Land at Chichele Road, Oxted Environmental Statement

Chapter E Ecology and Biodiversity

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Contents

E1.0 Introduction

E1.1 This Chapter of the Environmental Statement ('ES') has been prepared by Ethos Environmental Planning on behalf of the Applicant, CALA Homes (South Homes Counties) Limited ('the Applicant'). It assesses the Proposed Development described in Chapter C in relation to ecology and biodiversity.

E1.2 The baseline situation is considered before the likely environmental effects of the Proposed Development are identified during its construction and operational phases. Mitigation measures to reduce any adverse environmental effects are identified as appropriate, before the residual environmental effects are assessed.

E1.3 This Chapter is supported by the following technical appendices provided at Volume 2 to this ES:-

- Appendix E1: Background Data Search
- Appendix E2: Bat Survey Results

E1.4 This Chapter is supported by the following technical figures provided at Volume 2 to this ES:-

- Figure E1: Dormouse Survey Map
- Figure E2: Bat Activity Transect
- Figure E3: Bat Static Detector Locations
- Figure E4: Statutory Designated Sites
- Figure E5: Non-Statutory Designated Sites
- Figure E6: UKHab Survey
- Figure E7: UKHab Survey: Linear Habitats
- Figure E8: Site Photographs
- Figure E9: Bat static data graphs

About the Author

E1.5 The Chapter was written by Ellie Shearn (BSc Hons, CIEEM) an Ecologist with over 2 years' experience in relevant field and report writing experience on a range of planning applications. The Chapter has been checked and quality assured by Jim Phillips (MSc, BSc (Hons), MCIEEM). Jim's experience in ecology covers a wide range of projects and clients and his focus is on interpreting relevant policy and legislation to ensure projects are delivered efficiently and meet the needs of the client. He holds survey licenses for bats and great crested newts in England and Wales and is a registered consultant on Natural England's Bat Low Impact Class License (BLICL) and Level 2 Earned Recognition (ER) accreditation. Jim has written and checked ES Chapters for a range of projects across England.

E2.0 Policy Context

E2.1 This section sets out legislation, national and local policy of relevance to the technical assessment in this Chapter.

Relevant Legislation

E2.2 The following pieces of legislation have been considered within this assessment with an explanation of their relevance provided.

Table E2.1 Key Legislation of Relevance

Legislation	Purpose	Relevance
The Habitats Directive and Birds Directive Transposed into legislation by The Conservation of Species and Habitat Regulations 2017 (as amended) [Ref 1].	Forms the cornerstone of Europe's nature conservation policy. It is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection. All in all, the Directive protects over 1,000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance.	Relevant to the presence of commuting/ foraging bats on-Site, utilising hedgerows.
Wildlife and Countryside Act 1981 (as amended, including by the Countryside and Rights of Way Act 2000) [Ref 2].	Provides legislative protection for certain species. The Act also prohibits the spread of invasive plant species, as well as providing the mechanism for the designation and protection of Sites of Special Scientific Interest ('SSSI')	Relevant to the presence of bats on-Site.
Natural Environment and Rural Communities Act 2006 (the 'NERC' Act) [Ref 3].	Places a duty on all public authorities, including local planning authorities, to consider biodiversity in their work. Local planning authorities are to ensure that there is no net loss of biodiversity on a site, no net loss in habitat connectivity and aims to enhance biodiversity.	Enhancements for biodiversity
Hedgerows Regulations 1997 [Ref 4].	Protects 'important hedgerows' from being removed (uprooted or destroyed). Hedgerows are protected if they are at least 30 years old and meet at least one of the criteria listed in part II of schedule 1.	Relevant to the Presence of native hedgerows on-Site boundaries.

National Policy

E2.3 The National Planning Policy Framework ('NPPF') [Ref 5] sets out national planning policy, including policies of relevance to conserving and enhancing the natural environment. Policies of relevance to the Proposed Development (parts of paragraphs 180 and 185) have been summarised below.

E2.4 Paragraph 180:

"When determining planning applications, local planning authorities should apply the following principles:

a) 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;

d) 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."

E2.5 Paragraph 185:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the Site or the wider area to impacts that could arise from the development. In doing so they should:

[…]

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."

E2.6 The NPPF is supported by the Government Circular *Biodiversity and Geological Conservation, ODPM 06/2005* [Ref 6] and the Planning Practice Guidance ('PPG'), of which, the relevant guidance for this assessment is from Paragraphs 009 to 035 (Reference IDs: 8-009-20190721 to 8-035-20190721) [Ref 7].

Local Policy

Tandridge District Core Strategy (Adopted 2008) [Ref 8]

E2.7 The key policy of the Core Strategy with relation to ecology and biodiversity in the Tandridge District Core Strategy is Policy CSP 17: Biodiversity. This policy states that developments should protect biodiversity and aim to restore or create suitable semi-natural habitats and ecological networks to sustain wildlife in accordance with the Surrey BAP aims. Downlands Countryside Management Project, Local Nature Reserves and Community Wildlife Areas will also be supported.

Tandridge Local Plan Part 2: Detailed Policies 2014 – 2029 (Adopted 2014) [Ref 9].

E2.8 Several policies relevant in whole, or part to nature conservation within the Local Plan are provided below. Parts of this policy with most relevance to this scheme have been underlined.

Policy DP7: General Policy for New Development.

E2.9 This policy states that landscaping is an integral part of all proposed developments, with provisions for suitable new planting, trees and boundary treatments to enhance the Site from the outset. Existing features such as trees and hedgerows should be retained wherever possible and where a new road is required, a suitably hard and/or soft landscaped gap will be required. The policy also states that landscaping schemes, which makes provision for the retention of existing trees, should be submitted alongside the planning application when

important trees are present. If trees are felled, then the Council may require replacement planting, as part of any permission granted.

Policy DP19: Biodiversity, Geological Conservation and Green Infrastructure.

E2.10 This policy states that development proposals which seek to promote nature conservation and management, restore or create Priority Habitats or protect, enhance or increase the provision of multi-functional Green Infrastructure ('GI') will be favoured by the Council. In addition, proposals which would result in harm to local, national or statutory sites of biological importance or the broader GI network will be refused planning permission unless alternative locations with less harmful impacts are demonstrated to be unsuitable. Otherwise measures to avoid the harmful impacts arising, sufficiently mitigate or compensate for their effects must be incorporated by the proposals. The granting of planning permission will be wholly exceptional where a proposal is likely to harm an irreplaceable environmental asset of the highest designation directly or indirectly, (i.e., a Site of Special Scientific Interest ('SSSI'), Ancient Woodland or veteran trees). Exceptions will only be made where benefits of development at the Site clearly outweigh both the impacts on the features of the Site and on any broader networks of SSSIs or outweigh the loss of any Ancient Woodland or veteran trees. Proposals affecting (directly or indirectly) protected or Priority Species will only be permitted where it can be demonstrated that appropriate mitigation measures will be implemented to prevent possible harm.

Policy TLP35: Biodiversity, Ecology and Habitats

E2.11 This policy states that development proposals should protect biodiversity and natural habitats and contribute to the wider Green and Blue Infrastructure (see above). Proposals should demonstrate a net gain in biodiversity, with schemes aiming to restore or create appropriate wildlife habitats and ecological networks; in addition, opportunities for Priority Habitat creation and restoration will be sought. Proposals likely to adversely affect a SSSI, LNR, SNCI or pSNCI will not be permitted unless the benefits of the development outweigh the adverse impacts on the designated site and any adverse impacts on the wider biodiversity network. Where adverse impacts are unavoidable, the impacts must be adequately and proportionately mitigated; compensation will be required as a last resort.

Other plans and strategies

E2.12 It is anticipated that the policies in the adopted development plan will apply to the planning application, noting that the Council submitted the emerging Local Plan 2033 to the Planning Inspectorate for examination in January 2019 under Regulation 22 of the Town and Country Planning (Local Planning) (England) Regulations 2012.

E3.0 Assessment Methodology & Significance Criteria

Assessment Methodology

E3.1 This assessment has been undertaken in line with current guidance produced by the Chartered Institute of Ecology and Environmental Management ('CIEEM') as will be set out below. It consists of a number of stages outlined in the following paragraphs.

Scope of Assessment

E3.2 This assessment has been undertaken following the approach set out in the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' Ref 10. The assessment has considered 'Important Ecological Features' that are present within the 'Zone of Influence' of the project. Important Ecological Features for this project comprise[1]:

- Designated nature conservation-Sites;
- Habitats and Species of Principal Importance for the Conservation of Biodiversity in England;
- Legally protected species; and
- Red Listed or rare species (based on Red Data Book lists, Birds of Conservation Concern and species considered to be nationally rare / scare).

E3.3 The Zone of Influence ('ZoI') is the area over which the project could have an influence on ecological features. The ZoI is likely to vary for different features. However, in general terms the ZoI for the Proposed Development is considered to comprise the land within the red line boundary as well as immediate adjacent habitat features. It also includes designated nature conservation-Sites in the surrounding area.

E3.4 The scope of the assessment was informed by an 'ecological walkover' undertaken in November 2021. The purpose of this was to identify the habitats on-Site, their potential for protected species and to establish the scope of surveys that would be required to inform a future planning application at the Site.

E3.5 The overall assessment has been informed by guidelines provided in CIEEM (2017) Guidelines for Ecological Report Writing Ref 11.

Background Data Search

E3.6 A background data search was received from Surrey Biodiversity Information Centre on 17th May 2022. The search area included records of non-statutory designated sites and protected and notable species within 1km of the Site. Full results are set out in Appendix E1 (Volume 2 of this ES).

E3.7 An additional search for statutory designated sites within 2km of the Site and granted European Protected Species ('EPS') licences within 1km of the Site boundary was undertaken using publicly available information (DEFRA Magic map).

[1] Box 14 in CIEEM's ECiA Guidelines (2018)

UK Habitat Classification Survey

E3.8 A UKHab survey was undertaken on 24th May 2022, details of which are shown in Figure E6 and E7. The survey incorporated detailed assessment of the land within the Site boundary, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the Site and the predominant and notable species of flora. This survey was informed by the UKHab classification User's Manual [Ref 12].

Methodology for surveying grassland

E3.9 Grasslands were surveyed using a systematic approach, using 1x1m² quadrats sample. A minimum of three quadrats were undertaken of each grassland section. However, this can be increased to take into account variation across the grassland or the extent of the field. Information collected within each quadrat included aspect, slope, average ground cover, sward variation, species, and their percentage cover.

E3.10 Where the grassland differed to a certain extent or was divided by field boundary such as hedgerows it was considered that the grassland was a different habitat parcel, and another assessment was undertaken.

E3.11 This survey methodology provides information required to classify the grassland to the correct grassland habitat type and provides sufficient information to undertake the condition assessment within the Biodiversity Net Gain metric 3.0. Photographs of each habitat were taken with an iPhone camera and saved for evidence of the defined habitat type, as seen in Figure E8.

E3.12 The survey was undertaken using the Survey 123 NVC application on an iPhone smartphone whilst on-site, and was saved for evidence.

Protected Species Surveys

NERC S. 41 Mammals

E3.13 The survey included an assessment of the habitats on-Site for their potential to support NERC Section 41 species such as hedgehog *(Erinaceus europaeus)*, polecat *(Mustela putorius)*, harvest mouse *(Micromys minutus)* and brown hare *(Lepus europaeus)*. This included a search for nests, runs, latrines, paw prints, and live specimens.

Badger

E3.14 The survey for badger *(Meles meles)* included a search of the Site and surrounding habitats for any evidence of badgers, including setts, foraging signs (snuffle holes), runs and latrines. The fence lines, grassland, bare ground, woodland and scrub habitats were systematically surveyed for evidence of badgers in the form of:

- Faeces (dung pits): badgers usually deposit faeces in characteristic excavated pits, concentrations of which (latrine sites) are typically found at home-range boundaries;
- Setts: comprising either single isolated holes or a series of holes likely to be interconnected underground;

- Paths between setts or leading to feeding areas;
- Scratching posts at the base of tree trunks;
- Hair traces;
- Snuffle holes (foraging), formed during foraging and comprising characteristically disturbed ground vegetation; and,
- Footprints.

E3.15 The field survey methods described above are consistent with those advocated by Ref 13 . All field survey work was undertaken between April and September 2014, embracing the period when territorial marking is taking place and badgers are mobile and foraging.

Hazel Dormouse

E3.16 The survey included an assessment of the potential of the Site for hazel dormouse *(Muscardinus avellanarius)*, focusing on the connectivity and suitability of the habitat on-Site.

E3.17 48 dormouse tubes were deployed in suitable habitat across the Site, as shown in Figure E1 on 24th May 2022 at roughly 20 metre intervals and were left on-site for the entire survey period. The tubes were checked once a month between May and October 2022. Table C3.2 below (taken from Table 5 of the *Dormouse Conservation Handbook* Ref *14*) shows the index of probability of finding evidence of dormouse in the nest tubes. The score is based on 50 tubes deployed and a minimum score of 20 must be reached to determine presence/likely absence.

Table C3.2 15 Index of probability of finding dormice present in nest tubes in any one month

Month	Score
April	***1***
May	***4***
June	**2**
July	**2**
August	**5**
September	**7**
October	**2**
November	***2***
Total	**36**

E3.18 The tubes were deployed and checked from May to October 2022 and a score of 22 was achieved which can be considered a valid survey effort to determine presence/absence. The results of the surveys are discussed below.

Bats

E3.19 The methodology for the bat survey has been informed by the Bat Conservation Trust *Bat Surveys Good Practice Guidelines* Ref *15*.

Habitats Assessment

E3.20 The habitats on-Site were assessed for their suitability to support foraging and commuting bats. This assessment was also contextualized through examination of suitable habitat and

features in the wider landscape and possible flight-lines across the proposed site following natural linear features such as hedgerows.

Trees for Bats

Preliminary ground Roost Level Assessment

E3.21 The methodology draws upon guidance within Collins [Ref 15] and the Bat Tree Habitat Key (2018) [Ref 16].

E3.22 The surveys were undertaken using binoculars and a high-powered torch to view features from the ground. Details on the potential roosting features were recorded as well as information to identify the specific trees. This included tree height, diameter at breast height, species, mortality of tree, and the tree location.

E3.23 Potential roosting features on trees were identified as any feature within a tree that could provide shelter for a roosting bat. These features result from the following three mechanisms:

- Disease and Decay;
- Damage; and,
- Associations.

E3.24 Trees with no potential roost features were assessed as having 'negligible' potential for roosting bats and no further surveys were carried out. Trees with features suitable for roosting bats were assessed as having 'low', 'moderate' or 'high' potential for bats. Trees with 'low' potential for roosting bats were not subject to additional survey, in line with BCT survey Guidelines. Justification is provided, in the form of a detailed description and photographic evidence, to demonstrate how the classification of 'low potential' had been made. Recommendations will be made as necessary if any trees with low potential are to be impacted.

E3.25 Trees assessed as moderate or high potential and considered likely to be impacted by the Proposed Development (e.g., directly through removal or indirectly from light spill) were subject to further Potential Roost Features ('PRF') inspections or Aerial Inspection Surveys as detailed below.

E3.26 The definitions of 'negligible, low, moderate and high' used in this assessment are in accordance with those in BCT Survey Guidelines 2016:

- **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 or features seen with only very limited roosting potential.
- **Moderate**: A structure or 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 of high conservation status (with respect to roost type only).
- **High**: A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Activity surveys

E3.27 Bat activity surveys were undertaken on-Site to highlight any important commuting or foraging features on-Site. This included two surveyors walking a planned transect of the Site. The number of transects and number of surveys was informed by the habitats assessment which stated that the Site provided high potential for bats.

E3.28 Information recorded throughout the survey included the species present, their location, behaviour, and the identification of habitat features which were frequently used by the species. Surveyors were equipped with EMT bat detectors and with notes were collected on Survey 123.

E3.29 The transect is displayed within Figure E2 and the dates of the surveys were the 24th May, 26th July and 1st September 2022.

Static Surveys

E3.30 Bat static surveys were used to provide the composition of bat species present on-Site and were used to support the findings of the bat activity surveys. Bat surveys were undertaken in June, July and September 2022 with three statics deployed over a five-day period each month. The number and timings of the surveys were informed by the habitats assessment undertaken within the extended UKHab survey.

E3.31 The calls were processed and analysed using the British Trust for Ornithology ('BTO') Pipeline. This software provides a confidence score for each species returned and highlights rare species which are unlikely to be detected in the survey area. Results with a low confidence <50% probability were excluded from the analysis. This data was then input into the Microsoft Excel software and analytic graphs and tables were produced.

Birds

Habitat assessment

E3.32 The bird survey included an assessment of the habitats on-Site for their potential to support protected and notable species of bird as well as their potential to support breeding birds.

Reptiles

E3.33 The potential presence of reptiles on-Site was assessed considering the habitats present (availability of refugia and basking areas) and suitability of surrounding environment. Where possible, attempts to confirm reptile presence on-Site were made following *Froglife Advice Sheet 10 – Surveying for Reptiles* [Ref 17] through direct observation in reptile "hotspots" and checking of any existing refugia.

Amphibians

E3.34 The Site was examined for suitable waterbodies and for breeding terrestrial habitat. Terrestrial habitats providing sufficiently structured vegetation in which amphibians may forage or hibernate over winter were also surveyed for.

E3.35 In addition to the on-site assessment, *Great Crested Newt Mitigation Guidelines* [Ref 18] (English Nature, 2001) recommend that a desktop analysis of ponds within 500m of the

Site be undertaken, to identify any potential breeding ponds which may require further survey. Ponds within 500m of the Site were mapped on GIS with an OS OpenData base map at 1:10,000 resolution.

Invertebrates

E3.36 Due to the many invertebrate taxonomic groups that exist, the often-large differences in invertebrate diversity between habitats and the many survey techniques available, invertebrate surveys are highly specific to individual sites. Therefore, an assessment of the potential site for invertebrates was undertaken, including the need for targeted surveys.

Significance Criteria

E3.37 The CIEEM guidance (2016, [Ref 18]) has been used to assign significance or value to ecological features. Value is expressed according to seven levels, from 'International' to 'Sub-Parish'. The justification for selecting the level of value is given for each feature in the assessment. These evaluation categories are described in Table C1.1.

E3.38 Alongside the CIEEM assessment criteria, the following additional criteria were employed:

- Schedules and Annexes of UK and European wildlife legislation (e.g. Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended);
- Species and Habitats of Principal Importance for Conservation in England; and
- Taxi-specific conservation lists (e.g., Red Data Lists; Red/Amber Lists).

Table C3.3 Criteria for assessing receptor Sensitivity

Receptor Sensitivity	Criteria for defining receptor sensitivity
High	International value (internationally designated sites, or sites meeting criteria for international designation; sites supporting populations of internationally important species). National value (nationally designated sites (e.g. SSSIs) or sites meeting SSSI selection criteria; sites containing viable areas of threatened habitat identified as Priority Species or supporting a viable population of Red Data Book species or supplying critical elements of their habitat requirements).
Medium	Regional value (sites exceeding county-level designations but not meeting SSSI criteria; sites containing viable areas of threatened habitats on the Regional BAP, supporting viable populations of species that are nationally scarce or included in the regional BAP due to rarity). County value (sites meeting criteria for county or metropolitan designations; sites containing a viable area of a threatened habitat identified on the County BAP or supporting viable populations of county or metropolitan rarities (e.g. county BAP or county 'Red Data Book' species)).
Low	District value (undesignated sites or features that are considered to appreciably enrich the habitat resource within the context of the Borough or District). Parish value (areas of habitat or populations of species considered to appreciably enrich the habitat resource within the context of a parish or neighbourhood).
Negligible	Sub-Parish (ecological resource not meeting any of the above criteria, of importance within the context of the application-Site only).

E3.39 The effects of Proposed Development during and after construction on each valued feature have been assessed and the type of each effect characterised primarily according to its magnitude. In order to maintain consistency across the ES, the magnitude of effect is expressed using the criteria summarised in Table C3.4.

Table C.4 Criteria for assessing magnitude of change to receptors

Magnitude of Change	Criteria for defining magnitude of change

High	Any significant effect on an ecological receptor of high value (National or International) value; or a permanent and irreversible effect on the conservation status of an ecological receptor of medium value (e.g., loss of an area designated as a Site of Special Scientific Interest, or loss of a viable population of a NERC S41 Priority Species).
Medium	The effect is on an ecological receptor of medium (District, County or Regional) value or the effect is considered unlikely to have a permanent effect on the overall conservation status or integrity of a receptor of higher ecological value (e.g. loss of 30% of breeding bird habitat on a site).
Low	The effect is on an ecological receptor of low (Parish) value or is considered unlikely to significantly affect the conservation status or integrity of an ecological receptor of higher value (e.g., temporary hedgerow removal).
Negligible	The effect is certain not to have an adverse effect on the conservation status of a species or the integrity of a designated site or habitat. In accordance with CIEEM guidance, effects significant at less than Parish value (i.e. at 'Sub-Parish' level) are considered not significant.

Table 5 Criteria for assessing significance of effects

Magnitude of Change	**Sensitivity of Receptor**			
	High	**Medium**	**Low**	**Negligible**
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor to Moderate	Negligible
Low	Moderate	Minor to Moderate	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

E3.40 The significant of impacts has been identified on the aforementioned scales to a level of significance described below:

- Major Adverse or Beneficial;
- Moderate Adverse or Beneficial;
- Minor Adverse or Beneficial;
- Negligible; and
- Nil/Neutral.

E3.41 It has been determined that any impacts of Minor to Moderate or above are considered 'Significant' impacts in EIA terms.

Consultation

E3.42 Responses received over the course of public consultation frequently referred to the proximity of the Site to the Surrey Hills Area of Outstanding Natural Beauty ('AONB') and adjoining Ancient Woodland. While not undertaken in direct connection with the preparation of the EIA, these responses are recognised and the assessment contained within this Chapter therefore seeks to assess the potential for the Proposed Development to have significant effects on ecology.

Assumptions and Limitations

E3.43 Ecological assessments encounter limitations with the data that can be collected, including:

- Desk study data which may not accurately reflect actual species' presence and distribution at the Site or locality, however given the background data search and the in-depth on-site assessment, it has been determined that this is not a significant limitation to the overall assessment.
- On-Site field surveys cannot ensure the absolute and complete characterisation and prediction of the ecology of the Site or surrounding natural environment, additionally as habitats are subject to change where species may leave or colonise a site after surveys have taken place, the results become decreasingly reliable as time progresses. However, given the in-depth nature of the surveys and the date of surveys undertaken, it has been determined that this is not a significant limitation to assessment.
- The southern woodland parcel on-site was not internally accessed due to its dense and scrubby nature, and was deemed unsafe to access. However, given the assessment from the outside and fringes of the parcel, it has been determined that this is not a significant limitation to the overall assessment.

E4.0 Baseline Conditions

Current Conditions

E4.1 The Site is situated within the settlement of Oxted, approximately 450m south of the M25, and covers an area of approximately 6.36ha. It comprises an irregularly shaped agricultural field and deciduous woodland within the north.

Designated Sites

Statutory Designated Sites

E4.2 The Site is located within 1km of the Woldingham and Oxted Downs Site of Species of Scientific Interest ('SSSI'). There are also several parcels of Ancient Woodland within the Site, and the wider 1km. The locations of the designated sites are located in Figure E4.

Non-statutory Designated Sites

E4.3 There are two Sites of Nature Conservation Importance ('SNCI') located within 1km of the Site; Five Acre Shaw and Lodge Wood and Chalkpit Wood. There is also one potential SNCI ('pSNCI') located within the search radius, The Bogs. The locations of the designated sites are located in Figure E5.

Table E4.1 Designated Sites and Citations in Proximity to the Site

Designated Site	Citation	Distance from the Site
Woldingham and Oxted Downs SSSI	The Site includes rich chalk grassland, scrub and mature and secondary woodland supporting many species of characteristic plants and animals, a number of which are rare.	850m north
Five Acre Shaw and Lodge Wood SNCI	Ancient and secondary semi-natural woodland. Rich Ancient Woodland with characteristic ash, hazel and maple coppice trees. 26 Ancient Woodland indicator species were also present.	950m west
Chalkpit Wood SNCI	Ancient semi-natural woodland larger than 5ha. The Site supports a rich flora including a County rarity.	500m northwest
The Bogs pSNCI	N/A	800m southwest

E4.4 All SNCIs were assessed to be of **County importance** for nature conservation, in line with their designation. Non-statutory designated sites were assessed to be sufficiently distant from the Site to avoid impacts as a result of the Proposed Development, with the exception of Chalkpit Wood. The only designated site to be considered further within this assessment is Chalkpit Wood SNCI.

Habitats

E4.5 The Site comprises a modified grassland field with boundary hedgerows, an area of woodland and areas of mixed and bramble scrub. There is an area of hardstanding along and at the entrance of the Site. The Site is bordered by residential development to the east, south and west, with agricultural fields to the north.

UKHab Survey

E4.6 The following paragraphs provide descriptions of the habitats identified using the UK Habitat classifications survey ('UKHab'). Figure E6 and Figure E7 (Volume 2 of this ES) map these habitats and linear habitats.

Modified grassland

E4.7 The majority of the Site comprises a modified grassland field with evidence of seeding. Hay cut grasses are determined to be dominant. The grassland edges are encroaching scrub and tall ruderal vegetation, including bramble (*Rubus fruticosus*), common nettle (*Urtica dioica*) and cleavers (*Galium aparine*).

E4.8 The grassland species included Yorkshire fog (*Holcus lanatus*), cock's foot (*Dactylis glomerata*), common bent (*Agrostis capillaris*), ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), ragwort (*Jacobaea vulgaris*), hawkbits (*Leontodon spp*), oxeye daisy (*Leucanthemum vulgare*) and common vetch (*Vicia sativa*).

E4.9 The other neutral grassland does not meet the criteria as a Habitat of Principal Importance and is not considered to be of particular nature conservation importance. It is therefore only considered further in this assessment in relation to its potential to support protected species.

Other woodland; broadleaved

E4.10 The north and west boundaries of the Site include an area of ancient woodland with a range of woody species present, including: honeysuckle (*Lonicera spp*), hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), oak (*Quercus robur*), holly (*Ilex aquifolium*), field maple (*Acer campestre*), rose spp (*Rosa spp*), yew (*Taxus baccata*), elder (*Sambucus nigra*), apple (*Malus domestica*) and blackthorn (*Prunus spinosa*).

E4.11 The understory of the woodland is comprised of: bluebell spp (*Hyacinthoides non-scripta*), bramble, common ivy (*Hedera helix*), cleavers, ground ivy (*Glechoma hederacea*), dogs mercury (*Mercurialis perennis*), speedwell spp (*Veronica spp*), garlic mustard (*Alliaria petiolata*), red campion (*Silene dioica*), cow parseley (*Anthriscus sylvestris*), lords and ladies (*Arum maculatum*), pendulous sedge (*Carex pendula*), wood avens (*Geum urbanum*), green alkanet (*Pentaglottis sempervirens*), wood medik (*Medicago lupulina*) and herb Robert (*Geranium robertianum*).

E4.12 There are several mature trees within the woodland and natural regeneration and coppice management was present. The ancient woodland parcel and broadleaved woodland are Habitats of Principal Importance in England and is considered to be of **County and Local importance** for nature conservation, respectively.

Bramble scrub

E4.13 A small section of bramble scrub is located along the western boundary of the Site, adjacent to the boundary hedgerow, as shown in Figure E8, Photos E8.5 and E8.6. The bramble scrub has no particular ecological importance for nature conservation and is not considered further in this assessment.

Mixed scrub

E4.14 There is a small section of mixed scrub along the western strip of the Site shown in Photos E8.7 and E8.8 (Figure E8. Volume 2 of this ES). This area is very dense, and no access has been found. The mixed scrub has no particular ecological importance for nature conservation and is not considered further in this assessment.

Developed land, sealed surface

E4.15 There is a small area located within the south section of the Site (shown in Photos E8.9 and E8.10, In Figure E8, Volume 2 of this ES), comprised of developed land, sealed surface. This area is comprised of a tarmac access route that led into the wider site. The area is of no particular ecological importance for nature conservation and is not considered further in this assessment.

Hedgerows (Linear Habitats)

E4.16 There are five hedgerows on-Site (labelled H1 to H5 in Figure E7, Volume 2 of this ES), which are described in in the following paragraphs.

Native hedgerow

- H1 – native hedgerow contained at the eastern boundary of the Site, which includes mature hawthorn, field maple, oak, hazel, blackthorn and bramble;
- H3 and H4 – native hedgerow contained at the southern area of the Site, comprised of mature, dense treed. The species include: hawthorn, wild cherry (Prunus avium), hazel, dogwood (Cornus sanguinea), blackthorn and beech (Fagus sylvatica). The understory contained bramble, common nettle and hogweed (Heracleum spp); and
- H7 – native hedgerow located at the south-western boundary of the Site, comprised of a hedgerow containing field maple and beech.

Native hedgerow with trees

- H2 – hedgerow with trees along the east boundary of the Site. Species present include hawthorn, blackthorn, ash, bramble, hazel, oak and field maple; and
- H5 – contained at the Site access to Bluehouse Lane, Species present include yew, sycamore (*Acer pseudoplatanus*), laurel (*Laurus spp*), holly, hawthorn, ash and oak.

Ornamental non-native

- H6 – an ornamental, non-native hedgerow comprised of conifer and laurel.

E4.17 All of the hedgerows on-Site qualify as Habitats of Principal Importance in England and are assessed to be of **Local importance** for nature conservation.

NERC S. 41 Mammals

E4.18 The background data search returned five records of hedgehog (*Erinaceus europaeus*), dated 1997 – 2014.

E4.19 The Site is dominated by modified grassland with hedgerows, which provides good potential habitats for hedgehog. The key features for hedgehog were assessed to be the

grassland, boundary hedgerows, woodland and scrub areas of the Site. The north and east of the Site have good connectivity to the wider arable environment through a network of hedgerows. Overall, it is considered that the Site holds potential for hedgehog.

E4.20 Hedgehog are listed as a Species of Principal Importance for the conservation of biodiversity in England. Any animals using the Site are likely to form part of a wider population within the local area, which would be of **Local importance** for nature conservation.

E4.21 The Site was considered unsuitable for harvest mouse, brown hare, and polecat due to a lack of suitable habitat. The species are therefore considered likely absent from the Site and is not considered further in this assessment.

Badger

E4.22 There were no records of badger (*Meles meles*) returned within the data search.

E4.23 Habitats within the Site provide suitable foraging habitat for badger and mammal tracks were recorded on-Site, particularly in the south-west of the Site.

E4.24 No evidence of badger foraging was identified on-Site during the surveys. The Site was dominated by grassland which provides good habitat potential for badger. The Site was also connected to suitable habitat such as farmland to the east and north, with residential areas with gardens to the south and west of the Site. Therefore, it is considered that badgers are likely not currently present on-Site within setts, however there is potential for badger to forage and commute on-Site.

E4.25 Badgers are not a Species of Principal Importance and are only considered further in this assessment on a precautionary basis as they are a legally protected species under the Protection of Badgers Act 1992 [Ref 19].

Hazel Dormouse

E4.26 The background data search returned no records of hazel dormouse (*Muscardinus avellanarius*).

E4.27 Two EPS licences were granted in 2020 for hazel dormouse (2020-47344-EPS-MIT and 2020-47344-EPS-MIT-1), located approximately 750m northeast of and with direct links to the Site.

E4.28 Presence/absence surveys were undertaken in 2022 and determined that there was no evidence of hazel dormouse on-Site. Given the number of dormouse tubes deployed on-Site (48) and the duration of the survey period (May to October 2022), the minimum threshold score of 20 within the index of probability has been reached, and therefore the results are determined to be valid.

E4.29 No signs of dormouse were recorded during surveys in 2022. Therefore, dormice are assessed to be likely absent from the Site and are not considered further in this assessment.

Bats

Data Search

E4.30 Twelve records of bats were identified by the data search, five records were of unidentified bats, three records were of common pipistrelle (*Pipistrellus pipistrellus*), one record was of soprano pipistrelle (*Pipistrellus pygmaeus*), one record was of an unidentified *Pipistrelle* spp bat and one record was of brown long-eared bat (*Plecotus auritus*).

E4.31 There was one EPS licence recorded within 1km of the Site relating to bats (2017-28046-EPS-MIT), determined for common pipistrelle in 2017, located approximately 320m southeast of the Site.

E4.32 The habitats on-Site are dominated by modified grassland and woodland, which provides moderate habitat suitability for bats. There were scattered mature trees with potential roost features within the hedgerows (H2, H4 and H5). The woodland provided roosting and foraging opportunities for bats.

E4.33 The Site is located within 600m of the River Eden and its associated habitats. It was considered that the Site was connected to the brook via hedgerows out of the east of the Site and was likely to function as a part of the commuting corridor.

E4.34 Overall, it was considered that the Site provided moderate potential for bats**.**

Site context

E4.35 The Site includes a parcel of Ancient Woodland and links to hedgerows and other parcels of Ancient Woodland in the wider area. Of particular importance to this are any potential areas of foraging and commuting habitat that may be relevant to the Site. The boundary hedgerows throughout the Site provide potential commuting features. These features along with the grassland and woodland could also provide foraging opportunities for bats.

Roosting (Trees)

E4.36 A search for potential roosting features on the trees was undertaken. It was assessed that several of the trees had features which could provide roosting opportunities for bats, particularly in the Ancient Woodland in the northeast of the Site.

E4.37 The requirement for further climbing or emergence surveys of the trees on-Site for roosting bats is assessed in this Chapter against the Proposed Development (Section E5.0).

Activity transect surveys

E4.38 Three bat activity transect surveys were undertaken in May, July and September 2022 with eight species recorded, namely: common pipistrelle, soprano pipistrelle, brown long-eared, noctule, *Myotis* spp. The route of these transects is shown in Figure E2, at Volume 2 of this ES.

E4.39 The highest levels of activity were recorded in the northern section of the Site, with common and soprano pipistrelle recorded foraging within the woodland and commuting under the canopy across the north of the Site.

E4.40 During the May and September activity transect, a maximum of fourteen bats were seen within or adjacent to the woodland throughout the surveys. During the July activity survey, higher levels of activity were recorded along the southern access track to the Site with commuting common pipistrelle and noctule.

E4.41 The detailed results of the activity surveys are detailed in Appendix E2 (Volume 2 of this ES).

Static detector surveys

E4.42 Eleven species were recorded on the static detectors over the surveys taken in June, July and September of 2023, namely serotine, Brandt's bat, Daubenton's bat, Natterer's bat, *Myotis* spp., Leisler's bat, noctule, Nathusius's pipistrelle bat, common pipistrelle, soprano pipistrelle and brown long-eared bat.

E4.43 Common pipistrelle was the most abundant species recorded comprising more than 74% of all recordings, followed by noctule (16%). Low numbers brown long-eared bat (0.96%) were also recorded. The highest total volume of calls across all survey periods was recorded by the detectors deployed at location 3 (shown in Figure E3, Volume 2 of this ES) on the northern boundary. The survey period with the highest volume of bat calls was the September survey period.

E4.44 Location 3 on the northern boundary of the Site recorded the highest numbers of common pipistrelle bats, Brandt's bat, Daubenton's bat, Natterer's bat, *Myotis* spp, Nathusius's bat, and brown long-eared bat. as shown in Table 2 of Appendix 2. Location 2 recorded a far higher number of noctule bats (1,321 calls total) than the other locations on the Site (location 1 recorded 190 calls and location 3 recorded 447 calls).

E4.45 Brown long-eared bats were recorded across all static detector locations during each of the survey periods. The highest volume of brown long-eared bat calls were recorded during the September survey period. The highest numbers of long-eared calls were recorded at Location 3, as shown in Appendix E2, Tables 2 and 3, in Volume 2 of this ES.

E4.46 The detailed results of the static detector surveys are detailed in Appendix E2 (Volume 2 of this ES).

Summary and assessment of nature conservation importance

E4.47 Overall, bat activity at the Site was assessed to be moderate, with key area being along the northern woodland parcel of the Site. This is likely due to the suitability of these habitats as potential roosting areas and commuting routes to the wider environment.

E4.48 Given the geographic location of the Site, the habitats present, and the bat survey results, it is considered likely that the Site is an important commuting and foraging resource for bats. The Site provides a good link to the wider environment that includes Ancient Woodland parcels and a SNCI. The assemblage of other bat species present on-Site is not assessed to be particularly important for nature conservation and is only discussed further in this assessment in relation to precautionary mitigation during and post-construction.

Birds

Data search

E4.49 There were 10 bird records identified by the data search.

E4.50 Records were of robin (*Erithacus rubecula*), blue tit (*Cyanistes caeruleus*), great tit (*Parus major*), goldcrest (*Regulus regulus*), Eurasian nuthatch (*Sitta europaea*), Eurasian wren (*Troglodytes troglodytes*) and great spotted woodpecker (*Dendrocopos major*). All entries were dated as being recorded in 1996.

E4.51 The majority of the Site comprises modified grassland which is assessed as unlikely to support notable ground nesting birds due to the unsuitability of the habitat. The Site also comprises woodland and Ancient Woodland parcels with hedgerows which are assessed to be highly likely to support nesting birds. It is considered that the likely assemblage of birds present within the hedgerows and woodland is of **Local importance** for nature conservation.

Reptiles

E4.52 The background data search returned no results of reptiles.

E4.53 The Site is dominated by grassland, which can provide moderate foraging habitat for reptiles. The key features on-Site were assessed as the scrub habitats, however they were limited, and did not provide the suitable varied habitat that reptiles require. The Site is connected to suitable reptile habitat in the wider environment on the northern boundary and contains suitable cover and hibernation opportunities for a population of reptiles, for example within the woodland edge habitat.

E4.54 Overall, no evidence of reptile is recorded on-Site, and the habitats on-Site provide some potential habitat for reptiles; however the Site does not provide the varied sward habitats that are deemed most suitable for reptiles, therefore they are considered absent from the Site and not considered further within this assessment.

Amphibians

Data Search

E4.55 One record is returned for common frog (*Rana temporaria*) in the background data search, from 2009. No other records are returned.

E4.56 No EPS licences relating to GCN have been identified by the data search.

Habitat Assessment

E4.57 The Site is dominated by modified grassland, which provides low suitability terrestrial habitat for amphibians due to limited foraging and cover opportunities. It is considered that the key feature on-Site is scrub habitats.

E4.58 Overall connectivity of suitable GCN habitat in the local area is poor. Areas of residential housing are present to the east, south and west of the Site, which would be unlikely to contain suitable habitat for GCN. There is a large area of agricultural land to the north

which is also assessed to be largely fragmented from the potentially suitable ponds in the wider environment, given the proximity of the M25 and housing.

E4.59 A search for ponds within 500m of the Site identified no ponds within 500m of the Site.

Invertebrates

E4.60 There are no records of invertebrates within the 1km search area, however there are 16 invertebrate records returned within the wider 10km including Jersey tiger (*Euplagia quadripunctaria*), apple snail (*Helix (Helix) pomatia*), small heath *(Coenonympha pamphilus*), Dingy skipper (*Erynnis tages*), grizzled skipper (*Pyrgus malvae*), purple emperor (*Apatura iris*), white-letter hairstreak (*Satyrium w-album*), common darter (*Sympetrum striolatum*) and an unidentified beetle (*Mantura rustica*).

E4.61 The Site is dominated by modified grassland, which provides low habitat for invertebrates. The key feature is assessed to be both the woodland parcels, along the northern edge and in the south of the Site which could provide potential habitat for invertebrates, however overall, the assemblage of invertebrates on-Site is assessed to be unlikely to be particularly important for nature conservation. Therefore, invertebrates are not considered further in this assessment.

Invasive Species

E4.62 Twelve invasive species were identified from the background data search, including montbretia (*Crocosmia pottsii x aurea = C. x crocosmiiflora*), rhododendron (*Rhododendron ponticum*), yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*), Himalayan cotoneaster (*Cotoneaster simonsii*), Japanese knotweed (*Fallopia japonica*) and curly waterweed (*Lagarosiphon major*).

E4.63 One stand of cotoneaster was identified on-Site in the south-west corner.

Summary

E4.64 The Important Ecological Features of relevance to this assessment and their importance are summarised in Table E4.2.

Table E4.2 Summary of Important Ecological Features

Important Ecological Features	Scale of Importance	Sensitivity and Value of Receptor
Ancient Woodland	County	Moderate
Woodland	Local	Moderate
Hedgerows	Local	Minor to moderate
Hedgehog	Local	Minor to moderate
Bats	Local	Minor to moderate
Birds	Local	Minor to moderate

Future Baseline

E4.65 Should the Proposed Development not come forward, the Site conditions would remain in the same condition, with continued usage as an arable field utilised for silage cuts at the appropriate times of year.

E4.66 A search of the Tandridge District Council (TDC) planning application online records determined that there are no current planning applications that would create cumulative impacts with the Proposed Development and cause impacts on the wider landscape from an ecological perspective; therefore, if the Proposed Development were not to occur, no Significant ecological impacts on the Site or the wider landscape would be incurred.

E5.0 Potential Effects

Embedded Mitigation

E5.1 A Construction Ecological Management Plan ('CEMP') and Landscape and Ecological Management Plan ('LEMP') will be produced prior to the start of construction, secured via planning condition. This will establish the over-arching principles for protection, management and monitoring of habitats and protected/notable species during the pre-construction, construction and operational phases of the Proposed Development.

Construction

Habitats

E5.2 Retained areas of grassland, hedgerows and woodland will be protected from potential damage during construction through the use of temporary barriers (e.g., heras fencing), which will be installed prior to the start of construction at the agreed upon buffer distance from the features. Construction would be undertaken in accordance with BS5837 'Trees in relation to construction' [Ref 20]. All contractors' compounds would be located away from hedgerows and the woodland parcels to minimise potential lighting and disturbance impacts.

E5.3 Wherever possible, existing hedgerows will be retained in-situ in order to maintain wildlife corridors across the Site. This is particularly important with respect to retaining bat flight paths.

Protected Species

Hedgehog

E5.4 The Site has the potential to support hedgehog and in the absence of mitigation, impacts on hedgehog could occur during site clearance, comprising injury or mortality of hedgehog foraging on the Site. Good practice measures to avoid impacts on hedgehog would comprise appropriate storage of materials to avoid creating refugia, protection of retained hedgehog habitat (hedgerows and woodland) and a sensitive construction lighting plan. These measures will be set out within the CEMP.

Bats

E5.5 Hedgerow and tree removal, if required, would be minimised in order to maintain commuting and foraging routes used by bats. Where it is necessary to provide gaps through hedgerows for access purposes, the width of the gaps will be minimised, and canopy cover will be maintained wherever possible to minimise fragmentation effects.

E5.6 Construction lighting would be designed to avoid focusing on any hedgerows or the woodland areas in order to avoid impacts on light-sensitive bat species. In particular, the Ancient Woodland edge along the north of the Site; this area will be retained as a dark corridor for bats and will be detailed within the lighting strategy and CEMP.

Birds

E5.7 The retention of the hedgerows and woodland on-Site would ensure that there was no significant reduction in available nesting habitat during construction. Site clearance, if required, would be undertaken outside of the breeding bird season (March to August inclusive) or be subject to a pre-works check by a Suitable Qualified Expert ('SQE'). The SQE would identify any active bird nests and implement an exclusion zone around the nest to avoid disturbance until the chicks have fledged.

Operation

Habitats

E5.8 All proposed and retained habitats would be managed in accordance with the LEMP.

E5.9 The Ancient Woodland in the northwest of the Site will be brought into active management to minimise potential degradation due to increased residential pressure. Low impact paths and information boards will be provided to give opportunity and access to the woodland whilst reducing potential impacts and damage where possible; the details of this will be located in the LEMP.

E5.10 The landscaping strategy of the Proposed Development is considered embedded mitigation. Where possible, public realm will be located adjacent to retained hedgerows to allow access for future management and reduce the likelihood of interference by occupants of the Proposed Development. Retained and new hedgerows immediately adjacent to residential development would be maintained at a minimum height of 2m and protected through the installation of post and wire-mesh fencing; the latter would protect hedgerows against potential adverse effects such as removal and/or dumping of garden waste. Hedgerows would not be included in the ownership of adjacent properties and restrictive covenants would be put in place to prevent their removal.

Protected Species

Hedgehog

E5.11 New tree, hedgerow and grassland planting (including new residential gardens) will create new areas of suitable foraging and nesting habitat for hedgehog. Householders would be informed about the function of hedgehog passes in fence lines and encouraged not to block the holes and maintain them in perpetuity.

Bats

E5.12 The public-realm lighting scheme would be designed to ensure that light levels are minimised along all hedgerows and woodland edge, particularly those features identified as providing key bat foraging and commuting habitats along the northern area of the Site along the Ancient Woodland boundary. Lighting impacts would be kept to a minimum through minimising column height and using baffles, louvers, shields and/or hoods as required [Ref 21]. All lighting would be subject to agreement with TDC; a lighting assessment (including contour plan) would be produced and accompany each lighting plan submission. This requirement would be set out in the LEMP.

E5.13 The Site layout would be designed to provide green buffers along those features known to be of value to foraging and commuting bats, as shown in Appendix C2 (Volume 2 of this ES), along the Ancient Woodland edge.

E5.14 Bat boxes would be checked and maintained annually and replaced as necessary. Responsibility for box maintenance would be set out within the LEMP. Bat boxes on new buildings would be integral where possible to avoid the need for maintenance.

Birds

E5.15 Bird boxes would be checked and maintained annually and replaced as necessary; this will be set out in the LEMP.

E5.16 Habitat management works to new and retained habitats will be timed to avoid the breeding bird season (March to August inclusive).

Major Hazards and Accidents

E5.17 The potential for major hazards and accidents has been considered and it has been determined that this is not relevant to this chapter and therefore is not discussed further.

Phasing

E5.18 Phasing is not relevant to this Chapter and is therefore not discussed further.

During Construction

Designated Sites

E5.19 Due to the distance between the Site and the designated sites of nature conservation value, there are unlikely to be any construction-related impacts on designated sites.

Habitats

E5.20 Construction of the Proposed Development could lead to potential impacts on retained vegetation, including the Ancient Woodland in the northwest of the Site which would create impacts, however, embedded construction mitigation described in the above section will prevent disturbance, damage and pollution to retained habitats, and will ensure there is a **Negligible** adverse effect on habitats during construction, considered **Non-Significant**.

Protected Species

Hedgehog

E5.21 The construction works will result in the potential loss of hedgehog commuting and foraging habitat, as well as some potential nesting habitat within the hedgerows, however, this will be offset through the creation of new ecologically valuable habitats suitable for hedgehog. The construction works could also result in injury and mortality of hedgehog present on the Site and sheltering within construction materials and areas of retained habitat, however through the implementation of the CEMP the effect would be negligible. Therefore, the effects would be **Negligible (Non-Significant).**

Bats

E5.22 Construction of the Proposed Development has the potential to result in the loss of bat commuting routes and foraging habitats, although the majority of the Site contained modified grassland which was considered low value foraging habitat for bats and hedgerows are being retained.

E5.23 Bats commuting and foraging along the retained habitats (hedgerows and woodland) have the potential to be disturbed by artificial lighting during the construction period. This would have the greatest impact on light-sensitive species such as *Myotis* species. However, with appropriate mitigation measures on the use of construction lighting, which would be detailed in the CEMP, the effects would be **Negligible (Non-Significant).**

Birds

E5.24 Construction of the Proposed Development has the potential to result in the loss of breeding habitat for common birds within hedgerows and trees. However, these impacts will be mitigated in the long term through the implementation of the landscape strategy, which is considered embedded mitigation and will provide ecologically valuable habitats for nesting and foraging birds. The significance of this effect is therefore considered to be **Negligible (Non-Significant)**.

E5.25 The removal of suitable tree/hedgerow nesting habitat could have a direct effect on nesting birds, their eggs and young if undertaken during the nesting season. Construction works could also result in disturbance to nesting birds within the vicinity of the works. However, this will be mitigated against through the CEMP, resulting in a **Negligible, Non-Significant** impact.

Summary of Construction Effects on Protected Species

E5.26 Species-specific mitigation will be implemented through the CEMP during construction to avoid impact on protected and notable species, namely hedgehog, bats and birds. This ensures that effects are reduced to **Negligible** levels, considered **Non-Significant**.

Operation

Designated Sites

E5.27 Due to the distance between the Site and the designated sites of nature conservation value, the availability of accessible, natural open spaces in the area, there are unlikely to be any operational-related impacts on the designated sites.

Habitats

E5.28 There is potential for the retained Ancient Woodland on-Site to be adversely impacted by the Proposed Development through increased human activity in the vicinity. Possible effects include dog fouling/nutrient enrichment, litter, erosion from cycling/walkers as well as the disturbance of protected and notable species supported by the Ancient Woodland such as birds and botanical species; however, when the measures and mitigation that are embedded as part of the Proposed Development considered, there will be a **Minor Beneficial** effect **(Non-Significant)** on the Ancient Woodland as it will be brought into

active management to ensure no negative impact is incurred from increased residential pressure.

E5.29 Where new residential gardens abut retained and created habitats (e.g., hedgerows and woodland), there is the potential for residents to remove hedgerows and thus damage them and negatively affect the species which rely on them to forage, commute and nest (e.g., birds). Residents may also tip garden rubbish into adjacent habitats and fly-tipping could occur. This would be an adverse long-term low impact on low value receptors i.e., **Minor Adverse** effect, which is considered **Non-Significant**.

Protected Species

Hedgehog

E5.30 The landscape proposals will include areas of species-rich meadow grassland, hedgerows, trees and wet areas ('SuDS') which will provide new areas of foraging and nesting habitat for hedgehog. Hedgehog will also utilise the new residential gardens and public open space.

E5.31 New residential fencing will ensure it is permeable to hedgehog to allow individuals to pass between gardens post-construction. One pass measuring 13cm x 13cm will be installed in each line of non-permeable fencing.

E5.32 Impacts are predicted to be a low beneficial magnitude of change on a low value receptor, resulting in a **Minor Beneficial** effect, which is considered to be **Non-Significant**.

Bats

E5.33 The proposed new habitats including wetland areas, species-rich meadow grassland and native tree planting would provide suitable foraging and commuting habitat for bats. This will improve the foraging resource available for bats, which is currently predominately low value modified grassland. In the long term once habitats have established, this will reduce the impacts of site clearance to a low beneficial magnitude of change on a medium value receptor, resulting in a **Minor to Moderate Beneficial** effect, which is considered **Significant**.

E5.34 Street lighting and residential lighting from properties could have an adverse effect on bats, particularly on light-averse species such as *Myotis* bats that have been recorded on-Site. Artificial light directed at features used by commuting and foraging bats (e.g., hedgerows, woodland edges) could result in bats avoiding flying across the lit areas, potentially severing pathways between roosts and foraging habitats. With embedded mitigation in the form of a lighting strategy to be detailed within the LEMP, including a dark corridor along the ancient woodland edge and directional and low-level lighting implemented across the Site, there would be a **Negligible (Non-Significant)** effect on-Site.

E5.35 Bat boxes would be installed on retained woodland within the Site, and bat boxes/tubes would also be placed on new residential properties as they are constructed. The delivery and location of this mitigation would be outlined in the LEMP. A range of different bat boxes would be provided in order to provide habitat for a variety of bat species, which will create a **Moderate Beneficial**, **Significant** effect.

E5.36 Where residential gardens abut retained hedgerows or where they will remain publicly accessible, there may be potential for residents to remove sections of hedgerow and/or use as an area for dumping garden waste. To avoid impacts, the hedgerows will be located outside of private residential ownership and a buffer provided within the public realm, which will allow the hedgerows to be managed and maintained. Management and maintenance of the hedgerows will be set out within the LEMP, which can be secured by planning condition and therefore this will be a **Minor Adverse** impact, **Non-Significant**.

Birds

E5.37 New residential gardens and landscape planting will provide foraging and nesting habitat for birds. The composition of the bird assemblage is likely to change to include species more typical of urban habitats and fewer species typical of agricultural habitats.

E5.38 Integral bird boxes would also be incorporated within new buildings. The delivery and location of bird boxes would be outlined in the LEMP.

E5.39 The Proposed Development may result in an increase in cats within the Site. The resultant increase in predation pressure could have an adverse effect on nesting and foraging birds within retained and proposed habitats, however given that the Site is located within an existing urban area, it has been determined that the potential increase will not be significant. This is considered an adverse long-term low magnitude of change on a low value receptor, resulting in a **Minor Adverse** effect, considered **Non-Significant**.

E6.0 Mitigation and Monitoring

E6.1 The mitigation aforementioned under the Embedded Mitigation subheading of Section E5.0 shall need to be supervised by an Ecological Clerk of Works ('ECoW') and will be recorded as a 'site note' by the ECoW, and, if required, made available to TDC.

E6.2 The provision of ecological enhancements as set out in the Embedded Mitigation subheading will be subject to an ecological compliance report undertaken by the ECoW.

E7.0 Residual Effects

E7.1 Residual effects are those that are considered likely to remain after the implementation of additional mitigation measures. It has been assessed that there will be no residual Significant effects with the implementation of Embedded Mitigation, therefore there are no additional mitigation requirements.

During Construction

E7.2 As each of the potential effects of the Proposed Development during construction have been assessed as resulting in **Negligible (Non-Significant)** effects, no additional mitigation apart from the ECoW to ensure all embedded mitigation has been carried out has been necessitated. The residual construction effects are therefore as reported in Section E5.0 of this Chapter.

During Operation

E7.3 No significant adverse impacts have been identified during the operational phase and therefore no additional mitigation has been necessitated. The residual operational effects are therefore as reported in Section E5.0 of this Chapter. There would be a **Minor to Moderate Beneficial (Significant)** impact on bats as a result of proposed new planting and improvement of habitat, all other effects are considered to be **Non-Significant**.

E8.0 Summary & Conclusions

E8.1 This Ecological Impact Assessment has identified a number of potential effects on ecological features in and surrounding the Site.

E8.2 No significant adverse effects have been identified on the sensitive receptors listed in Section E4.0 of this Chapter. These effects are summarised in Table E8.1 below.

E8.3 The residual effects will be enabled through careful design of the open green spaces and green infrastructure scheme, combined with appropriate construction and operation phase mitigation measures. The provisions made within the embedded mitigation and within the principles of the CEMP, together with the production of a detailed LEMP, will ensure that such mitigation measures are fully incorporated into the Proposed Development in the appropriate manner.

E8.4 The Proposed Development is in line with the National and Local Policy detailed in Section E2.0 as the key habitats for biodiversity and protected species use are being retained, mitigated and managed. Policies within the Tandridge Local Plan are met due to the retention and protection of biodiversity, namely the ancient woodland parcel and additional new planting. The Proposed Development will meet Local Policy DP19 by promoting nature conservation management and providing a multi-functional green infrastructure with the plans to being the ancient woodland parcel into active management for nature conservation and local pedestrian use.

Table E8.1 Summary of Effects

Receptor	Impact	Potential Effects (taking account of embedded mitigation)	Additional Mitigation and Monitoring	Residual Effects
During Construction				
Ancient Woodland	Construction impact on woodland integrity and tree health	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible
Woodland	Construction impact on woodland integrity and tree health	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible
Hedgerows	Construction impact on hedgerow integrity and health	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible
Hedgehog	Loss of habitat and heightened mortality risk	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible

Receptor	Impact	Potential Effects (taking account of embedded mitigation)	Additional Mitigation and Monitoring	Residual Effects
Bats	Loss of commuting and foraging habitat	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible
Birds	Loss of breeding habitat	Negligible	Supervision of works by an ECoW to ensure all embedded mitigation has been carried out.	Negligible
During Operation				
Ancient Woodland	Increased human activity, fouling and damage	Minor Beneficial, Long Term	None required.	Minor Beneficial
Woodland	Increased human damage and potential for removal	Minor Adverse, Long Term	None required.	Minor Adverse
Hedgerows	Increased human damage and potential for removal	Minor Adverse, Long Term	None required.	Minor Adverse
Hedgehog	Fragmentation of habitat	Minor Beneficial, Long Term	None required.	Minor Beneficial
Bats	Proposed new planting and improvement of habitat	Minor to Moderate Beneficial, Long Term	None required.	Minor to Moderate Beneficial
	Increased lighting from development	Negligible, Long Term	None required.	Negligible
	Removal of commuting and foraging habitat	Minor Adverse, Long Term	None required.	Minor Adverse
Birds	Increased pet predation risk	Minor Adverse, Long Term	None required.	Minor Adverse

E9.0 Abbreviations & Definitions

Abbreviations

- **AONB** – Area of Outstanding Natural Beauty
- **BTO** – British Trust of Ornithology
- **CEMP** – Constriction Ecological Management Plan
- **CIEEM** - Chartered Institute of Ecology and Environmental Management
- **ECoW** – Ecological Clerk of Works
- **EIA** - Environmental Impact Assessment
- **EPS** (Licence) – European Protected Species Licence
- **ES** – Environmental Statement
- **GI** – Green Infrastructure
- **LEMP** – Landscape Ecological Management Plan
- **NERC** - Natural Environment and Rural Communities
- **NPPF** – National Planning Policy Framework
- **PRF** – Potential Roost Features
- **pSNCI** – potential Sites of Nature Conservation Importance
- **SNCI** - Sites of Nature Conservation Importance
- **SQE** – Suitable Qualified Expert
- **SSSI** – Site of Special Scientific Interest
- **SuDS** – Sustainable Urban Drainage System
- **UKHab** – United Kingdom Habitat Classification Survey
- **ZOI** – Zone of Influence

Definitions

- **Baseline conditions** - The conditions that would pertain in the absence of the proposed project at the time that the project would be constructed / operated / decommissioned. The definition of these baseline conditions should be informed by changes arising from other causes (e.g., other consented developments).
- **Cumulative impact/effect** - Additional impacts caused by surrounding development in conjunction with the proposed development or the combined impacts of a set of developments taken together.
- **Ecological Features** - This may include habitats, species or ecosystems.
- **Effect** - An outcome to an ecological feature from an impact.
- **Environmental Impact Assessment** - Assessment of projects carried out under the EIA Directive and Regulations.

- **Environmental Statement** - A document describing the effects of a project on the environment prepared during an EIA.
- **Habitat** - The place or type of site where an organism or population naturally occurs. Commonly used when referring to major assemblages of plants and animals recorded together.
- **Impact** - Actions resulting in changes to an ecological feature.
- **Significant effect** - An effect that either supports or undermines biodiversity conservation objectives for important ecological features.
- **Habitat of principal importance -** List of priority habitats in England ('Section 41 habitats and species') for public bodies, landowners and funders to use for biodiversity conservation.
- **Species of Principal Importance -** List of priority species in England ('Section 41 habitats and species') for public bodies, landowners and funders to use for biodiversity conservation.
- **EPS licences –** European Protected Species Licences which are required for works that will impact a range of protected species that includes:
    - capturing, killing, disturbing or injuring them - on purpose or by not taking enough care;
    - damaging or destroying their breeding or resting places - even accidentally;
    - obstructing access to their resting or sheltering places - on purpose or by not taking enough care.

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