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ECOLOGICAL ASSESSMENT College Lane, Hurstpierpoint

October 2022

BMD.22.0022.RPE/P1.801.-.Ecology

DOCUMENT HISTORY

Project Number: 22.0022		Document Reference: BMD.22.0022.RPE/P1.801.A.- .Ecology			
Revision	Purpose of Issue	Originated	Technical Reviewed	Approved	Date
-	PLANNING	JW/HR	JW	JP	06/10/2022
REV A	PLANNING	JK			

Declaration of compliance with professional code of ethics or conduct

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. We confirm that the opinions expressed are our true and professional bonafide opinions.

Every reasonable attempt has been made to comply with the relevant best practice guidelines and BS42020:2013 (Biodiversity: Code of practice for planning and development).

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EXECUTIVE SUMMARY

Client Thakeham Homes Ltd.
Consultant Bradley Murphy Design Ltd.

SITE

Location College Lane, Hurstpierpoint, West Sussex.
National Grid Reference... Approx. centre: TQ 29212 16026.
Over-view The Site comprises grazed fields and associated plantation woodland, pond, and treelines with associated ditches. The Site is situated in the urban outskirts of the village of Hurstpierpoint and Hassocks and to the south of the village of Hurst Wickham in the county of West Sussex. Burgess Hill town centre lies approximately 3.5 km north east of the Site
Landscape context The site is situated on the outskirts of the village of Hurstpierpoint, West Sussex and is set within a rural landscape. The site can be found on the eastern fringes of the village, between College Lane and Belmont Lane. The immediate surroundings consist of pasture and arable fields, with residential buildings to the south and west

DEVELOPMENT & PLANNING BACKGROUND

Proposed works Erection of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works.
Planning stage Full planning application

ECOLOGICAL BACKGROUND

General A previous ecological report was undertaken by PJC Ecology in 2012.

SURVEY

Objectives
1. To provide an ecological baseline, including nature conservation value, of the Site with a focus on habitats and potential for protected and notable species.
2. To identify the need and level of more detailed species-specific surveys for a planning application, with particular reference to great crested newt and reptiles.
3. To guide the initial stages of master planning and indicative mitigation required to ensure net biodiversity gain is achieved and favourable conservation status of species utilising the site as a result of the proposed development.
4. To provide specialist advice and make appropriate recommendations to ensure compliance with wildlife law and recognised best practice.
Approach Desk based assessment using online resources, including the *MAGIC* database, and data from the Local Biological Record Centres (West Sussex Biological Records Centre).
Habitat assessment – based on JNCC Phase 1 Habitat Survey.
Evaluation of habitat condition based on the Biodiversity Metric 3.1.
Date 1st August 2022.
Results The Site is an approximately 5 ha parcel of land comprising a grazing field with a plantation woodland block to the east and tree lines around the peripheries. The Site has/has the potential to support the following Protected and Notable Species:

- Badger;
- Bats;
- Hedgehog;
- Nesting birds (including schedule 1 birds);
- Reptiles; and
- Invasive plants

Conclusions Given the current early stage of the master-planning this report does not attempt to assess detailed ecological impacts or detailed appropriate mitigation and compensation measures associated with the potential development. A detailed assessment would likely be completed in the later stages of the project development assessment, either as an Ecological Assessment Report or as an Ecological Impact Assessment (EclA) Chapter forming part of an Environmental Statement.
The main aim of this report is to provide an initial assessment of the ecological interest of the site and to recommend the scope of detailed Phase II ecological surveys that are required to provide a full assessment of the site's ecological value. Initial opportunities for Biodiversity Net Gain have also been identified.

RECOMMENDATIONS

Further species surveys are considered necessary to better inform the proposals and potential impacts.
Key habitat of elevated ecological value should be retained and protected.
Initial opportunities for enhancement and creation which may result in a biodiversity net gain are provided.

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1. INTRODUCTION

1.1 Background Information

- 1.1.1 Bradley Murphy Design Ltd. (BMD) was commissioned by Thakeham Homes Ltd in July 2022 to undertake an Ecological Assessment of their site: Land east of College Lane, Hurstpierpoint, West Sussex —hereafter referred to as ‘the Site’. The Site is approximately centred on national grid reference: TQ 29212 16026. A plan depicting the Site’s location is provided in the Appendix.
- 1.1.2 The following assessments were completed in July and August 2022:
- Desk based assessment;
 - Habitat survey.
- 1.1.3 This report presents the approach, results and evaluation of the assessments and survey undertaken at the Site in order to determine the ecological baseline and nature conservation value of the Site. The data will:
- Enable the identification of the need for and level of more detailed species-specific surveys where required for a successful determination of the planning application;
 - Enable potential ecological constraints to the proposed development to be identified; and
 - Further guide the scheme proposals to ensure that net biodiversity gain is met (an obligation of the NPPF, 2026 and the emerging requirements of the Environment Act 2021) through design and mitigation hierarchy (avoid, mitigate, compensate).

1.2 Proposed Development

- 1.2.1 Erection of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works

1.3 Site Context

Historic Context

- 1.3.1 A review of readily available historical maps and aerial imagery indicate that the Site’s location formed part of an agricultural complex comprising two field parcels and associated marginal features such as treelines and hedgerows from at least the late 18th century onwards. The eastern boundary of the Site consisted of a treeline adjacent Belmont Lane within the late 18th century, this area was subject to new woodland planting and scrubland within 2015 which extended the treeline further into the Site. The northwest/northeast hedgerow and onsite waterbodies, sourced from a tributary of Herring Stream at the northern boundary of the Site, appear to have been present in the landscape since at least the late 18th century.
- 1.3.2 In regards to the local context changes throughout the centuries, the residential block connected to College Lane adjacent the west of the Site was originally arable land within the 18th century until the mid-19th century. At this time period this area alongside adjacent blocks to the south of the Site became part of a residential development that transformed the majority of the land to built form.

- 1.3.3 Further urban expansion has occurred within the surrounding areas within the 19th century, in particular the expansions of the village of Hurstpierpoint and Hassocks has led to many residential blocks being constructed to the south, west and east of the greater landscape near to the Site. Aside from boundary features, the main habitats within the Site, as well as the dominant landscape features within the vicinity of the Site – dominant agricultural field complexes and scattered woodland blocks primarily to the south – have changed little in composition of the last 100 years.

Present Context

- 1.3.4 The Site is an approximately 5.4 ha parcel of land comprising a large grazed field, scrub and plantation woodland, a stream and peripheral hedgerows and trees. The elevation above sea level on the Site approximately ranges from 40-70 m.
- 1.3.5 An area of scrub and new woodland planting was established in approximately 2015 along the eastern boundary of the Site.
- 1.3.6 The Site is situated in the urban outskirts of the village of Hurstpierpoint, west of Hassocks and to the south of the village of Hurst Wickham in the county of West Sussex. Burgess Hill town centre lies approximately 3.5 km north east of the Site. The urbanised areas, including residential developments, industrial complexes, and transport infrastructure associated with Burgess Hill and its suburban fringe, are present to the north east of the Site. This landscape sits in juxtaposition to the south of the Site beyond the existing residential development, which is dominated by agricultural fields (chiefly arable, but with significant tracts of land set to pasture). Thus, it is considered that the Site occupies a rural-urban transitional zone that defines its local ecology.
- 1.3.7 A stream is present in the northern boundary of the Site which in areas culminate into two separate historic pond features; one on Site and another north of the Site boundary. There are further waterbodies and watercourses which continue into the wider landscape particularly to the east of the Site.
- 1.3.8 Considering the outlined above contextual features regarding the Site and its surrounding landscape, while there is some overland connectivity of the Site to its adjacent habitats, particularly to the east and south, the presence of numerous significant dispersal barriers within the vicinity, including roadways and rail lines, is deemed to leave dispersal capacity of terrestrial fauna to/from the Site relatively moderate. Aquatic and semi-aquatic species may potentially have access to onsite habitats via the watercourse corridor along the north of the Site and associated off site waterbodies. It is further estimated that more mobile, flying species, such as bats, birds, and insects, would be more readily able to commute to the Site from surrounding habitats.

1.4 Ecological Context

- 1.4.1 A previous ecological report was undertaken by PJC Ecology in 2012. The report concluded that;
- “The site largely consists of semi-improved grassland with a short sward height due to regular grazing with rough grassland edges. There are several different habitat types on site including:*

semi-improved grassland; scrub; tree lines; hardstanding in the form of a small road; a stream and a pond.

The semi-improved grassland on site is grazed throughout the year by horses. Regular grazing means that the grassland has a relatively low ecological value for protected species.”

- 1.4.2 Five ponds have been identified to be on site or within 500 metres of the site. One pond is located on site and four within 500m of the redline boundary. No great crested newts or signs of great crested newts were found during the four survey visits to the ponds previously assessed.
- 1.4.3 Furthermore, there were several trees identified on Site as well as peripheral features which were recorded as having suitability to support bats and breeding birds.

1.5 Compliance with Policy, Guidance and Legislation

- 1.5.1 A summary of national planning policy and wildlife legislation relating to development projects in England is provided in Appendix A. The protocols, evaluations and recommendations contained within this report were made in accordance with these policies and legislation.

2. APPROACH

2.1 Introduction

2.1.1 This report has been produced with reference to current guidelines for ecological assessments (e.g. CIEEM, 2017 and 2017a) although adapted to be appropriate for the conditions on Site. Reference was also made to BS42020:2013: Biodiversity – Code of Practice for Planning and Development. The assessment comprised the following:

- Desk study; and
- Extended Phase 1 Habitat Survey.

2.1.2 Table 2.1 summarises the geographical extent of the study.

Table 2.1 Geographical extent of study

Element	Study area
Desk study	1 – 5 km. See Table 2.2 for specific details
Detailed Extended Phase 1 Habitat Survey	Site boundary
Local site context (broad habitat types)	Approx. 50 m from Site boundary (identified from within Site only)

2.1.3 Full survey methodologies are provided in Appendix B and summarised below. Details of dates, surveyors, weather conditions and a review of survey limitations are provided in Appendix C. Definitions of technical terms used in this report are provided in the Glossary in Section 8. Common names of species are used throughout the report with scientific names provided in Section 8.2.

2.2 Desk Study

2.2.1 The desk study involved gathering and analysing existing ecological focused data within the Site boundary and extending to 5 km. The results of the desk study aid in the interpretation of the survey results. Table 2.2 provides a summary of the data and their sources reviewed in the desk study.

2.3 Extended Phase 1 Habitat Survey

2.3.1 An Extended Phase 1 Habitat Survey was undertaken at the Site in accordance with industry standards (JNCC, 2010) and best practice guidance although adapted to be appropriate to the Site. The conditions and assessors of the survey are provided in the Appendix. The methodologies of the survey techniques are provided in the Appendix.

Habitats

2.3.2 The vegetation and broad habitat types within the Site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (2019). The Site was also appraised for its suitability to support notable flora, with regard to the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

- 2.3.3 In line with the emerging requirements of Biodiversity Net Gain Assessment, the condition of the habitats were also assessed against the habitat condition criteria relevant to the Biodiversity Metric 3.1.

Protected and Notable Species

- 2.3.4 The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRow Act, those given extra protection under the NERC Act, and species included in the UK BAP.

Table 2.2 Desk study data sources

Data ¹	Search area	Source ²	Justification of search area
Species			
Protected & Notable Species	1 km	A, B, E	The Site is anticipated to have some ecological value associated with the grassland, stream, hedgerows and peripheries of the Site. The majority of the Site and its habitats are common and widespread throughout Britain. In peripheral areas or selected habitat areas, the Site may have limited potential to support protected and notable species such as reptiles and nesting birds.
European Protected Species Licence Applications (excl. bats)	1 km	B	The Site is largely grazed and is likely to have limited ecological value, however it may hold potential to provide limited areas of terrestrial and aquatic habitat for great crested newts. Impacts on newt populations/meta populations can be cumulative arising from other developments off the Site. A review of licence applications within the local area can provide indicative implications if great crested newt habitat is confirmed on the Site. It also helps in reviewing the conservation status of the species in the area.
European Protected Species Licence Applications (bats)	5 km	B	There is some potential that the Site supports features that may be used by bat species and that may be lost through the works. Bats can travel a number of kilometres from their roosts in a single night to forage. A wider search area provides an indication of the potential value that the Site may have for foraging bats based on known roosts that have been affected by other development in the area.
Non-native Invasive Species	1 km	A	There is low potential for non-native invasive species on Site.
Habitats			
UK Priority Habitats	1 km	B, D	The Site is anticipated to have limited ecological value given that it largely comprises of a managed agricultural landscape and is unlikely to provide high value linkages through the wider landscape. Small areas of woodland and hedgerow lines may have elevated value.
Ancient Woodland	1 km	B	
Other notable habitats	1 km	A, B	
Change over time/landscape context	1 km	C	To provide an indication of ecosystem connectivity into the wider landscape and subsequent movement of protected and notable species.
Sites			
Statutory Protected Sites – Impact Risk Zones	Site	B	To assess whether any SSSI/SACs are likely to be impacted upon by the works.
Non-statutory Protected Sites (e.g. LWS)	1 km	A	To assess whether any LWSs are likely to be impacted upon by the works.

Data ¹	Search area	Source ²	Justification of search area
Statutory Protected Sites	2 km (5 km for bats)	B	These sites may have been designated for their populations of European Protected Species (EPS). As the Site has potential to support EPS a wider consideration of statutory protected sites is required.
Notes ¹ See glossary for definitions and species and habitats considered. ² A. Local Biological Records Centre: West Sussex Biological Records Centre [accessed 09/08/2022]. B. MAG/C (Multi-Agency Geographic Information for the Countryside) [accessed 22/07/2022]. C. Readily available aerial images and current/historic map sources. D. Woodland Trust Ancient Tree Inventory [accessed: 22/07/2022]. E. PTES The Big Hedgehog Map [accessed: 22/07/2022].			

2.4 Limitations

- 2.4.1 Full considerations of limitations are provided in Appendix C; in brief, it is considered that none of the limitations identified were sufficient to negatively affect the overall outcome of the assessment.

2.5 Evaluation and Review

- 2.5.1 Upon completion of the desk study and field surveys the evaluation and review will consider each of the following -
- Habitats:
 - reviewed in relation to S41 Priority Habitats descriptions;
 - reviewed in relation to Local Biodiversity Plans;
 - condition assessed using criteria used in the Biodiversity Metric 3.1; and
 - potential to support protected and notable species.
 - Species – focusing on protected and notable species:
 - evidence on Site;
 - potential to occur on Site based on habitats, connectivity and known records;
 - Potential constraints to development (legal and policy implications relating to wildlife); and
 - Potential for biodiversity enhancement.
- 2.5.2 The majority of impacts associated with development relate to species, including through habitat loss, fragmentation and deterioration, as well as direct harm and indirect effects. Therefore, until any necessary species-specific surveys, based on the outcome of this habitat focused ecological assessment, are completed, it is not feasible to identify specific impacts in relation to developing the Site.

3. RESULTS

3.1 Desk Study

3.1.1 Full documentation of the data considered as part of this Ecological Assessment is provided in Appendix D. This section presents the key findings of significance to development at the Site. Species records are considered within the last 10 years (from date of desk study). The exception to this is species that are typically under recorded and/or have low dispersal rates, such as dormouse and white clawed crayfish. Other exceptions would be species likely to have strong associations with the habitats onsite, such as black redstarts and derelict buildings and structures on urban sites.

3.1.1 A data search on *MAGIC* was completed on 22nd July 2022.

Statutory Designated Sites of Nature Conservation Importance

3.1.2 There are no statutory designated sites of nature conservation importance located within the Site itself.

3.1.3 The Site lies within 2 km of two statutory designated sites of nature conservation importance. These sites are summarised in Table 3.1.

Table 3.1 Statutory designated sites of nature conservation importance within 2 km of the site

Site	Designation ¹ & area	Proximity (distance/direction) & connectivity to Site	Summary description ²
Wolstonbury Hill SSSI	SSSI 58.6 ha	Approximately 1.7 km south west of the Site with good connectivity via woodland blocks, residential gardens, hedgerows and an agricultural landscape.	The chalk downland of Wolstonbury Hill is rich in flowering plants and includes a number of uncommon species. Woodland is established in parts of the site.
South Downs	National Park 1,625 km ²	Approximately 200 m south of the Site with good connectivity via grassland, woodland, residential pathways and arable landscape.	A national park which covers a wide area within southern England, from Winchester to Eastbourne. The area covers miles of chalk grassland, numerous areas of ancient woodland and heathland valleys. The area contains regions with high importance for ecology, geology and geography.
Notes ^{1,2} Provided by MAGIC (22/07/2022)			

3.1.4 The Site lies within the Impact Risk Zone (IRZ) of the Wolstonbury Hill SSSI and Beeding Hill to Newtimber Hill SSSI. The following have been identified as potential risks and causes of risk to this designated site if such development takes place within the area under assessment:

- **Infrastructure:** Airports, helipads and other aviation proposals.
- **Air Pollution:** Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t).

- **Combustion:** General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
- **Waste:** Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.
- **Composting:** Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

- 3.1.5 The development proposal within the Site are not listed as potential risks and causes of risk to the SSSI's outlined above, as such consultation with Natural England during the planning application stages is not deemed necessary.

Non-Statutory Designated Sites of Nature Conservation Importance

- 3.1.6 The Site does not lie within 1 km of any non-statutory designated sites of nature importance, as informed by West Sussex Biological Records Centre (accessed 09/08/2022).

Priority Habitats

- 3.1.7 Priority habitats returned by the desk study are listed in Appendix D. In summary, the following UK Priority Habitats occur (as depicted on *MAGIC*) within 1 km of the Site:
- **Deciduous Woodland:** 18 blocks of 69 parcels, the closest of which are located 130 m east of the Site.
 - **Woodpasture and Parkland:** 1 parcel of two blocks, the closest of which is located 300 m south of the Site.

Notable Habitats

- 3.1.8 The following non-priority but notable habitats occur within 1 km of the Site:
- **Ancient: Semi-natural:** 10 blocks of 15 parcels, the closest of which is 450 m south of the Site.
 - **No main habitat but additional habitat exists:** 2 blocks of 2 parcels, the closest of which is located approximately 320 m south east of the Site.
- 3.1.9 A review of the Woodland Trust Ancient Tree Inventory (Woodland Trust, 2022) as of 22/07/2022 highlighted two ancient and two veteran trees on the Site or within 1 km of its boundaries; these are described in Table 3.2.

Table 3.2 Woodland Trust Ancient Tree Inventory trees within 1 km of the study area

Tree sp.	WT ref.	Location	Distance	Direction
Pedunculate Oak	8704	TQ 28802 15604	450 m	SW
Pedunculate Oak	8705	TQ 28754 15475	525 m	SW
Pedunculate Oak	204899	TQ 28731 15013	750 m	SW
Field maple	14003	TQ 28425 15430	825 m	SW

Protected Species

Bats:

- 3.1.10 The Site does not lie within 5 km of a statutory designated site of nature conservation importance designated for bats.
- 3.1.11 A search on *MAG/IC* returned ten bat development licence applications within 5 km of the Site. The details of these applications are listed below in Table 3.3.

Table 3.3 Development bat license applications within 5 km of the Site identified during the data search

Species	Date	Proximity (distance/direction) & connectivity to Site	Licenced activity
Common pipistrelle	01/07/2014-31/10/2015	~1.5 km southeast Good connectivity to the Site via agricultural landscape, woodland blocks and residential gardens.	Destruction of a resting place.
Common pipistrelle and soprano pipistrelle	23/09/2020-30/06/2026	~3 km northwest Some connectivity to the Site via semi-urban corridors and some agricultural corridors.	Destruction of a resting place
Common pipistrelle and Brown long eared bat	01/03/2012-31/12/2013	~3.1 km east Some connectivity to the Site via semi-urban corridors and some agricultural corridors.	Destruction of a resting place.
Common pipistrelle and soprano pipistrelle	09/04/2019-31/05/2026	~ 3.6 km west Good connectivity to the Site via agricultural landscape.	Destruction of a resting place.
Brown long eared bat	01/10/2014-30/11/2019	~3.7 km northwest Some connectivity to the Site via semi-urban corridors and some agricultural corridors.	Destruction of a resting place and damage of a resting place.
Brown long eared bat, whiskered bat and serotine bat	25/03/2020-31/03/2025	~3.9 km east Good connectivity to the Site via agricultural landscape, railway line, woodland blocks and the residential gardens.	Destruction of a resting place.
Common pipistrelle	12/10/2016-31/10/2016	~4.4 km northeast Good connectivity to the Site via agricultural landscape, railway line, woodland blocks and the residential gardens	Impact on a breeding site, damage of breeding site, damage of a resting place, destruction of breeding site, and destruction of a resting place.

Species	Date	Proximity (distance/direction) & connectivity to Site	Licenced activity
Brown long eared bat and soprano pipistrelle	29/10/2020-28/10/2025	~4.5 km northeast Good connectivity to the Site via agricultural landscape, railway line, woodland blocks and the residential gardens	Destruction of a resting place.
Soprano pipistrelle	19/09/2014-01/08/2017	~4.8 km north Good connectivity to the Site via agricultural landscape, railway line and the residential gardens	Impact on a breeding site and damage of a breeding site.
Brown long eared bat	29/01/2015-28/01/2025	~4.9 km south Good connectivity to the Site via agricultural landscape, hedgerows woodland blocks and a railway corridor.	Destruction of a resting place.

Great Crested Newt:

- 3.1.12 A number of ponds are present on and within 500 m of the Site. A search on *MAGIC* returned seven great crested newt class licence returns within 1 km of the Site.
- 3.1.13 One European protected species application for great crested newt was granted within 1 km of the Site, as depicted on *MAGIC*. This record was 650 m north east of the Site with good connectivity via agricultural fields, woodland blocks, hedgerows and a stream.

Other Protected Species:

- 3.1.14 No other European Protected Species development licence applications were identified within 1 km of the Site, as depicted by *MAGIC* (22/07/2022).
- 3.1.15 Table 3.4 summarises the protected species records, as provided by West Sussex Biological Records Centre, returned 09/08/2022, that occur within 1 km (2 km for bats) of the Site within the last 10 years.

Table 3.4 Protected species recorded within 1 km (2 km for bats) of the Site (as provided by West Sussex Biological Records Centre (accessed 09/08/2022))

Species	Level of protection ¹	Summary of records ²		
		N. ^o , distribution & connectivity	Distance, direction & date	
Amphibians & Reptiles				
Grass Snake	UK (En)	3 records with some connectivity to the Site via scrub, woodland and rough grassland.	~370 m east 16/05/2013	~700 m northeast 20/05/2015
Great crested newt	EU & UK (En.)	42 records, all with some connectivity to the Site via woodland edges, residential gardens, grassland, ditches and waterbodies.	~220 m southeast 05/06/2014	~580 m northeast 21/05/2018
Slow-worm	UK	6 records, the majority having some connectivity to the Site via scrub, woodland and rough grassland.	~550 m south (within Stonecroft copse)	~820 m northeast 20/05/2015

Species	Level of protection ¹	Summary of records ²		
		N-º, distribution & connectivity	Distance, direction & date	
			Nearest	Most recent
			01/06/2013	
Bats				
Barbastelle bat species	EU & UK (En)	1 record with slight connectivity to the Site via woodland parcels/edges and residential pathways.	~2 km west 07/07/2020	~2 km west 07/07/2020
Bat species	UK	4 records, all with some connectivity to the Site via woodland parcels/edges, arable landscape, gardens and water corridors/bodies.	~780 m south 07/08/2020	~780 m south 07/08/2020
Bechstein's bat	EU & UK (En)	7 records in 5 locations, all with some connectivity to the Site via woodland corridors, parcels and edges.	~180 m south 18/09/2021	~370 m southeast 20/09/2021
Brown long-eared bat	EU & UK (En)	14 records, all with some connectivity to the Site via woodland parcels/edges, hedgerows, scrub, residential gardens and arable landscape.	~180 m south 03/10/2017	~620 m northeast 19/09/2019
Common pipistrelle	EU & UK (En)	75 records in several locations, the majority with some connectivity to the Site via woodland parcels/edges, residential gardens and arable landscape.	~390 m southeast 02/11/2014	~2 km northwest 03/10/2021
Daubenton's bat	EU & UK (En)	2 records, both with some connectivity to the Site via open woodland, parkland and water corridors.	~2 km southeast 07/08/2020	~2 km southeast 07/08/2020
Long-eared bat species	EU & UK (En)	11 records with some connectivity to the Site via residential gardens, woodland, parkland, scrub, arable landscapes and hedgerows.	~320 m southeast 20/07/2017	~2 km southwest 07/07/2020
Myotis bat species	EU & UK (En)	10 records, the majority with good connectivity to the Site via residential gardens, arable landscapes and hedgerows.	~420 m southeast 27/07/2017	~1.4 km northeast 18/08/2017
Nathusius's pipistrelle	EU & UK (En)	4 records the majority of which with some connectivity to the Site via scrub, water corridors and woodland.	~750 m southeast 17/06/2015	~1.4 km southwest 02/06/2020
Natterer's bat	EU & UK (En)	4 records, all of which with some connectivity to the Site via residential gardens, water corridors, woodland, arable landscapes, and hedgerows.	~390 m southeast 27/07/2017	~390 m southeast 27/07/2017
Noctule bat	EU & UK (En)	18 records in 10 locations, the majority of which with some connectivity to the Site via scrub, water corridors and woodland.	~390 m southeast 20/07/2017	~1.6 km south 27/07/2021
Pipistrelle species	EU & UK (En)	10 records, the majority with good connectivity to the Site via residential pathways, gardens,	~390 m southeast 16/04/2020	~690 m southwest 07/08/2020

Species	Level of protection ¹	Summary of records ²		
		N-º, distribution & connectivity	Distance, direction & date	
			Nearest	Most recent
		woodland, hedgerows, parkland, water corridors and arable landscape.		
Serotine bat	EU & UK (En)	11 records with good connectivity to the Site via residential gardens, woodland, arable landscapes and hedgerows.	~400 m southeast 20/07/2017	~1.3 km south 16/05/2020
Soprano pipistrelle	EU & UK (En)	19 records, the majority of which having good connectivity to the Site via residential gardens, woodland, arable landscapes and hedgerows.	~330 m southeast 06/07/2017	~2 km southwest 21/09/2021
Western barbastelle	EU & UK (En)	1 record with some connectivity to the Site via woodland parcels, hedgerows and waterbodies.	~2 km southwest 24/04/2020	~2 km southwest 24/04/2020
Whiskered bat	EU & UK (En)	3 records, all with slight connectivity to the Site via parkland, woodland and water corridors.	~2 km northwest 15/09/2017	~2 km northwest 15/09/2017
Birds				
Barn owl	UK	20 records, with the majority having good connectivity to the Site via arable landscape, woodland, grassland and parkland.	~150 m west 26/07/2020	~1 km northwest 03/11/2021
Kingfisher	UK	7 records with slight connectivity to the Site via water corridors.	~1 km west 03/08/2016	~1 km west 03/08/2016
Merlin	EU & UK (En.)	1 record with slight connectivity to the Site via scrub, parkland, grassland and open woodland.	~1 km southeast 09/12/2012	~1 km southeast 09/12/2012
Mammals				
Hazel dormouse	EU & UK (En.)	1 record with slight connectivity to the Site via woodland corridors and parcels.	~550 m south (within Stonecroft copse) 15/07/2019	~550 m south (within Stonecroft copse) 15/07/2019
Notes 1. EU – European; UK – UK; (En) – also a notable species in England, e.g. UK Priority/S41 species. Refer to Glossary for details and definitions. 2. As provided the West Sussex Biological records Centre (09/08/2022).				

Notable Species

- 3.1.16 There are no grassland or farmland bird assemblages within 1km of the Site. Species that have shown to form assemblages within 1 km of the Site include, curlew and turtle dove. Turtle dove assemblages overlapped with the Site itself, therefore, there is potential that this species may occur on or use the Site if suitable habitat is present.
- 3.1.17 There are eight hedgehog records present within 1 km of the Site as depicted on the Big Hedgehog Map, (PTES, 2022) as of 22/07/2022. The closest of these records are located approximately 20 m west of the Site with good connectivity via residential gardens.

- 3.1.18 Table 3.5 summarises the notable species records, as provided by the West Sussex Biological Records Centre, returned 09/08/2022, that occur within 1 km of the Site and within the last 10 years. This Table excludes any species that are specifically protected (see Table 3.4).

Table 3.5 Notable species recorded within 1 km of the Site (as provided by the West Sussex Biological Records Centre (returned 09/08/2022))

Species	Status				Summary of records		
	BAP ¹	S41	BoCC ²	Other ³	N- ^o , distribution & connectivity	Distance, direction & date Nearest	Most recent
Birds							
Common gull			☐		13 records with some connectivity to the Site via water bodies/corridors, grassland and arable landscape.	~1 km southeast 21/04/2013	~770 m north 02/01/2014
Cuckoo	☐	☐	☐		2 records, both with some connectivity to the Site via grassland, woodland and residential pathways.	~920 m southwest 30/06/2020	~920 m southwest 30/06/2020
Green woodpecker				Nb	6 records with some connectivity to the Site via scrub, woodland and parkland.	~1 km northwest 01/06/2015	~1 km northwest 01/06/2015
Grey wagtail			☐		5 records with some connectivity to the Site via water corridors, grassland, hedgerows and woodland.	~1 km southeast 15/05/2019	~1 km southeast 15/05/2019
Hawfinch	☐	☐	☐		2 records with good connectivity to the Site via scrub, woodland and hedgerows.	~300 m north 02/04/2018	~300 m north 02/04/2018
Herring gull	☐	☐	☐		3 records with some connectivity to the Site via water bodies/corridors, grassland and arable landscape.	~770 m north 14/11/2014	~770 m north 14/11/2014
House martin			☐		4 records with some connectivity to the Site via arable landscape, residential pathways/features and grassland parcels.	~780 m west 29/06/2015	~790 m west 10/08/2020
House sparrow	☐	☐	☐		1 record with some connectivity to the Site via arable landscape, hedgerows and grassland parcels.	~1 km northwest 14/03/2014	~1 km northwest 14/03/2014
Kestrel			☐		2 records with some connectivity to the Site via arable landscape, roadways' and grassland parcels.	~900 m north 11/06/2014	~900 m north 11/06/2014
Lapwing	☐	☐	☐		1 record with some connectivity to the Site via grassland, waterbodies and fields.	~770 m north 07/05/2014	~770 m north 07/05/2014
Little grebe				Nb	1 record with slight connectivity to the Site via water corridors.	~1 km northwest 14/03/2014	~1 km northwest 14/03/2014

Mallard			☐		4 records with some connectivity to the Site via water bodies/corridors and grassland.	~240 m south 01/06/2013	~720 m north 01/06/2015
Meadow pipit			☐		3 records with some connectivity to the Site via grassland, meadows and arable landscape.	~1 km northwest 07/05/2014	~1 km northwest 07/05/2014
Mistle thrush			☐		1 record with some connectivity to the Site via grassland, woodland and parkland.	~1 km northwest 30/01/2014	~1 km northwest 30/01/2014
Nightingale			☐		1 record with some connectivity to the Site via grassland and hedgerows.	~680 m east 01/05/2020	~680 m east 01/05/2020
Skylark	☐	☐	☐		18 records in 3 locations, all of which with some connectivity to the Site via arable land and hedgerows.	~560 m northwest 05/05/2020	~560 m northwest 05/05/2020
Song thrush	☐	☐	☐		6 records with some connection to the Site via grassland parcels and residential pathways.	~1 km northwest 01/06/2015	~1 km northwest 01/06/2015
Starling	☐	☐	☐	NT	3 records with some connection to the Site via grassland parcels and residential pathways.	~1 km northwest 16/12/2014	~1 km northwest 16/12/2014
Stock dove			☐		14 records with good connectivity to the Site via grassland, arable landscape and residential pathways.	~550 m south 03/07/2019	~1 km southeast 03/07/2019
Tawny owl			☐		2 records with some connectivity to the Site via residential gardens, woodland and riparian corridors.	~320 m south 26/06/2014	~320 m south 26/06/2014
Yellowhammer	☐	☐	☐		9 records with some connectivity to the Site via arable land and hedgerows.	~1 km northwest 01/06/2015	~1 km northwest 01/06/2015
Fungi							
Fibrous waxcap				LR	1 record with slight connectivity to the Site via grassland.	~740 m west 02/10/2020	~740 m west 02/10/2020
Invertebrates							
Autumnal Rustic	☐	☐			1 record with some connectivity via hedgerows, woodland and woodland fringes.	~1 km northwest 10/10/2020	~1 km northwest 10/10/2020
Beaded chestnut	☐	☐			9 records in the same location, all with some connectivity to the Site via hedgerows, woodland, gardens and grassland.	~1 km northwest 06/11/2020	~1 km northwest 06/11/2020
Black groundling				Nb	1 record with some connectivity to the Site via hedgerows, woodland, gardens and grassland.	~1 km northwest 18/07/2020	~1 km northwest 18/07/2020

Blood-vein	☐	☐			2 records with some connectivity to the Site via wet ditches, hedgerows and residential gardens.	~1 km northwest 23/08/2020	~600 m east 23/08/2020
Brindled beauty	☐	☐			4 records with some connectivity to the Site via woodland, scrub, hedgerows and gardens.	~1 km northwest 16/04/2020	~1 km northwest 16/04/2020
Brown-spot pinion	☐	☐			1 record with some connectivity to the Site via woodland, scrub and gardens.	~1 km northwest 05/10/2020	~1 km northwest 05/10/2020
Brown-veined neb				LR	1 record with some connectivity to the Site via ditches, grassland and gardens.	~1 km northwest 07/08/2020	~1 km northwest 07/08/2020
Brussels Lace				LR	6 records in the same location, some connectivity to the Site via woodland, scrub and gardens.	~1 km northwest 18/07/2020	~1 km northwest 18/07/2020
Buff ermine	☐	☐			9 records, all with at least some connectivity to the Site via gardens, hedgerows, green spaces and woodland.	~1 km northwest 26/08/2020	~1 km northwest 26/08/2020
Centre-barred swallow	☐	☐			9 records in the same location, all with some connectivity to the Site via woodland and hedgerows.	~1 km northwest 21/09/2020	~1 km northwest 21/09/2020
Cinnabar	☐	☐			2 records, both with good connectivity to the Site via grassland, gardens and allotments.	~100 m south 09/07/2019	~1 km northwest 19/05/2020
Comfrey ermel				Na LR	1 record with some connectivity to the Site via damp grassland and woodland.	~1 km northwest 31/07/2020	~1 km northwest 31/07/2020
Common wainscot				LR	14 records, all with some connectivity to the Site via grassland, gardens and scrub.	~1 km northwest 22/09/2020	~1 km northwest 22/09/2020
Dark-barred twin-spot carpet	☐	☐			1 record with some connectivity to the Site via gardens, grassland, woodland and hedgerows.	~600 m east 04/06/2020	~600 m east 04/06/2020
Deep-brown dart	☐	☐			7 records within the same location, all with some connectivity to the Site via open grassland, parkland and meadows.	~1 km northwest 08/10/2020	~1 km northwest 08/10/2020
Dusky brocade	☐	☐			1 record with some connectivity to the Site via pastures, woodland and hedgerows.	~1 km northwest 09/06/2020	~1 km northwest 09/06/2020
Dusky thorn	☐	☐			18 records, all with some connectivity to the Site via woodland parcels, margins,	~1 km northwest 22/09/2020	~1 km northwest 22/09/2020

					hedgerows and residential gardens.		
Feathered gothic	☐	☐			1 record with some connectivity to the Site via gardens, woodland, parkland and grassland.	~1 km northwest 02/09/2020	~1 km northwest 02/09/2020
Figure of eight	☐	☐			2 records with some connectivity to the Site via hedgerows, woodland, gardens and grassland.	~1 km northwest 02/11/2020	~1 km northwest 02/11/2020
Ghost moth	☐	☐			1 record with some connectivity to the Site via hedgerows, woodland, gardens and grassland.	~1 km northwest 20/06/2020	~1 km northwest 20/06/2020
Grass rivulet	☐	☐		LR	1 record with some connectivity to the Site via meadows, grassland and ditches.	~1 km northwest 09/06/2020	~1 km northwest 09/06/2020
Great oak beauty				LR	1 record with some connectivity to the Site via woodland parcels, edges and hedgerows.	~1 km northwest 15/06/2020	~1 km northwest 15/06/2020
Green-brindled crescent	☐	☐			3 records in the same location, all with some connectivity to the Site via hedgerows, woodland, gardens and grassland.	~1 km northwest 22/10/2020	~1 km northwest 22/10/2020
Hedge rustic	☐	☐			1 record with some connectivity to the Site via open grassland.	~1 km northwest 14/09/2020	~1 km northwest 14/09/2020
Hornet hoverfly				LR	1 record with some connectivity to the Site via gardens, allotments, grassland and field margins.	~890 m west 04/09/2021	~890 m west 04/09/2021
Knot grass	☐	☐			6 records in the same location, all with some connectivity to the Site via grassland, field margins and gardens.	~1 km northwest 26/07/2020	~1 km northwest 26/07/2020
Lackey	☐	☐			2 records, both with some connectivity to the Site via hedgerows and woodland.	~1 km northwest 25/06/2020	~1 km northwest 25/06/2020
L-album wainscot				LR	5 records, all with some connectivity to the Site via grassland and ditches.	~1 km northwest 01/10/2017	~1 km northwest 10/10/2020
Lunar thorn				LR	1 record with some connectivity to the Site via woodland, scrub and gardens.	~1 km northwest 12/04/2020	~1 km northwest 12/04/2020
Maple pug				LR	1 record with some connectivity to the Site via woodland and hedgerows.	~1 km northwest 31/07/2020	~1 km northwest 31/07/2020
Marsh grey				LR	1 record with some connectivity to the Site via grassland, hedgerows, woodland and gardens.	~1 km northwest 23/07/2020	~1 km northwest 23/07/2020

Mocha				LR	6 records, all in the same location with some connectivity to the Site via hedgerows, woodland and tree-lines.	~1 km northwest 04/09/2020	~1 km northwest 04/09/2020
Mottled rustic	☐	☐			4 records, all with some connectivity to the Site via grassland, hedgerows and gardens.	~1 km northwest 31/07/2020	~1 km northwest 31/07/2020
Mouse moth	☐	☐			1 record with some connectivity to the Site via grassland, woodland, hedgerows, field margins and gardens.	~1 km northwest 09/08/2020	~1 km northwest 09/08/2020
Oak hook-tip	☐	☐			19 records in the same location, all of which with some connectivity to the Site via woodland, hedgerows and gardens.	~1 km northwest 22/09/2020	~1 km northwest 22/09/2020
Obscure wainscot				LR	1 record with slight connectivity to the Site via wet grassland and ditches.	~1 km northwest 20/06/2020	~1 km northwest 20/06/2020
Orange footman				LR	1 record with some connectivity to the Site via hedgerows and woodland.	~1 km northwest 21/05/2020	~1 km northwest 21/05/2020
Pale eggar	☐	☐			1 record with some connectivity to the Site via woodland edge habitat and rough grassland.	~1 km northwest 04/09/2020	~1 km northwest 04/09/2020
Pied grey				Nb LR	1 record with some connectivity to the Site via grassland, woodland, hedgerows, field margins and gardens	~1 km northwest 25/06/2020	~1 km northwest 25/06/2020
Portland ribbon wave				LR	1 record with some connectivity to the Site via grassland and scrubland.	~1 km northwest 24/05/2020	~1 km northwest 24/05/2020
Powdered quaker	☐	☐			3 records with some connectivity to the Site via field margins, woodland parcels and gardens.	~1 km northwest 22/04/2020	~1 km northwest 22/04/2020
Red-girdled mining bee				LR Na	1 record with some connectivity to the Site via grassland, gardens, parkland and woodland.	~1 km northwest 06/05/2020	~1 km northwest 06/05/2020
Red-green carpet				LR	6 records in the same location, all with some connectivity to the Site via woodland and hedgerows.	~1 km northwest 21/11/2020	~1 km northwest 21/11/2020
Sallow	☐	☐			1 record with slight connectivity to the Site via grassland and damp woodland.	~1 km northwest 14/10/2020	~1 km northwest 14/10/2020
September thorn	☐	☐			1 record with some connectivity to the Site via woodland an hedgerows.	~1 km northwest 09/08/2020	~1 km northwest 09/08/2020

Shaded broad-bar	☐	☐			1 record with some connectivity to the Site via open grassland, hedgerows and woodland.	~1 km northwest 26/07/2020	~1 km northwest 26/07/2020
Small emerald	☐	☐			1 record with some connectivity via grassland, hedgerows and gardens.	~1 km northwest 16/07/2020	~1 km northwest 16/07/2020
Small heath	☐			NT	7 records, with the majority having some connectivity via grassland, meadows, field margins, woodland edges, allotments and gardens.	~400 m east 29/05/2020	~770 m northwest 24/07/2021
Small phoenix	☐	☐			4 records in the same location, some connectivity to the Site via grassland, gardens, greenspace and woodland.	~1 km northwest 07/08/2020	~1 km northwest 07/08/2020
Small square-spot	☐	☐			2 records with some connectivity to the Site via grassland, meadows, field margins, hedgerows and woodland.	~1 km northwest 20/08/2020	~1 km northwest 20/08/2020
Spindle knot-horn				Nb LR	3 records with some connectivity to the Site via gardens, roadside verges, grassland and field margins.	~1 km northwest 19/09/2020	~1 km northwest 19/09/2020
Sprawler	☐	☐			2 records in the same location, both with some connectivity to the Site via hedgerows and woodland parcels.	~1 km northwest 21/11/2020	~1 km northwest 21/11/2020
Varied coronet				LR	2 records with some connectivity via grassland and gardens.	~1 km northwest 25/06/2020	~1 km northwest 25/06/2020
Wall	☐	☐		NT	2 records, both with some connectivity via grassland, meadows, field margins, woodland edges, allotments and gardens.	~730 m west 07/05/2020	~1 km northwest 26/09/2020
Waste grass-veneer				Nb LR	2 records with some connectivity to the Site via grassland and allotments.	~1 km northwest 05/08/2020	~1 km northwest 05/08/2020
Waved black				LR	2 records, both with some connectivity to the Site via ditches, woodland, waterbodies and gardens.	~1 km northwest 07/08/2020	~1 km northwest 07/08/2020
Webb's wainscot				LR	1 record with some connectivity to the Site via ditches, drains and grassland.	~1 km northwest 16/07/2020	~1 km northwest 16/07/2020
White ermine	☐	☐			5 records, some with direct connectivity to the Site via grassland allotments, gardens, hedgerows and scrub.	Onsite (central Site) 23/07/2017	~600 m east 16/07/2020

White-barred knot-horn				Nb LR	1 record with slight connectivity via woodland, hedgerows and parkland.	~1 km northwest 23/06/2020	~1 km northwest 23/06/2020
Mammals							
West European hedgehog	□	□			13 records, with the majority having some connectivity to the Site via residential corridors, gardens, hedgerows woodland and roadside verges.	~220 m south -/11/2017	~220 m south -/11/2017
Plants							
Wild cabbage				NS	2 records with some connectivity to the Site via field margins, grassland, residential gardens and hedgerows.	~1 km northwest 20/08/2020	~1 km northwest 20/08/2020
Wild strawberry				NT	1 record with good connectivity to the Site via hedgerows, woodland parcels/edges and residential gardens.	~200 m south 01/06/2013	~200 m south 01/06/2013
Notes 1. Biodiversity Action Plan: UK – UK 2. Birds of Conservation Concern: R - Red listed; A – Amber listed 3. Other: Great Britain Threat Status: EN – Endangered; NT – Near Threatened; VU – Vulnerable; NS – Nationally Scarce; LR – Locally Rare; Na – Notable (a); Nb – Notable (b) Refer to Glossary for definitions							

Non-Native Invasive Species

- 3.1.19 Ten non-native invasive species that occur within 1 km of the Site and within the last 10 years were returned by the West Sussex Biological Records Centre (accessed 09/08/2022). Qualifying species are principally those with legislative classification, listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) but excludes widely naturalised species such as grey squirrel. Details of these species are highlighted in Table 3.6.

Table 3.6 Non-native invasive species recorded within 1 km of the Site (as provided by West Sussex Biological Records Centre (accessed 09/08/2022))

Species	Designation ¹	Summary of records ²		
		N ^{o.} , distribution & connectivity	Distance, direction & date	
			Nearest	Most recent
Birds				
Canada goose	Sch 9	30 records in 2 locations, the majority with some connectivity to the Site via water corridors/bodies, arable landscape and grassland.	~110 m west 27/01/2019	~110 m west 27/01/2019
Ring-necked parakeet	Sch 9	1 record with good connectivity to the Site via woodland and residential pathways.	~110 m west 09/12/2014	~110 m west 09/12/2014
Plants				
Hybrid bluebell	Local	1 record with some connectivity to the Site via residential gardens, roadside edges, grassland and hedgerows.	~380 m south 01/06/2013	~380 m south 01/06/2013

Species	Designation ¹	Summary of records ²		
		N- ^o , distribution & connectivity	Distance, direction & date	
			Nearest	Most recent
Japanese knotweed	Sch 9	1 record with some connectivity to the Site via gardens, residential gardens, roadside edges, and waste land.	~380 m south 29/10/2014	~380 m south 29/10/2014
Three-cornered garlic	Sch 9	1 record with some connectivity to the Site via residential gardens, roadside edges, grassland and hedgerows.	~660 m east 03/05/2014	~660 m east 03/05/2014
Winter heliotrope	Local	1 record with some connectivity to the Site via ditches, drains, residential gardens and water corridors.	~100 m southwest 01/01/2020	~100 m southwest 01/01/2020
Invertebrates				
Gypsy moth	Local	1 record with some connectivity to the Site via grassland, woodland and residential gardens.	~1 km northwest 20/08/2020	~1 km northwest 20/08/2020
Harlequin ladybird	Sch 9	1 record with some connectivity to the Site via grassland, woodland and residential gardens.	~620 m east 09/04/2017	~620 m east 09/04/2017
Horse-chestnut leaf-miner	Local	4 records in 2 locations, all of which with some connectivity to the Site via tree lines residential gardens, hedgerows and woodland.	~890 m northwest -/2014	~1 km northwest 09/08/2020
Oak processionary	Local	1 record with some connectivity to the Site via grassland, woodland and residential gardens.	~1 km northwest 20/08/2020	~1 km northwest 20/08/2020
Notes 1. Sch 9 – Schedule 9 of the Wildlife Countryside Act 1981 (Amended); Local – Sussex INNS. 2. As provided the West Sussex Biological Records Centre.				

3.2 Extended Phase 1 Habitat Survey: Habitats

Local Context

3.2.1 The following habitats were recorded immediately adjacent to the Site i.e., approximately 50 m from the Site boundary and visible from boundary/inferred from aerial photography:

- **North:** the southern extent of the village of Hurst Wickham, including residential housing, various amenity fields and landscaped areas. Beyond this is an agricultural landscape.
- **East:** to the east is the town of Hurstpierpoint with residential estates/industrial building complexes are also present. Beyond this is an agricultural landscape.
- **South:** Wickham hill road and associated residential properties is directly south of the Site. The majority of the landscape to the south of the Site is dominated by further agricultural landscape predominantly arable.
- **West:** the town of Hassocks including the Thames link railway line which runs north – south. Beyond this is agricultural fields, predominately pasture.

- 3.2.2 The Site boundary encloses around multiple residential properties and agricultural holdings in the centre of the Site which includes an area of Priority Woodland directly adjacent to the Site.

Site

- 3.2.3 A map depicting the distribution of the onsite habitats, as well as relevant photographs and species records on Site are provided in the Appendix.
- 3.2.4 The Site comprises of a poor semi-improved grassland field, associated drains, scrub, ruderal and treelines with scattered trees, a plantation woodland block and a pond. Additional onsite habitats include small areas of species rich neutral grassland.
- 3.2.5 The majority of the Site comprises of poor semi-improved grassland which is grazed year-round by cattle. Owing to the grazing practice within the Site, it is considered the poor semi-improved grassland has reduced diversity.
- 3.2.6 Full details, including species lists and target notes, of each area of onsite habitat, linear features, water courses and water bodies are provided in Appendix E and F.
- 3.2.7 The following habitats were present on the Site:
- 3.2.8 Bare ground - An area of bare ground is situated in the north west corner of the Site.
- 3.2.9 Ditch (dry) - A seasonally dry ditch is present within the site (Photograph 1). This feature is predominantly associated with the line of tree along the northern boundary. It is considered likely that the ditch holds water for short periods of time during the year. However, given that these features support very limited aquatic or emergent vegetation, it is considered likely that the ditch feature at the Site is dry for significant parts of the year. Species associated with the ditch recorded on site included hard rush, soft rush and pendulous sedge. The ditch is namely 1–1.5 m in width, with limited aquatic or emergent vegetation recorded. Indeed, the overshadowing from the adjacent trees has resulted in large sections of the banks supporting only sparse vegetation largely comprising ivy, with occasional common nettle and bramble also present. A small drainage ditch was found along the southern boundary of the Site. This ditch was also dry and was found to support species such as nettle.
- 3.2.10 Line of trees - The field was bordered on the northern, eastern and southern sides by tree lines (Photograph 2). These features are described in more detail in the appendix.
- 3.2.11 Neutral grassland – There are areas of semi-improved neutral grassland along the plantation woodland edge in the east of the Site (Photograph 3). This grassland extends into the woodland ground flora and is protected from grazing by fencing. Species in this area include yarrow, ragwort, glaucous sedge, greater bird's-foot-trefoil, creeping cinquefoil, black knapweed, creeping bent, common fleabane, creeping buttercup, birds-foot trefoil, timothy, Yorkshire fog, creeping thistle, ribwort plantain, common rush, silverweed, broadleaved dock, false oat grass, cocks foot, hairy willowherb and meadow foxtail.
- 3.2.12 Poor semi-improved grassland – The majority of the site consists of poor semi-improved grassland which was grazed by cattle at the time of survey (Photograph 4). The sward height of

the field was generally short, but given cattle numbers were low and grazing was limited there was still some diversity within the grassland albeit limited. The species present within the grassland areas included: meadow foxtail, perennial rye grass, Yorkshire fog, cocks foot, creeping bent, meadow grass, false oat grass, dandelion with occasional ribwort plantain, greater plantain, broadleaved dock, tormentil, timothy, creeping buttercup, common fleabane, common rush and silverweed. Nettle, cows parsley, spear thistle and creeping thistle were found in the longer sward areas of the Site.

- 3.2.13 Ruderal – Within areas of the Site to the south were some sporadic areas of ruderal largely dominated by creeping thistle with other species including bitter dock, broadleaved dock and nettle (Photograph 5)
- 3.2.14 Scrub – areas of scrub were present associated within the peripheries of the Site (Photograph 6). The areas of scrub were comprised chiefly of bramble with occasional dogwood and dog rose.
- 3.2.15 Woodland (plantation) – There is a woodland block within the Site (Photograph 7). The woodland block was dominated by native broadleaf species. The woodland was a recently planted plantation which was relatively young. The woodland adjoins to a line of trees with further mature oak and ash trees. Species included oak, pine sp., hawthorn, birch, hazel, rose sp., wild privet, dogwood, field maple, willow sp., elder, wild cherry and blackthorn.
- 3.2.16 Waterbodies and inundated : There was one onsite pond (Photograph 8 and TN 1). This feature was linked to a wider waterbody network within the surrounding landscape. This pond was situated to the northeast of the Site. The pond has a stream inflow and outflow. At the time of survey the pond was dry however did show evidence that water may be held during periods of the year. Ponds are UK BAP habitats. Species associated with this feature included water mint, pendulous sedge, crack willow, grey willow, common rush, bulrush and alder.

3.3 Extended Phase 1 Habitat Survey: Protected, Notable Species and Non-Native Invasive Species

- 3.3.1 There was direct evidence of the following protected, notable and invasive species on or immediately adjacent to the Site:
- **Nesting birds** – Multiple historic nests were present within various trees within the Site. Furthermore, the Site has areas of, grassland, ruderal, scattered scrub, trees, and woodland which are considered likely to support a range of breeding bird species.
- 3.3.2 Further to the above species, the habitats present within the Site had potential to support the following protected and notable species:
- **Badger** - There were numerous mammal paths found on the Site. Inconclusive evidence of mammal digging was found around the peripheries of the Site within the woodland. However there were no latrines or dung pits observed, nor any signs of badger setts located within or adjacent to the Site boundary.
 - **Bats** – numerous trees with potential negligible – low roosting features, e.g. ivy cladding and some small crevices, waterbodies and patches of vegetation suitable for commuting and foraging. Likely foraging/commuting corridors associated with woodland edge, the

stream corridor and the tree/hedge lines that are present within the Site and along the Site boundaries also.

- **Great crested newt** – A pond is present on Site albeit it was dry during the survey and some areas of suitable terrestrial habitat.

3.3.3 Other species recorded during the survey are listed in Appendix F. The potential for the habitats on Site to support other protected and notable species is discussed in Section 4: Evaluation.

4. EVALUATION

4.1 Introduction

4.1.1 This Section reviews the results of the desk study and field surveys in relation to the proposed development proposals; it:

- Determines the ecological importance of habitats at an appropriate geographic level;
- Determines the likelihood of protected and notable species occurring on the Site;
- Identifies any legal and policy implications for developing the Site in relation to nature conservation sites, habitats and species potentially associated with the Site; and
- Identifies high-level biodiversity net gain opportunities and approach.

4.2 Habitats

4.2.1 Table 4.1 provides a summary of the nature conservation importance of habitats within the Site. Full details of each individual hedgerow condition and habitat area are captured in Appendix E.

Table 4.1 provides a summary of the nature conservation importance of habitats within the Site.

Habitat	Meets UK Priority/Local BAP habitat criteria	Condition ¹	Geographical context ²
Bare ground	No	Poor	Site
Ditches (dry)	No	Poor-moderate	Site
Grassland – semi-improved neutral grassland	No	Good	Site
Grassland – poor semi-improved	No	Poor	Site
Line of trees	No	Moderate	Local
Ruderal	No	Poor	Site
Scrub	No	Poor	Site
Standing water - ponds	Yes	Poor-moderate	Site
Woodland – plantation	No	Moderate	Local
Notes: 1. As determined using the Biodiversity Metric 3.1 guidance. Where it is considered that the condition outcome is inappropriate justification is given in the text. See Appendix E for detailed habitat assessments across 2. Geographic level at which the habitat is considered important			

4.2.2 The ditches present within the Site are small and generally have limited ecological value. However, these features in association with the hedgerows do provide opportunities for certain faunal species and groups to disperse across an agricultural landscape, particularly amphibians.

4.2.3 Poor semi-improved grassland is a common habitat both locally and nationally. This habitat has very low botanical species diversity and low structural diversity. They provide only very limited opportunities to faunal species. As such this habitat is considered of low ecological value at the Site level.

- 4.2.4 There were small areas of semi-improved neutral grassland which are scarcer within the locality and provide a moderate diversity of flowering species. A diverse range of grasses and herbaceous species was recorded within these areas. Therefore, the neutral semi-improved grassland present is considered to be of good ecological value at a local level.
- 4.2.5 Although there were occasional high value trees within the lines of boundary trees, this habitat feature is common and widespread in the local landscape but is still considered to be of Local value.
- 4.2.6 Areas of ruderal and scrub are common habitats. Those present within the Site comprise a limited range of common species in a small area and are therefore considered to be of Site value only.
- 4.2.7 The plantation woodland is considered to be recently planted and is populated by native species. The condition of the broad-leaved plantation woodland was moderate because the blocks are large with some woodland character in certain areas and species diversity of ground flora. The ground flora was species rich particularly in areas which were less densely planted.
- 4.2.8 Under the current proposals, all habitats that meet the UK BAP criteria as priority habitats, are to be wholly retained, and where feasible to do so, enhanced. Connectivity between these habitats and those within the surrounding landscape if further expected to be improved by the proposals for the Site.

4.3 Species

- 4.3.1 This section considers the actual or potential occurrence of protected and notable species (including non-native invasive species) on the Site. It takes account of known data records and habitats on the Site and connectivity, appropriate to given species, across the landscape. Species not specifically listed in this Section are unlikely to occur on the Site on account of at least one of the following factors:

- No habitat on the Site to support the species;
- No connectivity to suitable habitat beyond the Site boundary; and
- Site is outside of the species typical geographic range.

- 4.3.2 Of the protected and notable species with potential to occur on Site:

Bats

- 4.3.3 A search of *MAG/C* identified ten records of protected species licences relating to bats within 5 km of the Site, with several other local biological records returned within 2 km, as depicted by the West Sussex Biological Records Centre. Species within these records included: Barbastelle, Bechstein's bat, brown long-eared, common pipistrelle, Daubenton's bat, myotis bat species, Nathusius's pipistrelle, soprano pipistrelle, Natterer's bat, noctule bat, Serotine bat and whiskered bat.
- 4.3.4 As there are no buildings within the Site and as such roosting potential for bat species is limited to scattered and woodland trees. There were a relatively high number of mature trees within the Site that had a range of features suitable for bat roosting, these included woodpecker holes,

loose bark, broken limbs and general crevices and knots. These features were associated with TN2 and then numerous trees within H2 and H3. Elevated potential roost features were observed in a group of mature oak trees shown as TN2 on BMD.22.0022.DRE.901.

- 4.3.5 The potential for commuting and foraging bats using the Site is assessed as high. This is owing to the presence of numerous well-vegetated habitat corridors that run along the boundaries of the Site which have wider connectivity to ancient woodland within the wider landscape. Foraging resources such as ponds (albeit dry) and the woodland blocks along the eastern boundary provide further important foraging/commuting opportunities for bats within the Site.
- 4.3.6 It is considered that potential for significant bat roosting within the Site is low, however, there is moderate potential for small numbers of roosting bats to be utilising various mature trees. This could include summer roost of species record within the locality. Commuting and foraging bats within the local landscape are considered likely to use the Site readily for both foraging and commuting routes.

Badger

- 4.3.7 The desk study search returned no recent records of badger within 1 km of the Site's boundaries.
- 4.3.8 There were no signs of latrines, digging or dung pits within the Site. However, due to the presence of cows, trampling could have obscured some field signs. Some signs of inconclusive mammal activity were present within the field which could be attributed to badger.
- 4.3.9 No setts are located within the Site itself, however a sett is located in the locality on the eastern embankment of Belmont Lane. This sett showed signs of sporadic use. Given this sett is adjacent to the Site boundaries it is considered that badgers from this sett will use the Site for commuting and foraging particularly along the eastern boundary of the Site where there is elevated ecological resource.
- 4.3.10 This sett is considered to be sufficiently removed from the proposals and hence is not considered to be significantly impacted by the proposals.

Dormouse

- 4.3.11 The desk study search returned one record for hazel dormouse within 1 km of the Site's boundaries. This record is associated with Stonecroft copse approximately 550 m south of the Site, with slight connectivity via woodland corridors. Deciduous Woodland is located in the locality of the Site, as are ancient woodland blocks.
- 4.3.12 There are some small areas along the eastern boundary of the Site which may provide some limited habitat for dormouse owing to the presence of woodland areas (including hazel coppice, and structural diversity). However, this area is considered to be limited and recently established and thus unlikely to support dormice. Hazel dormice are an arboreal species that rarely venture to the ground. Therefore, the improved grassland that comprises the majority of the Site provides negligible opportunities for this species.

- 4.3.13 Furthermore, all hedgerows and woodlands within the Site's redline boundary contained only small proportions of dormouse-suitable tree species such as hazel and are relatively narrow habitat features. As such, it is considered unlikely that significant dormouse populations would be present within the Site.

Great Crested Newt

- 4.3.14 A review of *MAGIC* identified one granted European protected species licence application relating to great crested newt within 1 km of the Site. An additional forty-two records of present GCN were revealed through data published by the West Sussex Biological Records Centre, some of these records have some terrestrial connectivity to the Site.
- 4.3.15 Five ponds have been identified to be on site or within 500 metres of the Site as depicted by *MAGIC*. One pond is located on Site although this was found to be dry at the time of survey. An additional pond to the north east of the Site was also found to be dry at the time of the survey.
- 4.3.16 Previous ecological surveys (PJC Ecology, 2012) indicate that no great crested newts or signs of great crested newts were found during the four survey visits to ponds within 500 m of the Site and within the Site itself.
- 4.3.17 However, the surveys are dating back to 2012 and cannot guarantee the absence of great crested newts in the locality of the Site. The pond within the Site were dry and thus considered unsuitable to support great crested newt during their aquatic and breeding stage. Consequently, great crested newt are considered likely absent from the Site. However, given the drought conditions experienced in the south of England during the summer of 2022 a precautionary approach should be adopted for the development.

Invertebrates

- 4.3.18 West Sussex Biological Records Centre identified several records of notable invertebrate species within the Site's locality, including a large number of notable moths, butterflies and beetles.
- 4.3.19 The overall habitat value of the Site for invertebrates is generally limited due to the improved grassland dominance on Site, although there are areas of woodland and waterbodies (albeit dry) that would provide some opportunities for deadwood and aquatic invertebrates. Overall, the Site is not considered to be of elevated value for notable invertebrates due to the dominance of lower value habitat, however there is limited opportunities present that local invertebrate species may utilise.

Nesting Birds

- 4.3.20 There are no grassland or farmland bird assemblages within 1km of the Site. Species that have shown to form assemblages within 1 km of the Site include, curlew and turtle dove. Turtle dove assemblages overlapped with the Site itself, therefore, there is potential that this species may occur on or use the Site if suitable habitat is present.
- 4.3.21 Several common and widespread bird species were recorded within the Site during the survey which included: house sparrow, red kite, collared dove, song thrush, blue tit, robin, blackbird,

great spotted woodpecker, woodpigeon and great tit. Some of the onsite habitats are suitable for a variety of common, notable and protected birds; particular features of note are the peripheral line of, trees surrounding the Site, areas of ruderal field margins, the mixed woodland in the east of the Site, and the seasonally wet pond in the north east of the Site. It is considered likely that the Site provides a range of nesting opportunities for birds within the local landscape considered to be important at a local level.

4.3.22 Widespread Schedule 1 species, red kite was recorded on the Site during the survey.

4.3.23 Presence of Schedule 1 birds would require bespoke mitigation with regard to any nesting sites, working near to active nests and provision of new habitats for such species.

Reptiles

4.3.24 West Sussex Biological Records Centre identified multiple records of grass snake and slow worm within 1 km of the Site's boundaries. These records have some connectivity to the Site via rough grassland, scrub and woodland.

4.3.25 Habitats within the Site are predominantly poor semi-improved grassland and thus negligible for reptiles. However potential basking, foraging, and shelter opportunities for reptiles are present along the peripheries of the Site and among the eastern boundary of the Site associated with the plantation woodland edge. It is considered that the woodland habitats on the Site provide some limited opportunity for populations of reptiles. However, owing to the majority of the Site comprising poor semi-improved grassland it is considered that significant reptile populations would be absent from the Site. Nevertheless, considering the woodland features within and adjacent to Site, it is likely that reptiles use the Site to some degree for basking, commuting, and foraging.

4.3.26 Current proposals indicate the woodland associated with the eastern boundary of the Site is due to be retained, thus impacts to reptiles are considered to be minimal.

Other Notable Fauna

4.3.1 There are eight hedgehog records present within 1 km of the Site as depicted on the Big Hedgehog Map (PTES, 2022) as of 22/07/2022. The closest of which is located approximately 20 m west of the Site with good connectivity via residential gardens. An additional thirteen records for hedgehog were identified via the West Sussex Biological Records Centre.

4.3.2 The vast majority of the site comprises short-sward, species-poor improved grassland and these habitats are unlikely to support an abundance or diversity of invertebrates, which would provide suitable foraging opportunities for hedgehog. No evidence of any other protected, rare, notable or Priority-listed mammal species was recorded within the Site during the site survey.

4.3.3 Ultimately, based on the habitats recorded on Site, the Site is considered unlikely to support significant populations of other protected or notable species.

Non-Native Invasive Species

- 4.3.4 Records of invasive plants, invertebrates and birds exist in the locality according to West Sussex Biological Records Centre, these species include: Canada goose, ring-necked parakeet, hybrid bluebell, three-cornered garlic, Japanese knotweed, winter heliotrope, gypsy moth, harlequin ladybird, horse-chestnut leaf-minor and oak processionary.
- 4.3.5 Table 4.2 provides a summary of protected and notable species (including non-native invasive species) considered in this assessment. Where there is potential for a species to occur, but no current evidence, the likely associated habitats and location within the Site are given. Associated habitats and location within the Site are also indicated where there is evidence of a species occurring on Site.

Table 4.2 Summary of protected and notable species (including non-native invasive species) considered in this assessment

Species	Status ¹	Confirmed on Site ²	Potential to occur	Associated habitats/location on Site
Badger	UK,	No	Yes	Whole Site
Bat	EU, UK, N	No	Yes – some foraging and commuting habitat; limited roosting potential	Woodland and scattered trees associated with peripheral trees
Birds (breeding, wintering and/or nesting)	UK, N	Yes	Yes – some potential for nesting and foraging	Mature trees, grassland edges, ruderal edges, woodland and peripheries of the Site
Great crested newt	EU, UK, N	No	Yes	Onsite waterbodies and associated terrestrial vegetation, offsite waterbodies near to Site boundaries.
Hedgehog	UK, N	No	Yes – low potential for commuting, foraging and sheltering	Tree lines, field margins, and woodland.
Reptiles	UK, N	No	Yes – low potential for foraging, basking and sheltering	Neutral grassland, and woodlands.
Invasive species (plants)	UK	No	Yes	Woodlands, grassland, disturbed land and watercourses.
Notes 1. EU – European protected. UK – UK protected. N – Notable species 2. Field – field evidence; Desk – desk study evidence.				

4.4 Legal and Policy Implications

Statutory Sites of Nature Conservation

- 4.4.1 The Site lies within the Impact Risk Zone (IRZ) of the Wolstonbury Hill SSSI and Beeding Hill to New timber Hill SSSI. Given that all applications are to be reviewed within this area consultation with Natural England would be required at the planning application stage.

Habitats

- 4.4.2 Ponds often form important stepping-stone habitats for wildlife across agricultural landscapes and are potentially UK BAP habitats. If ponds are assessed to support European protected species, they will meet the criteria for UK BAP habitats. However, given the pond on Site is dry, this is not considered to be a UK BAP habitat based on current information.

Species

- 4.4.3 The potential presence of protected and/or notable species on the Site means that they are a material consideration in the planning system through the NPPF and the Local Planning Policy. The following species/species groups have policy implications if impacted by the proposed development:

- Amphibians (including great crested newt);
- Badger;
- Bats;
- Hedgehog;
- Nesting birds (including schedule 1 birds);
- Reptiles; and
- Invasive plants.

- 4.4.4 Any development of the Site could have impacts on the other listed species if confirmed to be present. The LPA may request further species-specific surveys prior to determining a planning application associated with the Site.

Summary

- 4.4.5 Based on the current known ecological baseline of the Site, Table 4.3 summarises the legal and policy implications in relation to wildlife for developing the Site.

Table 4.3 Legal and policy implications of developing the Site

Habitat	Protected &/or notable species associated with the habitat	Legal implication	Policy implication
Grassland (poor semi-improved and semi-improved neutral)	Potential for reptiles and nesting birds.	Common reptile are protected under domestic legislation. All birds, their nests, and eggs are protected during nesting period.	NPPF & local policy pertaining to protected and notable species. Environment Act 2021

Habitat	Protected &/or notable species associated with the habitat	Legal implication	Policy implication
			NERC Act 2006
Tree lines	Potential for reptiles, hedgehog and nesting birds.	Common reptile and hedgehog are protected under domestic legislation. All birds, their nests, and eggs are protected during nesting period.	NPPF & local policy pertaining to protected and notable species.
Waterbodies-ponds and dry ditch	Potential habitat for bats, GCN, reptiles, and nesting birds. Low risk of invasive plants.	Bats and GCN and their habitats are protected under EU & domestic legislation. Common reptiles are protected under domestic legislation. All birds, their nests, and eggs are protected during nesting period. Potential for Schedule 1 birds (e.g. kingfisher) with additional protection against disturbance during nesting. Invasive plants require control and eradication to prevent them spreading in the wild.	NPPF & local policy pertaining to protected and notable species. Environment Act 2021 NERC Act 2006
Plantation woodland	Potential for nesting birds, badger, bats, GCN (terrestrial phase), hedgehog, nesting birds and reptiles. Risk of invasive plants.	Badgers, their setts, and some associated habitats are protected under the Protection of Badgers Act 1992. Bats and GCN and their habitats are protected under EU & domestic legislation. Common reptile and hedgehog are protected under domestic legislation. All birds, their nests, and eggs are protected during nesting period. Potential for Schedule 1 birds (e.g. red kite) with additional protection against disturbance during nesting. Invasive plants require control and eradication to prevent them spreading in the wild.	NPPF & local policy pertaining to protected and notable species. Environment Act 2021 NERC Act 2006

4.5 Opportunities for Achieving Biodiversity Gain

Habitat Retention and Enhancement

- 4.5.1 It is understood at the time of writing that the areas along the eastern boundary of the Site including the plantation woodland, the pond in the north east corner of the Site and line of trees which are of elevated ecological value are to be retained under the current development plans. As such, it is recommended that these areas are maintained and suitably protected during all

works. Maintaining and enhancing areas of ground flora associated with the plantation woodlands, tree lines and associated periphery grassland will allow natural regeneration of plant communities with opportunities for growth into newly create habitats nearby.

- 4.5.2 It is assumed that the areas of grazed grassland are to be cleared under the current planning proposal. As such, these habitat features cannot be enhanced or retained.

Species and Habitat Enhancement

- 4.5.3 Based on the features present on Site and within the locality the following enhancement opportunities would seem appropriate (to be developed to more detail during the scheme design stages):

- Significant enhancement of onsite woodlands by provision of well-designed edge habitats to include buffer zones such as mixture of native scrub and wildflower-rich grassland;
- Management and enhancement of existing retained woodlands including implementation of ecological features;
- Significant enhancement of designated greenspace areas. Buffering and planting will strategically increase biodiversity and connectivity to wider habitat areas including priority woodland;
- Opportunities for significant improvement of habitat connectivity within the wider area by linking the woodland blocks to other areas of elevated ecological value such as the woodland blocks to the north of the Site;
- Significant enhancement of pond and ditch feature through retention and buffering of waterbodies with thinning of over-shading vegetation and elimination of stock poaching;
- Opportunities for significant improvement of habitat connectivity within the wider area by linking woodlands within the Site with each other (via strengthened/new hedgerows) and the watercourses within the Site;
- Possibility of coordination of wildlife-beneficial greenspace provision with adjacent priority habitat areas to provide landscape-level ecological enhancements and improve ecological connectivity;
- Retention and enhancement of existing line of trees features within the Site in designated wildlife corridors;
- Retention and enhancement of drain features; and
- Increasing number of ponds and wetland areas in an area devoid of such features through habitat creation works and also use of multi-functional SUDS (designed to benefit wildlife) in close proximity to nearby ponds, ensuring good connectivity with adjacent wetland areas.

- 4.5.4 The woodlands should be managed in the long-term to meet criteria of lowland deciduous woodland priority habitat. This would mean achieving:

- A tree canopy comprising of varied mixtures of species including oak, downy birch, silver birch, ash, wych elm, sycamore, holly and hazel. However, the native species from the local context are good indicators of which species should be within the woodland.

- Species rich and varied in structure ground flora including calcicolous shrubs and plants such as dogwood, privet, spindle, wayfaring-tree, guelder rose, dog's mercury and enchanter's nightshade.
- Diversity in the structure and species composition of the ground vegetation as well as maintaining bryophyte and lichen assemblages on Site.
- Trees that are more than 5 m high when mature, and which form a distinct, although sometimes open, canopy with a canopy cover of greater than 20%.
- At least 90% native species.
- Removal of any non-native invasive species

4.5.5 Based on the habitats on the Site, desk study data and local records, the following species-specific enhancement would be appropriate:

- Amphibians (including great crested newt):
 - Retention, protection and enhancement of suitable onsite aquatic and terrestrial habitats, i.e. waterbodies and adjacent vegetated areas;
 - Retention, protection and enhancement of sheltered movement corridors where possible, e.g. existing vegetated field margins and treelines to be retained;
 - Existing refugia, such as dead wood piles and half buried features, to be retained where possible; and
 - Installation of multiple hibernacula within the Site at a suitable distance from waterbodies suitable for amphibians. Final installation details to be agreed by the project ecologist.
- Bats (all species):
 - Retention, protection and enhancement of suitable onsite commuting, foraging, and roosting habitats, i.e. woodlands, and scattered trees;
 - Enhancement of retained waterbodies to improve foraging resources for bats;
 - Bat friendly planting in any soft landscaping areas, e.g. night scented species such as jasmine; and
 - Provisions for artificial bat roosts or 'bat boxes' in new buildings and landscaped areas. In-built features capable of supporting maternity roosts should be prioritised, with the final installation details to be agreed by the project ecologist.
- Birds:
 - Retention, protection and enhancement of suitable onsite foraging and nesting habitats, i.e. rough grassland, waterbodies, and woodlands;
 - Bird-friendly planting to provide additional foraging resources for a variety of species to be included in landscaped areas and boundary features; and
 - Provisions for artificial nesting features or 'bird boxes' in new buildings and landscaped areas. Swift bricks and house martin 'nest cups' should be a core focus of onsite enhancement schemes, with the final installation details to be agreed by the project ecologist.
- Hedgehogs:
 - Retention, protection and enhancement of suitable onsite commuting, foraging and hibernation habitat, i.e. woodlands;

- Retention, protection and enhancement of sheltered movement corridors where possible, e.g. existing vegetated field margins and treelines to be retained; and
- Provisions for marked movement corridors through residential areas of development parcels, so-called 'Hog Highways', should be included within the onsite enhancement scheme. Final installation details to be agreed by the project ecologist.
- Invertebrates:
 - Retention, protection and enhancement of key onsite habitats, i.e. waterbodies and woodlands to encourage presence of species previously found on Site (White ermine);
 - Insect-friendly planting to provide a diversity of foraging resources for invertebrates to be included in any soft landscaping. Planting designs informed by The National Pollinator Strategy (DEFRA 2014);
 - Provisions for artificial nesting and sheltering features in development buildings and landscaped areas. So-called 'Bee Blocks' (or similar units designed for solitary bee occupancy) should be included within onsite enhancement schemes, with the final installation details to be agreed by the project ecologist; and
 - Provisions for bee and beetle banks should be explored across the development where feasible.
- Reptiles:
 - Retention, protection and enhancement of suitable onsite basking, commuting, and foraging habitat, i.e. grasslands, waterbodies, and woodlands; and
 - Retention, protection and enhancement of sheltered movement corridors where possible, e.g. existing vegetated field margins and treelines to be retained.

5. RECOMMENDATIONS

5.1 Surveys

5.1.1 Based on the evaluation documented in Section 4, the following further surveys are deemed appropriate and/or necessary to provide a fuller evaluation of the proposed development:

- Bat – activity surveys and potential tree roosting surveys (if required);
- Great crested newt – eDNA sampling of all onsite waterbodies during appropriate survey window and offsite waterbodies within 250m with potential further population size class assessment if GCN occupation is confirmed; and
- Reptile Survey – along the peripheries of the Site to determine presence and species.

5.1.2 It is recommended that the opportunities for biodiversity enhancement detailed in Section 4.5 are reviewed and considered when developing detailed plans for the scheme.

5.2 Mitigation

5.2.1 This Section is based solely on the current baseline data set out above. It outlines recommended ecological control and protection measures to be undertaken to ensure:

- No harm comes to faunal species (unprotected species as well as protected and notable species);
- There is minimal habitat loss and disturbance;
- No harm comes to the adjacent habitats;
- Pollution risk is minimised;
- Ecological best practice is followed;
- Conformity with current planning requirements pertaining to wildlife; and
- No breaches of current wildlife legislation.

5.2.2 The following mechanisms will ensure implementation of the protection measures:

- **Tool box talk** – To be given to all Site staff, including those joining later in the project. Site staff to be made aware of the safeguard measures put in place and why they are necessary.
- **Suitably qualified ecologist** – To provide advice and guidance as required throughout the development process.

5.2.3 The measures detailed focus on legally protected and notable species but will also ensure harm and disturbance is minimised to other common fauna, such as rabbits and foxes that may utilise the Site.

Generic Safeguarding Measures

5.2.4 Pollution:

- The former Pollution Prevention Guidelines (PPG) have been withdrawn while they are being reviewed and updated. Until such time as new guidance becomes available, standard industry best practice in relation to construction sites and dust production/water pollution

must be adhered. Further guidance is to be documented in a Construction Environmental Management Plan (CEMP). Measures to include:

- Dust damping measures.

5.2.5 Works between sunset and sunrise:

- To be avoided; and
- If works cannot be avoided then there is to be no significant increase in external light and noise over and above what is anticipated in the area post construction.

Habitats – Retained and Adjacent to Site

5.2.6 Woodlands and Tree Lines:

- Appropriate root Protection areas to be defined prior to any works commencing, and maintained throughout the development;
- Establishment and maintenance of a buffer around onsite woodlands, to be clearly marked throughout the development; and
- No spoil to be deposited or works to take place within the protection zones of retained onsite woodlands.

5.2.7 Ponds:

- Protection zones around rivers and ponds to be established and maintained through clearly marked fencing throughout the development. No works should take place within 8 metres (or other buffer requirement set by the appropriate authority) of the ponds on site;
- Management of surface run off around aquatic features within the Site

5.2.8 Air and waterborne pollution:

- Standard industry best practice in relation to construction sites and dust production/water pollution will minimise impacts to retained/adjacent habitats.

Bats

5.2.9 General:

- Woodlands/tree lines are the main habitats within the Site that offer roosting potential for bat species. All woodlands should be retained/enhanced. If any trees are required to be removed, additional inspections by a suitably qualified ecologist would be required prior to any woodland management/works within 15 m of any onsite woodlands.
- Free standing trees are also present and some of these features may also support bat roosting potential. If any trees are required to be removed, additional inspections by a suitably qualified ecologist would be required prior to any works commencing. It is understood that where feasible trees will be retained with hedgerow features within the scheme design.

5.2.10 Lighting:

- No additional flood lighting to be used between sunset and sunrise without agreement with a suitably qualified ecologist; and

- Retained woodlands, ponds, and watercourse corridors to remain as dark corridors during works and post-development with no increase in current light levels where feasible to do so.

Nesting Birds

- 5.2.11 Works impacting on/in close proximity to the onsite line of trees, woodlands and/or rough grass during the core nesting season (March to August inclusive):
- Immediately prior to works commencing (within 48 hours) an inspection by a suitably qualified ecologist to check for any evidence of nesting or nest building birds. If evidence is found, works may be delayed.
- 5.2.12 If nesting birds are found at any stage during construction works:
- All works that are likely to cause disturbance and/or within the zone of influence of the birds, MUST stop and not re-commence until advice has been received from a suitably qualified ecologist; and
 - Depending on the species, situation, stage of nesting and works in immediate vicinity it is likely that an exclusion zone will be put up around the nest and works will be stopped or restricted within the exclusion zone.
 - Schedule 1 bird species would require a bespoke mitigation strategy to be agreed with the suitably qualified ecologist depending on species, stage of nesting and location within the Site.

Great Crested Newt

- 5.2.13 The current proposals wholly retain the ponds which are suitable for great crested newt, the woodland and associated grassland, which are the core suitable habitat for great crested newt within the Site. Losses of sub-optimal habitat near to ponds (e.g. arable land) may require mitigation, which could include requirement for EPS mitigation licence or method statement type approach depending on scale of works and whether great crested newt are confirmed as present and if present the population size.

Other Fauna (including common amphibians, reptiles, and hedgehog)

- 5.2.14 Dependant of timing of works but likely to involve the following supervised by a suitably qualified ecologist:
- Check for presence of mobile fauna. Any animals present to be removed or encouraged to move to a place of safety following best practice at the time;
 - Vegetation to be cut to a height of 150 mm, in a continuous direction allowing any fauna to disperse. All cut material to be removed immediately off-site/to an area that will not be affected by the proposed works; and
 - Check for potential refugia sites and dismantle with care and in a controlled manner. This typically needs to be completed using handheld tools.
- 5.2.15 Hedgehog specific:

- If active hedgehogs are encountered works that are likely to cause disturbance and/or within the zone of influence of the hedgehog MUST stop and not re-commence until advice has been received from a suitably qualified ecologist;
- If required, the Ecological Clerk of Works will carefully move the hedgehog by hand from the construction area to nearby retained habitat features away from construction works; and
- If a hibernating hedgehog is encountered (i.e. during the months of November to February) works MUST stop and a suitably qualified ecologist will assess the situation. If the hedgehog can be left in-situ then the nesting material will be carefully replaced and suitable food/water will be left in the area as a precaution should the hedgehog come out of hibernation. The nest area will be monitored by the a suitably qualified ecologist until it is evident that that hedgehog has moved on. If the hedgehog is left in-situ then habitat connectivity must be maintained, i.e. it must not become isolated by being surrounded by areas of high-risk and/or low suitability. If there is an imperative reason for the clearance works to continue then the a suitably qualified ecologist would be required to carefully relocate the hedgehog within its nesting material to an appropriately sheltered location away from the works area. Food and water would be left in the vicinity of the relocation site as a precaution should the hedgehog come out of hibernation.

6. CONCLUSIONS

6.1.1 Based on the current study:

- The further surveys set out in section 5 are considered necessary in order for the LPA to validate/grant planning permission;
- The Site lies within the Impact Risk Zone (IRZ) of the Wolstonbury Hill SSSI and Beeding Hill to New timber Hill SSSI. Given the proposed development, consultation with Natural England is not considered necessary at the planning application stage.
- No non-statutory designated sites are considered likely to be directly affected by the proposed plans due to the nature of the proposals and intervening landscape between the Site and non-statutory designated sites. Indirect effects would be managed through standard ecological mitigation measures.
- There are S41/Priority Habitats within the area surrounding the Site. However, it was determined that with appropriate retention, buffering, mitigation and precautions, these habitats will not be negatively impacted by the proposed works.
- No protected or notable species will be negatively impacted if appropriate mitigation and precautions are followed, as set out in this report (to be further informed through additional species-specific survey works).
- It is recommended that onsite woodlands and waterbodies should be retained and suitably buffered and protected during any works.
- The proposed works have the potential to provide biodiversity enhancement through implementing various recommendations as outlined in section 4.

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8. GLOSSARY

8.1 Scientific Terms and Acronyms

BoCC Birds of Conservation Concern, the UK Red-list for birds, produced by the British Trust for Ornithology and last updated in December 2015.

BTO British Trust for Ornithology

CIEEM Chartered Institute of Ecology and Environmental Management, the professional organisation and provider of professional codes of conduct for ecological consultancy.

EPS European Protected Species For the purposes of this report EPS are species that require particular licences to allow certain works to go ahead. Species falling within the following situations are not considered as EPS within this report:

Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).

Birds listed on Annex 1 of the Birds Directive (European legislation). The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

FEP Farm Environment Plan

LBAP Local Biodiversity Action Plan.

Level of protection – ‘EU’ Protected under the Conservation of Habitats and Species Regulations (2017) as amended.

Level of protection – ‘UK’ Protected under the Wildlife and Countryside Act 1981 (as amended).

LNR Local Nature Reserve. Statutory designation.

LWS Local Wildlife Site. Non-statutory designation.

NNR National Nature Reserve. Statutory designation.

Non-native invasive species For the purposes of this report: species listed on Schedule 9 of the wildlife and Countryside Act 1981 (as amended). Widely naturalised species, such as grey squirrel, are excluded.

Notable species A species which is listed as a UK Priority Species, carries an unfavourable conservation status (e.g. scarce, rare, threatened, Red-listed), is invasive or is otherwise worthy of note from an ecological perspective.

Protected species A species protected under specific UK or European legislation, including Habitats Directive, Wildlife and Countryside Act.

PTES Peoples Trust for Endangered Species.

pLWS Potential Local Wildlife Site.

SAC Special Area of Conservation. Designated under European Union Habitat Directive (92/43/EEC) to protect species and habitat of European interest.

SPA Special Protection Area. A site designated under the European Union Directive on the Conservation of Wild Birds.

SSSI Site of Species Scientific Interest. Statutory designation of biological or geological importance.

UK Priority Habitat and species A habitat or species identified as a priority for conservation in accordance with Section 41 of the Natural Environment and Rural Communities Act (2006). Section 40 of the Act places a duty on public authorities to have regard for

the conservation objectives of these habitats and species. (Also known as Section 41 (S41) habitats/species).

8.2 Scientific Names

8.2.1 Scientific names of species mentioned in this report are outlined in Table 8.1. This table excludes species recorded on Site; see Appendix F.

Table 8.1 Scientific names of species mentioned within this report

English Name	Scientific Name
Amphibians	
Common toad	<i>Bufo bufo</i>
Great crested newt	<i>Triturus cristatus</i>
Bats	
Barbastelle	<i>Barbastella barbastellus</i>
Bat species	<i>Chiropter sp.</i>
Bechstein's bat	<i>Myotis bechsteinii</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Long-eared bat species	<i>Plecotus sp.</i>
Myotis species	<i>Myotis sp.</i>
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>
Natterer's bat	<i>Myotis nattereri</i>
Noctule bat	<i>Nyctalus noctula</i>
Noctule species	<i>Nyctalus sp.</i>
Pipistrelle species	<i>Pipistrellus sp.</i>
Serotine bat	<i>Eptesicus serotinus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Western barbastelle	<i>Barbastella barbastellus</i>
Whiskered bat	<i>Myotis mystacinus</i>
Birds	
Barn owl	<i>Tyto alba</i>
Canada goose	<i>Branta canadensis</i>
Common gull	<i>Larus canus</i>
Cuckoo	<i>Cuculus Canorus</i>
Green woodpecker	<i>Picus viridis</i>
Grey wagtail	<i>Motacilla cinerea</i>
Hawfinch	<i>Coccothraustes coccothraustes</i>
Herring gull	<i>Larus argentatus</i>
House martin	<i>Delichon urbicum</i>
House sparrow	<i>Passer domesticus</i>
Kestrel	<i>Falco tinnunculus</i>
Kingfisher	<i>Alcedo atthis</i>
Lapwing	<i>Vanellus vanellus</i>
Little grebe	<i>Tachybaptus ruficollis</i>
Mallard	<i>Anas platyrhynchos</i>
Meadow pipit	<i>Anthus pratensis</i>
Merlin	<i>Falco columbarius</i>
Mistle thrush	<i>Turdus viscivorus</i>
Nightingale	<i>Luscinia megarhynchos</i>
Ring-necked parakeet	<i>Psittacula krameri</i>
Skylark	<i>Alauda arvensis</i>
Song thrush	<i>Turdus philomelos</i>

English Name	Scientific Name
Starling	<i>Sturnus vulgaris</i>
Stock dove	<i>Columba oenas</i>
Tawny owl	<i>Strix aluco</i>
Yellowhammer	<i>Emberiza citrinella</i>
Invertebrates	
Autumnal Rustic	<i>Eugnorisma glareosa</i>
Beaded chestnut	<i>Agrochola lychnidis</i>
Black groundling	<i>Brachythemis fuscopalliata</i>
Blood-vein	<i>Timandra comae</i>
Brindled beauty	<i>Lycia hirtaria</i>
Brown-spot pinion	<i>Agrochola litura</i>
Brown-veined neb	<i>Metzneria neuropterella</i>
Brussels lace	<i>Cleorodes lichenaria</i>
Buff ermine	<i>Spilarctia luteum</i>
Centre-barred swallow	<i>Atethmia centrargo</i>
Cinnabar	<i>Tyria jacobaeae</i>
Comfrey ermel	<i>Ethmia quadrillella</i>
Common wainscot	<i>Mythimna pallens impura</i>
Dark-barred twin-spot carpet	<i>Xanthorhoe ferrugata</i>
Deep-brown dart	<i>Aporophyla lueneburgensis</i>
Dusky brocade	<i>Apamea remissa</i>
Dusky thorn	<i>Ennomos fuscantaria</i>
Feathered gothic	<i>Tholera decimalis</i>
Figure of eight	<i>Diloba caeruleocephala</i>
Ghost moth	<i>Hepialus humuli</i>
Grass rivulet	<i>Perizoma albulata</i>
Great oak beauty	<i>Hypomecis roboraria</i>
Green-brindled crescent	<i>Allophyas oxyacanthae</i>
Hedge rustic	<i>Tholera cespitis</i>
Hornet hoverfly	<i>Volucella zonaria</i>
Knot grass	<i>Acronicta rumicis</i>
Lackey	<i>Malacosoma neustria</i>
L-album wainscot	<i>Mythimna l-album</i>
Lunar thorn	<i>Selenia lunularia</i>
Maple pug	<i>Eupithecia inturbata.</i>
Marsh grey	<i>Eudonia pallida</i>
Mocha	<i>Cyclophora pendularia</i>
Mottled rustic	<i>Caradrina morpheus</i>
Mouse moth	<i>Amphipyra tragopoginis</i>
Oak hook-tip	<i>Watsonalla binaria</i>
Obscure wainscot	<i>Mythimna obsoleta</i>
Orange footman	<i>Wittia sororcula</i>
Pale eggar	<i>Trichiura crataegi</i>
Pied grey	<i>Eudonia delunella</i>
Portland ribbon wave	<i>Idaea degeneraria</i>
Powdered quaker	<i>Orthosia gracilis</i>
Red-girdled mining bee	<i>Andrena labiata</i>
Red-green carpet	<i>Chloroclysta siterata</i>
Sallow	<i>Xanthia ictertia</i>
September thorn	<i>Ennomos erosaria</i>
Shaded broad-bar	<i>Scotopteryx chenopodiata</i>
Small emerald	<i>Hemistola chrysoprasaria</i>
Small heath	<i>Coenonympha pamphilus</i>

English Name	Scientific Name
Small phoenix	<i>Ecliptopera silaceata</i>
Small square-spot	<i>Diarsia rubi</i>
Spindle knot-horn	<i>Nephopterix angustella</i>
Sprawler	<i>Asteroscopus sphinx</i>
Varied coronet	<i>Hadena compta</i>
Wall	<i>Lasiommata megera</i>
Waste grass-veneer	<i>Pediasia contaminella</i>
Waved black	<i>Parascotia fuliginaria</i>
Webb's wainscot	<i>Globia sparganii</i>
White ermine	<i>Spilosoma lubricipeda</i>
White-barred knot-horn	<i>Elegia similella</i>
Mammals	
Badger	<i>Meles meles</i>
Grey squirrel	<i>Sciurus carolinensis</i>
Hazel dormouse	<i>Muscardinus avellanarius</i>
Otter	<i>Lutra lutra</i>
Water vole	<i>Arvicola amphibius</i>
West European hedgehog	<i>Erinaceus europaeus</i>
Plants and Fungi	
Fibrous waxcap	<i>Hygrocybe intermedia</i>
Hybrid bluebell	<i>Hyacinthoides non-scripta x hispanica = H. x massartiana</i>
Japanese knotweed	<i>Reynoutria japonica</i>
Three-cornered garlic	<i>Allium triquetrum</i>
Wild cabbage	<i>Brassica oleracea</i>
Wild strawberry	<i>Fragaria vesca</i>
Winter heliotrope	<i>Arctostaphylos luciana</i>
Reptiles	
Grass snake	<i>Natrix helvetica</i>
Slow worm	<i>Anguis fragilis</i>

APPENDICES

SITE PLAN

BMD.22.0022.DRE.901.Phase 1 Habitat Survey Plan



NOTES

1. THIS DRAWING IS BASED ON ESRI SATELLITE BASEMAPPING
2. DO NOT SCALE FROM THIS DRAWING
3. ANY DISCREPANCIES WITHIN THIS DRAWING OR BETWEEN THIS DRAWING AND ANY OTHER INFORMATION IS TO BE REPORTED TO BMD FOR CLARIFICATION

SiteBoundary

 A2.1 - Scrub - dense/continuous

 B2.2 - Neutral grassland - semi-improved

☐ B6 - Poor semi-improved grassland

 C3.1 - Other tall herb and fern - ruderal

● ● ● ● ● A3.1 - Broadleaved parkland/scattered trees

 Line of Trees - Native

Drawing

BMD

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Thakeham Homes LTD

College Lane, Hunterspoint - Phase 1 Habitat Survey

Drawn SR	Checked JW	Approved JP	Date: Survey 05/10/2022
Job No. 22.022	Scale 1:1,000	Sheet Size A3	Revision A
Drawing Number BMD.22.0022.DRE.901		Date: Drawing 05/10/2022	

SITE PHOTOGRAPHS



Photograph 1: Example of dry ditch along the north of the Site



Photograph 2: Example of line of trees within the Site



Photograph 3: Example of neutral grassland forming the ground flora for the woodland



Photograph 4: Example of poor semi-improved grassland within the Site.



Photograph 5: Example of ruderal within the Site associated with the peripheries.



Photograph 6: Example of scrub within the Site



Photograph 7: Woodland plantation area within the east of the Site.



Photograph 8: Pond feature (dry) in the north east of the Site.

A. POLICY, LEGISLATION AND GUIDANCE

A.1 Overview

A.1.1 Tables A1.1 and A1.2 provide a summary of wildlife legislation and policy of relevance to development at the Site.

Table A1.1 Overview of species/species groups relevant to the current proposals and associated legislation and policy

Species/Species group	European	UK ¹	Priority species ²
Amphibians	See great crested newt	Various	Incl. common toad
Badger		Full	☐
Bats (all species)	☐	Full	Species dependent
Birds		Full	Species dependent, incl. House sparrow
Dormouse	✓	Full	✓
Great crested newts	☐	Full	☐
Mammals (general)		Species-dependent	Incl. hedgehog
Reptiles (excluding sand lizard and smooth snake)		Partial – incl. killing and injury	P
Notes ¹ Principally the Wildlife and Countryside Act: Full = full protection, either from the Wildlife and Countryside Act 1981 (as amended) alone or in combination between this act and European legislation; partial = partially protected. ☐ = covered by other specific legislation. ² Includes over 900 species listed in accordance with section 41 of the NERC Act (2006). Species known or most likely to utilise the Site are indicated where appropriate.			

Table A1.2 Relevant species legislation for development at the Site

Species / group	Legislation ^{see notes}													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Amphibians										☐				
Badger	☐						☐							☐
Bats (all species)					☐		☐		☐	☐				☐
Birds (nesting)		☐	☐							☐				
Dormouse					☐		☐		☐	☐				☐
Great crested newt					☐				☐	☐				
Invasive species								☐			☐	☐	☐	
Invertebrates										☐				
Hedgehog							☐			☐				☐
Reptiles					☐	☐				☐				
Notes ¹ Protection of Badgers Act 1992 ² Wildlife and Countryside Act, 1981 (as amended) – Part 1 ³ Wildlife and Countryside Act, 1981 (as amended) – Schedule 1 (some species, none recorded within the Site) ⁴ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 ⁵ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (4b, 4c) and (5) ⁶ Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (1, in respect of killing and injuring) and (5) ⁷ Wildlife and Countryside Act, 1981 (as amended) – Schedule 6, Section 11 ⁸ Wildlife and Countryside Act, 1981 (as amended) – Schedule 9, Section 14 ⁹ Conservation of Habitats and Species Regulations 2017 – Schedule 2 (European protected species)														

Species / group	Legislation ^{see notes}													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
¹⁰ Natural England and Rural Communities Act (2006) – Various species listed in accordance with Section 41 ¹¹ Invasive Species regulations: EU Regulation (1143/2014) on invasive alien (non-native) species ¹² Anti-social Behaviour, Crime and Policing Act 2014 ¹³ Environmental Protection Act 1990 ¹⁴ Wild Mammals (Protection) Act 1996														

A.1.2 The key national planning policies and documents are:

- The Environment Act (2021);
- The National Planning Policy Framework (2026); and
- The Natural Environment and Rural Communities (NERC) Act (2006).

B. ASSESSMENT METHODOLOGIES

B.1 Desk Study

B.1.1 The desk study involved:

- Gathering and analysing existing ecological data within the Site boundary and extending to a radius of 5 km; and
- Reviewing readily available habitat data within 5 km radius of the Site boundary.

B.1.2 The results of the desk study were used to aid in the interpretation of the survey results and were obtained from the following sources:

- West Sussex Biological Records Centre;
- The Multi-Agency Geographical Information for the Countryside (*MAG/C*) – web-based database;
- The Woodland Trust Ancient Tree Inventory;
- People's Trust for Endangered Species Big Hedgehog Map – web-based citizen science database of hedgehog sightings;
- Readily available maps (modern and historic); and
- Readily available aerial photographs.

B.1.3 In terms of species, particular attention was given to the following species/species groups:

- Amphibians;
- Badgers;
- Bats;
- Birds;
- Invertebrates (as appropriate based on geographic location and habitats present on Site);
- Invasive species (as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended));
- Plants (as appropriate based on geographic location and habitats present on Site);
- Mammals; and
- Reptiles.

B.1.4 Some species, such as the blue tit, may be listed on red data books but described as neither threatened nor near threatened; such species are not included in the protected and notable species tables within the desk study sections. Species listed solely on Schedule 5 Section 9(5)a and 9(5)b are not considered to be protected species in the context of this report as offences detailed in these Sections relate to sale/intention to sell.

B.1.5 For the purposes of this report species falling within the following situations are not indicated as having European level of protection in the desk study tables:

- Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).
- Birds listed on Annex 1 of the Birds Directive. The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

B.1.6 For the purposes of this report widely naturalised non-native invasive species listed in Schedule 9 of the Wildlife and County Act, such as grey squirrel and muntjac, are excluded.

B.2 Extended Phase 1 Habitat Survey

B.2.7 The Extended Phase 1 Habitat Survey involved a walk-over of the Site recording and mapping the various habitats present (as defined by and in line with the standard methodology in JNCC, 2010) in each definable land parcel. Where applicable, land parcels were separated into their component habitats. In addition to the floristic component of each habitat or habitat parcel (where it had a different character), each was described in terms of its likely origin (e.g. self-established, planted), character, condition and management. The condition of the habitat was determined using professional judgement and criteria used to inform the Biodiversity Metric 3.1

B.2.8 Attention was also paid to the presence or potential for protected and notable species occurring on Site. This focused on the species/species groups as listed in paragraph B1.3.

B.2.9 Target notes were used to aid the interpretation of mapped habitats to indicate notable features within the Site.

B.3 Evaluation

Habitats

B.3.10 The habitats were assessed against the criteria and descriptions of Priority Habitats to determine if they could be considered as Priority Habitat and, therefore, likely to have greater implication on developing the Site.

B.3.11 Habitats were also considered in relation to their wider landscape integration, notably connectivity and acting as a buffer to other habitats or protected sites.

B.3.12 The habitat condition assessments followed the habitat condition set out in the Biodiversity Metric 3.1 guidance.

Species

B.3.13 The Site was assessed in terms of its potential to support protected and notable species with particular attention being paid to those listed in paragraph B1.3. It takes account of habitats present on Site, the desk study species data, connectivity to known records and other suitable habitat and geographic range of species. For example, a Site may have suitable habitat for sand

lizard but is outside the species geographic distribution and as such would not be considered in the evaluation of the Site. Another example would be if water vole were returned in the desk study data but there was no watercourse within the Site or within a zone of influence which may be indirectly affected by pollution run-off.

Great Crested Newt

- B.3.14 The Site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003) and the Great Crested Newt Conservation Handbook (Langton, Becket & Foster, 2001).

Bats - Roosting Bats – Buildings / Structures / Trees

- B.3.15 A bat roost assessment of all trees present were carried out by Jonathan Wood and Ryan Clarke on the 26th January 2022. The buildings and trees were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) – hereafter referred to as the 'BCT Guidelines'. The system shown in Table B3.1 was therefore used to categorise the bat roost suitability of any features found.

Table B3.1 Categories for determining bat roost suitability

Suitability	Typical Roosting Feature
Negligible	Negligible habitat feature on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis & potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging / Commuting Bats

- B.3.16 The BCT Guidelines use the criteria shown in Table B3.2 to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site.

Table B3.2 Categories for determining bat roost suitability

Suitability	Typical Foraging & Commuting Features
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.

Reptiles

- B.3.17 The Site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003).

Badgers

- B.3.18 The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989).

Hazel Dormice

- B.3.19 The site was surveyed for its suitability to support hazel dormice. The assessment was based on guidance outlined in Bright, Morris and Mitchell-Jones (2006).

Otter

- B.3.20 All onsite waterbodies suitable for otter were surveyed for relevant signs that would indicate occupancy of this species, such as foot prints and spraint (otter droppings). These assessments were based on Monitoring the Otter (Chanin, 2003) and Otters. A Guide for Developers (CCW, 2009).

Water vole

- B.3.21 All onsite waterbodies suitable for water vole were surveyed for relevant signs that would indicate occupancy of this species, such as burrows, droppings, or feeding remains. These assessments were based on guidance set out in the Water Vole Mitigation Handbook (The Mammal Society, 2016).

Other Species

- B.3.22 The site was also appraised for its suitability to support other protected or notable fauna e.g. invertebrates with regard to the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) and BS42020:2013 Biodiversity – Code of Practice for Planning and Development (BSI, 2013). Evidence of any current or historical presence of such species was recorded.

C. METADATA, SURVEY CONDITIONS AND LIMITATIONS

C.1 Metadata

Factor	Detail
Data	Habitats described and mapped in accordance to JNCC (2010). Target notes of specific features.
Reason for collection	To provide baseline ecological data to inform master planning, planning applications and appropriate mitigation in relation to proposed development.
Location	College Lane, Hurstpierpoint, West Sussex, approximate centre: TQ 29212 16026
Date	01/08/2022
Method of collection	Phase 1 Habitat Survey: JNCC (2010).
Who collected	Jonathan Wood BSc MCIEEM

C.2 Survey Conditions

Date	Start Time	Preceding days	Cloud (%)	Sun	Temp. (°C)	Precipitation	Wind (Beaufort scale & direction)
01/08/2022	15:00 – 19:00	Sunny	20	Sunny	26	N/A	1 SW

C.3 Limitations Review

Consideration	Comment
Survey & data	
Personal competence, i.e. qualifications, training, skills, understanding, experience	All survey works were undertaken by or directly supervised by personnel experienced in ecological surveying (see meta data; Section C1). <u>Jonathan Wood BSc (Hons) MCIEEM</u> has over 7 years' experience in ecological consultancy, including an experience of performing and coordinating the survey work and assessments undertaken at Site. <u>James Patmore CECOL CEnv MCIEEM</u> has over 20 years of experience in ecological consultancy, including an extensive amount of experience performing and directing ecological survey work and assessments. <u>Heather Ridgway BSc (Hons)</u> has over one years of experience in ecological consulting and mitigation including technical reporting and assisting in survey work.
Resources (equipment and/or personnel)	Appropriate resources and suitably qualified personnel were used.
Time spent surveying	Sufficient time was spent on site to undertake all surveys. No surveys were 'cut short'.
Data (e.g. arising from incomplete or inappropriate surveys)	The data used and collected were sufficient for the purpose of the works. The data held by PTES on the Big Hedgehog Map is the output of various surveys including citizen science and as such a degree of caution should be applied when depending solely on these data to inform impacts as data may not have been verified.
Lack of statistical robustness and higher uncertainties	Statistical analysis of data was not deemed necessary for the purpose of the current works.
Old and out of date data	The data used to complete this Ecological Constraints Assessments were current and up to date.
Timing or seasonal constraints and suboptimal survey periods	The survey was conducted in August 2022. This is within the optimal period for habitat surveys.
Partial use of and/or departures from good practice guidelines	All surveys accorded with the relevant best practice guidelines.
Site conditions & other factors	
Adverse weather conditions	No significantly adverse weather conditions were encountered during the survey work undertaken at the Site that would be considered to have significantly adversely impacted the reliability and/or accuracy of data collected.
Restricted access to site or part of site	No significant access restrictions.
Unrealistic deadlines	No restrictions on survey data collected or analysed to date are as a result of unrealistic deadlines.
Unproven or untested measures for mitigation and compensation	N/A
Evaluation of conservation value and impacts	The evaluation of the conservation value of habitats and species associated (or potentially associated) with the site and impacts of the development, are based on the current information available. This evaluation will need to be reviewed and updated as necessary should a considerable period of time (24 months) elapse and/or more data from other survey work (on and within 500 m of the site) becomes available.

D. DESK STUDY SCOPING EXERCISE

- D.1.1 A data search on *MAG/C* and other web-based data sources was completed on 22nd July 2022. A summary of features checked is provided in Tables D1.1. to D1.6.
- D.1.2 A review of the Woodland Trust Ancient Tree Inventory (Woodland Trust, 2022) as of 22/07/2022 highlighted two ancient and two veteran trees on the Site or within 1 km of its boundaries; these are described in Table D1.1.

Table D1.1 Woodland Trust Ancient Tree Inventory trees within 1 km of the study area

Tree sp.	WT ref.	Location	Distance	Direction
Pedunculate Oak	8704	TQ 28802 15604	450 m	SW
Pedunculate Oak	8705	TQ 28754 15475	525 m	SW
Pedunculate Oak	204899	TQ 28731 15013	750 m	SW
Field maple	14003	TQ 28425 15430	825 m	SW

Table D1.2 Statutory nature conservation sites within 2 km of the Site (extending to 5 km for European designated sites)

Site designation	Number of sites				
	Total	On Site	0-1 km	1-2 km	2-5 km
AONB	0	0	0	0	0
LNR	0	0	0	0	0
NNR	0	0	0	0	0
National Park	1	0	1	0	0
Ramsar	0	0	0	0	0
SSSI	1	0	0	1	0
SAC	0	0	0	0	0
SPA	0	0	0	0	0
Impact Risk Zone	Yes – Wolstonbury Hill SSSI and Beeding Hill to Newtimber Hill SSSI.				

Table D1.3 Priority (and notable) habitats within 1 km of the Site

Broad category	Priority Habitat Inventory	Other habitats	On Site	0-1 km
Coastal	Saltmarsh		0	0
	Sand Dunes		0	0
	Vegetated Shingle		0	0
	Maritime Cliffs and Slopes		0	0
	Mudflats		0	0
	Saline Lagoons		0	0
Grassland	Calaminarian Grassland		0	0
	Coastal and Floodplain Grazing Marsh		0	0

Broad category	Priority Habitat Inventory	Other habitats	On Site	0-1 km
		Good quality semi-improved grassland (non-priority)	0	0
	Lowland Calcareous Grassland		0	0
	Lowland Dry Acid Grassland		0	0
	Lowland Meadows		0	0
	Purple Moor Grass and Rush Pasture		0	0
	Upland Calcareous Grassland		0	0
	Upland Hay Meadows		0	0
Heath	Lowland Heathland		0	0
	Mountain Heaths and Willow Scrub		0	0
	Upland Heathland		0	0
Limestone pavements	Limestone Pavements		0	0
Marine	Intertidal Substrate Foreshore		0	0
Wetland	Blanket Bog		0	0
	Lowland Fens		0	0
	Lowland Raised Bog		0	0
	Reedbeds		0	0
	Upland Flushes, Fens and Swamps		0	0
Woodland		Ancient: Semi-natural	0	10 blocks of 15 parcels
		Ancient: Replanted	0	0
	Deciduous Woodland		0	18 blocks of 69 parcels
		National Inventory of Woodland & Trees ¹	0	69 parcels
	Traditional Orchards		0	0
	Wood pasture and Parkland BAP Priority Habitat		0	1 parcel
Trees ²		Ancient, veteran or notable trees	0	0
Other		Fragmented heath (Non-Priority)	0	0
		Grass Moorland (Non-Priority)	0	0
		No main habitat but additional habitat exists	0	2 parcels
	Open Mosaic Habitat		0	0
Notes 1. Not notable habitats but provide information to guide mitigation 2. Woodland Trust Ancient Tree Inventory				

Table D1.4 European Protected Species license applications within 1 km and 5 km (bats) of the Site. NB excluding GCN, see Table D1.5.

Protected species licence applications	Number of applications				
	Total	On Site	0-1 km	1-2 km	2-5 km
Bat	10			✓	✓

Protected species licence applications	Number of applications				
	Total	On Site	0-1 km	1-2 km	2-5 km
Species covered by the bat licences					
Alcathoe bat					
Barbastelle					
Bechstein's bat					
dt's bat					
Brown long-eared bat	5				✓
Common pipistrelle	5			✓	✓
Daubenton's bat					
Greater horseshoe bat					
Grey long-eared bat					
Leisler's bat					
Lesser horseshoe bat					
Nathusius pipistrelle					
Natterer's bat					
Noctule					
Pipistrelle sp.					
Serotine	1				✓
Soprano pipistrelle	4				✓
Whiskered bat	1				✓
Notes 1. As depicted on <i>MAGIC</i>					

Table D1.5 Great crested newt data within 1 km of the Site

Data source	Number of records		
	Total	On Site	0-1 km
NE Class licence database ¹	0	0	7
NE country-wide survey data ¹	0	0	0
Development licenses ¹	0	0	1
Notes 1. As depicted on <i>MAGIC</i>			

Table D1.6 Notable fauna in relation to the Site

Species	On Site	0-1 km
Farmland bird assemblages¹		
Arable (max number of species)	0	0
Grassland (max number of species)	0	0
Black grouse		
Cirl bunting		
Corn bunting		
Curlew		✓
Grey partridge		
Lapwing		
Redshank		
Snipe		

Species	On Site	0-1 km
Stone curlew		
Tree sparrow		
Turtle dove	✓	✓
Twite		
Yellow wagtail		
Mammals		
European hedgehog ²	0	8
Notes 1. As depicted on <i>MAG/C</i> 2. Aa depicted on the Big Hedgehog Map (PTES, 2022)		

E. HABITAT TARGET NOTES

E.1.1 Table E1.1 and E1.2 shows target note descriptions of linear features and target notes within the Site which is solely comprised of hedgerows. Table E1.1 encompasses composition as well as conditions in these areas.

Table E1.1 Target notes on the Site

Target Note ID	Description	Condition
TN 1	Location of a dry pond and surrounding inundated vegetation.	Moderate
TN 2	A group of mature oak trees which have potential roost features	-

Table E1.2 Linear features on the Site

Target Note ID	Description	Condition
H1	Line of trees (ecologically valuable) - with bank or ditch Oak, ash, willow and alder with an understory of hawthorn, blackthorn and dog rose. Failed criteria 2, 4 and 5	Moderate
H2	Line of trees (ecologically valuable) Oak, with shrub species of hawthorn, blackthorn, dog rose, honeysuckle, holly and hazel. Failed criteria 4 and 5	Good
H3	Line of trees (ecologically valuable) - with bank or ditch The southern tree line boundary borders residential gardens. Species present include pine, ash, field maple, holly, hawthorn and shrubby honeysuckle as well as a number of ornamental species. Failed criteria 1, 4 and 5	Moderate

F. DETAILED SURVEY RESULTS

F.1 Species Recorded on Site

English Name	Scientific Name
Birds	
Blue tit	<i>Cyanistes caeruleus</i>
Blackbird	<i>Turdus merula</i>
Collared dove	<i>Streptopelia decaocto</i>
Great spotted woodpecker	<i>Dendrocopos major</i>
Great tit	<i>Parus major</i>
House sparrow	<i>Passer domesticus</i>
Red kite	<i>Milvus milvus</i>
Robin	<i>Erithacus rubecula</i>
Song thrush	<i>Turdus philomelos</i>
Wood pigeon	<i>Columba palumbus</i>
Plants	
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Bitter dock	<i>Rumex obtusifolius</i>
Blackthorn	<i>Prunus spinosa</i>
Black knapweed	<i>Centaurea nigra</i>
Birds-foot trefoil	<i>Lotus corniculatus</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broad-leaved dock	<i>Rumex obtusifolius</i>
Bulrush	<i>Typha latifolia</i>
Buttercup sp.	<i>Ranunculus</i> sp.
Cocksfoot	<i>Dactylis glomerata</i>
Common dandelion	<i>Taraxacum officinale</i>
Common nettle	<i>Urtica dioica</i>
Common rush	<i>Juncus effusus</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Crack willow	<i>Salix fragilis</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping thistle	<i>Cirsium arvense</i>
Dogrose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambucus nigra</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Field maple	<i>Acer campestre</i>
Fleabane	<i>Erigeron</i> sp.
Glaucous sedge	<i>Carex flacca</i>

English Name	Scientific Name
Greater birds foot trefoil	<i>Lotus pedunculatus</i>
Greater plantain	<i>Plantago major</i>
Grey willow	<i>Salix cinerea</i>
Hairy willowherb	<i>Epilobium hirsutum</i>
Hard rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Holly	<i>Ilex aquifolium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Ivy	<i>Hedera helix.</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Meadow grass	<i>Poa annua</i>
Oak	<i>Quercus sp.</i>
Perennial ryegrass	<i>Lolium perenne</i>
Pendulous sedge	<i>Carex pendula</i>
Pine sp.	<i>Pinus sp.</i>
Ragwort	<i>Jacobaea vulgaris</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rose sp.	<i>Rose sp.</i>
Silver birch	<i>Betula pendula</i>
Silverweed	<i>Potentilla anserina</i>
Soft rush	<i>Juncus effusus</i>
Spear thistle	<i>Cirsium vulgare</i>
Timothy	<i>Phleum pratense</i>
Tormentil	<i>Potentilla erecta</i>
Water mint	<i>Mentha aquatica</i>
Wild carrot	<i>Daucus carota</i>
Wild cherry	<i>Prunus avium</i>
Wild privet	<i>Ligustrum vulgare</i>
Willow sp.	<i>Willow sp.</i>
Willowherb sp.	<i>Epilobium sp.</i>
Yarrow	<i>Achillea millefolium</i>
Yorkshire fog	<i>Holcus lanatus</i>

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