11 Ecology

11.1 Introduction

11.1.1 This chapter of the ES assesses the likely significant effects of the Proposed Development on the environment in respect of biodiversity and ecology. It is supported by the following Technical Appendices:

- **Appendix 11.1**: Relevant Legislation and Planning Policy
- **Appendix 11.2**: Ecological Impact Assessment Methodology
- **Appendix 11.3**: Newlands Farm, Arborfield: Protected Species Survey Report
- **Appendix 11.4**: Breeding and Wintering Bird Results
- **Appendix 11.5**: Invertebrate Scoping Report
- **Appendix 11.6**: Biodiversity Net Gain

11.1.2 **Appendix 11.3**. and some associated maps therein, reference a portion of land to the east of the site boundary. This area was part of the Site at the time the surveys were conducted, but is no longer included in the current application or part of the Proposed Development assessed within this EIA.

11.1.3 This chapter describes the assessment methodology, the baseline conditions, the likely significant ecological impacts of the Proposed Development, the mitigation measures required to prevent, reduce or offset any significant negative effects after these measures have been employed.

Legislative and Planning Context

(1) Planning Context

11.1.4 Planning policy and key guidance documents of relevance to biodiversity and nature conservation are summarised in **Appendix 11.1**, with their specific implications in respect of individual ecological features discussed throughout this ES Chapter. The outcomes of the Ecological Impact Assessment (EcIA) assessed against the requirements of applicable planning policy are set out within the Summary section at the end of this Chapter.

11.1.5 Planning policy documents of primary relevance to this Chapter are:

- The National Planning Policy Framework (NPPF)(2024), in particular Section 15 which provides National Policy on conserving and enhancing the natural environment through the planning process;
- Wokingham Borough Adopted Core Strategy Development Plan Document (January 2010), in particular Policies CP7 – Biodiversity and CP8 – Thames Basin Heaths Special Protection Area ;
- Wokingham Borough Local Plan Update 2023-2040 (2025), in particular Policies NE1: Biodiversity and Geodiversity and NE2: Biodiversity Net Gain;
- Shinfield Parish Neighbourhood Plan (2017), in particular Policy 7: Biodiversity; and

- Arborfield and Barkham Neighbourhood Plan 2019-2036 (2020), in particular Policy IRS3: Protection and Enhancement of the Natural Environment and Green Spaces.

(2) Legislative Context

11.1.6 The following legislation of primary relevance has been referred to whilst compiling this Chapter, and is outlined more comprehensively in **Appendix 11.1**:

- The Environment Act 2021;
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Countryside and Rights of Way (CROW) Act 2006;
- The Natural Environment and Rural Communities (NERC) Act 2006 (as amended); and
- The Protection of Badgers Act 1992.

(3) Biodiversity Plans and Strategies

11.1.7 The following biodiversity plans and strategies have informed the design of the Proposed Development and the preparation of this Chapter:

- DEFRA (2011) Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services;
- DEFRA (2019) A Green Future: Our 25 Year Plan to Improve the Environment Plan;
- DEFRA (2018) 25 Year Environment Plan; and
- DEFRA (2023) Environmental Improvement Plan;
- Royal Borough of Windsor and Maidenhead (2025) Berkshire Local Nature Recovery Strategy (Draft).

11.2 Assessment methodology

Scope

11.2.1 The proposed scope for the impact assessment was set out at Chapter 11: Ecology of the Environmental Statement Scoping Report (2024). Following comments provided by Wokingham Borough Council in February 2025, the scope of the assessment can be confirmed to cover the ecological features as set out in **Table 11.1** below.

11.2.2 The Scoping Report covered the entire Loddon Valley Garden Village (LVGV) Site. As such, there are some ecological features, (White-Clawed Crayfish *Austropotamobius pallipes*, Great Crested Newt *Triturus cristatus*, and freshwater fish) which are not relevant to the Newlands Farm site, as it does not contain suitable habitat for these species. They are therefore not considered further within this chapter.

Table 11.1: Ecological Impact Assessment Scope

Ecological Feature	Effect	Scoped In
Internationally Designated Sites	• Damage to retained habitats • Disturbance (visual, noise, vibration, lighting) • Hydrological change and pollution (dust generation, pollution of habitats, change in surface and groundwater quality and quantity) • Changes in air quality • Recreational pressure (disturbance, trampling) • Increased levels of predation	Y
Nationally Designated Sites		Y
Locally Designated Sites		Y
Habitats/Botany	• Damage to retained habitats • Disturbance (visual, noise, vibration, lighting) • Hydrological change and pollution (dust generation, pollution of habitats, change in surface and groundwater quality and quantity) • Changes in air quality • Recreational pressure (disturbance, trampling) • Habitat creation • Direct harm to protected/notable species • Increased risk of road traffic mortality • Implementation of habitat management and monitoring plans • Increased levels of predation	Y
Invertebrates		Y
White-clawed Crayfish		Y
Freshwater Fish		Y
Great Crested Newt		Y
Breeding Bird Assemblage		Y
Winter Bird Assemblage		Y
Bat Assemblage		Y
Hazel Dormouse		N
Water Vole		N
Otter		Y
Reptiles		N
Badger		Y

Predicting effects

11.2.3 The approach to Ecological Impact Assessment (EcIA) taken in this report accords with guidance set out in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland version 1.3 (2018).

11.2.4 Further details of the methodology used for the EcIA in this Chapter are included within **Appendix 11.2**. In summary, EPR takes the following step-wise approach to EcIA:

- Prediction of the activities associated with a proposed scheme that are likely to generate biophysical changes which may lead to significant effects (either positive or negative) upon Important Ecological Features (IEFs);
- Identification of the likely Zone of Influence (ZoI) of these activities;
- Scoping to select the ecological features (habitats, species, ecosystems and their functions/processes) that are likely to fall within the predicted ZoIs and be affected by the activities – both negatively and positively;
- Evaluation of the IEFs likely to be affected using geographic frame of reference;
- Identification of likely impacts (positive and negative) on IEFs, together with an assessment of the geographic level at which effects are likely to be significant;
- Refinement of the proposed scheme to incorporate mitigation for negative effects on IEFs, and enhancements in order to deliver net gains;
- Assessment of the significant of residual effects and identification of any policy drivers for additional mitigation or compensation in the event residual significant negative effects; and
- Advice on conformance with policy.

Determining the Importance of Ecological Features

11.2.5 To inform the assessment of likely significant effects arising from the Proposed Development on ecological features currently present on the Site and within the immediately surrounding area, an evaluation of their importance in nature conservation terms is required. The CIEEM EcIA Guidelines promote the use of professional judgment in determining the importance of the feature being considered within a geographical context, and this has therefore been defined in this assessment as follows:

- International/European;
- National;
- Regional;
- County;
- Local; and
- Within ZoI only.

11.2.6 The following assessment considers IEFs, which are considered to be those features deemed to be importance at the Local level or above only. Those features considered to be important at the ZoI level only have been scoped out of the assessment.

Significance Criteria

11.2.7 The criteria used by CIEEM to define a 'significant' effect are slightly different to those set out in Chapter 5 of this ES, however they are based on the same general principles that take into account the importance of a feature or receptor, its sensitivity to change, and the magnitude, duration and reversibility of the predicted impact.

11.2.8 The CIEEM EcIA Guidelines, which are the industry standard and best practices guidelines for EcIA state that:

"Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in Chapter 4) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local."

11.2.9 An effect is therefore considered significant if it is likely to change the structure and function of a defined site and ecosystem, or the conservation status of habitats and/or species. In this Chapter, once a significant effect is identified, it is then characterised as either positive or negative, and assigned a geographic level of importance.

Likely Biophysical Changes and the Zone of Influence

11.2.10 The activities associated with the Proposed Development which are likely to lead to biophysical changes, and could accordingly give rise to ecological impacts, are set out in **Table 11.2** below, which is drawn from Box 9 of the EcIA Guidelines (CIEEM, 2018).

11.2.11 The Zone of Influence (ZoI) of a proposed development is defined by the EcIA Guidelines as *"… the area(s) over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities".*

11.2.12 In this case, the ZoI of the Proposed Development will encompass different areas, and thus potentially impact upon different ecological receptors, depending upon the spatial extent of the relevant biophysical change (e.g. light, noise, habitat loss, recreational disturbance). The ZoI(s) relevant to this assessment are summarised in **Table 11.2** below.

Geographic Scope

11.2.13 The ZoI of the Proposed Development will encompass different areas in respect of each ecological receptor depending upon its location and sensitivity. The ZoI specific to each feature is described in more detail in each of the relevant sections of this Chapter.

11.2.14 Many of the biophysical changes predicted to be generated by the Proposed Development have the potential to impact IEFs within the Site and its immediate environs. The exceptions to this are potential air quality effects arising from changes in traffic levels and changes in recreational pressure arising as a result of recreational behaviours of new residents, both of which have the potential to impact upon designated sites within a wider radius.

Temporal Scope

11.2.15 The temporal scope of the EcIA covers the construction and occupation phases of the Proposed Development.

Table 11.2: Activities and Biophysical Changes associated with the Proposed Development which may give rise to ecological impacts, and associated Zone(s) of Influence.

Activity	Potential Impact	Zone of Influence
Site Clearance and Construction Phase		
Access and travel on / off site, including temporary access routes for construction vehicles and vessels	Noise / visual / lighting disturbance of vulnerable species	Site and immediate Surrounds
Assembly and storage areas for machines and materials; construction compounds and components of construction	Loss and fragmentation of habitats Noise / visual / lighting disturbance to vulnerable species	Site and immediate surrounds
Vegetation clearance, ground, excavation and structural works, demolition and alteration operations	Loss and fragmentation of habitats Damage to vulnerable habitats Direct harm to vulnerable species Noise / visual /vibration/ lighting disturbance to vulnerable species Change to surface and ground water flows Dust generation	Site and immediate surrounds
Lighting of work area	Disturbance to vulnerable species	Site and immediate surrounds
movement of materials to/from or within a site	Loss and fragmentation of habitats Damage to vulnerable habitats Direct harm to vulnerable species Potential spread Invasive Non-Native Species (INNS) Noise / visual /vibration/ lighting disturbance to vulnerable species	Site and immediate surrounds, donor/receptor site and routes between them.
Drainage	Change of groundwater flows Change of water quality in groundwater Change in habitats fed by groundwater flows	Loddon Catchment
Acoustic disturbance and vibration from construction activities	Noise/vibration disturbance to vulnerable species	Site and immediate surrounds
ground excavation, infilling and landscaping	Loss and fragmentation of habitats Direct harm to vulnerable species Noise / visual /vibration/ lighting disturbance to vulnerable species Dust generation Change of groundwater flows Change of water quality in groundwater Change in habitats fed by groundwater flows	Site and immediate surrounds
environmental incidents and accidents e.g. spillages, noise and emissions	Contamination of soils/waterbodies Direct harm to habitats and species	Loddon catchment
construction of structures and hard surfaces	Loss or fragmentation of habitats Direct harm to vulnerable species	Site and immediate surrounds
Operational Phase		
Access and travel on / off site	Noise / visual / lighting disturbance to vulnerable species Air pollution from vehicle emissions	Site and immediate surrounds

Activity	Potential Impact	Zone of Influence
Occupation of new houses: urban effects	Noise / visual / lighting disturbance to vulnerable species Loss and fragmentation of habitats by trampling Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson)	Site and immediate surrounds
Presence of pets	Increased risk of predation/direct harm to vulnerable species Physical disturbance to vulnerable species Nutrient enrichment of soils from animal waste	
Recreation	Fragmentation of habitats by trampling Noise / visual disturbance /direct harm to vulnerable species by members of the public and/or dogs	Site and immediate surrounds, Local designated sites including Thames Basin Heaths SPA
Ongoing habitat management	Loss, creation and enhancement of habitats	Site and immediate surrounds
Lighting	Visual disturbance to vulnerable species	Site and immediate surrounds
Physical presence of structures e.g. a new road	Provision of additional habitat features for select species i.e. wildlife boxes etc Habitat fragmentation Noise / visual / lighting disturbance to vulnerable species Direct harm to vulnerable species	Site and immediate surrounds
Runoff containing contaminants or sediments	Changes to water quality of drainage ditches and other waterbodies	Loddon catchment

Assumptions and Limitations

Badger

11.2.16 Badgers *Meles meles* are highly mobile and can quickly establish new setts, therefore any survey will only provide a snapshot of how Badgers are using a particular site at a time.

Bats

11.2.17 Bats are often nomadic and invariably move between roosts, therefore, any bat survey will only provide a snapshot of how bats are using a particular site at a time.

11.2.18 Automated surveys allow surveillance over relatively long periods, and generate large volumes of data – the applicability of which is inevitably constrained by the lack of an observational context; that is to say, it is impossible to determine whether a number of recorded passes were made by few or many bats. However, undertaking manned activity surveys in combination with automated methods is considered to mitigate this intrinsic methodological constraint.

11.2.19 When analysing data from the static detectors it is not always possible to assign a call to species level due to poor-quality call data, or large amount of noise distorting the call. In these cases, the call is designated to genus level (e.g. Myotis species) or to a group, such as 'Big bats'.

11.2.20 Bat species that typically have quieter echolocation calls, particularly Long-eared Plecotus species, may be under recorded across the potential Zone of Influence as the quieter calls make them less likely to be detected compared to other bat species.

11.2.21 The Batbox Duet handheld bat detector malfunctioned at 20:47 on the bat transect survey on the 21st September 2022, however this was an hour and 42 minutes after sunset, therefore the minimum survey time had been completed as per the guidelines and so this was not considered a significant survey constraint.

Birds

11.2.22 Five breeding bird visits were conducted in 2022 and a further four were conducted in 2024. Following guidance, a total of six breeding bird survey visits should be undertaken for more complex terrestrial habitats, such as woodlands. Given the size of the site and the habitats available, with the majority of the site being open arable land, five and four visits, respectively, were therefore considered sufficient to provide data to evaluate and assess impacts on the breeding bird assemblage.

Baseline conditions

Current Baseline

Desktop Study

11.2.23 A desktop study was undertaken in 2024 to collect the details of local nature conservation sites and records of protected and/or notable species within a 2km radius of the Site, extending to 5km for European Protected Species. A review of published information was also reviewed to provide additional context for the Site and the habitats/species it may support.

11.2.24 Baseline information has been obtained from the following sources:

- Thames Valley Environmental Record Centre (TVERC) (updated June 2025);
- The Multi-Agency Geographic Information for the Countryside (MAGIC);
- The British Geological Survey;
- The Soil Survey of England and Wales;
- The Environment Agency;
- Open-source LiDAR imagery published by DEFRA;
- Ordnance Survey Drawing 126, dated 1806;
- OS 1 inch to the mile OS map, Sheets 7 and 12, published 1817;
- The 6" and 25" to the Mile Ordnance Survey Maps (c. 1880-1930s); and
- Aerial imagery from the 1940s onwards.

11.2.25 The ecological baseline has been compiled following the programme of surveys set out in **Table 11.3** below. Further information regarding the survey work carried out, including methodologies, metadata and results is provided in **Appendix 11.3**.

Table 11.3: Overview of ecological survey programme.

Survey Type	Month	Year
Habitat and Hedgerow Assessments	May-June	2022
	May	2024
Badger Survey	March	2022
	April	2024
Nighttime Bat Walkover Surveys	April-October	2022
	April-October	2024
Automated Bat Detector Surveys	April-October	2022
	April-October	2024
Ground Level Tree Assessment (GLTA)	July	2023
Tree Climbing Potential Roost Feature (PRF) Inspection	August	2025
Bat Emergence Surveys	August-September	2025
Breeding Bird Surveys	April-July	2022
	April-July	2024
Winter Bird Surveys	Jan-Feb, Nov-Dec	2023
Hazel Dormouse Habitat Assessment	April	2022
Invertebrate Survey	June-August	2022
Water Vole and Otter Habitat Suitability Survey	June	2022

11.2.26 The Site forms part of the wider Loddon Valley Garden Village (LVGV) allocation site. As such, some surveys were conducted over this wider area and were not specific solely to the application Site.

11.2.27 The Hazel Dormouse, Water Vole and Otter Habitat Assessments concluded that there was insufficient suitable habitat onsite to warrant further surveys, and so these were not updated alongside the other update surveys in 2024.

Other Ecological Surveys

11.2.28 Ecological surveys have been carried out on various sites in the surrounding Shinfield area since 1999. Between 2008 to the present, extensive survey work has been undertaken in association with development associated with the South of the M4 Strategic Development Location (SDL), the Shinfield Eastern Relief Road (SERR), the Thames Valley Science Park (TVSP) and the developments at 'Cutbush Lane' and the 'Manor'. Knowledge gained during previous ecological surveys for these developments has been used to inform the assessment of the Proposed Development, where applicable.

Description of Baseline

11.2.29 This section describes the ecological baseline of the Site and identifies 'Important Ecological Features' (i.e. features considered to be ecologically valuable at 'Local' level or above) at the time of the surveys and considered to be within the ZoI due to being vulnerable to the Proposed Development's effects during its construction and operational phases.

Designated Sites

11.2.30 The following designated sites lie within 5km of the Site boundary. They are shown in relation to the Site location in **Figures 11.1**.

Internationally Designated Sites

11.2.31 One Internationally Designated Site is located within the ZoI of the Proposed Development, The Thames Basin Heaths Special Protection Area (SPA). The Thames Basin Heaths is a network

of lowland heathland sites, designated as an SPA in March 2005 for its Internationally important populations of three heathland bird: Dartford Warbler Sylvia undata, Woodlark *Lullula arborea* and Nightjar *Caprimulgus europaeus*. Its location in relation to the Site is shown on Figure 11.1.

11.2.32 The SPA designation was originally created by the Birds Directive and later drawn into the "Natura 2000" network of protected areas by European Directive 92/43/EEC (the 'Habitats Directive'). The Habitats Directive was originally transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (as amended); also referred to as the 'Habitats Regulations'. Minor amendments were introduced to the Habitats Regulations through the Conservation of Habitats and Species Amendments (EU Exit) Regulations 2019, which came into force on 31st December 2020.

11.2.33 The Wokingham Borough Council Local Plan Update has identified that recreational pressure and atmospheric pollution as potential impact pathways which may result in adverse impacts on the Thames Basin Heaths and the features for which it is designated.

11.2.34 Designated under European legislation, the Thames Basin Heaths SPA is of International Importance. Due to the specific requirements of the Habitats Regulations, the potential for the Proposed Development to affect the qualifying features of the Thames Basin Heaths SPA is therefore assessed in detail in the separate Information for Habitats Regulations Assessment and briefly summarised in this Chapter.

Nationally Designated Statutory Sites

11.2.35 Two Sites of Special Scientific Interest (SSSI) are located within 5km of the Site. The SSSIs and their reason for designation are shown in **Table 11.4** below.

Table 11.4 Sites of Special Scientific Interest within 5km of the Site

Site Name and Designation	Distance from Site	Description
Longmoor Bog SSSI	3.00km	Supports base-poor valley mire, resulting in carr woodlands, wet heathlands and secondary woodlands. Supports an important assemblage of invertebrates, breeding birds and fungi.
Bramshill SSSI	4.35km	Comprises conifer plantation with relic wet heathland and acid ponds with associated mire which support varied dragonfly and damselfly assemblage. Supports populations of Annex I bird species.

11.2.36 The Site lies within a number of SSSI Impact Risk Zones, however due to the distance of the Site none of these impact zones consider residential development to be a risk.

11.2.37 Whilst the SSSI Impact Risk Zones do not consider increases in recreational pressure likely to cause an impact, based on the proximity of the Site and the increase in numbers of new residents publicly accessible SSSI's are considered as likely sensitive to impacts arising from increasing recreational pressure.

11.2.38 Longmoor Bog SSSI and Bramshill SSSI are considered to be located within the ZoI of the Proposed Development due to their proximity, public access and/or sensitivity to particular impact pathways.

11.2.39 Bramshill SSSI is currently in a favourable and stable condition, whilst Longmoor Bog SSSI is unfavourable and recovering.

11.2.40 Due to the protection afforded to these sites under national legislations, they are of National importance.

Non-Statutory Designated Sites

11.2.41 Twelve Berkshire Local Wildlife Sites (LWS) are located within a 2km radius of the Site. These are shown on **Figure 11.2** and summarised below in **Table 11.5**. Where information regarding management and condition of the sites is unavailable, their conservation status has been precautionarily assumed to be favourable and stable. Due to the protection afforded to these sites under County level policy, they are of County importance.

Table 11.5 Sites of Special Scientific Interest within 2km of the Site

Site Name and Designation	Distance from Site	Description	Conservation Status
Hazletons Copse LWS	0.15km	Lowland mixed deciduous woodland with 23 indicator species of long-established woodland.	Favourable, stable
Bearwood Estate Woods and Lakes LWS	0.52km	Long-established broadleaved woodland with a large lake, both of which host a diverse bird assemblage. Last surveyed in 1996	Favourable, stable
The Coombes LWS	0.58km	Lowland mixed deciduous woodland that host multiple floral communities. Rhododendron dominates in some areas.	Unfavourable, stable
Gravel Pit Wood, The Holt LWS	0.87km	Lowland mixed deciduous woodland supporting eight ancient woodland indicator species. Barkham Brook runs through the LWS.	Favourable, stable
Pound Copse	0.93km	Ancient woodland with areas of wet woodland	Favourable, stable
River Loddon LWS	1.06km	designated due to the diversity of features supported, including adjacent habitats such as marsh. Protected and notable species are also supported by the River Loddon, including Water Vole *Arvicola amphibius* and Loddon Pondweed	Favourable, stable
Arborfield Bridge Meadow LWS	1.06km	An island within the River Loddon comprised of mostly wet woodland	Unfavourable, declining
Loader's Copse LWS	1.19km	Provisional ancient woodland. Designation encompasses both west woodland and other lowland mixed deciduous woodland, but surveys by	Unfavourable, declining

Site Name and Designation	Distance from Site	Description	Conservation Status
		EPR indicate that it does not support wet woodland habitats	
Rushy Mead LWS	1.23km	Components of lowland mixed deciduous woodland and wet woodland. Wet woodland areas restricted to peripheries of the southern and western borders. The bulk of the woodland is comprised of 'other lowland mixed deciduous woodland'.	Unfavourable, declining
Hall Farm Woodland Triangle LWS	1.44km	Broadleaf wet woodland. The recently included extension is a mixed plantation woodland.	Unfavourable, declining
Spring Copse and Long Copse (North) LWS	1.50km	Semi-natural ancient woodland with areas of wet woodland	Favourable, stable
St Johns Copse LWS	1.57km	Lowland mixed deciduous woodland listed on the Provisional Ancient Woodland Inventory. Supports a number of ancient woodland indicator species including extensive Bluebell *Hyacinthoides non-scripta* cover and a small population of Wild Service Tree *Sorbus torminalis.*	Favourable, stable

Habitats and Vegetation

11.2.42 The Site consists of arable land which at the time of the surveys contained Wheat and Barley crops and temporary grass and clover leys. These areas are of little ecological value in themselves, although may provide foraging opportunities for local biodiversity.

11.2.43 Habitat and vegetation survey methodologies and results are shown in **paragraphs 2.1 – 2.5, 3.1 – 3.9** and **Maps 4a-h and 5** in **Appendix 11.3**.

Deciduous Woodland

11.2.44 At the north of the Site is an area of Lowland mixed deciduous woodland, a section of which is listed on the Provisional Ancient Woodland Inventory. This means this woodland is considered likely to have been in existence since at least 1600 and is classified as an 'irreplaceable habitat' under the NPPF. The woodland is currently unmanaged, and so the conservation status is unfavourable and declining. The woodland is of Local importance.

Veteran Trees

11.2.45 Four Veteran Trees have been identified on Site; three along the Site boundaries, and one within the central hedgerow that runs east to west, bisecting the two larger fields. All trees are considered to meet the regulatory definition of a veteran tree as set out in the Biodiversity Gain

(Irreplaceable Habitat) Regulations 2024, but none are considered to meet the policy definition as set out in the NPPF (2024). In addition to this, the Site supports a substantial number of 'Trees of Ecological Interest'. These trees are not considered to have enough features to categorise them as Veteran under either the BNG Regulations or the NPPF but do have some features of interest that have the potential to support biodiversity. Both the Veteran Trees and Trees of Ecological Interest are considered to be of Local importance and their conservation status is likely to be favourable and stable.

Hedgerows

11.2.46 The Site is largely bound by native hedgerows, of which many are heavily managed through flailing. The conservation status of the hedgerows is unfavourable due to the current management regime, but stable. The hedgerows are of local importance.

Grasslands

11.2.47 A parcel of rank, species-poor modified grassland is also present in the south of the Site, having colonised previously arable land. The conservation status of this parcel is likely favourable and stable, and the parcel is considered to be of Zone of Influence importance.

11.2.48 Grass verges run alongside Mole Road and Church Lane to the south of the main Site. Their conservation status is likely favourable and stable, and are also considered to be of Zone of Influence importance.

Fauna

Badger

11.2.49 The data search returned extensive records [redacted]

11.2.50 No Badger setts were found during the walkover survey. [redacted]

11.2.51 This indicates that [redacted]

11.2.52 The wider landscape is comprised largely of similar arable fields [redacted] Badger are [redacted]

11.2.53 Badger survey methodology and results are shown in **Paragraphs 2.6 – 2.10, 3.10 – 3.13** and **Maps 6a and 6b** in **Appendix 11.3**.

Bats

11.2.54 The data search returned records for twelve species of bat within 5km of the Site, including:

- Common Pipistrelle* *Pipistrellus pipistrellus*;
- Soprano Pipistrelle* *Pipistrellus pygmaeus*;

- Nathusius's Pipistrelle *Pipistrellus nathusii;*
- Barbastelle* *Barbastella barbastellus*;
- Brown Long-eared* *Plecotus auritus*;
- Serotine* *Eptesicus serotinus*;
- Noctule* *Nyctalus noctula*;
- Leisler's Bat* *Nyctalus leisieri*;
- Daubenton's Bat* *Myotis daubentonii;*
- Whiskered Bat *Myotis mystacinus;*
- Natterer's Bat *Myotis nattereri*; and
- Greater Horseshoe *Rhinolophus ferrumequinum.*

Species marked with a * were recorded within 250m of the Site.

11.2.55 At least nine species or species groups were recorded onsite during the automated and walked transect surveys, including;

- Common Pipistrelle;
- Soprano Pipistrelle;
- Nathusius's Pipistrelle*;*
- Barbastelle;
- Brown Long-eared;
- Serotine;
- Noctule;
- Leisler's; and
- Myotis species *Myotis sp*.

11.2.56 Bat activity is concentrated around the periphery of the Site, following the linear features of the Site boundary. Activity was dominated by Common Pipistrelle, which were recorded frequently across the Site and in every month of survey. Activity by the remaining species was recorded at a lower frequency, less often and in more discrete locations.

11.2.57 Social calls were recorded from Long-Eared bat species and Barbastelle bats. These species are particularly light-sensitive and require dark corridors in order to forage and breed. Barbastelle were recorded every month of the automated detector surveys, accounting for up to 1.6% of total bat activity. Barbastelle are known to be an early emerging species that travel long distances over the course of a night. All Barbastelle recordings occurred several hours after sunset, predominantly in the early hours of the morning, suggesting that Barbastelle were moving through the Site, rather than emerging nearby. Barbastelle were recorded in relatively low numbers throughout the year, suggesting that they are only incidentally present onsite,

though some nights show a marked increase in recordings that may indicate that Barbastelle occasionally use the habitats onsite to forage.

11.2.58 With the exception of Barbastelle, the assemblage of bats on-Site largely comprises common and widespread species. The bat assemblage onsite can therefore be valued at County importance (Wray et al. 2010). Full details of bat survey methodologies and results are shown **paragraphs 2.11 - 2.21, 3.14 – 3.30** and **Maps 2, 3, 7a-j and 8a-n** in **Appendix 11.3**.

11.2.59 Trees with potential to support roosting bats were identified during the GLTA survey (as shown in Figure 11,3), using the most up-to-date survey guidelines published at the time (Collins Ed. 2016). T39 and T47, due to be removed, were deemed to have Moderate and Low suitability (respectively) to support roosting bats during the GLTA. Neither tree was safe to climb to conduct tree climbing inspection in August 2025, but a ground level assessment at this time precautionarily reassessed both trees under the most recent survey guidance (Colins 2023) to PRF-M, requiring a minimum to two further emergence surveys.

The emergence surveys took place on 28th August 2025 and 18th September 2025. A single bats was observed emerging from T39. The species could not be ascertained as the bat was not echolocating, but the majority of activity around the tree was by Soprano Pipistrelle, with occasional passes from Common Pipistrelle, therefore it is likely to be one of these species, as a result, the loss of this tree would have a significant negative impact on the Bat Assemblage at the Local level. Birds

11.2.60 The data search returned records for 57 bird species, some of which are red- or amber-listed under Birds of Conservation Concern (BoCC).

11.2.61 A total of 46 species were recorded on the Site and within the immediate vicinity during the Breeding Bird surveys. Nine species are amber-listed under BoCC, whilst a further six are red-listed. Six species are listed under Section 41 of the NERC Act 2006.

11.2.62 Of the 46 species recorded, 28 are considered to be ‘breeding’ species (i.e. species observed to be breeding, or present within suitable breeding/nesting habitats).

11.2.63 The majority of birds were recorded within the hedgerows, treelines and woodland on the Site, which provide foraging, roosting and nesting opportunities.

11.2.64 Two Skylark *Alauda arvensis* territories were recorded within the arable fields on Site. Skylark are ground-nesting farmland birds, which rely on suitable crops to successfully raise the multiple broods a year required to maintain a population. A red-listed BoCC, their numbers have severely decreased in recent decades and as a result are often a key consideration during the planning process.

11.2.65 No nocturnal or roosting birds were recorded on the Site during the nocturnal survey, however, during other surveys carried out on Site a Tawny Owl *Strix aluco* was heard on the 27th of July 2022 in the woodland to the south-east of the Site and on the 12th of October 2022 in the north-east corner of the Site.

11.2.66 A total of 22 bird species were recorded during the winter bird survey. Of these, two are BoCC Red-listed and seven are on the Amber-list.

11.2.67 All bird species recorded onsite are common and widespread, and the assemblage is of Zone of Influence importance only. The conservation status is considered to be favourable and stable. Bird survey methodologies and results are discussed in **Paragraphs 2.22 – 2.33, 3.31 – 3.46** of **Appendix 11.3** and in **Appendix 11.4.**

Hazel Dormouse

11.2.68 The data search returned no recent records for Hazel Dormouse *Muscardinus avellanarius* within 2km of the Site.

11.2.69 The Site contains optimal habitat for Hazel Dormouse including the ancient woodland block to the north of the Site and boundary hedgerows.

11.2.70 The woodland and species-rich hedgerows provide nesting material and foraging opportunities while connectivity to the wider landscape, via species-rich and intact hedgerows and scrub, enables movement across the whole woodland landscape. Understory and shrubs are also vital to Dormouse movement by filling gaps between canopies and providing foraging and nesting material.

11.2.71 The majority of hedgerows on Site, however, are considered to be of sub-optimal suitability for Hazel Dormice. Specifically, they provide connectivity between optimal habitats but in themselves do not provide suitable nesting habitat for Hazel Dormice.

11.2.72 Whilst Dormouse surveys were not specifically undertaken on the Site, they were completed across the wider LGV Site, including immediate Site boundaries. No Dormice, or evidence of Dormice, was found during these surveys and they are considered to be likely absent from the Site. Hazel Dormouse is therefore not considered further in this Impact Assessment.

11.2.73 Hazel Dormouse survey methodology and results are discussed fully in **Paragraphs 2.34 – 2.37, 3.47 – 3.50** and **Map 9** in **Appendix 11.3**.

Invertebrates

11.2.74 There are no records returned from TVERC for the Site itself, and those within 2km include relatively few records, with the exception of records for Stag Beetle *Lucanus cervus* which are numerous across the wider LVGV site.

11.2.75 There are records of one species of mollusc within close proximity to the Site; Fine-lined Pea Mussel *Pisidium tenuilineatum* from 2000/1 within 2km west. Fine-lined Pea Mussel is a Species of Principle Importance under the NERC Act 2006 (as amended).

11.2.76 An assessment of the Site's value for terrestrial and aquatic invertebrates was carried out via a series of invertebrate survey visits undertaken between June to October 2022 and April to June 2023. Due to the impracticality of surveying all invertebrates within a site, only specific groups of species were examined during fieldwork. These groups are sufficiently well known as to allow meaningful comparisons to be made with other sites, both locally and nationally. Further details can be found in **Appendix 11.5**.

11.2.77 A total of 852 species of invertebrate were recorded across the Loddon Valley Garden Village site, though these were largely associated with the river Loddon. The arable land covering most of the Site is of limited importance for invertebrates. The ancient woodland at the north of the Site has been identified as an area of high-quality habitat, which is to be expected of a habitat of the maturity and longevity of ancient woodland.

11.2.78 Overall, the invertebrate assemblage within the ZoI is judged to be of Zone of Influence importance.

11.2.79 The conservation status of the invertebrate assemblage within the potential ZoI is considered unfavourable and declining. Unfavourable, since it is likely that the invertebrate assemblage will continue to be supported by the unfavourably managed habitats within the intensively managed farmland, which do not benefit invertebrates; and Declining, since species diversity and

population abundance is likely to continue to decline in line with national and regional trends. Even in the absence of the Proposals these trends are likely to continue.

11.2.80 The full invertebrate report which covers the entire Loddon Valley Garden Village allocation site is included in **Appendix 11.5.**

Water Vole and Otter

11.2.81 The data search returned no recent records for Water Vole *Arvicola amphibius* or Otter *Lutra lutra.*

11.2.82 Barkhams Brook, which lies approximately 120m east of the Site boundary, was found to be sub-optimal for both Water Vole and Otter.

11.2.83 No evidence of Water Vole was found on Site, or within the wider landscape.

11.2.84 The Brook provides opportunities for commuting and foraging Otter, although further upstream the size of the brook decreases significantly which will reduce opportunities. No evidence of Otter was found in the Brook, although evidence of Otter has been recorded within the wider landscape.

11.2.85 Otter and Water Vole are not considered further in this Impact Assessment due to their likely absence from the Site.

11.2.86 Full details of the Otter and Water Vole surveys are shown in **Paragraphs 2.40 and 3.53 – 3.56** of **Appendix 11.3**.

Summary of Important Ecological Features

11.2.87 With reference to the assessment criteria set out in **Appendix 11.2**, IEFs that are considered to be of Local importance or greater to be taken forward for impact assessment in Section 4 are summarised in **Table 11.6** below.

Table 11.6: Important Ecological Features to be considered further in this EcIA.

Feature	Importance
Thames Basin Heaths	International
Sites of Special Scientific Interest	National
Local Wildlife Sites	County
Deciduous woodland	local
Veteran Trees	local
Hedgerows	local
Bats	County

Future Baseline

Thames Basin Heaths

11.2.88 In the absence of the Proposed Development, no additional recreational pressure would arise and there would be no changes to air quality on roads in the vicinity of the Thames Basin Heaths SPA. The Thames Basin Heaths SPA would therefore remain in a favourable and stable condition.

Sites of Special Scientific Interest

11.2.89 In the absence of the Proposed Development, there would be no increase in recreational pressure on the SSSI's within the ZoI. Bramshill SSSI will therefore remain in a favourable and stable condition, whilst Longmoor Bog would likely continue to recover into a favourable condition.

Local Wildlife Sites

11.2.90 In the absence of the Proposed Development, Local Wildlife Sites will remain under their current management regimes, or lack thereof, and their conservation statuses will remain unchanged.

11.2.91 However, the section of the River Loddon is reliant on upstream conditions, and the conservation status of the river would therefore be subject to unpredictable fluctuations depending on changes to the upstream catchment.

Deciduous Woodland

11.2.92 In the absence of the Proposed Development the deciduous woodland onsite would remain in its current management regime and would therefore remain in an unfavourable and declining condition.

Veteran Trees

11.2.93 In the absence of the Proposed Development, veteran trees will continue to age and become more suitable for biodiversity. They will therefore remain in a favourable and stable condition.

Hedgerows

11.2.94 In the absence of the Proposed Development the hedgerows would remain in their current management regime and would therefore remain in an unfavourable and declining condition.

Bat Assemblage

11.2.95 In the absence of the Proposed Development, the bat assemblage will remain stable, and as a result its conservation status will remain favourable.

11.3 Inherent design mitigation

11.3.1 In accordance with the principle of the mitigation hierarchy, the scheme has been designed to avoid ecological impacts as far as possible in the first instance, thus reducing the need for extensive mitigation measures.

11.3.2 Impact avoidance measures incorporated into the Proposed Development are outlined below.

Buffer Zones

11.3.3 All retained habitats identified as IEFs will be appropriately buffered. This will include the implementation of buffers during the construction phase to prevent damage, whilst the Proposed Development has been designed to incorporate semi-natural buffers during the operational phase. IEF habitats include Provisional Ancient Woodlands, habitats listed under Section 41 of the NERC Act 2006 (as amended) and watercourses.

11.3.4 The onsite deciduous woodland will be subject to a buffer zone of no less than 15m to protect root systems and canopies, as shown in the parameter plan (drawing GLEE250321 FWP.01 A). This drawing also shows that areas of greenspace will be created around retained hedgerows, which may act as suitable buffer zones around these features.

Tree Root Protection Zones

11.3.5 Rootzone compaction and accidental damage to retained trees and hedgerows will be avoided through the implementation of a Tree Protection Plan during the construction phase. The Tree Protection Plan will include prescriptions for the installation and maintenance of fencing to exclude construction from activity within root protection areas.

11.3.6 All Veteran Trees, whether identified via the NPPF or The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024, shall include a root protection zone, to be as expansive as possible. At a minimum, it should encompass whichever of the following is larger:

- A radius extending 15 times the diameter of the tree (as measured at 1.5m above ground level); or
- An area reaching five meters beyond the tree's outermost canopy

Lighting Strategy

11.3.7 During the construction phase of the Proposed Development, the impacts of artificial lighting will be controlled through measures to be implemented as part of the Construction Environmental Management Plan (CEMP), as outlined below.

11.3.8 The lighting strategy will take into consideration ecologically sensitive features to be identified through existing and update ecological surveys, with a particular focus on nocturnal and crepuscular species, including bats, Badger and Otter. Measures to avoid impacts on these species include the provision of dark corridors into the project design.

Construction Environmental Management Plan

11.3.9 A CEMP will be implemented during the construction phase, to be secured via a planning condition. The implementation of the CEMP will address impacts commonly arising as a result of construction works that may otherwise have negative impacts on IEFs.

11.3.10 The CEMP will prescribe measures to prevent and mitigate dust, noise, lighting and other forms of pollution. It will ensure compliance with regulatory requirements and good practice protocols relating to storage, transportation and disposal of chemicals, materials and waste.

11.3.11 Non-standard measures to address specific impacts on IEFs are outlined in the Additional Mitigation section below.

Suitable Alternative Natural Greenspace

11.3.12 The Proposed Development will contribute to and benefit from the Suitable Alternative Natural Greenspace (SANG) associated with the wider Loddon Valley Garden Village Development.

11.3.13 The Wider Loddon Garden Village Development includes the delivery of 40.27ha of SANG to avoid adverse impacts on the Thames Basin Heaths SPA in line with local planning policy and Natural England Guidelines (2021).

11.3.14 Two areas of SANG are to be provided, to be connected by approximately 18ha of SANG Link. These areas will be secured in perpetuity via a S106 agreement. This will protect these areas as accessible greenspace for members of the public and ensure their continued management.

11.3.15 These areas will seek to provide attractive alternative recreational spaces for new and existing residents in the local area, thereby drawing visitors away from potentially sensitive sites, including the Thames Basin Heaths SPA, accessible SSSI's and LWS's.

Provision of Greenspaces

11.3.16 The design of the Proposed Development has incorporated extensive areas of open greenspace, to include:

- Natural greenspace – areas of created, retained and enhanced semi-natural habitats to include native planting and will be managed under conservation-led management regimes.
- Amenity greenspace – areas within the Proposed Development to be managed for recreational development. Planting may include a combination of native and non-native species.

11.4 Potential effects prior to additional mitigation

Introduction

11.4.1 This section examines the potential for significant ecological impacts and effects on IEFs as a result of the biophysical changes arising from the Proposed Development, both during the site clearance and construction phase and operational phase. Where impacts are identified, opportunities for impact avoidance and mitigation are explored. If the potential for significant residual effects remains after mitigation, then opportunities for compensation are also set out.

Construction Phase

Thames Basin Heaths SPA

11.4.2 The majority of anticipated biophysical changes will affect only the site and immediate surrounds (see ***Table 1.2***). The Thames Basin Heaths SPA lies 4.35km from the Site and so is not expected to be impacted during the construction phase.

Nationally Designated Sites

11.4.3 The majority of anticipated biophysical changes will affect only the site and immediate surrounds. The nearest Nationally Designated Site, Longmoor Bog SSSI, lies 3.00km from the Site and so is not expected to be impacted during the construction phase.

11.4.4 Other Biophysical changes are predicted to impact the wider catchment of the River Loddon. Measures to avoid these impacts will be outlined in the CEMP as described above, and are deemed sufficient to avoid impacts to Nationally Designated Sites during the construction phase.

Local Wildlife Sites

11.4.5 Hazletons Copse LWS lies 150m from the Site, and so could be impacted by dust generation or noise.

11.4.6 Similarly, all Local Wildlife Sites within the ZoI may be impacted by biophysical changes affected the Loddon Catchment (see Table 11.2). Measures to avoid these impacts will be outlined in the CEMP as described above, and are deemed sufficient to avoid impacts to Nationally Designated Sites during the construction phase.

Deciduous woodland

<u>Loss, fragmentation or direct harm to vulnerable habitats</u>

11.4.7 With the implementation of inherent mitigation measures outlined above, no impacts are predicted as a result of loss, fragmentation or direct harm to the onsite deciduous woodland during the construction phase.

Contamination of soils/waterbodies

11.4.8 Measures to avoid contamination of soils and waterbodies by environmental incident, such as the spillage of fuels or other chemicals, will be outlined in the CEMP as described above, and are deemed sufficient to avoid impacts to the deciduous woodlands onsite.

Veteran trees

Loss, fragmentation or direct harm to vulnerable habitats

11.4.9 With the implementation of inherent mitigation measure outlined above, no impact are predicted as a result of loss, fragmentation or direct harm to the onsite veteran trees during the construction phase.

Contamination of soils/waterbodies

11.4.10 Measures to avoid contamination of soils and waterbodies by environmental incident, such as the spillage of fuels or other chemicals, will be outlined in the CEMP as described above, and are deemed sufficient to avoid impacts to the veteran trees onsite.

Hedgerows

Loss, fragmentation or direct harm to vulnerable habitats

11.4.11 Some sections of hedgerows, totalling 340m, are due to be lost during the construction phase to facilitate access into and through the Site. as well as the loss of botanical value associated with these habitats, the fragmentation of linear habitats will have impacts on local biodiversity, particularly species which rely on these features to maintain connectivity through the local landscape, such as bats.

11.4.12 As such, the loss of these sections of hedgerow is likely to have a significant negative effect at Local level. This impact will be compensated for by the planting of an additional 300m of hedgerow onsite.

Contamination of soils/waterbodies

11.4.13 Measures to avoid contamination of soils and waterbodies by environmental incident, such as the spillage of fuels or other chemicals, will be outlined in the CEMP as described above, and are deemed sufficient to avoid impacts to the hedgerows onsite.

Bats

Loss, fragmentation or direct harm to vulnerable habitats

11.4.14 The majority of habitats of value to the local bat assemblage will be retained and enhanced through the Proposed Development, maintaining commuting and foraging habitats. Bat activity surveys across the Site have demonstrated that the arable fields offer limited foraging opportunities for bats, with the bulk of activity around the Site associated with linear features, such as tree lines or hedgerow and woodland edges.

11.4.15 These foraging and commuting routes will be protected in the landscape through the inherent mitigation measures as outlined above, including the use of buffers, semi-natural planting and

the implementation of lighting strategies. Nonetheless, there will be a minor loss in foraging and commuting habitats as a result of the Proposed Development.

11.4.16 Retained commuting and foraging habitats within the development area are included within the proposed Natural Greenspaces. Through the implementation of the inherent mitigation measures as outlined above, no significant impacts on these habitats are anticipated.

11.4.17 Some trees at the southern border of the Site (T39, T40, T41 and T47) are due to be wholly or partially lost to allow for access into the Site. For the purposes of this impact assessment, it is assumed that trees will be wholly removed.

11.4.18 T40 and T41 were deemed to have negligible suitability to support roosting bats during the GLTA and so their loss will not significantly impact the bat assemblage.

11.4.19 T39 and T47 possess features deemed to be PRF-M, able to accommodate multiple bats. A single bat was observed emerging from T39, therefore its loss will have a significant negative impact on the Bat Assemblage at the Local level.

Noise and lighting disturbance

11.4.20 Bats are vulnerable to noise and lighting disturbance from site activities which may cause them to abandon roosts at unfavourable times, making them more vulnerable to predation. Light disturbance also reduces the likelihood of bats to utilise foraging habitats onsite, which may affect survival.

11.4.21 Measures to restrict timing and direction of lighting during the construction phase will be outlined in the CEMP and are deemed sufficient to avoid significant impacts to bats.

Disturbance or direct harm during works to trees

11.4.22 In the absence of mitigation, works to and felling of trees with the suitability to support roosting bats has the potential to result in the injury and/or death of individual bats. The death or injury of individual bats could result in a significant negative effect at the Local level.

11.4.23 Harm to individual bats would also constitute an offence under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).

11.4.24 Where works to trees assessed as moderate suitability or PRF-I or above (depending on guidelines used) cannot be avoided, and bat roosts have not been identified within them, the works will be carried out using soft-felling methods to be outlined in the CEMP.

11.4.25 The above measures are deemed to be sufficient to avoid impacts on bats during the construction phase.

Birds

Loss, fragmentation or direct harm to vulnerable habitats

11.4.26 The two Skylark territories identified during the breeding bird surveys will be lost as a result of the Proposed Development. In the absence of mitigation, the loss of these two territories is unlikely to have a significant effect on the conservation status of the local Skylark population.

Operational Phase

Thames Basin Heaths SPA

Increased visitor numbers

11.4.27 The SPA may experience an increase in visitor numbers which may result in the degradation of habitats through trampling, littering or other forms of pollution.

11.4.28 Provision of greenspaces onsite and contribution to the SANG strategy of the wider Loddon Valley Garden Village development are deemed sufficient to avoid impacts on the SPA.

Nationally Designated Sites

Increased visitor numbers

11.4.29 The SSSI's may also experience an increase in visitor numbers which may result in the degradation of habitats through trampling, littering or other forms of pollution.

11.4.30 Provision of greenspaces onsite and contribution to the SANG strategy of the wider Loddon Valley Garden Village development are deemed sufficient to avoid impacts on the SSSIs.

Local Wildlife Sites

Increased visitor numbers

11.4.31 Local Wildlife Sites that are publicly accessible may experience an increase in visitor numbers which may result in the degradation of habitats through trampling, littering or other forms of pollution.

11.4.32 Provision of greenspaces onsite and contribution to the SANG strategy of the wider Loddon Garden Village development are deemed sufficient to avoid impacts on the LWS's.

Deciduous woodland

Degradation and pollution of vulnerable habitats through urban effects

11.4.33 The deciduous woodland parcel will be vulnerable to pollution and degradation from urban effects due to its proximity to the development. Urban effects include, but are not limited to, fly tipping, introduction of non-native species and arson etc.

11.4.34 The 15m buffer around the woodland, which will remain in place during the operational phase, will reduce these effects by reducing proximity to the development and residents.

11.4.35 Nevertheless, there still may be a significant negative impact on the woodland from urban effects during the operational phase at the local level.

Implementation of Habitat Creation and Management Plans

11.4.36 The onsite woodland will be incorporated into a conservation-led management regime to improve its value to local biodiversity. Habitat management measures will be secured through a Habitat Management and Monitoring Plan, or equivalent management plan, to be secured via S106 agreement or conservation covenant.

11.4.37 The implementation of the management plan will result in a significant positive impact on the woodland at local level and is deemed to be sufficient to mitigate the impacts of urban effects described above.

Veteran trees

Degradation and pollution of vulnerable habitats through urban effects

11.4.38 Veteran trees will also be vulnerable to urban effects during the operational phase. As with the woodland, the buffer zones are expected to mitigate some of these effects, however in the absence of mitigation, there may still be a significant negative effect on these habitats at the Local level.

Implementation of Habitat Creation and Management Plans

11.4.39 The habitat within the buffer zone of the onsite veteran trees will be incorporated into a conservation-led management regime to improve its value to local biodiversity. Habitat management measures will be secured through a Habitat Management and Monitoring Plan, or equivalent management plan, to be secured via S106 agreement or conservation covenant.

11.4.40 The implementation of the management plan will result in a significant positive impact on these trees at local level and is deemed to be sufficient to mitigate the impacts of urban effects described above.

Hedgerows

Degradation and pollution of vulnerable habitats through urban effects

11.4.41 Retained hedgerows will similarly be subject to urban effects. Hedgerows will run throughout the development and so are unlikely to be protected by buffering. As such, there may be a significant negative effect on hedgerows at the Local level.

Implementation of Habitat Creation and Management Plans

11.4.42 The retained and created hedgerows will be incorporated into a conservation-led management regime to improve its value to local biodiversity. Habitat management measures will be secured through a Habitat Management and Monitoring Plan, or equivalent management plan, to be secured via S106 agreement or conservation covenant.

11.4.43 The implementation of the management plan will result in a significant positive impact on the hedgerows at local level and is deemed to be sufficient to mitigate the impacts of urban effects described above.

Bats

Disturbance

11.4.44 Following the completion of the Proposed Development, it is anticipated that there will be a change in the light levels across the Site, which could impact upon bat foraging/commuting behaviour and alter use of existing roosts.

11.4.45 However, taking into consideration the inherent design mitigation as outlined above, with the implementation of a sensitive lighting strategy, no significant negative effects are anticipated during the operational phase of the Proposed Development.

Degradation and pollution of vulnerable habitats through urban effects

11.4.46 Bats are likely to also be affected by urban effects through degradation of their roosting and foraging habitats. Retained foraging and commuting habitats are including within the proposed Natural greenspaces for the Site and so will be easily accessible to residents.

11.4.47 As such, in the absence of mitigation, there may be a significant negative impact on the bat assemblage at Local level.

Implementation of Habitat Creation and Management Plans

11.4.48 Retained and created foraging and commuting habitats will be incorporated into the conservation-led management regimes outlined above. This is expected to result in an increase in invertebrate prey and increase connectivity through the landscape. This will result in a significant long-term positive impact on the bat assemblage at Local level.

Provision of additional habitat features for select species i.e. wildlife boxes etc

11.4.49 Bat boxes will be incorporated into new residential dwellings to support bats such as Common Pipistrelle. Tree-mounted bat boxes and 'veteranisation' of mature trees would provide further roosting opportunities.

11.4.50 The creation of new roosting opportunities will have a long-term significant positive effect at the Local level.

11.5 Additional Mitigation

11.5.1 This section assesses the likely significant effects of the Proposed Development in the absence of additional mitigation measures whilst taking into consideration the inherent design mitigation measures as outlined above

Construction Phase

11.5.2 A bat was observed emerging from T39, therefore an application for a European Protected Species Licence (EPSL) will be made to Natural England in order to legally carry out works to this tree. Bat boxes integrated into residential dwellings or mounted on retained trees will be sufficient to mitigate the impact of the loss of these roost features on the bat assemblage.

11.5.3 The Inherent Mitigation Measures are deemed to be sufficient to avoid all other significant impacts on IEFs during the construction phase, therefore no additional mitigation is required.

Operational Phase

11.5.4 The Inherent Mitigation Measures and ongoing management and wildlife box provision outlined above are deemed to be sufficient to avoid significant impacts on IEFs during the operational phase, therefore no additional mitigation is required.

11.6 Residual effects

11.6.1 The implementation of the inherent and additional mitigation measures as outlined above are predicted to result in positive residual effects on Important Ecological Features, as described below.

Construction Phase

11.6.2 With the implementation of the inherent and additional mitigation as outlined above, no residual effects are anticipated during the construction phase of the Proposed Development.

11.6.3 Negative impacts associated with the loss of hedgerows will be compensated for by the planting of 300m of additional hedgerow onsite.

Operational Phase

Implementation of Habitat Creation and Management Plans

11.6.4 The implementation of conservation-led management regimes is expected to enhance habitats onsite for biodiversity and have significant long term positive impacts on the onsite woodland, veteran trees, hedgerows and bat assemblage at Local level.

Provision of additional habitat features for select species i.e. wildlife boxes etc

11.6.5 Bat boxes will be strategically placed throughout the Proposed Development where they are most likely to be found and utilized by bats. Tree-mounted bat boxes and 'veteranisation' of mature trees would provide further roosting opportunities.

11.6.6 The creation of new roosting opportunities will have a significant long-term positive effect at the Local level.

11.7 Biodiversity Net Gain

11.7.1 In line with draft policy NE1 and SS13 of the Wokingham Borough Council Update Local Plan, and the Biodiversity Net Gain Regulations an assessment has been made of the potential for the Proposed Development to deliver biodiversity net gain. This has been measured using the statutory metric. Full details are presented in **Appendix 11.6**, including the calculator inputs/outputs, a description of parameters used and any assumptions made.

11.7.2 According to the statutory metric, the Proposed Development is predicted to result in a net gain of at least 11.19 area habitat units (20.81%), and 8.59 hedgerow units (45.19%).

11.7.3 Further gains of up to 19.41 area habitat units (36.10%) and 11.73 hedgerow units (61.73%) can be achieved if amenity planting is implemented as laid out in **Appendix 11.6**.

11.7.4 The output generated by the statutory metric relates to habitats only, and does not account for the gains proposed for specific species groups, such as the inclusion of wildlife boxes.

11.8 Implications of Climate Change

11.8.1 Climate change has been identified as one of the key drivers of biodiversity loss across the world (IPBES, 2019). Increases in global temperature patterns are causing fauna species to shift their distribution in response, with a global trend in movement towards the poles as temperatures shift faster than species are able to adapt (CIEEM, 2022).

11.8.2 Furthermore, changes in temperature are resulting in changes to key seasons for species, including breeding, mating and flowering species. A key impact of this is the resultant disparity between predator-prey dynamics which impacts upon food resources and influences species fitness and survivability as a result (CIEEM, 2022). Habitats themselves also change in response to changes in temperature, with floral species distributions also changing to reflect local conditions.

11.8.3 However, species movements throughout the landscape are restricted by human barriers. This of particular prevalence for less mobile species such as flora, small mammals and invertebrates.

11.8.4 It is for these reasons that climate change is a driver of species extinction and resulting loss in diversity.

11.8.5 Green corridors are included within the Proposed Development to aid in species movement through the Site and increase permeability in the local landscape. This will enable species to more easily shift their distributions over time to adapt to local climates.

11.8.6 Planting will consider future conditions to ensure longevity. For example, within dry areas of the Site, such as development area, species which are more drought tolerant will be included, such as Dogwood and Hazel, to cope with longer drier summers.

11.8.7 New habitats to be created will aid in carbon capture. Wildflower meadows and woodlands are some of the highest carbon storing habitats in the UK (Gregg *et al*, 2021). Their restoration and creation will therefore aid in local carbon capture and storage over and above the current capabilities of the existing habitats.

11.9 Cumulative effects

11.9.1 Consideration has been given to the potential for residual effects of the Proposed Development to act cumulatively with other committed schemes as identified within Chapter 5, as well as the additional development proposed within the wider Loddon Valley Garden Village Strategic Development Location.

Loddon Valley Garden Village Strategic Development Location

Implementation of Habitat Creation and Management Plans

11.9.2 Similar conservation-led management regimes are expected to be implemented across the wider Loddon Valley Garden Village Strategic Development, and as such will improve habitats for biodiversity and increase connectivity through the landscape.

11.9.3 Cumulatively this will have an even more significant long-term positive impact on IEFs at the County level.

Provision of additional habitat features for select species i.e. wildlife boxes etc

11.9.4 Bat boxes will be strategically placed on residential buildings and trees throughout the Loddon Valley Garden Village Strategic Development.

11.9.5 The creation of new roosting opportunities will have a significant long-term positive effect at the County level.

Wider Committed Development

11.9.6 There are no negative residual impacts associated with the construction or operational phases, and so there are no negative cumulative impacts arising from the wider committed development.

11.9.7 It is expected that conservation-led habitat management regimes for grasslands, hedgerows and veteran trees will be implemented by other sites in the wider committed development, in line with national legislation and local policy. It is therefore expected that the positive impacts associated with these regimes, as outlined throughout this impact assessment, will be compounded by the wider committed development.

11.9.8 It is expected that additional provision of habitat features through the installation of wildlife boxes will be implemented by other sites in the wider committed development, in line with national legislation and local policy. It is therefore expected that the positive impacts associated with this provision will be compounded by the wider committed development.

11.10 Summary

11.10.1 This impact assessment has been undertaken in accordance with CIEEM's Guidelines for the Assessment of Ecological Impacts in the UK and Ireland (CIEEM, 2018).

11.10.2 Importance Ecological Features with the potential to be affected (either positively or negatively) by the Proposed Development have been identified through a comprehensive desktop study and field survey work undertaken by EPR between 2022 and 2025. This work informed the evaluation of baseline conditions in relation to biodiversity, as well as the iterative design process for the Proposed Development.

11.10.3 The Importance Ecological Features scoped in for detailed impact assessment include: off-Site areas designated for nature conservation; onsite woodlands; veteran trees; hedgerows and bats.

11.10.4 An assessment of the likely significant effects of the Proposed Development on Important Ecological Features has been undertaken, taking into consideration inherent mitigation measures to be delivered as part of the Proposed Development. Likely significant effects in the construction phase include direct harm to species and loss/fragmentation of habitats. During the operational phase, likely significant effects include disturbance.

11.10.5 Key mitigation measures to be delivered include the implementation of a CEMP, lighting strategy, buffer zones, contribution to the wider Loddon Garden Village SANG strategy and implementation of habitat creation and management plans.

11.10.6 Residual positive effects remain in respect of improving retained and created habitats for biodiversity and provision of additional roosting opportunities for bats during the operational phase of the Proposed Development. These effects will act cumulatively with other committed schemes and will result in a long-term positive effect at the Local level.

11.10.7 This assessment has shown that, subject to the implementation the impact avoidance and mitigation measures described, the Proposed Development complies with all biodiversity related legislation and policy, as listed at **Appendix 11.1**.

11.10.8 A summary of the assessment is set out in **Table 11.8** overleaf.

11.11 References

- Bat Conservation Trust and Institute of Lighting Professionals (2023). *Guidance Note GN08/23 Bats and Artificial Lighting at Night.*
- Bat Conservation Trust (2020) *Core Sustenance Zones and habitats of importance for designing Biodiversity Net Gain for bats. Bat Conservation Trust, London.*
- Bird Survey & Assessment Steering Group. (2025). *Bird Survey Guidelines for assessing ecological impacts,* https://birdsurveyguidelines.org
- Bright, P.; Morris, P. & Mitchell-Jones, T. (2006) *Dormouse Conservation Handbook* 2nd *Edition.* English Nature, Peterborough.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3 updated September 2024. Chartered Institute of Ecology and Environmental Management, Ampfield.
- CIEEM (2022). Climate Emergency and Biodiversity Crisis: The Facts and Figures CIEEM Briefing Paper, Version 2.
- Collins Ed. (2016), Bat Surveys for Professional Ecologists: Good Practice Guidelines. Bat Conservation Trust London.

- Collins Ed. (2023), Bat Surveys for Professional Ecologists: Good Practice Guidelines. Bat Conservation Trust London.
- Department for Environment, Food and Rural Affairs (DEFRA) (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. London, Defra.
- DEFRA (2024). The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. July 2025.
- DEFRA (2024). The Statutory Biodiversity Metric Calculation Tool. July 2025.
- Department for Environment, Food and Rural Affairs (DEFRA) (2025). *The Statutory Biodiversity Metric User Guide. July 2025.*
- Department for Levelling Up, Housing and Communities (2024). *National Planning Policy Framework.* December 2024.
- Ecological Planning & Research Ltd (2019) British Museum Archaeological Research Collection (ARC) – Ecological Impact Assessment. 1723-1B
- Ecological Planning & Research Ltd (December 2016) Thames Valley Science Park Phase 2, Shinfield – Update Ecological Survey Report. P08/02-6D
- Ecological Planning & Research Ltd (March 2009) University of Reading Science and Innovation Park Environmental Statement – Chapter 9 : Ecology and Nature Conservation.
- Ecological Planning & Research Ltd (May 2012) Land North of Cutbush Lane, Shinfield Environmental Statement – Chapter 8
- Ecological Planning & Research Ltd (May 2018) Land South of Cutbush Lane – Ecological Impact Assessment. P16/44-1C
- Ecological Planning & Research Ltd (May 2021) Shinfield Studios Creative Media Hub, Thames Valley Science Park Environmental Statement – Chapter 8: Biodiversity
- Ecological Planning & Research Ltd (November 2014) Thames Valley Science Park, Shinfield – Update Ecological Survey Report. P08/02-4B
- Gregg, R., Elias, J. L., Alonso, I., Crosher, I. E, Muto, P. and Morecroft, M. D. (2021) Carbon storage and sequestration by habitat: a review of the evidence (second edition) Natural England Research Report NERR094. Natural England, York
- Her Majesty's Stationery Office (HMSO) (1981) *Wildlife and Countryside Act*. HMSO, London
- HMSO (1992) *Protection of Badgers Act*. HMSO, London
- HMSO (2006) Natural Environment and Rural Communities Act. HMSO, London.
- HMSO (2018) The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018. HMSO, London.
- HMSO (2019) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. HMSO, London.
- HMSO (2021). *Environment Act 2021*. HMSO, London.

- His Majesty's Stationery Office (HMSO) (2024). The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. HMSO, London.
- HMSO (2024). The Biodiversity Gain (Town and Country Planning) (Consequential Amendments) Regulations 2024. HMSO, London.
- HMSO (2024). The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024. HMSO, London.
- HMSO (2024). The Biodiversity Gain Requirements (Exemptions) Regulations 2024. HMSO, London.
- HMSO (2024). The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2024. HMSO, London.
- HMSO (2024). The Biodiversity Gain Site Register Regulations 2024. HMSO, London.
- HMSO (2024). The Environment Act 2021 (Commencement No. 8 and Transitional Provisions) Regulations 2024. HMSO, London.
- IPBES (2019) Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science- Policy Platform on Biodiversity and Ecosystem Services.
- Multi-Agency Geographic Information for the Countryside (MAGIC): Available at: http://www.natureonthemap.naturalengland.org.uk/magicmap.aspx Accessed (10/12/2024)
- Office of the Deputy Prime Minister (ODPM) (2005) Circular 06/2005: Biodiversity and Geological Conservation - Statutory Obligations and their Impact Within the Planning System. HMSO, London
- Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.
- Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. and Win, I (2021). *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. British Birds 114, 723-747.
- Wokingham Borough Council (2010). *Wokingham Borough Local Development Framework, Adopted Core Strategy Development Plan Document, January 2010*. Available at: https://www.wokingham.gov.uk/planning-policy/planning-policy-information/local-plan-and-planning-policies.
- Wray et al (2010), Valuing Bats in Ecological Impact Assessment. CIEEM, December 2010

11.12 Assessor information

Table 11.7 Assessor Information

Chapter	Responsibility	Name	Qualifications	Assessor information
Ecology	Ecological Planning and Research	Liam Mayle (Author)	BSc (Hons), MSc	Ecologist Liam has worked in ecological consultancy for six years and regularly produces documents in support of planning applications. This includes Ecological Impact Assessment, Protected Species and Mitigation Reports as well as contributing chapters for Environmental Statements.
Ecology	Ecological Planning and Research	Alison Hogan (Reviewer)	BSc (Hons) MSc MCIEEM	Managing Director Alison has over 20 years' experience in ecological survey and project management and has been responsible for managing and undertaking a variety of ecological assessments for development proposals at all scales including major road schemes and housing developments. She has considerable experience of the design and implementation of ecological mitigation for large-scale infrastructure projects and the provision of advice in relation to large-scale residential developments. She has a thorough understanding of the UK planning process and has undertaken many Ecological Impact Assessments for a variety of schemes, has provided information for Appropriate Assessment and assisted in Strategic Environmental Assessments.

Table 11.8 Summary of effects

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Construction Phase					
Thames Basin Heaths SPA	International	Due to the distance from the Proposed development, no impacts are expected during the construction phase	N/A	N/A	Not Significant
Sites of Special Scientific Interest	National	Due to the distance from the Proposed development, no impacts are expected during the construction phase	N/A	N/A	Not Significant
Hazleton Copse LWS	Local	Dust Generation	Measures to avoid impacts will be outlined in the CEMP	Mitigation expected to avoid impacts	Not Significant
Remaining Local Wildlife Sites	Local	Due to the distance from the Proposed development, no impacts are expected during the construction phase	N/A	N/A	Not Significant
Deciduous woodland	Local	Loss and fragmentation of habitats	15m buffer around the woodland where no development activities will take place	Mitigation is expected to avoid impacts	Not significant
		Damage to vulnerable habitats			
		Contamination of soils/waterbodies	Spill kits to be easily accessible; Refuelling of machinery to be carried out in designated areas Measures identified in the CEMP	Mitigation is expected to avoid impacts	Not significant
Veteran Trees	Local	Loss and fragmentation of habitats;	Veteran trees retained, Root Protection Zones (RPZs) to be fenced off.	Mitigation is expected to avoid impacts	Not significant
		Damage to vulnerable habitats;			

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
		Contamination of soils/waterbodies	Spill kits to be easily accessible; Refuelling of machinery to be carried out in designated areas Measures identified in the CEMP	Mitigation is expected to avoid impacts	Not significant
Hedgerows	Local	Loss and fragmentation of habitats;	Cannot be mitigated Compensation will include planting of additional hedgerows and enhancement of retained hedgerows	Management plan will provide enhancements for biodiversity	Significant Positive
		Damage to vulnerable habitats;	RPZs of retained hedgerows to be fenced off;	Mitigation is expected to avoid impacts	None
		Contamination of soils/waterbodies	Spill kits to be easily accessible; Refuelling of machinery to be carried out in designated areas. Details in CEMP	Mitigation is expected to avoid impacts	Not significant
Bats	County	Noise / lighting disturbance; Bats may abandon roosts at unfavourable times making them more vulnerable to predation, Bats are less likely to use disturbed foraging habitats, which may affect survival.	Limits on timing of works to daytime hours only, and instruction for lights to not be shone directly on bat roosts and habitat features to be detailed in CEMP. Dark corridors have been built into the site plans to allow bats	Mitigation is expected to avoid impacts	Not significant

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
			to continue to use foraging habitat.		
		Direct harm	Felling of trees with PRF-I potential or above to be supervised by a suitably licenced ecologist; Soft-fell methods to be used on trees with PRF-! Potential or above for roosting bats A European Protected Species Licence (EPSL) will be applied for in order to carry out works to T39 which contains a confirmed bat roost. Bat boxes will be integrated into buildings or mounted on nearby retained trees	Mitigation is expected to avoid impacts	Not significant
		Loss and fragmentation of habitats;	Timing of works and direction and nature of lighting to be restricted to avoid disturbing bats. Details in CEMP. A European Protected Species Licence (EPSL) will be applied for in order to carry out works to T39 which contains a confirmed bat roost. Bat boxes will be integrated into buildings or mounted on nearby retained trees	Mitigation is expected to avoid impacts	Not significant

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Operation Phase					
Thames Basin Heaths SPA	International	Increased visitor numbers	Contribution to wider LGV SANG strategy and provision of Natural Greenspaces.	Mitigation is expected to avoid impacts	Not Significant
Sites of Special Scientific Interest	National	Increased visitor numbers	Contribution to wider LGV SANG strategy and provision of Natural Greenspaces.	Mitigation is expected to avoid impacts	Not Significant
Local Wildlife Sites	Local	Increased visitor numbers	Contribution to wider LGV SANG strategy and provision of Natural Greenspaces.	Mitigation is expected to avoid impacts	Not Significant
Deciduous Woodland	Local	Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson);	15m Buffer Zone and implementation of habitat management plant.	Mitigation is expected to avoid impacts	Not Significant
		Implementation of habitat management plan	Loss, creation and enhancement of habitats	Management plan will provide enhancements for biodiversity	Significant positive
Veteran Trees	Local	Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson)	Buffer Zone and implementation of habitat management plant.	Mitigation is expected to avoid impacts	Not Significant
		Implementation of habitat management plan	Loss, creation and enhancement of habitats	Management plan will provide	Significant positive

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
				enhancements for biodiversity	
Hedgerows	Local	Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson)	Buffer Zone and implementation of habitat management plant.	Mitigation is expected to avoid impacts	Not Significant
		Implementation of habitat creation and management plans.	Retained hedgerows will be managed to enhance them for biodiversity. Additional hedgerows will be planted across the Site	Retained hedgerows will be managed to provide enhancements for biodiversity. Connectivity will increase across the Site.	Significant, Positive
Bats	County	Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson).	Buffer Zone and implementation of habitat management plan.	Mitigation is expected to avoid impacts	Not Significant
		Noise / lighting disturbance	Dark corridors have been built into the Site plans to allow bats to continue to utilise foraging habitats; Provision of additional bat boxes	Mitigation is expected to avoid impacts	Not Significant

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
		Implementation of habitat creation and management plans.	Retained and created habitats will be managed to enhance their quality	Increased abundance of invertebrate prey, greater connectivity through the landscape	Significant, positive
		Provision of additional habitat features for select species i.e. wildlife boxes etc	Boxes will be strategically placed where they are most likely to be found and used by bats.	More roosting opportunities will be available to bats than the current baseline.	Significant, positive

11.13 Mitigation commitments Summary

Table 11.9 Summary for Securing Mitigation

Identified receptor	Type and purpose of additional mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g. planning condition / legal agreement)	Delivered by	Auditable by
Construction Phase				
Hazleton Copse LWS Hedgerows Deciduous Woodland Veteran trees	CEMP (prevent)	Planning condition	Contractor	LPA

Identified receptor	Type and purpose of additional mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g. planning condition / legal agreement)	Delivered by	Auditable by
Breeding birds Bats				
Deciduous Woodland Veteran trees	Implementation of buffer zones (prevent)	Planning condition	Contractor	LPA
Woodlands Veteran trees Hedgerows	Root protection areas (prevent)	Planning condition	Contractor	LPA
Bats	Lighting strategy (prevent/reduce)	Planning condition	Developer	LPA
Bats	Greenspace provision	Planning condition	Developer	LPA
Operation Phase				
Thames Basin Heaths SPA Longmoor Bog SSSI Bramshill SSSI Local Wildlife Sites	Suitable Alternative Natural Greenspace (prevent)	Legal agreement	Applicant	LPA
Bats	Lighting Strategy (prevent/reduce)	Planning condition	Applicant/Developer	LPA
Hedgerows Deciduous Woodland Veteran trees Bats	Habitat Creation/Management Plans (offset/enhance)	Planning condition	Applicant/Developer	LPA