URBAN EDGE ENVIRONMENTAL CONSULTING

NATURAL PROGRESSION

Ashgrove Road, Sevenoaks, Kent

Preliminary Ecological Appraisal Report

September 2022

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Preliminary Ecological Appraisal Report

Client:	Sigma Strategic Land Ltd	
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CIEEM REGISTERED PRACTICE 2022-2023

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Abbreviations

AONB	Area of Outstanding Natural Beauty
CEMP	Construction Environmental Management Plan
CHS	Conservation of Habitats and Species Regulations 2017 (as amended)
EcIA	Ecological Impact Assessment
eDNA	Environnemental DNA
HPI	Habitat of Principal Importance
HSI	Habitat Suitability Index
IRZ	Impact Risk Zone
KMBRC	Kent & Medway Biological Records Centre
LWS	Local Wildlife Site
NERC	Natural Environment and Rural Communities Act 2006
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Assessment
PRF	Potential (bat) Roost Feature
SAC	Special Area for Conservation
SPI	Species of Principal Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TN	Target Note
WCA	Wildlife & Countryside Act 1981 (as amended)

0 Executive Summary

0.1 Introduction

0.1.1 A Preliminary Ecological Appraisal was undertaken for the site of a proposed residential development at Ashgrove Road, Sevenoaks, Kent (Grid Reference: TQ 52160 53418). The report was prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

0.2 Results

0.2.1 No internationally important wildlife sites are located within 5km of the site, but the site falls within the Kent Downs Area of Outstanding Natural Beauty. Two Sites of Special Scientific Interest are located within 2km of the site boundary. Additionally, there is one non-statutory Local Wildlife Site, within 1km of the site boundary.

0.2.2 There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with three priority habitats: Ancient Woodland, Lowland Mixed Deciduous Woodland and Wood-pasture and Parkland.

0.2.3 The survey area lies to the south of the town of Sevenoaks in Kent and measures c.2.47 ha (planning application boundary c.2.36ha). It comprises a pastoral field, woodland, a pond and hedgerows along the site boundaries. The site is bound by residential properties to the north; Ashgrove Road to the east; further pasture to the south; and Oak Lane to the west. To the north and east the wider landscape is a dominated by residential areas. South and west of the site lie large areas of woodland including Great Britain's Wood and Millbank Wood. Five ponds lie within 500m of the survey area.

0.3 Evaluation

0.3.1 Table 0.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 0.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	The site is located within the Kent Downs Area of Outstanding Natural Beauty. Objectives for this area include the creation of new habitats and the protectic priority habitats and species.

Feature	Detail
	None of the other statutory or non-statutory wildlife sites within the desk-study search zone are likely to be affected directly or indirectly as a result of the development of the site. However, precautionary ecological protection measures are recommended to prevent impacts to the surrounding landscape.
Priority habitats	Hedgerows H1, H2, H3 and H5 on site qualify as Habitat of Principal Importance, with H3 and H5 assessed 'Important' according to Hedgerows Regulations assessment. It is currently anticipated that the majority of hedgerows will be retained and protected during construction. However, some severance of H3 will be required to make way for a new site accesses.
Other habitats	The development of the site would likely result in permanent losses of up to c.2.27ha of semi-improved neutral grassland, depending on the extent and layout of proposals. Loss of this habitat should be mitigated by the creation of species-rich native wildflower meadow. The broadleaved semi-natural woodland, dense scrub, standing water, continuous bracken and scattered scrub are of relatively low intrinsic ecological value and of negligible importance. The standing water (pond P1) will be removed and replaced with two surface water drainage ponds, planted with native aquatic vegetation.
Great crested newt	Permanent loss of suitable terrestrial habitats (semi-improved neutral grassland, scrub, standing water and hedgerow bases).
Birds (nesting)	Permanent loss of small areas of nesting habitats (woodland, scrub and hedgerows).
[redacted]	
Bats (roosting)	Trees at T1-T5 contain features suitable for roosting bats (e.g. rotholes, lifted bark, dense ivy clad). It is currently anticipated woodland habitats will be retained as part of the proposed development.
Bats (foraging / commuting)	Effects on moderate suitability habitats (semi-improved neutral grassland, woodland, scrub and hedgerows) for foraging and commuting bats, including through increases in artificial light.
Hazel dormouse	Permanent loss of small areas of woodland, dense scrub and hedgerow habitat suitable for hazel dormouse.
Invasive non-native plants	Permanent loss of semi-improved neutral grassland, woodland, scrub and hedgerow bases.
Reptiles	Rhododendron a non-native invasive species listed on Schedule 9 of the WCA was recorded in the north-west of the survey area (outside of planning application boundary).
Hedgehog	Permanent losses of suitable habitats (semi-improved neutral grassland, scrub and hedgerow bases).
Opportunities:	
Priority habitats	The hedgerows Habitats of Principal Importance within the survey area are of high intrinsic value and can provide a focus for ecological enhancement measures.
Habitat creation / enhancement	Enhancement opportunities include improvement of woodland structure. Habitat creation opportunities include wildflower meadow planting, hedgerow creation, habitat piles and bird/bat boxes.

0.4 Recommendations

0.4.1 Recommendations are made for further protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate ecological impacts, and to enhance the site for wildlife following construction; these are summarised in Table 0.2. It is intended that these recommendations should be considered during the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 0.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June, or using conventional techniques from mid-March to mid-June.
R2	Ground-level tree assessment for roosting bats within woodland, if removal is requ preferably during winter or spring.
R3	Presence / absence surveys for roosting bats within trees T1-T5 if they are affected by proposals for the site, undertaken between May and August.
R4	Bat activity surveys, undertaken between April and October.
R5	Presence / absence surveys for dormouse, undertaken between April and November.
R6	Presence / absence surveys for reptiles, undertaken between April and September.
Precautionary measures	
R7	Removal of P1 will be carried out under the supervision of a suitably qualified ecologist, ar preferably outside of the amphibian breeding season (broadly March to July).
R8	Removal of nesting bird habitats will be undertaken outside of the bird nesting season, which runs from 1 March to 30 September. It will therefore be carried out between October ai February, but will be planned and implemented in accordance with the findings of the furth ecological surveys recommended above.
R9	A pre-works inspection of the site and adjacent woodland for any newly excavated set recommended to take place within two months prior to commencement of site clearance works.
Ecological protection measures	
R10	Standard site procedures to prevent impacts on hedgerows trees will be adhered to during construction.
R11	Construction works (including ground works and vegetation clearance) will be carried out in accordance with a Construction Environmental Management Plan.
R12	A method statement will be prepared to ensure adequate monitoring measures are adopted to prevent the spread of invasive rhododendron during construction.
R13	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the woodland or boundary hedgerows.

#	Summary of recommendations
[redacted]	
R15	Small access gaps will be provisioned at the base of new fence boundaries to enable continued dispersal of small mammals across the site.
R16	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R17	Any destruction of rabbit warrens will be undertaken in accordance with the Mammals Act 1996 by a registered pest control company.
Ecological enhancement	
R18	Retained woodland habitat will be enhanced though active management to improve structure and native species composition.
R19	Green spaces will be sown with a native wildflower and grass seed mix.
R20	Hedgerow creation and/or restoration will use a range of native fruit, seed, nut and nectar-bearing shrub species.
R21	New wetland habitat will be created within the proposed development as part of the drainage strategy and to increase aquatic habitat availability.
R22	The site's landscaping plans will utilise plant species which encourage bats by providing additional food sources or roosting opportunities.
R23	Habitat piles for amphibians, invertebrates and reptiles will be created within or close to areas of retained woodland, hedgerows and created ponds.
R24	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
R25	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.

0.5 Conclusions

0.5.1 The majority of land proposed for development is of low-moderate ecological value. Significant constraints to development were identified including priority habitats and the potential presence of great crested newt, [redacted] bats, hazel dormouse and reptiles. Further ecological surveys and impact assessment are required prior to submitting a planning application, to determine the value of the site for these species and to formulate a suitable mitigation strategy. These surveys were commenced in spring 2022 and are largely completed, and impact assessments have been undertaken based on the results currently available; refer to the accompanying Protected Species Report (UEEC, 2022) for further information.

1 Introduction

1.1 Purpose of this Report

1.1.1 This report presents a Preliminary Ecological Appraisal (PEA) for the site of a proposed residential development at Ashgrove Road, Sevenoaks, Kent (Grid Reference: TQ 52160 53418). The report has been prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

1.2 Objectives and Approach of the Study

1.2.1 The objectives of the PEA were to:

- Identify features present on the site or adjacent which are ecologically significant and which may act as constraints or opportunities to the proposed development;
- Consider the need for further ecological surveys which may be necessary; and
- Make preliminary recommendations for the protection of important ecological features, to avoid or mitigate ecological impacts, and to enhance the site for wildlife following construction.

1.2.2 The approach to establishing the ecological baseline found within this report has been achieved through:

- A desk study involving a review of statutory and non-statutory nature conservation sites, and records of habitats and species from the local area (1km radius from the centre of the proposed development site);
- An extended Phase 1 habitat survey identifying the main habitats on site and adjacent, and the presence of, or potential for, protected and/or notable species; and
- A PEA of the effects of development proposals with respect to the nature conservation value of the site.

1.3 Survey Area

1.3.1 The survey area lies to the south of the town of Sevenoaks in Kent and measures c.2.47 ha. It comprises a pastoral field, woodland, a pond and hedgerows along the site boundaries. The extent of the survey area is shown on Figure 1.1.

1.3.2 The site is bound by residential properties to the north; Ashgrove Road to the east; further pasture to the south; and Oak Lane to the west. To the north and east the wider landscape is a dominated by residential areas. South and west of the site lie large areas of woodland including Great Britain's Wood and Millbank Wood. Five ponds lie within 500m of the survey area.

1.4 Proposed Construction Activities

1.4.1 Outline planning consent is being sought for the erection of 50 dwellings with provision of an access on to Ashgrove Road providing affordable housing, landscaping, open space, new pedestrian accesses and car parking provision. The proposed site plan for the development is shown at Figure 1.2.

1.4.2 The planning application site boundary (c.2.36ha) differs marginally from the survey area boundary; the former excludes a small section of land in the north-west of the survey area.

Ashgrove Road, Sevenoaks, Kent

Survey area boundary

Application site boundary

Figure 1.1: Survey area & Applicatio site boundaries

0 140 280 N

Meters

Scale: 1:5,000 **Created by:** MT

Date: Jul 2022 **Reviewed by:** NP

Drawing number:
UE0441ECO-Site220722

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Figure 1.2: Proposed site plan

CDM 2015 Health & Safety Information

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.

Indicative Accommodation Schedule

Social Rent Dwellings	(14no. - 56%)		GIA
4no. 1-Bedroom Maisonettes	Block	2 Person	50sqm
3no. 2-Bedroom Houses	Semi-Detached	4 Person	79sqm
6no. 3-Bedroom Houses	Semi-Detached	5 Person	93sqm
1no. 4-Bedroom House	Semi-Detached	6 Person	106sqm
Affordable Rented Dwellings	**(2no. - 8%)**		
1no. 2-Bedroom House	Semi-Detached	4 Person	79sqm
1no. 3-Bedroom Houses	Semi-Detached	5 Person	93sqm
First Home Dwellings	**(6no. - 24%)**		
4no. 1-Bedroom Maisonettes	Block	2 Person	50sqm
2no. 2-Bedroom Houses	Semi-Detached	4 Person	79sqm
Intermediate Tenure Dwellings	**(3no. - 12%)**		
2no. 2-Bedroom Houses	Semi-Detached	4 Person	79sqm
1no. 4-Bedroom House	Detached	6 Person	106sqm
Open Market Dwellings	**(25no. - 50%)**		
2no. 1-Bedroom Maisonettes	Block	2 Person	50sqm
3no. 2-Bedroom Houses	Semi-Detached	4 Person	79sqm
2no. 2-Bedroom Bungalows	Detached	4 Person	79sqm
9no. 3-Bedroom Houses	Semi-Detached	5 Person	93sqm
2no. 3-Bedroom Houses	Detached	6 Person	100sqm
2no. 3-Bedroom Houses	Detached	6 Person	120sqm
1no. 4-Bedroom House	Detached	6 Person	140sqm
2no. 4-Bedroom Houses	Detached	6 Person	150sqm
2no. 5-Bedroom Houses	Detached	8 Person	190sqm

Total; 50 Dwellings [2.33 Ha to Red Line - 21.4 Dw/Ha]

Car Parking Generally; 1 space per 1-Bedroom Flat
2 spaces per 2-Bedroom Dwelling
2-3 spaces per 3-Bedroom Dwelling
3 spaces per 4/5-Bedroom Dwelling
17 visitor spaces within lay-bys (c. 1 per 3 Dwellings)

Rev	Date	Revision Details	Dr	Ch
E	15.09.22	Roof plan updated	KT	LT
D	27.07.22	Accomodation schedule updated, boundary amended & southern path updated	LT	
C	27.07.22	Bin collection point added. Fence line and site boundary amended	AK	LT
B	26.07.22	Schedule of accomodation updated & landscaping added	LT	AK
A	21.07.22	Site amendments	LT	AK

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Client's Name: Sigma Homes

Job Title: Land west of Ashgrove Road, Sevenoaks, Kent

Drawing Title: Proposed Site Plan 50 dwellings

Scale: 1:500 @ A1 / 1:1000 @ A3

metres 10 20 30 40 50

Drawn	Checked	Date
BW	AK	09.06.21

Job No	Drawing No	Rev
7054	PL-02	E

Status: PRELIMINARY

CAD Plot date: 15/09/2022 - 14:58:12 7054 - site.dwg

2 Survey Methodology

2.1 Desk Study

2.1.1 A desk-based study was undertaken to examine published information and biological records from within the search area (site centroid plus 1km). This was extended to 5km for internationally designated sites and 2km for nationally designated sites. The desk study established the presence of designated sites of nature conservation interest, or records of protected/notable habitats/species within the site and its surrounding area. This information was collected from the following sources:

- The 'MAGIC' (Multi-agency Geographic Information for the Countryside) website: www.magic.gov.uk; and
- Kent & Medway Biological Records Centre (KMBRC).

2.2 Preliminary Ecological Appraisal

2.2.1 The PEA (compliant to British Standard BS42020:2013) is based on a survey of the site undertaken on 31 March 2021 by an experienced ecologist. Weather conditions were warm (c.17°C), with a light breeze (Beaufort Scale 2), 50% cloud cover and no precipitation.

2.2.2 Within the survey area every parcel of land was classified, recorded and mapped using standard colour codes, in accordance with a list of ninety habitat types specified within the methodology for Phase 1 habitat survey (Joint Nature Conservation Council, 2010). This allows rapid visual assessment of the extent and distribution of different habitat types. Target notes were used to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map, or to provide additional details, for example relating to species composition and structure.

2.2.3 This basic methodology was extended to provide more detail in relation to habitats with potential to support rare or protected fauna, as described by the Chartered Institute of Ecology and Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017b). The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collin (ed.), 2016). Where a species/group is not specifically evaluated, this indicates that no habitat of potential value for the species was identified during the survey.

Scope of the survey

2.2.4 The buffer zone for the desk study was set at 1km from the centre of the site (5km for international sites / 2km for national sites) – a distance within which any notable ecological features likely to be affected by the proposed scheme would be identified.

2.2.5 All habitats within the survey area as indicated on Figure 1.1 were included in order to identify any ecological constraints that would be likely to apply to the scheme from within this zone. Adjacent habitats were also surveyed where appropriate in order to identify constraints falling outside of the proposed development site and to place the survey area in its ecological context.

Evaluation criteria

2.2.6 Important ecological features were evaluated to the extent possible under the survey methods used, and in relation to a geographical frame of reference, i.e. international/European value being most important, then national, regional, metropolitan/county/district/borough, and lastly local (based on CIEEM, 2018).

2.2.7 Value judgements are based on various characteristics that contribute to the importance of ecological features. These include site designations (such as Sites of Special Scientific Interest (SSSI), or for undesignated features, the extent, naturalness, conservation status (local or national importance and so on), and quality of the ecological resource. Quality can refer to habitats (for instance if they are particularly diverse, are a good example of a specific habitat type, or provide for the requirements of important species or assemblages), other features (such as connectivity provided by wildlife corridors or mosaics of habitats) or the richness and abundance of species populations or assemblages.

2.3 Hedgerow Regulations Survey

2.3.1 If a hedgerow is classified as important under the Hedgerow Regulations 1997, local planning authorities are able to prevent its removal. To be classified as important, the hedgerow should be over 30 years old and should comprise one of the following:

- At least 7 woody species/30m;
- At least 6 woody species/30m and at least 3 features such as; an associated ditch, bank or wall, standard trees, parallel hedge, or connections to woodland or pond;
- At least 6 woody species/30m and including any one of black poplar *Populus nigra*, wild service tree *Sorbus torminalis*, small-leaved lime *Tilia cordata*, large-leaved lime *Tilia platyphyllos*;
- At least 5 woody species and at least 4 associated features;
- If adjacent to a bridleway or footpath, at least 4 woody species and at least 2 features.

2.3.2 The Hedgerow Regulations do not apply to hedgerows which form the curtilage of residential properties or gardens. It should also be noted that hedgerows may qualify as important for historic or archaeological reasons and this report only assesses them according to the ecological criteria set out in the Hedgerow Regulations[1].

[1] A full list of criteria can be found at: http://www.legislation.gov.uk/uksi/1997/1160/schedule/1/made

2.4 Preliminary Roost Assessment

2.4.1 Trees within/adjacent to the survey area were subject to an external inspection for potential bat roost features (subject to safe access). All observable features potentially suitable for bats were noted and the overall suitability of the tree for roosting bats was classified with reference to Box 1 (Collins (ed.), 2016). The objective was to establish whether each feature was of negligible, low, moderate or high roosting bat suitability, or a confirmed roost based on the presence of bats or their droppings.

2.4.2 Trees were assessed for Potential Roost Features (PRF) such as woodpecker holes, cavities, cracks or splits in major limbs (e.g. hazard beams, rot holes, frost cracks, knot holes, occlusions, flush cuts, tear-outs, cankers or butt-rots), loose platey bark, aerial deadwood and dense ivy or epicormic growth. The tree inspection was carried out from ground level using binoculars and handheld torch.

Box 1: Potential suitability of structures/trees for roosting bats (after Collins, 2016)

Suitability	*Roosting habitats*
Negligible	Negligible habitat features on site likely to be used by roosting bats
Low	A tree of sufficient size and age to contain PRFs but with none seen from the ground / using ladders or features seen with only very limited roosting potential
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size shelter, protection, conditions and surrounding habitat but unlikely to support a roost high conservation status (for roost type only)
High	A 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 habitat
Confirmed roost	Bats or unequivocal evidence of bats found, i.e. bat droppings

2.5 Habitat Suitability Index

2.5.1 The Habitat Suitability Index (HSI; Oldham et al, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newt. The HSI incorporates ten suitability indices which are considered to affect great crested newt distribution. These are:

- Location (in Britain);
- Pond area;
- Desiccation rate (years out of ten that pond dries);
- Water quality (subjective assessment);
- Percentage of pond shaded (% of pond margin shaded 1m from the bank);
- Number of waterfowl;
- Fish population (subjective assessment);

- Number of ponds within 1km;
- Terrestrial habitat quality; and
- Percentage macrophyte cover.

2.5.2 The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham et al, 2000) to identify the probability of a pond supporting great crested newts, as follows:

Habitat Quality	HSI Score
Poor	Below 0.5
Below Average	0.5 – 0.59
Average	0.6 – 0.69
Good	0.7 – 0.79
Exceptional	Above 0.8

2.5.3 The HSI gives an indication of whether a pond is suitable for breeding great crested newts, however, it should be noted that a low score does not preclude the possibility that great crested newt are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

2.6 Limitations

2.6.1 Biological records gathered during the desk study can provide an indication of the likely presence of a species on or adjacent to a site, however, the absence of records for protected species does not equate to evidence of their absence from the locality. Data search accuracy is variable and records are often georeferenced to the nearest 1km grid square (four digits).

2.6.2 Time of year when the survey was carried out and other variations will influence the results of the survey. Botanical species vary considerably in their flowering, seeding and fruiting periods, and surveys outside of these periods can confound accurate species identification. Where this is the case plants have been identified to lowest possible taxonomic group, normally genus. The possibility nonetheless exists for other species to be present on the site which were not recorded or otherwise indicated by the survey.

2.6.3 The survey reported herein was carried out in early spring, prior to flowering for many botanical species. However, diagnostic vegetative characteristics are often still discernible and the timing of the survey is not considered to be a significant limitation to meeting the report objectives.

2.6.4 There were no difficulties in gaining access to survey the site's habitats and assess protected species suitability. Adjacent habitats were surveyed where appropriate in order to identify

constraints falling outside of the proposed development site and to place the survey area in its ecological context. [redacted]

2.6.5 This report aims to provide general advice on the ecological constraints associated with development proposals for the site and includes recommendations for further survey where appropriate. Where impacts are likely or further ecological surveys are recommended, a more detailed Ecological Impact Assessment (EcIA) of the effects of the proposed development should be carried out based on the results of recommended surveys. The EcIA will include detailed advice on ecological avoidance, mitigation, enhancement and/or compensation measures. This is in line with the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017a, 2017b, 2018).

2.6.6 The details of this report will remain valid for a period of 18 months from the date of the survey (March 2021), after which the validity of this assessment should be reviewed to determine whether further updates are necessary (CIEEM, 2019). Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the site line boundary or development proposals which this report was based on.

2.6.7 See Appendix VII for general Legal and Technical Limitations which apply to this document.

2.7 Personnel

2.7.1 The site survey was carried out by Tim Lees BA(Hons) MSc MCIEEM, a Principal Ecologist with nine years' professional consultancy experience in ecological field survey for a wide range of sites and development projects. Tim holds Natural England Class Licences to survey for great crested newt (WML-CL08) and bats (WML-CL17).

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3 Results

3.1 Desk Study

Statutory and non-statutory site designations

3.1.1 No internationally important wildlife sites are located within 5km of the site, but the site falls within the Kent Downs Area of Outstanding Natural Beauty (AONB). Two SSSIs are located within 2km of the site boundary. Additionally there is one non-statutory Local Wildlife Site (LWS), within 1km of the site boundary. The information provided by KMBRC regarding these sites is presented in Table 3.1, while Figure 3.1 shows their locations in relation to the survey area.

Priority habitats

3.1.2 Priority habitats include those listed on local Biodiversity Action Plans and Habitats of Principal Importance (HPI) listed under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC). A search of the MAGIC database returned the following data on priority and other habitats within the desk study search area: Ancient Woodland, Lowland Mixed Deciduous Woodland and Wood-pasture and Parkland. None of these are shown as present within the survey area.

Table 3.1: Nature conservation sites within the desk study search area

Site name	Location*	Description
National Statutory Sites		
Kent Downs AONB	On site	This area comprises two parallel ridges of chalk and greensand. The chalk ridge has great wildlife importance in its unimprove chalk grassland, scrub communities and broadleaved woodlands. The well-wooded greensand ridge supports heathlands anc acidic woodlands.
Knole Park SSSI	1.06km east	This site includes areas of acid grassland, parkland, woodland and several ponds. The woodland is dominated by sessile oak *Quercus petraea*, beech *Fagus sylvatica* and sweet chestnut *Castanea sativa*. The acid grassland is species-poor, dominated by common bent *Agrostis capillaris*, with sheep's fescue *Festuca ovina*, sweet vernal-grass *Anthoxanthum odoratum*, heath grass *Danthonia decumbens*, tormentil *Potentilla erecta*, sheep's-sorrel *Rumex acetosella* and heath bedstraw *Galium saxatile*. The trees, turf and masonry of walls and buildings support a lichen flora of county importance. The site supports a range of nationally rar and scarce invertebrate species, particularly the dead wo habitat.
Hubbard's Hill SSSI	1.14km south-east	This site is an important geological site Quaternary periglacial deposits and landforms.

Site name	Location*	Description
Non-statutory Sites		
Sevenoaks Common, Hubbard's Hill & Beechmont Bank LWS	c.473m south-east	This site is dominated by Lowland Mixed Deciduous Woodland HPI, including some areas of Ancient Woodland. Wood-pasture and Parkland is also present, connecting the blocks of woodland.

* Approximate distance and bearing from the survey area

Records of protected, rare and notable species

3.1.3 Biological records were obtained from KMBRC for the desk study search area and are summarised in Table 3.2.

Table 3.2: Records of protected, rare & notable species within the desk study search area

Group	Species	Designation
Amphibians	Great crested newt	Habs.Dir.2&4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Common toad *Bufo bufo*	WCA Sch.5 part, NERC s41
	Palmate newt *Lissotriton helveticus*, Smooth newt *Lissotriton vulgaris*, Common frog *Rana temporaria*	WCA Sch.5 part
Birds (note: species may appear more than once)	Nightjar *Caprimulgus europaeus,* Little egret *Egretta garzetta*	Birds Dir.1
	Redwing *Turdus iliacus,* Fieldfare *Turdus pilaris*	WCA Sch.1
	Lesser redpoll *Acanthis cabaret,* Skylark *Alauda arvensis,* Tree Pipit *Anthus trivialis,* Nightjar, Cuckoo *Cuculus canorus,* Yellowhammer *Emberiza citrinella,* Dunnock *Prunella modularis,* Herring Gull *Larus argentatus,* Linnet *Linaria cannabina,* Spotted flycatcher *Muscicapa striata,* House sparrow *Passer domesticus,* Willow tit *Poecile montana*, Bullfinch *Pyrrhula pyrrhula*, Starling *Sturnus vulgaris,* Song thrush *Turdus philomelos*, Lapwing *Vanellus vanellus*	NERC s41
	Lesser redpoll, Skylark, Tree Pipit, Cuckoo, Yellowhammer, Herring gull, Linnet, Grey Wagtail *Motacilla cinerea,* Spotted flycatcher, House sparrow, Willow tit, Woodcock *Scolopax rusticola*, Starling, Redwing, Fieldfare, Mistle thrush *Turdus viscivorus,* Song thrush, Lapwing	RL
	Mallard *Anas platyrhynchos*, Meadow pipit *Anthus pratensis*, Nightjar, Black-headed gull *Chroicocephalus ridibundus*, Stock Dove *Columba oenas*, House martin *Delichon urbicum*, Kestrel *Falco tinnunculus,* Oystercatcher *Haematopus ostralegus,* Redstart *Phoenicurus phoenicurus,* Dunnock, Willow warbler *Phylloscopus trochilus*, Bullfinch, Tawny owl *Strix aluco*	AL

Group	Species	Designation
Invertebrates	Purple Emperor *Apatura iris*, White-letter Hairstreak *satyrium w-album*, Roman snail *Helix pomatia*	WCA Sch.5 part
	White-letter hairstreak	NERC s41
Mammals (terrestrial)	European otter *Lutra lutra*	Habs.Dir.2&4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Noctule *Nyctalus noctula*, Hazel dormouse *Muscardinus avellanarius*, Long-eared bat *Plecotus* sp.	Habs.Dir.4, CHS Sch.2, WCA Sch.5 full, NERC s41
	Common pipistrelle *Pipistrellus pipistrellus*	Habs.Dir.4, CHS Sch.2, WCA Sch.5 full
	European Water vole *Arvicola amphibius*	WCA Sch.5 full, NERC s41
[redacted]		
	West European hedgehog *Erinaceus europaeus*	NERC s41
Plants	Pennyroyal *Mentha pulegium*, Early gentian *Gentianella anglica*	WCA Sch.8, NERC s41
	Bluebell *Hyacinthoides non-scripta*	WCA Sch.8
	White helleborine *Cephalanthera damasonium*, Man orchid *Orchis anthropophora*, Fly orchid *Ophrys insectifera*	NERC s41
Reptiles (terrestrial)	Slow worm *Anguis fragilis*, Common lizard *Zootoca vivipara*	WCA Sch.5 part, NERC s41

Birds.Dir.1	Wild Birds Directive 2009/147/EC Annex 1
Habs.Dir.2/4	Habitats Directive 92/43/EEC Annex 2 or 4
CHS Sch.X	Conservation of Habitats & Species Regulations 2017 Schedules 2 (EPS animals) or 5 (EPS plants)
WCA s1/Sch.X	Wildlife and Countryside Act 1981 Section 1 / Schedules 1, 5 (fully or partially protected), 6 or 8
[redacted]	
NERC s41	Natural Environment & Rural Communities Act 2006 Section 41 Species of Principal Importance
RL/AL	Red/Amber Listed (IUCN or Birds of Conservation Concern 4 (Eaton *et al.*, 2015))

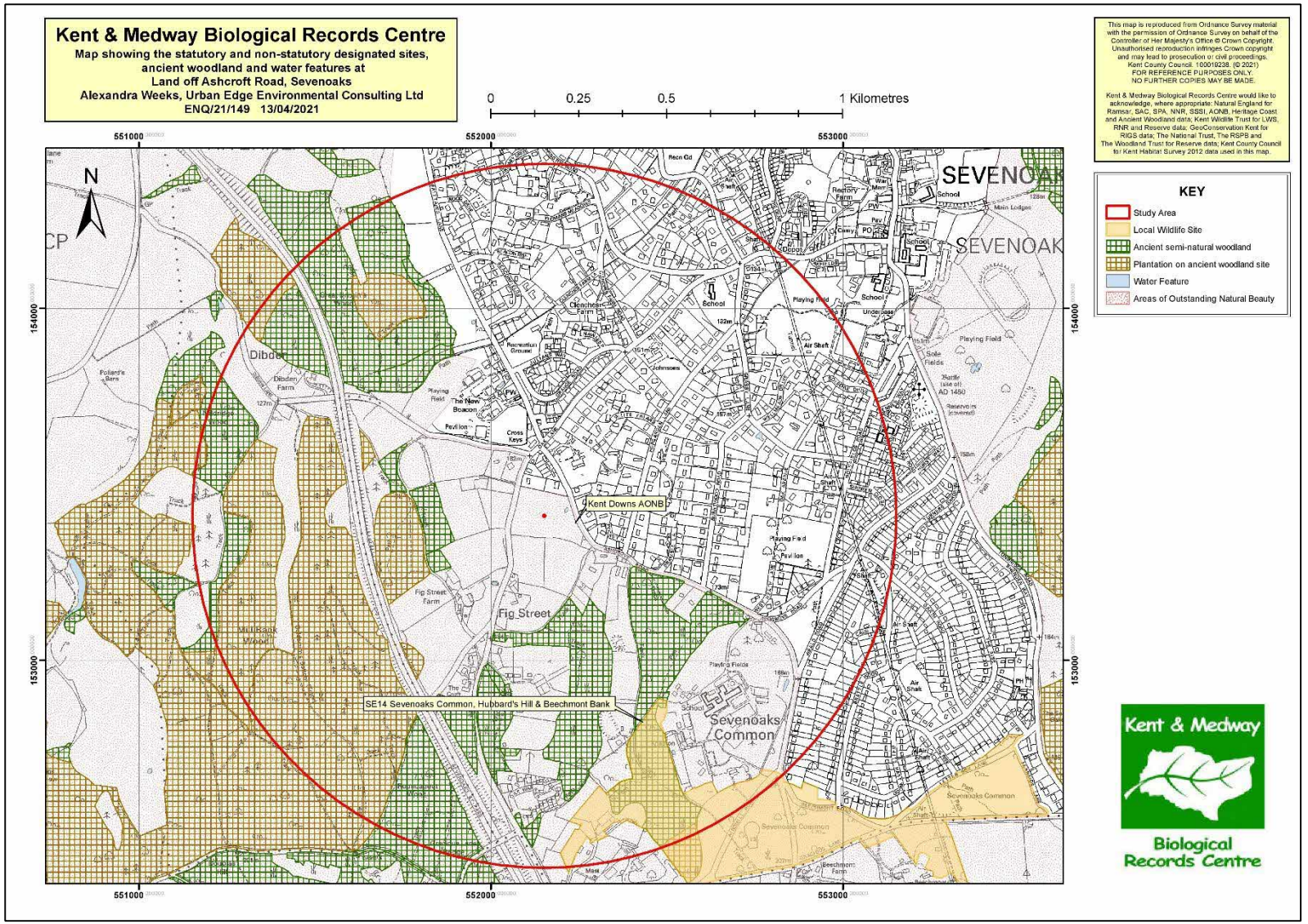

Figure 3.1: Statutory nature conservation sites within the desk study search area

3.2 Phase 1 Habitats

3.2.1 The following Phase 1 habitats were identified within or adjacent to the survey area and are shown on the Phase 1 habitats plan at Appendix I. The habitats are described below broadly in the order of their extent.

- Semi-improved neutral grassland
- Broadleaved woodland
- Dense scrub
- Continuous bracken
- Standing water
- Scattered scrub
- Hedgerows

Semi-improved neutral grassland

3.2.2 The site was dominated by a single field parcel of rough pasture grassland. The sward was tussocky and showed signs of improvement, but also some diversity in terms of grasses and forbs. Grass species included abundant cock's-foot *Dactylis glomerata* and Yorkshire-fog *Holcus lanatus*, with frequent perennial rye-grass *Lolium perenne*, and occasional false oat-grass *Arrhenatherum elatius* and red fescue *Festuca rubra*. Herbaceous species included frequent common sorrel *Rumex acetosa*, creeping buttercup *Ranunculus repens*, cut-leaved cranesbill *Geranium dissectum*, white clover *Trifolium repens* and occasional common nettle *Urtica dioica*. Only small patches of bare earth were recorded.

Broadleaved semi-natural woodland

3.2.3 A small area of broadleaved woodland was located in the south-eastern corner of the site. The canopy comprised a mixture of silver birch *Betula pendula* and sycamore *Acer pseudoplatanus*, which were c.10m in height. Along the south-eastern edge were individual sweet chestnut, beech and ash *Fraxinus excelsior* specimens. The understorey was fairly open, but included frequent holly *Ilex aquifolium*. The ground flora was generally bare dominated by leaf litter from the surrounding canopy. Open areas supported a mixture of native and non-native woodland species such as bluebell *Hyacinthoides non-scripta* (listed on schedule 8 of the Wildlife & Countryside Act 1981 (as amended) (WCA)), common ivy *Hedera helix*, lords-and-ladies *Arum maculatum*, white butterbur *Petasites albus* and Abraham-Isaac-Jacob *Trachystemon orientalis*. A small amount of deadwood was recorded in the form of a dead stump.

Dense scrub

3.2.4 Areas of dense scrub had accumulated around the site, mainly comprising patches of bramble *Rubus fruticosus* interspersed with hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and holly along the boundary hedgerows. Dense scrub had also surrounded the standing water

on site (P1), comprising of young hawthorn, holly and pedunculate oak *Quercus robur* trees, in addition to scrambling bramble.

Standing water

3.2.5 A small pond was present in the north-east of site (P1). The water level was low at the time of survey c.5cm and there was no aquatic vegetation present. A young hawthorn tree was at the centre of the pond and leaf litter filled much of the waterbody. Occasional soft rush *Juncus effusus* and creeping bent *Agrostis stolonifera* were located at the margin, but much of the bank comprised of bare earth. The pond does not qualify as HPI, primarily due to its small size, poor condition and transitional status (it appears to be drying out).

Continuous bracken

3.2.6 In the north-western corner of site was a fragment of dead bracken. Other than limited scattered scrub, the ground was bare suggesting that bracken dominates in the area through much of the year. A stand of the invasive species Rhododendron *Rhododendron ponticum* (listed on schedule 9 of the WCA) was recorded adjacent the bracken and had begun to encroach onto the site (TN1).

Scattered scrub

3.2.7 Small patches of scattered scrub were located at the centre of site and along the field boundaries. These were dominated by bramble, but also included some blackthorn and pedunculate oak saplings.

Hedgerows

3.2.8 All five hedgerows recorded on site were located along the site boundaries. H1 and H2 comprised of species-poor hedge, H3 and H5 were native species-rich hedge and trees, and H4 was a species-poor hedge and trees. For full hedgerow descriptions see Table 4.2.

Semi-improved neutral grassland and scattered scrub – view looking south-west

Broadleaved semi-natural woodland – view looking north-west

Dense scrub surrounding P1 – view looking south-west

Standing water (P1) – view looking north-east

Rhododendron encroaching onto the north-western corner of site (TN1) – view looking north-west

Hedgerow H1 – view looking west

Hedgerow H2 – view looking west

Hedgerow H3 – view looking south-east


Hedgerow H4 and dense scrub – view looking east


Hedgerow H5 and continuous bracken – view looking south

3.3 Preliminary Roost Assessment

3.3.1 No observable PRF's were identified on the majority of trees located within the woodland and hedgerows, but the mature specimens in the south-east of the broadleaved woodland are of an age, height and species to be suitable for roosting bats. The trees within the woodland could not be fully inspected from all angles at ground level due to the proximity of adjacent smaller trees. As such, if these trees are proposed for removal, then further assessment will be required. However, PRFs were identified upon five mature specimens within hedgerows H4 and H5 and these were assessed as providing Moderate suitability to support roosting bats (see Table 3.3 for full details).

3.3.1.1 The remaining scattered trees on site were assessed as providing Negligible suitability to support roosting bats.


Tree T1 – view looking north-west


Tree T2 – view looking west


Tree T3 – view looking west


Tree T4 – view looking west


Tree T5 – view looking north

Table 3.3: Classification of trees with bat roosting potential

Tree #	Suitability	Species	Grid reference	Potential roosting features
T1	Moderate	Pedunculate oak	TQ 52078 53474	} Damaged branch at +/- 5m facing north; } Dead, rotting branch at +/- 4-5m facing east; and } Ivy cover (potentially hiding PRF).
T2	Moderate	Pedunculate oak	TQ 52078 53469	} knot hole leading to hollow trunk at +/- 6m facing north; and } Ivy cover (potentially hiding PRF).
T3	Moderate	Pedunculate oak (dead)	TQ 52069 53414	} Dead mature tree with heavy ivy cover (potentially hiding PRF).

Tree #	Suitability	Species	Grid reference	Potential roosting features
T4	Moderate	Pedunculate oak	TQ 52061 53375	▸ Compression between branches +/- 5m facing west; ▸ Areas of flaky bark; and ▸ Ivy cover (potentially hiding PRF).
T5	Moderate	Beech	TQ 52217 53461	▸ Compression between branches and fork at +/- 6m and 7m facing south.

3.5 Other species

3.5.1 A number of rabbit *Oryctolagus cuniculus* holes were identified at the hedgerow bases, particularly along hedgerow H1.

4 Evaluation

4.1 Introduction

4.1.1 This section evaluates the survey area in terms of the habitats and species present or potentially present on site or its immediate vicinity, in the context of relevant legislation and planning policy. See Appendix VI for a review of the legislation and planning context.

4.2 Designated Sites

4.2.1 The site is located within the Kent Downs AONB. The Kent Downs Area of Outstanding Natural Beauty Management Plan 2014 – 2019 (Kent Downs AONB, 2014) seeks a net gain in biodiversity and habitats across the Kent Downs. Objectives in relation to biodiversity within the management plan include the creation of new habitats and habitat corridors, and the protection, conservation and extension of priority habitats and species. Measures relating to the protection of on-site priority habitats are included within section 4.3 and enhancements for the site are included within Table 5.4.

4.2.2 None of the other statutory or non-statutory wildlife sites within the desk-study search zone are likely to be directly affected as a result of the development of the site due the distance from the designated sites; closest designation is c.475m south-east (Sevenoaks Common, Hubbard's Hill & Beechmont Bank LWS). However, precautionary ecological protection measures are recommended at section 5.4 to prevent impacts to the surrounding landscape.

4.2.3 The site is located within the Impact Risk Zone (IRZ) for Knole Park SSSI, which addresses a variety of land use proposals but excludes residential developments. Additionally, the SSSI is part of the wider Knole Estate, which is managed for recreation. As such, it is unlikely that the SSSI would be affected by the development of the site. Sevenoaks Common, Hubbard's Hill & Beechmont Bank LWS is also managed for recreation and the likely uplift in residents is considered unlikely to impact the site's capacity for recreation.

4.3 Habitats

4.3.1 Table 4.1 presents a preliminary evaluation of the habitats recorded within or adjacent to the survey area, with reference to the criteria defined at section 2.2.6.

Table 4.1: Preliminary evaluation of habitats within the survey area

Habitat	Evaluation	Rationale
Hedgerows H1, H2, H3 and H5	Local	Whilst this habitat qualifies as an HPI, hedgerows of this quality are not uncommon in the Sevenoaks District, which restricts its importance.

Habitat	Evaluation	Rationale
Semi-improved neutral grassland, broadleaved woodland, dense scrub, continuous bracken, standing water, scattered scrub and hedgerow H4	Negligible	These habitats are common and widespread or poor quality examples, none of which are HPI habitats.

Priority habitats

4.3.2 The broadleaved woodland did not qualify as either Lowland Beech and Yew Woodland HPI or Lowland Mixed Deciduous Woodland HPI when compared with the structure and species of the associated National Vegetation Classification (NVC) types (Maddock, 2008).

HPI Hedgerows

4.3.3 Priority hedgerow habitats are defined "as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide…, consisting predominantly (i.e. 80% cover or more) of at least one woody UK native species" (any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow) (Maddock, 2008). Hedgerows H1, H2, H3 and H5 fall into this classification. Hedgerow H4 comprised of less than 80% native species and formed the curtilage of the adjacent residential property and is not HPI.

4.3.4 Hedgerow HPI are of high intrinsic ecological value and provide habitats suitable for a range of protected species, including amphibians and reptiles (shelter and dispersal), nesting birds, invertebrates, foraging / commuting bats and hazel dormouse. It is currently proposed that the majority of hedgerows will be retained and protected during construction. However, it is likely that sections of hedgerow H3 will need to be removed to provide access. Any loss should be minimised and offset by the creation of species-rich native hedgerow as part of the proposed development.

4.3.5 All the hedgerows within the site were assessed according to criteria set out in the Hedgerow Regulations 1997; see Table 4.2. A table showing full survey results is presented in Appendix III. If a hedgerow is classified as important under the Regulations, local planning authorities are able to prevent its removal.

Table 4.2: Hedgerow assessment

Ref	Description of dominant species, width & height	Significance *
H1	Species-poor unmanaged section of hedge comprising hawthorn, hol elder *Sambucus nigra* and bramble. Encroachment of scrub limited th ground flora present, which consisted of cleavers *Galium aparine*, common nettle and bluebell. 2.5-5m high, 2.5-3 m wide, c.92 m long.	Priority Habitat
H2	Species-poor unmanaged section of hedge, which may once have connected with H1. Comprised of hawthorn, holly, elder, hazel *Corylus*	Priority Habitat

Ref	Description of dominant species, width & height	Significance *
	avellana and, with honeysuckle *Lonicera periclymenum* and bramble. Ground flora included cleavers, lords-and-ladies, comfrey *Symphytum* sp., common nettle and bluebell. 6-9m high, 2.5m wide, c.69 m long.	
H3	Tall hedgerow and trees extending north from the broadleaved woodlan Comprised of hawthorn, holly, hazel, pedunculate oak and English e *Ulmus procera*. Standard beech and ash trees were present particularly towards the southern end. Bramble, honeysuckle and common ivy climbers were present and the ground flora included cleavers, lords-and-ladies, common nettle and bluebell. 5-9m high, 2-3m wide, c.108 m long.	Priority Habitat Important Species rich
H4	This hedgerow consisted of mature beech and ash standards, with hawthorn and holly at the eastern end. This converted into a well managed cherry laurel *Prunus laurocerasus* hedgerow further west, with ornamental rhododendron *Rhododendron* sp., and forsythia *Forsythia* sp.. ground flora consisted of cow parsley *Anthriscus sylvestris* and common nettle. The hedgerow formed part of the residential curtilage of the adjacent dwellings. 2-6m high, 1-3m wide, c.67 m long.	-
H5	Boundary hedgerow with mature pedunculate oak standards. Comprised of hawthorn, holly, hazel, beech, ash, blackthorn and yew *Taxus baccata*, with bramble, honeysuckle and common ivy climbers. Ground flora inclu common nettle, lords-and-ladies, ground-ivy *Glechoma hederecea* and bluebell. 5-6m high, 3-5m wide, c.119 m long.	Priority Habitat Important Species rich

* Hedge sections are marked as: Priority Habitat (NERC Act 2006), Important (Hedgerow Regulations 1997), or species rich (5 or more native woody species per 30m section).

Other habitats

4.3.6 Development of the site would result in permanent losses of up to c.2.27 ha of semi-improved neutral grassland, depending on the extent and layout of proposals. Loss of this habitat should be mitigated by the creation of species-rich native wildflower meadow to increase botanical richness above that currently present.

4.3.7 The broadleaved semi-natural woodland, dense scrub, standing water, continuous bracken and scattered scrub are of relatively low intrinsic ecological value and of negligible importance. The standing water (pond P1) will be removed and replaced with two surface water drainage ponds, planted with native aquatic vegetation.

4.4 Species

Amphibians (excluding great crested newt)

4.4.1 The semi-improved neutral grassland, woodland and hedgerows provide suitable terrestrial habitat for common and widespread amphibian species such as common frog, common toad, smooth newt and palmate newt, which have been recorded in the desk-study search zone. The pond on site (P1) may also provide breeding habitat, though regular desiccation of this waterbody during the breeding season makes this less likely. No further survey is necessary. However, it is

recommended that removal of the existing pond P1 should be completed in accordance with a Precautionary Working Method Statement to reduce the risk of killing/injury to common amphibians, as recommended at section 5.3. Pond P1 will be replaced with two surface water drainage ponds, planted with native aquatic vegetation.

Great crested newt

4.4.2 KMBRC returned eight records of great crested newt within the desk-study search zone. All but one of these records was located c420m south of the site between 2011 and 2013.

4.4.3 The site contains good quality terrestrial habitat for great crested newt, in the form of rough pasture grassland. This composition of coarse grasses, with a variable sward height and structure is suitable for foraging great crested newt. The boundary hedgerows and scrub provide shelter and dispersal habitat, while the woodland on and adjacent to site offer hibernation potential.

4.4.4 There is one pond within the site (P1), and analysis of Ordnance Survey maps and aerial photography indicated that four further ponds are present within 500m of the site (P2-P5); see Appendix II for a pond plan. P1 was assessed for its suitability to support breeding great crested newts using field observations supported by a HSI (Oldham et al, 2000).

4.4.5 Pond P1 is a shallow farmland pond, which showed no signs of regular management. The pond measured approximately 30 m^2 and was surrounded by dense scrub, with a small patch of grass at its southern edge. It is considered the pond dries annually and no waterfowl or fish were present. There was an absence of aquatic vegetation with only small patches of soft rush at the margin. P1 achieved an HSI value of 0.42 (full results are shown in Table 4.3), making it of poor suitability for breeding great crested newt.

Table 4.3: HSI results for P1

Variable	Field score	SI value
	Pond 1	
Location	A	1
Pond area (m2)	30	0.05
Desiccation rate	Dries annually	0.1
Water quality	Poor	0.33
% shaded 1m from bank	90	0.4
Fowl	Absent	1
Fish	Absent	1
Pond density (per km^2)	7	0.85
Terrestrial habitat	Good	1
Macrophyte cover %	0	0.3
HSI value	**0.42**	
Suitability	**Poor**	

4.4.6 Ponds P2-P5, could not be accessed to complete an HSI assessment. P2 was located c.70m north-east of site within a residential garden and P3 was located 135m south-west of site within woodland. P4 and P5 were located more than 250m north of the site beyond housing and a school, which contained large areas of playing field. Research undertaken by Natural England (Cresswell & Whitworth, 2004) suggests great crested newt will rarely move further than 200-250m from a breeding pond, with much reduced distances recorded where adjacent habitats are of good quality. Jehle (2000) also determined a terrestrial zone of 63m, within which 95% of summer great crested newt refuges were located. In addition, following the breeding season, Jehle and Arntzen (2000) recorded 64% of newts within 20m of the pond edge. As such, it is considered highly unlikely that any newts present within P4 and P5 would commute to the site. This is due to the suboptimal nature of adjoining habitats, which may leave them exposed to predation. Additionally, large areas of comparable or superior terrestrial habitat is in closer proximity to P4 and P5 than the site.

4.4.7 In conclusion, great crested newt may be present within P1 or the suitable terrestrial habitat on site. If absent from P1, great crested newt may use nearby ponds (P2 and P3) for breeding. Construction works would likely involve site clearance including removal of P1, creation of access tracks and materials storage compounds, vehicle movements and groundworks, which together could result in destruction of great crested newt habitat or present a risk of killing, injury or disturbance for great crested newt if present. Pond P1 will be replaced with two surface water drainage ponds, planted with native aquatic vegetation. Further surveys for great crested newt in the nearby suitable ponds are recommended at section 5.2.

Birds (nesting)

4.4.8 KMBRC returned records of 32 notable bird species from within the desk-study search zone between 1988 and 2019. The survey area's boundary hedgerows and scrub are suitable for nesting Species of Principal Importance (SPI) birds such as song thrush and house sparrow which have been recorded in the area.

4.4.9 The grassland and scrub is unlikely to support ground-nesting species such as skylark (SPI) and meadow pipit (Amber-listed) under the current intensive grazing regime. This is due to the short sward height, poor structural form and high levels of disturbance from the livestock.

4.4.10 Woodland habitats are of particular importance for species such as blackcap *Sylvia atricapilla*, great spotted woodpecker *Dendrocopos major*, green woodpecker *Picus viridis*, treecreeper *Certhia familiaris* and cuckoo (HPI and red-listed). The woodland on site was considered a poor example of this habitat, but may still provide breeding and foraging opportunities for these species.

4.4.11 The woodland and hedgerow habitats are proposed to be retained and protected as part of the proposals (though a small severance of hedgerow may be required for access). Provided this is the case and any loss of these habitats is minimised, further breeding bird surveys are not required, but precautionary measures for nesting birds are recommended at section 5.3.

Invertebrates

4.4.12 KMBRC returned records of three species of protected invertebrate from within the desk-study search zone between 2000 and 2015. This included purple emperor and white-letter hairstreak butterflies, which are often associated with mature oak trees and hedgerows. Whilst these are present on site, the larval foodplant for purple emperor (willow *Salix* sp.) was absent from the site and for white-letter hairstreak (elm *Ulmus* sp.) was in limited supply within hedgerow H3.

4.4.13 A single record for Roman snail was returned from 2000. The site is within the known range of this species and comprises calcareous soils, though heavily improved through farming. The site contained some habitat suitable for this species including scrub and hedges, but these are likely to be heavily disturbed and Roman snail avoids grazed grassland.

4.4.14 The habitats on site provide limited suitability for invertebrates and are unlikely to support a diverse or abundant invertebrate fauna in general. The features on site which do provide opportunities include the woodland and hedgerows which are proposed to be retained and protected. The ephemeral nature of the pond limits its value, but it may still support invertebrates. Removal and replacement of the waterbody will provide habitat of greater value. Invertebrates are not considered to present a constraint to the development proposals and no further surveys for this group are required.

Mammals (terrestrial)

[redacted]

Bats

4.4.17 KMBRC returned 10 records of bats from within the desk-study search zone between 1987 and 2013. This included roost records for common pipistrelle, noctule, long-eared species and an unknown bat species. The closest of which comprised of a hibernation roost for a single noctule, approximately 260m south-west of site in 1987. The remaining records comprised of flying bats, including records for common pipistrelle and unidentified bats.

4.4.18 The PRA concluded that four mature pedunculate oaks (T1-T4) and a single mature beech (T5) along the site boundaries were of moderate suitability for roosting bats due to the PRFs recorded. These trees are proposed to be retained and protected. If proposals change and felling or arboricultural works to T1-T5 are required, it could result in destruction of a bat roost or present a risk of killing, injury or disturbance if bats are present during the works. Accordingly, further surveys for bats roosting in trees are recommended at section 5.2.

4.4.19 A detailed ground-level tree assessment for bats is recommended at section 5.2 if the woodland habitat in the south-east of the site is to be impacted by the proposed works.

4.4.20 The survey area's mosaic of pasture, woodland, scrub and hedgerows are likely to provide abundant opportunities for foraging and commuting bats. It is likely that the majority of the grassland would be lost following development of the site and potentially hedgerows may be severed to provide access. There is also potential for an increase in artificial lighting following development of the site upon any retained or adjacent off-site habitats. This may render them less suitable for foraging/commuting bats. Accordingly, further bat activity surveys are recommended at section 5.2.

Hazel dormouse

4.4.21 KMBRC returned one record of hazel dormouse within the desk study search area in 2013, located 425m west of the site.

4.4.22 The hedgerow and scrub habitats within the survey area are dense and largely intact, providing potential habitat for dormouse. The woodland lacks the dense understorey required for this species, but may provide connectivity to more suitable off-site habitat. Food plants are present (including hazel, hawthorn, oak, and bramble) providing a good year-round source of food. The habitats are well connected via mature hedgerows to larger woodland blocks within the wider landscape, including where the desk study recorded is located. The woodland is proposed to be retained and protected during construction, but sections of the dense scrub habitats within the site will likely be removed and thus there is a risk of habitat loss, killing, injury or disturbance to dormice during the works. Additionally, development of the site is likely to require severance of hedgerow H3 to provide access, which may also impact this species. Further surveys for hazel dormouse are recommended in section 5.2.

Water vole and otter

4.4.23 KMBRC returned one record of water vole from within the desk study search area in 2003 (four-digit grid reference). KMBRC returned one record of otter from within the desk study search area in 1959 (four-digit grid reference).

4.4.24 There are no riparian habitats running through or adjacent to the site, nor in the wider landscape, making it unlikely that either species would be present. Neither species is considered to present a constraint to development proposals and further surveys are not required.

Plants, native

4.4.25 KMBRC returned records of six protected botanical species from within the desk-study search zone during a date range of 1958 to 2013. The majority are unlikely to be present on site due to the intensive grazing of the site.

4.4.26 Native bluebell was recorded in low numbers in the woodland and at the bases of hedgerows H1, H2, H3 and H5. No other rare or protected species of flora were recorded within the survey area, but the time of year may have resulted in botanical species being under recorded due to an absence of inflorescences. Given the low numbers recorded, it is not considered that the proposals will affect the bluebell population on site. However, it is recommended that a buffer of vegetation is located along the boundary hedgerows and woodland to continue accommodating this species on site post-development. Botanical species are not considered to present a constraint to the development proposals and no further surveys for this group are required.

Plants – invasive non-native species and injurious weeds

4.4.27 A small area of rhododendron, an invasive non-native species listed on Schedule 9 of the WCA, was noted on the north-western at TN3. The plant itself is located on a neighbouring residential property and the survey area immediately south of this is no longer included in the planning boundary. However, it is recommended that the area is monitored and where necessary treatment and removal of both seedlings and lateral growth above ground is carried out. Recommendations with respect to this are given at section 5.4. No other schedule 9 plants were recorded.

4.4.28 No significant stands of injurious weed species were noted (ragwort *Senecio jacobaea*, spear thistle *Cirsium vulgare,* creeping thistle *Cirsium arvense,* curled dock *Rumex crispus,* and broad-leaved dock *Rumex obtusifolius).*

Reptiles (terrestrial)

4.4.29 KMBRC returned three records of terrestrial reptile species from within the desk-study search area between 1995 and 2003; two slow worm and one common lizard. The only record provided with a grid reference of more than four digits was for slow worm located c.945m south-east in 1995.

4.4.30 The site contains good quality habitats for reptiles, dominated by a single field parcel of rough pasture grassland. This composition of coarse grasses, in combination with the woodland edge and hedgerows, creates a mosaic for foraging reptiles. The pond may also provide limited foraging opportunities for grass snake, if present in the local area. The boundary hedgerows and scrub provide shelter and dispersal habitat, while the woodland offers hibernation potential. Construction works would involve site clearance, creation of access tracks and materials storage compounds, vehicle movements and groundworks, which together could present a risk of killing or injury for reptiles if present within the survey area. Further surveys for reptiles are recommended at section 5.2.

Other protected, rare or notable species

4.4.31 KMBRC returned two records of hedgehog from within the desk-study search zone in 1979 and 2001. Both records comprise four-digit grid references. The survey area contains habitats suitable for this species, including grassland, woodland, hedgerows and scrub. Hedgehog is listed as an SPI and is undergoing a significant population decline. Measures should be taken to continue accommodating this species on the site post-development (see section 5.4).

5 Recommendations

5.1 Introduction

5.1.1 With regard to the objectives of this PEA, recommendations are made below for further protected species survey where necessary. Preliminary recommendations are also made for the protection of important ecological features, and/or to avoid or mitigate ecological impacts, and to enhance the site for wildlife following construction. It is intended that these recommendations should be considered during future changes to the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

5.2 Protected Species Surveys

5.2.1 The following species / groups (Table 5.1) will require additional surveys prior to refining development designs and formulating a suitable avoidance and mitigation strategy (if required).

5.2.2 The surveys recommended below were commenced in spring 2022 and are largely completed; refer to the accompanying Protected Species Report (UEEC, 2022) for further information.

Table 5.1: Recommendations for further ecological surveys

#	Recommendations for further ecological survey
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June, or using conventional techniques from mid-March to mid-June.
R2	Ground-level tree assessment for roosting bats within woodland, if removal is requ preferably during winter or spring.
R3	Presence / absence surveys for roosting bats within trees T1-T5 if they are affected by proposals for the site, undertaken between May and August.
R4	Bat activity surveys, undertaken between April and October.
R5	Presence / absence surveys for dormouse, undertaken between April and November.
R6	Presence / absence surveys for reptiles, undertaken between April and September.

Great crested newt

5.2.3 A great crested newt survey is recommended to establish whether the species is present in ponds within 250m of the proposed construction site, and if so in what numbers and whether they are breeding. If great crested newt survey are absent from these ponds then it is likely they are also absent from the application site. The surveys could take one of two formats:

- Environmental DNA (eDNA) sampling for each of the ponds; or

- Pond surveys using conventional techniques (torchlight, traps, nets and egg searches).

5.2.4 eDNA sampling has the advantage of being more time- and cost-efficient where there is a high number of waterbodies or the likelihood of recording great crested newt survey is low. A single visit to each pond should be made between 15 April and 30 June. However, this method carries the risk that conventional survey techniques (which are more resource-intensive) will still be required if great crested newt survey is recorded, and for this reason it is recommended that eDNA surveys are completed by the end of April. Twenty water samples are collected from each waterbody during the visit using purpose-designed sterile sampling kits, preserved in ethanol and subsequently dispatched for laboratory analysis. The sampling and analysis should follow the latest protocols set out in Natural England's '*Technical advice note for field and laboratory sampling of great crested newt environmental DNA*' (Biggs *et al*., 2014).

5.2.5 Surveys using conventional techniques should be carried out by a licenced herpetologist following recommended guidelines (English Nature, 2001). Each pond should be surveyed on at least four occasions during the breeding season (between mid-March and mid-June), with at least two visits between mid-April and mid-May, to determine presence/absence. Methods include torch survey, bottle trapping and egg searches. A further two surveys are necessary to provide a population estimate should great crested newts be recorded.

Roosting bats

5.2.6 A ground-level tree assessment following current guidelines (Collins, 2016) is required to establish the potential for trees within the woodland habitat on site to support roosting bats, if felling or arboricultural works to facilitate development works are required within these habitats. The objective is to classify each tree as of negligible, low, moderate or high suitability for roosting bats, to inform the need for further tree-climbing or presence/absence surveys.

5.2.7 The location of each tree potentially suitable for roosting bats within the construction site should be recorded, along with the following standard data: species, life stage, diameter at breast height, form and condition, types roost feature present, their aspect, stem orientation and approximate height above ground level. Ground-level tree assessment is best carried out during winter or early spring (after the leaves have fallen and before re-growth) in order to gain adequate view of potential roost features.

5.2.8 It is currently proposed that trees T1-T5 are retained as part of the development proposals. However, if felling or arboricultural works to trees is required, then these works could result in destruction of a bat roost or killing, injury or disturbance to roosting bats. As such, further surveys are recommended to determine their presence or likely absence with these features. The surveys should follow current guidelines (Collins, 2016), comprising dusk emergence and/or dawn re-entry surveys, and can be carried out between May and September (May to August is the optimal period). It should be noted that in the event that roost is confirmed in any of the trees, further survey may be required to characterise the roost and inform the licencing process. Surveys should begin at least quarter of an hour before dusk and continue for up to 2 hours after sunset, or begin 1.5 to 2 hours before dawn and continue until at least 15mins after sunrise. The level of survey effort required is dependent on each feature's suitability for roosting bats, as follows:

- Confirmed roost / High suitability: At least three surveys visits in total, including at least one dusk emergence and at least one separate dawn re-entry survey;
- Moderate suitability: At least one dusk emergence and a separate dawn re-entry survey;
- Low suitability: At least one dusk emergence or dawn re-entry survey.

5.2.9 An alternative approach for trees is to carry out a PRF inspection by a suitably licenced tree-climber in the first instance, to determine whether there is a need for presence/absence survey.

Foraging and commuting bats

5.2.10 Bat activity surveys are recommended due to the moderate suitability foraging and commuting habitats (grassland, woodland and hedgerows), which may be affected by development proposals. Bat activity surveys should follow current guidelines (Collins (ed.), 2016), combining transect surveys with static automated monitoring and supplementary methods as appropriate, and can be carried out between April and October. Transect surveys should begin at sunset and continue for 2–3hrs, or begin 2 hours before dawn and continue at least until sunrise, or continue through the night. For moderate suitability the level of survey effort required is one survey visit per month (April to October), including at least one dusk and pre-dawn survey, combined with two static detector locations per transect, each monitored for five consecutive nights per month.

Hazel dormouse

5.2.11 The hedgerow and scrub habitats within the survey area are dense and largely intact, providing potential habitat for hazel dormouse. Scrub habitat will likely be removed to facilitate the development and hedgerow H3 may be severed for access. As such, there is a risk of habitat loss, killing, injury or disturbance to hazel dormice during the works and surveys to establish the presence or likely absence of hazel dormouse are recommended.

5.2.12 The surveys should be undertaken by a suitably experienced and licensed ecologist following current guidelines (Bright *et al.*, 2006), comprising hazel nut searches and nest tube surveys, and can be carried out between April and November.

Reptiles

5.2.13 The survey area contains habitats suitable for reptiles including grassland, woodland, scrub, standing water and hedgerows. Therefore, there is a risk of killing or injury to reptiles and further surveys by an experienced herpetologist are required to establish their presence or likely absence within the proposed construction footprint. The survey should involve a minimum of seven visits to the site in suitable weather conditions during the active season (broadly April to September), following current guidelines (Froglife, 1999; Gent & Gibson, 2003). Methods include visual encounter surveys (i.e. targeted transects) and searches of artificial and natural refuges.

5.3 Precautionary Measures

5.3.1 The following species/groups (Table 5.2) require specific precautionary measures to be adhered to prior to and during construction to ensure that an offence under the relevant legislation is

avoided. These measures may need to be added to or amended following completion of the protected species surveys described above.

Table 5.2: Recommended precautionary measures

#	Recommended precautionary measures
R7	Pond P1 on site was not considered to qualify as priority habitat (primarily due to its small size, poor condition and transitional status) and is of poor suitability as breeding habitat for great crested newt. However, it may still provide a resource for common amphibians. Removal of the pond will be carried out under the supervision of a suitably qualified ecologist, and preferably outside of the amphibian breeding season (broadly March to July).
R8	Removal of nesting bird habitat will be undertaken outside of the bird nesting season, which runs from 1 March to 30 September. It will therefore be carried out between October and February, but will be planned and implemented in accordance with the findings of the further ecological surveys recommended above, as other protected species may still be present outside of the bird breeding season. Any construction works undertaken within the bird breeding season where suitable bird breeding habitat exists will require a site check for nesting birds by a suitably qualified ecologist. This will take place no more than two days prior to works commencing. This is to ensure that no disturbance to active bird nests occurs. If a nest is found it must be cordoned off and works adjacent to the nest must be delayed until such time that the chicks have fledged from the nest. This will be supervised by a suitably qualified ecologist.

[redacted]

5.4 Ecological Protection Measures

5.4.1 The following protection measures (Table 5.3) will be carried out as part of the proposed scheme, alongside any specific measures that are recommended following the protected species surveys described above.

Table 5.3: Recommended ecological protection measures

#	Recommended ecological protection measures
R10	Hedgerows H1, H2, H3 and H5 qualify as HPI, with H3 and H5 assessed 'Important' under the Hedgerow Regulations. All hedgerows will be retained, protected and enhanced during the development of the site (with the exception of small severances to H3). British Standard BS 5837:2012 and/or National Joint Utilities Group Guidelines (NJUG, 1995) will be followed at all times during construction when working in close proximity to the hedgerow or any retained trees on site, including those within the woodland. According to NJUG Guidelines the root protection zone or precautionary area is 4x the circumference of the trunk (circumference is measured around the trunk at a height of 1.5m above ground level). The distance is measured from the centre of the trunk to the nearest part of any excavation or other work. If a separate tree survey is carried out for the proposed development, works will be undertaken in accordance with the recommendations therein.
R11	Construction works (including ground works and vegetation clearance) will be carried out in accordance with a Construction Environmental Management Plan (CEMP: Biodiversity). The

#	Recommended ecological protection measures
	CEMP will specify: potentially damaging construction activities; "biodiversity protection zones"; measures to avoid or reduce impacts during construction (including protective fences, exclusion barriers, pollution control and methodological or seasonal restrictions); location and timing of sensitive works; periods during which ecological supervision is required; and the role & responsibilities of an Ecological Clerk of Works.
R12	Rhododendron is present along the north-western boundary of the site. This species is highly invasive and it is inadvisable to have it present in or bordering woodland. A method statement will be prepared to ensure adequate control measures are adopted during construction to prevent it spreading from the site. Control measures can comprise a variety of options. A cut stump application whereby herbicide is injected to the surface of a stump on the same day as cutting, may not be possible as the shrub is located in the adjacent residential garden. As such, foliar regrowth herbicide application; hand pulling of any seedlings; or manual cutting may be suitable treatments.
R13	The use of external lighting will be avoided or reduced to the minimum required for its intended purpose, during both construction and operation. This will be of benefit to nocturnal species e.g. bats. Where external lighting is to be provided, it will be low-level, directional lighting with minimal spill and glare, and consideration will be given to reduced hours of operation and/or a movement responsive system of control. Narrow-spectrum bulbs and light sources that emit minimal UV light, avoiding white and blue wavelengths of the spectrum, will be used. Glass lantern covers will be used instead of plastic to filter UV lights. Lighting will not be directed towards retained habitats on and adjacent to site including woodland and boundary hedgerows.
[redacted]	
R15	To enable continued dispersal of hedgehogs (which require large territory sizes) and other small mammals across the site and within the local area following development, small access gaps to measure c.13x13cm are recommended to be provisioned at the base of all new fence boundaries. These will allow easy passage for small mammals to continue foraging in the area while still being small enough to contain pets.
[redacted]	
R17	Where rabbit warrens are to be damaged or destroyed as part of the proposed works, this will be undertaken in accordance with the Mammals Act 1996 by a registered pest control company.

5.5 Recommendations for Ecological Enhancement

5.5.1 The following ecological enhancements (Table 5.4) should be considered for the site to contribute towards gains for biodiversity in line with the requirements of local and national policy and guidance, but should be reviewed and specified further following the completion of recommended protected species surveys.

Table 5.4: Preliminary recommendations for ecological enhancement

#	Preliminary recommendations for ecological enhancement
R18	The retained woodland will be enhanced though additional understorey planting of a range o native fruiting shrubs of local provenance and selective tree thinning to incre penetration.
R19	New green spaces will be sown with a native wildflower and grass seed mix of local provenance (i.e. calcareous wildflower meadow) to increase botanical richness above that currently present. This will be particularly targeted towards retained and newly created habitat features such as hedgerows, woodland and ponds. This will maintain/enhance ecological connectivity through the site, but will also be extended to public realm areas such as open spaces and road verges. The wildflower meadow treatment will provide ecological connectivity for reptiles, amphibians and small mammals, and provide foraging opportunities for invertebrates.
R20	Landscaping for the site will include hedgerow creation and enhancement of exi hedgerows, comprising a range of native shrub species. Fruit, seed, nut and nectar-bearing species will be used preferentially when selecting species for landscape planting, so that food sources are available throughout the year (e.g. hazel, hawthorn, blackthorn, rowan *Sorbus aucuparia* and honeysuckle).
R21	New ponds will be created within the proposed development as part of the drainage strateg and to increase habitat availability for species such as grass snake, amphibians a invertebrates. Newly created wetland habitats will be profiled to incorporate a variety of depths, with shallow sloping sides providing access points for wildlife, and planted with appropri native vegetation. Plants suitable for damp margins include; amphibious bistort *Persicaria amphibian*, marsh marigold *Caltha palustris*, reed canary grass *Phalaris arundinacea*, brooklime *Veronica beccabunga*, wild angelica *Angelica sylvestris*, purple loosestrife *Lythrum salicaria*, greater bird's-foot trefoil *Lotus uliginosus*, and gypsywort *Lycopus europaeus*. Aquati vegetation includes; water crowfoot *Ranunculus aquatilis*, lesser spearwort *R. flammula*, water mint *Mentha aquatic*, water forget-me-not *Myosotis scorpioides* and branched bur-weed *Sparganium erectum*, all of which can be used by newts for egg laying. Drainage engineers and landscape architects will be involved in specifying the mix of species as their suitab dependent on how frequently wetland areas will be inundated.
R22	The site's landscaping plans will utilise plant species which encourage bats. The table Appendix V lists species of plants that can provide benefit for bats either by providing a foo source for insects on which bats feed, or providing additional roosting opportunities (Gunne *et al.*, 2012). The plant species are predominantly native to Britain, but not all species will be suitable in all situations. The aim is to encourage a diverse range of invertebrate food sources and increased bat roost potential.
R23	Habitat piles will be created within areas of grassland or marginal vegetation, at the edges of the site close to retained woodland, hedgerows and created ponds. These will provid additional hibernation and shelter resources for amphibians, invertebrates, reptiles, and a range of other wildlife, and egg-laying substrate for grass snake. Hibernacula can be created by

#	Preliminary recommendations for ecological enhancement
	partially burying logs and stones in sheltered areas away from flood risk, and covering over with earth or turf. Breeding habitats can be created by collecting grass clippings and other prunings arising from landscape management of the site, and composting them in a secluded corner of the site. Deadwood piles can be created using arisings from site clearance to provide shelte and breeding opportunities for invertebrates, particularly saproxylic species w dependent on deadwood.
R24	The value of the site for birds will be enhanced by installing a range of artificial nest boxe These will be placed on retained mature trees within the development or at the site boundaries, or incorporated within building facades. For instance: New buildings: nest boxes can be installed under the eaves for birds that buildings for nesting, e.g. house martin, house sparrow and starling (all SPI). Trees: nest boxes with entrance holes suitable for tit species, woodpecke nuthatches, and open-fronted boxes suitable for spotted flycatcher or song thrush, and treecreeper boxes. Artificial nest boxes for kestrel, barn owl *Tyto alba* and tawny owl can be erected in the woodland or edges of the site, with appropriate habitat management regimes adopted to create areas/corridors of wildflower meadow as foraging habitat for these species.
R25	The value of the site for bats will be enhanced by installing a range of artificial roost boxe These will be placed on retained mature trees within the development or at the site boundaries, or incorporated within building facades. Boxes suitable for a range of species will be used, for instance: New buildings: integral bat tubes can be installed within buildings which face vegetated areas. Bat tubes can be incorporated into the design of the building so that only t access holes are visible from the exterior of the building. The Schwegler 1FR or 2FR Bat Tube (or other manufacturer's equivalent) is designed to meet the characteris requirements of the types of bats that inhabit buildings such as pipistrelles *Pipistrellus spp*. or serotine *Eptesicus serotinus*. It is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. Pipistrelles: bat boxes suitable to install on mature trees either within or at the edge of the development include the Schwegler 1FF Flat Bat Box, or other manufacture equivalent. Noctules and brown long-eared bats *Plecotus auritus*: bat boxes suitable to install on mature trees either within or at the edges of the development include the Schwegl 2F General Purpose Bat Box or the 2FN Woodland Bat Box, or other manufacture equivalent. Bat boxes should ideally be located south-facing (between south-east and south-west) and above 4m from ground level. They should be installed facing vegetation feature such as mature hedgerows or trees, but with a clear line of flight for bats exiting the roost, and away from sources of artificial light.

6 Summary and Conclusions

6.1 Introduction

6.1.1 A PEA was undertaken for the site of a proposed residential development at Ashgrove Road, Sevenoaks, Kent (Grid Reference: TQ 52160 53418). The report was prepared to establish the site's suitability for development, inform the design process for the proposal, record the ecological baseline and identify key ecological features within and around the proposal site.

6.2 Results

6.2.1 No internationally important wildlife sites are located within 5km of the site, but the site falls within the Kent Downs AONB. Two SSSIs are located within 2km of the site boundary. Additionally there is one non-statutory LWS, within 1km of the site boundary.

6.2.2 There are records of a range of protected or notable species in the locality, including amphibians, birds, invertebrates, terrestrial mammals, flowering plants and terrestrial reptiles, together with three priority habitats: Ancient Woodland, Lowland Mixed Deciduous Woodland and Wood-pasture and Parkland.

6.2.3 The survey area lies to the south of the town of Sevenoaks in Kent and measures c.2.47 ha. It comprises a pastoral field, woodland, a pond and hedgerows along the site boundaries. The site is bound by residential properties to the north; Ashgrove Road to the east; further pasture to the south; and Oak Lane to the west. To the north and east the wider landscape is a dominated by residential areas. South and west of the site lie large areas of woodland including Great Britain's Wood and Millbank Wood. Five ponds lie within 500m of the survey area.

6.3 Evaluation

6.3.1 Table 6.1 presents a summary of ecological constraints and opportunities identified within the survey area.

Table 6.1: Summary of ecological constraints and opportunities

Feature	Detail
Constraints:	
Designated sites	The site is located within the Kent Downs AONB. Objectives for this area include the creation of new habitats and the protection of priority habitats and species. None of the other statutory or non-statutory wildlife sites within the desk-study search zone are likely to be affected directly or indirectly as a result of the development the site. However, precautionary ecological protection measures are recommended to prevent impacts to the surrounding landscape.

Feature	Detail
Priority habitats	Hedgerows H1, H2, H3 and H5 on site qualify as HPI, with H3 and H5 assessed 'Important' under the Hedgerow Regulations. It is currently anticipated that the majority of hedgerows will be retained and protected during construction. However, some severance of H3 will be required to make way for a new site accesses.
Other habitats	The development of the site would likely result in permanent losses of up to c.2.27ha of semi-improved neutral grassland, depending on the extent and layout of proposals. Loss of this habitat should be mitigated by the creation of species-rich native wildflower meadow. The broadleaved semi-natural woodland, dense scrub, standing water, continuous bracken and scattered scrub are of relatively low intrinsic ecological value and of negligible importance. The standing water (pond P1) will be removed and replaced with two surface water drainage ponds, planted with native aquatic vegetation.
Great crested newt	Permanent loss of suitable terrestrial habitats (semi-improved neutral grassland, scrub, standing water and hedgerow bases).
Birds (nesting)	Permanent loss of small areas of nesting habitats (woodland, scrub and hedgerows).
[redacted]	
Bats (roosting)	Trees at T1-T5 contain features suitable for roosting bats (e.g. rotholes, lifted bark, dense ivy clad). It is currently anticipated woodland habitats will be retained as part of the proposed development.
Bats (foraging / commuting)	Effects on moderate suitability habitats (semi-improved neutral grassland, woodland, scrub and hedgerows) for foraging and commuting bats, including through increases in artificial light.
Hazel dormouse	Permanent loss of small areas of woodland, dense scrub and hedgerow habitat suitable for hazel dormouse.
Hedgehog	Permanent loss of semi-improved neutral grassland, woodland, scrub and hedgerow bases.
Invasive non-native plants	Rhododendron a non-native invasive species listed on Schedule 9 of the WCA was recorded in the north-west of the survey area (outside of planning application boundary).
Reptiles	Permanent losses of suitable habitats (semi-improved neutral grassland, scrub and hedgerow bases).
Opportunities:	
Priority habitats	The hedgerows HPI within the survey area are of high intrinsic value and can provide a focus for ecological enhancement measures.
Habitat creation / enhancement	Enhancement opportunities include improvement of woodland structure. Habitat creation opportunities include wildflower meadow planting, hedgerow creation, habitat piles and bird/bat boxes.

6.4 Recommendations

6.4.1 Recommendations are made for further protected species surveys, together with preliminary recommendations for the protection of important ecological features to avoid or mitigate

ecological impacts, and to enhance the site for wildlife following construction; these are summarised in Table 6.2. It is intended that these recommendations should be considered during the design of development proposals so that protection of important ecological features is secured and opportunities for ecological enhancement are realised. The recommendations should be reviewed following the completion of further ecological surveys.

Table 6.2: Summary of recommendations

#	Summary of recommendations
Botanical / protected species surveys	
R1	Presence / absence surveys for great crested newt in ponds within 250m of the site, undertaken using eDNA sampling techniques from mid-April to end June, or using conventional techniques from mid-March to mid-June.
R2	Ground-level tree assessment for roosting bats within woodland, if removal is required, preferably during winter or spring.
R3	Presence / absence surveys for roosting bats within trees T1-T5 if they are affected by proposals for the site, undertaken between May and August.
R4	Bat activity surveys, undertaken between April and October.
R5	Presence / absence surveys for dormouse, undertaken between April and November.
R6	Presence / absence surveys for reptiles, undertaken between April and September.
Precautionary measures	
R7	Removal of P1 will be carried out under the supervision of a suitably qualified ecologist, and preferably outside of the amphibian breeding season (broadly March to July).
R8	Removal of nesting bird habitats will be undertaken outside of the bird nesting season, which runs from 1 March to 30 September. It will therefore be carried out between October and February, but will be planned and implemented in accordance with the findings of the further ecological surveys recommended above.
R9	A pre-works inspection of the site and adjacent woodland for any newly excavated setts is recommended to take place within two months prior to commencement of site clearance works.
Ecological protection measures	
R10	Standard site procedures to prevent impacts on hedgerows trees will be adhered to during construction.
R11	Construction works (including ground works and vegetation clearance) will be carried out in accordance with a CEMP.
R12	A method statement will be prepared to ensure adequate monitoring measures are adopted to prevent the spread of invasive rhododendron during construction.
R13	The use of external lighting will be avoided or minimised to prevent impacts to nocturnal species such as bats. Lighting will not be directed towards the woodland or boundary hedgerows.
[redacted]	
R15	Small access gaps will be provisioned at the base of new fence boundaries to enable continued dispersal of small mammals across the site.

#	Summary of recommendations
R16	At the end of each working day excavations will be covered over and open pipework capped to prevent entrapment of mammals, amphibians and other fauna.
R17	Any destruction of rabbit warrens will be undertaken in accordance with the Mammals Act 1996 by a registered pest control company.
Ecological enhancement	
R18	Retained woodland habitat will be enhanced though active management to improve structure and native species composition.
R19	Green spaces will be sown with a native wildflower and grass seed mix.
R20	Hedgerow creation and/or restoration will use a range of native fruit, seed, nut and nectar-bearing shrub species.
R21	New wetland habitat will be created within the proposed development as part of the drainage strategy and to increase aquatic habitat availability.
R22	The site's landscaping plans will utilise plant species which encourage bats by providing additional food sources or roosting opportunities.
R23	Habitat piles for amphibians, invertebrates and reptiles will be created within or close to areas of retained woodland, hedgerows and retained or created ponds.
R24	The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
R25	The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.

6.5 Conclusions

6.5.1 The majority of land proposed for development is of low-moderate ecological value. Significant constraints to development were identified including priority habitats and the potential presence of great crested newt, [redacted], bats, hazel dormouse and reptiles. Further ecological surveys and impact assessment are required prior to submitting a planning application, to determine the value of the site for these species and to formulate a suitable mitigation strategy. These surveys were commenced in spring 2022 and are largely completed, and impact assessments have been undertaken based on the results currently available; refer to the accompanying Protected Species Report (UEEC, 2022) for further information.

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Appendix I: Phase 1 Habitat Plan

Ashgrove Road, Sevenoaks, Kent

- Survey area boundary
- Application site boundary
- Broadleaved semi-natural woodland
- Dense scrub
- SI Semi-improved neutral grassland
- Bracken
- Standing water
- Badger sett buffer (30m)
- Species-poor hedge
- Native species-rich hedge with trees
- Species-poor hedge with trees
- Pond
- Scattered scrub
- Tree with bat roost suitability
- Target note

0 40 80 Meters

N

Scale: 1:1,500 **Created by:** MT
Date: Jul 2022 **Reviewed by:** NP
Drawing number:
UE0441ECO-Phase1_220722

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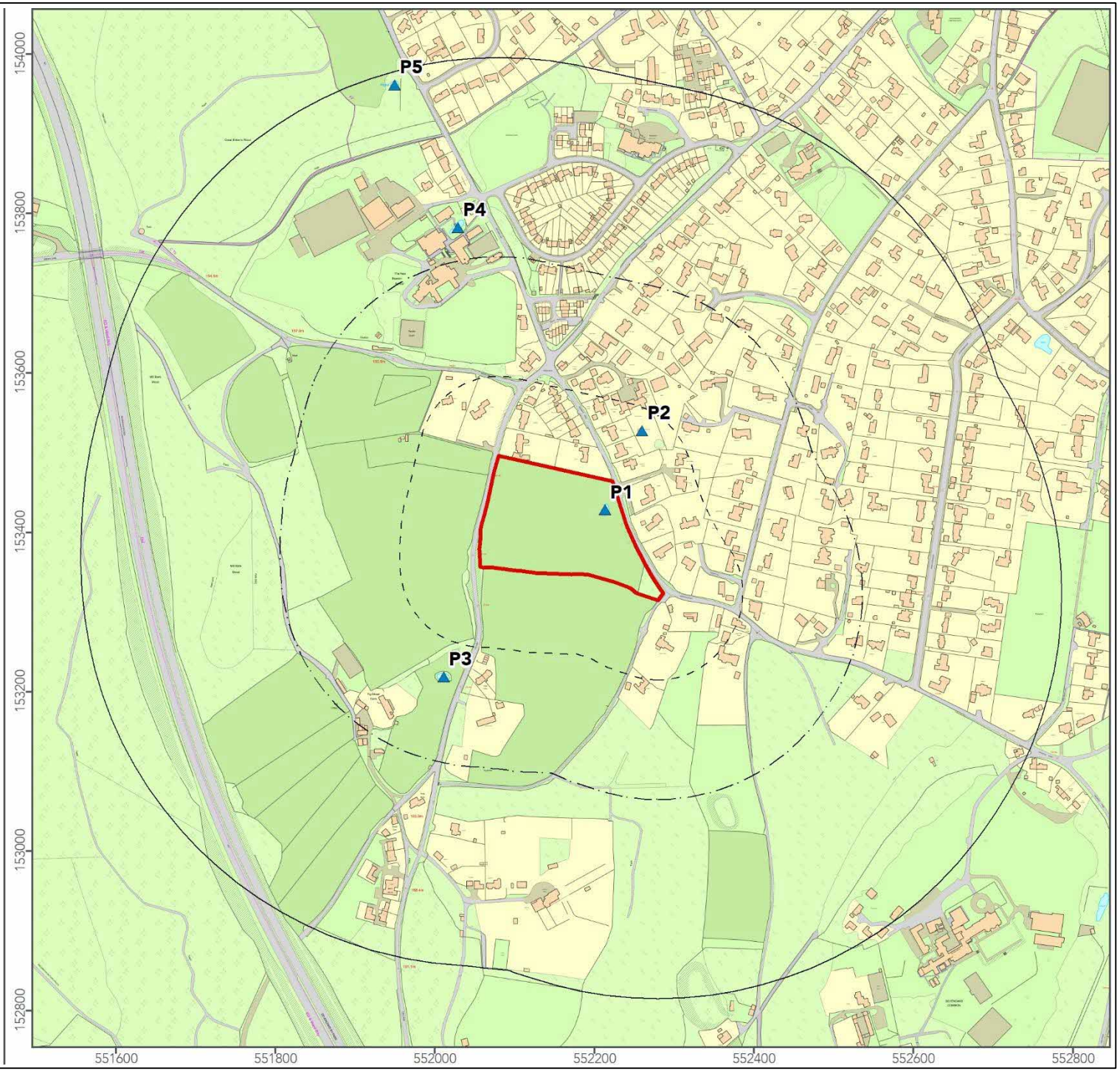
Appendix II: Pond Plan

Ashgrove Road, Sevenoaks, Kent

- Survey area
- Pond numbers
- 100m buffer
- 250m buffer
- 500m buffer



0 200 400 Meters

N

Scale: 1:7,000 **Created by:** AD

Date: Apr 2021 **Reviewed by:** NP

Drawing number:
UE0441ECO-Ponds210406

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Appendix III: Hedgerow Regulations Survey

Hedgerow Regulations assessment results for all hedgerows within and adjacent to the survey area are shown below.

	Hedgerow Number				
Feature	**H1**	**H2**	**H3**	**H4**	**H5**
Adjacent to bridleway/path	No	No	Yes	No	Yes
***Populus nigra, Sorbus torminalis, Tilia cordata, Tilia platyphyllos* present**	No	No	No	No	No
Average number of woody species within 30m sections	3	3	5	2	5
Associated bank or wall	No	No	Yes	No	Yes
Intact hedgerow	Yes	Yes	Yes	Yes	Yes
Trees present within hedge	No	No	Yes	Yes	Yes
Ditch	No	No	No	No	No
Connection points	2	2	3	1	2
Parallel hedge	No	No	Yes	Yes	No
Residential curtilage	No	No	No	Yes	No
IMPORTANT	No	No	Yes	No	Yes

Appendix IV: Botanical Species List

Scientific nomenclature and common names for vascular plants follow Stace (2010). Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA. Vegetation recorded along the pond margin has been included within the semi-improved neutral grassland species list.

Scientific name	Common name	Habitat / Abundance			
		Semi-improved neutral grassland	Broadleaved woodland	Scrub	Hedgerows
Acer pseudoplatanus	Sycamore		F		
Achillea millefolium	Yarrow	R			
Agrostis stolonifera	Creeping bent	R			
Anthriscus sylvestris	Cow parsley				R (GF)
Arrhenatherum elatius	False oat-grass	O			
Arum maculatum	Lords-and-ladies		R (GF)		R (GF)
Betula pendula	Silver birch		F		
***Brachythecium* sp.**	Feather-moss	O			
Cardamine hirsuta	Hairy bitter-cress	R			
Castanea sativa	Sweet chestnut		R		
Cerastium fontanum	Common mouse-ear	R			
Hypochaeris radicata	Cat's-ear				
Cirsium arvense	Creeping thistle	R			
Corylus avellana	Hazel		R		R
Crataegus monogyna	Hawthorn				F
Dactylis glomerata	Cock's-foot	A			
Fagus sylvatica	Beech		R		O
***Festuca* sp.**	Fescue	O			
***Forsythia* sp.**	Forsythia				R
Fraxinus excelsior	Ash		R		O

Galium aparine	Cleavers	R			O (GF)
Geranium dissectum	Cut-leaved crane's-bill	F			
Glechoma hederacea	Ground-ivy				R (GF)
Hedera helix	Common ivy		R (GF)		O
Holcus lanatus	Yorkshire-fog	A			
Hyacinthoides non-scripta	Bluebell		R (GF)		R (GF)
Ilex aquifolium	Holly		F	O	A
Juncus effusus	Soft rush	R			
Lamium album	White dead-nettle	R			
Lamium purpureum	Red dead-nettle	R			
Lolium perenne	Perennial rye-grass	F			
Lonicera periclymenum	Honeysuckle				R
Luzula campestris	Field wood-rush	R			
Petasites albus	White butterbur		R (GF)		
Polygala vulgaris	Common milkwort	R (LF)			
Prunus laurocerasus	Cherry laurel		R		R
Prunus spinosa	Blackthorn		R	O	O
***Rhododendron* sp.**	Ornamental rhododendron				R
Quercus robur	Pedunculate oak			O	O
Ranunculus repens	Creeping buttercup	F			
Rubus fruticosus	Bramble	R	R	A	R
Rumex acetosa	Common sorrel	F			
Rumex obsutifolius	Broad-leaved dock	O			
Sambucus nigra	Elder				R
Senecio jacobaea	Common ragwort	R			
Stellaria media	Common chickweed	R			
***Symphytum* sp.**	Comfrey				R (GF)
***Taraxacum* sp.**	Dandelion	R			
Taxus baccata	Yew				R
Trachystemon orientalis	Abraham-Isaac-Jacob		R (GF)		
Trifolium repens	White clover	F			
Ulmus procera	English elm				R

Urtica dioica	Common nettle	O			O (GF)
Veronica persica	Common field-speedwell	O			
Vicia sativa	Common vetch	R			

D – Dominant >75% A – Abundant 51 - 75% F – Frequent 26 - 50% O – Occasional 11 - 25% R – Rare 1 - 10%
LF – Locally Frequent GF – Ground flora

Appendix V: Plant Species which encourage Bats

Please see following pages which are drawn from Gunnell *et al.* (2012).

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Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
Acer campestre	Field maple	N	T/S	C	Any	Sun / shade				Y	
Acer platanoides	Norway maple		T	S	Well drained / alkaline	Sun / shade				Y	
Acer saccharum	Sugar maple		T	S	Any	Sun / shade				Y	
Achillea millefolium	Yarrow	N	HP	C,F	Well drained	Sun	Y				
Ajuga reptans	Bugle	N	HP	C,F	Any	Sun / shade	Y				
Anthyllis vulneraria	Kidney vetch	N	HP	F	Well drained	Sun	Y				
Aubrieta deltoidea	Aubrieta		H	F	Well drained	Sun / shade		Y			
Betula pendula	Silver birch	N	T	C	Sandy / Acid	Sun				Y	
Cardamine pratensis	Cuckoo-flower	N	HP	F	Moist	Sun / shade					Y
Carpinus betulus	Hornbeam	N	T	C	Clay	Sun				Y	
Centaurea nigra	Common knapweed	N	HP	C,F	Dry, not acid	Sun	Y				Y
Centranthus ruber	Red valerian		HP	F	Well drained / alkaline	Sun	Y				Y
Clematis vitalba	Old man's beard	N	C	F	Well drained / alkaline	Sun				Y	
Corylus avellana	Hazel	N	S	C	Any dry	Sun / shade		Y		Y	
Crataegus monogyna	Hawthorn	N	S	S,C	Any	Sun / shade				Y	
Daucus carota	Wild carrot	N	Bi	S,C,F	Any	Sun	Y				Y
Dianthus spp.	Pinks	N	A-Bi	F	Well drained	Sun	Y	Y			Y
Digitalis purpurea	Foxglove	N	Bi	C	Well drained	Shade / partial shade				Y	Y
Erica cineria	Bell heather	N	S	F	Sandy	Full sun					Y
Erysimum cheiri	Wallflower		Bi-P	F	Well drained	Sun		Y			
Eupatorium cannabinum	Hemp agrinomy	N	H	F	Moist	Sun / shade					Y
Fagus sylvatica	Beech	N	T	C,R	Well drained / alkaline	Sun / shade				Y	
Foeniculum vulgare	Fennel		H	F	Well drained	Sun					Y
Fraxinus excelsior	Common ash	N	T	C,R	Any	Sun / shade				Y	
Hebe spp.	Hebe species		S	F	Well drained	Sun / shade				Y	Y
Hedera helix	Ivy	N	C	F,C	Any	Sun / shade		Y		Y	Y
Hesperis matrionalis	Sweet rocket		H	F	Well drained / dry	Sun / shade					Y
Hyacinhoides non-scripta	Bluebell	N	B	F	Loam	Shade / partial shade		Y		Y	Y
Ilex aquifolium	Holly	N	T	C	Any	Sun / shade				Y	
Jasminum officinale	Common jasmine		C	F	Well drained	Sun		Y			Y
Lavandula spp.	Lavander species		S	F	Well drained / sandy	Sun		Y			Y
Linaria vulgaris	Toadflax	N	HP	C	Well drained / alkaline	Sun	Y				Y
Lonicera periclymenum	Honeysuckle	N	C	F	Well drained	Sun		Y		Y	
Lotus corniculatus	Bird's foot trefoil	N	HP	F	Well drained / dry	Sun	Y				Y
Lunaria annua	Honesty		Bi	F	Any	Sun / partial shade	Y				
Malus spp.	Apple		T	C	Any	Sun				Y	
Matthiola longipetala	Night-scented stock		A	F	Well drained/ moist	Sun			Y		
Myosotis spp.	forget-me-not	N	A	F	Any	Sun	Y	Y			
Nicotiania alata	Ornamental tobacco		A	F	Well drained/ moist	Sun / partial shade			Y		
Oenothera spp.	Evening primrose species		Bi	F	Well drained/ dry	Sun	Y				
Origanum vulgare	Marjoram	N	HP	F	Well drianed/ dry	Sun	Y	Y			
Populus alba	White poplar	N	T	C	Clay loam	Sun				Y	
Primula veris	Cowslip	N	HP	F	Well drained/moist	Sun / partial shade	Y				
Primula vulgaris	Primrose	N	HP	F	Moist	Partil shade	Y	Y		Y	
Prunus avium	Wild cherry	N	T	C	Any	Sun				Y	

Plant Species	Common name	Native	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain Gardens	Hedges/trees	Beds/borders
Prunus domestica	Plum		T	C	Well drained/ moist	Sun				Y	
Prunus spinosa	Blackthorn	N	S	C	Any	Sun / partial shade				Y	
Quercus petraea	Sessile oak	N	T	C,R	Sandy loam	Sun / shade				Y	
Quercus robur	Common oak	N	T	C,R	Clay loam	Sun / shade				Y	
Rosa canina	Dog rose	N	S	C	Any	Sun			Y	Y	
Salix spp.	Willow species	N	S	S,C	Moist	Sun / shade			Y	Y	
Sambucus nigra	Elder	N	T	C	Clay loam	Sun				Y	
Saponaria officinalis	Soapwort	N	HP	F	Any	Sun					
Saxifraga oppositifolia	Saxifrage	N	HP	C	Well drained	Sun	Y	Y			
Scabiosa columbaria	Small scabious	N	HP	F	Well drained/ alkaline	Sun	Y				
Sedum spectabile	Ice plant		HP	F	Well drained/ dry	Sun	Y				
Silene dioecia	Red campion	N	HP	F	Any	Shade / partial shade		Y	Y	Y	
Sorbus aucuparia	Rowan	N	T	C	Well drained	Sun				Y	
Stachys lanata	Lamb's ears		HP	F	Well drained/dry	Sun	Y				
Symphotrichum spp.	Michaelmas daisies		HP	F	Any	Sun					
Tegetes patula	French marigold		A	F	Well drained/moist	Sun					
Thymus serpyllum	Creeping thyme	N	HP/S	F	Well drained/dry	Sun	Y	Y			
Tilia x europaea	Common lime		Type	C	Any	Sun / shade				Y	
Trifolium spp.	Clover species	N	HP	F	Any	Sun	Y				
Veleriana spp.	Valerian species	N	HP	F	Moist	Sun / partial shade			Y		
Verbascum spp	Mulleins	N	Bi,HP	C	Well drained	Sun	Y				
Verbena bonariensis	Verbena		HP	F	Well drained/moist	Sun					
Viburnum lantana	Wayfaring tree	N	S	C	Any	Sun / shade				Y	
Viburnum opulus	Guelder rose	N	S	C	Moist	Sun / shade			Y	Y	
Viola tricolor	Pansy	N	A	F	Well drained/moist		Y	Y			

The table above is derived from the BCT publication Landscape and Urban Design for Bats and Biodiversity (Gunnell et al., 2012) and lists suggested plant species that can provide benefit for bats either by providing a food source for insects or roost potential. The plants listed are predominately native to Britain. The small group of non-native plants is included for their documented value for wildlife. This list has been checked against Natural England's list of invasive non-native plants.

HP: Herbaceous perennial	T: Tree	A: Annual	**Benefit:**		
Bi: Biennial	S: Shrub	B: Bulb	C: Moth caterpillar food plant	F: Flowers attract adult moths	
BiP: Biennial perennial	H: Herb	C: Creeper/climber	S: Sap sucking insects (e.g. whiteflies)	R: Good roost potential	

Appendix VI: Legislation and Planning Context

Legislation

General

The main legislative instruments for ecological protection in England and Wales are: the Wildlife and Countryside Act 1981 (WCA; as amended); Countryside and Rights of Way Act 2000 (CRoW; as amended); Natural Environment and Rural Communities Act 2006 (NERC; as amended); the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations; as amended); and the Environment Act 2021.

WCA 1981 consolidated and amended pre-existing national wildlife legislation in order to implement the Bern Convention and the European Union Wild Birds Directive (Council Directive 2009/147/EC). It complements the Habitats Regulations, offering protection to a wider range of species than the latter. The Act also provided for the designation and protection of nationally important conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSI). Schedules of the act list protected species of flora and fauna, as well as invasive species, and detail the possible offences that apply to these species.

The CROW Act 2000 amended and strengthened existing wildlife legislation detailed in the WCA. It placed a duty on government departments & the National Assembly for Wales to have regard for biodiversity, provided increased powers for the protection and maintenance of SSSI, and created a right of access to parts of the countryside. The Act contained lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The NERC Act 2006 consolidated and replaced aspects of earlier legislation. Section 40 of the Act places a duty upon all local authorities and public bodies in England and Wales to have regard to the purpose of conserving biodiversity in exercising all of their functions, including by restoring or enhancing habitats and species populations. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity (otherwise known as priority habitats/species as listed in the now superseded UK Biodiversity Action Plan). These lists supersede Section 74 of the CRoW Act 2000. These species and habitats are a material consideration in the planning process.

Habitats Regulations 2017 are the principal means by the European Union Habitats Directive (Council Directive 92/43/EEC) was transposed into English and Welsh law, and place a duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria in Europe are designated as Sites of Community Importance by the European Commission, and subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. Since the UK's departure from the European Union the European Commission no longer has a role in designating SACs in the UK. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 establish a single stage designation process, where the appropriate authority is the decision maker. The selection and designation of SACs is based on the criteria set out in Annex III of the Habitats Directive insofar as it applies to the UK, and having regard to the advice of the appropriate nature conservation body.

The 2019 Amendment Regulations have created a new national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SACs, existing Special

Protection Areas (SPA) originally designated as a result of Council Directive 2009/147/EC on the Conservation of Wild Birds, and any new SACs and SPAs designated under the 2019 Regulations. SACs and SPAs in the UK therefore no longer form part of the EU's Natura 2000 ecological network.

The Habitats Regulations also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively (European Protected Species (EPS)). Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade in these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations. Under the Habitats Regulations disturbance includes any activity which is likely to: impair the ability of a EPS to survive, breed, reproduce, or rear/nurture its young; impair the ability of a EPS to migrate or hibernate; or significantly affect the local distribution or abundance of the species.

The Environment Act 2021, among other things: established an Office for Environmental Protection; introduced a mandatory requirement for all new development requiring planning permission to achieve a net gain for biodiversity of at least 10% (although implementation of this is transitionary); amended the NERC Act duty to conserve biodiversity by explicitly adding a duty to enhance; and requires local authorities to produce local nature recovery strategies.

Bats (Chiroptera)

Bats and their roosts are fully protected by protected by the WCA and the Habitats Regulations, and seven species of bats are species of principal importance. The legislation makes it an offence, *inter alia*, to:

- Intentionally kill, injure or take a bat.
- Possess or control a live or dead bat, any part of a bat, or anything derived from a bat.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not.
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- Make a false statement in order to obtain a licence for bat work.

Birds

Birds are protected by the Wildlife and Countryside Act, 1981 (as amended). This legislation makes it an offence to intentionally kill, injure or take away any wild bird. It is also an offence to take, damage or destroy the nest of any wild bird while it is in use or being built or to take or destroy the egg of any wild bird. In addition, certain species are listed on Schedule 1 of the WCA (such as kingfisher *Alcedo atthis*). This makes it an additional offence to intentionally or

recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young. Such species are considered to be in greater need of legal protection or of high nature conservation priority.

Birds of Conservation Concern ("BoCC4) are included on Red and Amber lists (Eaton *et al.*, 2015). Birds on the Red list are those of highest conservation priority due significant and sustained population decreases and/or range contractions (e.g. house sparrow *Passer domesticus* and starling *Sturnus vulgaris)*. Birds on the Amber list are the next most critical group and include species whose population/range have shown moderate declines, or which have recovered to some extent from historical decline, such as dunnock *Prunella modularis*.

Dormouse (Muscardinus avellanarius)

Dormouse is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia*:

- Intentionally kill, injure or take a dormouse.
- Possess or control a live or dead dormouse, any part of, or anything derived from a dormouse.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a dormouse uses for shelter or protection.
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection.

Great crested newt (Triturus cristatus; GCN) (and natterjack toad Bufo calamita)

GCN is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia,* to:

- Intentionally kill, injure or take a GCN (including its eggs).
- Possess or control a live or dead GCN, any part of, or anything derived from a GCN.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a GCN uses for shelter or protection.
- Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.

Otter (Lutra lutra)

Otter is fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia,* to:

- Intentionally kill, injure or take an otter.
- Possess or control a live or dead otter, any part of, or anything derived from an otter.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that an otter uses for shelter or protection.
- Intentionally or recklessly disturb an otter while it is occupying a structure or place that it uses for shelter or protection.

Reptiles

The four common species (slow-worm *Anguis fragilis*; common lizard *Zootoca vivipara*; adder *Vipera berus* and grass snake *Natrix helvetica*) are partially protected under the WCA. They are protected, *inter alia,* against intentional killing and injuring. The handling and translocation of these reptiles does not require a licence.

Smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* are fully protected by the WCA and the Habitats Regulations. The legislation makes it an offence, *inter alia,* to:

- Intentionally kill, injure or take a smooth snake or sand lizard.
- Possess or control a live or dead smooth snake or sand lizard, any part of, or anything derived from a smooth snake or sand lizard.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a smooth snake or sand lizard uses for shelter or protection.
- Intentionally or recklessly disturb a smooth snake or sand lizard while it is occupying a structure or place that it uses for shelter or protection.

Water vole (Arvicola amphibious)

Water vole is fully protected by the WCA. The legislation makes it an offence, *inter alia,* to:

- Intentionally kill, injure or take a water vole.
- Possess or control a live or dead water vole, any part of, or anything derived from a water vole.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a water vole uses for shelter or protection.
- Intentionally or recklessly disturb a water vole while it is occupying a structure or place that it uses for shelter or protection.

Weeds Act 1959 / Ragwort Control Act 2003

This legislation provides for orders to be made for control where notifiable weed species such as ragwort are said to be a problem. The act does not make it illegal to have ragwort (or other weed species) on your land, make it illegal to allow ragwort to spread, or force landowners automatically to control it. However, if DEFRA is satisfied that there are injurious weeds to which this Act applies growing upon any land it may serve upon the occupier of the land a notice in writing requiring them, within the time specified in the notice, to take such action as may be necessary to prevent the weeds from spreading.

Planning context

National Planning Policy Framework (Section 15: Conserving and enhancing the natural environment)

The National Planning Policy Framework (NPPF), published in July 2021, outlines the Government's commitment to the conservation of wildlife and natural features. It is concerned with:

- Protecting and enhancing valued landscapes, sites of biodiversity or geological conservation value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- Maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

- Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current & future pressures;
- Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

The NPPF requires that local plans should "distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value…; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scape across local authority boundaries".

To protect and enhance biodiversity and geodiversity, the NPPF states that planning policies should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should aim to protect and enhance biodiversity by applying the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

The following wildlife sites should be given the same protection as habitats sites:

- potential Special Protection Areas and possible Special Areas of Conservation;

- listed or proposed Ramsar sites; and
- sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site. The policies within the NPPF (and additional guidance contained within Circular 06/2005) are a material planning consideration.

UK/Local Biodiversity Action Plan Designations and Birds of Conservation Concern and Red Data Book Listings

Note that BAP designations and status as RSPB Birds of Conservation Concern or Red Data Book species does not offer any further legal protection, but planning authorities are required to prevent these species from being adversely affected by development in accordance with National Planning Policy and the CROW and NERC Acts. The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contained a list of priority habitats and species of conservation concern in the UK, and outlined biodiversity initiatives designed to enhance their conservation status.

However, as a result of devolution, and new country-level and international drivers and requirements, much of the work previously carried out by the UK BAP is now focussed at a country-level rather than a UK-level, and the UK BAP was succeeded by the 'UK Post-2010 Biodiversity Framework' in July 2012. The UK lists of priority habitats and species nonetheless remain an important reference source and were used to draw up statutory lists of priority habitats and species in England, Northern Ireland, Scotland and Wales. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP required that conservation of biodiversity be addressed at a County level through the production of Local BAPs. These are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. Where they exist, Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Local Planning Policy

The following policy relating to wildlife and biodiversity is contained within the adopted Core Strategy for Sevenoaks (Sevenoaks District Council, 2011):

Policy SP 11

Biodiversity

The biodiversity of the District will be conserved and opportunities sought for enhancement to ensure no net loss of biodiversity.

Sites designated for biodiversity value will be protected with the highest level of protection given to nationally designated Sites of Special Scientific Interest, followed by Local Wildlife Sites and sites of local importance for biodiversity. Designated sites will be managed with the primary objective of promoting biodiversity whilst also providing for appropriate levels of public access.

Opportunities will be sought for the enhancement of biodiversity through the creation, protection, enhancement, extension and management of sites and through the maintenance and, where possible, enhancement of a green infrastructure network to improve connectivity between habitats.

Appendix VII: Legal and Technical Limitations

This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.

UEEC Ltd disclaims any responsibility to the Client and others in respect of any matters outside the scope of this contract. This report is confidential to the Client and is not to be disclosed to third parties. If disclosed to third parties, UEEC Ltd accepts no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any third party relies upon the contents of this report at their own risk and the report is not to be relied upon by any party, other than the Client without the prior and express written agreement of UEEC Ltd.

The advice provided in this report does not constitute legal advice. As such, the services of lawyers may also be considered to be warranted.

Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.

All work carried out in preparing this report has utilised and is based upon UEEC Ltd's current professional knowledge and understanding of current relevant UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and may cause any conclusions to become inappropriate or incorrect. UEEC Ltd does not accept responsibility for advising the Client or other interested parties of the facts or implications of any such changes;

Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;

This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;

Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;

Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;

Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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