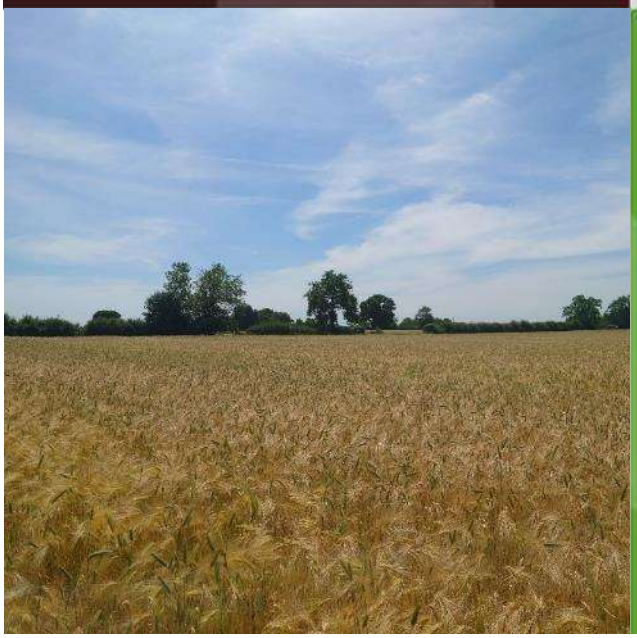
MINSTER LOVELL

WEST OXFORDSHIRE

Ecological Impact Assessment (EcIA)



Client:

Catesby Strategic Land Ltd.

Report Reference:

RSE_4967_R2_V1_ECIA

Issue Date:

November 2022

This report contains confidential information relating to the location of Badger setts. Due to the sensitive nature of this information, all reference to badgers should be redacted from the report prior to its release into the public domain and its circulation restricted.

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ECOLOGY
FLOOD RISK
ARBORICULTURE
HABITATS
TRAINING

CIEEM REGISTERED PRACTICE 2021-2022

PROJECT	
Client:	Catesby Strategic Land Ltd.
Project:	Minster Lovell, West Oxfordshire
Reference	RSE_4967_R2_V1_ECIA
Report Title	Ecological Impact Assessment

DOCUMENT CONTROL

Originated:	**Clare Stalford** BSc QualCIEEM	Ecologist		27/09/2022
Technical Reviewed:	**Amy Skuce** BSc (Hons) MCIEEM	Principal Ecologist		27/09/2022
Approved for Issue	**Nick Sanderson** MSc BSc MCIEEM	Director		28/09/2022
Revisions:				

East Midlands: West Midlands: Yorkshire: Northern Ireland

Switch board 0115 930 2493: info@rammsanderson.com: www.rammsanderson.com

DISCLOSURE:

1 EXECUTIVE SUMMARY

1.1 Background

RammSanderson Ecology Ltd was instructed by Catesby Strategic Land Ltd. to carry out an Ecological Impact Assessment (EcIA) at Minster Lovell, Oxfordshire, to assess the likely significant effects of the project on all ecological features. This report will be used to inform a planning proposal for residential development of the Site and information to submit with a planning application.

ii The Site was located to the south of B4047 and consisted of two arable fields bounded by hedgerows.

1.1.2 Designated Sites

iii No significant impacts upon designated sites are anticipated as a result of the proposals. The nearest statutorily designated site was Cotswolds Area of Outstanding Natural Beauty (AONB) which was 11meters north of the Site. Jurassic limestone gives the Cotswolds their distinctive character, and an underlying unity in its use as a building material throughout the area. This designation is primarily for geological and landscape character rather than ecological value and as such is beyond the scope of this assessment

iv Pumping Station Meadow Local Wildlife Site (LWS), which was 0.4km north of the Site, designated for its limestone grassland, and previously noted as having the largest population of green-winged orchids in Oxfordshire. Given its proximity to the Site, it is advised that mitigation be put in place to mitigate for any possible impacts that may occur from the influx of additional local residents. It is therefore recommended that any public footpaths that lead from the development site towards the LWS should be signposted detailing important information pertaining to the LWS to try and reduce trampling pressures and sufficient Public Open Space should be provided within the residential scheme to limit offsite recreational pressures, as is planned.

v Furthermore, although the Site lies within the Impact Risk Zone of Cotswolds AONB and Worsham Lane SSSI, these proposals are not of a type considered likely to impact upon these sites.

1.1.3 Habitats

vi One Habitat of Principal Importance was recorded on Site (hedgerow). All other habitats were common and widespread and offered limited ecological value. Hedgerows offer conservation value as an ecological corridor and should be maintained on Site (as is planned). Therefore, the impact upon habitats as a result of the proposals is deemed negligible.

1.1.4 Great Crested Newt

vii No ponds were located on site; however, one pond (P1) was identified 300m south m of the Site boundary, and not separated from the site by any significant barriers to dispersal.

viii The majority of the habitats on site are considered sub-optimal for GCN. The Sites hedgerow boundaries offer some scope as terrestrial habitat for GCN, however the proposals for the Site retain these habitats. Furthermore, no records of GCN were identified within 2km of the Site. Impacts on terrestrial phase amphibians are considered to be extremely unlikely. A precautionary method of works document stating suitable works timing and practices will further reduce potential risks to individual newts.

1.1.5 Bats

ix Six trees were assessed as having moderate potential to support roosting bats. A further eleven trees were assessed as having low potential to support roosting bats. No tree impacts currently proposed within development. Trees with low potential to be felled using soft felling techniques. Should plans alter and Moderate Roost potential trees require felling, presence/likely absence of roosting bats in moderate trees to

be confirmed by either tree climb survey or nocturnal surveys undertaken during the active period for bats (May-September)- 2 surveys (1 dusk and 1 dawn). No buildings were present onsite.

x The primary foraging and commuting routes for bats are considered to be the Sites hedgerows habitats which are being retained. Loss of the arable habitat is considered to have negligible impact on bat foraging locally (this habitat was assessed as low quality) with a potential betterment through provision of new POS areas with diverse grasslands and SUDS areas supporting a more diverse range of invertebrate prey species. However, to prevent adverse impacts on bat activity within the area, a lighting strategy for the Site is recommended to be sympathetic to nocturnal fauna.

1.1.6 Dormice

xi Hedgerow habitats provide suitable habitats for dormice, and connectivity to the wider landscape. No local records were identified within the desk study; however, the Site is within their population rage. The majority of habitats of value to dormice (hedgerows and trees) are to be retained within proposals. To prevent adverse impacts on dormouse activity within the area, a lighting strategy for the Site is recommended to be sympathetic to nocturnal fauna reducing the light spill onto peripheral habitats and maintaining these as dark corridors.

1.1.7 Birds

xii No habitats on the Site were assessed as offering breeding habitat for Schedule 1 birds. Furthermore, the desk study results produced records of common and widespread species only. Therefore, further surveys for breeding birds were deemed disproportionate. As such impacts upon breeding birds are anticipated to be negligible. Any maintenance / pruning works on hedgerows should be completed outside of the bird nesting season (which is considered to be March to September inclusive).

1.1.8 Reptiles

xiii The overall habitat quality of the Site limits its suitability for reptiles, being largely dominated by an arable field. Persistence of reptiles on site is therefore considered unlikely and certainly this site will not form a core area for reptiles locally and as such no further surveys were considered proportionate or necessary. However, as there remains the residual risk for reptile to pass through the Site, utilising features such as the hedgerow boundaries, a careful works procedure with regard to reptiles is recommended for site vegetation clearance.

xiv Four records of reptiles were identified during the desk study including grass snake and common lizard, the nearest of which was for grass snake 34m east of the Site.

1.1.9 Water Vole, Otter and White-Clawed Crayfish

xv Records of water vole *(Arvicola amphibius)* and otter (*Lutra lutra*) were identified within 300m of the Site. However, as was no suitable habitat located within the Site for otter, water vole or white clawed crayfish, these are considered to be absent.

xvi Further surveys for these species were not considered proportionate or necessary. Therefore, no impacts will occur to these species as a result of proposals.

1.1.10 Badgers

xvii An active single hole outlier sett in current use was identified on the Site boundary during surveys. Local records for this species were returned. As badgers are protected from killing/injury and disturbance, it will be necessary to obtain a licence from Natural England to close the sett prior to works commencing on site. This activity is only licensable 1st July to 1st December inclusive, outside of the breeding season. It is recommended that badger activity surveys are conducted every six months until the Site is operational to ensure badgers are not

gaining access to the Site and no new setts within 30m have been created. Best practice with regard to badgers should be followed during construction to minimise injury.

xviii Taken in combination with other developments locally, the loss of foraging habitat is likely to be negligible, however retained habitats should be enhanced with provision of nut and fruit bearing shrubs etc.

1.1.11 Principal Species

xix The Site contains suitable habitat for hedgehogs (*Erinaceus europaeus),* brown hare (*Lepus europaeus),* polecat (*Mustela putorius)* and harvest mouse (*Micromys minutus)* and there is a local record for these species. These species are Species of Principal Importance (NERC Act, 2006). The risk of injury to these species should be minimised during construction to make impacts to these species negligible.

1.1.12 Biodiversity

xx A Biodiversity Impact Assessment using the DEFRA Metric 3.1 was conducted (RSE_4967_BIA_V3). The Site baseline is 22.01 biodiversity units for habitat areas and 5.74 for linear features (hedgerows). Current proposals result in a gain of 13.10% in habitat areas and a gain of 44.31% for hedgerows.

1.1.13 Compensation and Enhancements

xxi Retention and enhancements of the hedgerow habitats, plus the addition of trees through implementing of additional native planting would benefit local flora and fauna through the improvement of ecological corridors. Additional enhancements easily achievable within the development are the incorporation of bat and bird nesting boxes, situated within the new buildings.

1.1.14 Monitoring

xxii No monitoring is required for the proposals to be compliant with legislation and policy.

1.1.15 Conclusion

xxiii The proposals were assessed as having no significant effect on the biodiversity conservation objectives for any important ecological features and the proposed development is compliant with relevant national and international legislation and policy relating to ecology.

xxiv The implementation of enhancement measures should provide a net gain in biodiversity post development.

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2 INTRODUCTION AND BACKGROUND

2.1 Purpose and Scope of this Report

RammSanderson Ecology Ltd was commissioned by Catesby Strategic Land Ltd. to assess the potential for protected species and habitats to be present on the Site of a proposed residential development on land south of B4047 in Minster Lovell, Oxfordshire.

ii To complete an EcIA of the proposals, a desk-based assessment, Extended Phase 1 Habitat Survey and protected species assessments were carried out based upon the findings of the Preliminary Ecological Appraisal (PEA) (RSE_4967_R1_V1_PEAR). This report is a stand-alone EcIA which has been prepared following current guidance (CIEEM, 2018) and can be used to lawfully determine a planning application in line with current planning policy[1]. This report does not form part of a wider discipline Environmental Impact Assessment (EIA) of Environmental Statement (ES), nor does it confer the need for any such documentation.

iii The study area was defined depending on the proposals, desk study and applicable legislation (Appendix 1) as shown in the enclosed Site Location Plan (Figure 3) and Phase 1 Habitat plan (Appendix 6) plus a buffer zone extended to include the Zone of Influence (see section below) of the proposals (hereafter referred to as the "Site").

iv This ecological impact assessment is based on a review of the development proposals provided by the Client in Drawing: Al13 (Appendix 4), desk study data (third party information) and surveys of the Site. The aims of this report are to:

- Classify the habitat types at the Site based on standard Phase 1 Habitat survey methodology;
- Evaluate any potential for protected species to be present;
- Identify any ecological constraints that may affect the scheme design;
- Provide recommendations for any further actions that might be required (for example, to monitor badger setts periodically through construction);
- Identify likely significant effects on ecological receptors;
- Assess if the proposals are compliant with legislation and policy relating to biodiversity; and
- Identify opportunities for ecological enhancement to provide net biodiversity gain in line with the Environment Act 2021 and the National Planning Policy Framework (NPPF, 2021).

v This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RammSanderson Ecology Ltd.

vi The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Constraints and Opportunities Plan are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013) and follow current guidance (CIEEM, 2018).

2.2 Zone of Influence

The Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the development proposals in relation to individual species ecological requirements indicated in best practice guidelines.

[1] Office of the Deputy Prime Minister Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System

ii In relation to great crested newts (GCN), the zone of influence is considered to be up to 500m from the Site boundaries, as this is the distance that Natural England would require to be considered in relation to GCN licensing.

iii For badgers, the zone of influence is typically 30-50m from the Site boundary as this is the distance within which a sett can be damaged or disturbed by heavy machinery.

iv For designated sites, the Zone of Influence can be up to 10km from the Site and this is termed the Impact Risk Zone (IRZ). Where sites occur within an IRZ the requirement for a Habitat's Regulations Assessment or Environmental Impact Assessment may be triggered.

2.3 Site Context and Location

The Site is on arable land west of Minster Lovell, Oxfordshire, OX29 0RU, central grid reference SP307105. The B4047 runs along the north boarder and the A40 runs in close proximity to the Site to the south. The wider landscape is dominated by arable land and associated buildings, with the larger towns of Witney to the east and Carterton to the southwest.

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Title: Site Context Plan	
Project: Land South of Burford Road, Minster Lovell	
Client: Catesby Strategic Land Ltd	Catesby Estates plc
Date: 11/11/2022	Fig: 1 Author: AMC
A4 Scale: 1:3000	ID: RSE_4967a_STC_0922_V2R1

3 METHODOLOGY

3.1 Ecological Impact Assessment

The ecological impact assessment is based on the standard best practice methodology provided by the Guidelines for Ecological impact Assessment (CIEEM, 2018). The assessment identifies important sites, habitats, species and other ecological features that are of conservation value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Local Biodiversity Action Plans.

ii The importance of an ecological feature is considered within a defined geographical context. The following frame of reference is used, or adapted to suit local circumstances:

- International and European
- National
- Regional
- Metropolitan, County, vice-county or other local authority-wide area
- River Basin District
- Estuarine system/Coastal cell
- Local
- Below Local level e.g. on site only

High Importance

Negligible Importance

iii Consideration of impacts at all scales is important, and essential if objectives for no net loss of biodiversity and maintenance of healthy ecosystems are to be achieved.

iv In identifying impacts, the review considers the Client's Site proposals and any subsequent recommendations made are proportionate / appropriate to the Site and have considered the Mitigation Hierarchy as identified below:

- **Avoid:** Provide advice on how the development may proceed by avoiding impacts to any species or sites by either consideration of site design or identification of an alternative option.
- **Mitigate:** Where avoidance cannot be implemented mitigation proposals are put forward to minimise impacts to species or sites as a result of the proposals. Mitigation put forward is proportionate to the Site.
- **Compensate:** Where avoidance cannot be achieved any mitigation strategy will consider the requirements for site compensatory measures.
- **Enhance:** The assessment refers to planning policy guidance (e.g. NPPF) to relate the ecological value of the Site and identify appropriate and proportionate ecological enhancement in line with both national and local policy.

v For the purpose of this EcIA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in 3.1.i.) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects are considered significant at the range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the ecological consequences of the project are understood. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

vi Note: The following definitions are used for the terms 'impact' and 'effect' throughout this report:

- **Impact** – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

- **Effect** – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

3.2 Desk Based Assessment

Data regarding statutory and non-statutory designated sites, plus any records of protected or Priority species and habitats was requested from the local ecological records centre and online resources, details of which are provided in Table 1 below.

Table 1: Consulted resources

Consultee/Resource	Data Sought	Search Radius from Boundary
Thames Valley Environmental Records Centre	Non-Statutory Site Designations, Protected/Priority species records	2km
www.magic.gov.uk[2] [3]	Statutory Site Designations	20km
	NERC Act (2006) Habitats	1km

NB: Desk study data is third party controlled data, purchased or consulted for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.3 Phase 1 Habitat Survey

An extended Phase 1 Habitat Survey of the Site was completed to identify habitats present within the Site. All habitats within and adjacent to the Site boundary were described and mapped following standard Phase 1 Habitat Survey methodology (JNCC, 2016), which categorises habitat type through the identification of individual plant species.

ii Nomenclature follows Stace (Stace, 2019) for vascular plant species and the DAFOR scale for relative abundance was used in the field to determine dominant plants within habitats and communities (D = dominant, A = abundant, F = frequent, O = occasional and R = rare).

3.4 Protected / Priority Species Scoping Assessment

The habitats on site were assessed for their suitability for supporting any legally protected or Priority species that would be affected by the proposed development. This includes invasive non-native plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

ii The full scope of species assessments and survey methods are detailed in Appendix 3. Any incidental sightings of individual species or field signs such as footprints, latrines or feeding remains discovered during the survey were noted.

[2] Multi Agency Geographic Information for the Countryside Interactive GIS Map.
[3] MAGIC resource was reviewed on the 23/06/2022

3.5 Biodiversity Impact Assessment

3.5.1 Outline Procedure

Biodiversity Impact Assessment of proposals was carried out in accordance with guidelines published by DEFRA and via the DEFRA Metric Calculation Tool 3.1. The existing value of individual habitats on site is initially calculated by accurately mapping the proposed development site from information collected during a Biodiversity Scoping Assessment/Phase 1 Habitat Survey and by dividing the land into individual habitat parcels. This part of the study is informed by JNCC Phase 1 habitat and UK habitats classification systems. The distinctiveness, condition, connectivity and strategic significance of these parcels is then assessed and together with the area of each habitat, a value is assigned. A summary of how habitat distinctiveness, condition assessment, connectivity and strategic significance is determined is detailed within DEFRA best practice literature

3.5.2 Calculation

ii Once the habitat types have been input into the Biodiversity Impact Assessment calculator, along with their area, distinctiveness, condition, connectivity and strategic significance an overall score in biodiversity units is calculated.

3.5.3 Compensation

iii Once the biodiversity value of existing on-site habitats has been quantified, the value of indicatively proposed habitats to achieve a net gain as part of development must be calculated. This is calculated using the methodology applied above, taking into account the area/length of indicatively proposed habitats, their distinctiveness, condition, connectivity and strategic significance once this is established. A further two parameters are also taken into consideration at this stage. These are the time it will take to reach this target condition and the difficulty of creating/restoring each habitat type proposed. By using these parameters, the calculation takes into account that the time it takes for a habitat to establish may result in a loss of biodiversity for a period of time and also the risk of failure associated with any habitat creation/restoration

3.6 Limitations

It should be noted that whilst every effort has been made to provide a comprehensive description of the Site, no investigation could ensure the complete characterisation and prediction of the natural environment.

3.7 Accurate lifespan of ecological data

The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 2 years, notwithstanding any considerable changes to the Site conditions.

4 BASELINE CONDITIONS

4.1 Surveyor Competency

The Phase 1 survey was carried out by Oliver Ramm BSc (Hons) MCIEEM and Lauri Leivers BSc (Hons) GradCIEEM. Oliver is a director in the company and has been a professional ecologist for 16 years. He holds a Class 2 licence for GCN (2016-22560-CLS-CLS) and bats (2015-18804-CLS-CLS). Lauri in a senior ecologist and has been an ecologist for five years. She holds a Class 2 licence for GCN (2018-37695-CLS-CLS) and is a FISC level 3 botanist.

ii The conditions assessment and ground level tree assessments (GLTA) were carried out by Nick Sanderson. Nick is a director in the company and has been a professional ecologist for 16 years. He holds a Class 2 licence for GCN (2015-16947- CLS-CLS) and bats (2015-15565-CLS-CLS) and is registered for GCN LICL (ECNIRCO52) and Badger LICL (CL135).

iii The surveys were completed during suitable conditions as detailed in Appendix 2.

4.2 Designated Sites

4.2.1 Statutory Designated Sites and Non-Statutory Designated Sites

The nearest statutorily designated site was Cotswolds Area of Outstanding Natural Beauty (AONB) which was 11m north of the Site. Jurassic limestone gives the Cotswolds their distinctive character, and an underlying unity in its use as a building material throughout the area. This designation is in regards to geological and landscape character and as such the assessment of risks is beyond the scope of this report.

ii The Site is located within the Impact Risk Zone (IRZ) of Cotswolds AONB and Worsham Lane SSSI. Developments which are considered likely to impact upon the nearby SSSI sites include any mineral, oil or gas exploration/extraction works. As such, these proposals are not of a type that is included within the Impact Risk Zones for these European and National designated sites.

iii The nearest non-statutorily designated site is Pumping Station Meadow Local Wildlife Site (LWS), which was 0.4km north of the Site, designated for its limestone grassland, and previously noted as having the largest population of green-winged orchids in Oxfordshire.

4.3 Habitats[4]

The Site was approximately 11 hectares in area and located to the west of Minster Lovell, Oxfordshire. The Site was bordered by open countryside, dominated by agricultural land with the residential developments of the village of Minster Lovell located to the east. The Site consisted of two arable fields, bounded, and separated by hedgerows.

ii The majority of habitats on site were generally of limited botanical interest and poor species diversity. The Site was dominated by arable bounded by hedgerows. The hedgerows offered some value as ecological corridors for the dispersal of fauna and flora into the wider countryside. Some of the hedgerow on site contained a multitude of woody native species and as such are likely 'ecologically important' under the Hedgerow Regulations (1997). Additionally, all hedgerows formed of >80% native woody species are a Habitat of Principal Importance under the NERC Act (2006). The current proposals plans include retention of

[4] Full Phase 1 survey results are displayed in Appendix 5.

these hedgerows, where possible these could be enhanced with the planting of native species. This will improve their quality as an ecological corridor within the surrounding environment.

iii No protected or Priority plant species were observed, and all plant species encountered were common, widespread and characteristic of the common habitat types they represent. The table below summarises the habitat types identified on site and the potential impacts as a result of the proposals and their ecological significance.

Table 2: Phase 1 habitat types and their ecological importance

Habitat	JNCC Code	Area (m^2)	Proportion of Site Area (%)	Ecological Importance & Outcome of Proposal
Arable	J1.1	116406	100	Limited ecological value, will be entirely lost within proposals.
Intact Species Rich Hedgerow (H3, H4)	J2.1.1	N/A	N/A	May support a range of protected species, primarily nesting birds. To be retained and enhanced within the development. Additional native woody species to increase botanical diversity is recommended.
Species Rich Hedgerow with Trees (H5)	J2.3.1	N/A	N/A	
Species Poor Hedgerow with Trees (H1, H2)	J2.3.2	N/A	N/A	

4.4 Protected / Priority Species/Species Groups[5]

The presence/likely absence of protected species to be present on site and impacted by the proposals is discussed under the headings below.

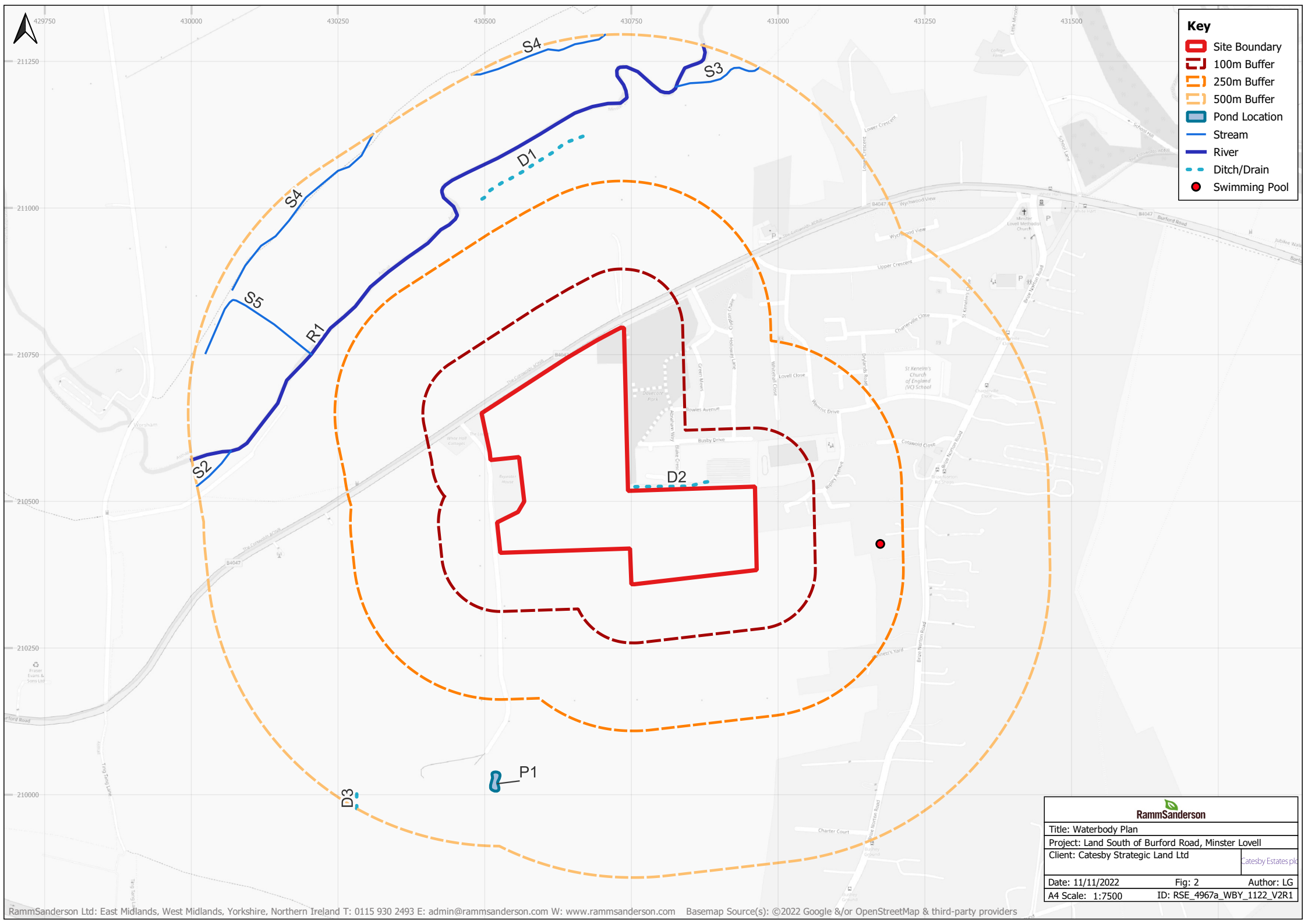
4.4.2 Great Crested Newt (GCN)

ii No ponds were located onsite. There was one pond within 500m of the Site boundary (Figure 2). P1 was located approximately 300m south of the Site, and not separated from the Site by any dispersal barriers. There were three ditches within 500m of the site. D1 was located approximately 300m north of the Site, across the B4047, this is considered to act as a natural barrier for dispersal. D2 was located on the Site boundary and was dry at the time of survey. These two ditches were therefore this ditch is scoped out of further consideration. D3 was located approximately 420m southwest of the Site, and not separated from the Site by any dispersal barriers.

ii The peripheral vegetation on site, including hedgerows, provide some, albeit limited, opportunities for foraging, refuge seeking and commuting GCN. However, no records of GCN were identified within 2km of the Site during the desk study and the arable fields which comprises the majority of the habitats present on site, was considered sub-optimal to terrestrial phase GCN. This is due to the high intensity management as a

[5] Full protected species survey results are in Appendix 8.

monoculture, resulting in an area of high disturbance and extremely limited vegetation cover suitable for refuge seeking GCN.


Key
Site Boundary
100m Buffer
250m Buffer
500m Buffer
Pond Location
Stream
River
Ditch/Drain
Swimming Pool
S4
S3
D1
S4
S5
R1
S2
D2
P1
D3
429750
430000
430250
430500
430750
431000
431250
431500
211250
211000
210750
210500
210250
210000
B4047
Burford Road
Upper Crescent
Lower Crescent
Wychwood View
Lovell Close
Busby Drive
Bowles Avenue
Rixley Avenue
Cotswold Close
Bruce Norton Road
Charter Court
Worsham
Minster Lovell Methodist Church
St Kenelm's Church of England (VC) School
RammSanderson
Title: Waterbody Plan
Project: Land South of Burford Road, Minster Lovell
Client: Catesby Strategic Land Ltd
Catesby Estates plc
Date: 11/11/2022
Fig: 2
Author: LG
A4 Scale: 1:7500
ID: RSE_4967a_WBY_1122_V2R1
RammSanderson Ltd: East Midlands, West Midlands, Yorkshire, Northern Ireland T: 0115 930 2493 E: admin@rammsanderson.com W: www.rammsanderson.com
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4.4.3 Bats

Trees

iii All of the trees on site were subject to a ground level tree assessment. 17 trees were identified as having potential for roosting bats, of which 6 trees (T2, T3, T7, T14, T15, and T17) were assessed as having moderate potential and 11 trees (T1, T4, T5, T6, T8, T9, T10, T11, T12, T13, and T16) as having low potential (using BCT guidelines). Features included extensive ivy growth, rot holes, flaking bark, callus rolls and woodpecker holes. Full results of tree assessments are shown in Appendix 8.

Foraging Habitat

iv The hedgerows present on site provided suitable foraging and commuting habitat, as well as providing connectivity to the wider landscape. The Site was assessed following the guidelines set out in Collins, 2016 as having moderate suitability for foraging bats. During the desk study, 5 pipistrelle records were identified, the closest of which was 134m east of the Site.

Buildings

v There were no buildings present onsite.

4.4.4 Dormice

vi The hedgerows and trees located on site are suitable habitat for dormice. Although no local records were identified within the desk study the Site is within their population range.

4.4.5 Birds

iii The hedgerows and trees on site are suitable habitat for bird nesting sites and local records of Birds of Conservation Concern (BoCC) and Wildlife and Countryside Act Schedule 1 (WCA1) were returned from the data search. However, no suitable nesting habitat for Schedule 1 birds was recorded on site and these are considered likely absent. While BoCC could use the Site, the footprint of the works is too restricted to impact more than one or two pairs of any given species. The arable land also provides some, albeit limited value to foraging birds. Additionally, Skylarks were recorded during the survey.

4.4.6 Reptiles

vii The hedgerows onsite provided opportunities for foraging, refuge and commuting for reptiles as well as providing connectivity with the wider countryside. Four records of reptiles were identified during the desk study including grass snake and common lizard, the nearest of which was for grass snake 34m east of the Site.

4.4.7 Water Vole, Otter and White Clawed Crayfish

iv Records of water vole (*Arvicola amphibius)* and otter (*Lutra lutra)* were identified within 300m of the Site. However, as was no suitable habitat located within the Site for otter, water vole or white clawed crayfish, these are considered to be absent.

4.4.8 Badgers

v A single mammal hole (Sett 1) was located along the eastern boundary of the Site that fits the criteria to be possible badger. A second hole (Sett 2) was located approximately 20m south of the Site, in the southwest corner within the hedgerow next to the track.

viii Two trail cameras were deployed on the Site, one at each potential sett location, for 14 days between 27th June and 11th July 2022. Footage from Sett 1 confirmed a single badger using the hole on a single night

during the 2-week survey period. The camera at sett 2 did not deploy correctly, it was therefore redeployed for a further 2 weeks on the 12th to the 26th of August. During this time no footage of badger was recorded.

vi The Site represents good foraging habitat and good sett building areas (under hedgerows). In addition, local records for this species were retuned.

Figure 3: Sett 1 - Confirmed badger sett

Figure 4: Badger camera footage

ix The setts have been classified as follows:

- Sett 1 - 1 hole active partially used outlier sett.
- Sett 2 – 1 hole disused outlier sett.

x No other signs of badgers were recorded during the survey. Full locations of all the badger signs recorded on Site are in the map in Appendix 9 (CONFIDENTIAL). A description of each sett hole is also provided in the table within Appendix 9.

4.4.9 Other Priority Fauna Species

vii The habitats on site were suitable for hedgehogs (*Erinaceus europaeus),* brown hare (*Lepus europaeus),* polecat (*Mustela putorius)* and harvest mouse (*Micromys minutus).* Records were also identified for these species, and they are considered likely present on site.

4.4.10 Biodiversity

xi When assessed against the DEFRA Metric 3.1. for biodiversity, the site contains 22.01 baseline biodiversity units for habitat areas and 5.74 for linear features (e.g. hedgerows). The only habitat type on the Site was cereal crops. The most distinctive linear feature was native hedgerow with trees, associated with bank or ditch. This is shown in Figure 5.

4.5 Habitat Connectivity Analysis and Closest Relevant Records

In assessing the Site, a review of online resources and desk study data was undertaken to assesses the Site with respect to its connectivity to the wider environment, particularly along linear features (rivers, railways, canals etc.) and any designated or protected sites. The figure below highlights the Site and any such habitat connectivity. This assessment enables the evaluation of a particular proposal in context of the wider environment with regard to the Site itself and any species which may utilise the Site.

ii The Site is bounded and divided by hedgerows. This offers good connectivity and foraging for avian species such as birds and bats and for terrestrial mammals and herptiles such as polecats, hedgehogs, and grass snakes. There is potential for connectivity with a riparian habitat along the river Windrush 250m northwest, but this is limited by a single lane road that runs along the northern boundary of the Site.

5 IMPACTS AND MITIGATION (CUMULATIVE AND/OR IN ISOLATION)

5.1 Planning Application Search

A search was conducted of planning applications within the vicinity of the proposed developments, using the Oxfordshire County Council Planning Enquiry System. The search was limited to the five-year period preceding the date of issue of this report (due to the typical five-year lifetime of planning permission). Excluding retention applications (i.e. typically local-scale residential or commercial developments where an impact has already occurred), and withdrawn and refused applications. No local developments were identified within our search criteria, as having the potential to act in-combination with this application.

ii In summary, the potential cumulative impacts are not predicted to elevate the geographic scale of impact significance for any protected fauna species.

5.2 Habitats

The hedgerows on site are the only habitats of value as they are HPI (NERC Act, 2006). The hedgerows onsite will be retained and enhanced within current proposals (446_P03-Illustrative Masterplan). Therefore, impacts in isolation or combination with other developments are negligible. To mitigate potential impacts upon these habitats during construction:

- Retained habitats to be protected through fencing; and
- Implementation of a robust pollution prevention strategy.

ii No other habitats of importance were recorded on site (dominated by arable).

5.3 Statutorily and Non-Statutorily Designated Sites

The Site is located within the Impact Risk Zone (IRZ) of Cotswolds AONB and Worsham Lane SSSI. However, the proposals are not of a type that is included within the Impact Risk Zones for these European and National designated sites.

ii The nearest statutorily designated site was Cotswolds Area of Outstanding Natural Beauty (AONB)which is not an ecological designation and as such beyond the scope of this assessment.

iii The nearest non-statutorily designated site is Pumping Station Meadow Local Wildlife Site (LWS), which was 0.4km north of the Site, designated for its limestone grassland, and previously noted as having the largest population of green-winged orchids in Oxfordshire. Given its proximity to the Site, it is advised that some mitigation be put in place to ensure no impacts occur from the influx of additional local residents. As a precaution, any public footpaths that lead away from the development site towards the LWS should be signposted detailing the location of the LWS and detailing important information pertaining to the Site (e.g. appropriate disposal of litter, proper utilisation of footpaths, keeping dogs on leads) to try and reduce trampling pressures. The site design includes proposed areas of public open space which will provide suitable recreational areas for the new development and aim to reduce the recreational pressures on offsite locations.

5.4 Fauna

5.4.1 Great Crested Newts

There are no waterbodies (including ponds suitable for amphibian breeding) within the Site and the Site comprises terrestrial habitats largely considered to be unsuitable to be sub-optimal for amphibians (i.e.,

arable field) with more optimal habitats for terrestrial refuge including the hedgerows being retained within the proposals. The nearest pond, P1 was approximately 300m south of the Site.

ii In assessing this loss against the Natural England Rapid risk assessment, the total loss beyond the 250m zone will be approximately 3.5ha of arable field.

iii The table below identifies the Rapid risk assessment components based on the above and confers that risk of an offence is highly unlikely.

Table 3: Natural England Rapid Risk Assessment

Component	**Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)**	**Notional offence probability score**
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.04
Individual great crested newts	No effect	0
	Maximum:	0.04
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

iv The risk assessment above purposefully has not allocated a score for the component of 'individual great crested newt'. This is because, as stated, works will be contained to arable field habitat in which GCN, and other amphibians are unlikely to persist within but are likely only traverse through at night during the active period for the species (March to November when night time temperatures exceed 5°C). All hedgerow habitats which may be of higher value for foraging and potential refuge are to be entirely retained by the works. Thus, potential risks associated with this site with respect to GCN are only that of potential killing and injury of individual newt which as discussed are highly unlikely to be present within the construction area due to the habitat type.

v It is therefore recommended that a precautionary method of works document is provided for the Site stating suitable works timing and practices to further reduce potential risks to individual newt. This will include elements of Ecological supervision / site spot checks to ensure compliance with the method.

vi Provided the method statement can be adhered to it is not conceived that any further survey or mitigation including European Protected Species Licence will be necessary for this site as a direct result of the habitat types present and the proposals for the Site. Therefore, impacts will be negligible.

5.4.2 Bats

Bat Tree Roosts

vii Ground level tree assessment (GLTA) were carried out. Six trees were assessed as having moderate potential to support roosting bats as a result of calus rolls, rot holes, flacking bark and extensive ivy cover. A further 11 trees were assessed as having low potential to support roosting bats as a result of ivy cover, flacking bark

and rot hole. Due to this classification, it is recommended that all trees be retained (as is currently planned) within the development, for both its botanical interest and habitat provision as a potential bat roost, If trees with moderate potential are to be removed as part of the development works (not currently planned in drawing AI13), then further aerial assessment or nocturnal bat surveys will need to be carried out to ascertain their status as a bat roost and determine the need for a Protected Species Licence. If trees with low potential are to be removed as part of the development works (not currently planned in drawing AI13) then they should be soft felled under instructions detailed within a CEMP.

Bat Foraging Habitat

viii The hedgerows around the peripheries of the Site provide suitable foraging and commuting resources for bats. Whilst the Site is connected to the surrounding environment, this is largely agricultural land, with residential areas adjacent to the northeast. Furthermore, the hedgerows and trees which are the main areas of suitable habitat are being retained as part of the development, with additional lines of trees are included within the development plan. With these areas being retained and potentially enhanced, foraging opportunities for bats could be enhanced as well as maintaining habitat connectivity through the Site and beyond.

ix In assessing the Site against criteria in best practice guidelines (Collins J., eds, 2016) the Site was considered to offer moderate quality foraging and commuting habitat for bats. Suitable habitat is localised to the peripheral vegetation which is being retained. On this basis, a development would be of low risk to bat species foraging and commuting. Given the retention of the hedgerows, was considered disproportionate to undertake further bat activity surveys as impacts to bat foraging will be negligible post-development if mitigation measures from artificial lighting during operation are adhered to.

x Artificial lighting can affect the way that bats use habitats in a number of ways, depending on the species and proximity to a roost. Direct bright lighting of a roost can cause bats to delay emergence from a roost and could even cause them to desert the roost or become entombed within it (BCT and ILP, 2018). The prey items for British bats are flying insects, and many flying insects are attracted to certain types of artificial light sources, especially those that emit light with an ultraviolet component or have a high blue spectral component (BCT and ILP, 2018). Some species of bat recorded are known to be attracted to insects gathered around light sources (such as pipistrelle, noctule, Leisler's and serotine), whereas other species actively avoid lit areas (such as long-eared bats, Myotis species, barbastelle and greater and lesser horseshoe bats). Lighting within the Site could therefore be expected to affect the ways that the bats in the area are able to use the Site. As a result, it is recommended that construction works are to be undertaken in daylight hours only with no night hours work permitted.

xi Sensitive lighting on site should follow the guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018). Therefore, associated site lighting proposals must consider the following:

- Avoid lighting where possible;
- Install lamps and the lowest permissible density;
- Lamps should be positioned to direct light to avoid upward spill onto any green corridors that could be used by commuting bats or features with bat roost potential;
- LED lighting – with no/low UV component is recommended;
- Lights with a warm colour temperature – 3000K or 2700K have significantly less impact on bats;
- Light sources that peak higher than 550nm also reduce impacts to bats; and
- The use of timers and dimmers to avoid lighting areas of the Site all night is recommended.

5.4.3 Dormice

xii Hedgerow habitats provide suitable habitats for dormice, and connectivity to the wider landscape; however, no records were identified.

xiii The majority of habitats of value to dormice (hedgerows and trees) are to be retained within proposals. As such impacts are deemed unlikely to extend beyond the local level.

xiv Potential for increased ambient lighting around boundary habitat to disturb dormice commuting and foraging on site. A sensitive lighting on site should follow the guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018) as detailed above, reducing the light spill onto peripheral habitats, and maintaining these as dark corridors.

5.4.4 Birds

viii The hedgerow habitats within the Site provide suitable habitat for nesting birds and records of birds of conservation concern (BoCC) and Wildlife and Countryside Act schedule 1 (WCA1) were returned from the data search. However, no suitable nesting habitat for Schedule 1 birds was recorded on site and these are considered likely absent. While BoCC could use the Site, the footprint of the works is too restricted to impact more than one or two pairs of any given species.

xv Furthermore, the majority of habitats of value to breeding bird (hedgerows and trees) are to be retained within proposals, with additional trees being planted. As such impacts are deemed unlikely to extend beyond the local level.

xvi Suitable habitat for ground nesting birds (i.e. arable and grassland) is widespread in the local area and the loss via this development is considered of a negligible scale locally.

xvii Any tree management works or vegetation clearance, to allow for site access, should take place outside the bird nesting season to ensure compliance with the general protection afforded to wild birds under the Wildlife and Countryside Act 1981 (as amended). If this is unavoidable, the trees and hedgerows should be carefully checked, by a suitably qualified ecologist, prior to removal. Where active nests are found, working restrictions would be put in place until follow up survey can demonstrate that all chicks have fledged. This will reduce impacts to negligible.

5.4.5 Reptiles

xviii The overall habitat quality of the Site limits its suitability for reptiles, being largely dominated by an arable field. Persistence of reptiles on site is therefore considered unlikely and certainly this site will not form a core area for reptiles locally. However, as there remains the residual risk for reptile to pass through the Site, utilising features such as the hedgerow boundaries, a careful works procedure with regard to reptiles is recommended for site vegetation clearance.

xix The actual need for such clearance will be minimal due to the retention of the hedgerow habitats etc, however, where this is required, works should be conducted in temperatures above 11°C, ideally in the late morning to afternoon, when reptiles are most active. The habitats should first be cut to a height of 15-20cm by a tractor progressing at walking pace only. The area should be left for 24-48hrs and then cut to 5cm using the same method, working in the same direction as the previous cut. This will allow any reptiles present to disperse into the wider environment unharmed. In the extremely unlikely event a reptile is seen during these works, they should be allowed to escape unharmed at their own pace. Only a trained ecologist should attempt to move reptiles by hand. If multiple reptiles are encountered, works should cease, and the methodology be re-evaluated. Following this precautionary methodology reduces the likely impacts upon reptile to negligible.

5.4.6 Badgers and Other Priority Fauna

xx An active single hole outlier sett in current use was identified during surveys. As badgers are protected from killing/injury and disturbance, it will be necessary to obtain a licence from Natural England to close the sett prior to works commencing on site. This activity is only licensable 1st July to 1st December inclusive, outside of the breeding season. It is recommended that badger activity surveys are conducted every six months until the Site is operational to ensure badgers are not gaining access to the Site and no new setts within 30m have been created.

xxi It is an offence to cause disturbance to a badger whilst it is occupying a sett. Table 4 below shows the minimum permitted distances for differing activities that can cause tunnel collapse or the abandonment of setts. The plan in Appendix 9 shows the buffers in relation to recorded sett on the Site boundary. As excavations using machinery are intended during works, buffers of 30m are applicable in most instances. Should pile driving occur on Site, within 50m of the main sett, a licence from Natural England to disturb or temporarily close the sett may be required. Impacts upon this clan are likely to be at the local level when further local foraging habitat loss is taken into account.

Table 4: Summary of badger disturbance distances

Distance	Activity
10m	All works to 10 metres of the nearest sett entrance must be undertaken using hand tools only. Where strimming or vegetation removal closer than this is required, a robust method statement and ecological clerk of works will be required (if roots are to be removed the 30m buffer applies).
30m	Using heavy machinery within 30 metres of any entrance to an active sett may require a licence
50-100m	In some cases such as where pile-driving drilling or blasting which cause severe vibration are intended, a larger zone, of at least 50 metres radius may be needed, together with careful timing of operations.

xxii Given the suitability of the Site for badgers, it is considered that hedgehog are likely to be utilising the Site for foraging. To enable this species to move freely across the Site, small 15x15cm gaps could be left at the bottom of residential fencing. Precautionary measures are also recommended to reduce the risk of impacting badgers and hedgehogs, or any other mammals during the works.

xxiii These precautions are:

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Cap off any open pipes at the end of each day;
- Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;
- Keep all fuel and other harmful substances in a locked area;
- Ensure any spillages are treated with spill kits;
- Night work should be avoided where possible, and any flood lighting should face away from the Site boundaries; and
- If any fresh sett digging is observed notify an ecologist immediately and leave a 20m buffer around the area until an assessment can be made.

5.4.7 Biodiversity

xxiv Following input of habitat data into the DEFRA Metric 3.1, it has been considered there will be quantified net gain in biodiversity of 2.88 habitat units (13.10%) and net gain of 2.54 linear units (44.31%) across the site.

xxv This net gain is a result of replacement of low distinctiveness cropland with areas of modified grassland, broadleaved woodland to the south-east, planting of small trees, and a Sustainable Urban Drainage Feature, and the addition of new hedgerows associated with the development.

xxvi Figure 6 shows a visualisation of the proposals.

xxvii In addition, the provision of this habitat creation/enhancement also presents the opportunity to create habitat provisions for a variety of species, such as bat, bird, and hedgehog boxes, as well as invertebrate refugia, as described in Section 7.

6 SUMMARY OF POTENTIAL IMPACTS

Table 5: Table Summary of Impacts

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
Statutory Designated Sites	County or above	None	No	N/A	N/A
Non-statutory designated sites	County	Increased footfall and trampling pressures on Pumping Station Meadow LWS	Public footpaths within the development site leading towards the LWS to be signposted detailing important information pertaining to the Site (e.g., appropriate disposal of litter, proper utilisation of footpaths, keeping dogs on leads).	Planning Condition – details within LEMP	Not significant
Habitats including invasive and Priority flora	Local	Loss of habitats of low diversity and possible indirect effects on higher quality peripheral habitats as a result of construction.	Retention of hedgerow and trees in accordance with root protection areas.	Planning Condition – details within a CEMP	Not significant
Reptiles	Local	Potential for killing/injury of individual animals during vegetation removal and construction.	Precautionary In relation to legislative protection of animals	Planning Condition – detail within a PMW	Not significant
Bats – Roosting	Local	Possible damage/destruction of satellite roost if trees impacted by proposal (not currently planned in drawing AI13).	Trees with low potential (T1, T4, T5, T6, T8, T9, T10, T11, T12, T13, and T16) to be felled using soft felling techniques detailed within a PMW. Presence/likely absence of roosting bats in moderate trees (T2, T3, T7,	N/A	Not significant

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
			T14, T15, and T17) to be confirmed by a suite of nocturnal surveys undertaken during the active period for bats (May-September)- 2 surveys (1 dusk and 1 dawn).		
Bats – Foraging/Commuting	Local	Unlikely to be impacted by proposals as low-quality habitat present on site and linear features being retained.	Maintenance of connective features such as hedgerows and tree lines by adhering to root protection zones. Implementation of sensitive bat lighting scheme.	Planning Condition – details within CEMP and LEMP	Not significant
Great crested newts	Local	Potential for killing/injury of individual animals during vegetation removal and construction.	Precaution in relation to legislative protection of animals	Planning Condition – detail within a PMW	Not significant
Dormouse	Local	Unlikely to be impacted by proposals as low-quality habitat present on site and linear features being retained.	Maintenance of connective features such as hedgerows and tree lines by adhering to root protection zones. Implementation of sensitive bat lighting scheme.	Planning Condition – details within CEMP and LEMP	Not significant
WWC	N/A	None	No	N/A	N/A
Water vole	N/A	None	No	N/A	N/A
Badgers	Local	Potential for killing/injury/disturbance of individuals in active setts.	Precautionary in relation to legislative protection of individual animals., Sett closure under a Natural England Licence.	NE Licence	Not significant, provided a licenced closure is undertaken.

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
Breeding birds	Negligible	Damage or destruction of nests	Precaution in relation to legislative protection of animals	Planning Condition -details within a CEMP	Not significant
Otter	N/A	None	No	N/A	N/A
Biodiversity	Local	Net gain in biodiversity of habitat areas (approximately 13%) and a net gain in biodiversity of linear habitats (approximately 44%).	Native trees to be planted within the development, including the creation of a small area of woodland to the south.	Planning Condition – details within LEMP	Significant positive gain for biodiversity.

7 COMPENSATION & ENHANCEMENT RECOMMENDATIONS

7.1 Habitats

The National Planning Policy Framework and local development plan requires ecological enhancement of sites subject to development proposals to the extent that they provide a net biodiversity gain.

ii Details concerning habitat creation can also be found within the Biodiversity Impact Assessment Metric: RSE_4967_BIA.

7.1.2 Hedgerows

iii A minimum of 6 species should be planted, which may include blackthorn (*Prunus spinosa*), field maple (*Acer campestre*), alder (*Alnus glutinosa*), common dogwood (*Cornus sanguinea*), hazel (*Corylus avellane*) and guelder rose (*Viburnum opulus*), Standard trees such as English oak (*Quercus robur*) and wild cherry (*Prunus avium*) can also be planted at 50m intervals.

iv Planting should be undertaken during early winter, providing the ground is not frozen. Planting up gaps can be done in conjunction with coppicing existing plants, to give new plants minimum competition. To further reduce competition and aid establishment of the planted-up sections, the bases of the plants would be kept weed free through spot treatment of herbicide for the first three years.

7.1.3 Grassland

v The development will include areas of amenity-managed 'modified' grassland. It is recommended that these areas are sown with a Flowering Lawn Mixture which contains slow growing grasses with a selection of wildflowers that respond well to regular short mowing. For example, Naturescape's N14 Flowering Lawn Mixture contains 80% grasses and 20% wildflowers, with species such as bird's-foot trefoil (*Lotus corniculatus*), selfheal (*Prunella vulgaris*), hard fescue (*Festuca Trachyphylla*), and smooth stalked meadow grass (*Poa pratensis*). This can be managed as amenity grassland since the species in the mix will tolerate close mowing to a height of c. 5cm for the majority of the year.

vi Additionally, the provision of rough grassland within the wider landscape would provide a valuable foraging, commuting and refuge resource for terrestrial phase herpetofauna, including great crested newts, as well as a variety of invertebrates and small mammals. It is recommended that Emorsgate EM10 Tussock Mixture is utilised within these areas. This seed mixture, once established, would form tussocky grassland, interspersed with wildflowers that can tolerate competition from the more competitive tussock forming grass species within this mixture. Once established, this grassland would require little to no maintenance.

7.1.4 Scrub

vii Where areas of scrub is proposed to be planted, this should utilise a mixture of native species such as hazel, blackthorn, hawthorn, willow, box, dogwood, and buckthorn. These areas of scrub should also be managed sensitively for wildlife, with sections cleared on a rotational basis to produce clearings within this habitat. In addition, areas of scrub should be planted around the new ponds to provide suitable refugia for any herpetofauna (amphibians and reptiles) that may utilise these habitats. The provision of this scrub would also provide suitable habitat for a variety of nesting bird species, as well as suitable habitat for sett establishment by badgers.

7.1.5 Tree planting and woodland creation

viii Tree planting is proposed throughout the Site and an area of broadleaved woodland is proposed to the south-east.

ix Native species should be used, for example rowan (*Sorbus aucuparia*), silver birch (*Betula pendula*) and cherry (*Prunus avium*). All three are relatively quick growing with limited crown spread so would be beneficial in amenity areas. Rowan would provide berries for bird sustenance.

x Ash (*Fraxinus excelsior*) and elm (*Ulmus sp.*) should be avoided due to prevalence of disease (Ash die-back and Dutch elm disease) in these species; stocks of these species cannot be guaranteed to be free from disease.

xi The use of native species in tree planting is also encouraged as these can harbour a high diversity of invertebrates. For example, English oak trees have over 400 associated invertebrate species (Kennedy & Southwood, 1984).

xii Other suggested planting of benefit to invertebrates includes:

- Willow (*Salix sp.*);
- Hawthorn (*Crataegus monogyna*);
- Blackthorn (*Prunus spinosa*);
- Hazel (*Corylus avellana*); and
- Birch (*Betula sp.).*

xiii The addition of fruit trees throughout the site, including apple (*Malus sp.)* and cherry (*Prunus sp.*) would also provide suitable foraging enhancements for badgers across the site.

xiv Within the woodland area, trees should be planted in groups at irregular spacing intervals between rows. This is typically preferred if a more natural appearance is desired or if wildlife and conservation are prime objectives. This variable spacing also allows space for natural regeneration to supplement the planted trees.

xv In addition, the understory of the new woodland should be sown with a shade tolerant wildflower seed mix, such as Emorsgate's EW1 Woodland Mixture, to increase the diversity of the ground flora.

xvi In order to achieve a 'moderate' condition, the single 'urban' trees should be managed to have no gaps in their canopy and provide niches for fauna, such as encouragement of deadwood and cavities, and provision of habitat boxes.

xvii In order to achieve 'moderate' condition, management of the woodland should implement the following:

- Evidence of wildlife browsing damage is <40%;
- <10% invasive species such as rhododendron or laurel;
- 3-4 native or shrub species are present;
- At least 50% of tree canopy and shrub coverage are native;
- <40% temporary open space;
- At least 2 classes of trees present (saplings, seedlings, and trees);
- Less than 25% tree mortality due to pests or disease;
- Recognisable National Vegetation Classification plants communities present;
- Two or more vegetation storeys present;
- At least 25% of woodland has standing deadwood;
- Less that 1 hectare is nutrient enriched with less than 20% damaged ground.

xviii Any landscape planting associated with the new development should also consider the use of native shrub species and also species which provide important sources for pollinating species such as lavender. The Royal Horticultural Society provide online resources to identify suitable plants for garden areas that are aesthetically pleasing but of significant value to local pollinators (www.rhs.org.uk/plantsforpollinators).

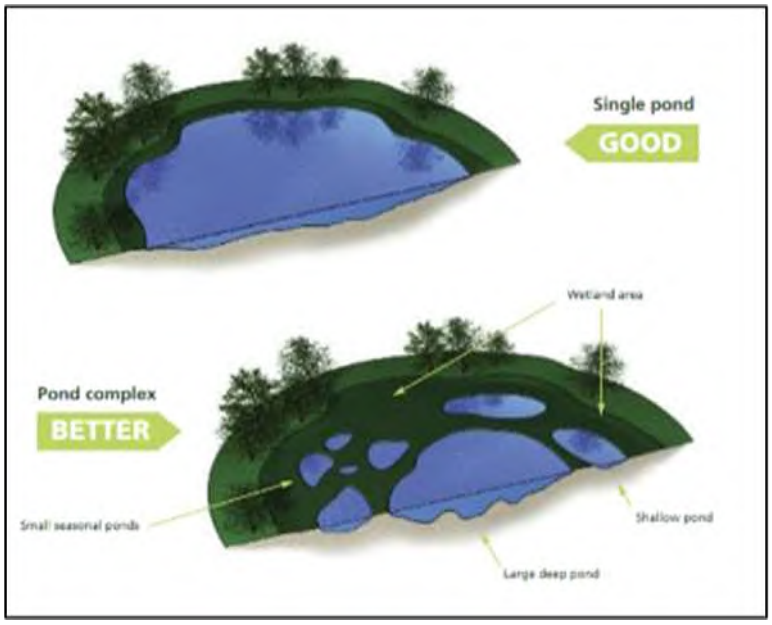
7.1.6 Sustainable Urban Drainage Feature (SUDs)

xix A SUDs feature is proposed to be created within the development. If planted sympathetically, this could provide significant ecological enhancement to the site. Areas of permanent wet waterbodies and associated vegetation can provide an important invertebrate habitat area and increasing the foraging capacity of the site

for fauna. The value of these ponds for wildlife can be maximised by utilising the following principles, recommended from the Freshwater Habitats Trust:

- Creating complexes of ponds rather than single waterbodies
- Include both permanent and seasonal ponds
- Almost all pond slopes are at least 12o in gradient
- Create broad, undulating wetland areas around and between ponds
- Create underwater bars and shoals to benefit aquatic plant

Figure 7: Pond Complex Example



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xx Where the ponds are designed to hold some degree of permanent standing water, they could be planted with native marginal plug plant species and with marginal vegetation, such as 'Naturescape's N8 Water's Edge Meadow Mixture. This comprises 24 wildflower species and 9 grass species. The species in this mix will tolerate flooding once established, and many would grow in the ponds themselves.

7.2 Protected/Principal Species

Additional enhancements that could easily be met within the development scope include the incorporation of bat and bird nest boxes. Boxes could be placed on retained trees within the Site boundaries. The tree mounted bat boxes should face south (for additional warmth), and be positioned at least 4 metres from the ground, with the entrances being free of overhanging branches. It is also recommended that bird nest boxes be placed 1.5m below each bat box, to ensure that the birds have somewhere to nest and do not inhabit the bat boxes. Use of boxes such as the Vivara woodstone box provide a long-term nest box solution requiring limited replacement unlike wooden boxes which need regular replacement as a result of weathering. Suitable bat box dimensions are 430mm high X 270mm wide X 140mm deep. The boxes are designed to mimic natural roost sites and to provide a stable environment.

Figure 8: Bat Box Example

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Figure 9: Bird Box Example

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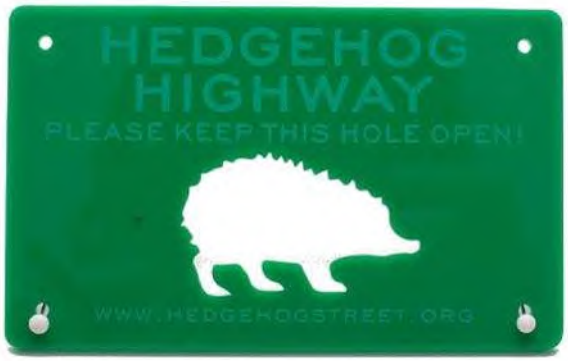
ii Additional enhancements for invertebrates could also be easily met within the development scope by including insect houses on any retained trees on site. These nest boxes will help to provide a variety of niches for a diverse spectrum of invertebrates to inhabit, and therefore help to increase the terrestrial invertebrate species diversity on site.

iii Where any permanent residential fencing is to be constructed, small 15x15cm mammal holes should be installed within these fences. 'Hedgehog Highway' signs (available from the British Hedgehog Preservation Society) could be installed above these holes to prevent them being filled in in the future. This will help to maintain their permanency and so the connectivity for mammals, such as hedgehogs, to the Site and the surrounding landscape.

Figure 10: Hedgehog Highway



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8 MONITORING

No monitoring is required for this project to be compliant with legislation and policy.

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10 APPENDIX 1: LEGISLATION AND PLANNING POLICY

10.1 General & Regionally Specific Policies

Articles of British legislation, policy guidance and both Local Biodiversity Action Plans (BAPs) and the NERC Act, 2006 are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:

- The Environment Act 2021
- The National Planning Policy Framework (2021)
- ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2021)
- Local planning policies EN3 (West Oxfordshire District Council)
- The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
- National Parks and Access to the Countryside Act 1949;
- The Protection of Badgers Act 1992;
- The Countryside and Rights of Way Act 2000;
- The Hedgerow Regulations 1997;
- The Natural Environment and Rural Communities (NERC) Act 2006;
- Local Biodiversity Action Plan for West Oxfordshire.

ii Specifically, EN3 of the West Oxfordshire District Council States:

"The biodiversity of West Oxfordshire shall be protected and enhanced to achieve an overall net gain in biodiversity and minimise impacts on geodiversity"

"Protecting and mitigating for impacts on priority habitats, protected species and priority species, both for their importance individually and as part of a wider network"

iii In relation to these proposals' relevant sections of the NPPF, 2021 are:

"promote the conservation restoration and enhancement of priority habitats and ecological networks and the protection and recovery of priority species…identify and pursue opportunities for securing measurable net gains for biodiversity (174b)"

"minimising impacts on and providing net gains for biodiversity (170d)"

"if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused (175)"

10.2 Bats and Great Crested Newts

Great crested newt and species of British bats are fully protected within UK Law under *Wildlife and Countryside Act 1981* (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:

- Intentional or reckless killing, injury, taking;
- Damage to or destruction of or, obstruction of access to any place of shelter, breeding or rest;
- Disturbance of an animal occupying a structure or place;
- Possession or control (live or dead animals);
- Selling, bartering or exchange of these species, or parts of.

ii This law is reinforced by the UK's transposition of the EU Habitats Regulations under *The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended)*. These Regulations also prohibit:

- the deliberate killing, injuring or taking of great crested newt or bats;
- the deliberate disturbance of any great crested newt or bat species in such a way as to be significantly likely to affect:
- their ability to survive, hibernate, migrate, breed, or rear or nurture their young; or
- the local distribution or abundance of that species.
- damage or destruction of a breeding site or resting place;
- the possession or transport of great crested newt or bats or any other part of.

iii Under certain circumstances a licence may be granted by Natural England to permit activities that would otherwise constitute an offence. In relation to development, a scheme must have full planning permission before a licence application can be made.

iv In addition, seven British bat species are listed as Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act, 2006. These are barbastelle (*Barbastellus barbastellus)*, Bechstein's (*Myotis bechsteinii)*, noctule (*Nyctalus noctula)*, soprano pipistrelle (*Pipistrellus pygmaeus)*, brown long-eared (*Plecotus auritus)*, greater horseshoe (*Rhinolophus ferrumequinum)* and lesser horseshoe (*Rhinolophus hipposideros)*.

v Under the National Planning Policy Framework 2019 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

10.3 Birds

The Wildlife and Countryside Act 1981 (as amended) is the Priority legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to recklessly or intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while it is in use or being built;
- Take or destroy the egg of any wild bird.

ii For birds listed on Schedule 1 of the Act, it is an offence to disturb any bird while it is building a nest, is at or near a nest with young; or disturb the dependant young of such a bird.

iii Species listed in Annex 1 of the EU Birds Directive 1994 (e.g. barn owl) are required to have special conservation measures taken to preserve their habitats and sites to be classified as Special Protection Areas (SPAs) where appropriate.

10.4 Reptiles

All reptile species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:

- Reckless or intentional killing and injury;
- Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species.

In addition to the above legislation, UK rare reptiles; sand lizards (*Lacerta agilis*) and smooth snakes (*Coronella austriaca*), are listed under The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended). This makes it an offence to;

- Capture, kill, injure and disturb;
- Take or destroying eggs;
- Damage or destroy breeding/resting places;
- Obstruct access to resting places; and
- Possess, advertise for sale, sell or transport for sale, live or dead (part or derivative).

ii Where these animals are confirmed as present on land that is to be affected by development guidance recommends that:

- The animals should be protected from injury or killing during construction operations;
- Mitigation should be provided to maintain the conservation status of the species locally;
- Under the National Planning Policy Framework 2019 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

10.5 Badgers

Badgers (*Meles meles*) and their setts are protected by the Protection of Badgers Act 1992. This makes it an offence to:

- intentionally capture, kill or injure a badger;
- damage, destroy or block access to their setts;
- disturb badgers in setts;
- treat a badger cruelly;
- deliberately send or intentionally allow a dog into a sett; and
- bait or dig for badgers.

ii Case law for this species contains example prosecutions of imprisonment for six months and heavy fines.

10.6 Hedgehogs, brown hare, polecat, and harvest mouse.

Under the NERC Act 2006, the hedgehogs (Erinaceus europaeus), brown hare (Lepus europaeus), polecat (Mustela putorius) and harvest mouse (Micromys minutus) are categorised as a 'Species of Principal Importance' for biodiversity. Listing as SPI reflects concerns that populations have suffered a rapid and sustained decline in the UK. As such, they are a material consideration during planning.

10.7 Hedgerows

All native hedgerows (including species-poor ones) are listed under Section 41 of the NERC Act (2006) and are a Local Biodiversity Action Plan (LBAP) habitat. All native hedgerows are considered to be of high conservation value.

ii The Hedgerow Regulations (1997) classifies a hedgerow as 'important' if it:

- Satisfies at least 1 of the criteria listed in Part II of Schedule 1
- Has existed for 30 years or more

iii Any person wishing to remove a hedgerow is required to submit a hedgerow removal notice to the LPA

iv Items of Legislation that are pertinent regarding hedgerows include:

- Hedgerow Regulations 1997
- The countryside Rights of Way Act 2000
- Natural Environment and Rural Communities Act (NERC) 2006
- Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation
- The UK Biodiversity Action Plan (UK BAP)
- The Conservation of Habitats & Species Amendments (EU Exit) Regulations 2019 (as amended)

11 APPENDIX 2: SURVEY CONDITIONS

Table 6: Survey Conditions

Survey type	Date completed	Temperatures (°C)	Wind speed (Beaufort Scale)	Cloud cover (Oktas Scale)	Precipitation
PEA	25/05/2021	22	1	4	0
Conditions assessment, and GLTA	22/06/2022	26	1	2	0
Badger camera deployment	27/06/2022	19	1	5	0
Badger camera collection	11/07/2022	28	1	0	0
Badger camera deployment	12/09/2022	24	1	5	0
Badger camera collection	26/09/2022	15	2	4	0

12 APPENDIX 3: SPECIES SPECIFIC SURVEY METHODOLOGY

12.1 Bats

The overall value of the Site and its connectivity to the wider countryside was assessed in relation to bats. The likelihood of bats roosting at the Site or moving through the Site between local roost sites and foraging/mating/hibernation habitats was considered.

ii The Site, including the trees and boundary trees, were assessed by an ecologist and graded as to their suitability for supporting roosting bats using the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Survey Guidelines* (Collins, J. Eds. 2016), an extract of which is provided interpreted in Table 7.

Table 7: Criteria for bat roost potential assessment of trees

Roost Potential	Description	Surveys Required (Trees)
Confirmed roost	Evidence of roosting bats found during initial daytime inspection.	3 – including 1 dawn as a minimum
High *	Structures with one or more features suitable for bat roosting, with obvious suitability for larger numbers of bats.	3 – including 1 dawn as a minimum
Moderate	Structure with one or more potential roost sites that could be used due to size, shelter and protection but unlikely to support a roost of high conservation status.	2– including 1 dawn as a minimum
Low	Structure with one or more potential roosting sites used by individual bats opportunistically. Insufficient space, shelter or protection to be used by large numbers of bats.	Precautionary Mitigation Approach, some instances may require further survey
Negligible	No or negligible features identified that are likely to be used by roosting bats	None

** Unless it is a confirmed roost, additional surveys are required of buildings to assess presence / likely absence of a roost. The number of surveys are indicative to give confidence in a negative result, i.e. where no bats are found, confidence in a result can be taken.*

12.2 Badger Survey

The survey followed the advice set out by English Nature (2002) and Harris *et al* (1989) and was undertaken by a surveyor with an extensive level of experience.

ii The Site was subject to a detailed badger survey involving searching for setts as well as evidence of badger activity. When a sett was identified, its location, along with details of the number of entrances, and consideration of the level of activity, were recorded as detailed below:

- **Main setts**: Normally each group of Badgers has only one main sett, and so by counting all the main setts in an area you can find out how many social groups of badgers are present. Main setts usually have several holes with large spoil heaps, and the sett generally looks well used. There will be obvious paths to and from the sett and between sett entrances. In the British national badger survey the average number of holes for a main sett was twelve, although main setts may be much smaller, even a single hole in exceptional circumstances. Although normally the breeding sett, and in continuous use, it is possible to find a main sett that has become disused due to excessive interference, illegal digging, tree felling or some other reason.
- **Annexe setts**: These are often close to a main sett, normally less than 150m away, and are connected to the main sett by one or more obvious well-worn paths. Usually they have several holes but may not be in use all the time, even if the main sett is very active. The average number of holes per annexe sett in the British survey was eight.
- **Subsidiary setts**: These are usually at least 50m from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active. The average number of holes per subsidiary sett in the British survey was four.
- **Outlying setts**: These often have little spoil outside the holes, have no obvious path connecting them with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not the actual entrance hole), which is at least 25cm in diameter and rounded or a flattened oval shape (i.e. broader than high). Fox and rabbit tunnels are smaller and often taller than broad. The average number of holes per outlying sett in the British survey was two.

iii Note: These sett definitions form part of a continuum, and setts do not always fit neatly into these categories.

iv Level of activity of each entrance is described as:

- **Well used** – clear of debris, trampled soil mounds and obviously active, with signs of activity such as presence of prints, dislodged guard hairs around the entrances – these signs indicate a sett is active and in current use.
- **Partially used** – some associated debris or plants at the entrance. Could be used with minimal excavation and usually with signs of activity within the vicinity, for example, badger pathways. Depending on the time of year, entrances with these signs could indicate presence of badgers and may be in current use.
- **Disused** – partially or completely blocked entrances. These signs show the sett is not in use.

v A subjective assessment of the foraging potential of the habitats within the Site was also made, based on the availability of potential food sources:

- **Good** foraging habitat: provides Badgers with a variety of foraging opportunities through the year (e.g. pasture, hedgerows, and gardens).
- **Moderate** foraging habitat: foraging opportunities can be limited by season and management regime (e.g. arable fields, grassland leys, woodland and scrub).
- **Poor** foraging habitat: areas that provide few foraging opportunities for Badgers (e.g. cereal crops, heathland, moorland, wetlands).

vi The definition of 'Current Use' as used in the report refers to the presence of current or recent field signs indicating 'current use' by badgers. A sett not considered in 'current use' is when field signs have deteriorated or decayed to such an extent that they no longer indicate that the sett is in 'current use'.

vii A sett that does not show signs of current use by badgers does not meet the definition of a badger sett under the Protection of Badgers Act (1992) (as amended) and is therefore not protected by this legislation.

PRELIMINARY

- Site boundary (10.07ha)
1. Proposed vehicular and pedestrian access
2. Proposed pedestrian/cycle connection
3. Primary street
4. Secondary street
5. Private drive
6. Proposed recreational route
7. Proposed playspace
8. Proposed attenuation basin
9. Existing vegetation retained and enhanced as necessary with locally characteristic and native species
10. Proposed woodland edge
11. Proposed green buffer to existing property
12. Proposed pumping station
13. Proposed footpath along Burford Road

Rev.	Date	Description
D	22.10.13	Amended site boundary
C	22.10.12	Amended site boundary
B	22.10.06	Amended landscape
A	22.09.29	Amended proposed layout

Land to the west of
MINSTER LOVELL

Illustrative Masterplan

Job ref:	Drawing number:	Revision:
466	P03	D

Scale:	Date:
1:2,500 @ A3	October 2022

edge URBAN DESIGN

part of
edge Placemaking Group Ltd

Suite 2
7 Buttermarket
Thame
Oxfordshire
OX9 3EW

01865 522395
enquiries@edgeUD.co.uk
www.edgeUD.co.uk

14 APPENDIX 5: DESK STUDY RESULTS

A total of two statutory designated sites were recorded within the search area, the details of which are summarised in Table 8 below. The Site is located within the IRZ of Cotswold AONB and Worsham Lane SSSI. However, the proposal is not of a type that is included within the Impact Risk Zones for these European and National designated sites.

Table 8: Statutorily Designated sites within 5km of Site Boundary

Site Name	Designation	Location	Brief Description
Cotswolds	AONB[6]	11m N	Jurassic limestone gives the Cotswolds their distinctive character, and an underlying unity in its use as a building material throughout the area. The limestone lies in a sloping plateau with a steep scarp slope in the west drained by short streams in deep cut wooded valleys, and a gentle dip slope which forms the headwaters of the Thames.
Worsham Lane	SSSI[7]	724m S	This site consists of an ancient track, together with adjoining grass verges and scattered scrub, which supports one of the largest British populations of the very rare plant species, downy woundwort Stachys germanica

ii Five non-statutorily designated sites were also identified within the 2km search radius, details of which are provided in Table 9.

Table 9: Non-statutory designated sites

Site Name	Designation	Location	Brief Description
Pumping Station Meadow	LWS[8]	0.4km W	Limestone grassland previously noted as having the largest population of green-winged orchids in Oxfordshire. The grassland on the slope is species rich with abundant dwarf thistle, lady's bedstraw, common restharrow, rough hawkbit, salad burnet, hairy violet, cowslip and wild thyme.
Upper Windrush	LWS	0.4km N	The valley of the Windrush from Whitney to the Oxfordshire border. Includes Lowland meadows, wet grassland/floodplain grazing marsh, lowland fen and swamp, limestone grassland and woodland.
Worsham Meadows	LWS	0.4km N	This is a series of three hay meadows along the flood plain of the River Windrush. All three fields are species rich.
Minister Lovell Marsh	LWS	1.3km NE	This site is mostly on the floodplain of the River Windrush with an extensive area fen. A good range of wetland species are present with water mint, meadowsweet, marsh bedstraw, wild angelica, meadow-rue, flag iris, and purple loosestrife.

[6] AONB – Area of Outstanding Natural Beauty

[7] SSSI – Site of Special Scientific Interest

[8] LWS – Local Wildlife Site

Site Name	Designation	Location	Brief Description
Asthall Leigh Valley	LWS	0.8km N	Asthall Leigh consists of two areas known as Foxhole Bottom and Shorthazel Bottom. The west facing banks have areas of limestone grassland, supporting a range of wildflowers including fragrant orchid, pyramidal orchid, an abundance of cowslips, common spotted orchid and marjoram.

iii There are 67 Habitats of Principal Importance under Section 41 of the NERC Act, 2006 located within a 1km radius of the Site. These are shown in a table below, with the distance and direction of the closest habitats in regard to the Site referenced. The closest habitats are an area of lowland calcareous grassland and area consisting of ancient & Semi-Natural Woodland, deciduous woodland and broad-leaved Woodland.

Table 10: Habitats of Principal Importance within 1km of the Site

Habitat	Quantity	Closest Habitat - Distance to Site	Closest Habitat - Direction to Site
Lowland calcareous grassland	2	0.2km	W
Ancient & Semi-Natural Woodland	1	0.2km	W
Deciduous woodland	33	0.2km	SW
Broad-leaved Woodland	1	0.2km	W
Coastal and Floodplain Grazing Marsh	12	0.3km	NW
Good quality semi-improved grassland	3	0.4km	N
Traditional orchard	4	0.5km	SE
Conifer Woodland	11	0.7km	N

iv Records of previous European Protected Species Licences (EPSL) were discovered within a 5km search area around the Site. This included:

- Five records of bat licences were identified including the following species Common pipistrelle (*Pipistrellus pipistrellus*), Brown long-eared bat (*Plecotus auritus*), Soprano pipistrelle (*Pipistrelles pygmaeus*), Natterer's bat (*Myotis nattereri*), Serotine (*Eptesicus serotinus).* The closest record was located 1.5km northeast (ref 2018-37679-EPS-MIT). The most recent licence was awarded in 2020 for Common pipistrelle, Soprano pipistrelle & Serotine which allowed the destruction of a resting site.
- Four records of great crested newt licences were also identified. The closest record was located 3.7km South (ref: EPSM2010-1955) but does not specify what the license relates to. The most recent licence was awarded in 2015 and allowed the damage and destruction of a resting place.

ix Protected species records were received from Thames Valley Environmental Records Centre. A summary of the records considered most relevant to the Site and/or proposed development are provided in Table 13. Full species records are available to view upon request.

Table 11: Summary of protected and Priority species records

Common Name	Scientific Name	Records	Conservation Status
Amphibians			
Common frog	*Rana temporaria*	3 records; closest record 2.1km S	Partial protection under WCA
Mammal			
Polecat	*Mustela putorius*	4 records; closest record 126m W	NERC
Common pipistrelle	*Pipistrellus pipistrellus*	5 records; closest record 134m E	EPS, WCA
European hedgehog	*Erinaceus europaeus*	4 records; closest record 236m NE	NERC
European otter	*Lutra lutra*	8 records; closest record 286m NW	EPS, WCA, NERC
Water vole	*Arvicola amphibius*	27 records; closest record 286m NW	WCA, NERC
Brown hare	*Lepus europaeus*	11 records; closest record 0.86km S	NERC
Eurasian badger	*Meles meles*	13 records; closest record 0.84km S	PBA[9]
Harvest mouse	*Micromys minutus*	7 records; closest record 1.77km S	NERC
Birds			
House sparrow	*Passer domesticus*	4 records; closest record 34m E	BoCCRed, NERC
Starling	*Sturnus vulgaris*	4 records; closest record 34m E	BoCCRed, NERC
Barn owl	*Tyto alba*	14 records; closest record 147m N	BoCCGreen, WCA (1)
Bullfinch	*Pyrrhula pyrrhula*	3 records; closest record 347m NW	BoCCAmber, NERC
Dunnock	*Prunella modularis*	6 records; closest record 347m NW	BoCCAmber
Fieldfare	*Turdus pilaris*	4 records; closest record 347m NW	BoCCRed, WCA (1)
Goshawk	*Accipiter gentilis*	1 record, 347m NW	WAC

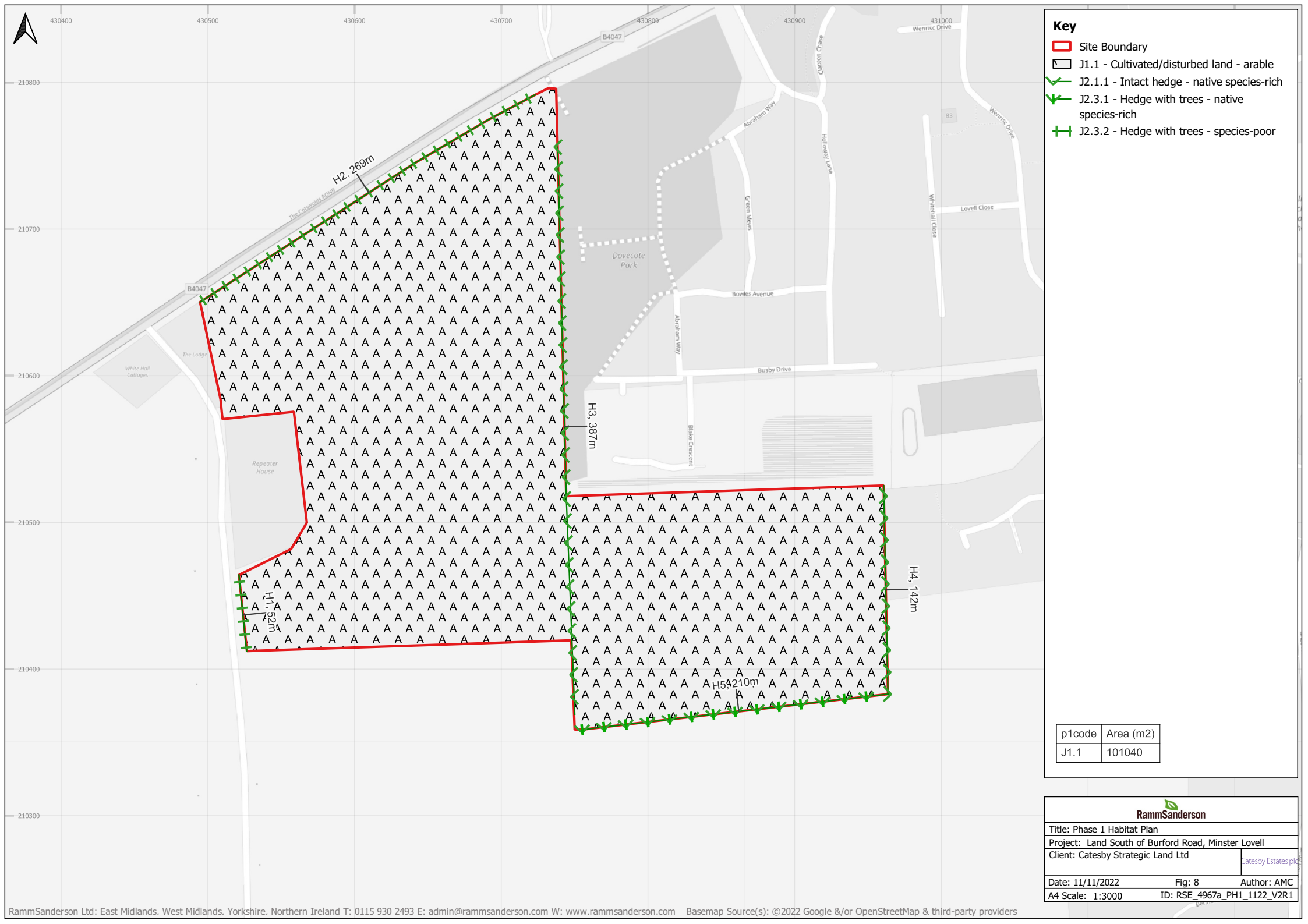
[9] PBA – Protection of Badgers Act 1992

Common Name	Scientific Name	Records	Conservation Status
Grey partridge	*Perdix perdix*	7 records; closest record 347m NW	BoCCRed, NERC
House martin	*Delichon urbicum*	1 record, 347m NW	BoCCRed
Kestrel	*Falco tinnunculus*	7 records; closest record 347m NW	BoCCAmber
Kingfisher	*Alcedo atthis*	7 records; closest record 347m NW	WCA (1)
Linnet	*Linaria cannabina*	5 records; closest record 347m NW	BoCCRed, NERC
Mallard	*Anas platyrhynchos*	22 records; closest record 347m NW	BoCCAmber
Meadow pipit	*Anthus pratensis*	4 records; closest record 347m NW	BoCCAmber
Reed bunting	*Emberiza schoeniclus*	7 records; closest record 347m NW	BoCCAmber, NERC
Skylark	*Alauda arvensis*	2 records; closest record 347m NW	BoCCRed, NERC
Snipe	*Gallinago gallinago*	6 records; closest record 347m NW	BoCCAmber
Song thrush	*Turdus philomelos*	4 records; closest record 347m NW	BoCCAmber, NERC
Stock dove	*Columba oenas*	8 records; closest record 347m NW	BoCCAmber
Swift	*Apus apus*	4 records; closest record 347m NW	BoCCAmber
Whinchat	*Saxicola rubetra*	1 record, 347m NW	BoCCRed
Cuckoo	*Cuculus canorus*	1 record, 379m NW	BoCCRed, NERC
Dunlin	*Calidris alpina*	1 record, 379m NW	BoCCRed
Grey wagtail	*Motacilla cinerea*	1 record, 379m NW	BoCCAmber
Herring gull	*Larus argentatus*	1 record, 379m NW	BoCCRed, NERC
Lapwing	*Vanellus vanellus*	2 records; closest record 379m NW	BoCCRed, NERC
Lesser black-backed gull	*Larus fuscus*	1 record, 379m NW	BoCCAmber
Pochard	*Aythya ferina*	1 record, 379m NW	BoCCRed
Redwing	*Turdus iliacus*	1 record, 379m NW	BoCCAmber, WCA (1)

Common Name	Scientific Name	Records	Conservation Status
Teal	*Anas crecca*	2 records; closest record 379m NW	BoCCAmber
Wigeon	*Mareca penelope*	2 records; closest record 379m NW	BoCCAmber
Willow warbler	*Phylloscopus trochilus*	1 record, 379m NW	BoCCAmber
Yellowhammer	*Emberiza citrinella*	2 records; closest record 379m NW	BoCCRed, NERC
Quail	*Coturnix coturnix*	1 record, 1.1km E	BoCCAmber, WCA (1)
Hobby	*Falco subbuteo*	2 records; closest record 1.21km NE	WCA (1)
Mistle thrush	*Turdus viscivorus*	1 record, 1.26km NE	BoCCRed
Green sandpiper	*Tringa ochropus*	1 record, 1.57km W	BoCCAmber, WCA (1)
Turtle dove	*Streptopelia turtur*	1 record, 1.63km W	BoCCRed, NERC
Reptile			
Grass snake	*Natrix natrix*	2 records; closest record 34m East	Partial protection under WCA, NERC
Common lizard	*Zootoca vivipara*	2 records; closest record 1.1km NW	Partial protection under WCA, NERC
Fish			
European eel	*Anguilla anguilla*	8 records; closest record 286m NW	Eel Regs, NERC
Barbel	*Barbus barbus*	8 records; closest record 394m W	CoHSR (4)
Brown trout	*Salmo trutta subsp.fario*	22 records; closest record 394m W	NERC
Bullhead	*Cottus gobio*	23 records; closest record 394m W	ECHD (A2)
Brook Lamprey	*Lampetra planeri*	1 record, 396m W	ECHD (A5)
Brown trout/Sea trout	*Salmo trutta*	3 records; closest record 396m W	NERC-S41
Grayling	*Thymallus thymallus*	5 records; closest record 396m W	CoHSR (4)
Invertebrates			
Caddis fly	*Ceraclea senilis*	3 records; closest record 297m W	NERC

Common Name	Scientific Name	Records	Conservation Status
Cinnabar	*Tyrua jacobaeae*	3 records; closest record 1.1km NW	NERC
Dot moth	*Melanchra persicariae*	1 record, 1.1km NW	NERC
Large nutmeg	*Apamea anceps*	2 records; closest record 1.1km NW	NERC
Pretty chalk carpet	*Melanthia procellata*	1 record, 1.1km NW	NERC
Rustic	*Hoplodrina blanda*	2 records; closest record 1.1km NW	NERC
Plants			
Bluebell	*Hyacinthoides non-scripta*	2 records; closest record 5m S	WCA (8)
Ragged-robin	*Silene flos-cuculi*	2 records; closest record 347m NW	RLEng (NT)
Autumn gentian	*Gentianella amarella*	1 record, 415m W	RLEng (NT)
Carline thistle	*Carlina vulgaris*	2 records; closest record 415m W	RLEng (NT)
Field scabious	*Knautia arvensis*	5 records; closest record 415m W	RLEng (NT)
Hoary plantain	*Plantago media*	2 records; closest record 415m W	RLEng (NT)
Quaking-grass	*Briza media*	2 records; closest record 415m W	RLEng (NT)
Downy woundwort	*Stachys germanica*	22 records; closest record 0.68km S	WCA (8), RLEng (VU)
Blue Pimpernel	*Anagallis arvensis subsp. foemina*	2 records; closest record 0.98km NW	RLEng (DD)
White Helleborine	*Cephalanthera damasonium*	1 record, 1.11km NW	RLEng (VU)
Bulbous Rush	*Juncus bulbosus*	1 record, 1.21km NE	Oxon-Rare
Lesser spearwort	*Ranunculus flammula*	2 records; closest record 1.21km NE	RLEng (VU)
Marsh speedwell	*Veronica scutellata*	1 record, 1.21km NE	RLEng (NT)
Marsh stitchwort	*Stellaria palustris*	1 record, 1.21km NE	RLEng (VU)
Bladder sedge	*Carex vesicaria*	1 record, 1.26km NE	RLEng (VU)
Spiny restharrow	*Ononis spinosa*	1 record, 1.31km NE	RLEng (NT)

Common Name	Scientific Name	Records	Conservation Status
Chicory	*Cichorium intybus*	2 records; closest record 3.45km SW	RLEng (VU)
Crosswort	*Cruciata laevipes*	1 record, 4.54km W	RLEng (NT)
Invasive Species			
Rhododendron	*Rhododendron ponticum*	1 record, 0.87km SE	WCA (9)
Butterfly bush	*Buddleja davidii*	1 record, 0.87km SE	



Key

- Site Boundary
- J1.1 - Cultivated/disturbed land - arable
- J2.1.1 - Intact hedge - native species-rich
- J2.3.1 - Hedge with trees - native species-rich
- J2.3.2 - Hedge with trees - species-poor

p1code	Area (m2)
J1.1	101040

RammSanderson

Title: Phase 1 Habitat Plan	
Project: Land South of Burford Road, Minster Lovell	
Client: Catesby Strategic Land Ltd	Catesby Estates plc
Date: 11/11/2022	Fig: 8 Author: AMC
A4 Scale: 1:3000	ID: RSE_4967a_PH1_1122_V2R1

16 APPENDIX 7: PHASE 1 HABITAT SURVEY RESULTS

16.1.1 Overview

x The survey area was dominated by arable fields bounded by hedgerows. Full habitat descriptions and photos are provided below. For a Phase 1 Habitat Survey Plan refer to Figure 2.

xi Habitat types detailed below are listed in order of the JNCC (2010) Handbook. The species list provided in this report reflect only those taxa observed during the survey.

16.1.2 Arable

The Site was dominated by two mono-culture arable fields bordered by hedgerows.

Figure 13: Arable land

16.1.3 Intact Species Rich Hedgerow (H3, and H4)

ii Hedgerows 3 and 4 (H3 and H4) were classified as intact species-rich, comprising of more than six woody species, and of over 80% woody species. Species included hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), blackthorn (*Prunus spinosa*), rose (*Rosa arvensis*), hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), elm (*Ulmus Procera*), elder flower (*Sambucus nigra*), cherry (*Prunus avium*), sycamore (*Acer pseudoplatanus).* and honeysuckle (*Lonicera periclymenum*).

Figure 14: Hedgerow 3

16.1.4 Species Rich Hedgerow with Trees (H5)

iii Hedgerows 5 (H5) was classified as species rich hedgerows with trees and formed the southern site boundary. Canopy included hazel, blackthorn, field maple, elder, rose, with oak standards.

Figure 15: Hedgerow 5

16.1.5 Species Poor Hedgerow with Trees (H1, H2)

iv Hedgerow 1 (H1) was located on the west boundary of the site. It consisted of species poor canopy dominated by blackthorn and hawthorn >2m high and width 1.5m. The hedgerow had a bank associated with the adjacent track and mature standards of ash. Ground flora is ubiquitous species associated with nutrient enrichment including cleavers (*Galium aparine*) nettle (*Urtica dioica*) common bent *(Agrostis capillaris*).

v Hedgerow 2 (H2) consisted of a line of mature ash along Burford Road, on the northern boundary of the site. Ground flora was dominated by nutrient loving herbs such as nettle, creeping thistle (*Cirsium arvense*) hogweed (*Heracleum sphondylium*) cleavers and hoary willowherb (Epilobium parviflorum).

Figure 16: Hedgerow 1

16.1.6 Non-Native Species

No invasive species were recorded during the Site visit. Local records for Rhododendron (Rhododendron ponticum), and Butterfly bush (Buddleja davidii) were identified 0.87km southeast of the site.

17 APPENDIX 8: PROTECTED/PRINCIPAL SPECIES SURVEY RESULTS

17.1 Bats

Table 12: Ground Level Tree Assessment Results

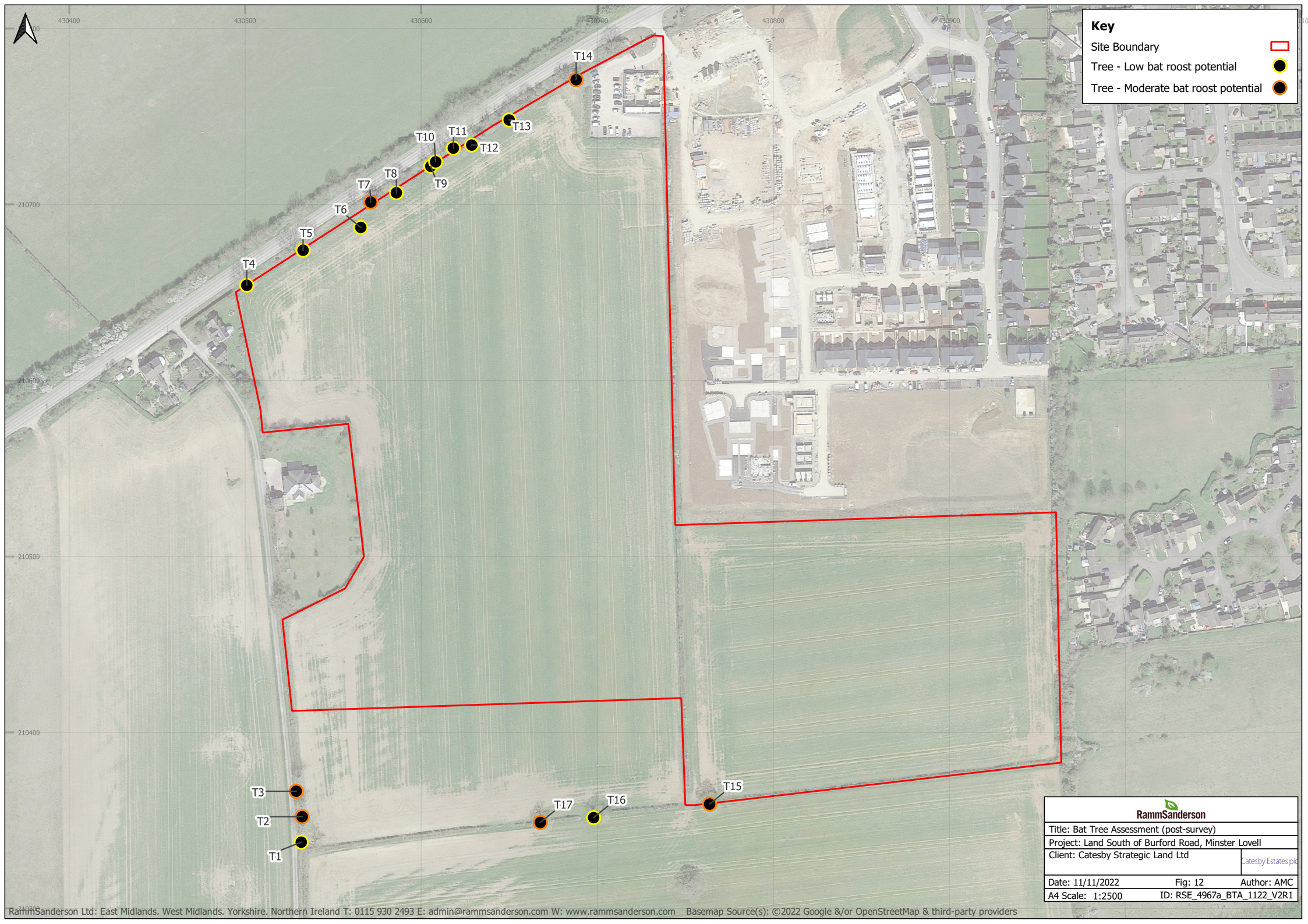
Tree Ref.	Tree species	Potential bat roost features	Ground Level Assessment in 2022	Photograph
1	Ash	Rot holes with minor surface level cracks and areas of peeling bark. Some larger damage but these are upward facing, so less suitable.	Low	
2	Ash	Almost dead tree with callus rolls and flaking bark.	Moderate	
3	Ash	Several callus rolls and a partially formed woodpecker hole.	Moderate	

Tree Ref.	Tree species	Potential bat roost features	Ground Level Assessment in 2022	Photograph
4	Ash	Some light ivy growth to the base of the trunk and some surface level rot holes.	Low	
5	Ash	Minor surface bark damage.	Low	
6	Ash	Extensive ivy cover but no significant interwoven stems.	Low	
7	Ash	Callus rolls, flaking bark and woodpecker holes.	Moderate	

Tree Ref.	Tree species	Potential bat roost features	Ground Level Assessment in 2022	Photograph
8	Ash	Ivy growth.	Low	
9	Ash	Ivy growth at base.	Low	
10	Ash	Extensive ivy growth.	Low	
11	Ash	Extensive ivy growth.	Low	

Tree Ref.	Tree species	Potential bat roost features	Ground Level Assessment in 2022	Photograph
12	Ash	Extensive ivy growth.	Low	
13	Ash	Extensive ivy growth.	Low	
14	Ash	Extensive ivy growth.	Moderate	
15	English Oak	Some minor rot holes.	Moderate	

Tree Ref.	Tree species	Potential bat roost features	Ground Level Assessment in 2022	Photograph
16	Ash	Extensive ivy growth.	Low	
17	Ash	Flaking bark,	Moderate	



18 APPENDIX 9: BADGER SURVEY RESULTS (CONFIDENTIAL)

Table 13: Badger Survey Results Table - Sett 1

Entrance Hole No.	Description	Photo
1	Outlier sett. Partially used. Facing east. Current use.	

Table 14: Badger Survey Results Table - Sett 2

Entrance Hole No.	Description	Photo
1	Outlier sett. Disused. Facing northwest.	


Key
Site Boundary
10m Buffer
30m Buffer
50m Buffer
Partially used Outlier Sett
Trail Cam Locations
430400
430500
430600
430700
430800
430900
431000
431100
210800
210700
210600
210500
210400
210300
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Title: Badger Survey Plan
Project: Land South of Burford Road, Minster Lovell
Client: Catesby Strategic Land Ltd
Catesby Estates plc
Date: 11/11/2022
Fig: 13
Author: AMC
A4 Scale: 1:3000
ID: RSE_4967a_BTA_1122_V2R1
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