

Growing Baldock

Environmental Statement Volume 2: Figures & Appendices

Chapter 11: Ecology

Appendix 11.8 Further Ecological Assessment



LAND TO THE EAST AND SOUTH OF BALDOCK

Phase 2: Further Ecological Assessment

BMD.21.0045.RPE-P2.814.Eco Assessment

DATE: AUGUST 2025

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Declaration of compliance with professional code of ethics or conduct

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bonafide opinions.

All reasonable efforts have been made to comply with current legislation and best practice, including BS 42020:2013, the Environment Act 2021 (Schedule 7A: Biodiversity Gain), the National Planning Policy Framework (2025), CIEEM EclA Guidelines (2018, updated 2022), and relevant Natural England guidance.

Bradley Murphy Design Ltd

Studio 3, Floor 18
Alpha Studios
Alpha Tower
Suffolk St Queensway
Birmingham
B1 1TT

Company No. 7788475

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EXECUTIVE SUMMARY

Client Urban&Civic plc
Consultant Bradley Murphy Design Ltd.

SITE

Location Land to the east and south of Baldock
National Grid Reference Approx. centre: TF03160859
Over-view The Site is approximately 220 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. Two small sections of the railway, however, fall within the northern section of the Site, partially connecting it to the southern area at two locations. The northern area comprises approximately 144 ha. The southern area comprises approximately 76 ha. The northern area of the Site is composed of land parcels to the north and south of Bygrave Road/Ashwell Road in Baldock, Hertfordshire, centred at Ordnance Survey National Grid Reference TL 25369 34942. The northern section is bound to the south by the railway, with two small sections of the railway line falling within the Site boundary. It comprises a combination of arable fields and grazed pasture, with a mixture of residential and farm buildings located along Bygrave Road. North and east of the Site is dominated by farmland, with the town of Baldock located to the south-west. To the west, beyond North Road, is Ivel Springs LNR, Blackhorse Farm Meadow LWS and Ivel Springs, Norton Road LWS. The southern section of the Site is located to the east of the town of Baldock in Hertfordshire and is centred at Ordnance Survey National Grid Reference TL 25643 33923. The Site comprises arable fields with occasional boundary hedgerows, with a mixture of residential and farm buildings. It is largely bound by a railway line to the north, the A505 to the south and east with the residential areas of Clothall Common and Baldock to the west.

Landscape context The Site is situated on the eastern extent of the town of Baldock. As such, the Site sits within a transitional landscape, with an agricultural field matrix to the north, and an urbanised area characterised by residential developments with occasional industrial use to the south and southwest.

DEVELOPMENT & PLANNING BACKGROUND

Proposed works Outline planning application with all matters reserved except for means of highway access into the development from the A505, North Road, Royston Road, Clothall Road and Wallington Road, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRoW diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.

Planning stage Outline Planning Application

ECOLOGICAL BACKGROUND

General An ecological appraisal was undertaken at the site in 2015 (Ecus, 2016). WYG carried out a suite of breeding bird surveys in 2017 (WYG, 2017a). Subsequently, an ES was prepared and an outline planning permission submitted in January 2018. However, the application was subsequently withdrawn. In 2019 the ecological appraisal was updated along with a series of species-specific assessments including corn bunting and reptile reports which were produced between 2019-2020. Updated Phase II assessments, including reptile, breeding bird, badger, winter birds and bat surveys were undertaken from May 2022 to July 2022. Full results of these surveys can be found here: BMD.21.0045.RPE-P2. 804.A.Eco Assessment. Further bat roosting surveys were undertaken in November 2023, with results presented in Report Ref BMD.21.0045.RPE-P2.808.Eco Assessment. No other ecological assessments are known to have been undertaken in the study area.

Most recent baseline An ecological assessment of the Site was undertaken by BMD during March-July 2022 that refined the scope of Phase 2 surveys required to inform the outline planning application. A verification was undertaken in May 2024 of habitats within the Site. Full results of the survey are presented within this report.

SURVEY

Objectives

1. To provide further ecological baseline, including nature conservation value, of the Site with a focus on protected and notable species;
2. To guide the initial stages of master planning and indicative mitigation required to ensure net biodiversity gain is achieved and favourable conservation status of species utilising the Site as a result of the proposed development; and
3. To provide specialist advice and make appropriate recommendations to ensure compliance with wildlife law and recognised best practice.

Approach Specific surveys, following current best practice, were undertaken for the following species/species groups:

- Bats
- Badger
- Botanical
- Breeding birds (including a focus on corn bunting)
- Reptiles.

Date..... April 2024– September 2024.

Results **Bats** - No bat roosts have been confirmed on Site to date, two trees and 14 buildings have been subject to nocturnal surveys to date. Full results are presented within Phase 2: Further Ecological Assessment: Bats (Ref: BMD.21.0045.RPE-P2.808).
Bats have been recorded foraging and commuting at the Site with key habitat areas being the peripheries of fields, dark roadways (Bygrave Road), boundary hedgerows and treelines (in particular northeast adjacent Ivel Springs). Bat species recorded at the Site include common pipistrelle, soprano pipistrelle, *Myotis* sp., leisler, noctule and barbastelle.
Breeding birds – A total of 17 bird species were recorded to hold territories at the Site during breeding bird surveys, including Red and Amber listed species. The Site is assessed to continue to support a breeding corn bunting population of county level importance (similar to the findings of the 2019/20 and 2022 assessment). The diverse assemblage is largely associated with the scrub, farmland and rough grassland habitats.
Schedule 8 plant species lizard orchid was recorded within the south-east grassland.
Reptile – a 'low' population of common lizard and 'low' population of slow worm occur in select areas of the Site.
Botanical - The keys areas of botanical interest are: the unmanaged grassland (although very variable); grassland scrub-mosaic in the south-east of the agricultural land, roadside verges associated with Bygrave Road LWS and a newly identified notable arable plant assemblage within a field adjacent to the A505. A verification was undertaken in May 2024 of habitats within the Site. Full results of the survey are presented within this report.
Incidental sightings - S41 species and Local BAP species: small blue and lizard orchid.
Evaluation/Conclusions..... The Site supports a range of protected and notable species and as such, appropriate mitigation and compensation will be required to facilitate the Proposed Development.

RECOMMENDATIONS

Appropriate mitigation strategies will be required to ensure protected and notable species are protected from harm during the construction works and that the conservation status of all protected and notable species currently using the Site is maintained post development through habitat creation and enhancement.

Opportunities for enhancement include the use of appropriate native trees and shrubs in the planting schemes, provision of bat roosting features (range of boxes), hedgerow enhancements and replanting, enhancements of degraded woodland and calcareous grassland, management of scrub, creation of hibernacula and refugia and enhancement of grassland areas.

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1. INTRODUCTION

1.1 Background Information

1.1.1 Bradley Murphy Design Ltd. (BMD) was commissioned by Urban&Civic plc in April 2024 to undertake an updated Ecological Assessment of their site: Land to the east and south of Baldock—hereafter referred to as ‘the Site’. The Site is approximately centred on national grid reference: TL 25443 34886. A plan depicting the Site’s location is provided in the Appendix.

1.1.2 Species specific surveys which have been undertaken at the Site are detailed in Section 2.

1.1.3 This report presents the approach, results and evaluation of assessments and surveys undertaken at the Site to provide the species-specific ecological baseline. The data will:

- Further guide the detailed master planning to ensure that favourable conservation status of the species/species groups assessed (where confirmed on Site) is at least maintained and, where appropriate, enhanced through the design and mitigation hierarchy (avoid, mitigate, compensate);
- Further inform the detailed planning applications and level of mitigation required to ensure, as a result of the proposed development:
 - Current European and domestic wildlife legislation is not breached.
 - Favourable conservation status of protected and notable species at the Site.

1.2 Proposed Development

1.2.1 Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road, for up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRow diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.

1.3 Site Context

Historic Context

1.3.1 Readily available historic aerial imagery and maps indicate that the Site has largely remained in its current state of arable land with the surrounding landscape largely being used for agricultural purposes since at least the late 18th century. The surrounding landscape has also remained largely unchanged from its 19th century landscape character, except for localised urban expansion of inhabited areas surrounding the Site; most notably the town of Baldock and city of Letchworth to the southwest, the town of Stotfold to the northwest. The surrounding habitats have

also seen changes with the removal of woodland parcels for further agricultural land occurring throughout the 19th century.

Present Context

- 1.3.2 The Site is approximately 220 ha in total however is largely dissected by a railway running east west through the middle of the Site effectively creating a northern and southern portion of the Site. The northern area comprises approximately 144 ha. The southern area comprises approximately 76 ha.
- 1.3.3 The northern area of the Site is located within the north of Hertfordshire, approximately 7.6 km north of the borough of Stevenage, at the north-eastern extent of the market town of Baldock. The Site is dissected by the Cambridge Train Line which splits the Site into a northern and southern area. Two small sections of the railway line, however, fall within the northern section of the Site, partially connecting to the southern area of the Site.
- 1.3.4 The train line running through the centre of the Site borders the northern area of the Site to the south, with two small sections of the railway line falling within the northern section of the Site; North Road to the west and chiefly agricultural land to the north and east. Several residential avenues, pathways, gardens and homes are also present within the vicinity of the Site boundaries, particularly along the southwest border of the Site.
- 1.3.5 The Bygrave Road runs southwest-northeast within the centre of the northern area of the Site, dividing arable farmland. Multiple footpaths run within the north Site's boundaries, connecting to North Road, Bygrave Road and multiple residential pathways. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the Site. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated with the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1 km northeast of the Site.
- 1.3.6 In the southern area of the Site the A505 (Royston Road) borders the Site from the south to the northeast; the Cambridge Train Line to the north; Wallington Road to the west and the Ashville Trading estate at the northwest border—several residential avenues, gardens and homes are also present within the vicinity of the Site boundaries.
- 1.3.7 The A507 (Clothall Road) runs southwest-southeast along the southern section of the Site, dividing arable farmland within the Site. Multiple footpaths run within the southern areas' boundaries, connecting to the B656, Wallington Road and multiple residential areas. There are also some urban features within the Site, such as the roundabout connecting the B656 and A505 to the northeast of the southern area. The surrounding landscape, with the exception of the town of Baldock to the southwest, has a commensurate character to that within the Site: agricultural land, chiefly arable, interspersed by residential pockets, roads and hedgerows. The residential areas surrounding the Site are all primarily associated with the town of Baldock situated to the southwest of the Site and the village of Bygrave approximately 1.3km northeast of the Site.

- 1.3.8 Considering the outlined above contextual features regarding the Site and its surrounding landscape, while there is some overland connectivity of the Site to its adjacent habitats, particularly from the north, the presence of multiple dispersal barriers within the vicinity, including highways and rail lines, is deemed to leave dispersal capacity of terrestrial fauna to/from the Site as moderate. It is further estimated that more mobile, such as bats, birds, and insects, would be more readily able to commute to the Site from surrounding habitats.

1.4 Ecological Context

- 1.4.1 An ecological appraisal was undertaken at the Site in 2015 (Ecus, 2016), which included a badger survey, great crested newt assessment and reptile survey. The principal habitats recorded were arable, improved grassland, hedgerows, scattered trees, scrub, semi-improved grassland, tall ruderal, amenity grassland, buildings and hardstanding. The survey identified the potential for the following protected species/species groups: great crested newt, badger, bats, breeding birds, common reptiles.
- 1.4.2 WYG carried out a suite of breeding bird surveys in 2017 (WYG, 2017a & WYG, 2017b). The Site was found to support a population of corn bunting considered to be of County importance. Other farmland birds were also recorded and this assemblage was also considered to be of County level importance. Subsequently, an ES was prepared and an outline planning permission submitted in January 2018. However, the application was subsequently withdrawn.
- 1.4.3 In 2019 the ecological appraisal was updated along with a series of species-specific assessments including corn bunting and reptile reports which were produced between 2019-2020. These reports are as follows:
- Baldock North - Updated Ecological Appraisal (2019a);
 - Baldock Southeast - Updated Ecological Appraisal (2019b);
 - Baldock Reptile Survey Report (2019c);
 - Baldock Southeast - Bat Activity Report (2020a);
 - Baldock North – Bat Activity Report (2020b);
 - Baldock North and Southeast - Corn Bunting Report (2020c); and,
 - Baldock Mitigation Sites – 2019 Corn Bunting Survey Report (2020d).
- 1.4.4 In 2022 and 2023, a number of Phase II surveys and reports were undertaken at the Site and produced by BMD including:
- Reptile surveys – May to July 2022
 - Bat activity surveys – May to September 2022
 - Bat emergence surveys – May to September 2023
 - Breeding bird surveys with a focus on corn bunting – April to July 2022
 - Wintering bird survey – February 2023
 - Corn bunting mitigation sites assessment in 2023 (Ref: BMD.21.0045.RPE-TN.810.A)
 - Botanical and Habitat Verification Assessment – July 2023 (Ref: BMD.21.0045.RPE-TN.807.A.-.Verification Assessment).

1.4.5 Full results of the Phase II surveys undertaken in 2022 and 2023 are presented within Phase 2: Further Ecological Assessment (Ref: BMD.21.0045.RPE-P2.804.A) and Phase 2: Further Ecological Assessment: Bats (Ref: BMD.21.0045.RPE-P2.808).

1.4.6 No further previous ecological surveys or assessments are known for the Site or adjacent land.

1.5 Compliance with Policy, Guidance and Legislation

1.5.1 A summary of national planning policy and wildlife legislation relating to development projects in England is provided in Appendix A. The protocols, evaluations and recommendations contained within this report were made in accordance with these policies and legislation.

Local Policy

Hertfordshire Local Nature Recovery Strategy (LNRS)

1.5.2 The draft Local Nature Recovery Strategy for Hertfordshire has been completed and is out for public consultation until September 2025, alongside a LNRS mapping viewer which identifies strategic priorities for nature across the county including priority habitats, core LNRS focus areas, species with targeted actions and public greenspace.

1.5.3 The draft LNRS has been reviewed in relation to the proposed development at the Site and is referenced to throughout this report to ensure post-development biodiversity enhancements and mitigation align with strategic priorities highlighted within and adjacent to the Site by the LNRS.

North Hertfordshire Local Plan (2011–2031)

1.5.4 The Site lies within the administrative boundary of North Herts Council, and the adopted North Hertfordshire Local Plan 2011–2031 (adopted in November 2022) forms the primary local policy framework. Key policies relevant to ecology include:

1.5.5 Policy NE1 – Landscape: Seeks to conserve and enhance the character of the district's varied landscapes, particularly in areas of high sensitivity. Development proposals must demonstrate respect for local landscape character, including natural features and habitats.

1.5.6 Policy NE2 – Green Infrastructure: Requires the protection and enhancement of existing green infrastructure assets and the provision of new green infrastructure in line with the district's Green Infrastructure Strategy. Proposals should support ecological connectivity and multifunctionality.

1.5.7 Policy NE3 – Biodiversity: Requires development proposals to protect, enhance and manage biodiversity, including through measurable net gain. Proposals must conserve existing ecological assets and deliver enhancements in accordance with the mitigation hierarchy. The policy also supports the use of up-to-date ecological information and monitoring.

1.5.8 Policy NE4 – Protecting Public Rights of Way: Encourages development to maintain or enhance the local footpath network, which can support wildlife corridors and public access to nature.

2. APPROACH

2.1 Introduction

- 2.1.1 This report has been produced with reference to current guidelines for ecological assessments (e.g. CIEEM, 2020 and 2020a) although adapted to be appropriate for the conditions on Site. Reference was also made to BS42020:2013: Biodiversity – Code of Practice for Planning and Development.
- 2.1.2 The assessments undertaken at Site from May to September 2024 have comprised the following:
- Reptile survey (May to June 2024);
 - Bat:
 - Activity survey transects – Monthly (May to September 2024);
 - Deployment of static detectors (April to October 2024);
 - Breeding Bird Survey with a focus on corn bunting (May to July 2024); and
 - An Ecological Verification Assessment (May 2024)
- 2.1.3 Full survey methodologies are provided below. Details of dates, weather conditions and a review of survey limitations are provided in the results sections below.
- 2.1.4 Definitions of technical terms used in this report are provided in the Glossary in Section 7. Common names of species are used throughout the report with scientific names provided in Section 7.2

2.2 Bat Surveys

Building and Tree Inspections & Dusk Emergence Surveys

- 2.2.1 The buildings/other structures and trees within the Site have been previously assessed in the preliminary ecological assessment (BMD.21.0045.RPE-P1.801.A.-.Ecology) for potential roost features. This assessment then informed dusk emergence surveys undertaken for the Site in 2023 (Ref: BMD.21.0045.RPE-P2.808).
- 2.2.2 No dusk emergence surveys were conducted in 2024 as the results from the surveys in the previous season remained valid. Additionally, no emergence of bats had been recorded in the entire Site in the 2023 surveys. Further emergence surveys were undertaken in 2025 with the full results presented in BMD.21.0045.RPE-P2.808.

Bat Activity Surveys 2024

- 2.2.3 As per BCT best practice, dusk bat activity surveys were undertaken across the entire study area during suitable weather conditions across 3 visits in 2024 (see detailed survey plan BMD.21.0045.DRE.917 - Bat Activity Results). Transects were devised to cover the key habitats across the site; Transect plans are provided in the Appendix (Ref: BMD.21.0045.DRE.916). The transects focused on areas of suitable bat foraging and commuting habitat (i.e. all field

boundaries, grassland areas. An appropriate number of listening station stops were adopted along the chosen route, with 3 minutes spent at each stop.

- 2.2.4 Bat activity survey work involved surveyors using EM-Touch 2 (for iOS and Android) and AnaBat express bat detectors to aid identification of any bats observed along each transect through the study area. Over the course of each transect, the species, number, and direction of travel of all bats heard and/or seen was recorded. The aim of this survey work is to develop a picture of the use of the Site and adjacent habitats by bats, with the aim of quantifying the activity and mapping the key areas utilised by bats.

Static Bat Detectors

- 2.2.5 Bat activity surveys were also supplemented with the use of remote static recording (Anabat Express) within two areas of the Site. One was deployed within a hedgerow dividing arable fields, along the northern extent of the Site and the other was placed within a hedgerow bounding the south of the Site, adjacent to the A505 roadway. These were carried out from April to October of 2024, for a minimum of five-night recording periods of each deployment.

Sonogram Analysis

- 2.2.6 All bat registrations recorded during the bat survey work were analysed using Analook W v.3.7 (for analysis of ZC files) and Anabat insight to verify the species recorded during survey work. Registration verification was undertaken by a suitably experienced ecologist with reference to known sonogram parameters. Using Analook, individual files were labelled where bat species could be identified with reasonable certainty. Calls that appeared to have been produced by bats but could not reliably be attributed to a species were labelled with a "sp." or similar identifier, where possible (e.g. *Myotis* 'sp.').

2.3 Badger Survey

- 2.3.1 An updated assessment of badger activity within the Site was carried out alongside the habitat verification survey in May 2024. The survey adhered to the standard approach detailed in Harris et al (1989) and included a comprehensive walkover to search for badger field signs including setts entrances, latrine sites, footprints, hairs, pathways, scratching posts and snuffle holes. The walkover was undertaken in spring at the optimal time of year, when levels of badger activity is high but field signs are yet to be obscured completely by overgrown vegetation.
- 2.3.2 Any incidental evidence of badger observed during the various additional assessments at the Site were also recorded, such as during bat activity surveys and Ecological Clerk of Works inspections.

2.4 Breeding Bird Survey

Methods

- 2.4.1 The assessment comprised assessing targeted breeding birds within the survey area of the proposed development site following current protocol, with particular attention being made to corn bunting in this case. This involves a number of elements:

- Desk study (including a review of previous ecological reports pertaining to breeding birds and published literature of corn bunting ecology).
- Review of The Birds of Hertfordshire (annual reports).
- Three transect surveys to identify assemblages of breeding birds at the Site by recording visual and vocal observations on to Site maps.
- Breeding assemblages that had been identified were subjected to criteria assessments to determine the breeding status of each species identified at the Site (i.e. confirmed, probable, possible, not breeding).
- The assemblage of breeding birds was assessed using Fullers criteria to determine the level of importance. Individual breeding populations were assessed with reference to the Hertfordshire Bird Report 2014 and The Birds of Hertfordshire 2015.

2.4.2 The survey methodology broadly followed that set out by the Common Bird Census (CBC) devised by the British Trust for Ornithology (BTO) which is used to record territorial activity of corn buntings (and selected other species) within a specified survey area. To achieve this, three surveys were conducted across the Site during suitable weather conditions (calm, dry days with good visibility) and between the hours of 0500 hrs and 1200 hrs whilst birds are most likely to be active.

2.4.3 During surveys, breeding behaviours that were recorded included displaying, singing, territorial activity, agitated or defensive behaviour or a pair of adult birds observed together. Each species of bird encountered were identified either visually or through vocalisations. The presence of bird species and types of activities observed were recorded onto maps of the Site to allow the assessment of breeding territories to be determined.

2.4.4 All breeding bird species identified at the Site were assessed using the criteria set out within Table 2.1.

Table 2.1 Criteria used to determine breeding bird territories during surveys conducted in 2024

Breeding status	Registration description
Confirmed breeding territory	Two registrations of a particular species displaying breeding behaviour within a territory range over the total survey period
	A single record of a nest containing eggs or young
	Two registrations of a difficult species (e.g. nocturnal species such as owls or woodcocks) within a territory range over the total survey period
Probable breeding territory	Present in suitable habitat in the same location (within normal territory range) on two occasions
	Displaying breeding behaviour on one occasion only ¹
Possible breeding territory	Present in suitable habitat on one occasion only
Non-breeding	Present in habitat not suitable for breeding
	Immature birds (e.g. raptors and gulls not of breeding age)
Notes 1. Breeding behaviour includes displaying, singing, territorial activity, agitated or defensive behaviour or a pair of adults together	

Evaluation and Review

2.4.5 Following the desk study and field surveys, the following assessments were undertaken:

- The value of the Site in terms of supporting breeding birds of varying species to determine the type of habitats available for breeding birds to occupy;
 - The use of the Site by breeding birds for nesting, foraging and undertaking breeding behaviours;
 - Where present, the estimated territories and criteria of breeding bird assemblages have been estimated from observations across the survey Site;
 - A review of likely impacts resulting from the proposed development on breeding bird assemblages.
- 2.4.6 The most recent review of breeding birds was undertaken during 2021 (Birds of Conservation Concern: BoCC 5). The review subdivides populations of breeding birds into the three BoCC categories:
- Red list species – species of highest conservation concern.
 - Amber list species – species experiencing moderate declines in population or range.
 - Green list species – species of no immediate conservation concern.
- 2.4.7 Breeding assemblages on the Site were assessed using criteria set out by Fuller (1980). The adapted scale outlined in the CIEEM guidelines (2018) will be used to reflect the decline in arable species since Fullers guidelines were originally published, see Table 2.2.

Table 2.2 Criteria for assessing the level of importance for breeding birds

Number of breeding species	Level of importance
Up to 24 breeding species	Local importance
25 – 49 breeding species	District importance
50 – 69 breeding species	County importance
70-84 breeding species	Regional importance
85+ breeding species	National importance

- 2.4.8 The importance of breeding bird populations has been assessed at four levels:
- Regional: contains a significant proportion of the breeding population of birds within the counties of Cambridgeshire, Bedfordshire and Hertfordshire.
 - County: supports a significant proportion of the breeding population of a species within Hertfordshire, or notable populations of species of conservation concern.
 - District: those considered to be significant in a localized area (in this case the local authority area – North Herts Council)
 - Local: significant at a parish level.

Limitations

- 2.4.9 A full review of limitations considered is provided in Appendix C.
- 2.4.10 The transect routes used in the 2024 survey followed the same route as that used in the 2022 breeding bird survey. The route avoided walking through an area of numerous horse paddocks south of Freeland Farm, as the extent of electric fencing demarcating the paddocks made access

difficult. The horse paddocks could be surveyed from neighbouring land and this is not considered to be a significant constraint.

- 2.4.11 The Site comprises a series of farms, housing and industrial units, along with public footpaths and areas of public open space. Given the nature of the Site, disturbance is a feature as business and farming activities occur throughout the day, along with public access. Archaeological works and other site investigation works were being undertaken on Site during the May survey. The fallow field north of the A505 attracted large numbers of people during June to photograph flowering poppies. These factors are likely to have caused some localised disturbance to breeding birds.
- 2.4.12 It is considered that levels of activity noted in 2024 in certain parts of the Site would have differed in duration and nature compared to those experienced by breeding birds during the 2019 and 2022 breeding season.
- 2.4.13 The weather conditions were considered to be suitable throughout the surveys with no significant constraints encountered.
- 2.4.14 The survey dates were scheduled to coincide the main period of corn bunting breeding activity. The number of visits and timing of the visits is considered insufficient to accurately record the breeding populations of all breeding species on Site. The population estimates given for other species are considered to be reasonable accurate but are unlikely to have recorded all breeding territories.

2.5 Reptile Survey

- 2.5.1 During the initial ecological assessment and Phase 2 surveys, suitable reptile habitat was identified within the Site and as such updated detailed Phase 2 survey work was undertaken between May and June 2024 (i.e. during one of the optimal survey periods for reptile surveys) to determine presence/absence of common reptiles (and to provide an updated assessment of population size that where present since previous surveys in 2022).
- 2.5.2 Previously within the 2022 reptile surveys, ten transects were placed across the Site. The Site was re-evaluated for reptile habitat and tiles were deployed accordingly in combination with previous results. During the 2024 updated surveys, only four transects were deployed, covering areas previously highlighted as supporting reptile populations within the Site.
- 2.5.3 A total of 50 100cm x 50xcm sheets of thick roofing felt and corrugated roofing felt were placed within areas of suitable reptile habitat across the Site to act as artificial refugia, as presented on the Reptile Survey Plan (Appendix: Ref BMD.21.0045.DRE.915). These refugia provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the evening. As such, reptiles being ectothermic (cold blooded), use them to bask under and raise their body temperature which allows them to forage earlier and later in the day. Therefore, checking the refugia in the morning and/or late afternoon should reveal reptiles, if they are present at a site.

- 2.5.4 The refugia were left in place for 7 days in order to 'bed-in' and enable any reptiles present to find them. Subsequent to this the refugia were checked over 7 survey visits during suitable weather conditions, as recommended in Herpetofauna Groups of Britain and Ireland (HGBI) Best Practice and Lawful Guidance. In addition, careful visual observations were made during each survey visit to search for any basking or foraging reptiles within key habitat areas on the Site.
- 2.5.5 Furthermore, care was taken to arrive at the Site early in the morning when appropriate to ensure the reptile refugia had not become too hot, which would potentially result in reptiles dispersing from underneath the refugia into adjacent areas of suitable habitat. Moreover, days with optimal weather conditions were targeted where possible, (i.e. cloudy days with sunny spells or days forecast to have short periods of heavy rain with sunny intervals). Therefore, it is considered that an accurate and robust assessment of reptile activity at the Site has been made.

2.6 Other Species – Incidental Observations

- 2.6.1 The general faunal activity and changes to flora was recorded during the course of the survey work, including incidental sightings of birds, mammals and invertebrates, with particular attention paid to any potential use of the Site by protected, rare, notable, or Priority-listed faunal species.

2.7 Verification Survey & Botanical Assessment

Extended Phase 1 Habitat Survey

- 2.7.1 An Extended Phase 1 Habitat Survey was undertaken at the Site in accordance with industry standards (JNCC, 2010) and best practice guidance although adapted to be appropriate to the Site. The conditions and assessors of the survey are provided in the Appendix. The methodologies of the survey techniques are provided in the Appendix.
- 2.7.2 The vegetation and broad habitat types within the Site were noted during the verification survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The Site was also appraised for its suitability to support notable flora, with regard to the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

3. RESULTS

3.1 Bats

Summary of 2022 Bat Data

Activity surveys

- 3.1.1 Species recorded during the activity surveys included common pipistrelle, *Myotis* sp., *Nyctalus* sp., *Plecotus* sp. and serotine. The majority of bat activity was located along the peripheries of the field parcels, within rough grassland and along roadside verges where commuting and foraging bats were identified utilising the hedgerows, rough grassland and trees. In contrast, arable field parcels and footpaths exhibited an absence of bat presence. A range of bat species were identified using periphery features onsite to commute through the landscape, additionally tree-lined hedgerow, rough grassland and scrubland supported foraging activity.

Bat static recording

- 3.1.2 The bat static recordings identified a total of eight species onsite utilising the hedgerows and grassland including common pipistrelle, soprano pipistrelle, *Myotis* sp., Leisler's, noctule, barbastelle, brown long-eared and serotine. Overall, the general level of bat activity within these areas was considered low, with 68% of all recordings being identified as soprano pipistrelle.
- 3.1.3 Detailed results are presented within the previous Phase II report for the Site (Ref: BMD.21.0045.RPE-P2.804.A).

Bat Activity Surveys 2024

June 2024

- 3.1.4 Within the north of the Site, the surveyors recorded the echolocation calls of common pipistrelle, Leisler's bat and noctule. Most of these records were concentrated along field margins and hedgerow features either side of Bygrave Road as well as some recorded along the eastern peripheries of the arable parcel south of Bygrave Road. Bats were observed to largely be commuting along the hedgerow features adjacent to Bygrave Road as well as through the arable landscape, likely travelling to areas of higher value habitat.
- 3.1.5 Within the south of the Site, the surveyors recorded the echolocation calls of exclusively noctule bats. The species was recorded commuting over dense scrub along the peripheries of the southern arable field. No other species were identified for the remainder of the southern transect, resulting in a large absence of bat activity recorded within this area of the Site.
- 3.1.6 As presented on the Bat Activity Plan (Drawing BMD.21.0045.DRE.917) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels and roadsides onsite where commuting bats were identified using the hedgerows, scrub, trees and arable land in the northern extent of the Site. In contrast, the southern arable field parcels and Clothall Common exhibited an absence of bat species presence.

July 2024

- 3.1.7 Within the north of the Site, the surveyors recorded the echolocation calls of common pipistrelle, noctule, Leisler's bat and a single barbastelle. Bats were recorded foraging and commuting along the extent of Bygrave Road, along Hedgerow 3, Hedgerow 8, Hedgerow 13 and Hedgerow 15 (as presented on BMD.21.0045.DRE.901) as well as noctule and Leisler's recorded around the peripheral margins of the arable parcel south of Bygrave Road. A single noctule was recorded commuting along the tree and scrub-lined railway corridor. Higher levels of activity were recorded at the hedgerow and field margin peripheries of arable fields.
- 3.1.8 Within the south of the Site, the surveyors recorded the echolocation calls of common pipistrelle and soprano pipistrelle only. Bats were recorded commuting and foraging over the northern extent of semi-improved grassland of Clothall Common and along the northern peripheries of the arable parcel immediately south of Clothall Common. Highest levels of activity were recorded over Clothall Common, however in general bat activity remained very limited.
- 3.1.9 As presented in the Bat Activity Plan (Drawing BMD.21.0045.DRE.917) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels, within rough grassland and on roadside edges onsite where commuting and foraging bats were identified along the hedgerows, rough grassland and trees, mostly similar to the results of the June 2024 activity survey, with exception of slightly varied activity in the south of the Site. In contrast the arable field parcels and footpaths exhibited an absence of bat species presence. Activity was focused on the peripheries associated with scrub, hedges and trees.

September 2024

- 3.1.10 Within the north of the Site, the surveyors recorded the echolocation calls of common pipistrelle, soprano pipistrelle and Leisler's bat. Common pipistrelle were recorded foraging and commuting along the arable margins of the parcel north of Bygrave Road, whilst a single soprano pipistrelle and Leisler's were recorded along hedgerows 14 and 15 (as presented on BMD.21.0045.DRE.901) respectively in the northwest of the Site. Higher levels of activity were recorded at the peripheries of arable fields.
- 3.1.11 Within the south of the Site, the surveyors recorded no echolocation calls from any bat species during the survey.
- 3.1.12 As presented on the Bat Activity Plan (Drawing BMD.21.0045.DRE.917) in Appendix A, the majority of bat activity was located along the peripheries of the field parcels and hedgerow features edges onsite where commuting and foraging bats were identified. The activity recorded in the northern area was concentrated in similar areas to that observed during the June and July 2024 surveys. Overall, however, bat activity for the September 2024 survey was lower than that recorded during previous visits in 2024.
- 3.1.13 It should be noted that as per the previous 2023 verification visit, offsite habitat including the railway corridor have since been intensively managed, removing a lot of the habitat corridor including scrub and scattered trees. This is likely to impact commuting bats within the area, removing important connecting habitat and a commuting route.

Bat Static Recordings 2024

3.1.14 Table 3.1 provides a summary of the static data results at the Site from April to October 2024.

Table 3.1 Summary of static recording results in 2024

	May (01-07)		June (17-21)		July (02-07)		August (29-02)		Sept (04-08)	TOTAL
	E	F	E	F	E	F	E	F	E	
Common pipistrelle	25	63	70	75	123	110	806	791	359	2428
Soprano pipistrelle	5	28	26	39	33	79	620	333	244	1407
Myotis Sp.	12	8	8	3	4	11	13	5	7	71
Noctule/ Leislars	27	28	32	26	24	20	209	50	30	446
Barbastelle	5	0	5	0	3	1	4	0	1	19
	74	127	141	143	187	221	1652	1179	641	4371

3.1.15 The surveys recorded six species of bat using the hedgerows, grassland and boundaries of the Site; common pipistrelle, soprano pipistrelle, *Myotis* sp., Leisler's, noctule and barbastelle.

3.1.16 Whilst it is not possible to gauge the number of times a single bat passes the recorder, meaning that a count of individual bats is not possible, the number of bat passes has been calculated to give an index over a nightly period, recording from sunset to sunrise.

3.1.17 Only one static recorded in September, due to a fault in static F.

3.1.18 The general level of bat activity along these areas was deemed to be low however, with the number of bat passes per hour ranging from 1.2 to 27.5.

3.1.19 The majority of remote static detector bat recordings of these locations were of common pipistrelles, with 56% of all recordings being from this species. Soprano pipistrelle contacts were also fairly high through the autumn months.

3.2 Badger Survey

3.2.1 Various field signs of badger were observed during the multiple surveys undertaken at the Site in 2024, including the Site verification walkover in May 2024, bat activity surveys and during Ecological Clerk of Works checks prior to archaeological and borehole works undertaken at the Site. Field signs included various latrine sites, predominantly along arable field margins immediately north of the railway corridor and one site identified within the northern arable field.

3.2.2 Numerous active sett entrances were identified [REDACTED] during a nesting bird check prior to archaeological works in March 2024, the location of which is presented on drawing BMD.21.0045.DRE.908 within the Appendix. These

entrances were monitored to check for recent activity, however, an inspection in November 2024 revealed they were no longer in use with no signs of fresh digging and vegetation covering the sett entrances. Historic evidence of badger is known [REDACTED], but it was considered that there are currently no known active badger setts within the Site.

3.3 Breeding Bird Survey

Breeding Bird Survey Results 2022

- 3.3.1 During the 2022 targeted corn bunting surveys, a total of 15 bird species were recorded holding territories at the Site, of which included nine red-list species and six amber-list species. These species were common whitethroat, corn bunting, dunnock, greenfinch, grey partridge, house sparrow, linnet, meadow pipit, reed bunting, skylark, song thrush, starling, woodpigeon, wren, yellow wagtail and yellowhammer. A breeding population of corn bunting of county importance was recorded, with a total of 20 territories observed on Site.
- 3.3.2 Habitat features on Site that were frequently utilised by birds included farmland, hedgerows, rough grassland areas, scrub, treelines and ruderal areas. It was considered likely that the Site hosted a range of nesting opportunities for the birds within the local landscape and thus was considered to be important at a local level with regard to bird species.
- 3.3.3 Full results of the 2022 breeding bird surveys are detailed within the previous Phase II ecological assessment (Ref: BMD.21.0045.RPE-P2.804.A).

Breeding Bird Survey Results 2024

- 3.3.4 Although the survey was focused on recording corn bunting activity a record was made of other scarce farmland birds seen or heard during the surveys. Where sufficient field data was collected these territories were mapped. Territorial activity for wood pigeon (an amber list species) was not collected. Similarly, where breeding activity was likely to be primarily off-site (such as for common swift and house sparrow) territorial activity was not collected.
- 3.3.1 During May-July 2024, a total of 17 bird species were recorded holding territories at the Site during the targeted corn bunting surveys, with the following notable species recorded:
- Birds of Conservation Concern (BTO, 2021) with nine red-list bird species holding territories on Site and eight amber-list species holding territories; and
 - Breeding population of county importance of corn bunting was recorded;
- 3.3.2 Table 3.2 shows the status of selected red and amber list species recorded within the Site during the 2024 surveys. Each species is listed and coloured appropriately for those that occur on the red-list or amber-list (BoCC5). No Schedule 1 species were recorded to be holding territory within the Site.

Table 3.2 Species holding territory during 2024 survey

Species	BoCC Status ¹
Common whitethroat	Amber
Corn bunting	Red
Dunnoch	Amber
Greenfinch	Red
Grey partridge	Red
House sparrow	Red
Linnet	Red
Meadow pipit	Amber
Reed bunting	Amber
Skylark	Red
Song thrush	Amber
Sparrowhawk	Amber
Starling	Red
Woodpigeon	Amber
Wren	Amber
Yellow wagtail	Red
Yellowhammer	Red
Notes	
1. See Glossary for definitions	

- 3.3.3 Of the species recorded to hold territories, nine were red-list species and eight were amber list species. Sparrowhawk were recorded to be holding territory within the Site, of which they were previously absent in the 2019 and 2022 surveys. A map depicting the location of amber-listed and red-listed species territories onsite recorded during the 2024 surveys is provided within the Appendix (Drawing reference: BMD.21.0045.DRE.914).
- 3.3.4 Table 3.3 shows the number of territories of selected red and amber list species recorded within the Site during the 2019, 2022 and 2024 surveys. The table also noted the presence of other species on site where territorial mapping was not undertaken in either 2019 or 2022.

Table 3.3 Summary of Red and Amber listed bird species recorded in 2019, 2022 and 2024 (shading indicates Red/Amber listing; bold Schedule 1)

Species observed on Site	Breeding status during 2019	Breeding status during 2022	Breeding status during 2024	Habitats of potential use on Site
Common whitethroat	Territories not mapped	Present – territories not mapped	11 territories	Grassland, hedgerows and scrub
Corn bunting	14 territories	20 territories	21 territories – recorded carrying food	Arable landscape, rough grassland and scrub
Dunnoch	3 territories	Present – territories not mapped	14 territories	Scrub, hedgerows, ruderal and farmland
Greenfinch	Territories not mapped	Present – territories not mapped	9 territories	Hedgerows, treelines and scrub
Grey partridge	2 territories	1 territory	3 territories – pair with chicks seen on Site	Grassland, farmland and hedgerows
House sparrow	Territories not mapped	Present – territories not mapped	Present – territories not mapped	Scrub, hedgerows and grassland for foraging
Linnet	3 territories	4 territories	11 territories – two small nesting colonies recorded	Farmland, grassland and scrub.

Species observed on Site	Breeding status during 2019	Breeding status during 2022	Breeding status during 2024	Habitats of potential use on Site
Meadow pipit	7 territories	6 territories	4 territories	Grassland – territories within south-eastern grassland parcel
Reed bunting	Territories not mapped	Singing male noted in July	1 territory	Farmland and grassland for foraging
Skylark	36 territories	32 territories	40-44 territories – nest and adults recorded carrying food	Farmland and grassland
Song thrush	1 territory	Present – territories not mapped	1 territory	Hedgerows, treelines and grassland
Sparrowhawk	Not mapped	Not mapped	1 territory – adult birds recorded return to tree containing old common buzzard nest	Farmland, hedgerows, treelines, urban areas and grassland.
Starling	Territories not mapped	Present – territories not mapped	Present – territories not mapped	Farmland and grassland
Woodpigeon	Territories not mapped	Present – territories not mapped	Present – territories not mapped	Hedgerows, treelines, farmland and grassland
Wren	Territories not mapped	Present – territories not mapped	14 territories	Hedgerows, treelines, scrub and grassland
Yellow wagtail	4 territories	4 territories	7 territories – adults recorded carrying food. Some territories may relate to second broods in different parts of Site	Farmland, hedgerows and grassland
Yellowhammer	3 territories	2 territories	2 territories	Farmland, hedgerows and grassland

- 3.3.5 Table 3.3 shows that the number of breeding territories of other scarce farmland species such as grey partridge, skylark and yellowhammer are largely unchanged since 2019. All these species are strongly associated with the arable areas of the Site. The possible increase in yellow wagtail pairs in 2024 may be a result of pairs moving within the Site during the breeding season or a real increase in numbers.
- 3.3.6 The numbers of breeding meadow pipit have declined since 2019, however the following of the field north of the A505 in 2024 reduced the extent of suitable grassland within the Site compared to previous years. The rough grassland to the east of Clothall Common remains the key breeding area for meadow pipit within the Site.
- 3.3.7 During the July survey visit a pair of hobby were observed displaying activity strongly indicative of an occupied nest. The nest was located beyond the Site boundary. Hobby is a listed-on Schedule 1 of the Wildlife and Countryside Act, but as the nest is some distance from the Site boundary (over 300m) disturbance is unlikely. The breeding hobby population in Hertfordshire is estimated to be in the region of 130-180 pairs so the record is of local importance only.
- 3.3.8 Plan BMD.21.0045.DRE.914 showing the distribution of confirmed, probable and possible territories for Red and Amber species across the Site are provided in the Appendix.

Corn Bunting

- 3.3.9 Corn buntings have been recorded holding territories within the Site during the 2017 to 2024 surveys undertaken. The 2022 survey results identified a total of 20 corn bunting territories within the Site and confirmed that corn bunting heavily utilise the habitats onsite for breeding territories, in particular the arable land that dominates the majority of the Site, alongside hedgerows, treelines and the area of rough grassland and scrub at the eastern side of Clothall Common.
- 3.3.10 A total of 21 corn bunting territories were recorded during the 2024 survey. There were noticeable clusters of territorial activity across the Site. The hedgerow running along the northern boundary of the Site held six singing males. A further four singing males were recorded holding territories either side of Bygrave Road/Ashwell Road. In the southern part of the Site three singing corn bunting were recorded between the railway line and Royston Road (north of A505). Plan BMD.21.0045.DRE.914 provided within the Appendix depicts the distribution of singing male corn bunting within the Site.
- 3.3.11 The total number of singing males (assuming no double counting of singing males) recorded during each survey visit only varied slightly (19-22 birds). This would suggest that the current estimate of singing males is accurate. Territorial male corn bunting were also noted singing on offsite land to the north, east and south of the Site.
- 3.3.12 Birds were recorded using a variety of song posts including cereal heads and weed species within crops, various trees, fence posts, telegraph wires and hedgerows. Birds were also noted singing from lumps of mud in cultivated fields early in the season. Male corn bunting were also noted singing from song posts close to existing rights of way, close to houses at Bygrave and behind Tapps Garden Centre (Wallington Road) suggesting male birds were not avoiding areas with high levels of human activity.
- 3.3.13 Birds were recorded carrying food confirming breeding was taking place on site. A noticeable feature of the 2024 survey was the lack of corn bunting singing from the rough grassland and scrub east of Clothall Common. A single male corn bunting was recorded singing here in May but there were no subsequent records of corn bunting using this area in 2024.

Summary of Breeding Bird Presence

- 3.3.14 During the three targeted 2024 visits, a total of 17 bird species were recorded holding breeding territories within the Site. Of the 17 species recorded, 9 are red-list species and the remaining 6 are amber-listed.
- 3.3.15 A new territory related to sparrowhawk was recorded during the 2024 survey.

3.4 Reptile Survey

Reptile Survey Results 2022

- 3.4.1 Ten transects were deployed during the 2022 surveys, including along arable field margins of grassland and scrub to the north, centrally and to the south of the Site. The remaining transects covered a large area of Clothall Common within the centre of the Site.

- 3.4.2 No reptiles were recorded along the transects adjacent to arable field parcels within the northern and central extent of the Site. Common lizard were recorded throughout Clothall Common, with a peak count of 24 adults recorded. Both common lizard and slow-worm were recorded along the arable grassland margin transects to the south of the Site, with a maximum of 18 slow-worm adults recorded during one survey.
- 3.4.3 Full results are presented within the previous 2022 Phase II report for the Site (Ref: BMD.21.0045.RPE-P2.804.A).

Reptile Survey Results 2024

- 3.4.4 Table 3.4 provides a summary of the reptile survey undertaken at the Site during May and June 2024 including dates of visits, weather and observations during each visit.
- 3.4.5 The location of reptile transects, and key findings are presented on the Reptile Survey Plan (Drawing Ref BMD.21.0045.DRE.915) within the Appendix. Whilst there were fewer transects deployed during the 2024 surveys (four transects deployed in total), transect numbers have been kept the same as those within the 2022 surveys to allow for easier comparison.

Table 3.4 Summary of 2024 reptile transects

Survey Visit	Weather Conditions	Air Temp	Reptile Refugia	Transect No.	Common Lizard	Slow Worm	Other Species
1 7 th May	Sunny	14-15	Majority warm.	4 and 10	2 adult common lizards	6 slow worms (1 adult and 5 juvenile)	0
2 13 th May	Sunny intervals	14-16	Majority warm.	4 and 10	1 adult common lizard	4 adult slow worms	0
3 23 rd May	Cloudy with sunny intervals	14-15	Half warm, half cool.	4 and 10	2 adult common lizards	5 adult slow worms	0
4 30 th May	Cloudy	13-14	Mostly cool.	4, 5 and 10	5 adult common lizards	5 adult slow worms	0
5 3 rd June	Cloudy with limited sunny intervals	16-17	Mostly cool.	4, 5 and 10	6 adult common lizards.	8 slow worms (7 adult and 1 juvenile)	0
6 12 th June	Patchy sun	12-13	Half warm, half cool.	4, 5, 6 and 10	4 adult common lizards	4 slow worms	0
7 18 th June	Sunny	16-18	Majority warm.	10	0	9 slow worms (5 adult and 4 juvenile)	0
Peak Count (Adults)					6	7	0

- 3.4.6 Common lizards were recorded during six visits to the Site, with slow worms recorded on all seven visits, including both adults and juveniles.
- 3.4.7 Reptile species were recorded along all four transects, with slow-worm only occupying the rough grassland arable margin to the south of the Site (Transect 10). One common lizard was also

recorded along Transect 10, however, the majority of common lizards were recorded in the large open grassland (Clothall Common) in the central transect routes (Transects 4-6).

- 3.4.8 Adult common lizards were recorded during six of the seven visits, with a maximum count of 6 adults recorded on the 3rd of June 2024.
- 3.4.9 Slow worms were recorded during all seven visits, with a maximum count of 7 adults recorded on the 3rd of June 2024.
- 3.4.10 No other reptile species or fauna were recorded.

3.5 Other Species – Incidental Observations

2022/2023 Results

- 3.5.1 During the extensive survey visits undertaken during 2022 at the Application Site, other protected and notable species recorded included red kite, common swift, house sparrow and lizard orchid.
- 3.5.2 Other species recorded included European rabbit, red fox, blackbird, buzzard, carrion crow, chaffinch, coal tit, collared dove, goldcrest, goldfinch, great tit, jay, long-tailed tit, magpie, robin, common shrew, wood mouse, field vole, bank vole, marbled white and six-spot burnet.
- 3.5.3 On a separate survey on the 21st of May 2023 members of the Herts Invertebrate Project Ian Carle and David Carr undertook a survey within the Green space east of Clothall Common area of the Site. These results were shared with BMD to encompass within this report.
- 3.5.4 Species of note which were recorded included:
 - Small blue butterfly - recorded in good numbers which could suggest a breeding population on restricted to suitable habitat adjacent to known small blue butterfly populations along the A507, located near the green space east of Clothall Common;
 - Sandrunner shieldbug;
 - Weevil species, *Tychius schneideri*;
 - *Megalonotus antennatus*; and
 - *Argenna subnigra*

2024 Results

- 3.5.5 During the extensive survey visits undertaken at the Application Site during 2024, the following protected and notable species were also recorded:
 - Red kite – similarly to the 2022 season, red kite were observed throughout the arable and grassland fields on site;
 - Brown hare – the species were observed throughout the northern arable fields during nesting bird checks prior to archaeological works;
 - Lizard orchid – lizard orchid was again identified during breeding bird surveys within the rough grassland area of Clothall Common in the southeast of the Site;

- Small blue – the species were recorded again on Clothall Common during the breeding bird surveys
 - Common lizard - a single common lizard was observed along an arable grassland margin along the field immediately south of Clothall Common during a nesting bird check on the 1st of May, prior to reptile surveys taking place. It was recorded within close proximity to the known population within the Common.
- 3.5.6 An abundant assemblage of orb-weaver spiders was observed to be utilising the rough grassland area at the most southern point of the Site during the September bat static deployments, including the wasp spider.

3.6 Verification Survey & Botanical Assessment

- 3.6.1 A site visit was undertaken on the 28th May 2024 consisting of a habitat verification assessment of the Site and the local environment. Findings were compared to the prior 2023 verification assessment of the Site, as detailed within BMD.21.0045.RPE-TN.807.A.Verification Assessment, in order to highlight any notable changes in habitats present onsite.
- 3.6.2 The following habitats were recorded within the Site during the 2024 surveys:
- Allotments
 - Arable
 - Amenity grassland
 - Bygrave LWS
 - Buildings and hardstanding
 - Dense scrub
 - Hedgerows
 - Improved grassland
 - Mixed scattered trees
 - Poor semi-improved grassland
 - Semi-improved grassland
 - Tall ruderal
 - Woodland
- 3.6.3 For the purpose of this verification, the survey focused on verifying and assessing habitats of botanical value within the Site, including all grassland, woodland and hedgerows within the Site. Full results of all habitats within the Site are detailed within the initial Ecological Assessment (Ref: BMD.21.0045.RPE-P1.801.A.-.Ecology).

Area Habitats

- 3.6.4 Overall, there has been little change in terms of habitats onsite compared with the previous 2022 and 2023 verification assessments.

Arable

- 3.6.5 The arable fields dominate the Site and are subject to intensive management, with frequent cultivation and applications of agro-chemicals considered likely. Such measures significantly reduce plant and invertebrate species diversity and hence the ecological value of such habitats for these species. The arable fields provide suitable habitat for farmland birds such as corn bunting and other Priority species such as brown hare, however the fields lack floral diversity.
- 3.6.6 Furthermore, during the June breeding bird survey, the large field adjacent to the west of the A505 was newly identified as an area of botanical interest, supporting various arable plants of note. Species recorded throughout surveys included prickly poppy, long-headed poppy, rough poppy, Venus' looking glass, henbit dead nettle, small toadflax, dwarf spurge, sun spurge, shepherd's purse, common groundsel, bird's eye speedwell and fumitory species including common fumitory and few-flowered fumitory, a nationally scarce plant.
- 3.6.7 It is considered that the arable land has transitioned to a diverse poppy field due to being temporarily unfarmed and disturbed during ground investigation works/archaeological works which occurred within the field in early May 2024.
- 3.6.8 There were no other changes noted within the arable fields during the 2024 verification survey.

Improved grassland

- 3.6.9 Fields of improved grassland remain similar to those previously recorded within the Site, mostly comprised of grazed pastures. This habitat onsite has very low botanical species and structural diversity, providing limited opportunities for faunal species. Full species lists for these areas are provided within BMD.21.0045.RPE-P1.801.A.-.Ecology.

Amenity grassland

- 3.6.10 Areas of amenity grassland are located throughout the Site, primarily associated with residential gardens that are situated within the boundary. There have been no changes to these habitats onsite since the previous 2023 verification, with low botanical species and structural diversity due to intensive management providing limited value for wildlife.

Semi-improved grassland

- 3.6.11 Several areas of poor and neutral semi-improved grassland are present within the Site, forming the main areas of floristic interest such as Clothall Common, botanically diverse roadside verges/field margins such as the Bygrave Road Verge LWS and the Royston Road roundabout. The verification assessment confirmed these habitats have remained largely unchanged, still supporting a varied assemblage of grass and herbaceous species. These habitats of note are discussed further within Section 4.

Mixed broadleaved woodland

- 3.6.12 The mixed broadleaved woodland within the Site does not meet the criteria of Priority Habitat and is considered to be of poor condition owing to the relatively single age-class of the wood, the narrow and linear nature and limited ground flora due to dense ivy/shading. A lack of species

diversity and ground flora within the woodland was recorded in 2023. This is still the case from the 2024 updated survey.

Linear Habitats

Hedgerows

- 3.6.13 There have been no significant changes to the hedgerows present within the Site since the 2023 survey. All hedgerows onsite still meet UK Priority Habitat Criteria. All species-rich hedgerows were assessed against the Hedgerow Regulations 1997 criteria. Results and further evaluation of the hedgerow features present onsite is detailed within Section 4.

Ditches

- 3.6.14 There have been no changes to the ditches present within the Site, they remain small and have botanically limited ecological value. However, as previously identified, these features in association with hedgerows provide some opportunities for certain faunal species to disperse across and agricultural landscape, particularly amphibians.

Railway corridor

- 3.6.15 Although largely offsite, the railway corridor which runs through the centre of the Site had significant maintenance and management work completed in 2023. The majority of trees and scrub were removed on both sides of the track, leaving the majority of the corridor as bare ground.
- 3.6.16 Some ruderal and scrub vegetation has re-colonised the embankments since the removal including nettle, bramble and young hawthorn/blackthorn saplings.
- 3.6.17 As a result of recent amendments to the Site boundary, two small sections of the railway corridor now fall within the Site, in comparison to previous verifications and assessments where the entire railway line was located offsite. Habitats within these two sections are detailed fully within the Preliminary Ecological Assessment of the Site (BMD.21.0045.RPE-P1.801.A.-Ecology), however includes two new species-poor hedgerows, areas of ruderal, scrub and bare ground.

4. EVALUATION & CONCLUSIONS

4.1 Introduction

- 4.1.1 This section considers both fauna and flora to evaluate their significance within the Site. A summary of ecological constraints associated with the development is shown on Plan BMD.21.0045.DRE.908 in the Appendix.

4.2 Badger

- 4.2.1 Disused badger setts have previously been recorded on Site. Numerous active sett entrances were identified [REDACTED] during a site walkover in March 2024. An updated assessment of the sett entrances was conducted in November 2024 prior to adjacent bore hole works and were concluded to no longer be in use. Currently, there are no known active badger setts onsite.
- 4.2.2 Numerous fresh badger latrines have been recorded from early spring to late autumn in 2024 whilst conducting the verification walkover and other protected species surveys at the Site, predominantly along the edge of multiple arable field parcels immediately north of the railway corridor, as well as centrally within northern arable parcels. Fresh latrines indicates that the Site, particularly the northern extent, likely forms an important part of badger territory.
- 4.2.3 There is extensive commuting and foraging habitat for badger particularly in the north of the Site. These habitats included: grassland field margins, hedgerows, scattered scrub and a woodland block. The Site has several open boundaries into adjacent badger-suitable landscapes. As such, it is estimated that badger are readily able to commute to/from the Site from adjacent habitats.

4.3 Bat Activity

- 4.3.1 The surveys conducted in 2024 recorded a total of 7 species of bat using the Site:
- Common pipistrelle
 - Soprano pipistrelle
 - *Myotis* sp.
 - Noctule
 - Barbastelle
 - Leisler's
 - Brown long-eared
- 4.3.2 All of the above species are known to occur in the local and surrounding areas, as evidenced by the local records provided in BMD.21.0045.RPE/P1.801.A.-.Ecology.
- 4.3.3 The recorded bat activity was highest along the peripheries of the Site, particularly along the hedgerows and treelines that border the arable/grassland fields, as well as darker road corridors such as Bygrave Road and the Ashwell Road corridor. Soprano pipistrelle and common pipistrelle were observed foraging and commuting over the grassland areas of Clothall Common and along

the periphery of the arable field to the south during the July survey. Noctule was recorded on one occasion along the periphery of the southernmost arable field during the southern transect survey.

- 4.3.4 Bat activity across the Site was largely concentrated along boundary features, with most activity limited to commuting along the central, northern, and eastern boundaries. Additionally, tree-lined hedgerows, rough grassland, and scrubland patches supported foraging activity. However, the wider landscape to the north, east, and south is an open expanse with limited woodland features, offering few additional habitat corridors beyond the Site's immediate boundaries.
- 4.3.5 A single record of barbastelle was detected during the July survey. While two maternity roosts are known to exist in Hertfordshire, it is likely that the record represents a fly-by or occasional commuting route rather than regular activity associated with the Site.
- 4.3.6 Overall, bat activity recorded at the Site during the three surveys in 2024 was low relative to the Site's size. This is likely due to the predominance of large arable fields, which offer limited suitable habitat corridors. Most bat activity was restricted to the peripheries where hedgerows and marginal features provide some connectivity. Activity levels were particularly low in the southern extent of the Site, with a maximum of five species recorded during the June survey. Additionally, the A505 road, located to the south of the Site, may act as a deterrent to bat species due to vehicle disturbance and light pollution, further limiting bat movement in this area.
- 4.3.7 It should also be noted that during the 2023 verification visit, the railway corridor had been intensively managed, removing significant areas of scrub and scattered trees. This has likely impacted bat commuting routes within the area by reducing important connecting habitat, potentially contributing to the lower activity levels observed at the Site.

4.4 Botanical Assessment

Survey Overview

- 4.4.1 The botanical surveys conducted in 2024 reaffirmed the findings of previous assessments, with an updated botanical survey undertaken in May 2024 to validate habitat conditions and floristic composition across the Site.

Key Areas of Floristic Interest

- 4.4.2 The Site contains several areas of notable floristic value, including the neutral and calcareous grassland patches east of Clothall Common, roadside and field margins such as Bygrave Road Verge LWS, connective vegetation such as dense scrub and species-rich hedgerows, and a newly identified arable botanical interest area adjacent to the A505. Each of these areas provides varying levels of biodiversity interest, discussed below.

Clothall Common Grassland

- 4.4.3 The grassland parcel east of Clothall Common is of particular ecological significance due to its floristic diversity and association with calcareous soils, identified as an 'Area of Particular Importance for Biodiversity' within the Hertfordshire LNRS. The presence of localised calcareous

indicator species suggests that soil conditions in this area promote a more diverse assemblage of flora. Notably, orchid diversity was identified, including frequent pyramidal orchid, common spotted orchid, and a single record of Schedule 8-listed lizard orchid.

- 4.4.4 As lizard orchid is listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), consultation with Natural England would be required if any works are proposed within this area. However, current development proposals indicate that this area will be retained and enhanced as a greenspace, ensuring protection of these valuable botanical features.
- 4.4.5 The grassland within Clothall Common itself is interspersed with patches of semi-improved neutral grassland, supporting a moderate diversity of species, including grasses and herbaceous plants typical of calcareous soils. The area has the potential for further ecological enhancement, particularly through targeted management to prevent encroachment of competitive species and to encourage further expansion of orchid populations. This approach also aligns the Hertfordshire LNRS as Clothall Common falls within the 'Grass and Heath Focus Area', where the overall aim is to maintain and enhance existing good quality grassland habitats.
- 4.4.6 Furthermore, the grassland within this area provides an important connective function within the wider landscape, linking semi-natural grassland patches to Bygrave Road Verge LWS and roadside calcareous verge habitats. Retention and enhancement measures could improve ecological connectivity and promote species-rich calcareous grassland development.

Roadside Verges and Bygrave Road LWS

- 4.4.7 A number of roadside verges, particularly along Bygrave Road, contain thin strips of semi-improved neutral grassland supporting a diverse range of grasses and herbaceous species. This includes areas designated as Local Wildlife Sites (LWS), which exhibit elevated floristic diversity compared to the wider Site.
- 4.4.8 The Bygrave Road Verge LWS remains one of the most botanically diverse areas on-site, with species indicative of calcareous soil, including lady's bedstraw, greater knapweed, and field scabious. However, many of the other roadside verges show reduced species richness, with increased dominance of ruderal species such as mugwort and common nettle. This is likely due to lack of appropriate management and nutrient enrichment from adjacent agricultural activities. Fertiliser runoff and infrequent mowing have encouraged coarse grasses to outcompete more delicate calcareous indicators. The LWS also partially falls within an 'Area of Particular Importance for Biodiversity' as outlined within the Hertfordshire LNRS, and therefore the enhancement and retention of the site is considered necessary.
- 4.4.9 Enhancement proposals will focus on restoring and improving these verges through selective cutting regimes to encourage species diversity, removal of nutrient-enriching grass cuttings, and targeted sowing of native calcareous grassland species. Through these interventions, these verges have the potential to contribute significantly to the wider ecological value of the Site, supporting pollinators and maintaining botanical diversity. Similarly to Clothall Common, the LWS partly falls within the 'Grass and Heath Focus Area', where the overall aim is to maintain and enhance existing good quality grassland habitats as part of the Hertfordshire LNRS.

Dense Scrub and Hedgerows

- 4.4.10 The areas of dense scrub onsite are common habitats throughout the county, and whilst generally floristic interest throughout these areas were poor, this area is considered to be on calcareous soils with slight species diversity present within patches. The areas of dense scrub throughout the Site are to be retained where possible and would be further enhanced and managed to prevent succession into woodland.
- 4.4.11 The results found throughout the numerous survey visits and preliminary assessment have been confirmed through an updated botanical survey undertaken during May 2024.
- 4.4.12 It is also recommended that opportunity should be taken to enhance the character of the woodland blocks through implementing appropriate management promoting native species and encouraging a 3-dimensional structure and diverse ground flora to develop.
- 4.4.13 The hedgerow evaluation undertaken at the Application Site within the original PEA concluded the following:
- All native hedgerows within the Site contain 80% or more native woody species and therefore qualify as UK Priority Habitats;
 - There were occasional high value trees within the hedgerows. This habitat feature is common and widespread in the local landscape but is still considered to be of local value;
 - Hedgerows H3, H3a, H8, H9, H10, H11, H27 and H28 all contain 5 or more native woody species and therefore qualify as species-rich hedgerows. The remainder of the hedgerows present at the Site contain 4 or less native woody species and therefore do not qualify as species-rich hedgerows;
 - Hedgerow H28 was considered to qualify as an 'Important' hedgerow under the Hedgerows Regulations 1997 owing to supporting nine woody species; an associated public right of way and at least one tree per 50m of the hedgerow;
 - It should be noted that only low/very low abundances of some of the qualifying native woody species listed under the Wildlife and Landscape criteria of the Hedgerows Regulations 1997 were recorded along some of the remaining species-rich hedgerows onsite (H3, H3a, H8, H9, H10, H11 and H27). Therefore, these may not qualify as 'Important' hedgerows when fully assessed against the Hedgerows Regulations 1997 criteria.
 - None of the remaining species-poor hedgerows present at the Site are considered to qualify as 'Important' under the Hedgerows Regulations 1997.
- 4.4.14 Where possible hedgerows should be retained within the scheme design and be brought into appropriate management, especially H28 and all the species-rich hedgerows. The verification in May 2024 confirmed no change to the status or condition of the hedgerows on site.

Newly Identified Arable Botanical Interest Area (A505)

- 4.4.15 During the June 2024 breeding bird survey, a new area of botanical interest was identified west of the A505, supporting a range of arable plant species of conservation significance.

- 4.4.16 Recorded species included prickly poppy, long-headed poppy, rough poppy, Venus' looking glass, henbit dead nettle, small toadflax, dwarf spurge, sun spurge, shepherd's purse, common groundsel, bird's eye speedwell, and fumitory species, including common fumitory and the nationally scarce few-flowered fumitory.
- 4.4.17 This temporary botanical diversity not previously recorded in any of the ecology studies undertaken at the Site to date, is considered to be a result of disturbance caused by recent archaeological works and ground investigations, which created open, nutrient-poor conditions ideal for arable plant establishment.
- 4.4.18 However, this habitat is not well-established and is likely ephemeral, as natural succession or resumed agricultural activity will alter species composition over time. Many of the species recorded are arable weeds that thrive in disturbed conditions, with populations fluctuating in response to soil disturbance cycles.
- 4.4.19 Nonetheless, this area presents an opportunity for conservation management, particularly through the retention of a managed arable plant strip within the development, targeted monitoring to assess changes in species composition over time, and soil disturbance management to maintain conditions suitable for rare arable species. As the newly identified area falls within a 'rare arable plant' zone as part of the Hertfordshire LNRS, retention of rare arable plant strips within the final scheme design will link to strategic biodiversity enhancement as well as aiding to offset the loss of arable habitat within these zones.
- 4.4.20 If properly managed, this could contribute to biodiversity net gain (BNG) objectives, particularly for arable plant conservation.

Conclusion

- 4.4.21 The botanical survey has reaffirmed the ecological value of Clothall Common grasslands, roadside verges, hedgerows, and the newly identified arable botanical interest area. Retention and enhancement strategies will be key to ensuring that these features contribute to BNG and long-term conservation objectives outlined within the Hertfordshire LNRS.

4.5 Breeding Birds

- 4.5.1 The breeding bird survey recorded 17 species holding territory within the survey area (confirmed, probable and possible territories). Using the criteria adapted from Fuller, this would mean the breeding bird assemblage onsite is of local importance only. The survey area includes extensive areas of rough grassland mixed with scrub and some areas of woodland. The areas of rough grassland support high densities of breeding skylark and meadow pipit and this habitat is likely to be scarce at a county level.
- 4.5.2 With regard to corn bunting, the 2024 survey documented the continued presence of territorial males on arable land to the north, east and south of the Site. The survey results indicate that surrounding farmland (outside the Site) may also support concentrations of breeding corn buntings that be of district or county importance

- 4.5.3 Along the A505 singing males were noted mainly on the southern side of the carriageway. The area south of the A505 supports a breeding population of corn bunting and it should not be assumed that the territories of these birds include parts of the Site. Song posts along the hedgerow forming the northern boundary of the Site are used by male corn bunting who appear to have territories centred both within the Site and those with territories located in fields outside the site (to the north and east). More detailed surveys would be required along this stretch of hedgerow (totalling 1.3km) to accurately plot the distribution of territories within and outside the Site boundary.
- 4.5.4 The 2024 survey recorded 21 singing male corn bunting within the Site. The number of singing males present in 2024 was very similar to the number recorded in 2022. Survey data for the Site since 2017 suggests the Site supports a relatively stable breeding population.
- 4.5.5 The Site continues to support approximately 10% of the singing male corn buntings present in Hertfordshire based on most recent population estimates. The population of breeding corn bunting within the Site appears to have remained relatively stable over the 8 years.

Comparisons of the results of breeding corn bunting surveys

- 4.5.6 The previous surveys of breeding corn bunting have identified a population of county importance breeding within the Site. The 2024 survey results confirmed the continued presence of a breeding population representing around 10% of the singing male corn buntings within the county. The population of singing males within the Site appears to have remained relatively stable over the period 2017-2024.
- 4.5.7 The 2019, 2022 and 2024 surveys do suggest high degree of fidelity to certain parts of the Site by male corn bunting. Territories have been recorded in very similar locations in all three years in certain parts of the Site. It is impossible to determine if these records relate to the same males or if these are just parts of the Site that contain optimal habitat features for corn bunting. Similar patterns of occupancy of the same territories by corn bunting over several years has also been noted on surveys of adjacent land.
- 4.5.8 The 2024 survey has confirmed the findings of the 2022 survey which seemed to indicate that certain landscape features and parts of the Site were particularly attractive to territorial corn bunting. The hedgerow running along the northern boundary of the Site is extensively used as corn bunting to sing from. In 2022 a total of five singing male corn bunting were recorded along the hedgerow running along the northern boundary of the site six singing males were recorded along this hedgerow in 2024.
- 4.5.9 Similarly, there are a number of territories running along the Bygrave Road/Ashwell Road. In 2022 five singing male corn bunting were recorded holding territories either side of Bygrave Road/Ashwell Road; in 2024 four singing males were recorded along this road.
- 4.5.10 The distribution of corn bunting territories recorded across the Site north of the railway line in 2019, 2022 and 2024 has changed little. Territorial males are widely distributed across arable land north of the railway. More singing males were recorded along the northern boundary in 2022 and 2024 than in 2019, although this may be a result of differences in the way territories were ascribed between the 2019 survey and subsequent surveys. The 2022 and 2024 surveys may

have mapped singing males where the majority of the territory is located north of the Site boundary.

- 4.5.11 Three territorial males on the area of rough grassland and scrub at the eastern end of Clothall Common in 2022. Territorial corn bunting were not recorded using this area in 2019 or 2024. The reason for the absence of corn bunting in this area in 2024 is not clear as, superficially, the habitat appears largely unchanged since 2022. The assemblage of other birds using the area for breeding was very similar in 2022 and 2024.
- 4.5.12 In 2024 corn bunting were recorded using the field north of Salisbury Road in Baldock (east of North Road); two territorial males were recorded using this field. Birds were not recorded using this field in 2019 or 2022. Given the changes in habitat within the Site between 2022 and 2024 and the fact the overall number of singing corn bunting remained stable it is considered these birds were responding to the availability of suitable habitat within the Site.
- 4.5.13 The three surveys show that although there is inter-year variability in the distribution of singing male corn buntings within the Site there appears to be sufficient suitable habitat to support around 20 singing males. The range of habitats present on Site (various arable crops, pasture, scrub and rough grassland) provide habitat that provides breeding habitat for corn bunting throughout the breeding season.

Conclusions and mitigation options

- 4.5.14 The Site supports a diverse assemblage of breeding birds, including an onsite population of corn bunting with county importance for the species. The 2024 breeding corn bunting survey has demonstrated that the Site continues to support around 10% of the singing male corn buntings present in Hertfordshire. The Site is therefore of county importance for this species. Without appropriate mitigation the proposed development of the Site will adversely affect the breeding population of corn bunting at a county level.
- 4.5.15 Although corn bunting are primarily associated with arable land in Hertfordshire, in other parts of southern England they can be found on chalk grassland and scrub habitats (e.g. Salisbury Plain in Wiltshire and Martin Down in Hampshire).
- 4.5.16 It may be possible to mitigate the loss of some of the corn bunting territories present in the arable fields through the provision of areas of rough calcareous grassland with scattered trees and scrub within the final scheme design. The inclusion of poles or fences should also be considered to provide song posts for corn buntings as new habitats develop. Uncultivated grassland should support a higher insect biomass than arable crops which would benefit provisioning adults.
- 4.5.17 The lack of invertebrate food to enable adult corn bunting to feed young has been identified as a major factor leading to the collapse of the Schleswig-Holstein population in Germany. Studies in England have shown that invertebrates fed to corn bunting nestlings in southern England have declined in abundance on lowland farms (Aebischer and Ward, 1997).
- 4.5.18 Studies of foraging corn buntings in southern England found birds preferentially selected grassy field margins, spring-sown barley, unintensified grassland or set aside (Brickle, Harper, Aebischer and Cockayne, 2001). The same study found that insect densities (of the four main

invertebrate groups fed to corn bunting chicks) were highest in unintensified grassland and field margins. The provision of areas of uncultivated grassland could assist in supporting breeding corn bunting through providing high quality foraging habitat for adult birds.

- 4.5.19 A study looking at the nesting preferences of corn bunting (Perkins, Maggs and Wilson, 2015) found that nesting attempts by corn buntings using rough grassland did not vary seasonally. Breeding corn bunting appear to favour sward density over sward height with bird preferentially selecting fields with a tall, dense sward. This would suggest areas of tall, dense rough grassland would provide suitable nesting habitat for corn bunting throughout the breeding season.
- 4.5.20 On-site mitigation measures are unlikely to be able to fully mitigate the loss of extensive areas of arable land within the Site. A variety of crop types appears to be important to nesting corn bunting as nesting preferences vary within the breeding season (Perkins, Maggs and Wilson, 2015). The provision of areas of wildflower mixes and around the margins of the Site within 100m of off-site arable habitat could help bolster breeding success through providing invertebrate-rich habitat for foraging adults. The measure may help improve rates of chick survival in arable area immediately adjacent to the Site.
- 4.5.21 To mitigate the loss of arable areas on site; arable habitat supported the entire corn bunting breeding population in 2024, off-site mitigation is likely to be required. On site surveys have already demonstrated the presence of breeding corn buntings on arable land to the north, east and south of the Site. Given the sedentary nature of corn buntings off-site mitigation schemes should look to identify suitable areas close to the Site to maintain the local population. Ringing data would suggest that mitigation areas within c5km of the Site are sufficiently close to be reached by corn buntings.
- 4.5.22 To be successful off-site mitigation will need to increase the carrying capacity of arable land used by corn bunting through improving the quality of existing nesting and foraging habitat. Any measures that may improve breeding success should also be considered.
- 4.5.23 Various suitable mitigation sites have been identified within the locality and 5 km radius of the Site where corn bunting territories are known and have been mapped accordingly as depicted within the relevant report Ref: BMD.21.0045.RPE/TN.810.A. As stated within this document, mitigation measures should focus on increasing the number of breeding corn buntings already occupying offsite mitigation areas, as well as aiming to enhance breeding success and over-wintering survival rates. Management methods include the provision of doubled drilled strips of cereals in the centre of fields, areas of sacrificial cereal crops and 5 m wildflower field margins. The provision of double-drilled lengths of crops in off-site fields used for cereal production could help support the local corn bunting population through providing areas preferentially selected by corn bunting. The double sown strips should be provided in fields of both autumn and spring sown cereals and positioned towards the centre of the fields selected. Positioning the strips towards the centre of fields and away from the edges should assist in improving nest survival compared to nests located close to field margins.
- 4.5.24 Many farmland species are experiencing severe population declines in the wider countryside. The site supports large numbers of additional declining farmland species including skylark and linnet. These species are associated with the arable land, rough grassland and periphery features

onsite. The mitigation measures set out for corn bunting should also benefit many of these species.

- 4.5.25 The provision of scrub and rough grassland habitats within the final design is likely to provide effective mitigation for the impacts on many of the other breeding species present on Site. The habitats along the green corridors as well as existing high value grassland should be retained where feasible as they offer a range of diverse habitats for breeding birds.
- 4.5.26 Habitat enhancement in the form of the creation of SuDS would provide additional habitat for species such as reed bunting. These habitats also provide valuable foraging resources for species such as house sparrow that feed their young on invertebrates.
- 4.5.27 Large, multi-phase developments, provide breeding opportunities for farmland birds during the development phases. Disturbed ground is readily colonised by annual plants that provide a source of seeds for many species. Areas of fallow land or cleared land can provide breeding opportunities for species such as skylark, lapwing and grey partridge. Opportunities to provide areas of temporary mitigation during the development of the site should be considered, as short-term increases in local populations of some species can occur when suitable habitat are present, benefiting the local bird populations.

4.6 Reptiles

- 4.6.1 Two species of reptile were recorded onsite during the reptile surveys conducted between May and June 2024. The species were common lizard and slow worm.
- 4.6.2 The overall Site result for common lizard (a maximum count of 6 adults during a single visit) indicates a 'low' population.
- 4.6.3 The overall score for slow worm (a maximum count of 7 adults observed during one visit) indicates a 'low' population.
- 4.6.4 The maximum counts for each species during 2024 was lower than that recorded in 2022 likely due to a smaller number of transects deployed across the Site. Overall, however, the Site continues to support a 'low' population of both common lizard and slow worm as recorded during the 2022 surveys also.
- 4.6.5 No other species of reptile were recorded during the survey.
- 4.6.6 Transect 4-6 within Clothall Common and transect 10 within the southwest of the Site (see Plan Ref BMD.21.0045.DRE.915 for transect locations) within grassland areas were where all reptiles were recorded.
- 4.6.7 Generally large areas of the Application Site were considered sub-optimal for reptile being either too open (e.g. the arable field parcels) or lacking optimal reptile habitat. As such, the reptile results indicate a scattered distribution of reptiles associated with optimal habitat areas on the margins of larger habitat blocks (e.g. rough grassland areas on field margins) along with the population of common lizards on Clothall Common.

4.6.8 To ensure compliance with the Wildlife and Countryside Act 1981 (As Amended), reptile mitigation strategies will be developed in detail for the proposed scheme and presented in a construction and environmental management plan. In line with HGBI (2016) guidance, the aims of the mitigation strategies will be to:

- Protect reptiles from any harm that might arise during the construction of the Scheme;
- Ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the existing reptile population during construction and once completed; and
- Ensure no net loss of local reptile conservation status.

4.7 Other Species – Incidental Observations

4.7.1 A number of other species were identified incidentally within the Application Site.

4.7.2 S41 butterflies (small blue) were identified utilising the rough grassland to the east of Clothall Common residential block. It is understood that the habitats in which the butterflies are present as well as other notable invertebrates were recorded will be retained and enhanced within the proposals.

4.7.3 A single lizard orchid was identified during a breeding bird survey within the rough grassland to the east of Clothall Common residential block. As an extremely rare orchid listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), consultation with Natural England would be required if works are to occur within this area. Presently the plant is situated within an area to be retained and enhanced.

4.7.4 A notable arable plant assemblage was identified within an arable field immediately west of the A505 including the nationally scarce few-flowered fumitory. It is considered species have colonised the area due to an absence of intensive farming of the area during ground investigations over the spring and summer.

4.7.5 Red kite, a schedule 1 bird, was recorded on site during various surveys.

4.7.6 A number of common, notable and protected bird species were identified incidentally utilising the Site during the numerous survey visits. This includes robin, wood pigeon, blackbird, magpie, and carrion crow.

4.7.7 Mammals such as red fox, brown hare and rabbit were also recorded on Site during the survey visits.

5. RECOMMENDATIONS

- 5.1.1 The presence of protected and notable species has been confirmed on Site and as such the following mitigation and compensation/enhancement requirements have been identified:
- 5.1.2 **Reptiles:** the proposed development areas avoid optimal areas for reptiles and thus through the mitigation hierarchy impacts will be minimised. Consequently, the main mitigation measures will be habitat manipulation/displacement. Specific habitat creation/enhancement works for reptiles would include scrub management, creation of log and stone piles and provision of grass heaps (for grass snake & slow worm).
- 5.1.3 Reptiles should be safeguarded to ensure wildlife legislation (notably the Wildlife and Countryside Act 1981 as amended) is not breached.
- 5.1.4 Mitigation should be implemented to protect reptiles from harm during site clearance and construction works and to ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate reptiles on the Site with no net loss of the local reptile conservation status.
- 5.1.5 High risk areas for reptiles include scrub and grassland mosaics such as Clothall Common and the peripheries of the Site which are proposed to be retained.
- 5.1.6 Mitigation measures in relation to loss of habitat areas known to support reptiles will include:
- Risk area mapping: As part of the assignment of risk areas, reptile risk areas will also be taken into consideration to ensure the appropriate level of mitigation is implemented as set out below.
 - The following works to be undertaken during the reptile active period – March to October inclusive.
- 5.1.7 At present, displacement works is considered to be the most appropriate method given the retention of large areas of habitat that reptiles can be moved into and the areas of suitable habitat which are proposed to be retained. These areas would be subject to enhancements including scrub/grass management and creation of log piles and hibernacula features.
- 5.1.8 Where only small areas of habitat on the periphery of retained core habitat areas are being affected, mitigation works will include displacement of reptiles from work areas into adjacent retained habitats through gradual reduction of vegetation in a phased/directional manner.
- 5.1.9 This approach also relates to low-risk areas. Such works would be conducted during the reptile active period (March to October inclusive). The works are described in detail below and will include directional clearance of vegetation and phased height reduction which will encourage displacement of reptiles (and other species) toward retained habitat features. Such works would be planned and overseen by the Ecological Clerk of Works.
- 5.1.10 Reptile Trapping and Translocation works if required would include:
- The high-risk areas will be fenced with reptile exclusion fencing and subject to a period of trapping; total trapping days to be informed by trapping progress, with minimum trapping

days set for each area (based on area's size and known population sizes). This will include intensive hand capture effort and gradual reduction of areas, through use of habitat manipulation methods to concentrate reptiles into smaller and smaller areas of suitable habitat within each trapping area. This will be followed by hand searching and then supervised site stripping with caught reptiles relocated to designated and enhanced receptor areas.

- The receptor areas will be within the Site boundaries and as such reptiles will be relocated within the Site rather than translocated to distant receptor sites.
- The receptor areas will be the nearest retained reptile habitat area and will be enhanced with additional features ahead of receiving relocated reptiles.
- Receptor areas would be clearly defined on Site and would be in areas that would not be subject to any disturbance works (other than low level management and maintenance works associated with landscape improvements and works that could be carried out under the method of temporary displacement if required).

- 5.1.11 The Ecological Clerk of Works will review each proposed works area regarding risk to reptile species and will apply the most appropriate approach with regard to the level of mitigation required. This would need to consider the Site clearance programme, seasonal timing constraints and also the time required to clear areas of reptiles if trapping is required.
- 5.1.12 **Bats:** No confirmed roosts have been identified through the survey effort undertaken to date, therefore no specific mitigation is required at this stage in relation to bat roosts.
- 5.1.13 Retention of boundary hedgerows and treelines supplemented with new planting will continue to provide bat foraging and commuting corridors. Retention of dark corridors throughout Site e.g. hedgerows/Royston Road that are utilised by the bat species onsite.
- 5.1.14 Enhancements of the low-quality woodland patch, herb - rich grassland alongside scrub management including targeted planting for increasing nocturnal insect biomass would also benefit bats with regard to new and enhanced foraging areas. Installation of SUDS will also provide additional foraging opportunities for bats. Bat box installations at the Site would also provide roosting features in an area that lacks a range of roost types. Light levels should be kept to the minimum required for safety and follow best practice for lighting in relation to bats and other nocturnal fauna (BCT and ILP, 2023).
- 5.1.15 **Badgers:** the species are confirmed to be utilising the Site, with fresh badger latrines observed onsite during various surveys in 2024. Active sett entrances were previously identified [REDACTED] onsite, however, the most recent assessment in November 2024 observed they were no longer in use. No direct impacts on these setts are anticipated but works near to disused badger setts may be required. Any works in close proximity would need appropriate mitigation or licence depending on the extent and duration of the works and whether the setts have remained inactive.
- 5.1.16 **Notable butterflies:** one S41 species (small blue) is confirmed to be using the south-east grassland fields of the Site. Best practice should be followed to minimise impacts to the conservation status of these species. Opportunity should also be taken to increase suitable habitat such as the rough grassland post development through specific habitat creation schemes

as recommended by Butterfly Conservation. It is understood that the habitats where small blue was recorded is due to be retained and enhanced.

- 5.1.1 **Breeding birds:** pre-work surveys will be necessary for works undertaken during breeding season (March-August) and when works are underway to ensure works are sited away from breeding birds, young and eggs until they have naturally left the nest.
- 5.1.2 Further mitigation for the loss of some of the corn bunting territories present in the arable fields through the provision of areas of rough calcareous grassland with scattered trees and scrub within the final scheme design as outlined within Section 4. The inclusion of poles or fences should also be considered to provide song posts for corn buntings as these new habitats develop.
- 5.1.3 The incorporation of unintensified grassland and field margins results in an increase in invertebrate diversity and therefore provides high quality foraging habitat for adult birds. The inclusion of areas of wildflower mixes around Site margins, within 100 m of offsite arable habitat would aid in breeding success of birds through further providing invertebrate-rich habitat for foraging adults. Furthermore, selected areas of grassland should be managed to a tall, dense sward to provide suitable nesting habitat for corn bunting and other bird species present onsite such as yellowhammer.
- 5.1.4 As well as on-site mitigation measures, off-site mitigation will be required to compensate the loss of arable areas onsite and the associated impact on the corn bunting breeding population. Given the sedentary nature of corn buntings such measures should look to identify suitable areas close to the Site to maintain the local population. Ringing data would suggest that mitigation areas within c. 5km of the Site are sufficiently close to be reached by corn buntings.
- 5.1.5 Surveys at the Site have already determined the presence of breeding corn buntings on arable land to the north, east and south of the Site. Various suitable mitigation sites have been identified within the locality and 5 km radius of the Site where corn bunting territories are known and have been mapped accordingly as depicted within the relevant report Ref: BMD.21.0045.RPE/TN.810.A. As stated within this document, mitigation measures should focus on increasing the number of breeding corn buntings already occupying offsite mitigation areas, as well as aiming to enhance breeding success and over-wintering survival rates. Management methods include the provision of doubled drilled strips of cereals in the centre of fields, areas of sacrificial cereal crops and 5 m wildflower field margins.
- 5.1.6 Full details and recommendations regarding offsite mitigation sites for breeding corn bunting are provided within BMD.21.0045.RPE/TN.810.A.
- 5.1.7 **General habitat enhancement:** opportunities are detailed in the ecological assessment report (BMD.21.0045.RPE/P1.801.A.-.Ecology).
- 5.1.8 The newly identified poppy field supporting a wide range of arable plants may offer an opportunity for enhancement from arable land at a later stage, with a good seed bank present within the soil. It is recommended that the field is monitored in the future to observe any further changes or additional notable species that may colonise the area. This area falls within the 'rare arable plant' zone identified within the Hertfordshire LNRS and therefore strips of arable plants utilising the present seed bank, as well as introducing species, could be considered within the post-

development scheme. Incorporating this will provide strategically significant biodiversity benefits as well mitigating the loss of arable habitat within these zones.

- 5.1.9 Finally, the majority of the Site falls within the 'Herts Chalk Focus Area' as part of the Hertfordshire LNRS, where the priority aim is to support the delivery of new chalk grassland habitats, with these superseding all other habitat types. Therefore, incorporation of new chalk grassland areas within the Site is recommended to provide strategically significant benefits to wildlife present onsite and within the locality.

6. REFERENCES AND BIBLIOGRAPHY

- Aebischer, N.J. & Ward, R.S. 1997. *The distribution of Corn Buntings Miliaria calandra in Sussex in relation to crop type and invertebrate abundance*. In Donald, P.F. & Aebischer, N.J. (eds) *The Ecology and Conservation of Corn Buntings Miliaria calandra*:124-138. Peterborough: Joint Nature Conservation Committee.
- ARG UK (2010). *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Amphibian and Reptile Groups of the United Kingdom.
- Bat Conservation Trust (2023). *Bats and Artificial Lighting at Night' ILP Guidance Note*
- Bickmore, C. J. (2002). *Hedgerow survey handbook: a standard procedure for local surveys in the UK*. London: DEFRA
- Balmer, D.E., Gillings, S. Caffery, B.J., & Swann R.L. (2013). *Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland*. BTO, Thetford.
- Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S.H. (2007). *Bird census techniques (2nd edition)*. Academic press, London.
- BMD (2023). Baldock Green Infrastructure Audit. Bradley Murphy Design: BMD.21.0045.RP.003
- BMD (2025). Preliminary Ecological Appraisal including initial bat: Baldock. Bradley Murphy Design: BMD.21.0045.RPE-P1.801.A.Ecology_Bat
- BMD (2025). Phase 2: Further Ecological Assessment, Baldock. Bradley Murphy Design: BMD.21.0045.RPE-P2.804.A
- BMD (2025). Verification Assessment, Baldock. Bradley Murphy Design: BMD.21.0045.RPE-TN.807.A
- BMD (2025). Assessment of corn bunting mitigation sites, Baldock. Bradley Murphy Design: BMD.21.0045.RPE-TN.810.A.
- Brickle, N.W., Harper, D.G.C., Aebischer, N.J and Cockayne, S.H. (2001) *Effects of aricultural intensification on the breeding success of corn buntings Miliaria calandra*. Journal of Applied Ecology. <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1046/j.1365-2664.2000.00542.x>
- British Standards Institute (BSI) (2013). *BS42020 - Biodiversity Code of Practice for Planning and Development*. BSI, London.
- Collins, J (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London
- CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal (2nd edn)*. Winchester: CIEEM.
- CIEEM (2017a). *Guidelines on Ecological Report Writing (2nd edn)*. Winchester: CIEEM.
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3*. Chartered Institute of Ecology and Environmental Management, Winchester.
- Cramp, S., & Perrins, C.M. (Eds). 1994. *Handbook of the Birds of Europe, the Middle East and North Africa. The Birds of the Western Palearctic. Volume IX: Buntings and New World warblers*. Oxford University Press.
- Department for Environment, Food and Rural Affairs. (2024). *The Statutory Biodiversity Metric User Guide*. July 2024
- Department for Environment, Food and Rural Affairs (2024). *The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology*. February 2024.
- Donald, P.F & Evans, A.D. (1995). *Habitat selection and population size of corn buntings Miliaria calandra breeding in Britain in 1993*. Bird Study, 42:3. 190-204.
- Donald, P.F. & C. Forrest. (1995). *The effects of agricultural change on population size of corn buntings Miliaria calandra on individual farms*. Bird Study, 42:3, 205-215

- Donald, P.F. (1997). The corn bunting *Miliaria calandra* in Britain: a review of current status, patterns of decline and possible causes. In *The ecology and conservation of corn buntings Miliaria calandra* (Eds P.F. Donald and N.J. Aebischer) 11-26. UK Nature Conservation No 13. JNCC. Peterborough.
- Eaton, M, Aebischer, N, Brown, A, Hearn, R, Lock, L, Musgrove, A, Noble, D, Stroud, D and Gregory, R (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds. (108), pp. 708-746.
- Ecus Ltd (2016). Land at North Baldock, Ecological Appraisal on behalf of Hertfordshire County Council. Project number 6594.
- Environment Agency (2012). Working at Construction and Demolition Sites: PPG6 Pollution Prevention Guidelines (2nd edn). Bristol: Environment Agency.
- Harper, D. (1995). Studies of West Palearctic birds 194: Corn bunting *Miliaria calandra*. British Birds 88: 401-422.
- Harris, S., Cresswell, P. and Jefferies, D. (1989) Surveying Badgers – An Occasional Publication of the Mammal Society – No. 9. The Mammal Society.
- Harris, S.J., Massimino, D., Balmer, D.E., Kelly, L., Noble, D.G., Pearce-Higgins, J.W., Woodcock, P., Wotton, S. Gillings, S. (2022). *The Breeding Bird Survey 2021. BTO Research Report 745*. British Trust for Ornithology, Thetford.
- Herpetofauna Groups of Britain and Ireland (HGBI).2016. Evaluating local mitigation/translocation: best practice and lawful standards
- Hertfordshire County Council (2025). Hertfordshire Local Nature Recovery Strategy *DRAFT*.
- JNCC (2010). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Peterborough: JNCC.
- Maddock, A (ed.) (2011). UK Biodiversity Action Plan; Priority Habitat Descriptions (Updated Dec 2011).
- Mammal Society (1989). Occasional Publication No. 9 – Surveying Badgers. Mammal Society.
- Mason, C.F & Macdonald, S.M. (2000). Corn Bunting *Miliaria calandra* populations, landscape and land use in an arable district of eastern England. *Bird Conservation International* (2000). 10. 169-186.
- Natural England (2010). Higher Level Stewardship Farm Environment Plan Manual (3rd ed).
- Natural England (2015). <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>
- Natural England (2015b). *Wild birds: surveys and mitigation for development projects*. Downloaded from <https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects> [Accessed 21/11/2022].
- Orchard, M. (2015). The 2014 Hertfordshire Corn Bunting Survey. In the Hertfordshire Bird Report 2014. Transactions of the Hertfordshire Natural History Society, Volume 47, Part 3, November 2015.
- Panks, S. *et al.* (2023a). Biodiversity metric 4.0: Auditing and accounting for biodiversity – User Guide. Natural England.
- Panks, S. *et al.* (2023b). Biodiversity metric 4.0: Auditing and accounting for biodiversity – Technical Supplement. Natural England
- Perkins, A.J., Maggs, H.E and Wilson, J.D (2015) *Crop sward structure explains seasonal variation in nest site selection and informs agri-environmental scheme design for a species of high conservation concern; the corn bunting *Emberiza calandra**. Bird Study. Vol 62, Issue 4.
<https://www.tandfonline.com/doi/full/10.1080/00063657.2015.1076763>
- Smith, K. W., Dee, C. W., & Fernside, J. D. (2015). *Birds of Hertfordshire*. Hertfordshire Natural History Society.
- Stanbury, A., Eaton, M., Aebischer., Balmer, B., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D & Win, I. (2021). The status of our bird populations: the fifth *Birds of*

- Conservation Concern in the UK, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds. (114), pp. 723-747.*
- Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M & Baillie, S.R. (Eds). (2002). *The Migration Atlas: movements of the birds of Britain and Ireland*. T&AD Poyser. London.
- Wingfield Gibbons, D, Reid, J.B & Chapman, R.A. 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. BTO, SOC and IBC. T&AD Poyser. London.
- WYG, (2017a), Baldock South East on behalf of Hertfordshire County Council, Corn Bunting and Farmland Bird Report, Project number A090070-171.
- WYG, (2017b), Baldock South East on behalf of Hertfordshire County Council, Ecological Appraisal Report, Project number A090070-171.
- WYG, (2017c), Baldock North on behalf of Hertfordshire County Council, Corn Bunting and Farmland Bird Report, Project number A090070-171.
- WYG, (2019a), Ecology Chapter, Baldock North, Report on behalf of Hertfordshire County Council, Project number A090070-171-2.
- WYG, (2019a), Updated Ecological Appraisal, Baldock North, Report on behalf of Hertfordshire County Council, Project number A090070-171-2.
- WYG, (2019b), Updated Ecological Appraisal, Baldock South-east, Report on behalf of Hertfordshire County Council, Project number A090070-171-2.
- WYG, (2020a), Bat Activity Report, Baldock South-east, Report on behalf of Hertfordshire County Council, Project number A090700-171-2
- WYG, (2020b), Bat Activity Report, Baldock North, Report on behalf of Hertfordshire County Council, Project number A090700-171-2
- WYG, (2020d), Baldock Mitigation Sites, Report on behalf of Hertfordshire County Council, Project number A090700-171-2

7. GLOSSARY

7.1 Scientific Terms and Acronyms

Badger sett An underground complex of tunnels utilised by badger as a den and accessed by one or more entrances at ground surface level

BoCC Birds of Conservation Concern, the UK Red-list for birds, produced by the British Trust for Ornithology and last updated in December 2021.

BTO British Trust for Ornithology

CBC Common Bird Census

CIEEM Chartered Institute of Ecology and Environmental Management; the professional organisation and provider of professional codes of conduct for ecological consultancy.

Defunct hedgerow A hedgerow which is not stock proof without the need for fencing.

EPS European Protected Species For the purposes of this report EPS are species that require particular licences to allow certain works to go ahead. Species falling within the following situations are not considered as EPS within this report:

- Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).
- Birds listed on Annex 1 of the Birds Directive (European legislation). The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

HERC Hertfordshire Environmental Record Centre.

Important Hedgerow Any hedgerow which has existed for 30 years or more and satisfies a number of criteria listed within Part II of Schedule 1 to the Hedgerow Regulations 1997. For the purposes of this report, only wildlife and landscape criteria are considered; archaeological and historical criteria are not assessed.

Intact hedgerow A hedgerow which is stock proof with the need for fencing.

LBAP Local Biodiversity Action Plan.

Level of protection – ‘EU’ Protected under the Conservation of Habitats and Species Regulations (2017).

Level of protection – ‘UK’ Protected under the Wildlife and Countryside Act 1981 (as amended).

NIA Nature Improvement Areas.

Non-native invasive species For the purposes of this report: species listed on Schedule 9 of the wildlife and Countryside Act 1981 (as amended).

Notable species A species which is listed as a UK Priority Species, carries an unfavourable conservation status (e.g. scarce, rare, threatened, Red-listed), is invasive or is otherwise worthy of note from an ecological perspective.

Protected species A species protected under specific UK or European legislation, including Habitats Directive, Wildlife and Countryside Act.

SSSI Site of Species Scientific Interest. Statutory designation of biological or geological importance

UK Priority Habitat and species A habitat or species identified as a priority for conservation in accordance with Section 41 of the Natural Environment and Rural Communities Act (2006). Section 40 of the Act places a duty on public authorities to have regard for the conservation objectives of these habitats and species. (Also known as Section 41 (S41) habitats/species).

7.2 Bird Specific Terminology and Terms

BoCC Red list

- 7.2.1 Species that are globally threatened (Critically endangered, endangered and vulnerable but not near threatened) using IUCN guidelines, as assessed by Birdlife International in 2021.
- 7.2.2 Historic decline: Historic decline in breeding populations. Species judged to have declined severely between 1800 and 1995 from an assessment conducted by Gibbens *et al.* (1996) and which have not recovered subsequently.
- 7.2.3 Breeding population decline: Severe decline in UK breeding population size, either a decline of over 50% over 25 years or the longer-term defined as the period since the first BoCC review (1969).
- 7.2.4 Non-breeding population decline: Severe decline in UK non-breeding population of over 50% over a 25-year period or over a longer-term defined as the period since the first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding populations were assessed.
- 7.2.5 Breeding range decline: Species that have experienced a severe decline in the UK range between the breeding bird atlases in 1988-1991 and 2007-2011 or 1968-1971 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.6 Non-breeding range decline: Severe decline in UK range (more than 50%) between the wintering bird atlases in 1981-1984 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.

BoCC Amber list

- 7.2.7 The European Red List of Birds (ERLoB) was published in 2021 by Birdlife International. It covers IUCN Red list assessments of regional extinction risk with no consideration of the wider suite of measures (species rarity, localization, moderate decline and depletion) included in SPEC assessments. Any species on the European Red list (Critically endangered, endangered, vulnerable) is included on the Amber list.
- 7.2.8 Historic decline – recovery: Species Red listed for historic decline in a previous review but with a substantial recent recovery (at least 100% in the last 25 years or the longer-term period). Longer-term is defined as the period since the first BoCC review (1969).
- 7.2.9 Breeding population decline: Species experiencing a moderate decline in UK breeding population (more than 25% but less than 50%) over 25 years of the longer-term period. Longer-term is defined as the period since the first BoCC review (1969).
- 7.2.10 Non-breeding population decline: Moderate decline in UK non-breeding populations (more than 25% but less than 50%) over a 25-year period or over longer-term defined as the period since the first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding population was assessed.
- 7.2.11 Breeding range decline: Species that have experienced a moderate decline (more than 25% but less than 50%) in the UK range between the breeding bird atlases in 1988-1991 and 2007-2011 or 1968-1971 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.12 Non-breeding range decline: Moderate decline in UK range (more than 25% but less than 50%) between the wintering bird atlases in 1981-1984 and 2007-2011 as measured by the calculated change in the number of occupied 10 km squares.
- 7.2.13 Breeding and non-breeding rarity: Species with a UK breeding population of fewer than 300 pairs or with a UK non-breeding population of less than 900 individuals.
- 7.2.14 Breeding and non-breeding localization: Localized breeding or non-breeding population with at least 50% of UK population found in 10 or fewer sites. Sites were defined as either Special Protection Areas or Important Bird Areas. Rare breeding and non-breeding species were not assessed against this criterion as the small population size predisposes them to be restricted to a small number of sites.
- 7.2.15 Breeding or wintering population of International importance: Species with at least 20% of European breeding or non-breeding population found in the UK.

7.3 Scientific Names

- 7.3.1 Scientific names of species mentioned in this report are outlined in Table 7.1.

Table 7.1 Scientific names of species mentioned within this report

English Name	Scientific Name
Mammals (excluding bats)	
Badger	<i>Meles meles</i>
Bank vole	<i>Myodes glareolus</i>
Brown hare	<i>Lepus europaeus</i>
Common shrew	<i>Sorex araneus</i>
European rabbit	<i>Oryctolagus cuniculus</i>
Field vole	<i>Microtus agretis</i>
Red fox	<i>Vulpes vulpes</i>
Wood mouse	<i>Apodemus sylvaticus</i>
Bats	
Barbastelle	<i>Barbastella barbastellus</i>
Brown long-eared	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Leisler's	<i>Nyctalus leisleri</i>
<i>Myotis</i> bat species	<i>Myotis</i> sp.
Noctule	<i>Nyctalus noctula</i>
<i>Nyctalus</i> bat species	<i>Nyctalus</i> sp.
<i>Plecotus</i> bat species	<i>Plecotus</i> sp.
Serotine	<i>Eptesicus serotinus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Birds	
Blackbird	<i>Turdus merula</i>
Buzzard	<i>Buteo buteo</i>
Carrion crow	<i>Corvus corone</i>
Chaffinch	<i>Fringilla coelebs</i>
Coal tit	<i>Periparus ater</i>
Collared dove	<i>Streptopelia decaocto</i>
Common whitethroat	<i>Sylvia communis</i>
Corn bunting	<i>Emberiza calandra</i>
Dunnock	<i>Prunella modularis</i>
European jay	<i>Garrulus glandarius</i>
Goldcrest	<i>Regulus regulus</i>
Goldfinch	<i>Carduelis carduelis</i>
Great tit	<i>Parus major</i>
Greenfinch	<i>Chloris chloris</i>
Grey partridge	<i>Perdix perdix</i>
Hobby	<i>Falco subbuteo</i>
House sparrow	<i>Passer domesticus</i>
Lapwing	<i>Vanellus vanellus</i>
Linnet	<i>Linaria cannabina</i>
Long-tailed tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>
Meadow pipit	<i>Anthus pratensis</i>
Red-legged partridge	<i>Alectoris rufa</i>
Red kite	<i>Milvus milvus</i>
Reed bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Skylark	<i>Alauda arvensis</i>
Song thrush	<i>Turdus philomelos</i>
Sparrowhawk	<i>Accipiter nisus</i>
Starling	<i>Sturnus vulgaris</i>
Swift	<i>Apus apus</i>
Woodcock	<i>Scolopax rusticola</i>
Woodpigeon	<i>Columba palumbus</i>

Wren	<i>Troglodytes troglodytes</i>
Yellow wagtail	<i>Motacilla flava</i>
Yellowhammer	<i>Emberiza citronella</i>
Plants	
Bird's eye speedwell	<i>Veronica persica</i>
Common fumitory	<i>Fumaria officinalis</i>
Common groundsel	<i>Senecio vulgaris</i>
Common nettle	<i>Urtica dioica</i>
Common spotted orchid	<i>Dactylorhiza fuchsii</i>
Dwarf spurge	<i>Euphorbia exigua</i>
Few-flowered fumitory	<i>Fumaria vaillantii</i>
Greater knapweed	<i>Centaurea scabiosa</i>
Henbit dead nettle	<i>Lamium amplexicaule</i>
Lady's bedstraw	<i>Galium verum</i>
Lizard orchid	<i>Himantoglossum hircinum</i>
Long-headed poppy	<i>Papaver dubium</i>
Mugwort	<i>Artemisia vulgaris</i>
Prickly poppy	<i>Papaver argemone</i>
Pyramidal orchid	<i>Anacamptis pyramidalis</i>
Rough poppy	<i>Papaver hybridum</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Small toadflax	<i>Chaenorhinum minus</i>
Sun spurge	<i>Euphorbia helioscopia</i>
Venus' looking glass	<i>Legousia hybrida</i>
Reptiles & Amphibians	
Common lizard	<i>Zootoca vivipara</i>
Grass snake	<i>Natrix helvetica</i>
Great crested newt	<i>Triturus cristatus</i>
Slow worm	<i>Anguis Fragilis</i>
Invertebrates	
Marbled white	<i>Melanargia galathea</i>
Orb-weaver species	<i>Araneidae</i> sp.
Sandrunner shieldbug	<i>Sciocoris cursitans</i>
Six-spot burnet	<i>Zygaena filipendulae</i>
Small blue	<i>Cupido minimus</i>
Wasp spider	<i>Argiope bruennichi</i>
Weevil sp.	<i>Curculionoidea</i>

APPENDICES

A. PLANS

HABITATS AND BOTANICAL INTEREST

Drawing BMD.21.0045.DRE.901: Phase 1 Habitat Survey

Drawing BMD.21.0045.DRE.908: Ecological Constraints Plan

SITE LOCATION

Drawing BMD.21.0045.DRE.902: Site Location

BIRDS

Drawing BMD.21.0045.DRE.914: Breeding bird survey

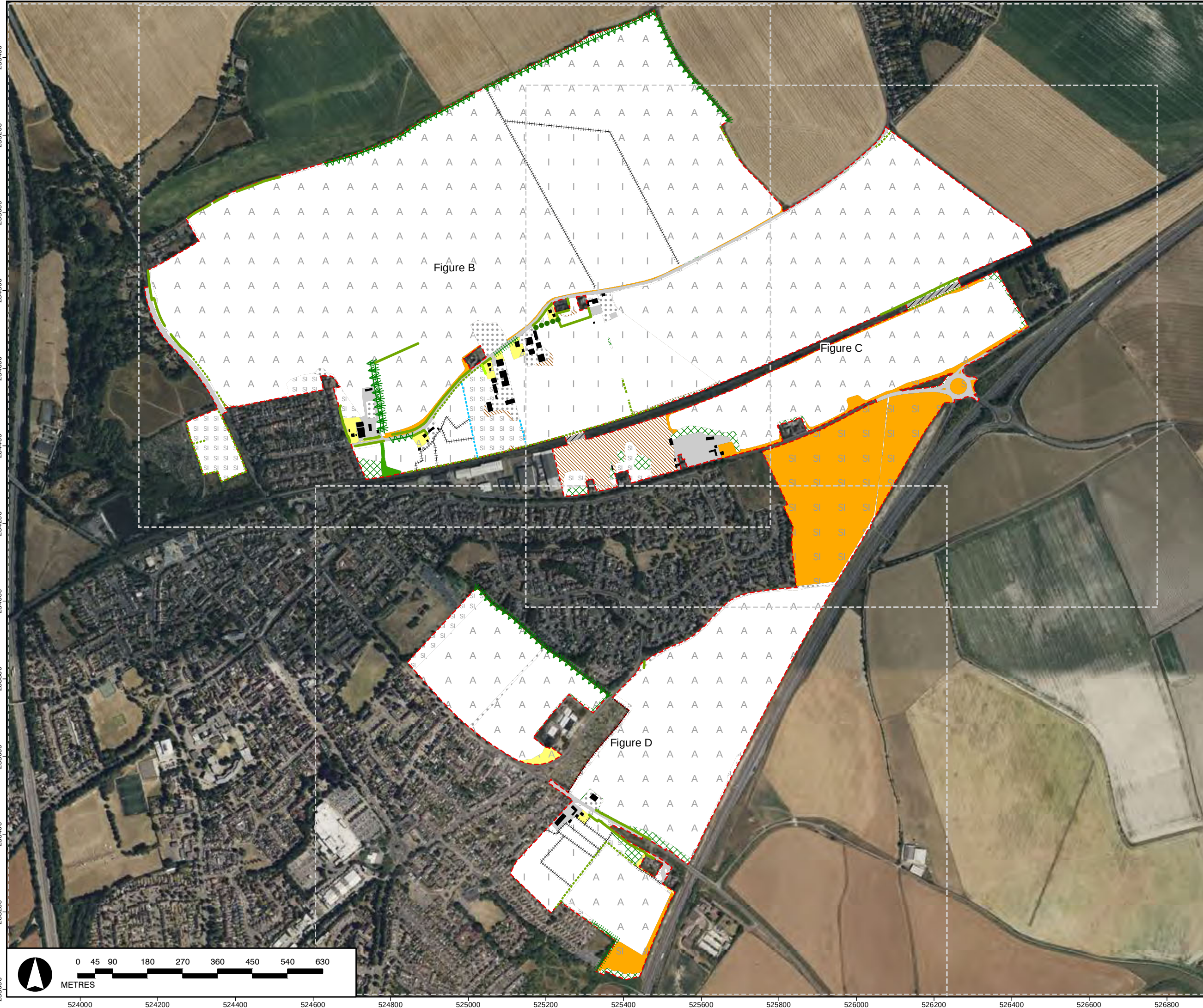
BATS

Drawing BMD.21.0045.DRE.916: Bat Activity Transects

Drawing BMD.21.0045.DRE.917: Bat Activity Results

REPTILES

Drawing BMD.21.0045.DRE.915: Reptile Survey Plan



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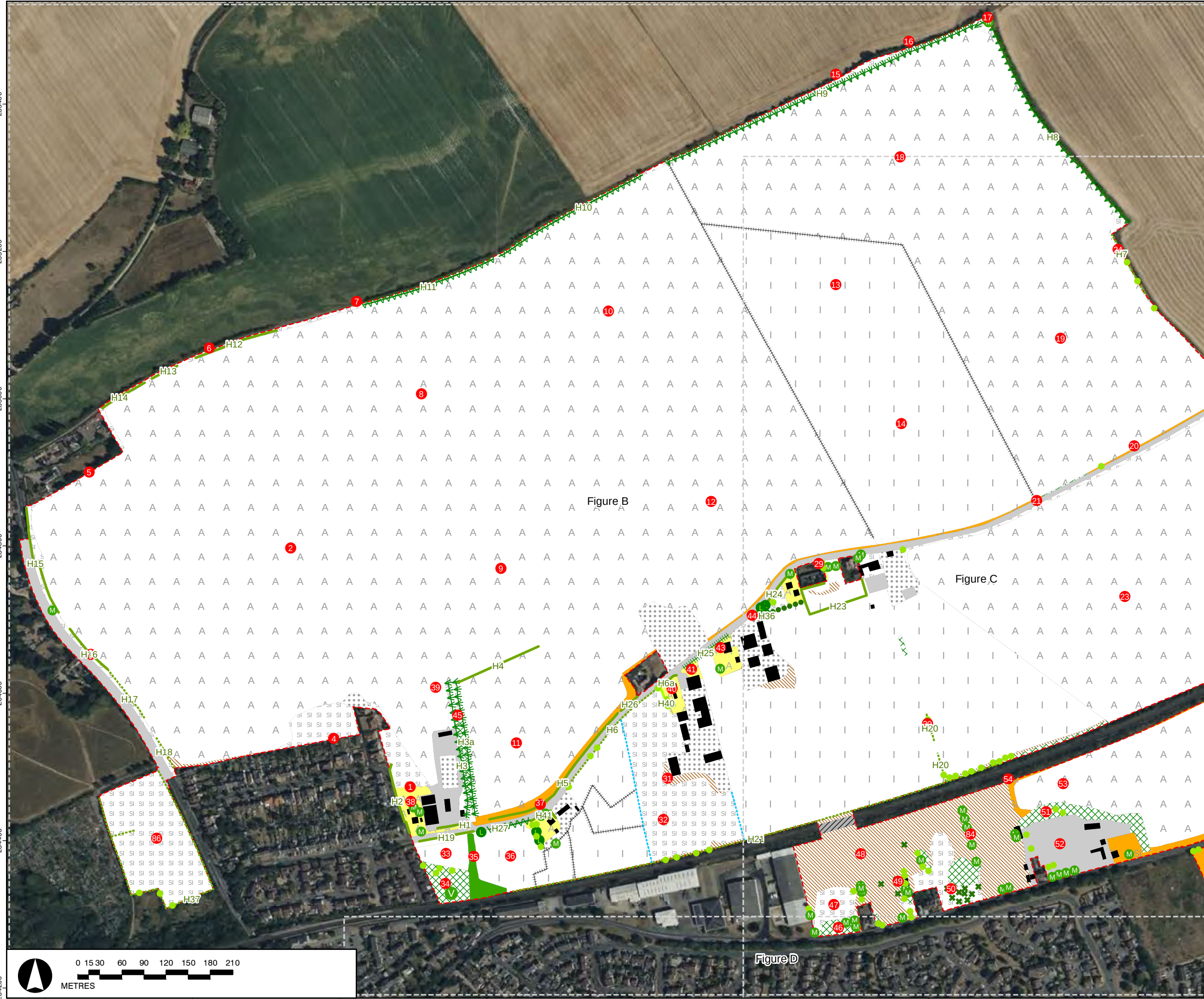
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 Application boundary

Pre-development Habitats

	A1.1.1 - Broadleaved woodland - semi-natural
	A2.1 - Scrub - dense/continuous
	B2.2 - Neutral grassland - semi-improved
	B4 - Improved grassland
	B6 - Poor semi-improved grassland
	C3.1 - Other tall herb and fern - ruderal
	J1.1 - Cultivated/disturbed land - arable
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.6 - Buildings
	J4 - Bare ground
	J5 - Other habitat - road
	J5 - Other habitat - railway
	J2.1.1 - Intact hedge - native species-rich
	J2.1.2 - Intact hedge - species-poor
	J2.2.1 - Defunct hedge - native species-rich
	J2.2.2 - Defunct hedge - species-poor
	J2.3.1 - Hedge with trees - native species-rich
	J2.3.2 - Hedge with trees - species-poor
	Line of trees
	Non-native and ornamental hedgerow
	J2.4 - Fence
	J2.6 - Dry ditch
X	Target note

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Rev	Description	--	
Purpose of Issue			
INFORMATION			
Bradley Murphy Design Ltd Studio 3, Floor 18 Alpha Studios Alpha Tower Suffolk St Queensway Birmingham B1 1TT t: 0121 815 9127 e: info@bradleymurphydesign.co.uk www.bradleymurphydesign.co.uk		BMD	
Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
A : PHASE 1 HABITAT SURVEY			
Drawn	Checked	Approved	Date
MP	LT	JP	17/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	D
Drawing Number			
BMD.21.0045.DRE.901A			



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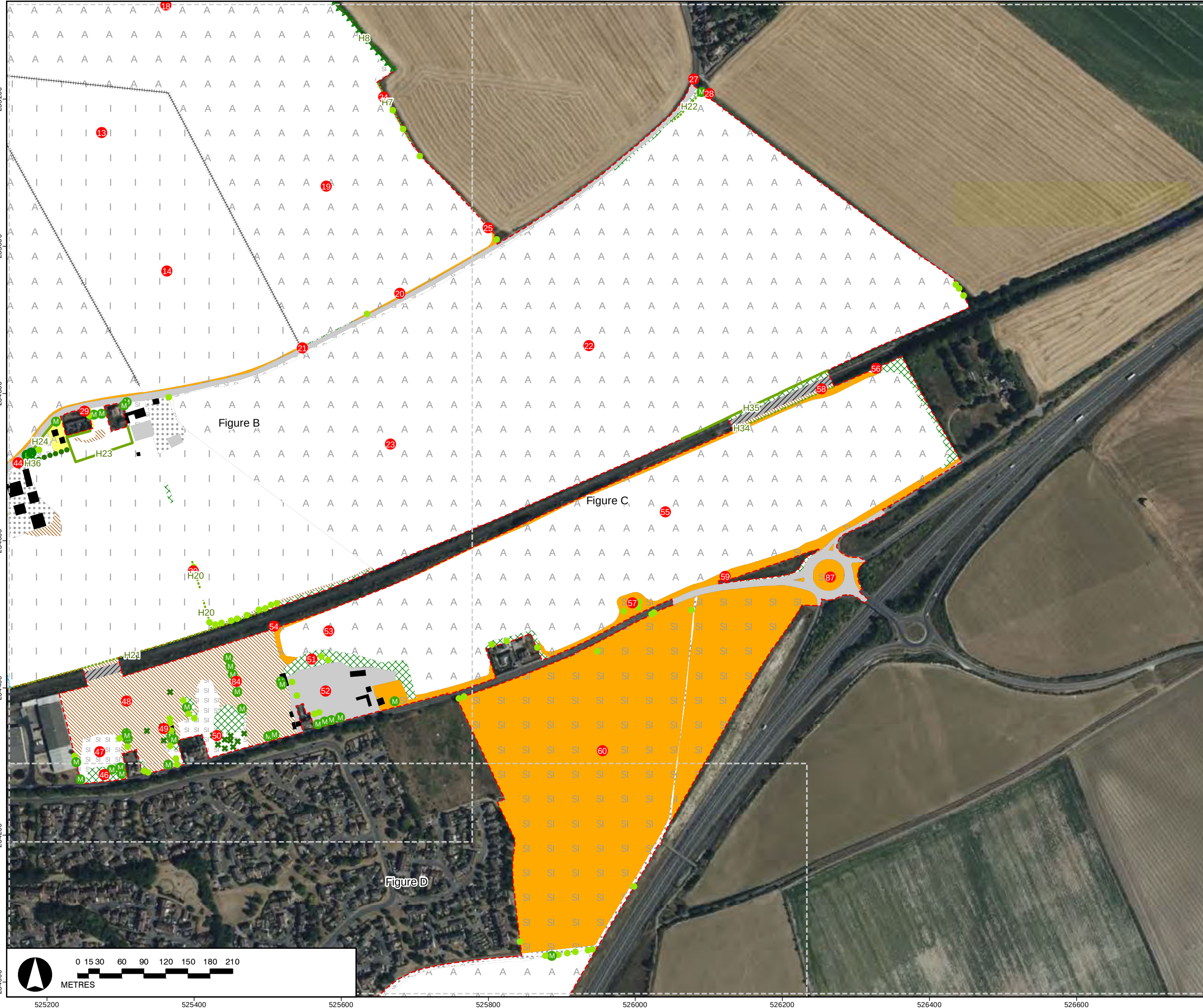
Application boundary

Pre-development Habitats

	A1.1.1 - Broadleaved woodland - semi-natural
	A2.1 - Scrub - dense/continuous
	B2.2 - Neutral grassland - semi-improved
	B4 - Improved grassland
	B6 - Poor semi-improved grassland
	C3.1 - Other tall herb and fern - ruderal
	J1.1 - Cultivated/disturbed land - arable
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.6 - Buildings
	J4 - Bare ground
	J5 - Other habitat - road
	J5 - Other habitat - railway
	J2.1.1 - Intact hedge - native species-rich
	J2.1.2 - Intact hedge - species-poor
	J2.2.1 - Defunct hedge - native species-rich
	J2.2.2 - Defunct hedge - species-poor
	J2.3.1 - Hedge with trees - native species-rich
	J2.3.2 - Hedge with trees - species-poor
	Line of trees
	Non-native and ornamental hedgerow
	J2.4 - Fence
	J2.6 - Dry ditch
V	Scattered tree - very large
L	Scattered tree - large
M	Scattered tree - medium
●	Scattered tree - small
x	Scattered scrub
X	Target note

Rev	Description	--	
INFORMATION			
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Client URBAN & CIVIC			
Project BALDOCK			
Drawing Title B : PHASE 1 HABITAT SURVEY			
Drawn MP	Checked LT	Approved JP	Date 17/09/25
Job No. 21.0045	Scale 1:4,750	Sheet Size A3	Revision D
Drawing Number BMD.21.0045.DRE.901B			





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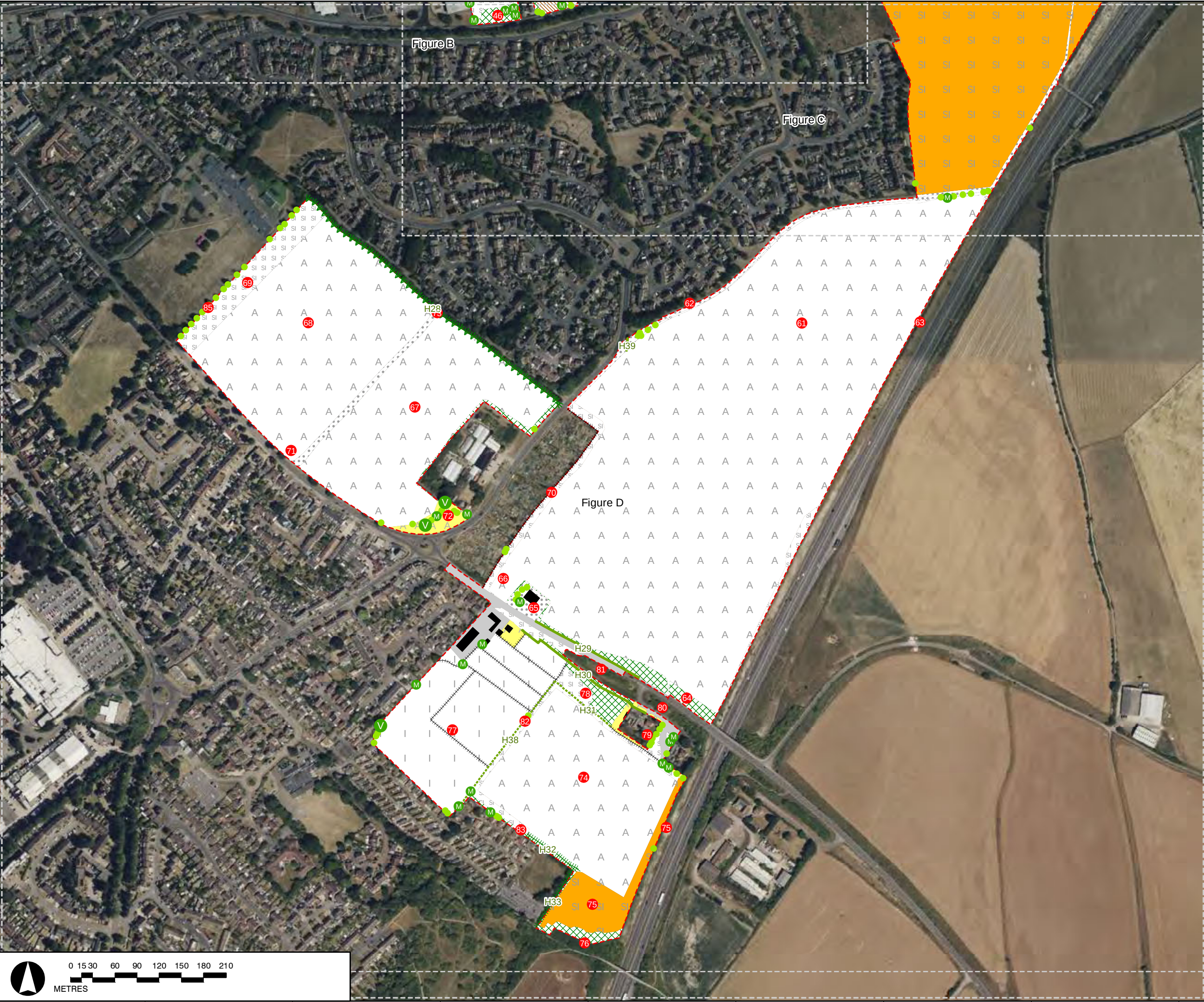
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 Application boundary

Pre-development Habitats

	A1.1.1 - Broadleaved woodland - semi-natural
	A2.1 - Scrub - dense/continuous
	B2.2 - Neutral grassland - semi-improved
	B4 - Improved grassland
	B6 - Poor semi-improved grassland
	C3.1 - Other tall herb and fern - ruderal
	J1.1 - Cultivated/disturbed land - arable
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	J3.6 - Buildings
	J4 - Bare ground
	J5 - Other habitat - road
	J5 - Other habitat - railway
	J2.1.1 - Intact hedge - native species-rich
	J2.1.2 - Intact hedge - species-poor
	J2.2.1 - Defunct hedge - native species-rich
	J2.2.2 - Defunct hedge - species-poor
	J2.3.1 - Hedge with trees - native species-rich
	J2.3.2 - Hedge with trees - species-poor
	Line of trees
	Non-native and ornamental hedgerow
	J2.4 - Fence
	J2.6 - Dry ditch
	Scattered tree - very large
	Scattered tree - large
	Scattered tree - medium
	Scattered tree - small
	Scattered scrub
	Target note

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Rev	Description	--
Purpose of Issue		
INFORMATION		
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Client		
URBAN & CIVIC		
Project		
BALDOCK		
Drawing Title		
C : PHASE 1 HABITAT SURVEY		
Drawn	Checked	Approved
MP	LT	JP
Job No.	Scale	Sheet Size
21.0045	1:4,750	A3
Drawing Number		
BMD.21.0045.DRE.901C		
Date		
17/09/25		
Revision		
D		



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Application boundary

Pre-development Habitats

	A1.1.1 - Broadleaved woodland - semi-natural
	A2.1 - Scrub - dense/continuous
	B2.2 - Neutral grassland - semi-improved
	B4 - Improved grassland
	B6 - Poor semi-improved grassland
	C3.1 - Other tall herb and fern - ruderal
	J1.1 - Cultivated/disturbed land - arable
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.6 - Buildings
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	J5 - Other habitat - road
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	J2.1.1 - Intact hedge - native species-rich
	J2.1.2 - Intact hedge - species-poor
	J2.2.1 - Defunct hedge - native species-rich
	J2.2.2 - Defunct hedge - species-poor
	J2.3.1 - Hedge with trees - native species-rich
	J2.3.2 - Hedge with trees - species-poor
	Line of trees
	Non-native and ornamental hedgerow
	J2.4 - Fence
	J2.6 - Dry ditch
	Scattered tree - very large
	Scattered tree - large
	Scattered tree - medium
	Scattered tree - small
	Scattered scrub
	Target note

Rev	Description	--	
Purpose of Issue			
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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
D : PHASE 1 HABITAT SURVEY			
Drawn	Checked	Approved	Date
MP	LT	JP	17/09/25
Job No.	Scale	Sheet Size	Revision
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Drawing Number			
BMD.21.0045.DRE.901D			

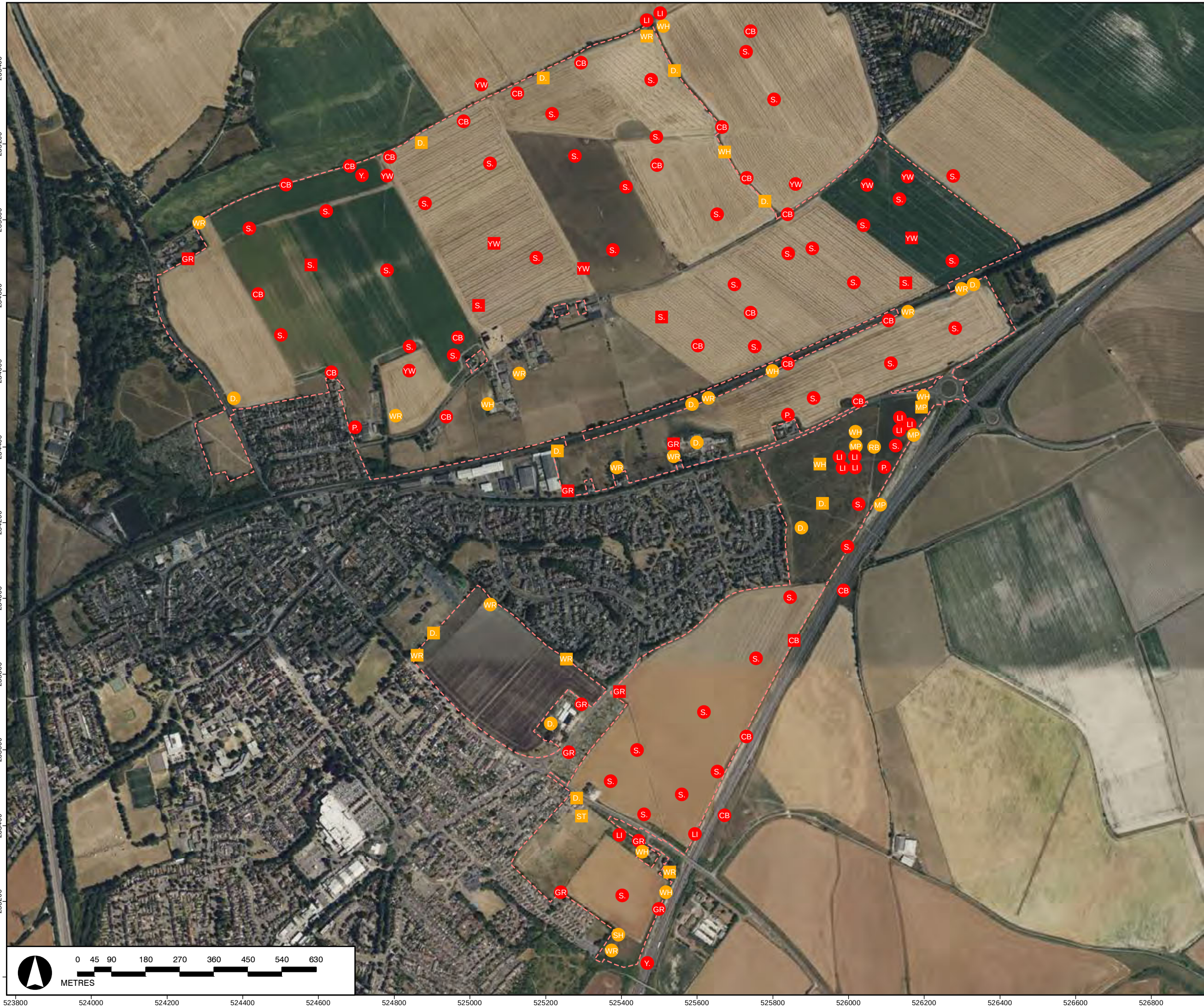


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 Application boundary

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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
SITE LOCATION			
Drawn	Checked	Approved	Date
MP	LMB	JP	18/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B
Drawing Number			
BMD.21.0045.DRE.902			



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Application boundary

Confirmed breeding bird - BoCC status

● Red
● Amber
● Green

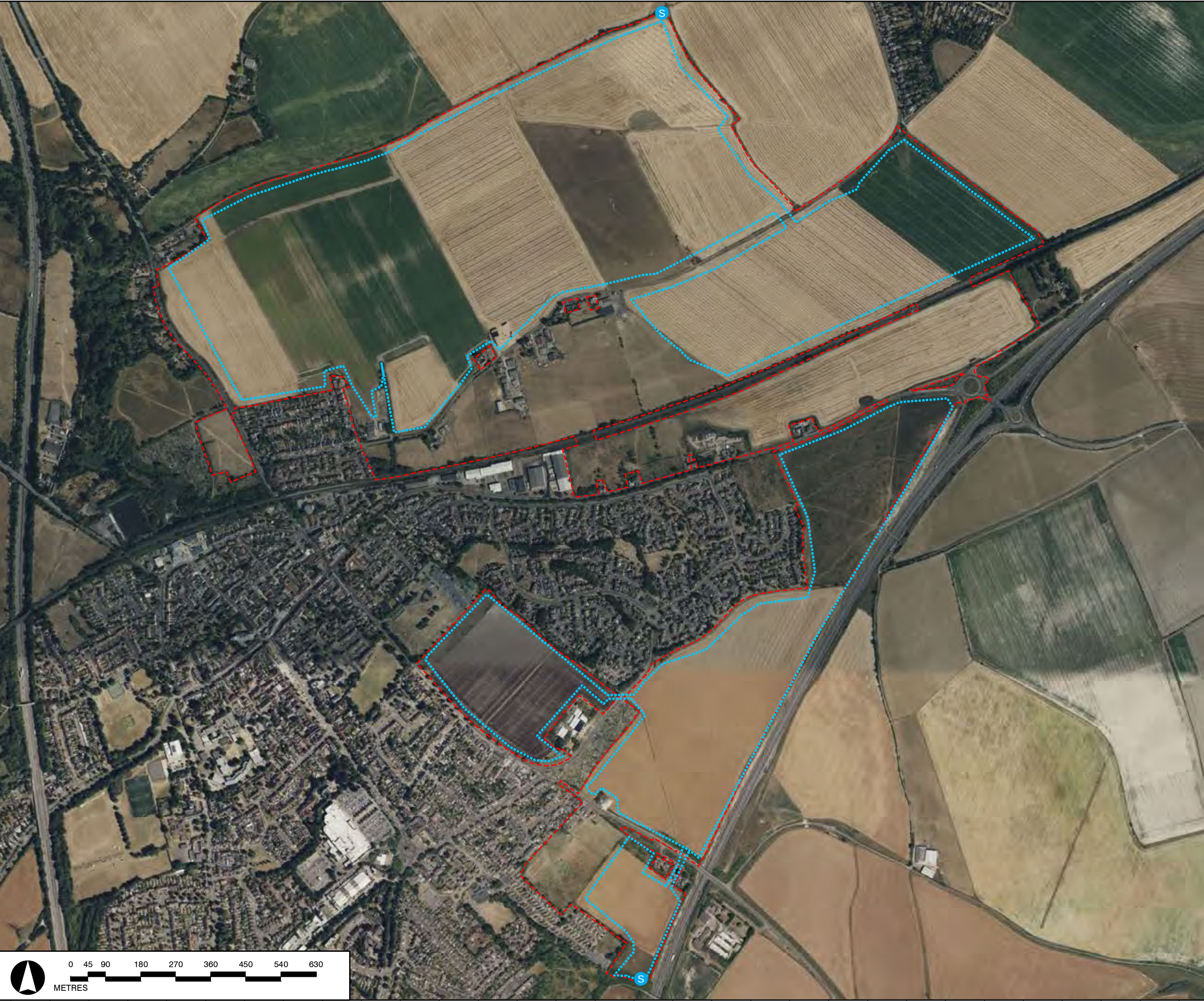
Probable breeder bird - BoCC status

Red
 Amber
 Green

BTO species codes:

CB - Corn bunting
D. - Dunnock
GR - Greenfinch
LI - Linnet
MP - Meadow pipit
P. - Grey partridge
RB - Reed Bunting
S. - Skylark
SH - Sparrowhawk
ST - Song Thrush
WH - Whitethroat
WR - Wren
Y. - Yellowhammer
YW - Yellow Wagtail

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Rev	Description	--	
Purpose of Issue			
INFORMATION			
Bradley Murphy Design Ltd 6 The Courtyard Hatton Technology Park Dark Lane Hatton Warwickshire CV35 8XB t: 01926 676496 e: info@bradleymurphydesign.co.uk www.bradleymurphydesign.co.uk		BMD	
Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
BREEDING BIRD SURVEY - 2024			
Drawn	Checked	Approved	Date
MP	LT	JP	19/09/25
Job No.	Scale	Sheet Size	Revision
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Drawing Number			
BMD.21.0045.DRE.914			



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Site boundary

Location of static bat detector

Bat transect route

Rev	Description	
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Purpose of Issue

INFORMATION

Bradley Murphy Design Ltd
Studio 3, Floor 18
Alpha Studios
Alpha Tower
Suffolk St Queensway
Birmingham
B1 1TT

t: 0121 815 9127
e: info@bradleymurphydesign.co.uk
www.bradleymurphydesign.co.uk

Client

URBAN AND CIVIC

Project

BALDOCK

Drawing Title

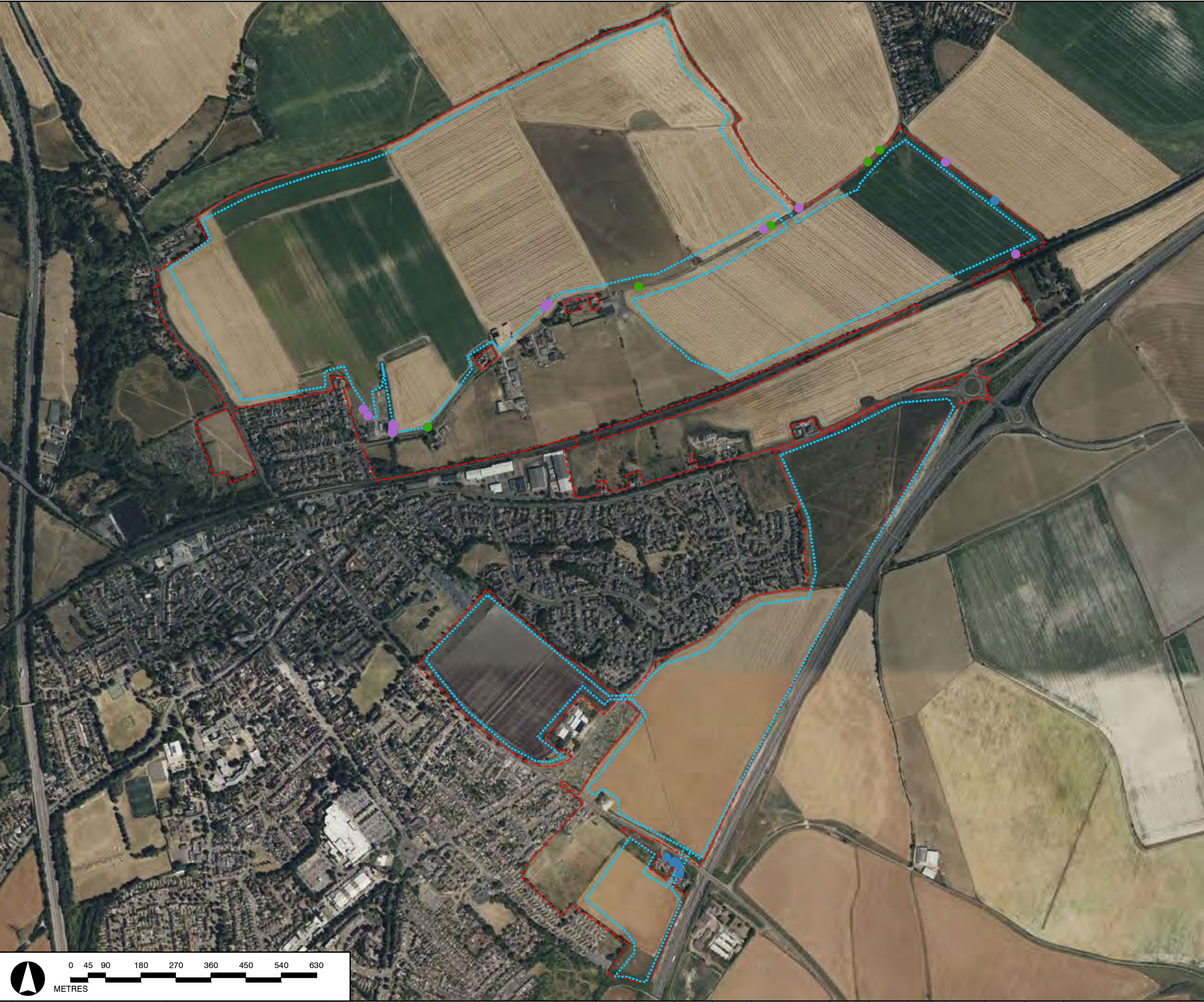
BAT ACTIVITY TRANSECTS AND STATIC DETECTORS

Drawn	Checked	Approved	Date
MP	LT	KD	19/09/25

Job No.	Scale	Sheet Size	Revision
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Drawing Number

BMD.21.0045.DRE.916

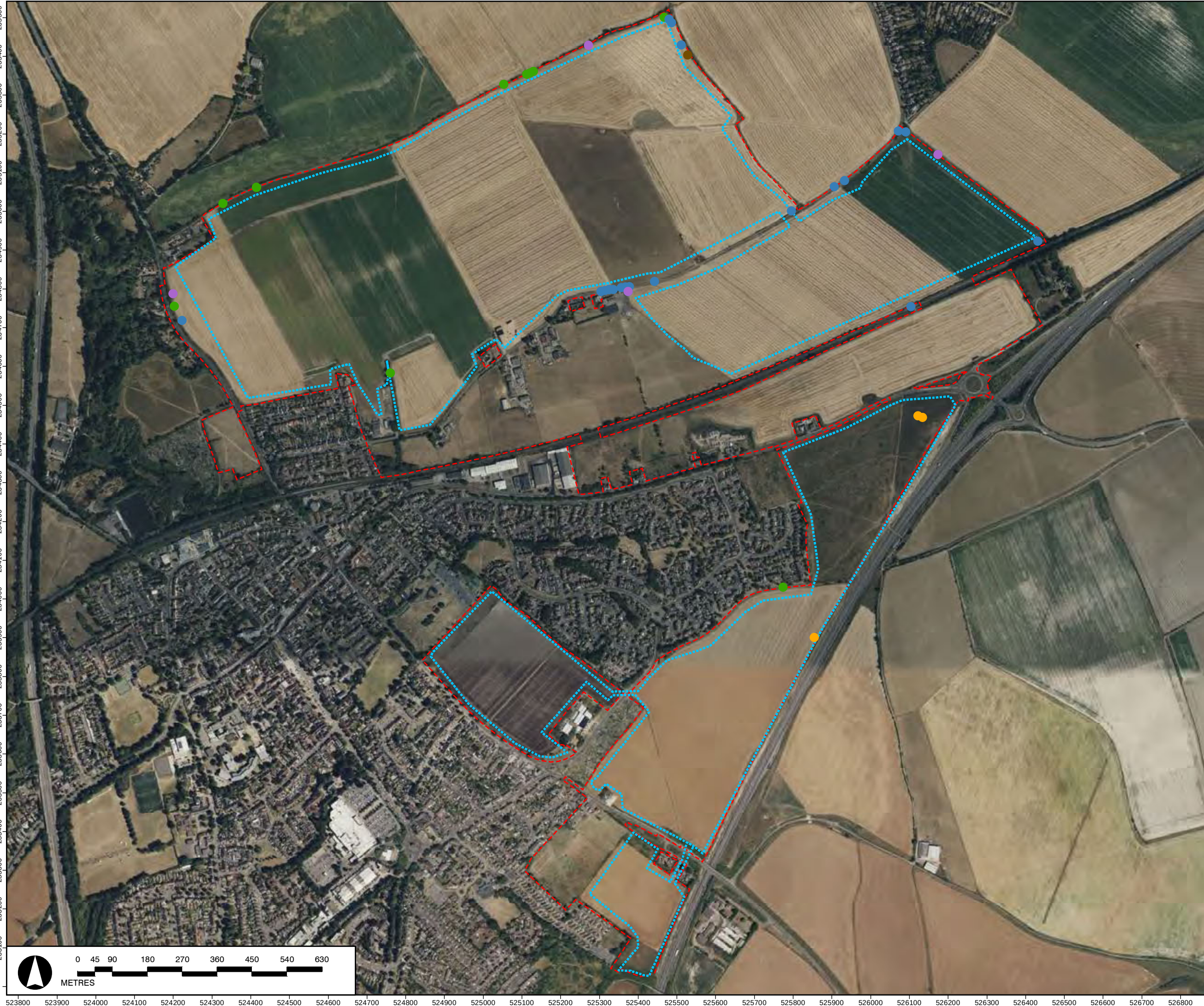


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- Site boundary
- Bat transect route
- Barbastelle (0)
- Common pipistrelle (5)
- Soprano pipistrelle (0)
- Leisler's bat (16)
- Noctule (6)

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Rev	Description	--	
Purpose of Issue			
INFORMATION			
Bradley Murphy Design Ltd Studio 3, Floor 18 Alpha Studios Alpha Tower Suffolk St Queensway Birmingham B1 1TT t: 0121 815 9127 e: info@bradleymurphydesign.co.uk www.bradleymurphydesign.co.uk			
Client			
URBAN AND CIVIC			
Project			
BALDOCK			
Drawing Title			
BAT ACTIVITY TRANSECTS RESULTS - JUNE			
Drawn	Checked	Approved	Date
MP	LT	KD	19/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	B
Drawing Number			
BMD.21.0045.DRE.917A			



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Site boundary

Bat transect route

● Barbastelle (1)

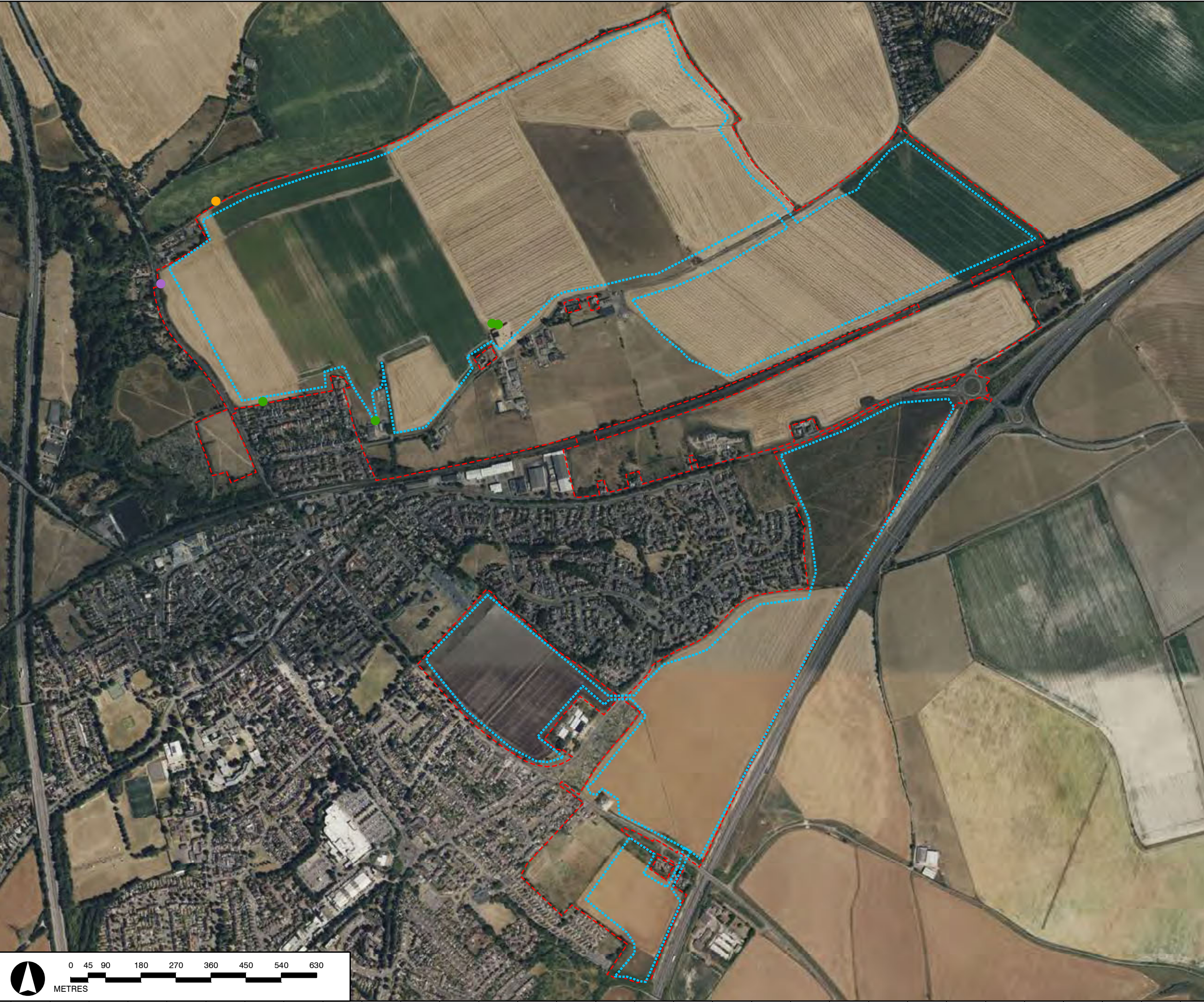
● Common pipistrelle (12)

● Soprano pipistrelle (3)

● Leisler's bat (4)

● Noctule (25)

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Rev	Description	--
Purpose of Issue		
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Client		
URBAN AND CIVIC		
Project		
BALDOCK		
Drawing Title		
BAT ACTIVITY TRANSECTS RESULTS - JULY		
Drawn	Checked	Approved
MP	LT	KD
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		Revision
BMD.21.0045.DRE.917B		
		B



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Site boundary

..... Bat transect route

● Barbastelle (0)

● Common pipistrelle (6)

● Soprano pipistrelle (1)

● Leisler's bat (1)

● Noctule (0)

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Rev	Description	--
Purpose of Issue		
INFORMATION		
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Client		
URBAN AND CIVIC		
Project		
BALDOCK		
Drawing Title		
BAT ACTIVITY TRANSECTS RESULTS - SEPTEMBER		
Drawn	Checked	Approved
MP	LT	KD
Job No.	Scale	Sheet Size
21.0045	1:9,000	A3
Drawing Number		Revision
BMD.21.0045.DRE.917C		



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Application boundary

Reptile survey - results

Common lizard and slow worm recorded

Common lizard recorded

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Rev	Description	--	
Purpose of Issue			
INFORMATION			
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Client			
URBAN & CIVIC			
Project			
BALDOCK			
Drawing Title			
REPTILE SURVEY PLAN			
Drawn	Checked	Approved	Date
MP	LT	JP	19/09/25
Job No.	Scale	Sheet Size	Revision
21.0045	1:9,000	A3	-
Drawing Number			
BMD.21.0045.DRE.915			

B. POLICY AND LEGISLATION

B.1.1 Tables B.1 and B.2 provide a summary of wildlife legislation and policy of relevance to development at the Site.

Table B.1 Overview of species/species groups relevant to the current proposals and associated legislation and policy

Species/Species group	European	UK ¹	Priority species ²
Amphibians		Various	Incl. common toad
Badger		✓	
Bats (all species)	✓	Full	Species dependent
Birds		Full	Species dependent, incl. House sparrow
Invertebrates	Various	Various	Various, incl stag beetle
Mammals (general)		Species-dependent	Incl. hedgehog, brown hare
Plants	Various	Species-dependent	Various
Reptiles (excluding sand lizard and smooth snake)		Partial – incl. killing and injury	✓
Notes ¹ Principally the Wildlife and Countryside Act: Full = full protection, either from the Wildlife and Countryside Act 1981 (as amended) alone or in combination between this act and European legislation; partial = partially protected. ✓ = covered by other specific legislation. ² Includes over 900 species listed in accordance with section 41 of the NERC Act (2006). Species known or most likely to utilise the Site are indicated where appropriate.			

Table B.2 Relevant species legislation for development at the Site

Species / group	Legislation ^{see notes}													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Amphibians											✓			
Badger	✓						✓							✓
Bats (all species)					✓		✓			✓	✓			✓
Birds (nesting)		✓	✓							✓	✓			
Brown Hare					✓		✓							
Invertebrates											✓			
Reptiles						✓					✓			
Lizard orchid								✓						
Small blue											✓			
Notes ¹ Protection of Badgers Act 1992 ² Wildlife and Countryside Act, 1981 (as amended) – Part 1 ³ Wildlife and Countryside Act, 1981 (as amended) – Schedule 1 (some species, none recorded within the Site) ⁴ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 ⁵ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (4b, 4c) and (5) ⁶ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (1, in respect of killing and injuring) and (5) ⁷ Wildlife and Countryside Act, 1981 (as amended) – Schedule 6, Section 11 ⁸ Wildlife and Countryside Act, 1981 (as amended) – Schedule 8, Section 13 ⁹ Wildlife and Countryside Act, 1981 (as amended) – Schedule 9, Section 14 ¹⁰ Conservation of Habitats and Species Regulations 2017 – Schedule 2 (European protected species) ¹¹ Natural England and Rural Communities Act (2006) – Various species listed in accordance with Section 41 ¹² Invasive Species regulations: EU Regulation (1143/2014) on invasive alien (non-native) species ¹³ Anti-social Behaviour, Crime and Policing Act 2014 ¹⁴ Environmental Protection Act 1990 ¹⁵ Wild Mammals (Protection) Act 1996														

B.1.2 The key national planning policies and documents are:

- The Environment Act (2021);
- Schedule 7A of the Town and Country Planning Act (1990);
- The National Planning Policy Framework (2025); and
- The Natural Environment and Rural Communities (NERC) Act (2006).

C. METADATA, SURVEY CONDITIONS AND LIMITATIONS

C.1 Metadata

Factor	Detail
Data	Updated bat activity surveys
Reason for collection	To provide an update to existing Phase II data at the Site to inform appropriate mitigation in relation to proposed development.
Location	Land to the east and south of Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	27/06/2024, 29/07/2024 and 10/09/2024
Method of collection	See section 2.3
Who collected	Lili Timms BSc MSc Jasmine Whitmore BSc (Hons) Bethany Jenner BSc (Hons) Linda Pryke BSc (Hons), MSc, ACIEEM Archie Neale BSc (Hons)
Factor	Detail
Data	Breeding bird transect surveying and assessment of breeding corn bunting
Reason for collection	To provide an update to existing baseline data pertaining to breeding birds at the Site, with a targeted focus on corn bunting. To inform scheme design and appropriate mitigation in relation to the proposed development.
Location	Land to the east and south of Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	20/05/2024 – 09/07/2024
Method of collection	Common Bird Census adapted for Site specific conditions. Survey method broadly replicates that used in previous surveys.
Who collected	Jeff Picksley MCIEEM, experienced ornithologist.
Factor	Detail
Data	Updated reptile surveys
Reason for collection	To provide an update to existing Phase II data at the Site to inform appropriate mitigation in relation to proposed development.
Location	Land to the east and south of Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	01/05/2024 - 18/06/2024
Method of collection	Reptile: habitat assessments and presence/likely absence surveys.
Who collected	Katie Dalton BSc (Hons) MRSB ACIEEM Lili Timms BSc MSc
Factor	Detail
Data	Ecological verification of habitats and updated botanical assessments
Reason for collection	To identify habitats in relation to a Verification Assessment and updated botanical surveys
Location	Land to the east and south of Baldock, Hertfordshire approximate centre: TL 25319 34539.
Date	28 th May 2024
Method of collection	Ecological verification assessment based on JNCC Phase 1 Habitat assessments
Who collected	Katie Dalton MRSB ACIEEM

C.2 Survey Conditions

C.2.1 Bat activity survey

Date	Time	Preceding days	Cloud (%)	Temp. (°C)	Wind (Beaufort)	Precipitation
27/06/2024	21:20-23:30	Sunny spells	20-40	15	4 W	None
29/07/2024	20:45-23:00	Sunny	25	23	2-3 SE	None
10/09/2024	19:25-21:30	Cloudy, light rain	70	11-9	3-4 NW	Light rain at start of survey.

C.2.2 Breeding bird surveys

Date	Time	Preceding days	Cloud (%)	Temp. (°C)	Wind (Beaufort)	Precipitation
20/05/2024	04:55-10:55	Sunny	30-100	9-14	3-4 N	None
23/06/2024	04:35-11:35	Partly sunny	0-30	11-21	0-4 W	None
09/07/2024	05:05-11:45	Cloudy, heavy rain, sunny spells	100	14-17	1-5 SE	None

C.2.3 Reptile surveys

Date	Time	Preceding days	Cloud (%)	Temp. (°C)	Wind (Beaufort)	Precipitation
01/05/2024	11:30-12:15	Sunny	40	16-18	3 NNE	None
07/05/2024	09:30-11:00	Sunny	30	14-15	1 W	None
13/05/2024	08:50-09:50	Sunny	30	14-16	4 SW	None
23/05/2024	11:30-12:30	Light rain, partly sunny	80-70	14-15	4 WSW	None
30/05/2024	09:20-10:15	Partly sunny	80-90	13-14	4-3 NW	None
03/06/2024	09:30-11:30	Sunny	90-80	16-17	3 NW	None
12/06/2024	09:20-10:20	Sunny	80-70	12-13	2 SW	None
18/06/2024	10:15-11:40	Sunny	40	16-18	3 N	None

C.2.4 Verification survey

Date	Start Time	Cloud (%)	Sun	Precipitation
28/05/2024	18:15-20:30	60	Short sunny spells	Showers

C.3 Limitations

Consideration	Comment
Survey & data	
Personal competence, i.e. qualifications, training, skills, understanding, experience	All survey works were undertaken by or directly supervised by personnel experienced in ecological surveying (see meta data; Section C1). <u>James Patmore CEng CEnv MCIEEM</u> has over 22 years of experience in ecological consultancy, including an extensive amount of experience performing and directing ecological survey work and assessments.

Consideration	Comment
	<u>Jonathan Wood BSc (Hons) MCIEEM</u> has over 10 years' experience in ecological consultancy, including an experience of performing and coordinating the survey work and assessments undertaken at Site. <u>Katie Dalton BSc (Hons) MRSB ACIEEM</u> has over 6 years' experience in ecological consultancy, including an experience of performing the survey work and assessments undertaken at Site along with technical reporting. Katie holds a level 2 bat and GCN class licence. <u>Jeff Picksley BSc (Hons) MCIEEM</u> an experienced ornithologist with over 20-years experience in undertaking bird surveys. <u>Jasmine Whitmore BSc (Hons)</u> has over one year's experience in ecological consultancy, including survey work and ecological reports. <u>Bethany Jenner BSc (Hons)</u> has a season of experience in ecological consultancy, including technical reporting, and over a years' worth of experience assisting in and completing survey work undertaken at site. <u>Archie Neale BSc (Hons)</u> has over 4 years' experience in ecological consultancy, including an experience of performing and coordinating site based ecological mitigation work, ecological surveys and reporting.. <u>Linda Pryke BSc (Hons) MSc ACIEEM</u> has over 10 years of experience in ecological fieldwork and mitigation, including experience in performing and leading ecological survey work and assessments. Level 2 bat licence holder. <u>Lili Timms MSc, BSc (Hons)</u> has a seasons experience in ecological consultancy, including over a year of experience in assisting in survey work and assessments undertaken at Site along with technical reporting.
Resources (equipment and/or personnel)	Appropriate resources and suitably qualified personnel were used. Optical equipment used were Zeiss Victory SF 8x42 binoculars.
Time spent surveying	Sufficient time was spent on site to undertake all surveys. No surveys were 'cut short'.
Data (e.g. arising from incomplete or inappropriate surveys)	The data used and collected were sufficient for the purpose of the works.
Lack of statistical robustness and higher uncertainties	Statistical analysis of data was not deemed necessary for the purpose of the current works.
Old and out of date data	The data used to complete this report were current and up to date.
Timing or seasonal constraints and suboptimal survey periods	The surveys were conducted in between April 2024 and September 2024 and were timed to be inside the optimal survey period for each species.
Partial use of and/or departures from good practice guidelines	All surveys accorded with the relevant best practice guidelines.
Site conditions & other factors	
Adverse weather conditions	No significantly adverse weather conditions were encountered during the survey work undertaken at the Site that would be considered to have significantly adversely impacted the reliability and/or accuracy of data collected.
Restricted access to site or part of site	The working farm buildings and the derelict buildings at Cofton Richards Farm were not included in the breeding bird surveys. Some fields containing cattle were avoided during breeding bird transects at the request of the farmer.
Unrealistic deadlines	No restrictions on survey data collected or analysed to date are as a result or unrealistic deadlines.
Unproven or untested measures for mitigation and compensation	N/A
Evaluation of conservation value and impacts	The evaluation of the conservation value of species using the Site is based on the current information available. This evaluation will need to be reviewed and updated as necessary should a considerable period of time (24 months) elapse and/or more data from other survey work (on and within 500 m of the site) becomes available.

BMD

E: info@bradleymurphydesign.co.uk
W: www.bradleymurphydesign.co.uk
T: 0121 815 9127

BIRMINGHAM



CAMBRIDGE

