



Miller Homes

Station Road, Market Bosworth

ECOLOGICAL APPRAISAL

May 2024

This report may contain sensitive ecological information, it is the responsibility of the Local Authority to determine if this should be made publicly available

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CONTENTS

NON-TECHNICAL SUMMARY	2
1.0 INTRODUCTION	3
2.0 METHODOLOGY.....	4
3.0 RESULTS	10
4.0 DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS.....	22

APPENDICES

Appendix A: Botanical Species List

Appendix B: GCN Habitat Suitability Index of On-Site Pond

Appendix C: Automated Bat Static Detector Survey

Appendix D: Scoping Breeding Bird Survey Results

Appendix E: GCN eDNA Results

FIGURES

Figure 1a: Site Location & Consultation Results Plan – Designated Sites

Figure 1b: Site Location & Consultation Results Plan – Protected Species

Figure 2: Phase 1 Habitat Plan

Figure 3: Waterbody Location Plan

Figure 4: Bat Transect & Static Location Plan Spring

Figure 5: Bat Transect & Static Location Plan Summer

Figure 6: Bat Transect & Static Location Plan Autumn

Figure 7: Scoping Breeding Bird Survey Results Plan – Distribution of Notable Species

NON-TECHNICAL SUMMARY

- FPCR Environment and Design Ltd. were commissioned by Miller Homes Ltd. to complete an ecological assessment on land to the south of Station Road, Market Bosworth. The Site predominantly comprised arable farmland and industrial/residential development. Other habitats included buildings, hedgerows, broadleaved trees, a single ditch and scrub.
- No international sites designated for their nature conservation interest were present within a 5km radius. A single Site of Special Scientific Interest (SSSI) known as Ashby Canal was located within 2km of the Site. A single potential Local Wildlife Site (pLWS) consisting of a hedgerow was located within the site, with an additional 19 non-statutory sites of nature conservation value were present within 1km of the Site boundary. Minor losses to the on-Site pLWS are anticipated and will be mitigated through additional hedgerow planting and management. No further impacts to nature conservation are anticipated upon the remaining sites from development.
- All hedgerows and mature broadleaved trees were classified as a Habitat of Principal Importance. Habitats offering greater ecological value include broad-leaved trees and hedgerow. Arable farmland, buildings and scattered scrub provide low ecological importance at a site level. A Biodiversity Net Gain (BNG) Assessment was carried out on the Site, the results of which are provided within a separate BNG Technical Note.
- The vast majority of habitat comprising, poor semi-improved grassland, provided a sub-optimal commuting and foraging resource and unsuitable sheltering resource for great crested newts (GCN) *Triturus cristatus*. Suitable terrestrial habitats present within the Site included hedgerows and scattered scrub. A single waterbody (P1) was present within the Site and comprised a small garden pond which tested negative for GCN eDNA and had an HSI of 0.56, indicating 'below average' suitability to support GCN. GCN are therefore considered highly unlikely to be present within pond P1. Four ponds are present within 250m of the Site, however due to the presence of partial barriers to dispersal, an abundance of alternative more-suitable habitat in the wider landscape, as well as the fact that the majority of the habitats within the northern portion of the Site are buildings/hardstanding, GCN are considered reasonably unlikely to disperse into the Site. However in the unlikely event that this species is present in the wider environment, precautionary Reasonable Avoidance Measures (RAMs) are provided.
- Tree T4 presented features providing roosting potential for roosting bats and is to be retained and buffered. Should this tree required removal/pruning or is to be affected significantly by lighting, further survey work will be required. All buildings were assessed as providing low roosting potential, and no roosts were found during nocturnal surveys. The Site was assessed to support low numbers of common and widespread species of bats, with the activity survey identifying hedgerows and broadleaved trees as suitable foraging features, the majority of these which are to be retained. No significant impact on the local bat population is anticipated and the proposal has scope to provide a greater commuting and foraging resource to the local bat population than the Site currently provides.
- No active or inactive badger setts were identified within or within a 30m radius of the Site (where accessible). Precautionary working measures have been recommended.
- Reptiles have not been identified as a statutory constraint to development.

- No significant impacts are anticipated on the breeding bird assemblage. Suitable nesting habitat for birds was present within the Site, including the arable field, scrub and boundary features. It is recommended that if works are to be undertaken within the bird nesting season (March to September inclusive), then a nesting bird check should be undertaken by a suitably experienced ecologist prior to commencement of works.

1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd. on behalf of Miller Homes and details the results of an Ecological Appraisal of an area of land located south of Station Road, Market Bosworth, Leicestershire (OS Grid Ref SK394 029) (hereafter referred to as the 'Site' or 'proposals').
- 1.2 The aim of the appraisal is to identify the habitats and protected species present and any other features of value within the Site, identify and describe potential ecological constraints and impacts of the proposed development, and set out appropriate avoidance, mitigation, compensation and enhancement measures which could be implemented.
- 1.3 The appraisal has been informed by an ecological desk study, extended Phase I habitat, hedgerow survey and protected species surveys.

Site Location and Context

- 1.4 The Site comprised two arable field compartments, as well as an area of industrial buildings, residential properties with associated gardens and hardstanding drives/car parking. Field compartment boundaries were formed by native hedgerows, fence lines and walls. Other habitat present either within or bounding the Site included broadleaved tree lines and standard trees and scattered scrub.
- 1.5 Station Road borders the Site to the north, an area of commercial development also borders the site to the north and west, with residential dwellings bordering the Site to the west and arable fields to the south. The wider landscape is predominantly arable, with crop and pasture fields interspersed with small pockets of woodland.

Development Proposals

- 1.6 Development proposals are for a mixed development including residential and industrial buildings, allotments and open space and associated infrastructure, with access from Station Road to the north. The proposed scheme is included as Policy BD2 in the adopted Market Bosworth Neighbourhood Plan¹.

¹ Hinckley & Bosworth Borough Council (2014) Market Bosworth Neighbourhood Plan [Online]. Available from: https://www.hinckley-bosworth.gov.uk/downloads/file/4845/market_bosworth_neighbourhood_plan . [Accessed 06.10.2023]

2.0 METHODOLOGY

Desk Study

- 2.1 An ecological desk study was undertaken to collate existing baseline information held by statutory and non-statutory consultees. The following baseline data was collated;
- Records of statutory designated sites of European nature conservation importance (such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites), national/regional nature conservation importance (such as Sites of Special Scientific Importance (SSSIs) and National Nature Reserves (NNR)) and local nature conservation importance (Local Nature Reserves (LNR) within 5, 2 and 1km of the Site, respectively;
 - Non-statutory designated sites for nature conservation for within 1km of the Site included the following:
 - Local Wildlife Sites (LWS) which are designated on the basis of the habitat(s) they support or the known presence of rare, local and/or declining species;
 - Candidate Local Wildlife Sites (cLWS) which are defined as sites that meet local wildlife site criteria but have not been formally designated as a LWS;
 - Potential Local Wildlife Sites (pLWS) which are defined as sites that have not been through the formal notification process as a LWS, but are likely to meet the LWS criteria, although further survey is required to confirm this.
 - Records of legally protected species and notable species, including Species of Principal Importance under the Natural Environment & Rural Communities (NERC) Act 2006 for within 1km of the Site.
- 2.2 Information was requested from the Leicestershire and Rutland Environmental Records Centre (LRERC).
- 2.3 Online resources, including data available through the Multi-Agency Geographic Information for the Countryside² and Bing maps³ websites were used to supplement information obtained from consultees and reviewed in order to obtain an overview of statutory designations and identify any features of potential importance for nature conservation in the wider landscape.

Field Survey

Extended Phase 1 Survey Habitats

- 2.4 The field survey was conducted on 19th April 2023 by a suitably experienced ecologist with a level four Field Identification Skills Certificate (FISC) certificate. Survey methods broadly followed the Phase I Survey technique⁴. This involved a systematic walkover of the Site to classify the broad habitat types and to particularly identify any Habitats of Principal Importance for the conservation of biodiversity as listed on NERC Act 2006. Habitats were also classified using the UKHab version 1.1 classification system⁵.

² Magic [online] <https://magic.defra.gov.uk/MagicMap.aspx>

³ Bing Maps <https://www.bing.com/maps>.

⁴ JNCC (2010) Handbook for Phase I habitat survey – a technique for environmental audit, JNCC, Peterborough.

⁵ Butcher, B., Carey, P., Edmonds, R., Norton, L. and Trewick, J. (2020). The UK Habitat Classification User Manual 1.1 at <http://www.ukhab.org>

- 2.5 In accordance with best practice, the survey was ‘extended’ to include the recording of observation, signs or suitable habitat for any species protected under Part I of the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 (as amended) and the Protection of Badgers Act 1992. In addition, species lists were compiled for each habitat type present and their relative abundances recorded using the DAFOR scale.

Hedgerows

- 2.6 All hedgerows within the Site were assessed in accordance with the Wildlife and Landscape criteria contained within Statutory Instrument No: 1160 – The Hedgerow Regulations 1997 to determine whether they qualified as ‘Important Hedgerows’ under the Regulations. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance⁶. An assessment of archaeological importance as defined under the Act is outside the scope of the current assessment.

Fauna

Badger

- 2.7 All suitable habitats within the Site and accessible land within 30m were searched for evidence of badger *Meles meles* activity. The methodology employed followed that outlined by Harris, Creswell and Jefferies⁷.
- 2.8 Evidence of badger occupation and activity sought included:
- Setts: including earth mounds, evidence of bedding and runways between setts;
 - Latrines: often located close to setts, at territory boundaries or adjacent to favoured feeding areas;
 - Prints and paths or trackways;
 - Hairs caught on rough wood or fencing; and
 - Other evidence: including snuffle holes, feeding and playing areas and scratching posts.

Bats

Ground Level Tree Assessment

- 2.9 Tree assessments were undertaken from ground level, with the aid of binoculars (where appropriate). These surveys were undertaken during the ecological walkover on the 19th April 2023 by a suitably experienced ecologist. During the survey Potential Roosting Features (PRF) for bats such as the following were sought (Based on P16, British Standard 8596:2015 Surveying for bats in trees and woodland, October 2015):
- Natural holes (e.g., knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar;
 - Woodpecker holes;
 - Cracks/splits in stems or branches (horizontal and vertical);

⁶ Clements, D.K., & Tofts, R.J. (1992). Hedgerow Evaluation and Grading System (HEGS): A methodology for the ecological survey, evaluation and grading of hedgerows. Countryside Planning and Management.

⁷ Harris, S., Cresswell, P. & Jefferies, D. 1989. Surveying for badgers. Occasional Publication of the Mammal Society No. 9. Mammal Society, Bristol.

- Partially detached, loose or bark plates;
 - Cankers (caused by localised bark death) in which cavities have developed;
 - Other hollows or cavities, including butt rots; and
 - Bat or bird boxes.
- 2.10 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings, and its location in respect to other features may enhance or reduce the potential value.
- 2.11 Trees were classified into general bat roost potential groups based upon the presence of these features. Table 1 (below) broadly classifies the potential categories as accurately as possible as well as discussing the relevance of the features. This table is based upon Table 6.2 and Chapter 6 in Bat Surveys for Professional Ecologists: Good Practice Guidelines⁸.

Table 1: Classification and Survey Requirements for Bats in Trees

Classification of Tree	Description of Category and Associated Features (based on PRFs listed above)	Likely Further Survey Work / Actions
PRF – I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.	No further survey required but a precautionary working method statement may be appropriate.
PRF – M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.	Where the tree(s) will likely be affected by development a combination of aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August). Following additional assessment a tree may be upgraded or downgraded based on findings. If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from Natural England will be required. After completion of survey work (where the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.

Internal/External Building Assessment

- 2.12 Specific evaluation of all buildings was carried out by a suitably qualified ecologist on 19th April 2023. This entailed a full internal (where access was possible) and external inspection of all buildings within the study area. This methodology takes into account the statutory guidance⁹ and updated guidelines introduced by the Bat Conservation Trust¹⁰ and earlier guidance within the 2004 Bat Workers Manual¹¹.
- 2.13 The building exteriors were visually assessed for potential access points and evidence of bat activity. Features such as small gaps under barge/soffit/fascia boards, raised or missing ridge tiles and gaps at gable ends, which have potential as access points, were sought. Indicators that

⁸ Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust

⁹ English Nature 2001. *Bat Mitigation Guidelines*.

¹⁰ Bat Conservation Trust (BCT) 2016. *Bat Surveys for Professional Ecologists, Good Practice Guidelines*, 3rd Edition

¹¹ Mitchell-Jones, A.J., & McLeish, A.P. Ed. 2004. *Bat Workers' Manual* 3rd Edition

potential access points had not recently been used included the presence of cobwebs and general detritus within the access.

- 2.14 The interior of the buildings, including roof voids where present and accessible, were also visually assessed for evidence of bat activity and/or for the potential to be used by bats.
- 2.15 The potential for the study area and immediate surrounds to support feeding and commuting bats was also assessed, with particular regard being given to the presence of continuous treelines, water courses and hedgerows providing good connectivity in the landscape, and the presence of varied habitat such as scrub, woodland, grassland and open water in the vicinity.

Nocturnal Building Survey

- 2.16 Two dusk emergence nocturnal bat building surveys were undertaken on 20th July and 24th August 2023.
- 2.17 During the surveys bat workers were positioned so all aspects of the buildings with potential to support bats could be observed. The dusk survey commenced 15 minutes prior to sunset and ended at least 90 minutes following sunset.
- 2.18 During the nocturnal surveys the species and location of any bat activity was recorded using Echo Meter Touch® bat detectors in conjunction with Echo Meter Touch® app and Apple Inc. iPad®. Post-survey, bat calls were analysed using Kaleidoscope© (Wildlife Acoustics) software package, by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. Surveys were conducted in appropriate conditions, i.e., ambient temperatures above 10°C and with little wind and no rain.

Table 2: Bat Emergence Survey Conditions

Survey date	Buildings Surveyed	Time (sunset/sunrise)	Temperature	Cloud cover %	Rain (0-10)	Wind (0-10)
20.07.2023 Dusk emergence	B1, B1a, B1b, B2a, B2b, B3a, B3b, B3c	20:38 to 22:01 (sunset 21:16)	13°C	30	0	1
24.08.2023 Dusk emergence	B2a, B2b, B3a, B3b, B3c	19:58 to 21:43 (sunset 21:13)	16°C	15	0	1

Commuting and Foraging

- 2.19 Habitats present within and bounding the Site were considered for their potential to support a commuting and foraging value for bats.

Activity Transect Surveys – Foraging/Commuting Habitat

- 2.20 Walked activity transect survey was completed seasonally during spring, summer and autumn. The primary objectives were to identify foraging areas, commuting routes and species utilisation of the study area. The transect route was determined prior to survey in order to sample different areas of the study area with the focus on those areas considered to provide higher suitability. Point count stops were incorporated to provide further information regarding bat activity levels. Each point count was a minimum of five minutes long, during which time all bat activity was recorded. The transect commenced at sunset and lasted a minimum of 2 hours.

- 2.21 The transect was walked at a steady pace and when a bat passed by the species, time and behaviour was recorded on a plan. This information helps to form a general view of the bat activity present within the study area and highlights what habitat types are associated with bat activity. A Wildlife Acoustics Inc. Echo Meter Touch® bat detector was used in conjunction with an Echo Meter Touch® app and Apple Inc. iPad®.
- 2.22 The transect was undertaken when conditions were suitable (i.e. when the ambient air temperature exceeded 10°C and there was little wind and no rain).

Table 3: Bat Activity Transect Survey Conditions

Survey Date	Sunset / Sunrise	Transect Start / Finish	Temp °C	Rain	Wind (0-5)	Cloud %
16 th May 2023	20:57	20:57-22:57	10	None	1	10-0
5 th July 2023	21:31	21:31-23:31	15	None	1	80-95
5 th September 2023	19:43	19:43-21:43	20	None	1	10-0

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

Automated Surveys – Foraging and Commuting Bats

- 2.24 Static passive recording broadband detectors were deployed on the study area to supplement the manual transects surveys.
- 2.25 Passive monitoring was undertaken using an automated logging system (Wildlife Acoustics Inc. Song Meter® SM4 BAT FS bat detectors) with the output saved to an internal storage device. These devices were placed alongside or close to features considered to be of value to bats. They were deployed during suitably mild weather conditions and were programmed to activate 30 minutes before dusk and record continuously until 30 minutes following sunrise for an extended period on each occasion (five consecutive nights). The output was then subjected to computer analysis using Kaleidoscope® Pro 5 (Wildlife Acoustics) to assess bat activity over this period.
- 2.26 In some cases the static bat detectors were deployed for longer than five nights. In accordance with the BCT guidelines the first five nights of data are presented in this report. Any data recorded following the initial five nights were analysed/checked for the presence of Annex II species and notable species only.

Birds

- 2.27 A scoping breeding bird survey was undertaken on 19th April 2023. The objectives of the survey were to:
- Identify the presence, species, and distribution of breeding birds within the Site;
 - Evaluate the conservation importance of breeding bird populations present;
 - Evaluate the importance of breeding bird populations and the anticipated residual impacts of the development; and
 - To identify areas of ornithological interest and make recommendations to minimise the potential impact of the scheme.

- 2.28 The survey methodology employed was broadly based on that of territory mapping as developed by the BTO¹². All birds encountered (seen or heard) were recorded on a field survey plan using standard BTO species codes and symbols for bird activities and to denote activity, sex and age where appropriate. Birds were considered to be holding a territory and therefore likely to be utilising the Site for breeding activities if they were displaying breeding behaviours, such as: singing, nest building, food carrying or territorial defence. If birds did not display such behaviours, e.g. they were only recorded flying over the Site, they were considered non-breeders.
- 2.29 The survey visit was undertaken between sunrise and 11.00 hrs. A route was mapped out prior to the survey being undertaken, with particular attention to linear features, such as hedgerows and watercourses. The survey was not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results. The conditions during the survey visit are summarised in Table 4.

Table 4: Conditions during the Breeding Bird Survey

Survey	Date	Cloud Cover (%)	Rain	Wind (Beaufort)	Visibility
1	19.04.23	10	None	1	Excellent

Great Crested Newt

Habitat Suitability Index (HSI) Survey

- 2.30 As part of the Phase I habitat survey a habitat suitability index (HSI) assessment was completed on accessible ponds within 500m of the Site where suitable habitat connectivity was identified using OS mapping and aerial photographs. The HSI assessment provides a measure of the likely suitability that a waterbody has for supporting great crested newts (GCN). Whilst not a direct indication of whether or not a pond will support the species, generally, those with a higher score are more likely to support GCN than those with a lower score, and there is a positive correlation between HSI scores and ponds in which GCN are recorded. Ten separate attributes are assessed for each pond to calculate the suitability of the ponds to support GCN:
- Location (Area A, B or C within the UK);
 - Pond area (size in m²);
 - Permanence (how many times it likely dries out in a decade);
 - Water quality (invertebrate diversity);
 - Shade (percentage of a water body's perimeter shaded);
 - Fowl (impact of waterfowl if present);
 - Fish (impact of fish if present);
 - Pond count (density of ponds within 1km)
 - Terrestrial habitat (quality of surrounding habitat); and
 - Macrophytes (percentage of surface area occupied).
- 2.31 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. These are multiplied together and then the tenth root calculated. Pond suitability is then determined according to the scale shown in Table 5.

Table 5: HSI Scores as a Measure of Pond Suitability

¹² Bibby, C.J., N.D. Burgess & D.A. Hill. 2000. *Bird Census Techniques*: 2nd Edition. London: Academic Press.

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

eDNA surveys

- 2.1 Pond P1 was subject to an eDNA survey on 6th June 2023. This methodology has been approved by Natural England for the determination of GCN presence/absence.
- 2.2 The methodology comprised taking samples of agitated water from 20 locations around the pond perimeter and mixing thoroughly. 15ml of this water was then placed into each of 6 sterile sample tubes containing preservative, precipitates and a DNA sequence that was used for degradation control. The sample was stored in accordance with the protocols provided by the laboratory. The sample was then transported under suitable conditions to the ADAS laboratory for analysis.
- 2.3 The laboratory results could have one of three outcomes which are described in Table 6.

Table 6: Description of Possible Results of eDNA Analysis

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

Reptiles

- 2.4 Habitats present within the Site were considered for their potential suitability to support reptile populations, including the presence of features which provide opportunities for reptiles to bask, forage and/or hibernate, and areas of varied vegetation structure in sheltered locations with sunny aspects and connectivity to other suitable reptile habitats. This assessment was based on the methodology detailed in the Herpetofauna Workers Manual¹³ and the Froglife Advice Sheet¹⁴.

Biodiversity Net Gain Assessment (BNG)

Legislation and Policy Context

¹³ Gent, A.H. & Gibson, S.D., eds., 1998. Herpetofauna workers' manual. Peterborough, Joint Nature Conservation Committee.

¹⁴ Froglife, 1999. *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10*. Froglife, Halesworth.

- 2.5 The key legislation relevant to this report is The Environment Act (2021)¹⁵ which sets out the requirement for developments to deliver a Biodiversity Net Gain.
- 2.6 At the time of writing this report, the secondary legislation necessary to mandate the requirements of the Environment Act has not yet been published. The current key driver for delivering a measurable net gain currently sits within the National Planning Policy Framework, which seeks to ensure that the planning system contributes to and enhances the natural and local environment, protect and enhance biodiversity and geodiversity.
- 2.7 The Draft Local Plan 2020 – 2039 for Hinckley and Bosworth¹⁶ and adopted Market Bosworth Neighbourhood Plan 2014 - 2026¹⁷ have also been reviewed to inform this assessment. Relevant policies include Policy NAT08 of the Hinckley and Bosworth Draft Local Plan which states “all development should provide a net gain in biodiversity where possible. As a minimum, there should be no net loss of biodiversity.”
- 2.8 To assess whether or not the proposals are capable of delivering a biodiversity gain, the Department for Environment, Food and Rural Affairs (DEFRA) Biodiversity Impact Assessment Calculator v4.0 was used, the results of which are discussed in a standalone technical note (FPCR, 2023).

¹⁵ <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted> [Accessed 08/11/23]

¹⁶ Hinckley and Bosworth Borough Council (2020) Draft Local Plan 2020 – 2039 [Online]. Available from: https://www.hinckley-bosworth.gov.uk/downloads/file/7356/draft_local_plan_2020_-_2039 [Accessed 08/10/23]

¹⁷ Market Bosworth Parish Council (2015) Market Bosworth Neighbourhood Plan [Online]. Available from: <https://www.marketbosworth-pc.gov.uk/uploads/adopted-market-bosworth-neighbourhood-plan.pdf?v=1493731766> [Accessed 08/10/23]

3.0 RESULTS

Desk Study

Statutory Designations

- 3.1 The Site is not covered by or does not lie adjacent to any statutory designated site of nature conservation.
- 3.2 No internationally designated sites for nature conservation were present within a 5km radius of the Site, however one nationally important site of nature conservation was present within a 2km radius of the Site, Ashby Canal Site of Special Scientific Interest (SSSI). This site is located approximately 1.45km northwest of the Site and supports aquatic and emergent plants representative of eutrophic standing waterbodies in the English lowlands, as well as a large diversity of invertebrates including nine species of dragonfly. The Site falls within the impact risk zone (IRZ) for this SSSI.

Non-Statutory Designations

- 3.3 One non-statutory designated site of nature conservation value, a potential Local Wildlife Site (pLWS), was present within the Site boundary. This is referred to as Market Bosworth, Hedge 2 and its citation reads simply 'Hedgerow'.
- 3.4 There were an additional 19 non-statutory sites located within 1km of the Site, none of which are fully designated, with six sites holding candidate Local Wildlife Sites (LWS) and four potential Local Wildlife Sites (pLWS). The remaining nine non-statutory sites are historic Local Wildlife Sites (hLWS) and have not been surveyed recently. A summary of the reasons for nature conservation are provided in Table 7 below and shown in Figure 1a.

Table 7: Non-Statutory Designated Sites within 2km of the Site.

Site Name	Designation	Approximate distance to Site	Nature Conservation Reason
Market Bosworth, Hedge 2	pLWS	Within site	Hedgerow
Sedgemere, Market Bosworth	pLWS	80 m W	Wet grassland
Market Bosworth, Hedge 1	pLWS	107m S	Hedgerow
Marsh/rough grassland	hLWS	113m S	No recent survey data – not known if the site still has value
Ashby Canal, Market Bosworth	LWS	135m W	Canal
Market Bosworth, Station Road Veteran Ash	LWS	140m N	Veteran ash <i>Fraxinus excelsior</i> tree
Market Bosworth, Kyngs Golf Course Ponds and Tree	LWS	200m N	Located within the grounds of a former golf course and comprises five ponds all containing pondweeds <i>Potamogeton</i> sp. A single Oak <i>Quercus</i> sp. tree with trunk girth estimated at >3.7m
Bosworth Marina Wetland	LWS	340 NW	Recently created pond, formed as part of ecology compensation for construction

Site Name	Designation	Approximate distance to Site	Nature Conservation Reason
			of Marina. <i>Potamogeton natans</i> and <i>perfoliatus</i> , <i>Myriophyllum spicatum</i> and local RDB <i>Ceratophyllum submersum</i> . Water voles. Fringe of emergent vegetation, inc. <i>Carex pseudocyperus</i>
Dismantled Railway	hLWS	555m S	No recent survey data – not known if the site still has value
Market Bosworth, Woodland South of Mill Covert	hLWS	560m N	No recent survey data – not known if the site still has value
Market Bosworth, Far Coton, Pond between canal and railway	hLWS	655m S	No recent survey data – not known if the site still has value
Market Bosworth, Shenton Lane Hedge	pLWS	685m SE	Species-rich hedge, meeting HRegs 'important' criteria, plus several near veteran oaks
Shenton, Woodland East of Railway	hLWS	705m S	No recent survey data – not known if the site still has value
Market Bosworth, Friezeland Farm Pool	hLWS	755m W	No recent survey data – not known if the site still has value
Ashby Canal, Welsboro Bridge to Deakin's Bridge	hLWS	820m SW	No recent survey data – not known if the site still has value
Silk Hill Mature Trees	LWS	830m NE	Mature trees
Carlton, Grassland	hLWS	920m W	No recent survey data – not known if the site still has value
Stream along Nailstone/Carlton boundary	LWS	995m N	Small river or stream
Mill Covert	hLWS	995m N	No recent survey data – not known if the site still has value

Species Records

- 3.5 Records provided by LRERC pertaining to protected or otherwise notable taxa for the 1km search area are summarised in Table 8 and shown in Figure 1b.

Table 8: Protected and Notable Species Records within 1km of the Site.

Species	Closest Record to Site (Approximate)	Notes
Bats		
Brown long-eared bat <i>Plecotus auritus</i>	65m W	9 records, including 5 roost records and 3 activity/sonogram records

Species	Closest Record to Site (Approximate)	Notes
Common pipistrelle <i>Pipistrellus pipistrellus</i>	563m W	36 records, mostly activity records
<i>Pipistrellus</i> species	170m W	4 records
Daubenton's Bat <i>Myotis daubentonii</i>	170m W	2 activity records
<i>Myotis</i> species	75m W	3 sonogram records
Noctule <i>Nyctalus noctula</i>	75m W	7 sonogram records
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	90m W	7 records of activity and roosts
Unidentified bat species	135m W	6 records, mostly of droppings associated with roosts
Other Mammals		
Badger <i>Meles meles</i>	85m S	15 records, all of setts
Hedgehog <i>Erinaceus europaeus</i>	55m NE	3 records, mostly live sightings
Hare <i>Lepus europaeus</i>	940m SE	2 records
Otter <i>Lutra lutra</i>	105m W	3 records of field signs
Water vole <i>Arvicola amphibius</i>	215m NW	3 records in association with Ashby Canal
Amphibians		
Great Crested Newt (GCN) <i>Triturus cristatus</i>	75m N	12 records, mostly pond survey records with some evidence of confirmed breeding
Smooth newt <i>Lissotriton vulgaris</i>	85m N	8 records, mostly pond survey records
Common frog <i>Rana temporaria</i>	370m E	2 records
Common toad <i>Bufo bufo</i>	130m W	3 records
Reptiles		
Grass snake <i>Natrix helvetica</i>	130m W	5 records from around the Market Bosworth
Invertebrates		
Invertebrate species	105m W	4 beetle and 3 moth records
Birds		
Bird species	55m NE	62 records consisting of a number of different species, predominantly associated with Market Bosworth village

Field Survey – Habitats

Overview

- 3.6 The habitats described below correspond to those mapped on Figure 2: Phase 1 Habitat Plan. Plant species lists for each habitat are provided in Appendix A.
- 3.7 The Site largely comprised two arable fields bisected by a hedgerow and flowing ditch. There was also an area of residential and industrial development including buildings and hardstanding in the north with associated amenity grassland and gardens. Other habitats included areas of dense scrub and scattered scrub and tall ruderal vegetation.
- 3.8 Site boundaries and field compartment boundaries were formed by native hedgerows, ditches, broadleaved trees, walls and fence lines.

Arable

- 3.9 At the time of survey, the western arable field contained a wheat crop, while the eastern field had been left to go to fallow and was dominated by arable weeds, including frequent cut-leaved crane's-bill *Geranium dissectum* and a mayweed sp. *Matricaria* sp. Within the western field compartment floral diversity was low as species within the field margins had not encroached into the field compartment and there was a clear separation from the crops where the ground had been previously ploughed.
- 3.10 Field margins were approximately 1-2m wide and contained a mixture of grass species up to 50cm in height, with certain areas dominated by bramble *Rubus fruticosus* agg. Other species recorded within field margins include occasional cow parsley *Anthriscus sylvestris*, cleavers *Galium aparine*, locally occasional common nettle *Urtica dioica* and rare hogweed *Heracleum sphondylium*, creeping thistle *Cirsium arvense*, dandelion *Taraxacum* sp., groundsel *Senecio vulgaris* and broad-leaved dock *Rumex obtusifolius*.
- 3.11 Giant hogweed *Heracleum mantegazzianum* was also present in occasional stands along the western field boundary.

Dense Scrub

- 3.12 Several small stands of dense scrub were present across the site, mostly consisting of bramble. The central stand however contained tall woody species hawthorn *Crataegus monogyna*, elder *Sambucus nigra* and Leyland cypress *Cupressus x leylandii*. Ground flora species present here included garlic mustard *Alliaria petiolata* and ivy *Hedera helix*.

Amenity Grassland

- 3.13 A small area of amenity grassland was recorded along the northern boundary adjacent to Station Road. This grassland was regularly mown and consisted of abundant perennial rye-grass *Lolium perenne* and annual meadow-grass *Poa annua*, with locally occasional sticky mouse-ear *Cerastium glomeratum*, creeping buttercup *Ranunculus repens* and chickweed *Stellaria media*, with rare occurrence of ivy-leaved speedwell *Veronica hederifolia*, yarrow *Achillea millefolium*, daisy *Bellis perennis*, white clover *Trifolium repens* and field wood-rush *Luzula campestris*.
- 3.14 A small patch of poor semi-improved grassland was present close to the amenity grassland, forming a front garden to one of the residential properties. This grassland was less managed and

was dominated by Yorkshire-fog *Holcus lanatus*, and also contained perennial rye-grass, cock's-foot *Dactylis glomerata* and dandelion.

Garden

- 3.15 Two residential gardens were present in association with building B1. The western garden contained a neatly kept lawn with border planting and fruit trees. The eastern garden was overgrown and contained a patch of dense bramble scrub and tall ruderal vegetation including abundant nettle, locally abundant meadow foxtail *Alopecurus pratensis* and cock's-foot, locally frequent white dead-nettle *Lamium album*, occasional broad-leaved dock and rare creeping buttercup, creeping cinquefoil *Potentilla reptans*, herb robert *Geranium robertianum*, hybrid bluebell *Hyacinthoides* sp. and wood sorrel *Oxalis acetosella*.

Trees

- 3.16 A small number of broadleaved trees were recorded, some in association with the industrial/residential area in the north, with others present within and surrounding the westernmost arable field in association hedgerows/field boundaries. Tree species recorded included English oak *Quercus robur*, crack willow *Salix fragilis* and a number of ornamental fruit tree within gardens.
- 3.17 Two coniferous trees were present at the southern end of the western residential garden.
- 3.18 Trees are discussed further within the Bats section.

Hedgerows

- 3.19 A total of six hedgerows were present either bounding the Site or separating field compartments. Table 9 provides a summary and their ecological value.
- 3.20 All hedgerows except for hedgerow H1 consisted of 80% or more native woody species therefore are classified as Habitats of Principal Importance (HPI) under the Natural Environment and Rural Communities (NERC) Act 2006.
- 3.21 Hedgerows H2a-c and part of H3 were identified during the desktop study as Market Bosworth, hedge 2 pLWS which is described as 'Hedgerow'. No information was provided as to when the site was last surveyed and as such it was unknown whether the site still met the original value ascribed to it. From the results of the survey it was considered that the hedgerows did not meet the primary or secondary criteria¹⁸ and were not species-rich with less than five native woody species per 30m length, were not continuous (large gaps >5m wide) and/or only had one supporting additional feature (ditch along the hedgerow). As such, it was considered that the hedgerow is unlikely to meet the criteria for selection as a LWS habitat.

¹⁸ Leicestershire County Council (2011) Guidelines for the selection of Local Wildlife Sites in Leicester, Leicestershire and Rutland [Online]. Available from: https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2016/8/22/Guidelines_LWS_0.pdf [Accessed 08.11.23]

Table 9: Summary of the Extent of the Hedgerows and their Ecological Value

Ref.	Canopy Sp.	Height/ Width (m)	Length (m)	Sp. per Av. 30m	Associated Features	Import. HR*?
H1	<i>Cm</i> , <i>Laburnum</i> , Norway Spruce, <i>Leylandii</i>	2-4 / 1.5-2	35	7	1 mature standard	No
H2a	<i>Cm</i> , <i>Ps</i> , <i>Qr</i> , <i>Sc</i>	1.5-2 / 1.5-2	53	4	Mature standard, ditch (wet)	No
H2b	<i>Ps</i> , <i>Sn</i> , <i>Lp</i>	1.5-2 / 1.5-2	25	3	No gaps, ditch (wet)	No
H2c	<i>Cm</i> , <i>Prunus</i> sp., <i>Fe</i> , <i>Rf</i> , <i>Ps</i>	2-4 / 1.5-2	90	3	Mature standards, no gaps, ditch (wet)	No
H3	<i>Sf</i> , <i>Ps</i> , <i>Qr</i> , <i>Cm</i> , <i>Fe</i>	2-4 / 1.5-2	190	5	Mature standard, <10% gaps	No
H4	<i>Sc</i> , <i>Cm</i> , <i>Pa</i>	2-4 / 1.5-2	68	3	10% gaps	No
H5	<i>Ps</i> , <i>Rc</i> , <i>Bp</i> , <i>Ac</i> , <i>Cm</i> , <i>Qr</i> , <i>Fe</i> , <i>Pb</i>	1.5-2 / 1.5-2	106	8	>5 mature standards, <10% gaps	No
H6	<i>Cm</i> , <i>Sn</i> , <i>Rc</i> , <i>Ac</i>	2-4 / 1.5-2	63	3.5	No gaps	No

Key: *Ac* *Acer campestre* - Field maple, *Cm* *Crataegus monogyna* - Common Hawthorn, *Fe* *Fraxinus excelsior* - Ash, *Ps* *Prunus spinosa* - Blackthorn, *Rc* *Rosa canina* - Dog-rose, *Sf* *Salix x fragilis* - Crack willow, *Sn* *Sambucus nigra* - Elder, *Ln* *Lonicera periclymenum* - Honeysuckle, *Pb* *Populus balsamifera* - Balsam Poplar

Buildings

- 3.22 Three buildings were present in the north of the Site. B1a and B1b were two semi-detached properties, whilst B2 and B3 were industrial buildings. The buildings are further described within in the Bat section below.

Fence Lines and Walls

- 3.23 Domestic fence lines and walls formed some of the Site's northern and eastern boundaries.

Fauna

Badgers

- 3.24 Suitable badger commuting and foraging habitat within the Site comprised arable field margins, dense scrub, residential gardens and hedgerows.
- 3.25 No active or inactive badger setts were identified within or within a 30m radius of the Site (where accessible) and no other badger evidence was observed.

Bats

Tree Roost Assessment

- 3.26 One tree (tree T4) was observed which contained potential bat roost features. Details of this trees can be found in Table 10.

Table 10: Assessment of Trees with Bat Potential

Tree reference	Species	Suitable features	Bat roost potential
T4	English oak <i>Quercus robur</i>	east: Large cavity extending from trunk	Moderate

Building Roost Assessment

- 3.27 A total of 3 buildings were located within the survey area. A summary of the buildings is detailed below, with their locations shown in Figure 2.
- 3.28 Building B1 was a two-storey semi-detached dwelling with a single pitched, well-sealed composite tiled roof. The building was a cavity walled brick built residential house with several double-glazed windows with UPVC frames, gable ends, soffit box on north and southern aspect, two brick built chimneys on the east and west aspects with well-sealed flashing around chimneys. On the northern aspect B1 had a brick-built porch with a flat bitumen felt roof and wooden panels.
- 3.29 Internally Building B1 had a loft void which was boarded in the centre and exposed insulation at the edge with well-sealed bitumen felt roof and timber trusses. No evidence of bats was recorded.
- 3.30 Potential bat access points observed externally included a small gap on southern eaves of roof, gaps on both north-west and eastern gable end in mortar beneath tiles, however these were exposed to the elements. Building B1 was categorised as having **low** potential for roosting bats.
- 3.31 Building B1a was a single storey, single pitched, brick-built garage annexed to B1 on the western aspect, the structure possessed a large metal gliderol door on the northern aspect, well-sealed wooden panel cladding on north gable end. The internal inspection recorded no evidence of bats. Building B1a was categorised as having **negligible** potential for bats.
- 3.32 Building B1b was a lean to, single storey garage with pebble dashed render, wooden cladding above metal gliderol door and a partially bitumen felted sloped roof, which also had plastic corrugates sheets. The internal survey did not record any evidence of bats but did note the high levels of light. Potential bats roosting pointed observed were gap along edge of garage door and gaps beneath wooden panels above eastern window. The building was categorised as having **low** potential for roosting bats.
- 3.33 Building B2a was a single storey single skinned metal sheeted structure with a pitched canvas roof and well-sealed metal doors on western aspect. No potential bat access points were recorded and no evidence of roosting bats, the building was therefore categorised as having **negligible** potential for roosting bats.
- 3.34 Building B2b was a single storey building with a flat and single pitched bitumen felted roof, a lean to with clay tiles adjacent to B2a, gable ends, timber soffit boards and plastic sheeting on western aspect above windows. Potential access points included small gaps under fascia boards on northern aspect. No evidence of bat usage was observed and the building was categorised as having **low** potential for bats.

- 3.35 Building B3a was a two-storey brick-built office with a pitched composite tile roof, gable ends, soffit boards and had a single porch extension on western aspect with composite tiles. Internally the loft void was partially boarded and insulated, had small gaps at base of the roof, ventilation bricks on gable ends and timber trusses lined with bitumen felt. A small, lifted section of bitumen felt was observed. No field signs or evidence was recorded. Potential bat access points included a gap under the soffit box on the western aspect as well as a gap under fascia board. Building B3a was categorised as having **low** potential for roosting bats.
- 3.36 Building B3b was a single storey extension on the western aspect of building B3a and had a corrugated roof and a wooden frame door on northern aspect. Potential bat access points included a gap under a soffit box on the southern aspect and a gap under the outer brick layer of a concrete beam on western aspect. Building B3b was categorised as having **low** potential for roosting bats.
- 3.37 Building B3c was a single storey extension with a clay tiled pitched roof, soffit boards, fascia boards and flashing. Potential access points included small gaps in roof tiles. Building B3c was categorised as having **low** potential for roosting bats.

Foraging/Commuting Habitat

- 3.38 Boundary habitats including hedgerows, field boundaries and other tree lines provided suitable foraging and commuting opportunities for the local bat population. The arable habitats that formed the majority of the site were however considered to provide only limited foraging opportunities.
- 3.39 The static detector units were positioned around the main (western) arable field roughly in areas where hedgerow removal was considered likely. Over the course of the three separate static detector surveys, undertaken in spring, summer and autumn, exactly 2000 bat contacts were record (1016 in spring, 418 in summer and 566 in autumn).
- 3.40 The most frequently recorded bat species during the transect and static detector bat surveys was common pipistrelle which comprised c. 81% of the total static detector data. Other bat species identified utilising the site included soprano pipistrelle (c10%), noctule *Nyctalus noctula* (c.5%), *Myotis* sp. (c. 1.8%), brown long-eared bat (0.85%), *Nyctalus/Eptesicus* sp. (0.2% 4 passes) and Nathusius' pipistrelle *Pipistrellus nathusii* (0.05% - 1 pass).
- 3.41 Overall bat activity levels were generally low level and associated with the boundary habitats. See Appendix C for the Automated Static Detector Survey results.

Nocturnal Survey Results

- 3.42 On the 20th of July small numbers of soprano pipistrelle *Pipistrellus pygmaeus*, *Myotis* sp. and noctule were recorded, as well as common pipistrelle *Pipistrellus pipistrellus* were recorded in greater numbers. The earliest bat recorded was a soprano pipistrelle at 21:36 which flew over the Site heading east.
- 3.43 The second survey on the 24th of August recorded small numbers of common pipistrelle, *Nyctalus* species and myotis. The earliest recorded bat was a non-visible soprano pipistrelle at 21:29.

- 3.44 No bat roosts were confirmed during surveys, and no evidence of any commuting routes regularly used by significant numbers of bats was noted.

Birds

- 3.45 Suitable nesting and breeding habitat was present within the Site in the form of hedgerows, scattered scrub, broad-leaved trees and buildings. The main (western) arable field was planted with a wheat crop at the time of the scoping breeding bird survey.
- 3.46 A total of 30 species were recorded during the scoping breeding bird survey, of which 15 were listed on either Section 41 of the NERC Act as a Species of Principal Importance or on the BoCC Red or Amber lists and are therefore considered 'notable'.
- 3.47 Of the species recorded, two were confirmed as breeding, including notable species dunnock *Prunella modularis*. A further two species, considered notable, were probable breeders, mallard *Anas platyrhynchos* and house sparrow *Passer domesticus*. The remaining 26 species were considered either possible breeders (20) or non-breeders (6).
- 3.48 The breeding bird assemblage recorded was considered typical of the habitats present, consisting of mostly arable habitats with some small areas of dense vegetation such as hedgerows, scrub, trees etc. The arable field provided some potential breeding habitat for ground-nesting species such as skylark *Alauda arvensis*, which was recorded during the survey singing over the field. The hedgerows and trees provided suitable breeding and foraging areas for other notable species such as greenfinch *Chloris chloris*, whitethroat *Curruca communis*, woodpigeon *Columba palumbus* and dunnock.

Great Crested Newt

- 3.49 Suitable GCN terrestrial commuting, foraging and sheltering habitat within and/or bounding the Site was limited to the hedgerow bases and scrub with the arable habitats considered to provide limited commuting/foraging/sheltering habitat for GCN. The majority of the survey area was considered to be unsuitable due to the intensively managed nature of the arable land.
- 3.50 A single standing waterbody (pond P1) was located in the north residential garden. This was an ornamental pond containing no vegetation and a pump. No vegetation was hanging into the water, and in general the pond was considered unsuitable to support GCN. A Habitat Suitability Index (HSI) assessment of the pond returned a score of 0.56, making the pond of 'below average' suitability to support GCN. The eDNA survey confirmed that GCN were not present (see Appendix E for the formal results).
- 3.51 A further ten waterbodies were additionally located within a 500m radius of the site boundary, four of which (P2, P3, P4 and P5) were within 250m of the site boundary. Access for these four closest ponds was requested by letter however this was not granted, therefore these ponds were not surveyed.
- 3.52 Pond P2, located approx. 75m north of the Site boundary is the location at which four of the GCN desk study records were located, from 2011 to 2020. The most recent population estimate, made from surveys carried out in 2018, found a maximum count of two individuals, implying a small population was present at this time. It is considered likely that this pond is still used as a breeding site by GCN.

- 3.53 P3 was subject to an eDNA survey by a third-party consultancy in 2020 for a nearby planning application¹⁹. Results from this survey were negative for GCN eDNA. No consultation data for ponds P4 or P5 were returned.

Reptiles

- 3.54 The dominant habitat present within the Site (arable), provided sub-optimal commuting and foraging habitat and unsuitable sheltering habitat for reptiles. Suitable reptile habitat was limited within the Site to hedgerows and scrub.

Other Species

- 3.55 The ditch present within the Site held very little water, and in places was little more than a trickle. The ditch also does not connect directly to any watercourses in the area and is therefore less suitable for dispersa for otter *Lutra lutra*. While the ditch contains some small potential to support occasional dispersing otter, it is considered highly unlikely that otter would use it regularly, let alone for breeding.
- 3.56 The ditch is considered to provide negligible value for white-clawed crayfish *Austropotamobius pallipes* and water vole *Arvicola amphibius* due to the lack of water.

¹⁹ <https://pa.hinckley-bosworth.gov.uk/online-applications/applicationDetails.do?keyVal=QQDB68IIOS700&activeTab=summary>

4.0 DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

Sites of Nature Conservation Value

- 4.1 No statutory designated sites were present within the Site boundary, however one non-statutory designated site (pLWS) was located within the site.
- 4.2 The site falls within the Impact Risk Zone (IRZ) for the Ashby Canal SSSI, located c1.45km northwest of the Site. An assessment using MAGIC²⁰ showed that the following development types within this IRZ requires consultation with Natural England:
- Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.
 - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.
 - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.
 - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
 - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.
 - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.
- 4.3 The proposed development does not meet any of the above criteria and therefore it is not required that Natural England be consulted.
- 4.4 Due to the nature of the proposed development, its distance to the SSSI and the fact that surface/rainwater run-off will be largely contained with SuDS features, it is considered unlikely that the Site will pose a risk to the SSSI as a result of pollution/nutrient influx. The Site is therefore not considered to result in a significant impact to Ashby Canal SSSI.
- 4.5 Market Bosworth, Hedge 2 pLWS (referenced hereinafter as H2a/b/c) was located within the centre of the Site. The current Sketch Layout indicates that part of this hedgerow will be lost in order to facilitate the creation of the main access road. This hedgerow will be discussed within the below Habitats section.

Habitats

- 4.6 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within a specific policy, for example veteran trees, ancient woodland and linear habitats within the National Planning Policy Framework (NPPF);
 - A non-statutory site designation (e.g. LWS);

²⁰ <https://magic.defra.gov.uk/magicmap.aspx>

- Habitats considered as Habitats of Principal Importance for the conservation of biodiversity as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006;
 - Habitats identified as being a Priority Habitat within the national and local Biodiversity Action Plan (Leicestershire BAP).
- 4.7 The habitats identified during the survey which fall within the above listed categories are hedgerows and mature trees.
- 4.8 All hedgerows in the proposed development areas, except for hedgerow H1, comprise over 80% native woody species and are therefore classified as a Habitat of Principal Importance and meet the local BAP. It is recommended that all hedgerows be retained as fully as possible. Development proposals indicate that the vast majority of hedgerows are to be retained as part of the development. These include the full retention and buffering of hedgerows H4, H5 and H6. Small sections of hedgerows H2a/b/c and H3 are to be lost in order to facilitate a spine road. Hedgerow H1 is to be fully lost.
- 4.9 Hedgerow H1 is dominated by non-native species and its loss is not considered likely to result in a significant loss to local biodiversity. Hedgerow H3, however is a native-species hedgerow and losses resulting from development, should be mitigated for.
- 4.10 Hedgerows H2a, H2b and H2c were assessed during the Phase 1 Habitat Survey, and contained several large gaps so as to be classed as three distinct hedgerows. A UKHab condition assessment showed that all three hedgerows were considered to be in 'moderate condition'. When taken as distinct hedgerows, each hedgerow does not qualify as species-rich as they do not contain more than seven woody species. Furthermore, the primary criteria for hedgerows to be qualified as LWS specifies that hedgerows must be "continuous (breaks only at gateways or equivalent)". As stated, the hedgerow is no longer continuous and contains two gaps over 10m, making it now three distinct hedgerows and therefore does not meet LWS criteria.
- 4.11 Nonetheless, it is recommended that as one or more sections of hedgerow H2a/b/c and a section of H3 are to be lost, hedgerow mitigation and enhancements elsewhere within the site should be provided. This should be in the form of gapping up/re-planting sections of all retained hedgerows, and also additional hedgerow creation elsewhere within the site wherever feasible. Where suitable mitigation and enhancements can be provided, it is anticipated that no adverse impacts on the nature conservation status of the on-Site hedgerows including the pLWS will occur as a result of proposals. All retained hedgerows are to be buffered from development. It is recommended that buffer habitats include native species mixed scrub planting and species-rich meadow grassland planting. An extensive area of buffer vegetation is proposed along the development's western and southern boundaries.
- 4.12 Development access will utilise an existing hardstanding entrance which is currently in frequent use by traffic accessing the industrial estate.
- 4.13 Hedgerows and trees that are to be retained should be suitably protected during construction activities i.e. working methods should adhere to standard best practice guidance. This would include BS5837 Trees in Relation to Construction – Recommendations: 2012 for trees and hedges.
- 4.14 According to the latest proposals, the large mature tree in the centre of the site (T7) will be retained as part of the development scheme. Small trees in the northern section of the Site, including those associated with the on-Site residential and industrial development will be lost. With the exception of two conifers, all lost trees are small (<4m) and ornamental, with little biodiversity value. It is

anticipated that the provision of tree planting across the site will more than mitigate for the loss of trees within the northern portion of the Site. All retained trees should be suitably protected during construction activities as per the above guidance. In the event of any loss of semi-mature or mature trees due to reasons such as tree health, or public health and safety, these should be replaced by native species standard tree planting.

- 4.15 Arable farmland, buildings and scattered scrub provide low ecological importance at a site level. Any loss of these areas of habitat would not result in a significant effect to biodiversity locally. Habitats offering greater ecological value include broad-leaved trees and hedgerow.
- 4.16 According to the latest development proposals, all habitats providing greater ecological importance (albeit from the minor loss of sections of hedgerows H1, H2a/b/c and H3) are to be incorporated into the green infrastructure (GI) or public open space (POS) of the development wherever feasible.
- 4.17 A SuDS facility is proposed within the developments north-western corner. Other habitats which are recommended to be incorporated into the GI/POS or within the development footprint include native species standard broadleaved tree planting and native species rich hedgerow planting.

Fauna

- 4.18 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2017 (as amended). Some species, for example badgers, also have their own protective legislation (Protection of Badger Act 1992). The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.
- 4.19 The presence of protected species is a material consideration in any planning decision, it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions.
- 4.20 In addition to protected species, there are those that are otherwise of conservation merit, such as Species of Principal Importance for the purpose of conserving biodiversity under the NERC Act 2006. These are recognised in the NPPF²², which advises that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying a set of principles including:
 - If significant harm to biodiversity resulting from a development cannot be avoided, minimised, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

²² <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

- 4.21 The implications for the proposed development from the desk study and field survey are outlined below:

Badger

- 4.22 Badgers are a widespread species that are protected from harm and cruelty by the Protection of Badgers Act 1992.
- 4.23 No active or inactive setts were identified within or within a 30m radius (where accessible) of the Site.
- 4.24 Due to the transitional nature of badgers it is recommended that an updated badger survey should be carried out prior to the commencement of works to ensure that badgers are not a constraint to the proposed development.
- 4.25 Furthermore, as a precaution to minimise the risk of harm to this species and other terrestrial vertebrates, the following good practice should include the following:
- Any trenches or other deep excavations created during works will be left with a sloping end or a ramp to prevent animals, from becoming trapped, or will be suitably covered before dusk to prevent any passing animals falling in.
 - Any pipe work used within the development with a diameter of 250mm or above should be capped at the end of each working day.
 - Careful consideration will also be given to the location of topsoil storage mounds that can readily become used by badgers for the creation of new setts and should be checked regularly by the site manager.
 - An update badger survey should be undertaken prior to the commencement of ground preparation works.
- 4.26 Suitable badger commuting and foraging habitats located within the POS/GI will include species-rich meadow grassland and native species mixed scrub planting.

Bats

- 4.27 All UK species of bats and their roosts are listed on the Conservation of Habitats and Species Regulations 2017 (as amended), making it illegal to deliberately disturb any such animal or damage/destroy a breeding site or roosting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally obstruct access to any place of shelter or protection or disturb any animal whilst they are occupying such a place of shelter or protection. Some bat species, including soprano pipistrelle, noctule and brown long-eared bat are also Species of Principal Importance under the NERC Act.

Tree Roost Assessment

- 4.28 Tree T4 was assessed as providing roosting potential to support roosting bats and is to be retained and buffered as part of proposal. Should future amendments to the proposals mean that tree T4 is due to be removed or otherwise impacted by the proposals (by lighting/pruning etc.), then ecologist advice should be sought and potentially trees might require an aerial assessment to confirm the presence/likely absence of a bat roost.

- 4.29 To enhance the bat roost opportunities within the survey area, it is recommended that a range of bat boxes be installed under gable apexes of buildings and/or on suitable retained trees.

Building Bat Roost Assessment

- 4.30 Buildings B1b, B2a, B3a, B3b and B3c was assessed as providing a low roosting potential for bats. Emergence surveys were carried out on 20th July and 24th of August 2023. During the survey no bat roosts were recorded. As a result, the presence of a bat roost within buildings has not been identified as a statutory constraint to development.

Foraging/Commuting Habitat

- 4.31 Records for several species of bats were returned within a 1km radius of the study area, including a number of common pipistrelle, soprano pipistrelle, noctule, brown long-eared bat and unidentified pipistrelle sp. records located close to the west of the Site located along the nearby railway and within residential development to the east.
- 4.32 The automated static detector surveys identified hedgerows H2a/b/c, H3 and H4 as being utilised by a very low number of bats and not providing a significant resource although they are utilised by common and widespread species. 1016 contacts were recorded in spring over the 5-night survey period along hedgerow H3, 418 along hedgerow H2a/b/c in summer and 566 along hedgerow H4 in autumn.
- 4.33 The activity transect survey identified the Site to be utilised by common and widespread species, with boundary habitat of broadleaved trees and hedgerows providing suitable commuting and foraging habitat. The vast majority of boundary habitat is to be retained and buffered as part of the scheme, with a minor sections of hedgerows H2a/b/c and H3 to be removed. The loss of these minor stretches is unlikely to provide a significant impact to commuting and foraging bats. It is recommended however that a 'hop-over' is established adjacent to the proposed breaks in hedgerows H2a/b/c and H3. This could be in the form of broadleaved tree planting either side of breaks in order to establish canopy cover.
- 4.34 An extensive area of green infrastructure (GI) is proposed within the southeast corner of the development and along the western boundary of the residential portion of the Site, while a stretch of GI will additionally buffer hedgerow H3. Habitats proposed within the GI/POS include a SuDS feature with associated planting, species-rich meadow grassland and native species mixed scrub planting. These habitats will all provide suitable commuting and foraging habitat for bats and will buffer and complement existing retained boundary habitats of value to bats. Other habitats which could be established include native species standard broadleaved tree planting.
- 4.35 It is recommended that an appropriate sensitive lighting scheme is implemented to retain dark corridors along retained and created habitat around the boundaries of the development and mature and semi-mature trees. Where artificial lighting cannot be avoided the lighting scheme will be designed with reference to the Bat Conservation Trust and Institute of Lighting Professionals guidance²³. Lighting considerations which are recommended to be implemented during construction and incorporated into the development in order to ensure minimal light spill from the development include:

²³ Bat Conservation Trust & Institute of Lighting Professionals (ILP). 2023. *Guidance Note GN08/23: Bats and Artificial Lighting at Night*.

Bat Conservation Trust. 2011. *Statement on the Impact and Design of Artificial Light on Bats*.
Institute of Lighting Professionals. 2011. *Guidance notes for the reduction of Obtrusive Light*.

- During the construction period no artificial lighting should be used at night in the vicinity of the brook or field perimeter habitats
- The lighting scheme should ensure lighting is directed to where it is needed, avoiding light spillage, particularly along the woodland habitats, hedgerows/scrub lines, wildflower grassland and waterbodies.
- The lighting scheme should incorporate LED luminaires as these have a sharp cut-off, lower intensity, good colour rendition and dimming capability. All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats; and
- Security lighting on properties backing on to sensitive habitats such as hedgerows, trees or waterbodies will be low wattage (<70W)²⁴ motion censored lights on short (1min) timers. These should be provided on any properties (along the development boundaries) at construction.

4.36 With the implementation of the above recommendations, it is considered unlikely that the development will significantly affect the local bat population. Furthermore, it is considered that the development has potential to result in an overall positive enhancement in terms of the quality and extent of suitable resources available to the local bat population at the site level.

Birds

- 4.37 All wild bird species are protected while nesting by the Wildlife and Countryside Act 1981 (as amended). This legislation protects wild birds and their eggs from intentional harm, and makes it illegal to intentionally take, damage, or destroy a wild bird nest while it is in use or being built.
- 4.38 Suitable breeding habitat in the form of hedgerows, scattered scrub and broadleaved trees were present within and bounding the Site. Broadleaved trees and the majority of scattered scrub and hedgerows are to be retained.
- 4.39 Due to the size of the arable field and its management, it is considered likely that the field only provides breeding potential for part of the year. It is therefore not expected that it would provide significant breeding/foraging resources for the local farmland bird assemblage.
- 4.40 The remaining bird assemblage is likely to undergo either **Negligible** or **Minor Beneficial** impacts as a result of development, in
- 4.41 Proposed adequate mitigation for the small loss of suitable nesting and foraging habitat will be incorporated within the GI/POS of the scheme. This will include native species-rich meadow grassland, native species mixed scrub planting and SuDS facilities.
- 4.42 To avoid disturbance to nesting birds any clearance of woody vegetation should be undertaken prior to the bird-breeding season (i.e. avoiding March to September, inclusive) to minimise the risk of disturbance to nesting birds. If this is not possible, habitats will be checked prior to removal by an experienced ecologist. If active nests are found, nest sites will be left untouched and suitably buffered from works until all birds have fledged. Specific advice will be provided prior to undertaking the clearance/demolition.

²⁴ Stone, E.L. 2013. *Bats and lighting: Overview of current evidence and mitigation*.

- 4.43 It is recommended that as an enhancement a range of bird boxes be provided throughout the proposal on suitable retained trees and/or new dwellings in order to provide enhanced nesting opportunities for local bird species. These should include a mixture of small hole (26mm and 32mm) designs and open fronted boxes. The provision of such features would be in accordance with NPPF.
- 4.44 Given the above provisions no significant impact is anticipated to the overall bird assemblage as a result of the proposed scheme.

Great Crested Newt

- 4.45 No suitable GCN breeding habitat was recorded within the site. Pond P1 achieved an HSI score of 0.56 making it 'below average' suitability for GCN and eDNA test results showed that GCN were absent.
- 4.46 GCN records were returned by consultation records, the closest of which were from a pond (P2) c. 75m north of the Site. The most recent data were from 2020, which include the presence of eggs. Further data from 2018 detail a maximum count of 2 GCN recorded over 6 surveys, indicating a small population size-class is likely present. Access was requested in 2023 for access to pond P2 in order to carry out aquatic surveys, however was not granted.
- 4.47 The abovementioned pond (P2) is separated from the site by a single-carriageway main road, presenting a partial barrier to GCN potentially dispersing into the site. Furthermore, any GCN moving into the main area of the site would need to cross relatively large areas (c100m) of hardstanding, making dispersal through this route less suitable.
- 4.48 GCN records were also obtained from pond P11 (c. 450m south of the site). This pond is considered suitably distance from the Site and surrounded by more optimal terrestrial habitat for GCN. It is therefore considered that GCN dispersal into the predominantly poor on-Site habitats would be extremely unlikely.
- 4.49 The vast majority of the development footprint area (arable farmland) comprised sub-optimal commuting and foraging habitat and unsuitable sheltering potential. Suitable GCN terrestrial commuting, foraging and sheltering habitat within and/or bounding the Site were limited to hedgerows and scrub.
- 4.50 GCN are considered highly unlikely to be present within pond P1 due to the negative eDNA result,. It is therefore highly unlikely that GCN would be present within the Site.
- 4.51 Despite the proximity of pond P2 which was confirmed as a GCN breeding pond in 2020, dispersal of GCN into the main area of Site is considered highly unlikely due to the presence of the main road and c100m of buildings/hardstanding within the northern section of the Site. Furthermore, the fact that the P2 population is likely to be small, combined with the abundance of alternative suitable habitat surrounding P2 in comparison to habitats within the Site, make it unlikely that GCN would disperse into the Site.
- 4.52 P4 and P5 are located 215m and 240m north of the Site, respectively. No GCN data was returned for these ponds and access was not granted to survey them. GCN dispersal into the Site from ponds P4 and P5 is considered extremely unlikely for the same reasons as for P2, i.e. the presence of the main road posing a partial barrier to dispersal and the abundance of alternative suitable habitat surrounding these ponds.

- 4.53 P3 is located approximately 130m west of the Site within an existing residential development that is not yet completed. From aerial images the pond appears to have been lost or partially lost as a result of said development. An eDNA survey by a third-party consultancy in 2020 found that this pond was negative for GCN eDNA. Pond P3 is therefore not considered to pose a constraint to development in terms of GCN.
- 4.54 Given the above it is considered unlikely that GCN would be present on site and hence the species is not considered to pose a statutory constraint to the proposals. However, in order to further minimise any potential risk to this species it is recommended that precautionary Reasonable Avoidance Measures (RAMs) are followed.

Reasonable Avoidance Measures

- 4.55 The following approach is recommended:
- Completion of a toolbox talk with contractors by an Ecological Clerk of Works (ECoW);
 - Agreeing working methods and timings of phases to minimise any potential impact to GCN in the unlikely event they are present e.g. no works (if required) to the hedgerow bases/roots in winter;
 - Precautionary strimming (c.150mm) to maintain the grassland at a short sward;
 - Habitat clearance works of any appropriate habitats to be hand searched supervised by an ECoW;
 - Protection of suitable habitats (e.g. hedgerows) using suitable fencing, and avoidance of works within root protection areas;
 - Ensure that no piles of rubble, earth or materials are created that would provide suitable areas of shelter for GCN, such materials must be disposed of immediately into a skip;
 - Storage of loose materials off the ground;
 - Any excavations or trenches left overnight would require a ramp or shallow sloping gradient at one end to allow animals to escape. Excavations or trenches left overnight would need to be inspected each morning to ensure no GCN or other trapped wildlife are present;
 - Any works undertaken adjacent to places of shelter e.g. hedgerow bases should be hand searched by the ECoW immediately prior to works;
 - If GCN are found works must stop and the ECoW contacted immediately.
- 4.56 Post construction habitats in the form of hedgerow planting, mixed scrub planting, species-rich meadow grassland and SuDS facility would create suitable habitat and opportunities for amphibians.

Reptiles

- 4.57 All British reptiles are protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended) and are listed as Species of Principal Importance for the conservation of biodiversity under Section 41 of the NERC Act, indicating that public bodies, such as the Local Planning Authority, have a duty to have regard to the conservation of these species.
- 4.58 Records of grass snake were returned in the consultation response. The vast majority of the Site in the form of arable farmland provided sub-optimal commuting and foraging habitat and unsuitable

sheltering habitat for reptiles. Suitable reptile habitat was limited within the Site to hedgerows, scrub and residential gardens in the north. The majority of scattered scrub and the majority of hedgerows are to be retained as part of proposals.

- 4.59 As a result of the vast majority of habitat lost to development being assessed as sub-optimal and unsuitable for reptiles, it is considered highly unlikely that any reptiles would be present within these areas and any killing or injury to reptiles would occur.
- 4.60 Reptiles have therefore not been assessed as a statutory constraint to development.
- 4.61 Post construction habitats in the form of hedgerow planting, mixed scrub planting, species-rich meadow grassland and SuDS facility would create suitable habitat and opportunities for reptiles.

Other Species

- 4.62 Otter, water vole and white-clawed crayfish are not considered to pose a statutory constraint to development due to the lack of any suitable habitat within the Site.

Appendix A: Botanical Species List

Abundance is described on the DAFOR scale.

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare, LD = Locally Dominant, LA = Locally Abundant, LF = Locally Frequent, LO = Locally Occasional, LR = Locally Rare.

Common Name	Scientific Name	GDN	G1	DSCR	FDMN	HDST
Annual meadow-grass	<i>Poa annua</i>		A			B
Black medic	<i>Medicago lupulina</i>	R				
Box bush species	<i>Buxus</i> sp.					
Bramble	<i>Rubus fruticosus</i>	LA		F	LF	
Broad-leaved dock	<i>Rumex obtusifolius</i>	O			R	
Buddleia	<i>Buddleja</i> sp.	R				
Charlock	<i>Sinapis arvensis</i>				R	
Chickweed	<i>Stellaria media</i>		LO		R	
Cleavers	<i>Galium aparine</i>	LO			O	R
Cock's foot	<i>Dactylus glomerata</i>	LA			R	
Common field-speedwell	<i>Veronica persica</i>				R	
Common nettle	<i>Urtica dioica</i>	A		O	LO	
Common ragwort	<i>Jacobaea vulgaris</i>	R				
Common vetch	<i>Vicia sativa</i>	R				
Cow parsley	<i>Anthriscus sylvestris</i>				O	
Cowslip	<i>Primula veris</i>	R				
Creeping buttercup	<i>Ranunculus repens</i>	R	LO			
Creeping cinquefoil	<i>Potentilla reptans</i>	R				
Creeping thistle	<i>Cirsium arvense</i>		R		R	
Curled dock	<i>Rumex crispus</i>	R			R	
Curled x broad dock	<i>Rumex</i> sp.	LO				
Cutleaf cranes-bill	<i>Geranium dissectum</i>				F	
Daffodil	<i>Narcissus pseudonarcissus</i>	R			R	
Daisy	<i>Bellis perennis</i>	R	R			
Dandelion	<i>Taraxacum officinale</i>	LO	O		R	R
Elder	<i>Sambucus nigra</i>			R		
Field forget-me-not	<i>Myosotis arvensis</i>				R	
Field Woodrush	<i>Luzula campestris</i>		R			
Firethorn	<i>Pyracantha</i>				R	
Forget-me-not	<i>Myosotis sylvatica</i>	R				
Forsythia	<i>Forsythia suspensa</i>			R		
Garden privet	<i>Ligustrum ovalifolium</i>			R		
Garlic mustard	<i>Alliaria petiolata</i>			O		
Germander speedwell	<i>Veronica chaedrys</i>	R				
Groundsel	<i>Senecio vulgaris</i>		R		R	
Hairy bittercress	<i>Cardamine hirsuta</i>	R				
Hawksbeard	<i>Crepis</i> sp.		R			
Hawthorn	<i>Crataegus monogyna</i>			F		
Herb robert	<i>Geranium robertianum</i>	R				R
Hogweed	<i>Heracleum sphondylium</i>				R	
Hyacinth	<i>Hyacinth</i> sp.	R				
Hybrid bluebells	<i>Hyacinthoides</i> sp.	R		R		
Ivy	<i>Hedera helix</i>			LF	R	
Ivy-leaved speedwell	<i>Veronica hederifolia</i>	LO	R	R		
Lesser celandine	<i>Ficaria verna</i>	R				

Common Name	Scientific Name	GDN	G1	DSCR	FDMN	HDST
Leyland cypress	<i>Leylandii</i> sp.			R		
Lilac	<i>Syringa</i> sp.	R				
Lords and ladies	<i>Arum maculatum</i>				R	
Magnolia	<i>Magnolia grandiflora</i>	R				
Mayweed	<i>Matricaria</i>				F	
Meadow Foxtail	<i>Alopecurus pratensis</i>	R/LA				
Mint	<i>Mentha</i> sp.	R				
Old man's beard	<i>Clamatis</i> sp.	R				
Parsley piert	<i>Aphanes</i> sp.				R	
Peony	<i>Paeonia lactiflora</i>	R				
Perennial ryegrass	<i>Lolium perenne</i>	R	A			
Periwinkle	<i>Catharanthus roseus</i>				R	
Petty spurge	<i>Euphorbia peplus</i>	R				
Plum	<i>Prunus</i> sp.	R				
Poppy	<i>Papaver</i> sp.					R
Primrose	<i>Primrose vulgaris</i>	R				
Privet species	<i>Ligustrum</i> sp.					
Red deadnettle	<i>Lamium purpureum</i>	R			R	
Red fescue	<i>Festuca rubra</i>	LO				
Domestic rose	<i>Rosa</i> sp.	R				
Rowan	<i>Sorbus aucuparia</i>	R				
Shiny crane's-bill	<i>Geranium lucidum</i>	LO				
Smooth meadow-grass	<i>Poa pratensis</i>	R				
Sow thistle	<i>Sonchus oleraceus</i>	R	R			R
Spear thistle	<i>Echinops sphaerocephalus</i>	R	R		R	R
Spreading meadow-grass	<i>Poa humilis</i>	R				
Springy turf-moss	<i>Rhytidiadelphus squarrosus</i>	R				
Sticky mouse-ear	<i>Cerastium glomeratum</i>		LO			R
Strawberry	<i>Fragaria</i> sp.	R				
Sun spurge	<i>Euphorbia helioscopia</i>				R	
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	R				
Thale cress	<i>Arabidopsis thaliana</i>					R
Tulip	<i>Tulipa</i> sp.	R				
White clover	<i>Trifolium repens</i>	R	R			
White dead-nettle	<i>Lamium album</i>	LF			R	
Willow herb	<i>Chamerion angustifolium</i>	R			R	
Wood avens	<i>Geum urbanum</i>				R	
Wood sorrel	<i>Oxalis acetosella</i>	R				
Yarrow	<i>Achillea millefolium</i>		R			
Yellow archangel	<i>Lamium galeobdolon</i>				R	
Yorkshire-fog	<i>Holcus lanatus</i>	D	R		LF	

GDN – Garden

G1 – Grassland G1

DSCR – Dense scrub

FDMN – Arable field margins

HDST – Species present within areas of hardstanding

Appendix B: GCN Habitat Suitability Index on On-Site Pond

	SI -1	SI - 2	SI -3	SI -4	SI -5	SI -6	SI -7	SI -8	SI -9	SI -10		
Pond Number	Geographical Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Ponds	Terrestrial Habitat	Macrophytes	HSI score	Pond Suitability
1	1	0.01	0.9	0.33	1	1	1	0.5	0.67	0.3	0.56	Below average

Appendix C: Automated Bat Static Detector Survey

Survey Dates		Survey Hours		Total Avg. per hour		Total Registrations		Common Pipistrelle			Soprano Pipistrelle			Noctule			Myotis Species			Brown Long-eared Bat			Nathusius' Pipistrelle			Nyctalus Species		
05.09.23	16.05.23	05.07.23	16.05.23	05.07.23	16.05.23	05.07.23	16.05.23	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total	Avg. per hour	Peak Count	Period Total
59	45	42	45	42	45	42	45	20.4	264	918	1.044444	11	47	0.555556	10	25	0.48889	7	22	0.044444	2	2	0	0	0	0.044444	1	2
9.593220	22.57778	9.952381	22.57778	9.952381	22.57778	9.952381	22.57778	6.619048	86	278	2.785714	70	117	0.428571	5	18	0.047619	1	2	0.047619	1	2	0	0	0	0.02381	1	1
566	1016	418	1016	418	1016	418	1016	7.322034	218	432	0.864407	19	51	0.949153	14	56	0.20339	4	12	0.220339	3	13	0.016949	1	1	0.016949	1	1

Appendix D: Scoping Breeding Bird Survey Results

Species: Common Name	Species: Scientific Name	Survey 1	Conservation Status & Protection	Breeding Status
Mallard	<i>Anas platyrhynchos</i>	4	Amber List	Probable P, H
Pheasant	<i>Phasianus colchicus</i>	3	Not Listed	Possible H
Woodpigeon	<i>Columba palumbus</i>	26 + 1 flyover	Amber List	Possible S, H
Sparrowhawk	<i>Accipiter nisus</i>	1 flyover	Amber List	Non-breeder F
Buzzard	<i>Buteo buteo</i>	1 flyover	Green List	Non-breeder F
Jay	<i>Garrulus glandarius</i>	1	Green List	Possible H
Magpie	<i>Pica pica</i>	2	Green List	Possible H
Jackdaw	<i>Coloeus monedula</i>	1 + 1 flyover	Green List	Possible S, H
Rook	<i>Corvus frugilegus</i>	6 flyovers	Amber List	Non-breeder F
Carrion Crow	<i>Corvus corone</i>	2 flyovers	Green List	Non-breeder F
Blue Tit	<i>Cyanistes caeruleus</i>	3	Green List	Possible H
Great Tit	<i>Parus major</i>	4	Green List	Possible H
Skylark	<i>Alauda arvensis</i>	1	Red List NERC S.41	Possible S, H
House Martin	<i>Delichon urbicum</i>	4 flyovers	Red List	Non-breeder F
Long-tailed Tit	<i>Aegithalos caudatus</i>		Green List	Confirmed FF
Willow Warbler	<i>Phylloscopus trochilus</i>	1	Amber List	Possible S, H
Chiffchaff	<i>Phylloscopus collybita</i>	1	Green List	Possible S, H
Blackcap	<i>Sylvia atricapilla</i>	2	Green List	Possible S, H
Whitethroat	<i>Curruca communis</i>	2	Amber List	Possible S, H
Wren	<i>Troglodytes troglodytes</i>	3	Amber List	Possible S, H

Starling	<i>Sturnus vulgaris</i>	1 + 11 flyovers	Red List NERC S.41	Possible S, H
Song Thrush	<i>Turdus philomelos</i>	1	Amber List NERC S.41	Possible S, H
Blackbird	<i>Turdus merula</i>	10	Green List	Possible S, H
Robin	<i>Erithacus rubecula</i>	2	Green List	Possible S, H
House Sparrow	<i>Passer domesticus</i>	2 colonies	Red List NERC S.41	Probable P, H
Dunnock	<i>Prunella modularis</i>	2	Amber List NERC S.41	Confirmed FF, H
Chaffinch	<i>Fringilla coelebs</i>	1	Green List	Possible S, H
Greenfinch	<i>Chloris chloris</i>	4 + 3 flyovers	Red List	Possible S, H
Linnet	<i>Linaria cannabina</i>	1 flyover	Red List NERC S.41	Non-breeder F
Goldfinch	<i>Carduelis carduelis</i>	3 + 9 flyovers	Green List	Possible S, H
Total Species	30			

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

Confirmed breeder

DD – distraction display or injury feigning

UN – used nest or eggshells found from this season

FL – recently fledged young or downy young

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

FF – adult carrying faecal sac or food for young

NE – nest containing eggs

NY – nest with young seen or heard

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

P – pair in suitable nesting habitat

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

D – courtship and display

N – visiting probable nest site

A – agitated behaviour

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

B – nest building or excavating nest-hole

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

H – observed in suitable nesting habitat

S – singing male

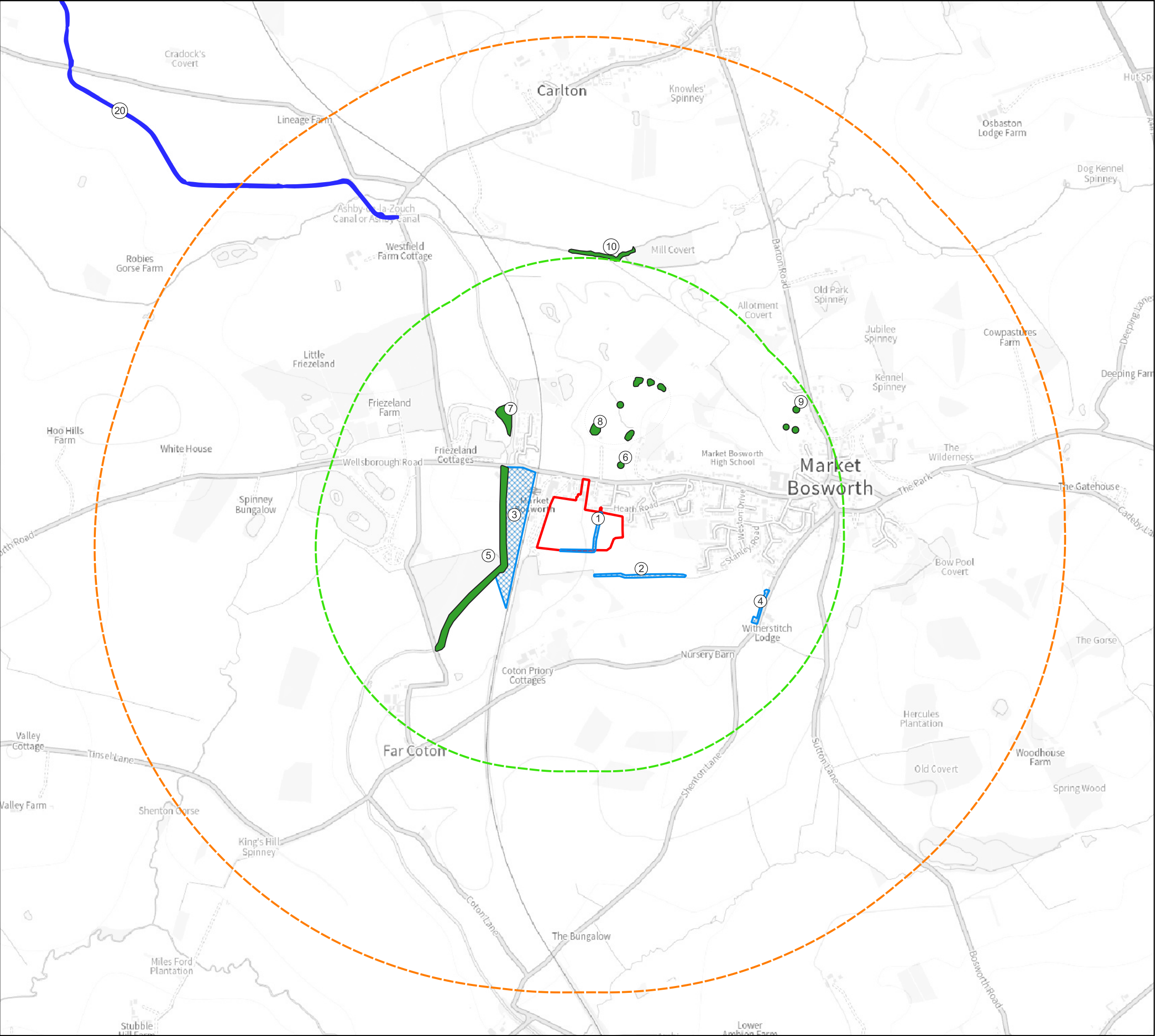
Non-breeder

F – flying over

M – migrant

U – summering non-breeder

UH – observed in unsuitable nesting habitat



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Key

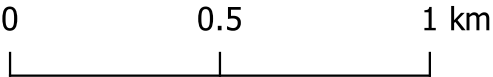
- Site Boundary
- 1km Buffer
- 2km Buffer
- Potential Local Wildlife Site (pLWS)
- Candidate Local Wildlife Site (LWS)
- Potential Historic Local Wildlife Site (hLWS)
- Site of Special Scientific Interest (SSSI)

- Potential Local Wildlife Sites:
- 1 - Market Bosworth, hedge 2
 - 2 - Market Bosworth, hedge 1
 - 3 - Sedgemere, Market Bosworth
 - 4 - Market Bosworth, Shenton Lane hedge

- Candidate Local Wildlife Sites:
- 5 - Ashby Canal, Market Bosworth
 - 6 - Market Bosworth, Station Rd veteran ash
 - 7 - Bosworth Marina wetland
 - 8 - Market Bosworth, Kyngs Golf Course Ponds
 - 9 - Silk Hill mature trees
 - 10 - Stream along Nailstone/Carlton boundary

- Potential Historic Local Wildlife Sites:
- 11 - Market Bosworth, woodland S of Mill Covert
 - 12 - Marsh/rough grassland
 - 13 - Carlton, grassland
 - 14 - Market Bosworth, Friezeland Farm pool
 - 15 - Ashby Canal, Welsboro Bridge to Deakin's Bridge
 - 16 - Market Bosworth, Pond at Far Coton
 - 17 - Dismantled Railway
 - 18 - Shenton, woodland East of railway
 - 19 - Mill Covert

- Site of Special Scientific Interest:
- 20 - Ashby Canal



client
Miller Homes Ltd

project
Station Road,
Market Bosworth

drawing title
SITE LOCATION AND CONSULTATION
RESULTS PLAN - DESIGNATED SITES

scale @ A3
1:18000

drawn
KB / BRJ

issue date
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Figure 1a

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Key

Site Boundary

1km Buffer

Birds

Avocet

Brambling

Brent Goose

Bullfinch

Crossbill

Cuckoo

Dunnock

Fieldfare

Grey Partridge

Hawfinch

Hen Harrier

Hobby

House Martin

Kingfisher

Lapwing

Linnet

Little Ringed Plover

Peregrine

Quail

Redstart

Redwing

Reed Bunting

Ruff

Skylark

Song Thrush

Spotted Flycatcher

Starling

Swift

Tree Sparrow

Willow Tit

Wren

Yellowhammer

Other Species

Brown Long-eared Bat

Cinnabar

Common Frog

Common Pipistrelle

Common Toad

Daubenton's Bat

Grass Snake

Great Crested Newt

Hare

Harlequin Ladybird

Hedgehog

Myotis Bat species

Noctule Bat

Nyctalus Bat species

Otter

Pipistrelle sp.

Rustic

Signal Crayfish

Smooth Newt

Soprano Pipistrelle

Unidentified Bat Species

Water Vole

Species Records of 1km Accuracy

SK3802	- Lesser Redpoll, Yellowhammer, Reed Bunting, Grasshopper Warbler, Spotted Flycatche, Dunnock, Wren, Kingfisher, Peregrine, Water Vole
SK3803	- Common Toad, Common Frog, Daubenton's Bat, Noctule Bat, Common Pipistrelle, Soprano Pipistrelle
SK3901	- Skylark, Swift, Yellowhammer, Swallow, House, Sparrow, Dunnock, Bullfinch, Wren, Song Thrush, Latticed Heath, Shaded Broad-bar, Blood-vein
SK3902	- Common Toad, Smooth Newt, Common Frog, Skylark, House Martin, Yellowhammer, Swallow, Linnet, Willow Tit, Dunnock, Bullfinch, Starling, Wren, Song Thrush, Barn Owl, Wall Cotoneaster, Giant Hogweed, Mottled Rustic, Latticed Heath, Small Square-spot, Small Phoenix, Rustic, Shaded Broad-bar, Blood-vein, Cinnabar, Oak Hook-tip, Grass Snake, Water Vole, Myotis Bat species, Lesser Noctule, Noctule Bat, Nathusius's Pipistrelle, Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared Bat
SK3903	- House Martin, Yellowhammer, Starling, Song Thrush, Kingfisher, Giant Hogweed, Wall, Cinnabar, Hare
SK3904	- House Sparrow, Wren, Song Thrush

FPCR Environment and Design Ltd, Lockington Hall, Lockington, Derby, DE74 2RH | t:01509 672 772 | e: mail@fpcr.co.uk | w: www.fpcr.co.uk | masterplanning | environmental assessment | landscape design | urban design | ecology | architecture | arboriculture

client

Miller Homes Ltd

project

Station Road,
Market Bosworth

drawing title

SITE LOCATION AND CONSULTATION
RESULTS PLAN - SPECIES RECORDS

scale @ A3

1:12000

drawn

KB / BRJ

issue date

9/11/2023

drawing / figure number

Figure 1b

rev

-

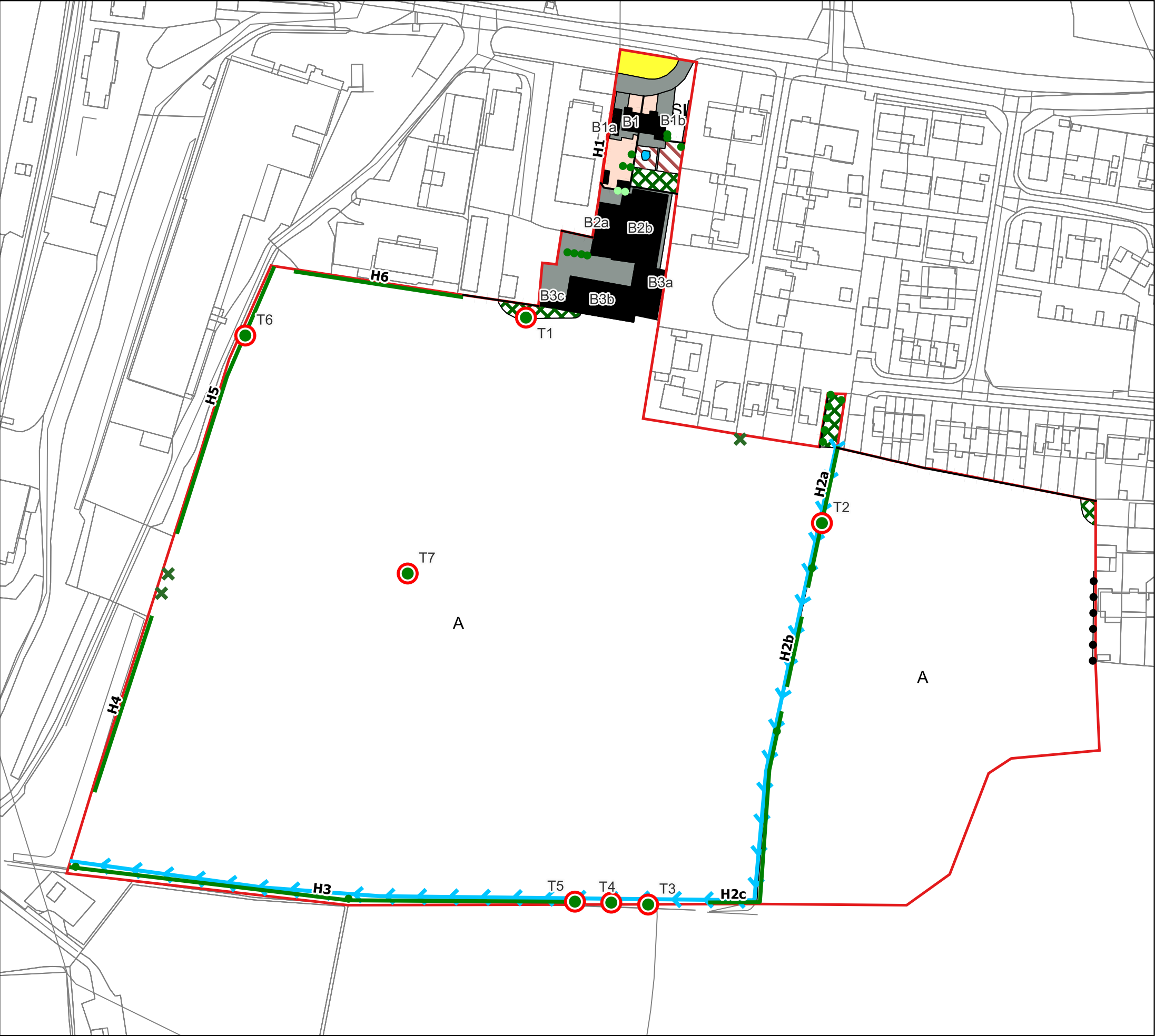
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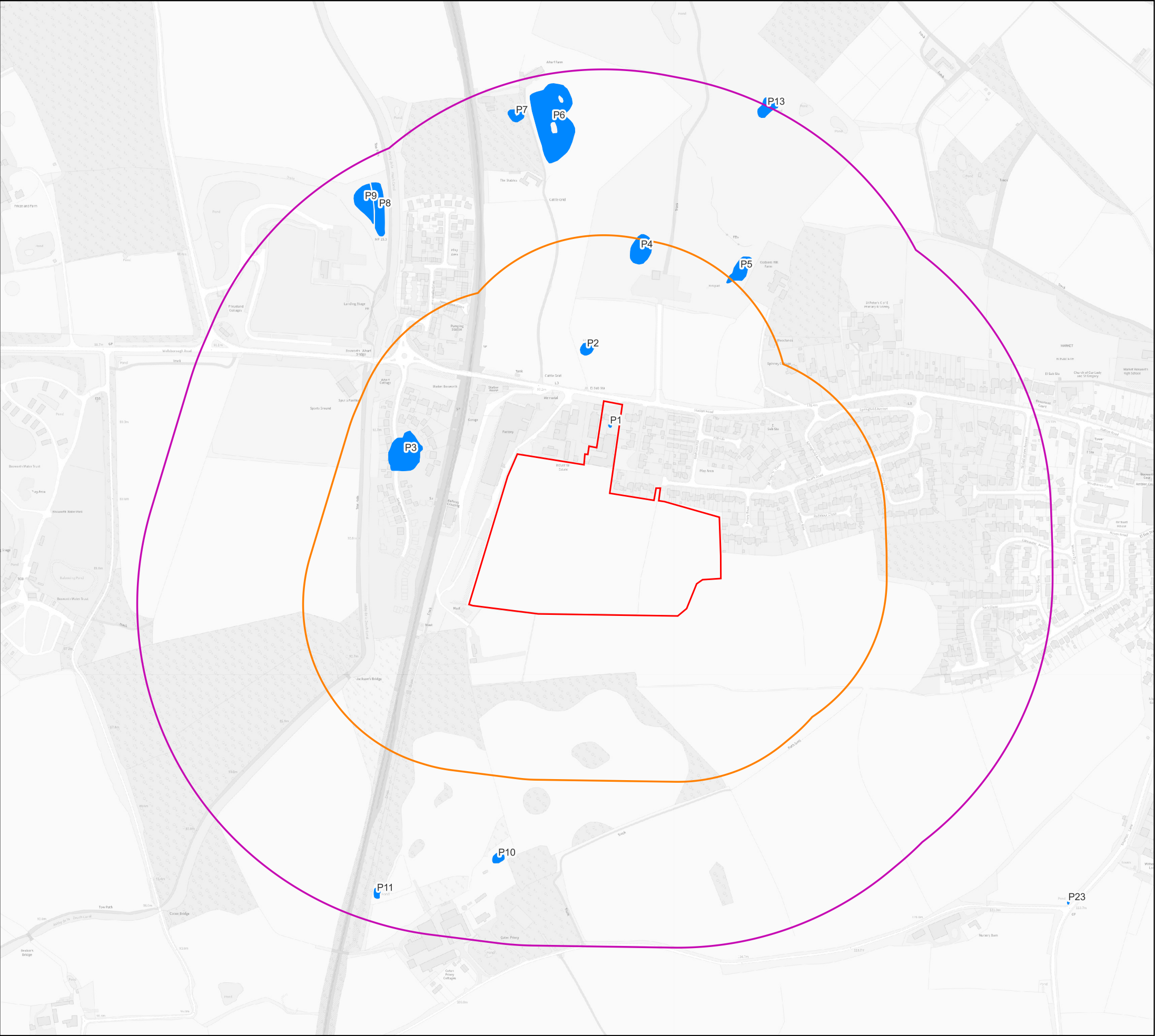
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Key

- Site Boundary
- Buildings
- Built Environment: Buildings/hardstanding
- Built Environment: Gardens (lawn and planting)
- Cultivated/disturbed land - amenity grassland
- A Cultivated/disturbed land - arable
- Cultivated/disturbed land - ephemeral/short perennial
- Other tall herb and fern - ruderal
- SI Poor semi-improved grassland
- Scrub - dense/continuous
- Standing water
- Broadleaved trees
- Running water
- Hedges: Introduced shrub
- Intact hedge - species-poor
- Fence
- Earth bank
- Scrub - scattered
- Tree with bat potential
- coniferous trees
- Broadleaved tree



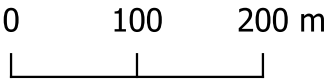


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Key

- Site Boundary
- 250m Buffer
- 500m Buffer
- Pond

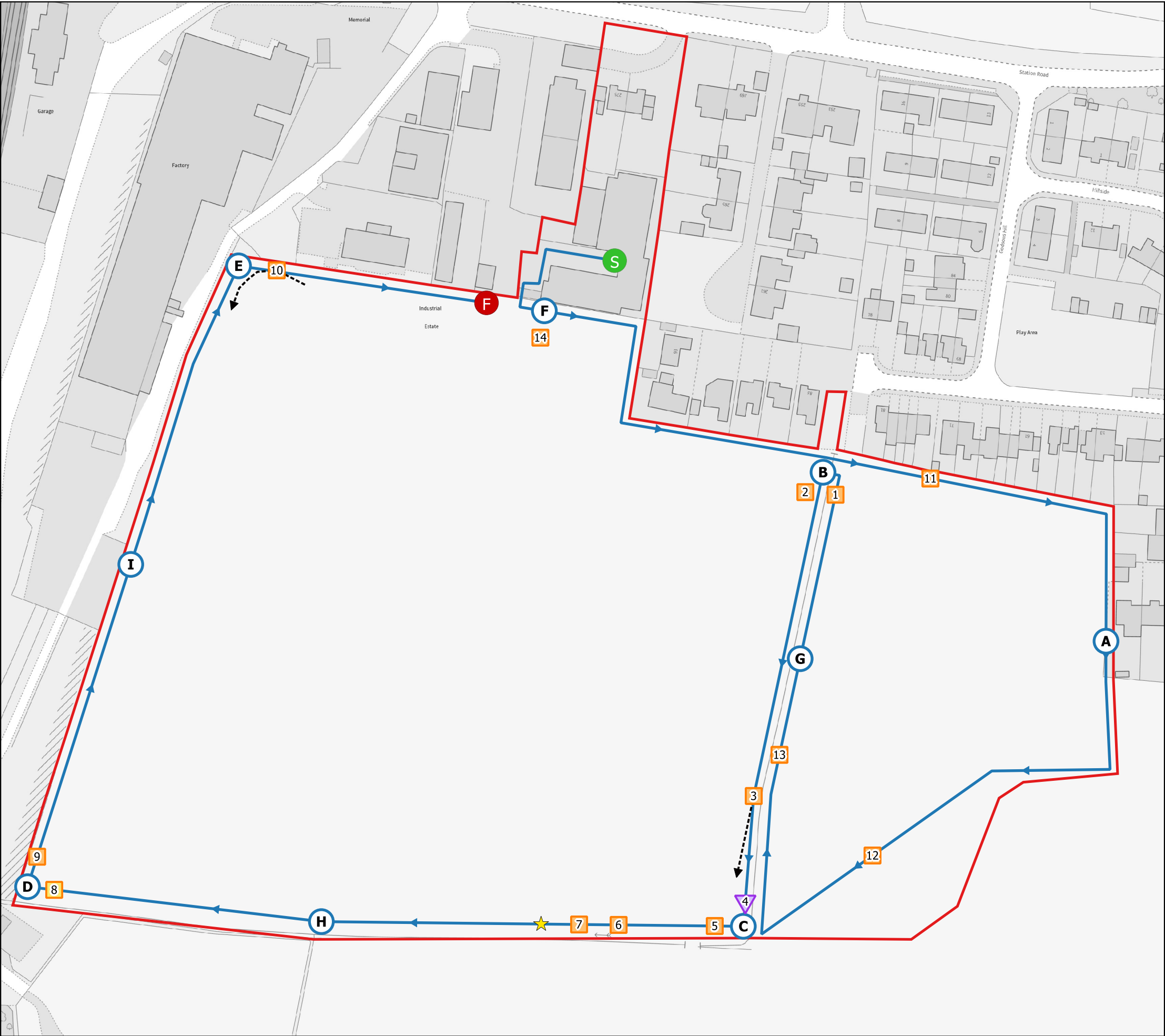


client
Miller Homes Ltd
project
Station Road,
Market Bosworth
drawing title
Waterbody Location Plan

scale @ A3
1:6,000
drawn
BS / BRJ
issue date
30/5/2024

Figure 3

rev



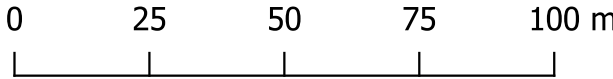
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Key

- Site Boundary
- Start point
- Finish point
- Transect Route
- Point Count Locations
- Flight Arrow
- Common Pipistrelle
- Soprano Pipistrelle
- Noctule
- Static Detector Location

REF	TIME	SPECIES	PASSES	BEHAVIOUR
PC A	21:11 - 21:16	No bats	NULL	NULL
PC B	21:23 - 21:28	REF 1, 2	NULL	NULL
1	21:23:15	Common Pipistrelle	continuous	foraging
2	21:27:40	Common Pipistrelle	5	commuting
3	21:31:04	Common Pipistrelle	1	commuting
PC C	21:32 - 21:37	REF 4, 5	NULL	NULL
4	21:32:25	Noctule	2	commuting
5	21:36:46	Common Pipistrelle	1	commuting
6	21:41:08	Common Pipistrelle	2	commuting
7	21:49:13	Common Pipistrelle	1	commuting
PC D	21:54 - 21:59	REF 8, 9	NULL	NULL
8	21:55:21	Soprano Pipistrelle	2	commuting
9	21:56:18	Common Pipistrelle	2	commuting
PC E	22:02 - 22:07	REF 10	NULL	NULL
10	22:04:15	Common Pipistrelle	2	commuting
11	22:12:38	Common Pipistrelle	1	commuting
12	22:16:24	Common Pipistrelle	1	commuting
PC G	22:19 - 22:24	REF 13	NULL	NULL
13	22:21:48	Common Pipistrelle	1	commuting
PC H	22:30 - 22:35	No bats	NULL	NULL
PC I	22:38 - 22:43	No bats	NULL	NULL
PC F	22:48 - 22:53	REF 14	NULL	NULL
14	22:50:39	Common Pipistrelle	1	commuting





client

Miller Homes Ltd

project

Land at Station Road,
Market Bosworth

drawing title

BAT TRANSECT PLAN (16.05.2023)

scale @ A3

1:1,399.99803

drawn

FMH / BRJ

issue date

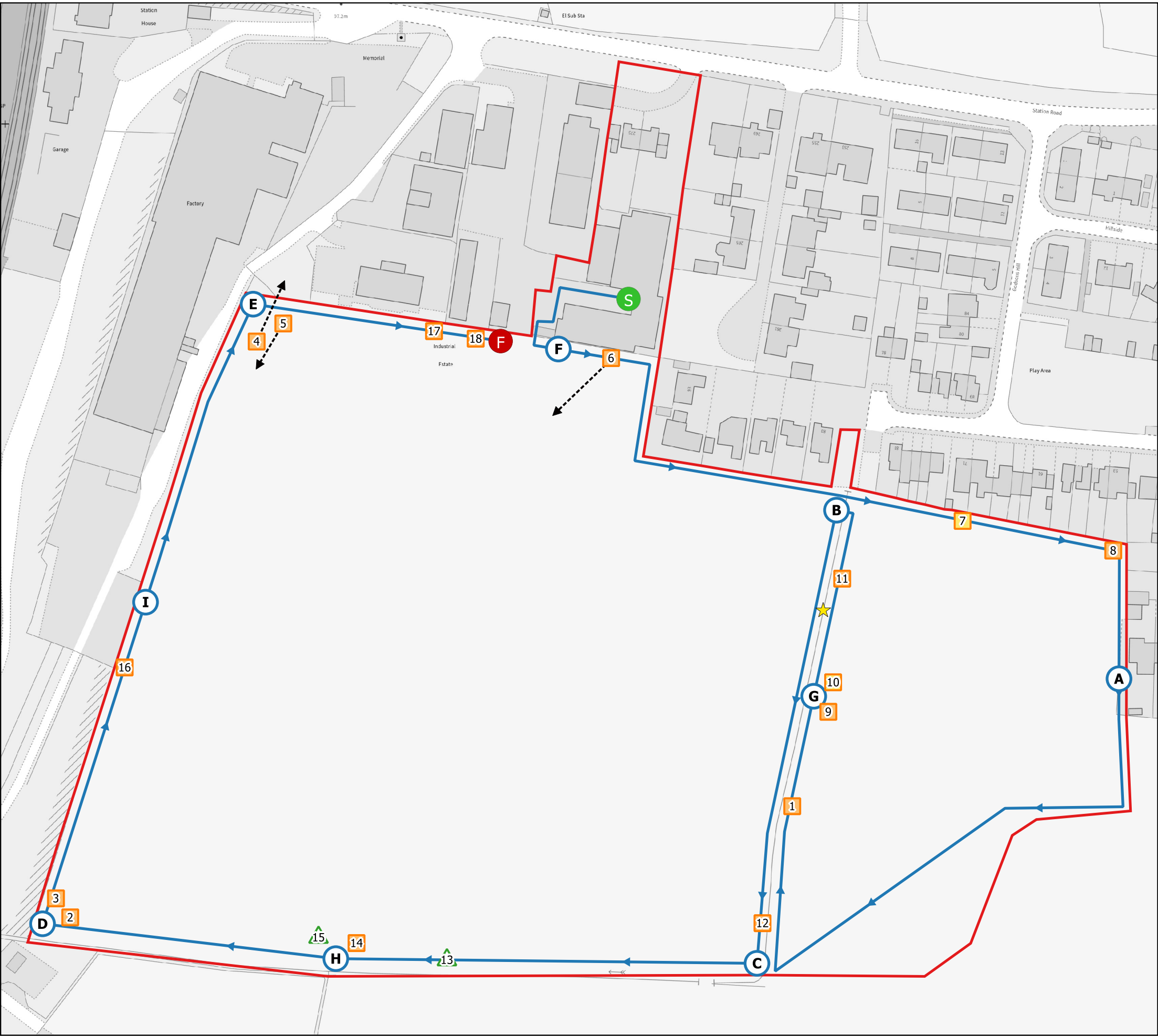
9/11/2023

drawing / figure number

Figure 4

rev

-



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Key

- Site Boundary
- Start point
- Finish point
- Transect Route
- Point Count Locations
- Flight Arrow
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Static Detector Location

REF	TIME	SPECIES	PASSES	BEHAVIOUR
PC A	21:37 - 21:42	No bats	NULL	NULL
PC B	21:48 - 21:53	No bats	NULL	NULL
1	21:56:18	Common Pipistrelle	1	commuting
PC D	22:01 - 22:06	REF 2, 3	NULL	NULL
2	22:01:02	Common Pipistrelle	6	forgaing
3	22:04:55	Common Pipistrelle	1	commuting
PC E	22:09 - 22:14	REF 4, 5	NULL	NULL
4	22:09:42	Common Pipistrelle	1	commuting
5	22:11:51	Common Pipistrelle x2	1	commuting
PC F	22:15 - 22:20	REF 6	NULL	NULL
6	22:17:16	Common Pipistrelle	2	commuting
7	22:24:28	Soprano Pipistrelle	2	commuting
8	22:25:39	Common Pipistrelle	4	commuting
PC G	22:30 - 22:35	REF 9, 10	NULL	NULL
9	22:30:49	Common Pipistrelle	5	commuting
10	22:34:29	Soprano Pipistrelle	3	commuting
11	22:36:37	Common Pipistrelle	8	forgaing
PC C	22:41 - 22:46	REF 12	NULL	NULL
12	22:43:42	Common Pipistrelle	1	commuting
13	22:50:08	Myotis species	1	commuting
PC H	22:51 - 22:56	REF 14, 15	NULL	NULL
14	22:52:16	Common Pipistrelle	3	commuting
15	22:55:27	Myotis species	1	commuting
PC I	22:58 - 23:03	No bats	NULL	NULL
16	23:05:40	Common Pipistrelle	1	commuting
17	23:20:06	Common Pipistrelle	1	commuting
18	23:30:07	Common Pipistrelle	1	commuting



client
Miller Homes Ltd

project
Land at Station Road,
Market Bosworth

drawing title
BAT TRANSECT PLAN (05.07.20223)

scale @ A3
1:1,400

drawn
FMH / BRJ

issue date
9/11/2023

drawing / figure number
Figure 5

rev
-



0 25 50 75 100 m

REF	TIME	SPECIES	PASSES	BEHAVIOUR
PC I	20:00 - 20:05	NULL	NULL	NULL
1	20:04:36	Noctule	2	Commuting
PC H	20:09 - 20:14	NULL	NULL	NULL
2	20:09:34	Common Pipistrelle	1	Commuting
PC G	20:19 - 20:24	NULL	NULL	NULL
3	20:19:19	Soprano Pipistrelle	1	Commuting
4	20:19:22	Common Pipistrelle	2	Commuting
PC F	20:28 - 20:33	NULL	NULL	NULL
5	20:31:50	Common Pipistrelle	1	Commuting
PC E	20:35 - 20:40	NULL	NULL	NULL
6	20:35:35	Common Pipistrelle	2	Commuting
PC D	20:44 - 20:49	NULL	NULL	NULL
PC C	20:54 - 20:59	NULL	NULL	NULL
7	20:57:15	Common Pipistrelle	2	Commuting
PC B	21:03 - 21:08	NULL	NULL	NULL

client
Miller Homes Ltd

project
Land at Station Road,
Market Bosworth

drawing title
BAT TRANSECT PLAN (06.09.2023)

scale @ A3
1:1,400

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drawing / figure number
Figure 6

rev
-



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Key

BoCC Red List Species

- HS House Sparrow
- LI Linnet
- S Skylark
- SG Starling
- GR Greenfinch
- HM House Martin

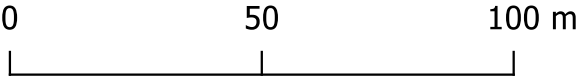
BoCC Amber List Species

- D Dunnock
- MA Mallard
- WW Willow Warbler
- WH Whitethroat
- RO Rook
- ST Song Thrush
- SH Sparrowhawk
- WP Woodpigeon
- WR Wren

→ Fly over only

Additional Protections

- NERC Species of Principal Importance





client
Miller Homes

project
Station Road,
Market Bosworth

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

scale @ a3
1:1,500

drawn
BRJ

issue date
8/11/2023

drawing / figure number
Figure 7

rev
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