Preliminary Ecological Appraisal

Site: Small barn at Riseley Farm, Part Lane, Swallowfield

Client: Mr & Mrs Close

Date: January 2026

Crossland Ecology Ltd. Office 5945, 321 High Road, Chadwell Heath, Essex, RM6 6AX

www.crosslandecology.co.uk | info@crosslandecology.co.uk | 01245 806 360

Quality Assurance

Revision	Status	Date	Author(s)	Review and approval by
A	Final	15/01/2026	MC	SC

Disclaimer

Crossland Ecology has prepared this report for the exclusive use of the client for the intended purpose as stated in the terms and conditions under which the scope of work has been agreed and completed.

The report may not be relied upon by any other party without explicit agreement from Crossland Ecology and the client. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Site assessments / surveys (where required) have been restricted to a level of detail required to achieve the stated objectives of the work.

Due to the temporal nature of ecology, the findings of this report should not be relied upon if a significant amount of time has passed, as defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines.

Contents

Summary

1.1 Located within Riseley Farm on Part Lane, the Site was approximately 44 m^2 in extent and comprises a small barn. The small barn lies within a larger farm complex, with further agricultural and residential dwellings present to the south. The north is dominated by horse grazed fields. The Site is situated within the village of Swallowfield which is a mosaic of urban development, agricultural fields and pockets of woodland.

1.2 No further surveys are required. Standard industry precautionary working method has been advised for hedgehogs.

1.3 A summary of ecological features likely impacts, and outline mitigation/enhancement measures is provided in Table .

1.4 Through incorporation of relevant recommendations, it is considered that the proposals can deliver positive residual impacts in line with current wildlife legislation, chapter 15 of the NPPF (MHCLG, 2024); and local planning policies relevant to nature conservation.

Introduction

2.1 Crossland Ecology Ltd. was commissioned by Mr & Mrs Close to undertake a Preliminary Ecological Appraisal (PEA) of Riseley Farm, Part Lane, Swallowfield (the 'Site'). The location of the Site is provided in Appendix 1.

2.2 This report presents the findings and recommendations of the PEA.

2.3 The objectives of this appraisal were to:

- Map the main ecological features within the surveyed area and compile a plant species list for each habitat type;
- Make an initial assessment of the presence or likely absence of species of conservation concern;
- Identify any legal and planning policy constraints relevant to nature conservation which may affect the development proposals;
- Determine any potential further ecological issues;
- Determine the possible need for further surveys and mitigation; and
- Make recommendations for minimising impacts on biodiversity and providing net gains in biodiversity where possible in accordance with Chapter 15: *Conserving and Enhancing the Natural Environment*, of the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government [MHCLG], 2024), and relevant local nature conservation planning policies.

2.4 The details of relevant wildlife legislation in addition to national and local planning policies related to nature conservation and biodiversity are provided in Appendix 2.

Methods

3.1 This report has been prepared with reference to British Standards Institution (BSI) BS 42020:2013 'Biodiversity – code of practice for planning and development' (BSI, 2013) and The Chartered Institute of Ecology and Environmental Management's (CIEEM) and Technical Guidance Series 'Ecological Report Writing' (CIEEM, 2017a) and Code of Professional Conduct (CIEEM, 2025).

3.2 The following PEA follows guidance and methods as prescribed by the CIEEM Guidelines for Ecological Appraisal 2nd edition (2017b) and the Guidelines for Ecological Impact Assessment (2024). Following these methods, a baseline of rare and/or notable ecological features (species and habitats) was established and valued. Predicted significant impacts upon these features have been identified as well as constraints and opportunities. This step-wise assessment process has informed likely mitigation and enhancement measures as well as any further assessment required. This PEA and any additional surveys will fully inform the predicted impacts of the scheme in accordance with the NPPF (DHULC, 2024), local planning policy and relevant wildlife legislation.

Desk Study

3.3 A web-based search for statutory designated sites via the Multi Agency Geographic Information for the Countryside (MAGIC) spatial data resource magic.defra.gov.uk was undertaken on 07.01.26 for the following statutory designated sites: European (up to 10 km from the Site boundary; National (5 km from the surveyed area boundary) and non-statutory designated sites (2 km from the Site boundary).

3.4 A search was undertaken for waterbodies within 250 m utilising MAGIC online spatial data resource (https://magic.defra.gov.uk/) on 07.01.26.

3.5 Hazel dormouse *Muscardinus avellanarius* records were checked on 07.01.26 from the National Biodiversity Network (NBN) Atlas www.nbnatlas.org, which holds data from the People's Trust for Endangered Species (PTES).

Extended Phase 1 Habitat Survey

3.6 A UK Habitat Classification (UKHab) Survey was carried out on 18.12.25 by Consultant Ecologist Maddy Carter during appropriate weather conditions. UKHab survey methods are set out in the UK Habitat Classification User Manual – Version 2.0 (UKHab Ltd. 2023). UKHab is a comprehensive habitat classification system designed for the UK and is intended for ecologists to identify and map habitats to provide outputs that are suitable for ecological impact assessment. Habitat mapping was undertaken using the standard classification to indicate habitat types.

3.7 The dominant and readily identifiable higher plant species identified in each of the various habitat parcels were recorded and their abundances assessed on the DAFOR scale:

- D - Dominant

- A - Abundant
- F - Frequent
- O - Occasional
- R - Rare

3.8 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2019).

Protected and Notable Species

3.9 The surveyed area was assessed during the UKHab survey for its suitability for protected and notable species that are likely to occur in the area. Considering the results of the desk study, the location and habitats in the surveyed area, an assessment was carried out for:

- Rare, notable and invasive flora;
- Badger *Meles meles*;
- Bats (roosting, foraging and commuting habitats);
- Breeding and non-breeding birds;
- Great crested newt (GCN) *Triturus cristatus*;
- Hazel dormouse;
- Rare or notable invertebrates;
- Reptiles; and
- Other notable species.

Badger

3.10 An initial assessment was made to identify areas that might be used by badger for foraging, commuting and sett creation.

Bats

3.11 The Site was assessed for its suitability to support roosting, foraging and commuting bats. A Preliminary Roost Assessment (PRA) was undertaken of the buildings within the Site to assess the potential suitability of the structure for roosting bats.

3.12 Good bat foraging habitat generally includes sheltered areas and habitats with good numbers of insects, such as woodland, scrub, ponds, lakes and species-rich or rough grassland. Good commuting habitat generally comprises linear features such as well-connected hedgerows, woodland edge, watercourses. The Site was assigned a level of suitability according to the classification provided by Collins (2023) (Table 1).

Table 1: Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2023)

Potential suitability	**Description**	
	Roosting habitats in structures	**Potential flight-paths and foraging habitats**
None	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. 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 used for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. 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 used for	Habitat that could be used by small numbers of bats as flightpaths 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

	maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).	(not in a parkland situation) or a patch of scrub.
Moderate	A structure 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, such as maternity and hibernation – the categorization described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths 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	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths 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. Site is close and connected to known roosts.

Birds

3.13 The Site was assessed for its potential to support rare and notable breeding birds and significant wintering and/or migratory bird populations. Suitable habitat generally includes scrub, trees and can also include buildings, open grassland and piles of debris.

Great Crested Newt

3.14 The Site was assessed for its potential to support GCN. Aquatic habitats within 250 m of the Site were identified using online mapping services. Terrestrial habitats on-site were also assessed for their suitability for GCN as part of the PEA. Suitable terrestrial habitat generally includes rough grassland and woodland where they can forage and hibernate, with good links to the ponds where they breed.

Hazel Dormouse

3.15 The Site was assessed for its potential to support hazel dormouse. This species generally uses areas of dense woody vegetation and are more likely to be found where there is a wide diversity of woody species contributing to a three-

dimensional habitat structure, a number of food sources, plants suitable for nest-building materials and good habitat connectivity.

Invertebrates

3.16 The Site was assessed for its potential to support rare or notable invertebrate species; this assessment was made on the basis of the range of the habitats present.

Reptiles

3.17 The Site was assessed for its suitability for the four more widespread UK reptile species; common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*. Specific habitat requirements vary between species. Common lizard and slow worm prefer rough grassland although they can be found in a variety of habitats ranging from woodland glades to walls and pastures. Grass snake have similar habitat requirements but have a greater reliance on ponds and wetlands. Adder is more associated with dry grasslands, heathland and woodland edge habitats.

Other Notable Species

3.18 The Site was assessed for its potential to support Natural Environment and Rural Communities (NERC) Act 2006 species of principal importance (SoPI) which are likely to occur in the local area especially west European hedgehog *Erinaceus europaeus* and brown hare *Lepus europaeus.*

Assessment of Nature Conservation Value

3.19 CIEEM guidelines for Ecological Impact Assessment in the United Kingdom (2024) have been utilised to assess the impacts upon habitats within the zone of influence (ZoI) of the site. CIEEM suggests that it is best to use the geographical scale (i.e., International, National, Regional etc.) at which a feature (i.e. a habitat, species or other ecological resource) may or may not be important, as the appropriate measure of value. As such, data from the data search and UKHab survey have been reviewed and the likely occurrence of protected and notable species/species groups assessed. This has allowed predictions of impacts to be made along with recommendations for mitigation, compensation and enhancement. If needed, further targeted survey has been recommended to refine the evaluation and associated recommendations.

3.20 All impacts upon ecological features have been considered for the purposes of this survey following industry best practice guidance. Only relevant protected and notable species have been discussed within this report to keep the contents concise and relevant to the works being undertaken and for ease of application.

Constraints

3.21 Desktop data searches are a valuable tool in evaluating a site's potential to hold rare and protected species, it is not however absolute in confirming presence or absence of notable species due to the nature of how the records are collected.

3.22 Where any data supplied by the client, or any other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by Crossland Ecology Ltd. for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report assume that all relevant information has been supplied by those bodies from whom it was requested.

3.23 All the species that occur in a habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. The assessment of the site was undertaken in December 2025, which falls outside the optimal plant growing season. However, considering the types of habitats and Site location, this is not considered a significant constraint.

Baseline Ecological Conditions

Site Description

4.1 Located within Riseley Farm on Part Lane, the Site was approximately 44 m^2 in extent and comprises a small barn. The small barn lies within a larger farm complex, with further agricultural and residential dwellings present to the south. The north is dominated by horse grazed fields. The Site is situated within the village of Swallowfield which is a mosaic of urban development, agricultural fields and pockets of woodland.

Statutory Designated Sites

European Designated Sites

4.2 There is one European designated site located within 10 km of the Site; Thames Basin Heaths Special Protection Area (SPA) located 1.4 km souht-east. The details of the European designated site is summarised in Table 2.

4.3 SPAs, Ramsar Sites and SACs are considered important at the **International** level.

Nationally Designated Sites

4.4 There are seven Nationally designated sites within 5 km of the Site; four Sites of Special Scientific Interest (SSSI) and three Local Nature Reserves (LNR) (Table 2). The nearest is The Marshes (LNR) at c.460 m south-east of the Site.

4.5 The Site lies with the Impact Risk Zone (IRZ) for multiple SSSIs, however, the proposed development is not deemed likely to impact the designated sites.

4.6 SSSIs and LNRs are considered important at the **National** level.

Table 2: Statutory Designated Sites within the Vicinity of the Site

Site name	Distance & direction	Size (ha)	Reason for designation
Thames Heath Basin SPA	1.40 km south-east	8309.5	The site has breeding populations of nightjar *Caprmulgus europaeus*, woodlark *Lullula arborea*, and the Dartford warbler *Sylvia undata*.
Bramshill SSSI	1.40 km south-east	671.99	The site has a series of shallow acid ponds and associated mire, which supports a rich assemblage of dragonfly and damselfly, and rotationally felled conifer plantation, which provides habitat for internationally important populations of nightjar, woodlark and Dartford warbler.
Standford End Mill and River Loddon SSSI	2.21 km west	13.4	A series of traditionally managed seasonally waterlogged hay meadows. The site is of interest for nationally important populations of two rare plants: the fritillary *Fritillary meleagris* and the Loddon pondweed *Pontamogeton nodosus*.

Site name	Distance & direction	Size (ha)	Reason for designation
Hazeley Heath SSSI	4.17 km south-east	177.1	The site comprises a relatively large tract of heathland which is a habitat with distinc national scarcity value.
Longmoor Bog SSSI	4.91 km north-east	14.4	The woodland and heathland on-site support a variety of breeding birds including woodcock, great spotted and green woodpeckers, treecreeper and tree pipit.
The Marshes LNR	460 m south-east	2.21	N/A
Swallowfield Meadow LNR	968 m north-west	0.71	The meadows, albeit small, contain a wide variety of habitats including native hedgerows, a small copse, ditches and seasonal ponds as well as the meadows themselves. The meadow is rich in plant and wildlife species with water voles being attracted to the site in recent years.
Longmoor Bog LNR	4.91 km north-east	11.75	Lowland valley mire and wet (bog) woodland. Species include bog bush cricket, adders, bog bean and common wintergreen.

Ancient Woodland and Priority Habitats

4.7 The desk study identified multiple parcels of Ancient Woodland Inventory (AWI)/ Priority Habitat Inventory Deciduous Woodland and Priority Habitat Inventory Wood-Pasture and Parkland within 2 km of the Site that is not already designated as SSSI. Parcels of Traditional Orchards and Good Quality Semi-improved Grassland are also located within 2 km of the Site. The closest Priority Habitat to the Site is a Traditional Orchard located 160 m north of the Site.

4.8 Priority Habitats are considered important at the **County** level.

Habitats

4.9 A UKHab map of the site is provided within Appendix 3. A selection of site photographs is provided in Appendix 4.

4.10 The UKHab types within the Site are listed below followed by a description of each habitat type:

- u1b – buildings

Developed Land; Sealed Surface

4.11 Building B1 is a brick-built stables with a concrete base. The building has a single-skinned corrugated asbestos roof. The stable is split into two halves, with one half being open and for housing horses, whilst the other half is enclosed and used for storage.

Non-Priority Habitats

4.12 The Site's non-priority habitats are considered to be of **Negligible** importance for biodiversity. Confidence in this assessment is **high**.

Protected and Notable Species

4.13 Protected species are animals and plants protected under the Wildlife and Countryside Act (WCA) 1981 (as amended), the Conservation of Habitats and Species Regulations 217 (as amended), the Protection of Badgers Act 1992, or listed in Section 40 or 41 of the NERC Act 2006. Protected and notable species with existing records within 2 km of the Site are detailed below.

Protected and Invasive Flora

4.14 No protected species listed on Schedule 8 and no invasive species listed on Schedule 9 of the WCA 1981 (as amended) were identified within the Site during the survey or within 2 km of the Site through the desk study.

4.15 Given the common and widespread habitats present, it is considered unlikely that rare or protected flora would be present.

4.16 The Site is therefore considered to be of **Negligible** importance for flora. Confidence in this assessment is **high.**

Badger

4.17 There was no evidence of use of the Site or the surrounding habitats by badger during the survey. There is connectivity from the Site to higher ecologically valuable habitats in the locality but the majority of Riseley Farm is comprised by grazed fields of limited suitability. Therefore, the surrounding farm may be utilised occasionally by transient individuals, but the presence of badgers on the Site is deemed to be unlikely.

4.18 The Site is currently considered of **Negligible** importance for badger. Confidence in this assessment is **high**. This species will not be considered further within this report.

Bats

4.19 A review of MAGIC returned nine European Protected Species Licences (EPSLs) for common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *Pipistrelle pygmaeus*, brown long-eared bat *Plecotus auritus* and serotine *Cnephaeus serotinus* within 2 km of the Site. The closest EPSL is located 522 m south of the site and allowed for the destruction of a resting place.

Bats- Roosting

4.20 The PRA identified B1 as having no suitable roosting features for bats due to the lack of crevices. Additionally, due to the openness of the building and presence of windows, the internal spaces experience a large influx of natural light and are likely to have fluctuating climactic conditions.

Bats- Roosting

4.21 The Site is therefore considered to be of **Negligible** importance for roosting bats. Confidence in this assessment is **high**.

Bats- Foraging

4.22 The Site has no habitat of ecological value for foraging and commuting bats.

4.23 The Site is therefore considered to be of **Negligible** importance for foraging/commuting and roosting bats. Confidence in this assessment is **high**. This species will not be considered further within this report.

Birds

4.24 The Site comprises a small barn which has limited nesting opportunities and resources for even common and widespread birds. No evidence of historic birds' nests were identified during the survey.

4.25 Overall, the Site is not likely to support even a common assemblage of breeding and non-breeding species. As such, the Site was considered to be of up to **Negligible** importance. Confidence in this assessment is **high**.

Great Crested Newt

4.26 There were no waterbodies within the Site. From inspection of available mapping, there are two ponds and multiple drainage ditches within 250 m of the Site. The ponds are located 54 m south-east and 68 m south-west of the Site (Appendix 6). Both are separated from the Site by the developed land of the farm.

4.27 The pond located 54 m south-east was assessed for its suitability for GCN through a Habitat Suitability Index (HSI) assessment. The pond scored 'Below Average' with a HSI value of 0.5647 overall. Although the HSI is not conclusive on GCN present, it indicates that there is a reasonably low likelihood of this species using this pond.

4.28 The Site has no suitable terrestrial habitat as there are no habitats of ecological value present. The surrounding grass fields are horse grazed with a short sward length making them of limited suitability for commuting GCN.

4.29 The Site is considered to be of **Negligible** importance for GCN with confidence in this assessment **high**. This species will not be considered further within this report.

Hazel Dormouse

4.30 There are 171 records of hazel dormouse within 10 km of the site. Additionally, a review of MAGIC returned 6 EPSLS for hazel dormice within 10 km of the site. The closest EPSL is located 1.45 km south-west of the Site.

4.31 The Site is considered to be unsuitable for hazel dormouse due to the lack of habitats with ecological value.

4.32 As such, the site was considered to be of **Negligible** importance for hazel dormice. Confidence in this assessment is **high.** This species will not be considered further within this report.

Invertebrates

4.33 The Site provides no suitable habitat for even common and widespread invertebrates.

4.34 The Site is considered to be of **Negligible** importance for invertebrates. Confidence in this assessment is **high.**

Reptiles

4.35 The Site provides no suitable habitat for reptiles. The surrounding grass fields are heavily horse grazed so provide limited suitability for reptiles to forage and commute across, therefore, further reducing the likelihood of reptiles being present on-Site.

4.36 The Site was considered to be of **Negligible** importance. Confidence in this assessment is **high.** This species will not be considered further within this report.

Other Notable Species

4.37 The Site provides limited suitable shelter for hedgehogs due to the open nature of the building. The surrounding farm likely provides suitable habitat for hedgehogs to forage and commute across. Therefore, the presence of an individual transient hedgehog cannot be wholly ruled out. The Site was considered to have potential to be of **Site** importance for these species. Confidence in this assessment is **high**.

Summary

4.38 A summary evaluation of the surveyed area in relation to ecology features is provided in Table 4.

Table 4: Evaluation of existing ecological features

Feature	**Summary Description**	**Importance**	**Confidence**
European Designated Sites	One site of international importance were located within 10 km of the Site.	International	High
Statutory Designated Sites	Seven nationally designated sites within 5 km of the Site.	National	High

Feature	**Summary Description**	**Importance**	**Confidence**
Priority Habitats	Multiple parcels of Ancient Woodland, Deciduous Woodland, Woodpasture and Parkland, Traditional Orchard and Good Quality Semi-improved Grassland within 2 km of the Site	County	High
Other notable species	Sub-optimal shelter habitat for hedgehog.	Site	High

Preliminary Impacts, Mitigation/Enhancement Measures and Residual Effects

Description of Proposals

5.1 The site is subject to a planning application for the demolition of existing barn and erection of stable block within the same footprint (Appendix 5).

Statutory Designated Sites

5.2 One European designated site is located within 10 km of the Site, four SSSIs and three LNRs within 5 km.

5.3 The Site lies within a Natural England Impact Risk Zone (IRZ) for multiple SSSIs but the proposed development is not deemed likely to impact the designated sites.

5.4 It is predicted that the development will have a **neutral** residual effect on statutory designated sites. Confidence in this assessment is **high**.

5.5 Direct effects on statutory designated sites are not anticipated due to the distances from the Site and the relatively small-scale of the Proposed Development.

Habitats

5.6 The Site lacks any habitats of ecological value and the proposed development will not directly impact any surrounding habitats of value (i.e. grass fields).

5.7 Potential impacts during the construction phase include direct damage to retained surrounding habitats e.g. due to pollution events or direct damage.

5.8 Industry standard pollution prevention and environmental protection measures should be strictly adhered to during construction works and throughout operation to protect against potential damage, disturbance and pollution of adjacent habitats.

5.9 Further enhancements proposed to benefit specific fauna (including bird boxes) are detailed within this report.

5.10 The above mitigation alongside the lack of habitats of ecological value on Site are considered likely to result in a **neutral** residual effect.

Protected and Notable Species

Bats – Roosting/Foraging

5.11 All bat species are legally protected under the WCA (1981, as amended) and Conservation of Habitats and Species Regulations (2017, as amended). Taken together, it is an offence to destroy/damage or obstruct access to a bat roost, to kill/injure or disturb individual bats, or to deliberately disturb bats in such a way

to be likely to significantly affect their ability to survive, breed, rear or nurture their young or their local distribution.

5.12 Although B1 does not provide any roosting habitat for bats, surrounding buildings and habitats within the farm likely provide roosting and foraging habitats.

5.13 If any new lighting is necessary, this should avoid directly lighting adjacent off-site vegetation. A sensitive lighting strategy should be employed throughout both the construction and occupation phases of the development to reduce indirect impacts on any local bat populations.

5.14 In general, it is recommended that Site lighting around key features likely to be used by foraging or commuting bats is avoided. If lighting is necessary, this should avoid directly lighting vegetation likely to be utilised by bats, seeking to maintain lux levels along such features (hedgerows and tree canopies) that are in the region of natural nocturnal light levels (generally 0.25 lux or below, up to a maximum of 1 lux). The following mitigation strategies have been taken from the Institution of Lighting Professionals and Bat Conservation Trust's Guidance Note 08/23 Bats and Artificial Lighting at Night (2023) (and other referenced sources) should be considered when choosing luminaires and their potential impacts:

- In general, light sources should not emit ultraviolet light to avoid attracting insects and thus potentially reducing numbers in adjacent areas, which bats may use for foraging. Metal halide and fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light components. Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls of similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90^0 and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion-sensors and set to as short as possible a timer as the risk assessment will allow. For

most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.

- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged; they should only be considered in specific cases.
- Only if all other options have been explored, then accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only where it is needed.

5.15 Plans should seek to avoid any significant increase in lux levels along retained, adjacent and nearby vegetation features, aiming to maintain levels along sensitive habitat features in the region of 0.1-0.25 lux (equivalent to a typical cloudy or moonlit natural nocturnal light levels), and not exceeding a maximum of 1 lux (equivalent to a fully moonlit night) at 2m above ground level, only where this is strictly necessary. Buffering of retained and adjacent areas, would aid to meet this aim, ensuring that functional connectivity is maintained. At detailed design stage, an assessment of proposed lighting designs undertaken by a suitably qualified ecologist may be necessary. This will require the provision of lighting contour plans, illustrating levels of light spill onto sensitive habitats.

5.16 The Site could be enhanced for roosting bats through the inclusion of bat boxes on any suitable retained mature trees or integrated into the new building. Examples are shown in Figure 1 and Figure 2 below.

Figure 1: Habibat (general purpose) bat box for integration into buildings

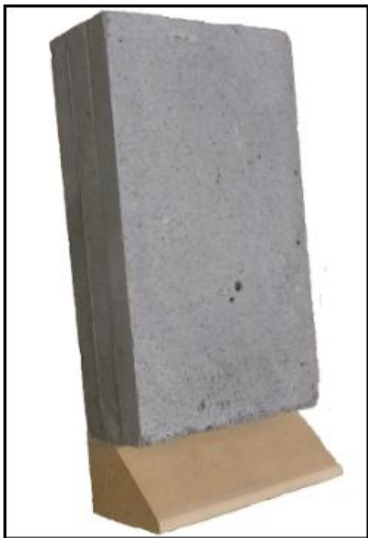


Figure 2: Schwegler 1FD bat box erected on a tree

5.17 The above mitigation and enhancement measures are considered likely to result in a **positive** residual effect.

Birds

5.18 All breeding birds are protected from deliberate destruction under the WCA 1981 (as amended). Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to intentionally kill, injure, or take any wild bird or their eggs or nests (exceptions to this are listed in Schedule 2). In addition, a select group of species are further listed under Schedule 1 of the Act and these have additional protection that makes it an offence to disturb these birds at the nest, or to disturb their dependent young. In addition to this statutory protection British birds are also classified according to their conservation status, including their position on the Red and Amber lists of BoCC (Stanbury *et al,* 2021) and whether they have been identified as Priority Species.

5.19 The Site is small and is considered unlikely to support even common and widespread species. However, the surrounding farm likely provides suitable nesting opportunities and resources.

5.20 To enhance the Site for nesting birds, artificial nesting opportunities are recommended to be installed on trees/buildings. Boxes are recommended to be integrated into new buildings where possible to attract species known to occur locally, in particular house sparrow *Passer domesticus* and swift bricks for swift *Apus apus* (example shown in 3).

Figure 3: Woodstone Build-in Swift Nest Box

5.21 The above enhancement measures are considered likely to result in a **positive** residual effect.

Other Notable Species

5.22 Section 40 of The NERC Act 2006 places a legal duty on Local Authorities to conserve biodiversity. Section 41 (S41) sets out a list of 943 species and habitats of principal importance. These species are known as England Biodiversity Priority (EBP) species and are those identified as requiring action under the former UK Biodiversity Action Plan (BAP) and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. Amongst these species are western hedgehog and brown hare for which limited suitable habitat exists.

5.23 Potential impacts to hedgehog include risk of death/injury during construction.

5.24 It is therefore recommended that standard best practice mitigation measures should be deployed during construction to minimise the risk of injuring and killing any badgers or other wildlife. The following precautionary measures should be followed throughout the construction phase:

- Covering trenches at night or leaving a plank of wood leaning against the side to allow badgers to escape if they were to accidentally fall in;
- Covering open pipework with a diameter of greater than 120mm at the end of the workday to prevent animals from entering and becoming trapped;
- Appropriately storing any chemicals overnight; and
- Regular removal of litter.

5.25 Sensitive working and clearance methods will deliver a **neutral** residual effect for hedgehogs during construction.

Conclusions

6.1 Located within Riseley Farm on Part Lane, the Site was approximately 44 m^2 in extent and comprises a small barn. The small barn lies within a larger farm complex, with further agricultural and residential dwellings present to the south. The north is dominated by horse grazed fields. The Site is situated within the village of Swallowfield which is a mosaic of urban development, agricultural fields and pockets of woodland.

6.2 No further surveys are required. Standard precautionary working method has been advised for hedgehogs.

6.3 A summary of ecological features likely impacts, and outline mitigation/enhancement measures is provided in Table .

6.4 Through incorporation of relevant recommendations, it is considered that the proposals can deliver positive residual impacts in line with current wildlife legislation, chapter 15 of the NPPF (MHCLG, 2024); and local planning policies relevant to nature conservation.

Table 5: Summary of likely impacts, mitigation and enhancement measures and residual effects

Feature	Potential Impacts	Further Surveys and Assessment	Likely Mitigation and Enhancement Measures	Residual Effect
Statutory Sites	N/A	N/A	N/A	Neutral
Habitats	Lighting of retained, adjacent and created habitats during the operational phase.	N/A	Sensitive lighting scheme.	Neutral
Flora	None considered likely to occur.	N/A	N/A	Neutral
Bats	N/A	N/A	Sensitive lighting scheme. Provision of bat boxes.	Positive
Breeding Birds	N/A	N/A	Provision of artificial nesting opportunities (bird boxes).	Positive
Hedgehog	Death/injury.	N/A	Sensitive vegetation clearance.	Neutral

References

British Standards Institution (2012) *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations*. British Standards Institution: London.

British Standards Institution (2013) *BS 42020: 2013 Biodiversity – Code of Practice for Planning and Development*. British Standards Institution: London.

CIEEM (2017a) *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2017b) *Guidelines for Preliminary Ecological Appraisal 2nd edition*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2025) *Code of Professional Conduct*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* version 1.3 – Updated September 2024. Chartered Institute of Ecology and Environmental Management: Winchester.

Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th Edition*. London: The Bat Conservation Trust.

Crossland Ecology Ltd. (2025) *Draft Biodiversity Gain Plan. Land North of High Road, Thornwood*.

English Nature (2001) *Great Crested Newt Mitigation Guidelines.* English Nature. Peterborough.

MHCLG (2024). Ministry of Housing, Communities and Local Government *National Planning Policy Framework.* [Online]. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

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

Gunnell, K., Grant, G. and Williams, C. (2012). *Landscape and Urban Design for Bats and Biodiversity*. Bat Conservation Trust

Harris, S., Cresswell, P. and Jefferies, D. (1989) *Surveying Badgers:* Occasional Publication No.9 The Mammal Society.

Institution of Lighting Professionals (2018) *Guidance Note 08/23: Bats and Artificial Lighting at Night*. Institution of Lighting Professionals: Warwickshire

Jones, J. (2000). *Impact of Lighting on Bats.* Bat Conservation Trust: London.

Stace, C. A. (2019) *New Flora of the British Isles, 4th Edition*. Cambridge University Press: Cambridge.

Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. and Win, I. (2021) Birds of Conservation Concern 5 The status of all regularly occurring birds in the UK, Channel Islands and the Isle of Man. British Birds 114.

Stone, E.L., Jones, G., Harris, S. (2012) *Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats*. Glob Change Biol. 18, 2458-2465.

UKHab Ltd. (2023) *UK Habitat Classification Version 2.0*. [Online]. Available at: https://www.ukhab.org

Wokingham Borough Council (2010) *Wokingham Borough Local Development Framework : Adopted Core Strategy Development Plan Document*.

Appendix 1: Site Location Plan

Appendix 2: Legislative and Policy Framework

This document has not been prepared by a legal or planning professional and should be read as an interpretation of relevant statutes and planning policy guidance only. The information presented within this document has been reported in good faith and are the genuine opinion of Crossland Ecology on such matters. Crossland Ecology does not accept any liability resulting from outcomes relating to the use of this information or its interpretation within this document.

National Planning Policy Framework (NPPF)

The *NPPF* (MHCLG, 2024) outlines what the planning system should do to contribute to and enhance the natural and local environment through the following policy statements:

Paragraph 8
Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy

Paragraph 20
Strategic policies should set out an overall strategy for the pattern, scale and design quality of places and make sufficient provision for:

d) conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation

Paragraph 29
Non-strategic policies should be used by local planning authorities and communities to set out more detailed policies for specific areas, neighbourhoods or types of development. This can include allocating sites, the provision of infrastructure and community facilities at a local level, establishing design principles, conserving and enhancing the natural and historic environment and setting out other development management policies

Paragraph 77:
The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities (including a genuine choice of transport modes). Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities should identify suitable locations for such development where this can help to meet identified needs in a sustainable way. In doing so, they should:

a) consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for net environmental gains;

Paragraph 109
Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:

f) Identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains

Paragraph 124
Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously developed or 'brownfield' land.

Paragraph 125
Planning policies and decisions should:

a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside;

b) recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;

Paragraph 151
Once Green Belts have been defined, local planning authorities should plan positively to enhance their beneficial use, such as looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged and derelict land. Where Green Belt land is released for development through plan preparation or review, the 'Golden Rules' in paragraph 156 below should apply.

Paragraph 187
Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) 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);

b) 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;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;

Paragraph 188
Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Paragraph 192
To protect and enhance biodiversity and geodiversity, plans should:

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

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Paragraph 193

When determining planning applications, local planning authorities should apply the following principles:

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

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

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Paragraph 194

The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites;

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

Paragraph 195

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

Paragraph 198

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Relevant Policies from the Wokingham Borough Local Development Framework: Adopted Core Strategy Development Plan

- CP1 – Sustainable Development
- CP7 – Biodiversity
- CP8 – Thames Basin Heaths Special Protection Area
- CP12 – Green Belt

Wildlife Legislation

The two principal wildlife statutes are the Conservation of Habitats and Species Regulations 2017 (as amended) which deals with internationally important sites and species, and the Wildlife and Countryside Act (WCA) 1981 (as amended) which deals with nationally important sites and species.

Certain habitats and species within discrete sites are protected as SSSI under the WCA 1981 (as amended). A proportion of these are more strictly protected as proposed or designated SPA, SAC and Ramsar sites under the Conservation of Habitats and Species Regulations, 2017 (as amended). These designations protect features and resources listed as being of international importance from both direct and indirect effects arising from a range of issues including proposed development. In addition, non-statutory designated sites (e.g. Local Wildlife Sites) are protected under the National Parks and Access to the Countryside Act, 1949 Section 21.

Certain species listed on Schedule 5 of the WCA 1981, including all bat species, great crested newt *Triturus cristatus,* hazel dormouse *Muscardinus avellanarius* and otter *Lutra lutra* are also protected under Schedule 2 of the Habitats Regulations 2010 making them European Protected Species (EPS). Taken together it is illegal to:

- Deliberately kill, injure or capture any wild animal of EPS;
- Deliberately disturb wild animals of any EPS in such a way to be likely to significantly affect:
- The ability of that species to survive, breed, rear or nurture their young; or
- The local distribution of that species.
- Recklessly disturb an EPS or obstruct access to their place of rest;
- Damage or destroy breeding sites or resting places of such animals;
- Deliberately take or destroy the eggs of such an animal;
- Possess or transport any part of an EPS, unless acquired legally; and/or
- Sell, barter or exchange any part of an EPS.

A range of species other than birds, including water vole *Arvicola amphibius*, is protected from disturbance and destruction under the WCA 1981 through inclusion on Schedule 5.

All breeding birds are protected from deliberate destruction under the WCA 1981. Certain species are further protected from disturbance at their nest sites being listed on Schedule 1 of the WCA 1981.

Common reptiles including common lizard *Zootoca vivipara,* slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus* are protected under the WCA 1981, they are listed as schedule 5 species, therefore part of Section 9(1) and section 9(5) apply; the Countryside and Rights of Way Act 2000 (CRoW) also strengthens their protection.

Badger *Meles meles* is protected from sett disturbance and destruction under the Protection of Badgers Act 1992.

Section 40 of The Natural Environment and Rural Communities Act (NERC) 2006 places a legal duty on Local Authorities to conserve biodiversity. Section 41 (S41) sets out a list of 943 species and Habitats of Principal Importance. These species are known as England Biodiversity Priority (EBP) species and are those identified as requiring action under the former UK Biodiversity Action Plan (BAP) and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

Native, species-rich hedgerows that fit certain criteria are protected as being 'important' under the Hedgerow Regulations (1997).

Japanese Knotweed *Fallopia japonica*, along with other introduced and invasive species are listed under Schedule 9 of the WCA 1981. Japanese knotweed is highly invasive, and its rhizomes cause damage to buildings and other infrastructure. Hence it is also classed as controlled waste under the Environment Protection Act 1990 and has therefore either to be removed or disposed of in a licensed landfill or the rhizomes buried to a depth of at least 5m.

Appendix 3: Baseline Habitats

Appendix 4: Site Photographs

Photo 1: An overview of the small barn (B1), looking at the southern elevation.

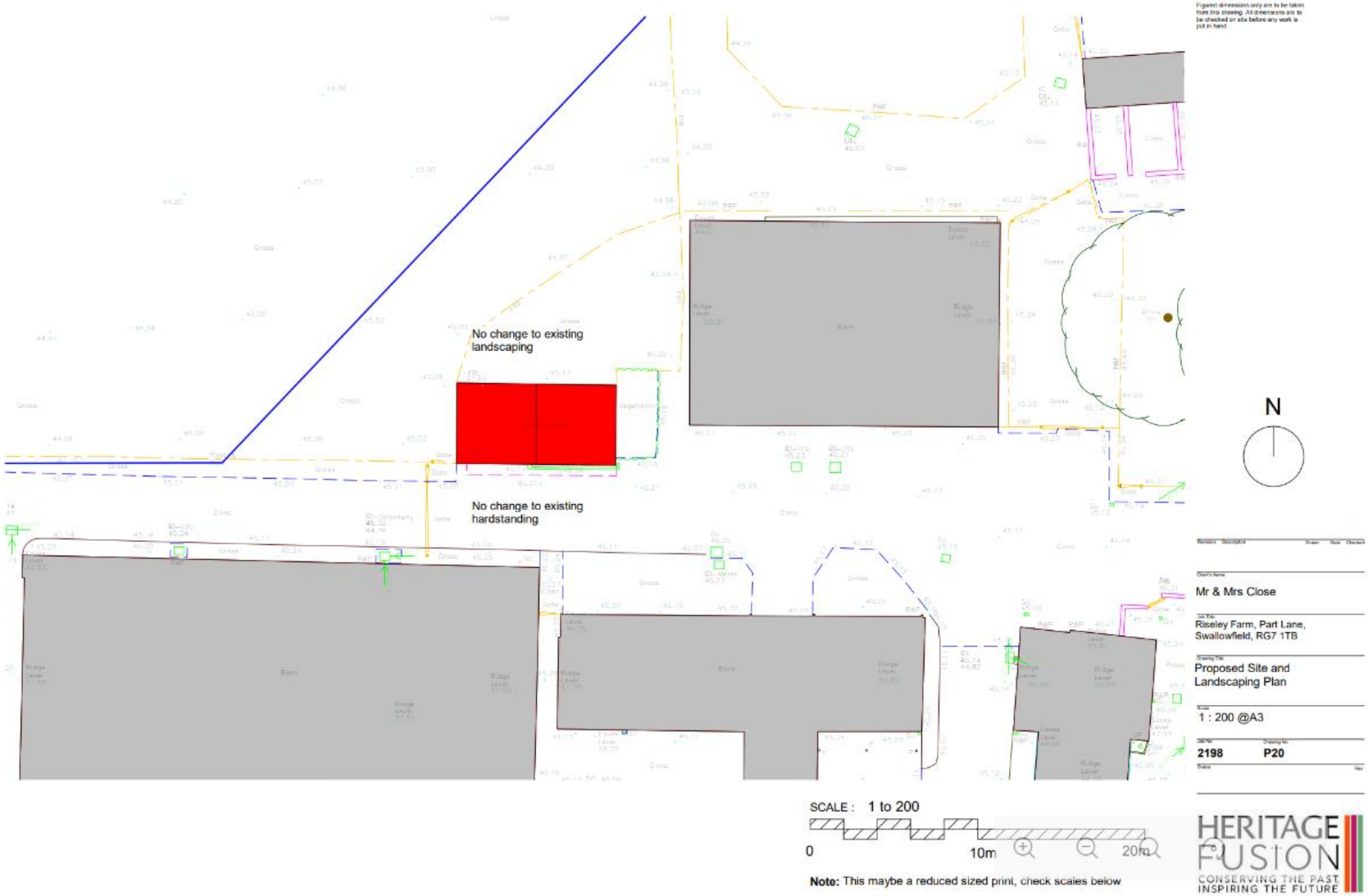
Photo 2: The eastern elevation of B1.

Photo 3: The western elevation of B1.

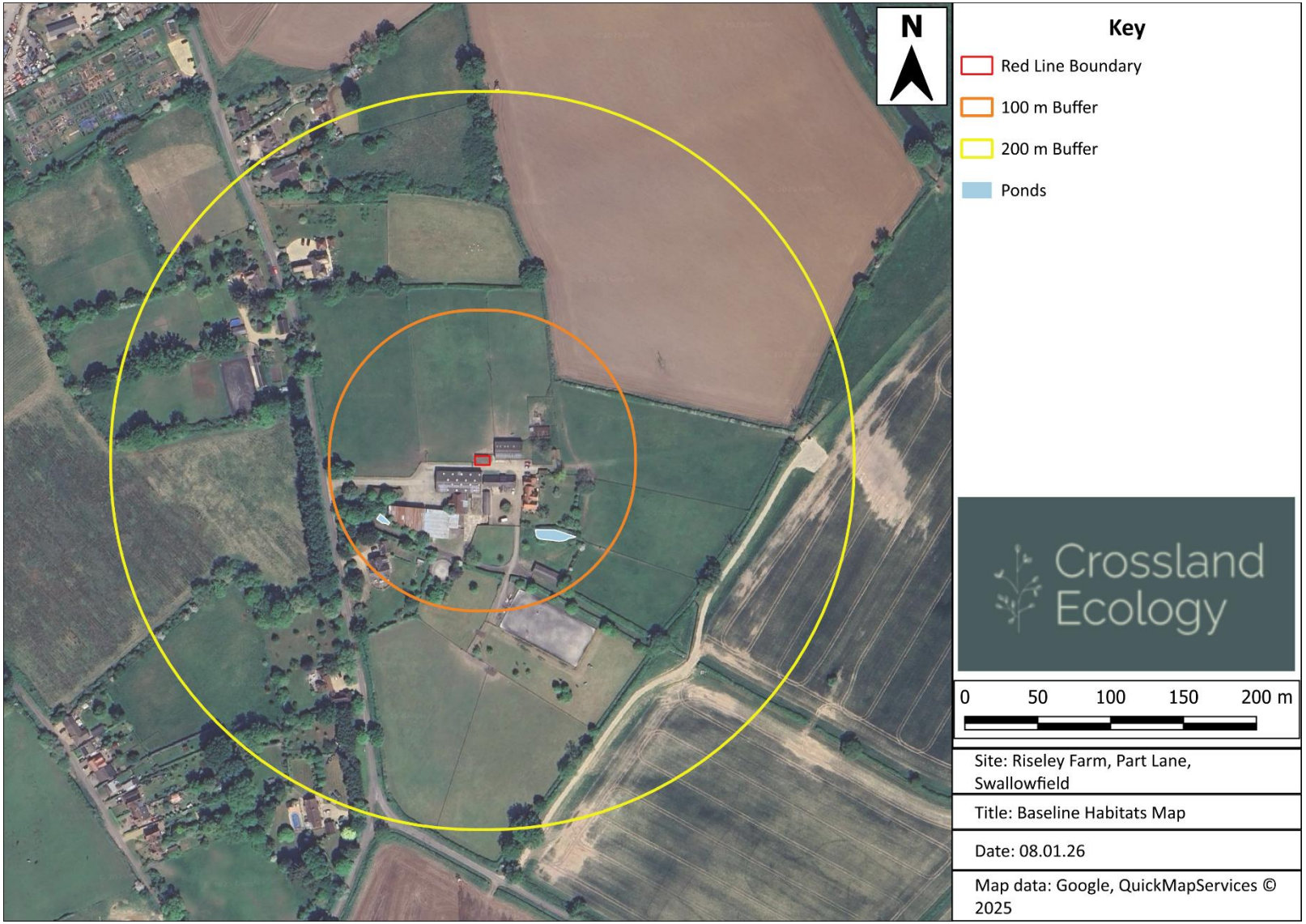
Photo 4: The internal of the eastern half of B1.

Photo 5: The internal of the western half of B1.

Appendix 5: Proposals Plan



Appendix 6: Pond Location Plan



Appendix 7: Species of Known Benefit to Wildlife (Bats and Invertebrates)

The following table is reproduced from Gunnell, K., Grant, G. and Williams, C. (2012). Landscape and Urban Design for Bats and Biodiversity, Bat Conservation Trust. This table contains a suggested species list of plants that can provide benefit for bats either by providing a food source for insects and/ or roost potential. The plants listed are predominately native to Britain. The small group of non-native plants included for their documented value for wildlife. The list has been checked by the author against Natural England's list of invasive non-native plants.

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
Acer campestre	Field maple	N	T/S	C	Any	Sun/ shade				Y	
Acer platanoides	Norway maple		T	S	Well drained/ alkaline	Sun/ shade				Y	
Acer saooharum	Sugar maple		T	S	Any	Sun/ shade				Y	
Achillea millefolium	Yarrow	N	HP	C,F	Well drained	Sun				Y	
Ajuga reptans	Bugle	N	HP	C,F	Any	Sun/ shade	Y		Y		
Anthyllis vulneraria	Kidney vetch	N	HP	F	Well drained	Sun	Y				
Aubrieta deltoidea	Aubrieta		H	F	Well drained	Sun/shade		Y			
betula pendula	Sliver birch	N	T	C	Sandy/ acid	Sun				Y	
Cardamine pratensis	Cuckoo-flower	N	HP	F	Moist	Sun/ shade			Y		Y
Carpinus betulus	Hornbeam	N	T	C	Clay	Sun				Y	
Centaurea nigra	Common knapweed	N	HP	C,F	Dry, not acid	Sun	Y				Y
Centranthus ruber	Red valerian		HP	F	Well drained	Sun	Y				Y
Clematis vitalba	Old man's Beard	N	C	F	well drained/ alkaline	Sun				Y	
Corylus avellana	Hazel	N	S	C	Any dry	Sun/ shade		Y		Y	
Crataegus monogyna	Hawthorn	N	S	S,C	Any	Sun/shade				Y	
Daucus carota	Wild carrot	N	Bi	S,C,F	Any	Sun	Y				Y
Dianthus spp.	Pinks	N	A-Bi	F	Well drained	Sun	Y	Y			Y
Digitalis purpurea	Foxglove	N	Bi	C	Well drained	Shade/ partial shade				Y	Y
Erica cinera	Bell heather	N	S	F	Sandy	Full sun					Y
Ersimum cherira	Wallflower		Bi-P	F	Well drained	Sun		Y			Y

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
Eupatorium	Hemp agrimony	N	H	F	Moist	Sun/ shade			Y		Y
Fagus sylvatica	Beech	N	T	C, R	Well drained alkaline	Sun/ shade				Y	
Foeniculum vulgare	Fennel		H	F	Well drained	Sun					Y
Fraxinus excelsior	Common Ash	N	T	C, R	Any	Sun/ shade				Y	
Hebe spp.	Hebe species		S	F	Well drained	Sun /shade				Y	Y
Hedera Helix	Ivy	N	C	F,C	Any	Sun/ shade		Y	Y	Y	Y
Hesperis matrionalis	Sweet Rocket		H	F	Well drained/ dry	Sun/ shade					Y
Hyacinthoides non - scripta	Bluebell	N	B	F	Loam	Shade/ partial shade		Y		Y	Y
Ilex aquailfolium	Holly	N	T	C	Any	Sun/ shade				Y	
Jasmine officinale	Common jasmine		C	F	Well drained	Sun		Y			Y
Lavandula spp.	Lavender species		S	F	Well drained / sandy	Sun		Y			Y
Linaria vulgaris	Toadflax	N	HP	C	Well drained/ alkaline	Sun	Y				Y
Lonicera periclymenum	Honeysuckle	N	C	F	Well drained	Sun		Y		Y	
Lotus corniculatus	Bird's foot trefoil	N	HP	F	Well drained/ dry	Sun	Y				Y
Lunaria annua	Honesty		Bi	F	Any	Sun/ partial shade	Y				Y
Malus spp.	Apple		T	C	Any	Sun				Y	Y
Matthiola longipetala	Night - scented stock		A	F	Well drained/ moist				Y		Y
Myosotis spp.	Forget me not sp.	N	A	F	Any	Sun	Y	Y			Y
Nicotiania alata	Ornamental tobacco		A	F	Well drained moist	Sun / partial shade			Y		Y
Oneothera spp.	Evening primrose		Bi	F	Well drained	Sun	Y				Y

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
Origanum vulgare	Marjoram	N	HP	F	Well drained / dry	Sun				Y	
Populus alba	White poplar	N	T	C	Clay loam	Sun				Y	
Primula veris	Cowslip	N	HP	F	Well drained/ moist	Sun/ partial shade	Y				Y
Primula vulgaris	Primrose	N	HP	F	Moist	Partial shade	Y	Y		Y	Y
Prunus avium	Wild cherry	N	T	C	Any	Sun				Y	Y
Prunus domestica	Plum		T	C	Well drained/ moist	Sun				Y	Y
Prunus spinosa	Blackthorn	N	S	C	Any	Sun/ partial shade				Y	
Querois petraea	Sessile oak	N	T	C,R	Sandy loam	Sun/ shade				Y	
Quercus robur	Common oak	N	T	R	Clay Loam	Sun/ shade				Y	
Rosa canina	Dog rose	N	S	C	Any	Sun			Y	Y	Y
Salix spp.	Willow species	N	S	S,C	Moist	Sun/ shade			Y	Y	
Sambucus nigra	Elder	N	T	C	Clay loam	Sun				Y	
Saponaria officinalis	Soapwort	N	HP	F	Any	Sun					Y
Saxifraga oppositifolia	Saxifrage	N	HP	C	Well drained	Sun	Y	Y			Y
Scabiosa columbaria	small scabious	N	HP	F	Well drained/ alkaline	Sun	Y				Y
Sedum spectabile	Ice plant		HP	F	Well drained/ dry	Sun	Y				Y
Silene dioecia	Red campion	N	HP	F	Any	Shade/ partial shade		Y	Y	Y	Y
Sorbus aucuparia	Rowan	N	T	C	Well drained	Sun				Y	
Stachys lanata	Lamb's ear		HP	F	Well drained/ dry	Sun					Y
Symphotrichum spp.	Michaelmas daisies		HP	F	Any	Sun					Y
Tages patula	French marigold		A	F	Well drained	Sun					Y

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
Thymus serpyllum	Creeping thyme	N	HP/S	F	Well drained/ dry	Sun	Y	Y			Y
Tilia x europaea	Common lime		T	C	Any	Sun/ shade				Y	
Trifolium spp.	Clover species	N	H	F	Any	Sun	Y				Y
Valerina spp.	Valerian species	N	HP	F	Moist	Sun/ partial shade			Y		Y
Verbascum spp.	Mulleins	N	Bi, HP	C	Well drained	Sun					Y
Verbena bonariensis	Verbena		HP	F	Well drained/moist	Sun					Y
Viburnum lantana	Wayfaring tree	N	S	C	Any	Sun/ shade				Y	Y
Viburnum opulus	Guelder rose	N	S	C	Moist	Sun/ shade			Y	Y	
Viola tricolor	Pansy	N	A	F	Well drained/ moist	Sun/ partial shade	Y	Y			Y

Legend

Type		Benefit	
HP	Herbaceous perennial	C	Moth caterpillar food plant
Bi	Biennial	S	Sap sucking insects (e.g., whiteflies)
BiP	Biennial perennial	F	Flowers attract adult moths
T	Tree	E	Good roost potential
S	Shrub		
H	Herb		
A	Annual		
B	Bulb		
C	Creeper/ climber		