



ROAVR | GROUP

Project: 23_PEA_09_22
Site: 34 Allum Lane, Elstree, Borehamwood, WD6 3NP
Client: Vector Capital PLC



Project Number:	23_PEA_09_22
Report Type:	Preliminary Ecological Appraisal Report (PEAR)
Site Address:	34 Allum Lane, Elstree, Borehamwood, WD6 3NP

Role:	Name:	Position:	Date:
Surveyor	Peter Haine	Field Surveyor	19/09/2023
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Revision History		
Date:	Version number:	Summary of changes:
6/10/2023	1.0	First Draft
6/10/2023	1.0	First Issue
14/11/2023	2.0	Second Issue - following plan changes and client discussions.

Summary:	
Site Surveyed	Land at 34 Allum Lane, Elstree, Borehamwood, WD6 3NP National Grid Reference: TQ18419603
Purpose & Brief	Preliminary ecological appraisal commissioned by Vector Capital PLC
Development Proposals	Residential units.
Methods	Desk Study UK Habitat Classification (UKHab) survey of the site. Assessment of likely significant effects as far as can be reasonably and proportionally known
Confirmed Ecological Constraints	Bats
Potential Ecological Constraints	Roosting bats Nesting birds Great Crested Newts
Recommendations For Further Survey Works	Bat presence / absence surveys Pre-works nesting bird check A precautionary GCN working method statement Production of wildlife sensitive lighting scheme
Opportunities For Ecological Enhancements	Bat boxes Bird boxes Native species planting Tree planting

With the assumption that the existing conditions on-site remain unchanged. The results of this report are likely to remain valid for 12-months inline with the guidance published by CIEEM and the Bat Conservation Trust.

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Appendix 1: Site Location and Assessment Boundary

Appendix 2: Desktop Study

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Acknowledgements:

Data referred to within this report was sourced from Natural England Department for Environment, Food and Rural Affairs Multi-Agency Geographic Information for the Countryside (DEFRA MAGIC) database and through direct consultation with Herts Environmental Records Centre (HERC).

Client Documents:

This report has been completed on assumption that the plans provided by the client at the time of issue of this report remain the same. A list of the documents provided by the client can be found in the table below.

Table: Documents provided by the client as of 13th september 2023

Plans provided by client as of 13th september 2023
DWELLING_1_DRAWINGS
DWELLING_2_DRAWINGS
DWELLING_3_DRAWINGS
DWELLING_4_DRAWINGS
SITE_PLAN_-_COLOUR
SITE PLAN - LANDSCAPE AND BIODIVERSITY
SITE PLAN - LANDSCAPING
SITE PLAN - ROOF

1 Introduction

- 1.1 ROAVR Group were commissioned to undertake a Preliminary Ecological Appraisal Report (PEAR) at 34 Allum Lane, Elstree, Borehamwood, WD6 3NP.
- 1.2 The survey was comprised of a desktop study, which was undertaken in September 2023 and a site survey, which was carried out by Peter Haine on 19/09/2023. Peter has been completing preliminary ecological appraisals for over three years and regularly undertakes surveys of this scale. He has received professional training in all aspects covered in this report.
- 1.3 The methodology and results are outlined within the report. Where applicable, recommendations for suitable mitigation and ecological enhancements are provided.
- 1.4 The report is to be submitted to support a planning application to redevelop the site.
- 1.5 The information and recommendations within this report have been prepared and provided in accordance with CIEEM's Code of Professional Conduct (CIEEM, 2022).

SITE DESCRIPTION

- 1.6 The survey site covers an area of approximately 4,702.8 sq metres and is centred on grid reference 'TQ 1841 9603'.
- 1.7 The site is situated 1.3km SW of the centre of Borehamwood in the Hertsmere Borough Council control area. The site is accessed from the south off of the B5378 Allum Lane.
- 1.8 The site is currently a 2-storey detached derelict residential dwelling property. It is estimated to have been built between 1930-1949.

DEVELOPMENT PROPOSALS

- 1.9 The site is to be redeveloped with the addition of four new units. Full details of the proposed development will be available on the planning portal.

SCOPE OF WORKS

- 1.10 The aims of this assessment were to:
 - identify the likely ecological constraints associated with the proposed development;
 - identify suitable mitigation measures (if required);
 - determine whether further surveys are necessary;
 - identify opportunities for ecological enhancement;

2 Methodology

DESKTOP STUDY

- 2.1 Site-specific information in relation to land designations, protected species and protected habitats within a 2km search area was sourced from DEFRA MAGIC and HERC.
- 2.2 In order to ensure that ecological data searches were up to date, species data was screened and all data records pre-2012 was omitted from the results.
- 2.3 Results of the desktop study should be considered to be indicative only.

UKHAB SURVEY

- 2.4 A Preliminary Ecological Appraisal, comprised of a site walkover and mapping was undertaken by Peter Haine on 19/09/2023. The PEA was undertaken in line with CIEEM's 'Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).
- 2.5 The survey was conducted from the ground. Habitats and features of importance were mapped using a GPS enabled handset.
- 2.6 A Site Habitat Map was produced in accordance with the UK Habitat Classification Manual (Butcher et al., 2020). (Appendix 3).

PRELIMINARY BAT ROOST ASSESSMENT (PRA)

- 2.7 A Preliminary Roost Assessment, comprised of a preliminary ground level roost assessment was undertaken by Peter Haine during the site survey on 19/09/2023. The PRA was undertaken in line with the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists: Best Practice Guidelines' (Collins, 2023).
- 2.8 The survey included an active search for evidence of bats (such as droppings, feeding remains, urine splatters, oil staining, bat fur and/or scratch marks) and potential roosting features (PRFs). PRFs of trees are listed in Table 2.8.1. PRFs of built structures are listed in Table 2.8.2. The lists are not exhaustive but show examples of the most commonly used roosting features of built structures and trees.

Table 2.8.1: Potential roosting features (PRFs) in built structures listed in Bat Conservation Trust’s ‘Bat Surveys for Professional Ecologists: Best Practice Guidelines’ (Collins, 2023).

Potential roosting features (PRFs) in built structures	
External	Internal
<ul style="list-style-type: none"> - Access/egress through windowsills, window panes and walls; - Behind peeling paintwork or lifted rendering; - Behind hanging tiles; - Weatherboarding; - Eaves; - Soffit boxes; - Fascias; - Lead flashing; - Gaps under felt (even including those of flats roofs); - Under tiles/slates; - Existing bat boxes; - Gaps in brickwork or stonework which provide access/egress to cavity or rubble-filled walls 	<ul style="list-style-type: none"> - Behind wooden panelling; - In lintels above doors and windows; - Behind window shutters and curtains; - Behind pictures, posters, furniture, peeling paintwork, peeling wallpaper, lifted plaster and boarded windows; - Inside cupboards and in chimneys accessible from fireplaces; - Within attic roof voids; - The top of gable end or dividing walls; - The top of chimney breasts; - Ridge and hip beams and other roof beams; - Mortise and tenon joints; - All beams; - The junction of roof timbers, especially where ridge and hip beams meet; - Behind purlins; - Between tiles and the roof lining; - Under flat felt roofs

2.9 A Site PRF Map was produced to show the location of built structures, trees and potential roosting features (PRFs). Habitats and features of importance were mapped using a GPS enabled handset.

SUITABILITY ASSESSMENT

2.10 The likelihood of occurrence of protected ecological features and species was ranked in accordance with the criteria listed in Tables 2.10.1 and 2.10.2. Likelihood of occurrence was assessed using data collected during the desk study and after evaluation of the habitats on-site (during the site survey) as to their likelihood to provide suitability for protected species (i.e. presence of breeding, nesting, roosting, foraging, commuting and/or refuge habitat for example).

Table 2.10.1: Criteria used to assess the likelihood of occurrence for protected ecological features and species on-site (excl. bats).

Likelihood of occurrence	Criteria
Present	Confirmed as present during the site survey or by confirmed historical records.
High	Species are known to be present within close proximity to the site (records present). Habitats on-site are of high quality for the species and/or likely to support a large population. The site is well connected to good quality habitat within the local area.
Moderate	Species are known to be present within the local area (records present). Habitats on-site are of moderate quality for the species and/or likely to support a moderate population. The site and connected habitats provide all of the ecological requirements of the species. Suitability of habitats on-site may be limited due to disconnectivity to the wider landscape, poor to moderate habitat available within the wider locality, and/or due to the presence of only a small area of suitable habitat.
Low	Few or no records of the species within the local area. Habitats on-site are of poor quality for the species and/or likely to support just a few individuals. The suitability of habitats may be limited due to disturbance, isolation and/or poor quality habitat available within the wider locality. However, species presence cannot be discounted due to the national distribution of the species or the nature of on-site and surrounding habitats (if all required ecological requirements for the species are present).
Negligible	While presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species. Connected habitats do not fulfil the ecological requirements of the species. There are no local records and/or the site is outside the known national range of the species.

Table 2.10.2: Criteria used to assess the likelihood of occurrence (site's suitability) for bats, from Bat Conservation Trust's 'Bat Surveys for Professional Ecologists: Best Practice Guidelines' (Collins, 2023).

Suitability	Criteria	
	Roosting bats	Foraging / Commuting bats
Negligible	Negligible habitat features on-site likely to be used by roosting bats.	Negligible habitat features on-site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats but isolated (i.e. not very well connected to the surrounding landscape by other habitat).</p> <p>Suitable, but isolated habitat that could be used by small numbers of bats for foraging.</p>
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, appropriate conditions and/or suitable surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - with respect to roost type only).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting.</p> <p>Habitat that is connected to the wider landscape that could be used for bats for foraging.</p>
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitats.	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats.</p> <p>Site is close to and connected to known roosts.</p>

ECOLOGICAL CONSTRAINTS AND MITIGATION

2.11 An evaluation of the potential ecological constraints to the proposed development and appropriate mitigation strategies was made following CIEEM's 'Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018).

LIMITATIONS

- 2.12 Only one site visit was undertaken, therefore, a full evaluation of species present throughout the year could not be made. The data collected during the site survey was sufficient to make an appropriate assessment of the site.
- 2.13 The site map shown in Appendix 3 was produced from the OS plans provided to us. A site walkover with site plans was used to inform the location and extent of existing habitats shown on the appended mapping and is as accurate as possible but some error must be allowed for without a full topographical survey.

3 Policy and Legislative Context

- 3.1 This section includes the legislative context of those protected species or other notable species that are recorded on-site, or have the potential to be present on-site. Details on specific legislation for other protected or notable species that have not been identified as being present, or having the potential to be present, are not included below.

NATIONAL PLANNING POLICY

- 3.2 The introduction of the National Planning Policy Framework (NPPF) in March 2012 sets out the Government's planning policies for England and how these are expected to be applied in the presumption in favour of sustainable development. It sets out the Government's requirements for the planning system, only to the extent that it is relevant, proportionate and necessary to do so and is a material consideration for local planning authorities in determining applications.
- 3.3 Planning Practise Guidance is relevant covering the Natural Environment alongside the NPPF. Therefore features of ecological value should be considered in the context of conserving and enhancing the natural environment.
- 3.4 The Government's objectives for planning are to promote sustainable development, to conserve, enhance and restore the diversity of England's wildlife and geology and to contribute to rural renewal and urban renaissance.

LOCAL PLANNING POLICY

- 3.5 This report has been commissioned in order to comply with policies adhered to by Hertsmere Borough Council, which include:

Policy CS12 The enhancement of the natural environment

Policy CS13 The Green Belt

Policy CS16 Environmental impact of new development

NATIONAL AND INTERNATIONAL LEGISLATION

- 3.6 Bern Convention on the Conservation of European Wildlife and Natural Habitats (1982)
- 3.7 Convention on the Conservation of Migratory Species of Wild Animals (1983)
- 3.8 Countryside and Rights of Way Act (2000)
- 3.9 National Parks and Access to the Countryside Act (1949)
- 3.10 Natural Environment and Rural Communities Act (2006)
- 3.11 Protection of Badgers Act (1992)
- 3.12 The Conservation of Habitats and Species Regulations (2017)
- 3.13 The Convention of International Trade in Endangered Species of Wild Fauna and Flora (1975)
- 3.14 The Hedgerows Regulations (1997)
- 3.15 Wildlife and Countryside Act (1981)
- 3.16 Wild Mammals (Protection) Act (1996)

4 Desktop Study

SITE DESIGNATIONS

4.1 There are three designated sites within the 2km search area.

Table 4.1.1: 1 recorded within a 2km radius of the survey site.

Site Name	Grid Reference	Area (ha)	Approx. Closest Distance from Site (km)
Local Nature Reserves (England) SCRATCHWOOD AND MOAT MOUNT OPEN SPACES	TQ19839508	55.16	1.6 km
SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)	TQ18479601	NA	0 km
Green Belt (England)	TQ17899531	2238.55217	1 km

*Data from DEFRA MAGIC

LOCAL HABITAT

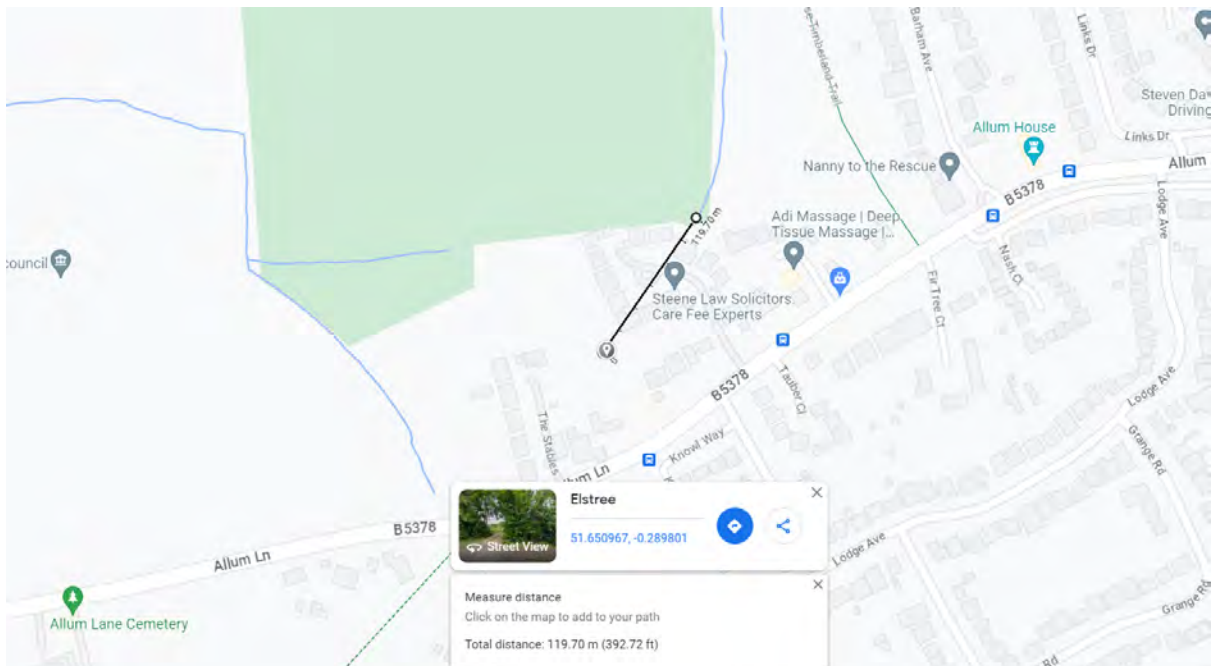
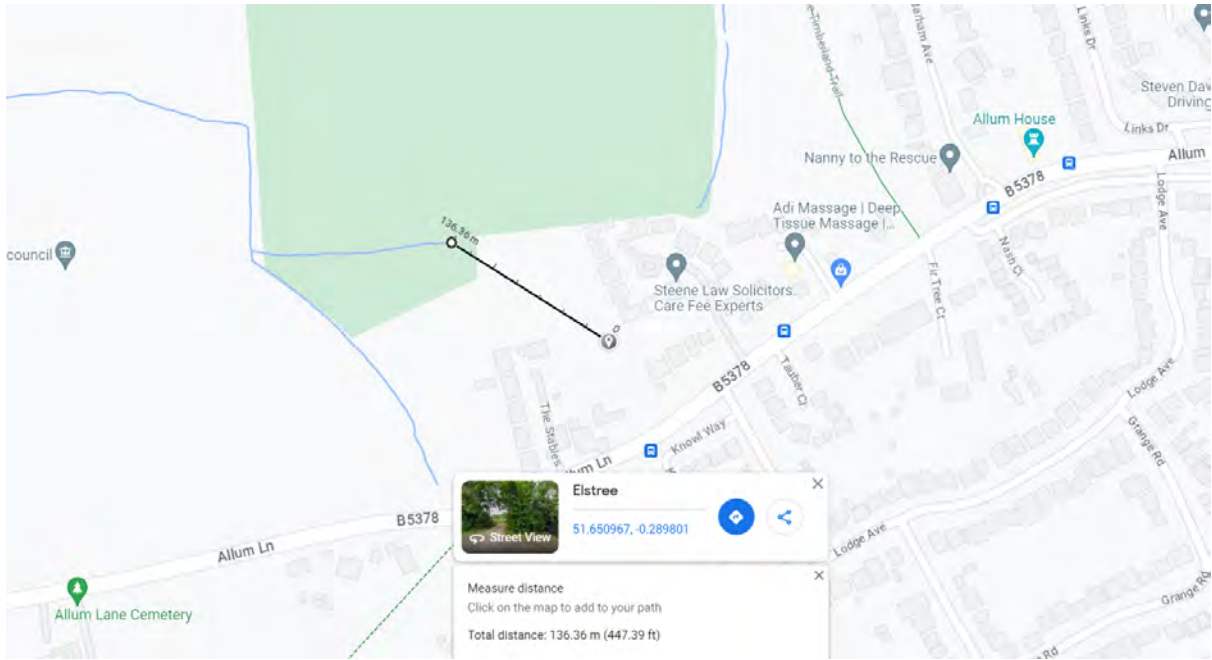
4.2 There were more than ten priority habitats that were formerly mapped within the 2km search area.

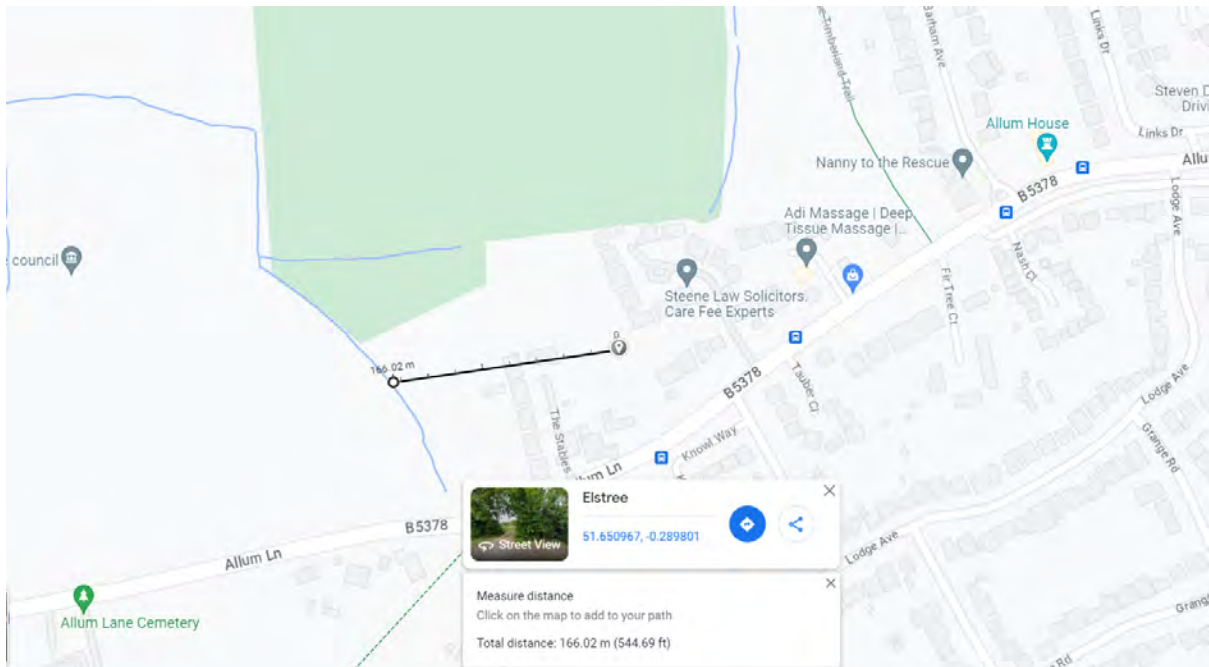
Table 4.2.1: Priority habitats formerly mapped within a 2km radius of the survey site.

Habitat	Approx. Closest Distance from Site (km)
Priority Habitat Inventory - Lowland Meadows (England)	0.6 km
Priority Habitat Inventory - Deciduous Woodland (England)	0.1 km
Priority Habitat Inventory - Traditional Orchards (England)	0.9 km

*Data from DEFRA MAGIC

4.3 There were three standing water bodies situated within a 500m radius of the survey site. All three of which are smaller runoffs of Tyke Water, the tributaries are 119, 148 and 166 metres away in north east, north west and west directions.





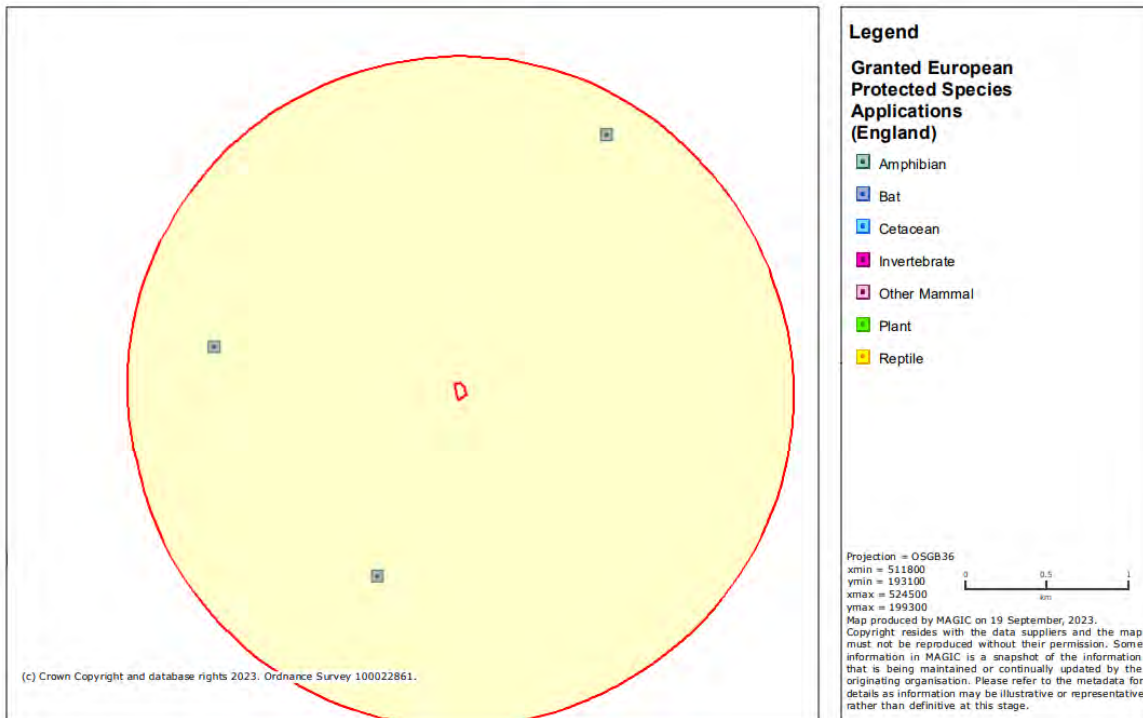
Google, 2023.

HISTORICAL SPECIES RECORDS

- 4.4 Protected species records relating to the site and 2km search area were obtained from the HERC as part of the desktop study. The data search contains confidential information that is not suitable for public release. Therefore, the data has not been included in the report.
- 4.5 A full list of identified species recorded within the 2km search area has been requested from LERC. The relevant authority has provided us with the LERC data which shows a number of records for EPSL species.
- 4.6 The absence of identified records does not discount the presence of a species. An absence of identified records is primarily a result of a lack of survey or the non-submission of records. Furthermore, historical records of species do not confirm their current presence within an area.
- 4.7 The data search returned over 300 records of bats including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Common Serotine (*Eptesicus serotinus*), Brown Long-eared bat (*Plecotus auritus*) and Daubenton's Bat (*Myotis daubentonii*). A search on MAGIC identified three previous protected species licences for bats within 2km of the site; details of the licences are presented in table below.

MAGIC

EPSL



Screenshot showing licensed EPSM granted within 2km of the site area. (MAGIC, 2023).

Table 4.7.1: Previous protected species licences for bats mapped within a 2km radius of the survey site

Reference, Date and Species	Approx. Distance from Site (km)
EPSM2011-2886 - 30/10/2012 - C-PIP, S-PIP, BLE	1.9km NE
EPSM2012-4220 - 26/10/2012 - C-PIP, S-PIP, BLE, NOCT	1.7km NNW
EPSM2014-6995-A - 01/03/2014 - S-PIP	1.6km SW

*Data from DEFRA MAGIC

4.8 There are 11 records of reptiles within 2km of the site, including slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*), common toad (*Bufo bufo*) and adder (*Vipera berus*). The data search returned no records of great crested newt (*Triturus cristatus*), a search on MAGIC identified no survey data or previous protected species licences for great crested newts within 2km of the site.

4.9 There are 7 records of badger (*Meles meles*) within 2km of the site. There are 16 records of Hedgehog (*Erinaceus europaeus*) within 2km of the site.

- 4.10 The closest watercourse is 1.14km NW from site, and separated from site by a main road, therefore aquatic species such as water vole (*Arvicola amphibius*), otter (*Lutra lutra*) and white-clawed crayfish (*Austropotamobius pallipes*) are considered absent from site and are not considered further in this report.
- 4.11 There are numerous records of birds within 2km of the site, comprising species of a variety of habitats including garden, wetland and woodland including red kite (*Milvus milvus*), kingfisher (*Alcedo atthis*) and bullfinch (*Pyrrhula pyrrhula*).
- 4.12 The data search returned numerous records of invertebrates within 1km of the site and 2 records of stag beetles (*Lucanua cervus*).

5 Site Survey

- 5.1 The site survey was undertaken on the 19th September 2023. The weather conditions were considered to be appropriate to survey (Table 5.1.1).

Table 5.1.1: Weather conditions at the time of survey.

Date of site survey: 19/09/2023	
Temperature	17c
Wind	10 mph SW
Precipitation	0%

*Data from BBC Weather.


PHASE 1 HABITAT SURVEY

5.2 The habitats presented consist of the following JNCC Phase 1 Habitat categories:

- Buildings
- Scattered trees and shrubs
- Hard surfaces
- Tall ruderal vegetation

5.3 A description of habitat present along with target notes is shown in Table 5.3.1. The location of habitats is shown in the Site Habitat Map, Appendix 4.

Table 5.3.1: Description of habitats present on-site (please also see the Site Habitat Map, Appendix 4).

Habitats and Target Notes	Description	Supporting Photo
Buildings	<p>There are two buildings on site (B1 and B2), Building B1 is a derelict residential building that has been used recently for the illegal production of drugs. Evidence was scattered across the site which became a survey limitation.</p> <p>Building B2 is an oak framed agricultural building with rambling lean-to and extensions added. A preliminary roost assessment follows in the next section</p>	 <p>Photo 1 - Building B1 (northern elevation)</p>



		 <p data-bbox="1603 802 1861 826">Photo 2 - Building B2</p>
<p data-bbox="338 863 663 887">Scattered trees and shrubs</p>	<p data-bbox="826 863 1406 1082">The periphery of the site is populated with linear features of outgrown garden ornamentals such as Leylandii, Bay and Cedar. The tree cover is predominantly located to the south with a conifer hedgerow to the northeast. Offsite trees sit on the northern and western boundaries. There is evidence of tree felling across the site with lines of conifer stumps, brush and log piles.</p>	 <p data-bbox="1536 1265 1928 1289">Photo 3 - Evidence of tree felling</p>



Photo 4 - Poor quality non-native conifer hedging



Photo 5 - Site entrance

Tall ruderal vegetation

The main body of the site is overgrown vegetated garden land populated by tall ruderal vegetation including Bramble (*Rubus fruticosus*), Nettle (*Urtica dioica*), Dock (*Rumex obtusifolius*), Rosebay Willow Herb (*Chamaenerion angustifolium*)



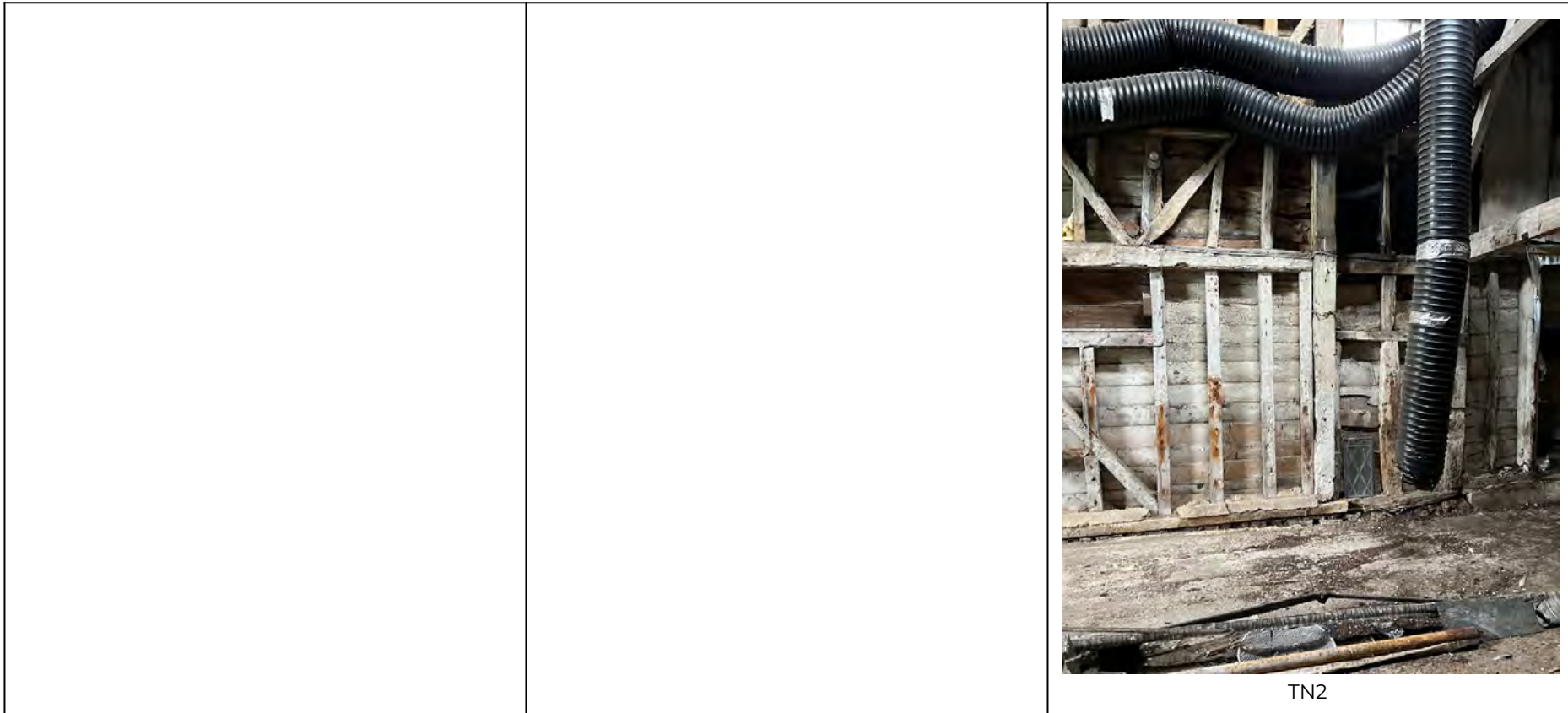
Photo 6

Target Notes:


- TN1 - the site is scattered with semi-industrial waste which constrains survey effort.
- TN2 - The interior of part of B2
- TN3 - Evidence of rabbits across the site
- TN4 - Rabbit burrow in spoil heap
- TN5 - Disused pond formed of concrete
- TN6 - Southern elevation of B1
- TN7 - Interior of B2

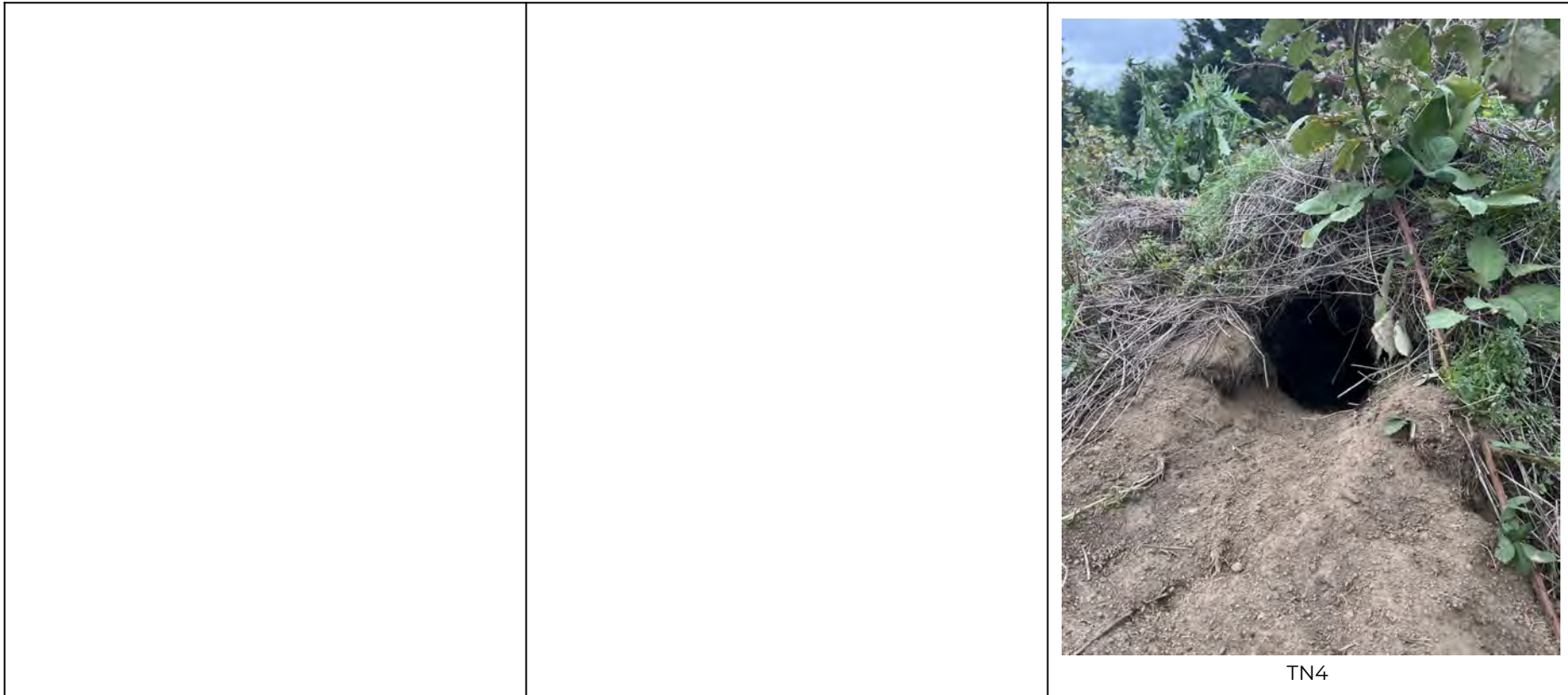


TN1



TN2

		 <p>TN3</p>
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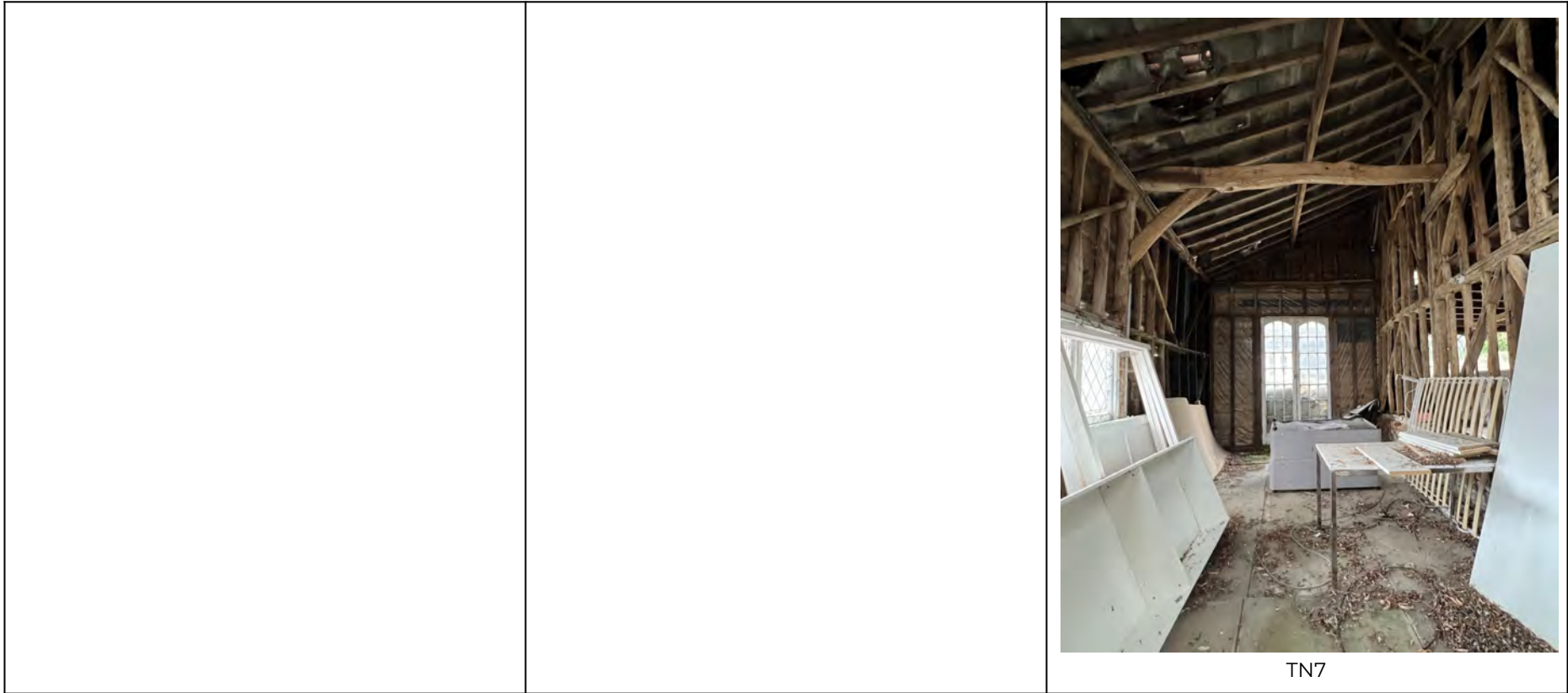




TN5



TN6



TN7

PRELIMINARY BAT ROOST ASSESSMENT (PRA)

5.4 There were two built structures on site. Access was constrained to both due to safety concerns.

Building B1 is a large derelict detached former residential property. It is of brick construction with timbered gable ends. The building has a clay pantile roof covered with multiple areas of slipped and damaged tiles and gaps in the lead flashing. The timber windows, soffits and fascias were in a poor overall condition. There were multiple gaps behind the timbers. There was access to small sections of the loft void in the centre of the property only. No field signs of bats were observed but the survey had multiple constraints. The building was assessed as having moderate potential for roosting bats.

Building B2 is an agricultural type building with an oak frame. There are multiple iterations of extension to the footprint. Part of the roof structure may be asbestos and was thus avoided. There was limited access internally due to safety concerns. The roof is mainly clay pantiles which are in very poor condition. There were pigeons within the buildings. The building was assessed as having moderate potential for roosting bats.

6 Evaluation and Assessment

- 6.1 Results from the desktop study and site survey were evaluated to assess the likelihood of occurrence for protected ecological features and species potential (as per Table 2.10.1). An evaluation of the potential impacts due to the proposed development and recommendations for appropriate mitigation measures are provided in Table 6.1.1.

Table 6.1.1: Likelihood of occurrence of protected ecological features and species on-site, potential impacts due to the proposed development and recommendations for appropriate mitigation measures.

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
Protected sites	Low	The site is not situated within, or adjacent to, any known protected sites. The site is not considered to be well connected to any known protected sites.	None.	None required.
Protected habitats	Low	There were no protected habitats on, or adjacent to, the site. Habitats on-site were not considered to be unique or of high quality within the wider locality.	None.	None required.
Protected plant species	Low	There are no known records of protected plant species within 2km of the site. No protected plant species were observed during the site survey. Habitats on-site are not considered to be unique or of high quality to support protected plant species, however, their presence cannot be entirely discounted.	The site does not appear to support protected plant species, thus, the proposed development is unlikely to impact upon protected plant species.	None required.

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
Amphibians (incl. Great Crested Newts)	Low	There are records of GCN within 2km of the site. There are no water bodies on or adjacent to the site but terrestrial habitat is somewhat suitable. The small concrete frames ex-pond is unsuitable for newts and the adjacent terrestrial habitat has been heavily disturbed.	In the unlikely event of presence, there is the potential to injure, harm or kill GCN. Thus a precautionary approach will be required.	A precautionary great crested newt method statement should be conditioned on planning consent.
Bats (Chiroptera)	Roosting bats			
	Moderate	<p>There were records of bats within 2km of the site.</p> <p>Buildings B1 and B2 were considered to have moderate potential for roosting bats due to the presence of numerous potential roosting features together with safety related survey limitations.</p>	<p>The proposed development requires the removal of building B2 and extensive works to building B1 which will result in the loss of several PRFs. Therefore, the proposed demolition and renovation works have the potential to disturb, injure and/or kill roosting bats (if present). Bat presence/absence must be determined to identify potential impacts.</p> <p>As the proposed demolition works will result in the loss of several PRFs, new habitat creation is advised.</p>	Two bat activity surveys of B1 and B2 are to be carried out between May and September (only one survey can be undertaken in September). The survey must be supported with night vision and thermal cameras. Further surveys may be required if bat presence / absence cannot be determined during the initial site visit. The surveys must be undertaken by suitably experienced ecologists. The survey report must identify bat presence/absence and outline relevant mitigation measures (if required). A new bat roost must be created on-site to offset the loss of PRFs.

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
	Foraging/Commuting bats			
	Moderate	<p>Amenity grassland, hedgerows and habitats on-site were considered to be suitable for foraging / commuting bats. Furthermore, the site has good connectivity to high quality habitats within the wider locality, including the golf course to the north and water bodies to the northwest.</p>	<p>Mitigation measures must be put in place to ensure that disturbance does not increase during and/or post-development.</p> <p>The proposed development will not result in any substantial habitat loss that will impact upon local populations long-term.</p>	<p>Construction works should be limited to daylight hours (excl. dawn and dusk) in order to prevent disturbance to nighttime foraging activity.</p> <p>Post-construction, the use of artificial lighting should be limited where possible. Motion sensors on outside lighting will prevent prolonged disturbance. It is recommended that outside lighting be set on short-timers (1 minute) and that the sensitivity is set to large moving objects only.</p>
Birds	High / Present	Breeding birds were identified on-site.	The proposed development required the removal of several trees, which have potential to support breeding birds.	<p>The trees should be protected from site with HERAS fencing before any works commence on-site. The fencing must be signed appropriately and outlined within the tool box talk/</p> <p>Tree works (if required) should take place outside the breeding season (typically</p>

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
				March-October).
Invertebrates	Low.	There are records of stag beetles within 1km of the site. The tree stumps on site could provide suitable habitat.	The development could result in the loss of suitable stag beetle (and other invertebrate) habitat.	If stumps are removed (or logs created during vegetation clearance) they should be retained and relocated to secluded areas of the site. Loggeries can be created by half burying logs vertically in the ground.
Reptiles	Low.	There are records of reptiles within 2km of the site. No reptiles, or evidence of reptiles, was found during the site survey. The site was well connected to suitable habitats within the wider locality, including open grassland, hedgerows and woodland.	The proposed development requires the removal of a small areas of ground-level vegetation on-site. Vegetation removals have the potential to disturb, injure and/or kill reptiles (if present). Thus, a precautionary approach is required. The proposed development will not result in any substantial habitat loss that will impact upon local populations long-term.	The grassland should continue to be maintained and kept short through mowing and management up until the point of any construction works commencing on-site to prevent the habitat from becoming more favourable to reptiles. Herptile fencing must be placed around the construction zone and any access/egress in order to temporarily exclude reptiles from site. The fencing must be signed appropriately and outlined within the tool box talk.
Other terrestrial mammals (excl. bats).	Badgers (<i>Meles meles</i>)			
	Low.	There are no known records of badgers within 1km of the site. No badger setts were identified during the site visit	Construction works could result in harm to badger and other wild mammals should they enter the site during	Construction works should be limited to daylight hours in order to prevent disturbance to nighttime foraging activity.

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
		and no evidence of badgers was found. The site is not considered to be of importance to badgers, but care must be taken in case they commute across the site during construction.	construction.	Any trenches or other excavations left open overnight should be well covered to deter badgers from entering.
Dormice (Gliridae)				
	Negligible.	There are records of dormice and previous mitigation licences within 2km of the site. However, there is no suitable habitat on site, therefore dormice are considered absent.	None.	None required.
Hedgehogs (<i>Erinaceus europaeus</i>)				
	Moderate	<p>There are no records of Hedgehogs 1km from the site. The introduced shrub and modified grassland provide suitable habitat. The site is well connected to suitable suburban habitats.</p> <p>Hedgehogs could commute across the site to access foraging habitat.</p>	<p>Construction works could result in harm to hedgehogs should they enter the site during construction.</p> <p>The proposed development will not result in any substantial habitat loss that will impact upon local populations long-term.</p>	<p>Construction works should be limited to daylight hours (excl. dawn and dusk) in order to prevent disturbance to night time foraging activity.</p> <p>During hibernation season (October to March), any brush piles created should be retained to ensure hibernating hedgehogs are not harmed. If removal is unavoidable, the piles must be carefully checked before burning.</p>

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
				<p>Any trenches or other excavations left open overnight should either be well covered or provided with an escape ramp (comprised of a sloped side or wooden plank reaching up to ground level or slightly above), to allow any hedgehogs that fall in to escape.</p>
Common and widespread mammals				
	Present	<p>There was evidence of rabbits on site, and mammals could commute across the site.</p>	<p>The proposed development will not result in a substantial habitat loss that will impact upon local populations long-term.</p> <p>Mitigation measures must be put in place to minimise disturbance during the construction phase.</p>	<p>Construction works should be limited to daylight hours in order to prevent disturbance to night time foraging activity.</p> <p>Any trenches or other excavations left open overnight should either be well covered or provided with an escape ramp (comprised of a sloped side or wooden plank reaching up to ground level or slightly above), to allow any wildlife that falls to escape.</p> <p>Any newly built boundary</p>

Protected feature / species	Likelihood of occurrence / suitability	Comments / Justification	Impact due to Proposed Development	Required Mitigation Measures
				features should incorporate 'wildlife gaps' (comprising a 13x13cm gap at the base of the feature), to allow wildlife to pass through.
Invasive plant species	Low.	No invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were found during the survey. As there were seasonal constraints to plant identification, it is possible that invasive plant species are present and have yet to be identified.	Invasive plant species have the potential to impact protected species and habitats	If invasive plant species are found, it is recommended to consider appropriate methods of removal.

7 Biodiversity Enhancement

- 7.1 The development should be used as an opportunity for biodiversity net gain, by creating new opportunities for wildlife.

BATS

- 7.2 It is recommended to install two bat boxes on-site. Bat boxes should be positioned in areas of low human disturbance, in spaces that are unshaded for most of the day.
- 7.3 Chambered bat boxes should be positioned 3-5 metres above ground level, orientated southwards. There should be a clear path between the entrance and suitable habitat.

BIRDS

- 7.4 It is recommended to place two new bird boxes on-site.
- 7.5 A traditional nest box should be placed 3 metres above ground level in an area of low disturbance. The box should be sheltered away from prevalent weather conditions, commonly associated within the UK, such as strong sunlight, prevailing winds and rain.

INVERTEBRATES

- 7.6 Bee bricks are to be incorporated into the proposed dwellings. Alternatively, it is recommended to install invertebrate boxes on-site. The boxes should be suitable for solitary bees.
- 7.7 Nectar-rich wildflowers should be planted within close proximity to the bee bricks/invertebrates boxes to create new opportunities for pollinators.
- 7.8 Fruit trees make ideal habitat for many invertebrate species. Thus, it is recommended to plant new garden ornamental fruit trees on-site. For example, Crab Apple (*Malus sylvestris*), Wild Cherry (*Prunus avium*) and Common Pear (*Pyrus communis*).

TERRESTRIAL MAMMALS

- 7.9 It is recommended to plant native species-rich hedgerows on-site, which will enhance connectivity and provide refuge for small mammals. Suitable species would include Common Beech (*Fagus sylvatica*), Common Hawthorn (*Crataegus monogyna*), Rowan (*Sorbus aucuparia*) and Crab Apple (*Malus sylvestris*) for example.

TREES

- 7.10 New tree planting would be a welcomed addition to development. New tree planting should be considered carefully, with consideration to species, location and future management. New trees should be robust and of high quality. Where possible, native species should be used. However, considerations should be given to climate change and potential pathogens.

8 Conclusions

- 8.1 The site at 34 Allum Lane, Elstree, Borehamwood, WD6 3NP is to be redeveloped with new residential units.
- 8.2 The development will result in the loss of bat roosting habitat, scattered trees and introduced scrub and tall ruderal vegetation.

ECOLOGICAL CONSTRAINTS

- 8.3 Development proposals must have regard for protected species identified as potentially occurring on, or near to, the site (e.g., amphibians, birds, terrestrial mammals, and reptiles). Mitigation measures to protect these species have been produced within this report to ensure that the proposed works comply with relevant UK legislation.
- 8.4 Buildings B1 and B2 were considered to have moderate potential for roosting bats due to the presence of numerous PRFs which may be suitable for individual crevice dwelling bat species to utilise opportunistically (including gaps in external and internal brickwork, slipped roof tiles, lifted lead flashing, gaps between internal felt lining and roof).). The proposed works will result in the loss of PRFs, thus, further bat surveys will be required to determine bat presence/absence and inform on suitable mitigation measures.
- 8.6 Further mitigation measures have been outlined within the report to ensure that protected species are not impacted by the development. Ecological Clerk of Works (ECoW) supervision will be required throughout the construction phase to ensure that the recommended mitigation measures are implemented appropriately.

MITIGATION STRATEGIES

- 8.7 Two bat presence/absence survey of B1 and B2 are to be carried out between May and August. The survey should consist of two dusk emergence surveys. The survey must be designed by a suitably experienced ecologist. The survey report must outline bat presence/absence and suitable mitigation measures (if required). Further surveys may be required if bat presence/absence cannot be determined during the initial site visits.

- 8.8 A tool box talk should be given to all relevant personal by a suitable qualified ecologist before any works commence on-site to outline ecological constraints and the required mitigation measures.
- 8.9 Tree works (if required) should take place outside the breeding season (typically March-October) or once a suitability qualified ecologist has inspected the trees for breeding birds and confirmed that there are no active nests.
- 8.10 Construction works should be limited to daylight hours (excl. dawn and dusk) in order to prevent disturbance to nighttime foraging activity.
- 8.11 Vegetation removal must be undertaken using hand tools. Cut vegetative materials should be checked and removed from site immediately.
- 8.12 Any trenches or other excavations left open overnight should be well covered to deter Badgers from entering. If this is not possible, any trenches or other excavations left open overnight should either be provided with an escape ramp (comprised of a sloped side or wooden plank reaching up to ground level or slightly above), to allow any wildlife that falls in to escape.
- 8.13 Any necessary excavation of animal burrows should be done carefully to avoid unnecessary suffering (such as crushing or asphyxiation).
- 8.14 During hibernation season (October to March), piles of leaf litter and logs should be retained to ensure hibernating hedgehogs are not harmed. If removal is unavoidable, the piles must be carefully checked before burning.
- 8.15 Post-construction, the use of artificial lighting should be limited where possible. Motion sensors on outside lighting will prevent prolonged disturbance. It is recommended that outside lighting be set on short-timers (1 minute) and that the sensitivity is set to large moving objects only.
- 8.16 Any newly built boundary features should incorporate 'wildlife gaps' (comprising a 13x13cm gap at the base of the feature), to allow wildlife to pass through.
- 8.17 A new bat roost should be created on-site to offset the loss of PRFs. It is recommended that the roost be suitable for crevice dwelling species which are most likely to utilise the existing structures. Where possible, bat roosts should be incorporated into the proposed built footprint to ensure that permanent features are created.

BIODIVERSITY ENHANCEMENT

8.19 The project is to be used as an opportunity for biodiversity net gain by creating new opportunities for wildlife. New habitat creation is to be implemented on-site and should be included within the final project design.

SUMMARY

8.20 Subject to the completion of the required bat surveys and the implementation of the recommended mitigation measures, the proposed development is unlikely to have a significant ecological impact.

9 References and Bibliography

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Matt Harmsworth
Lead Consultant

MW Harmsworth



Prepared by: Matt Harmsworth Tech.Arbor.A, Dip RS, FDSc Arb, Assoc. ICFor
Checked by: Max Shaw BSc Grad CIEEM

Appendix 1: Site Location and Assessment Boundary

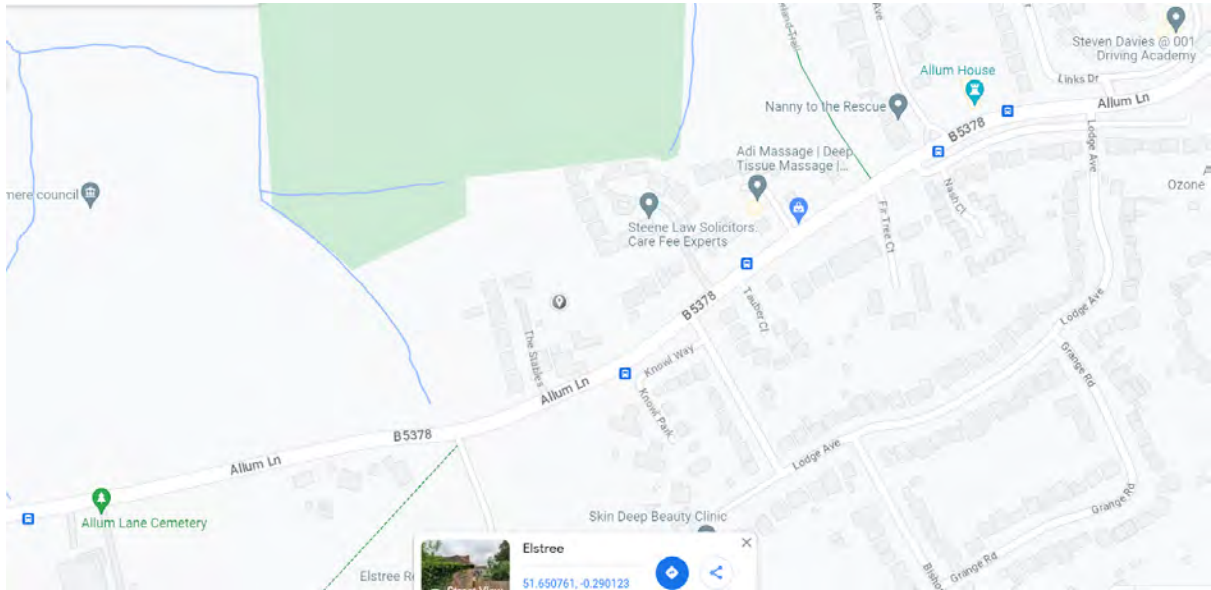


Figure A1.1: Extract from Google Maps showing the site location. (Google, 2023)

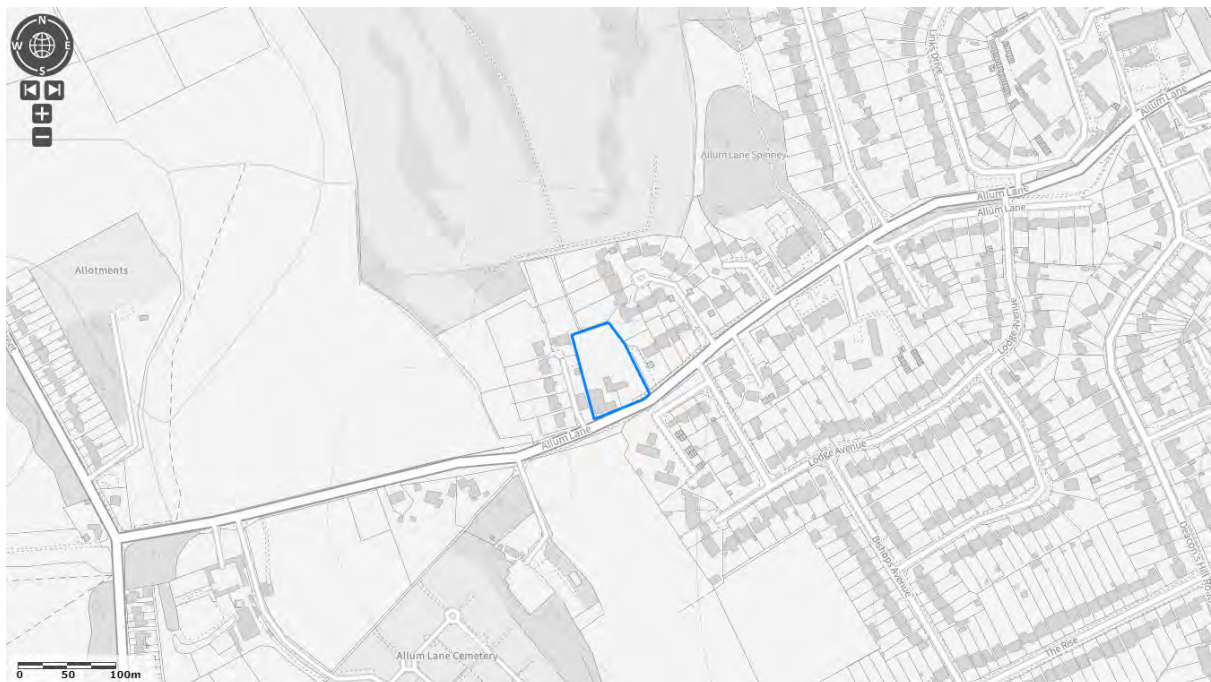


Figure A1.2: Extract from DEFRA MAGIC showing the assessment boundary. (MAGIC, 2023).

Appendix 2: Desktop Study

*Data from DEFRA.

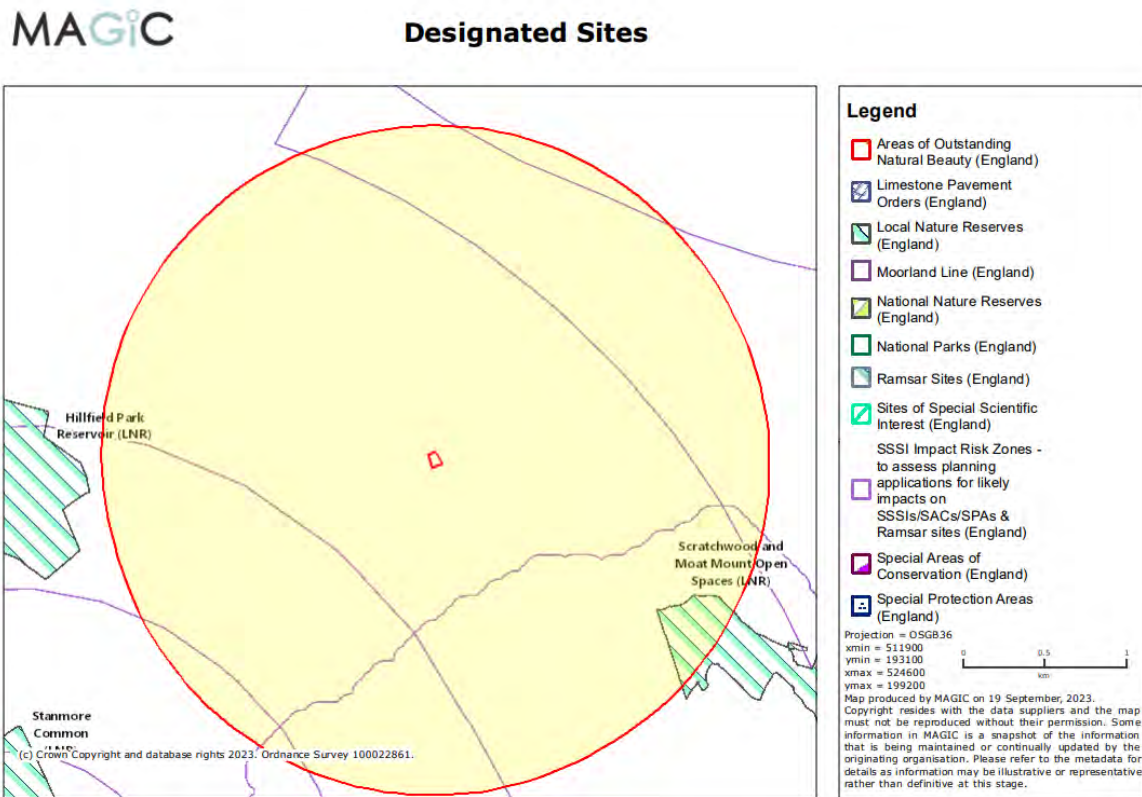


Figure A2.1: Location of Designated sites situated within a 2km search radius of the site.

*Data from DEFRA.

MAGiC

Priority habitats

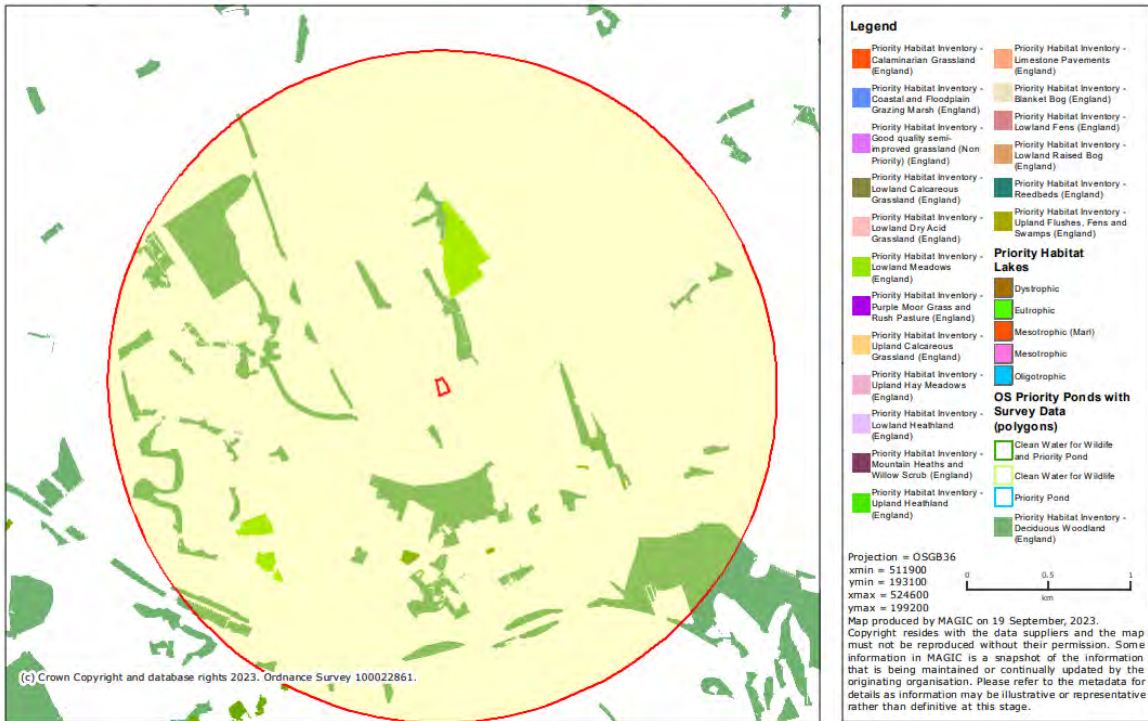


Figure A2.2: Priority habitats formerly mapped within a 2km search radius of the site..

*Data from Bing Maps

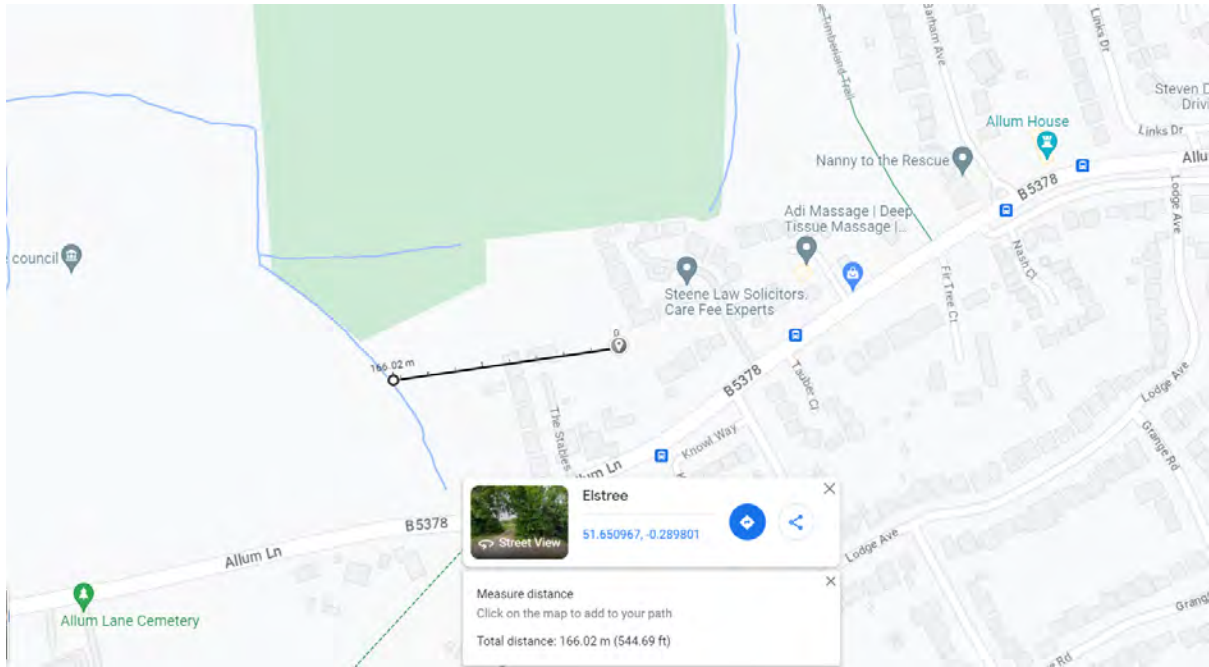


Figure A2.3: Standing water bodies formerly mapped within a 500m search radius of the site.

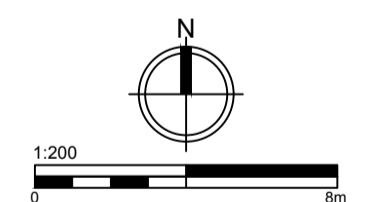
Appendix 3: Site Maps

General Notes
 Do not scale off drawing.
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 The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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Key

- Introduced Trees & Shrubs
- Tall Ruderal Vegetation
- Building
- Hard Surface
- Site Outline
- Gravel Surface
- Fence Line



Drawing Title
Habitat Map - Existing

Client
 Vector Capital PLC

Site/Project
 34 Allum Lane, Elstree,
 Borehamwood, WD6 3NP

Scale/Sheet 1:200 @ A1	Date 14/11/2023
Drawing No 23_PEA_09_22	Rev 1
Drawn By PH	Checked By MH

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