

RUSCOTE AVENUE – SITE 3

Ecological Assessment

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Ruscote Avenue – Site 3
Ecological Assessment
Final v2
August 2021

REPORT

Quality Management

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EXECUTIVE SUMMARY

- RPS was commissioned by Jacobs Douwe Egberts (JDE) to undertake an Ecological Assessment (EA) of an area of land off Ruscote Avenue, Banbury, Oxfordshire.
- An initial EA and protected species surveys of the site were undertaken by RPS in 2019, which comprised a desk study, Phase 1 Habitat Survey and details of further survey work undertaken to determine the use and value of the site for protected and notable species, details for recommended mitigation measures as appropriate, and appropriate biodiversity enhancements in line with national and local planning policy.
- Due a reduction in size of the application site and the length of time elapsed since the original surveys, an additional walkover of the site was undertaken in August 2021 to identify any changes to the ecological features previously identified within the site and in areas that could be affected by the proposals.
- The proposals for the site include a drive-thru (Class E) with associated surface level car parking and landscaping.
- One statutory designated site was located 1.02 km north west of the site: Neithrop Field Cutting, which was designated as a Site of Special Scientific Interest (SSSI) for its important geological features.
- The site was approximately 0.34 ha in size and comprised predominantly hardstanding and amenity grassland with a small area of introduced shrub and scattered broadleaved trees.
- The proposals for the site originally included developing a large area of mown amenity grassland, with a stream running through the centre of the site; this area has since been removed in the revised developmental proposals. Due to anecdotal evidence of reptiles being present, further surveys for reptiles were undertaken in 2019; there were no reptiles recorded during the surveys, however a single great crested newt (GCN) was found under a reptile mat.
- The size of the proposed development had decreased since the original surveys undertaken in 2019. However, the habitats present had not changed significantly, with the main changes resulting from vegetation growth and encroachment. The site was found to continue to provide suitable habitat for breeding birds and foraging and commuting bats. Due to the revised development boundary, the site was no longer considered suitable for reptiles or GCN.
- Standard pollution control measures are recommended to ensure contaminants are contained and removed from within construction areas and prevented from reaching sensitive receptors within the site or near to it, such as watercourses.
- A description of the potential effects of the proposed development on the habitats and species identified as being present or potentially present are described in this report followed by recommendations for mitigation measures to ensure such effects are avoided.
- Measures to protect and enhance the site are also provided, including using appropriate management to enhance the value of retained boundaries.

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- Appendix C Species List
- Appendix D 2019 Reptile Surveys

1 INTRODUCTION

1.1 Purpose and Scope of this Report

- 1.1.1 RPS was commissioned by Jacobs Douwe Egberts (JDE) to undertake an Ecological Assessment (EA) of an area of land off Ruscote Avenue, Banbury, Oxfordshire.
- 1.1.2 An initial EA and protected species surveys of the site were undertaken by RPS in 2019, which comprised a desk study, Phase 1 Habitat Survey and details of further survey work undertaken to determine the use and value of the site for protected and notable species, details for recommended mitigation measures as appropriate, and appropriate biodiversity enhancements in line with national and local planning policy.
- 1.1.3 Due a reduction in size of the application site and the length of time elapsed since the original surveys, an additional walkover of the site was undertaken in August 2021 to identify any changes to the ecological features previously identified within the site and in areas that could be affected by the proposals.
- 1.1.4 The EA aimed to:
- undertake a desk-based review of designated sites and records of protected species and other species that could present a constraint;
 - map and assess the habitats present on site;
 - assess the site for potential to support protected species or other species that could present a constraint, and make appropriate recommendations for further survey work if necessary;
 - provide options for mitigation measures as appropriate; and
 - make recommendations for appropriate biodiversity enhancements in line with national and local planning policy.
- 1.1.5 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 RPS.
- 1.1.6 The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Appraisal Notes are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013).

1.2 Study Area

- 1.2.1 The site was located approximately one mile north east of Banbury Town Centre, Oxfordshire. The site is approximately 0.34 ha in size. The National Grid coordinates for the centre of the site are SP 449 241.
- 1.2.2 The site is currently predominantly used as a car park area for the JDE unit located immediately adjacent to the site.
- 1.2.3 The surrounding area comprised industrial factories, warehouses and a retail park.
- 1.2.4 The site location is shown on Figure 3.1. Aerial imaging available via Google Earth Pro was also reviewed to assess the site in relation to its context in the wider landscape.

1.3 Development Proposals

- 1.3.1 The proposals for the site include a drive-thru (Class E), with associated surface level car parking and landscaping.

- 1.3.2 This proposal is linked to two separate applications: the erection of a surface carpark to provide replacement employee parking for JDE (Site 2); and a van storage facility on the remaining area of the existing JDE carpark.

1.4 Legislation and Policy

- 1.4.1 Relevant legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to throughout this report where appropriate. Their context and application are explained in the relevant sections of this report.
- 1.4.2 The relevant articles of legislation are:
- The National Planning Policy Framework (NPPF, 2021);
 - ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2021);
 - Local planning policies (from Adopted Cherwell Local Plan 2011-2031 (Part 1) and saved policies from the Cherwell Local Plan (1996);
 - The Conservation of Habitats and Species Regulations 2020 (EU Exit Amendment);
 - The Wildlife and Countryside Act 1981 (as amended);
 - The Protection of Badgers Act 1992;
 - The Countryside and Rights of Way Act 2000;
 - The Hedgerow Regulations 1997;
 - The Natural Environment and Rural Communities Act 2006; and
 - National / Local Biodiversity Action Plan for Oxfordshire.
- 1.4.3 A summary of legislation relevant to protected or other species identified as potential constraints in this report is provided in Appendix A.

2 METHODS

2.1 Desk Study

- 2.1.1 Ecological records within a 2 km radius of the site were requested from Thames Valley Environmental Records Centre (TVERC). Data requests were limited to records for protected and notable species recorded within the last ten years and sites of nature conservation interest within 2 km of the site. This included a review of existing statutory sites of nature conservation interest, such as Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and National Nature Reserves (NNRs), and non-statutory sites, such as Sites of Importance for Nature Conservation (SINCs) and Local Wildlife Sites (LWSs).
- 2.1.2 Locations of statutory designated sites were accessed via the government 'MAGIC' website (MagicMap, 2021).
- 2.1.3 A 1:25,000 OS map was used to identify nearby features such as ponds or green corridors that could provide habitat or connectivity to other areas.

2.2 Ecological Appraisal

- 2.2.1 The Ecological Appraisal comprised a Phase 1 Habitat survey and a scoping survey for protected species and other species of conservation concern which could present a constraint to development.
- 2.2.2 The original Phase 1 Habitat Survey and bat roost assessment was undertaken on 4th April 2019 by Sam Barker GradCIEEM, an RPS Ecologist with 2 years' experience and assisted by Annie Davies GradCIEEM, an RPS Assistant Ecologist.
- 2.2.3 An additional walkover of the site was undertaken on 13th August 2021 by Katy Thomas ACIEEM, a Senior Ecologist employed by RPS.
- 2.2.4 The surveys followed the standard Phase 1 survey methodology set out by the Joint Nature Conservation Committee (JNCC) and outlined in the Handbook for Phase 1 Surveys; a technique for environmental audit (JNCC, 2016).
- 2.2.5 A protected species scoping survey was carried out in conjunction with the Phase 1 Habitat survey. The site was assessed for its suitability to support protected species, in particular, reptiles, birds, badgers *Meles meles*, bats, and other species of conservation importance that could pose a planning constraint.
- 2.2.6 The surveyors looked for evidence of use, such as burrows, droppings, footprints, paths, hairs and refugia, and particular habitat types known to be used by certain groups, such as ponds. Any mammal paths were noted down and where possible followed. Fence boundaries were walked to establish any entry points or animal signs such as latrines. Areas of bare earth were inspected for mammal prints. Areas of habitat considered suitable for protected species or those of conservation interest were recorded.

2.3 Impact Appraisal

- 2.3.1 The overall ecological appraisal is based on the standard best practice methodology provided by the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). The assessment identifies sites, habitats, species and other ecological features that are of value based on factors such as legal protection, statutory or local site designations such as SSSIs and LWSs or inclusion on Red Data Book Lists or Biodiversity Action Plans.
- 2.3.2 The assessment also refers to planning policy guidance (e.g. NPPF) where relevant to relate the value of the site and potential impacts of development to the planning process, identifying constraints and opportunities for ecological enhancement in line with both national and local policy.

- 2.3.3 In appraising any impacts, the review considers the client's site proposals and any subsequent recommendations made are proportionate and 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.

2.4 Limitations

Desk Based Assessment

- 2.4.1 The desk study data is third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

Survey

- 2.4.2 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment.
- 2.4.3 The protected/notable species assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected/notable species group.

Accurate Lifespan of Ecological Data

- 2.4.4 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 up to three years, assuming no significant considerable changes to the site conditions.

3 RESULTS

3.1 Designated Sites

- 3.1.1 There was one statutory designated site within 2 km of the site; Neithrop Fields Cutting SSSI which was located 1.02 km north west of the site and is designated for its geological value. It is not designated for its nature conservation value.
- 3.1.2 There were no non-statutory sites located within the 2 km search radius of the site.
- 3.1.3 A summary of the site is provided in Table 3.1 below and its location is detailed in Figure 3.1.

Table 3.1: Designated sites within 2 km of the study area

Site name	Type	Approx. area (ha)	Interest Features	Distance from site (km)
Statutory Sites				
Neithrop Fields Cutting	SSSI	1.5	A key paleogeographic and stratigraphic locality	1.02

Abbreviations used in Table 3.1: SSSI: Site of Special Scientific Interest; ha: hectare.

Figure 3.1: Designated Sites within 2 km



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- Legend**
- Site Location
 - 2km Search Area
 - Sites of Special Scientific Interest

Rev	Description	By	CB	Date



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 Project **Banbury JDE**
 Title **Designated Sites Figure**

Status	Drawn By	PM/Checked By
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Figure Number		Rev
3.1		-

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3.2 Species

- 3.2.1 Records of protected species were obtained from TVERC. A number of species of conservation importance or otherwise notable species were recorded within the 2 km search radius of the site. A summary of these records is provided in Table 3.2.
- 3.2.2 In order to simplify the results, only records of species from the last 10 years are shown. In addition, only data with a six-figure grid reference resolution or higher are provided with a distance from the site, since locations given at a lower resolution do not allow accurate calculation of distance to the site boundary.
- 3.2.3 Any species recorded to a lower accuracy have the distances marked with an 'X'.

Table 3.2: Species records from the last 10 years within 2km of the site

Common name	Scientific name	Nearest distance from site (km)	Year of most recent record	Conservation Status
Flora				
Chives	<i>Allium schoenoprasum</i>	0.81	2015	NS
Wormwood	<i>Artemisia absinthium</i>	0.62	2015	Ox-RA
Slender Thistle	<i>Carduus tenuiflorus</i>	1.42	2017	Ox-RA
Marsh Willowherb	<i>Epilobium palustre</i>	0.70	2010	Ox-RA
Common Cudweed	<i>Filago vulgaris</i>	X	2015	NT
Wall Bedstraw	<i>Galium parisiense</i>	1.89	2018	NS
Bluebell	<i>Hyacinthoides non-scripta</i>	X	2016	WCA8
Prickly Poppy	<i>Papaver argemone</i>	1.40	2015	NS, VU
Hoary Plantain	<i>Plantago media</i>	0.74	2019	NT
Annual Pearlwort	<i>Sagina apetala subsp. apetala</i>	1.73	2016	Ox-SC
Ragged-Robin	<i>Silene flos-cuculi</i>	0.70	2019	NT
Lesser Chickweed	<i>Stellaria pallida</i>	1.02	2016	Ox-SC
Large-leaved Lime	<i>Tilia platyphyllos</i>	X	2015	NS
Common Valerian	<i>Common Valerian</i>	0.76	2015	NT
Fish				
Brown/Sea Trout	<i>Salmo trutta</i>	0.87	2014	NERC S41
Brown Trout	<i>Salmo trutta subsp. fario</i>	0.94	2014	NERC S41
Amphibians				
Common toad	<i>Bufo bufo</i>	1.12	2016	WCA5, NERC S41
Smooth newt	<i>Lissotriton vulgaris</i>	1.68	2012	WCA5
Common frog	<i>Rana temporaria</i>	0.87	2001	WCA5
Great crested newt	<i>Triturus cristatus</i>	1.62	2015	EPS, WCA5, NERC S41
Reptiles				
Common Lizard	<i>Zootoca vivipara</i>	1.48	2016	WCA5, NERC 41
Grass Snake	<i>Natrix helvetica</i>	0.85	2017	WCA5, NERC 41
Birds				
Lesser redpoll	<i>Acanthis cabaret</i>	X	2011	NERC S41, Red

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Common sandpiper	<i>Actitis hypoleucos</i>	X	2011	Amber
Skylark	<i>Alauda arvensis</i>	1.36	2019	NERC S41, Red
Kingfisher	<i>Alcedo atthis</i>	1.56	2011	WCA1
Teal	<i>Anas crecca</i>	X	2011	Amber
Wigeon	<i>Anas penelope</i>	X	2011	Amber
Mallard	<i>Anas platyrhynchos</i>	X	2011	Amber
Greylag goose	<i>Anser anser</i>	0.40	2011	Amber
Meadow pipit	<i>Anthus pratensis</i>	X	2011	Amber
Swift	<i>Apus apus</i>	0.22	2019	Amber
Dunlin	<i>Calidris alpina</i>	X	2011	Amber
Ringed plover	<i>Charadrius hiaticula</i>	X	2011	Red
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1.56	2011	Amber
Hawfinch	<i>Coccothraustes coccothraustes</i>	X	2011	Red
Stock dove	<i>Colomba oenas</i>	1.36	2019	Amber
Mute swan	<i>Cygnus olor</i>	1.74	2011	Amber
House martin	<i>Delichon urbicum</i>	1.68	2012	Amber
Yellowhammer	<i>Emberiza citrinella</i>	X	2011	NERC S41, Red
Reed bunting	<i>Emberiza schoeniclus</i>	X	2011	NERC S41, Amber
Peregrine	<i>Falco peregrinus</i>	X	2011	WCA1
Hobby	<i>Falco subbuteo</i>	X	2011	WCA1
Kestrel	<i>Falco tinnunculus</i>	1.36	2019	Amber
Pied flycatcher	<i>Ficedula hypoleuca</i>	X	2011	Red
Snipe	<i>Gallinago gallinago</i>	X	2011	Amber
Oystercatcher	<i>Haematopus ostralegus</i>	X	2011	Amber
Herring gull	<i>Larus argentatus</i>	X	2011	Red
Common gull	<i>Larus canus</i>	X	2011	Amber
Lesser black-backed gull	<i>Larus fuscus</i>	X	2011	Amber
Mediterranean gull	<i>Larus melanocephalus</i>	X	2011	Amber
Linnet	<i>Linaria cannabina</i>	1.63	2013	NERC S41, Red
Grasshopper warbler	<i>Locustella naevia</i>	X	2011	NERC S41, Red
Red kite	<i>Milvus milvus</i>	X	2011	WCA1
Grey wagtail	<i>Motacilla cinerea</i>	X	2011	Red
Yellow wagtail	<i>Motacilla flava</i>	1.36	2019	Red
Spotted flycatcher	<i>Muscicapa striata</i>	X	2011	NERC S41, Red
Curlew	<i>Numenius arquata</i>	X	2011	NERC S41, Red
House sparrow	<i>Passer domesticus</i>	0.70	2019	NERC S41, Red
Redstart	<i>Phoenicurus phoenicurus</i>	X	2011	Amber

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Willow warbler	<i>Phylloscopus trochilus</i>	1.36	2019	Amber
Willow tit	<i>Poecile montana</i>	X	2011	NERC S41, Red
Marsh tit	<i>Poecile palustris</i>	X	2011	NERC S41, Red
Dunnock	<i>Prunella modularis</i>	1.36	2019	NERC S41, Amber
Bullfinch	<i>Pyrrhula pyrrhula</i>	1.36	2019	Amber
Kittiwake	<i>Rissa tridactyla</i>	X	2011	Red
Whinchat	<i>Saxicola rubetra</i>	X	2011	Red
Sandwich tern	<i>Sterna sandvicensis</i>	X	2011	Amber
Common tern	<i>Sterna hirundo</i>	X	2011	Amber
Tawny owl	<i>Strix aluco</i>	X	2011	Amber
Starling	<i>Sturnus vulgaris</i>	1.36	2019	NERC S41, Red
Redwing	<i>Turdus iliacus</i>	1.73	2011	WCA1
Song thrush	<i>Turdus philomelos</i>	1.36	2019	NERC S41, Red
Fieldfare	<i>Turdus pilaris</i>	X	2011	WCA1
Mistle thrush	<i>Turdus viscivorus</i>	1.12	2011	Red
Lapwing	<i>Vanellus vanellus</i>	X	2011	NERC S41, Red
Mammals (Bats)				
Barbastelle	<i>Barbastella barbastellus</i>	1.95	2019	EPS, WCA5, NERC S41
Serotine	<i>Eptesicus serotinus</i>	1.74	2019	EPS, WCA5
Daubenton's Bat	<i>Myotis daubentonii</i>	1.68	2012	EPS, WCA5
Leisler's bat	<i>Nyctalus leisleri</i>		2019	EPS, WCA5
Noctule Bat	<i>Nyctalus noctula</i>	1.16	2019	EPS, WCA5, NERC S41
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	1.74	2019	EPS, WCA5
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	1.01	2019	EPS, WCA5
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	1.16	2019	EPS, WCA5, NERC S41
Brown Long-eared Bat	<i>Plecotus auritus</i>	1.24	2019	EPS, WCA5, NERC S41
Mammals				
West European Hedgehog	<i>Erinaceus europaeus</i>	0.60	2019	NERC S41
European Otter	<i>Lutra lutra</i>	0.89	2017	EPS, WCA5, NERC S41
Eurasian Badger	<i>Meles meles</i>	0.91	2018	PBA
Polecat	<i>Mustela putorius</i>	0.96	2014	EPS, NERC S41

Abbreviations used in Table 3.2: EPS: European Protected Species; WCA1: Wildlife & Countryside Act Schedule 1, part 1; WCA5: Wildlife & Countryside Act Schedule 5; WCA8: Wildlife & Countryside Act Schedule 8; NT: Near Threatened; NS: Nationally Scarce; EN: Endangered; VU: Vulnerable; NERC S41: Natural Environment & Rural Communities Act Species of Principal Importance; UKBAP: UK Biodiversity Action Plan priority species; PBA: Protection of Badgers Act 1992; Birds: Red: Bird Population Status: red; Birds: Amber: Bird Population Status: amber; OX-RA: Oxfordshire Rare; OX-SC: Oxfordshire Scarce.

3.3 Phase 1 Habitat Survey

3.3.1 The survey results are presented in the form of a map with the habitat types and boundary features marked (Figure 3.2). An explanation of target notes from Figure 3.2 can be found in Appendix B.

- 3.3.2 Habitat descriptions are defined by broad habitat types (JNCC, 2010). Descriptions of the habitat types and boundary features are detailed below.

A3.1 Scattered broadleaved trees

- 3.3.3 Scattered broadleaved trees were present adjacent to the fence line and across the amenity grassland with species comprising whitebeam *Sorbus aria*, Norway maple *Acer platanoides*, London Plane *Platanus X hispanica*, a hybrid poplar sp. *Populus x canadensis* and narrow leaved ash *Fraxinus angustifolia*.
- 3.3.4 All tree species were identified through the Arboriculture Impact Assessment (BB Trees, 2019).

J1.2 Amenity grassland

- 3.3.5 A small area of grassland was present in the north and west of the site. An additional strip of grassland extending north to south through the centre of the car park.
- 3.3.6 Both areas of grassland appeared to be unmanaged resulting in a taller sward developing, however the species diversity was still low and subject to some disturbance. The grassland was dominated by annual meadow grass *Poa annua* and perennial rye grass *Lolium perenne*.
- 3.3.7 A small variety of herb species were also present and pioneer and ruderal species were colonising the margins of the grassland, where they met areas of hardstanding. Species present included buttercup *Ranunculus repens*, daisy *Bellis perennis*, dandelion *Taraxacum officinale*, yarrow *Achillea millefolium*, bristly oxtongue *Helminthotheca echioides*, broad-leaved dock *Rumex obtusifolius*, clover *Trifolium sp.*, common sowthistle *Sonchus oleraceus*, creeping thistle *Cirsium arvense*, dove's-foot cranesbill *Geranium molle* and ribwort plantain *Plantago lanceolata*.

J1.4 Introduced shrub

- 3.3.8 A small area of scattered introduced shrub was present in the north west corner of the site (TN1).

J2.4 Fence

- 3.3.9 Metal security fencing surrounded the majority of the site.

J4 Bare Ground/Hardstanding

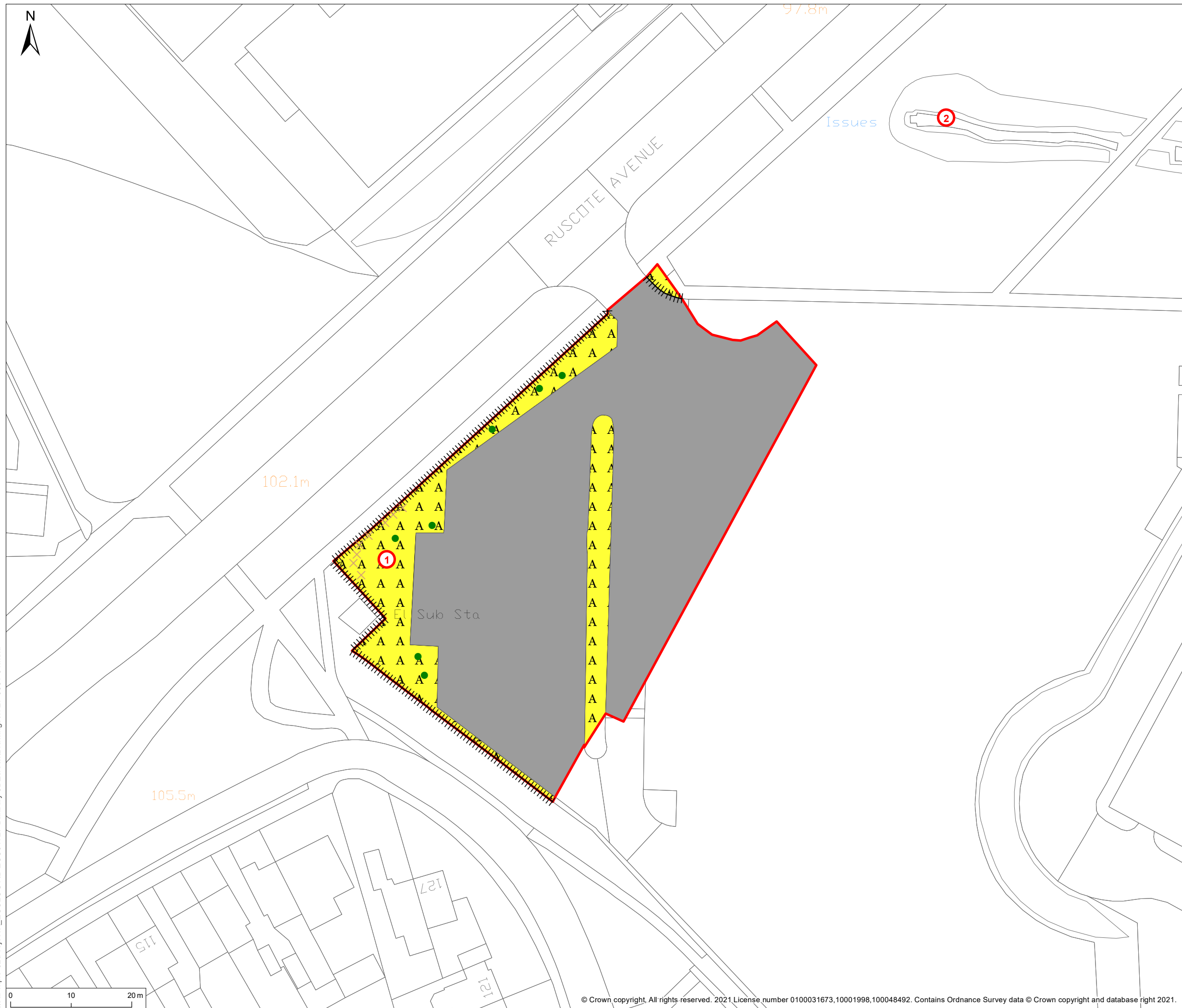
- 3.3.10 The majority of the site comprised a tarmac car park.
- 3.3.11 Pioneer and ruderal species, including those listed in Paragraph 3.3.6 as well as bramble *Rubus fruticosus*, willowherb *Epilobium sp.* common nettle *Urtica dioica* and ragwort *Senecio jacobaea* were beginning to colonise between cracks in the tarmac.

Habitats outside of the site boundary

G2 Running water

- 3.3.12 A steep banked, open culverted stream ran through two small, areas of grassland to the north east of the site, approximately 50 m away. The banks were approximately 2 m high and the stream approximately 1 m wide (TN2). The channel depth was shallow and comprised a stony substrate with limited aquatic and bankside vegetation. Immediately surrounding the stream were areas of heavily mown amenity grassland.
- 3.3.13 The stream is above ground where it is occurs on site, before entering a long culvert.

Figure 3.2: Phase 1 Habitat Map



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- Legend**
- Amentiy grassland
 - Hard standing
 - Fence
 - × Introduced shrub/ornamental planting
 - Scattered tree - broadleaved
 - 1 Phase 1 target notes

Rev	Description	By	CB	Date



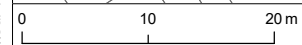
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Client -
 Project Banbury JDE
 Title Phase 1 Habitat Survey

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Figure Number 3.2	Rev -	

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3.4 Protected and Notable Habitats and Species

Plants

- 3.4.1 The habitats on site comprised a mix of amenity grassland and a range of ornamental shrubs and trees which provided little suitable habitat for rare and endangered plant species. There were no plant species of particular conservation significance noted during the survey
- 3.4.2 The habitats on site had not changed significantly since the original survey in 2019, with the main changes resulting from vegetation growth and encroachment. Over time, the grassland has the potential to develop into a more interesting sward.

Invertebrates

- 3.4.3 The site comprises highly managed habitats and comprises non-native species. The potential for the habitats present to support protected and/or notable invertebrates is low.
- 3.4.4 In 2021, the value of the habitats on site for invertebrates had not changed and therefore it was considered that the site would be unlikely to support any protected or notable species.

Herpetofauna

Reptiles

- 3.4.5 In 2019, the areas of amenity grassland to the north east of the wider JDE site were considered low value habitat for reptiles due to a regular mowing regime resulting in a lack of shelter and risk of mortality. However, anecdotal evidence was provided of a snake species being discovered under boarding laying on the grass in the north of the site, adjacent to the stream (TN2). The areas of grassland were fenced off from the main JDE site and were not connected to each other or other areas of suitable habitat, however it is possible that reptiles could still pass through the fencing.
- 3.4.6 Therefore, a reptile survey was undertaken within these areas of grassland between May and July 2019, using artificial refugia and visual searches. There were no reptiles recorded during any of the survey visits.
- 3.4.7 The full results of the reptile survey and survey methodologies are provided in Appendix D.
- 3.4.8 The revised development boundary no longer includes any areas of habitat which were previously surveyed in 2019; the revised boundary is separated from the grassland and stream by areas of hardstanding which are in frequent use. In 2021, the habitats present within the site boundary continued to be unsuitable for reptiles and therefore it was considered unlikely that reptiles would now be present and using the site.

Great crested newts

- 3.4.9 The areas of amenity grassland and introduced shrub provided very limited terrestrial habitat for amphibians, including great crested newts (GCN). A stream was located 50 m to the north east of the site, however it was considered to be unsuitable for GCN as the water was shallow and fast flowing, with limited aquatic vegetation. The stream is separated from the site by large areas of hardstanding and managed amenity grassland.
- 3.4.10 There were no other ponds or waterbodies identified within 250 m of the site.
- 3.4.11 During the reptile survey undertaken in late June 2019, a single sub-adult GCN was found sheltering under a mat. GCN were not recorded on any other visit.

Breeding Birds

- 3.4.12 Vegetation with the potential to support nesting birds was present within the site, including the scattered trees, amenity grassland and introduced shrub. Therefore, the loss of these habitats has the potential to impact breeding birds unless suitable mitigation is in place. The building could also support breeding birds.
- 3.4.13 In 2021, the habitats within and immediately adjacent to the site continued to provide habitat for a range of bird species and could potentially support protected and notable birds.

Bats

- 3.4.14 There were no trees or buildings on site which were considered suitable for roosting bats.
- 3.4.15 The trees along the north western boundary of the site are likely to provide good foraging and commuting habitat for bats; these trees are to be retained, with additional new tree planting proposed.

Badgers

- 3.4.16 No signs of badgers were recorded during the habitat surveys undertaken in 2019 or 2021.

4 EVALUATION AND POTENTIAL IMPACTS

4.1 Designated Sites

- 4.1.1 One statutory designated site was located within 2 km of the site; Neithrop Fields Cutting SSSI which is located 1.02 km from the site.
- 4.1.2 The site is designated due to its geology and therefore the proposed work would not have any ecological impacts on the site.

4.2 Habitats

- 4.2.1 Several widespread and common habitats were identified across the site. Table 4.1 below summarises the habitat types within the site and outlines the potential impacts of the development proposals to each of these habitats.

Table 4.1: Summary of potential habitat impacts

JNCC Code	Habitat Type	Area (ha)	% of site	Ecological Importance	Potential impact
A3.1	Scattered broadleaved trees	N/A	<1	Moderate	Breeding birds and foraging and commuting bats
J1.2	Amenity grassland	0.07	19.4	Negligible	None
J1.4	Scattered Introduced shrub	N/A	<1	Low	Breeding birds
J2.4	Fence	N/A	<1	None	None
J4	Bare ground/hardstanding	0.28	80.6	None	None

4.3 Species

Plants

- 4.3.1 The site comprises highly managed habitats and non-native species. The potential for notable flora to be present is low and no adverse impacts from the development on flora of conservation interest are considered to be likely.

Invertebrates

- 4.3.2 The site comprises highly managed habitats and comprises non-native species. The potential for the habitats present to support notable invertebrates is low and no adverse impacts from the development on invertebrates of conservation interest are considered likely.

Herpetofauna

Reptiles

- 4.3.3 There was no suitable reptile habitat identified within the site boundary, as the majority of habitats comprised predominantly hardstanding and areas of amenity grassland which were isolated from areas of higher-value habitat.
- 4.3.4 Reptile surveys undertaken in the wider site in 2019 found no presence of reptiles and it is considered unlikely that reptiles would now be present in the lower-value habitat present on site. Therefore, there would be no adverse impacts on reptiles.

Great crested newts

- 4.3.5 The habitats present within the site boundary comprised mainly hardstanding and amenity grassland which was considered unsuitable for GCN. The nearby stream located approximately 50 m to the north east of the site was scoped out for further surveys as the water was shallow and fast-flowing and was not considered to provide any suitable breeding habitat for GCN. The closest GCN record to the site (from desk study data) was over 1.6 km away
- 4.3.6 A single GCN was found sheltering under a reptile mat during a survey undertaken in late June; no other GCN were found during the surveys. It is likely that the individual was a sub-adult newt dispersing away from the natal pond and passing through the site.
- 4.3.7 The site is isolated from higher value terrestrial habitats and no potential breeding ponds were identified within 500 m of it. The closest pond to the site is located approximately 680 m to the north east and local information suggests that the closest breeding pond for GCN is approximately 775 m to the east of the site, in the Spiceball Country Park. The surrounding area was dominated by commercial and residential properties with areas of green spaces comprising frequently managed amenity grassland, trees and shrubs which were also considered low value terrestrial habitat for GCN. It is therefore considered unlikely that the site falls within a commonly used dispersal route for newts and the presence of other GCN on the site is considered to be highly unlikely as it does not clearly link areas of higher value habitat.
- 4.3.8 The revised Site 3 boundary no longer includes the stream or surrounding amenity grassland; the site itself is dominated by a large area of hardstanding and isolated patches of amenity grassland which were unsuitable terrestrial habitat for GCN, and therefore it is considered highly unlikely that GCN would be using any areas of this site.
- 4.3.9 Furthermore, the proposed development will predominantly fall within the existing areas of hardstanding, with only a small section of amenity grassland to be lost.
- 4.3.10 However, a precautionary approach would be undertaken prior to and during construction in the highly unlikely event that GCN are present on site. Details on mitigation measures for GCN are included within Section 5 of this report.

Breeding Birds

- 4.3.11 The scrub, trees and introduced shrubs within and immediately adjacent to the site provided foraging and nesting habitat for a range of common and widespread breeding birds.
- 4.3.12 To minimise the impacts on the breeding birds within the site boundary, the measures described in Section 5 of this report should be adhered to.

Bats

- 4.3.13 The trees along the north western boundary of the site are likely to provide good foraging and commuting habitat for bats; these trees are to be retained, with additional new tree planting proposed.
- 4.3.14 There are no likely adverse impacts on foraging and commuting bats as a result of the development, however it is recommended that measures are implemented to avoid night-time lighting of areas that could provide flight lines and foraging habitats for bats.

Badgers

- 4.3.15 No signs of badger activity were recorded on site in either 2019 and 2021 and therefore no effects from the development are considered likely.

5 MITIGATION AND ENHANCEMENT

5.1 Designated Sites

- 5.1.1 There were no sites designated for their nature conservation value within 2 km of the site, therefore no mitigation measures are required. One site, Neithrop Fields SSSI, was identified within 2 km of the site but was designated for its geological interest and therefore has no ecological constraints.

5.2 Habitats

- 5.2.1 The habitats on the site are common and widespread and comprise a low diversity of flora. However, they have the potential to support protected species (breeding bird and bat roosts).
- 5.2.2 The majority of the hardstanding and a small area of amenity grassland would be lost in the current proposals.
- 5.2.3 The NPPF (2021) states that to minimise impacts on biodiversity, planning policies should promote the preservation, restoration and re-creation of priority habitats.
- 5.2.4 After any mitigation required for these species has been designed into the proposals, new habitats should be created through soft landscaping comprising habitats of greater value than those to be lost. Ideally this should be carried out onsite. Where this is not possible, opportunities for offsite habitat creation will be explored to ensure a net gain for biodiversity is achieved.

5.3 Species

Great crested newts

- 5.3.1 A single sub-adult GCN was identified by a fast-flowing stream within the wider JDE site in 2019. The revised Site 3 boundary no longer includes the stream or surrounding amenity grassland; the site itself is dominated by a large area of hardstanding and isolated patches of amenity grassland which were unsuitable terrestrial habitat for GCN, and therefore it is considered highly unlikely that GCN would be using any areas of this site.
- 5.3.2 Furthermore, the proposed development will predominantly fall within the existing areas of hardstanding, with only a small section of amenity grassland to be lost.
- 5.3.3 Given the highly unlikely event that GCN are present on site, a precautionary approach would be undertaken prior to and during construction. Therefore, the following measures should be adhered to:
- No tree roots should be removed during the winter period. Vegetation should be cut down to just above ground level during the winter and the root systems removed carefully between March and October (inclusive);
 - Works would avoid any direct impacts on retained or off-site habitats, such as from run-off or accidental encroachment from construction vehicles, site operatives or machinery;
 - Construction machinery and materials should be stored on areas of hardstanding or raised off the ground on pallets, where possible;
 - Waste materials should be removed off site immediately or stored in skips, where possible;
 - Excavations should be backfilled, covered overnight, or ramps placed in to allow any animals to escape;
 - Excavations and working areas should be managed so as not to create temporary waterbodies which may attract newts onto site; and

- Access roads should use existing roads and tracks and keep habitat disturbance to a minimum, avoiding any areas of sensitive or potentially valuable habitat.

Breeding Birds

- 5.3.4 The trees and introduced shrubs within and immediately adjacent to the site provided foraging and nesting habitat for a range of common and widespread breeding birds.
- 5.3.5 It is recommended that features with potential to support nesting birds are removed outside of the breeding bird season. It should be noted that whilst the main bird breeding season runs between March and September some birds can nest at any time of year.
- 5.3.6 If any clearance was required during the breeding season, the relevant areas should be inspected by a suitably qualified ecologist within 48 hours prior to clearance to check for the presence of nesting birds. If an active nest was present, the nest and vegetation within 5 m of it would need to be retained until the young birds had fledged.
- 5.3.7 If a nest proved to be of a species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), advice from the inspecting ecologist regarding suitable distances to avoid disturbance of the nest and any birds using it would need to be sought and agreed with clearance contractors. Such buffers would need to remain in place until the young birds had fledged and left the nest.
- 5.3.8 Areas of high-value habitats that were being retained should be protected from accidental damage or disturbance during construction and managed to ensure their long-term existence. The habitats should also be protected from any increases in disturbance post-construction; this could be achieved through the implementation of measures to minimise additional pedestrian or vehicular access to these habitats.
- 5.3.9 Soft landscaping within the development, such as tree and scrub planting, would be used to compensate for any habitat loss and maintain habitat connectivity. This would be achieved by the use of native plant-mixes to recreate lost habitat and maintain linkages between remaining areas of natural habitat.
- 5.3.10 It is also recommended that bird boxes are installed on retained mature trees within the site boundary, to provide alternative nesting opportunities for smaller bird species.

Bats

- 5.3.11 The trees along the north western boundary of the site are likely to provide good foraging and commuting habitat for bats; these trees are to be retained, with additional new tree planting proposed.
- 5.3.12 Any proposed lighting required for the site would be designed to direct artificial light to where it is needed and should be directed away from any existing or proposed habitats that would be used by foraging and/or commuting bats (such as retained woodland, tree lines and boundary features).
- 5.3.13 Where practicable, lux levels should be 0.5 lux or less at the interface with any of these habitats. Where this is not practicable advice from an ecologist should be sought to determine the impact on bats.
- 5.3.14 The guidance provided in Bats and Artificial Lighting in the UK (ILP, 2018) should be followed.
- 5.3.15 Measures would need to be included within an Ecological Management Plan (EMP) that ensured any trees or buildings with bat roost potential were managed appropriately and activities such as heavy pruning of trees or maintenance to buildings was only undertaken once an ecologist had been consulted.

- 5.3.16 It is recommended that an ecologist is consulted regarding the proposed lighting design for the site to ensure that any artificial light proposed is directed away from suitable bat habitats present.
- 5.3.17 It is also recommended that bat boxes are installed on retained mature trees within the site boundary, to provide additional roosting opportunities for bats.

5.4 Enhancement Measures

- 5.4.1 Landscape proposals have been designed to achieve biodiversity enhancements, to increase the ecological value of the site. These include the following:
- Retaining, protecting and enhancing existing hedgerows and trees;
 - Providing and enhancing grassland; and
 - Planting pollinator-friendly native shrubs and herbs of local provenance throughout.

6 CONCLUSIONS

- 6.1.1 The EA identified designated sites and records of protected and notable species within the search area around the site. The site was found to comprise predominantly hardstanding and amenity grassland with a small area of introduced shrub and scattered broadleaved trees.
- 6.1.2 In 2019, the site was found to comprise habitats suitable for breeding birds and foraging and commuting bats.
- 6.1.3 In 2021 the habitats on site had not changed significantly since the original survey in 2019 and the site was found to continue to provide suitable habitat for breeding birds and foraging and commuting bats. Due to the revised development boundary, the site was no longer considered suitable for reptiles or GCN.

6.2 Designated Sites

- 6.2.1 There were no statutory designated sites or non-statutory designated sites designated for their nature conservation interest identified within 2 km of the site during the desk study. The proposals will therefore have no effect on any site designated for its nature conservation interest.

6.3 Habitats

- 6.3.1 The majority of the hardstanding and a small area of amenity grassland would be lost in the current proposals.
- 6.3.2 None of the habitats themselves are of significance as the majority of the plant species are non-native ornamental species. However, the habitats present do have the potential to support protected and notable fauna species.

6.4 Species

Great crested newts

- 6.4.1 A single sub-adult GCN was found within the wider JDE site during a reptile survey undertaken in late June. There were no waterbodies identified within 500 m of the site boundary and the site itself had limited terrestrial habitat.
- 6.4.2 Given the highly unlikely event that GCN are present on site, a precautionary approach would be undertaken prior to and during construction.

Breeding Birds

- 6.4.3 The trees and introduced shrub continue to provide habitat for a range of bird species and could potentially support species of conservation concern.
- 6.4.4 Further mitigation measures would be required to ensure that there would be no adverse effects on the species present and using the site
- 6.4.5 The value of the site for breeding birds would be slightly reduced due to habitat loss and due to the deterioration of retained habitats and therefore mitigation measures would also be required to ensure alternative habitats were provided.

6.5 Enhancement Measures

- 6.5.1 Measures to enhance the biodiversity value of the site have been designed into the project proposals through the provision of new, higher value habitats.

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APPENDICES

Reptiles

All common UK reptile species (Adder *Vipera berus*, Grass Snake *Natrix natrix*, Common Lizard *Zootoca vivipara* and Slow Worm *Anguis fragilis*) are protected through part of Section 9(1 and 5) of the Wildlife & Countryside Act 1981 (as amended). This prohibits:

- Intentional or reckless injuring or killing;
- Selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- Publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.

Great crested newts

Great Created Newts *Triturus cristatus* are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (and as amended), which affords the species protection under Section 9. The species is also listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017. In combination, this makes it an offence to:

- intentionally kill, injure or take (capture etc.) a Great Crested Newt;
- possess a Great Crested Newt;
- intentionally or recklessly damage, destroy, obstruct access to any structure or place used by Great Crested Newt for shelter or protection, or disturb any animal occupying such a structure or place; and sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative) or advertise for buying or selling such things.

Great Crested Newts are also listed on the UKBAP as a Priority Species and are listed as a species of principal importance for biodiversity in England & Wales under Section 41 of the Natural Environment & Rural Communities Act (2006).

Birds

All birds, their nests and eggs are afforded protection under the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. It is an offence to:

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

Schedule 1 birds cannot be intentionally or recklessly disturbed when nesting and there are increased penalties for doing so. Licences can be issued to visit the nests of such birds for conservation, scientific or photographic purposes but not to allow disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid planning permission.

Appendix B
Target
Notes

Target Note No.	Description
1	An area of shrub planting in the north west of the site providing suitable habitat for nesting birds.
2	Fast-flowing stream to the north east of the site

Annual meadow grass *Poa annua*
Bramble *Rubus fruticosus*
Bristly oxtongue *Helminthotheca echinoides*
Broad-leaved dock *Rumex obtusifolius*
Buttercup *Ranunculus repens*
Clover *Trifolium sp.*
Common nettle *Urtica dioica*
Common sowthistle *Sonchus oleraceus*
Crane's bill *Geranium sp.*
Creeping thistle *Cirsium arvense*
Daisy *Bellis perennis*
Dandelion *Taraxacum officinale*
Dove's-foot cranesbill *Geranium molle*
Ivy *Hedera helix*
London plane *Platanus X hispanica*
Narrow leaved ash *Fraxinus angustifolia*
Norway maple *Acer platanoides*
Perennial rye grass *Lolium perenne*
Poplar sp. *Populus x canadensis*
Ragwort *Senecio jacobaea*
Ribwort plantain *Plantago lanceolata*
Whitebeam *Sorbus aria*
Willowherb *Epilobium sp.*
Yarrow *Achillea millefolium*

Methodology

Reptiles are best surveyed from April following hibernation until June and then again in September. At this time of year, the sun is often shining but air temperatures are low, so reptiles spend a long time basking and are therefore more easily observed.

The reptile survey was conducted using artificial refugia made from corrugated tin and roofing felt measuring 50cm x 50cm and 50cm x 100cm. These provide shelter and basking opportunities for reptiles, which can be recorded on or under the refugia in suitable weather conditions.

On the 9th May 2019 reptile refugia was placed in areas identified as providing the greatest suitability for reptiles and which had optimal basking opportunities. The locations of the refugia are shown on Figure 3.3.

The refugia were left undisturbed for a minimum of 10 days prior to the first survey being undertaken in order to allow them to bed down and to give them time for reptiles to find them. In order to conform to best practice guidelines, the refugia was inspected on seven separate survey visits and a visual search was undertaken when the refugia were being laid.

On each of the visits every refugia was inspected for reptiles basking on top and was then lifted to identify any reptiles beneath. The number, species, age class and where possible, sex of each reptile observed was recorded.

Visit times were selected to coincide with suitable weather conditions and times of day when refugia would be acting as heat traps which would attract reptiles to use them whilst basking. Periods of strong wind or heavy rain were avoided, and surveys were typically undertaken during periods of sunshine and when air temperatures were between 10°C and 18°C.

Froglife (1999) provides a basic index of relative abundance of reptiles based on peak survey counts (Table 6.1). The figures in the table refer to the maximum number of adults seen by direct observation and/or on or under refuges by one person in one day.

Table 6.1: Reptile population class sizes

Species	Low population	Good population	Exceptional population
Adder	<5	5-10	>10
Grass snake	<5	5-10	>10
Common Lizard	<5	5-10	>20
Slow worm	<5	5-10	>20

Results

Each visit included checking artificial refugia and undertaking a visual search of suitable habitat on site.

The dates and results of the survey are detailed in Table 6.2 below and shown on Figure 6.1.

Table 6.2: Reptile survey results

Survey	Date	Weather	Species found
1	21/05/19	Sunny, warm, breezy, 17°C	No reptiles found

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2	24/05/19	Patchy cloud, windy, 18°C	No reptiles found
3	28/05/19	North westerly winds, 14°C	No reptiles found
4	06/06/19	Moderate breeze and patchy cloud, 13°C	No reptiles found
5	20/06/19	Patchy cloud, light breeze, warm, 15°C	No reptiles found; sub-adult GCN found
6	28/06/19	High clouds and slight breeze, 18°C	No reptiles found
7	03/07/19	Light winds with heavy clouds, 17°C	No reptiles found

No reptiles were recorded during the surveys, however a sub-adult GCN was found under a reptile mat in late June.

This area subject to surveys in 2019 is no longer within the proposed development boundary for the site.

Figure 6.1: 2019 Reptile Survey Results



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Legend

- Site Boundary
- Reptile Mat Locations
- Great Crested Newt

Rev	Description	By	CB	Date



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Client -

Project Banbury JDE

Title 2019 Reptile Survey Results

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