



GA2, Land north of Great Ashby Environmental Statement

Chapter 9: Ecology and Biodiversity

CSA Environmental on behalf
of Picture Estates Limited

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9. ECOLOGY AND BIODIVERSITY

Introduction

9.1 This chapter of the ES has been prepared by CSA Environmental and presents an assessment of the likely significant effects of the Proposed Development with respect to Ecology and Biodiversity. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified and/or enhance likely beneficial effects. Taking into account the mitigation measures, the nature and significance of the likely residual effects are reported.

9.2 This chapter is supported by the following technical appendices:

- **Appendix 9.1:** Legislation, Planning Policy and Standing Advice;
- **Appendix 9.2:** Desk Study Information;
- **Appendix 9.3:** Habitats and Botany;
- **Appendix 9.4:** Bats;



- **Appendix 9.6:** Hazel Dormouse;
- **Appendix 9.7:** Birds;
- **Appendix 9.8:** Reptiles;
- **Appendix 9.9:** Great crested newt;
- **Appendix 9.10:** Invertebrates;
- **Appendix 9.11:** Biodiversity Net Gain

9.3 In addition to the above the following documents and information are of relevance to ecology and biodiversity and should be viewed in conjunction

- An Outline Landscape & Ecology Management Plan (LEMP) provided within the Landscape Chapter
- Draft Habitat Management & Monitoring Plan (HMMP) (CSA/0993/07)

Competence

- 9.4 For a summary of the competency of the authors of this chapter, please refer to **Appendix 1.6**.

Legislation and Policy Context

Legislation Context

- 9.5 The following legislation is relevant to the Proposed Development:

- The Conservation of Habitats and Species Regulations 2017 (as amended); and
- The Wildlife and Countryside Act 1981 (as amended); and
- The Natural Environment and Rural Communities (NERC) Act 2006; and



- The Environment Act 2021.

- 9.6 This legislation has been addressed, as appropriate, in the production of this report with further information provided in **Appendix 9.1**.

National Planning Policy

- 9.7 The following national planning policy is relevant to the Proposed Development:

- The National Planning Policy Framework (2024)ⁱ – Chapter 15: Conserving and Enhancing the Natural Environment; and
- The Natural Environment Planning Policy Guidance (PPG)ⁱⁱ; and
- Government Circular 06/2005.

- 9.8 Further details are provided in **Appendix 9.1**.

Local Planning Policy

- 9.9 The following local planning policies, set out within North Hertfordshire Local Plan 2011-2031 (adopted November 2022), are relevant to the Proposed Development:

- Policy SP12: Green infrastructure, landscape and biodiversity; and
- Policy SP18: Site GA2 – Land off Mendip Way, Great Ashby; and
- Policy NE1: Strategic green infrastructure; and
- Policy NE4: Biodiversity and geological sites.

- 9.10 The above local plan policies are summarised in **Appendix 9.1**.

Guidance

- 9.11 Natural England Standing Advice regarding protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual

response received from Natural England following consultation. Standing advice has therefore been given due consideration, alongside other detailed guidance documents, in the scoping of ecological surveys and production of this report.

Assessment Methodology and Significance Criteria

- 9.12 This section presents the methodology used to assess the potential effects of the Proposed Development in relation to Ecology and Biodiversity.
- 9.13 The method for this assessment is based on the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)iii. These guidelines provide a robust framework for ecological assessment, which has been approved by all relevant national agencies.
- 9.14 The main aims of this assessment are to:
- Consider the activities and biophysical changes likely to be associated with the Proposed Development and its zone of influence.
 - Identify the baseline conditions within the zone of influence, with particular reference to those important ecological features that are likely to be affected.
 - Describe and assess the potential effects on the structure and function of the systems on which these features depend, in the absence of mitigation.
 - Describe any mitigation needed to avoid or minimise adverse effects and explain how such actions have been incorporated into the scheme.
 - Describe any compensation needed where an effect cannot be reduced to an insignificant level.
 - Set out the net anticipated effects of the Proposed Development, complete with mitigation.
 - Quantify the overall net change in biodiversity using the Statutory Biodiversity Metric

Consultation

- 9.15 As part of the wider project consultation between January and October 2023, including at scoping stages, discussions have been undertaken with Senior Ecologist at North Hertfordshire Council, and Principal Ecologist at Place Services, on behalf of the Local Planning Authority. This included discussion and agreement of the scope and approach of ecological survey, investigation and assessment set out herein.
- 9.16 In addition, in their response to the submitted scoping report Natural England raised the follows matters to be addressed within the EIA:

Table 9.1 Summary of Comments Raised

Consultee	Comment	Response
EIA Scoping Opinion		
Natural England	- Any historical data for the site affected by the proposal (e.g. from previous surveys) - Additional surveys carried out as part of this proposal - The habitats and species present - The status of these habitats and species (e.g. whether priority species or habitat) - The direct and indirect effects of the development upon those habitats and species - Full details of any mitigation or compensation measures - Opportunities for biodiversity net gain or other environmental enhancement	
NHDC – comments on draft application	Habitat Monitoring and Management Plan (HMMP): Proposed monitoring years (1,2,3,5,7,10,15,20,25,30) should align with NHC requirements.	Changes have been made to the HMMP in respect of monitoring.
	Landscape and Ecological Management Plan (LEMP) folder is currently empty and must include assessment of impacts from informal footpaths through woodland.	Included in Landscape Appendices
	Ancient woodland mapping (CSA/0993/152) should reflect all designated areas, not just those on MAGIC.	Map updated to show both official ancient woodland inventory sites as well as those identified as ancient through the course of surveys at the Site.
	Biodiversity Metric: Embed standalone maps; currently missing and not compliant as a self-contained document.	The inclusion of maps in the statutory metric is not a legal requirement or a published policy requirement of the LPA. Maps are clearly provided within the ES Statement and BNG Appendix. Such maps will be provided in full to discharge the Biodiversity Gain Condition prior to the commencement of development as is required under the Environment Act. However, to allay concerns, maps have been provided in updated metric as requested.

	Updated survey (Dec 2024): Requires justification due to suboptimal timing; should include details such as route walked, target notes, and photos.	The most recent update survey of the Site was conducted in June 2025 by Jamie Woollam CEcol (CSA) and relevant findings are included in this ES Chapter.
	Hedgerow 11 corridor should be included in the non-developable area to support connectivity and due to proposed SuDS.	Hedgerow 11 is a small unconnected stretch of category C hedge, which has been proposed for removal in order to rationalise the development area and relocate a new, connected green corridor with swales and new planting.
	SuDS buffers: Avoid placing SuDS within 12m and 15m buffer zones; if unavoidable, depth details must be provided.	We have avoided where possible, but we do note that SuDS will be planted to be a complimentary habitat, and would be outside RPAs. They are therefore acceptable uses within these areas from a policy standpoint. We added information on the swale profiles within the DAS, but have been asked to remove this by others, even though the wording was flexible. We have retained reference to the potential for swales to be 1m deep with at least 1:3 slopes.
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
9.17	Justify incursions into 12m and 15m woodland buffers in DAS or Planning Statement.	This will be justified in the Planning Statement.
	Ensure Drainage Plan avoids buffer zones; indicate SuDS feature depths if within buffers.	This will be justified in the Planning Statement.
	[REDACTED]	[REDACTED]

Study Area and Scope

Study Area

- 9.18 The Study Area was defined as the Site boundary, all adjacent and adjoining habitat to the Site boundary.

Scope

- 9.19 The Scoping Report identified the receptors scoped in following as aspects that would be considered in the ES because potential effects on these receptors could be significant:

- Local Wildlife Sites:
 - Increased human activity/recreational pressure
 - Increased pressures from domestic pets (dog walking/fouling, cat predation)
- Bats: Potential effects to flight lines, foraging and roosting opportunities

[REDACTED]

- Dormouse: Potential removal/disturbance of suitable dispersal, foraging and nest building habitat
- Nesting birds: Potential removal of nesting and foraging opportunities

Assessment Methodology

Impact Areas

- 9.20 The Ecological Zone of Influence (EZoI) is defined as the areas/resources that may be affected by the biophysical changes caused by activities associated with the Proposed Development. Due to the scale and nature of the proposals, the EZoI includes all land within the Study Area. When assessing the potential effects of the development proposals on statutory and non-statutory designated sites the following arbitrary EZoIs have been adopted:

- Internationally designated statutory sites: all land within 10km of the Site boundary.
- Nationally and locally designated statutory sites: all land within 3km of the Site boundary.
- Non-statutory designated sites: all land within 1km of the Site boundary.

- 9.21 In respect of fauna, flora and habitats, the EZoI includes all land within the Site, with a wider 2km desk study area providing contextual records of notable and protected species. In addition, for great crested newts, the EZoI was extended to include all waterbodies within 500m of the Site boundary

[REDACTED]

Geographic Frame of Reference

- 9.22 The Geographic Frame of Reference method is adopted for this assessment to assign importance to ecological features based on that set out in CIEEM guidelines, where ecological resources are assessed as having importance at the following levels:

- International; or
- National; or
- Regional (if applicable); or
- County (or Metropolitan, vice-county and other local authority-wide area); or
- Local.

- 9.23 It should be noted that ecological features which fall short of the threshold for local importance are those considered unable, or very unlikely, to experience significant adverse effects as a result of the proposals. However, these features often have some limited ecological importance such that they remain relevant when considering overall net gains or losses in biodiversity.

Designated Sites

- 9.24 Some sites are assigned a level of nature conservation importance through designation, and the guidelines recommend that the reasons for this designation need to be taken into account in the assessment. Such designations include:

- Internationally important sites: Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites, including 'candidate' or 'potential' Sites (i.e. cSACs, pSACs, c.SPAs and pSPAs); and
- Nationally important sites such as Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs); and
- Regional/County important sites.

- 9.25 Where a particular site has multiple designations, effects of the proposals are considered in respect of each of the features of each designation, carefully distinguishing between them in accordance with the respective legislation and policy.

- 9.26 Previous ecological reports reviewed in order to identify potentially important ecological features include those undertaken as part of the GA2 promotion through the Local Plan:

- ELMAW Consulting's Preliminary Ecological Appraisal: Farmland north-east of Great Ashby Stevenage, dated August 2016.
- ELMAW Consulting's Ecological Evaluation Study Area GA2, dated December 2017.
- ELMAW Consulting's Hazel Dormouse [REDACTED] for the purpose of future development of GA2, dated November 2020.
- ELMAW Consulting's Consultation Response, dated May 2020.

Habitats & Flora

- 9.27 The importance of areas of habitat, floral species and communities are measured against published selection criteria where available. Habitat types of European (International) conservation importance are listed on Annex I of the Habitats Directive. Habitats that are considered priorities for conservation in England are listed as habitats of principal importance under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

- 9.28 Habitat and botanical survey work was carried out between March and August 2023, with full methodologies and results provided in **Appendix 9.3**.

Fauna

- 9.29 The importance of areas for faunal species are measured against published selection criteria where available. Species of European (International) conservation importance are listed on Annexes II, IV and V of the Habitats Directive and Annex I of the Birds Directive. Species that are considered to be priorities for conservation in England are listed under section 41 of the NERC Act 2006.
- 9.30 The importance of faunal populations are determined using existing criteria where available and contextual information about distribution and abundance, including trends based on historical records.
- 9.31 Specific faunal species have legal protection under Annex IV of the EC Habitats Directive. In the UK other species are protected under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended). Where protected species are present and there is the potential for a breach of the legislation, these matters are considered, but addressed separately from ecological 'importance'.

Biodiversity Metric

- 9.32 In accordance with NPPF (2024) and local planning policy, and in line with CIEEM guidance, a biodiversity metric calculation has been undertaken using the Statutory Biodiversity Metric (set out in **Appendix 9.11**).

Significance Criteria

- 9.33 The scale attributed to each effect has been determined based on the sensitivity of the receptor and magnitude of impact arising as a result of the Proposed Development. Professional judgement and experience have been drawn upon to assess the scale and significance.

Receptors and Receptor Sensitivity

- 9.34 The following terminology is adopted to express the nature of any significant effects and to determine their level of significance:
- Beneficial (positive) or Adverse (negative) at the relevant Geographic Frame of Reference (i.e. International, National, Regional, County or Local) and;
 - extent or magnitude;
 - duration or timing;
 - frequency; and/or
 - reversibility.

Magnitude of Impact

- 9.35 Magnitude is quantified where possible and expressed in absolute or relative terms e.g. the amount of habitat lost, percentage change to habitat area, percentage decline in a species population, etc.

Assessing Significance

- 9.36 The significance of an ecological effect, whether beneficial or adverse, has been assessed in accordance with the CIEEM guidelines, which states that an effect is considered to be significant “...if it is sufficiently important to require assessment and reporting” and if it could result in a change in the conservation status or degree of integrity of any important ecological feature. Wherever possible therefore, a justification for determining whether effects are ‘sufficiently important’, at whichever geographic scale, to warrant assessment and reporting, and the change to conservation status or integrity of a feature is given.

Limitations and Assumptions

- 9.37 There were no limitations to the survey work in terms of access to the Study Area. All surveys were undertaken in a range of suitable weather conditions at optimum times of year following recognised guidance.
- 9.38 Any assumptions/limitations relating to specific surveys types have been provided in the relevant appendices, and referenced as required in the baseline conditions and/or assessment of effects.
- 9.39 It should be noted that owing to the seasonal/annual variation in detectability of some fauna/flora, as well as the ability for some species to colonise, the absence of evidence of any particular species from within the Site should not be taken as conclusive proof of absence. However, it is considered that the results of the surveys undertaken in 2023 are sufficient to determine baseline conditions.

Assessment of Cumulative Effects

- 9.40 The following types of actions which can cause cumulative effects were considered:
- Additive/incremental - refers to multiple activities/projects (each with potentially insignificant effects) which when added together give rise to a significant effect due to proximity in time and space. The effect may be additive or synergistic.
 - Associated/connected - refers to a development activity which 'enables' another development such as phased development as part of separate planning applications.
- 9.41 The following types of future development projects within the same zone of influence were considered:
- proposals for which consent has been applied which are awaiting determination in any regulatory process;
 - projects which have been granted consent but have not yet been started or which have been started but are not yet completed;
 - proposals which have been refused permission but which are subject to appeal and the appeal is undetermined; or
 - proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority.

Biodiversity Net Gain (BNG)

- 9.42 Alongside this Chapter a Biodiversity Net Gain (BNG) calculation has been prepared to provide information relevant to Schedule 15 of the Environment Act (2021). Minimum requirements for the determination of a planning application for the Site have been prepared including baseline biodiversity information, a map illustrating habitats, presence or otherwise of irreplaceable habitats, and confirmation of whether the Site has been subject to any degradation since January 2020. In addition, post-development biodiversity values have been provided separately in the BNGA report alongside a map of proposed habitats and a draft Habitat Management & Monitoring Plan (HMMP).
- 9.43 Further information with regard to BNG will be provided, as legally required, prior to commencement of development through the submission of a Biodiversity Gain Plan (BGP) for approval by NHDC. A draft BGP is provided in **Appendix 9.11**.

Baseline Conditions

Establishing Baseline Conditions

Desk Study

- 9.44 An ecological desk study was undertaken in February 2023 comprising a review of online resources and biological records centre data as detailed below, with further details in **Appendix 9.1**.
- The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify the following ecological features (based on the Site's likely 'zone of influence' in respect of such features):
 - SPA, SAC and Ramsar sites within 10km of the Site (including possible/proposed sites)
 - SSSI, NNR, Local Nature Reserves (LNR) within 3km of the Site
 - Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site
- 9.45 A review was undertaken of the location of any such designations, their distance from and connectivity with the Site, and the reasons for their designation. This information was used to determine whether they may be within the Proposed Development's Zone of Influence (ZoI).
- 9.46 Hertfordshire Environmental Records Centre (HERC) was contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence of effects upon non-statutory designations and protected or notable habitats and species.
- 9.47 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by

the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.

9.48 Previous ecological reports reviewed in order to identify potentially important ecological features include those undertaken as part of the GA2 promotion through the Local Plan:

- ELMAW Consulting's Preliminary Ecological Appraisal: Farmland north-east of Great Ashby Stevenage, dated August 2016.
- ELMAW Consulting's Ecological Evaluation Study Area GA2, dated December 2017.
- ELMAW Consulting's Hazel Dormouse [REDACTED] for the purpose of future development of GA2, dated November 2020.

9.49 ELMAW Consulting's Consultation Response, dated May 2020. In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography.

9.50 Where possible under the terms of the data provider, relevant desk study data are presented in **Appendix 9.2.**

Field Surveys

9.51 A UK Habitat Classification ('UKHab') survey was carried out in fine and dry weather conditions on 08 March and 13 March 2023 by Michelle Bullock MCIEEM, FISC1 Level 4, encompassing the Site and immediately adjacent habitats that could be viewed. The Site was re-visited on several occasions during the pre-application process on 13 June 2024, 12 December 2024 and 22 May 2025 by Jamie Woollam CEcol MCIEEM FISC Level 5 to review conditions of the Site remain as previously characterised.

9.52 UKHab is a unified and comprehensive system for mapping and classifying habitats, designed to provide a simple and robust approach to surveying and monitoring, and replaces Phase 1 Habitat survey methods. The method allows for identification of important habitat types, including habitats of Principal Importance under Section 41 (S41) of the NERC Act (2006) and Habitats Directive Annex I habitats. This method also allows for direct translation of habitats into the current Statutory Biodiversity Metric.

9.53 The following parameters were adopted for the UKHab survey undertaken for this PEA:

- UKHab Professional edition (Butcher *et al.*, 2020, commercial End User Licence Agreement (EULA))

¹ Field Identification Skills Certificate, Botanical Society of Britain and Ireland

- Minimum Mappable Unit (MMU):
 - 10m²/0.001ha (polygons)
 - 5m (linear)
 - Primary Habitats recorded to a minimum of Level 2 (see below) with UKHab codes provided
 - Mandatory secondary codes used
 - Base-mapping comprising a combination of aerial imagery and topographic information
- 9.54 Primary Habitats are recorded to a minimum of Level 2. Where the survey is conducted at an appropriate time of year (e.g. May to July for grassland) habitats may be recorded to Level 3, 4 or 5, only if conditions and the experience of the surveyor allow.
- 9.55 To assist with classification of habitats and to identify any important/notable species, targeted botanical surveys were undertaken of the following habitats:
- Woodland
 - Grassland
 - Arable
 - Hedgerows
- 9.56 To assist with the classification and origin of woodland habitats, a dedicated botanical and habitat features survey was undertaken on 18 April 2023 by Jamie Woollam CEcol MCIEEM, FISC Level 5. Representative survey plots were identified within each woodland parcel, covering a minimum of three plots (See **Appendix 9.3**).
- 9.57 A dedicated botanical survey of all arable margins within the Site was undertaken on 01 August 2023 by Michelle Bullock MCIEEM, FISC Level 4 to identify any important/notable species present. To assist with classification of grassland habitats, 1 x 1 m quadrat samples were taken during a dedicated botanical survey. Representative sample locations were identified within each grassland parcel, spread evenly to avoid habitat transitions or ecotones, following a 'W' shape-route through the parcel and covering a minimum of five sampling locations. Both average (mean) species count per m² and peak species counts are reported for comparison.
- 9.58 Identification of habitat stands were made arbitrarily by the surveyor based upon obvious habitat structure, composition or other delineating feature (e.g. field or enclosure). Locations of sampling locations and photographs of samples are provided in **Appendix 9.3**.
- 9.59 To assist with the identification of 'important' hedgerows under the Hedgerows Regulations and the identification of 'species-rich' hedgerows, as well as to inform a condition assessment of hedgerows for the biodiversity metric, a dedicated hedgerow survey was undertaken on 17 May 2023 encompassing all hedgerows within and bounding the Site (see **Appendix 9.3**)
- 9.60 Alongside the UKHab survey, additional field survey information was collected, comprising:

- Detailed floral species lists recorded for each identified habitat/parcel
- Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
- Evidence of, or potential for, other protected species (including birds, reptiles, water vole [REDACTED] and certain invertebrates)
- Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- Any other survey information relevant to ecological matters

9.61 Results of the UKHab survey are presented on the Habitats Plan in **Appendix 9.3** alongside photographs of the habitats at the Site and a list of floral species recorded. Nomenclature for higher plants within this report is consistent with the fourth edition of The New Flora of the British Isles (Stace, 2019).

Further Survey Work

9.62 The following detailed field survey work was carried out between March and November 2023, with full methods and results provided in the relevant Appendices:

- **Appendix 9.3:** Habitats and Flora;
- **Appendix 9.4:** Bats;
[REDACTED]
- **Appendix 9.6:** Dormouse;
- **Appendix 9.7:** Birds
- **Appendix 9.8:** Reptiles;
- **Appendix 9.9:** Great crested newt;
- **Appendix 9.10:** Invertebrates.

9.63 As set out above the Site was re-visited on 13 June 2024, 12 December 2024 and 22 May 2025 by Jamie Woollam to review conditions of the Site remain as previously characterised, including in respect of the survey findings for the above groups and species.

9.64 For the avoidance of doubt the most recent Site visit on 22 May 2025 included a thorough review of the Site approximately 4 hours. A route was walked commencing from field F4, through woodland W6, W4 and W3, walking north to fields F1, F2 and F3, north to F11, retuning south to woodland W5, into F6, W8, F9, into woodland W9, along H12, into W12, F10 off-site along H16, returning via F8 into F7, into W10, through W7 into F5, returning through W6 and W4. This visit confirmed the following key ecological considerations remain as described herein:

- Arable land remains as previously cultivated, with a range of crops, arable leys, fodder and field margin sowing occurring;

- Grasslands remain managed as previously observed with regular mechanical cuts
- Woodland management remains as previously identified with no substantial operations (e.g. clear-fell) observed
- Public-use of the site remains as previously observed including along both public and permissive routes
- Hedgerow management remain consistent



- Farmland and wider bird assemblages anecdotally observed to be consistent with previous findings, including skylark, yellowhammer and other conspicuous species
- Off-site ditches remain dry, consistent with their seasonally wet status

9.65 Given the above, data presented herein collected principally in 2023, remains both relevant and appropriate for assessment of effects upon ecological interests.

Limitations

9.66 There were no specific limitations to the desk study or field surveys, which were conducted at an optimum time of year and in good conditions. Limitations to further detailed field survey work are addressed in the relevant appendix/appendices. Update site visits in 2024 and 2025 allowed for review of previous survey findings from 2023 to ensure these remain applicable and accurate to inform the assessment set out herein.

Baseline Conditions

Site Context and Description

9.67 The Study Area occupies an area of c. 70ha and is located around central grid reference TL 2627 2782, to the north-east of Stevenage. The Study Area lies adjacent to existing settlement and suburban edge, comprising open farmland, with land under both arable cultivation and as grassland, as well as broadleaved woodlands both on and surrounding the Site see **Appendix 9.3**.

Nature Conservation Designations

Statutory

9.68 There are no statutory designations covering any part of the Study Area or within 10km of the Study Area boundary. No national/local statutory designations were identified within 3km of the Study Area.

Non-statutory

9.69 Fourteen non-statutory designations are present within 1km of the Study Area, of which four are on-site or adjacent.

9.70 These non-statutory designations are described in **Table 9.1** below.

Table 9.2 Statutory and Non-statutory Designations within search radii

Site Name & Designation	Distance & Direction from Survey Area	Special Interests or Qualifying Features
International Designations within 10km		
-	-	-
National Designations within 3km		
-	-	-
Local Designations within 3km		
-	-	-
Non-Statutory Designations within 1km		
New Spring Wood LWS 22/009	Within the Study Area to the south west	Ancient woodland comprising pedunculate oak <i>Quercus robur</i> and ash <i>Fraxinus excelsior</i> with some hornbeam <i>Carpinus betulus</i> and hazel <i>Corylus avellana</i> coppice.
Brooches Wood LWS 22/008	Partially within and adjacent to the Study Area to the west and south-west	Ancient woodland. Divided into two compartments by a central ride. The south compartment is comprised largely of planted conifers. The north is mostly old secondary woodland of mainly mature ash <i>Fraxinus excelsior</i> .
Tilekiln Wood & Parsonsgreen Wood LWS 22/010	Adjacent to Study Area to the west	Ancient semi-natural pedunculate oak/hornbeam coppice-with-standards woodland with areas cleared and replanted with conifers, mostly larch <i>Larix sp.</i> and <i>Pine Pinus spp.</i>
Claypithills Spring Wood (Stevenage) LWS 22/007	Adjacent to Study Area to south	Ancient semi-natural pedunculate oak/hornbeam coppice woodland. Ground flora supports a good diversity of woodland indicators.
Claypits Wood (N. of Stevenage) LWS 22/011	c. 0.4km north	Ancient semi-natural pedunculate oak/hornbeam woodland with some suckering elm <i>Ulmus sp.</i>
The Warren (N.E. of Stevenage) LWS 22/047	c. 0.4km south-east	Ancient semi-natural hornbeam coppice woodland with pedunculate oak and ash standards.
Wellfield Wood LWS 22/005	c. 0.5km south	Ancient semi-natural pedunculate oak/hornbeam coppice woodland replanted with mainly beech <i>Fagus sylvatica</i> , sycamore <i>Acer pseudoplatanus</i> , birch <i>Betula spp.</i> , poplar <i>Populus sp.</i> , field maple <i>Acer campestre</i> and various conifers.
Exeter Close LWS 22/036	0.5km south	Buildings and environs important for protected species, likely relating to a bat roost (species / status unknown, not provided).

Box Wood & Pryor's Wood LWS 22/006	c. 0.7km south	Ancient woodland. Notable for having a diversity of bird species and records of hazel dormouse <i>Muscardinus avellanarius</i> .
Halls Green Grassland LWS 22/030	c. 0.7km south	Small area of old neutral pasture with a good diversity of flora. The grassland is variable, with dwarf thistle <i>Cirsium acaule</i> (a chalk grassland species) present and some wet acid grassland flora and two ponds.
Harbourclose Wood LWS 21/029	c. 0.7km north-west	Ancient semi-natural pedunculate oak/hornbeam/ash/field maple woodland of mainly neglected coppice.
Stonesley Wood LWS 21/033	c. 0.9km north-west	Ancient semi-natural pedunculate oak/hornbeam/ash and field maple woodland. Ground flora supports indicator species.
Weston Park North Meadow LWS 13/020	c. 1.0km north	Two unimproved, damp neutral grasslands on Boulder Clay. Species recorded include Sneezewort <i>Achillea ptarmica</i> , Lady's-mantle <i>Alchemilla vestita</i> , Dropwort (<i>Filipendula vulgaris</i> , Adder's-tongue <i>Ophioglossum vulgatum</i> , Pepper-saxifrage <i>Silene silaus</i> , and Strawberry Clover <i>Trifolium fragiferum</i> , a Herts Vulnerable Species.
Howell's Wood LWS 22/039	c.1.0km east	Ancient coppiced Hornbeam woodland with coppice and standards of Ash.

Green Infrastructure

9.71 HERC have provided details of both existing and potential green infrastructure features at the Site and in adjacent areas via 'Hertfordshire Ecological Network Mapping'. The following features of relevance have been identified (with feature references given where necessary):

- Within Study Area:
 - Dell Spring – listed as semi-natural broadleaved woodland (D03241 listed as S41 habitat)
 - Woodland W3 – listed as broadleaved woodland plantation (D03129 listed as S41 habitat)
 - New Spring Woods – listed as semi-natural broadleaved woodland (D03193 listed as S41 habitat)
 - Part of W6 listed as 'no known habitats present (high priority for habitat creation)'. Currently scattered scrub with target habitat creation: chalk grassland/broadleaved woodland (D03200 and D03201)
 - Woodland W10 - listed as mixed woodland plantation with target habitat restoration: 'chalk grassland/broadleaved woodland' (D03199 listed as not currently qualifying as S41 habitat)
 - Nine Acre Spring - listed as semi-natural broadleaved woodland (D03260 listed as S41 habitat)
 - Longdell Wood - listed as semi-natural broadleaved woodland (D03259 listed as S41 habitat)

- Scrub associated with existing SUDS – listed as broadleaved woodland plantation (D03266 listed as S41 habitat) and coniferous woodland plantation with target habitat restoration: ‘broadleaved woodland’ (D03267 listed as not currently qualifying as S41).
- Outside Study Area:
 - P2 (associated with Tile Kiln Farm), P3 and P9 - Standing water (D03208, D03209 and D03242)
 - Tilekiln Wood - listed as mixed plantation woodland with target habitat restoration: ‘broadleaved woodland’ (D03189 listed as not currently qualifying as S41) and semi-natural broadleaved woodland (D03190 listed as S41 habitat)
 - Brooches Wood - listed as semi-natural broadleaved woodland (D03195, D03197 and D03198 listed as S41 habitat) and mixed plantation woodland with target habitat restoration: ‘chalk grassland/broadleaved woodland’ (D03196 listed as not currently qualifying as S41)
 - Warrensgreen Wood - listed as semi-natural broadleaved woodland (D03239 listed as S41 habitat)
 - Newberry Grove - listed as semi-natural broadleaved woodland (D03261 listed as S41 habitat)
 - Claypithills Spring - listed as semi-natural broadleaved woodland (D03265 listed as S41 habitat) and coniferous woodland plantation with target habitat restoration: ‘broadleaved woodland’ (D03263 listed as not currently qualifying as S41).

Habitats and Flora

- 9.72 Habitats recorded within the Study Area are illustrated in **Appendix 9.3** Habitats Plan (CSA/0993/140) and described below.

Notable Flora Records

- 9.73 The HERC provided 232 records of 63 notable plant species from within the search area. Four species were recorded in the LBAP, UKBAP and S41 Species of Principal Importance. Due to the proximity to the Study Area and habitats present, the species of potential relevance to the Study Area include bluebell *Hyacinthoides non-scripta*, sanicle *Sanicula europaea*, heath speedwell *Veronica officinalis*, strawberry clover *Trifolium fragiferum* and quaking-grass *Briza media*. Of these species the following were recorded within the Study Area: bluebell, heath speedwell and sanicle.
- 9.74 Records for non-native invasive species (listed under Schedule 9 of the Wildlife and Countryside Act) of potential relevance to the Study Area include rhododendron *Rhododendron ponticum*, Himalayan balsam *Impatiens glandulifera*, variegated yellow archangel *Lamium galeobdolon subsp. argentatum*, Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum*. The majority of these records are historic, with the most recent record being of giant hogweed identified c. 1.2km from the Study Area in 2018. None of these species were recorded within the

Study Area at the time of survey, however variegated yellow archangel was recorded adjacent to the Study Area in Newberry Grove (W12).

Arable land (c1)

- 9.75 Arable land covers a large proportion of the Study Area (c.50ha / 70% of Study Area), the vast majority of which are under cereal crop rotation (fields F1, F3, F5, F6, F7, F8, F10 and F11). Review of historical aerial imagery suggests these fields have been in arable cultivation for at least the last 20 years. The arable fields comprise an agricultural monoculture with few other species present save for occasional common arable weeds including scentless mayweed, prickly sow thistle and field bindweed.
- 9.76 An area of fallow land is present in the western part of field F7 to the south of Nine Acre Spring Wood and east of H10. Historical imagery indicates that it was under arable cultivation until 2020, and indeed it is described as arable land under cereal cultivation in the ELMAW 2016 and 2017 ecological reports. However, there is no evidence of recent management which has led to colonisation of opportunistic species amongst remnants of the previous cereal crop including those species generally associated with field margins (see below).
- 9.77 Given the agricultural monoculture, intensive management of these habitats and absence of important/notable arable weeds, this habitat within the Study Area falls short of the threshold for determining ecological importance.

Arable field margins (priority habitat) (c1a)

- 9.78 The field margins are relatively wide (up to c. 30m in some cases) and are dominated by common coarse grasses including cock's-foot, false oat grass, Timothy and rough meadow-grass. Herbs are generally limited to tall ruderal species including common nettle *Urtica dioica*, mugwort *Artemisia vulgaris*, willowherb *Epilobium sp.* and creeping thistle *Cirsium arvense*. A dedicated arable margin survey undertaken on 01 August 2023 failed to identify any important or notable species associated with this habitat type.
- 9.79 Online mapping provided by the MAGIC database suggests the Study Area is managed under the middle-tier Countryside Stewardship scheme which provides financial incentive for farmers to enhance the environment such as through improving habitat and increasing biodiversity.
- 9.80 Due to management specifically to provide benefits for wildlife, the arable field margins within the Study Area are categorised as habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). However, this habitat type and middle tier management is common throughout Hertfordshire, is easily replicable and no important/arable weeds were recorded during the dedicated botanical survey. As such, this habitat falls short of the threshold for determining ecological importance.

Rye-grass and clover Ley (c1b5)

- 9.81 Field F9 is located between Longdell Wood (W8) and Newberry Grove (W12) and comprises temporary grass dominated, almost exclusively, by perennial rye-grass. This field appears to be in rotation with cereal crops as suggested by aerial imagery and the previous ELMAW 2016 and 2017 ecological reports for the Site which describe this field as under cereal crop cultivation.
- 9.82 As above for cereal crops, given the agricultural monoculture, intensive management and absence of important/notable arable weeds, this habitat within the Study Area falls short of the threshold for determining ecological importance.

Modified grassland (g4)

- 9.83 A single area of modified grassland that fall within the study area, labelled as F4 of the Habitats Plan (see **Appendix 9.3**).
- 9.84 Field F4 is associated with Mendip Way Park which is managed as recreational public open space (F4) with an associated children's playground and planted shrubs (see below). It is assumed this area was seeded with a grassland mix in c. 2000-2006 when the park was created. Prior to this, the area was partially arable farmland (to the west of the retained hedgerow/dense scrub) and partially existing grassland (to the east of the retained hedgerow/dense scrub). There are two distinct areas of management, with the west of the retained hedgerow/dense scrub managed via regular mowing to maintain a consistently short sward height of less than c. 10cm, and the east of the retained hedgerow/dense scrub being left to establish a longer sward during the summer period, with a sward height of >30cm observed during the grassland survey on 1st August 2023. The grassland is dominated by common and widespread grasses, predominantly perennial rye-grass. A low diversity of common and widespread herbs occur regularly throughout the grassland including daisy *Bellis perennis*, dandelion, white clover, ribwort plantain *Plantago lanceolata* and greater plantain. Also associated with the grassland are a number of scattered, planted trees (secondary code=32), predominantly young silver birch *Betula pendula*.
- 9.85 Grassland quadrats of F4 undertaken in August 2023 identified the following species-abundance (see **Appendix 9.3**).
- Average (mean) 6.6 species per m² (long sward) and 7.6 species per m² (short sward)
 - Peak 6 species per m² (for both long and shot sward)
 - Range 4-8 species per m² (long sward) and 7-8 species per m² (short sward)
- 9.86 This habitat within the Study Area is species-poor, easily replicable and common throughout Hertfordshire. Modified grasslands do not qualify as habitats of principal importance under the NERC Act and this habitat does not meet the criteria for Local Wildlife Site selection in Hertfordshire. This habitat within the Study Area therefore falls short of the threshold for determining ecological importance. Nonetheless, any losses would result in a loss in biodiversity and as such should be

compensated through habitat creation as part of the Proposed Development. The BNG metric for the proposed scheme would identify the quantum of any compensation required.

Other neutral grassland (q3c)

9.87 Field F2 is a grassland field in the north-west of the Study Area, adjacent to Tilekiln Farm, comprises a mix of coarse and fine-leaved grasses including cock's-foot *Dactylis glomerata*, crested dog's-tail *Cynosurus cristatus*, Timothy and fescue *Festuca sp.* Herb species occur rarely within the sward and are generally limited to yarrow, creeping buttercup and white clover, although a patch of tall forbs (secondary code=16) is present in the east of the field comprising common nettle *Urtica dioica*, white dead-nettle *Lamium album*, cow parsley *Anthriscus sylvestris* and cleavers *Galium aparine*. The presence of a water trough and cow dung suggests the grassland is managed by low-intensity cattle grazing, although none were present at the time of survey. Also associated with field F2 is a pond (P1) known as Dell Spring (see below), a small woodland on the banks of the steep-sided depression and a further three scattered mature oak trees (secondary code=32) (considered in terms of their ecological importance under their retrospective habitat types below).

9.88 Grassland quadrats of F2 undertaken in August 2023 identified the following species-abundance (see **Appendix 9.3**).

- Average (mean) 4.6 species per m²
- Peak 6 species per m²
- Range 4-6 species per m²

9.89 Grassland in field F2 is species poor and falls substantially short of criteria for Local Wildlife Site selection in Hertfordshire, and falls short of the threshold for determining ecological importance. Nonetheless, any losses would result in a loss in biodiversity and as such should be compensated through habitat creation as part of the Proposed Development. The BNG metric for the proposed scheme would identify the quantum of any compensation required.

Lowland mixed deciduous woodland (priority habitat); Ancient (w1f, 28)

9.90 Three ancient semi-natural woodlands occur within the Study Area (see **Appendix 9.3**), including New Spring Wood (W4), Longdell Wood (W8) and Nine Acre Spring (W9). New Spring Wood (W4) is additionally designated as a Local Wildlife Site (see **Table 9.2** above).

9.91 A further five ancient woodlands (see **Appendix 9.2**) are located just outside of the Study Area boundary, including Tilekiln Wood (W1), Warrensgreen Wood (W2), Brooches Wood (W7), Claypithills Spring (W11) and Newberry Grove (W12).

9.92 Tilekiln Wood (W1) and Claypithills Spring (W11) are additionally designated as Local Wildlife Sites (see **Table 9.2** above). As set out above Tilekiln Wood, Claypithill Spring and the section of Brooches Wood located outside of the Study Area boundary are included within the ancient woodland inventory.

- 9.93 In summary, the majority of woodlands within and adjacent to the Study Area are likely ancient in origin despite the limited extent of Ancient Woodland Inventory mapping.
- 9.94 All ancient woodlands within the Study Area are broadleaved and are broadly similar in composition, comprising canopies of predominantly oak *Quercus robur*, ash *Fraxinus excelsior* and beech *Fagus sylvatica* (occasionally dominant), with hornbeam *Carpinus betulus* and field maple *Acer campestre*. Notable exceptions to this include dominant beech to the east of Nine Acre Spring (W3) on exposed chalk substrates, and small-leaved lime *Tilia cordata* along the western boundary of Newberry Grove (W5). Other canopy trees recorded include sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, wild cherry *Prunus avium*, purple/copper beech *Fagus sylvatica* 'Purpurea', elm *Ulmus* sp., grey willow *Salix cinerea* and European larch *Larix decidua*.
- 9.95 Shrub layer varies across the woodlands, although typically includes hazel (including old stools), common hawthorn *Crataegus monogyna* and, rarely, midland hawthorn *C. laevigata*, elder *Sambucus nigra*, holly *Ilex aquifolia* and dog rose *Rosa canina* agg. Other shrub species recorded included blackthorn *Prunus spinosa*, broom *Cytisus scoparius*, gorse *Ulex europaeus*, goat willow *Salix caprea*, dogwood *Cornus sanguinea*, cherry plum *Prunus cerasifera* and spindle *Euonymus europaeus*.
- 9.96 Climbing woody species recorded include honeysuckle *Lonicera periclymenum*, traveller's joy/old man's beard *Clematis vitalba* and ivy *Hedera helix*.
- 9.97 Ground flora across these woodlands comprises frequent ancient woodland indicators, with some variation occurring between more acid bluebell dominated areas with pignut, to more alkaline areas with indicators such as sanicle *Sanicula europaea*. In general, the ground flora comprises locally abundant bluebell and dog's mercury *Mercurialis perennis*, with occasional to rare wood anemone *Anemone nemorosa*, sanicle, wood sedge *Carex sylvatica*, pignut, three-nerved sandwort *Moehringia trinervia*, wood meadow-grass *Poa nemoralis*, yellow archangel *Lamium galeobdolon*, bugle *Ajuga reptans* and greater stitchwort *Stellaria holostea*. Other frequent woodland species recorded include ivy, primrose *Primula vulgaris*, lords-and-ladies *Arum maculatum*, cleavers *Galium aparine*, bramble *Rubus fruticosus* agg., dog violet *Viola riviniana*, creeping bent *Agrostis stolonifera*, Yorkshire-fog, annual meadow-grass *Poa annua*, wood false-brome *Brachypodium sylvaticum*, pendulous sedge *Carex pendula*, wood avens *Geum urbanum*, garlic mustard *Alliaria petiolata*, ground-ivy *Glechoma hederacea*, lesser celandine *Ficaria verna*, herb Robert *Geranium robertianum*, wood speedwell *Veronica montana*, heath speedwell *Veronica officinalis*, field forget-me-not *Myosotis arvensis*, common nettle, bracken *Pteridium aquilinum*, hedge woundwort *Stachys sylvatica*, cow parsley *Anthriscus sylvestris*, broadleaved dock *Rumex obtusifolius*, wood dock *Rumex sanguineus* and remote sedge *Carex remota*.
- 9.98 Within woodland W9 to the southern boundary is a former chalk pit (Target note 2). The habitat forms part of the wider woodland mosaic, comprising extensive scrub, traveller's joy and exposed chalk faces.

9.99 The ancient status of woodlands W4, W8 and W9 within the Study Area and of off-site W1, W2, W7, W11 and W12 are elucidated by the following desktop and survey findings:

- LWS citations for W1, W4, W7 and W11;
- Appearance of all above woodlands on historic OS mapping (Hertfordshire X111.5 and X111.8, 1896).;
- Presence and frequency of key ground flora indicator species listed above;
- Presence of midland hawthorn and small-leaved lime;
- Presence of wood banks and ditches with some large coppice stools (hazel and hornbeam) and;
- Mature and/or veteran individual trees

9.100 In addition to LWS citations, setting out ancient woodland selection criteria, all of the woodlands are shown on historic ordnance survey mapping (Hertfordshire X111.5 and X111.8, 1896).

9.101 W4 on-site is designated as a LWS. Furthermore, W8 and W9 on-site, and W2 and W12 would likely all meet the criteria for Local Wildlife Site selection in Hertfordshire. In addition, all woodlands on-site are categorised as habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). As such all woodland within the Site, excluding W3, and adjacent W1, W2, W7, W11 and W12 is of ecological importance at the **County Level**.

Lowland mixed deciduous woodland (priority habitat) (w1f)

9.102 A linear wooded belt, labelled W5 on the Habitats Plan, is present within the Study Area which extends northeast from New Spring Wood (W4). This 11m wide linear woodland comprises frequent mature and semi/mature ash and oak trees with coppiced hazel, hawthorn, blackthorn and rose. The ground flora includes some ancient woodland indicators including bluebell and lords-and-ladies, thereby suggesting this woodland is old in origin.

9.103 A small group of mature trees (labelled W13 on the Habitats Plan – see **Appendix 9.3**) are present on the banks of the steep-sided depression associated with Dell Spring within field F2, predominantly mature oak and beech. Some of these trees are storm damaged thereby creating veteran features, potentially of importance for associated fauna such as invertebrates and bats. There is very little, if any, understorey present and ground flora is sparse.

9.104 The linear woodland (W5) and woodland W13 do not meet Local Wildlife Site selection criteria. However, these woodlands are categorised as a habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). In addition, these woodlands comprise trees of significant size and age. As such, this habitat within the Study Area is of ecological importance at the **Local Level**.

Other broadleaved woodland; mixed (w1g)

- 9.105 Wooded habitat W6 lies between W4 and W7 along the corridor of two electricity cable routes, with a large pylon to the centre. The area comprises a mosaic of dense bramble and mixed scrub, young and regenerating woodland, with some areas to the margins influenced by ancient woodland habitats and its associated ground flora to the north and south. Higher canopy trees include frequent ash and sycamore with silver birch and hornbeam. Shrub species either under canopy trees or in dense scrub areas include blackthorn, common hawthorn, elder, hazel, bramble, gorse *Ulex europaeus*, goat willow and broom *Cystisus scoparius*. Ground flora includes some areas of frequent bluebell, with dog's mercury, bramble, wood false-brome, cleavers, garlic mustard, remote sedge, common bent and common nettle. Although this younger area of scrub and young/regenerating woodland is of poorer quality than the adjacent ancient woodlands, this area does still form part of Brooches Wood LWS designation.
- 9.106 A planted wooded belt, labelled W3 on the Habitats Plan, lies to the south of F3 and comprises newly planted broadleaved trees, including hornbeam, oak, hazel, cherry *Prunus* sp. and ash. Review of historical aerial imagery suggests woodland W3 was planted c. 20 years ago. Ground flora is generally limited to common shade tolerant species including common nettle and garlic mustard, with few, if any, woodland indicator species present.
- 9.107 These habitats present within the Study area do not meet Local Wildlife Site selection criteria in Hertfordshire and are also not classified as a habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Woodland W6 does however provides connectivity with other wooded habitats within/adjacent to the Study Area of and is therefore considered in the wider assessment of biodiversity losses and gains.

Other woodland; mixed (off-site) (w1h)

- 9.108 A planted wooded belt, labelled W10, on the Habitats Plan, lies to the south of F7 and predominantly comprises dense conifer plantation which has led to a heavily-shaded, sparse understory. The woodland is dominated by Corsican pine *Pinus nigra*. Native tree species are however present including hornbeam, hazel, hawthorn, oak, silver birch and ash. Review of historical aerial imagery suggests woodland W10 was planted c. 20-30 years ago.
- 9.109 Similar to woodland W3 above, albeit with greater dominance of non-native and coniferous species, this habitat similarly does not meet Local Wildlife Site selection criteria in Hertfordshire, nor is it classified as a habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Woodland W10 does however provide connectivity with other wooded habitats within/adjacent to the Study Area of and is therefore considered in the wider assessment of biodiversity losses and gains.

Mixed scrub (h3h)

- 9.110 Areas of native planted scrub are present in Mendip Park, in the vicinity of F4. The planting comprises native woody species including dogwood, hazel, hawthorn, elder, rose *Rosa* sp., holly and

blackthorn. There is also some minor encroachment of non-native garden privet *Ligustrum ovalifolium* and cotoneaster *Cotoneaster* sp. from the surrounding residential gardens.

- 9.111 Also located within Mendip Park is a partially retained field boundary surrounding the previous arable habitat present prior to the creation of the park. This is a remnant old hedgerow, that predominantly comprises hawthorn with mature oak. However, recent native shrub planting immediately adjacent to the hedgerow as part of Mendip Park landscaping has created a denser area of 'scrub' vegetation, such that this habitat feature would no longer meet the habitat definition of a 'hedgerow'. Ground flora comprises ivy *Hedera helix* and notably an ancient woodland indicator species lords-and-ladies *Arum maculatum*, thereby expressing the old origin of the remnant hedgerow.
- 9.112 This habitat present within the Study Area does not meet Local Wildlife Site selection criteria in Hertfordshire, nor is it classified as a habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). It is easily replicable and common across Hertfordshire. This habitat within the Study Area therefore falls short of the threshold for determining ecological importance. Nonetheless, any losses would result in a loss in biodiversity and as such should be compensated through habitat creation as part of the Proposed Development. The biodiversity metric for the proposed scheme would identify the quantum of any compensation required.

Native hedgerows (priority habitat) (h2a)

- 9.113 A network of hedgerows (H1-H18) bound and divide many of the fields, particularly in the north of the Study Area. The hedgerows comprise native species, with the most frequently occurring species being blackthorn, hawthorn, oak, elder, ash, field maple and field-rose. Other species present within hedgerows at the Study Area include hazel, sycamore, dog-rose, crab apple, hornbeam, cerry and rarely holly, dogwood, silver birch, plum, spindle, goat willow and large-leaved lime. The hedgerows are of mixed management with some being intensively managed and stock proof and others being old and outgrown with significant gaps.
- 9.114 An artificial wet ditch is present associated with H13/H14, H15 and the existing SUDS feature. The ditch comprised flowing water at the time of survey. The banks are artificially constructed of concrete slabs with little, if any, aquatic/marginal vegetation recorded in association with the channel or banks.
- 9.115 Many hedgerows comprise associated mature/semi-mature trees, predominantly oak and ash. An examination of historical imagery shows that all of the hedgerows are older than 20 years.
- 9.116 A dedicated hedgerow survey identified the condition, type, and 'ecological importance' of all hedgerows at the Site (see **Appendix 9.3**). The table below provides a summary of the results.

Table 9.3 Hedgerows

Hedgerow ref	UK Hab code	Associated features	Species -rich*	Ecologically Important**
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H1	h2a6	Trees	No	No
H2	h2a6	-	No	No
H3	h2a6	Trees	No	No
H4	h2a6	Trees, 1 woodland species within ground flora	No	No
H5	h2a6	Trees	No	No
H6	h2a6	3 woodland species within ground flora	No	No
H7	h2a5	Trees, 3 woodland species within ground flora	Yes	No
H8	h2a5	Trees, 2 woodland species within ground flora	Yes	Yes
H9	h2a5	Trees, 2 woodland species within ground flora	Yes	Yes
H10	h2a5	Trees, 3 woodland species within ground flora	Yes	Yes
H11	h2a5	-	Yes	No
H12	h2a5	Trees, ditch, 2 woodland species within ground flora	Yes	Yes
H13	h2a5	Trees, ditch	Yes	Yes
H14	h2a5	Trees, ditch, 1 woodland species within ground flora	Yes	Yes
H15	h2a6	-	No	No
H16	h2a6	Trees, ditch, 1 woodland species within ground flora	No	No
H17	h2a5	Trees, 3 woodland species within ground flora	Yes	Yes
H18	h2a6	1 woodland species within ground flora	No	Yes

* 5 or more native woody species in 30m section

**Ecologically important under the Hedgerows Regulations 1997

9.117 All hedgerows within the Study Area comprise predominantly native woody species and as such are categorised as habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). In addition, all hedgerows are considered to be in 'good' condition with the vast majority being dense and continuous with undisturbed ground flora. Furthermore, hedgerows H8, H9, H10, H12, H13, H14, H17 and H18 qualify as ecologically 'important' under the Hedgerows Regulations, 1997. Hedgerows H7-H14 and H17 are species-rich. However, none of the hedgerows meet any of the selection criteria for Local Wildlife Sites in Hertfordshire.

9.118 The hedgerows at the Study Area provide good connectivity for wildlife within the Study Area and to suitable habitats in the wider landscape including providing connectivity of ancient woodlands. Given the age and favourable condition, coupled with the connectivity of these hedgerows within the Study Area and to the surrounding habitat, the hedgerow network at the Site is considered to be of ecological importance at the **County Level**, with particular interest associated with the nine species-rich hedgerows: H7-H14 and H17.

Other Standing water (ponds (non-priority)) (r1g, 41)

- 9.119 A single 'pond', P1 known as 'Dell Spring' is present within the Study Area boundary. Pond P1 is located in the north of field F2 and at the time of survey was found to hold very little water, a finding repeatedly confirmed through surveys in 2023 and confirmatory visits in 2024. The pond is surrounded by mature oak and beech trees with abundant associated fallen deadwood (W13 - see above) resulting in the pond being choked with leaf litter with little, if any, aquatic vegetation present. It is fed via an underground pipe and water levels likely fluctuate throughout the year and is therefore considered seasonally wet. This habitat within the Study Area does not qualify as a habitat of principal importance under the NERC Act and does not meet the criteria for Local Wildlife Site selection in Hertfordshire. As such and coupled with the poor water quality and lack of aquatic fauna/flora, this habitat within the Study Area falls short of the threshold for determining ecological importance.

Scattered trees (Secondary code=32)

- 9.120 Three distinct groups of planted silver birch are present in the east of F4 (in the east of Mendip Way Park). These are groups of low numbers (5-12 per group) of scattered semi-mature trees, planted c. 15 years ago as part of the Mendip Way Park landscaping. Given their relatively young age and that this habitat is easily replicable, this habitat within the Study Area falls short of the threshold for determining ecological importance.

Mature trees (secondary code=203) & Ecologically valuable line of trees (secondary code=34)

- 9.121 Three scattered mature oak trees are present within field F2, labelled T31, T32 and T33 within the Tree Report. A fourth mature oak tree (labelled T88 in the Tree Report) is located on the south-eastern edge of field F8. Two of the trees (T32 and T33) are of special importance given their significant size, age and associated features and are therefore considered 'Notable'. These notable trees exhibit some veteran features such as storm damage and have cracks and fissures, and have niche habitat potential in deadwood. A line of 4 mature oak trees form a field boundary between F6 and F5.
- 9.122 Given their significant size, age, and veteran features, these notable trees and lines of trees between F6 and F5, are of ecological importance at the **County Level**.

Fauna

Bats

- 9.123 A total of 128 bat records were identified within the search area, dating from 1920 to 2017. These include the following species: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auratus*, Nathusius pipistrelle *Pipistrellus nathusii*, Leisler's bat *Nyctalus leisleri*, *Myotis* species, serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, *Nyctalus* species and barbastelle *Barbastella barbastellus*. Between 1991 and 2017, a total of 49 possible, probable and confirmed roosts were identified within the search area. The closest record is a possible brown long-eared roost identified at Tile Kiln Farm, from 1999, c. 1.0km west from the Study Area (no further

information provided). The most recent record identified a brown long-eared roost, c. 1.6km from the Study Area in 2017.

- 9.124 Bat activity surveys within the Study Area undertaken in 2017 to inform the GA2 Site allocation for promotion under the Local Plan, confirmed the presence of at least seven bat species including common pipistrelle, soprano pipistrelle, noctule, Daubenton's bat, Leisler's, brown long-eared bat and barbastelle, as well as unidentified myotis species *Myotis* sp. (ELMAW Consulting, December 2017). Bat activity at the Study Area was by far dominated by common and widespread bat species, predominantly common pipistrelle which is the most common bat across the UK and locally. This species were recorded along every hedgerow and along most woodland edges within the Study Area. Nonetheless, notably, Leisler's bat and barbastelle were also recorded which, in England, are considered 'rarer' and 'rarest', respectively (Wray et al., 2010). A low number of barbastelle calls were recorded and these were associated with the off-site Tilekiln Wood only. Barbastelle bats are the UK's rarest bat and are rare in Hertfordshire with records limited to a few wooded river valleys. Leisler's bat were recorded along the linear wood (W9) and hedgerow H8 and given that they were recorded on few occasions it is likely that the bats were using the Study Area to disperse.
- 9.125 Review of European Protected Species licences available on the MAGIC website has identified six bat licence records located c. 1.1km north, 1.1km north-east and 1.5km north-east of the Study Area. The records provided relate to common pipistrelle and brown long-eared bats allowing for the destruction of resting places for these species between 2012 and 2022.
- 9.126 The Study Area is dominated by arable habitats, which alone provide relatively limited opportunities for bats. By contrast the hedgerow network and woodlands provide important potential foraging and navigational opportunities for bats.
- 9.127 In respect of roosting, targeted survey work undertaken in August 2023 identified a total of four trees with 'Moderate' bat roost potential and six trees with 'Low' bat roost potential (see **Appendix 9.4**) twelve hedgerow trees to have 'Moderate' or 'High' bat roosting potential (ELMAW Consulting, December, 2017). These trees featured a mix of rot holes and cavities and broken limbs. However, numerous other trees within the Study Area and adjacent woodlands have bat roosting potential.
- 9.128 Remote monitoring and bat activity transect surveys were undertaken at the Site between May and September 2023 (See **Appendix 9.4**). In summary, at least eight species of bat were confirmed to make use of the Study Area including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared bat, noctule, serotine, barbastelle and at least one Myotis species.; as well as a Nyctalid species. Bat activity was dominated by common and widespread bat species with common pipistrelle by far the most commonly recorded bat species at the Study Area (accounting for 97.52% and 93.27% of activity recorded during the transect surveys and remote monitoring, respectively). Far lower levels (between 1 – 2%) of *Nyctalus* sp., noctule, and soprano pipistrelle contacts were recorded, which collectively accounted for 4.44% of total contacts recorded during the remote

monitoring surveys and only 1-5 contacts recorded by each species during the transect surveys. All other species contacts contributed less than 1% of total calls recorded over the monitoring periods.

9.129 Spatially, activity was recorded across most of the Site but the majority of activity was recorded along woodland edges and hedgerows. Activity levels for common pipistrelle were by far the highest at Monitoring Location 4 (ML4), located at the southern corner of Nine Acre Spring (W9), with a median value of 22.5 contacts per hour per night, compared with a median of 9.6 contacts per hour per night at ML1 (located within W6), 2.2 at ML2 (located at the node of H5 and H6) and 8.7 at ML3 (located at the eastern corner of Longdell Wood W8). For all remaining species, the frequency of bat contacts at all monitoring locations suggests relatively low levels of bat activity, with a median of less than 1 contact per hour for all species, at each monitoring location.

9.130 ML2 recorded the lowest number of bat calls overall. However, activity levels for barbastelle are highest at ML2 (located at the node of H5 and H6) within open space with connecting hedgerows rather than woodland. With a median value of 0.117 average contacts per hour per night for barbastelle in ML2, compared with a median of 0 average contacts per hour per night at ML1 and ML4. No barbastelle bats were recorded at ML3 (located at the eastern corner of Longdell Wood W8). All barbastelle recordings were at least one hour post sunset and therefore is unlikely that barbastelles are roosting immediately within the woodlands where the statics were placed (W6, W8 and W9), given that barbastelle are known to emerge from roosts, on average, 17-36 minutes after sunset (Zeale et al, 2012^{iv}).

9.131 The bat diversity present at the Site meets Local Wildlife Site Selection criteria which states “*areas of semi-natural habitat with records for foraging bats of at least eight bat species*”. As reported above, at least eight bat species were recorded at the Site. It should be noted that, given the grouping of some songrams to genus level (e.g. Myotis sp. Nyctalus sp. Nyctalus/Eptesicus sp.), it is possible that more than eight species were recorded during the surveys. Overall, given the habitats present and the diversity of bat species recorded at the Site, in combination with the presence of barbastelle and Nathusius’s pipistrelle (albeit in very low numbers), which are considered rare in Hertfordshire and the UK^v, the bat foraging/commuting interest at the Site is considered to be of importance at the **County Level**.

[REDACTED]

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Dormouse

- 9.138 A total of seven historical records of dormouse *Muscardinus avellanarius* were identified within the search area, dating from 1976 to 2000, with only a single record from post-2000. The majority of records were identified within Box Wood, located c. 0.9km south-east from the Study Area. The most recent record from 2008 identified six active dormouse nests, within an unspecified area c. 1.0km south from the Study Area.
- 9.139 Surveys undertaken by ELMAW in 2008 to inform the GA2 Site allocation for promotion under the Local Plan confirmed the presence of dormice through the presence of nests in survey tubes in New Spring Wood (W4) and the linear woodland (W5) which connects to New Spring Wood. In 2010, surveys of Nine Acre Spring (W9), Newberry Grove (W12) and a number of hedgerows, failed to locate any further evidence that dormice were at that time extant beyond New Spring Wood (W4) and the linear woodland (W5). Further surveys in 2017 using a combination of nest tubes and wooden nest boxes also failed to identify evidence of dormice (ELMAW Consulting, December 2017). It should be noted that dormice are particularly difficult to detect when present at low densities.
- 9.140 Update surveys were undertaken in April-October 2023 with increased survey effort using a combination of nest tubes and footprint tunnels, as well as making use of 10 remaining dormouse boxes that had remained *in-situ* in Longdell Wood (W8) from previous survey work. Despite these efforts no evidence of dormice was found (see **Appendix 9.6** for full survey data).

- 9.141 It is therefore concluded that this species has become locally extinct or is at such low density in the study area as to preclude detection. Accordingly, the study area is concluded to not be of significant importance for this species.

Otter & Water Vole

- 9.142 The HERC provided a single record of otter from 2008 from within the search area. A two-figure grid reference is supplied for this recorded providing an accuracy of 10,000km with no further information provided.
- 9.143 A total of two records of water vole *Arvicola amphibius* were identified within the search area, dated 1990 and 1994. The most recent record was identified within a pond at Weston Park, c. 2.1km north from the Study Area. No further information was provided about these records.
- 9.144 No evidence of either otter or water vole were recorded within the Study Area at the time of survey. The Study Area has limited riparian and aquatic habitats required for otter and water vole. A wet ditch flows in the south of the Study Area. The banks of part of the ditch are reinforced with concrete providing limited suitable habitat for foraging and burrowing water vole. Overall, the wet ditch is considered unsuitable to support either otter or water vole, given the low water levels and highly seasonal nature. The ditch also appears to serve the sole purpose of draining the fields following high levels of rainfall, with the ditch not connecting to any nearby watercourse. It is therefore concluded that the Study Area is not of any significant importance for these species.

Brown Hare

- 9.145 A total of 32 records of brown hare *Lepus europaeus* were identified within the search area, dating from 1973 to 2017. The majority of records are historic and have a two-figure grid reference which provides an accuracy of 10km. The closest record was identified within the Study Area itself in 1997 within a woodland along the southern boundary. The remaining records originate within arable fields to the north of Stevenage.
- 9.146 The majority of the Site, being dominated by arable land and grassland, provides potential opportunities for brown hare. However, no evidence of brown hare was recorded at the Site. Given this lack of evidence on-site and the proximity of existing built environment, the Study Area is unlikely to be of significant importance for this species.

Hedgehog

- 9.147 HERC provided a total of 78 records of hedgehog *Erinaceus europaeus* within the search area, dating from 1967 to 2022. The vast majority of records were identified within residential areas of Stevenage, with the closest c. 0.3km south of the Study Area.
- 9.148 Opportunities for hedgehog within the Study Area are provided by woodland, scrub, hedgerow, arable and grassland habitats which provide shelter and foraging opportunities. Within the wider landscape, nearby residential gardens situated within Stevenage provide further opportunities for this species.

- 9.149 No confirmed evidence or sighting of hedgehog was recorded and therefore effects cannot be definitively assessed. Measures to ensure small mammals, such as hedgehog, can continue to make use of much of the site have been included herein, such as gaps in fencing of new private gardens.

Harvest Mouse

- 9.150 Six records of harvest mouse *Micromys minutus* were identified within the search area, dating from 1976 to 1985. The most recent records were identified within Box Wood & Pryor's Wood c. 0.9km south-east from the Study Area.
- 9.151 This species favours areas of tall grasses/reeds/cereals such as road side verges, hedgerows, reed beds, dykes and salt marshes where nests can be built. The habitats at the Site are subject to agricultural management including flailing of hedgerows and intensive management of arable crops. As such, given the management of the habitats present, the Site is considered sub-optimal for harvest mouse.
- 9.152 No confirmed evidence or sighting of harvest mouse was recorded and therefore effects cannot be definitively assessed. Measures to ensure small mammals, such as harvest mouse, can continue to make use of much of the site have been included herein, such as provision of attenuation basins with reed habitats.

Birds

- 9.153 A total of 4,924 records of 107 bird species were identified within the search area, dating from 1978 to 2019. Of these species, 70 are listed as 'red' or 'amber' on the Birds of Conservation Concern (BoCC), 15 are listed under Schedule 1 of the Wildlife and Countryside Act (1981), and a further 17 are listed under Section 41 of the NERC Act 2006. Those of potential relevance to the Study Area comprise woodland and farmland birds, including fieldfare *Turdus pilaris*, brambling *Fringilla montifringilla*, whinchat *Saxicola rubetra*, marsh tit *Poecile palustris* and linnet *Linaria cannabina*.
- 9.154 Winter bird surveys within the Study Area to inform the GA2 Site allocation for promotion under the Local Plan, recorded a total of 25 bird species during the 2016/17 wintering survey period (ELMAW Consulting, December 2017). Of these, only five species are of conservation concern including mistle thrush *Turdus viscivorus*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, yellowhammer *Emberiza citrinella* and dunnoek *Prunella modularis*.
- 9.155 Breeding bird surveys carried out within the Survey Area in 2017 to inform the GA2 Site allocation for promotion under the Local Plan recorded a total of 17 bird species considered to be holding a breeding territory within or immediately adjacent to the Study Area (ELMAW Consulting, December 2017). Of these, only four species are of conservation concern including dunnoek, yellowhammer, skylark *Alauda arvensis* and linnet.
- 9.156 Breeding bird surveys undertaken in 2023 recorded a total of 49 bird species on or adjacent to the survey area during the surveys. Of these, 48 species were recorded to be using the Site for foraging

or breeding. The remaining single species was recorded flying over the Site only, but unlikely to being the Site.

- 9.157 Of those species recorded in 2023, 23 were priority species, comprising: including Bullfinch, Common whitethroat, Cuckoo, Dunnock, Grey partridge, House martin, House sparrow, Linnet, Mallard, Marsh tit, Red kite, Rook, Skylark, Song thrush, Sparrowhawk, Starling, Stock dove, Tawny owl, Willow warbler, Woodpigeon, Wren, Yellow wagtail and Yellowhammer.
- 9.158 The majority of birds recorded fall within an arable assemblage, with some falling within a woodland assemblage and some migrant birds recorded on-site. Within the arable assemblage are birds including yellow wagtail, skylark and grey partridge, all seen to be breeding on-site. Although not recorded on-site, it was noted that in the local area, corn bunting was recorded in good numbers and are likely to winter on-site.
- 9.159 Arable fields on the Site provide good foraging potential to skylark. However, the species' productivity is likely to be lower dependent on the ploughing regime/management of the crop. This species benefits from open arable with mosaic land use. Breeding bird surveys confirmed a low density of skylark with only 4 territories held across the whole site, with single territories in fields F3, F5, F7 and F9.
- 9.160 The woodland assemblage on-site includes marsh tit, tawny owl, lesser redpoll and willow warbler. A single male marsh tit was recorded within W4. Marsh tit have mixed breeding success locally in Hertfordshire/Middlesex based on the 'Breeding Bird Atlas 2007'. This has been considered a new record (at the time of survey), however the breeding bird atlas has not been updated since 2007. This record is associated with old broadleaved woodland, where the species can nest in cavities. Due to this, broadleaved woodland on-site should be conserved with a suitable buffer for development to allow for the advancement of this species. Willow warbler was recorded on-site within Newbury Grove (W12), a species now scarce within lowland England. They prefer to breed within dense scrub, woodland and woodland clearings with new growth.
- 9.161 The suite of surveys recorded a number of long-distance migrant species which may be breeding on-site, including cuckoo and willow warbler. On-site records are considered to be 'passage birds,' stopping on-site within suitable habitats before moving further north for breeding. Cuckoo, although parasitic are protected by proxy of the host species. The two most likely migrant species breeding on-site include dunnock and meadow pipit, the latter which was not recorded on-site but expected to be breeding locally.
- 9.162 Several birds of prey were recorded on the site, notably red kite (Schedule 1). No nest site was identified, however it is likely to breed on site within the tall, mature trees or locally.
- 9.163 Based upon the survey information gathered, presence of priority and protected bird species, including arable assemblage and woodland assemblage, notable marsh tit and migratory cuckoo, the bird interest of the Site is assessed to be of importance at the **County** level.

Reptiles

- 9.164 A total of eight records of three reptile species were identified within the search area including adder *Vipera berus*, slow worm *Anguis fragilis* and grass snake *Natrix Helvetica* (syn. *Natrix natrix*). The most recent record was of a single slow worm identified in 2017, c. 1.8km south-east from the Study Area. The remaining records were historic and provided a two-figure grid reference with an accuracy of 10km.
- 9.165 Reptile surveys undertaken within the Study Area in 2017 to inform the GA2 Site allocation for promotion under the Local Plan, identified no evidence of reptiles (ELMAW Consulting, December 2017).
- 9.166 The majority of the Study Area, being dominated by intensively managed arable land provides limited opportunities for reptiles. The arable field margins, hedgerow bases, woodland edges and areas of longer grassland (such as in the area of the existing SUDS feature) provide suitable basking, foraging and refuge opportunities for common reptiles as well as connectivity to similar habitats in the wider landscape. However, no evidence of reptiles was recorded at the Site during the update survey work in 2023 (see **Appendix 9.8** for full survey data). It is therefore concluded that the reptiles are likely absent from the Study Area and the Study Area is not of any significant importance for this species.

Amphibians

- 9.167 A total of 11 records of two amphibian species were returned, including great crested newt *Triturus cristatus* (GCN) and common toad *Bufo bufo*. Four of the records were historic dating pre-2000, with the most recent record dated 2019. The closest record is common toad found within a woodland c. 0.5km south from the Study Area.
- 9.168 A total of four records were returned of GCN dating from 1984 to 2016. Only one of these records is historic, dating to pre-2000. The three non-historic records were given to a four-figure grid reference with an accuracy of 1km. No part of these 1km quadrants fall over any part of the Study Area. No GCN licence returns were identified within 2km of the Study Area.
- 9.169 A single potential breeding pond was identified within the Study Area during the survey (labelled P1 on the Habitats Plan), while a further 18 appear within a dispersible range of the Study Area, based on OS mapping.
- 9.170 The on-site pond was surveyed for amphibians in 2008 by ELMAW Consulting which found low numbers of smooth newt *Lissotriton vulgaris* and common frog *Rana temporaria*, with GCN likely-absent. A Habitat Suitability Index (HSI) survey of the on-site pond was conducted in 2017 to assess the pond's suitability to support GCN. It was found to be unsuitable for GCN and no further survey work was conducted. An additional three ponds surrounding Dane End Farm were surveyed for suitability to support GCN due to close proximity and connectivity to the Study Area. Two of these ponds were entirely unsuitable for GCN One was found to have 'Below average' suitability and was

surveyed in 2017. No GCN were found during the subsequent four torch and netting surveys and as such GCN were considered likely absent from this pond.

- 9.171 The majority of the Study Area, being dominated by arable habitat provides suboptimal opportunities for amphibians during their terrestrial phase. Field margins, hedgerows and woodlands which cross the Study Area provide suitable dispersal corridors, foraging and hibernation opportunities for any GCN. However, no evidence of GCN was recorded in association with the on-site or nearby ponds during the update survey work in 2023 (see **Appendix 9.9** for full survey data). It is therefore concluded that the GCN are likely absent from the surveyed ponds and the Study Area is not of importance for this species.

Invertebrates

- 9.172 A total of 1,291 records of 143 invertebrate species were identified within the search area, including 68 species listed under the LBAP and UKBAP. Due to proximity to the Study Area and habitats present at the Study Area, species of potential relevance include shaded broad-bar *Scotopteryx chenopodiata*, September thorn *Ennomos erosaria*, small heath *Coenonympha pamphilus*, chalk-hill blue *Polyommatus coridon* and small skipper *Thymelicus sylvestris*. The Study Area is not located within an Important Invertebrate Area (IIA).
- 9.173 An invertebrate assessment undertaken in 2017 commissioned by ELMAW Consulting to inform the GA2 Site allocation for promotion under the Local Plan, identified a total of 39 invertebrate species within the Study Area, including small heath *Coenonympha pamphilus* butterfly is a species of principal importance.
- 9.174 The arable habitats which dominate the Study Area were considered unlikely to support a locally important assemblage of invertebrates. Field margins, hedgerows, grassland and ancient woodland present within the Study Area have the potential to support a range of invertebrates including important saproxylic invertebrates or invertebrate assemblages associated with woodland habitats.
- 9.175 Update survey work undertaken in 2023 identified a total of 253 invertebrate species within the habitats sampled within the Study Area, 8 of which are Notable species including small heath (a Section 41 priority species), as recorded in 2017 and a further 7 species that are considered Nationally Scarce. In addition, 22 Local species were recorded, including several records of significance for the Vice County. No invertebrate species protected under Schedule 5 (Section 9) of the Wildlife and Countryside Act (as amended) 1981 were recorded and there is very limited potential for any such species to be present. Although a diverse range of habitats and resources of value to invertebrates are present at the site, these are not of particularly exceptional quality or are otherwise limited in the landscape.
- 9.176 Entomological advice provided set out that invertebrate assemblages at the Site associated with woodland, hedgerows and scrub edges, including relic chalk habitats (to south of woodland W8/ target note T3) are at particular risk development.

9.177 The invertebrate assemblage present at the Site meets Local Wildlife Site Selection criteria which states “Sites with semi-natural habitat supporting 1 or more nationally scarce species or 3 or more Hertfordshire notable species recorded within the last 10 years”(excluding butterflies) and also meets the criteria for butterflies which states “Sites with one or more RDB species, nationally scarce species or UK BAP priority species including Candidate UK priority species recorded within the last 20 years where the habitat can support that species”. However, this appears to be an exceptionally low threshold for Site selection. The invertebrate assemblage present at the Study Area does not reflect the diverse range of habitats present, with the diversity of invertebrates lower than anticipated, albeit with a low number of notable species recorded. As such, the invertebrate assemblage at the Site is not considered of ecological importance beyond the **Local Level**.

Receptors

9.178 A list of existing and future receptors is included in **Table 9.4**.

Table 9.4 Existing and Future Sensitive Receptors

Receptor	Geographic Context of Importance and/or Protection Status
Existing Receptors	
New Spring Wood LWS (on-site)	County
Brooches Wood LWS (partially on-site)	County
Tilekiln Wood & Parsonsgreen Wood LWS (adjacent to site)	County
Claypithills Spring Wood LWS (adjacent to site)	County
Other LWSs (off-site)	County
Lowland mixed deciduous woodland (priority habitat); ancient	County
Native hedgerows, Mature trees & Lines of Trees	County
Bats	County
██████	████████████████
Birds	County
Invertebrates	Local

Biodiversity Baseline

9.179 In addition to identification of Important Ecological Receptors and their level of importance, the wider biodiversity value for the site has been calculated via the Statutory Biodiversity Metric, using habitat as a proxy for biodiversity more broadly.

9.180 Full baseline figures are set out in separately within the Statutory Biodiversity Metric, summarised in **Table 9.5** below for information:

Table 9.5 Biodiversity (Habitat) Baseline Values

Biodiversity Metric Module	Habitat Distinctiveness	Total Area (ha) / Linear (km)	% of total Area	Total Habitat Units
On-site Habitat Baseline	All	62.93ha	100%	131.38
	Very high	0ha	0%	0.00
	High (e.g. Lowland Mixed deciduous woodland)	7.72ha	12%	0.00 (147.78*)
	Medium (e.g. scrub, neutral grassland, plantation)	4.4ha	7%	25.36
	Low (e.g. arable, modified grassland)	50.07ha	80%	104.82
	Very Low (developed land/sealed surface)	0.14ha	<1%	0.00
On-site Hedgerow Baseline	All	2.67km	100%	24.18
	High (e.g. Species rich native hedge with trees)	0.37km	14%	6.66
	Medium (e.g. Species-rich native hedge)	0.62km	23%	7.44
	Low (e.g. native hedge)	1.68km	63%	10.08

*Irreplaceable habitats. The baseline value of these habitats are excluded from the calculation. The figure given here reflects their value excluded from the baseline.

9.181 As set out above there are no 'very high' distinctiveness habitats at the Site, with the majority of the Site (80%) comprising low distinctiveness arable land. Note that given all 'high distinctiveness' habitat within the Site comprises ancient woodland, an irreplaceable habitat, the baseline value of these habitats are excluded from the baseline.

9.182 In respect of hedgerows, the majority of hedgerows at the Site are 'low' distinctiveness, comprising native, species-poor hedgerows.

Future Baseline

9.183 It is not anticipated that any substantive change to the management or land-use of the Site would occur in the absence of development proposals. Cultivation of the arable land would likely continue, as well as woodland management and use of footpaths by local residents. Accordingly, no substantive changes to the ecological conditions are expected in the short-term.

9.184 Habitats, flora and fauna remain vulnerable to extinction events through a combination of current habitat fragmentation, changes in climatic conditions and progression of pests and diseases. In the long term and in the absence of nature positive initiatives conservation efforts, continued general declines of biodiversity are expected in many parts of England, including this Site.

Assessment of Effects (Construction and Operational)

9.185 Effects have been assessed based on the following stages:

- During construction: including any vegetation clearance, ground works and construction of infrastructure, dwelling, communities' facilities and landscaping of open space;
- In-operation: during occupation of new dwellings and use of community/other facilities;

Embedded Mitigation

9.186 Best practice construction measures will be implemented to avoid/minimise generation of litter, dust, noise, and vibration. In addition, measures will be implemented to avoid/minimise potential for fuel and chemical spills in line with current best practice and pollution prevention guidelines. The above measures would be set out within the Construction Environmental Management Plan (CEMP) for the scheme which could be secured via a planning condition.

9.187 Retained woodland, hedgerows and mature/veteran trees will be protected in line with standard arboricultural practice (BS5837:2012) to prevent damage via works occurring close to trees or Root Protection Areas, including but not limited to tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials. Where installed within an RPA, the proposed acoustic fence is to be located on arable land which has previously been subject to ploughing to ensure impacts on trees remains negligible.

9.188 In addition, all wild birds are protected from killing and injury, and their nests and eggs are protected from damage and destruction, under the Wildlife and Countryside Act 1981 (as amended). Appropriate safeguards will be implemented during clearance of the Site.

9.189 Any clearance of nesting habitat or features required to facilitate the development should avoid the period between March and August (inclusive) when nesting birds are most likely to be present. If this is not possible, habitat will need to be checked for nesting birds by a suitably qualified ecologist prior to clearance with works only proceeding if no nesting evidence or behaviour are observed.

Potential Significant Effects

New Spring Wood LWS

Construction Phase

9.190 New Spring Wood LWS is located adjacent to the Site boundary, to the west of the Site. It is designated for its ancient woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by a minimum 15m woodland buffer. In the absence of mitigation, woodland habitats will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas. This includes tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials. The LWS will also be vulnerable to indirect effects in relation to dust and pollution produced during construction. In the absence of embedded

mitigation an adverse effect significant at the Local level (moderate adverse effect) is predicted in this respect.

- 9.191 Subject to the implementation of the above embedded mitigation set out above, no significant adverse effects arising from the construction phase of the Proposed Development are anticipated (no significant effect).

Operational Phase

- 9.192 New Spring Wood LWS is located adjacent to the Site boundary, to the west of the Site. It is designated for its woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by a minimum 15m woodland buffer. The LWS is publicly accessible via public right of way routes with unsurfaced paths. Potential effects during the operational phase include trampling of ground flora through increased recreational use and dumping of garden waste from adjacent residential gardens which may include non-native and/or invasive species.
- 9.193 Proposed footpath links as part of the development will provide direct access from the Site to the LWS. The Proposed Development is therefore expected to result in an increase in visitors (walkers and dog walkers) with impacts including soil compaction and disturbance associated with and increase in human movement and nutrient enrichment. However, although these effects are likely to occur frequently, these are considered low in magnitude. The woodlands are already exposed to such disturbances as they are well used by the local community and lie adjacent to existing settlement.
- 9.194 Overall, based on the above, an adverse effect significant at the Local level (moderate adverse effect) is predicted.

Brooches Wood LWS

Construction Phase

- 9.195 Brooches Wood LWS is located partially within the Site, to centre/west boundary. It is designated for its woodland, including both ancient and more recent habitat. All of the ancient woodland habitat within the LWS will be retained and buffered from adjacent development by a minimum 15m woodland buffer. However, to allow for vehicular access into the Site, requires removal of more recent woodland beneath overhead powerlines.
- 9.196 In addition to the above, In the absence of mitigation, woodland habitats will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas. This includes tracking/parking of heaving plant, soil stripping for cut/fill and storage of materials. The LWS will also be vulnerable to indirect effects in relation to dust and pollution produced during construction. In the absence of embedded mitigation an adverse effect significant at the Local level (moderate adverse effect) is predicted in this respect.

- 9.197 An adverse effect significant at the Local level (moderate adverse effect) is predicted to the LWS in respect of loss of recent (non-ancient) woodland. Subject to the implementation of the above embedded mitigation set out above, no significant adverse effects upon ancient woodlands are predicted during construction.

Operational Phase

- 9.198 Brooches Wood LWS is located partially within the Site, to centre/west boundary. It is designated for its woodland, including both ancient and more recent habitat. All of the ancient woodland habitat within the LWS will be retained and buffered from adjacent development by a minimum 15m woodland buffer. As set out above during construction, to allow for vehicular access into the Site, requires removal of more recent woodland beneath overhead powerlines. The LWS is publicly accessible via public right of way routes with unsurfaced paths. Potential effects during the operational phase include trampling of ground flora through increased recreational use and dumping of garden waste from adjacent residential gardens which may include non-native and/or invasive species.
- 9.199 Proposed footpath links as part of the development will provide direct access from the Site to the LWS. The Proposed Development is therefore expected to result in an increase in visitors (walkers and dog walkers) with impacts including soil compaction and disturbance associated with and increase in human movement and nutrient enrichment. However, although these effects are likely to occur frequently, these are considered low in magnitude. The woodlands are already exposed to such disturbances as they are well used by the local community and lie adjacent to existing settlement.
- 9.200 Overall, based on the above, an adverse effect significant at the Local level (moderate adverse effect) is predicted.

Tilekiln Wood and Parsonsgreen Wood LWS

Construction Phase

- 9.201 Tilekiln Wood and Parsonsgreen Wood LWS is located adjacent to the Site boundary, to the west of the Site. It is designated for its woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by a minimum 15m woodland buffer. In the absence of mitigation, woodland habitats will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas. This includes tracking/parking of heaving plant, soil stripping for cut/fill and storage of materials. The LWS will also be vulnerable to indirect effects in relation to dust and pollution produced during construction. In the absence of embedded mitigation an adverse effect significant at the Local level (moderate adverse effect) is predicted in this respect.
- 9.202 Subject to the implementation of the above embedded mitigation set out above, no significant adverse effects arising from the construction phase of the Proposed Development are anticipated (no significant effect).

Operational Phase

- 9.203 Tilekiln Wood and Parsonsgreen Wood LWS is located adjacent to the Site boundary, to the west of the Site. It is designated for its woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by a minimum 15m woodland buffer. The LWS is publicly accessible via public right of way routes with unsurfaced paths. Potential effects during the operational phase include trampling of ground flora through increased recreational use and dumping of garden waste from adjacent residential gardens which may include non-native and/or invasive species.
- 9.204 Proposed footpath links as part of the development will provide direct access from the Site to the LWS. The Proposed Development is therefore expected to result in an increase in visitors (walkers and dog walkers) with impacts including soil compaction and disturbance associated with and increase in human movement and nutrient enrichment. However, although these effects are likely to occur frequently, these are considered low in magnitude. The woodlands are already exposed to such disturbances as they are well used by the local community and lie adjacent to existing settlement.
- 9.205 Overall, based on the above, an adverse effect significant at the Local level (moderate adverse effect) is predicted.

Claypithills Spring Wood LWS

Construction Phase

- 9.206 Claypithills Spring Wood LWS is located adjacent to the Site boundary, to the south of the Site. It is designated for its woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by existing habitats. In the absence of mitigation, woodland habitats will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas. This includes tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials. The LWS will also be vulnerable to indirect effects in relation to dust and pollution produced during construction. In the absence of embedded mitigation an adverse effect significant at the Local level (moderate adverse effect) is predicted in this respect.
- 9.207 Subject to the implementation of the above embedded mitigation set out above, no significant adverse effects arising from the construction phase of the Proposed Development are anticipated (no significant effect).

Operational Phase

- 9.208 Claypithills Spring Wood LWS is located adjacent to the Site boundary, to the south of the Site. It is designated for its woodland habitats. The LWS will be retained in its entirety and buffered from adjacent development by existing habitats. The LWS is publicly accessible via public right of way routes with unsurfaced paths. Potential effects during the operational phase include trampling of ground flora through increased recreational use and dumping of garden waste from adjacent residential gardens which may include non-native and/or invasive species.

- 9.209 Proposed footpath links as part of the development will provide direct access from the Site to the LWS. The Proposed Development is therefore expected to result in an increase in visitors (walkers and dog walkers) with impacts including soil compaction and disturbance associated with and increase in human movement and nutrient enrichment. However, although these effects are likely to occur frequently, these are considered low in magnitude. The woodlands are already exposed to such disturbances as they are well used by the local community and lie adjacent to existing settlement.
- 9.210 Overall, based on the above, an adverse effect significant at the Local level (moderate adverse effect) is predicted.

Other Local Wildlife Sites

Construction Phase

- 9.211 The remaining ten LWS designations within 1km of the Site boundary are largely designated for their woodland and grassland habitats. Given the separation of these habitats from the Site (over 400m at the nearest) no direct effects upon these designations, such as from dust or noise, are possible during construction. Accordingly, no significant adverse effects arising from the construction phase of the Proposed Development are anticipated (no significant effect).

Operational Phase

- 9.212 The remaining ten LWS designations within 1km of the Site boundary are largely designated for their woodland and grassland habitats. Accessibility of these designations varies, with some accessible via public footpaths from the Site. However, given distance of these LWSs from the Site (over 400m at the nearest) and the provision of open space at the Site, it is unlikely that significant recreational pressures will occur at the LWSs.
- 9.213 Subject to the provision of open spaces as proposed, no significant adverse effects arising from the operational phase of the Proposed Development are anticipated (no significant effect).

Lowland mixed deciduous woodland (priority habitat); ancient

Construction Phase

- 9.214 All ancient lowland mixed deciduous (priority habitat) woodlands on-site (W4, part of W7, W8, W9) and adjacent (W1, W2, remainder of W7 and W12) will be retained as part of the Proposed Development. More recent, non-ancient woodland parts of W6 will be loss for access purposes.
- 9.215 In the absence of embedded mitigation, woodland habitats will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas. This includes tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials. The woodlands will also be vulnerable to indirect effects in relation to dust and pollution produced during construction. In the absence of mitigation an adverse effect significant at the Local level (moderate adverse effect) is predicted in this respect.

- 9.216 Subject to the implementation of the above embedded mitigation, no significant adverse effects arising from the construction phase of the Proposed Development are anticipated (no significant effect).

Operational Phase

- 9.217 Unrestricted access to the ancient woodlands on-site and adjacent by new residents could result in recreational pressures including trampling impacts resulting in soil compaction and inhibition of future development of ground flora and tree growth, dog fouling and littering. In the absence of mitigation an adverse effect significant at the **Local** level (**moderate adverse effect**) is predicted in this respect.

Mature trees & Native hedgerows

Construction Phase

- 9.218 The construction phase will result in losses to short sections of five hedgerows (H3, H6, H7, H10 and H12) and the entire removal of hedgerow H11 to facilitate vehicular and pedestrian access within the Site. A small number of mature trees will also be lost for access or to otherwise facilitate the Proposed Development (See Tree Survey Plan).
- 9.219 In addition, in the absence of embedded mitigation, retained mature trees and hedgerows will be vulnerable to damage during the construction phase due to construction works occurring close to trees or Root Protection Areas.
- 9.220 Overall, the Proposed Development is anticipated to result in impacts in association with the loss of hedgerows and trees at the Site, resulting in an adverse effect, significant at the **Local** level (**moderate adverse effect**).

Operational Phase

- 9.221 Given their retention within open space areas, and buffering elsewhere across the Site, no potential effects arising from the operational phase of the development are predicted on retained hedgerows and/or mature and veteran trees within the network (**no significant effect**).

Bats

Construction Phase

- 9.222 The construction phase will result in the permanent loss of sub-optimal arable habitat for local bat populations, in addition to restricted areas of higher value habitat including woodland and grassland. The majority of this loss is not anticipated to result in significant adverse effects to bats.
- 9.223 The permanent severance of hedgerows and loss of a section of wooded belt and trees as detailed above would reduce habitat connectivity and interrupt flight-lines for bats, including most notably W5, W6, H6, H7, H10, H12 and open habitats between W8 and W9. Equally, new linear 'corridors' and patches of habitat are included within the scheme parameters which seek to restore similar levels of habitat connectivity between existing woodlands and other habitats in the local landscape.

- 9.224 Some light-shy and lower-flying species may be dissuaded from crossing open ground between hedgerow and woodland parcels. Functionally, the severance of hedgerows and woodlands may further reduce the amount of available foraging opportunities for bats.
- 9.225 No bat roosts have been confirmed to be present at the Site. However, extensive roosting opportunities are available across woodland habitats and mature trees. Whilst no evidence of roosting bats was identified during transect surveys, it is anticipated that bats do roost at the Site, and therefore the connectivity of habitats within the Site, for roosting, navigating and foraging, remains relevant to any severance of such habitat.
- 9.226 Based on the above, in the absence of mitigation, an adverse effect significant at the **Local** level (**moderate adverse effect**) is predicted for bat populations making use of the Site, with the potential for legal infringements possible.

Operational Phase

- 9.227 Artificial lighting, increased levels of human activity and associated noise arising from residential areas and road infrastructure are anticipated to have an adverse effect on foraging/commuting bats within the Site. This could permanently hinder movement between foraging and roosting areas for bats in the local area. These impacts are considered to primarily effect common species recorded at the Site, in addition to low numbers of rarer species. As such, in the absence of mitigation, an adverse effect significant at the **Local** level (**moderate adverse effect**) is predicted in respect of bats at the Site.

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Birds

Construction Phase

- 9.238 The cessation of arable cultivation and construction at the Site will result in a change in the use of the Site by breeding and wintering birds. At least four pairs of breeding skylark are likely to be permanently displaced as a result of these works along with some other farmland species, including grey partridge.
- 9.239 The majority of habitats of importance for birds, as demonstrated in the breeding bird survey, comprising woodland and hedgerows will be largely retained as part of the current proposals.

Removal of sections of hedgerow and non-ancient woodland to facilitate road/pedestrian access links, could disturb/displace breeding birds with habitat removal resulting in a loss of potential nesting, foraging and refuge habitat. New gardens, landscaping and open spaces will provide a variety of alternative nesting opportunities for these and other species.

- 9.240 Overall, based on the above, an adverse effect significant at the **Local** level (**moderate adverse effect**) is predicted.

Operational Phase

- 9.241 Considering both the loss of existing habitats and the extent of new habitats that will occur at the Site, it is anticipated that, with the exception of ground nesting farmland species (i.e. skylark), a comparable diversity of bird species would continue to breed at the Site in gardens and open spaces. It is however anticipated that whilst occupied, the development would result in higher levels of human disturbance associated with residential development, as well as increased cat predation. Accordingly, the overall abundance of breeding birds may reduce.
- 9.242 Based on the above, in the absence of mitigation, an adverse effect significant at the **Local** level is predicted (**moderate adverse effect**).

Invertebrates

Construction Phase

- 9.243 Invertebrate interest identified at the Site is related largely to woodland, scrub and hedgerow habitats albeit with these habitat resources not of exceptional quality or are otherwise limited in the landscape. The vast majority of the Proposed Development falls within arable habitats of limited invertebrate interest with significant new habitat provision delivered across the Site. Based upon the above no potential effects arising from the construction phase of the development are predicted on invertebrates (**no significant effect**).

Operational Phase

- 9.244 Artificial lighting arising from residential areas and road infrastructure are anticipated to have an adverse effect on invertebrate activity within the Site. This would be particularly harmful adjacent to ancient woodland habitats and diminish the invertebrate interest of new created habitats. As such, in the absence of mitigation, an adverse effect significant at the **Local** level (**moderate adverse effect**) is predicted in respect of bats at the Site.

Mitigation Measures

New Spring Wood LWS

Construction Phase

- 9.245 New Spring Wood LWS will be buffered from adjacent residential development by a minimum 15m ancient woodland buffer. During construction the 15m buffer will be temporarily fenced prior to

commencement of works in line with good arboricultural practice (BS5837:2012) to prevent damage via works occurring close to trees or Root Protection Areas, including but not limited to tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials.

Operational Phase

- 9.246 To establish ancient woodland buffer a permanent fenced at 15m, behind which a combination of (A) natural regeneration of from the ancient woodland will be allowed to take place, as we as (B) groups of appropriate native shrub and climber species will be planted, including: hazel, goat willow, Midland hawthorn and honeysuckle. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

- 9.247 Public access to within the LWS will be controlled to the existing north-south public footpath to the west of the LWS and other paths fenced off. The path will not be surfaced, with fencing demarking route, further lined with timber arisings from any forestry operations or tree wider removal works, with waymarking and or signage, all of which will encourage users to remain on footpaths. appropriate signage will be installed at the entrances to the woodland explaining woodland value., encouraging responsible recreation and use wider open spaces at the Site. These measures are intended minimise uncontrolled access to the wider LWS, whilst maintaining access to review habitats, including spring bluebells.
- 9.248 In addition to the above, a 'den building' area will be provided in the existing coniferous woodland north of Cleveland Way within the Site. This 'sacrificial' area is intended to limit any similar but uncontrolled activity in the LWS and wider woodlands. This will include erection of signage and provision of timber arisings from woodland management works.
- 9.249 A Woodland Management Plan for the LWS will be prepared, along with other LWSs and woodland at the Site, to be agreed with the LPA. This would include a regime of long-term, nature conservation woodland management, including long-rotation coppice, selective clearance and restocking where appropriate. Opportunities to veteranise of semi-mature trees well-away from public access/footpaths will be explored for the benefits of bats and other species. The management plan would be subject to expert forestry advice, focussed upon nature conservation outcomes.
- 9.250 Planting schemes and management would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide Landscape Environmental Management Plan (LEMP). An outline LEMP has been provided within **Appendix 11.8**

Brooches Wood LWS

Construction Phase

- 9.251 Mitigation as proposed above for New Spring Wood LWS in respect of tree protection will be implemented for Brooches Wood LWS.

- 9.252 To mitigate for the loss of non-ancient woodland habitat required to facilitate vehicular access into the Proposed Development, new woodland planting will be undertaken across the Site, notably adjacent to Warrensgreen Wood to the north, and to the east beyond Newberry Grove woodland.

Operational Phase

- 9.253 Mitigation as proposed above for New Spring Wood LWS in respect of ancient woodland buffers will be implemented.
- 9.254 The majority of the remaining area of Brooches Wood LWS lies off-site. Mitigation in the form open space provision will be undertaken to ensure this woodland is not subject to excessive levels of recreational pressure. In addition a dedicated den building area, as set out above would further safeguard against uncontrolled recreation.
- 9.255 A Woodland Management Plan for the LWS will be prepared, along with other LWSs and woodland at the Site, to be agreed with the LPA. This would include a regime of long-term, nature conservation woodland management, including long-rotation coppice, selective clearance and restocking where appropriate. The management plan would be subject to expert forestry advice, focussed upon nature conservation outcomes.
- 9.256 Ancient woodland buffer planting schemes and management, and wider measures would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide LEMP.

Tilekiln Wood and Parsonsgreen Wood LWS

Construction Phase

- 9.257 Mitigation as proposed above for other LWS in respect of tree protection will be implemented adjacent to Tilekiln Wood and Parsonsgreen Wood LWS.

Operational Phase

- 9.258 Mitigation as proposed above for other LWSs in respect of ancient woodland buffers will be implemented adjacent to Tilekiln Wood and Parsonsgreen Wood LWS.
- 9.259 Ancient woodland buffer planting schemes and management, and wider measures would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide LEMP.

Claypithills Spring Wood LWS

Construction Phase

- 9.260 Mitigation as proposed above for other LWS in respect of tree protection will be implemented adjacent to Claypits Spring Wood LWS.

Operational Phase

- 9.261 Mitigation as proposed above for other LWSs in respect of ancient woodland buffers will be implemented adjacent to Claypits Spring Wood LWS.
- 9.262 Ancient woodland buffer planting schemes and management, and wider measures would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide LEMP.

Lowland mixed deciduous woodland (priority habitat); ancient

- 9.263 Ancient woodland across the Site, including LWSs as set out above, will be buffered from adjacent residential development by a minimum 15m ancient woodland buffer. During construction the 15m buffer will be temporarily fenced prior to commencement of works in line with good arboricultural practice (BS5837:2012) to prevent damage via works occurring close to trees or Root Protection Areas, including but not limited to tracking/parking of heavy plant, soil stripping for cut/fill and storage of materials.

Operational Phase

- 9.264 To establish ancient woodland buffer a permanent fenced at 15m, behind which a combination of (A) natural regeneration of from the ancient woodland will be allowed to take place, as well as (B) groups of appropriate native shrub and climber species will be planted, including: hazel, goat willow, Midland hawthorn and honeysuckle. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

- 9.265 Public access to ancient woodlands will be controlled along the following existing footpaths:

- North-south public footpath to the west of the W4 (Newspring Wood LWS)
- Along northeast boundary of W9 (Longdell Wood)
- Along the southwest boundary of W9 (Nine Acre Spring)
- Southern boundary of W12 (Newberry Grove)

- 9.266 The paths along these routes will not be surfaced, with fencing demarking route, further lined with timber arisings from any forestry operations or tree wider removal works, with waymarking and or signage, all of which will encourage users to remain on footpaths. appropriate signage will be installed at the entrances to the woodland explaining woodland value., encouraging responsible recreation and use wider open spaces at the Site. These measures are intended minimise uncontrolled access to the wider woodlands, whilst maintaining access to review habitats, including spring bluebells.

- 9.267 In addition to the above, a 'den building' area will be provided in the existing coniferous woodland north of Cleveland Way within the Site. This 'sacrificial' area is intended to limit any similar but

uncontrolled activity across all wider woodlands. This will include erection of signage and provision of timber arisings from woodland management works.

- 9.268 A Woodland Management Plan for all on-site woodlands will be prepared to be agreed with the LPA. This would include a regime of long-term, nature conservation woodland management, including long-rotation coppice, selective clearance and restocking where appropriate. Opportunities to veteranise of semi-mature trees well-away from public access/footpaths will be explored for the benefits of bats and other species. The management plan would be subject to expert forestry advice, focussed upon nature conservation outcomes.
- 9.269 Planting schemes and management would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide LEMP.

Native hedgerows & Mature trees

Construction Phase

- 9.270 Loss of hedgerows will be compensated for through the creation of new species-rich native hedgerows and enhancement of existing hedgerows to more favourable condition. Most notably these hedges will be planted along parts of the northern boundary, around educational facilities and centrally flanking the overhead power-line corridors.
- 9.271 Substantial planting along key habitat corridors, such as between Nine Acre Spring and New berry Grove woodlands, will reinforce hedgerows for the movement and dispersal of wildlife.
- 9.272 Hedgerow planting schemes and management would be secured via detailed designs and/or a suitably worded planning condition, including the provision of a site wide LEMP.

Bats

Construction Phase

- 9.273 The loss of habitat connectivity between key habitat patches as described above will be compensated for at a whole-site/landscape scale through the following provision of new habitats and other interventions:
- 'Hop-overs' on hedgerow routes where roads bisect hedgerows, comprising the planting and management of vegetation to minimise gaps between hedgerow sections and to guide bat flightlines
 - Strengthening of hedgerow H12 between Newberry Wood and Nine Acre Spring woodland with extensive shrub planting
 - Providing a 140m wide habitat corridor between Nine Acre spring and southwest to woodland north of Cleveland way, with unlit vehicular access road passing through.
 - Central open space running under existing overhead powerlines providing new habitat corridor in existing arable land, including orchard, trees, SuDS and scrub habitat.

- Reversion of arable habitat in field F11 to grassland, woodland and pond (providing new forage habitat) between existing habitats at Warrensgreen Wood and Dell Spring grassland,
- Ancient woodland buffers around all woodlands, extending the area of these wooded habitat patches

9.274 Subject to the above measures, the overall connectivity of habitats for bats will be maintained.

9.275 No confirmed bat roosts have been identified at the Site including for trees to be removed for vehicular and pedestrian access. Nonetheless, prior to the commencement of any felling works, updated bat survey work will be required to confirm the absence of roosting bats, in accordance with the latest guidance for bat surveys. In the event that any bat roosts are identified in trees which require felling, an appropriate derogation (mitigation) licence will be sought from Natural England prior to any works taking place.

9.276 Woodland Management Plans prepared for LWSs and woodland across the Site will be designed to safeguard and benefit bats. Most notably opportunities to veteranise of semi-mature trees well-away from public access/footpaths will be explored for the benefits of roosting bats and other species.

Operational Phase

9.277 An external lighting scheme for the Site will be sensitively designed so as to avoid light spill along existing hedgerows (particularly severance points), woodland, retained vegetation and all enhanced and created habitats, thereby maintaining these habitats as foraging/commuting features for bats. This would be secured via control of detailed lighting designs and/or a suitably worded planning condition.

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Birds

Construction Phase

- 9.284 Any clearance of nesting habitat or features required to facilitate the development will avoid, as far as practicable, the period between March and August (inclusive) when nesting birds are most likely to be present. If this is not possible, habitat will need to be checked for nesting birds by a suitably qualified ecologist prior to clearance with works only proceeding if no nesting evidence or behaviour are observed.
- 9.285 To compensate for the loss of four skylark territories, and wider farmland bird losses, mitigation will be provided through the provision of off-site set-aside land within the control of the applicant. This will comprise the following works within an area of approximately of 2.55ha at location TL 27271 27918:
- Native hedgerow planting of approximately 370m to the south, west and east of the;
 - Cessation of intensive arable cultivation;
 - Shallow pond / scrape dug to the centre of the field for water-dependent species (e.g. turtle dove)
 - Cultivation and sowing of wild bird seed mix within field, with annual cutting and sowing/reseeding
 - Ongoing management plan and period to be agreed with the authority
- 9.286 The above measures would be secured via an appropriate planning condition and/or legal agreement setting out management required.

Residual Effects and Monitoring

- 9.287 The residual effects arising from the Proposed Development are summarised in **Table 9.5** below.

Table 9.6 Summary of Residual Effects

Effect	Receptor (Sensitivity)	Nature of Effect and Geographic Scale	Magnitude of Impact*	Classification of Effect (Statement of Significance BEFORE mitigation)	Mitigation and Monitoring	Residual Effect
Construction Effects						
New Spring Wood LWS (on-site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures	No significant (negligible) effect
Brooches Wood LWS (partially on-site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures; compensatory woodland planting	No significant (negligible) effect
Tilekiln Wood & Parsonsgreen Wood LWS (adjacent to site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures	No significant (negligible) effect
Claypithills Spring Wood LWS (adjacent to site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures	No significant (negligible) effect
Other LWSs (off-site)	Medium (County Importance)	No significant effect	Negligible	No significant effect	-	No significant (negligible) effect
Lowland mixed deciduous woodland (priority habitat); ancient	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures	No significant (negligible) effect

Native hedgerows, Mature trees & Lines of Trees	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Tree protection measures	No significant (negligible) effect
Bats	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Habitat measures; New habitat creation; NE licences (if required)	No significant (negligible) effect
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Birds	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Standard nesting bird safeguards; Off-site farmland bird habitat	No significant (negligible) effect
Invertebrates	Low (Local Importance)	No significant effect	Low	No significant effect	-	No significant (negligible) effect
Operational Effects						
New Spring Wood LWS (on-site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Ancient woodland buffers; recreational safeguards long term woodland management	No significant (negligible) effect
Brooches Wood LWS (partially on-site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Ancient woodland buffers; recreational safeguards long term woodland management	No significant (negligible) effect

Tilekiln Wood & Parsonsgreen Wood LWS (adjacent to site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Ancient woodland buffers; recreational safeguards long term woodland management	No significant (negligible) effect
Claypithills Spring Wood LWS (adjacent to site)	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Ancient woodland buffers; recreational safeguards long term woodland management	No significant (negligible) effect
Other LWSs (off-site)	Medium (County Importance)	No significant effect	Negligible	No significant effect	-	No significant (negligible) effect
Lowland mixed deciduous woodland (priority habitat); ancient	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Ancient woodland buffers; recreational safeguards long term woodland management	No significant (negligible) effect
Native hedgerows, Mature trees & Lines of Trees	Medium (County Importance)	No significant effect	Negligible	No significant effect	-	No significant (negligible) effect
Bats	Medium (County Importance)	Adverse, Local level	Medium	Moderate adverse effect (Local level)	Sensitive lighting strategy; long-term woodland management	No significant (negligible) effect
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Birds	Medium (County Importance)	No significant effect	Low	No significant effect	-	No significant (negligible) effect
Invertebrates	Low (Local Importance)	No significant effect	Low	No significant effect	-	No significant (negligible) effect

Notes: * incorporating environmental design and management, ** incorporating mitigation and monitoring measures

Likely Significant Environmental Effects

- 9.288 Subject to the implementation of all mitigation measures set out herein, secured appropriately by detailed design, condition and/or other planning obligation, no significant adverse environmental effects are predicted as a result of the Proposed Development.

Ecological Enhancements

- 9.289 In addition to the measures set out herein in respect of mitigation, the following ecological enhancement measures are proposed:

- Biodiversity Net Gain (BNG) delivered on-site in excess of the minimum 10% legal requirement, to include spatially significant habitats to the north and east of the Site, strengthening connectivity in the local landscape, and delivering new pond, grassland and woodland habitat;
- Restoration of former chalk pit habitat to benefit flora, invertebrates and other ecological interests, to comprise the selective clearance of scrub to open up micro-habitat and chalk grassland, installation of an interpretation board and long-term management and monitoring;
- As set out herein, seeking opportunities to veteranise healthy semi-mature trees within woodlands to benefit saproxylic organisms and roosting bats, well-away from publicly accessible places and subject to expert arboricultural advice;
- Commitment to installing bird (swift) nesting, bat roosting and invertebrate features (e.g. bee bricks) into new dwellings at the Site, at a rate of 1 feature per dwelling (features to be grouped on those dwellings most appropriately located);
- Commitment to installing hedgehog friendly fencing within developments, by maintaining either gaps under fences or lifting garden gates to allow small mammal passage;
- Inclusion of a range of native species within landscaping across the Site, with appropriate wildlife friendly near-native species in formal settings;
- Design of SuDS features to maximise their ecological interests, to include wet and dry grasslands, wetland scrub and areas of permanent water, all of which to be managed sensitively in the long-term

- 9.290 The above measures would be secured by appropriate control of detailed design and/or planning condition where necessary.

Summary and Conclusions

- 9.291 Chapter 9 identifies a range of potential effects upon nature conservation designations, habitats and species, principally in relation to ancient woodlands, hedgerows, bats, birds, [REDACTED] Without mitigation, construction and operational phases would result in up to moderate adverse effects at a local level, including habitat loss, disturbance, and some risks of legal infringements. However, the scheme incorporates extensive embedded and additional mitigation, such as ancient woodland buffers, sensitive lighting, habitat restoration, and species safeguards. These measures, combined

with biodiversity net gain initiatives, would ensure residual effects after mitigation are not significant (negligible).

- 9.292 Enhancement commitments include delivering biodiversity net gain above the 10% legal requirement in respect of a wide range of habitat creation, installing bird, bat, and invertebrate features, and creating hedgehog-friendly fencing. Long-term ecological management is embedded into the design, with safeguards for recreation impacts on sensitive woodlands and measures to protect protected species.

Effect Interactions and Cumulative Effects

- 9.293 Cumulative effects are the combined effects of several development schemes (in conjunction with the Proposed Development) which may, on an individual basis be insignificant but, cumulatively, have a significant effect. Cumulative effects have been considered with regard to seven Site as set out below in Table 6.6. In summary, no cumulative effects are anticipated in respect of the proposed development and identified schemes nearby.

Table 6.6 Cumulative Effects

Application Reference & Status	Location & Description	Anticipated Cumulative Effects (during construction and in operation)
3/19/0118/OUT; Granted 18 December 2020 3/22/2657/REM, Validated 03 January 2023.	Land East of Stevenage (EOS1) Gresley Way, Residential- 618 dwellings, and other elements RM 359 dwellings 1.32km south	Proposed Development sufficiently distant (1.32km) from the Site to avoid any significant cumulative effects in respect of ecology.
17/00862/OPM Granted 01 September 2022 22/00810/RMM Granted 15 March 2023	Land to the North of Stevenage, Weston Road, Stevenage, 1.94km south west Residential- 800 dwellings and other elements 1.36km south west RM 243 units,	Proposed Development sufficiently distant (1.36km) from the Site to avoid any significant cumulative effects in respect of ecology.
24/02889/FP Registered December 2024 Awaiting decision	Land to the East of High Street and North Road, Graveley, 1.53km west Residential- 900 dwellings and other elements	Proposed Development sufficiently distant (1.53km) from the Site to avoid any significant cumulative effects in respect of ecology.

Application Reference & Status	Location & Description	Anticipated Cumulative Effects (during construction and in operation)
21/03380/FP (Appeal ref: 3323321) Granted 143 March 2024	Land to the North and East of Great Wymondley , 2.88km north west Solar farm- 88 ha	Nature of the development (solar farm) is such that no cumulative effects are likely with the Proposed Development in respect of ecological interests.
22/00956/OP Registered 06 April 2022. Awaiting decision	Land South of Little Wymondley , 4.3km west Residential 300 dwellings	Proposed Development sufficiently distant (4.3km) from the Site to avoid any significant cumulative effects in respect of ecology.
18/01154/OP Validated 19 June 2018 Granted, yet to be completed	Land North of Highover Farm to Stotfold Road, Highover Way, Hitchin 6.16km north west Residential 700 dwellings	Proposed Development sufficiently distant (6.16km) from the Site to avoid any significant cumulative effects in respect of ecology.

Non-Technical Summary

Introduction & Baseline

- 9.294 The method for this assessment is based on the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland 2018 (Version 1.1 Updated September 2019), published by the Chartered Institute of Ecology and Environmental Management (CIEEM). These guidelines provide a robust framework for ecological assessment, which has been approved by all relevant national agencies. Methods for all surveys follow industry standards and are provided in the relevant appendices.
- 9.295 The Site is dominated by arable habitats of limited ecological interest along with ancient woodlands, some limited grassland and hedgerow habitats.
- 9.296 The Site supports a locally important assemblage of bats and birds, with relevant legislative protections also considered with regard to bats, [REDACTED] nesting birds, hedgerows and veteran trees.

Construction Phase

- 9.297 Likely significant effects during construction phase include moderate adverse effects in respect of woodlands (including Local Wildlife Sites), hedgerows, bats and birds [REDACTED]
[REDACTED]
- 9.298 Mitigation measures include embedded mitigation and additional mitigation including compensatory habitat creation/restoration, ancient woodland buffers, reinforcing wider habitat connectivity, a sensitive lighting design for bats and other wildlife, and provision of enhancement measures including bird and bats boxes trees. Relevant licensing will be secured [REDACTED] and off-site mitigation will be provided for farmland birds.

Operational

- 9.299 Likely significant effects during operational phase include moderate adverse effect in respect of LWSs, woodlands and bats. Mitigation measures include embedded mitigation and additional mitigation including appropriate long -term management and protection of retained woodlands, sensitive lighting [REDACTED]

Cumulative effects

- 9.300 No significant cumulative effects are predicted.

Conclusion

- 9.301 Following the effective implementation of the embedded and additional mitigation measures proposed, there are no significant residual effects arising from the Proposed Development during construction or operational phases.

References

- ⁱ Ministry of Housing, Communities & Local Government (2024). '*National Planning Policy Framework*'. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2#history>
- ⁱⁱ Defra (2019). '*Natural Environment Planning Policy Guidance: Biodiversity, geodiversity and ecosystems*'. [online, last updated July 2019]. Available at: <https://www.gov.uk/guidance/natural-environment#biodiversity-geodiversity-and-ecosystems> [Accessed October 2023]
- ⁱⁱⁱ CIEEM (2016). '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal (2nd edition)*'. Chartered Institute of Ecology and Environmental Management, Winchester
- ^{iv} Zeale M, Davidson-Watts I & Jones G, 2012. Home range use and habitat selection by barbastelle bats (*Barbastella barbastellus*): implications for conservation. *Journal of Mammalogy* 93(4): 1110-1118.
- ^v Bat Conservation Trust, 2023. The National Bat Monitoring Programme Annual Report 2022. Bat Conservation Trust, London. Available at www.bats.org.uk/our-work/national-bat-monitoringprogramme/reports/nbmp-annual-report.