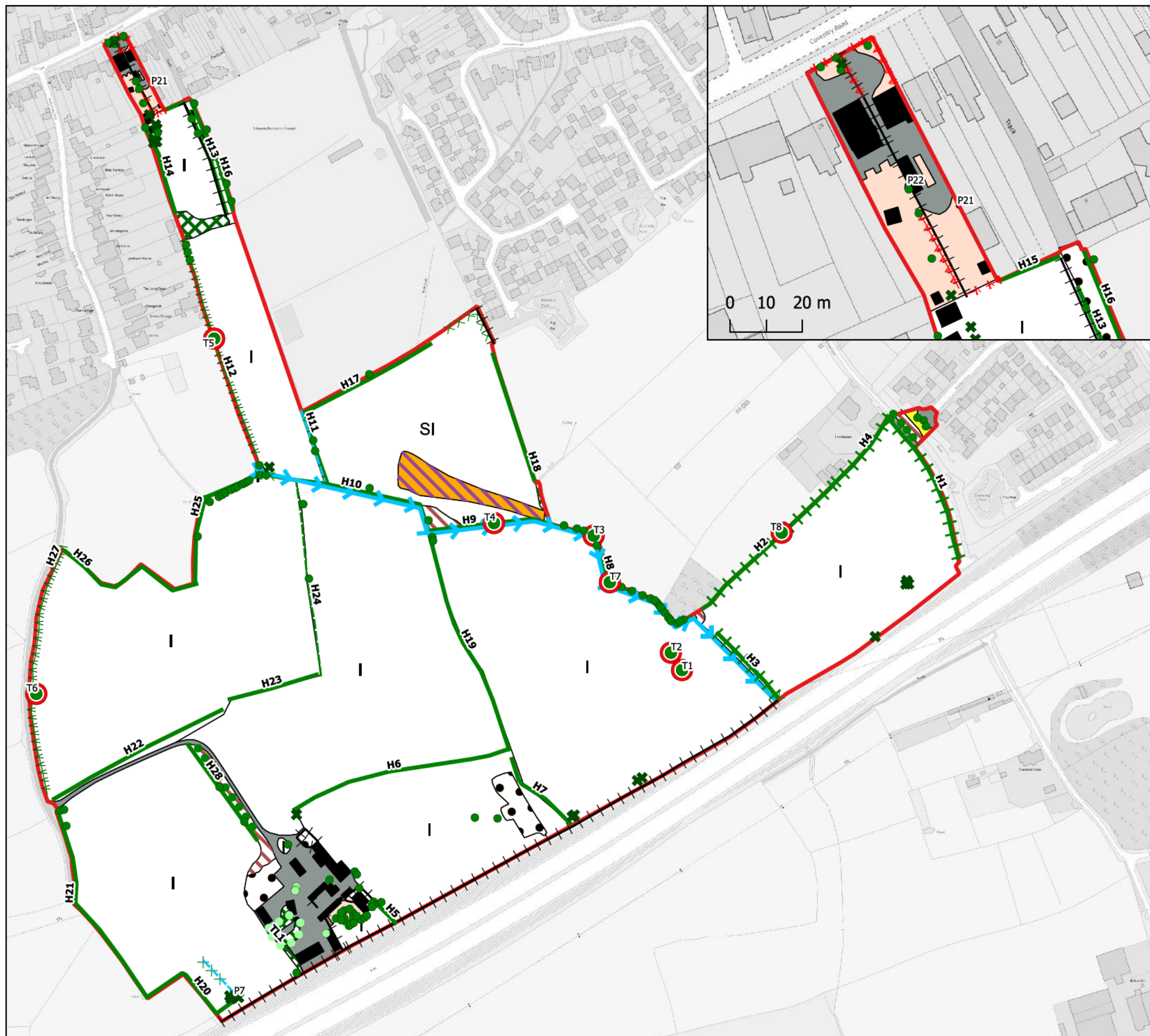
drawing / figure number **Figure 1b** rev **9685-E-01b**

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Key

- Site Boundary
- Bare ground
- Buildings
- Built Environment: Buildings/hardstanding
- Built Environment: Gardens (lawn and planting)
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Marsh/marshy grassland
- Other tall herb and fern - ruderal
- Poor semi-improved grassland
- Scrub - dense/continuous
- Standing water
- Broadleaved trees
- Running water
- v v Hedges: Introduced shrub
- Intact hedge - species-poor
- v v Intact hedge - native species-rich
- + + Hedge with trees - species-poor
- + + Fence
- Dry ditch
- Defunct hedge - species-poor
- Coniferous trees
- x x Scrub - scattered line
- x Scrub - scattered
- Tree with bat potential
- Coniferous trees
- Broadleaved tree



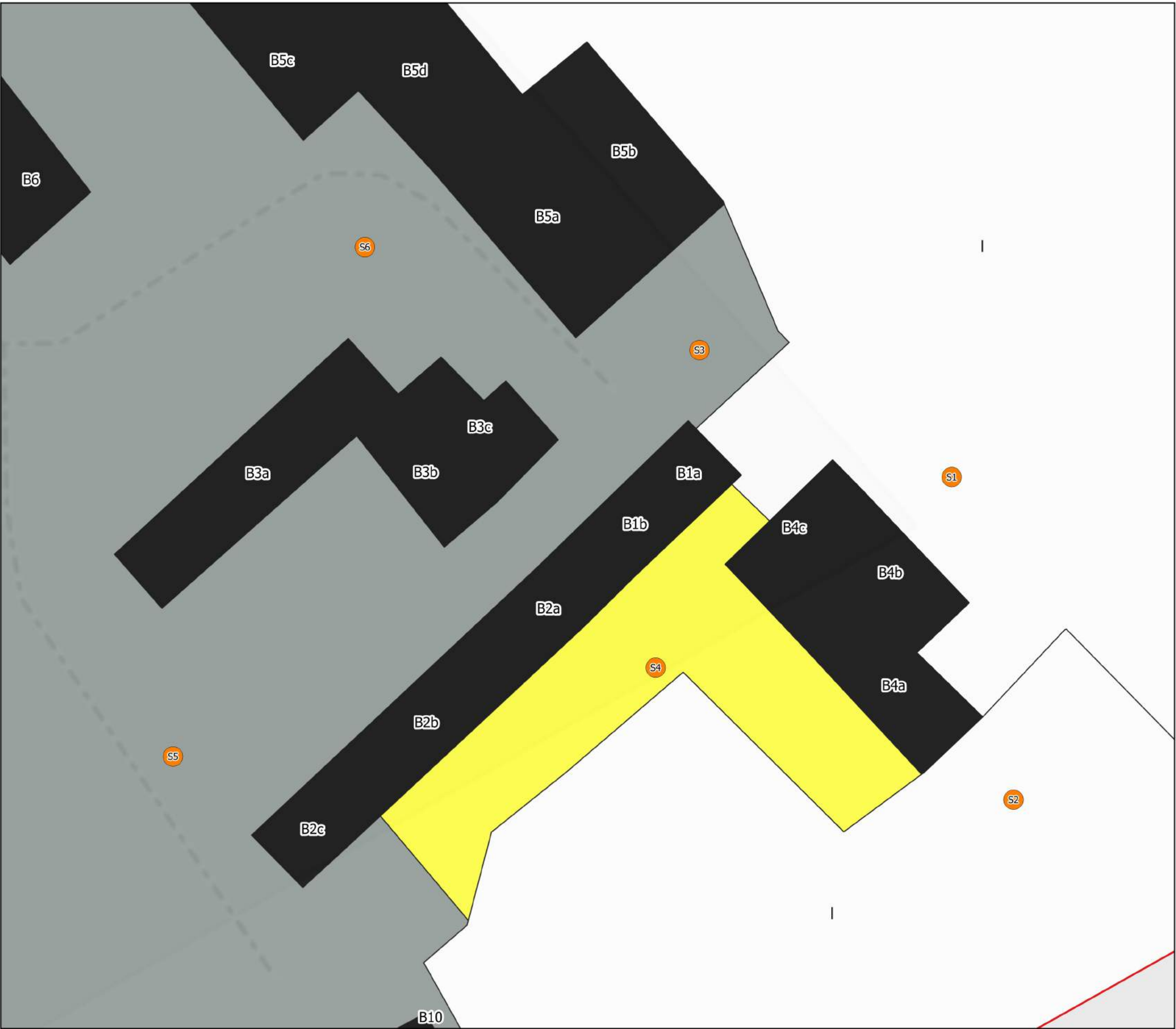


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Key

- Site Boundary
- negligible potential
- low potential
- moderate potential



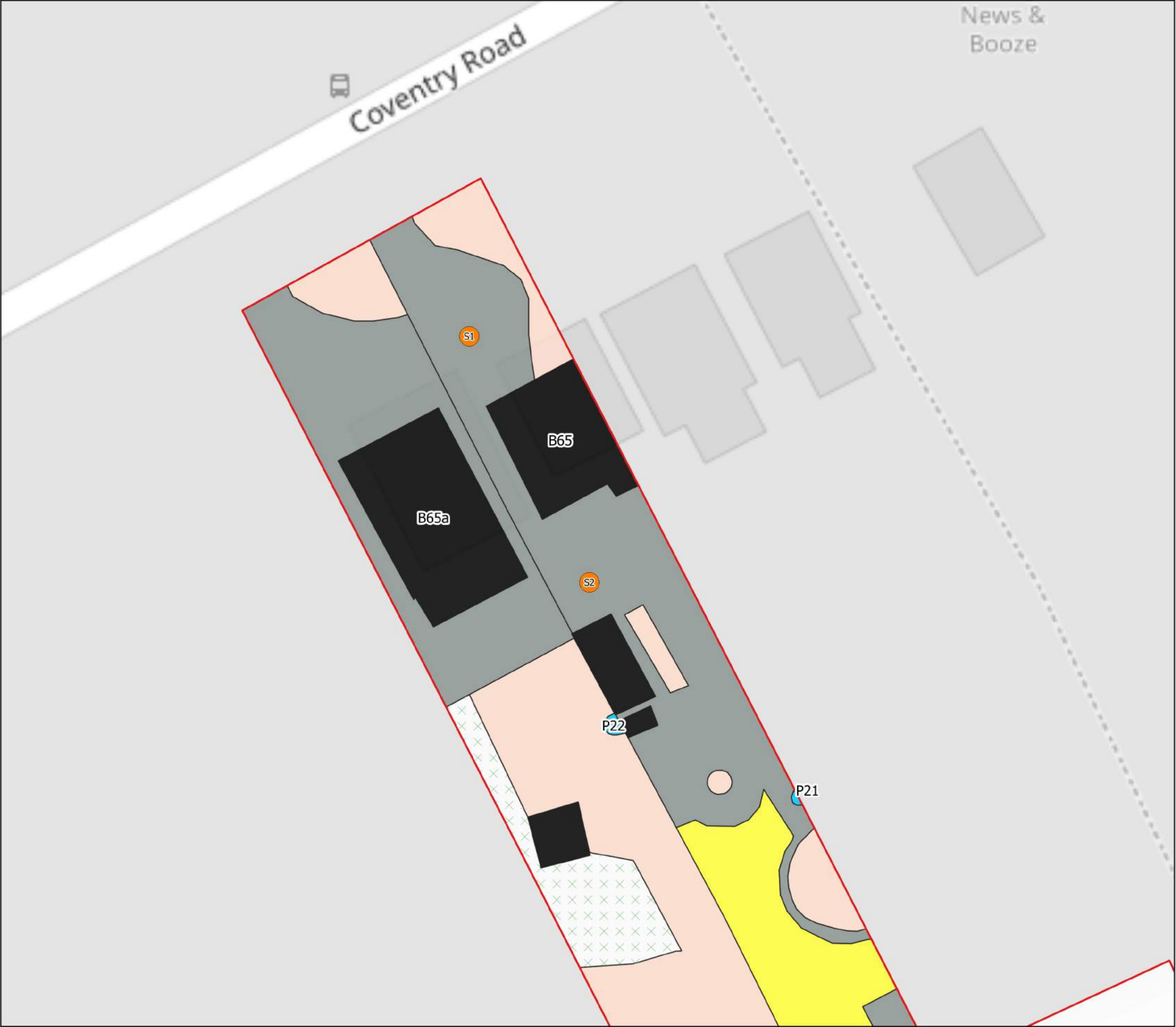
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Key:

-  Site Boundary
-  Building Surveyor Locations





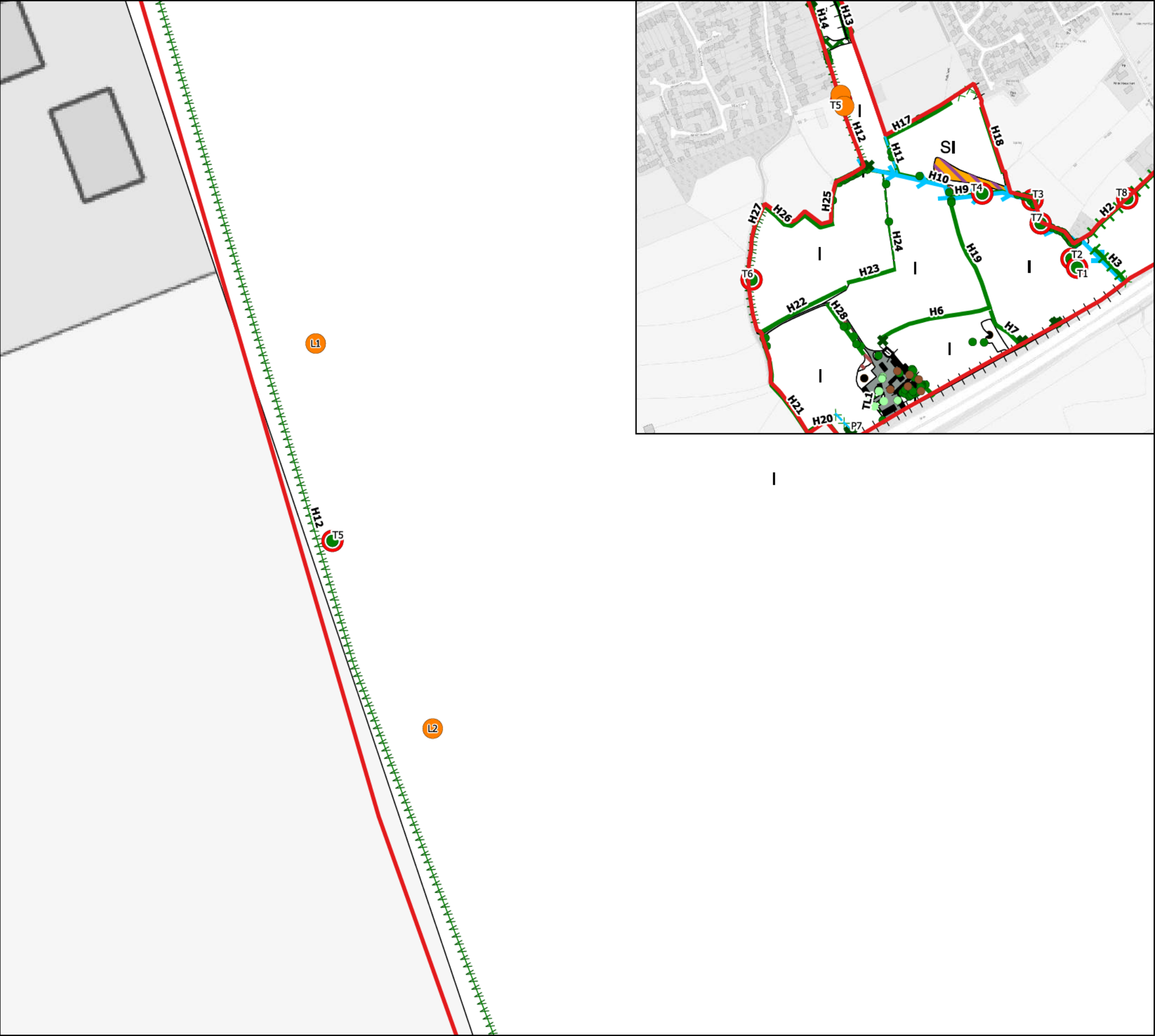
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Key:

- Site Boundary
- Building Surveyor Locations



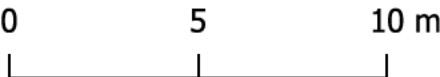


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Key

- Site boundary
- Improved grassland
- Intact hedge - native species-rich
- Tree with bat potential
- Surveyor Locations





client
Redrow

project
Land South of Burbage

drawing title
**TREE WITH BAT POTENTIAL (T5)
NOCTURNAL SURVEYOR LOCATION PLAN**

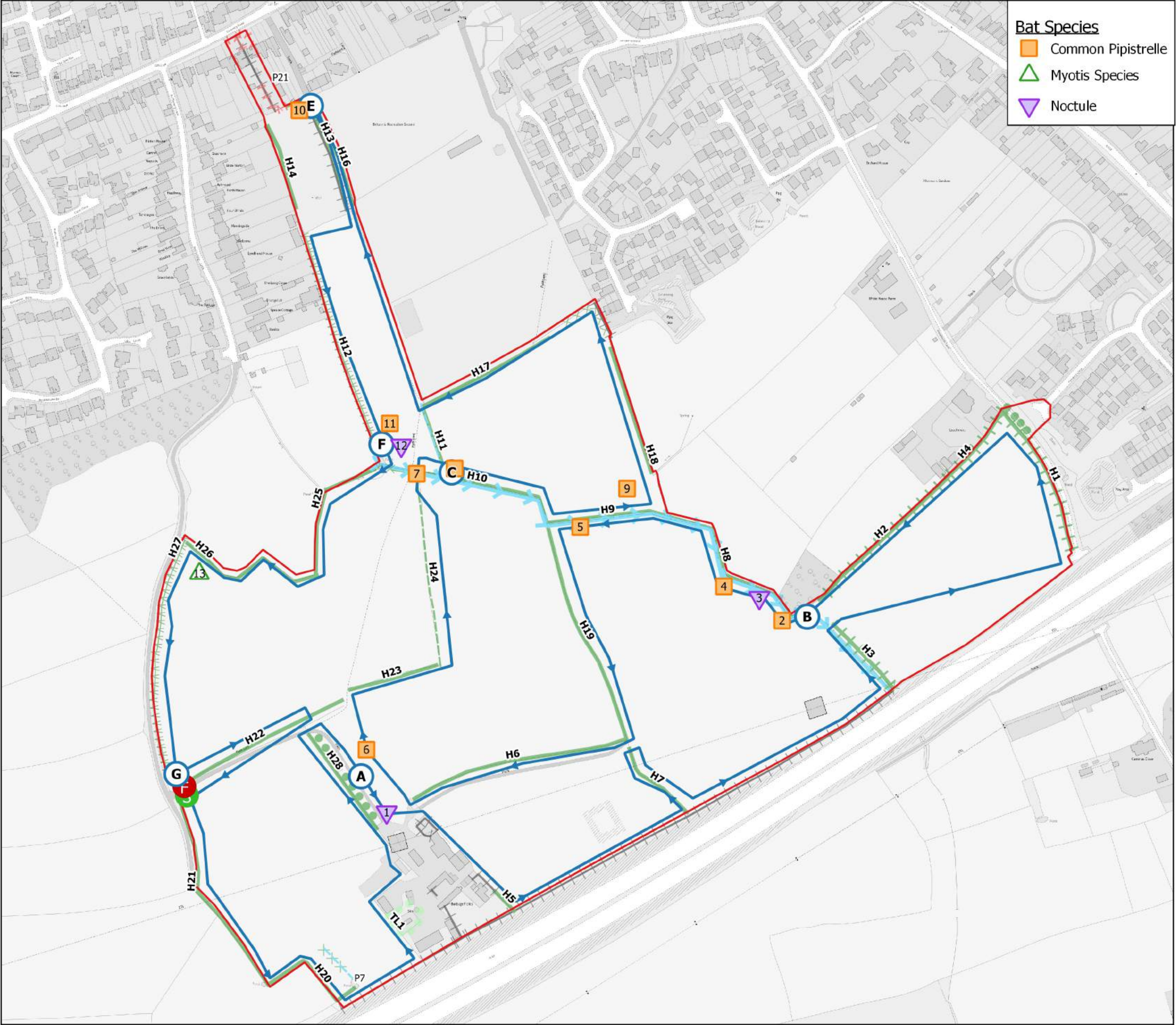
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issue date
16/11/2023

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Figure 6

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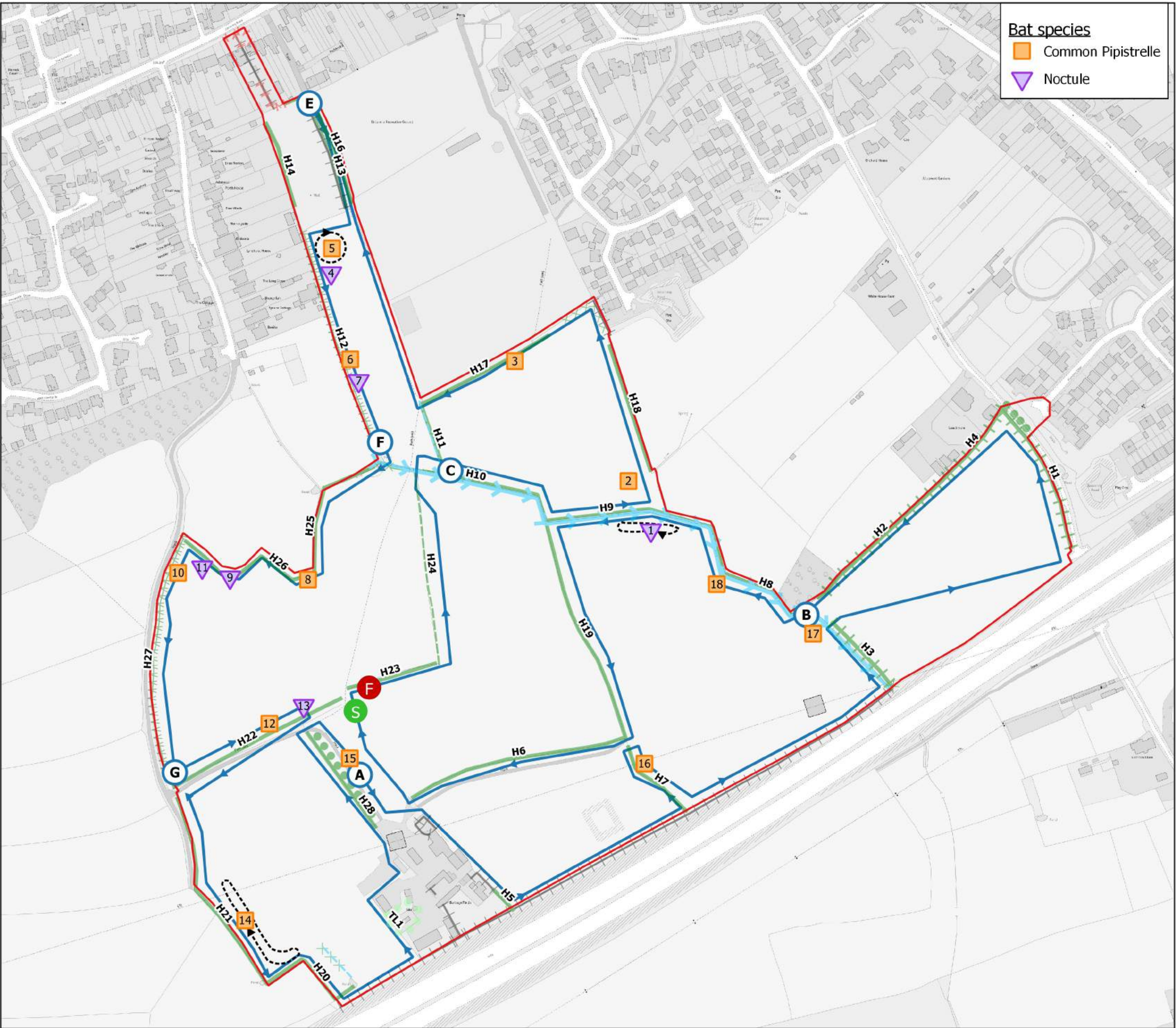
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Key:

- Site boundary
- Transect Route
- Start point
- Finish point
- Point Count Locations

Ref	Time	Bat specie	Passes	Behaviour
PC A	21:19 - 21:24	No Bats	NULL	NULL
1	21:26	Noctule	1	Commuting
PC B	21:39 - 21:41	No Bats	NULL	NULL
2	21:42	Common Pipistrelle	2	Commuting
3	21:44	Noctule	Cont	Foraging
4	21:45	Common Pipistrelle	Cont	Foraging
5	21:53	Common Pipistrelle	Multi	Foraging
PC C	21:57 - 22:02	No Bats	NULL	NULL
6	22:06	Common Pipistrelle	Multi	Foraging
7	22:12	Common Pipistrelle	1	Commuting
8	22:16	Common Pipistrelle	2	Commuting
PC D	22:25 - 22:30	Ref. 9	NULL	NULL
9	22:25	Common Pipistrelle	Cont	Foraging
PC E	22:40 - 22:45	Ref. 10	NULL	NULL
10	22:40	Common Pipistrelle	Cont	Foraging
PC F	22:51 - 22:56	Ref. 11,12	NULL	NULL
11	22:53	Common Pipistrelle	3	Foraging
12	22:55	Noctule	3	Foraging
PC G	23:01 - 23:06	Ref. 13	NULL	NULL
13	23:05	Myotis Species	3	Foraging



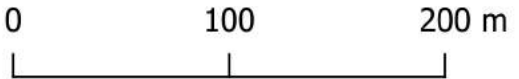
Bat species
Common Pipistrelle
Noctule

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- Key:**
- Site boundary
 - Transect Route
 - Start point
 - Finish point
 - Point Count Locations
 - Flight Arrow

Ref	TIME	Bat specie	Passes	Behaviour
PC D	21:36 - 21:41	Ref. 1,2	NULL	NULL
1	21:37	Noctule	Cont	Foraging
2	21:39	Common Pipistrelle	4	Foraging
3	21:45	Common Pipistrelle	1	Commuting
4	21:50	Noctule	Multi	Foraging
5	21:50	Common Pipistrelle	Cont	Foraging / Social
PC E	21:56 - 22:01	No bats	NULL	NULL
6	22:02	Common Pipistrelle	Cont	Foraging
7	22:02	Noctule	Multi	Foraging
PC F	22:06 - 22:11	No bats	NULL	NULL
8	22:13	Common Pipistrelle	3	Foraging
9	22:16	Noctule	1	Commuting
PC G	22:17 - 22:22	Ref. 10,11	NULL	NULL
10	22:18	Common Pipistrelle	Multi	Foraging
11	22:20	Noctule	Multi	Foraging
12	22:25	Common Pipistrelle	Multi	Foraging
13	22:29	Noctule	Multi	Foraging
14	22:35	Common Pipistrelle	Cont	Foraging
PC A	22:49 - 22:54	Ref. 15	NULL	NULL
15	22:49	Common Pipistrelle	2	Commuting
16	22:58	Common Pipistrelle	1	Commuting
PC B	23:03 - 23:08	Ref. 17	NULL	NULL
17	23:03	Common Pipistrelle	1	Commuting
18	23:09	Common Pipistrelle	1	Commuting
PC C	23:16 - 23:21	No bats	NULL	NULL



Client
Redrow

Project
Land South of Burbage

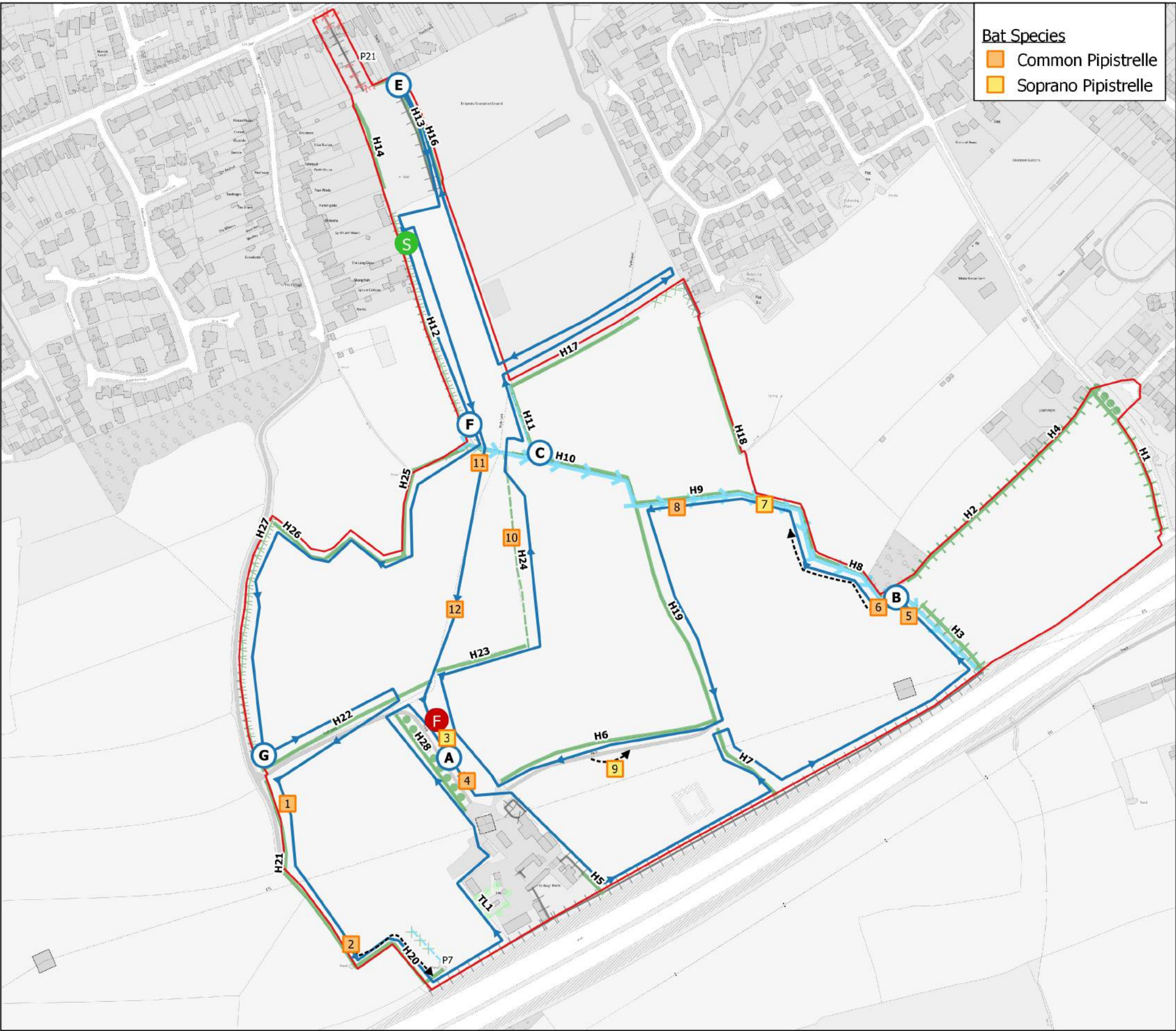
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Drawn
HET / NG

Issue date
16/11/2023

Figure 8



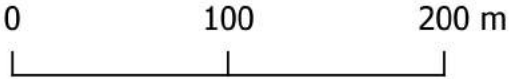
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Key:

- Site boundary
- Transect Route
- Start point
- Finish point
- Point Count Locations
- Flight Arrow

Ref	Time	Bat species	Passes	Behaviour
PC F	19:26 - 19:31	No bats		
PC G	19:36 - 19:41	No bats		
1	19:51	Common pipistrelle	1	Commuting
2	19:53	Common pipistrelle	Cont	Foraging
PC A	20:00 - 20:05	Ref. 3		
3	20:05	Soprano Pipistrelle	2	Commuting
4	20:06	Common pipistrelle	Cont	Foraging
PC B	20:17 - 20:22	Ref. 5,6		
5	20:17	Common pipistrelle	2	Commuting
6	20:19	Common pipistrelle	Cont	Foraging
7	20:24	Soprano Pipistrelle	Multi	Foraging
8	20:26	Common pipistrelle	Cont	Foraging / Social
PC C	20:31 - 20:36	Ref. 9		
9	20:35	Soprano Pipistrelle	1	Commuting
10	20:43	Common pipistrelle	Multi	Foraging
PC D	20:49 - 20:54	No bats		
PC E	21:02 - 21:07	No bats		
11	21:12	Common pipistrelle	1	Commuting
12	21:15	Common pipistrelle	3	Foraging





client

Redrow

project

Land South of Burbage

drawing title

BAT TRANSECT PLAN (14.09.21)

scale @ A3

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drawing / figure number

Figure 9

drawn

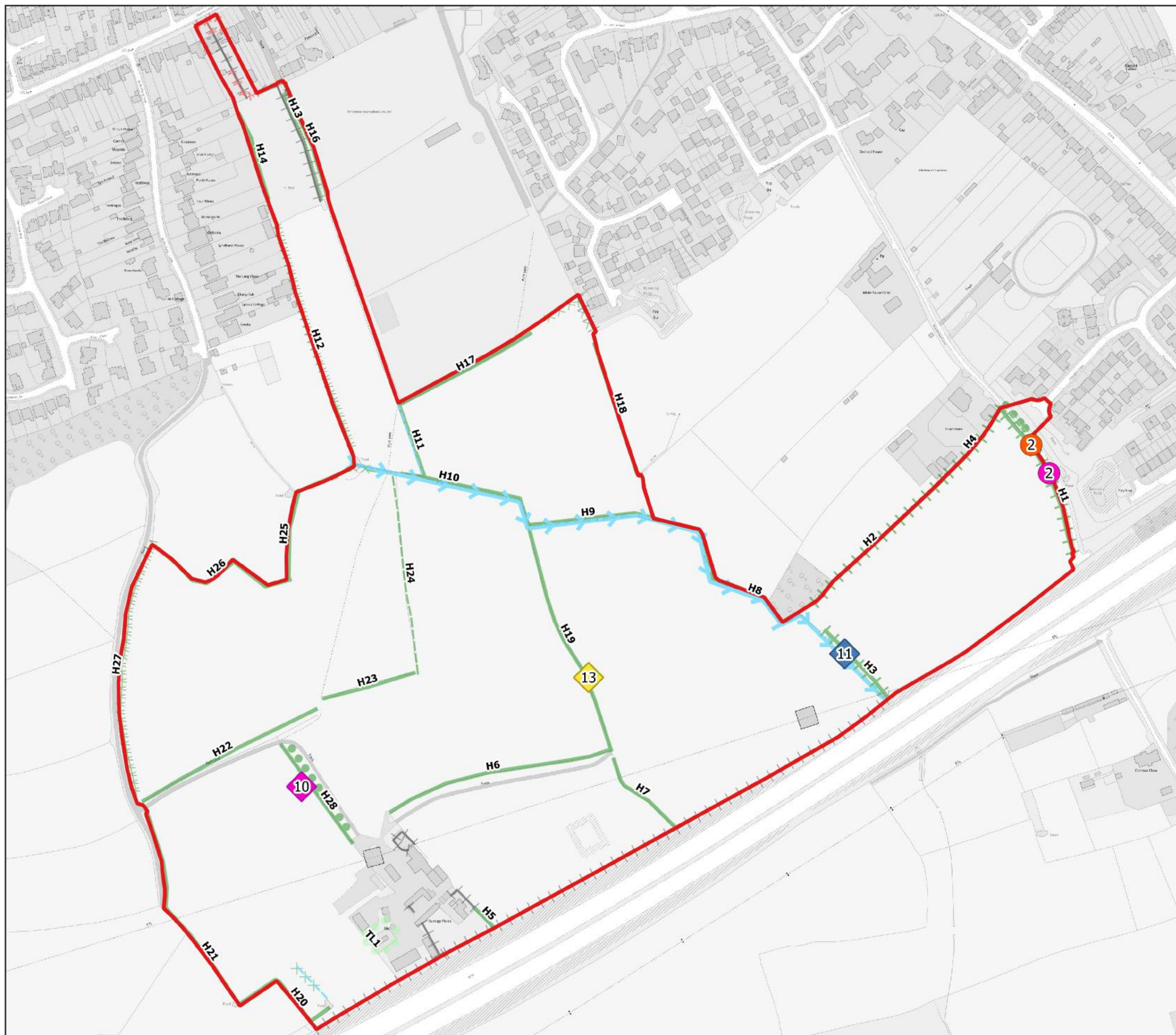
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16/11/2023

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Key

- Site Boundary
- ◆ August 2020 Static
- ◆ September 2020 Static
- ◆ May 2021 Static
- ◆ July 2021 Static
- ◆ September 2021 Static

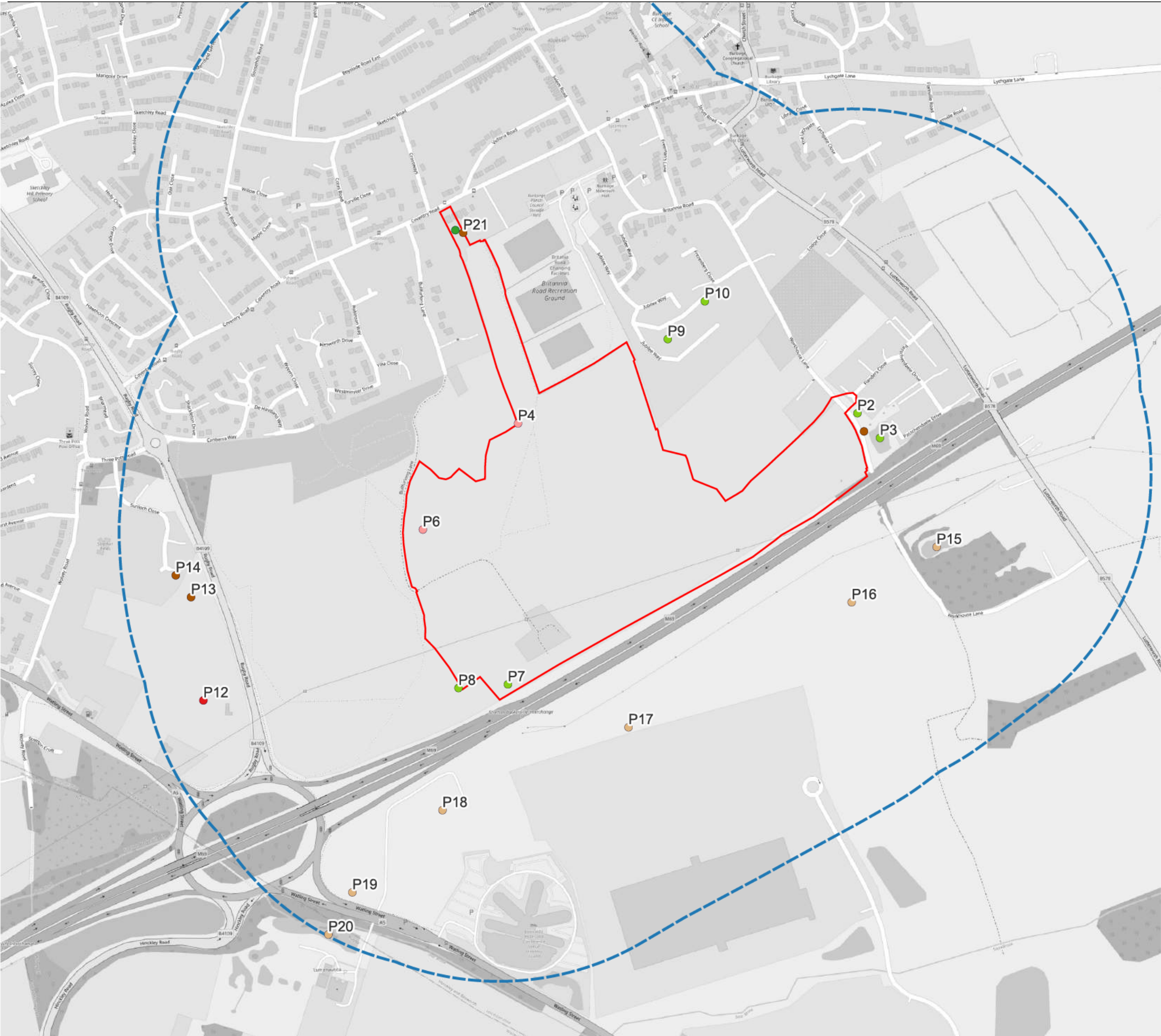


client
Redrow
project
Land South of Burbage

drawing title
2021 STATIC LOCATION PLAN

scale @ A3
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drawn
FMH / AJR
issue date
16/11/2023

Figure 10



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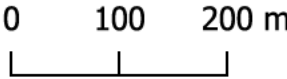
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Key

- Site Boundary
- 500m Buffer

Waterbodies

- Aquatic surveys - No GCN
- eDNA survey - Negative
- Dry
- Non-existent
- Separated by dispersal barrier





client
Redrow Homes

project
Land South of Burbage

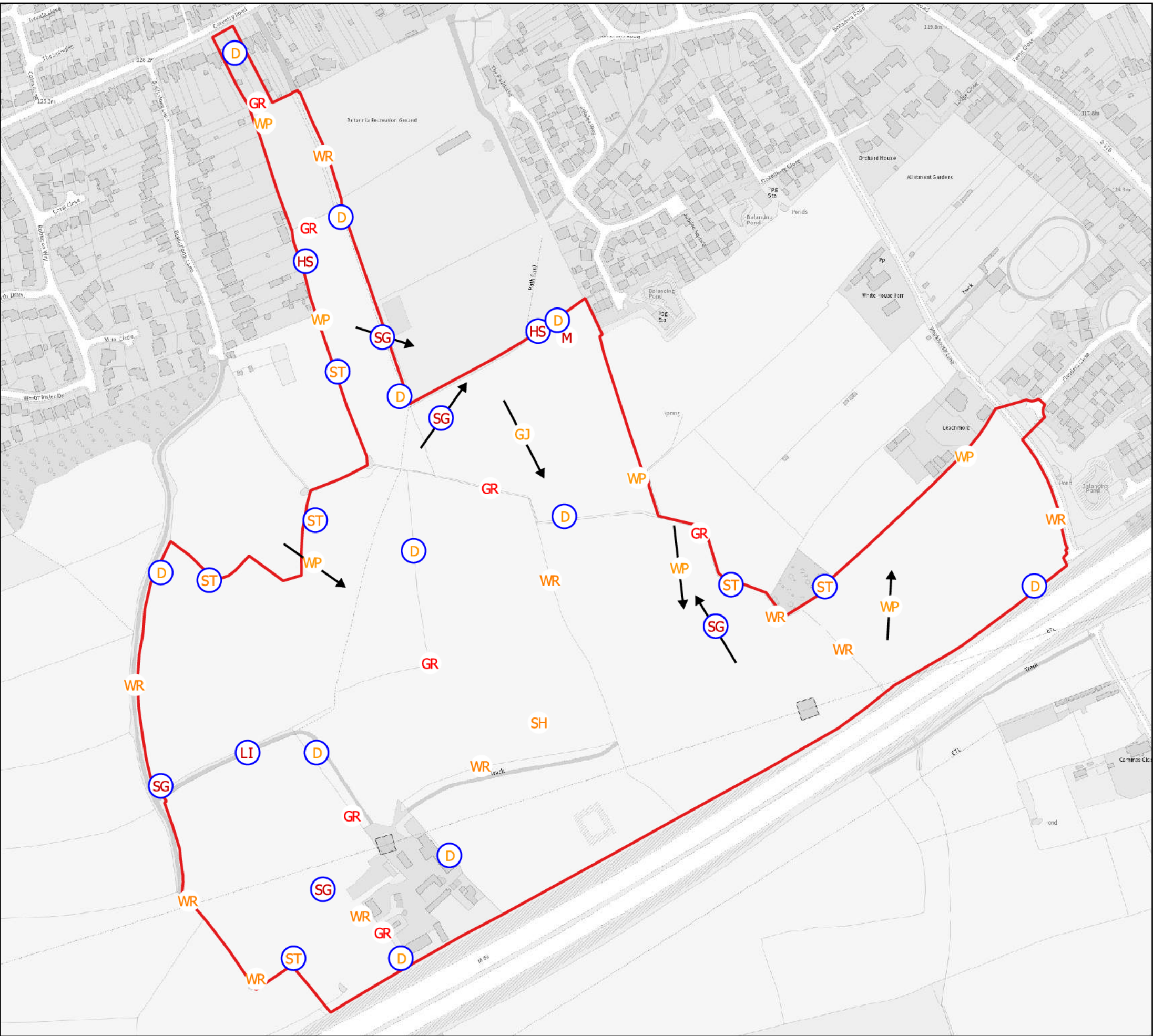
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drawing / figure number
Figure 11

drawn
AJR

issue date
16/11/2023

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Key

Site Boundary

Fly over only

BoCC Red List Species

HS House Sparrow

LI Linnet

M Mistle Thrush

SG Starling

GR Greenfinch

BoCC Amber List Species

D Dunnock

GJ Greylag Goose

ST Song Thrush

SH Sparrowhawk

WP Woodpigeon

WR Wren

Additional Protections

 NERC Species of Principal Importance

 Schedule 1 Species

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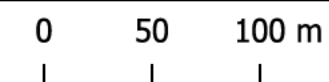
 Site Boundary

BoCC Red List Species

GR Greenfinch

WR Wren

Schedule 1 Species



K:\9600\9685\ECO\QGIS\QGIS 2.14\Plans\Bird Figures\BoCC5 - WBS Plan Template\BoCC5 - WBS Plan Template\9685-E-01 Winter Bird Survey Results Plan - Distribution of Notable Species.qgs

client
Redrow Homes Ltd.

project
Land South of Burbage

drawing title
WINTER BIRD SURVEY RESULTS PLAN -
DISTRIBUTION OF NOTABLE SPECIES

scale @ A3
1:3,500

drawing / AJR

issue date
16/11/2023

drawing / figure number
Figure 13

rev
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