PRELIMINARY ECOLOGICAL APPRAISAL REPORT

Client: Cygnature Homes

Site: South [illegible]rough

26.01.2023

Version 001

aLyne Ecology Ltd.

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Life Span of Survey Data and Report	
Report	This report remains valid for 12 to 18 months from date of issue. The report, conclusions and recommendations are valid for current development plans only. Should this change, the report should be reviewed and, if necessary, further survey work and desk study review undertaken.
Survey Data	Survey data are valid for 12 to 18 months from the date the survey was undertaken.

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Contents

1. Summary

Site Details
• Site Address: South Hill, Storrington Road, Thakeham, Pulborough, RH20 3EN. • OS grid reference: TQ 1035 1745. • Area of Site: 6873.2 m² (0.687 ha).
Scope of Works
• aLyne Ecology Ltd was commissioned by Cygnature Homes to undertake a Preliminary Ecological Appraisal (PEA), comprising a data search and field survey to assess the baseline ecological conditions of the site and its potential to support protected species and species of conservation concern.
Development Proposals
• The development proposals are for the construction of five detached dwellings, including associated garages and garden spaces.
Evaluation and Potential Impacts Assessment
• The habitats recorded on site are as follows: modified grassland, line of trees, hedgerows (Priority Habitat), other hedgerows, broadleaved trees, horticulture, developed land, sealed surface, buildings and artificial unvegetated; unsealed surface (see Figure 1). • The site is not located within or adjacent to a designated site for nature conservation and there are no statutory or non-statutory designated sites located within 1 km of the site. However, Arun Valley Special Area of Conservation (SAC), Ramsar, and Special Protection Area (SPA) is located approximately 4 km to the west of the site. SACs, and SPAs are European designated sites protected in the UK by Conservation of Habitats and Species Regulations 2017 (as amended). Ramsar's receive the same protection as SACs and SPAs. • Native hedgerows are located on site and there are five types of Priority Habitats located within 1 km of the site, namely hedgerows, deciduous woodland, ponds, rivers/streams, and traditional orchards. Priority Habitats are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. Under the NERC Act, 2006, Local Planning Authorities are required to give due regard to biodiversity. • Ponds are absent from the site, but at least 12 ponds are located within 1 km of the site, the nearest being approximately 80 m to the north-east of the site. Native hedgerows, lines of trees and scattered scrub are present along the site boundaries, which could potentially support the great crested newt during its terrestrial phase. The great crested newt and its habitats are fully protected under the Wildlife and Countryside Act, 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). These habitats could also support the common toad, which is a Priority Species listed on Section 41 of the NERC Act, 2006. • The hedgerow, line of tree and scrub habitat has the potential to support reptiles. Reptiles are protected against killing and injury under the Wildlife and Countryside Act, 1981, (as

amended). All reptile species are Priority Species as listed on Section 41 of the NERC Act, 2006.

- The hedgerow, tree and scrub habitats could support nesting birds, including birds of conservation concern. Under the Wildlife and Countryside Act, 1981 (as amended), it is illegal to take, damage or destroy the nests of wild birds whilst being built or in use.
- The hedgerow, tree and scrub habitats on site could support foraging, and commuting bats. Bats, their roosts, and their habitats are strictly protected under the Wildlife and Countryside Act, 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).
- [redacted]
- The native hedgerows on stie could potentially support the hazel dormouse. The hazel dormouse and its habitats are fully protected under the Wildlife and Countryside Act, 1981 and the Conservation of Habitats and Species Regulations, 2017 (as amended).
- The site has potential to support European hedgehogs. The European hedgehog is a Priority Species, listed on Section 41 of the NERC Act, 2006.

Recommendations for Avoidance, Mitigation and Enhancement

- In accordance with Policy 31 of the Horsham District Planning Framework (November 2015), any development with the potential to impact Arun Valley SAC/SPA/Ramsar will be subject to a Habitats Regulations Assessment (HRA) to determine the need for an Appropriate Assessment. It is recommended that the LPA and Natural England are consulted on whether a HRA is required.
- Hedgerows and lines of trees on site should be retained, protected, and enhanced. Any gaps should be interplanted with native species of trees and shrubs already growing on site. Buffer zones should be created adjacent to the hedgerows and lines of trees on site, comprising areas of grassland, managed to increase its floristic diversity. Providing recommendations relating to Priority Habitats are adhered to, further survey for hazel dormice and foraging/commuting bats should be avoided.
- Trees and scrub should be retained and protected. Any planting of shrubs and trees should include native species of local provenance.
- A fingertip search of the grassland habitats within the site should be carried out by a great crested newt licenced ecologist prior to works taking place. The removal of scrub or any other vegetation should be carried out carefully by hand with an Ecological Clerk of Works (ECoW) present, to ensure that any amphibians, reptiles, or European hedgehogs, which may be present, can escape unharmed. If any great crested newts are found, all works must cease immediately, and a European Protected Species Licence (EPSL) should be obtained from Natural England.
- Any removal of vegetation or demolition of buildings should be undertaken outside of the bird breeding season (March to August inclusive) to avoid destruction/disturbance of nesting birds.

- [redacted]

- A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly bats when foraging and commuting.

Below is a summary of measures, which should be implemented on site to enhance biodiversity:

  - Planting of native hedgerows along site boundaries.
  - Planting native trees and shrubs.
  - The enhancement of retained grassland on site by sowing a wildflower mix suitable for the geology of the site.
  - Use of planters, containing wildflower seed mixes, or plants of known benefit to wildlife.
  - The installation of appropriate bat and bird boxes.
  - The installation of a hibernacula for invertebrates.
  - Construction of log piles for invertebrates and reptiles.
  - The installation of a Royal Hedgehog House.

- These recommendations, including measures to protect and enhance Priority Habitats on site, should be included in a Biodiversity Net Gain Assessment and Biodiversity Management and Maintenance Scheme.

- Timings of works and approach should be detailed in a Construction Environmental Management Plan (CEMP), which will be subject to a planning condition.

Further Survey Requirements

- None required (providing avoidance and mitigation measures are adhered to).

2. Introduction

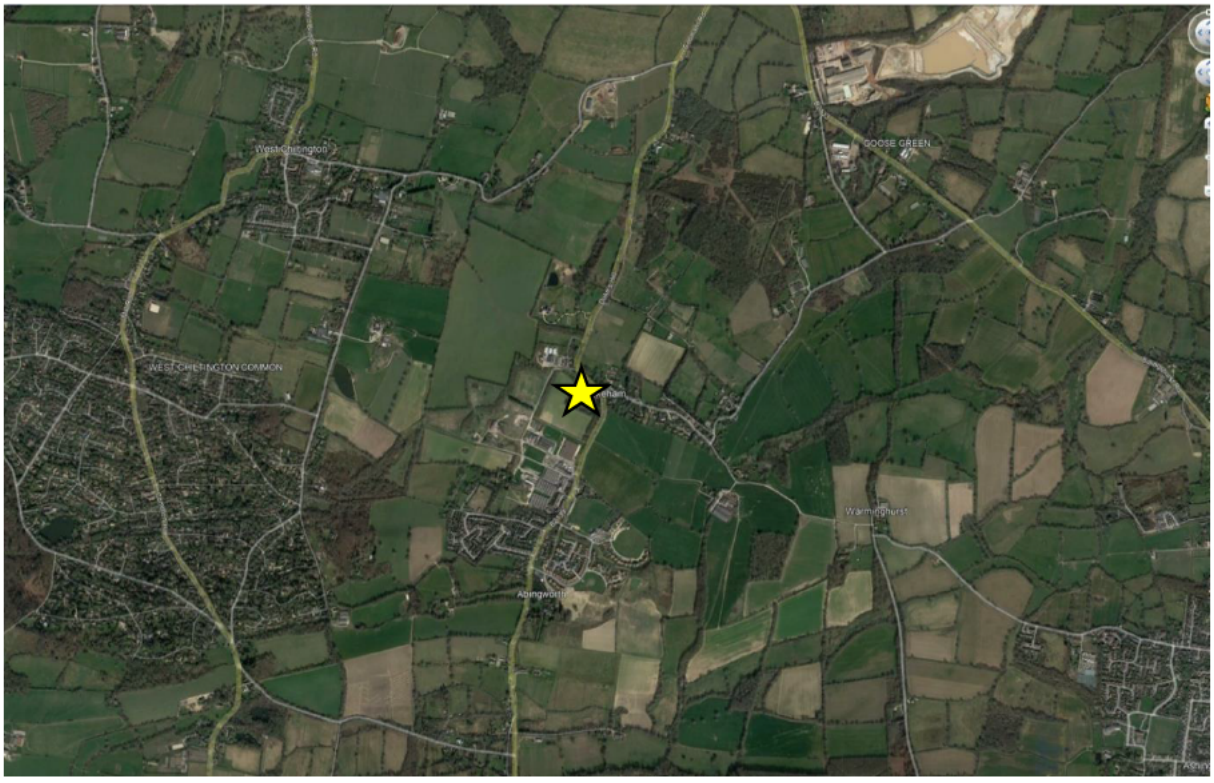
2.1 Site Details

Table 1 provides details of the site, intended as a summary of key features, derived from the data search received from Sussex Biodiversity Records Centre (SxBRC) and www.magic.gov.uk. The habitats recorded on site during the field survey are shown on Figure 1. Photographs of the site are provided in Appendix 1. A full species list, with target notes, is provided in Appendix 2.

Table 1. Site Details

Site Name	South Hill, Pulborough
Site Address	South Hill, Storrington Road, Thakeham, Pulborough, RH20 3EN
OS Grid Reference	TQ 1035 1745
Total Area of Site	6873.2 m² (0.687 ha)
Landowner and Local Authority	Cygnature Homes, Horsham District Council
Geology and Soils	Freely draining, slightly acidic, loamy soils
Hydrology	Freely draining
Nature Conservation Designations	None on site
Other Designations	None on site
The Woodland Trust Ancient and Notable Tree Inventory	None on site
Biodiversity Opportunity Area	None on site
National Habitat Network	None on site
Primary Habitats	Modified grassland, line of trees, hedgerow (Priority Habitat), other hedgerow, artificial unvegetated; unsealed surface, developed land, sealed surface and buildings.
Protected Species	Potential for amph bians, reptiles, breeding birds, foraging/commuting bats European hedgehogs (*Erinaceus europaeus*), hazel dormice (*Muscardinus avellanarius*) [redacted]
Current Land Use	Horticultural plot and surrounding amenity grassland

An aerial plan showing the location of the site is provided below.



Site Location (© Google Earth Pro, accessed 13th January 2023).

2.2 Site Context

Table 2 provides details on the context of the site in terms of habitats, land use and connectivity to the wider landscape.

Table 2. Site Context

Surrounding Habitats and Land Use	Rural location, comprising a mixture of arable and grazed fields, hedgerows, and woodland. Numerous waterbodies are located within 1 km of the site, the closest being approximately 80 m from the north-east corner of the site. The wider landscape is characterised by scattered residential and light industrial buildings, and further areas of farmland.
Urban Context / Locality	The site is located in Thakeham, off the B2139.
Connectivity to Wider Landscape	The site has reasonable connectivity via existing hedgerows and lines of trees to areas of key foraging habitat for bats and other wildlife in the wider landscape.
Priority Habitats within 1 km	• Hedgerows. • Ponds. • Rivers/streams. • Woodpasture & parkland. • Traditional orchards.
Ancient Woodland within 1 km	Three, nearest being approximately 445 m to the north of the site.
Non-Statutory Designated Sites within 1 km	None
Statutory Designated Sites within 1 km	None
European Designated Sites within 5 km	Arun Valley SAC/SPA/Ramsar located approximately 4 km to the west of the site.
European Protected Species Licence (EPSLs) within 2 km	Two granted EPSLs in total for roosting bats: • Destruction of a resting place and breeding site for common pipistrelles (*Pipistrellus pipistrellus*) and brown long-eared bats (*Plecotus auritus*) located approximately 1.45 km to the east. • Destruction of a resting place for common pipistrelles and brown long-eared bats located approximately 1.95 km to the south-east. One granted EPSL for the damage and destruction of a hazel dormouse resting and breeding site located approximately 1.37 km to the south-west.

2.3 Proposed Development

The development proposals are for the construction of five detached dwellings, including associated garages and garden spaces.

2.3.1 Impacts on Existing Habitats

Areas of existing modified grassland and horticultural land will be lost to facilitate construction of the dwellings. Under current proposals all hedgerows and lines of trees on site will be retained.

2.4 Brief and Objectives

2.4.1 Preliminary Ecological Appraisal

- Map and identify the existing habitats within the survey area, using the UK Habitat Classification (UKHab) system.
- Check for evidence of protected species and assess the potential for protected species to be present on site.

- Check for evidence of invasive species.
- Identify potential ecological impacts and constraints relating to the proposed works.
- Make recommendations for further survey work, as appropriate.
- Propose mitigation measures to avoid, mitigate or compensate for ecological impacts, as appropriate.

3. Relevant Legislation and Planning Policy

This section provides a summary of legislation and planning policy for designated sites, Priority Habitats, ancient woodland, trees, and protected species, which are assessed to be present or potentially present on site, as detailed in Table 7, Section 6.

The legislation and planning policy detailed in this section is intended to be a summary only. The relevant pieces of legislation and planning policy should be referred to for full information. Legislation and planning policy pertaining to protected habitats and species can be found at the following websites:

- The Birds Directive 2009/147/EC: http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm
- The Habitats Directive 1992/43/EEC: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm
- Water Directive Framework: https://ec.europa.eu/environment/water/water-framework/info/intro_en.htm
- Wildlife and Countryside Act, 1981 (as amended): http://www.legislation.gov.uk/ukpga/1981/69
- Conservation of Habitats and Species Regulations, 2017 (as amended): http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi_20100490_en.pdf
- Countryside Rights of Way Act, 2000: http://www.legislation.gov.uk/ukpga/2000/37/contents
- Natural Environment and Rural Communities Act, 2006: http://www.legislation.gov.uk/ukpga/2006/16/contents
- National Planning Policy Framework, 2021: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
- OPDM Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf
- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf
- Horsham District Planning Framework, 2015: https://www.horsham.gov.uk/planning/local-plan/read-the-current-local-plan
- Sussex Wildlife Trust: Biodiversity and Planning in Sussex, 2014: https://dnu7gk7p9afoo.cloudfront.net/Files/swt-planning-guidance-2014.pdf
- Thakeham Parish Neighbourhood Plan to 2031: https://www.horsham.gov.uk/planning/neighbourhood-planning/thakeham

The valued ecological receptors, which could be impacted on by development are highlighted in blue in Table 3 and further details on relevant legislation and planning policy are provided in Appendix 3. A list of abbreviations is provided in Appendix 4.

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3.1 Legislation and Planning Policy Relating to Valued Ecological Receptors

Table 3. Legislation and Planning Policy Relating to Valued Ecological Receptors

	Legislation and Planning Policy										
Key Ecological Receptor	**Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex I of Birds Directive 2009/147/EC**	**Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019**	**The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9**	**Countryside and Rights of Way Act, 2000**	[redacted]	**NERC Act, 2006**	**NPPF**	**Relevant Regional Planning Policy**	**Relevant Local Planning Policy: Relevant Local Planning Policy: Horsham District Planning Framework, Biodiversity and Planning in Sussex, Thakeham Parish Neighbourhood Plan**
Statutory Designated Sites – SACs and SPAs	✓	✓		✓					✓		✓
Statutory Designated Sites – SSSIs					✓	✓			✓		✓
Statutory Designated Sites – LNRs									✓		✓
Non-Statutory Designated Sites – SINCs/LWSs								✓	✓		✓
Priority Habitats								✓	✓		✓
Ancient Woodland									✓		✓
Trees											✓
Priority Species – Plants								✓			✓
Invasive Plant Species					✓ (Schedule 9)						✓
Priority Species – Invertebrates								✓	✓		✓

	Legislation and Planning Policy										
Key Ecological Receptor	**Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex I of Birds Directive 2009/147/EC**	**Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019**	**The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9**	**Countryside and Rights of Way Act, 2000**	[redacted]	**NERC Act, 2006**	**NPPF**	**Relevant Regional Planning Policy**	**Relevant Local Planning Policy: Relevant Local Planning Policy: Horsham District Planning Framework, Biodiversity and Planning in Sussex, Thakeham Parish Neighbourhood Plan**
Great Crested Newts (*Triturus cristatus*)		✓		✓	✓ (Schedule 5)			✓	✓		✓
Common Toads (*Bufo bufo*)								✓	✓		✓
Reptiles					✓			✓	✓		✓
Breeding Birds					✓				✓		✓
Priority Species – Birds								✓	✓		✓
Protected Bird Species					✓ (Schedule 1)				✓		✓
Roosting, Foraging and Commuting Bats		✓		✓	✓ (Schedule 5)			✓	✓		✓
Hazel Dormouse (*Muscardinus avellanarius*)		✓		✓	✓ (Schedule 5)			✓	✓		✓
[redacted]					✓		[redacted]				✓
European Hedgehog *(Erinaceus europaeus)*								✓	✓		✓

	Legislation and Planning Policy										
Key Ecological Receptor	**Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC**	**Annex I of Birds Directive 2009/147/EC**	**Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019**	**The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9**	**Countryside and Rights of Way Act, 2000**	[redacted]	**NERC Act, 2006**	**NPPF**	**Relevant Regional Planning Policy**	**Relevant Local Planning Policy: Relevant Local Planning Policy: Horsham District Planning Framework, Biodiversity and Planning in Sussex, Thakeham Parish Neighbourhood Plan**
Brown hare (*Lepus europaeus*)								✓			✓
European Otter (*Lutra lutra*)		✓		✓	✓ (Schedule 5)			✓	✓		✓
Water Vole (*Arvicola amphibius*)					✓ (Schedule 5)			✓	✓		✓

3.2 Biodiversity Enhancement

The NPPF, 2021 sets out policies for, inter alia, biodiversity and geological conservation directing those schemes should seek to protect and enhance, where possible, designated, and non-designated nature conservation sites and features.

Section 41 of the NERC Act, 2006 requires public bodies "to have regard to" the importance of conserving biodiversity in England when undertaking their functions. Local planning authorities should use the list of species and habitats of principal importance (section 41) to identify those that require special consideration when making decisions.

Circular 06/05 on Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England.

The following is a summary of relevant local planning policy and guidance, which relates to biodiversity enhancement and the achievement of biodiversity net gain on development sites.

3.2.1 Horsham District Planning Framework, November 2015

Horsham District Planning Framework, November 2015 supports ecological enhancement in the design of developments through Policy 25 – Strategic Policy: The Natural Environment and Landscape Character, which states: "The Council will protect the natural environment and landscape character of Horsham and support any development proposals, which maintains and enhances the Green Infrastructure Network, existing network of geological sites and biodiversity, addresses any identified deficiencies in the District, ensures no net loss of wider biodiversity and provides net gains in biodiversity". Policy 26 - Strategic Policy: Countryside Protection states: "Proposals must not lead to a significant increase in activity in the countryside and proposals must protect, conserve and enhance the key features and characteristics of the countryside". Policy 31 – Green Infrastructure and Biodiversity also states proposals must maintain and enhance existing networks of green infrastructure and biodiversity, but also states particular considerations will be given to proposals relating to statutory and non-statutory designated sites. Policy 33 – Development Principals states developments will be required to presume in favour of retaining existing important landscape and natural features.

3.2.2 Sussex Wildlife Trust: Biodiversity and Planning in Sussex, 2014

Section 4 of the Sussex Wildlife Trust Biodiversity and Planning in Sussex, 2014 identifies important areas for targeting wildlife conservation, in particular BOAs and networks of green spaces. It states that new developments should be designed to maintain existing Green Infrastructure and reduce habitat fragmentation by providing appropriate landscaping within developments. Roosting and nesting opportunities for bats and birds should be provided in buildings in the form of nest boxes. Green roofs should be considered into the design of buildings to increase the biodiversity on a development site and thought should be given to the impact of lighting on wildlife, especially bats. Buffering of existing biodiversity features from human activity can help reduce impacts. The Wildlife Trust, Homes for People and Wildlife, January 2018 lists additional features, which could be incorporated into the design of a development. These include, permeable driveways, tree and hedgerow habitats, wildlife verges, Sustainable Urban Drainage Systems (SUDS), renewable energy and water efficiency features, pedestrian and cycle routes, planting of native species, wildlife-permeable boundaries, allotments, street trees and interpretation panels for the public.

3.2.3 Thakeham Parish Neighbourhood Plan to 2031

The vision for Thakeham is to protect, maintain, enhance and improve our distinctive environment and community, to provide an outstanding quality of life for current and future generations of residents, to

be socially and economically thriving and to conserve and protect our high-quality natural environment, landscape, habitats and wildlife biodiversity. Future development during the plan period should maintain the character of the Parish through the adoption of appropriate building styles, low densities and open green spaces in order to mitigate its impact.

Development proposals will be supported, provided they protect and retain and, wherever possible, enhance the following green infrastructure and valued landscape features of the Parish:

i. *sunken lanes;*
ii. *prominent ridges;*
iii. *public rights of way and their settings;*
iv. *land designated for nature conservation;*
v. *ecological corridors between designated and non-designated areas of nature conservation;*
vi. *hedgerows;*
vii. *copses and woods, including ancient woodland; and*
viii. *exposed areas of geological rock layers.*

4. Methods

This report has been produced with reference to current guidelines for Preliminary Ecological Appraisals (CIEEM, 2017) and BS42020:2013: Biodiversity – Code of Practice for Planning and Development.

4.1 Data Search

SxBRC was contacted on 13th January 2023 to provide a data search report for the site and land within 1 km of the site boundary (comprising information on protected species, species of conservation concern and statutory and non-statutory designated sites). The following published materials were also consulted:

- The Multi-Agency Geographical Information for the Countryside (www.magic.gov.uk) (accessed 13th January 2023).
- Section 41: Priority Species in England (NERC Act, 2006) (www.jncc.defra.uk, accessed 13th January 2023).
- Horsham District Planning Framework, 2015 (accessed 13th January 2023).
- Sussex Wildlife Trust: Biodiversity and Planning in Sussex, 2014 (accessed 13th January 2023).
- Thakeham Parish Neighbourhood Plan to 2031 (accessed 13th January 2023).

4.2 Field Survey

A field survey, using the UKHab system was undertaken of the site by Josh Brown BSc (Hons) on 10th January 2023 (aLyne Ecology Limited, Ecologist). The weather conditions during the survey were 11°C, wind force 4, and 100% cloud and rainy. The site boundary and survey area are shown in Figure 1.

The field survey technique used is detailed in the UK Habitat Classification User Manual, Version 1.0. The UK Habitat Classification Working Group, May 2018. The principle aim of the UK Habitat Classification (UKHab) system is to provide a rapid system for recording and classifying habitats, which can be used for both earth-based and field-based surveys. The system comprises a principal hierarchy (the Primary Habitats), which include ecosystems, broad habitats, Priority Habitats and Annex 1 habitats, and non-hierarchical Secondary Codes.

The UKHab 'Professional Edition' has been used, with the use of Level 5 Primary Habitats and Secondary Codes, as detailed in the UK Habitat Classification-V1 (May 2018) Excel workbook. Primary Habitats and Secondary Codes follow the UK Habitat Classification – Habitat Definitions – V1.0 (May 2018). The Secondary Codes selected are appropriate to the site and habitats recorded. The Minimum Mapping Unit used is 25 m^2 and 5 m in length.

Where possible, prior to carrying out the field survey, habitats on site were identified using www.magic.gov.uk, Google Earth Pro, 2020 and previous surveys reports, if available. Pre-survey maps were compiled using QGIS 3.16 Hannover. Evidence of habitat management was also noted.

During the field survey, habitat types were recorded using QField on a tablet (Samsung Galaxy Tab S6). GIS symbology used is as recommended in the UK Habitat Classification symbology files for QGIS, presented as Level 4 Primary Habitat, with Level 5 labelled as a code.

4.3 Protected Species Assessment

As part of the PEA, the site was assessed for its potential to contain protected or notable species. The assessment was made based on the habitats present within the site and their suitability for protected

species (information on the legislation of protected species can be found in Section 3 and Appendix 4). Protected species assessed for, but not limited to, were:

- Plants of conservation concern.
- Invertebrates of conservation concern.
- Great crested newts.
- Common toad.
- Reptiles.
- Breeding birds.
- Bats.
- Hazel dormice.
- [redacted]
- European hedgehog.
- Brown hare.
- Otters.
- Water voles.

In addition, a search was undertaken for evidence of non-native, invasive species.

4.4 Evaluation of Ecological Features

A valuation of ecological features (designated sites, species, and habitats) was undertaken in accordance with CIEEM guidance (CIEEM, 2018). Valuation is determined using the geographic framework provided in Table 4.

The value of an ecological feature is based on a professional ecologist's judgement and takes into consideration various characteristics including any site designations, species records, priority species and habitats, species rarity, the quality of the resources (e.g., habitat diversity, species population size), and location within the landscape context.

Sometimes it is not possible to provide a valuation of ecological features in the absence of data, which would have to be provided by further ecological surveys. Important ecological features, which may pose a constraint to the proposed development, are those with an ecological value which could be impacted by the development. These are the features which may require further survey work and mitigation.

Table 4. Framework for Assessing the Value of Ecological Features

Geographic Scale	Example of Ecological Feature
International	An internationally designated site, i.e., SPAs, SACs and Ramsar sites. Regularly occurring populations of internationally important species.
National	Site of national importance, i.e., SSSIs, NNRs. Regularly occurring populations of nationally important species.

Geographic Scale	Example of Ecological Feature
Regional	Non-statutory site e.g., LWSs, Key Wildlife Site (KWS), Country Wildlife Site (CWS) supporting a regionally significant area of Priority Habitat or regionally significant population of legally protected/priority species.
County	Non-statutory site e.g., LWSs, KWSs, CWSs, ancient woodland, site supporting Priority Habitats, Priority Species, and/or legally protected species of significance for the county.
Local	Habitats which enhance the local habitat resource e.g., old species-rich hedgerow, deciduous woodland, ponds, small areas of Priority Habitat or areas supporting small populations of legally protected/Priority Species which are not rare within the region, county, or nationally.
Site	Habitats of limited ecological importance e.g., scattered trees, hedgerows, woodland plantations, small areas of non-priority habitats that are of value for wildlife. Species of limited ecological importance.
Negligible	Hardstanding, bare ground, built environment, and other areas with negligible biodiversity value, including for priority and legally protected species.

4.5 Survey Limitations

The data search should not be taken as a definitive list of the protected species and species of conservation concern that occur within the search area.

The site was visited over the period of one day, as such seasonal variations cannot be observed and only a selection of all species that potentially occur within the site have been noted. Therefore, the survey provides a general assessment of potential nature conservation value.

There were no limitations to the survey in terms of the following:

- The site could be fully accessed.
- Weather conditions (dry and sunny).
- Personal competence (qualifications, training, skills, and experience).
- Time spent surveying.

The field survey was undertaken at a sub-optimal time of year; however, this is not considered to be a significant limiting factor as the habitats present on site are common and widespread and, therefore, easily identifiable at any time of year by an experienced ecologist.

5. Baseline Ecological Conditions

5.1 Data Search

A copy of the data search report from SxBRC can be supplied on request (SxBRC/22/786).

5.1.1 Designated Sites

Arun Valley SAC/SPA/Ramsar, which encompasses Pulborough Brooks SSSI, is located approximately 4 km to the west of the site. The site is not located within or adjacent to a designated site for nature conservation and there are no statutory or non-statutory designated sites located within 1 km of the site.

5.1.2 Ancient Woodland

The site is not located within an area of ancient woodland or plantation on ancient woodland. There are three parcels of ancient woodland located within 1 km of the site, the nearest being approximately 445 m to the north.

5.1.3 Priority Habitats

Five types of Priority Habitats are located within 1 km of the site, as detailed in Table 5.

Table 5 Priority Habitats within 1 km of the Site

Habitat Type	Number of Land Parcels	Nearest Land Parcel to Site (m)
Hedgerow	Unknown number	0 (on-site)
Pond	3	80
Deciduous woodland	10	115
Rivers/streams	1	500
Traditional orchards	1	885

5.1.4 Protected Species and Species of Conservation Concern

Examples of protected species and species of conservation recorded in the data search from the previous 10 years, which could potentially occur on, or in the vicinity of the site are provided below. The data search report should be referred to for the full list of species, which occur within 1 km of the site.

- Alcathoe bat (*Myotis alcathoe*).
- Brambling (*Fringilla montifringilla*).
- Brown long-eared bat (*Plecotus auritus*).
- Bullfinch (*Pyrrhula pyrrhula*).
- Cinnabar moth (*Tyria jacobaeae*).
- Common pipistrelle (*Pipistrellus pipistrellus*).
- Fieldfare (*Turdus pilaris*).
- Greenfinch (*Chloris chloris*).
- Grizzled skipper (*Pyrgus malvae*).
- Hazel dormouse.
- House sparrow (*Passer domesticus*).
- *Myotis* bat.
- Noctule bat (*Nyctalus noctula*).
- Redwing (*Turdus iliacus*).
- Song thrush (*Turdus philomelos*).
- Soprano pipistrelle (*Pipistrellus pygmaeus*).

- Yellowhammer (*Emberiza citronella).*

There following records are for invasive species within 1 km of the site, but there are none for the site itself.

- Japanese knotweed (*Fallopia japonica*).
- Three-cornered garlic (*Allium triquetrum*).
- Wall cotoneaster (*Cotoneaster horizontalis*).

5.1.5 Granted European Protected Species Licences

Four granted EPSL's for roosting bats including:

- Destruction of a resting place and breeding site for common pipistrelles and brown long-eared bats located approximately 1.45 km to the east.
- Destruction of a resting place for common pipistrelles and brown long-eared bats located approximately 1.95 km to the south-east.

One granted EPSL for the damage and destruction of a hazel dormouse resting and breeding site located approximately 1.37 km to the south-west.

5.1.6 Great Crested Newt Licence Returns and Pond Surveys

None within 2 km of the site.

5.1.7 Great Crested Newt Risk Zones

Maps are not available for Horsham District (NatureSpace).

5.2 Field Survey – Habitats

The results of the field survey undertaken on 10th January 2023 are presented in map form on Figure 1 and described in Table 6. Priority Habitats are in bold. Photographs of the site are provided in Appendix 1 and a full list of species, with scientific names, is provided in Appendix 2. The following habitats (Level 5 Primary Habitat labels and codes, where applicable) were recorded on site.

- Modified grassland – g4.
- Line of trees – w1g6.
- Hedgerow (Priority Habitat) – h2a.
- Other hedgerow – h2b.
- Horticulture – c1f.
- Developed land, sealed surface – u1b.
- Buildings – u1b5.
- Artificial unvegetated; unsealed surface – u1c.

Table 6. Results of Field Survey – Habitats

Primary Habitat Level 4 Label and Code	Primary Habitat Level 5 Label and Code	Area (ha) / Length (m)	Location in Site	Main Common Plant Species	Rare/Scarce or Protected Plant Species	Secondary Code – Habitat Mosaic	Secondary Code – Habitat Complex	Secondary Code – Origin	Secondary Code – Management	Secondary Code – Land Use	Secondary Code – Green Infrastructure	Signs of and Potential for Protected Species
Modified grassland – g4	N/A	0.184 ha	Short mown, amenity grassland borders the horticultural plot on site and a small lawn adjacent to the northern site boundary where the new substation is located. Areas of the grassland have	Annual meadow-grass, common cat's-ear, creeping thistle, dove's-foot crane's-bill, perennial rye-grass, white clover, wild strawberry	None recorded	Scattered trees (11)	N/A	N/A	Mown (64) Bare ground (73)	N/A	N/A	None recorded

Primary Habitat Level 4 Label and Code	Primary Habitat Level 5 Label and Code	Area (ha) / Length (m)	Location in Site	Main Common Plant Species	Rare/Scarce or Protected Plant Species	Secondary Code – Habitat Mosaic	Secondary Code – Habitat Complex	Secondary Code – Origin	Secondary Code – Management	Secondary Code – Land Use	Secondary Code – Green Infrastructure	Signs of and Potential for Protected Species
			turned to bare ground as a result of machinery damage									
Other woodland, broadleaved – w1g	Line of trees – w1g6	0.071 km	Present on the northern and southern site boundaries	Hawthorn, hazel, sycamore, silver birch	None recorded	N/A	Native (47)	N/A	N/A	N/A	N/A	Potential for nesting birds, foraging/commuting bats, reptiles, amphibians, and hazel dormice
Hedgerow (Priority Habitat) – h2a	**N/A**	**0.206 km**	**Present along sections of the eastern and western site boundaries as well as a small hawthorn hedgerow that intersects the site**	**Bramble, hawthorn, ivy, sycamore**	**None recorded**	**N/A**	**Native (47)**	**N/A**	**N/A**	**N/A**	**N/A**	**Potential for nesting birds, foraging/commuting bats, reptiles, amphibians, and hazel dormice**
Other hedgerow – h2b	N/A	0.058 km	Ornamental hedgerows comprising predominantly non-native species are located adjacent to the access track and along sections of the eastern and western site boundaries	Beech, cherry laurel, holly, Leyland cypress	None recorded	N/A	N/A	Non-native (48)	N/A	N/A	N/A	Potential for nesting birds, foraging/commuting bats, reptiles, amphibians, and hazel dormice
Horticulture – c1f	N/A	0.366 ha	A large fenced off vegetable plot comprises the majority of the site. There is also a large polytunnel located adjacent to the eastern boundary of the plot	Beetroot, black mustard, common field speedwell, hairy bittercress, potato, rhubarb, shepherd's purse.	None recorded	N/A	N/A	N/A	Fence (69)	N/A	Small-scale food growing (900)	Potential for foraging/commuting bats

Primary Habitat Level 4 Label and Code	Primary Habitat Level 5 Label and Code	Area (ha) / Length (m)	Location in Site	Main Common Plant Species	Rare/Scarce or Protected Plant Species	Secondary Code – Habitat Mosaic	Secondary Code – Habitat Complex	Secondary Code – Origin	Secondary Code – Management	Secondary Code – Land Use	Secondary Code – Green Infrastructure	Signs of and Potential for Protected Species
Developed land; sealed surface – u1b	N/A	0.017 ha	Comprises a hard standing gravel driveway hat gives access to the site from the northern boundary	None recorded	None recorded	N/A	N/A	N/A	N/A	N/A	N/A	None recorded
Developed land; sealed surface – u1b	Buildings – u1b5	0.002 ha	Two buildings on site. Substation located in northern corner of the site and a timber shed located adjacent to access track.	N/A	None recorded	N/A	N/A	N/A	N/A	N/A	N/A	None recorded
Artificial unvegetated; unsealed surface – u1c	N/A	0.119 ha	Areas of bare ground are located mainly around the boundaries of the horticultural plot but also a more extensive area adjacent to the substation on site.	Annual meadow-grass, cleavers, common daisy, creeping thistle, common dandelion	None recorded	N/A	N/A	N/A	Bare ground (73)	N/A	N/A	None recorded

5.3 Field Survey – Species

The following fauna was recorded during the survey:

Birds:

- Blue tit.
- Bullfinch.
- Goldfinch.
- Herring gull.
- Jackdaw.
- Jay.
- Robin.

6. Evaluation and Potential Impacts Assessment

Table 7 sets out known and potential ecological constraints to development, and potential impacts assessment (in the absence of avoidance and mitigation measures), derived from the data search and field survey, including designated sites, ancient woodland, Priority Habitats, and protected species/species of conservation concern. Where a potential ecological constraint has been identified, further survey work and/or appropriate avoidance, mitigation, and compensation (as appropriate) is likely to be required to address the issue. **Further survey and/or mitigation measures are required for the valued ecological receptors highlighted in blue**.

Table 7. Evaluation and Potential Impacts Assessment

Ecological Receptor and Value	Potentially Present / Known to be Present on Site	Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor
Designated Sites (International)	Arun Valley SAC and SPA located within 5 km of the site	The site is not located within or adjacent to a designated site for nature conservation and there are no statutory or non-statutory designated sites located within 1 km of the site. However, Arun Valley SAC/SPA/Ramsar, which also encompasses Pulborough Brooks SSSI, is located approximately 4 km to the west of the survey area. Recommendations relating to Arun Valley SAC/SPA/Ramsar are provided in Section 7.1.
Priority Habitats (Regional)	Present on site and within 1km	Hedgerows (Priority Habitat) are located on site and five types of priority habitat are located within 1 km of the survey area. In the absence of avoidance and mitigation measures, construction and development operation activities could result in significant adverse effects on Priority Habitats. Recommendations for avoidance and mitigation measures relating to Priority Habitats have, therefore, been provided (see Section 7.2). There are also opportunities to enhance the site for biodiversity, which would benefit Priority Habitats, as set out in Section 9.
Ancient woodland (N/A – none present)	None present	The site is not located within or adjacent to an area of ancient woodland or plantation on ancient woodland. There are three parcels of ancient woodland located within 1 km of the site, the nearest being approximately 445 m to the north. Therefore, further survey and avoidance/mitigation measures are not required in relation to the proposed development and ancient woodland.

Ecological Receptor and Value	Potentially Present / Known to be Present on Site	Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor
Trees (Site)	Present on site	Mature native trees are located on site. In the absence of avoidance and mitigation measures, construction and development operation activities could result in significant adverse effects on trees. Recommendations for avoidance and mitigation measures relating to trees have, therefore, been provided (see Section 7.3). There are opportunities for biodiversity enhancements on site, including the planting of native trees and shrubs (see Section 9).
Plants of conservation concern (N/A – neglig ble potential)	Negligible potential	No protected or notable rare plant species were noted during the survey. The areas of the site, which will be affected by the proposed works have negligible potential to support plants of conservation concern (short-mown modified grassland, horticultural land, hard standing and buildings). Therefore, plants of conservation concern are concluded to be absent from the site and further survey and avoidance/mitigation measures are not required in relation to the proposed development and plants of conservation concern.
Invasive plant species such as rhododendron, Japanese knotweed (*Reynoutria japonica*) and giant hogweed (*Heracleum mantegazzianum)* (N/A – none recorded)	None recorded	Plant species listed under Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended) were not recorded on site. Therefore, further survey and avoidance/mitigation measures are not required in relation to the proposed development and invasive plant species.
Invertebrates of conservation concern (Site)	Negligible potential	No invertebrates of conservation concern were noted during the survey. The areas of the site, which will be affected by the proposed works have negligible potential to support invertebrates of conservation concern (short-mown modified grassland, horticultural land, hard standing and buildings). Invertebrates of conservation concern which were recorded in the data search (namely grizzled skipper) are more likely to be found within the lowland calcareous grassland habitats located in the wider landscape. There are also opportunities for biodiversity enhancements on site, including the creation and enhancement of hedgerow and grassland habitats to benefit invertebrates of conservation concern (see Section 9).

Ecological Receptor and Value	Potentially Present / Known to be Present on Site	Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor
Great crested newts (Regional)	Low potential	The site has low potential to support great crested newts for the following reasons: • There are no ponds on site. • The nearest pond to the site (as shown on www.magic.gov.uk) is approximately 80 m to the north-east of the site, separated from the site by Storrington Road. • There are no granted EPSLs for great crested newts within 2 km of the site. • The areas of the site, which will be affected by the proposed works also have low potential to support great crested newts during their terrestrial phase (short-mown modified grassland, horticultural land, hard standing and buildings). • Providing recommendations relating to the retention and protection of Priority Habitats (Section 7.2) are adhered to, the habitats on and adjacent to the site which could potentially support great crested newts (hedgerows, lines of trees and scrub) should be retained, protected, and enhanced. As there is low potential for great crested newts to be on site during their terrestrial phase, it is considered appropriate to take a precautionary approach to ensure great crested newts are not harmed during the works, in the unlikely event that they are encountered (see recommendations in Section 7.4). There are opportunities for biodiversity enhancements on site, including the incorporation of features for amphibians (see Section 9).
Common toads (Site)	Low potential	For the same reasons given for great crested newts, common toads could potentially be on site. Recommendations provided in section 7.4 also apply to other species of amphibians, including common toads which could be present on site. There are opportunities for biodiversity net gain on site, including the incorporation of features for amphibians (see Section 9).
Reptiles (such as slow worms- *Anguis fragilis*, common lizards - *Zootoca vivipara*, and grass snakes- *Natrix helvetica*) (Site)	Low potential	No species of reptiles were recorded in the data search and the grassland on site is short mown and unsuitable for reptiles (photographs are provided in Appendix 1). However, the scattered scrub habitats found within the site boundaries, hedgerows and lines of trees could potentially support common species of reptiles. As reptiles are protected against killing and injury, and could be impacted on during site clearance, avoidance measures have been provided in Section 7.4. Further survey is concluded to not be necessary, as the areas of the site which will be directly impacted by the development proposals comprise short-mown modified grassland, horticultural land, hard standing and buildings, which have negligible potential for reptiles.

Ecological Receptor and Value	Potentially Present / Known to be Present on Site	Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor
		Providing recommendations relating to the retention and protection of Priority Habitats (Section 7.1) are adhered to, the habitats on and adjacent to the site which could potentially support reptiles should be retained, protected, and enhanced. There are opportunities for biodiversity enhancements on site, including the incorporation of features for reptiles (see Section 9).
Nesting birds (Site)	Potentially present	The site comprises trees, hedgerows, and scrub, which could support common species of nesting birds. As nesting birds are protected, recommendations to avoid disturbing nesting birds are provided in Section 7.5. There are opportunities for biodiversity enhancements on site, including the incorporation of features for nesting birds (see Section 9).
Birds of conservation concern (such as barn owl – *Tyto alba*, peregrine falcon – *Falco peregrinus* and black redstart – *Phoenicurus ochruros*) (Site)	Potentially present	Birds of conservation concern recorded on site during the field survey (bullfinch) could potentially breed on site. Avoidance measures for breeding birds are provided in Section 7.5, which also relate to birds of conservation concern. Measures to retain and protect the hedgerows and trees, as detailed in Sections 7.2 and 7.3, will also ensure that nesting bird habitats are avoided and protected. There are opportunities for biodiversity enhancements on site, including the incorporation of features for birds of conservation concern (see Section 9).
Bats (Local)	Habitats on and adjacent to site are likely to support foraging/commuting bats	There are no buildings or trees on site with bat roosting potential. The hedgerows, lines of trees and open grassland on site, have high suitability for foraging/commuting bats. Providing recommendations relating to the retention and protection of Priority Habitats (Section 7.2) are adhered to, the habitats on and adjacent to the site which could potentially support foraging and commuting bats should be retained, protected, and enhanced. However, as foraging/commuting bat habitats are protected, and could be impacted on by the development proposals, a sensitive lighting plan has also been recommended in Section 7.6. There are opportunities for biodiversity enhancements on site, including the incorporation of features for bats (see Section 9).

Ecological Receptor and Value	Potentially Present / Known to be Present on Site	Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor
[redacted]	[redacted]	[redacted]
Hazel dormouse (Regional)	Low potential	The hazel dormouse was recorded in the data search and an EPSL for the destruction of a breeding/resting site for hazel dormice has been granted within 2 km of the site. However, the hedgerow and scrub habitats on site have low potential to support hazel dormice as they have low connectivity to parcels of woodland located in the wider landscape. Providing recommendations relating to the retention and protection of Priority Habitats (Section 7.2) are adhered to, the habitats on and adjacent to the site which have low potential to support hazel dormice should be retained, protected, and enhanced. Therefore, it is concluded that the hazel dormouse will be adversely impacted by the development, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and hazel dormice. **Should the hedgerows or lines of trees require removal then further survey for hazel dormice will be required.** There are opportunities for biodiversity enhancements on site, including the incorporation of features for hazel dormice (see Section 9).
Brown hare (N/A – negligible potential)	Negligible potential	The site does not contain any habitats, which could support the brown hare, i.e., agricultural fields and open pasture. Therefore, the brown hare is concluded to be absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and brown hares.
Water vole and European otter (N/A – neglig ble potential)	Negligible potential	The site does not contain any habitats, which could support the water vole and European otter, i.e., rivers and streams. Therefore, the water vole and European otter are concluded to be absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and water voles and European otters.
European hedgehog (Site)	Potentially present	The European hedgehog was not recorded in the data search. However, the scattered scrub, hedgerow, and line of tree habitats on site could support the European Hedgehog, which is a Priority Species. Avoidance measures for European hedgehogs have been recommended in Section 7.4, should any vegetation require removal. There are opportunities for biodiversity enhancements on site, including the enhancement of habitats for the European hedgehog (see Section 9).

7. Recommendations for Avoidance and Mitigation

7.1 Designated Sites

In accordance with Policy 31 of the Horsham District Planning Framework (November 2015), any development with the potential to impact Arun Valley SAC/SPA/Ramsar will be subject to a Habitats Regulations Assessment (HRA) to determine the need for an Appropriate Assessment. Therefore, it is recommended that the LPA and Natural England are consulted on whether a HRA is required.

7.2 Priority Habitats

Native hedgerows, which are a Priority Habitat, form the eastern and western boundaries of the site. The following avoidance and mitigation measures relating to Priority Habitats are recommended:

- **Hedgerows and lines of trees on site should be retained, protected, and enhanced.** Any gaps should be interplanted with native species of trees and shrubs already growing on site, such as hazel, sycamore, blackthorn, and hawthorn, to enhance connectivity for hazel dormice, foraging/commuting bats and other wildlife. Hedgerows should be managed to be at least 2 m in height and depth and managed to form an 'A' profile. This will provide benefits to a range of wildlife such as providing a winter food source for winter migrant birds recorded in the data search.

- The hedgerows should not be annually flailed. This will give the hedgerows on site chance to reach at least 2 m in height and depth and they should be managed to form an 'A' profile. This will provide benefits to a range of wildlife and act as natural screening to the south and west. Reducing the intensity and frequency of hedgerow management will also provide a winter food source for winter migrants recorded in the data search, such as the redwing and fieldfare.

- Buffer zones should be created adjacent to the hedgerows and lines of trees on site, comprising areas of grassland, managed to increase its floristic diversity. The buffer zones will provide protection to the hedgerows and the wildlife they could support, including butterflies, nesting birds, amphibians, reptiles, foraging/commuting bats, and the hazel dormouse.

- Any planting of shrubs and trees should include native species of local provenance, such as English oak, blackthorn, and hawthorn.

- A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly bats when foraging and commuting (see Section 7.6).

Providing the recommendations given above are adhered to, priority habitats should not be negatively impacted upon by the development proposals.

7.3 Trees

Native trees should be retained, where possible and any trees lost as a result of the proposed development, should be replaced with equivalent numbers of native species.

To prevent damage to retained trees during development, a buffer zone should be put in place to protect the rooting area (Root Protection Area, which is calculated in accordance with British Standard 5837, 'Trees in Relation to Construction'), in which no construction activities should be permitted.

7.4 Amphibians, Reptiles and European Hedgehogs

As a precautionary approach to ensure great crested newts and common toads are not harmed during the proposed works, it is recommended that a fingertip search of the works area is carried out by a great crested newt licenced ecologist immediately prior to the commencement of the works, to search for great crested newts and other amphibians. An ECoW should be present on site during any site clearance activities, which are likely to involve the removal/disturbance of any vegetation.

The site should be cleared in September, October, or April (following confirmation by a suitably experienced ecologist that nesting birds are absent), which is outside of the hibernation period for reptiles and amphibians.

Prior to clearance, a log piles should be created along the site boundaries, in appropriate locations. The site boundaries are linear habitats, providing connectivity to suitable reptile habitat in the wider landscape, including gardens, woodland, and hedgerows. A sign will be erected on site, warning construction staff of the requirement to retain scrub and trees along the site boundaries and to prevent materials being stored near to the site boundaries. A toolbox talk will also be provided by the on-site ecologist.

Vegetation within the site will be reduced and removed in stages, with a suitably qualified and experienced ecologist present. The height of vegetation will initially be reduced to 30 cm using handheld machinery. Following a period of five days, the vegetation will further be reduced to ground level using handheld machinery. The above approach will start in the southern areas of the site, moving northwards towards the northern boundary, thereby allowing any animals to move into suitable habitats off-site of their own accord. Any animals found by the ecologist, that are unable to move safely into the retained scrub habitats/habitats off-site, will be carefully moved to one of the log piles. Please note our recommendation pertaining to great crested newts, whereby the identification of a great crested newt on site will result in the ceasing of site clearance and Natural England will be contacted for advice on how to proceed lawfully.

Vegetation will be kept at ground level until construction commences. Arisings will be removed from site.

Timings and approach should be detailed in a Construction Environmental Management Plan (CEMP), which will be subject to a planning condition.

7.5 Nesting Birds

Nesting bird habitat within the hedgerows, trees and scrub on site should be retained, as detailed in Sections 7.2 and 7.3. However, if works which are likely to damage bird nests need to be carried out during the nesting period, there is potential that nesting birds could be harmed and disturbed. To ensure legal compliance, a check should be undertaken by an ecologist within 48 hours of works commencing, to confirm the presence/absence of nest sites. If nests sites are identified, works to that feature should be delayed until the nest site becomes inactive (species specific, but approximately 4-6 weeks maximum).

7.6 Bats

Recommendations to minimise the potential impacts of artificial external lighting on bat activity, are provided below (Institute of Ecology and Environmental Management, 2006: Institute of Lighting Engineers, 2007 and Bat Conservation Trust, 2018):

- Avoid prolonged use of outside lighting during the period dusk to dawn, particularly during the bat active season (April to September).

- Security lighting should be avoided on the southern and western boundaries of the site and be on a motion sensor and short duration timer (1 minute).
- Lighting that is required for security or safety reasons, should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor activated lamps.
- LED luminaires with a warm white spectrum (<2700 Kelvin) are the preferred option and should be used where possible. Luminaires should feature peak wavelengths higher than 550 nm to minimise disturbance to bats. All luminaires should lack UV elements, metal halide and fluorescent sources should not be used.
- Lighting should be directed to where it is needed with minimal light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a specialist bollard that directs the light below the horizontal plane.
- Artificial lighting should not directly illuminate any potential bat roosting features or habitats of value to foraging bats, i.e., hedgerows and lines of trees.

[redacted]

[redacted].

8. Recommendations for Further Ecological Surveys

None required (providing measures described in Section 7 are strictly adhered to).

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9. Biodiversity Enhancements

Below are a set of biodiversity enhancement measures, which should be implemented on site. These suggestions take into account current planning policy and guidance, as detailed in Section 3.2 of this report. These measures are in addition to avoidance measures for habitats, as detailed in Section 7.

- A species-rich hedgerow should be planted along the western site boundary adjacent to the location of proposed 'Plot 01' to enhance connectivity to the wider landscape. The hedgerow should be at least 2 m in height and depth and managed to form an 'A' profile.
- The enhancement of existing hedgerows, by planting native trees, shrubs, and climbers such as English oak, blackthorn, hawthorn, field maple, spindle, honeysuckle, and bittersweet.
- The use of appropriate SUDS. For example, in addition to permeable surfaces, a rain garden could be included (see Rainwater Gardens, a Guide for Residents, Woking Borough Council, 2018).
- The inclusion of at least one biodiverse roof (where possible), which can help to enhance habitat linkage across the site, particularly for invertebrates and birds.
- Open spaces should include a wildflower mix suitable for the geology of the site, is available from www.wildseed.co.uk.
- The installation of log piles along site boundaries, to provide habitat for invertebrates and reptiles.
- The installation of Schwegler 2F Boxes (or similar) on trees and buildings, would be beneficial to common and widespread bat species that are likely to be present on site (www.arkwildlife.co.uk).
- The installation of RSPB Robin and Wren Diamond Nest boxes and Apex Open-Front Nest boxes on buildings and trees would be beneficial to garden bird species. These nest boxes can be purchased from www.rspb.co.uk.
- The installation of 2GR Schwegler nest boxes on trees in adjacent hedgerows, would be beneficial to garden bird species. These nest boxes can be purchased from www.nhbs.com.
- The installation of swift bricks or house martin nests which can be purchased from www.arkwildlife.co.uk.
- The installation of bee bricks which can be purchased from https://www.nhbs.com/.
- The installation of a Royal Hedgehog House, which can be purchased from www.arkwildlife.co.uk.
- The installation of a hibernacula for invertebrates, such as the Bug Box 2000, which can be purchased from www.arkwildlife.co.uk.
- The installation of a wildlife pond planted with native aquatic plant species.

These recommendations, including measures to protect and enhance habitats on site, should be included in a Biodiversity Net Gain Assessment and Biodiversity Management and Maintenance Scheme.

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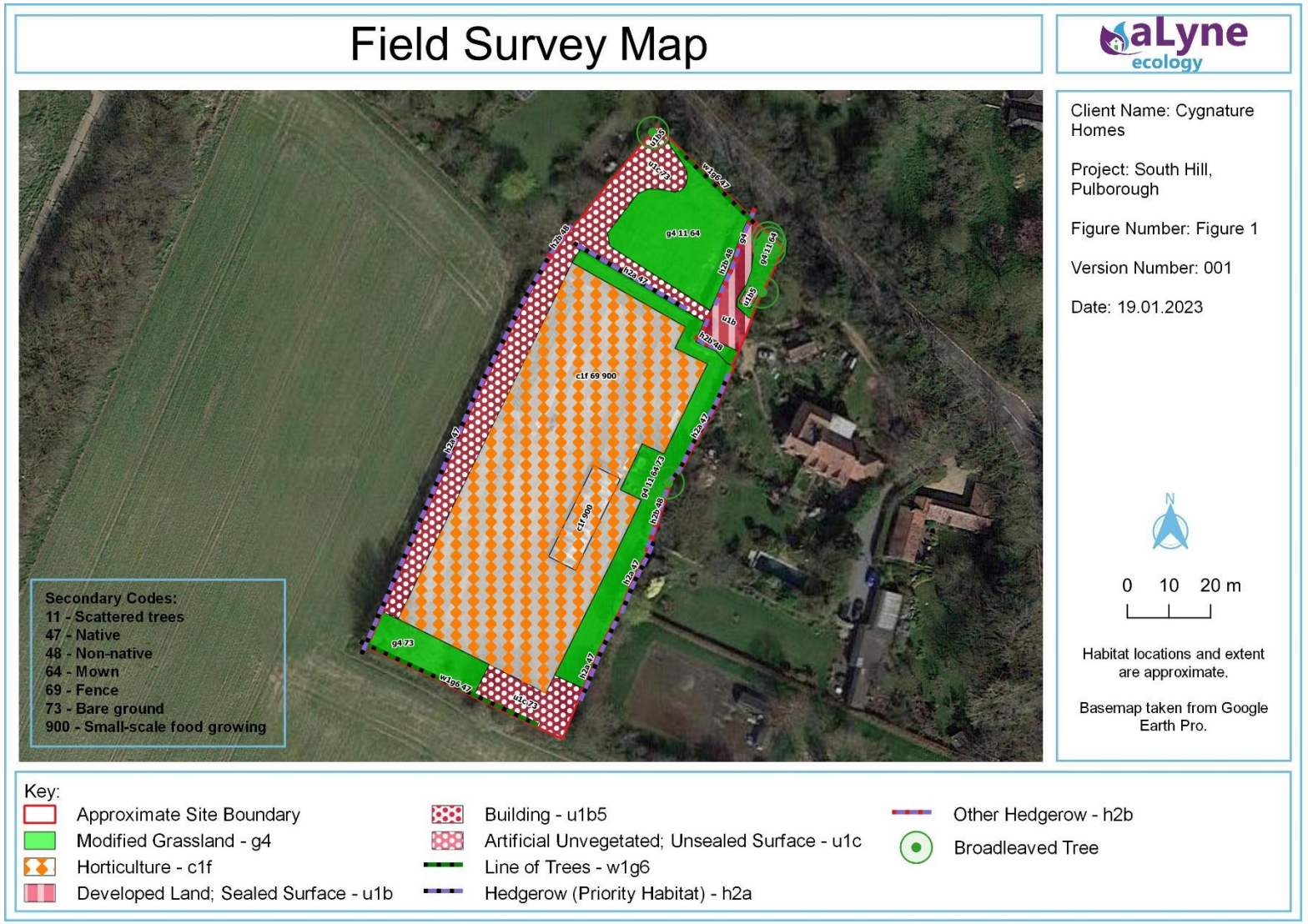
The UK Habitat Classification Field Key (May 2018). UK Habitat Classification Working Group.

11. Figure 1 – Results of Field Survey



12. Appendix 1 – Site Photographs

Photograph 1 — Hard standing gravel driveway that gives access to the site off Storrington Road (B2139).

Photograph 2 — Area of modified grassland adjacent to northern site boundary which also includes a small substation.

Photograph 3 — Small native hawthorn hedgerow that intersects the site.

Photograph 4 — Eastern site boundary looking south, comprising a mixture of native and non-native hedgerows, modified grassland and mature trees.

Photograph 5 — Line of native ivy-clad trees and scrub that forms the southern site boundary.

Photograph 6 — Native hedgerow that forms the western site boundary, including areas of bare ground surrounding the horticultural plot on site.

Photograph 7 — Further areas of bare ground adjacent to the substation and northern site boundary.

Photograph 8 — Horticultural plot that forms the majority of the site comprising a fenced area cleared for growing of vegetables. A polytunnel is also located adjacent to the eastern boundary of this plot.

Photograph 9 — Inside of polytunnel on site.

13. Appendix 2 – Full Species List

Habitats	Common Name	Species Name
Modified Grassland – g3c	Annual meadow grass	*Poa annua*
	Cherry	*Prunus avium*
	Cleavers	*Galium aparine*
	Common cat's-ear	*Hypochaeris radicata*
	Common daisy	*Bellis perennis*
	Common dandelion	*Taraxacum officinale*
	Common mouse-ear	*Cerastium fontanum*
	Common nettle	*Urtica dioica*
	Cow parsley	*Anthriscus sylvestris*
	Creeping buttercup	*Ranunculus repens*
	Creeping thistle	*Cirsium arvense*
	Dove's-foot crane's-bill	*Geranium mole*
	Ground-ivy	*Glechoma hederacea*
	Groundsel	*Senecio vulgaris*
	Lords-and-ladies	*Arum maculatum*
	Ivy	*Hedera helix*
	Perennial rye grass	*Poa annua*
	Pointed spear-moss	*Calliergonella cuspidata*
	Ragwort	*Jacobaea vulgaris*
	Red deadnettle	*Lamium purpureum*
	Springy turf-moss	*Rhytidiadelphus squarrosus*
	White clover	*Trifolium repens*
	Wild strawberry	*Fragaria vesca*
	Wood avens	*Geum urbanum*
Line of Trees – w1g6	Bramble	*Rubus fruticosus* agg.
	Elder	*Sambucus nigra*
	Hawthorn	*Crataegus monogyna*
	Hazel	*Corylus avellana*
	Holly	*Ilex aquifolium*
	Ivy	*Hedera helix*
	Silver birch	*Betula pendula*
	Sycamore	*Acer pseudoplatanus*
Hedgerow (Priority Habitat) – h2a	Bramble	*Rubus fruticosus* agg.
	Cleavers	*Galium aparine*
	Common nettle	*Urtica dioica*
	Hawthorn	*Crataegus monogyna*
	Lords-and-ladies	*Arum maculatum*
	Ivy	*Hedera helix*
	Sycamore	*Acer pseudoplatanus*
Other Hedgerow – h2b	Bay laurel	*Laurus nobilis*
	Bramble	*Rubus fruticosus* agg.
	Cherry laurel	*Prunus laurocerasus*
	Sycamore	*Acer pseudoplatanus*
Horticulture – c1f	Beetroot	*Beta vulgaris subsp. vulgaris*
	Black mustard	*Brassica nigra*
	Butternut squash	*Cucurbita moschata*
	Carrot	*Daucus carota subsp. sativus*
	Common field-speedwell	*Veronica persica*
	Common nettle	*Urtica dioica*
	Hairy bittercress	*Cardamine hirsute*
	Hogweed	*Heracleum sphondylium*
	Potato	*Solanum tuberosum*
	Rhubarb	*Rheum rhabarbarum*
	Scented mayweed	*Matricaria chamomilla*
	Shepherds' purse	*Capsella bursa-pastoris*
	Turnip	*Brassica rapa subsp. rapa*

Habitats	Common Name	Species Name
	Yarrow	*Achillea millefolium*
Artificial unvegetated; unsealed surface – u1c	Annual meadow-grass	*Poa annua*
	Cleavers	*Galium aparine*
	Common cat's-ear	*Hypochaeris radicata*
	Common daisy	*Bellis perennis*
	Common dandelion	*Taraxacum officinale*
	Common nettle	*Urtica dioica*
	Creeping thistle	*Cirsium arvense*
	Dove's-foot crane's-bill	*Geranium mole*
	Ground-ivy	*Glechoma hederacea*
	Perennial rye grass	*Poa annua*
	Red deadnettle	*Lamium purpureum*
Birds	Blue tit	*Cyanistes caeruleus*
	Bullfinch	*Pyrrhula pyrrhula*
	Goldfinch	*Carduelis carduelis*
	Herring gull	*Larus argentatus*
	Jackdaw	*Corvus monedula*
	Jay	*Garrulus glandarius*
	Robin	*Erithacus rubecula*

14. Appendix 3 – Legislation and Planning Policy

14.1 Habitats Directive, EC Council Directive 92/43/EEC

The following information has been taken from ec.europa.eu.

Natura 2000 is a network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats. How a site is chosen depends on what it aims to protect.

Under the Habitats Directive (Art. 3 and 4), Member States designate Special Areas of Conservation (SACs) to ensure the favourable conservation status of each habitat type and species throughout their range in the EU. Under the Birds Directive (Art. 4), the network must include Special Protection Areas (SPAs) designated for 194 particularly threatened species and all migratory bird species.

Member States designate Special Protection Areas (SPAs) according to scientific criteria such as '1% of the population of listed vulnerable species' or 'wetlands of international importance for migratory waterfowl'.

The choice of sites is based on scientific criteria specified in the directive, to ensure that the natural habitat types listed in the directive's Annex I and the habitats of the species listed in its Annex II are maintained or, where appropriate, restored to a favourable conservation status in their natural range.

14.2 The Birds Directive 2009/147/EC

The following information has been taken from ec.europa.eu.

The Birds Directive aims to protect all of the 500 wild bird species naturally occurring in the European Union. The 500 wild bird species naturally occurring in the European Union are protected in various ways:

- **Annex 1**: 194 species and sub-species are particularly threatened. Member States must designate Special Protection Areas (SPAs) for their survival and all migratory bird species.
- **Annex 2**: 82 bird species can be hunted. However, the hunting periods are limited, and hunting is forbidden when birds are at their most vulnerable: during their return migration to nesting areas, reproduction, and the raising of their chicks.
- **Annex 3**: overall, activities that directly threaten birds, such as their deliberate killing, capture or trade, or the destruction of their nests, are banned. With certain restrictions, Member States can allow some of these activities for 26 species listed here.
- **Annex 4**: the directive provides for the sustainable management of hunting, but Member States must outlaw all forms of non-selective and large scale killing of birds, especially the methods listed in this annex.
- **Annex 5**: the directive promotes research to underpin the protection, management and use of all species of birds covered by the Directive, which are listed in this annex.

14.3 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

Under these Regulations, the UK Government and Devolved Administrations are required to establish a network of important high-quality conservation sites that will make a significant contribution to conserving the habitats and species identified in Annexes I and II, respectively, of European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the Annex I habitat types, 78 are believed to

occur in the UK. Of the Annex II species, 43 are native to, and normally resident in, the UK (www.JNCC.gov.uk). Special Areas of Conservation (SACs), together with Special Protection Areas (SPAs), are the UK's contribution to the Bern Convention's Emerald Network of protected areas, known as Areas of Special Conservation Interest (ASCIs).

14.4 The 1949 National Parks and Access to the Countryside Act

Section 21 of the National Parks and Access to the Countryside Act, 1949 provides discretionary powers to enable local authorities to establish and manage Local Nature Reserves (LNRs). Under the Conservation of Habitats and Species (Amendment) (EU Exit) 2019 Regulations, these powers have been extended from preserving flora and fauna to include enabling or facilitating its recovery or increase.

14.5 The Wildlife and Countryside Act, 1981 (As Amended)

The following information was taken from www.jncc.gov.uk and www.ukwildlife.com.

The Wildlife and Countryside Act, 1981 (as amended) is the primary national legislation, which protected animals, plants, and habitats in the UK. The act contains four parts and 17 schedules, which cover:

- Part 1: Wildlife (includes protection of birds, animals, and plants; and measures to prevent the establishment of non-native species which may be detrimental to native wildlife).
- Part 2: Nature conservation, the countryside, and National Parks (including the designation of protected areas).
- Part 3: Public rights of way.
- Part 4: Miscellaneous provisions of the act.

All naturally occurring wild birds in Great Britain are protected from persecution. It is illegal to kill, injure or 'take' any wild bird, take, or damage the nest of any wild bird whilst in use or being built. The eggs of all wild birds are also protected. If you have in your possession any live wild birds, egg(s) or any part of a wild bird you are committing an offence. The birds listed in Schedule 1 of the Wildlife and Countryside Act 1981 are further protected by Special Penalties all year round for those in Part 1 and during a specified closed season for those listed in Part 2.

Schedule 5 lists Animals Species that are protected under Section 9. Section 9 prohibits the intentional killing, injuring, or taking of the species listed in Schedule 5 and also prohibits their possession and the trade in the wild animals listed. The species listed are also further protected from disturbance by prohibiting actions that affect places they use for shelter.

Animals listed in Schedule 6 are protected from being killed or taken by certain methods under Section 11(1) of the Wildlife and Countryside Act 1981. The methods listed are: self-locking snares, bows, crossbows, explosives (other than ammunition for a firearm), or live decoys. The species listed are also protected from the following activities: trap, snare or net, electrical device for killing or stunning, poisonous, poisoned or stupefying substances or any other gas or smoke, automatic or semi-automatic weapon, device for illuminating a target or sighting device for night shooting, artificial light, mirror or other dazzling device, sound recording, and mechanically propelled vehicle in immediate pursuit.

Under the Wildlife and Countryside Act 1981 (as amended), the country nature conservation bodies have a duty to notify any area of land which in their opinion is 'of special interest by reason of any of its flora, fauna, or geological or physiographical features' – these areas are known as Sites of Special Scientific Interest (SSSIs).

14.6 Countryside & Rights of Way Act, 2000

The CRoW Act gives a public right of access to land mapped as 'open country' (mountain, moor, heath and down) or registered common land. The protection of Sites of Special Scientific Interest (SSSIs) is strengthened in this legislation. The CRoW Act also allows for the prosecution of third parties that damage or destroy a SSSI.

14.7 Hedgerow Regulations 1997

These regulations fall under the local authority and are intended to protect important hedgerows from removal. Owners and managers must request permission from their local authority before removing a hedgerow, and permission may not be granted if it supports a diverse range or protected species.

[redacted]

14.9 Natural Environment and Rural Communities (NERC) Act, 2006

The site comprises deciduous woodland, which is a Priority Habitat. Priority Habitats are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. Section 40 (1) of the NERC Act, 2006 imposes a duty to conserve biodiversity:

- "*Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*."

Section 40(3) of the Act explains that:

- "*Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat*".

The duty applies to all local authorities and extends beyond just conserving what is already there to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

14.10 National Planning Policy Framework (NPPF) 2021

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.

Section 15 of the NPPF (paragraphs 174 to 182) considers the conservation and enhancement of the natural environment including habitats and biodiversity (paragraphs 179-182) Paragraph 174 states that planning and decisions should contribute to and enhance the natural and local environment by:

- "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);

- 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

- Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"

Paragraph 175 states that plans should distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Paragraph 179 states that in order to protect and enhance biodiversity and geodiversity, plans should:

- "Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

- 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."

When determining planning applications, Paragraph 1780 states that local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

- Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, 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 improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

As stated in paragraph 181 the following should be given the same protection as habitats sites:

- Potential Special Protection Areas and possible Special Areas of Conservation;
- Listed or proposed Ramsar sites; and

- Sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites."

Paragraph 182 states that the presumption in favour of sustainable development does not apply where the planned project is likely to have a significant effect on a habitat site (alone or in combination with other plans or projects) unless an appropriate assessment has concluded the plan or project will not adversely affect the integrity of the habitats site.

14.11 Office of the Deputy Prime Minister (ODPM) Circular 06/2005

ODPM Circular 06/05 provides guidance on applying legislation in relation to nature conservation and planning in England. Part I considers the legal protection and conservation of internationally designated sites (namely candidate Special Areas of Conservation (cSACs), SACs, potential Special Protection Areas (pSPAs), SPAs and Ramsar sites) and Part II considers the legal protection and conservation of nationally designated sites, namely Sites of Special Scientific Interest (SSSIs).

Part III considers the protection of habitats and species outside of designated areas (particularly UK Biodiversity Action Plan species and habitats, which it states are capable of being a material consideration in the preparation of local development documents and the making of planning decisions.

Part IV considers species protected by law and states that the presence of a protected species is a material consideration in the consideration of a development proposal that, if carried out, would be likely to result in harm to the species or its habitat and that it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted.

14.12 Water Framework Directive

The Water Framework Directive (Directive 2000/60/EC) became law in England and Wales in 2003 via the Water Environment (WFD) (England and Wales) Regulations. The Water Framework Directive has four main goals: (1) to prevent deterioration in water status, (2) all water bodies achieve good ecological status, good chemical status, and good groundwater status (or potential), (3) reduce and eliminate sources of pollution and (4) contribute to achieving objectives of sites protected by other EU legislation.

14.13 Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was ratified by the UK Government in 1982. The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species.

14.14 Wild Mammals (Protection) Act, 1996

The Wild Mammals (Protection) Act 1996 makes provision for the protection of wild mammals from certain cruel acts by stating that any person who mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering shall be guilty of an offence.

15. Appendix 4 - List of Abbreviations

BAP	Biodiversity Action Plan
CSZ	Core Sustenance Zone
CWS	County Wildlife Site
EcIA	Ecological Impact Assessment
EPSL	European Protected Species Licence
GCN	Great Crested Newt
NERC	Natural Environment and Rural Communities Act
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
SSSI	Site of Special Scientific Interest
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
UKHab	UK Habitat Classification System