

13 Biodiversity

13.1 Introduction

13.1.1 This chapter was prepared by FPCR and presents an assessment of the likely significant effects of the Development on ecology and Nature Conservation during both the construction and completed development stages of the project. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified and/or enhance likely beneficial effects. The nature and significance of the likely residual effects are then reported. An assessment of the cumulative effects of the project with other developments (as identified in Chapter 3 and Appendix 3.4) is also presented.

13.1.2 The chapter is supported by the following figures and appendices:

- Figure 13.1: Designated Sites and Protected & Notable Species Records Plan;
- Figure 13.2: UKHab Plan;
- Appendix 13.1: Bat Survey Report;
- Appendix 13.2: Reptile Survey Report;
- Appendix 13.3: Great Crested Newt Survey Report;
- Appendix 13.4: Badger Survey Report (CONFIDENTIAL);
- Appendix 13.5: Dormouse Survey Report;
- Appendix 13.6: Breeding Bird Survey Report;
- Appendix 13.7: Winter Bird Survey Report;
- Appendix 13.8: Biodiversity Net Gain Assessment Report;
- Appendix 13.9: Shadow Habitat Regulation Assessment; and
- Appendix 13.10: Arboricultural Assessment.

Competence

13.1.3 The ES Chapter has been carried out by Rosie Murfitt, QCIEEM, Senior Ecologist, with five years of experience as an Ecological Consultant. The ES Chapter has been completed in accordance with guidance of relevant professional institution's Ecological Impact Assessment Guidelines. This document has been checked and approved by David Harper, MCIEEM, Director (Ecology) who has over 21 years of experience within ecology.

13.2 Legislation, Planning Policy and Guidance

13.2.1 The following sections provide a summary of the legislation, planning policy and guidance that is of relevance to this assessment and the Development. For a detailed review, please refer to Appendices 13.1 to 13.9.

Legislation Context

13.2.2 The following legislation is relevant to the Development:

- The Conservation of Habitats and Species Regulations ('CHSR') 2017 (as amended)¹;
- The Wildlife and Countryside Act (WCA) 1981 (as amended)²;
- Protection of Badgers Act (PBA) 1992³;
- Natural Environment and Rural Communities (NERC) Act 2006⁴;
- The Hedgerow Regulations 1997⁵; and
- Environment Act 2021⁶.

Planning Policy Context

National

13.2.3 The following national planning policy is relevant to the Development:

- National Planning Policy Framework (2025)⁷.

Local

13.2.4 The following local planning policy for St Albans District Council (SADC) is relevant to the Development:

- Draft SADC Local Plan – Draft Local Plan 2041 ('Emerging Local Plan')⁸.

Guidance

13.2.5 The following guidance is relevant to the Development:

- Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition) - The Bat Conservation Trust (2016)⁹;
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition) - The Bat Conservation Trust (2023)¹⁰;
- Bird Survey Guidelines for assessing ecological impacts – Bird Survey & Assessment Steering Group (2025)¹¹;
- British Standard BS8596:2015 Surveying for Bats in Trees and Woodland¹²;
- Great Crested Newt Mitigation Guidelines – English Nature (2001)¹³;
- Guidance for Ecological Impact Assessment in the UK and Ireland (Version 1.3) – Chartered Institute of Ecology and Environmental Management (2024)¹⁴;
- The UK Habitat Classification (Version 2.0) – Butcher et al. (2023)¹⁵;
- BS 42020:2013 British Standard Institution: Biodiversity Code of Practice for Planning and Development;¹⁶
- Planning Practice Guidance: Biodiversity Net Gain (2024);¹⁷
- Planning Practice Guidance: Natural Environment (2025);¹⁸

- UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2 (2025);¹⁹ and
- Guidance on the assessment of dust from demolition and construction V2.2 (2024)²⁰.

13.2.6 Most protected species groups and survey types have specific published guidance that, along with Natural England / Department for Environment, Food and Rural Affairs (Defra) standing advice published on at www.gov.uk, are the industry standards, and each is referenced briefly under the relevant heading in the methodology section below and in more detail in the associated species survey reports (Appendices 13.1 – 13.7).

13.3 Assessment Methodology

Consultation

EIA Scoping Opinion

13.3.1 A request for a Scoping Opinion was submitted by the Applicant to SADC on 27 March 2025. The Scoping Report accompanied the request (Appendix 3.2). The Scoping Opinion (Appendix 3.3) was issued by SADC on 23 May 2025 which included comments from statutory consultees. Table 13.1 summarises key comments raised by consultees of relevance to this assessment during the EIA Scoping study and how the assessment responded to them.

Table 13.1: EIA Scoping Response Summary

Consultee and Comment	Response
<i>SADC - Scoping Opinion (23 May 2025)</i>	
Ecology and Nature Conservation Ecology is supportive of the EIA provided that their comments outlined in their full response are addressed. These comments request that when available local information and circumstances are considered such as through the use of Herts own environmental records centre and local designations such as Ashridge SAC.	SADC Ecology scoping comments are taken into account as set out below.
Consideration should be given to BNG baseline surveys, the impacts of artificial lighting, provision of blue and green infrastructure which supports biodiversity and specific species as well as contributing towards the emerging Local Nature Recovery Strategy.	Biodiversity Net Gain (BNG) has been considered from an early stage of Development design process informed by BNG baseline habitat surveys. Measures included within the Development to achieve BNG and deliver blue and green infrastructure which supports biodiversity, specific species and contributes towards the emerging Local Nature Recovery Strategy are summarised in Embedded Mitigation with further details provided in Chapter 5: Description of the Development and Appendix

Consultee and Comment	Response
	13.8: BNG Assessment Report. The impacts of artificial lighting on Important Ecological Features (IEFs) are considered in Sections 13.5 and 13.6 of this chapter.
Comments of Hertfordshire Ecology must be taken into account. The comments of Natural England must also be taken into account.	Hertfordshire County Council (HCC) Ecology and Natural England scoping comments are taken into account as set out below.
<i>Hertfordshire County Council (HCC) Ecology – Scoping Response (9 May 2025)</i>	
Overall recommendation – HCC highlight information requirements the EIA Regulations.	Appendix 3.1 explains the location of specified information required by the EIA Regulations within the ES.
Cumulative and in-combination effects - Identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities, whether existing, ongoing, proposed or projected.	Section 13.7 provides an assessment of cumulative and in-combination effects on ecological receptors.
Environmental data - National (e.g. MAGIC) and locally (Herts Environmental Records Centre) available sources should be used to fully inform background understanding of the site and its immediate environs.	Both MAGIC and locally available sources were used as detailed under 'Assessment Methodology'.
Consideration for the implications and consequences for: ▪ Internationally important sites (Ashridge SAC and SANG provision) ▪ Nationally important sites (other SSSIs) ▪ Local Wildlife Sites and RIGS ▪ Site habitat features and ecological functionality ▪ Protected species. This would include Great crested newt District Level Licensing available in Hertfordshire if appropriate. ▪ Priority Habitats and Species. ▪ Ancient Woodland, veteran trees and any other irreplaceable habitats.	Statutory designated sites are considered within this ES Chapter and specifically assessed in the Shadow Habitats Regulation Assessment report (Appendix 13.9). Habitat features, including priority and irreplaceable habitats including ancient woodland, veteran trees and irreplaceable habitat are considered in the ES Chapter and the BNG Assessment Report (Appendix 13.8), assessed through both desk study review and habitat field surveys. Protected and priority species are considered within this ES Chapter and the relevant species report appendices, assessed through desk study review and relevant field surveys.
In relation to BNG, sufficient survey information to properly inform baseline habitat distinctiveness and conditions (including all	Details of survey information used is provided in the BNG Assessment (Appendix 13.8) and is summarised in Section 13.3. This includes the

Consultee and Comment	Response
quadrat data where species-richness and species composition are defining characteristics), habitat map and fully completed metric baseline is required. Where possible, proposals as to how BNG can be delivered using a combination of on-site and off-site measures would also be supported.	baseline BNG habitat assessment which was obtained from field surveys mapping the habitat classification and condition. This was then compared to a proposed indicative scheme design, from which retained, lost, enhanced and created habitats were measured to give BNG score, informed by the metric. Precise BNG scores will not be available until the detailed design stage and reserved matters submission.
Impacts of artificial lighting to include: ▪ features of importance; ▪ provision of dark corridors; ▪ luminaires proposed and design control measures to avoid: ▪ excessive light levels (anticipated lux levels); ▪ light spill; ▪ glare; ▪ light reflection; and ▪ timing of use.	Impacts of artificial lighting is considered within the ES Chapter in relation to light sensitive species (bats) and in more detail within Appendix 13.1 – Bat Survey Report. Impacts of artificial lighting are considered for commuting, foraging and roosting bats throughout the Site, with recommendations for appropriate mitigation provided.
Provision of Green (open spaces / wildspaces etc) and Blue Infrastructure (SuDS), (GI and BI), where this is expected to provide biodiversity benefits. Proposed outline management of GI and BI where this is expected to provide long term biodiversity benefits, including on-site BNG and or SANG provision.	Principles of the provision of GI, BI and on-site BNG and SANG are set out in Chapter 5: Description of the Development and are defined by the Parameter Plans, Development Specification, Drainage Strategy, Outline Landscape and Ecological Management Plan (Outline LEMP) (Appendix 17.5) and Outline SANG Mitigation and Management Plan (Outline SMMP). A Green Infrastructure Strategy also accompanies the planning application. Appendix 13.8: BNG Assessment Report provides further details of the above based on an illustrative landscape scheme and outlines the management prescriptions. The BNG Assessment Report will form the parameters of the future HMMP to be provided after the application is determined (in accordance with government advice on BNG implementation), which will consider this in more detail.
Contribution to and relationship with local environmental initiatives and priorities such as local strategies or supplementary planning documents, landscape strategies, green infrastructure strategies, tree and woodland	The Land Use and Green Infrastructure Parameter Plan, Development Specification (Key Design Principles) and Outline LEMP (Appendix 17.5) have been developed with regard to local initiatives and priorities including the Draft LNRS

Consultee and Comment	Response
strategies, biodiversity strategies or biodiversity opportunity areas. This would include the emerging local nature recovery strategy (LNRS).	for Hertfordshire. This is also considered within the ES Chapter and Appendix 13.8 by reviewing local policy and relevant strategies, assessing how the Development may contribute.
<i>Natural England – Scoping Response (8 April 2025)</i>	
General principles – EIA should be compliant with the EIA Regulations and information requirements.	Refer to Appendix 3.1: Location of specified information in ES.
Cumulative and in-combination effects – The ES should fully consider the implications of the whole development proposal. This should include an assessment of all supporting infrastructure. An impact assessment should identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. [The scoping response also includes a list of types of projects and plans]	An assessment of cumulative and in-combination effects is provided in Section 13.7.
Designated sites - The ES should thoroughly assess the potential for the proposals to assess nationality and internally designated sites of nature conservation importance. [The scoping response identifies that the development site may impact on the Chilterns Beechwood SAC]. The ES should consider any impacts upon local wildlife sites and geological sites.	An assessment of effects on the Chilterns Beechwoods SAC and local wildlife sites is provided in this Chapter and Appendix 13.9. No geological sites form part of this ecological assessment as none would be affected.
Protected species, priority habitats and species, ancient woodland, ancient and veteran trees, biodiversity net gain.	Effects on these aspects are assessed in Section 13.5 and 13.6. Appendix 13.8 provides a BNG Assessment.

Pre-Application Consultation

- 13.3.2 In addition to the consultation undertaken via the EIA Scoping process, consultation was also undertaken with Natural England in March 2025. The consultation was via video call on Teams, with the purpose to discuss the design of the SANG. It was agreed that the SANG design mostly satisfied the SANG requirements, but that an additional footpath crossing along Little Revel End Lane would be required to avoid a ‘pinch point’.
- 13.3.3 In September 2025, Natural England issued a written response to the SANG proposals, following on from the initial meeting. This response brought up the same ‘pinch point’ access issue as before. It also stated that the mitigation area on-site for breeding skylark, could not form part of the SANG allocation, as it would be fenced off during the breeding season; stopping public access.

- 13.3.4 Consultation with Martin Hicks Ecologist at St Albans District Council in March 2025, via a Teams meeting, discussed the survey effort required in 2025, where it was agreed that although surveys had initially been undertaken in 2023, further ecological surveys were not required due to habitats remaining consistent, as reported in June 2024 by FPCR. The only exception was for the breeding bird surveys to be updated, to confirm breeding and appropriate mitigation.

Summary of Assessment Scope

- 13.3.5 The scope of the construction assessment within this chapter is limited to the following potential impacts and assessment of effects:

Construction

- 13.3.6 For the construction phase of the Development, the following potential effects have been assessed:

- Habitat loss and degradation;
- Loss of habitats that support protected species;
- Fragmentation of habitat linkages utilised by protected species; and
- Noise / lighting disturbance to protected species.

Completed Development

- 13.3.7 For the completed Development, the following potential effects have been assessed:

- Degradation of retained and created habitats from activities associated with the completed Development;
- Effect of air quality emissions from Development-generated traffic on designated sites and ancient woodland;
- Disturbance to faunal species / populations from unintentional mismanagement and timing of management works;
- Recreational disturbance to Chilterns Beechwoods SAC and/or Great Revel End LWS; and
- Noise/lighting disturbance to protected species.

Cumulative Assessment:

- 13.3.8 The cumulative assessment will consider the same potential likely significant effects (where possible and where the necessary information is available) as identified for the Development (outlined above).
- 13.3.9 The following schemes will only be considered in terms of their potential impact through increased recreational pressure on the Chilterns Beechwoods SAC, and will be scoped out of any other potential effects due to them being over 2km from the Site. Cumulative Schemes: ID4, ID7, ID8, ID9, ID10, ID11, H4, Hm03, Hm04, Hm06, Hm13 and M6.

Non-Significant Effects

13.3.10 The following impacts are not considered to lead to significant effects and consequently will be scoped out of the assessment:

- Any impacts on Special Protection Areas, Ramsars, National Nature Reserves or Sites of Special Scientific Interest on account of their spatial separation and distance from the Site;
- Loss of habitats of low value to biodiversity including arable cropland, developed land, bare ground and improved grassland (poor condition);
- Any impacts on great crested newts, hazel dormice and reptiles due to likely absence recorded during field surveys;
- Any impacts on otters and water voles due to lack of suitable habitats; and
- Any cumulative impacts from cumulative schemes ID 5, ID 6 and ID 12 due to them not being residential applications (so having no effect on increased recreational pressure on any designated sites).

Study Area

13.3.11 In determining a study area, the CIEEM guidelines first consider 'important ecological features' (IEF), defined as those warranting detailed assessment (thus generally excluding any that are 'widespread, unthreatened and resilient to project impacts and will remain viable and sustainable'). They are to be expressed geographically (international, national, regional, county, local and Site) and to be identified using expert judgement, including published information (for example designations, guidelines and scientific literature) and also, especially at the local level, that of experienced professionals (ecological facilitators and specialist consultees).

13.3.12 The zone of influence (referred to as the study area) for the assessment was determined with reference to IEFs on or around the Site (including designated sites), the extent and nature of project activities liable to give rise to potentially significant impacts, any incidence of mobile or migratory species, seasonality of ecological features, and ecosystem functioning including interdependencies between ecological features. The study area comprised the Site boundary, the wider land ownership boundary (where relevant) and a range of distances around the Site for desktop study recorded, especially in respect of designated sites/species that may be remote from the Site.

13.3.13 The Site boundary for the ecological survey programme comprises the land to the north and south of Little Revel End Lane. The Site was originally larger in size, extending further east and also to the west of Holtsmere End Lane. Where relevant, survey results and information from these surrounding areas are included for context.

13.3.14 The Site boundary extends into Redbourn Road B487 and into the fields to the south, due to the creation of an access junctions for both the Development and the neighbouring third party, East Hemel development. Relevant ecological information and survey results relating to this third party development have been obtained from The Crown Estate, which inform aid this assessment.

13.3.15 The desk study included the following search areas for biodiversity information:

- 15km around the Site for sites of International Importance (e.g. Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites.
- 2km for sites of National or Regional Importance (e.g. SSSIs);
- 2km for protected and notable species records (e.g. protected, or Section 41 NERC species of principal importance and notable species);
- 1km for sites of Local or County Importance or statutory sites such as Local Nature Reserves (LNRs), Priority Habitats and Ancient Woodland; and
- The Site boundaries for the habitat and species-specific surveys conducted by FPCR to inform the assessment. The wider boundary area corresponding with the Applicants' land ownership was also utilised in the assessment of impacts on badgers to add contextual information.

Baseline Characterisation Approach

Existing Baseline

13.3.16 The approach to defining the existing baseline conditions within the study area for the assessment involved a combination of desk-based research and Site-specific surveys, as set out below.

Desk Study

13.3.17 Relevant ecological recorded were sought from the Hertfordshire Environmental Records Centre (HERC) and the Multi-Agency Geographic Information for the Countryside (MAGIC). The search areas for this study were as stated above in paragraph 13.3.15.

13.3.18 Further inspection, using colour 1:25,000 OS base maps and aerial photographs from online sources were also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.

Field Study

Habitat Survey

13.3.19 An initial habitat survey and protected species assessment was undertaken in April 2023 on the land to the north of Little Revel End Lane, and in May 2023 on the land to the south of Little Revel End Lane. This initial habitat survey was to assess the suitability of the Site for protected/notable species when designing the ecological survey programme to inform the application. An update survey was then undertaken in June 2024 for the Site as a whole.

13.3.20 Habitats were identified utilising the UK Habitat Classification System¹, a comprehensive method of determining habitat types in the wider countryside. This involved a systematic walkover of the survey area during which habitat descriptions and lists of plant species (following Nomenclature in Stace 2019²) were compiled. Habitats were mapped on a base plan and where appropriate, target notes were made. An inspection of the Site for the presence of any invasive weed species was also carried out. Features such as trees were

¹ UK Habitat Classification Working Group. (2019). UK Habitat Classification. Available at: <http://ecountability.co.uk/ukhabworkinggroup-ukhab/> [Accessed 01/11/2019].

² Stace. 2019. New Flora of the British Isles. C&M Floristics, Peterborough

considered with regard to their ecological value and potential to provide suitable habitats for protected species.

13.3.21 Consideration has also been given to the potential presence of species listed within one or more of the following (collectively referred to herein as ‘Notable Species’):

- Species of Principal Importance (SPI) for the conservation of biodiversity in England on the NERC Act, Section 41 (S41);
- Species listed on any Local Biodiversity Action Plan (LBAP) initiatives; and
- Red Data Book (RDB) species.

Faunal Surveys

13.3.22 Following the initial assessment of the Site for protected/notable species potential, a suite of protected species surveys were undertaken between 2023 and 2025, as detailed below. Recommended survey methodologies were followed for each species/species group of concern and detailed methods employed to inform this assessment are contained within the appended reports. Surveys were undertaken for the following species/species groups in the following years:

- **Bats** – Hedgerows, woodland and grassland provide suitable foraging and commuting habitat for bats, whilst trees provide suitable roosting habitat. Activity surveys were undertaken in 2023 and 2024, whilst aerial assessments and nocturnal surveys of trees with potential roost features were conducted in 2025. The methodologies take into account the most up-to-date guidance from Bat Conservation Trust (BCT) that was available at that. See Appendix 13.1: Bat Survey Report.
- **Reptiles** – Surveys were undertaken in 2023 due to field margins providing suitable habitat. Surveys were based on methodology detailed in the Herpetofauna Workers Manual (1998)²¹ and the Froglife Advice Sheet 10 (Froglife 1999)²². See Appendix 13.2: Reptile Survey Report.
- **Great Crested Newts (GCN)** – A pond on-site and the field margins provide some habitat for GCN. eDNA²³ and Habitat Suitability Index²⁴ were conducted in 2023. See Appendix 13.3: Great Crested Newt Survey Report.
- [REDACTED]
- **Dormouse** – Hedgerows and woodland within the Site provide some suitable arboreal habitats. Surveys were undertaken in 2023 following the most recent guidance at that time²⁶. See Appendix 13.5: Dormouse Survey Report.
- **Birds** – The Site provides suitable habitat for farmland and generalist/woodland bird assemblages. Winter and breeding bird surveys were undertaken in 2023 to 2025 following the latest guidelines at the time^{27 28}. See Appendix 13.6: Breeding Bird Survey Report and Appendix 13.7: Winter Bird Survey Report.

Future Baseline

13.3.23 The future baseline conditions have been determined by considering factors such as land management and climate change. As the majority of the Site is utilised as farmland,

management would be expected to generally stay consistent. However, fields may be cropped differently year on year due to crop rotations, so specific crops within the Site could be expected to change. Some fields are currently temporary grassland and so this could be expected to change in the future, with the potential for these fields to become cropped. This may vary the suitability of the Site for some species, particularly farmland birds, each year depending on cropping and management regimes. Climate changes might also dictate a changing in crops and management, changing the utilisation by native species.

Assessment Method

13.3.24 This impact assessment has been carried out using the CIEEM guidance²⁹. The impact assessment process involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancements.

13.3.25 The starting point for the assessment of impacts was to determine the IEFs. Ecological features can be important for a variety of reasons, for example, the quality of designated sites or habitats, habitat/species rarity, or their rate of decline.

13.3.26 Potential construction effects were assessed by considering the Parameter Plans and detailed highway junction drawings which show the extent of built development and vegetation loss/retention within the Site. Reference was also made to the indicative earthworks strategy which show the extent of habitat loss within the Site.

13.3.27 Potential completed Development effects were assessed by considering the baseline ecological information (from the desk study and survey results), relevant Chapters (including Noise and Air Quality), embedded mitigation, green infrastructure plan and relevant outline management plans (Outline CEMP and Outline LEMP which includes an Outline SMMP).

Cumulative Effects

13.3.28 The cumulative schemes that have been agreed with SADC for assessment have been reviewed to determine their potential to interact cumulatively with the Development during the construction and completed development phases. Refer to paragraph 13.3.9 for the cumulative schemes scoped out.

Assessment Criteria

Geographical Value of Receptor

13.3.29 The ecological features that may be affected by the Development have been evaluated within a geographical framework (in accordance CIEEM EcIA guidance) which area based on the ecological status of the features, but which also reflects a wide range of legislation and governmental guidance as indicated in Table 13.2. The guidance stresses there are many geographic contexts in which the importance of IEFs can be assessed, and the

importance is in how these are defined. The significance of impacts is also then subsequently assessed based on this frame of reference.

Table 13.2: Geographical Value Descriptors

Value (Sensitivity)	Descriptor
International and European	▪ An internationally or European designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified. ▪ A viable area of a habitat type listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole. ▪ Any regularly occurring population of an internationally important species, which is threatened or rare in the UK (i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK) or of uncertain conservation status or of global conservation concern. ▪ A regularly occurring, nationally significant population/number of any internationally important species.
National	▪ A nationally designated site (SSSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified. ▪ Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (local BAP). ▪ A regularly occurring, regionally or county significant population/number of any nationally important species.
Regional (South-East)	▪ Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile. ▪ Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK, or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation. ▪ A regularly occurring, locally significant number of a regionally important species. ▪ Sites which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.
County	▪ Semi-natural ancient woodland greater than 0.25 ha. ▪ County/Metropolitan sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County/metropolitan ecological criteria (County/Metropolitan sites will often have been identified in local plans). ▪ A viable area of habitat identified in County BAP.

Value (Sensitivity)	Descriptor
	- Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan “red data book” or BAP on account of its regional rarity or localisation. - A regularly occurring, locally significant number of a County/Metropolitan important species.
Local (with further sub levels as appropriate)	- Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood (e.g. species-rich hedgerows). - The presence of protected or locally scarce species occurring on-site or in close proximity, in locally important numbers. - Local Nature Reserves selected on Parish ecological criteria.
Site	- Areas of habitat considered to be of value but not in the context of Parish or neighbourhood. - The presence of protected or locally scarce species occurring on-site.

Magnitude of Impact

13.3.30 Table 13.3 sets out the magnitude of impact descriptors used in the assessment of impacts.

Table 13.3. Magnitude of Impact Descriptors

Impact Magnitude	Descriptor
High	Total loss or major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Medium	Loss, gain or alteration to one or more key elements/features of the baseline conditions such that the post development character/composition/attributes of the baseline will be materially changed.
Low	A minor shift away from baseline conditions. Change arising from the loss/alteration/gain will be discernible/detectable but will not alter the underlying character/composition/attributes of the baseline condition.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to ‘no change’ situation

Assessing Significance

13.3.31 As part this assessment it is important to assess whether an effect (referred to as an impact within the CIEEM guidelines) is significant or not. Significance is defined as:

“An effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’.”

13.3.32 An IEF is defined as:

“Ecological features requiring specific assessment within EclA. Ecological features can be important for a variety of reasons (e.g. quality and extent of designated sites or habitats, habitat / species rarity).”

- 13.3.33 Effects that are deemed to be significant for the purposes of this assessment, are those that are described as being of a moderate or major beneficial or adverse level. Features with a value of Local or above were considered to represent IEFs. The impacts of the Development have been predicted in both the construction and the operational phase. The ecological significance of these impacts has then been assessed based upon the likely effect on the structure, function, or conservation status of the feature. The assessment of impact significance is undertaken both to identify the need for mitigation and also to assess residual impacts.

Construction

- 13.3.34 Effects from construction are considered to begin as soon as any works begin within the Site boundary. The above methodology has been used to identify and assess likely significant effects. These include direct effects of habitat loss on both habitats and protected species, as well as indirect effects from noise and dust deposition etc.
- 13.3.35 For the purposes of this assessment, the indicative programme for construction works is assumed to be approximately 13 years, with works expected to commence in 2028 and be complete by 2041. Peak construction activity is predicted to be in 2033, with completion expected in 2041.

Completed Development

- 13.3.36 Effects from the completed Development are considered to begin as soon as the first residents move in. The above methodology has been used to identify and assess likely significant effects, which may include impacts such as increased recreational pressure and disturbance. For assessment purposes, the year of 2041 is assumed as the completed year.

Assumptions and Limitations

- 13.3.37 The following assumptions and limitations have informed this assessment:
- The figures for this chapter and ecological survey reports have been reproduced from detailed field notes, informed by aerial imagery, OS mapping and site maps provided by the Applicant. The accuracy of these figures is therefore ultimately guided by the accuracy of these sources and can only be relied upon to a certain degree of resolution;
 - Data provided by third party sources collated during the desktop study is generally made up from a wide range of sources including (but not limited to) those submitted by ecological consultancies, wildlife conservation organisations and volunteers. As such, this data is typically focused on areas of known nature conservation and is reliant upon formal surveys having been undertaken within an area or the presence of an expert within the locality (particularly for invertebrate records) and as such this data can never be fully relied upon as a complete ecological dataset for any given area. Rather, this data is used as a guide to likely presence of notable ecological features and can never be relied upon for likely absence; and

- According to CIEEM guidance, ecological data is considered valid for up to 18 months in most cases. Some or all of survey work between 18 months to 3 years old may need to be updated, dependent on: the mobile nature of the species present, changes to habitats present or management practices and whether the local distribution of a species within the wider area has changed. Site visits have been updated at least annually to ensure there are no significant changes to the habitats on Site, which may affect the distribution/abundance of protected/notable species.

13.3.38 Limitations relevant to specific species surveys/assessment have been addressed within the specific reports detailed in Appendices 13.1-13.7. These limitations include:

- Some surveys conducted to inform this assessment were completed in 2022/23 and this data is therefore 2 to 2.5 years old. This data remains valid for this assessment, consistent with CIEEM guidance (Advice Note on the Lifespan of Ecological Reports & Surveys, 2019³⁰) for data up to three years old. A targeted update walkover survey in 2025 confirmed no significant changes habitats have occurred in terms of character, extent, or management. Therefore, the 2- to 2.5-year-old data accurately represents the current reptile baseline and is appropriate for the ES;
- Bat surveys being conducted in line with BCT 3rd edition guidelines rather than 4th edition, due to the 4th edition being released mid-way through the survey period. This is not considered a constraint as the methodology used is still robust; and
- Access was not available to an off-site pond P3, to undertake eDNA surveys for GCN. This pond is separated from the Site by the B487 which is considered to act as a barrier to dispersal and so any GCN in P3 are considered unlikely to utilise the habitats on the Site.

Biodiversity Net Gain Assessment

13.3.39 While Biodiversity Net Gain (BNG) sits outside of the EIA process, it is a legal requirement to be applied regardless and therefore a summary of the BNG approach is set out below and BNG is referred to where relevant to the assessment, for example as embedded mitigation.

13.3.40 In accordance with statutory requirements, a BNG assessment has been completed to ensure a minimum 10% net gain in biodiversity can be achieved. The BNG assessment was completed in accordance with relevant guidance. The Defra Statutory Biodiversity Metric Calculation Tool (hereafter 'the BNG metric') was used to calculate the baseline and predicted post-development biodiversity value of the Site and Development based on the Land Use and Green Infrastructure Parameter Plan (Appendix 5.1) and SANG Landscape Strategy (Indicative Landscape Proposals for Suitable Alternative Natural Greenspace (SANG) which is included in the Outline LEMP (Drawing Ref_12578-FPCR-ZZ-ZZ-DR-L-0007). The Defra Statutory Metric and baseline and proposed habitat details are provided in Appendix 13.8: BNG Assessment Report.

13.4 Baseline Conditions

Existing Baseline

13.4.1 The Site is in the Redbourn ward within SADC to the east of the town of Hemel Hempstead. The Site is bound by Hemel Hempstead Road to the south and Holtsmere End Lane to the west. Little Revel End Lane runs through the Site, separating the Site into two main parcels,

that to the south and that to the north of Little Revel End Lane. Little Revel End Farm lies within the Site boundary, including the access track running east to west.

- 13.4.2 The Site is predominantly used for agriculture, with a mixture of arable fields and grassland leys. The field boundaries generally consist of hedgerows with narrow strips of woodland and hedgerows bounding the Site.

Designated Sites

Statutory Sites of International Conservation Value

- 13.4.3 The MAGIC website indicates that there is one internationally designated site of nature conservation importance within 15km of the Site boundary, as shown on Figure 13.1. This is the Chilterns Beechwoods SAC, located approximately 7.3km west of the Site. This SAC is primarily designated due to the extensive area of *Asperulo-Fagetum* beech forests it supports, in the centre of the habitat's UK range. The SAC supports an important part of a grassland-scrub-woodland mosaic and also supports stag beetle *Lucanus cervus*.
- 13.4.4 The Site falls within the Zone of Influence for Chilterns Beechwoods SAC and so it is considered an IEF (see Appendix 13.9 for more detail).

Statutory Sites of National Conservation Value

- 13.4.5 There are no statutory designated sites of national conservation importance, such as SSSIs, within 2km of the Site boundary and the Site does not fall within any Impact Risk Zones of any SSSIs.
- 13.4.6 Howe Grove Wood Local Nature Reserve (LNR) is located approximately 2.4km from the Site and so lies outside the 1km search area. However, this LNR does lie adjacent to the A4147 and so there is potential for increased traffic to lead to impacts on this Site. Therefore, it has been scoped into this assessment and considered. This LNR is designated due to being an Ancient or semi-natural woodland.

Non-Statutory Designated Sites

- 13.4.7 HERC returned five Local Wildlife Sites (LWS) within the 1km search area of the Site. These are illustrated in Figure 13.1 and Table 13.4 shows their approximate distance from Site and reason for designation.

Table 13.4: Local Wildlife Sites and Ancient Woodland within 1km

Designation	Approximate Distance from Site	Reason for Designation
Great Revel End Farm LWS	60m east	Designated for supporting a wide range of species characteristic of old and relatively undisturbed neutral grassland. Plants of particular note that have been recorded include downy oat-grass <i>Helictotrichon pubescens</i>, pignut <i>Conopodium majus</i>, meadow vetchling <i>Lathyrus pratensis</i> and burnet-saxifrage <i>Pimpinella saxifraga</i>. Wildlife Site criteria: Grassland indicators.

Designation	Approximate Distance from Site	Reason for Designation
Nicky Way Dismantled Railway LWS	100m south	A disused railway bordered by areas of rough neutral grassland, tall herbs, wooded hedgerow and scrub. Wildlife Site criteria: Mosaic; woodland and grassland indicators.
High Wood LWS & Ancient Woodland	130m west	Ancient woodland remnant mainly of ash <i>Fraxinus excelsior</i> , beech <i>Fagus sylvatica</i> , wild cherry <i>Prunus avium</i> and hybrid black poplar <i>Populus x canadensis</i>) with ground flora including bluebell <i>Hyacinthoides non-scripta</i> , woodruff <i>Galium odoratum</i> , goldilocks buttercup <i>Ranunculus auricomus</i> , and wood meadow-grass <i>Poa nemoralis</i> . Along the northern margin there is a hedge bank supporting Hazel coppice. Wildlife Site criteria: Ancient Woodland site with some semi-natural canopy and field evidence suggesting an ancient origin .Ancient Woodland Inventory site.
Hay Wood (Holtmere) LWS & Ancient Woodland	590m north-west	Ancient broadleaved woodland site with semi-natural canopy consisting mainly of beech <i>Fagus sylvatica</i> , Pedunculate oak <i>Quercus robur</i> and wild cherry. Ancient woodland indicators including bluebell, pignut, woodruff, Wood Millet <i>Milium effusum</i> , and Dog's mercury <i>Mercurialis perennis</i> are present. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
Woodhall Wood LWS & Ancient Woodland	890m west	Ancient semi-natural woodland remnant dominated by a high canopy of ash and wild cherry with occasional Pedunculate oak and beech. The shrub layer is characterised by old hazel coppice The ground flora includes bracken <i>Pteridium aquilinum</i> , woodruff, bluebell and dog's mercury and wood millet. Remnant ancient laid hedges and banks mark the boundary of the original woodland support a wide range of tree and shrub species. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
New Wood (West of Redbourn) LWS	900m north	A small area of ancient semi-natural Pedunculate oak and ash woodland with a diverse ground flora including frequent bluebell along with wood anemone <i>Anemone nemorosa</i> , dog's mercury and woodruff. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
Bury Wood (near Redbourn) LWS &	990m north-east	Ancient semi-natural woodland of ash, Pedunculate oak, hazel and beech. Ground flora dominated by bluebell and wood anemone with other ancient woodland indicators also present.

Designation	Approximate Distance from Site	Reason for Designation
Ancient Woodland		Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.

13.4.8 All of the above LWS are considered to be IEFs due to them being of Local value.

Protected, Notable and Invasive Species

13.4.9 Records of protected, notable and invasive species within 2 km, derived from the desk study consultees, are summarised in Table 13.5 below and Figure 13.1. Please note that for bats, the records did not define the type of encounter, whether this was in flight or a roost, for the purpose of this assessment they are not considered as roosts.

13.4.10 No records of invasive, non-native species were returned in proximity to the Site.

Table 13.5: Protected and Notable Species Records

Species	Dates	Legal Protections	Approximate Location Relative to Site
Bats			
Bat Species	2019	HAB4, WCA, S41	Nearest record 600m south-west within Hemel Hempstead.
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	2019 - 2022	WCA5, CHSR	Nearest record 600m north-east within Redbourn.
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	2019 - 2022	WCA5, CHSR, NERC41	Nearest record on-site along the central hedgerows.
Noctule <i>Nyctalus noctula</i>	2022	WCA5, CHSR, NERC41	Nearest record 830m east.
Terrestrial Mammals			
Badger <i>Meles meles</i>	2010 - 2021	Protection of Badgers Act 1992	
Birds			
Barn Owl <i>Tyto alba</i>	2013 - 2019	WCA Sch.1	Nearest record 100m east towards Redbourn.
Bittern <i>Botaurus stellaris</i>	2015	Amber List WCA Sch. 1 NERC S.41	Nearest record 1.8km north-east along the River Ver.
Fieldfare <i>Turdus pilaris</i>	2011 - 2019	Red List WCA Sch.1	Nearest record 760m north-east towards Redbourn.

Species	Dates	Legal Protections	Approximate Location Relative to Site
Green Sandpiper <i>Tringa ochropus</i>	2016 - 2019	Amber List WCA Sch.1	Nearest record 1.9km north-east near Redbourn.
Hobby <i>Falco subbuteo</i>	2017	WCA Sch.1	Nearest record 1.9km east.
Kingfisher <i>Alcedo atthis</i>	2014	WCA Sch.1	Nearest record 1.9km north-east near Redbourn.
Peregrine <i>Falco peregrinus</i>	2014 - 2019	WCA Sch.1	Nearest record 1.9km north-east near Redbourn.
Red Kite <i>Milvus milvus</i>	2011 - 2019	WCA Sch.1	Nearest record on-site, in the southern parcels.
Redwing <i>Turdus iliacus</i>	2015 - 2019	Amber List WCA Sch.1	Nearest record 1.9km north-east near Redbourn.

Key: NERC41 – Section 41 of the Natural Environment and Rural Communities Act 2006; HabsDirA2 – Habitat Directive Annex II species, CHSR – The Conservation of Habitats and Species Regulations 2017; WCA1/WCA5/WCA9 – species listed on Schedule 1, Schedule 5, and Schedule 9 of the Wildlife and Countryside Act 1981 respectively

Habitats

13.4.11 Figure 13.2 shows the habitats within the Site boundary.

Cereal and Non-cereal crops

13.4.12 The majority of the Site comprises large arable field compartments which are defined and bound by hedgerows. Floral diversity is low due to the intensive management practices and the input of fertiliser, pesticide and herbicide. The field margins are not well defined and comprise of long unmanaged swards with ruderals, including perennial rye-grass *Lolium perenne*, cock's foot *Dactylis glomerata*, false oat grass *Arrhenatherum elatius*, with herbaceous species including cow parsley *Anthriscus sylvestris* common hogweed *Heracleum sphondylium* and curled dock *Rumex crispus*. The fields are sown with a mixture of cereal crops and non-cereal crops.

13.4.13 This habitat is common and widespread and is managed chiefly for agricultural purposes. Surveys indicate that the intensively managed nature of cereal fields on-site has resulted in them supporting very limited botanical diversity, and these habitats are considered to be of no more than **Site value** and are therefore not considered to be an IEF supported by the Site.

Temporary Grass

13.4.14 A large expanse of improved grassland is present towards the centre of the Site, managed by annual cutting and dominated by perennial rye-grass and/or Italian rye grass *Lolium rigidum*. Floral diversity is low due to the intensive management practices and the input of fertiliser, pesticide and herbicide.

- 13.4.15 Due to the limited botanical diversity and heavily managed nature of these habitats, they are therefore considered to be of no more than **Site value** and is therefore not considered to be an IEF supported by the Site.

Modified Grassland

- 13.4.16 To the south of the Site along the western boundary is a small area of modified grassland, most likely an area of the field that cannot easily be cultivated. This grassland comprises frequent Yorkshire fog *Holcus lanatus*, crested dogs-tail *Cynosurus cristatus* and rough meadow grass *Poa trivialis* along with occasional meadow fescue *Festuca pratensis*, meadow foxtail *Alopecurus pratensis* and meadow buttercup *Ranunculus acris*.
- 13.4.17 This habitat is common and widespread, supporting limited species diversity that is dominated by species common and widespread species of abandoned cropland. This habitat is considered to be of no more than **Site value** not an IEF.

Other Woodland; Broadleaved

- 13.4.18 To the south of the Site, there is a narrow strip of woodland running north to south through the arable field. This woodland comprises pedunculate oak *Quercus robur*, hawthorn *Crataegus monogyna*, field maple *Acer campestre*, hazel *Corylus avellana*, ash *Fraxinus excelsior* and blackthorn *Prunus spinosa* with a ground flora including wood avens *Geum urbanum*, cleavers *Galium aparine*, garlic mustard *Alliaria petiolata*, creeping thistle *Cirsium arvense* and barren brome *Bromus sterilis*.
- 13.4.19 A narrow strip of woodland acts as the western boundary of the Site, running along Holtsmere End Lane. The woodland comprises frequent pedunculate oak, field maple and ash with occasional cherry *Prunus avium*, blackthorn and dog-rose *Rosa canina*. The ground flora includes bracken *Pteridium aquilinum*, wood avens, remote sedge *Carex remota* and common nettle *Urtica dioica*.
- 13.4.20 The woodlands are all narrow with the understorey mostly dominated by the road and likely regularly receiving nutrient input from the adjacent agricultural fields. They generally have poor structural diversity and a limited to non-existent, ground flora. Due to this, they are not considered to support a good example of lowland woodlands and therefore assessed as being of no more than **Local value** and is considered to be an IEF.

Mixed Scrub

- 13.4.21 There is a single area of mixed scrub located around the pond in the centre of the Site. This scrub block comprises of elder *Sambucus nigra*, ash, English elm *Ulmus procera*, hawthorn and dog-rose, with ground flora including nettles and broad-leaved dock *Rumex obtusifolius*.
- 13.4.22 Due to the small size of this mixed scrub and it being a common and widespread habitat, it is considered to be of no more than **Site value** and is not an IEF.

Ponds

- 13.4.23 There is a single pond located in the centre of the Site. This pond is heavily shaded due to being surrounded by scrub and had poor water quality at the time of survey. The pond had limited marginal vegetation and no aquatic vegetation and held very little water at the time of survey in April. This pond is a poor example of its habitat type and so is not an IEF.

Developed land, sealed surface

- 13.4.24 The access track through the centre of the Site to Great Revel End Farm is comprised of a sealed surface. This habitat supports no vegetation, hence is no ecological value or an IEF.

Hedgerows

- 13.4.25 There are 29 hedgerows bounding the fields and boundaries on-site. All hedgerows on-site include a variety of native species with mature and semi-mature specimens frequent within them. The details of which are provided in Table 13.6 below.
- 13.4.26 Hedgerow H20 and H21 are considered 'important' under the Hedgerow Regulations due to the high number of native species present per 30m and the presence of different connections and a parallel hedgerow.
- 13.4.27 All hedgerows were classified as NERC S41 Habitats of Principal Importance (HoPI), due to having at least 80% of their canopy comprising native species. All hedgerows are considered to be of **Local Value** as they provide structural variation on-site and commuting and foraging habitat for a range of faunal species.
- 13.4.28 It is important to note that hedgerows EH1 & EH2 fall within the adjoining third party land and application, so were surveyed by another ecological consultancy, their inclusion is part of the assessment for future traffic access into both developments. This assessment has been based on only hedgerows within this application, hedgerows H1 to H29.

Table 13.6: Hedgerow Survey Results

Ref	Canopy Species	Length	Description	Important under Hedgerow Regulations
H1	<i>Ps, Ia, Qr, Ac, Ca, Fe</i>	290m	Field and road hedgerow, native species dominant.	Not Important 3sp / 30m
H2	<i>Pa, Ca, Cm</i>	120m	Field hedgerow, native species dominant.	Not Important 2sp / 30m
H3	<i>Qr, Cm, Ca, Ps</i>	240m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H4	<i>Ca, Cm, Qr, Ia, Ps, Fe</i>	260m	Field hedgerow, native species dominant.	Not Important 3sp / 30m
H5	<i>Ca, Ps, Qr, Fe, Cm, Pa</i>	180m	Field hedgerow, native species dominant.	Not Important 3sp / 30m
H6	<i>Qr, Ps, Ac, Fe, Ca</i>	250m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H7	<i>Ca, Qr, Sn, Ps, Fe</i>	80m	Field hedgerow, native species dominant.	Not Important 5sp / 30m
H8	<i>Ps, Ca, Sn, Ac, Pa</i>	130m	Field and residential hedgerow, native species dominant.	N/A - Residential
H9	<i>Up, Ca, Sn, Cm, Qr, Ps, Pa</i>	360m	Field hedgerow, native species dominant.	Not Important 5sp / 30m

Ref	Canopy Species	Length	Description	Important under Hedgerow Regulations
H10	<i>Fs, Cm, Qr, Pa, Fe</i>	70m	Field and residential hedgerow, native species dominant.	N/A - Residential
H11	<i>Ps, Sn, Qr, Ca</i>	120m	Field and residential hedgerow, native species dominant.	N/A - Residential
H12	<i>Cm, Ps, Ia, Ca, Sn, Fe, Ap</i>	120m	Field and residential hedgerow, native species dominant.	N/A - Residential
H13	<i>Ac, Fa, Ca</i>	40m	Field and residential hedgerow, native species dominant.	N/A - Residential
H14	<i>Ps, Ac, Sn, Cm, Qr</i>	100m	Field and residential hedgerow, native species dominant.	N/A - Residential
H15	<i>Cm, Rf</i>	30m	Field and residential hedgerow, native species dominant.	N/A - Residential
H16	<i>Ps, Ca, Qr, Cm, Sn, Ia</i>	350m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H17	<i>Qr, Ac, Ia</i>	230m	Field hedgerow, native species dominant.	Not Important 2sp / 30m
H18	<i>Cm, Cs, Ac, Ps</i>	340m	Field and road hedgerow, native species dominant.	Not Important 2sp / 30m
H19	<i>Pa, Qr, Ca, Ps, Ia, Sn</i>	140m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H20	<i>Cm, Ps, Qr, Fe, Ac, Ca, Fs</i>	360m	Field and road hedgerow, native species dominant.	Important 5sp / 30m & associated features
H21	<i>Ca, Ps, Cm, Sn, Fe, Qr, Ac, Ap</i>	660m	Field and road hedgerow, native species dominant.	Important 6sp / 30m & associated features
H22	<i>Ac, Ap, Cm, Ps, Rf, Ia, Qr</i>	60m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H23	<i>Cm, Ca, Ps, Up, Ap, Fe, Ia</i>	390m	Field hedgerow, native species dominant.	Not Important 3sp / 30m
H24	<i>Ca, Cm, Sn, Ps, Ac, Fe, Um</i>	160m	Field hedgerow, native species dominant.	Not Important 5sp / 30m
H25	<i>Ca, Ap, Up, Ps, Qr</i>	120m	Field hedgerow, native species dominant.	Not Important 4sp / 30m
H26	<i>Ca, Sn, Qr, Fe, Cm, Ap, Ug</i>	150m	Field hedgerow, native species dominant.	N/A - Residential
H27	<i>Ac, Ps, Sn, Fe, Qr, Up, Ap</i>	80m	Field hedgerow, native species dominant.	Not Important 5sp / 30m

Ref	Canopy Species	Length	Description	Important under Hedgerow Regulations
H28	<i>Qr, Cm, Ca, Ps, Ac, Fe, Ap</i>	820m	Field and road boundary hedgerow, native species dominant.	Not Important 3sp / 30m
H29	<i>Ca, Qr, Rf, Ac, Ia, Sa</i>	190m	Field hedgerow, native species dominant.	Not Important 3sp / 30m
EH1	<i>Ps, Ac, Cm</i>	190m	Field and road boundary hedgerow, native species dominant.	Not Important 2sp / 30m
EH2	<i>Ps, Ac, Cm, Ia</i>	410m	Field and road boundary hedgerow, native species dominant.	Not Important 2sp / 30m

Key: **Ac**: Field maple, *Acer campestre*; **Ap**, Sycamore; *Acer pseudoplatanus*; **Bp**: silver birch, *Betula pendula*; **Ca**: Hazel, *Corylus avellana*; **Cm**: hawthorn, *Crataegus monogyna*; **Fe**: Ash, *Fraxinus excelsior*; **Fs** beech, *Fagus sylvatica*; **Ia**: Holly, *Ilex aquifolium*; **Pa**: Wild cherry, *Prunus avium*; **Ps**: Blackthorn *Prunus spinosa*; **Qr**: English oak, *Quercus robur*; **Rf**: bramble, *Rubus fruticosus*; **Sn**: elder, *Sambucus nigra*; **Up**: Field elm, *Ulmus procera*; and **Ug**: Wych elm, *Ulmus glabra*.

Mature Individual Trees

- 13.4.29 There are seven mature individual trees (of medium, large and very large size) within the Site boundary, all along the access track to Great Revel End Farm. These were three oaks, an ash and three hybrid black poplar. There are no ancient or veteran trees within the Site. See Appendix 13.10 for further details on trees within the Site and retention/loss. The mature trees within the Site are not considered to be IEF as they are a common feature of the surrounding landscape.

Fauna

Bats (Appendix 13.1)

- 13.4.30 The habitats on-site provide some suitable commuting, foraging and roosting habitats in the form of hedgerows, mature trees and woodland. A variety of common and widespread species have been recorded, illustrated by the majority of registrations recorded during the static detector surveys comprising of common pipistrelle *Pipistrellus pipistrellus* (94% of registrations). Other species recorded in lower numbers included soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, *Myotis* species and brown long-eared bats *Plecotus auritus*. Low levels of bat activity were generally recorded, with peak activity recorded along hedgerows.
- 13.4.31 One Annex II species, barbastelle *Barbastella barbastellus*, has been recorded within the Site comprising of only 1.8% of all registrations recorded during the static surveys. The Site is moderately well connected to pockets of ancient woodland in the surrounding landscape, which is likely where these barbastelles are travelling to and from. Barbastelles are likely using the Site for commuting and sporadic foraging, particularly along hedgerow H23. Due to the low number of barbastelles registrations recorded, it is considered unlikely that the Site is of importance for this species and is instead used occasionally.
- 13.4.32 During the ground level tree assessment (GLTA), 33 trees were identified as offering potential roost features, which are anticipated to either be lost or indirectly impacted via light spill. Further work was undertaken on these trees to classify whether they supported a

potential roost feature that could support an individual bat (PRF-I) or multiple bats (PRF-M). This was either completed via aerial assessment, using an endoscope or by undertaking nocturnal emergence surveys, with a total of three aerial assessments and three nocturnal surveys undertaken. A total of seven trees were classified as having one or more PRF-Is, whilst six trees were classified as having single or multiple PRF-Ms and the remaining trees were considered negligible. Once the additional surveys were completed no suitable roost features were confirmed.

- 13.4.33 The Site is considered to be of **Local value** for the assemblage of bats, with regards to foraging and commuting and is considered to be an IEF.

Reptiles (Appendix 13.2)

- 13.4.34 Reptile surveys conducted within the Site boundary did not record any reptile species. This species group are therefore considered likely absent from the Site and are not considered to pose a constraint to the proposals. They are therefore not considered further in this Chapter

Great Crested Newts (GCN) (Appendix 13.3)

- 13.4.35 eDNA surveys of the waterbodies were undertaken, whilst access was not granted to P3, the remaining two ponds returned negative results, implying the absence of GCN.
- 13.4.36 The Site lies within the Green Risk Zone of Natural England's GCN Risk Zone Map.
- 13.4.37 GCN are **likely absent** from the Site and do not pose a constraint to the proposals, so are not considered further in this Chapter.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Hazel Dormice (Appendix 13.5)

- 13.4.40 Dormouse surveys undertaken recorded no signs of dormice within the Site boundary, suggesting that dormice are **likely absent**. As dormice are considered likely absent, they are not considered to pose a constraint to the proposals and are not considered further in this Chapter.

Breeding Birds (Appendix 13.6)

- 13.4.41 The hedgerows and woodlands on-site support an assemblage of common and widespread generalist and woodland species, both for breeding and foraging. Notable species within this assemblage include song thrush, dunnock, wren and greenfinch. This assemblage is considered to be typical of this semi-rural habitat, with few notable species recorded and none recorded in important numbers.

- 13.4.42 The internal parts of the arable fields offer limited suitability for the majority of species recorded. Skylarks were recorded on the Site which do utilise a variety of habitat types. Other farmland bird species including linnet and yellowhammer were also recorded within the Site.
- 13.4.43 Two nesting red kites, a species listed under Schedule 1 of the Wildlife & Countryside Act, were recorded in 2023, one on the western boundary and one on the eastern boundary. These were not noted to be active during the 2025 season, so currently these species are not breeding on Site.
- 13.4.44 While of some conservation concern, the notable generalist species recorded are still considered to be relatively widespread within Hertfordshire and the wider UK. The majority of these species adapt readily to urban landscapes and, with appropriate implementation of green infrastructure, are expected to persist within the Site after development.
- 13.4.45 The breeding bird assemblage within the Site are unexceptional in terms of numbers and species recorded, farmland birds are of **Local value** and an IEF; whereas the typical generalist and woodland species are of **Site value**.

Wintering Birds (Appendix 13.7)

- 13.4.46 The habitats on-site provide suitable habitats for a variety of species including a range of generalist and woodland edge species and a limited farmland bird assemblage.
- 13.4.47 The 2023/ 2024 and 2025 wintering bird surveys recorded a total of 37 species, of which 18 are 'notable' species. A bird species is considered 'notable' if it exists on one of the following three lists: Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), BoCC Red or Amber lists, or Section 41 of the NERC Act 2006.
- 13.4.48 Skylark were recorded foraging in flocks, with winter thrushes recorded in varying numbers, also foraging on the Site. Farmland birds are likely utilising the Site as part of a wider mosaic of foraging habitats, that collectively provide sustainability during the winter months.
- 13.4.49 Due to the use of the Site by farmland bird such as skylarks, the Site is of **Local value** for the wintering bird assemblage which are an IEF. The generalist species are of **Site value**.

Future Baseline

- 13.4.50 If proposals were not to proceed, it is considered that habitats on-site would likely remain in the same condition as described. Continued management of the farmland would retain the majority of the Site as cropland, with spraying of fertilisers and pesticides likely to continue. The narrow strips of woodland on the Site would likely remain in the same condition, or decline slowly, with a general lack of management and impact of run-off from the application of fertilisers and pesticides. The grassland would likely remain in the same condition assuming the annual cutting continues.
- 13.4.51 The status of protected species on the Site can be expected to remain the same or broadly consistent with the baseline described, provided that arable management continues. Reptiles and dormice would be unlikely to colonise the Site due to the intensive arable management. The bird assemblages on the Site would likely remain consistent with that recorded, with the farmland bird assemblage (skylark, linnet and yellowhammer) likely to vary annually or seasonally depending on the cropping regimes. The network of hedgerows

throughout the Site would continue to support a common and widespread assemblage of bats. Badgers are a particular mobile and adaptable species, so their utilisation of the Site is likely to vary.

Summary of Receptors and Sensitivity

13.4.52 Table 13.7 provides a summary of the geographical value of receptors.

Table 13.7: Summary of Receptor Geographical Value

Receptor	Geographical Value	Rationale
Existing		
Chilterns Beechwoods SAC	International	Site designated at European level.
Howe Grove Wood LNR	County	Site designated for local importance.
Local Wildlife Sites	County	Sites designated for their local importance.
Ancient Woodland Inventory sites	Local	There are ancient woodland sites within 1km of the Site.
Habitats		Native hedgerows (a Habitat of Principal Importance) are present within the Site.
Bats		Mostly widespread and commons species recorded in low numbers, with small numbers of Annex II species, Barbastelle.
Breeding & Wintering farmland birds		A small number of farmland birds were recorded, including breeding skylark.
Breeding & Wintering generalist/woodland birds	Site	An assemblage of generalist and woodland birds utilise the Site for breeding and foraging.
Future Baseline – habitats not changing		
Chilterns Beechwoods SAC	International	Site designated at European level.
Howe Grove Wood LNR	County	Site designated for local importance.
Local Wildlife Sites	County	Sites designated for their local importance.
Ancient Woodland Inventory sites	Local	There are ancient woodland sites within 1km of the Site.
Habitats		Native hedgerows (a Habitat of Principal Importance) is likely to still be present within the Site.
Bats		The usage of the Site by bats will likely remain similar, with low levels of activity mostly from common species.
Breeding & Wintering farmland birds		The Site will likely continue to support farmland birds as it will likely remain as farmland.
Breeding & Wintering generalist/woodland birds	Site	The Site will likely continue to support generalist and woodland species.

Receptor	Geographical Value	Rationale

13.5 Embedded Mitigation (Scheme Design and Management)

13.5.1 Table 13.8 summarises the embedded mitigation measures that have been accounted for within this assessment. As set out in Chapter 3: EIA Methodology, and in line with IEMA guidance, this includes both primary and tertiary mitigation measures.

Table 13.8: Summary of Embedded Mitigation

Embedded Mitigation Measure	Description	How Secured
<i>Construction</i>		
Vegetation retention / removal	Habitats to be removed or retained are shown on the Land Use and Green Infrastructure Parameter Plan and the Development Specification document. These plans also identify the necessary breaks in existing vegetation required to provide access, public rights of way, and street connections. Hedgerow, trees and woodland to be retained will have appropriate buffers between them and construction activities, with the use of protective fencing if required (see Appendix 13.10). This will help protect and prevent damage to retained habitats.	Land Use and Green Infrastructure Parameter Plan Development Specification Document
CEMP	Good practice measures secured through the Outline CEMP (Appendix 6.1) would be in place to avoid significant adverse effects on the species/habitats of IEF present on-site. This would include mitigation to reduce impacts directly and indirectly from noise, light spill and dust deposition on IEF. The Outline CEMP is to be secured via an appropriately worded planning condition.	Planning condition for detailed CEMP. Refer to Appendix 6.1: Outline CEMP.
<i>Completed Development</i>		
Strategic Alternative Natural Greenspace (SANG)	As the Site falls within the ZoI of the Chilterns Beechwoods SAC, a SANG is required as mitigation for increased recreational pressure as stated within the SADC Local Plan. A SANG will be provided in a phased manner in the east of the Site and will be a minimum of 28.8ha, this will provide recreational alternatives to the designations for the new residents, but also existing residents in a 5km radius of the SANG, benefiting the wider area. Subject to phasing, separate circular routes of a minimum of 2.3km can be provided to the south and north of Little	Parameter Plans, Development Specification, Outline LEMP and Section 106

Embedded Mitigation Measure	Description	How Secured
	Revel End Lane. The indicative landscape strategy identifies that a c4.6km route can be provided across the whole SANG. Information boards will be provided at entrance points to the SANG showing the routes available on a map and signposts will be used around the SANG as appropriate. A variety of habitat including woodland, grassland and scrub will be provided within the SANG area and a car park will be provided for use of the SANG outside the Development footprint. Dog-proof fencing will encompass the SANG to cater for dogs off leads. The SANG will also provide areas of foraging opportunities for farmland birds, with a focus on the provision of seeds and also invertebrate prey items that are favoured by skylarks; this will include invertebrate/beetle banks created around the SANG. These will all be managed to ensure a prolonged foraging resource to be detailed within the Outline LEMP and SMMP.	
Strategic Access Management and Monitoring Strategy (SAMMS) payment	The SAMMS, set-up by Natural England and partner authorities, works to improve site management of the Chilterns Beechwoods SAC through access management and engagement work. The strategy aims to mitigate potential recreational disturbance on the SAC from new residential developments in-combination. A financial contribution, in accordance with the applicable tariff, will be provided by the Applicant for the Development to support the long-term implementation of the SAMMs.	Secured through a Section 106 Agreement
Green Infrastructure Strategy	In addition to the 28.8ha SANG, there will be sport provisions (3.68ha) and areas of GI around the residential areas to the west of the SANG provision, this will create an additional 22.36ha which will create a variety of habitats including grassland, scrub, SUDs, and shrub planting; with further hedgerow planting along boundaries and within the Development footprint. This aligns with the Draft LNRS action Grassland 3 and Broadleaved Woodland 1, which target the creation of more neutral grassland and woodland respectively.	Outline LEMP. Development Specification (Key Design Principles)
Outline LEMP	The Outline LEMP which incorporates the SMMP (Appendix 17.5) provides an overarching draft structure and strategy for habitat protection, creation and management approaches for existing and new GI at the	Appropriately worded condition

Embedded Mitigation Measure	Description	How Secured
	Development. A detailed LEMP would be agreed by planning condition.	
Outline SANG Mitigation and Management Plan (SMMP)	An Outline SANG Mitigation and Management Plan (SMMP) is included at Appendix A of the Outline LEMP (Appendix 17.5). The Outline SMMP deals specifically with the SANG proposals put forward to mitigate impacts upon the Chilterns Beechwood SAC. The OSMMP document is high level and sets out the key principles only. A final SMMP will be prepared and secured via planning condition. The SANG would function in perpetuity, to be secured through a S106 agreement.	Appropriately worded planning condition. Section 106 Agreement.
Habitat Management and Monitoring Plan	An HMMP will be provided under the BNG requirements and will provide detailed prescriptions for both the creation and enhancement of habitats on the Site, as well as on the continued management ensuring targeted conditions are met. This will be informed by finalised proposals following detailed design at Reserved Matters.	Appropriately worded planning condition

13.6 Assessment of Effects - Construction

Chilterns Beechwoods SAC

- 13.6.1 There are no hydrological links between the Site and Chilterns Beechwoods SAC. The Site is sufficiently distant from the SAC, so construction activities will not significantly impact the SAC, such as direct habitat loss and indirect dust release. Therefore, there will be **no significant effect** from the Development.
- 13.6.2 See Appendix 13.9 for further detail on impacts on Chilterns Beechwoods SAC.

Local Wildlife Sites

- 13.6.3 Ground clearance, including soil stripping and earth movements, have the potential to lead to an increase in airborne dust, particularly during dry weather periods, which can disrupt photosynthesis vegetation if major. The Institute of Air Quality Management has produced guidance on the assessment of dust deposition which notes that sites such as LWS are classified as being low sensitivity to effects of dust deposition and states a maximum distance of risk at <50m. All of the LWSs are over 50m away from the Site boundary, with the closest being Great Revel End Farm LWS located 60m north-east of the Site, closest to the proposed SANG rather than the built development footprint, whereby dust release will be minimal.
- 13.6.4 The Site is not hydrologically linked to the LWSs and therefore there are not anticipated to be any impacts from run-off to the LWSs. Therefore, there will be **no significant effect** on the LWSs from these impacts.

Ancient Woodland Inventory sites

- 13.6.5 As above with the LWS', the Ancient Woodland Inventory (AWI) sites located near the Site have the potential to be impacted by dust from construction activities, but no direct damage. All of the AWIs are greater than 50m from the Site boundary, with the closest being 130m from the Site. The Site is also not hydrologically linked to the AWIs and therefore there are not anticipated to be any impacts from run-off to the LWSs. Therefore, it is considered that there will be **no significant effect** on the AWIs from these impacts.

Habitats

- 13.6.6 At this stage it is known that H18, H20, H28 and H29 will have partial losses to create vehicular access into and within the Site, although it is likely that other hedgerows will also have small losses to create access between development parcels. The GI Strategy would deliver new hedgerow planting around the Site perimeter and within the Site. A diverse range of habitats will be created in the western areas, away from the SANG; the HMMP will also provide management and monitoring strategies to ensure they are maintained well. Therefore, it is considered that there will be a short-term, (non-significant) **minor adverse** Site effect on hedgerows. As planting of new hedgerows, grassland, scrub and woodland establishes, there will be a long-term (non-significant) **minor beneficial at Site level** effect on hedgerows and other newly created habitat types.
- 13.6.7 Owing to the proximity of construction activities to all woodland compartments within the Site, dust deposition could have a small effect on photosynthesis. The detailed CEMP will include methods to ensure that dust deposition is kept to a minimum, such as dampening of the ground during dry conditions and so it is considered that with the embedded mitigation there will be **no significant effect** on the woodland on-site from dust deposition.

Bats

- 13.6.8 The proposals will lead to partial losses of woodland and hedgerows as well as a small area of species-poor grassland. The loss of these habitats will lead to a small decrease in the foraging, roosting and commuting habitat available for bats, with the punch-through of hedgerows reducing connectivity. However, the landscape strategy retains and buffers the majority of woodland and hedgerows within the Site, maintaining connectivity through the Site and to the wider area. Most trees with the potential to support roosting bats are to be retained, with two trees expected to be lost to create the access off Holtsmere End Lane. The GI strategy also includes the creation of species-rich grassland, woodland and scrub planting within the SANG, which will provide optimal foraging habitat for the bat species utilising the Site, thus exceeding the baseline arable habitats currently present.
- 13.6.9 Bats were generally recorded in low numbers, with most bats recorded on the Site comprising common and soprano pipistrelles which are more generalist in their habitat usage. Although Barbastelle bats are present on the Site, they were recorded sporadically, and as such the Site is not thought to be a key habitat for this species.
- 13.6.10 It is considered that habitat creation will have a (non-significant) permanent long-term **minor beneficial effect at Site level** on the assemblage of bats on Site.
- 13.6.11 Lighting during the construction phase on hedgerows and boundary habitats, including trees with the potential to be used for roosting, may impact bat species utilising the Site. Common and soprano pipistrelles, the most frequently recorded species recorded, which are not so averse to lighting as other bat species, some even benefiting from light attracting more

invertebrates for feeding. However, Barbastelle are less tolerant of lighting. The CEMP will provide measures including the avoidance of night working and the use of directional lighting and timed/sensor-activated security lighting to reduce the construction effects on bats. During winter months where construction lighting is needed earlier, bats will be in hibernation so effects will be limited further. It is therefore considered that lighting during the construction phase, outside hibernation, will result in a temporary, short-term (not significant), **minor adverse effect at Site level**.

Badgers

- 13.6.12 See Appendix 13.4 for assessment details, but it is anticipated that the current location of development will not effects badgers directly and GI will create/retain foraging and commuting. The CEMP will detail precautionary working practices to ensure badgers do not become traps or injured during works, so effect could be **negligible**. If there are changes to the population dynamics whereby increased setts are recorded and are affected by construction directly, then effects could be a **long term minor/moderate adverse at Site level**.

Breeding and Wintering Generalist/Woodland Birds

- 13.6.13 The proposals will lead to a loss of cropland, field margins, temporary grassland, species-poor grassland and limited loss of woodland and hedgerows. The loss of habitat within the Site will lead to a decrease in foraging and/or breeding and wintering habitat for a number of notable species. This loss will occur in phases due to the phased nature of the Development. The green infrastructure strategy includes the creation of species-rich grassland, scrub, woodland, hedgerows and attenuation basins, all of which will provide good habitat for both breeding and wintering generalist and woodland birds. The retention and buffering of most woodland and hedgerows, will continue to provide suitable habitat for the generalist assemblage recorded.
- 13.6.14 Red kite breeding was recorded in 2023 at two locations within oaks trees, one to the east which will fall within the SANG; the other nest was to the west along boundary woodland backing onto Holtsmere End Lane which will be retained and buffered. The nests were not used in 2025, so breeding is assumed to be absent currently, so effects are **negligible at Site Level**. If the nests do become occupied, construction effects on the eastern nest will be negligible as built construction will be absent and GI will be created. To the west development does fall within close proximity to the old/disused nest but will be buffered, some disturbance may result during construction, if it is occupied, which may lead to a **minor/moderate short term adverse effect at Site level**, although there are other nesting opportunities to the northwest and east in the SANG, so breeding opportunities are not strictly lost.
- 13.6.15 Red kites were seen foraging within the surveys area, however owing arable dominance, the Site will be of limited potential for prey, especially as these species primary food source is from carrion. The degree of new habitats created provides opportunities for new prey items to colonise the Site, this will include small mammals, invertebrates and birds, which form their dietary preferences.
- 13.6.16 Construction works have the potential to lead to disturbance of general birds within the Site with activities such as groundworks and use of heavy machinery, potentially leading to nest desertion and reduced suitability of nesting and wintering habitat. If habitat removal occurs during the breeding season this could cause injury or death to nesting birds. The CEMP will include methods of reducing noise disturbance and the inclusion of nesting bird checks if

works are to be undertaken during the breeding season. It is considered that there will be a temporary, short-term (not significant) **minor adverse / negligible effect at Site level**.

Breeding and Wintering Farmland Birds

- 13.6.17 The proposals will lead to a loss of arable, field margins, species-poor grassland with limited loss of woodland and hedgerows. The Site is dominated by arable fields, which as a resource for most bird species is sub-optimal, especially where there is management with insecticides etc. There will be a loss of arable habitats in the short term, but species like yellowhammer and linnet will use habitats that are retained, and skylarks will be displaced into the SANG during phased removal, where more beneficial resources will be provided. This is covered in the sections below.
- 13.6.18 Owing to the numbers of skylarks, their diverse habitat requirements and status, the effects of arable loss are unlikely to affect their favourable conservation status at a local level, especially as the species is relatively common in the UK. It is considered that the loss of arable habitats could lead to a permanent short-term (not significant) **minor adverse effect at Site** on skylarks, as the loss of arable habitats onsite are unlikely to form a significant foraging resource that can be recreated/compensated for within the GI/SANG.

Additional Mitigation, Monitoring and Residual Effects

- 13.6.19 The following section covers additional mitigation measures that will be employed to reduce the level of any adverse effects on ecological receptors during the construction phase. They have also been provided to ensure legal compliance, including those species which have not been identified as IEF at the Site, but which nonetheless have legal protection. These 'standard' mitigation documents can be secured through appropriately worded planning conditions and/or S106 legal agreement or similar.

Bats

- 13.6.20 Bat boxes will be installed on existing mature trees across the Site and bat tubes/boxes/tiles will be incorporated into suitable residential dwellings / or other structures, especially those backing onto GI areas. This will provide further roosting opportunities for the bat species utilising the Site.
- 13.6.21 A sensitive private lighting scheme will be agreed which will reduce any potential impacts from light spill during the construction phase, resulting in a **negligible effect at Site level**.

Badgers

- 13.6.22 See Appendix 13.4. Surveys will be updated to ensure a robust assessment of the badger use of the Site and/or local area, whereby these will provide further guidance for specific mitigation to ensure no significant effects. If badgers have colonised areas where they were previously absent, then buffers may need to be provided, and if this effects construction a licence may be required for closure. New habitats will provide more favourable foraging resources for badgers.

Breeding and Wintering Generalist/Woodland Birds

- 13.6.23 To mitigate for the effect of habitat removal on nesting birds, removal of vegetation will be undertaken outside of the breeding season where possible (March to September inclusive). If this is not possible, then vegetation removal will be conducted under the supervision of a suitably experienced ecologist, checking for any nests before and during removal, where

found suitable buffer zones will be instated until young have fledged. This will ensure compliance with relevant legislation.

- 13.6.24 Surveys will be undertaken for red kites to assess if the previously recorded nests are occupied or if new nests have been created, such surveys will be done prior to any construction commencement on each phase during the breeding season. If nests occur in the SANG, effects will be negligible owing to the limited works needed. If nests are created close to construction areas, an ecological review will be undertaken to determine if disturbance is likely, this could be subsequently mitigated for by implementation of temporary buffers of at least 100m and kept in place until young have fledged.
- 13.6.25 A variety of bird boxes will be provided throughout the Development, including small holes nest boxes for common tit species, open fronted nest boxes for robin and blackbird. A variety of boxes or integrated bricks for urban species such as house sparrows and swallows. This will increase nesting opportunities for the generalist birds utilising the Site.
- 13.6.26 Scrub and hedgerow planting will prioritise the provision of native, fruit-bearing species of local origin to provide an optimal foraging resource for a range of bird species including the warbler, finch and thrush species recorded.
- 13.6.27 With the above enhancements, it is considered that there will be a **long-term, permanent, (non-significant) minor beneficial effect at Site level** on the assemblage of generalist/woodland birds.

Breeding Farmland Birds

- 13.6.28 Areas of the SANG will be managed specifically for farmland birds with a focus on skylarks, providing permanent, high quality, foraging habitat that will be secured through management measures in a SANG Management Plan and LEMP. A balance will be made between the function of the SANG for recreational activities and ecological enhancement. The provision of other neutral grassland will include specific plants that will have a seed resource for farmland birds, the scheme will also provide beetle/invertebrate banks which are specifically created to increase invertebrate diversity, with a focus on beetles which are key prey items for farmland birds particularly skylarks.
- 13.6.29 These structures will be spread around the SANG, but typically nearer offsite arable fields, this means that farmland birds can utilise the SANG as a foraging resource which will promote more successful breeding as energy reserves can be maintained due to the ease of access to prey items. As skylarks have a quick reproductive system two broods are possible if resources allow, and as chicks become independent around two weeks after fledging, it makes sense for any mitigation to focus on accessibility to foraging resources to ensure their survival. These direct measures are likely to result in a **permanent long-term minor beneficial effect at Site level**.
- 13.6.30 Additional mitigation is summarised in Table 13.9.

Table 13.9: Summary of Additional Mitigation – Construction

Additional Mitigation Measure	Description	How Secured
<i>Construction</i>		
Natural England Licence to interfere with setts - badgers	A licence granted by Natural England that allows the eviction or exclusion of badgers from setts or allows setts to be destroyed for development.	Through Condition
Bat Roosting Features	Bat boxes will be installed on existing mature trees across the Site; further bat boxes, tubes and tiles will be incorporated into suitable residential dwellings, especially those near GI.	
Bird boxes	A variety of bird boxes should be provided throughout the Development, including small holes nest boxes for common tit species, open fronted nest boxes for robin and blackbird and a variety of boxes or integrated bricks for urban species such as house sparrows and swallows.	

13.7 Assessment of Effects - Completed Development

Chilterns Beechwoods SAC

- 13.7.1 Increased recreational disturbance at the SAC has potential to lead to tramping, erosion, vandalism and nutrient enrichment from dog waste. The Development is over 7.3km, residents may still drive to access the SAC to undertake recreational activities. The Ashridge Commons and Woods SSSI component of the SAC has a zone of influence (Zol) of 12.6km for recreational disturbance, which the Site falls within and so it is accepted the Development could lead to increased recreational disturbance on the SAC from increased recreational pressure.
- 13.7.2 As the Site falls within the Zol of the Ashridge Commons SSSI component of the SAC, the Development is required to create (or contribute) to a SANG and provide a financial contribution to the SAMMS. A 28.8ha SANG is being provided within the eastern part of the Site, which will conform to Natural England's SANG requirements (8ha per 1,000 population). The SANG design and principles are set out in the Outline LEMP and SMMP. This SANG, and the payment to the SAMMS, is considered by Natural England and the relevant local authorities sufficient to mitigate for the increase in recreational pressure on the Chilterns Beechwoods SAC alone and in-combination with other developments. It is therefore considered that recreational pressure on the SAC will be negligible and there will be **no significant effect**.
- 13.7.3 There are no hydrological links between the Site and Chilterns Beechwoods SAC. No major roads lie within 200m of the SAC and so there is unlikely to be any significant impact on the SAC from increased road traffic pollution. Therefore, there will be **no effect** from pollution (hydrological or air) or run-off linked to the Development.
- 13.7.4 See Appendix 13.9 for further detail on the potential for likely significant effects on the Chilterns Beechwoods SAC.

Howe Grove Wood Local Nature Reserve

- 13.7.5 There is a risk of Howe Grove Wood LNR being affected by increased exhaust emissions due to increased traffic from the Development as the LNR lies adjacent to the A4147. Predicted trip generation from the Development on the A4147 was provided by i-Transport, the Transport Consultants for the project. This indicated that the Development is predicted to generate increases of 161 LDV and 5 HDV along this road. Therefore, the Development is not predicted to increase traffic flows in proximity to Howe Grove Wood by more than 1,000 and as so there will be **no significant effect**.

Local Wildlife Sites

- 13.7.6 There is a risk of increased recreational pressure on the nearby LWSs, most notably the two closest LWSs: Nicky Way Dismantled Railway LWS and Great Revel End Farm LWS. Both of these LWS have a Public Right of Way (PROW) through and the PROW through Great Revel End Farm also runs directly through the Site itself. As both already have PROWs running through, they already experience some recreational pressure. It is unlikely that the Development will lead to a significant increase in recreational disturbance over what is already experienced.
- 13.7.7 The creation of the SANG, including extensive walking routes, will also provide alternative opportunities for recreational activities and, as the SANG is adjacent to the Development footprint, it will be closer to new residents than the LWS's. It is therefore considered that recreational pressure on the LWS's will have **no significant effect**.

Ancient Woodland Inventory sites

- 13.7.8 There is a risk of increased recreational pressure on the nearby AWIs that have public access; most notably High Wood located to the west of the Site. However, this woodland site already experiences recreational pressure from the residents of the housing estate that backs directly on to this woodland.
- 13.7.9 The creation of the SANG as part of the Development, will provide alternative walking routes and space for recreational activities and, as the SANG is adjacent to the Development footprint, it will be closer to most new residents than High Wood. There will therefore be **no significant effect** on the Ancient Woodland from increased recreational pressure.
- 13.7.10 The only AWI Site located within 200m of a major affected road is Bury Wood which is in close proximity to the M1 motorway. Due to existing traffic levels on the M1 motorway, additional traffic from the Development would not have a significant effect on Bury Wood. Therefore, it is considered that there will be **no significant effect** on AWIs from increased traffic-related air pollution.

Habitats

- 13.7.11 The delivery of the SANG (28.8ha) and the general GI (22.36ha) around the built development to the east will provide opportunities for a variety of habitats that were previously absent or poorly represented in the baseline. A range of waterbodies are to be created, some will be purely for drainage and are unlikely to hold water for long periods, while the retained pond in the SANG, will hold water for longer periods provide opportunities for marginal and aquatic species to establish that are currently absent; this will have benefits for invertebrates and potential larger fauna such as amphibians.

- 13.7.12 A variety of grassland habitats will be created and managed to ensure conditions are optimal for recreational activities but also for fauna, as mentioned above, areas will have specific foraging benefits for bird species and other fauna. The range of scrub, shrub and woodland planting will provide a habitat that is poorly represented currently within the Site and the immediate area but will take on the character of the wider areas such as the Ashridge Estate to the west. As mentioned, woodland habitats are good for bird species, particularly red kites that were previously recorded breeding. Woodland and bramble also create foraging resources for mammals ranging from vole, mice and shrews, which will form prey items for apex predators. The previous dominance of arable crops and the corresponding management measures resulted in reduced opportunities for invertebrates owing to insecticides; the new habitats such as the grasslands, shrub and hedgerows will create nectar sources and areas of refuge/hibernation.
- 13.7.13 The SANG does have a multiple function, and it has been designed to balance ecological and recreational benefits, this allows areas to be enjoyed without directly damaging more sensitive habitats, as public footpaths will divert away from such places. The HMMP and SMMP will ensure that management is responsive to these requirements, and where changes are needed, that will be implemented.
- 13.7.14 The habitats created provide a substantial benefit to the biodiversity of the Development, which is evident within the initial BNG metric assessment that currently meets the Environmental Act's (2021) statutory requirement of a 10% gain. The BNG assessment can be a good interpretation of the gains of certain habitat types within the Development, however this can overshadow the ecological value; the degree of planting diversity and the strengthen of linkages to the surroundings will benefit the wildlife on Site and in the wider areas. The new habitats created and managed favourably will provide a **permanent long term moderate beneficial effect at Site level (significant)**.

Bats

- 13.7.15 There is the potential for indirect disturbance to bats through increased light pollution on new and retained foraging, commuting and potential roosting habitat. This has the potential to lead to changes in emergence and roosting behaviour and the ability for bats to move around the Site to use foraging habitat on and off Site. Lighting could therefore lead to adverse effects on bats using habitats adjacent to the Development footprint and the access road. Barbastelle are a more light sensitive species, however this species is not reliant on these habitats, and the peak of activity was within habitats that will form the SANG, and will therefore not suffer any lighting impacts. Overall, lighting is considered to result a **long-term minor adverse effect at a Site level** due to the species utilising the Site being mainly pipistrelle species which are not as sensitive to lighting impacts as other species and generally low numbers of barbastelle (light sensitive) bats recorded on-site. Lighting design would also be required to adhere to good practice lighting design principles.
- 13.7.16 The increase in habitat diversity will provide additional foraging resources as more invertebrate prey items are likely to utilise the Site, as these habitats will be brought under suitable management, in line with the LEMP and SMMP, but also future HMMPs, they will provide a long-term benefit for the local bat assemblage.

Badgers

- 13.7.17 See Appendix 13.4 Any retained setts that occur within the scheme will be buffered with natural vegetation to provide a screen from the public. The increases in habitat diversity particularly woodland and grassland coverage will provide increased earthworm

concentrations which are a key resource for badgers. The diversity of native fruit and nut species will provide alternative foraging resources, and the density/connectivity of scrub and hedgerows will allow movement around the Development, but also into surrounding habitats outside the boundary.

Breeding and Wintering Birds

13.7.18 The increase in domestic pets, particularly cats, may lead to an effect on small bird populations. However, it is considered unlikely that the increased abundance of cats would alter the conservation status of any of the bird assemblages present in this instance, with the magnitude of any such impact reduced by the retention, enhancement and creation of hedgerows and mixed scrub habitats, which will continue to provide cover and screening from potential predators. It is considered that the impact of cats will result in a **negligible effect** which will be offset by the increase in the availability of suitable breeding habitat for generalist birds that the Development will provide.

Additional Mitigation, Monitoring and Residual Effects

13.7.19 The following section covers mitigation measures that will be employed to reduce the level of any adverse effects on ecological receptors during the operational phase. They have also been provided to ensure legal compliance, including those species which have not been identified as IEF at the Site, but which nonetheless have legal protection. These ‘standard’ mitigation documents can be secured through appropriately worded planning condition and/or S106 legal agreement or similar.

Bats

13.7.20 The implementation of a private sensitive lighting scheme/plan at detailed design stage will help to minimise any impacts on bats due to lighting. This would include the maintenance of “dark corridors”, use of directional lighting, the avoidance of unnecessary lighting on boundary features and restricting the height of light columns. This additional mitigation means that impacts from lighting on bats are considered to have a **negligible effect** at a Site level.

Badgers

13.7.21 Internal access road speeds will be limited, therefore potential road collisions are unlikely to take place. This mitigation means that impacts from traffic on badgers are considered to have a **negligible effect at a Site level**.

13.7.22 Additional mitigation is summarised in Table 13.10, and a summary of the residual effects is provided in Table 13.11.

Table 13.10 Summary of Additional Mitigation – Completed Development

Additional Mitigation Measure	Description	How Secured
<i>Completed Development</i>		
Sensitive Lighting Scheme	A sensitive private lighting scheme should be secured that will include best practices such as using directional lighting, maintaining “dark corridors” along important	Appropriate Worded Condition

Additional Mitigation Measure	Description	How Secured
	foraging and commuting areas and the avoidance of unnecessary lighting.	

13.8 Cumulative Effects

13.8.1 A list of 17 development schemes have been assessed for cumulative effects on IEFs can be found in Appendix 3.4. Ecological effects relate to the construction and operational phases, and where required specific schemes have been referenced where effects are likely on IEFs, if schemes are not mentioned then it can be assumed that there is no effect. The closest application Land East of Hemel Hempstead (Ref: 5/2024//2171), which is to the south of this Development across Hemel Hempstead Road, has common IEF shared with this application.

Construction

Chilterns Beechwoods SAC

13.8.2 All cumulative schemes (listed in Appendix 3.4) are a sufficient distance away from the SAC, where there will be no direct impacts during the construction phase, which includes direct habitat loss and damage from dust pollution, but also indirect effects from pollution, hydrological changes, construction noise and lighting. The SADC Habitats Regulations Assessment³¹ supports this assessment. There are therefore considered to be **no cumulative effects** on the SAC during construction.

Local Wildlife Sites

13.8.3 The only schemes that fall within a proximity of Nicky Way Dismantled Railway LWS and Great Revel End Farm LWS, where indirect damage might result from construction activity, is the Land East of Hemel Hempstead (Ref: 5/2024//2171). The EIA for this application details that a CEMP will be produced for construction to implement measures to avoid any effects. No other schemes fall within proximity to these LWS, and it is concluded there is **no cumulative effect** on LWS.

Habitats

- 13.8.4 Most of the cumulative schemes comprise of arable land and / or species poor grassland which are not considered Habitats of Principal Importance. Some sites also have hedgerows, woodland and / or species-rich grassland present on-site which are habitats of higher value. For example, Scheme ID No. 1 (Ref: 5/2016/2845) mostly consists of cropland, but has an area of woodland on-site as well as hedgerows. The retention of the woodland and creation of new hedgerows to compensate for any loss will mean there would be no cumulative effect.
- 13.8.5 Other individual applications have demonstrated how they will mitigate or compensate for any loss or effects on important or higher value habitats, whether this be through retention or creation of more valuable habitats. All sites have created buffers around trees, woodland and hedgerows to ensure root systems are protected.

- 13.8.6 This Development is anticipating beneficial effects on habitats due to the extensive habitat creation incorporated within the SANG & GI design, therefore 'consuming its own smoke', therefore cumulative effects regarding habitats losses with other applications are unlikely. Each of the cumulative sites will need to provide the statutory requirements for net gain of 10% in accordance with the Environmental Act, where this cannot be met, off site mitigation provisions through biobanks will be provided. Schemes such as East Hemel (5/2024//2171), 19/02749/MOA, and 21/04508/MOA will also provide SANG provisions enabling increased diversity of habitats. It is concluded that as all developments will need to provide a 10% net gain, that the diversity and quality of habitats created will be of benefit, and exceed current habitat diversity. The provision of new habitat types will have a **long term minor beneficial effect at Site/Local Level**.

Bats

- 13.8.7 Nearby cumulative schemes are providing mitigation for bats in the form of habitat creation to increase foraging resources and further buffering of retained habitats such as woodlands and hedgerows. Those sites mentioned in 13.8.6 have SANG provisions, which will also benefit commuting and foraging opportunities. As bats are protected species no applications will adversely affect the conservation status of such species by removing bat roosts, without mitigation measures and NE licences being provided. In the majority of cases there will be a **negligible to minor beneficial effect at Site/Local Level on local bat assemblages**.

Badgers

- 13.8.8 The majority of the applications have kept such data confidential, [REDACTED] As with the above, all schemes will endeavour to retain linear features, which in the majority are where badgers are likely to create their setts. The degree of disturbance is dependent on the activities, but as badgers are protected under the Protection of Badgers Act, all development will need to consider badger presence and mitigate for the loss of substantial setts such as main setts where they will be affected by construction. Where setts are to be affected, they will be temporarily/permanently closed depending on sett type and impacts. There is therefore considered to be **no cumulative effects** on badgers.

Breeding and Wintering Birds

- 13.8.9 All planning applications have (and will) avoid disturbance to breeding birds by undergoing vegetation removal outside of the breeding season or, if removal has to take place within the breeding season, vegetation removal will be supervised by a suitably experienced ecologist; for most of the applications such details are provided within a CEMP or similar. There is considered to be **no cumulative effects** on breeding birds from disturbance due to vegetation removal.
- 13.8.10 Most habitats to be lost for these planning applications are arable, species-poor grassland and some woodland with hedgerows. Mitigation including the creation of new and enhancement of retained habitats, will mitigate for most of these losses adequately on the individual project scales.
- 13.8.11 The Development will lead to some loss of suboptimal farmland and skylark habitat in the form of arable fields. These effects will be compensated and mitigated by the inclusion of new grassland habitats, with increased foraging opportunities, which will be provided within the SANG, thus increase breeding and fledging success. There are no details of the bird surveys for East Hemel (5/2024//2171), but as habitats are similar it is likely that breeding

and wintering bird assemblages will also be similar. This development will also create a variety of habitat types, including a SANG, therefore mitigation for any bird assemblages is likely to be included within that design. With this mitigation, it is considered that there will be **no cumulative effects** on skylark due to habitat loss.

Additional Mitigation, Monitoring and Residual Effects

- 13.8.12 No additional mitigation will be required to mitigate cumulative effects during the construction stage effects of the Development.

Completed Development

Assessment

Chilterns Beechwoods SAC

- 13.8.13 In November 2022, a mitigation strategy for the Chilterns Beechwoods SAC was published³². All residential planning applications submitted from this point onwards must provide a SANG (or contribute to a SANG) and contribute financially to the SAMMS, to mitigate adequately for the effects of increased recreational pressure on the designated site. The SADC HRA provides further details on SANG provision and the SAMMS scheme. Before this mitigation was put in place, developments did not have to provide mitigation for recreational pressure. Therefore, the more recent planning applications and any allocated sites yet to have submitted for planning, will need to mitigate for any recreational impacts on the SAC, by contributing to the SAMMS and providing / contributing to a SANG.
- 13.8.14 Additionally, the SADC Local Plan HRA fully assess the effects of this Development in combination with a number of other proposals in the borough and concludes that sufficient SANG provision and contribution to the SAMMS will lead to no cumulative adverse effects on the integrity of the SAC. Schemes such as East Hemel (5/2024//2171), 19/02749/MOA, and 21/04508/MOA have included SANG provisions thus ensuring compliance with the SAC mitigation strategy.
- 13.8.15 It is therefore considered that there will be **no effect** on the Chilterns Beechwoods SAC from increased recreational pressure in-combination.

Howe Grove Wood LNR

- 13.8.16 Chapter 11: Air Quality states that cumulative air quality impacts on Howe Wood LNR are considered to be negligible and so it is considered that there will be **no cumulative effect** on the LNR.

Local Wildlife Sites

- 13.8.17 SANG provision or contribution must be provided by all residential applications considered as they are all within the zone of influence of the Chilterns Beechwoods SAC. This SANG provision, and green space within sites themselves, will provide adequate local green-space for recreational uses, minimising the impact of increased recreational pressure on any LWS's in proximity to the proposed developments. It is therefore considered that there will be **no cumulative effect** on the LWS's from increased recreational pressure.

Bats

- 13.8.18 Planning applications within 2km of the Site, such as Scheme ID 3, are providing mitigation for the effect of light spill on bats in the form of sensitive lighting schemes to limit light spill

from the Development footprint. This mitigation provided by individual applications will therefore result in **no cumulative effects** on bat populations due to lighting.

Additional Mitigation, Monitoring and Residual Effects

13.8.19 No additional mitigation will be required.

13.9 Summary

13.9.1 A summary of the residual effects is provided in Table 13.11.

Table 13.11: Summary of Residual Effects

Effect	Receptor (Sensitivity)	Geographic level	Magnitude of Impact	Scale of Effect	Additional Mitigation and Monitoring	Residual Effect
<i>Construction</i>						
Loss of hedgerows	Habitats (Low)	Site	Low	Short-term, (non-significant) minor adverse	New hedgerow planting and management – replace dead specimens	Long-term minor beneficial effect (non-significant) at Site Level
Habitat Loss and Creation	Bats (Medium)	Site	Medium	Non-significant permanent long-term beneficial effect	Bat boxes/tubes on suitable buildings and trees	Permanent long-term minor beneficial effect (non-significant)
Lighting	Bats (Medium)	Site	Medium	Temporary, short-term (not significant), minor adverse effect at Site Level	Sensitive private lighting scheme	Negligible effect
Injury / death due to sett destruction / damage	Badgers (Low)	Site	Medium	Permanent long-term minor/moderate adverse at Site Level. Or negligible if setts are not affected directly.	Update surveys, sett closure if needed under mitigation licence from Natural England	Negligible effect
Habitat Removal / Creation	Badgers (Low)	Site	Medium	Permanent long-term minor	None required	Permanent long-term minor beneficial effect

Effect	Receptor (Sensitivity)	Geographic level	Magnitude of Impact	Scale of Effect	Additional Mitigation and Monitoring	Residual Effect
				beneficial at Site Level		(non-significant) at Site Level
Habitat Removal / Creation	Generalist Birds (Low)	Site	Medium	Negligible / minor adverse at Site Level	Native fruit bearing shrub species within hedgerows/wood lands. Seed /invertebrate resources in SANG	Permanent long-term, minor beneficial effect (non-significant) at Site level
Habitat loss	Skylark (Medium)	Site	Medium	Permanent short-term, not significant, minor adverse at Site level	Increase foraging resources with seeding species and invertebrate/beetle banks increased within SANG.	Permanent long-term minor beneficial effect (non-significant) at Site level
Disturbance due to machinery usage and groundworks	Breeding and Wintering Birds (Medium)	Site	Medium	Temporary short-term, not significant negligible effect	None required	Temporary short-term negligible effect at Site level
<i>Completed Development</i>						
Favourable habitat management through HMMP	Habitats (Low)	Site	Medium	Permanent, long-term (significant) moderate beneficial effect at Site level	None required	Permanent, long-term moderate beneficial effect (significant) at Site level.

Effect	Receptor (Sensitivity)	Geographic level	Magnitude of Impact	Scale of Effect	Additional Mitigation and Monitoring	Residual Effect
Lighting	Bats (Medium)	Site	High	Long-term Minor Adverse at Site level	Sensitive private lighting scheme	Negligible effect
Injury / death from traffic collisions	Badgers (Low)	Site	Medium	Minor adverse permanent effect	Traffic calming measures	Negligible effect

Cumulative Effects – Construction

Loss of existing habitats and new Habitat Creation	Habitats / Bats / Badgers / Birds (Low-Medium)	Site / Local	Medium	Negligible to Minor beneficial	None required	Negligible to Minor beneficial (non-significant)
--	--	--------------	--------	--------------------------------	---------------	--

References

- ¹ Department for Environment, Food and Rural Affairs (2017) The Conservation of Habitats and Species Regulations 2017 Online at <https://www.legislation.gov.uk/ukxi/2017/1012/contents> [Accessed 30.10.25].
- ² Department for Environment, Food and Rural Affairs (2024) Wildlife and Countryside Act 1981 Online at <https://www.legislation.gov.uk/ukpga/1981/69/section/1> [Accessed 30.10.25].
- ³ Department for Environment, Food and Rural Affairs (1992) Protection of Badger Act Online at <https://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed 30.10.25].
- ⁴ Department for Environment, Food and Rural Affairs (2006) Natural Environment and Rural Communities Act 2006. Online at <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed 30.10.25].
- ⁵ Department for Environment, Food and Rural Affairs (1997) The Hedgerows Regulations 1997. Online at: <https://www.legislation.gov.uk/ukxi/1997/1160/contents> [Accessed 30.10.25].
- ⁶ Department for Environment, Food and Rural Affairs (2021) The Environment Act 2021. Online at: <https://www.legislation.gov.uk/ukpga/2021/30/contents> [Accessed 30.10.25].
- ⁷ Department for Communities and Local Government, (2025). National Planning Policy Framework.
- ⁸ SADC, (2024). Draft Local Plan 2041 - Regulation 19 Publication. September 2024.
- ⁹ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- ¹⁰ Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.
- ¹¹ Bird Survey & Assessment Steering Group 2023. Bird Survey Guidelines for Assessing Ecological impacts v.1.1.1. Available at: <https://birdsurveyguidelines.org> [Accessed: 10.12.24].
- ¹² BSI Standards Publication (2015) Surveying for bats in trees and woodland – Guide. Online at: <https://www.standards-global.com/wp-content/uploads/pdfs/preview/1903858> [Accessed: 30.10.25].
- ¹³ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.
- ¹⁴ CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland V1.3. Online at <https://cieem.net/wp-content/uploads/2018/08/EclA-Guidelines-v1.3-Sept-2024.pdf> [Accessed: 30.10.25].
- ¹⁵ Butcher et al. (2023) The UK Habitat Classification (Version 2.0). Online at: <https://www.ukhab.org/> [Accessed: 30.10.25].
- ¹⁶ BSI Standards Publication (2013) BS 42020:2013 British Standard Institution: Biodiversity Code of Practice for Planning and Development. Online at:

<https://knowledge.bsigroup.com/products/biodiversity-code-of-practice-for-planning-and-development> [Accessed: 30.10.25].

¹⁷ Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2024) Planning Practice Guidance: Biodiversity Net Gain. Online at <https://www.gov.uk/guidance/biodiversity-net-gain> [Accessed: 30.10.25]

¹⁸ Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (2025) Planning Practice Guidance: Natural Environment. Online at <https://www.gov.uk/guidance/natural-environment> [Accessed: 30.10.25]

¹⁹ Reason, P.F. and Wray, S (2025) UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2 Chartered Institute of Ecology and Environmental Management, Ampfield. Online at: <https://cieem.net/wp-content/uploads/2023/09/Bat-Mitigation-Guidelines-2025-V1.2.pdf> [Accessed: 30.10.25]

²⁰ Institute of Air Quality Management (2024) Guidance on the assessment of dust from demolition and construction. Online at: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf> [Accessed: 30.10.25]

²¹ Gent, A.H., & Gibson, S.D., 1998: Herpetofauna Workers' Manual. Peterborough, Joint Nature Conservation Committee.

²² Froglife, 1999. Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10.

²³ Biggs, J. et al. (2014) Analytical and Methodological Development for Improved Surveillance of the Great Crested Newt. Appendix 5: Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

²⁴ Oldham, R.S., Keeble, K., Swan, M.J.S. & Jeffcote, M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal, 10(4), 143-155.

²⁵ Harris, Creswell and Jefferies 1989 Surveying Badgers. The Mammal Society.

²⁶ Dormouse Conservation Handbook, Second Edition. Available at: <https://cieem.net/wp-content/uploads/2019/07/Dormouse-Conservation-Handbook.pdf> [Accessed 17.10.24].

²⁷ Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.0. <https://birdsurveyguidelines.org>.

²⁸ Bibby, C.J., N.D. Burgess & D.A. Hill, 2000: Bird Census Techniques: 2nd Edition. London: Academic Press.

²⁹ Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for ecological impact assessment in the UK and Ireland -Terrestrial, Freshwater, Coastal and Marine. Online at <https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf>. [Accessed: 26.09.25].

³⁰ CIEEM. (2019). Advice Note on the Lifespan of Ecological Reports & Surveys. [Accessed 26.09.2025].

³¹ AECOM (2023) Habitat Regulations Assessment Regulation 18 draft Local Plan. Online at: [https://www.stalbans.gov.uk/sites/default/files/attachments/Planning%20Policy/LPCD/LPCD%2004.02%20-%20Habitats%20Regulations%20Assessment%20\(2023\).pdf](https://www.stalbans.gov.uk/sites/default/files/attachments/Planning%20Policy/LPCD/LPCD%2004.02%20-%20Habitats%20Regulations%20Assessment%20(2023).pdf) [Accessed: 30.10.25].

³² Dacorum Borough Council; Buckinghamshire Council; Central Bedfordshire Council; St. Albans City and District Council (2022) Chilterns Beechwoods Special Area of Conservation Mitigation Strategy for Ashridge Commons and Woods Site of Special Scientific Interest V.1. Online at: <https://democracy.dacorum.gov.uk/documents/s36836/Appendix%20A%20-%20Draft%20Mitigation%20Strategy%202.pdf> [Accessed: 30.10.25].



Legend

- Redline Boundary
- 15km Buffer
- 2km Buffer
- 1km Buffer
- Special Areas of Conservation (SAC)
- Local Wildlife Sites (LWS)
- Ancient Woodland

Protected Species Records

- Barn Owl
- Bat
- Fieldfare
- Noctule
- Peregrine
- Pipistrelle
- Red Kite
- Redwing
- Soprano Pipistrelle

- 1 - Great Revel End Farm LWS
- 2 - High Wood LWS
- 3 - Nicky Way Dismantled Railway LWS
- 5 - Woodhall Wood LWS
- 6 - New Wood LWS
- 7 - Bury Wood LWS

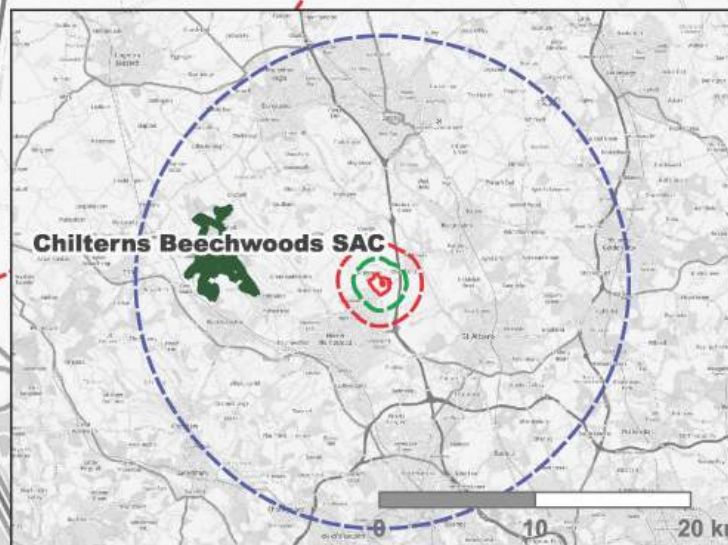
**North Hemel Hempstead / Figure 13.1
Designated Sites and Protected
Species Records Plan**

0 0.5 1 km



Date: November 2025 Created by: FPCR
Environment and Design Ltd.

Scale: 1:30,000 @ A4



FPCR | environment
& design

Lockington Hall,
Derby,
DE74 2RH

01509 6727 72
www.fpcr.co.uk

Legend

 Redline Boundary

Individual Trees

-  Existing Large Rural Tree
-  Existing Medium Rural Tree

Hedgerows

-  Native hedgerow
-  Native hedgerow with trees
-  Species-rich native hedgerow
-  Species-rich native hedgerow with trees

Habitats

-  Cereal crops
-  Developed land; sealed surface
-  Mixed scrub
-  Modified grassland
-  Non-cereal crops
-  Other woodland; broadleaved
-  Ponds (non-priority habitat)
-  Temporary grass and clover leys

North Hemel Hempstead / Figure 13.2 - UKHab Plan

0 0.1 0.2 km



Date: November 2025

Created by: FPCR
Environment and Design Ltd.

Scale: 1:7,000 @ A4

FPCR | environment
& design

Lockington Hall,
Derby,
DE74 2RH

01509 6727 72
www.fpcr.co.uk