

Land North of Arborfield Road, Shinfield

Ecological Impact Assessment

Prepared on behalf of

Bellway Homes Ltd (Thames Valley)

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Land North of Arborfield Road, Shinfield

Ecological Impact Assessment

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Land North of Arborfield Road, Shinfield

Ecological Impact Assessment

Contents

1. INTRODUCTION	3
2. ASSESSMENT METHODOLOGY	5
3. ECOLOGICAL BASELINE	7
4. IMPACT ASSESSMENT	18
5. ENHANCEMENTS AND BIODIVERSITY NET GAIN	21
6. CONSEQUENCES FOR DECISION MAKING	24
7. LEGAL CONSIDERATIONS	26
8. REFERENCES	28

MAPS

Map 1a	Site Location and Designations
Map 1b	Site Location and Site Protected by Planning
Map 2	Habitats and Features
Map 3	Reptile Refugia
Map 4	Post-Development Habitats

APPENDICES

Appendix 1	Development Proposals
Appendix 2	Legislation and Policy
Appendix 3	Assessment and Survey Methodologies
Appendix 4	Biodiversity Net Gain Calculation Headline

Land North of Arborfield Road, Shinfield

Ecological Impact Assessment

Executive Summary

Ecological Planning & Research Ltd (EPR) was commissioned by Bellway Homes Ltd (Thames Valley) to carry out an Ecological Appraisal and targeted Phase 2 surveys for Badger, reptiles and bats in relation to proposals for a housing development at Land North of Arborfield Road, Shinfield. The proposals are for residential dwellings with associated hardstanding and green space.

To date, a Badger walkover, breeding bird surveys, reptile surveys, bat emergence surveys, April-July 2024 automated bat surveys and the spring and summer bat night-time walkover have taken place.

The Site currently comprises an arable field used for crops during the growing season and grazed by sheep in the winter. Within the site there are two buildings, as well as a natural watercourse, two constructed ditches, grassland and scrub habitats. The ecological appraisal found no likely important ecological features apart from the potential for habitats to support protected species i.e. bats, breeding birds and reptiles.

The results of an internal and external bat building inspection assessed both building to be of low suitability for roosting bats. No bats were recorded emerging from or entering any of the buildings and therefore it is considered unlikely that the Site supports roosting bats. A low number of bat passes were recorded during the dusk emergence survey but no sustained activity, e.g. foraging and no evidence of commuting.

Reptile surveys undertaken at the Site in 2024 didn't record any reptiles. The habitats within the Site boundary are considered to be sub-optimal for reptiles although it is possible that Grass Snakes *Natrix natrix* may utilise the Site on an occasional basis. This species is relatively mobile and has been recorded on the land to the north previously. During a bat night-time walkover, a single male grass snake was recorded on the Site boundary.

Recommendations have been given for the enhancement of the Site for biodiversity in line with local and national planning policy, including provision of integral bat, as well as the creation of habitats and the retention of the natural watercourse present.

It is concluded that the proposals (demolition of existing buildings and construction of a 191 residential house development) will be able to proceed in accordance with applicable nature conservation related legislation and policy.

Land North of Arborfield Road, Shinfield

Ecological Impact Assessment

1. INTRODUCTION

Brief

- 1.1 Ecological Planning & Research Limited (EPR) was commissioned by Bellway Homes Ltd (Thames Valley) Homes to carry out an ecological appraisal of Land North of Arborfield Road, Shinfield (Ordnance Survey Grid Reference SU 73654 68009); hereafter referred to as 'the Site'.
- 1.2 EPR was also commissioned by Bellway Homes Ltd (Thames Valley) to undertake targeted protected species surveys for badgers, breeding birds, bats (emergence survey, night-time bat walkover and automated survey) and reptiles which have been used to inform this Ecological Impact Assessment of the development proposals at the Site.

Site Location and Context

- 1.3 The Site is situated to the north Arborfield Road and west of the A327. To the north of the site is an active construction site with residential housing to the south and west. To the east there are agricultural fields. The Site is located on the eastern edge of Shinfield.
- 1.4 The wider surrounding landscape is a patchwork of settlements from the denser housing areas of Shinfield to open arable land with small collections of mixed farmland, woodland and the River Loddon. Refer to **Map 1** for Site Location.

Outline of the Proposed Development

- 1.5 The proposed development includes the demolition of existing buildings within the Site and clearance of the Site for the construction of a 191-unit development and supporting infrastructure. The proposals are included within **Appendix 1**.

Relevant Legislation, Policy and Guidance

- 1.6 The following articles of nature conservation legislation and planning policy (**Appendix 2**) that may be of relevance to the proposals, and have been considered as part of this report are:
 - 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 2000;
 - The Natural Environment and Rural Communities (NERC) Act 2006;
 - The Protection of Badgers Act 1992;
 - The National Planning Policy Framework (NPPF) (2023); and

- Wokingham Borough Local Development Framework. Adopted Core Strategy (2010-2026). Relevant Policies:
 - Policy CP7: Biodiversity

1.7 In addition to the above, biodiversity objectives detailed in the following documents have been considered:

- The Government's Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (2011)
- 25 Year Environment Plan (2018); and
- Environmental Improvement Plan (2023).

1.8 Further details are provided in **Appendix 2**.

2. ASSESSMENT METHODOLOGY

Introduction

- 2.1 The approach to Ecological Impact Assessment (EclA) taken in this report accords with guidance presented in the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2 (CIEEM, 2018).
- 2.2 In summary, EPR takes the following step-wise approach to EclA:
- 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 (Zol) of those activities;
 - Scoping to select the ecological features (habitats, species, ecosystems and their functions/processes) that are likely to fall within the predicted Zols and be affected by the activities;
 - Evaluation of IEFs likely to be affected – both negatively and positively;
 - 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;
 - Application of the mitigation hierarchy - refinement of the proposed scheme to incorporate impact avoidance and/or mitigation measures for negative effects on IEFs, and enhancements in order to deliver net gains;
 - Assessment of the significance of residual effects and identification of any policy drivers for additional mitigation or compensation in the event of residual significant negative effects; and
 - Advice on conformance with policy and legislation.
- 2.3 Further information regarding the methods for ecological evaluation and impact assessment are provided in **Appendix 1**.

Likely Biophysical Changes and Zone of Influence

- 2.4 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 2.1** below, which is drawn from Box 9 of the EclA Guidelines (CIEEM, 2018).
- 2.5 The Zone of Influence (Zol) of a proposed development is defined by the EclA Guidelines as “... *the area(s) over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities*”.
- 2.6 In this case, the Zol 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 Zol(s) relevant to this assessment are summarised in **Table 2.1** below.

Table 2.1: Activities and Biophysical Changes associated with the Proposed Development which may give rise to ecological impacts, and associated Zone(s) of Influence.

Predicted Change	Zone of Influence
Site Clearance and Construction Phase	
Vegetation clearance and landscaping	Site and immediate surrounds
Building demolition (removal of habitat)	Site and immediate surrounds
Increase in general disturbance from construction traffic, noise and vibration etc	Site and immediate surrounds
Dust from clearance, demolition and construction	Site and immediate surrounds
Increase in artificial lighting and light spill from security and safety floodlighting of demolition and construction compounds	Site and immediate surrounds
Retention of the natural watercourse	Site and immediate surrounds
Operational Phase	
Changes in landscape structure	Site and immediate surrounds
Increase in artificial lighting and light spill	Site and immediate surrounds
Impacts of Natural Watercourse	Site and immediate surrounds
Increase in recreational pressure on Designated Nature Conservation Sites due to a net increase in residential accommodation	Within 5km of the Site

3. ECOLOGICAL BASELINE

Overview

- 3.1 The ecological baseline has been compiled following the programme of surveys set out in **Table 3.1** below, in combination to a review of previous survey data gathered on the Site and the adjacent development Sites by other ecological consultants. The survey methodologies are provided in **Appendix 3**.

Table 3.1: Overview of ecological survey programme.

Survey Type	Month	Year
Data search from the local biological record centre	June	2024
Ecological Appraisal	September	2023
Daytime Inspection of the Buildings for Bats	March	2024
Ground Level Tree Assessment for Bats	March	2024
Dusk Emergence Survey	May	2024
Night-Time Bat Walkovers	April and July	2024
Reptile Survey	April-June	2024
Badger Survey	March	2024

Ecological Appraisal

- 3.2 The ecological appraisal was the starting point for determining the ecological features potentially needing to be considered within an EcIA. The Site is comprised of an arable field, with two farm buildings, a natural watercourse, grassland, hedges and scrub habitats. The Ecological Appraisal recorded no habitats of any intrinsic nature conservation value within or adjacent to the Site boundary although the habitats were found to have some suitability to support roosting bats, reptiles, badgers and nesting birds.

Designated Sites

- 3.3 **Map 1a and Map 1b** shows local-level nature conservation designations up to 2km from the Site and up to 5km for National and International sites of nature conservation designations.

Statutory Designated Sites

International

- 3.4 As part of the desktop study, a search for internationally designated sites that may be impacted by development of the Site is done and these sites are subsequently investigated. These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and RAMSAR sites. However, the Site is located within the ZOI for one Internationally designated site.

Special Protection Areas

- 3.5 Within 5km of the Site is the Thames Basin Heath, which is located approximately 4.8km south east of the Site. The Thames Basin Heath is protected for its ground nesting birds include nightjar, Woodlark and Dartford warbler

- 3.6 Due to proximity of the SPA, the Site falls within the Zone of Influence for recreation impacts therefore Suitable Alternative Greenspace (SANG) mitigation will be required, in addition to Strategic Access Management and Monitoring (SAMM) payments.

Sites of Special Scientific Interest

- 3.7 A total of three Special Scientific Interest (SSSI) are located within 5km of the Site. These are:

- Longmoor Bog SSSI;
- Bramshill SSSI; and
- Stanford End Mill and River Loddon SSSI.

- 3.8 Of these, the closest SSSI is Stanford End Mill and River Loddon SSSI which lies approximately 3 km to the south west of the Site. It is designated for its traditionally-managed seasonally waterlogged hay meadows.

- 3.9 Longmoor Bog SSSI is approximately 4.7km to the south west of the Site. It is designated for its base-poor valley mire.

- 3.10 Bramshill SSSI is approximately 4.87km to the south east of the Site. It is designated for its series of shallow acidic ponds and associated mire and is a component of the Thames Basin Heaths SPA.

- 3.11 The Site falls within the Zone of Influence for SSSI, however this will be addressed through the mitigation for Thames Basin Heath SPA.

Local Nature Reserves

- 3.12 A total of six five Local Nature Reserves (LNRs) are located within 5km of the Site. These are:

- Pearmans Copse LNR;
- Maiden Eriegh Park LNR;
- Highwood LNR;
- Swallowfield Meadow LNR;
- The Marshes LNR; and
- Longmoor Bog LNR

- 3.13 Given the distance between all of the above LNRs and the Proposed Development Site, the most likely impact as a result of any development will be an increase in recreational pressure at those LNRs which are accessible to the public.

Ancient Semi-natural Woodland

- 3.14 There are a number of patches of ancient semi-natural woodland and ancient replanted woodland listed on the Ancient Woodland Inventory (Provisional) within 5km of the Site.

- 3.15 The closest area of ancient woodland is approximately 0.6km south of the Site and is called Tanner's Copse. Given the distance between the Site and any patch of ancient semi-natural woodland, it is unlikely that they are within the Zone of Influence of the Site

Non-Statutory Designated Sites

- 3.16 13 Local Wildlife Site (LWS) are within 2km of the Site Boundary. The closest is Hall Farm Woodland Triangle LWS which is located 450m north east of the site.
- 3.17 The River Loddon corridor and patches of provisional ancient woodland dotted throughout the surrounding landscape. Due to the spatial separation between the Site and the River Loddon there will be no impact from the development on the river.
- 3.18 All of the Non-Statutory Sites within 2km of the Site are either set up to manage recreational pressure or are located within inaccessible areas and therefore there are no anticipated impacts as a result of the proposals on the non-statutory sites. Consequently, these are not taken further in the impact assessment.

Habitats and Vegetation

- 3.19 The distribution of broad habitat types and features noted during the field visit are presented on **Map 2** and are described further below. The Site was mostly comprised of Willow *Salix sp.* scrub, mixed scrub, grassland, ditches and arable habitat. The habitats were recorded based on UK Habitat Classification (UKHab) criteria. Each habitat parcel has also been assigned an individual ID code for ease of reference; these are shown on **Map 2**.

Arable Land

- 3.20 The majority of the Site is made up of an arable field and has been mapped as Area 1 and presented in **Map 2**. These have been categorised as Cropland through the UK Habitat Classification system as the fields displayed signs of agricultural activity.
- 3.21 As the Site consists mainly of arable land, and it is the habitat of the lowest biodiversity, development has been concentrated in this area.
- 3.22 The arable land is considered to be of value within the ZoI only.

Hedgerows

- 3.23 Two hedgerows have been mapped on Site as H1 and H2 on **Map 2**.
- 3.24 H1 comprises of Alder *Alnus glutinosa*, Elder *Sambucus nigra* and English Elm *Ulmus procera*.
- 3.25 H2 comprises of Hawthorn *Crataegus monogyna*, Lime *Tilia x europaea* and English Elm.
- 3.26 The hedgerows are in good condition but are managed as they form the boundary of the arable field.
- 3.27 Hedgerow loss has been minimised and the retained hedgerows will be buffered from development and enhanced. Any removal of sections of hedgerow to facilitate the construction of roads etc. will be compensated for through the creation of new hedgerows and/or management of existing hedgerows.
- 3.28 The hedgerows are considered to be of value within the ZoI only.

Lines of Trees

- 3.29 Within the Site there are two lines of trees, marked as LOT1 and LOT2 on **Map 2**. Both line of trees are along the boundary of Willow scrub. Both lines of trees comprise Crack Willow *Salix fragilis*.
- 3.30 These are young trees and border the boundary of the Site and offer little value to wildlife.
- 3.31 The line of trees is considered to be of value within the Zol only.

Ditches

- 3.32 There are three ditches on Site, marked as D1, D2 and D3 on **Map 2**.
- 3.33 Ditches D1 and D2 have been created for drainage, whereas D3 is a natural ditch. Ditches D1 and D3 held shallow, slow moving water at the time of the appraisal.
- 3.34 The Site design retains, buffers, and enhances D3 due to it being a natural ditch. Any removal of the created ditches will be compensated through the creation of new ditches and enhanced with aquatic vegetation.
- 3.35 The ditches are considered to be of value within the Zol only.

Other Neutral Grassland

- 3.36 Within the Site there are areas of grassland present, marked as 2,3,4,5 and 6 on **Map 2**.
- 3.37 Species present within the grassland areas include Soft Brome *Bromus hordeaceus*, Cocksfoot *Dactylis glomerata*, Red Fescue *Festuca rubra*, Small Cat's Tail *Phleum bertolonii*, Meadow Soft-grass *Holcus lanatus*, Hogweed *Heracleum sphondylium*, Field Rose *Rosa arvensis*, Rough-stalked Meadow-grass *Poa trivialis*, Common Vetch *Vicia sativa*, Stinging Nettle *Urtica dioica* subsp. *galeopsifolia*, Blackberry *Rubus fruticosus*, Creeping Buttercup *Ranunculus repens*, Broad-leaved Dock *Rumex obtusifolius*, Field Forget-me-not *Myosotis arvensis*, Ox-eye Daisy *Leucanthemum vulgare*, Hard Rush *Juncus inflexus*, Cat's-ear *Hypochaeris radicata*, Perforate St John's-wort *Hypericum perforatum*, Common Storks-bill *Erodium cicutarium*, Teasel *Dipsacus fullonum*, Creeping Thistle *Cirsium arvense*, Remote Sedge *Carex remota*, False Fox Sedge *Carex otrubae*, Cow Parsley *Anthriscus sylvestris*, and Rat's-tail Fescue *Vulpia myuros*.
- 3.38 The grassland on Site is unmanaged. The grassland has been retained and enhanced where possible within the development.
- 3.39 The other neutral grassland is considered to be of value within the Zol only.

Willow Scrub

- 3.40 Within the Site there are three areas of Willow scrub, marked as 10, 11 and 12 on **Map 2**.
- 3.41 Species present within this area include Alder, Hazel *Corylus avellana*, Hawthorn, Wild Cherry *Prunus avium*, Crack Willow, Elder, Lime, Hedge Bindweed *Calystegia sepium*, Creeping Thistle, Cleavers *Galium aparine*, Fleabane *Pulicaria dysenterica*, Creeping Buttercup, Blackberry and Stinging Nettle.

- 3.42 The scrub offers suitable habitat for a variety of species.
- 3.43 Within the development the scrub will be retained and enhanced where possible. Any loss of scrub will be compensated for.
- 3.44 The willow scrub is considered to be of value within the Zol only.

Mixed Scrub

- 3.45 Within the Site there are three areas of mixed scrub, marked as 7,8 and 9 on **Map 2**.
- 3.46 Species present include Alder, Crack Willow, Wild Garlic *Alliaria petiolata*, Greater Burdock *Arctium lappa*, Pendulous Sedge *Carex pendula*, Spear Thistle, Teasel, Cleavers, White Dead Nettle *Lamium album*, Hemlock Water-dropwort *Oenanthe crocata*, Fleabane and Wood Dock *Rumex sanguineus*,
- 3.47 The scrub offers suitable habitat for a variety of species.
- 3.48 Within the development the scrub should be retained and enhanced where possible. Any loss of scrub will be compensated for.
- 3.49 The mixed scrub is considered to be of value within the Zol only.

Fauna

Birds

Desk Study

- 3.50 The records search from Thames Valley Environmental Record Centre (TVERC) returned several records of Amber and Red listed Birds of Conservation Concern (BoCC), Section 41 of the NERC 2006 Act, Schedule 1 of the wildlife and Countryside Act 1981 (as amended), or Annex 1 of the Birds Directive.

Field Survey

- 3.51 Six breeding bird surveys were undertaken between March and July 2024 (**Appendix 3**).
- 3.52 Several species of birds were recorded within the Site, however, no significant territories or breeding colonies were recorded.
- 3.53 No evidence of nesting birds was noted during the Site visit, but buildings, shrubs and trees provide suitable bird nesting habitat and the gardens provide suitable foraging opportunities for common bird species. Majority of species recorded within or around the Site were recorded within the eastern area of mixed scrub and willow scrub.

Conservation Priority Species

- 3.54 Bird species that are listed as Species of Principal Importance for Conservation under Section 41 of the NERC Act 2006, or as Red/Amber-listed Birds of Conservation Concern, are considered to be particularly vulnerable due to factors such as serious population declines or reductions in their natural range. These species are therefore given special consideration when assessing the conservation importance of breeding bird assemblages.

Rarity

- 3.55 The current Species List and annual reports of the Rare Breeding Bird Panel (RBBP) at www.rbbp.org.uk are a key resource when considering the rarity of a species. The RBBP splits its data into different geographical areas to provide regional context. Rarity should also be considered in a local context where possible.
- 3.56 Several measures of rarity can be used. Species with fewer than 1,000 breeding pairs in Britain are described as Nationally Rare (Fuller, 1980). A species with a County population of up to 25 pairs might therefore be treated as being rare in the County (depending on the species and its status).
- 3.57 Rarity can also be recorded by distribution rather than population size. The Breeding Bird Atlas (Balmer et al. 2013) records breeding distributions of birds in Britain and Ireland by 10x10 km grid squares. This makes it possible to describe the frequency of occurrence of individual species in terms of the proportions of squares in which they occur. A 30% level forms a useful line below which species can be described as 'Scarce', for both breeding and wintering species. This method can also be applied on a more local basis where suitable atlases exist, as it does in counties on a tetrad (2x2km) basis.
- 3.58 The occurrence of species which are specially protected by law or otherwise listed as threatened, although not necessarily strictly rare, can also be helpful in establishing the conservation importance of sites. Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) or on Annex 1 of the Birds Directive are worthy of special consideration. These lists take into account measures such as population size and distribution.

Relative Population Size

- 3.59 This is evaluated by assessing the percentage of a population size unit (e.g. national, county) that occurs within the study area. The standard criterion upon which evaluation of population is based is that if 1% or more of the defined geographical unit of a species regularly uses a site, then the site may be important at that geographical scale. This means, for example, that if 1% of the county population occurs, then the site may be of county level importance for that species.
- 3.60 Sources of population data include Woodward et al. (2020b) and the JNCC SSSI Selection Guidelines at the UK level (though generally such sites have already been designated as SPAs or SSSI for their bird interest), the BTO's annual 'BirdTrends' reports and Wetland Bird Survey (WeBS) alerts (where relevant).

Diversity

- 3.61 The number of species recorded in an area (species richness) is a simple and effective measure of diversity, which can be used in the assessment of a breeding bird assemblage. **Table 2.1** below shows the thresholds commonly used to measure diversity (Fuller, 1980).
- 3.62 However, since the publication of the criteria in 1980, species diversity has declined significantly, and it is considered that Fuller's thresholds are too high for today's breeding bird populations. For this reason, it is therefore judged appropriate to recalibrate the categories slightly downward, as shown. This is achieved by splitting the 'local' category into two and adding a 'district' category, which also fits with the geographical scale set out in the CIEEM guidelines.

Table 2.1 Breeding bird assessment using the number of breeding bird species.

Level of Importance	Number of Breeding species	
	Fuller (1980)	Adapted criteria
Local	25-49 species	<25
District	-	25-49
County	50-69	50-60
Regional	70-84	70-84
National	85+	85+

Evaluation

- 3.63 The Site does have suitable features for nesting and breeding birds and it is likely that common bird species will use both vegetative features and buildings within the Site boundary for nesting.
- 3.64 Using the above guidance and professional judgement, the breeding bird assemblage is assigned a level of 'importance' within the ZOI on a geographical frame of reference according to the EcIA guidelines (CIEEM, 2018).
- 3.65 The reason for deviating from the above guidance, is due to the habits present on Site offering limited opportunities, low numbers of each species recorded and the species that have been recorded are widespread and common, with no rare birds recorded on Site.
- 3.66 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), and therefore there will be a need to consider the potential for nesting birds when carrying out demolition works/vegetation removal. Further information regarding this is included within **Section 7**.

Bats

- 3.67 All bats and their roosts are afforded legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are a European Protected Species under the Habitats Regulations 2020 (as amended).
- 3.68 In addition to their legal protection, seven species of bats are classified as a Species of Principle Importance under the NERC Act 2006.

Desk Study

- 3.69 The records search from TVERC includes 445 records for both field records/flying bats and roosts within 2km of the Site, all of the records are marked as sensitive and therefore cannot be mapped. Bat species that have been recorded within 2km of the Site include:

- Common Pipistrelle *Pipistrellus pipistrellus*;
- Soprano Pipistrelle *Pipistrellus pygmaeus*;
- Nathusius Pipistrelle *Pipistrelle nathusii*;
- Pipistrelle species *Pipistrellus sp.*;
- Long-eared bat species *Plecotus sp.*;
- Brown Long-eared bat *Plecotus auritus*;;

- Noctule *Nyctalus noctule*;
- Leislars *Nyctalus leisleri*;
- Myotis species *Myotis sp.*;
- Daubentons *Myotis daubentonii*;
- Barbastelle *Barbastella barbastellus*; and
- Serotine *Eptesicus serotinus*.

3.70 The desktop study also returned 11 granted European Protected Licenses (EPSL) within 2km of the Site. The closest approved EPSL return is located 550m to the north of the Site, for the destruction of a Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bat resting place.

Field Surveys

3.71 Surveys were undertaken in 2023 and 2024. Surveys undertaken by EPR, including:

- Habitat Appraisal (September 2023);
- Ground Level Tree Assessment (GLTA) (March 2024);
- Daytime Inspection of the Buildings (March 2024);
- Night-time Bat Walkover April and July 2024;
- Automated Static Detector Surveys in April, May, June and July 2024; and
- Emergence Surveys on Both Buildings in May 2024.

3.72 All surveys were carried out in line with Good Practice Guidance (Collins, 2023). Full details of the bat surveys undertaken by EPR are provided in **Appendix 3**.

3.73 The habitats on Site including the hedgerows, trees, willow scrub, mixed scrub and grassland offer suitable commuting and foraging habitat.

3.74 A single tree within the Site was assessed as being PRF-M, able to support multiple bats, due to the Ivy *Hedera helix* present and the split in the trunk. This tree is in an area to be retained and therefore did not require further surveys; no bats were seen near the tree on the Night-time Bat Walkover.

3.75 Any confirmed roosts and trees assessed to be either PRF-I or PRF-M, will be subject to further survey work in the form of either an aerial tree climbing inspection or dusk emergence/dawn re-entry surveys.

3.76 Minimal bat activity has been recorded within the Site, with bats limited to the areas of Willow and mixed scrub. Common Pipistrelle were seen foraging and commuting across the site.

3.77 The two buildings within the Site were assessed as having low potential to support roosting bats and as per the guidance were subjected to a single emergence survey. An emergence survey

was undertaken on the 25th of May 2024, no bats were recorded emerging from the building and therefore no further survey work is required.

- 3.78 The automated static detectors deployed monthly between April 2024 and July 2024 inclusive, identified that the Site is being used by at least 7 different bat species (albeit infrequently by some) including Common Pipistrelle, Soprano Pipistrelle, Pipistrelle Sp., Nathusius's Pipistrelle, Long-eared species, Myotis Sp., Noctule, Noctule / Leisler's, Big Bat, and Barbastelle. The highest number of passes made on a given night by a bat species was 412 passes by Common Pipistrelle in May 2024.
- 3.79 Further bat night-time walkover and automated surveys are taking place between August and October 2024. Once surveys have been completed an update will be provided.
- 3.80 Common and Soprano Pipistrelle made up the highest proportion of bat calls recorded on any given night, both of which are common and widespread in England. A small number of unidentified Myotis species passes were recorded; the distribution and status of Myotis bats depends on the species and can range from widespread to restricted and from common to rare. A small number of passes by Nathusius' Pipistrelle and Barbastelle were also recorded, indicating that they have an infrequent presence within the Zone of Influence. Although distributed across southern England and Wales, Barbastelle are rare in both the UK and across Europe, although there is potential that this species is under-recorded (JNCC, undated).
- 3.81 Where it is necessary to remove trees that have bat roosting suitability, but where a roost has not been confirmed, tree removal may be carried out under ecological supervision and a non-licensed method statement which may include all or some of the measures identified above.
- 3.82 In order to minimise potential impacts on bats, a sensitive lighting strategy will be implemented to avoid unnecessary light spill.

Evaluation

- 3.83 The Site supports commuting and foraging bat species, which use the boundary vegetation and scrub habitats in the eastern area.
- 3.84 The bat community present is considered to be of local value.

Amphibians

Desk Study

- 3.85 The data search returned by TVERC included 43 records for amphibians which included 4 records of Great Crested Newt *Triturus cristatus* within 2km of the Site Boundary. The most recent record was in 2020 and was located approximately 1.5km south west of the Site. All records were located southwest of the Site, with a large spatial separation, highly urbanised areas and several roads which are likely to present a barrier for dispersal for Great Crested Newts.
- 3.86 A search of MAGIC revealed no additional records for Great Crested Newts within the wider landscape.
- 3.87 Due to the limited suitable habitat within the Site, no ponds within 500m of the Site and the lack of connectivity to the wider landscape, Great Crested Newts are not considered further in this assessment.

Reptiles

Desk Study

- 3.88 TVERC returned 100 records of reptiles including Grass Snake *Natrix Helvectica* Common Lizard *Zootoca vivipara*, and Slow Worm *Anguis fragilis* within 2 km of the Site with all records being approximately 1km north west of the Site.

Field Survey

- 3.89 The survey methodology is provided in **Appendix 3**.
- 3.90 The surveys did not record any reptile species within the Site boundary. The conditions under which those surveys were carried out are recorded in **Table 3.1** below.
- 3.91 A single visual record of a male Grass Snake was recorded on 17th of July during the Night-Time Bat Walkover.

Table 3.1; Survey Conditions of 2024 reptile survey

Visit No.	Date	Time		Temperature (0°C)		Cloud Cover (%)	Wind (Beaufort Scale)	Rain
		Start	Finish	Start	Finish			
1	17/04/24	11:15	12:00	12	15	10	1	Dry
2	30/04/24	18:40	19:10	15	15	20-30	2-3	Dry
3	7/05/24	8:00	8:30	12	13	10	0	Dry
4	15/05/24	8:30	10:00	14	15	30	3	Dry
5	24/05/24	8:30	9:15	12	15	80	1	Dry
6	30/05/24	9:45	10:15	14	14	80	2	Dry
7	03/06/24	9:00	9:30	15	16	30-20	0	Dry

- 3.92 The location of, and type of refugia used to undertake the survey are provided on **Map 3**.

Evaluation

- 3.93 Due to a single Grass Snake being found on site, and this being the only reptile found within the Site. The Site supports a low population of Grass Snake.
- 3.94 Reptiles are considered to be of value within the Zol only.

Hazel Dormouse

- 3.95 No records were returned for Hazel Dormice *Muscardinus avellanarius*. There is limited suitable habitat within the Site, such as the willow scrub and mixed scrub, however these habitats are isolated from the wider landscape and therefore cannot support Hazel Dormice.

Badger

- 3.96 A total of 77 records were returned for Badger *Meles meles* within 2km of the Site. The closest record is approximately 700m north of the Site. Majority of the records returned are for a badger sett.

- 3.97 A Badger survey was undertaken on the 26th March 2024 and no evidence of Badger was found and no further surveys are required.
- 3.98 Prior to construction works an updated Badger walkover will be undertaken due to the mobile nature of Badgers. Should any new sett entrances be recorded closer to the proposed works area, a suitably qualified ecologist will advise on whether it is possible to introduce controls to works activity to prevent any disturbance of the sett(s). If this is not possible, then a licence from Natural England will be obtained to enable works to proceed lawfully under the Protection of Badgers Act 1992. Consideration will also be given to maintaining the permeability of the site to Badgers passing through or around the proposals, to enable foraging habitats to continue to be accessed by the surrounding Badger clans.

Evaluation

- 3.99 The Site does have suitable habitats for foraging Badgers and it is likely that badgers will use the Site infrequently.
- 3.100 Badgers are considered to be of value within the ZOI only.

Other Protected Species

- 3.101 The habitats on Site are considered suitable to support Hedgehogs *Erinaceinae europaeus* but no other protected species/species groups such as Water Vole *Arvicola amphibious*, and Otter *Lutra lutra*.

4. IMPACT ASSESSMENT

Introduction

- 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 Proposals, 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.

Mechanisms for Implementing and Securing Mitigation

- 4.2 Throughout this section, reference is made to a suite of plans and strategies which will include and expand on key principles of the impact avoidance and mitigation measures described below, and which can be secured through planning conditions or obligations, including:

Construction Environment Management Plan

- 4.3 The Construction Environmental Management Plan (CEMP) will set out detailed measures for protecting the environment during the site clearance and construction phase. This will include specifications for construction timing and logistics; pollution prevention measures; measures to control surface water run-off and the emission of dust and noise; and specific measures that will be prescribed to avoid or mitigate damage and disturbance to important species and habitats, such as the exclusion of construction activities from sensitive areas.

Biodiversity Enhancements Plan

- 4.4 The Biodiversity Enhancements Plan will include details of how retained habitats will be enhanced and new habitats will be created within the Site boundary.

Landscape and Ecology Management Plan

- 4.5 The Landscape and Ecology Management Plan (LEMP) will provide prescriptions for the ongoing management of open space on Site.

Lighting Plan

- 4.6 A Lighting Strategy will provide detailed specifications for the provision of lighting within the Proposed Development, including measures that will be applied to minimise potential impacts on ecological receptors and achieve compliance with applicable best practice guidance.

Impact Assessment

Thames Basin Heath SPA

Impacts

- 4.7 Due to the increase in the number of residential dwellings and the proximity to the SPA, there will be additional recreational pressure on the SPA.
- 4.8 Without mitigation this would have a significant negative impact on the condition of the SPA.

Mitigation

- 4.9 To offset the additional recreation pressure on the SPA two financial payments will be made to mitigate the impacts.
- 4.10 The first financial payment is the Strategic Access Management and Monitoring (SAMM) payments.
- 4.11 As the site is within 5km of the SPA, these payments currently (as of June 2024) stand at:
- 1 Bedroom: £563
 - 2 Bedroom: £784
 - 3 Bedroom: £1,042
 - 4 Bedroom: £1,225
 - 5 Bedroom: £1,400
- 4.12 The second financial payment is a payment to the University of Reading's SANG. This will be arranged directly with the University of Reading. This will be to buy additional capacity of the SANG to offset the additional residential dwellings being proposed.
- 4.13 With the above payments being made it is considered the impacts upon the SPA will be mitigated.

Bats

Impact- Habitat Loss

- 4.14 The proposals will result in the loss of a foraging and commuting habitat within the Site. This is in the form of grassland and ditches present within the Site, as well as arable land.
- 4.15 Without mitigation the impact of the habitat loss will be significant due to the limited foraging habitat present due to north, west and south of the Site being dominated by residential housing.

Mitigation

- 4.16 New grassland including other neutral grassland, other neutral grassland-wet tolerant and modified grassland, as well as the creation of ditches and the retention and enhancement of the existing natural watercourse. These habitats will provide new foraging habitats for bat species.
- 4.17 With the above habitat creation, the habitat loss on site will be mitigated and only a temporary disturbance to foraging/ commuting bats will occur during the habitat creation time.

Impact- Occupation Phase-Lighting

- 4.18 Within the new development external lighting will be added to the development.
- 4.19 If the lighting is not mitigated it will have a significant negative impact on bats.

Mitigation

- 4.20 A lighting plan will be reviewed by an ecologist to confirm that foraging and commuting habitat is kept dark.

- 4.21 Where possible external lights will be in compliance with the BCT lighting for bat guidance, including being on timers or motion sensors where possible.
- 4.22 The open space within the eastern area of the site will be kept dark during the night time as this is where the foraging and commuting habitat is present.
- 4.23 With the above mitigation in place the impact on the bats will be mitigated and therefore not be a significant impact.

5. ENHANCEMENTS AND BIODIVERSITY NET GAIN

- 5.1 This section describes the measures the proposals will deliver in order to provide biodiversity net gain, in accordance with relevant National and Local biodiversity policies and strategies.
- 5.2 The requirement for biodiversity net gain is enshrined within the NPPF (2023), as well within the Local Plan of Wokingham. As of 12th February 2024, the provision of 10% biodiversity net gain, as measured by a metric (currently published by Defra) is now a condition of planning permission in England, as per The Environmental Act 2021.

Creation of New Habitats

Landscaping

- 5.3 Landscaping through the proposals will incorporate native species; the inclusion of such species will provide further foraging opportunities for the local invertebrate assemblage including bees and butterflies, and in turn provide foraging opportunities for local bird, bat and small mammal populations.

Other Neutral Grassland

- 5.4 Areas within the Proposed Development will include wildflower grasslands sown with a species rich seed-mix to be managed according to a conservation management regime that will benefit local biodiversity. Given the proximity to the residential area, these areas are likely to be public amenity areas, however, public access will be controlled via the implementation of paths and/or designated routes throughout the grassland to limit damage. Prescriptions to create and manage wildlife grasslands including infrequent mowing and creation of variation within the sward height will be included within a Landscape Ecological Mitigation Plan (LEMP).
- 5.5 Wildflower grasslands within the proposals will increase the floral diversity on Site, thereby increasing the diversity biomass of the local invertebrate assemblage. An increase in invertebrates will in turn, provide an additional foraging resource for many species including bats, small mammals and reptiles.

Sustainable Drainage System (SuDS)

- 5.6 As per the proposals, a SuDS is being provided. This will provide additional foraging resources for local bat, bird and small mammal populations. A suitable management plan including infrequent management to create variation in vegetation and management of invasive non-native species will also be implemented with further details provided within a LEMP.

Wildlife Boxes

- 5.7 Wildlife boxes are to be incorporated throughout the Proposed Development to provide shelter roosting and/or nesting opportunities for local biodiversity. The locations and specification of these boxes will be set out within a LEMP at a later date, the implementation of which can be secured by planning condition.

Bats

- 5.8 To provide the local bat assemblage with additional roosting opportunities bat boxes will be provided throughout the Proposed Development. These boxes will target species that have been recorded on Site during the bat surveys, such as Pipistrelle sp. A total of 12 bat boxes will be provided with specifications and exact locations outlined within a LEMP.

Birds

- 5.9 To provide the local breeding bird assemblage with additional nesting opportunities, bird boxes will be provided throughout the Proposed Development. This will include boxes mounted onto the new residential dwelling.
- 5.10 Bird boxes will be targeted at species that are known to inhabit the Site and wider landscape and will be suited to a suburban environment.
- 5.11 Swift *Apus apus*, are a Species of Principal Importance under the NERC Act 2006. A total of 24 swift boxes will be provided with specifications and exact locations outlined within a LEMP.

Hedgehogs

- 5.12 Hedgehogs are a Species of Principal Importance, with populations continuing to decline across the UK. They are listed as Vulnerable on the Red List for British Mammals. Therefore, where Hedgehogs are likely to be present, enhancements should be provided. One Hedgehog box will be situated on Site, within a linear feature in a secluded area where they are unlikely to be disturbed.

Biodiversity Net Gain

- 5.13 As part of the pre-application an initial BNG calculation has been undertaken using the Statutory Biodiversity Metric. The full metric can be found in Arborfield Statutory Metric 300824.
- 5.14 The BNG calculations are based on the initial proposals for the proposed development, a condition assessment was undertaken in May 2024 to confirm all habitats and condition of habitats within the Site.
- 5.15 As per Natural England's BNG User Guide (Natural England, 2023) all trees planted outside of private gardens have been included towards the post-development calculations, therefore, as per the proposed development, 170 trees have been included within the BNG metric calculations.
- 5.16 In its current condition, the Site provides 15.82 habitat units (**Map 2**). Following the Proposed Development, it is anticipated that 20.29 habitats units will be provided (**Map 4**) resulting in a net change of 4.47 habitat units.
- 5.17 At present, the Site provides 0.96 hedgerow units (**Map 2**). Following the Proposed Development, 2.13 hedgerow units will be provided (**Map 4**), resulting in a net change increase of 1.17 hedgerow units.

- 5.18 At present, the Site provides 0.59 watercourse units (**Map 2**). Following the Proposed Development, 0.66 watercourse units will be provided (**Map 4**), resulting in a net change increase of 0.06 watercourse units.

Limitations of the Biodiversity Metric

- 5.19 As habitats are used 'as a proxy to describe biodiversity' the Biodiversity Metric alone cannot be considered to provide a full picture of the deliverable biodiversity enhancements available.
- 5.20 The Metric does not take into account species information, and therefore habitats which support protected and/or notable species will not be given extra weight or consideration. Similarly, additional enhancement measures which may be targeted at faunal species (e.g. wildlife boxes) will not be taken into account by the metric whilst calculating biodiversity net gain.
- 5.21 The Statutory Biodiversity Metric can therefore be considered to be a quantitative measure of biodiversity net gain, with additional enhancements a qualitative measure of net gain opportunities to be considered additionally.

6. CONSEQUENCES FOR DECISION MAKING

Summary of Mechanisms to Secure Impact Avoidance, Mitigation and Compensation Measures

6.1 The following strategies, which will be secured by planning conditions and/or obligations, will be required to ensure the successful implementation of the impact avoidance, mitigation and compensation measures set out in **Section 4**

- Construction Environment Management Plan (CEMP).
- Biodiversity Enhancements Plan
- Landscape and Ecology Management Plan (LEMP)
- Lighting Strategy

Biodiversity Net Gain

6.2 The Proposed Development will deliver biodiversity enhancements which go above and beyond the measures required to avoid, mitigate and/or compensate for the potential impacts described in **Section 4**. The enhancement measures are intended to benefit known features of ecological importance present within the ZoI, as well as biodiversity in general.

6.3 Key deliverables include:

- Creation of grassland habitats;
- Retention and enhancement of natural watercourse;
- Bat and bird boxes and hedgehog house; and
- Creation of Hedgehog Highway through the development in line with Bellway's sustainability approach 'Better with Bellway'.

6.4 A BNG Calculation has been completed using the Statutory Defra Metric (see **Appendix 4**). The proposals will deliver 1.17 Hedgerow units resulting in a BNG uplift of 121.57% and 4.47 habitat units resulting in an BNG uplift of 28.29%.

6.5 While not assessed / taken into account within the metric, the proposals are also going to deliver BNG through the installation of bat and bird boxes, a hedgehog house and the creation of 'Hedgehog Highways'.

Conclusion

6.6 This EclA has predicted that, subject to the implementation of the impact avoidance, mitigation and compensation measures set out in **Section 4**, the Proposed Development will not have any significant negative residual effects on IEFs and will conform to all applicable nature conservation-related legislation and policy.

- 6.7 As a result of the enhancement measures proposed, the proposals will not result in significant harm to biodiversity.

7. LEGAL CONSIDERATIONS

7.1 Should planning permission be granted for the Proposed Development, the following legal considerations will apply, in accordance with the following items of legislation:

- The Conservation of Habitats and Species Regulations 2017 (as amended); and
- The Wildlife and Countryside Act 1981 (as amended).

Bats

7.2 The field surveys have concluded that bats are likely to be absent from the buildings at present. Surveys were conducted in accordance with Best Practice Guidelines (BCT, 2023) and did not record any evidence of roosting bats.

7.3 It is recommended that if more than 24 months elapses between the surveys and the demolition of the properties that an update survey should be undertaken as conditions may have changed.

7.4 In the unlikely event that bats are found during the demolition and construction works, all work should stop immediately, and a suitably qualified ecologist contacted for advice, it is possible that in this circumstance a European Protected Species Licence (EPSL) would be required to continue.

Birds

7.5 The buildings have potential to support nesting birds. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), and therefore there will be a need to consider the potential for nesting birds when carrying out demolition works/vegetation removal. Typically, protection of nesting birds can be achieved either by carrying out demolition and clearance works outside of the recognised bird nesting season (March to August inclusive) or preceding works with a check carried out by a suitably experienced ecologist not longer than 24 hours prior to works. If any active birds nests are discovered, they would then be protected in situ with an appropriate buffer until and dependent young had fledged the nest.

Reptiles

7.6 Only Grass Snake were found within the Site which are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) from killing, injury (intentional and reckless) and from trade.

7.7 Suitable reptile habitat is present on the Site and reptiles have been recorded in the wider area there is potential for more mobile species of reptile (such as Grass Snake) that are present in surrounding habitats to utilise the Site occasionally or to disperse through the Site.

7.8 A precautionary approach is recommended during the clearance of habitats considered suitable for reptiles in order to ensure that no reptiles are harmed in compliance with the relevant legislation. Habitat clearance works should be carried out under a Working Method Statement which should include the phase clearance of vegetation, the destructive search of suitable habitats under supervision of a suitably experienced ecologist and the relocation of any reptiles found to areas of retained habitats within and on the Site boundary.

7.9 An outline method statement in respect of reptiles is detailed below:

- All clearance works to areas with the potential to support reptiles will be undertaken when common reptiles are likely to be fully active i.e. during the April to September period. If works need to be undertaken outside of the active period then a suitably qualified ecologist will assess the area for its potential to support hibernating animals and advise accordingly.
- Clearance of logs, brash, stones, rocks or piles of similar debris will be undertaken carefully and by hand.
- Clearance of tall vegetation should be undertaken using a strimmer or brush cutter with all cuttings raked and removed the same day. Cutting will only be undertaken in a phased way which may either include:
 - Cutting vegetation to a height of no less than 30mm, clearing no more than one third of the site in anyone day or;
 - Cutting vegetation over three consecutive days to a height of no less than 150mm at the first cut, 75mm at the second cut and 30mm at the third cut
- Following removal of tall vegetation using the methods outlined above, remaining vegetation will be maintained at a height of 30mm through regular mowing or strimming to discourage common reptiles from returning.

8. REFERENCES

Bat Conservation Trust (BCT, 2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2*. Chartered Institute of Ecology and Environmental Management, Winchester

Institute of Lighting Professionals and BCT (2018) *Guidance Note 08/18*

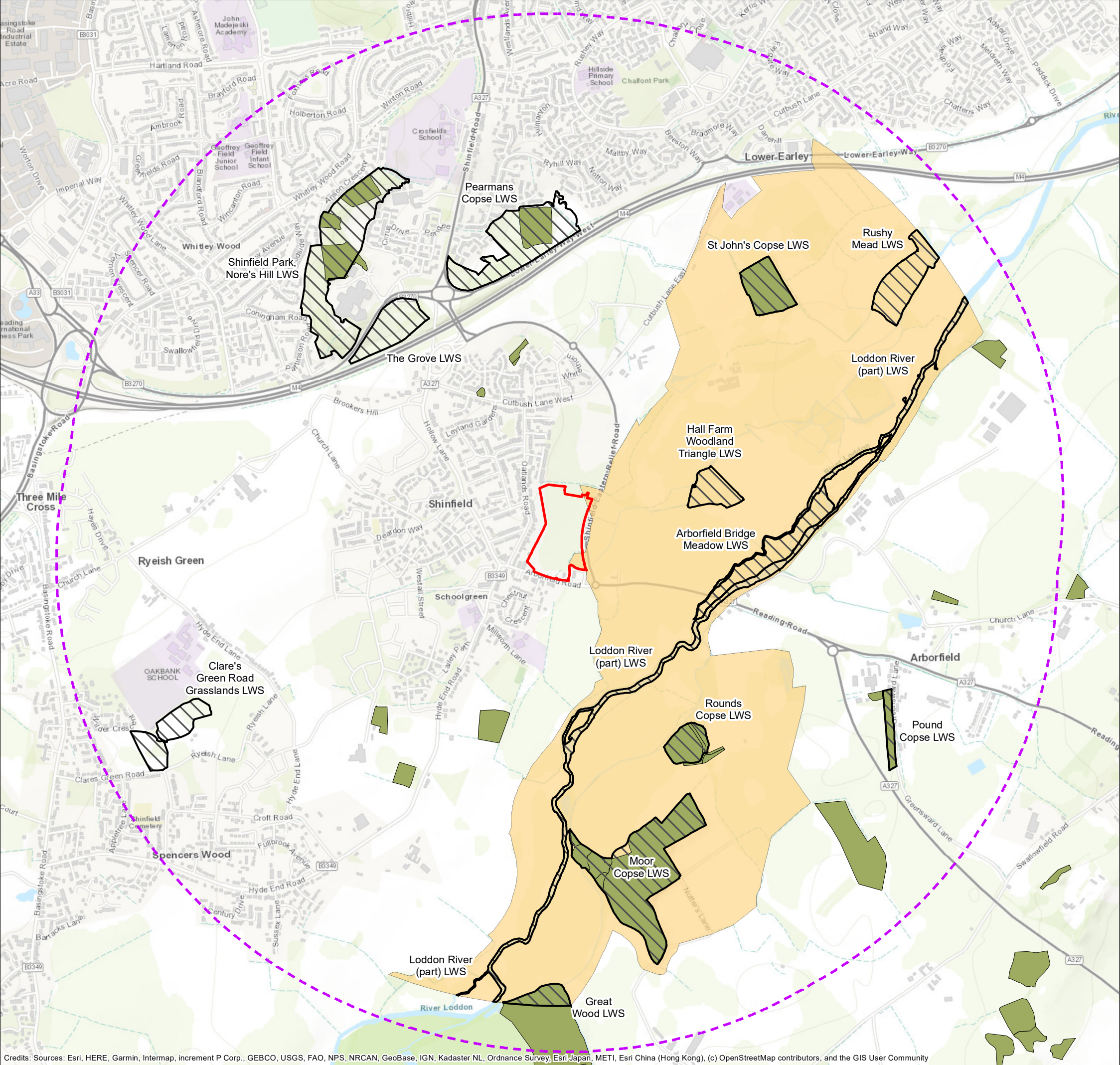
Ministry of Housing, Communities and Local Government (2021). *National Planning Policy Framework*. July 2021.

Ministry of Housing, Communities and Local Government. *Planning Practice Guidance*. Available from: <https://www.gov.uk/government/collections/planning-practice-guidance>

Multi-Agency Geographic Information for the Countryside (MAGIC): Available at: <http://www.natureonthemap.naturalengland.org.uk/magicmap.aspx> Accessed (08/08/2022)

Maps

Map 1a	Location and Nature Conservation Designations
Map 1b	Location and Nature Conservation Designations
Map 2	Habitats and Features
Map 3	Reptile Refugia Placement
Map 4	Post Development Habitats



MAP 1b Site Location & Sites Protected by Planning Policy

KEY

- Site boundary
- 2km linear distance from site
- 5km linear distance from site
- Local Wildlife Sites
- Loddon Valley South Biodiversity Opportunity Area
- Provisional Ancient Woodland

SCALE: 1:16,000 at A3

0 200 400 600 800 1,000 Metres

N



CLIENT: Bellway Homes

PROJECT: Land North of Arborfield Road

DATE: 08 August 2024



MAP 3 Reptile Refugia

KEY

-  Site boundary
-  Felt
-  Onduline
-  Tin
-  Natural sighting - Grass Snake

SCALE: 1:1,750 at A3

0 20 40 60 80 100 Metres



CLIENT: University of Reading
PROJECT: Land North of Arborfield Road, Shinfield
DATE: 14 August 2024



MAP 4 On-site Post Development Habitats

KEY

Site boundary

Created

Trees

Native hedgerow

Non-native and ornamental hedgerow

Artificial unvegetated, unsealed surface

Developed land; sealed surface

Introduced shrub

Mixed scrub

Modified grassland

Other neutral grassland

Other neutral grassland (wet tolerant)

Vegetated garden

Retained

Mixed scrub

Other neutral grassland

Willow scrub

SCALE: 1:1,500 at A3

0 20 40 60 80 100 Metres



CLIENT: Bellway

PROJECT: Land North of Arborfield Road

DATE: 29 August 2024

Appendix 1

Development Proposals

Native Shrub & Hedge Planting

Viburnum opulus
Viburnum lanata
Rhamnus cathartica
Prunus spinosa
Ligustrum vulgare
Corylus avellana
Cornus sanguinea

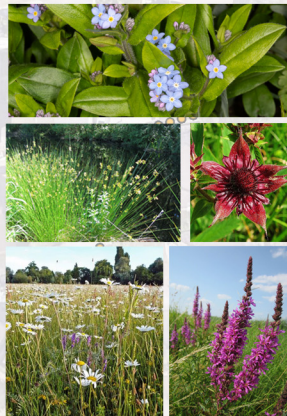


Mixed Native Hedgerows

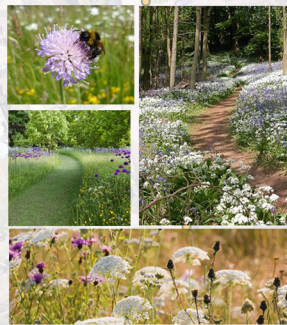
5% Viburnum opulus
5% Ligustrum vulgare
10% Viburnum lanata
10% Prunus spinosa
10% Corylus avellana
10% Acer campestre
50% Crataegus monogyna



Ditch and Swale Wetland Meadow



Species Rich Wildflower Grass



Native Bulb Planting



Open Space & Native Boundary Trees

Acer campestre
Alnus glutinosa
Betula pendula
Carpinus betulus
Corylus avellana
Crataegus monogyna
Fagus sylvatica
Malus sylvestris
Prunus avium
Quercus robur
Salix alba
Sorbus aria
Sorbus aucuparia
Tilia cordata



Internal Ornamental & Street Trees

Corylus columna 'Te Terra Red'
Magnolia Sp.
Tilia cordata 'Rancho'
Acer campestre 'Streetwise'
Betula pendula
Carpinus betulus 'Lucas'
Betula utilis 'Edinburgh'
Corylus columna
Malus triobata
Malus sylvestris



Ornamental Hedge Planting

Sacococca confusa
Prunus sp.
Euonymus japonicus
'Green spire'



Ornamental Shrubs

Lavandula angustifolia 'Hidcote'
Rosmarinus officinalis
Euonymus fortunei 'Emerald Gaiety'
Carex oshimensis 'Evergold'
Skimmia japonica 'Rubella'
Hebe 'Sutherlandii'



Key:

- Site Boundary
- Existing Public Right of Way
- Existing Permissive Route
- Existing vegetation to be retained
- Proposed Street Tree Planting
- Proposed Native Tree Planting
- Proposed Ornamental Shrub Planting
- Proposed Native Shrub Planting
- Proposed Ornamental Hedge Planting
- Proposed Native Hedge Planting
- Proposed Native Bulb Planting
- Proposed Feature Shrub Planting
- Proposed Basin
- Proposed Wetland Mix
- Proposed Wildflower Mix
- Proposed Mown Footpath
- Proposed Benches
- Proposed Short Span Timber Bridge
- Proposed Informal Boulder Seating

The landscape proposals have been informed by the landscape strategies and relevant guidelines for LCA A2: Loddon River Valley and LCA J3: Spencers Wood Settled and Farmed Clay of the Wokingham Borough Landscape Character Assessment (LUC: 2019). Landscape-related design guidance within the Wokingham Borough Design Guide (2012), the South of the M4 – Strategic Development Location SPD (2011) and relevant guidance and aspirations within the Shinfield School Green Village Character Statement (2008) have also informed the landscape proposals along with adopted local policy.

- Approved Phase 1 play space to benefit from natural surveillance from properties on the northern development edge.
- Key vegetation sensitively considered through the provision of appropriate development offsets, with outward-facing development establishing a positive development edge.
- Alexander Walk, an existing pedestrian and cycleway along the eastern edge of the Phase 1 development, to be extended through the proposed open space, providing a link between Cutbush Lane to the north and Arborfield Road and Langley Mead SANG to the south.
- Footpath links onto the nearby permissive route and PRoW SHIN7 to improve connectivity and encourage access into the countryside to the east.
- Retained native trees and scrub in the eastern extents of the Site to be enhanced with further native planting of local prevalence to highly contain the Site within the built form context and ensure a strong degree of separation from the landscape to the east. This will complement the existing vegetated character of the eastern boundary of the Phase 1 development to the north, as well as further assist in integrating the A327 Eastern Relief Road within the landscape.
- Proposed attenuation basin to promote sustainable drainage solutions along with informal recreational opportunities provided by kick about area and informal boulder seating.
- Species-rich wildflower grassland to provide biodiversity enhancements and visual interest within open space areas.
- Mown grass paths to promote alternative routes through the open space, offering a more integrated user experience.
- Tree-lined primary street to form a continuation of the Phase 1 street scene and establish a green spine running through the development.
- Central open space to form an inviting, multifunctional space for the community, offering informal play opportunities and providing a meeting point at the heart of the scheme. This space is physically and visually connected to the linear open space in the eastern extents of the Site through the design layout.
- Ornamental shrub planting and clipped, low-growing hedgerows to plot frontages to provide a high-quality landscape setting within the development, offering seasonal and year-round interest.
- Arborfield Road frontage to provide a gateway into the development, with feature tree and shrub planting proposed either side of the site entrance.
- Replacement mixed native hedgerow planting and native tree planting to mitigate for the required vegetation loss along Arborfield Road. This will retain the vegetated character along the road corridor and protect the existing visual amenity of residential properties to the south.
- Existing onsite watercourse to be retained and enhanced. Proposed swale set within wildflower planting, to benefit biodiversity and create an attractive natural feeling pathway.

D	22.08.24	Updated to latest layout	AS	SP
C	19.08.24	Updated to latest layout	AS	CW
B	12.08.24	Updated to latest layout	BS	SP
A	02.08.24	Updated to latest comments	BS	SP
REV	DATE	NOTE	BS	DRAWN

REVISIONS

aspect landscape planning

TITLE

Land North of Arborfield Road, Shinfield
Landscape Strategy Plan

CLIENT

Bellway Home Thames Valley

SCALE	DATE	DRAWN	CHK'D
1:1,500 @ A3	JUNE 2024	AS	IC
DRAWING NUMBER	REVISION		
8395 / ASP6 / LSP	D		

Appendix 2

Legislation and Policy

LEGISLATION

The Environment Act 2021

The Environment Act 2021 places a requirement on the Secretary of State to make regulations setting out long-term targets for air quality, water, biodiversity, resource efficiency and waste reduction. It also requires the Government to produce an Environmental Improvement Plan, to report on progress towards its goals annually, to meet the targets that are set in relation to the improvement of the natural environment and to produce remedial plans should this not be achieved.

In relation to water quality, the Act places new duties on the Government, Environment Agency and sewerage undertakers to reduce the frequency and harm of discharges from storm overflows on the environment, and for monitoring the quality of watercourses affected by those overflows.

It also includes a requirement for an independent Office for Environmental Protection (OEP) to be established, with responsibilities for monitoring and reporting on progress against environmental improvement plans and targets. The OEP will also have investigation and enforcement powers against public authorities failing to comply with environmental law when exercising their functions.

The Act makes provisions for 10% biodiversity gain to become a condition of planning permission in England, through amendments to the Town and Country Planning Act 1990. These amendments came into force on the 12th February 2024 (delayed to 2nd April 2024 for 'small sites'). This is measured through a biodiversity metric published by the Secretary of State. The Act also establishes Biodiversity Net Gain as a requirement for Nationally Significant Infrastructure Projects (NSIPs).

The Act also strengthens the biodiversity duty placed on public authorities through amendments to the Natural Environment and Rural Communities Act 2006 Section 40, requiring such authorities to not only conserve but also enhance biodiversity when exercising their functions. Public authorities will also be required to publish summary reports of actions taken under Section 40 at least every five years.

The Act provides the legal basis for the creation of Local Nature Recovery Strategies (LNRSSs) for England (including specifying their content), and the preparation and publication of species conservation strategies and protected sites strategies.

It also creates a new legal vehicle known as a 'Conservation Covenant' which is a voluntary, legally binding private agreement between landowners and responsible bodies (the latter designated by the Secretary of State) which conserve the natural or heritage features of the land, enabling long-term conservation. Conservation Covenants are designed to 'run with the land' when it is sold or passed on and are intended to become a primary mechanism for the delivery of Biodiversity Net Gain (BNG).

The Act provides new powers for the Government to amend in future Regulation 9 and Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') – but "only if satisfied that the regulations do not reduce the level of environmental protection provided by the Habitats Regulations".

Several aspects of protected species licencing have also been adjusted by the Act. These include the removal of several inconsistencies between the Habitats Regulations and the Wildlife & Countryside Act 1981 (as amended), ensuring that licences issued under the former piece of legislation also apply under the latter, and making it now possible for licences to be issued under Section 16(3) of the Wildlife & Countryside Act 1981 (as amended) for purposes of overriding public interest. The maximum term of a licence that can be issued by Natural England has also been extended from 2 to 5 years.

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (known as the “Habitats Regulations”) were originally drawn up to transpose the European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the “Habitats Directive”) into UK legislation. Following the UK’s exit from the European Union, the Habitats Regulations – as amended by Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – remain in force until such a time as they are superseded by new or updated domestic legislation.

The Habitats Regulations provide for the designation of both Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) in the UK, which previously formed part of the Natura 2000 network of protected areas across Europe and are now part of the UK’s “National Sites Network”. New National Sites may be designated under the Regulations.

The Regulations also prohibit certain actions relating to European Protected Species (EPS), which include *inter alia* Hazel Dormouse *Muscardinus avellanarius*, Great Crested Newt *Triturus cristatus*, European Otter *Lutra lutra* and all native species of bat.

Further information on SPAs, SACs and European Protected Species is provided in the relevant sub-sections of this Appendix.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the principal mechanism for the legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. Certain species of bird, animal and plant (including all of the European Protected Species listed above) are afforded protection under Schedules 1, 5 and 8 of the Act. Reference is made to the various Schedules and Parts of this Act (**Table A1.1**) in the section of this Appendix dealing with Legally Protected Species. The Act also contains measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) and public rights of way as well as preventing the establishment of invasive non-native species that may be detrimental to native wildlife.

Table A1.1: Relevant Schedules of the Wildlife & Countryside Act 1981 (as amended)

Schedule	Protected Species
Schedule 1 Part 1	Protects listed birds through special penalties at all times
Schedule 1 Part 2	Protects listed birds through special penalties during the close season
Schedule 5 Section 9.1 (killing/injuring)	Protects listed animals from intentional killing or injuring
Schedule 5 Section 9.1 (taking)	Protects listed animals from taking
Schedule 5 Section 9.2	Protects listed animals from being possessed or controlled (live or dead)
Schedule 5 Section 9.4a	Protects listed animals from intentional damage or destruction to any structure or place used for shelter or protection
Schedule 5 Section 9.4b	Protects listed animals from intentional disturbance while occupying a structure or place used for shelter or protection
Schedule 5 Section 9.5a	Protects listed animals from being sold, offered for sale or being held or transported for sale either live or dead, whole or part
Schedule 5 Section 9.5b	Protects listed animals from being published or advertised as being for sale
Schedule 8	Protects listed plants from: intentional picking, uprooting or destruction (Section 13 1a); selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); advertising (any of these) for buying or selling (Section 13 2b).
Schedule 9	Prohibits the release of species listed in the Schedule into the wild.
Schedule 9a	Allows environmental authorities to issue species control orders to landowners, obliging them to control/eradicate invasive and/or non-native species.

Further information on legally protected species, designated wildlife sites and invasive non-native species is provided in the relevant sub-sections of this Appendix.

Countryside & Rights of Way Act 2000

Many of the provisions of the Countryside and Rights of Way (CRoW) Act 2000 have been incorporated as amendments into the Wildlife and Countryside Act (1981) and some provisions have now been superseded by later legislation such as The Natural Environment and Rural Communities Act (2006).

The most relevant changes provided by the CRoW Act include the added protection given to SSSIs and other important sites for nature conservation. Importantly, under the Act it became a criminal offence to "recklessly disturb" Schedule 1 nesting birds and species protected under Schedule 5 of the Wildlife and Countryside Act. It also enabled heavier penalties on conviction of wildlife offences.

The Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act 2006 was intended to raise the profile of biodiversity amongst all public authorities (including local authorities, and statutory undertakers) and to make biodiversity an integral part of policy and decision-making processes. The NERC Act also improved wildlife protection by amending the Wildlife and Countryside Act 1981.

Section 40 (S40) of the Act places a 'Biodiversity Duty' on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions. This includes giving consideration to the restoration and enhancement of species and habitats.

Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England. This was published in 2007 and is commonly referred to as the "S41 list". Public authorities have a responsibility to give specific consideration to the S41 list when exercising their normal functions. For planning authorities, consideration for Species and Habitats of Principal Importance will be exercised through the planning and development control processes. Further information on Species and Habitats of Principal Importance is provided in the relevant sub-sections of this Appendix.

SITES DESIGNATED FOR THE CONSERVATION OF NATURE

There is a hierarchy of nature conservation sites which is based on the level of statutory (legal) protection and the administrative level of importance. Other features of nature conservation interest outside designated sites may also be a material consideration in the determination of planning applications.

Statutory Sites: International

Ramsar Sites, Special Areas of Conservation (SAC) and Special Protection Areas (SPA)

The Conservation of Habitats and Species Regulations 2017 (as amended) provide the primary legal basis for the protection of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) in the UK.

SACs are sites which support internationally important habitats and/or species listed as being of Community Importance in the Annexes of the European Habitats Directive 92/43/EEC. SPAs are sites which support internationally important numbers of bird species listed as being of Community Importance in the Annexes of the European Birds Directive 2009/147/EC. Following the UK's exit from the EU, these now form part of the "National Sites" network rather than the EU Natura 2000 network.

Ramsar sites are wetlands of international importance and although not covered under the Habitats Regulations they are, as a matter of national planning policy, subject to the same strict protection as SACs and SPAs. The majority of terrestrial Ramsar sites in England are also notified as SPAs and/or Sites of Special Scientific Interest (SSSIs).

To avoid confusion with the nationally designated sites described below, EPR refers to SACs and SPAs as 'International sites', given the reasons for their designation.

Any plan or project considered likely to affect an International site (SAC, SPA or Ramsar) must be subject to a Habitats Regulations Assessment (HRA), as set out under Regulation 63 (and Regulation

105 in respect of Land Use Plans) of the Habitats Regulations 2017 (as amended) and the National Planning Policy Framework (NPPF) 2023.

The local authority (or other 'competent authority') carries out the HRA, but the onus is on the developer to provide the necessary information to inform this process, usually in the form of a report.

Under the Habitats Regulations 2017 (as amended), the competent authority must determine in the first instance whether a proposed development is likely to have a significant effect on the SAC/SPA, either alone or in combination with other plans and projects. This stage of the HRA process is known as 'screening'.

If a likely significant effect cannot be precluded (screened out) on the basis of objective information, the competent authority must undertake an 'Appropriate Assessment' to fully assess these implications against the site's conservation objectives. A precautionary approach must be taken with respect to determining whether or not there would be a significant effect, and the appropriate nature conservation body (in most cases Natural England) should be consulted. Except in certain exceptional circumstances prescribed by the Regulations where there are imperative reasons of overriding public interest for allowing a development to proceed, the competent authority may not undertake or authorise the plan or project until they have established (based on the conclusions of the Appropriate Assessment) that the activity will not adversely affect the integrity of the SAC/SPA. This should be the case where no reasonable scientific doubt remains as to the absence of such effects.

Regulation 16A of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 sets out the management objectives of the National Site Network, which can be summarised as follows:

- to maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive within the UK's territory to a favourable conservation status (FCS); and
- contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

The appropriate authorities must also have regard to:

- the importance of protected sites in meeting the above objectives, including breeding, moulting, staging and wintering areas for in the case of migratory bird species;
- their importance for the coherence of the national sites network; and
- the threats of degradation or destruction (including deterioration and disturbance of protected features) on SPAs and SACs.

Government guidance¹ also states that competent authorities have a duty to help protect, conserve and restore the designated features of SACs and SPAs when carrying out their statutory work, including

¹ <https://www.gov.uk/guidance/duty-to-protect-protect-protect-and-restore-european-sites>

taking decisions that might affect a site. They also have a duty to consider how they can help to prevent the deterioration of the site's habitats from human activity or natural changes, including habitats that support designated species, and prevent significant disturbance of the site's designated species from human activity or natural changes.

Competent authorities include (but are not limited to) local planning authorities, councillors, planning committee members and statutory agencies such as Natural England.

Statutory Sites: National

Nationally important sites include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). A development proposal that is likely to affect a nationally important site will be subject to special scrutiny by the local planning authority and Natural England. Certain operations may be permitted. Any potentially damaging operations that could have an adverse effect directly or indirectly on the special interest of the site will not be permitted unless the reasons for the development clearly outweigh the nature conservation and/or geological value of the site itself and the national policy to safeguard such sites, as set out in Section 15 of the National Planning Policy Framework (NPPF).

Sites of Special Scientific Interest

The Wildlife and Countryside Act 1981 (as amended) and the CROW Act 2000 provide the primary legal basis for the protection of Sites of Special Scientific Interest (SSSIs). These sites have been designated to capture the best examples of England's flora, fauna, geological or physiographical diversity.

Public bodies have a duty to take reasonable steps to conserve and enhance the special features of sites of special scientific interest (SSSIs) when carrying out their statutory duties and giving others permission for works, such as reviewing planning applications.

National Nature Reserves

National Nature Reserves (NNRs) are declared under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981, as amended by the Environmental Protection Act 1990. They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats communities and species represented within them. NNRs represent the very best parts of England's SSSIs. The majority of NNRs also have European nature conservation designations.

Statutory Sites: Regional/Local

Local Nature Reserves

Local Nature Reserves (LNRs) are declared by local authorities under the National Parks and Access to the Countryside Act 1949 as living green spaces in towns, cities, villages and countryside. They provide opportunities for research and education, or for simply enjoying and having contact with nature. LNRs are usually protected from development through local planning documents which may be supplemented by local by-laws.

Non-Statutory Sites

Local Wildlife Sites

Local planning authorities may designate non-statutory sites for their nature conservation value based on important, distinctive and threatened habitats and species within a national, regional and local context. These sites are not legally protected but are given some protection through the planning system. These sites may be declared as 'County Wildlife Sites', 'Sites of Importance for Nature Conservation' (SINCs), or 'Sites of Nature Conservation Importance' (SNCIs) in local and structure plans. Non-statutory sites are a material consideration when planning applications are being determined. The precise amount of weight to be attached, however, will take into account the position of the site in the hierarchy of sites as set out above. Further information is typically provided in local level planning policy.

Nature Conservation in Areas Outside Designated Sites

Various other features exist outside designated sites that are important for the conservation of nature and which are a material consideration in the planning system.

Habitats of Principal Importance in England

Fifty-six habitat types have been identified as Habitats of Principal Importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006. Although these habitats are not legally protected, the NPPF, Government Circular 06/05, good practice guidance and the NERC Act place a clear responsibility on planning authorities to further the conservation of these habitats. They can be a material consideration in planning decisions, and so developers are advised to take reasonable measures to avoid or mitigate impacts to prevent their net loss and to enhance them where possible. Additional guidance to developers is typically provided in local level planning policy.

The S41 list also includes species as explained below under 'Species of Principal Importance in England'.

Networks of Natural Habitats

Networks of natural habitats link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Examples include rivers with their banks, traditional field boundary systems (such as hedgerows), ponds and small woods. Local planning authorities are encouraged through the NPPF to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through planning, policies and development control.

Hedgerows

Hedgerows can act as wildlife corridors that are essential for migration, dispersal and genetic exchange of wild species. Hedgerows that qualify as a Habitat of Principal Importance under S41 of the NERC Act 2006 are a material consideration in the planning system.

Under the Hedgerow Regulations 1997, it is an offence to remove a hedgerow classed as 'important' under the criteria set out by the Regulations without submitting a notice to the Local Planning Authority and waiting for their decision. The Regulations are aimed at countryside hedges and do not apply to hedges around private dwellings or where planning permission has been granted for a project that

includes hedge removal. Hedgerows that satisfy wildlife, archaeological, historical or landscape criteria qualify as 'important' under the Regulations. If a hedgerow is not important, the Local Planning Authority may not prevent its removal; however, Local Planning Authorities are required under the Regulations to protect and retain important hedgerows unless satisfied that the circumstances justify their removal.

Tree Preservation Orders

Tree Preservation Orders (TPOs) may be declared under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999 to protect individual trees and woodlands from development and cutting. TPOs are primarily put in place to preserve amenity or for landscape conservation reasons. The importance of trees as wildlife habitat may be taken into account, but alone is not sufficient to warrant a TPO. For this reason, TPOs do not fit comfortably under the remit of nature conservation and are generally dealt with by an arboricultural consultant rather than an ecologist. Further guidance on TPOs in relation to development is available from the Department for Levelling Up, Housing and Communities.

Ancient Woodland & Veteran Trees

Ancient woodlands are defined as areas continuously wooded since at least 1600 AD. Even an ancient wood which has been replanted may still have remnants of ancient woodland wildlife and historical features and has potential to be restored. Ancient woodland is not a statutory designation and does not provide legal protection, but local authorities are advised under the NPPF and National Planning Practice Guidance (NPPG) not to grant planning permission for any development that would result in the loss or deterioration of ancient woodland, ancient trees or veteran trees unless there are 'wholly exceptional reasons' and 'a suitable compensation strategy in place'. Local Planning Authorities must take into account Natural England and the Forestry Commission's *Standing Advice for Ancient Woodland and Veteran Trees*, available on the www.gov.uk website.

Surface & Ground Waters

Surface waters (including flowing and standing water) and ground water can directly and indirectly impact upon the conservation of nature.

Guidance on pollution prevention is hosted on the Government's website and focuses on regulatory requirements. This covers topics including the prevention of pollution if you are a business, managing business and commercial waste, oil storage, working on or near water, and managing water on land. Careful planning and the application of these guidelines can help reduce the risk of construction and maintenance work causing pollution to surface and ground waters. Some activities with the potential to impact watercourses or groundwater may require consent under the Water Resources Act 1991.

Water Resources Act (WRA) 1991

Under the WRA there is strict regulation of discharges (including sediment, chemicals, nutrients) to rivers, lakes, estuaries and groundwaters. It also aims to ensure that polluters cover the costs associated with pollution incidents.

SPECIES PROTECTION

Legally Protected Species

The species listed in the following subsections are protected by law in England. When preparing a planning application, it is essential to determine the presence or likely absence of legally protected species and the extent to which they may be affected by a proposed development. This can best be achieved by undertaking surveys early in the planning process. Avoidance and/or mitigation measures may be required to address any predicted impacts upon protected species and may necessitate a licence. The Government website offers standing advice from Natural England and DEFRA which can be applied to planning applications that affect protected species.

Bats

There are 18 species of bat in the UK, seven of which are Species of Principal Importance in England. All bats and bat roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are also a European Protected Species protected under the Habitats Regulations 2017 (as amended). It is an offence to:

- Intentionally or deliberately kill, injure or capture bats;
- Intentionally, deliberately or recklessly disturb bats in such a way as to be likely to significantly affect the ability of any significant group of bats to survive, breed, or rear or nurture their young or the local distribution of or abundance of a species of bat;
- Intentionally, or recklessly damage, destroy or obstruct any place used for shelter or protection (i.e. bat roosts) or intentionally or recklessly disturb a bat whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a bat; and
- Possess, sell or transport a bat, or anything derived from it.

Development proposals affecting bats or their roosts require a European Protected Species mitigation licence from Natural England.

Great Crested Newt

The Great Crested Newt *Triturus cristatus* is a Species of Principal Importance in England. It is legally protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is afforded significant further protection as a European Protected Species under the Habitats Regulations 2017 (as amended). Collectively, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture Great Crested Newts;
- Intentionally, deliberately or recklessly disturb Great Crested Newts in such a way as to be likely to significantly affect the ability of any significant group of Newts to survive, breed, or rear or nurture their young or the local distribution of or abundance the species;
- Intentionally or recklessly damage, destroy or obstruct any place used by Great Crested Newts for shelter or protection, or intentionally or recklessly disturb a Great Crested Newt whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a Great Crested Newt; and

- Possess, sell or transport a Great Crested Newt, or anything derived from it.

Development proposals affecting the Great Crested Newt require a European Protected Species mitigation licence from Natural England.

Intentional or reckless behaviour leading to an offence being committed as detailed above may result in maximum penalties of:

- Up to £5,000 fine per offence committed;
- A custodial sentence of up to six months instead of, or in addition to, a fine; and/or
- Items of equipment involved in committing the offence may be seized and detained.

In addition to the above penalties, it is likely that any EPS mitigation licence obtained for a site will be revoked whilst any wildlife offence is investigated. This will lead to immediate temporary and, depending on investigation outcomes, possible permanent restrictions on site works, as well as associated cost.

Hazel Dormouse

The Hazel Dormouse *Muscardinus avellanarius* is a Species of Principal Importance in England. It is legally protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is afforded significant further protection as a European Protected Species under the Habitats Regulations 2017 (as amended). Collectively, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture Dormice;
- Intentionally, deliberately or recklessly disturb Dormice in such a way as to be likely to significantly affect the ability of any significant group of Dormice to survive, breed, or rear or nurture their young or the local distribution of or abundance of the species;
- Intentionally or recklessly damage, destroy or obstruct access to places used by Dormice for shelter or protection (whether occupied or not) or intentionally or recklessly disturb a Dormouse whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a Dormouse;
- Possess or transport a Dormouse (or any part thereof) unless under licence; and
- Sell or exchange Dormice.

Development proposals affecting the Dormouse require a European Protected Species mitigation licence from Natural England.

European Otter

The European Otter *Lutra lutra* is a Species of Principal Importance in England. It is legally protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and is afforded significant further protection as a European Protected Species under the Habitats Regulations 2017 (as amended). Collectively, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture Otters;

- Intentionally, deliberately or recklessly disturb Otters in such a way as to be likely to significantly affect the ability of any significant group of Otters to survive, breed, or rear or nurture their young or the local distribution of or abundance of Otters;
- Intentionally or recklessly damage, destroy or obstruct access to places used by Otters for shelter or protection (whether they occupied or not) or intentionally or recklessly disturb an Otter whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of an Otter;
- Possess or transport an Otter (or any part thereof) unless under licence; and
- Sell or exchange Otters.

Development proposals affecting the Otter require a European Protected Species licence from Natural England.

Eurasian Beaver

The Eurasian Beaver *Castor fiber* is a European Protected Species under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). As a result of this protection, it is considered an offence to:

- Deliberately disturb a Beaver - this includes any action likely to impair their ability to survive, breed or rear their young
- Deliberately injure, capture or kill a Beaver;
- Damage or destroy the breeding site or resting place of a Beaver;
- Possess, control or transport a Beaver; and
- [offer to] Sell or exchange Beavers.

This applies whether the Beaver is alive or dead and includes Beaver parts and derivatives.

Development proposals affecting the Eurasian Beaver require a European Protected Species licence from Natural England.

Where an offence is committed the offender could be sentenced to:

- Up to 6 months in prison, and/or;
- An unlimited fine.

The Wildlife and Countryside Act 1981 (as amended) also prohibits the release of Beavers into the wild unless under licence, and makes it an offence to use any trap or snare for the purpose of killing, taking, restraining or injuring Beavers.

Reptiles

All four of the widespread British species of reptile, namely the Common Lizard *Zootoca vivipara*, Slow-Worm *Anguis fragilis*, Grass Snake *Natrix helvetica* (previously *Natrix natrix*) and Adder *Vipera berus*, are Species of Principal Importance in England. They are protected under Schedule 5 (Sections 9.1,

9.5a, 9.5b) of the Wildlife & Countryside Act 1981 (as amended) from intentional killing, injury and trade. The habitat of the four widespread reptiles is not legally protected; however the replacement of habitat lost through development may be required through the planning system. Mitigation for these species is not subject to licensing by Natural England but should nonetheless be planned to minimise disturbance and potential project delays.

The Smooth Snake *Coronella austriaca* and the Sand Lizard *Lacerta agilis* are the rarest reptile species in Britain. In addition to the protection that is afforded to the widespread species of reptile listed above, these species are protected further under Schedule 5 (Sections 9.4b and 9.4c) of the Wildlife and Countryside Act 1981 (as amended). They are also European Protected Species protected under the Habitats Regulations 2017 (as amended). This legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture Sand Lizards or Smooth Snakes;
- Intentionally, deliberately or recklessly disturb Sand Lizards or Smooth Snakes in such a way as to be likely to significantly affect the ability of any significant group of Sand Lizards or Smooth Snakes to survive, breed, or rear or nurture their young or the local distribution or abundance of either species;
- Intentionally or recklessly damage, destroy or obstruct any place used by Sand Lizards or Smooth Snakes for shelter or protection, or intentionally or recklessly disturb a Sand Lizard or Smooth Snake whilst it is occupying such a place;
- Damage or destroy a breeding site or resting place of a Sand Lizard or Smooth Snake;
- Keep, sell, or exchange Sand Lizards or Smooth Snakes or their eggs; and
- Deliberately take or destroy their eggs.

Development proposals affecting Smooth Snake or Sand Lizard require a European Protected Species mitigation licence from Natural England.

Water Vole

The Water Vole *Arvicola terrestris* is a Species of Principal Importance in England. The legal protection for Water Voles was increased in 2008 to fully cover the species under Section 5 of the Wildlife and Countryside Act 1981 (as amended). The legislation makes it an offence to:

- Intentionally or deliberately (but not recklessly) kill, injure or take Water Voles;
- Intentionally, deliberately or recklessly damage, destroy or obstruct access to any structure or place used by Water Voles for shelter or protection;
- Intentionally, deliberately or recklessly disturb Water Voles whilst they occupy a structure or place used for that purpose;
- Sell Water Voles or offer or expose for sale or transport for sale; and
- Possess or control live or dead Water Voles or derivatives.

Developers who wish to maintain, build on or alter areas used by Water Voles must ensure that unnecessary damage is avoided and all reasonable steps are taken to minimise impacts on Water Voles and their burrows. The Wildlife and Countryside Act provides a defence against the offences listed

above, provided the action is the incidental result of an otherwise lawful operation and could not reasonably have been avoided.

A licence to displace Water Voles must be obtained from Natural England before conducting any activities involving displacement operations (this is different to a conservation licence, which is required for survey methods that involve disturbing Water Voles or their burrows, or capturing them). To obtain a displacement licence, it is necessary to demonstrate that the activity/activities will result in a conservation benefit for Water Voles.

Birds

49 species of bird are listed as Species of Principal Importance in England. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence, with certain exceptions (e.g. game birds), to intentionally kill, injure or take any wild bird and to take, damage or destroy their nests or eggs.

Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) affords extra protection for certain species and applies harsher penalties for offences. Any intentional or reckless disturbance of a Schedule 1 bird, whilst it is nesting or rearing dependent young, constitutes an offence.

Regulation 10 of the Conservation of Habitats and Species Regulations 2017 (as amended) requires appropriate authorities and conservation bodies, in the exercise of their functions, to take such steps that they consider appropriate in order to secure “*the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat (...)*”.

European Badger

The Protection of Badgers Act 1992 offers considerable protection to both Badgers and Badger setts. This legislation was enacted to protect the European Badger *Meles meles* against baiting and not as a means of species recovery as it is common in England. It is an offence to cruelly treat, kill or take Badgers, but it is also illegal to intentionally or recklessly damage or disturb a Badger sett while it indicates signs of current use by a Badger.

The Government website contains information to help developers and their proponents avoid sett disturbance and to identify setts that are in current use. It is important to maintain adequate foraging territory in development proposals affecting Badgers as the destruction or severance of large areas of foraging territory could also be taken to include habitat loss. Licences to disturb Badgers and their setts in respect of development may be issued by Natural England provided provisions are made to minimise disturbance.

Wild Mammals

All wild mammals are protected against cruelty under the Wild Mammals (Protection) Act 1996, which makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

Licences for Development

Licences are required to permit activities prohibited under wildlife legislation, namely the disturbance or capture of protected species or damage to their habitats. Natural England is the licensing authority in

England. Licences are only issued for certain purposes, which are set out in the legislation, and only where there is a valid justification. The licences most relevant to development scenarios are discussed below.

European Protected Species Mitigation Licences

A European Protected Species mitigation licence (EPSML) is required from Natural England to undertake any development that is reasonably likely to result in an offence in respect of a European Protected Species protected under Schedule 2 of the Habitats Regulations 2017 (as amended); including *inter alia* all species of bats, Hazel Dormouse, Great Crested Newt, European Otter and Eurasian Beaver. Natural England must be satisfied that the following three tests are satisfied before it will issue a licence covering a European Protected Species:

1. The proposal is necessary to preserve public health or public safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
2. There is no satisfactory alternative; and
3. The proposal will have no detrimental effect to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Other Protected Species Mitigation Licences

Natural England can issue mitigation licences for reasons of “overriding public interest” in respect of animal and plant species listed on Schedules 5, 6 and 8 of the Wildlife and Countryside Act 1981 (as amended), excluding birds and European Protected Species (as these have separate licensing systems). In the context of development, the most relevant species are likely to include Adder, Grass Snake, Common Lizard, Slow-worm and several species of plant.

Applicants must demonstrate that the licence is for the purpose of overriding public interest, and also that there are “no other satisfactory solutions”. In practice, therefore, this type of licence is likely to be difficult to obtain for most types of development.

Conservation Licences

In the context of development, conservation licences are normally only relevant to mitigation involving the capture of Water Voles or White-Clawed Crayfish. Conservation licences are granted to permit the trapping and translocation of these species on the condition that the development activity is properly planned and executed and thereby contributes to the conservation of the population of the species.

Badger Licences

Licences to disturb Badgers and their setts in respect of development may be issued by Natural England, provided provisions are made to minimise disturbance.

Species of Principal Importance in England

943 species have been identified as being of Principal Importance for the conservation of biodiversity in England under Section 41 (S41) of the NERC Act 2006. The S41 list includes species found in England which have been identified as requiring action under the now superseded UK Biodiversity Action Plan 2007 (plus the Hen Harrier). While many of these species may not be legally protected (some are

protected under the legislation described above), there is a clear responsibility on local planning authorities to further their conservation. These species can be a material consideration in development control decisions and so developers are advised to take reasonable measures to avoid or mitigate impacts to prevent the net loss of these species, and to enhance their habitats where possible. Additional guidance to developers is typically provided in local level planning policies.

Invasive Non-Native Species

There are a number of species not ordinarily resident in the UK, such as Japanese Knotweed. Those which pose a significant threat, if uncontrolled, to our ecology and economy are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). For an offence to be committed, a species must be released or allowed to escape into the wild. For example, if a plant listed on Schedule 9 is not adequately controlled by a land owner, once they are aware that it is present, and the species is allowed to spread into adjoining areas, then this could constitute an offence.

Japanese Knotweed is also classed as 'controlled waste' under the Environment Protection Act 1990 (as amended) and if taken off site it must be disposed of safely at a licensed landfill site. Soil containing rhizome material should also be regarded as contaminated and treated accordingly.

Species Control Orders

A new schedule 9A was inserted into the Wildlife and Countryside Act 1981 (as amended) by Sections 23 to 25 of the Infrastructure Act 2015. This gives environmental authorities (in England the Secretary of State, Environment Agency, Natural England and the Forestry Commission) the power to offer 'species control agreements' to landowners in respect of invasive and/or non-native species, such as Japanese Knotweed. If the landowner does not comply with a species control agreement, or refuses to enter into one, the environmental authority may issue a 'species control order', requiring the owner to eradicate or control the species, or to allow the environmental authority access to carry out these operations themselves.

If the owner does not comply with the species control order, the maximum penalty if convicted is a fine of up to £40,000 and/or imprisonment for up to 51 weeks. The environmental authority can also recover costs for carrying out the necessary work themselves.

PLANNING POLICY & GUIDANCE

This section set out the main planning policy and government guidance that relates to the conservation of nature at all levels of government.

National Level

National Planning Policy Framework 2023

The National Planning Policy Framework (NPPF) 2023 sets out the Government's planning policies for England and how these should be applied in local-level policy and decision making. The NPPF has a clear "presumption in favour of sustainable development" (paragraph 11), with economic, social and environmental objectives. This presumption does not apply where a plan or project has failed the 'appropriate assessment' test under the Habitats Regulations (paragraph 182).

Section 15 of the NPPF provides guidance on conserving and enhancing the natural environment through the planning system, as summarised below.

Firstly, planning policies and decisions should contribute to and enhance the natural and local environment by applying the following key principles:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; and
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Section 15 also requires planning policies and decisions to limit the impact of artificial light pollution on nature conservation.

Secondly, when determining planning applications, local planning authorities should apply the following key principles:

- if significant harm resulting from a development cannot be avoided, adequately mitigated or (as a last resort) compensated for, then planning permission should be refused;
- proposed development that is likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should normally be refused;
- planning permission should normally be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, unless there are 'wholly exceptional reasons' and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported, while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

In the case of SSSIs and irreplaceable habitats, exceptions may be made if it can be clearly demonstrated that the benefits of the development, in that location, clearly outweigh the costs in terms of loss or adverse impacts.

Section 15 specifies that listed or proposed Ramsar sites, potential European sites, and sites identified or required as compensatory measures for adverse effects on designated/listed or potential/proposed European and Ramsar sites should be given the same protection as designated European sites.

Section 15 includes the following text on air quality:

- Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas;
- Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications; and
- Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.

The NPPF also sets out principles for plan-making, including the allocation of land with the least environmental or amenity value, and taking a strategic approach to maintaining and enhancing networks of habitats and green infrastructure by identifying, mapping and safeguarding components of local wildlife-rich habitats, wider ecological networks, wildlife corridors and stepping stones, and those areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.

Government Circular 06/05: Biodiversity and Geological Conservation

The Government produced Circular 06/05 to provide guidance on the application of the law to the conservation of nature. Although the document is in the process of being updated, Paragraphs 98 and 99 remain relevant as they set out the following principles and obligations:

- The presence of protected species is a material consideration when determining a development proposal;
- Local authorities should consult with Natural England before granting permission, and consider imposing planning conditions or obligations to secure the long-term protection of the species;
- The presence of protected species, and the extent to which they may be affected by the proposed development, must be established before permission is granted;
- Given the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by the development.

Planning Practice Guidance

Revised and updated Planning Practice Guidance (PPG) was launched by the Department for Communities and Local Government (now the Department for Levelling Up, Housing and Communities) as a web-based tool in March 2014 to accompany the NPPF. The webpages are set out in a Q&A format. The PPG consolidates and supersedes existing guidance on a range of planning-related topics, clarifies some of the statements made in the NPPF, and provides links to relevant legislation and other sources of advice.

The Guidance outlines a number of important principles in relation to nature conservation and biodiversity, including the need to integrate biodiversity into all stages of the planning process and to

consider opportunities to enhance biodiversity and contribute to the Government's commitments and targets set out in *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*.

The guidance also requires that "an ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate", and recommends that "local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development."

Other guidance

In addition to the Planning Practice Guidance, various other forms of guidance and standards are available in relation to biodiversity and the development process. Of particular note is *British Standard BS42020:2013 Biodiversity – Code of practice for planning and development*, published in August 2013, which replaces *Planning to Halt the Loss of Biodiversity (PAS 2010): Biodiversity conservation standards for planning in the United Kingdom*.

This document is designed to complement the NPPF and is aimed at organisations concerned with ecological issues throughout the planning process, including local authorities, developers, planners and ecological consultants. It sets out step-by-step recommendations on how to incorporate biodiversity considerations at all stages of the planning process, with a focus on the provision of consistent, high quality and appropriate ecological information, effective decision making, and high standards of professional conduct and competence.

Regional Level

Regional plans (such as the South East Plan Regional Spatial Strategy) have been revoked, but some specific policies have been saved. The only policy saved from the South East Plan is Policy NRM6, which relates to the Thames Basin Heaths Special Protection Area (TBH SPA).

Local Level

Wokingham Borough Local Development Framework. Adopted Core Strategy (2010-2026). Relevant Policies.

"Policy CP7: Biodiversity:

Site designation as of importance for nature conservation at an internal or national level will be conserved and enhanced and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the terms of its international or national importance.

Development:

- A) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or*
- B) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or*

- C) *That comprises the implementation of the national, regional, county and local biodiversity action plans*

Will only be permitted if it has been clearly demonstrated that the need for proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and:

- i) *Mitigation measure can be put in place to prevent damaging impacts; or*
- ii) *Appropriate compensation measures to offset the scale and kind of losses are provided.*

BIODIVERSITY PLANS AND STRATEGIES

The NERC Act 2006 places a duty on local authorities to have due regard to biodiversity when exercising their normal functions, and the NPPF requires planning policies to “promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species, and identify and pursue opportunities for securing measurable net gains for biodiversity” (paragraph 174). These targets are set out in a range of biodiversity plans and strategies from the international through to the district level.

An overview of the key biodiversity plans and strategies in the UK, and their implications for development, are set out below.

National level

The Government’s Environmental Improvement Plan 2023 is the first revision of the 25 Year Environment Plan published in 2018. It sets out ten goals aimed at restoring nature – of which the ‘apex goal’ is to halt the decline of biodiversity. The EIP 2023 includes targets and commitments to:

- Halt the decline in species abundance by 2030;
- Restore or create more than 140,000 hectares of wildlife-rich habitat outside protected sites by 2028;
- Improve the Red List Index for England by 2042;
- Achieve favourable condition for 48% of designated features in Marine Protected Areas by 2028;
- Complete update condition assessments for all SSSIs by 2028;
- Increase tree canopy and woodland cover by 0.26% by 2028;
- Reduce water pollution from agricultural nitrogen, phosphorus and sediments by at least 40% by 2038; and
- Reduce phosphorus loadings from treated wastewater by 80% by 2038.

Other targets have been set in relation to, water demand, residual waste, air quality, and. pollution from abandoned metal mines and agriculture.

The *UK Biodiversity Action Plan 2007* (UK BAP) has been superseded by the *UK Post-2010 Biodiversity Framework* and individual national biodiversity strategies. The UK Framework sets out the overarching vision, strategic goals and priority activities for the UK’s work towards international biodiversity targets

(known as the 'Aichi Targets'), as agreed by 192 parties at the UN Convention on Biological Diversity in 2010.

In England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* is the national biodiversity strategy, which has the stated mission "(...) to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people." In order to focus activity and assess performance in achieving this mission, Biodiversity 2020 sets out objectives relating to terrestrial and marine habitats and ecosystems, species and people.

Local level

While BAPs at the national level have now been superseded by *the UK Post-2010 Biodiversity Framework* and *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, many county and district level BAPs still exist.

Central Bedfordshire has Species Action Plans for: Adder, Arable Plants, Depressed River Mussel, European Otter, Great Crested Newt, Hazel Dormouse and Water Vole.

Biodiversity Net Gain

The Environment Act 2021 makes provisions for 10% biodiversity gain, as measured by a metric, to become a condition of planning permission in England. This came into force upon the adoption of secondary legislation and regulations on the 12th February 2024 (delayed to 2nd April 2024 for sites meeting the published definition of a 'small site'). A publicly accessible register of Biodiversity Gain Sites was published on this date, along with the Statutory Biodiversity Metric and associated guidance.

The Act specifies that biodiversity gain can be delivered on and/or offsite, and establishes the basis for purchasing off-site credits to meet the 10% obligation if required. In most cases the land used to deliver biodiversity gain must be maintained for at least 30 years, and the biodiversity gain planning condition requires a Biodiversity Gain Plan to be submitted to and approved by the planning authority prior to commencement of development.

The legislation also clarifies that the baseline biodiversity value of a site should be taken from the date on which planning consent is granted, unless otherwise agreed with the LPA. This excludes any activities undertaken without planning permission (or other relevant permissions) after 30 January 2020 which have had the effect of reducing the biodiversity value of the land. In such cases, "the pre-development biodiversity value is to be taken to be its biodiversity value immediately before the carrying on of the activities."

Biodiversity net gain (BNG) is already enshrined in the key principles of the NPPF, and some local planning policies include a requirement to deliver net gain above the minimum statutory 10% figure.

Enhancement measures may not just benefit biodiversity. There are many functional benefits to be won from strategically planned green infrastructure projects such as semi-natural urban green spaces, sustainable drainage schemes (SUDS) and green roofs.

Appendix 3

Assessment and Survey Methodologies

ECIA ASSESSMENT METHODOLOGY

Overview

The approach to Ecological Impact Assessment (EcIA) taken in this report takes account of guidance in the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2.' (CIEEM, 2018). The Preface of the CIEEM EcIA Guidelines states:

"Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013) cites the CIEEM EcIA Guidelines as the acknowledged reference on ecological impact assessment. The Guidelines are consistent with the British Standard on Biodiversity, which provides recommendations on topics such as professional practice, proportionality, pre-application discussions, ecological surveys, adequacy of ecological information, reporting and monitoring."

In accordance with the above guidance, 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 (Zol) of those activities;
- Scoping to select the ecological features (habitats, species, ecosystems and their functions/processes) that are likely to fall within the predicted Zols and be affected by the activities;
- Evaluation of IEFs likely to be affected – both negatively and positively;
- 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;
- Application of the mitigation hierarchy - refinement of the proposed scheme to incorporate impact avoidance and/or mitigation measures for negative effects on IEFs, and enhancements in order to deliver net gains;
- Assessment of the significance of residual effects and identification of any policy drivers for additional mitigation or compensation in the event of residual significant negative effects; and
- Advice on conformance with policy and legislation.

Ecological Evaluation Method

The evaluation method used in this EcIA uses the following geographic scale of importance for ecological features:

- International/European;
- National;
- Regional;
- County (or Metropolitan or Local Authority-wide area);
- Local; and

- Within the Zone of Influence.

With this in mind, features taken forward for detailed impact assessment are those which:

- Are evaluated as being of at least 'Local' ecological importance, or have the potential to be so; and
- Are likely to be affected, positively or negatively, by the proposals.

Ecological features deemed to be of less than 'Local' importance are considered throughout the EclA process in the context of the national planning policy requirement for 'Biodiversity Net Gain'. The implications for those features that are protected by legislation are also discussed separately at the end of the EclA report.

Ecological Importance is judged with reference to the following factors:

- Statutory requirements and policy objectives (e.g. site designations or the country lists of habitats and species of principle importance for the conservation of biodiversity); and
- Biodiversity value (e.g. diversity, rarity, scarcity, function within ecosystem, population trends).

Impact Assessment Method

The ecological features selected to be included in the assessment are those which both meet the importance threshold and are likely to be affected by the proposed scheme.

The first stage of the assessment is to determine the potential impacts upon each important ecological feature, with reference to the likely biophysical changes arising from the proposals. Impacts can be characterised according to their extent, magnitude, duration, timing, frequency, reversibility, and whether they are positive or negative.

The likelihood of cumulative impacts with other planned or consented projects is also taken into account at this stage.

An assessment is then made of whether the effect(s) of an impact upon an important ecological feature is likely to be considered 'significant' in EclA terms.

Significant Effects

The EclA Guidelines state that:

"Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EclA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general.....in broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)." [our emphasis]

Put simply, an effect is considered significant if it is likely to change the structure and function of defined sites and ecosystems or the conservation status of habitats and species.

Professional judgement about significance is informed by conservation objectives for the affected feature, where available (for example conservation objectives set by Natural England for European designated sites, or in habitat and species action plans). The ‘conservation status’ (habitats and species) or the degree to which a feature is exhibiting ‘integrity’ in terms of structure, function and condition (defined sites or ecosystems) is also considered. The predicted effect of natural and man-made trends in the absence of development is also taken into account in determining the conservation status or integrity of a feature and in considering whether otherwise insignificant effects may contribute to a significant cumulative effect.

The CIEEM Guidelines state:

“The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.”

ECOLOGICAL APPRAISAL

The ecological appraisal was completed in order to inform the planning process and establish the appropriate scope of an Ecological Impact Assessment (EclA) in accordance with the Chartered Institute of Ecology and Environmental Management’s (CIEEM) Guidelines for the Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. (2018). CIEEM’s 2017 Guidelines for Preliminary Ecological Appraisal were also taken into account.

Desk Study Methodology

A desk study was carried out in order to gather and refer to existing biodiversity and contextual information with respect to the zone of influence and the wider area. This involved interrogation of internet resources, including the Multi-agency Geographic Information for the Countryside (MAGIC) aerial photos, current Ordnance Survey maps and historical maps. Reference was also made to local planning policies, strategies and initiatives relating to biodiversity.

A request was made to Thames Valley Environmental Record Centre for any existing biological records in their database. The local records search and other desktop research was over a 2km radius for nationally and locally important features and a 5km radius for European Protected Species and sites of European significance.

Fieldwork Methodology

The field survey was completed by Alison Hogan in September 2023. The core of the Site and immediately surrounding land was walked, recording habitats and features of potential value to wildlife and any evidence of, or potential for, protected or notable species or habitats, in accordance with the methods described below.

Land Use, Habitat Types, Vegetation Communities and Flora

Within the study area the land use, habitat types and landscape features (such as hedgerows and veteran trees) were described and mapped. For each main habitat type the dominant vegetation communities were recorded, along with any notable or indicator plant species, (including invasive

species such as Japanese Knotweed where present). A preliminary evaluation of the structure, quality and likely management of each habitat or feature was also carried out.

The survey method used to record this information was based on the UK Habitat Classification System (UK Hab, 2020). Botanical nomenclature in this report follows Stace (2019).

Fauna

The potential for habitats and features to support protected or notable species, or species of principal importance for the purpose of conserving biodiversity, were recorded, as were any signs encountered. The following is a summary of the approach taken for this Ecological Appraisal.

Badgers

Consideration was given to the presence of habitat potentially suitable for supporting Badgers, including woodland and grassland. No evidence of the presence of Badgers was looked out for and noted, including earthworks that might be Badger setts, and signs such as dung pits, mammal pathways through ground vegetation and under fences, and hairs on fences.

Bats

Bats use buildings and trees for roosting and breeding and, where present, a preliminary assessment of the potential for these features to support bats was undertaken during the survey. Potential may include gaps beneath roof or hanging tiles, in soffits, or beneath the end of ridge tiles, but also under the edge of felt on flat roofs. In trees potential roosting features include woodpecker holes, splits in branches and peeling bark.

Preliminary evidence was obtained through noting any staining around potential roost entrances, and looking for bat droppings, for example on window sills. A preliminary evaluation was also undertaken of potential bat foraging habitat in the area, including trees, scrub and watercourses.

Birds

Any birds seen whilst carrying out the survey were recorded, and the type and quality of habitats available for birds was considered, including vegetation suitable for nesting, and habitat with the potential to support valued species, including breeding and wintering birds.

Amphibians

Consideration was given to the presence of habitat potentially suitable for supporting amphibians, including water bodies (watercourse, ditches), scrub and grassland, and features such as log piles that might provide hibernation areas. Where appropriate, effort to gather direct evidence of amphibians was undertaken by making a preliminary search for eggs by examining vegetation within reach of the margins of water bodies, and for resting animals on land by looking under potential refuges, such as stones, wood and rubbish near to water bodies.

Reptiles

The presence and quality of habitat considered potentially suitable for supporting reptiles was recorded. This included areas providing basking and foraging areas, hibernation and breeding sites, such as rough grassland and scrub, banks, burrows, rubble piles, compost heaps, hedgebanks and water bodies.

Bat Preliminary Roost Assessment

Bats use buildings and trees for roosting and breeding and, where present, a preliminary assessment of the potential for these features to support bats was undertaken during the survey. Potential may include gaps beneath roof or hanging tiles, in soffits, or beneath the end of ridge tiles, but also under the edge of felt on flat roofs. In trees potential roosting features include woodpecker holes, splits in branches and peeling bark.

Preliminary evidence was obtained through noting any staining around potential roost entrances, and looking for bat droppings, for example on window sills. A preliminary evaluation was also undertaken of potential bat foraging habitat in the area, including woodland, pasture, hedges and watercourses.

External and internal building inspections were undertaken by Siobhan Pryke (a licensed bat ecologist) and Katharine Luckhurst in March 2024, aided by the use of binoculars, Clu-light and ladder where required. During the inspections surveyors searched for bats and evidence thereof, such as droppings, urine staining, feeding remains, scratch marks and features with the potential to support bats, e.g. slipped or missing tiles, gaps or crevices in walls, gaps behind bargeboards, or soffit boxes.

Based on the results of the inspections, each building was assessed as having either negligible, low, moderate, or high suitability to support a bat roost, or confirmed bat roost, based on current good practice bat survey guidelines (Collins, 2023).

A preliminary roost assessment was undertaken on the 26th of March 2024. The buildings within the Site had lifted and missing tiles as well as gaps beneath the roofing, as shown on **Map 3.1**.

PHASE 2 BAT SURVEYS

Emergence Survey

A dusk emergence survey was undertaken on those buildings that were assessed to be of low suitability for bats, or where a bat roost had been confirmed based on results of the building inspections.

Surveys were carried out by experienced bat surveyors equipped with bat detectors and night vision aids. An appropriate number of surveyors were positioned around each building/structure to provide good visual coverage of potential roosting features. Any bats seen or heard were recorded on a detailed map of the survey area, logging any emergence/re-entry and access feature, the time a bat was recorded, bat species/species group, number of bats, direction of flight (where observed) and behaviour, where possible, e.g. commuting, etc. Recordings were later analysed using appropriate software, e.g. BatSound to confirm identification to species/species groups, as necessary.

Dusk emergence surveys commenced at least 15 minutes prior to sunset and continued for at least 1.5 hours.

Details of survey timings and weather conditions are provided in **Table A2.1**

Table A3.1: Phase 2 Bat Survey Metadata

Date	Dusk/Dawn	Start/End Time	Sunset Time	Start / End Temperature (°C)	Cloud Cover (%)	Wind Speed (Beaufort)	Rain
2204/2024	Dusk	20:44-22:29	20:59	14-13	10-50	2-1	None

Night-Time Bat Walkover

The Night-time Bat Walkover (NBW) surveys is summarised in **Map 3.2**. Full meta-date for the surveys can be found in **Table 3.2**.

The walkover surveys indicate that the Site is being used by three species or groups of bats: Common Pipistrelle, Soprano pipistrelle and Noctule.

Three species were either seen foraging or noted as passing close to sunset during the vantage point 30 minutes of the surveys. Therefore, these records may indicate that roosts for these species are nearby.

Foraging behaviour was recorded along the Site Boundaries during the spring survey this was mainly seen along the southern hedgerow.

TABLE: 3.2: TIMINGS OF SURVEYS

Date	Sunset/ Sunrise	Start	End	Start Temperature (°C)	End Temperature (°C)	Cloud Cover (%)	Wind (Beaufort Scale)	Rain
30.04.2024	20:26	20:26	22:26	15	12	25-50	0-1	None
17.07.2024	21:11	21:11	23:11	18	12	50-10	1-0	None
Autumn to be completed								

Table 3.3 summarises the NBW survey results per month.

Table 3.3: Summary of NBW survey results across the Site per Season.

Month	Summary of NBW results across the Site
Spring (April 30 th)	A total of three bat species were recorded. Noctules were recorded during the vantage point. Common Pipistrelle were seen foraging along the southern hedgerow.
Summer (July 17 th)	A total of three bat species were recorded. Noctule, Common and Soprano Pipistrelle were recorded during the vantage point. Common Pipistrelle were seen foraging along the site boundaries.
Autumn (September)	To be completed

Automated Static Bat Activity Surveys

The automated static detectors deployed within the north and south areas of the Site (for five consecutive nights each month from April to July) identified bat passes from at least seven different bat species (Common Pipistrelle, Soprano Pipistrelle, Long-eared bat, Noctule, Barbastelle, Nyctalus species and an unidentified species of Myotis). The highest number of passes was by Common Pipistrelle bats. The most passes were made at B (South) during the May deployment with a total of 1,242 passes made.

Locations of the automated static detectors are shown in **Map 3.3**. A summary of the automated static detector survey results is provided in **Table 3.4-3.6**.

Table 3.4 Total number of passes per species

Site Totals	Pip pip	Pip pyg	Myo sp	LE sp	Barb	Pip Nat	Nyc sp	Nyc noc	Pip sp	Total calls
Total Calls	5,311	226	12	65	54	11	12	649	17	6,345
% of total calls	83	4	0.2	1	0.9	0.2	0.2	10.2	0.3	

Pip pip = Common Pipistrelle, Pip pyg = Soprano Pipistrelle, Myo sp = Myotis species, LE sp = Long-eared species, LFB = Low-frequency bat (Noctule/Leislars/Serotine), Ept ser = Serotine, Nyc sp = Nyctalus species, Nyc noc = Noctule, Nyc Lei = Leislars.

Geographic Variation in Activity

Table 3.5: Total number of passes per sampling location (refer to Map 3.3)

Location	A	B
Total Calls	3,737	2,608
% of total calls	58	42

Seasonal Variation in Activity

Table 3.6: Total number of passes per month

Month	April	May	June	July	August	September	October
Total Calls	559	2,273	1,224	2,289	TBC	TBC	TBC
% of total calls to date	8.8	36	19.2	36	-	-	-

TBC-To be completed

Reptile Survey

Field Survey

The reptile survey method was based on the standard accepted practice (Froglife 1999², Gent and Gibson, 2003³). The deployment of 40 artificial refugia (of which 8 were Onduline, 7 were corrugated tin and 25 were roofing felt) with a minimum size of 0.5m² was carried out across relevant suitable habitat on site, the overall density of which exceeds the standard guidelines of 10 per hectare.

Seven surveys were conducted in suitable weather conditions, the first of which was carried out on 17 April 2024 and the last on 03 June 2024 ensuring a period of at least 2 days between each survey.

Survey Limitations and Constraints

Reptiles are most effectively sought out during their active period from March to October with the most optimal months being April, May and September. All six surveys were carried out in April and May, with the final survey falling outside the optimal period. This last survey was undertaken during suitable conditions.

Breeding Bird Surveys

Field Survey

The survey methodology used was based on a combination of the Common Bird Census (CBC) Bibby et al., (2000), and the bird survey guidelines for assessing ecological importance (Bird Survey and Assessment Steering Group, 2023).

All bird species seen or heard during the survey visits were recorded. However, survey effort was focussed on species listed as Species of Principal Importance, red status species (see Stanbury et al., 2021), species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and those that are UK RBBP species.

Consequently, birds flying overhead (and not using the Site) and some common and widespread species may have been missed on specific survey visits. Records of Feral Pigeon *Columba livia domestica* were not made.

The area was surveyed on foot so that the surveyor passed within 50m of most points within the Site. In some circumstances e.g. dense vegetation cover, the distance between the surveyor and areas within the Site may have exceeded 50m. The route walked (Appendix 4) varied on each visit to control for time-of-day effects.

² Froglife (1999) Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth

³ Gent, T. and Gibson, S. (2003) The Herpetofauna Workers Manual. Joint Nature Conservation Committee, Peterborough.

Table 3.7: Time and weather during breeding bird survey visits.

Date	Time and Weather
26/03/2024	Sunrise: 05:52 Start: 06:05, 7°C, dry, 100% cloud cover, light breeze. End: 06:50, 7°C, dry, 100% cloud cover, light breeze.
22/04/2024	Sunrise: 05:50 Start: 06:15, 0% cloud cover, 5°C, light breeze. End: 07:00, 0% cloud cover, 5°C, light breeze.
20/05/2024	Sunrise: 04:58 Start: 05:45, dry, 50% cloud cover, 8°C, Force 1. End: 06:40, dry, 50% cloud cover, 9°C, Force 2.
10/06/2024 (nocturnal)	Sunset: 21:19 Start: 20:49 dry, 13°C, 20% cloud cover, Force 0. End: 22:19, dry, 13°C, 20% cloud cover, Force 1.
24/06/2024	Sunrise: 04:38 Start: 05:45, dry, 0% cloud cover, 16°C. End: 06:50, dry, 0% cloud cover, 16°C.
10/07/2024	Sunrise: 04:51 Start: 05:45, dry, 50% cloud cover, 14°C, Force 1. End: 06:30, dry, 50% cloud cover, 14°C, Force 1.

Where possible, signs of breeding activity were noted, and breeding evidence was assigned to four categories: confirmed; probable; possible and non-breeding. These are based on the standard British Trust for Ornithology (BTO) criteria.

Survey Limitations and Constraints

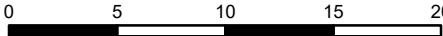
There were no material constraints to the breeding bird survey conducted in 2024.



MAP 3.1 Building Inspection Results

KEY

 Site boundary

SCALE: 1:350 at A3
 0 5 10 15 20 Metres



CLIENT: Bellway Homes
PROJECT: Land North of Arborfield Road, Shinfield
DATE: 02 September 2024



MAP 3.2 Night-Time Bat Walkover Route

KEY

Site boundary

V

 Vantage point

Night-time Bat walkover route

SCALE: 1:1,500 at A3

020406080100

Metres

N



CLIENT: Bellway Homes

PROJECT: Land North of Arborfield Road, Shinfield

DATE: 02 September 2024



MAP 3.3 Automated Bat Static Survey -
Static Locations

KEY

-  Site boundary
-  Automated Bat statics

SCALE: 1:1,500 at A3

0 20 40 60 80 100 Metres



CLIENT: Bellway Homes
PROJECT: Land North of Arborfield Road, Shinfield
DATE: 02 September 2024

Appendix 4

Biodiversity Net Gain Calculation Headline Results

Land North of Arbrofield Road	Return to results menu		
Headline Results			
Scroll down for final results ⚠			
On-site baseline	Habitat units	15.82	
	Hedgerow units	0.96	
	Watercourse units	0.59	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	20.29	
	Hedgerow units	2.13	
	Watercourse units	0.66	
On-site net change (units & percentage)	Habitat units	4.47	28.29%
	Hedgerow units	1.17	121.57%
	Watercourse units	0.06	10.62%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	4.47	
	Hedgerow units	1.17	
	Watercourse units	0.06	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	4.47	
	Hedgerow units	1.17	
	Watercourse units	0.06	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	28.29%	
	Hedgerow units	121.57%	
	Watercourse units	10.62%	
Trading rules satisfied?	Yes ✓		