Land off Balmoral Avenue, Banbury

Ecological Appraisal

Prepared by:
The Environmental Dimension Partnership Ltd

On behalf of:
Lone Star Land Ltd

October 2021
Report Reference
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Executive Summary

S1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Lone Star Land Ltd. This Appraisal considers the ecological implications of the proposed development of Land off Balmoral Avenue, Banbury (hereafter referred to as 'the Application Site' or 'the Site'). The Application Site is centred approximately at Ordnance Survey Grid Reference (OSGR) SP437400 in the District of Cherwell, Oxfordshire.

S2 The baseline ecological investigations undertaken as part of this Appraisal include a desk study, Extended Phase 1 Habitat survey, badger, bird, bat activity, great crested newt and hazel dormouse surveys. These surveys were undertaken with reference to best practice guidance.

S3 No part of the Site is covered by any statutory designation of international or national significance, and there are none present within the zone of influence of the proposals. There are also no non-statutory designations present within the local landscape that are at risk of impacts resulting from the proposed development.

S4 A large proportion of the Site comprises arable land encroached by scrub and tall ruderal vegetation of limited (Site-level) ecological value in their own right. Habitat of Local-level ecological value is present around the Site's boundaries, namely hedgerows/tree lines and woodland.

S5 Surveys for protected species have identified a bat assemblage of Local-level value commuting and foraging around the boundaries of the Site. In addition, the habitats support other wildlife including breeding birds, foraging badgers and potentially reptiles and invertebrates.

S6 Policy for the conservation and enhancement of the natural environment at all levels aims to minimise impacts on biodiversity and provide net gains in biodiversity (National Planning Policy Framework para 174). Accordingly, from the outset of the design process, EDP has contributed to the design of the masterplan assessed by this report, and which accompanies the planning application.

S7 As a result of this iterative design process, habitat loss has been reduced to the unavoidable loss of scrub and tall ruderal habitats, and a couple of minor hedgerow breaks to facilitate a drainage installation. Such impacts, including those on associated protected species (principally birds and bats, and potentially badger), are proposed to be mitigated through the enhancement of retained habitats and the creation of new habitats.

S8 Furthermore, retained habitats and associated species interests have been buffered from the development footprint and recommendations made for their protection during construction (measures including sensitive clearance methods to protect breeding birds and reptiles to be detailed in an Ecological Construction Method Statement (ECMS)) and

management during operation (measures to be detailed in an Ecological Management Plan (EMP)), to ensure their long-term retention and enhancement. With respect to protected species, enhancement measures include the establishment and management of new habitats and provision of new bird and bat boxes and refugia/hibernacula for reptiles, amphibians, hedgehogs, and invertebrates.

S9 In summary, the ecological mitigation strategy for the scheme includes: (1) avoidance measures already embedded within the masterplan; (2) measures that should be incorporated at the construction stage; (3) those that should be designed and specified within the landscaping scheme; and (4) management measures to ensure that the design vision is achieved in the long term that the proposals deliver a >10% net gain in biodiversity in accordance with emerging local and national planning policy.

S10 On this basis, EDP considers that the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels.

Section 1
Introduction, Purpose and Context

1.1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Lone Star Land Ltd. This Appraisal considers the ecological implications of the proposed residential development of Land off Balmoral Avenue, Banbury (hereafter referred to as 'the Site').

1.2 The survey work covered a wider area (hereafter referred to as the 'Survey Area'), including the Site, to provide contextual information and inform biodiversity net gain considerations.

1.3 This report has been informed and prepared with reference to the following industry standard guidelines:

- BSI (2013) Biodiversity. *Code of Practice for Planning and Development*. *BS Standard*. *BS 42020:2013*. British Standards Institute;
- CIEEM (2013). *Guidelines for Preliminary Ecological Appraisal.* Chartered Institute of Ecology and Environmental Management (CIEEM), Winchester; and
- CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal.* CIEEM, Winchester.

1.4 EDP is an independent environmental planning consultancy with offices in Cirencester, Cheltenham and Cardiff. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website (www.edp-uk.co.uk).

Site Context and Development Proposals

1.5 The Site is centred approximately at Ordnance Survey Grid Reference (OSGR) SP437400 north of Boughton Road (B4035), Banbury, North Oxfordshire OX16 0BE. The Local Planning Authority (LPA) is Cherwell District Council.

1.6 The location and extents of the Site are shown on **Plan EDP 1**. It measures 3.15 hectares (ha) and consists of arable land, located on the western extent of Banbury, with land to the north and south-east being residential housing, the east approved plans for residential housing and land to the west, north-west and south-west being fields managed as pasture or arable, bounded by hedgerows with occasional wooded copses and scattered farms present.

1.7 The Site lies to the east of residential proposals for up to 49 homes, public open space and other infrastructure, granted by planning inspector at appeal in June 2021

(APP/C3105/W/21/3271094: Land North And West Of Bretch Hill Reservoir Adjacent to Balmoral Avenue, OX16 0BG).

1.8 The development proposals for the Site have been designed as a complimentary second phase to this development with access provided from the approved scheme. An outline planning application, with all matters reserved except for access, for the erection of up to 49 dwellings, public open space and other infrastructure is proposed and appraised by this report.

Scope of Appraisal

1.9 This Ecological Appraisal describes the current ecological interest within and around the Site, based on standard desk and field-based investigations. It then considers the potential ecological impacts and identifies the necessary measures to avoid, mitigate or provide compensation for potential impacts, and the mechanisms for securing such measures.

1.10 The remainder of this report is structured as follows:

- **Section 2** summarises the methodology employed in determining the baseline ecological conditions within and around the Site (with further details provided within Appendices and on Plans where appropriate);

- **Section 3** summarises the baseline ecological conditions (with further details also provided within Appendices and on Plans where appropriate) and identifies and evaluates any pertinent ecological features/receptors;

- **Section 4** describes the development proposals, how the design has been influenced by ecological factors, EDP input to the design process and key components of inherent mitigation;

- **Section 5** considers the potential impacts of the proposal on pertinent ecological features in the context of legislative, planning policy and biodiversity action planning considerations. Recommended mitigation and enhancement measures are provided for the current and possible future planning stages; and

- **Section 6** summarises the inherent and recommended additional mitigation measures and provides the overall conclusions of the Appraisal.

Section 2
Methodology

2.1 This section of the Ecological Appraisal summarises the methodologies employed in determining the baseline ecological conditions within the Site and wider Survey Area. The appraisal has been undertaken by an appropriately experienced and qualified ecologist using relevant best practice methodologies wherever possible.

Methods (Baseline Investigations)

2.2 This Ecological Appraisal has been informed by a desk study, an Extended Phase 1 habitat survey including a badger survey, hedgerow survey and a tree bat roost assessment, bat activity surveys, bird survey, hazel dormouse surveys and great crested newt (GCN) surveys of habitats within the Site. These are described in more detail below.

Desk Study

2.3 The desk study provides important contextual information for the Ecological Appraisal and augments the information captured during site surveys.

2.4 The desk study involved collating information from the following sources:

- Thames Valley Environmental Records Centre (TVERC);
- Multi-Agency Geographic Information for the Countryside (MAGIC) website[1];
- National Biodiversity Network (NBN) Atlas website[2]; and
- Freely available aerial photography at Google Maps[3] and Ordnance Survey mapping available through Promap[4].

2.5 The desk study was undertaken during September 2021 and involved obtaining the following information:

- International statutory designations (10km radius around the Site);
- National statutory designations and non-statutory local sites (1km); and
- All protected/notable species records (1km).

[1] www.magic.gov.uk
[2] National Biodiversity Network Atlas website (https://nbnatlas.org/)
[3] https://www.google.co.uk/maps?tab=wl
[4] http://www.promap.co.uk/

2.6 These search areas are considered sufficient to cover the potential zones of influence[5] of the proposed development in relation to designated sites, habitats and species.

2.7 In addition to the above, freely available web-based Ordnance Survey plans and aerial photographs were reviewed to identify key habitat features including ponds within 500m[6] that could offer potential breeding habitat for great crested newt (*Triturus cristatus)*, and strong linear terrestrial or aquatic connecting features in the landscape.

Extended Phase 1 Survey

2.8 An Extended Phase 1 survey of the Site and wider Survey Area was undertaken on 27 May 2021, with reference to the methods described in JNCC (2010)[7], in order to inform the baseline habitats and (potential) protected species information for the application.

2.9 The Extended Phase 1 survey involves identifying and mapping the principal habitat types and identifying the dominant plant species present in each principal habitat type. In addition, any actual or potential protected species or Species of Principal Importance (as defined under Section 41 of the *NERC Act* (2006)[8]) are identified and scoped.

2.10 The Phase 1 survey was conducted in May, which is within the optimum season for such a survey (April to October inclusive), particularly within the south of England. Accordingly, the survey results are considered to be sufficiently robust, up to date and reliable to inform this Ecological Appraisal.

Phase 2 Protected Species Surveys

2.11 Based upon the studies that were undertaken as described above, using professional judgement and experience, a number of Phase 2 surveys were considered necessary in order to inform the ecological assessment. The surveys 'scoped in' are summarised in turn below and a brief explanation of those potential surveys 'scoped out' is provided thereafter.

Hedgerow Survey

2.12 Owing to the presence of a network of hedgerows within the Site, with variable quality and species-diversity, a detailed survey was undertaken to assess their value with reference to the Wildlife and Landscape criteria provided in Part II of Schedule 1 of the *Hedgerows Regulations* 1997. The survey was completed on 27 May 2021, and further details are provided in **Appendix EDP 2**.

5 Zone of Influence - the areas and resources that may be affected by the proposed development

6 500m is the upper distance over which most great crested newts typically disperse (English Nature (2001). *The Great Crested Newt Mitigation Guidelines.* English Nature, Peterborough

7 Joint Nature Conservation Council (2010) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (reprinted with minor corrections for original Nature Conservancy Council publication)

8 Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) http://www.legislation.gov.uk/ukpga/2006/16/section/41

Breeding Bird Survey

2.13 The value of the Site for breeding birds was assessed through the completion of a pilot breeding bird survey undertaken on 06 May 2021 to assess the value of the assemblage and to advise of the need for further surveys. The pilot survey was undertaken with reference to the Common Bird Census (CBC) approach, as detailed in **Appendix EDP 3** and the results are illustrated on **Plan EDP 2**.

Bat Surveys

Bat Roosting - Trees

2.14 With reference to best practice guidance [9], trees within the Site were visually assessed from ground level for the presence of bats/evidence of bats and potential to support roosting bats by a suitably experienced ecologist on 27 May 2021. This included searching for the presence of potential bat roosting features such as: loss/peeling/fissured bark; natural holes e.g. rot holes and holes from fallen limbs; woodpecker holes; cracks/splits or hollow tree trunks/limbs; and thick-stemmed ivy. On the basis of this, trees were assigned a rating of low, medium or high potential.

2.15 Locations of the trees, together with their corresponding reference numbers are shown on **Plan EDP 1** and further details provided in **Appendix EDP 4**.

Bat Foraging/Commuting

2.16 Features such as trees, hedgerows and scrub within the Site were identified as being potentially suitable for foraging and commuting bats. Therefore, bat activity was investigated through a combination of three manual transect surveys and three automated detector surveys (two statics deployed for five nights on each occasion) undertaken between June and September 2021.

2.17 Full details of the bat surveys undertaken are provided in **Appendix EDP 4** and detailed on **Plans EDP 3** - **6** inclusive.

Hazel Dormouse

2.18 Based on the suitability of habitats present, a nest tube survey to determine the presence/likely absence of dormouse (*Muscardinus avellanarius*) was undertaken across the Site in accordance with best practice guidance. A total of 55 standard nest tubes were deployed on 06 May 2021. The tubes were located in suitable hedgerows as shown on **Plan EDP 7**. These tubes were checked for the presence or evidence of dormouse during June, July and September, with further checks programmed in October and November 2021.

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

2.19 Best practice guidance advises that the index of probability in detecting dormice presence within nest tubes is calculated according to set scores given for each of the different months, during which a minimum of 50 nest tubes are deployed. The combined survey effort score meets best practice guidance for detecting dormouse presence. This is discussed further within **Appendix EDP 5**.

Great Crested Newt Survey

2.20 There are two waterbodies present within 250m of the Site boundary. Great crested newt (*Triturus cristatus*) (GCN) eDNA surveys were conducted in May and June 2021. Pond locations are illustrated on **Plan EDP 1**.

2.21 Full details of the GCN surveys are provided in **Appendix EDP 6**.

Badger

2.22 The habitats identified within the Site were considered suitable to support badger (*Meles meles*) and as such badger walkover surveys were completed on 27 May 2021.

2.23 Full details of the badger surveys are provided in **Appendix EDP 7**.

Surveys Scoped Out

2.24 **Table EDP 2.1** summarises other survey types, which, while commonly required as part of an assessment of the ecological baseline conditions of a site, were not considered necessary/appropriate in this case.

Table EDP 2.1: Ecology Surveys Scoped Out

Survey Type	Reasons for Scoping Out
Botanical Surveys (Grasslands)	Phase 1 habitat survey information was sufficient to confirm habitat value, with no indication of particularly high value habitat present.
Reptiles	No current or historic records were returned from within the Site by TVERC. There are two records of reptiles within 2km of the Site, a single record of common lizard (*Zootoca vivipara*) and grass snake (*Natrix natrix)* was returned by TVERC. The closest record is c.0.6km south-east of the Site. In addition, habitat within the Site is limited to small areas of scrub and tall ruderal connectivity to the wider landscape is fragmented by adjacent roads and arable landscape. Higher quality rough grassland habitats to the east of the Site were subject to surveys as part of the planning application for its development and no reptiles were recorded.

Survey Type	Reasons for Scoping Out
Further Breeding and Wintering Birds	The Site is not considered to contain a large enough amount of suitable habitat to support any notable bird assemblages. The trees, scrub and adjacent woodland provide potential habitat for nesting birds. The small size of the Site means potential to support ground nesting species (such as skylark (*Alauda arvensis*)) is very limited and no evidence was noted during any of the survey work. The pilot survey and precautionary mitigation, as detailed under **Section 5**, is considered to be adequate to appraise and safeguard such interests.
Bat Building Roost Surveys	Surveys completed as part of the adjacent development proposals in 2018 and 2019. The demolishment and any associated bat mitigation, if required, will be dealt with through this development, which has outline approval (ref:APP/C3105/W/21/3271094).
Water Vole (*Arvicola terrestris*), Otter (*Lutra lutra*) and White-clawed Crayfish (*Austropotamobius pallipes*)	No records of otter, water vole or crayfish within 1km of the Site, and no suitable habitat within the Site or on adjacent land.
Invertebrates	Limited habitat suitability, with higher value habitats restricted to field boundaries and acting as a surrogate to protect such interests.

Biodiversity Net Gain Calculations

2.25 To calculate biodiversity net gain, as required by the *National Planning Policy Framework* (NPPF) and *Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment, within the* Cherwell District Local Plan 2011 – 2031 (adopted 2016) a Biodiversity Impact Assessment (BIA) metric is required. This is a transparent way to calculate the biodiversity value of the habitats and hedgerows on a site before and after development. It is a proxy measure to determine if the development will result in an on-site habitat biodiversity net loss or gain.

2.26 A BIA was undertaken using the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Metric 3.0 (July 2021), by an experienced ecologist.

2.27 The assessment was undertaken based on the existing habitat information derived from the Extended Phase 1 Habitat survey and the Illustrative Landscape Plan (**Appendix EDP 8**). GIS software has been used to accurately calculate areas of habitat to be retained, enhanced and recreated.

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Section 3
Results (Baseline Conditions)

3.1 This section of the Ecological Appraisal summarises the baseline ecological conditions determined through the course of desk and field-based investigations described in **Section 2**. In particular, this section identifies and evaluates those Important Ecological Features (IEFs) situated within the Site, or its potential zone of influence, which are pertinent in the context of proposed development.

3.2 The evaluation of potential IEFs has been undertaken in accordance with the latest Chartered Institute of Ecology and Environmental Management (CIEEM) guidance, with professional judgement and available guidance used to assign a level of importance to IEFs at a geographical scale from International/European (highest importance) National > Regional > County > District > Local > Site-level > Negligible (lowest importance).

3.3 Except where indicated otherwise, within this Ecological Appraisal report 'Priority Species' and 'Priority Habitats' refers to the list of species and habitats of principal importance for nature conservation; a list that is required to be in operation under Section 41 of the *Natural Environment and Rural Communities Act* 2006, and which, under Section 40, Local Planning Authorities must consider as a material consideration during decision making.

3.4 Further technical details of the results are, where appropriate, provided in the appendices and on plans to the rear of this report.

Designated Sites and Ecology Features in the Wider Landscape

3.5 The Site is located on the south-western extent of Banbury, within a semi-rural context. The majority of land to the north, east and south comprises of residential housing. Land adjacent to the western boundary is predominantly a farmed landscape, comprising pasture and arable fields bounded by hedgerows, with scattered woodland copses present within the wider landscape.

3.6 There are no statutorily designated sites of European/International importance located within 10km of the Site.

3.7 There are no designated sites of National importance located within 1km of the Site.

3.8 Non-statutory wildlife sites in Oxfordshire are known as Local Wildlife Sites (LWS). There are no LWS within 1km of the Site.

3.9 There are no sites designated as Ancient Semi-Natural Woodland (ASNW) or Ancient Replanted Woodland (AWS)/Plantation on Ancient Woodland (PAWS) within or immediately adjacent to the Site.

Priority Habitats Within Site and Adjacent Landscape

3.10 There are several occurrences of the Priority Habitat deciduous woodland within 1km of the Site, including the closest area to the Site boundary, a small section located 0.2km to the east of the Site. Other small areas of this habitat, along with a small area of traditional orchard, located within the 1km search radius, are not considered to be at risk from the proposals due to geographical separation.

Habitats

3.11 Information on habitats within the Site and wider Survey Area was obtained during the Extended Phase 1 Habitat survey and hedgerow assessment.

3.12 The distribution of different habitat types within the Site is illustrated on **Plan EDP 1**. In addition, detailed descriptions of these habitat types, together with illustrative photographs, are provided in **Appendix EDP 1**.

3.13 The full results of the detailed hedgerow survey are provided in **Appendix EDP 2**. In summary, three of the eight hedgerows surveyed within the Survey Area were found to qualify as 'important' under the Wildlife and Landscape Criteria of the *Hedgerows Regulations* 1997, on the basis of their species diversity and associated features, including hedgerows H1, H4 and H5. These hedgerows all bound parts of the Site.

3.14 A summary and qualitative assessment, of the habitats is provided in **Table EDP 3.1**.

Table EDP 3.1: Summary of Habitats within the Site

Habitat or Feature	Distribution within Site or Survey Area	Intrinsic Ecological Importance
Arable	The majority of the Site comprises of arable fields.	**Negligible**, owing to intensive cultivation and absence of notable margins.
Tall Ruderal	A small area located in the southern-eastern corner of field **F1** outside of the Site	**Low to negligible (Site level)**, owing to low distinctiveness and small size of habitat.
Hedgerows	Hedgerow network delineating the majority of the field boundaries, with a mixture of species-rich hedgerows and species-poor hedgerows.	**Local level**, owing to species-diversity and connectivity across the Site.
Scattered Trees	Mature standards predominantly scattered along field boundaries.	**Local level**, owing to age and size.
Dense Continuous Scrub	Predominantly found along the northern, eastern and western edge of field **F1**. Dominated by blackthorn.	**Site level**, owing to low distinctiveness.
Broad-leaved Semi-natural Woodland	Small extent of broad-leaved semi-natural woodland is present adjacent to the north-eastern Site boundary.	**Local level**, owing to limited extent.

3.15 As noted within **Table EDP 3.3**, the majority of the habitats within the Site, which comprises predominantly intensive arable fields, are of negligible or low (Site level) ecological importance. However, the scattered trees, hedgerow network and adjacent broad-leaved semi-natural woodland are considered to be of up to Local level importance.

3.16 A number of the habitats or other features which are of negligible or low (Site level) intrinsic importance may also require consideration in relation to their importance in maintaining populations of protected and/or notable species. This is discussed further below.

Protected and/or Notable species

3.17 The likelihood of presence, or confirmed presence, of protected and/or notable species within the Site is summarised below with reference to desk study records, habitat suitability and detailed surveys where relevant. Further details are made available within appendices and plans where referenced.

3.18 Where a particular species or taxonomic group has been confirmed to be present, or presence is inferred based on habitat suitability, the ecological importance or significance of the population or assemblage is assessed on a geographical scale.

Breeding Birds

3.19 The desk study returned a small number of records of notable birds, the most pertinent of which, based on the habitats present, are considered to include Red list species: skylark (*Alauda arvensis*), corn bunting (*Emberiza calandra*), mistle thrush (*Turdus viscivorus*), fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*).

3.20 Given the limited extent and nature of habitats present, the Site was considered unlikely to support a significant breeding bird assemblage. However, as a precaution, in order to provide a greater baseline understanding of the bird assemblage using the Site and to inform the need for further surveys, a pilot breeding bird survey was undertaken on 06 May 2021 by an experienced surveyor. Full results of the breeding bird survey are provided in **Appendix EDP 3**, illustrated on **Plan EDP 2** and summarised below.

3.21 During the breeding bird survey, 18 species were recorded in total. Of these, 14 (78%) were common and widespread (Green list or no status) species. Of the remainder, two (11%) were Red list species and two (11%) Amber list, namely song thrush (*Turdus philomelos*), house sparrow (*Passer domesticus*), bullfinch (*Pyrrhula pyrrhula*) and dunnock (*Prunella modularis*). All of these species are relatively common and widespread in garden and parkland settings, despite suffering national declines. With the exception of house sparrows, which typically nest in buildings, the other conservation concern species are likely to breed within the scrub and hedgerow habitats within the Site. No notable farmland specialist species were recorded.

3.22 All species were recorded in fairly low numbers, with house sparrow being the most numerous species recorded due to the presence of two small flocks. Birds were recorded site-wide throughout hedgerows, with peaks of activity associated with the north-eastern plantation wood boundary/scrub and south-eastern corner adjacent to residential gardens in the wider Study Area.

3.23 Based on the survey findings, the breeding bird assemblage is considered to be of Site to Local level nature conservation importance. Given the typical assemblage recorded it was considered that no further surveys would be required.

Bats

3.24 The desk study returned 49 records for bat species relating to common and widespread species including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), serotine (*Eptesicus serotinus*) and noctule bat (*Nyctalus noctula*). In addition, records of two bats (barbastelle and myotis) on the annex 2 list were returned from within 2km. No records of bats were returned from within the Site.

Bat Roosting – Buildings

3.25 The Site boundary extends to the east to incorporate access through the approved adjacent development proposals (ref: APP/C3105/W/21/3271094) and thereby includes some old derelict buildings within the red line. These buildings were subject to internal/external bat roost inspections and where necessary emergence/re-entry surveys in 2018 as part of the adjacent proposals, with the results presented in the corresponding Ecological Appraisal (edp4380_r002). Further surveys were completed in 2019 and are provided in an Addendum Bat Report (edp4380_r003). No roosting bats were recorded within any of these buildings and any update surveys will need to be completed as part of the reserved matters application for the approved scheme. In light of this, no surveys were conducted to inform this Ecological Appraisal.

Bat Roosting – Trees

3.26 No bats or evidence of bats were found during the ground level tree assessments. The visual assessment identified two trees within the Survey Area, outside of the Site, with potential to support roosting bats. These comprised of one with high potential (T2) and one with medium potential (T1). The locations of trees with bat roost potential are illustrated on **Plan EDP 1**.

Bat Foraging/Commuting Activity

3.27 The results of the transect surveys and automated detector surveys are provided in detail in **Appendix EDP 4** and illustrated on **Plan EDP 4-7**. The surveys recorded moderate levels of bat foraging/commuting activity across the Site, with typical and widespread species, including common pipistrelle, soprano pipistrelle, myositis sp. and noctule bats, accounting for the majority of recordings made. This supports the findings of bat activity

surveys relating to the adjacent development application. However, a number of additional rare species were recorded including Nathusius pipistrelle (*Pipistrellus nathusii*), serotine, long eared species as well as Annex II species barbastelle (*Barbastella barbastellus*) and lesser horseshoe (*Rhinolophus hipposideros*).

3.28 Of the rare species, there were 22 barbastelle registrations, 18 lesser horseshoe and four Nathusius pipistrelle. This is considered to be indicative of the value and species diversity across the wider landscape and representative of sporadic foraging and commuting across the Site, rather than indicative of the value of the habitats within the Site itself for foraging. However, it does highlight the use of the Site's boundary vegetation for commuting by a variety of bat species.

3.29 Based on the survey findings, the bat population supported by the Site is considered to be of Local level ecological importance.

Hazel Dormouse

3.30 TVERC returned no records of dormouse from within 2km of the Site.

3.31 Interim details of the dormouse surveys are given in **Appendix EDP 5**. To date no dormice have been recorded. The results of the final two checks will be submitted during determination.

Great Crested Newts

3.32 TVERC returned 14 records of GCN from within 2km of the Site including a known population recorded by development proposals to the south of Broughton Road, greater than 250m from the Site.

3.33 Full details of the GCN surveys are given in **Appendix EDP 6**. In summary, the eDNA tests returned a negative result for both ponds **P1** and **P2**, which lie to the south of the Site on the opposite side of Broughton Road.

3.34 No other ponds are present within 250m of the Site and terrestrial opportunities within the Site are limited to the field boundaries. Broughton Road also acts as a barrier to movement from the known populations in the wider landscape to the south. Therefore, GCN are considered likely to be absent from the Site.

Reptiles

3.35 TVERC returned two records of reptiles (common lizard) (*Zootoca vivipara*) from within 2km of the Site.

3.36 The hedgerows and scrub bounding the Site offer limited opportunities for sheltering and foraging reptiles. In addition, the surrounding landscape is considered to be suitable for reptiles and the Site is well connected to these areas. However, given an absence of findings from surveys of the adjacent higher quality grassland and that the suitable

habitat on-site is restricted to the boundaries, further surveys for reptiles are not considered to be necessary. A precautionary approach to potential reptile presence within these habitats is adopted accordingly.

Summary

3.41 Based on the baseline investigations described above, the Important Ecological Features pertinent to an assessment (those of Local level importance or greater, and those that have legal protection) of the proposed development at the Site, are listed in **Table EDP 3.2** below.

Table EDP 3.2: Important Ecological Features Warranting Consideration During Assessment

Important Ecological Feature	Key Attributes	Nature Conservation Importance
Habitats		
Broadleaved Semi-natural Woodland/Tree Lines/Scattered Trees and Hedgerows	Adjacent woodland, hedgerows (including important hedgerows) and trees located along the majority of the Site boundaries, connecting habitats in the wider landscape and forming dispersal corridors for wildlife.	Local

Important Ecological Feature	Key Attributes	Nature Conservation Importance
Fauna		
Birds	Suitable habitat for a range of generalist breeding bird species though of insufficient extent to support notable populations.	Site to Local
Bats	Presence of a relatively diverse assemblage of foraging/commuting bats, primarily associated around the boundaries of the Site and including small numbers of rarer species. Potential for bats to be roosting within trees present within the wider Survey Area but not on-Site.	Local
Badger	Badger sett in relatively close proximity to the Site and population considered to forage and commute across the Site.	Site

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Section 4
Details of the Proposed Development

4.1 Based on the review of baseline conditions, this section of the Ecological Appraisal provides pertinent details of the proposed development, in particular those aspects which have a potential implication for the ecological features/receptors identified in **Section 3**. Where relevant, reference is made to the influence that ecological considerations have had in the scheme's design and any inherent mitigation which avoids or reduces the severity of potential ecological impacts.

4.2 The proposal comprises an outline planning application for the erection of up to 49 dwellings, public open space and other infrastructure and is in conjunction with the phase 1 development adjacent to the east of the Site. An illustrative landscape plan is provided in **Appendix EDP 8**.

4.3 Input has been provided throughout the iterative design process so the masterplan, although illustrative, already reflects some important measures to avoid, mitigate or compensate for ecological impacts as well as other measures designed to provide long-term ecological enhancements. Such measures include:

- Retention and buffering of the most valuable vegetation comprising woodland, mature trees and hedgerows;
- Tree, shrub and hedgerow planting to strengthen and enhance habitat corridors and delineate private gardens, particularly along the northern and western boundaries;
- Creation of wildflower grassland margin around the boundaries of the retained vegetation and along the drainage easement; and
- Creation of a new attenuation feature designed with permanent water and adjacent wildflower grassland to provide enhanced opportunities for wildlife outside the core development area.

4.4 Direct habitat impacts have therefore been limited to the unavoidable loss of a small number of trees for access and sections of encroaching scrub and tall ruderal habitats around the boundaries of **F1**.

4.5 A vision for the open spaces and natural areas incorporated as part of the masterplan proposals is contained within the Design and Access Statement. Further measures designed to ensure that the proposals enhance the natural environment by '*minimising impacts on and providing net gains for biodiversity'* in accordance with paragraph 174 of the NPPF, may be incorporated at the reserved matters stages. Such measures are discussed further in **Section 5** of this Appraisal.

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Section 5
Predicted Impacts and Mitigation

5.1 This section of the Ecological Appraisal considers the likely impacts of the illustrative landscape masterplan included as **Appendix EDP 8** on the existing ecological resource. Where impacts cannot be avoided by inherent mitigation alone, additional mitigation or enhancement measures are recommended which, if implemented, would as a minimum enable the proposed development to meet legislative and/or planning policy requirements.

5.2 In accordance with the *Natural Environment and Rural Communities* (NERC) Act 2006, within England, local planning authorities have a statutory duty to have regard to effects upon biodiversity when exercising their functions; this includes consideration of effects upon ecological features such as designated sites, and Priority Habitats/Priority Species when determining planning applications. In accordance with planning policy at all levels, local planning authorities must also consider whether or not 'significant harm' to biodiversity may occur due to effects upon such ecological features. This, and the statutory protection afforded to certain designated sites and species, is explored in further detail below.

5.3 The overall summary and conclusions, based upon the above, are provided in **Section 6**.

Designated Sites

5.4 As set out in **Section 3**, there are no statutory or non-statutory designations that are at risk of direct or indirect impacts as a result of the development proposals.

Habitats and Biodiversity Net Gain Calculations

5.5 There are several mechanisms through which habitats receive protection in addition to the statutory and non-statutory designated site frameworks. For instance, certain habitats are identified in policies within the NPPF. Furthermore, the NPPF states:

"180. when determining planning applications, local planning authorities should apply the following principles:

a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

c) development proposals resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless

there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable net gains in biodiversity or enhance public access to nature where this is appropriate."

5.6 At a local level, *Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment, within the* Cherwell District Local Plan 2011 – 2031 (adopted 2016) states that protection and enhancement of the natural environment will be achieved by (amongst other actions) the following:

- *"In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources;*
- *The protection of trees will be encouraged, with an aim to increase the number of trees in the District;*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity;*
- *Development proposals will be expected to incorporate features to encourage biodiversity and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity the biodiversity and geological value of land and buildings and minimise harm to or loss of environmental features, such as trees, hedgerows, woodland, wetland and ponds;*
- *Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably;*
- *A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management".*

5.7 Habitats within the Site and along the boundaries have been assessed through an Extended Phase 1 survey. The Site comprises arable fields with pockets of scrub encroaching around the field boundaries. which are considered to only be of Site-level

ecological value, such that development in these areas would have a minimal impact on biodiversity. However, the hedgerows, scattered trees and woodland along the Site's boundaries are considered to be of Local ecological value, particularly when considered collectively with the scrub within the Site. These locally valuable habitats do not pose an 'in principle' constraint to the development. However, the development proposals have sought to retain these features and compensate for any losses with enhancement and new habitat creation elsewhere on the Site, or immediately bounding the Site, to deliver net gains in biodiversity.

5.8 As a result of an iterative design process in which ecological sensitivities were considered, the majority of valuable boundary tree and hedgerow habitats have been retained and buffered from development (see **Appendix EDP 8**). To avoid damage/disturbance of these retained features during construction, it is recommended that Ecological Protection Zones (EPZs) with an appropriate buffer should be established during the construction phase. EPZs can often be achieved through co-ordination with tree protection measures required as good arboricultural practice, including temporary protective fencing and signage.

5.9 Habitat loss has been minimised to the loss of 0.27ha of blackthorn scrub habitat along the northern boundary to allow for the inclusion of a play space, and the loss of two sycamore and two ash trees to provide access into the Site (as set out in the Arboricural Impact Assessment (Ruskins Consultancy October 2021). There may also be some small-scale scrub removal required where the drainage pipe, that will take run-off to the attenuation feature, crosses two gappy hedge lines. The magnitude and extent of direct habitat impacts is therefore relatively low. These losses can be mitigated and compensated through habitat enhancement and creation within Site. The following compensatory and ecological enhancement measures are therefore proposed:

- Enhancement of hedgerow, scrub and tree habitats through appropriate management measures;
- Creation of new grassland within areas of open space, including meadow flower grassland along the drainage corridor, and ongoing suitable management;
- Creation of an attenuation pond designed for wildlife with permanent water elements and variable shelves to allow for a variety of aquatic species to establish; and
- New native tree, shrub and hedgerow planting, to strengthen existing habitat corridors and increase habitat diversity.

5.10 Specifications for new planting and other habitat creation should be provided with a detailed Soft Landscaping Scheme secured by a planning condition. In addition, it is recommended that measures to restore and enhance existing habitats, to ensure successful establishment of new habitats, and to maintain the value of all ecological features in the long-term are detailed within an Ecological Management Plan (EMP) secured by a planning condition.

5.11 In light of the habitat losses, gains and enhancements, a Biodiversity Impact Assessment calculation has been completed using the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Metric 3.0 (July 2021) to objectively determine the overall biodiversity impact of the proposals. The results of this calculation are provided in **Appendix EDP 9**, and the broad areas used in the calculator illustrated in **Plan EDP 8**. Notes are included in the calculator comments field to justify the parameters used.

5.12 The calculations suggest that the Proposed Development will achieve a net gain of +1.07 (10%) area biodiversity units and a +1.08 (12.7%) gain in linear hedgerow units. To ensure there is no habitat trading issue, this is based on the assumption that 0.2ha of the meadow flower grassland depicted in **Plan EDP 8** is actually used for scrub planting.

5.13 Habitat enhancement and management measures can be incorporated within the Landscape and Ecology Management Plan (LEMP) to ensure the delivery of biodiversity gain.

5.14 Subject to the implementation of the recommendations set out above, including the delivery of habitat enhancements adjacent to the Site, the proposed development is considered to be capable of meeting biodiversity planning policy requirements at a Local and National level, including emerging policy requiring 10% net gain in biodiversity. Should it transpire that the drainage easement cannot be used for meadow flower grassland, or additional net gain needs to be delivered, the applicant controls the two other arable fields within the Study Area, which can potentially be utilised for further habitat creation.

5.15 Some of the habitats present within or adjacent to the Site, including those of low intrinsic value, require further consideration in relation to supporting protected species as discussed below.

Protected and Notable Species

5.16 Certain species receive legal protection in the United Kingdom and are commonly known as 'protected species'. The level of protection for different species varies considerably, from protection solely against 'killing and injury' to full protection of the species and their places of refuge. Where pertinent, details of legal protection afforded to species/species-groups are provided below.

5.17 In addition to protected species, there are other species/species-groups that do not receive legal protection, but which are notable owing to their conservation status as Priority Species or other status. Details of any actual or potential notable species within the Site are identified below.

5.18 With respect to planning policy, protected and notable species are afforded policy protection at a national level by the NPPF (paragraph 180) and at a local level by Policy ESD 10 of the Cherwell District Local Plan (2016).

5.19 Baseline investigations have identified protected species implications for the development relating to breeding birds, badgers and bats. These are discussed in turn below.

Breeding Birds

5.20 All wild birds, their nests and eggs are protected under Section 1 of the *Wildlife and Countryside Act* 1981 (as amended), with certain species afforded additional protection measures. In addition, certain species of conservation concern are listed as UK Priority Species.

5.21 Owing to the small size and limited diversity of habitats currently present on-site, the Site supports an assemblage of breeding birds that is relatively limited in diversity and abundance and comprising common and widespread generalist species. The habitat retention and enhancement measures described above would minimise impacts upon the breeding bird assemblage of the Site and surrounding area, particularly given that the assemblage appears to be principally associated with the woodland, trees, hedgerows and scrub located along the Site boundaries.

5.22 The delivery of the landscape masterplan and installation of suitable bird boxes on retained trees and integrated into buildings adjacent to green space, could potentially increase the nesting and foraging resources within the Site for breeding birds, including conservation concern species recorded locally such as swallow (*Hirundo rustico*), house martin (*Delichon urbicum*), swift (*Apus apus*), dunnock, house sparrow, starling, song thrush and mistle thrush (*Turdus viscivorus*).

5.23 It is recommended that the quantum, design and location of integrated bird nesting features follows CDCs *Biodiversity in the Built Environment, Good Practice 1, Preservation of Existing Sites and Provision of Artificial Nesting Sites* (September 2019), which includes the integration of one bird/bat feature per dwelling.

5.24 For the reasons described above, it is not considered that the proposed development will have any significant impact on the local bird populations. However, given the protection afforded to all breeding birds, their nests, eggs and young, any removal of or disturbance to any vegetation on-site or immediately adjacent to the Site considered to offer potential nesting habitat for breeding birds (i.e. scrub, trees and woodland), should either be undertaken between September and February inclusive, or immediately following inspection for active nests by a suitably qualified ecologist.

5.25 The protection and enhancement measures outlined above in relation to breeding birds should be delivered via a conditioned Ecological Construction Method Statement (ECMS), Soft Landscaping Scheme and EMP.

Bats

5.26 All species of British bat are listed as European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive). This affords bats

and their roosts strict protection under the *Conservation of Habitats and Species Regulations* 2010 (as amended). Additional protection for bats is also afforded under the *Wildlife and Countryside Act* 1981 (as amended) and a subset of the British bat assemblage are listed as UK Priority Species.

Bat Roosting

5.27 There are two trees within the Survey Area offering potential for roosting bats, with potential ranging from medium to high. The trees are located outside of the Site itself and will not be impacted directly or indirectly by the proposals. Based on the Site layout (**Appendix EDP 8**), it is also anticipated that existing flight lines from these features will also be maintained.

5.28 The roosting potential of trees can vary over time as a result of storms and natural decay. As such, it is recommended that an update inspection of any trees for roosting bat potential is completed prior to any felling or pruning works by a suitably experienced ecologist.

5.29 In terms of bat roosting within buildings, the buildings associated with the eastern access have been surveyed as part of the adjacent development proposals in 2018 and 2019. The proposals include the demolition of these buildings and creation of road access. The demolishment and any associated update bat surveys and bat mitigation, if required, will be dealt with through this development, which has outline approval (ref:APP/C3105/W/21/3271094). Historically, the buildings have not been found to support any roosting bats.

Bat Foraging/Commuting

5.30 The activity surveys identified an assemblage of bats comprising largely common and widespread species foraging and commuting within the Site and wider Survey Area, with occasional rarer species also recorded. The majority of activity was recorded evenly throughout the Site with higher concentration of recordings along the eastern and southern boundaries of the Survey Area. The assemblage has been valued at a Local-level.

5.31 All of the hedgerow, trees and woodland bounding the Site will be retained and provided with a buffer from development except for small scale losses associated with the installation of the drainage pipe through two hedges. However, adjacent pockets of scrub/tall ruderal habitat will be lost to enable development, particularly within the north-eastern corner of the Site where 0.27ha of blackthorn scrub is proposed to be removed to allow space for a play area.

5.32 It is considered that the loss of the scrub and ruderal habitat would not result in significant impacts upon the bat assemblage, given the connectivity provided by the boundaries will be retained. The scrub/ruderal habitat is not considered to provide an important foraging resource for the local bat assemblage. The magnitude and extent of impacts upon the local bat assemblage is therefore considered to be relatively minor.

5.33 The loss in bat foraging habitats will be mitigated through habitat creation and enhancement measures described above. However, in the absence of additional mitigation, those retained and newly created habitats within the development could be subjected to increased light levels, which would deter foraging/commuting bats. This is particularly pertinent given the presence, albeit in low numbers, of more rare and light sensitive species such as lesser horseshoe and Barbastelle bats. It is therefore recommended that, at the detailed design/reserved matters stage, a wildlife-sensitive lighting scheme should be devised to avoid or minimise light spill where development is located in close proximity to retained foraging habitats. This could be achieved through a combination of positioning of fittings/luminaires and other design features such as directional hoods/baffles, timers, low-level bollards etc. to maintain dark corridors around the Site boundaries.

5.34 The protection and enhancement measures outlined above should be delivered via a Soft Landscaping Scheme, EMP and sensitive lighting design. Subject to the implementation of these mitigation measures, no significant effects upon the local bat assemblage are anticipated to arise as a result of the development proposals.

5.35 It is also recommended that bat roosting opportunities are increased as a result of the development. This can be achieved through the incorporation of features such as access tiles, gaps under fascia boards or bat bricks into selected new dwellings situated in closest proximity to suitable foraging habitats and through the erection of a variety of artificial bat roost boxes on suitable trees and/or buildings within the Site. Details should be agreed at the detailed design/reserved matters stages and included in the EMP for the development.

Badger

5.36 Badgers and their setts are legally protected from intentional cruelty and disturbance by *The Protection of Badgers Act* 1992. The off-site badger sett is >100m from the nearest development proposals and separated from the Site by a reservoir and future residential development. As such, there is not considered to be any risk of direct or indirect disturbance of the badger sett during construction.

5.37 As a precaution, given the presence of a local sett and mobile nature of badgers, it is recommended that an ecologist undertakes a walkover survey to check for active setts prior to work commencing. Should any active setts be identified, suitable mitigation measures should be employed, which may include a Natural England development license.

5.38 It is not considered that the loss of a small area of scrub foraging habitat resulting from the Proposed Development, will significantly impact the local badger population. Furthermore, the Site has been designed to maintain movement corridors around the tree and scrub lined boundaries, including a green corridor along the south of the Site that links with the wider landscape. The creation and enhancement of habitats within and adjacent to the Site will also compensate for such foraging habitat losses and maintain movement corridors.

Other Species – Hedgehog, Reptiles, Common Toad and Invertebrates

5.39 Given the potential presence of reptiles, amphibians and other wildlife within suitable boundary habitats (e.g. scrub and ruderal), where these require removal, it is recommended as a precaution that this clearance should be preceded by phased habitat clearance and destructive searches by hand of any log/rubble piles or any other suitable refugia. This would entail a cutting in two phases, once to 150mm and once to ground level towards retained habitats, in order to encourage reptiles and other wildlife to relocate into these. Any dismantling of refugia should only be completed when reptiles and amphibians are active (April to September) by a suitably experienced ecologist. It is recommended that such measures are detailed and secured through the ECMS.

5.40 It is recommended that enhancement measures for reptiles, amphibians and hedgehogs are also included in an EMP for the Site, to be secured by planning condition. Such measures could include sensitive maintenance within landscaped areas, such as sensitive ground-based vegetation management and minimising the use of pesticides to encourage a variety of invertebrates and other prey items, in addition to the creation of hibernacula and refugia. Gardens and public open space should be designed to enable mammals, including hedgehogs, to move freely, by use of hedgerows to form boundaries (rather than fencing), or by providing holes in fences where hedgerows are not appropriate.

5.41 It is considered that the habitat enhancement and species protection measures set out above would also safeguard other wildlife during construction and enhance opportunities for these species (e.g. invertebrates). Log piles and insect hotels are also recommended to enhance the Site for these species.

Section 6
Summary and Conclusions

6.1 This section of the Ecological Appraisal summarises the ecology strategy for the proposed development, in terms of inherent and recommended additional mitigation measures, and then provides the overall conclusions of the Appraisal.

Summary of Ecology Strategy

Inherent Mitigation Embedded in the Masterplan

6.2 The following mitigation is embedded within the masterplan:

- Retention, enhancement and buffering of valuable habitats from the built development, namely the hedgerows, trees and woodland bounding the site, in addition to areas of scrub;
- Creation of an attenuation feature, including a wildlife friendly permanent water design; and
- Creation of a scrub and meadow flower grassland habitats.

Construction/Pre-construction Measures

6.3 The construction/pre-construction measures include:

- Briefing of site personnel and supervision of certain construction/enabling works by a suitably experienced ecologist (if required);
- Protection of retained habitats within EPZs where construction personnel, vehicles and materials are excluded;
- Prior to clearance, update inspection of the trees for bat potential, and a walk over survey to check for presence of badger setts; and
- Sensitive timing and methods of vegetation clearance with regards to nesting birds and reptiles/amphibians.

6.4 It is recommended that these measures are detailed within an ECMS secured by a suitably worded pre-commencement condition attached to planning consent.

Detailed Design Measures

6.5 Detailed design measures include:

- New planting of native trees in the Site;
- Creation of informal open space surrounding the proposed development;
- Creation of new native species-rich hedgerows to strengthen the Site boundaries in appropriate locations and also to form boundaries delineating private gardens (preferentially over the use of fencing, or where the use of fencing is unavoidable, inclusion of suitable ground-level gaps to enable hedgehogs and other fauna to move through the Site);
- Provision of bird boxes on suitable mature trees along the boundaries of the Site and integrated into buildings;
- Provision of bat roosting features through incorporation of suitable features into selected new dwellings and erection of artificial bat roost boxes on suitable trees within the Site; and
- A sensitive lighting strategy designed to ensure that light spill is kept to a minimum on boundary habitats.

6.6 It is recommended that these measures are incorporated into the detailed landscaping scheme, the Ecology Management Plan (EMP) and sensitive lighting design, secured by suitably worded pre-commencement conditions attached to the planning consent.

Restoration, Enhancement and Maintenance Measures

6.7 Restoration, enhancement and maintenance measures include:

- Scrub management to include removal of the 50% of the dominant blackthorn and replanting of more diverse scrub plant species to increase its suitability for fauna such as invertebrates, birds, amphibians and small mammals;
- Hedgerow management to include gap planting and a cut on a three-year rotation (with no more than one third cut any one year) to increase value to wildlife;
- Management and strengthening of the hedgerows to provide greater structure and diversity, and retention of dead wood/creation of wood piles within the biodiversity area to create habitat for fauna such as reptiles, amphibians, small mammals and invertebrates; and
- Creation of a scrub and meadow flower grassland adjacent to the attenuation pond, along the drainage corridor and around the margins of the development. This will include arable conversion to meadow flower grassland, scrub planting to

compensate the loss of scrub habitat and gap planting of hedgerows to enhance species diversity and habitat heterogeneity. Further enhancements will include; log piles and hibernacula.

Overall Conclusions

6.8 Desk and field-based baseline investigations have demonstrated that the designated sites, habitats and species present within and adjacent to the Site do not pose an 'in principle' constraint to the proposed development that is the subject of this Appraisal. There are no statutory or non-statutory nature conservation sites within the proposed development site and none nearby that would be materially affected by the proposals.

6.9 However, habitats and protected species have been identified that require due consideration and should be embedded into any future reserved matters applications. These include the hedgerows, scattered trees and adjacent woodland around the site's boundaries, in addition to birds, bats and badger.

6.10 National and local policy for the conservation and enhancement of the natural environment expects developments to minimise impacts on and provide net gains for biodiversity (NPPF paragraph 174). Accordingly, from the outset of the design process, EDP has contributed to the design of the masterplan assessed by this report, which accompanies the planning application. Specific proposals for the avoidance, mitigation and compensation of any predicted impacts are considered in this report and summarised above. These measures include: (1) those already embedded within the masterplan; (2) measures that should be incorporated at the construction stage; (3) those that should be designed and specified within the landscaping scheme; and (4) management measures to ensure that the design vision is achieved in the long term.

6.11 The habitats and protected and notable species interest within the Site do not pose a notable constraint to development. Indeed, the scope of the proposed mitigation and compensation measures, will ensure the proposals deliver >10% net gain in biodiversity. On this basis, EDP considers that the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels.

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Appendix EDP 1
Habitat Descriptions and Site Photographs

A1.1 The Site and wider Survey Area comprises four fields subject to different land uses and management, delineated by hedgerows and scrub. The principal habitats within and around the Site are described below, with illustrative photographs provided where appropriate. The following should be read in conjunction with **Plan EDP 1** - Extended Phase 1 Habitat survey appended to this report.

Arable

A1.2 The Site supports four arable field (as illustrated in **Image EDP A1.1**), which is actively cultivated through ploughing, sewing of crops and herbicide/fertiliser application. The fields have limited grass margins.

Image EDP A1.1: Looking south over arable land of the Site (Field **F1**).

A1.3 Arable habitats are considered of negligible intrinsic ecological importance and offer limited opportunities for protected species.

Tall Ruderal

A1.4 The Site contains a small of area of tall ruderal to the south-east of field **F1** as well as a small area offsite adjacent to **F2**. The species composition of the tall ruderal habitats is dominated by herbaceous species including common nettle (*Urtica dioica*), rosebay (*Chamaenerion angustifolium*) willow herb (*Chamerion angustifolium*), burdock (*Arctium)* and thistle species (*Cirsium* s*p*).

A1.5 These fast-growing, aggressive species require high nutrient levels, and can easily out-compete more desirable wildflowers which favour nutrient poor areas. Overall, tall ruderal is considered to be of low to negligible intrinsic ecological importance, although has potential to support foraging/commuting bats and widespread reptile species as discussed within the relevant species section.

Image EDP A1.2: Tall ruderal located in the south-east corner of **F2**.

Hedgerows

A1.6 The Site and Survey Area supports eight hedgerows which delineate the majority of the field parcels (as illustrated in **Image EDP A1.2**). Dominant species within the hedgerow network include hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), crab apple (*Malus sylvestris*) and elm species (*Ulmus* spp.).

A1.7 A detailed hedgerow assessment was undertaken, as discussed in full in **Appendix EDP 2**. The hedgerow survey recorded confirmed that three of the hedgerows qualify as 'important' under the Wildlife and Landscape criteria of the *Hedgerow Regulations* (1997), and two of the hedgerows are considered species-rich as they support five or more species along their length.

A1.8 More generally, the hedgerow network supported by the Site is considered to be of ecological value for wildlife, particularly for foraging/commuting bats and nesting birds.

A1.9 Collectively, the hedgerow network throughout the Site is considered of Local level intrinsic ecological importance.

Image EDP A1.3: Hedgerow **H2** located along the southern boundary of **F1**.

Trees

A1.10 The Site supports many trees, predominantly scattered along field boundaries. Species present predominantly comprise of ash and sycamore.

A1.11 Overall, trees are considered of no greater than low (site level) intrinsic ecological importance.

Dense/Continuous Scrub

A1.12 The Site supports areas of dense/continuous blackthorn (*Prunus spinose)* scrub, predominantly found along the northern, eastern and western edge of field **F1** within the Site.

A1.13 Overall, scrub habitats are considered to be of low (Site level) intrinsic ecological importance, but, in the context of the Site, a valuable component of the existing green infrastructure present and of value to foraging/commuting bats and breeding birds.

Image EDP A1.4: Dense scrub along the northern and eastern boundary of **F1**.

Buildings

A1.14 There are four built structures within the Application Site – Buildings 1, 4 and 5, located at the south-eastern extent of the Site. Building **B4** was subject to a bat emergence and re-entry survey and further details can be found in the Land at Bretch Hill, Balmoral Avenue, Banbury Ecological Appraisal edp4380_r002d.

A1.15 For clarification; building **B1** is derelict, with no roof or front wall present. The remaining walls are constructed of brick and concrete block work. The interior of the building is vegetated with tall ruderal vegetation, dominated by common nettle.

Image EDP A1.5: External of **B1**.

A1.16 Building **B2** is a similar construction and condition to building **B1**; it is used for storage of farm equipment and materials such as wood and stone. The Site boundary appears to dissect this building, with the majority of the building located off-site, south of the Site boundary.

Image EDP A1.6: External of **B2**.

A1.17 Building **B4** is a two-storey cottage, constructed in the 1960's, with walls being rendered with pebble dash and a pitched, clay-tiled roof. The walls and roof appear to be in good condition although only the south aspect is directly visible, with inspection of other aspects constrained by dense ivy and trees. The roof has a roof void with roofing felt membrane present. Most windows have been boarded up although some are open, enabling potential access by fauna such as birds and bats.

Water Bodies (Offsite)

A1.18 There are two waterbodies located within 250m of the Site, as discussed in turn below.

P1

A1.19 Pond **P1** is located 12m south of the Site. The pond has been recently created within an area of public open space associated with the new housing estate. The pond is ephemerally wet, though supports an aquatic flora of reed mace (*Typha latifoli*), rosebay, willowherb and soft rush (*Juncus effusus*) with bankside bramble scrub.

P2

A1.20 **P2** is located 80m south-east of the Site on the opposite side of Broughton Road, the pond is heavily overgrown with bramble, hawthorn and willow scrub which create a shady silted environment. As a result, the pond is relatively shallow, is considered to dry annually and supports no aquatic vegetation.

Appendix EDP 2
Hedgerow Survey

Methodology

A2.1 The Extended Phase 1 survey identified a number of hedgerows on the Site that may qualify as ecologically 'Important' under the *Hedgerows Regulations* 1997. The ecological importance of all hedgerows within the Site was subsequently assessed by an experienced EDP ecologist on 27 May 2021.

A2.2 Reference was made to the Wildlife and Landscape criteria provided in Part II of Schedule 1 of the *Hedgerows Regulations* 1997 to determine the ecological importance of the Site's hedgerows. The *Hedgerows Regulations* 1997 serve the purpose of ensuring the retention of important countryside hedgerows; their removal only being approved by the relevant local authority.

A2.3 The aims of the hedgerow assessment were to:

i. Identify hedgerows that are classified as 'important' under the ecological criteria of the *Hedgerows Regulations* (1997); and

ii. Identify hedgerows that, although not deemed 'important' under the ecological criteria of the *Hedgerows Regulations* 1997, have ecological value in terms of species diversity, or as potential wildlife corridors.

A2.4 A total of eight hedgerows located within the Site were surveyed against the *Hedgerow Regulations* 1997 criteria.

A2.5 Hedgerows qualify for assessment by exceeding 20m in length or by being connected at both ends to another hedgerow of any length. The middle 30m of all hedgerows up to 100m in length were surveyed, whilst two 30m sections were surveyed for hedgerows up to 200m in length where access was possible. For hedgerows exceeding 200m in length, three 30m sections were surveyed. Hedgerows surveyed were assigned points dependent upon the number of qualifying 'features' as defined by the *Hedgerows Regulations* 1997, with total scores per hedgerow determining their status.

A2.6 Qualifying as an 'important' hedgerow requires the hedgerow assessed to be greater than 30 years of age and contain species listed in Schedule 5 (animals) and 8 (plants) of the *Wildlife and Countryside Act* 1981 (as amended), birds categorised as declining breeders (Category 3) within the 'Red Data Birds in Britain' (Batten, 1990), or any species categorised as 'endangered', 'extinct', 'rare' or 'vulnerable' by any of the British Red Data Books.

A2.7 Hedgerows are also considered important should they satisfy any of the following criteria:

- That the hedgerow is referred to in a record held by a biological records centre as containing protected plants (within ten years) or birds and animals (within five years);
- That the hedgerow contains one of the following criteria per average 30m section surveyed:
  - Seven Schedule 3 species;
  - Six Schedule 3 species and three listed features (see below);
  - Six Schedule 3 species, including one of the following: black poplar, large-leaved lime, small-leaved lime or wild service-tree;
  - Five Schedule 3 species and four listed features; and
  - Four Schedule 3 species, two listed features and lying adjacent to a bridleway or footpath.
- Listed features to include:
  - A bank or wall which supports the hedgerow along at least half of its length;
  - Gaps which together do not exceed 10% of the length of the hedgerow;
  - At least one standard tree per 50m of hedge;
  - At least three Schedule 2 woodland species within the hedgerow;
  - A ditch along at least one half of the length of the hedgerow;
  - Connections scoring 4 points or more (1 point per connection of the hedgerow with another, 2 points per connection of the hedgerow to a pond or broad-leaved woodland; and
  - A parallel hedge within 15m of the hedgerow.

A2.8 Where a hedgerow did not meet the 'important' hedgerow criteria, it was considered whether this boundary feature had ecological value, in terms of species diversity, or as potential wildlife corridors.

Results

A2.9 The detailed results of the hedgerow survey are provided in **Table EDP A2.1** and the location of hedgerows illustrated on **Plan EDP 1**.

A2.10 In summary, three of the hedgerows surveyed qualify as 'Important' under the *Hedgerow Regulations* 1997, namely hedgerows **H1**, **H4** and **H5**. Two hedgerows, **H4** and **H6**, qualify as species-rich because they support an average of five or more woody species.

Table EDP A2.1: Hedgerow Survey Results

Hedgerow Number	Woody Species (Recorded within the Entire Length of the Hedgerow)												Mean Count of Schedule 3 Species from the 30m Samples (sample size)	Schedule 2 and 3 Woodland Plants	Bank/ Wall	Gaps <10%	Standard Trees (min. 1 / 50m)	Ditch	Connections (4 or >4)	Parallel Hedge	Adjacent footpath, Bridleway, Road Used as Public Path or Byway Open to all Traffic?	Important Hedgerow
	Schedule 3 Species																					
	Ash (*Fraxinus excelsior*)	Apple, Crab (*Malus sylvestris*)	Blackthorn (*Prunus spinosa*)	Elder (*Sambucus nigra*)	Elm (*Ulmus spp.*)	Gorse, common (*Ulex europaeus*)	Hawthorn (*Crataegus monogyna*)	Hazel (*Corylus avellana*)	*Leylandii* sp.	Maple, Field (*Acer campestre*)	Oak, Pedunculate (*Quercus robur*)	Rose sp. (*Rosa spp.*)										
H1	✓			✓	✓		✓						4		✓		✓		✓		✓	✓
H2	✓			✓			✓						3				✓		✓			×
H3	✓				✓		✓						3				✓		✓			×
H4	✓	✓	✓	✓			✓						5			✓	✓		✓			✓
H5	✓			✓	✓		✓						4			✓	✓				✓	✓
H6	✓		✓	✓	✓		✓						5			✓	✓		✓		✓	×
H7	✓				✓		✓						3				✓		✓			×
H8	✓		✓				✓						3				✓		✓			×

Appendix EDP 3
Pilot Breeding Bird Survey

Methodology

A3.1 The Site supports a range of habitats suitable for breeding birds, including hedgerows, scrub, tall ruderal and arable farmland. A number of records of protected/notable species pertinent to the Site and its immediate surroundings were returned from the desk study, including hobby (*Falco subbuteo*), mallard, kestrel (*Falco tinnunculus*), cuckoo (*Cuculus canorus*), barn owl (*Tyto alba*), kingfisher (*Alcedo atthis*), skylark, grey wagtail (*Motacilla cinerea*), dunnock, mistle thrush (*Turdus viscivorus*) and willow warbler (*Phylloscopus trochilus*).

A3.2 A single 'pilot' breeding bird survey (BBS) was undertaken on 06 May 2021 to assess the Survey Area for its potential to support breeding birds of conservation concern. The survey was undertaken with reference to standard methodology, entailing a modified Common Bird Census (CBC) 'territory mapping' approach, which usually involves the completion of three visits to the Site, undertaken between approximately mid-April and late July; i.e. at the height of the bird breeding season for lowland Britain. A decision was made following the first survey on whether further survey was necessary.

A3.3 Following best practice, the survey visit was timed to start at, or just before, first light, to coincide with the period of peak activity for birds, particularly passerine songbird species. The survey was also undertaken during suitable weather conditions; i.e. strong winds and heavy or persistent rain were generally avoided.

A3.4 In common with the CBC, the survey methodology involved walking to within 50m of all parts of the Site where possible and recording bird species present and their activity status, with a particular emphasis placed upon those elements considered to relate to, or be indicative of, breeding. This ensured that the survey identified all birds using the margins of the Site, as well as those in the interior.

A3.5 Due to the completion of only one survey, the breeding status of each bird species could not be accurately identified. An assessment was made for each other species on the likelihood of their breeding within the Site, based on the habitats available.

A3.6 An assessment of the individual bird species recorded in the Survey Area, as well as the overall assemblage, has been made with reference to the national conservation status of the different breeding species according to the following key lists/criteria:

- Schedule 1 of the *Wildlife and Countryside Act* 1981 (as amended) – affords greater protection to certain breeding species that are considered appropriately at risk nationally and are listed additional protection under Schedule 1 accordingly;

- Birds of Conservation Concern report [10]: the population status of birds in the UK, Channel Islands and Isle of Man (BoCC) - Under this approach UK bird populations are assessed, using quantitative criteria, to determine the population status of each species and then placed on one of three lists; Red, Amber or Green:

    - Red list species are of high conservation concern, being either globally threatened, having historical UK population declines between 1800 and 1995 or a rapid population decline, or breeding range contraction by 50% or more in the last 25 years;

    - Amber list species are of medium conservation concern due to a number of factors, for example having suffered between 25% and 49% contraction of UK breeding range or a 25-49% reduction in breeding or non-breeding populations over the last 25 years. Species which have a five year mean of 1-300 breeding pairs in the UK, or an unfavourable European conservation status, or for which the breeding population in the UK represents 20%, or more of the European breeding populations are also listed on the Amber list; and

    - Green list species have a favourable conservation status.

- Species of Principle Importance included under Section 41 (England) of the *Natural Environment and Rural Communities* (NERC) Act 2006; and

- Species status as defined in the Dorset Bird report 2016 [11].

A3.7 Species are listed as having Green status within the BoCC report and having no other special conservation status are not included in analysis.

Limitations

A3.8 A single breeding bird survey visit is not sufficient to accurately determine the breeding status of species using the Site. However, using the evaluation methodology outlined above, it is considered possible to gain sufficient information about the assemblage and habitats present to effectively determine the Site's value to breeding birds.

A3.9 The survey was carried out at an appropriate time of year for the locality, and in suitable weather conditions. It is therefore considered that the results provide a representative overview of the breeding bird interest at the Site.

[10] Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds, Vol. 108, 708-746.

[11] Dorset Bird Club (2018) *Dorset Bird Report* 2016

Results

A3.10 The pilot breeding bird survey recorded 18 species of bird within or immediately adjacent to the Site, including two on the Red list and two on the Amber list for conservation concern, as summarised in **Table EDP A3.1**.

A3.11 A list of Green listed species recorded during the survey is included in **Table EDP A3.2**.

Table EDP A3.1: Protected/Notable Bird Species Recorded During the Survey within the Site

Species	Onsite Breeding Likelihood	Observations	Conservation Status [12]
Bullfinch (*Pyrrhula pyrrhula*)	Probable	Recorded calling from the hedgerow on the southern boundary. Scrub habitats bounding the Site are very suitable for this species.	Amber List; NERC s.41
Dunnock (*Prunella modularis*)	Probable	Two singing males recorded and hedge/scrub boundaries very suitable for this species.	Amber List; NERC s.41
House Sparrow (*Passer domesticus*)	Non-breeder	Small foraging flocks recorded along the southern boundary hedge and in north-eastern boundary scrub. Likely to nest within offsite residential dwellings and just forage on site.	Red List; NERC s.41
Song Thrush (*Turdus philomelos*)	Probable	Recorded singing from the northern and south-eastern corner of the Survey Area. Likely to mean that two pairs are present, though only one is likely to breed within the Site itself.	Red List; NERC s.41

Table EDP A3.2: Green Listed Bird Species Recorded During the Survey within the Site

Species	
Woodpigeon	(*Columba palumbus*)
Magpie	(*Pica pica*)
Jackdaw	(*Coloeus monedula*)
Blue tit	(*Cyanistes caeruleus*)
Great tit	(*Parus major*)
Blackcap	(*Sylvia atricapilla*)
Wren	(*Troglodytes troglodytes*)
Robin	(*Erithacus rubecula*)
Goldfinch	(*Carduelis carduelis*)
Blackbird	(Turdus merula)
Great Spotted Woodpecker	(Dendrocopos major)
Greenfinch	(Chloris chloris)
Chaffinch	(Fringilla coelebs)
Chiffchaff	(Phylloscopus collybita)

[12] Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds, Vol. 108, 708-746.

A3.12 The red and amber list species recorded within the Survey Area, while declining, remain common and widespread and inhabit garden and urban edge settings. No notable farmland specialist species were recorded.

A3.13 Birds were recorded site-wide throughout hedgerows, with peaks of activity associated with the north-eastern plantation wood boundary and scrub and south-eastern corner adjacent to residential gardens. Overall, the abundance of birds was relatively low. The overall assemblage is regarded to be typical for a lowland urban edge farmland site in southern England. While some species of conservation concern were recorded in low numbers, the assemblage is only considered to be of importance at a Site to Local level.

Appendix EDP 4
Bat Activity Surveys

Methodology

A4.1 During the Extended Phase 1 survey, areas of scrub, hedgerows, tall ruderal and adjacent woodland were identified as having the potential to support foraging and commuting bats. In addition, a number of trees were considered to have the potential to support roosting bats.

A4.2 The following surveys for bats were therefore undertaken, with reference to national best practice guidelines [13]:

i. Bat Roosting:

(a) Ground-level preliminary roost assessment of trees for bat roosting potential.

ii. Bat foraging/commuting activity, comprising:

(a) Manual transect surveys; and

(b) Automated detector surveys.

Preliminary Roost Assessment – Trees

A4.3 A visual assessment of all suitable trees within the Site for the presence of, or potential to support roosting bats, was undertaken by a suitably experienced ecologist in accordance with BCT guidelines. The visual assessment was undertaken on 27 May 2021. The trees were searched as thoroughly as possible from ground level, with all elevations covered where accessibility allowed.

A4.4 Suitable features for roosting bats include:

- Loss/peeling/fissured bark;
- Natural holes e.g. rot holes and holes from fallen limbs;
- Woodpecker holes;
- Cracks/splits or hollow tree trunks/limbs; and
- Thick-stemmed ivy.

[13] Bat Conservation Trust (2007). *Bat Surveys: Good Practice Guidelines*. Bat Conservation Trust, London

A4.5 Signs of roosting bats include:

- Bat/s roosting *in situ*;
- Bat droppings within or beneath a feature (hole or split);
- Staining around or beneath a feature;
- Oily marks (staining) around roost access points;
- Audible squeaking from the roost;
- Large/regularly used roosts or regularly used sites may produce an odour; and
- Flies around the roost, attracted by the smell of guano.

A4.6 Based upon the results of the visual assessment and features/evidence identified as above, the following ratings for trees were used during the assessment:

- Known or confirmed roost: European Protected Species (EPS) licence required for works to tree to be completed lawfully;
- High potential (Category 1*): Multiple highly suitable features capable of supporting larger roosts;
- Medium potential (Category 1): Definite bat roosting potential with fewer suitable features than Category 1*;
- Low potential (Category 2): No obvious potential, although the tree is of an age and size where suitable features may be found, or the tree supports features which may have limited potential for roosting bats; and
- No potential (Category 3): No potential to support roosting bats.

Limitations

A4.7 Visual assessments for roosting bats can be undertaken at any time of year; this assessment was not limited by seasonal or climatic factors.

A4.8 It should be noted that this type of assessment is based on features visible from the ground level and is not considered to be a definitive bat roosting survey. Should the proposals require that any trees of sufficient potential to support roosting bats be subject to tree felling/surgery, additional survey work may be required to establish if any bats are roosting within the trees at the time of the proposed works. If trees are found to support bat roosts during pre-commencement investigations, such works would be subject to a EPS licence to commence lawfully.

Investigations of Bat Foraging/Commuting Activity

Manual Transect Surveys

A4.9 Manual transect surveys were undertaken across the Site to identify areas of bat foraging activity and commuting routes used by bats. With reference to best practice guidelines [14], surveys were completed within the optimal survey months of June to September inclusive.

A4.10 Full details including the survey type, date, timing, and weather conditions during each of the transect surveys undertaken during 2021 is given in **Table EDP A4.1**. Weather conditions on the majority of visits were optimal for bat surveys, being relatively warm with light to medium winds and no rain. The surveys are not considered to be seasonally or climatically constrained.

Table EDP A4.1: Date, Timing and Weather Conditions of Bat Activity Transect Surveys

Survey Date	Dusk/ Dawn	Survey Time	Sunrise/ Sunset Time	Weather Conditions			
				Temp (°C)	Cloud (%)	Rain	Wind (Beaufort Scale)
09.06.18	Dusk	21:23 – 23:23	21:23	18- 19	80	Nil.	1
01.09.21	Dusk	19:54 – 21:54	19:54	17	100	Nil.	1 – 2
29.09.21	Dusk	18:47 – 20:47	18:47	10 – 12	40	Nil.	1 – 2

A4.11 Manual transect surveys were completed by experienced bat surveyors across a single transect route. The transect route was designed to cover all trees, hedgerows and other potential foraging or commuting habitat within the Survey Area as illustrated on **Plan EDP 3**. The transect route was walked by two surveyors travelling in opposite directions at a slow and steady pace, with 'pacing points' used as a guide for the surveyors. All bats were recorded, and their behaviour marked on survey maps in order to characterise the value of the Site and its component habitats to foraging and commuting bats. Owing to the small transect length, at least two circuits were walked each survey by each surveyor and therefore it may have lead to higher levels of recordings.

A4.12 Activity surveys were conducted using Elekon Batlogger M detectors. Observations of the time, location, and activity of all bats seen or heard were noted. Bats were identified on the basis of their characteristic echolocation calls, which were recorded and analysed using computer sonogram analysis software Bat Explorer to confirm species identification. Species of *Myotis* bat and long-eared bat (*Plecotus sp.*) are difficult to tell apart solely from their echolocation calls and are therefore grouped as such.

[14] Hundt L (2012). *Bat Surveys: Good Practice Guidelines, 2nd Edition,* Bat Conservation Trust

Automated Detector Surveys

A4.13 To supplement the transect survey data, bat activity within the Site was also sampled using static, automated bat detectors ('Anabat'), which automatically trigger and record bat echolocation calls. These surveys were conducted during the months of June and September 2021; two detectors were left in situ for five consecutive nights from 27 May - 01 June, 02 September - 07 September and 29 September- 04 October 2021.

A4.14 Anabat Express Bat Detectors were deployed in two different locations on Site during each of the three sampling periods, as shown on **Plan EDP 3**. The detectors were fixed in secure locations, with an external microphone attached 2m above ground, and directed away from dense vegetation to maximise detection sensitivity.

A4.15 The echolocation calls recorded by the automated detectors were filtered for noise files (i.e. sound files created when background noise triggers the Anabat to record) and then specifically for each of the UK's bat species using Analook software filter function. The parameters for the noise filter are based on that proposed by Chris Corben and Kim Livengood [15] and are provided in **Table EDP A4.2**. All files passing the various filters were checked manually using sonogram analysis (AnalookW) in accordance with published parameters [16] to confirm the species identification of each bat call.

Table EDP A4.2: Filtration Values used by Analook Software to Remove Noise Files

Filter	Smoothness	Frequency (Fc (kHz))		Duration (ms)	
		Min	Max	Min	Max
Noise Filter	50	15	120	2	50

<u>Limitations</u>

A4.16 The identification of calls and species using Analook software is dependent upon the quality of the recording made which can be influenced by the following factors, which may limit levels of activity and species recorded:

- Weather conditions – rainfall and wind;
- Distance of bat from Anabat;
- Presence of obstructions through which the noise must pass i.e. trees; and
- Proximity of other noise sources such as roads.

A4.17 None of the automated detector or transect surveys completed during 2021 were constrained by unseasonably cold/wet conditions.

[15] Taken from *Making an Antinoise Filter* presentation from 2010 Annual Bat Conference
[16] Russ (2012). *British Bat Calls, a guide to species identification*. Pelagic Publishing, Exeter

A4.18 Although no spring activity was recorded, it is considered that the level of summer and autumn data recorded is sufficient to understand the value of the bat assemblage and its use of the Site.

A4.19 The use of two surveyors and multiple laps of the transect will have led to an over recording of bat activity by comparison to single longer transects that might typically be used for development sites. This has been factored into the interpretation of results.

Results

Preliminary Roost Assessment – Trees

A4.20 The preliminary roost assessment of trees from ground-level identified two trees with potential to support roosting bats including one with high potential (**T2**) and one with medium potential (**T1**). Neither of these trees fall within the Site itself. All of the trees referred to are illustrated on **Plan EDP 1**. Two trees (**T49** and **T101**) are to be removed for the proposed access route as shown in the associated arboricultural report by Ruskins, October 2021 (*Arboricultural Report and Tree Condition Survey for the Proposed Residential Development on the Land off Balmoral Avenue, Banbury, Oxfordshire, OX16).* However, as these trees were assessed as having negligible potential to support roosting bats. No further consideration is required.

Investigations of Bat Foraging/Commuting Activity

Manual Transect Surveys

A4.21 The distribution of bat activity recorded around the Site is illustrated on **Plans EDP 4** to **6** inclusive. Raw data gathered are available upon request.

A4.22 At least four species of bat were identified foraging and/or commuting within the Site during the course of the activity surveys, including: common pipistrelle, soprano pipistrelle, noctule and myotis sp.

A4.23 Common pipistrelle accounted for the large proportion of recordings with soprano pipistrelle also heard regularly.

A4.24 While a high number of calls were recorded, it is likely that this reflects the use of two surveyors completing at least two laps of the transect route on each survey.

A4.25 Overall, transect activity was fairly evenly distributed throughout the Site, though during late September transect bat activity was only recorded along the eastern boundary of **F1** and western boundary of **F2**.

Automated Detector Surveys

A4.26 The results of the automated detector surveys are summarised below in **Table EDP A4.3**.

Table EDP A4.3: Automated Detector Survey Summary

Location	Species Recorded	Late May - June	Early Sept	Late Sept - Oct	Grand Total	% Species Proportion
1	Barbastelle	7	7	7	**21**	**0.7**
	Common pipistrelle	230	531	1444	**2205**	**74.1**
	Plecotus sp.	4	3	5	**12**	**0.4**
	Lesser horseshoe	1		2	**3**	**0.1**
	Myotis sp.	58	224	162	**444**	**14.9**
	Nathusius' pipistrelle	2	1		**3**	**0.1**
	Noctule	122	26	1	**149**	**5.0**
	Soprano pipistrelle	9	29	82	**120**	**4.0**
	Serotine	2	14	1	**17**	**0.6**
	Total	**435**	**835**	**1704**	**2974**	**100.0**
2	Barbastelle	1			**1**	**0.0**
	Common pipistrelle	1776	341	236	**2353**	**68.0**
	Plecotus sp.	5	6		**11**	**0.3**
	Lesser horseshoe			15	**15**	**0.4**
	Myotis sp.	191	25	324	**540**	**15.6**
	Nathusius' pipistrelle		1		**1**	**0.0**
	Noctule	8	251	3	**262**	**7.6**
	Pipistrellus sp.		1		**1**	**0.0**
	Soprano pipistrelle	60	13	146	**219**	**6.3**
	Serotine	48	9	1	**58**	**1.7**
	Total	**2089**	**647**	**725**	**3461**	**100.0**
Grand Total		**2524**	**1482**	**2429**	**6435**	

A4.27 To summarise, activity levels were significantly higher in June and late September than in early September. The detector deployed in late September at Location 2 recorded the largest total number of bat registrations in a single deployment with 3461 registrations. This Anabat was positioned in the south of the Site within an area of arable land with a mature hedgerow and scattered mature trees, all suitable habitats for foraging/commuting bats.

A4.28 A total of 10 species were recorded during the static detector surveys. The majority of registrations recorded relate to common and widespread bat species including common pipistrelle (71%), *Myotis* sp. (15%), noctule (6%) and soprano pipistrelle (5%). Serotine was the next most recorded (1%), with all other species accounting for less than 1% of calls each.

A4.29 Of the other species recorded by the Anabats, barbastelle and lesser horseshoe are considered infrequent and vulnerable in the UK. However, species were recorded onsite in very low numbers with only 22 registrations of barbastelle and 18 registrations of

lesser horseshoe. These findings suggest a small number of these species commuting through the Site.

A4.30 The presence of low numbers of Serotine on the Site is still noteworthy given their vulnerable status, however variation between 50 registrations in June and 2 registrations in September suggests that the Site does not represent a key foraging resource for this species.

Evaluation of Overall Assemblage

A4.31 The bat species recorded during the course of manual transect and automated detector surveys is considered to be relatively diverse but not unique for an urban edge farmland site in south-western England, with common and widespread generalist species such as common pipistrelle, myotis, noctule and soprano pipistrelle species accounting for the vast majority of foraging and commuting activity. Only relatively low numbers of rarer species were recorded, though it suggests they utilise the Site as part of the wider landscape resource.

A4.32 The hedgerow and scrub is considered to provide a moderately valuable foraging habitat for the local bat assemblage. However, the habitats are considered typical of the wider surroundings and, based on their quality/extent, only capable of supporting moderate numbers of bats, as supported by the activity levels recorded.

A4.33 Based on the findings summarised above, the bat population present within the Site is considered to be of local ecological importance.

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Appendix EDP 5
Hazel Dormouse Survey

Methodology

A5.1 The Site supports areas of suitable species-rich hedgerow network and as well as broadleaved woodland which is adjacent to the north-east of the Site of which are well connected both across the Site and to the wider landscape. Such habitats are considered to have the potential to support hazel dormouse.

A5.2 A nest tube survey to determine the presence/likely absence of hazel dormouse from habitats within the Site was undertaken during June–November 2021. As shown on **Plan EDP 7,** the survey area comprised a representative number of the onsite hedgerows.

A5.3 A total of 55 standard nest tubes, each comprising a wooden tray and nesting tube made from plastic tree guard material [17], were deployed throughout the Site, at approximately 15-20m intervals were deployed on 06 May 2021. Nest tubes were erected at between 1m and 2m heights above ground and tied to suitable horizontal branches located within the hedgerows or lower branches of trees. Tubes were left *in situ* and checked for evidence of use by dormice on five separate occasions in suitable weather conditions. Two of the surveys remain outstanding and are programmed for October and November 2021, with the results to be submitted as an addendum to this report.

A5.4 Best practice guidance [18] advises that the index of probability in detecting dormice presence within nest tubes is calculated according to set scores given for each of the different months, during which a minimum of 50 nest tubes are deployed. As illustrated in **Table EDP A5.1** below, the combined survey effort score exceeds the minimum survey effort score recommended by Chanin & Woods (2003) for a thorough dormouse survey (score > 20).

Month	Index of Probability	06 May deployment (55 tubes)
April	1	
May	4	*Tubes deployed start of May*
June	2	✔
July	2	✔
August	5	✔
September	7	✔
October	2	✔
November	2	✔
Total Survey Effort Score		**24**

[17] Specifications as per Mammal Society nest tube product
[18] Bright, P. M., Morris, P. & Mitchell-Jones, T. (2006) The Dormouse Conservation Handbook. English Nature

A5.5 Evidence such as the presence of individuals, nests and/or food caches was recorded during each of the surveys. Incidental sightings or evidence of wood mice (*Apodemus sylvaticus*) were also recorded during the surveys, during which all tubes were emptied of wood mouse nests and individuals, cleaned and re-hung.

Results

A5.6 The dormouse surveys undertaken to date did not record any dormouse nests. Several recordings of wood mice, their nests and food caches were made within a number of the tubes located across the Site. Full results are provided in **Table EDP A5.2** with two further surveys programmed in October and November 2021

Table EDP A5.2: Results of Dormouse Surveys Undertaken in 2021.

Evidence Recorded	Check 1: 25.06.21	Check 2: 27.07.21	Check 3: 24.09.21	Check 4: 27.10.21	Check 5: 26.11.21
Dormouse Nest.	No recordings	No recordings	No recordings	TBC	TBC
Other Small Mammals or Nests.	No recordings	One wood mouse nest.	Three wood mouse nests, a single individual.	TBC	TBC

Evaluation of Results

A5.7 No dormouse individuals were recorded during any of the surveys to date. Two further surveys are programmed in October and November with the results to be submitted as an addendum to this Ecological Appraisal.

Appendix EDP 6
Great Crested Newt Surveys

Methodology

A6.1 There are two waterbodies within c.250m of the Site boundaries (as illustrated in **Plan EDP 1**), which were considered to have potential to support great crested newts (*Triturus cristatus*). To establish the current presence/likely absence of great crested newt within these ponds further surveys were undertaken comprising the following:

- A Habitat Suitability Index (HSI) assessment; and
- Water sampling for the presence of great crested newt environmental DNA (eDNA).

Habitat Suitability Index Assessment

A6.2 A Habitat Suitability Index (HSI) assessment, as developed by Oldham *et al*. (2000)[20], was completed on 27 May 2021 to assess all the ponds identified adjacent to the Site.

A6.3 The HSI assessment follows a standardised assessment criterion using habitat components such as water quality, fish/waterfowl presence, and surrounding terrestrial habitat quality to derive a suitability score, or 'index'. Waterbodies with high scores are considered more likely to support great crested newts compared to those with lower scores. HSI scores and the inferred suitability of the waterbody assessed to support great crested newts are described within **Table EDP A6.1**.

Table EDP A6.1: HSI Scores and Inferred Pond Suitability

HSI Score	Pond Suitability to Support Great Crested Newts
<0.5	Poor suitability
0.5–0.59	Below average suitability
0.6–0.69	Average suitability
0.7–0.79	Good suitability
>0.8	Excellent suitability

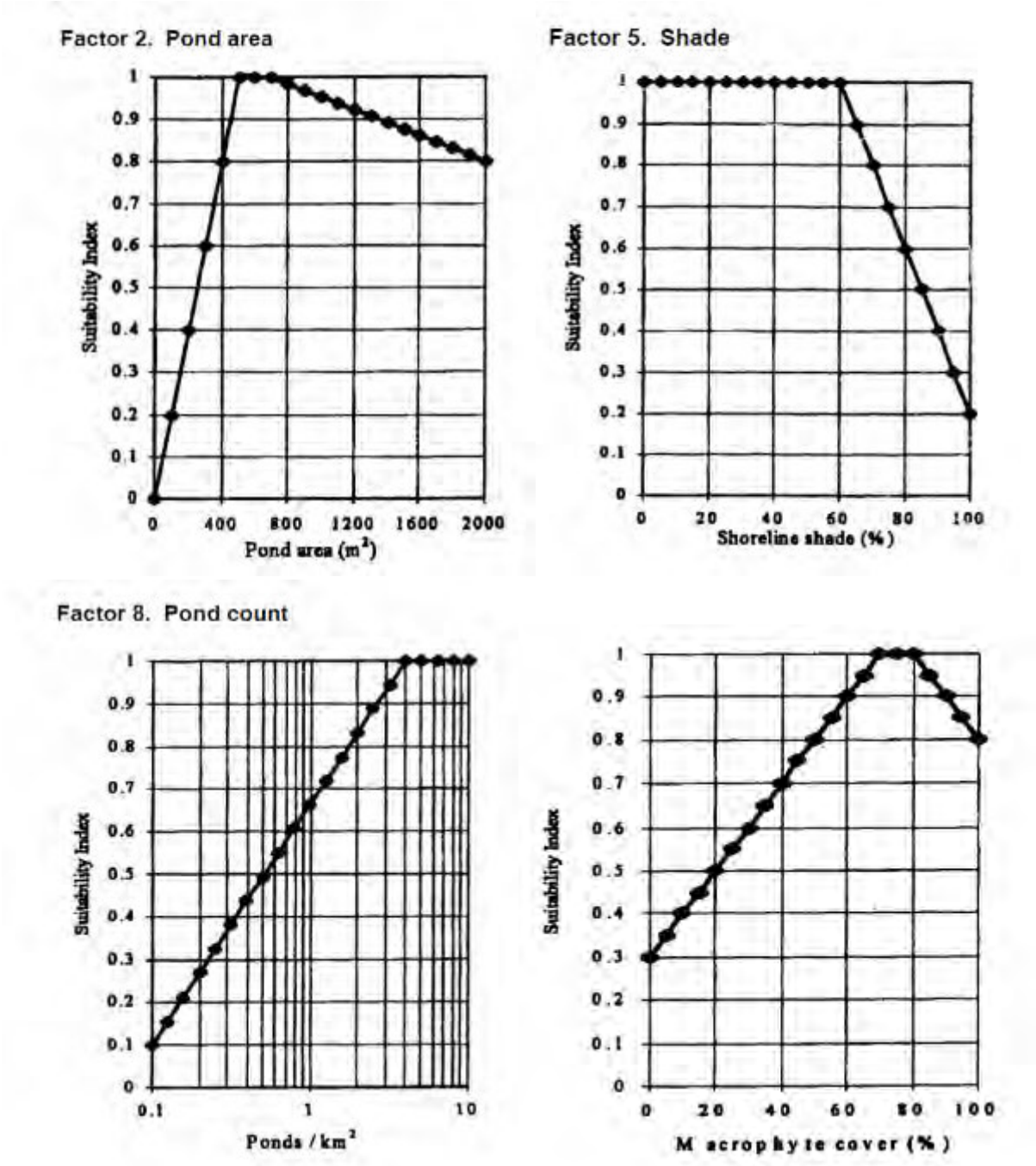
A6.4 The suitability factors shown in **Table EDP A6.2** are converted into Suitability Index scores on a scale of 0.01 to 1.

Table EDP A6.2: Suitability Factors

Suitability Indices	Definition	Possible Score
SI_1 Location	Zone A – optimal.	1
	Zone B – marginal.	0.5
	Zone C – unsuitable.	0.01

[20] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt* (Triturus cristatus). Herpetological Journal 10 (4), 143-155

Suitability Indices	Definition	Possible Score
SI_2 Pond Area	Estimate pond surface area (to the nearest 50m² if very large).	Read off graph
SI_3 Pond Drying	Never Dries.	0.9
	Rarely dries (dries no more than 2 in 10 years or in drought only).	1
	Sometimes dries (dries between 3 in 10 years to most years).	0.5
	Dries annually.	0.1
SI_4 Water Quality	Good (abundant and diverse invertebrate community).	1
	Moderate (moderate invertebrate community).	0.67
	Poor (low invertebrate diversity, few submerged plants).	0.33
	Bad (clearly polluted, no submerged plants).	0.01
SI_5 Shade (May to Sept)	Percentage of pond perimeter shaded to at least 1m from the shore.	Read off graph
SI_6 Fowl (excluding moorhens)	Absent (no evidence of waterfowl, excluding moorhen).	1
	Minor (waterfowl present, though little impact).	0.67
	Major (severe impact - few submerged plants, turbid water).	0.01
SI_7 Fish	Absent (no records of fish stocking and no fish seen during survey).	1
	Possible (no evidence of fish, but conditions suggest presence).	0.67
	Minor (small numbers of crucian carp, goldfish or stickleback).	0.33
	Major (dense populations of fish present).	0.01
SI_8 Ponds	No. ponds within 1 km of survey pond not separated by major barriers, divided by 3.14.	Read off graph
SI_9 Terrestrial Habitat	Good (extensive habitat offering good opportunities for foraging and shelter surrounding pond e.g. rough grassland, scrub, woodland).	1
	Moderate (habitat offering opportunities for foraging and shelter, but not extensive and does not completely surround pond).	0.67
	Poor (habitat with poor structure, offering limited opportunities for foraging and shelter e.g. amenity grassland).	0.33
	None (No suitable habitat around pond e.g. expanse of bare habitat.	0.01
SI_{10} Macrophytes (Mar-June)	Percentage of pond surface area occupied by macrophyte cover (excluding duckweed) and submerged plants reaching the surface.	Read off graph



A6.5 The ten SI scores are then multiplied together, and the tenth root of the number provides the HSI score for the waterbody.

Environmental DNA Sampling

A6.6 All accessible and suitable waterbodies within 250m of the Site boundaries were sampled and tested for great crested newt DNA (environmental DNA, i.e. eDNA) on 06 May and 27 May 2021 by two experienced and Natural England (NE) great crested newt licensed surveyors. Ponds surveyed are shown in **Table EDP A10.4**.

A6.7 The ponds were subject to water sampling for eDNA testing during the 2021 breeding season in accordance with the Technical Advice Note for field and laboratory sampling of great crested newt environmental DNA (WC1067)[21]. Using sampling kits supplied by the SureScreen Scientifics this technique involved the collection of 20 × 40ml water samples from locations spread around the perimeter of the pond, which are then combined and decanted into six sample tubes. The samples are then forwarded to the SureScreen Scientifics laboratory to be analysed.

A6.8 Although a relatively new technique, eDNA testing was formally approved by NE in spring 2014 and can remove the need for the time-consuming traditional survey procedures if the results are returned negative.

Limitations

A6.9 With respect to eDNA testing, there is believed to be a 99.3% detection rate of great crested newt DNA when 80-90% of the pond margin is sampled. Sampling of **P1** was limited by dense bankside scrub, however, the best areas of pond habitat were sampled and owing to the pond size and overall limited suitability of the habitat, this is not considered to have significantly limited the likelihood of detecting GCN.

Results

Habitat Suitability Index Assessment

A6.10 The results of the habitat suitability index assessment of the two ponds surveyed in 2021 for their suitability to support populations of GCN are shown in **Table EDP A6.3**.

A6.11 Both pond **P1** and **P2** were calculated as having 'Average' suitability to support GCN.

[21] Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. *Analytical and Methodological Development for Improved Surveillance of the Great Crested Newt*. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford

Table EDP A6.3: Suitability of Ponds Assessed for their Potential to Support Great Crested Newts Using the Standard Habitat Suitability Index

Suitability Indices	Pond 1 (P1)	Pond 2 (P2)
SI_1 Location	1	1
SI_2 Pond Area	0.35	0.2
SI_3 Pond Drying	0.5	0.1
SI_4 Water Quality	0.67	0.67
SI_5 Shade (May to Sept)	0.4	1
SI_6 Fowl (excluding moorhens)	1	1
SI_7 Fish	1	1
SI_8 Ponds	0.82	0.82
SI_9 Terrestrial Habitat	0.67	0.67
SI_{10} Macrophytes (Mar-June)	0.4	0.9
$(SI_1*SI_2*SI_3*SI_4*SI_5*SI_6*SI_7*SI_8*SI_9*SI_{10})^{1/10}$	0.63	0.61
Pond Suitability	**Average**	**Average**

Environmental DNA Sampling

A6.12 No evidence of GCN eDNA was found in any of the ponds surveyed (as reported by SureScreen Scientifics on 14 May and 08 June 2021). Analysis was conducted in accordance with current best practice guidelines, and in the presence of the following controls: extraction blank, appropriate positive and negative PCR controls (great crested newt degradation and inhibition). All controls performed as expected. A summary of the results is provided in **Table EDP A6.4**.

Table EDP A6.4: eDNA Results from the Ponds Tested within 250m of the Site

Pond No.	Sure Screen Sample Ref.	Sample Integrity	Degradation	Inhibition	GCN Detection
P1	2687	Pass	Pass	Pass	Negative
P2	1181	Pass	Pass	Pass	Negative

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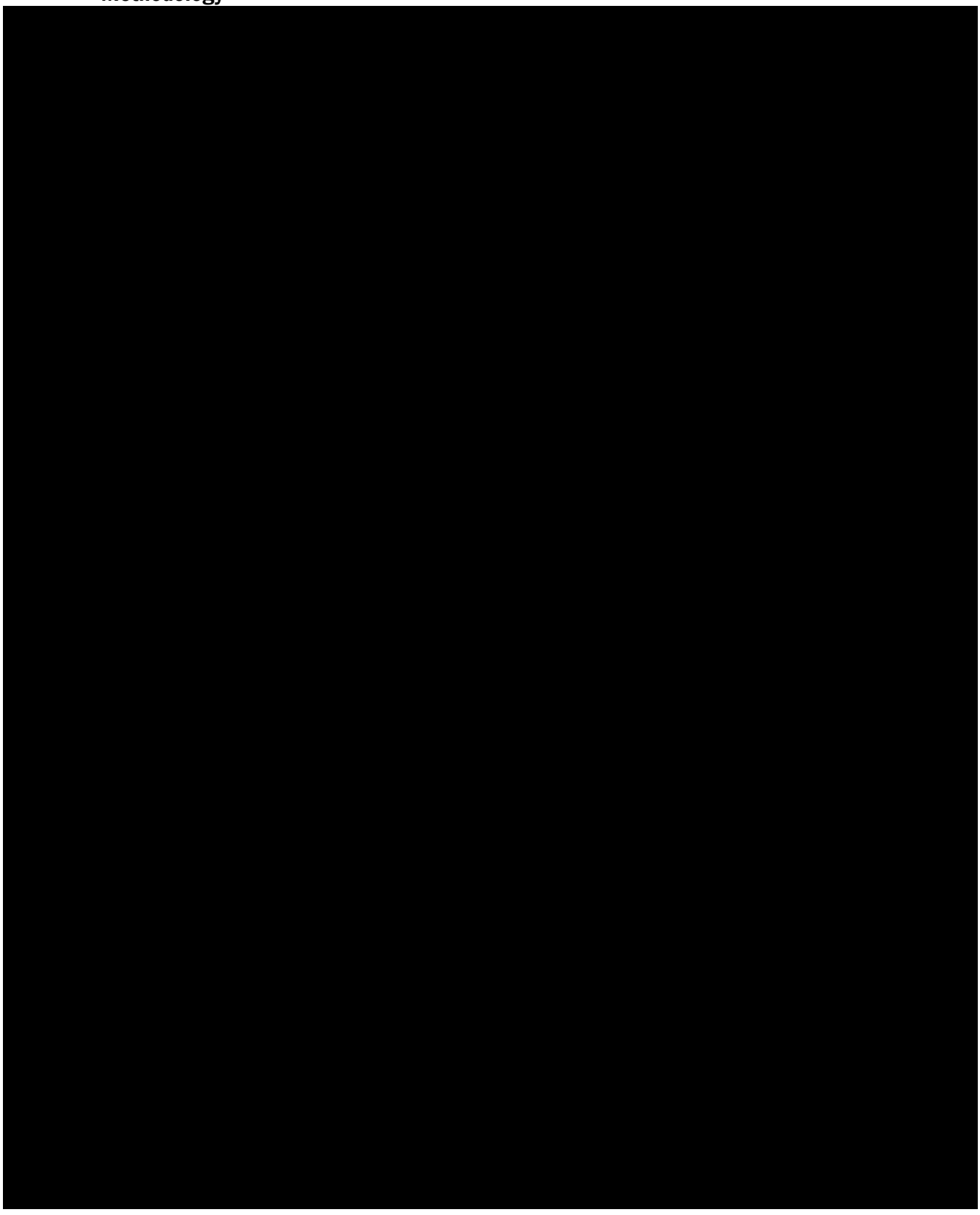
Appendix EDP 7
Badger Survey

Methodology



A7.7 Based on the findings summarised above, the foraging/commuting badger population on Site is considered to be of no greater than Site level importance.

Appendix EDP 8
Illustrative Landscape Plan

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mood landscape

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Appendix EDP 9
Biodiversity Impact Assessment Calculations

Methodology

A9.1 The Biodiversity Impact Assessment (BIA) was undertaken using the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Metric 3.0 (July 2021), by an ecologist with considerable experience of using such calculators.

A9.2 A BIA has been undertaken at the request of the local planning authority to objectively assess the net biodiversity impacts of the proposals in line with local and national planning policy.

A9.3 The assessment has been undertaken based on the existing habitat information derived from the Phase 1 Habitat Plan (**Plan EDP 1**) and proposed habitats detailed on the Illustrative Landscape Strategy (**Appendix EDP 8**). GIS software has been used to accurately calculate areas of habitat to be retained, enhanced and recreated.

A9.4 The broad habitat areas used in the calculations are illustrated on **Plan EDP 8**.

Assumptions and Limitations

A9.5 Various assumptions have been made for the purposes of the calculations. Where appropriate these have been added to the impact calculation table in the notes column, with the key ones being:

- Meadow flower grassland has been categorised as 'other neutral grassland' of 'moderate' condition;
- The retained blackthorn scrub is proposed to be enhanced from 'moderate' to 'fairly good' condition through selective thinning and planting of other native species, cyclical management and creation of a scalloped edge, in order to increase species diversity and heterogeneity;
- Only the hedgerow bounding the south of the northern field will be enhanced. This hedgerow is gappy and contains ash with dieback. As such it will be gap planted and new tree specimens encouraged to establish;
- The retained woodland belt along the eastern boundary of the site will be managed but no enhancements have been included in the calculator;
- 0.2ha of the meadow flower grassland depicted on the landscape proposals would be delivered to address the trading deficit in the calculator and directly account for the scrub losses as a result of the proposed development; and

- The BIA calculations do not account for other protected species enhancement measures such as the provision of bird and bat boxes.

Results

A9.6 The BIA calculations pertaining to habitat areas and linear habitat features are provided in this appendix and will be submitted as the raw data to allow for full review. Overall, the proposed development is expected to provide a net gain in biodiversity for both area and linear calculations as shown in **Table EDP 9.1**.

Table EDP 9.1: Biodiversity Impact Assessment Summary

Biodiversity Value	Area Calculations	Linear Calculations
Existing Site Baseline	10.68	8.56
Post Development	11.75	9.64
Net Balance (units)	+1.07	+1.08
Net Balance (%)	9.99%	12.65%

A9.7 As detailed above, net gains in biodiversity are demonstrated by the BIA calculations for the development proposals. Using the Defra 3.0 Impact Calculator the results are as follows: The scheme is therefore capable of meeting planning policy requirements and delivering net gains in biodiversity. If required, the applicant also controls the other two arable fields within the Study Area that could be utilised to deliver further biodiversity gain.

Plans

Plan EDP 1	Extended Phase 1 Habitat Survey (edp7133_d001b 25 October 2021 GY/RF
Plan EDP 2	Pilot Bird Survey 2021 (edp7133_d011a 25 October 2021 RB/TRo)
Plan EDP 3	Bat Activity Transect Route and Anabat locations (edp7133_d006a 25 October 2021 RB/TRo)
Plan EDP 4	Bat Activity Survey Results: June 2021 (edp7133_d007a 25 October 2021 RB/TRo)
Plan EDP 5	Bat Activity Survey Results: Early September 2021 (edp7133_d008a 25 October 2021 RB/TRo)
Plan EDP 6	Bat Activity Survey Results: Late September 2021 (edp7133_d009a 25 October 2021 RB/TRo)
Plan EDP 7	Hazel Dormouse Tube Location Plan (edp7133_d010a 25 October 2021 RB/TRo)
Plan EDP 8	Biodiversity Impact Assessment (edp7133_d012 25 October 2021 GY/RF)

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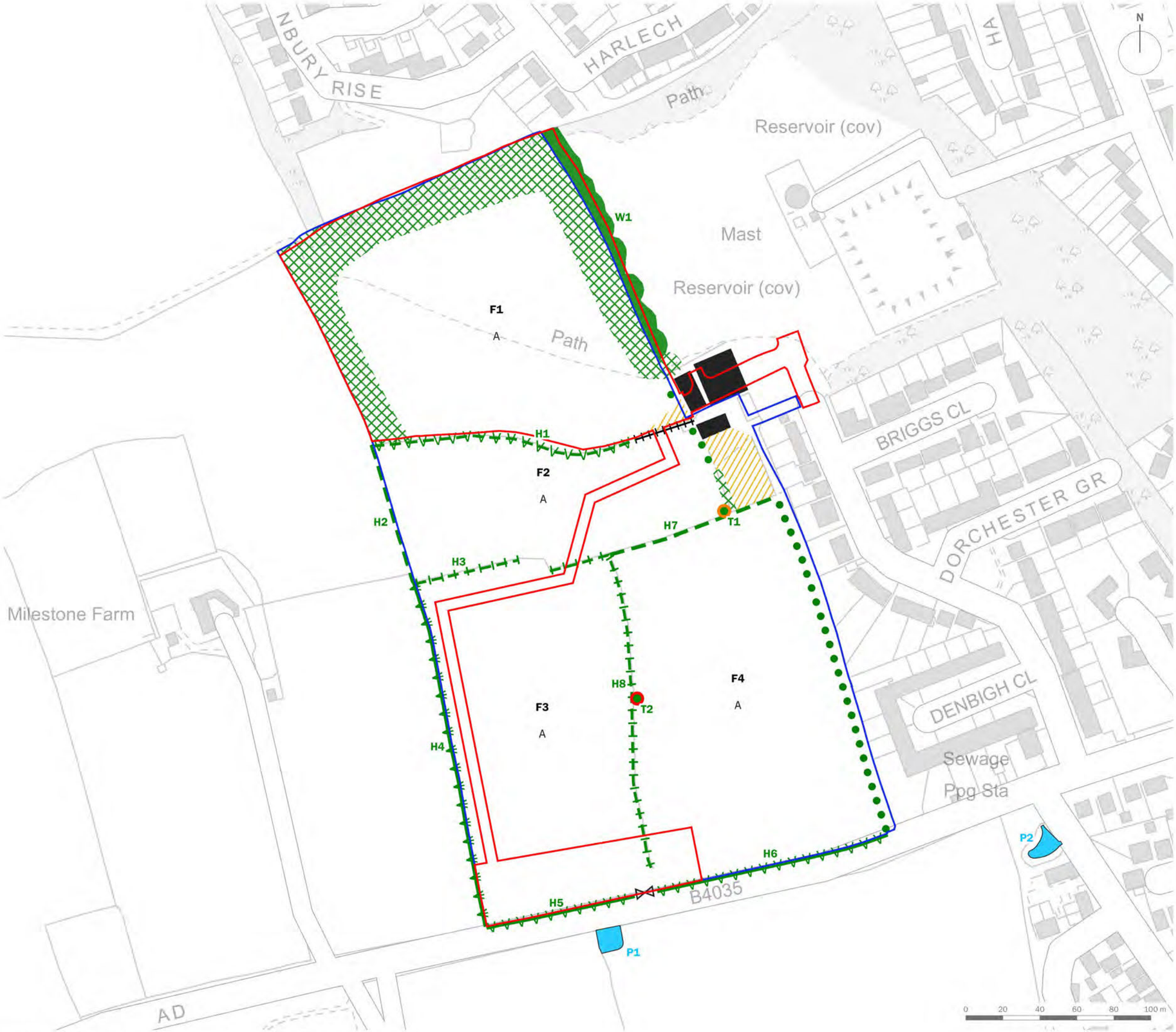

- Site Boundary
- Survey Boundary
- Broadleaved Semi-natural Woodland
- Tall Ruderal
- Dense Continuous Scrub
- A — Arable
- Standing Water
- Building
- Intact Species-rich Hedgerow and Trees
- Intact Species-rich Hedgerow
- Defunct Species-poor Hedgerow and Trees
- Defunct Species-rich Hedgerow and Trees
- Defunct Species-poor Hedgerow
- Fence
- Scattered Trees (Broadleaved)
- Gate
- Tree with High Bat Roost Potental
- Tree with Medium Bat Roost Potental

client

Lone Star Land Ltd

project title

Land off Balmoral Avenue, Banbury

drawing title

Plan EDP 1: Extended Phase 1 Habitat Survey

date	**25 OCTOBER 2021**	drawn by	**GY**
drawing number	**edp7133_d001b**	checked	**ND**
scale	**1:2,000 @ A3**	QA	**JTF**

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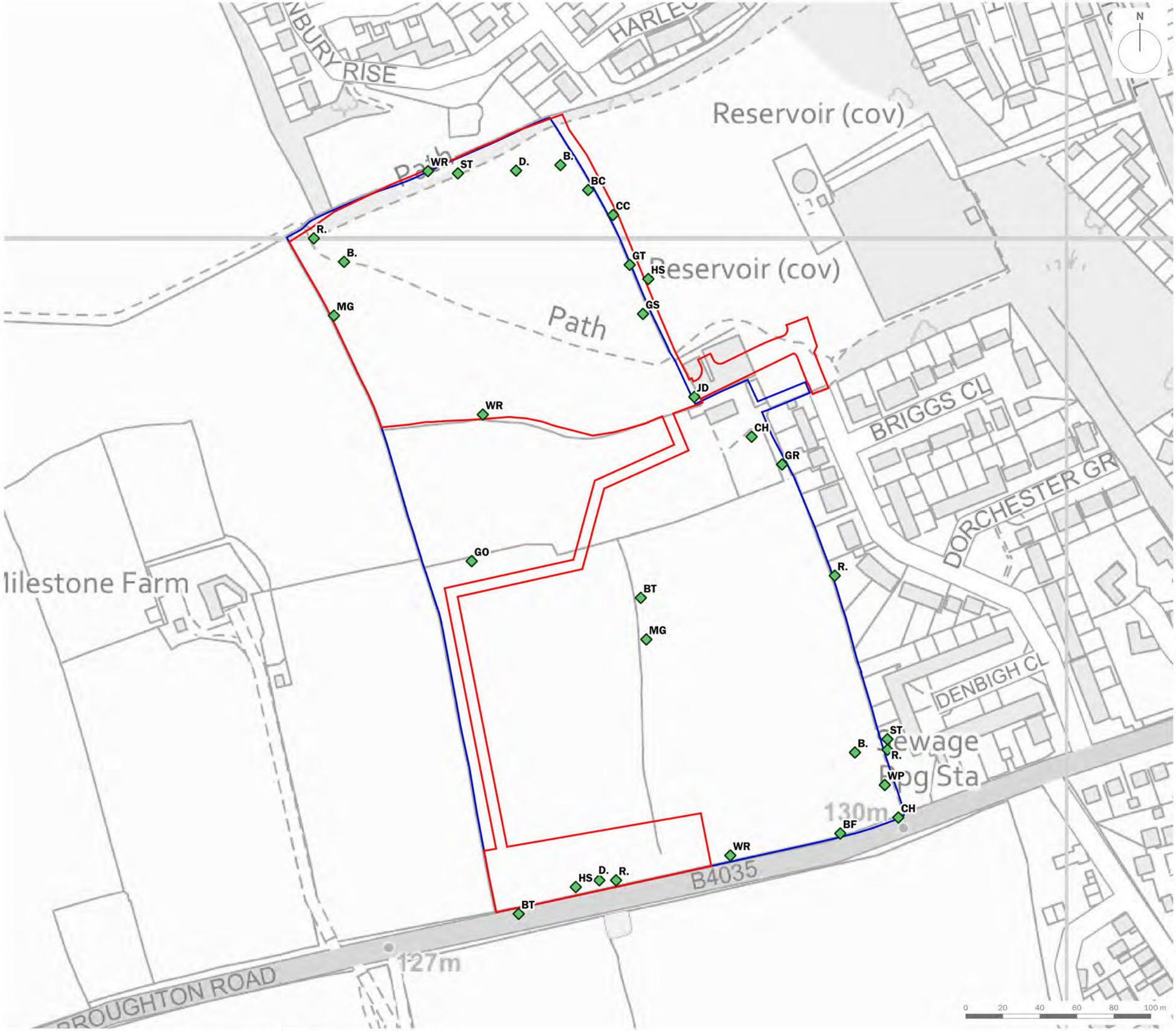

Site Boundary

Survey Boundary

Bird Survey

B.	Blackbird (Turdus merula)
BC	Blackcap (Sylvia atricapilla)
BF	Bullfinch (Pyrrhula pyrrhula)
BT	Blue Tit (Cyanistes caeruleus)
CC	Chiffchaff (Phylloscopus collybita)
CH	Chaffinch (Fringilla coelebs)
D.	Dunnock (Prunella modularis)
GO	Goldfinch (Carduelis carduelis)
GR	Greenfinch (Chloris chloris)
GS	Great Spotted Woodpecker (Dendrocopos major)
GT	Great Tit (Parus major)
HS	House Sparrow (Passer domesticus)
JD	Jackdaw (Corvus monedula)
MG	Magpie (Pica pica)
R.	Robin (Erithacus rubecula)
ST	Song Thrush (Turdus philomelos)
WP	Woodpigeon (Columba palumbus)
WR	Wren (Troglodytes troglodytes)

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Plan EDP 2: Pilot Bird Survey 2021

date	**25 OCTOBER 2021**	drawn by	**RB**
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scale	**1:2,000 @ A3**	QA	**JTF**

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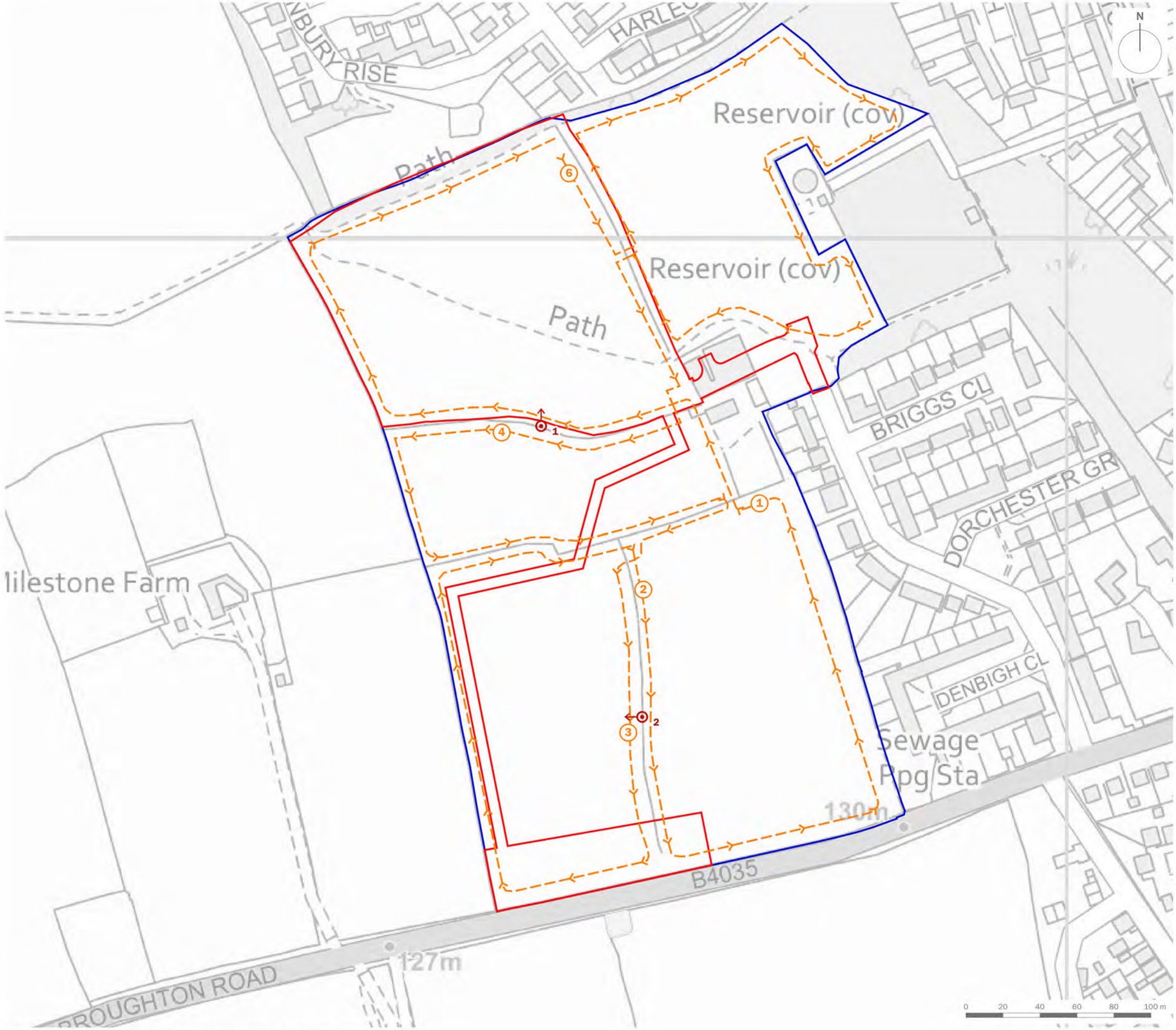

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Land off Balmoral Avenue, Banbury

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Plan EDP 3: Bat Activity Transect Route and Anabat Locations

date	**25 OCTOBER 2021**	drawn by	**RB**
drawing number	**edp7133_d006a**	checked	**TRo**
scale	**1:2,000 @ A3**	QA	**JTF**

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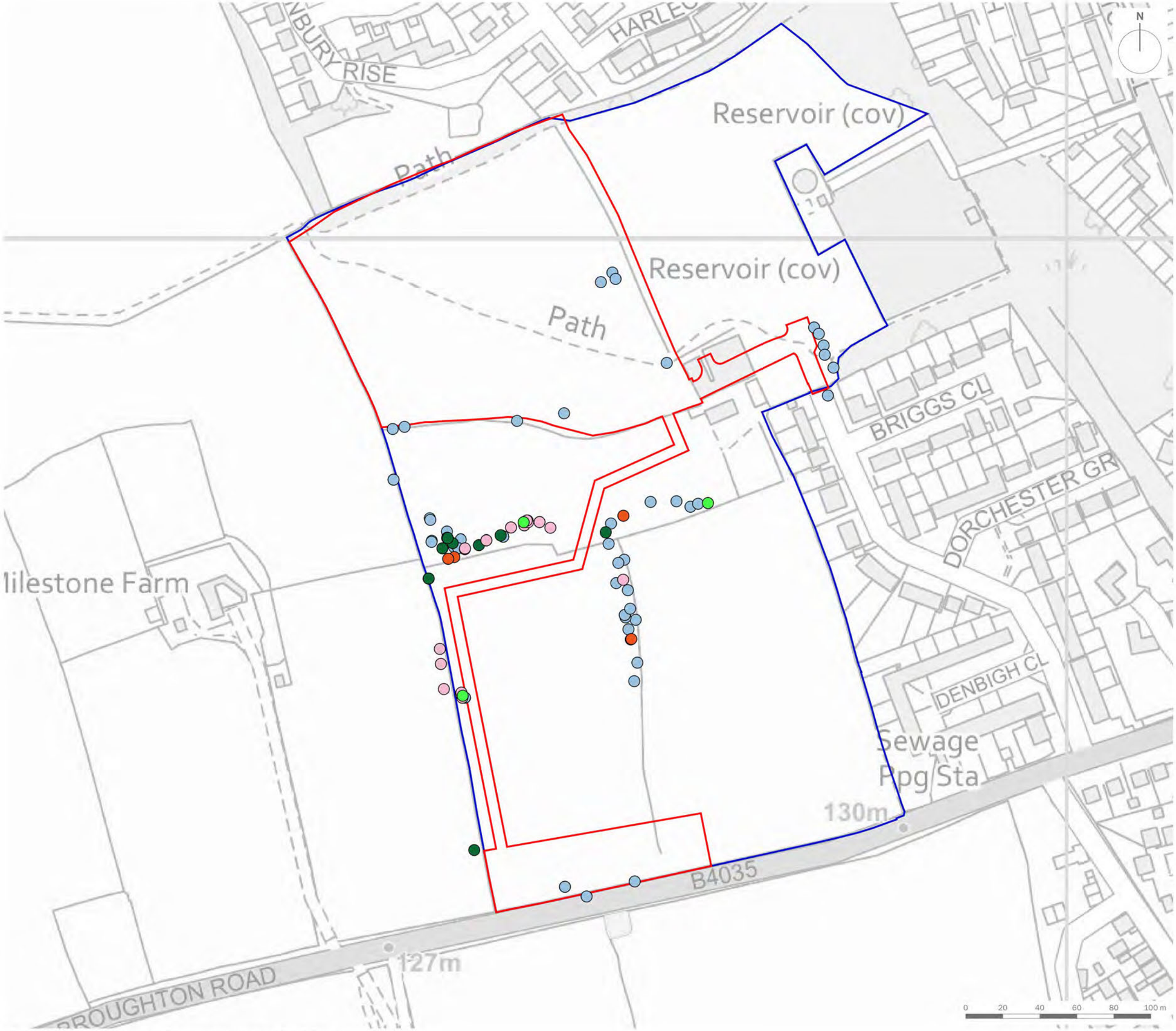

Site Boundary

Survey Boundary

Bat Species

- Common Pipistrelle
- Soprano Pipistrelle
- Myotis sp.
- Brown Long-eared Bat
- Noctule

client

Lone Star Land Ltd

project title

Land off Balmoral Avenue, Banbury

drawing title

Plan EDP 4: Bat Activity Survey Results: June 2021

date	**25 OCTOBER 2021**	drawn by	**RB**
drawing number	**edp7133_d007a**	checked	**TRo**
scale	**1:2,000 @ A3**	QA	**JTF**

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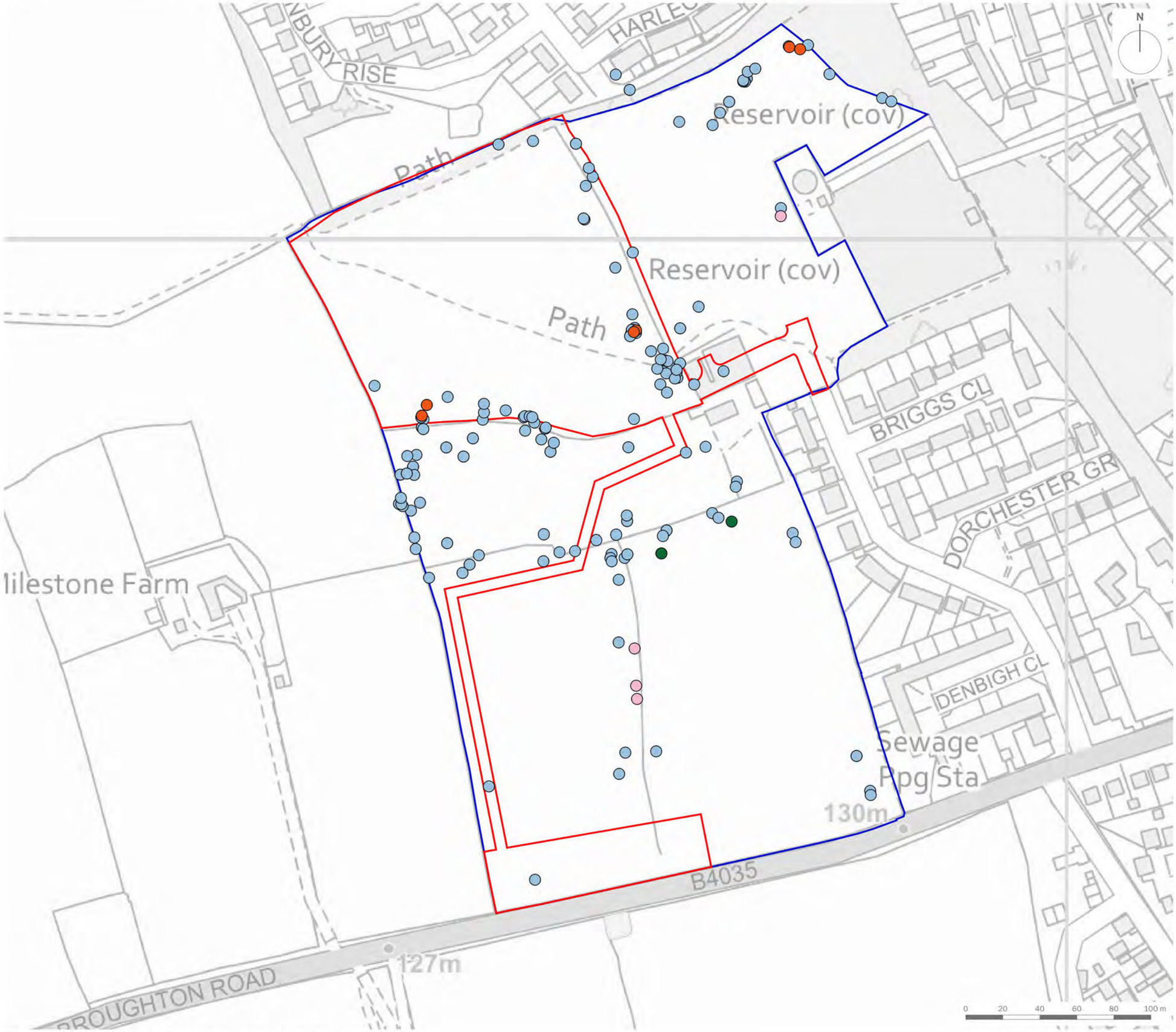

Site Boundary

Survey Boundary

Bat Species

Common Pipistrelle

Soprano Pipistrelle

Myotis sp.

Noctule

client

Lone Star Land Ltd

project title

Land off Balmoral Avenue, Banbury

drawing title

Plan EDP 5: Bat Activity Survey Results: Early September 2021

date	**25 OCTOBER 2021**	drawn by	**RB**
drawing number	**edp7133_d008a**	checked	**TRo**
scale	**1:2,000 @ A3**	QA	**JTF**

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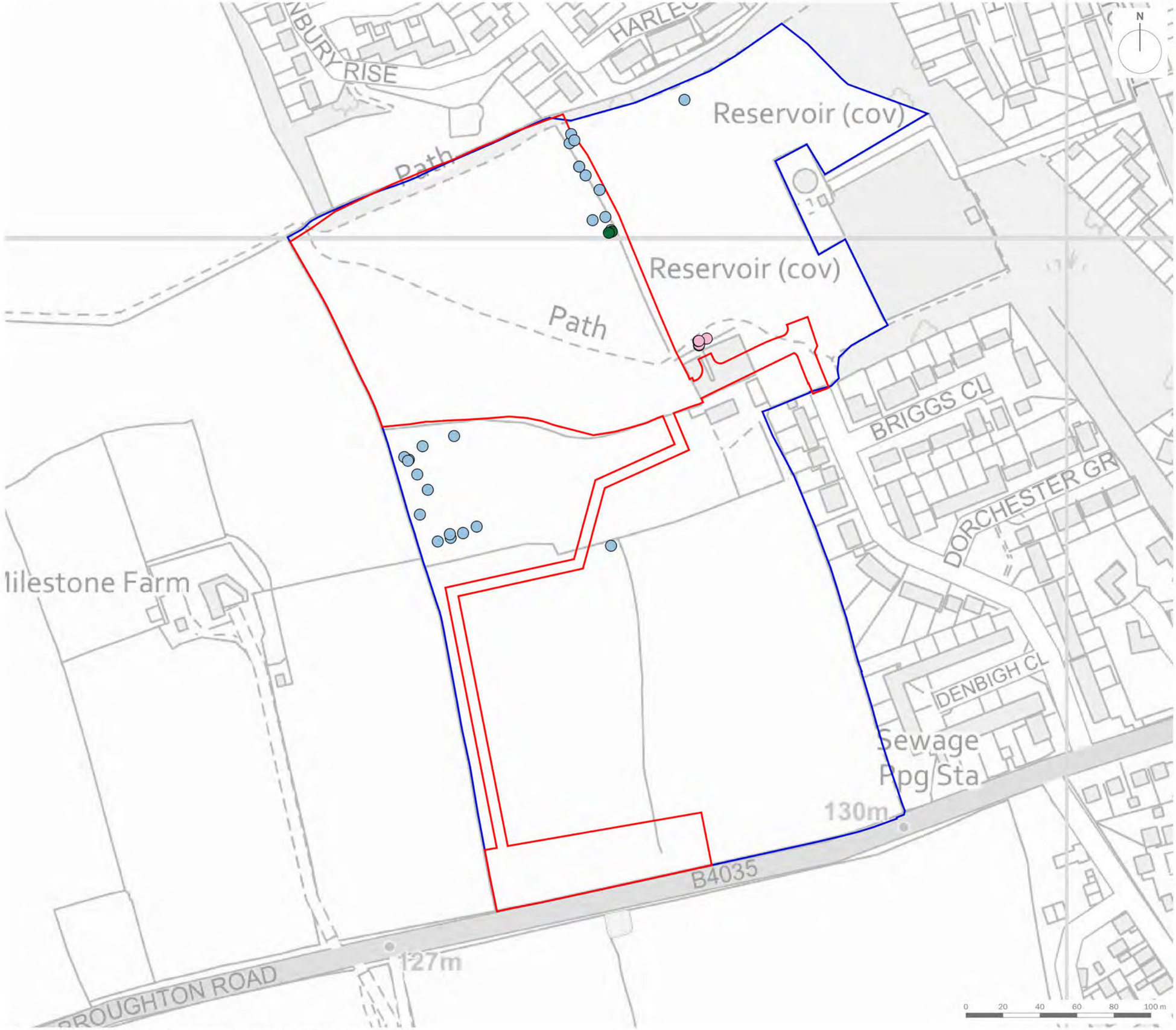

Site Boundary

Survey Boundary

Bat Species

Common Pipistrelle

Soprano Pipistrelle

Myotis sp.

client

Lone Star Land Ltd

project title

Land off Balmoral Avenue, Banbury

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Plan EDP 6: Bat Activity Survey Results: Late September 2021

date	**25 OCTOBER 2021**	drawn by	**RB**
drawing number	**edp7133_d009a**	checked	**TRo**
scale	**1:2,000 @ A3**	QA	**JTF**

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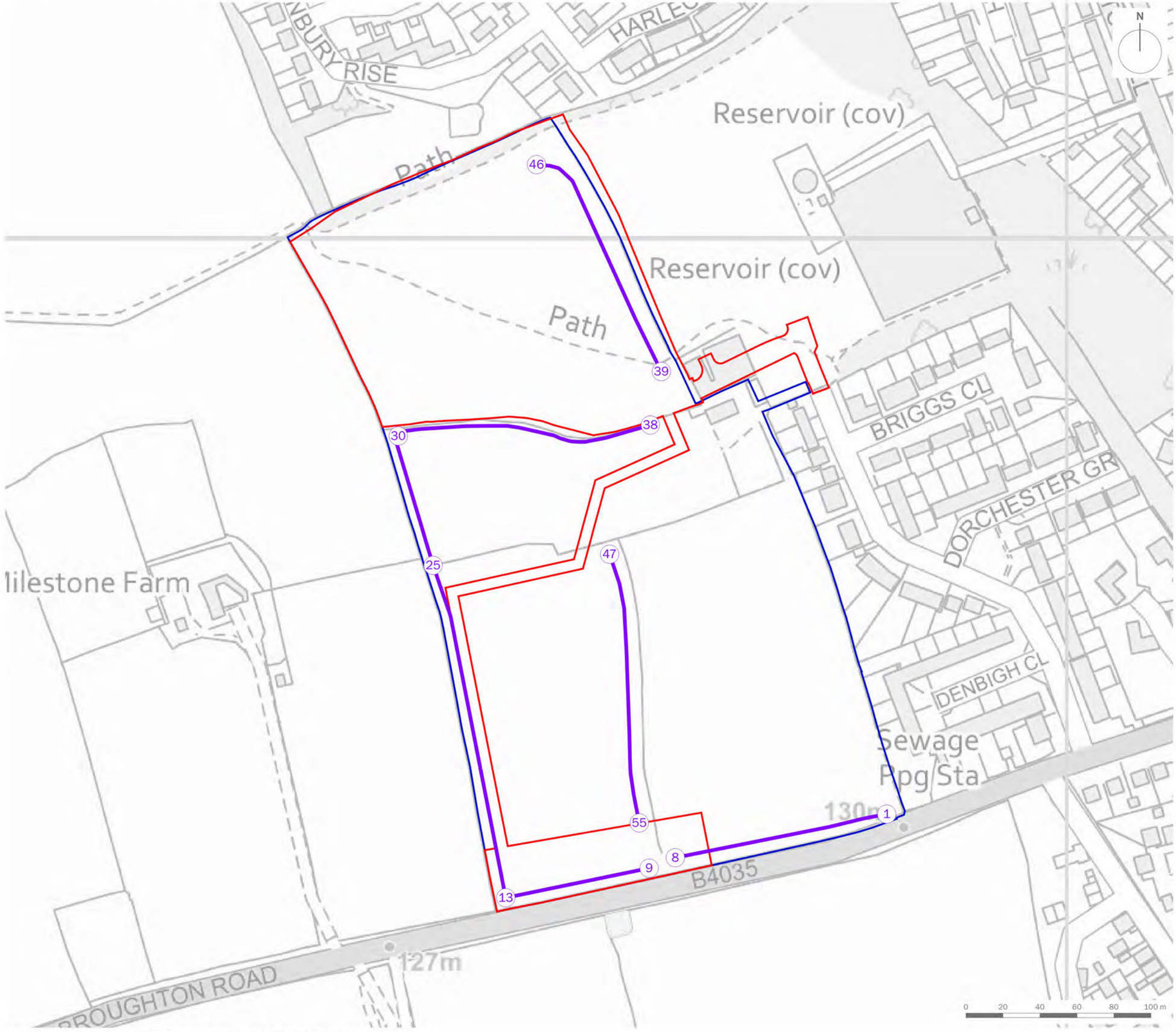

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Plan EDP 7: Hazel Dormouse Tube Location Plan

date	**25 OCTOBER 2021**	drawn by	**RB**
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scale	**1:2,000 @ A3**	QA	**JTF**

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Site Boundary

Retained and Enhanced Habitats

Woodland

Native Scrub

Retained Hedgerow

Habitat Creation

Other Neutral Grassland

Modified Grassland

Garden

Introduced Shrubs

Pond

Sustainable Urban Drainage Feature

Building/Hardstanding

Native Hedge

Ornamental Hedge

client

Lone Star Land Ltd

project title

Land off Balmoral Avenue, Banbury

drawing title

Plan EDP 8: Biodiversity Impact Assessment

date	**25 OCTOBER 2021**	drawn by	**GY**
drawing number	**edp7133_d012**	checked	**RF**
scale	**1:1,750 @ A3**	QA	**JTF**

the environmental dimension partnership

Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk

the environmental dimension partnership

CARDIFF
02921 671900

CHELTENHAM
01242 903110

CIRENCESTER
01285 740427

info@edp-uk.co.uk
www.edp-uk.co.uk

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