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PRELIMINARY ECOLOGICAL APPRAISAL REPORT

NORTH RYE HOUSE

YIANGOU ARCHITECTS

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VERSIONING AND QUALITY ASSURANCE

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Final	15/08/2022	Peter Hacker ACIEEM Senior Ecologist	Peter Hacker ACIEEM Senior Ecologist	Peter Hacker ACIEEM Senior Ecologist

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The evidence which we have prepared and provided is true and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

SUMMARY

Purpose	<ul style="list-style-type: none"> • Wildwood Ecology was commissioned by Yiangou Architects (the client) to undertake a Preliminary Ecological Appraisal (PEA) of North Rye House • The site is the subject of a planning application for the creation of an equestrian arena, resurfacing of the existing access track through a field, and repositioning of a barn.
Work undertaken	<ul style="list-style-type: none"> • A PEA was undertaken consisting of a field survey undertaken in June 2022 and a desk study in July 2022 following the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2017) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010). • A Biodiversity Net Gain (BNG) assessment was undertaken using the Natural England Biodiversity Metric 3.1 – biodiversity calculation tool.
Key issues	<ul style="list-style-type: none"> • The development may result in impacts on wildlife and habitats affecting the following protected species: <ul style="list-style-type: none"> ◦ Bats ◦ Hedgehog ◦ Amphibians ◦ Reptiles
Recommendations	<ul style="list-style-type: none"> • Recommendations are made in Section 5 about precautionary working methods required prior to/ during construction phases so that legislation protecting amphibians, bats, nesting birds, hedgehog and reptiles isn't triggered. • Section 5 includes recommendations regarding the loss of onsite habitats and compensation/ enhancements.
Conclusions	<ul style="list-style-type: none"> • Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site. • This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until February 2024.

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1 INTRODUCTION

- 1.1 Wildwood Ecology was commissioned by Yiangou Architects (the client) to undertake a Preliminary Ecological Appraisal (PEA) and Biodiversity Net Gain (BNG) assessment of North Rye House (the site) centred at grid reference SP 20595 28639.
- 1.2 Previous surveys at the site have been conducted at the site by Cotswold Wildlife Service, including a Preliminary Roost Assessment (PRA) in February 2020 and subsequent bat emergence surveys in August 2021.

Site description

- 1.3 The aerial image of the site (Figure 1) shows the site to consist of an estate, with five buildings located in the centre of the state in a landscaped section of the site. The focus of the proposed development is on a section of arable land located to the east of the site, as well as strip of grassland upon which a road will be created to connect the development to existing site infrastructure.
- 1.4 The offsite blue-line boundary consists of pastureland currently being grazed by sheep and previous arable land which has now been left fallow. There is also a pond located towards the west of the site and an area of woodland towards the south of the site, although neither of these habitats are being impacted by the proposed development.
- 1.5 The wider landscape is comprised of a mixture of arable and pastureland, which small, wooded areas located in between. Most nearby habitats are well connected to each other via mature hedgerows. The village of Stow on the Wold is located less than 2 miles south of the site.



Figure 1 – Aerial image of the site (red line shows the site boundary). Image used under licence (©2021 Google). Imagery date April 2021.

Proposed development

- 1.6 The site is the subject of a planning application for the creation of an equestrian arena, resurfacing of the existing access track through a field, and repositioning of a barn.
- 1.7 A previous planning application for the demolition of the main house and its replacement with a new residential building covering much of the footprint of the existing building, along with the construction of a new leisure building over the site of the existing tennis court has been approved (22/01275/FUL).

Purpose of this report

- 1.8 The purpose of this report is to provide sufficient information for the local planning authority to fully assess the potential ecological impacts of the proposed development, or to identify what further information is required before a full assessment can be made.
- 1.9 The result of the PEA has been used to inform whether further surveys are required, or to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed development.

2 METHODOLOGY

Desk study

- 2.1 A biodiversity desk study was undertaken in relation to the site in February 2020. The sources consulted and the type of information obtained are summarised in Table 1.

Table 1 – Sources of biodiversity and ecological records.

Source	Information requested (search buffer from site centre/boundary)
Gloucestershire Centre for Environmental Records	<ul style="list-style-type: none"> Protected and priority species (2km) Non-statutory sites (2km)
Multi-Agency Geographic Information for the Countryside (MAGIC) ¹	<ul style="list-style-type: none"> International statutory designations (5km) National statutory designations (2km)

- 2.2 The search buffers are considered to be sufficient to cover the potential zone of influence (Zol²) of the proposed development.
- 2.3 The impact of the proposed development on the biological integrity of any nearby designated protected sites has been fully considered.
- 2.4 Previous surveys have been conducted at the site relating to bats within the main house and outbuildings (PRA and dusk emergence/dawn re-entry surveys). The findings of these surveys relate only to bats and thus will be referred to in the full EclA report for the site.

Field survey

- 2.5 A field survey was undertaken on 08 June 2022.
- 2.6 All habitats present within the site with the potential to support rare, protected, or otherwise notable species of flora or fauna (together with any direct signs) were noted.
- 2.7 In the context of this report, rare, protected, or otherwise notable species of flora or fauna were those considered to meet any of the following criteria:
- Species protected by UK or European legislation (see Appendix V);
 - UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
 - Nationally rare or nationally scarce species;
 - Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

¹ <http://magic.defra.gov.uk/MagicMap.aspx>

² Zol definition – ‘the areas/resources that may be affected by the biophysical changes caused by activities associated with a project’ (CIEEM, 2018).

- 2.8 A PEA habitat map was drawn up incorporating target notes used to highlight features of particular ecological interest (see Appendix I).
- 2.9 The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Plant species listed in Schedule 9 were searched for during the survey. Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

Surveyor information

- 2.10 The PEA was undertaken by Peter Hacker. See Table 2 for further information.

Table 2 – Surveyor information.

Surveyor	Licences	Ecological experience
<p>Peter Hacker M.Sc., B.Sc. (Hons) ACIEEM Ecologist</p>	<p>Bat GCN</p>	<p>Holds a 2:1 Honours degree in Ecological Consultancy. Has field experience gained through both academic and professional training. Experience of surveying a range of protected species including reptiles, bats, great crested newt, and common dormice.</p>

Limitations and assumptions

- 2.11 The desk study and field survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods). An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.
- 2.12 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

3 RESULTS

Desk study

Designated sites (statutory)

- 3.1 There are no international statutory designations within 5km of the site and no national statutory designations within 2km.
- 3.2 The site is located within the Cotswolds Area of Outstanding Natural Beauty (AONB).

MAGIC map results

- 3.3 A search for granted Protected Species Mitigation Licence (PSML) within 2km of the site returned two licences for bat species. These licences included the following species: Barbastelle, brown long eared, natterer's, soprano pipistrelle and common pipistrelle and included the destruction of a breeding site. The closest of the licences is located 1km southeast of the site.
- 3.4 The search for granted PSML within 2km of the site returned no licences for GCN.
- 3.5 Furthermore, pond surveys undertaken between 2017 – 2019 confirmed no GCN presence at any ponds within 2km of the site.

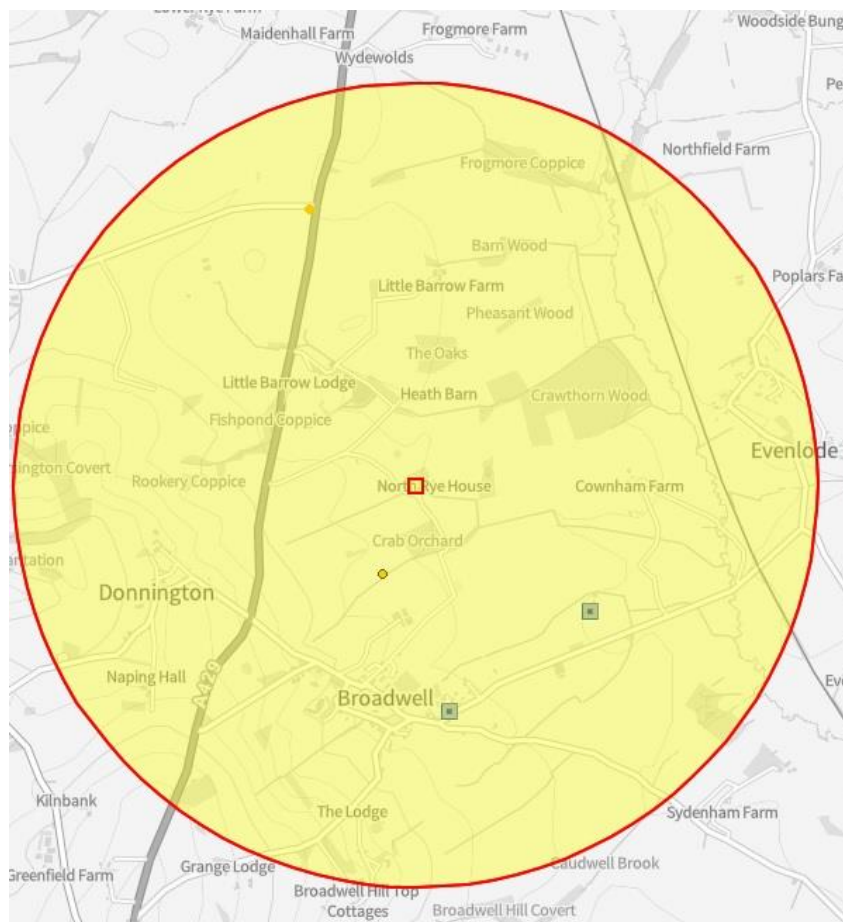


Figure 2 - Screenshot of Magic map search for nearby PSML. The site is shown as a red square; bat PSML are shown as mauve squares. Orange dots indicate pond surveys with negative results.

Protected species

3.6 Table 3 summarises the priority and protected species records found within the local area within the last 10 years.

Table 3 - Priority and protected species records found in the vicinity of the site within the last 10 years

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Bats	Brown long-eared	0	0	3	Closest roost: 970m from site
	Common pipistrelle	0	0	5	Closest roost: 970m from site
	Lesser horseshoe	0	0	2	Closest roost: 970m from site
	Long-eared species	0	0	1	Closest record: 1700m from site
	Myotis species	0	0	1	Closest record: 1020m from site
	Natterer's	0	0	2	Closest roost 1140m from site
	Noctule	0	0	2	Closest record: 1020m from site
	Serotine	0	0	1	Closest record: 1700m from site
	Soprano pipistrelle	0	0	1	Closest record: 1700m from site
	<i>TOTALS</i>	<i>0</i>	<i>0</i>	18 (9)	
Mammals <i>(excluding bats)</i>	Badger	0	0	1	Closest records: 1090m from site
	Otter	0	0	1	Closest records: 760m from site
	West-European Hedgehog	0	0	5	Closest record: 1430m from site
		<i>TOTALS</i>	<i>0</i>	<i>0</i>	7 (3)
Reptiles	Adder	0	0	1	Closest record: 1850m from site
	Grass snake	0	0	2	Closest record: 1590m from site
		<i>TOTALS</i>	<i>0</i>	<i>0</i>	3 (2)
Birds	Schedule 1	0	0	33 (6)	Schedule 1 species: barn owl, brambling, fieldfare, hobby, red kite and redwing
	Non-schedule 1	0	0	196 (32)	

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Freshwater fish	see further info	0	0	1	Closest record: brown trout 1290m from site

Field survey

Timing and conditions

3.7 Prevailing weather conditions during the field survey are summarised within Table 4.

Table 4 - Summary of weather conditions during the PEA.

Date	Weather conditions			
	Temp [°C]	Cloud cover [Oktas]	Wind speed [Beaufort scale]	Rain
08/06/2022	22	2/8	0/1	Nil

3.8 The distribution and extent of habitats observed within the site is illustrated in the PEA plan (see Appendix I). An accompanying species list (including scientific names) can be found in Appendix IV.

3.9 The habitats present onsite are described in detail in Table 5 using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010).

3.10 Please also refer to Table 5 for a list and description of the onsite target notes. The positions for these target notes are highlighted in the PEA plan in Appendix I.

3.11 The site was classified according to the following habitat types: Semi-natural broadleaved woodland, continuous scrub, improved grassland, semi-improved grassland and soft landscaping.

Table 5 – Habitats and linear features present onsite.

Habitat type / Linear feature	Species present	Other observations
<p><i>B2.2 Semi-improved neutral grassland</i></p> <p>A section of the site located to the north of the onsite building is not grazed and so maintains a higher sward and slightly higher species diversity.</p>	<p>Perennial rye grass, false oat grass, Yorkshire fog, crested dogs tail, creeping buttercup, white clover</p>	
<p><i>B4 Improved grassland/arable land</i></p> <p>The majority of the site is comprised of heavily grazed (sheep) grassland</p>	<p>Annual meadow grass, perennial rye, thistle, white clover, dandelion, creeping buttercup.</p> <p><i>Fallow field</i></p> <p>Arable wheat, meadow vetch, rough hawkbit, yarrow, false oat grass, thistle, broad leaved willowherb</p>	<p>One of the fields at the site has been left fallow, while previously being used as an arable field.</p>

Habitat evaluation

3.12 The improved grassland and semi-improved grassland habitats located across the site support common and widespread plant species. These habitats provides foraging source for onsite fauna, although other suitable foraging habitat is present along nearby hedgerows and arable field margins. The improved grassland and semi-improved grassland habitats are therefore considered to have **site ecological importance**.

Onsite fauna

3.13 The presence of the following species were observed or detected around the site during the survey: wood pigeon, black bird, robin, buzzard, wren and carrion crow.

4 INTERPRETATION AND ASSESSMENT

- 4.1 The proposed development will require displacement of onsite habitats and disturbance to their associated features. This section concerns an assessment of ecological impacts resulting from the proposed development.
- 4.2 The following interpretation and assessment is provided to ensure full compliance with both UK and European legislation and both local and national planning policy (see Appendix V).

Designated sites

- 4.3 There are no statutory and non-statutory designated sites identified within the vicinity of the site.
- 4.4 Given the scale of the proposed development, and the lack of designated sites nearby, no impacts on any designated sites or their features are anticipated as a result of the works.

Priority and protected habitats

- 4.5 The proposed development will result in the loss of habitats of site ecological importance, namely improved grassland and soft landscaping. No priority or protected habitats will be impacted by the proposed development.

Priority and protected species

- 4.6 Based on the presence of suitable habitat and the records returned by the data search, the following priority/ protected species have potential to be present onsite: Amphibians, reptiles, foraging and commuting bats, nesting birds, badger, otter and invertebrates.

Bats

- 4.7 The local records search returned a total of 18 records for nine bat species in the vicinity of the site (see Table 3). The closest roosts to the site are common pipistrelle and brown long eared day roosts located 970m from the site. However, previous surveys conducted by Cotswold Wildlife Service in 2020 and 2021 show that the site is in use by common pipistrelle and brown long eared.
- 4.8 The development will result in the loss of areas of improved grassland/arable land and semi-improved grassland likely used as foraging habitat by bats. However, these habitats are in abundance in the surrounding landscape and bats will be able to carry on commuting on and off site during and after the development phase as there will be no loss of tree lines or hedgerows as a result of the development. Therefore, in the absence of mitigation, there is unlikely to be an impact on bats as a result of loss of foraging habitat, although enhancements of foraging habitat will be delivered as part of the masterplan, enhancement of onsite habitats is proposed. However, without mitigation, there is potential for increased light disturbance as a result of the development.

Artificial light levels are currently low at the site and its vicinity as there are no in use residential properties or lit roads nearby. The site is in an area of residual light measuring $0.00-10^{-9}W/CM^2 \cdot Sr$ (VIRS 2021).



- 4.9 If there is to be new lighting at the site, the increased disturbance and potential fragmentation as a result of light spill may have a negative effect on the favourable conservation status of the local bat populations.
- 4.10 In the absence of mitigation, there will be a minor negative impact on bats as a result of the proposed development due to the potential for increased lighting at the site.

Common dormouse

- 4.11 The local records search returned no records for common dormouse in the vicinity of the site (see Table 3).
- 4.12 There is no habitat onsite suitable for use by dormouse that will be impacted as a result of the proposed development.
- 4.13 Onsite connectivity to the surrounding landscape is good, with the boundary hedgerows being connected to nearby woodlands and mature hedgerows. However, due to the lack of records and small home range of the species, dormouse presence at the site is considered reasonably unlikely and the species is therefore not considered further in this report.

European otter

- 4.14 The local records search returned one record for European otter in the vicinity of the site (see Table 3), with this record being located 760m from site.
- 4.15 No evidence of use by otter (spraints, feeding remains) was identified during the PEA.
- 4.16 The closest waterbody is the pond located onsite, however the nearest watercourse is the river Evenlode, located 1.5km east of the site.

- 4.17 Given the small size of the proposed development area, the lack of impact on the waterbody and the distance to the nearest watercourse, it is considered unlikely that otter will be directly by the proposed development. Furthermore, the development will not impact upon the ability of otters to commute across the surrounding landscape.
- 4.18 Impacts on the local otter population (if present) are reasonably unlikely and it is therefore considered that there will be no impact upon local otter populations as a result of the development.

Great crested newt (GCN)

- 4.19 The local records search returned no amphibian records in the vicinity of the site (see Table 3).
- 4.20 A Magic map search for GCN records returned no granted PSML, no GCN licence returns with confirmed presence of GCN within 2km of the site and no pond surveys undertaken between 2017 – 2019 with positive results.
- 4.21 The nearest waterbody is the pond located towards the east of the site, with 2 ponds located within a 1km radius of the site (as identified via aerial mapping).
- 4.22 No ponds, ditches or other aquatic habitat is being impacted by the proposed development, however small areas of terrestrial habitat (improved grassland) that are proposed for removal are suitable for use by amphibians for foraging and commuting.
- 4.23 The presence of amphibian species was not confirmed during the PEA survey by an incidental sighting, however, the site habitats (improved grassland, semi-improved grassland) are suitable to support amphibians in their terrestrial phase.
- 4.24 While the onsite habitat is suitable to support GCN, it is unlikely that GCN will be impacted by the proposed development due to the distance between the pond and the habitat to be lost (200m), as well as the lack of nearby records. Additionally, the core and intermediary habitat surrounding the pond is optimal and therefore GCN are unlikely to commute from the pond (if present) onto areas proposed for removal.
- 4.25 In the absence of mitigation during vegetation clearance, there is unlikely to be a negative impact on common amphibians as a result of the proposed development.

Reptiles

- 4.26 The local records search returned three records for reptile species in the vicinity of the site (see Table 3) with the closest record located 1590m from site.
- 4.27 There are habitats suitable for reptile basking and foraging at the site, predominantly within the improved grassland and semi-improved grassland habitat.

- 4.28 There are a number of hedgerows located around the site that are likely to be used by reptiles for shelter and as a hibernaculum, although many of the defunct hedgerows that make up the internal boundaries across the site are less likely to be used in this way. However, no hedgerows are proposed to be impacted by the development.
- 4.29 In the absence of mitigation by way of precautionary working methods when clearing onsite vegetation, there would be a negative impact on reptiles as a result of the proposed development due to killing/ injury (if present), triggering legislation that protects reptiles.

Nesting birds

- 4.30 The local records search returned 229 records for bird species in the vicinity of the site, including 33 Schedule 1 designated species (see Table 5), including three barn owl records.
- 4.31 Several common bird species were observed onsite during the PEA.
- 4.32 It is considered likely that nesting birds use the hedgerows and buildings present close to the proposed development site.
- 4.33 In the absence of mitigation during vegetation clearance, there will be a negative impact on nesting bird species as a result of the proposed development due to killing/ injury/ destruction of active nests (if present), triggering legislation that protect nesting birds.

European badger

- 4.34 The local records search returned one record for European badger in the vicinity of the site (see Table 3), for a single adult located 1090m from the site.
- 4.35 No evidence of use by badger (latrines, tracks, hair, snuffle holes or setts) was identified during the PEA.
- 4.36 The proposed development will result in the loss of small areas of potential foraging habitat for badger (if the species is present at the site), such as the grassland habitat present within the development areas at the site. However, areas of suitable foraging habitat will remain onsite post-completion of the development and suitable foraging habitat is adjacent to the site and is a common resource locally. It is therefore not considered likely that the proposed development will impact on the ability of local badger populations to forage.
- 4.37 Badger is a highly mobile species with large territories that readily digs new setts. However, providing precautionary working measures are followed during the construction phase, there will not be a negative impact on European badger as a result of the proposed development.

West European hedgehog

- 4.38 The local records search returned five records for west European hedgehog species in the vicinity of the site (see Table 3), with the closest record located 1430m from site.

- 4.39 Onsite habitats (improved grassland and semi-improved grassland) are suitable to support hedgehog and it is considered likely that this species uses the site for commuting and foraging.
- 4.40 If suitable habitats are cleared without mitigation, there would be a negative impact on hedgehog as a result of the proposed development due to killing/injury (if present), triggering legislation that protects the species.
- 4.41 The loss of habitat may have an impact on individual hedgehogs due to the loss of foraging/ commuting habitat. However, it is considered that adverse impacts on the local hedgehog populations are unlikely as grassland habitats are a common local resource and available in the surrounding landscape.

Invertebrates

- 4.42 The local records search returned no records for invertebrate species in the vicinity of the site (see Table 3).
- 4.43 It is considered likely that common invertebrate species are present within the improved grassland and semi-improved grassland habitat at the site. These habitats are abundant in the surrounding landscape and thus it is not considered likely that the proposed development will adversely impact on local invertebrate populations.
- 4.44 There will not be a negative impact on invertebrate species as a result of the proposed development.

5 CONCLUSIONS AND RECOMMENDATIONS

- 5.1 Wildwood Ecology was commissioned to undertake a Preliminary Ecological Appraisal (PEA) and Biodiversity Net Gain (BNG) assessment of North Rye House.
- 5.2 The site is the subject of a planning application for the creation of an equestrian arena, resurfacing of the existing access track through a field, and repositioning of a barn.

Designated sites

- 5.3 There are no designated sites within the vicinity of the site and thus no impacts are anticipated as a result of the proposed development.

Protected species

Amphibians (including GCN)

- 5.4 The local records search returned no amphibian records in the vicinity of the site (see Table 3).
- 5.5 A Magic map search for GCN records returned no granted PSML, no GCN licence returns with confirmed presence of GCN within 2km of the site and no pond surveys undertaken between 2017 – 2019 with positive results.
- 5.6 Some of the onsite habitats (improved grassland and semi-improved grassland) are suitable for amphibians, with connectivity to suitable offsite habitat.
- 5.7 A Precautionary Working Method Statement (PWMS) will be created detailing how impacts on amphibians can be avoided during clearance and construction activities.
- 5.8 Vegetation removal will be carried out in the active season for amphibians (i.e. April – October, inclusive) in order to avoid the risk of impacting protected species during hibernation season when they are most vulnerable.
- 5.9 As a precaution, trenches will be covered overnight during the works (or a plank provided as a means of escape) and pipes will be capped.
- 5.10 To compensate for the loss of suitable habitat, brash and wood piles will be created in discrete locations, as directed by the ecologist.

Bats

- 5.11 In order to prevent an impact on local bat populations, foraging and commuting routes located along hedgerows close to the development area must remain un-fragmented. Fragmentation can occur by physical removal of the habitat, but also by artificial light spilling onto them.
- 5.12 All UK bats are nocturnal species, and some species are light-averse (brown long-eared bat, confirmed within buildings close to the site, particularly so). Artificial lighting of foraging and commuting routes is known to act as a barrier to bats and fragment otherwise suitable habitats, causing a negative impact on their local populations. As the above listed light-averse species are

known to commute at and around the site, lighting around hedgerows bordering the site must be kept at the current dark levels to avoid impacting these species

- 5.13 Therefore, if there is to be lighting, a sensitive lighting plan should be produced, demonstrating consideration for bats with dark flight lines retained to ensure the proposed development would not have a detrimental effect on bats commuting/ foraging along nearby habitat. The external works for the proposed development should be undertaken during daylight hours.

Nesting birds

- 5.14 Building works should take place outside of the bird nesting season. In the event that clearance work has to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a nesting bird check will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - <http://www.jncc.gov.uk/page-3614>) is found to be present, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.

European badger

- 5.15 As no evidence of use by badger was identified onsite, no further surveys will be required.
- 5.16 However, as badger is a highly mobile species that readily digs setts, as a precaution in order not to trigger legislation, a suitably qualified ecologist should carry out a badger check at the site prior to the start of works to ensure no setts exist that would be adversely affected by the development.
- 5.17 As a precaution, trenches should be covered overnight during the works (or a plank provided as a means of escape) and pipes should be capped.

Reptiles

- 5.18 The proposed development will result in the loss of habitat considered suitable to support common reptile species. Avoidance and mitigation measures must therefore be undertaken to avoid the possibility of killing and injuring reptiles.
- 5.19 A Precautionary Working Method Statement (PWMS) will be created detailing how impacts on reptiles can be avoided during clearance and construction activities.
- 5.20 Vegetation removal will be carried out in the active season for reptiles (i.e. April – October, inclusive) in order to avoid the risk of impacting protected species during hibernation season when they are most vulnerable.
- 5.21 As a precaution, trenches will be covered overnight during the works (or a plank provided as a means of escape) and pipes will be capped.

5.22 To compensate for the loss of suitable habitat, brash and wood piles will be created in discrete locations, as directed by the ecologist.

Invertebrates

5.23 By way of compensation for loss of shelter habitat, two insect boxes should be installed within retained vegetation, as directed by the ecologist. Enhancements are recommended below to improve the site for invertebrates (and in turn for other species by increasing prey availability at the site) by planting native plants or plants with known biodiversity value.

Biodiversity enhancement

5.24 Local authorities have a duty to seek to maintain **and enhance** biodiversity in the exercise of their functions.

5.25 Where possible the existing onsite habitat of ecological importance will be retained to ensure that habitats and species that rely on them are not adversely affected by the development. Native species of local provenance or ornamental plants with known wildlife value will be used for new planting on the site.

5.26 Bird nesting boxes and bat roosting boxes will be incorporated within the proposed buildings or retained trees. A range of types will be used to provide opportunities for a number of species. Based on the species records returned by the record centre and the species observed at the site, the following designs are recommended:

- Two 2F Schwegler general purpose bat boxes - (<https://www.nhbs.com/2f-schwegler-bat-box-general-purpose>) (or similar)
- Two standard nest boxes for garden birds - <https://www.nhbs.com/traditional-wooden-bird-nest-box> (or similar)

Overall conclusion

5.27 Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.

This ecological report will remain valid for a period of 18 months from the date of the last survey - i.e. until February 2024. Further surveys may be required to update the site information if planning is not obtained or works do not commence within this time period.

6 BIODIVERSITY IMPACT ASSESSMENT

- 6.1 A biodiversity net gain assessment was conducted for the site, based on the habitat assessment carried out during the PEA.
- 6.2 Habitat classifications used for metric calculations were converted from Phase 1 to National Vegetation Classification (NVC) using the comparison key contained within the BNG 3.1 metric.
- 6.3 The baseline onsite and offsite habitat data required for the biodiversity metric calculation for the site can be found in Tables 6 and 7 respectively.

Table 6 - Baseline onsite habitat data

Pre-development habitat	Area (Ha)	Condition	Biodiversity units	Area retained (Ha)	Area Enhanced (Ha)	Units lost
Modified grassland	0.6	Moderate	2.64	0	0.05	2.42
Developed land; sealed surface	0.7	N/A - Other	0.00	0.7	0	0.00
Vegetated garden	1.3	Condition Assessment N/A	2.86	1.3	0	0.00
Cereal crops	5.79	Condition Assessment N/A	12.74	3.83	1.66	0.66
Cereal crops	0.21	Condition Assessment N/A	0.46	0	0.21	0.00
<i>Totals</i>	8.60	-	18.70	5.83	1.92	3.08

Table 7 - Baseline offsite habitat data

Pre-development habitat	Area (Ha)	Condition	Biodiversity units	Area retained (Ha)	Area Enhanced (Ha)	Units lost
Lowland mixed deciduous woodland	2.5	Moderate	33.00	2.5		0.00
Mixed scrub	1.4	Moderate	12.32	1.4		0.00
Modified grassland	37.57	Poor	82.65	37.36	0.21	0.00
Modified grassland	1.13	Poor	2.49		1.13	0.00
Modified grassland	8.2	Moderate	36.08	7.99	0.21	0.00
Ponds (Priority Habitat)	0.1	Good	1.98	0.1		0.00
<i>Totals</i>	50.90	-	168.52	49.35	1.55	0.00

- 6.4 As onsite habitat is being lost as a result of the proposed development, onsite compensation for habitat loss will be required on land within the applicant's ownership for the development to result in an overall net gain of at least 10%.
- 6.5 Proposed onsite habitat creation can be found in Table 8 and proposed habitat enhancement can be found in Table 9. Proposed offsite habitat enhancement can be found in table 10.

Table 8 - Onsite habitat creation

Post-development habitats	Area (Ha)	Habitat units delivered
Onsite habitat (red-line boundary)		
Developed land; sealed surface	0.85	0
<i>Totals</i>	0.85	0

Table 9 - Onsite habitat enhancement

Pre-development habitat	Area proposed for enhancement (Ha)	Existing condition	Proposed habitat	Proposed condition	Units gained
Grassland - Modified grassland	0.05	Moderate	Lowland mixed deciduous woodland	Moderate	0.27
Cropland - Cereal crops	1.66	Condition Assessment N/A	Lowland mixed deciduous woodland	Moderate	5.58
Cropland - Cereal crops	0.21	Condition Assessment N/A	Traditional orchards	Moderate	1.22
<i>Totals</i>	1.92	-	-	-	7.07

Table 10 - Offsite habitat enhancement

Pre-development habitat	Area proposed for enhancement (Ha)	Existing condition	Proposed habitat	Proposed condition	Units gained
Grassland - Modified grassland	0.21	Poor	Wet woodland	Moderate	1.10
Grassland - Modified grassland	1.13	Poor	Other neutral grassland	Moderate	7.71
Grassland - Modified grassland	0.21	Moderate	Lowland mixed deciduous woodland	Moderate	1.12
<i>Totals</i>	1.55	-	-	-	9.92

6.6 Many of the sites internal hedgerows are in poor condition and thus offer an opportunity for further enhancement. Therefore, hedgerow creation and enhancement is being undertaken to assist in providing net gain at the site.

6.7 Baseline hedgerow data, hedgerow creation data and hedgerow enhancement data can be found in Tables 11, 12 and 13, respectively.

Table 11 - Baseline hedgerow data

Hedgerow type	Length (km)	Condition	Total hedgerow units	Length retained (km)	Length Enhanced (km)	Total units lost
Hedge Ornamental Non Native	0.35	Poor	0.39	0.35	0	0.00
Native Hedgerow	2.3	Poor	5.06	1.93	0.37	0.00
Native Hedgerow with trees	2.7	Poor	11.88	0.87	1.74	0.40
Native Hedgerow with trees - Associated with bank or ditch	0.72	Poor	4.75	0	0.72	0.00

Table 12 - Onsite hedgerow creation.

Hedgerow type	Length (km)	Condition	Hedgerow units delivered
Native species-rich hedgerow	0.33	Good	2.84

Table 13 - onsite hedgerow enhancement

Pre-development hedgerow	Length proposed for enhancement (km)	Existing condition	Proposed hedgerows	Proposed condition	Units gained
Native Hedgerow	2.3	Poor	Native Species Rich Hedgerow	Good	4.22
Native Hedgerow with trees	2.7	Poor	Native Species Rich Hedgerow with trees	Good	30.08
Native Hedgerow with trees - Associated with bank or ditch	0.72	Poor	Native Species Rich Hedgerow with trees - Associated with bank or ditch	Good	16.68
<i>Totals</i>	5.72	-	-	-	50.98

6.8 If the commitments outlined above are met, the biodiversity net gain metric shows an increase in biodiversity at the site as a result of the creation of enhanced habitat, with a total net % change of 30.51% net gain. Additionally, there will be a total net % change of hedgerow units at the site of 182.11% net gain.

6.9 Headline results from the biodiversity net gain metric can be seen in Tables 14 and 15, respectively.

Table 14 - Biodiversity net gain metric results.

Onsite baseline habitat units	Offsite baseline habitat units	Onsite habitat units' post-intervention	Offsite habitat units' post-intervention	Overall habitat unit net gain	Total % net change
18.70	168.52	18.35	174.57	5.71	30.51%

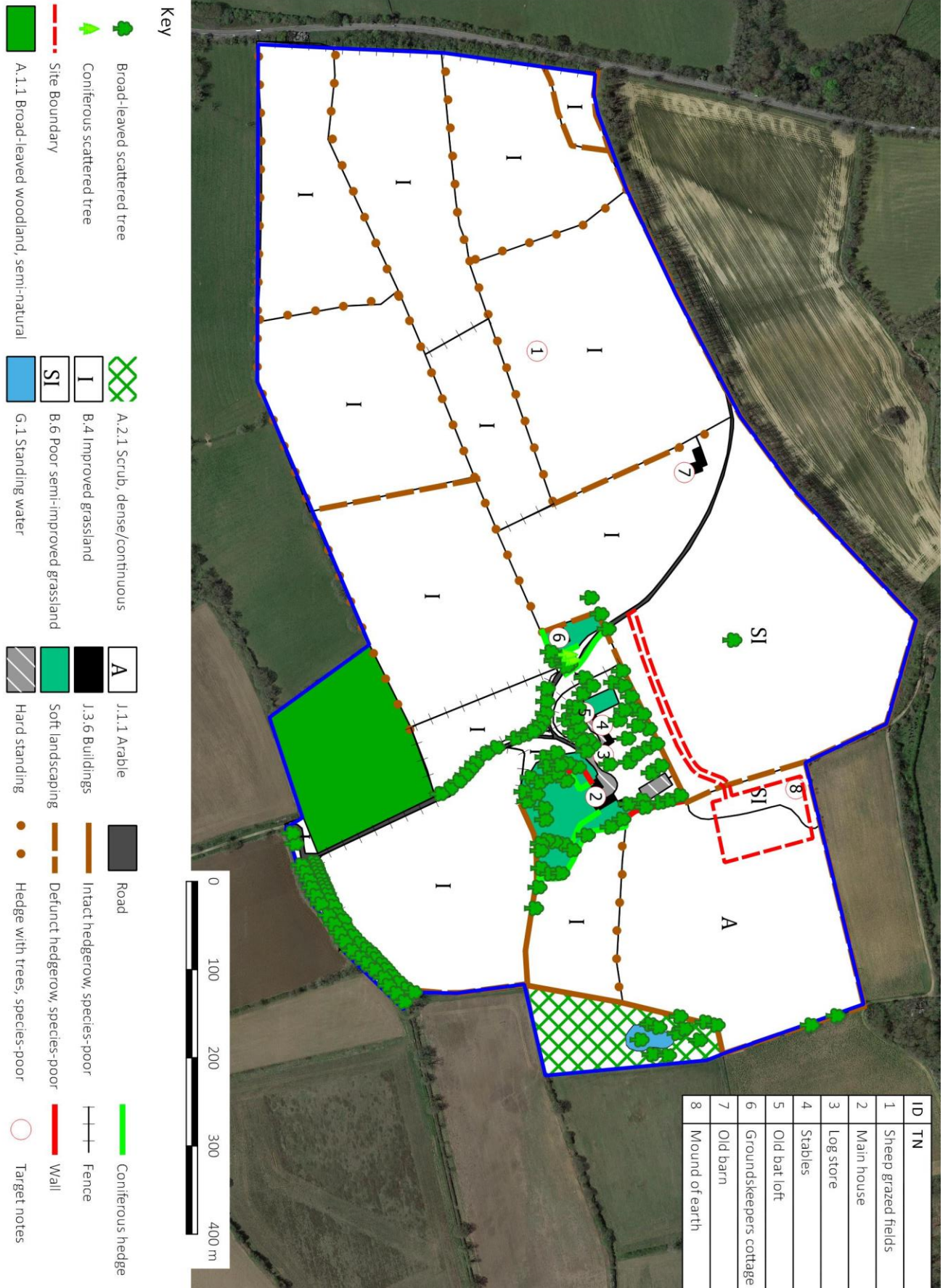
Table 15 - Hedgerow net change results.

Onsite baseline hedgerow units	Onsite hedgerow units' post-intervention	Overall hedgerow unit net gain	Total % net change
22.08	62.28	40.20	182.11

7 REFERENCES

- Bat Conservation Trust and the Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK; *Bats and the Built Environment* series (Guidance Note 08/18), The Bat Conservation Trust, London.
- CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.

APPENDIX I: PEA PLAN



APPENDIX II: PROPOSED DEVELOPMENT PLAN



APPENDIX III: SURVEY IMAGES



Figure 3 - main house at the site



Figure 4 - proposed location for stables



Figure 5 - grassland habitat to be removed



Figure 6 - proposed location of the menage



Figure 7 - improved grassland habitat



Figure 8 - improved grassland and defunct hedgerow with trees



Figure 9 - heavily grazed grassland comprises much of the improved grassland habitat



Figure 10 - example of a defunct hedgerow with little ground flora



Figure 11 - tennis court and grassland habitat proposed for removal



Figure 12 - soft landscaping habitat proposed for removal

APPENDIX IV: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name: North Rye House
Grid ref: SP 20595 28639

Provided by: Wildwood Ecology Ltd
Verified by: Peter Hacker

Common name	Scientific Name (if known)	Number	Comment
Flora			
Ash	<i>Fraxinus excelsior</i>		
Beech	<i>Fagus sylvatica</i>		
Birch	<i>Betula pubescens</i>		
Blackthorn	<i>Prunus spinosa</i>		
Bramble	<i>Rubus fruticosus</i>		
Broad leaved willowherb	<i>Epilobium montanum</i>		
Cotoneaster	Cotoneaster horizontalis		
Creeping buttercup	Ranunculus repens		
Crested dog's tail	Cynosurus cristatus		
Dog rose	Rosa canina		
False oat grass	Arrhenatherum elatius		
Hawthorn	Crataegus monogyna		
Hazel	Corylus avellana		
Leyland cypress	Cupressus x leylandii		
Meadow vetchling	Lathyrus pratensis		
Oak	Quercus robur		
Perennial Rye grass	Lolium perenne		
Rough hawkbit	Leontodon hispidus		
Thistle sp.	Cirsium sp.		
Wheat	Triticum aestivum		
Yarrow	Achillea millefolium		
Yorkshire fog	Holcus lanatus		
Fauna			
Buzzard	Buteo buteo		
Black bird	Turdus merula		
Carrion crow	Corvus corone		
Robin	Erithacus rubecula		
Wood pigeon	Columba palumbus		
Wren	Troglodytes troglodytes		
Common pipistrelle	Pipistrellus pipistrellus		
Soprano pipistrelle	Pipistrellus pygmaeus		
Brown long eared	Plecotus auratus		
Noctule	Nyctalus noctule		
Myotis sp.	Myotis sp.		

APPENDIX V: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

National Planning Policy Framework 2019

The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) states: “*Planning policies and decisions should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; maintaining the character of the undeveloped coast, while improving public access to it where appropriate; minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*”

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2017 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include –The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and *Rhododendron ponticum*) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonably avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example, scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the

development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 (as amended). All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

a wild animal.