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PRELIMINARY ECOLOGICAL APPRAISAL

Newlands Barn, Delaware Farm, Hever Road,
Edenbridge, Kent

Report Reference: BG21.101 REV1

November 2021



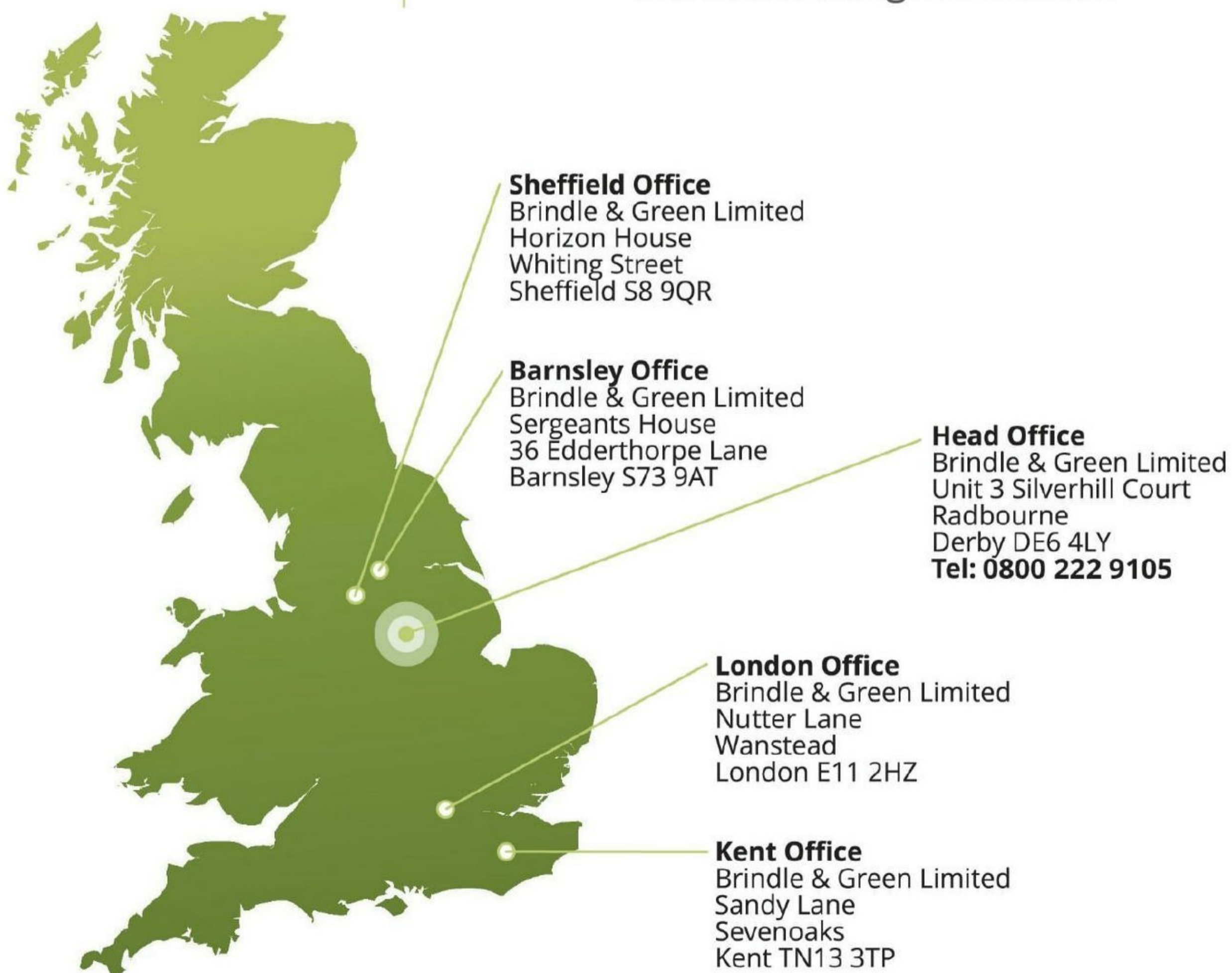
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Document Control

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Rev1 (PDF)	Lucinda Sweet MCIEEM		17/11/2021

Rev1 Details	Updated site plan to drawing 20017a-P-200 which sees minor changes to the layout of the building, and demolition of the barn (Building 1) rather than renovation
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1 Summary

- 1.1 Brindle & Green Ltd were commissioned by Keeley Dixon to undertake an updated Preliminary Ecological Appraisal for clarification on the requirement of further survey work, incorporating a Phase 1 Habitat Survey and Protected Species Assessment at Newlands Barn, Hever Road, Edenbridge, Kent. A bat emergence survey completed by PJC Consultancy (September 2020) concluded that Building 1 is considered to be likely absent of roosting bats. This report summarises the potential ecological constraints to the full planning application for the demolition of the existing barn and construction of a new detached dwelling. Design plans are provided within Appendix 6 of this report. The survey was carried out on the 3rd February 2021.
- 1.2 The red line boundary is approximately 0.13ha in extent and comprises a barn (Building 1) surrounded by hardstanding, semi-improved grassland and a defunct species-poor hedgerow along the southern site boundary. Two waterbodies were located along the southern and western site boundaries. The site was evaluated to support site value on a regional scale.
- 1.3 The habitats described within this report have the potential to support protected and/or notable species. As such, this report outlines important measures to protect species during site clearance, and recommendations to improve the biodiversity status of the site post development.
A full description of the recommendations can be found within Chapter 7, the table below is a summary of the ecological issues recommended for further consideration as a result of our initial investigations:

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Habitat	A CEMP document should be compiled to avoid impacts to the surrounding waterbodies during construction works outlined in Chapter 7.	Set out as planning condition
Breeding birds	Reasonable Avoidance Measures (RAMS) as, outlined in Chapter 7.	During site Clearance (optimal outside of Breeding bird season)
Bats	Sensitive lighting scheme, outlined in Chapter 7.	During and post construction

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Great crested newts	Presence/absence surveys as outlined in Chapter 7.	Surveys Mid March to mid-June prior to submission of the application
Reptiles	Reasonable Avoidance Measures are recommended during site clearance, outlined in Chapter 7.	During site Clearance and construction
Water vole	Further habitat suitability assessments of WB2, outlined in Chapter 7.	Between April and June
Otter	Reasonable Avoidance Measures outlined in Chapter 7.	During site Clearance and construction
MSPI – West European Hedgehog	Reasonable Avoidance Measures are recommended, outlined in Chapter 7.	During site Clearance and construction

2 Introduction

- 2.1 The purpose of this assessment was to provide a Preliminary Ecological Appraisal of the site incorporating a Phase 1 Habitat Survey and Protected Species Assessment to establish the likelihood of the site supporting protected species. The survey provides detail on the need for any additional, more detailed protected species surveys, likely mitigation and any opportunities for enhancement.
- 2.2 The red line boundary is approximately 0.13 ha in extent and comprises a barn (Building 1) set within an area of hardstanding, immediately bordered by grassland, scattered trees and hedgerow, with a stream running along the western extent of the application boundary. The site is located to the south-east of Edenbridge, Kent and positioned within an agriculturally dominant landscape. The site is the subject of a full planning application for the demolition of the existing barn and construction of a new detached dwelling. Parking facilities and associated landscaping are also proposed within the scheme. Design plans are provided within Appendix 6 of this report.
- 2.3 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 4.
- 2.4 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, results of the desk study, and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Table 1 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites, in addition to any records for protected species, were requested from the following sources:

Table 1. Ecological Data Resources

Consultant	Requested Data	Search Radius	Date Requested
Local Ecological Records Centre Kent and Medway Biological Records Centre, from PJC Consultancy PEA Report (September, 2020)	Protected and notable species records Local, National and International Site Designations	2km	September 2020
MAGIC Maps	National and International Site Designations Granted EPS Development Licences	2km	01/02/2021

3.2 Surveyors

The survey was carried out by Amy Trewick BSc (Hons.), ACIEEM, Natural England Bat Licence (Class Level 2, 2018-37960-CLS-CLS), Great Crested Newt Licence (Class Level 1, 2019-40362-CLS-CLS), Barn Owl Licence (CL29/00456).

3.3 Survey Conditions

The survey was undertaken at 11:00am on the 3rd February 2021.

The outside temperature was recorded as 10°C, with light rain, and 8/8 cloud cover.

3.4 Extended Phase 1 Habitat Survey

3.4.1 A Phase 1 habitat survey was undertaken following survey guidance (JNCC 2007) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development. A Phase 1 Habitat Map was produced (Appendix 1) and where additional details were required Target Notes have been provided (Appendix 2). A plant species list (Appendix 2) summarising all plants identified on site was produced during the survey and all scientific nomenclature was produced according to Stace (2010).

3.4.2 This survey was extended to note the potential for habitats on site to support protected and/or notable species and for evidence of any such species. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings or field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further species specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or to guide an EPS development licence.

3.4.3 Hedgerows on site were assessed following the Hedgerow Survey Handbook (DEFRA 2007), and defined as species-rich if the structural species making up a surveyed 30m section of hedgerow included at least four native woody species. Results were compiled and assessed against qualifying criteria within the Hedgerow Regulations (1997) and also the UK Biodiversity Action Plan / NERC Act 2006.

3.4.4 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendices 4 and 5 of this report.

3.4.5 Site Evaluation

Following the ecological appraisal the site was classified into one of six groups (Table 2), to indicate whether the site is considered to hold ecological value on a local, national or international scale. This evaluation is intended as a guide and only targeted survey work can establish the significance of protected species populations onsite.

Table 2. Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status. (Table constructed following The CIEEM EclA Guidelines, Terrestrial, Freshwater and Coastal (2016) pages 16-17).

Evaluation Value	Comparable example
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA) / Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	<p>Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare.</p> <p>A regularly occurring regionally or county significant population/number of any nationally important species</p> <p>A feature identified as of critical importance within Section 41 of the NERC Act (2006).</p>
Regional	Key Habitat type included within the National Biodiversity Action Plan (BAP) /NERC Habitat of Principle Importance (HPI). A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	<p>District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (Which have features qualifying for LWS status).</p> <p>Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.</p>
Local / Site	<p>Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context.</p> <p>Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.</p>

3.5 Limitations

3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The protected and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats, known distribution of the species in the local area and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group.

3.5.2 The assessment was undertaken outside of the optimal survey period for phase 1 survey. Certain habitat types such as amenity grassland can be surveyed at any time of the year where the species that they comprise vary very little. Where habitats are more complex and support species with different growing seasons, they may be recommended for further, more detailed assessments at the appropriate time of the year. Given the common nature of habitats recorded on this site, the survey is considered an accurate assessment of the flora on site.

3.6 Report Lifespan

Given the transient nature of the subject we would consider the survey results contained to be accurate for 2 years.

4 Site Context

4.1 Site Description

4.1.1 The application site can be found at TQ 45955 45634 and is located directly north off Hever Road approximately 1.6km south-east of the rural town of Edenbridge, Kent. The site comprises a barn surrounded by concrete hardstanding, grassland and scattered trees. A species-poor hedgerow defines the southern site boundary, beyond which lies a brook which connects to a stream along the western edge of the site.

4.1.2 Directly surrounding the site the environment is dominated by arable and pastoral farmland interspersed by hedgerows, treelines and small pockets of woodland, notably a deciduous woodland positioned 200m north-east of the site. Agricultural buildings associated with the surrounding landscape are positioned directly to the south and west and a railway track lined with mature trees is positioned 400m to the south. Waterbodies within the surrounding area include several ponds and the River Eden LWS, positioned approximately 250m north and east of the site. The site is well connected to the surrounding environment via two hedgerows and the scattered trees recorded within the site. However, barriers to terrestrial species dispersal are present within the locality, namely Hever Road and the B2026 positioned approximately 100m to the south and 1.3km to the west of the site, respectively.

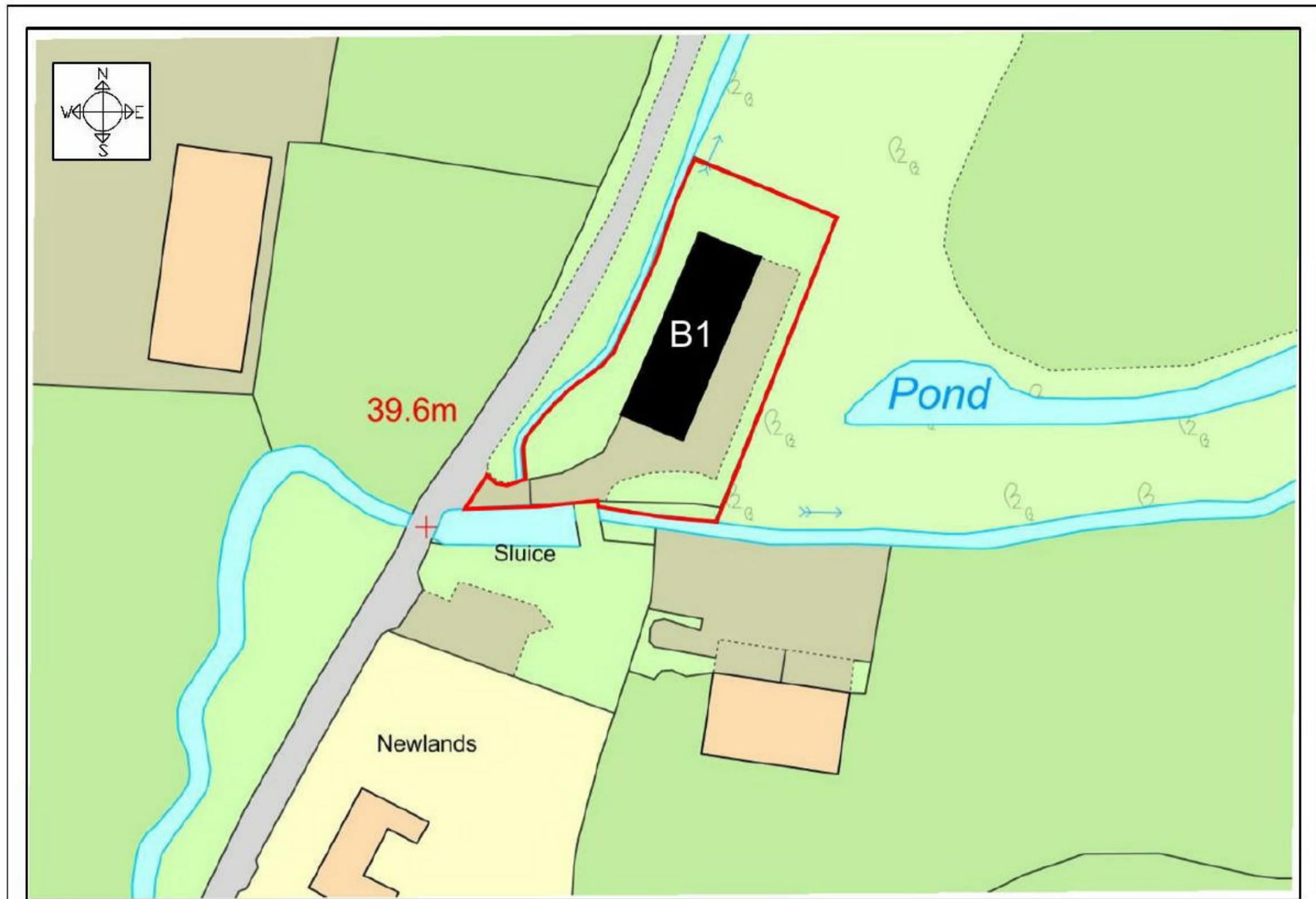


Figure 1. OS map of the project site and surrounding area.

Red line boundary depicts application site, area marked in black depicts survey building.

4.2 Zone of Influence

The zone of influence describes the geographic extent of potential impacts of a proposed development. The small scale of the proposed development reduces the likelihood of impact to the surrounding area, however suitable connective vegetation could influence the presence of protected species within the application boundary. The zone of influence was considered to be 500 metres from the application boundary for amphibians and reptiles, [REDACTED], and within the area of impact for breeding birds and bats.

5 Results

5.1 Desk Study

5.1.1 Designated Sites

The site was subjected to a search for designated sites within a 2km radius of the site using data supplied by the Local Records Centre (Kent and Medway Biological Records Centre (KMBRC)) and the online desk-based resource MAGIC.

5.1.2 The data supplied by KMBRC was received in September 2020 by PJC Consultancy and is summarised within Table 3. The search revealed one Non-statutory site within a 2km radius of the site, pertaining to a local wildlife site (LWS).

5.1.3 A search of the online resource Magic Maps found no additional sites with Statutory designations within the 2km radius search.

Table 3. Summary of Designated Sites within a 2km radius of the application site

Site Name	Grid Ref	Status	Reason for Designation	Distance from site
The River Eden	TQ 45967 45909	LWS	Supports diverse habitats including wet meadows, woodlands and extensive pastures.	0.25m N

5.1.4 Protected Species Assessment

5.1.4.1 Data supplied by KMBRC also included records of protected species. A summary of the closest or most relevant records can be seen in Table 4 below.

5.1.4.2 Magic maps revealed three granted EPS licences within 2km of the site pertaining to:

- Damage of a Great Crested Newt (*Triturus cristatus*) resting site granted in 2015 and expired in 2016, located 1.1km to the south-east.
- Destruction of a common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared (*Plecotus auritus*) resting place, granted in 2011 and expired in 2014, located 1.7km to the south-east.
- Destruction of a great Crested Newt resting place, granted in 2011 and expired in 2013, located 1.9km to the north-west.

Table 4. Summary of relevant protected and priority species records

Species	No. of Records	Distance and Aspect of Nearest Record	Date of most recent record
Birds			
Barn Owl (<i>Tyto alba</i>)	1	Within 1km	2017
Fieldfare (<i>Turdus pilaris</i>)	52	Within 1km	2018
Redwing (<i>Turdus iliacus</i>)	27	Within 1km	2017
Peregrine (<i>Falco peregrinus</i>)	1	Within 1km	2011
Hobby (<i>Falco Subbuteo</i>)	16	Within 1km	2017
Kingfisher (<i>Alcedo atthis</i>)	60	Within 1km	2017
Dunnock (<i>Prunella modularis</i>)	7	Within 1km	2013
Skylark (<i>Alauda arvensis</i>)	36	Within 1km	2017
Mammals			
Serotine (<i>Eptesicus serotinus</i>)	18	Within 1km	2012
Noctule (<i>Nyctalus noctula</i>)	22	Within 1km	2019
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	122	290m SE	2006
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	42	Within 1km	2019
Nathusius pipistrelle (<i>Pipistrellus nathusii</i>)	1	Within 1km	2016
Whiskered (<i>Myotis mystacinus</i>)	6	Within 1km	2009
Brandt's (<i>Myotis brandtii</i>)	1	Within 1km	2010
Natterer's (<i>Myotis nattereri</i>)	9	Within 1km	2014
Daubenton (<i>Myotis daubentonii</i>)	13	Within 1km	2012
Bechstein (<i>Myotis bechdteinii</i>)	3	Within 1km	2012
European otter (<i>Lutra lutra</i>)	4	980m east	2017
Amphibians			
Great Crested Newt (<i>Triturus cristatus</i>)	7	980m SE	2015
Common Frog (<i>Rana temporaria</i>)	1	Within 1km	2011
Invertebrates			
Small blue (<i>Cupido minimus</i>)	1	Within 1km	2014

5.2 Habitats

- 5.2.1 The habitat types recorded on site are summarised below, and the frequency and distribution of habitat types is displayed within a Phase 1 Habitat Survey Map (Appendix 1 and 2).
- 5.2.2 Table 5 provides a list of habitat types present on site along with their inclusion (or otherwise) as a National and / or Local Habitat of Principle Importance (HPI) (Previously referred to as Biodiversity Action Plan (BAP)) (*It should be noted that additional information is included within the text where a classification under Phase 1 survey methodology does not mirror habitat types considered to be conservation priorities*).

Table 5. JNCC Habitat Types found on site and inclusion within UK BAP/HPI habitats.

Habitat Type	N HPI	L HPI	N/A
Semi-improved grassland			✓
Species-poor native hedgerow			✓
Scattered broadleaf trees			✓
Hardstanding			✓
Building			✓

5.2.3 Semi-Improved Grassland

Neutral semi-improved grassland was found predominantly towards the north and west of the site and along the eastern boundary (Figure 2). Species recorded in this habitat type included cock's-foot (*Dactylis glomerata*), perennial ryegrass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), fescue sp. (*Festuca sp.*) and false oat grass (*Arrhenatherum elatius*). Occasional creeping buttercup (*Ranunculus repens*), cow parsley (*Anthriscus sylvestris*), dandelion sp. (*Taraxacum sp.*) and hedge mustard (*Sisymbrium officinale*) were recorded.



Figure 2. Area semi-improved grassland west of Building 1.

5.2.4 Species-poor Hedgerow

5.2.4.1 A short, defunct species-poor hedgerow (Hedgerow 1) was recorded along the southern boundary of the site, immediately bordered by a brook. The hedgerow displayed evidence of a relaxed management regime and comprised solely of field maple (*Acer campestre*), measuring approximately 10m in length, 0.5m in height and 2m in width (Figure 3a). The understorey was formed of common ivy (*Hedera helix*). A timber fence also spanned the length of this hedgerow and mature oak trees were recorded on the opposite bankside of the brook.

5.2.4.2 Towards the south-western corner of the site, a defunct mature hornbeam (*Carpinus betulus*) hedgerow (Hedgerow 2) was recorded (Figure 3b). It was approximately 10m in length and 0.5m in width, with an ivy and bramble (*Rubus fruticosos agg.*) understorey.



Figure 3. Species-poor hedgerows recorded during the survey. a) Hedgerow 1 along the southern site boundary, b) hedgerow 2 located in the south-western corner of the application site.

5.2.5 Scattered Trees

A collection of scattered trees were present across the site, primarily within the western extent of the site. The trees ranged from young to mature and included pedunculated oak, willow (*Salix sp.*), hazel (*Corylus avellana*) and elder (*Sambucus nigra*). In addition, a mature leylandii cypress (*Cupressus x leylandii*) tree was positioned towards the north-western corner of the site (Figure 4).



Figure 4. Mature leylandii positioned towards the north-western corner of the application site.

5.2.6 Hardstanding

Non-permeable hardstanding surrounds Building 1 directly to the east and south (Figure 5). It also extends to the south-western corner of the application site providing vehicular access to the site.



Figure 5. Area of hardstanding recorded east of Building 1.

5.2.7 Invasive Weeds Assessment

An assessment of the site was made to establish the presence of invasive weeds included on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). No recordings of invasive weed species were found within, or adjacent to the application area.

5.3 Fauna

5.3.1 Breeding Birds

5.3.1.1 The species-poor hedgerows, grassland and trees on site provide suitable nesting habitat for a number of common bird species, however, no evidence of current or historic nesting activity was recorded. Bird activity was low on site, however, the survey was undertaken outside of the optimum breeding bird season.

5.3.1.2 Building 1 was considered suitable for breeding birds such as house sparrow (*Passer domesticus*) and barn swallow (*Hirundo rustica*). Access for bird species was recorded along the eastern elevation, through the open fronted barn and potential features such as exposed timber cladding towards the southern internal portion of the building were also recorded.

5.3.1.3 Based on a review of the habitat types on site and the list of bird species recorded within the data search, the site is considered to support an assemblage of bird species including some species considered to be of high conservation concern that are either legally protected or UK BAP species, such as, dunnock (*Prunella modularis*), skylark (*Alauda arvensis*) and house sparrow.

5.3.2 Bats

5.3.2.1 Roosting Bats

The data search showed over 200 records of bat foraging and commuting activity, with the closest record located approximately 290m to the south-east.

5.3.2.2 The site supported scattered trees that varied from young to mature. Visible trees were assessed and categorised based upon Bat Conservation Trust guidance (see Appendix 5), with all Scattered trees within the site boundary assessed to have **Negligible** suitability to support roosting bats. Despite some trees being mature in nature, they did not support suitable cracks, fissures or holes to support roosting bats.

5.3.2.3 Building 1 was assessed to have **Low** suitability to support roosting bats. The extent of the suitability pertained only to internal features where exposed timber cladding was recorded towards the southern portion of the building. The main

structural features of the building, and their suitability for supporting roosting bats are summarised below (Table 6), and associated figures can be found with Appendix 9.

Table 6. Summary of Bat Roost potential and evidence found within each of the buildings/structures on site (Supporting Figures within Appendix 8).

High	Moderate	Low	Negligible	None
Building Number	Description	Bat evidence / Potential Roosting Features (PRFs)		Roost Suitability
B1	<p>Single storey barn supporting a corrugated asbestos pitched roof in poor condition. The walls comprised sealed breezeblock with corrugated metal cladding towards the upper half and steel beams supported the building (Figure 9, Appendix 9). Aggregate fascia boards were present on all elevations and the barn was open fronted along the eastern elevation.</p> <p>Internally the building comprised four compartments, three of which were used as stables, positioned towards the southern aspect and featured a breezeblock foundation with timber cladding on the upper walls. The fourth compartment also supported breezeblock foundations, with timber cladding on the southern aspect and corrugated asbestos on the remaining elevations.</p>	<ul style="list-style-type: none"> Timber cladding present within the building may provide a surface for bats to roost on (Figure 8, Appendix 9). <p>No evidence of previous bat activity was recorded during the assessment.</p>		Low

NOTE: The previous bat emergence survey undertaken by PJC Consultancy in 2020 found no bats emerging from Building 1 and therefore the identified PRF's are considered to be likely absent of roosting bats for a 12 month period due to the transient nature of this species

5.2.3.3 Foraging and Commuting Bats

The site supported vegetative features considered suitable to support commuting and foraging bats. The scattered trees, grassland and hedgerows within the site boundary provide valuable resources for foraging bats. Linear features such as the hedgerows on site provide connective habitat across the site, providing commuting pathways to the wider environment which is predominantly rural. The site was therefore assessed to hold **Moderate** suitability for foraging and commuting bats,



5.3.4 **Great Crested Newts** (*Triturus cristatus*)

5.3.4.1 The data search returned 7 records of great crested newts within 2km of the site with the nearest record located 980m to the south-east.

5.3.4.2 The site supported rough unmanaged semi-improved grassland and two hedgerows which are considered suitable to support the terrestrial phase for this species. No waterbodies are present within the application boundary; however, eight waterbodies were identified within the 500m zone of influence considered for the site (Figure 6, Table 7). The closest pond (WB1) was positioned within 10m of the eastern site boundary. The pond has not been previously surveyed for GCN but supported a good HSI score (Table 7) indicating the potential for presence. The proposed development falls within the 50metre core habitat area associated with breeding GCN ponds.

5.3.4.3 Four out of the eight identified waterbodies were assessed and assigned a GCN Habitat Suitability Index (HSI) score (Oldham et al, 2000) displayed within Table 7 below.

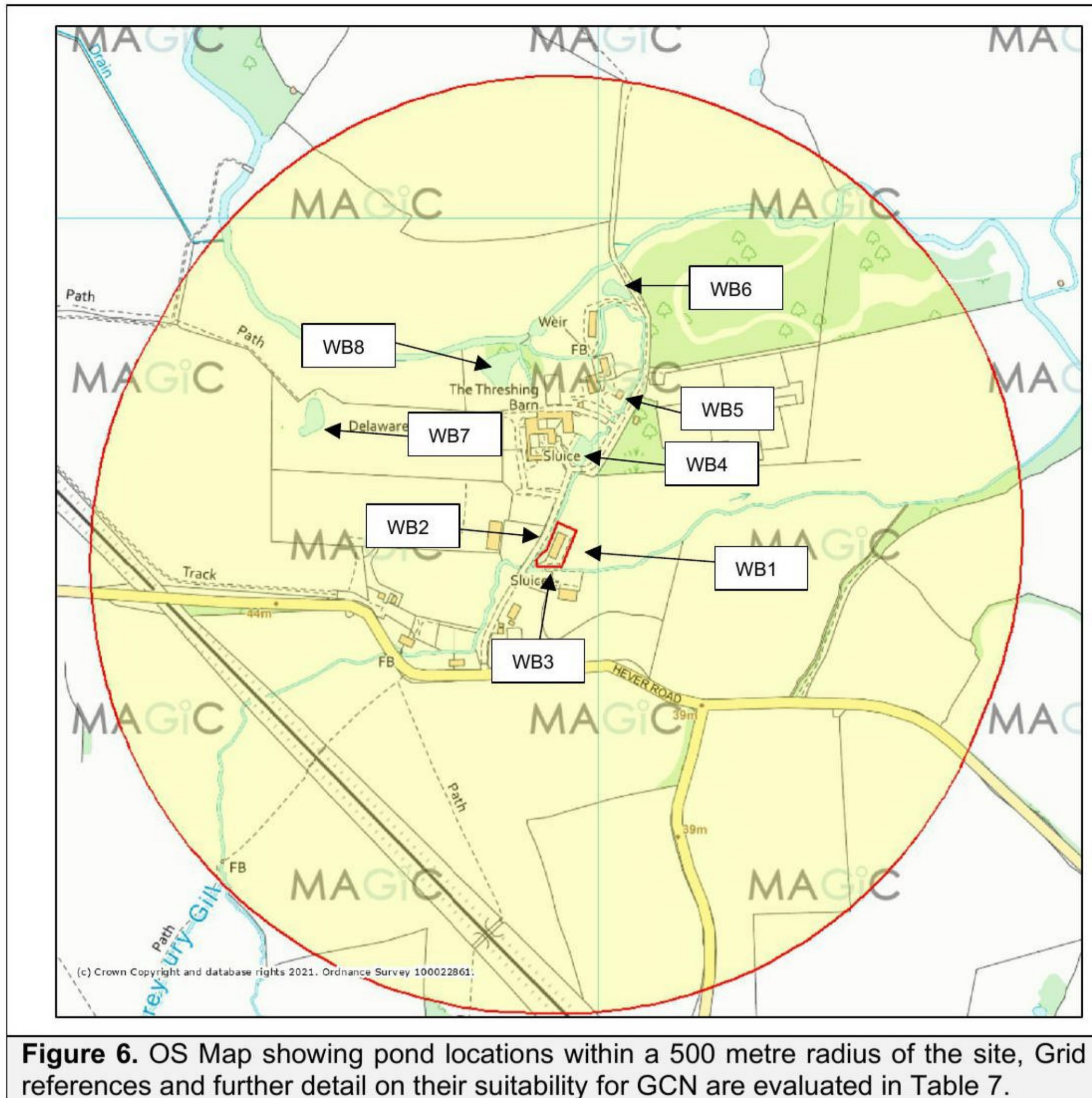


Figure 6. OS Map showing pond locations within a 500 metre radius of the site, Grid references and further detail on their suitability for GCN are evaluated in Table 7.

Table 7. Pond Locations and Suitability for Great crested newts (Images can be found within Figure 7 below).

Pond No.	Grid Ref.	Habitat Suitability Index Score (See Appendix 9)	Distance from Site
1	TQ 45990 45627	Good - 0.76	10m E of site boundary
2	TQ 45938 45633	Excellent - 0.86	Adjacent to W boundary
3	TQ 45946 45609	Good- 0.71	Adjacent to S boundary
4	TQ 45980 45738	Excellent - 0.81	80m N
5	TQ 46029 45808	Unknown landowner, not accessed	160m NE
6	TQ 45935 45896	Unknown landowner, not accessed	180m NE
7	TQ 45675 45784	Unknown landowner, not accessed	300m NW
8	TQ 45875 45830	Unknown landowner, not accessed	250m N

Figure 7: Images and pond descriptions

Pond 1

Small pond with a surface area of approximately 140m². Surrounded by young trees and pasture farmland.



Pond 2

Stream running adjacent to the western site boundary, assumed to flow into the River Eden north of the site. Banksides supported scattered trees and scrub habitat.



Pond 3

Brook running adjacent to the southern site boundary, supporting steep concrete banks and lined with mature trees.



Pond 4

Large pond with a surface area of approximately 500m². Minimal submerged vegetation surrounded by managed grassland to the north-west and scattered trees in all other directions.



5.3.5 Reptiles

5.3.5.1 The data search returned no records of reptiles within 2km of the site.

5.3.5.2 No evidence of reptiles was recorded during the survey; however, the site supported a suitable habitat matrix to support reptiles such as grass snake (*Natrix helvetica*). The semi-improved grassland on site provides a variable sward structure and the hedgerows recorded on site offer dappled shade and provide suitable reptile refugia such as deadwood. The location within a rural environment provides ample foraging habitat with connectivity to the site for reptiles and therefore it is likely they could pass through the site.

5.3.6 Water vole

5.3.6.1 The data search returned no records of water vole within 2km of the site.

5.3.6.2 The stream and brook present along the site boundaries lacked herbaceous bankside and emergent vegetation and were relatively shaded by scattered trees. In addition, the waterbodies were less than 1m in depth and supported shallow waters. However, both the waterbodies provide continuous sections of water and the bank of WB2 provides burrowing opportunities for water vole. As such, it may be used by water vole and is considered to hold low potential to support this species.

5.3.7 Otter

5.3.7.1 The data search returned 4 records of otters within 2km of the site, with the nearest record located 980m east of the site.

5.3.7.2 No evidence for this species was identified on site. The site offered limited suitable terrestrial habitat to support otters and the banks of WB2 and WB3 were not considered deep enough to offer holt creating opportunities in addition to lacking sufficient vegetation to provide appropriate space, cover or seclusion for holts. No areas within the immediate surroundings were deemed likely holt or resting sites either. WB2 is assumed to flow into the River Eden, which is known to support a population of otters and given the wide foraging range of this species otters may pass through the site on a transient basis. However, WB2 is subject to regular human disturbance and lacks a varied supply of food given the shallowness of the water and therefore, it is considered highly unlikely to support a local population of otters.

5.3.8 **White-clawed crayfish** (*Austropotamobius pallipes*)

5.3.8.1 The data search returned no records of white-clawed crayfish within 2km of the site.

5.3.8.2 No evidence for this species was identified on site and at the time of the survey. WB2 and WB3 were very silty and lacked suitable rock substrate typically required for this species. As such the site is considered to hold negligible potential to support white-clawed crayfish.

5.3.9 **Mammal Species of Principle Importance**

5.3.7.1 The NERC Act 2006, Section 41 highlights 17 species of principle importance within England. Although these species were not surveyed directly as a result of their distribution and habitat preferences, evidence for activity by these species was searched for during the initial survey.

5.3.9.1 *West European Hedgehog* (*Erinaceus europaeus*)

The data search returned no records of West European hedgehog within 2km of the site however, habitats including the grassland and hedgerows are considered suitable for supporting foraging and commuting West European hedgehog. No evidence of this species was noted during the assessment.

6 Evaluation

6.1 Development Proposals

The site is the subject of a full planning application for the demolition of the existing barn and construction of a new detached dwelling. Design plans are provided within Appendix 6 of this report.

6.2 Desk Study Impacts

Direct impacts on nearby designated sites as a result of the proposed development are considered unlikely. The Eden River LWS is positioned 250m north of the site, however it is designated for its flora assemblage pertaining to wet meadows, woodlands and extensive pastures, rather than its fauna. The initial proposals set out for the site (Appendix 6) show that the extent of the development proposals are contained within the site boundary, and impacts on locally designated sites are considered unlikely. That said, the waterbodies identified adjacent to the site are connected to the LWS and could be indirectly impacted by movement of soils and machinery during construction. Recommendations to avoid direct and indirect impacts to the waterbodies are set out in Chapter 7.

6.3 Habitats

The habitats on site have been evaluated as having site value in relation to the immediate surroundings and a regional context. The site was dominated by semi-improved grassland, hardstanding and scattered trees. Both hedgerows were defunct and measured less than 30m each in length and as such do not fall under BAP category. However, a short section of the hedgerow to the south is to be removed for car parking and therefore additional native species hedgerows, preferably with a diversity of species, should be planted for the benefit of native wildlife. Recommendations are outlined in Chapter 7.

6.4 Breeding Birds

- 6.4.1 All wild birds, their eggs and nests are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure, or take any wild bird whilst nesting, or take, damage or destroy the nest of any such bird while in use or being built. In addition, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 or their dependant young

are afforded additional protection from disturbance whilst they are at their nests.

6.4.2 The vegetation and Building 1 on site were considered to provide suitable nesting habitat for common bird species and has the potential to support populations of birds of local and national interest such as house sparrow, dunnock and skylark. Any clearance works proposed on site should be well researched in order to prevent direct or indirect impacts on individual birds, their young, eggs and habitats. Chapter 7 sets out important guidance on measures to avoid impacts on species and measures to support its conservation status.

6.5 **Bats**

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

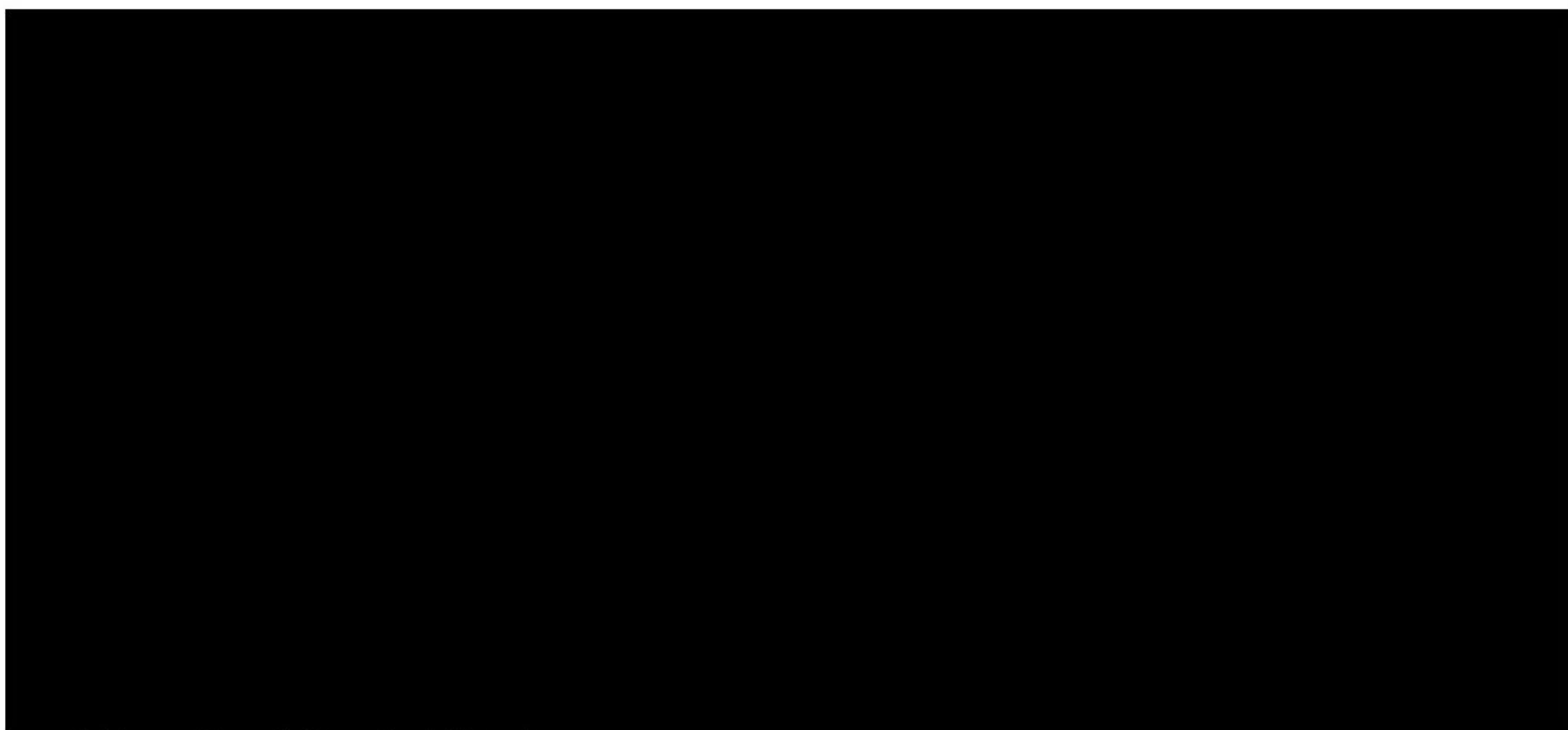
6.5.1 *Roosting bats*

Scattered trees on site were not considered suitable to support roosting bats. Building 1 was identified as having **Low** suitability to support roosting bats. The previous bat emergence survey undertaken by PJC Consultancy in 2020 concluded that Building 1 is likely absent of roosting bats. The results of this survey are valid for 12 months and therefore if the development is undertaken during this time, further survey work will not be necessary. Any delays preventing works commencing or changes to the condition of the barn may result in a requirement for further survey work in the future.

6.5.2 *Foraging and Commuting Bats*

The linear features provided by the species-poor hedgerows and scattered trees could act as important commuting lines for bat species and are considered to hold **Moderate** suitability. The removal of these features without an understanding of their significance could lead to the loss or disturbance of commuting and foraging habitat utilised by local bat populations, impacting their commuting behaviour. These features are to be retained where possible and

post development landscaping should be introduced for the benefit of foraging and commuting bats. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.



6.7 Great Crested Newts

Great crested newts and their eggs, breeding sites and resting places are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). Ponds within the zone of influence provide suitable breeding habitat for local GCN populations. The site offers suitable terrestrial habitats such as unmanaged semi-improved grassland and hedgerows, which could provide resting places and commuting pathways for GCN if present within WB1. Without confirmation of the GCN population in the local area, the development has the potential to result in direct (injury, or death of individual GCN) or indirect (loss of suitable breeding, foraging and hibernation habitat) impacts to local newt populations. Chapter 7 provides recommendations relating to the need for further survey work to safeguard this protected species and support its conservation status.

6.8 Reptiles

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) making it illegal to intentionally kill or injure reptiles. No evidence of reptiles were recorded during the survey; however, the site supported a suitable habitat matrix comprising a variable sward structure and the hedgerows recorded on site offer dappled shade and provide suitable reptile refugia such as deadwood. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.9 **Water vole**

Water vole are fully protected under Schedule 9 of the Wildlife & Countryside Act 1981 (as amended). No evidence of water vole were observed on site. However, WB2 and WB3 offered continuous sections of water and WB2 positioned adjacent to the western site boundary supported sections of riverbank considered suitable to provide burrowing opportunities for this species. As such, Chapter 7 outlines recommendations for further habitat assessment to establish the suitability of the stream and determine if an active population is present within the zone of influence.

6.10 **Otter**

Otter are fully protected under Schedules 5 & 6 of the Wildlife & Countryside Act 1981 (as amended). No evidence of this species was observed on site, however, there is a chance that this species may be present within the surrounding environment and utilise WB2 adjacent to the site for commuting purposes. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.11 **Mammal Species of Principle Importance**

6.11.1 *West European Hedgehog*

The NERC Act 2006, Section 41 highlights 17 species of principle importance within England. From this list the habitats on site were considered conducive to supporting West European hedgehog. No evidence of West European Hedgehog was recorded during the survey. However, the site provides suitable foraging and commuting habitats for this species. Chapter 7 provides recommendations aimed at safeguarding this species during ongoing development works.

7 Recommendations

This survey can be used to guide the Master Plan to ensure that mitigation is employed to retain and enhance local biodiversity. As with all development sites; efforts should be made to support National and Local Biodiversity Action Plans, and seek opportunities to incorporate ecological enhancement schemes within the proposed development. Such site enhancements are viewed positively in light of the NPPF (2019) which seeks biodiversity enhancements and net gain through the planning process.

7.1 Habitat

Habitat	Timing
Recommendations	
<p>The waterbodies identified adjacent to the site may be indirectly impacted by the movement of soils and machinery during construction. They are assumed to flow into the River Eden and as such could impact this LWS. Protection of these waterbodies should be ensured through the production of a Construction Environmental Management Plan (CEMP) prior to construction.</p> <p>A small section of the species-poor hedgerow to the south will be lost to facilitate a car park. Therefore, planting of additional native species hedgerows is recommended for the benefit of native wildlife.</p>	<p>Set out as planning condition.</p> <p>Post construction</p>
Enhancement Prescriptions	
Enhancements should include planting of native species hedgerows, preferably with a diversity of species, to offset the short section of the hedgerow that is to be removed.	Post construction

7.2 Breeding Birds

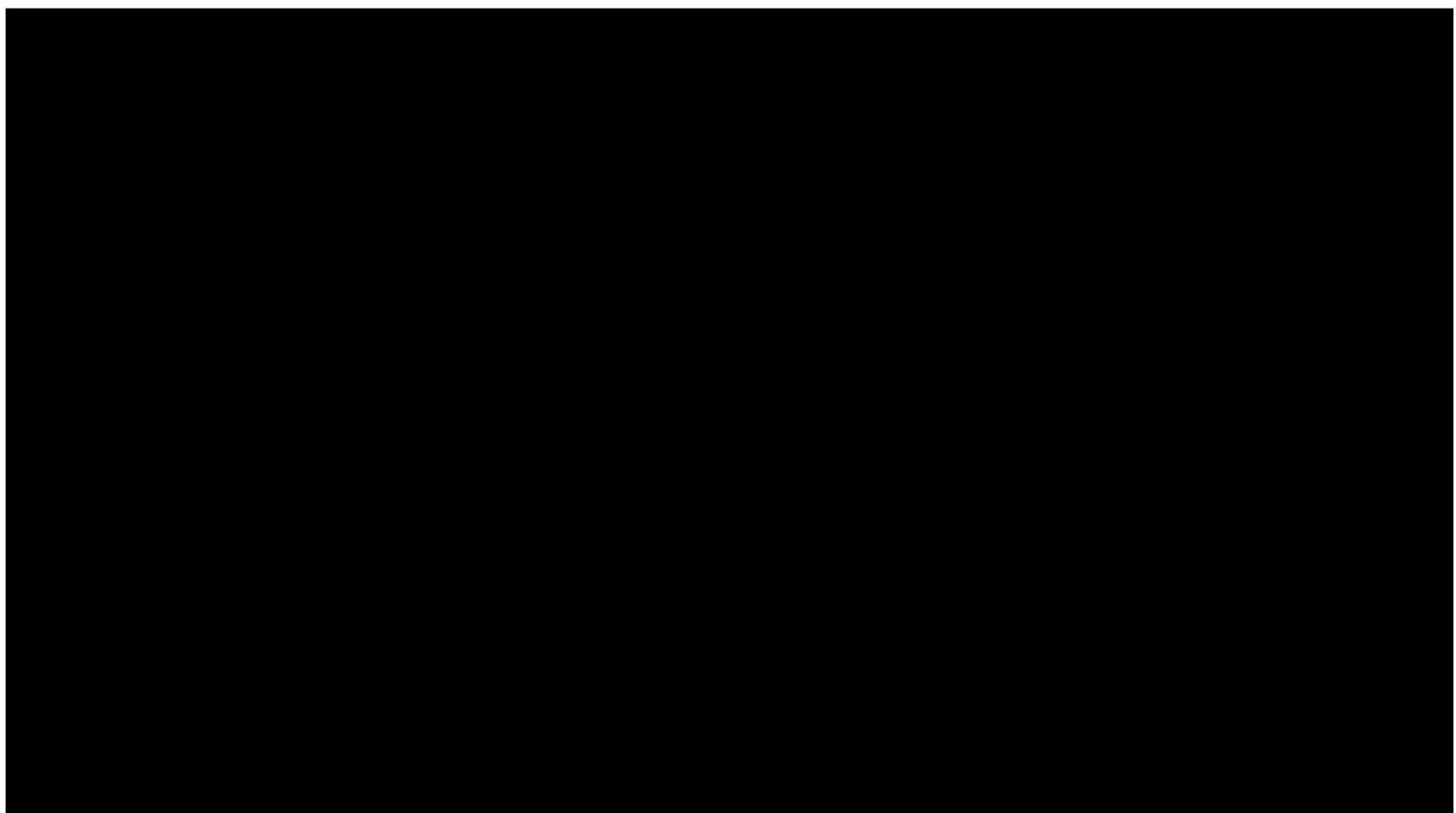
Breeding Birds	Timing
Recommendations	
The site supports a range of features that are suitable for supporting breeding birds.	<p>Works outside of the breeding season (Oct to Feb)</p> <p>If unachievable, follow</p>

<p>Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September. Consideration and implementation must be given to the following options most appropriate to the scheme.</p> <ul style="list-style-type: none"> a) Undertake vegetation clearance between the months of October and February where possible. b) Any vegetation proposed for removal between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works. This should confirm whether all or some clearance is achievable. Any identified active nests must be left undisturbed until a qualified ecologist can confirm the chicks have fledged and the nest is no longer active. c) In addition to a pre-works check the clearance of vegetation between the months of March and September should be supervised by a suitably experienced ecologist. 	<p>steps in recommendation</p>
<p>Enhancement Prescriptions</p>	
<p>1 x Vivara Pro Woodstone House Sparrow Nest Box (or similar approved) will be integrated into the eaves of the converted dwelling on the eastern elevation.</p> <p>1 x 1B Schwegler nest box (32mm hole) (or similar approved) will be installed onto boundary tree within the site ownership, positioned on the east facing elevation at a height of at least 2m</p>	

7.3 Bats

Bats	Timing
<p>Recommendations</p>	
<p>The site possesses a range of features, notably scattered trees, shrubs and a hedgerow, that have the potential to act as important flight paths and foraging resources for local bat populations.</p> <p>The extent of disturbance to foraging and commuting bats within the area should be reduced where possible by employing a sensitive lighting scheme during construction works, and artificial security lighting should not be installed post construction in a way which</p>	<p>During construction</p>

<p>directs lighting at any remaining vegetation on site, outlined within CEMP.</p> <p>If lighting is required, a scheme should be devised and positioned to have minimal disturbance following the guidance of an ecologist. Any lighting used during the development should be directed away from the hedgerow boundary feature.</p> <p>Boundary features such as the hedgerow on the southern boundary should be retained as part of the development wherever possible.</p>	
Enhancement Prescriptions	
<p>1 x Built-in Woodstone Bat Box (or similar approved) will be integrated into the wall of the new building. The box should be installed on a south-western facing elevation at a height of at least 4m above ground, facing away from prevailing winds and with an unobstructed flight path.</p>	



7.5 Great Crested Newts

Great Crested Newts (GCN)	Timing
Recommendations	
<p>Semi-improved grassland on site provides a suitable terrestrial habitat for GCN. The site is positioned within 10m of three waterbodies holding suitable potential for breeding habitat.</p>	<p>Four visits (per pond) in suitable weather conditions</p> <p>Timing: mid-March to mid-June, with at least two of</p>

<p>To establish whether GCN are present in the area it is recommended that all ponds deemed suitable for supporting GCN (where access is possible) be subjected to a full GCN presence / absence survey at the appropriate time of year.</p> <p>In addition or alternative to this, it is recommended that a district level licence is applied for through the Natural England to compensate for the loss of terrestrial habitats.</p>	<p>these visits during mid-April to mid-May. If GCN present, an additional two surveys will be required between mid April to mid May.</p> <p>All year round</p>
<p>Enhancement Prescriptions</p>	
<p>Design proposals may require amendment following the results of further survey work. Enhancements can be better advised and directed once the extent of local GCN populations has been established.</p>	

7.6 Reptiles

Reptiles	Timing
<p>Recommendations</p>	
<p>Suitable habitat was limited to semi-improved grassland and the hedgerows on site.</p> <p>Vegetation clearance should take place during the winter.</p> <p>a) Prior to commencement of clearance works personnel on site will undergo a toolbox talk detailing the implications of finding reptiles on site.</p> <p>b) Any vegetation to be cleared should initially be cut to a height of approximately 10cm supervised by an ecologist using hand-held strimmer's or brush cutters. The strimmed areas should then be cleared during early summer. The area of cleared vegetation should be maintained by further mowing and strimming until development work commences to prevent colonisation/re-colonisation by reptiles. All cuttings should be removed from the site immediately.</p> <p>c) Any potential refugia such as deadwood, rubble or arisings should be carefully removed by hand and taken off-site. Waste from the demolition works should be immediately disposed into a skip.</p> <p>If reptiles are encountered during operations all works should cease and the advice of a suitably qualified ecologist should be sought.</p>	<p>Vegetation clearance to take place during winter</p>

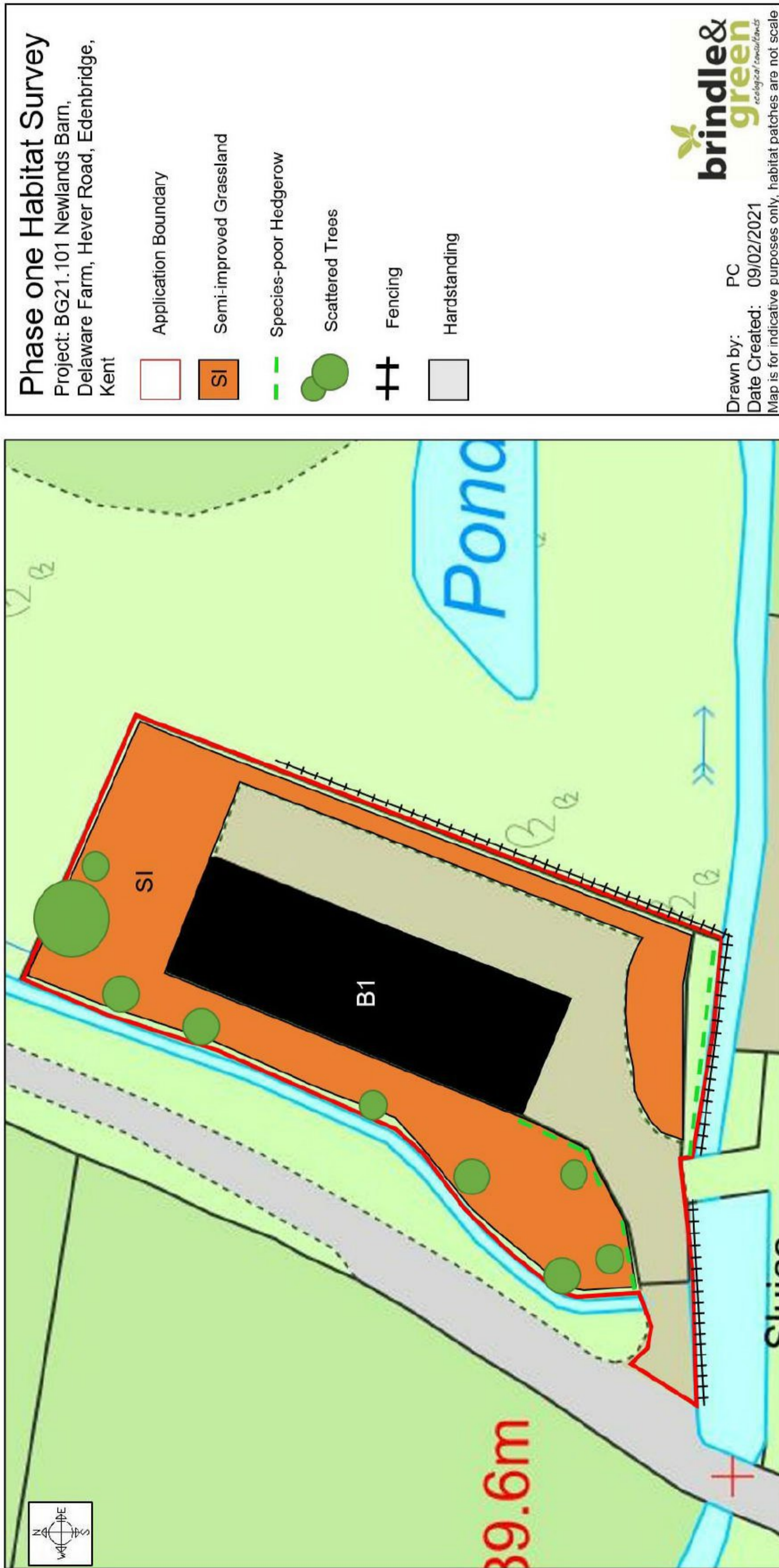
7.7 Water Vole

Water vole	Timing
Recommendations	
WB2, adjacent to the western site boundary is considered suitable to support this species. To establish whether water vole may be present in the vicinity of the application site, it is recommended that habitat suitability assessments are conducted on WB2 plus 100m up and down stream.	Walkover survey conducted April and June. If evidence found, an additional walkover between July to September.

7.8 West European Hedgehog

Hedgehog	Timing
Recommendations	
<p>Hedgehogs may use the site for foraging or commuting purposes.</p> <p>The recommended reasonable avoidance measures should be followed:</p> <ul style="list-style-type: none"> a) Any temporarily exposed open pipes are to be capped to prevent hedgehogs gaining access. b) Undertake works during daylight hours. c) The vegetation should be checked prior to removal d) Search areas of deadwood, brash, and discarded items by hand before removing. e) If burning any cleared vegetation, carry out immediately after piling to prevent hedgehogs moving in prior to burning. f) Any exposed excavations to be left overnight are to be covered at the end of each working day, or include a means of escape for any fallen animals (e.g. a scaffolding plank). 	During clearance and development

Appendix 1. Phase 1 Habitat Plan



Appendix 2. Plant Species List

Plant Species List with DAFOR Scale		
Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.		
Please note that this plant species list was generated as part of a Phase 1 Habitat survey, and does not constitute a full botanical survey.		
Abundance was estimated using the DAFOR scale as follows: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent		
Common Name	Scientific Name	Estimated Abundance (DAFOR)
Bramble	<i>Rubus fruticosus</i>	O
Cock's-foot	<i>Dactylis glomerata</i>	A
Common vetch	<i>Vicia sativa</i>	O
Cow parsley	<i>Anthriscus sylvestris</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	F
Creeping thistle	<i>Cirsium arvense</i>	F
Dandelion sp.	<i>Taraxacum sp.</i>	O
Dock	<i>Rumex sp.</i>	F
Elder	<i>Sambucus nigra</i>	O
False oat	<i>Arrhenatherum elatius</i>	O
Fescue	<i>Festuca</i>	R
Field maple	<i>Acer campestre</i>	R
Hazel	<i>Corylus avellana</i>	O
Hedge mustard	<i>Sisymbrium officinale</i>	O
Hornbeam	<i>Carpinus betulus</i>	O
Ivy	<i>Hedera helix</i>	A
Lesser celandine	<i>Ficaria verna</i>	O
Leylandii	<i>Cupressus x leylandii</i>	R
Oak	<i>Quercus robur</i>	F
Perennial rye	<i>Lolium perenne</i>	F
Red dead nettle	<i>Lamium purpureum</i>	F
Tufted Hair-grass	<i>Deschampsia cespitosa</i>	F
Western Red cedar	<i>Thuja plicata</i>	R
Willow sp.	<i>Salix sp.</i>	O
Yorkshire Fog	<i>Holcus lanatus</i>	A

Appendix 3. General References

Bat Conservation Trust's 'Good Practice Survey Guidelines' (Rev 2012).

Bell, S. McGillivray, D. (2006) *Environmental Law*. 6th ed. Oxford University Press.

Byron, H (2000) *Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy.

Collins, J (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd edition), Bat Conservation Trust, London.

Defra (2007) *Hedgerow Survey Handbook*; A standard procedure for local surveys in the UK. Defra, London.

Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods: Breeding Bird Survey* (pages 389-393). RSPB.

Harris S, Cresswell P and Jefferies D (1989). [REDACTED]

Joint Nature Conservation Committee (JNCC) *Handbook for Phase 1 habitat survey* (2003). JNCC.

Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Mitchell-Jones A.J. McLeish, A.P. (2004) *Bat Workers Manual* (3rd Edition). Joint Nature Conservation Committee.

Mitchell-Jones A.J. *Bat Mitigation Guidelines* 2004. English Nature.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155.

Rodwell, J.S. Joint Nature Conservation Committee (JNCC). *National Vegetation Classification: Users' handbook* (2006). JNCC.

Strachan R. MoorHouse T, and Gelling M (2011) *Water Vole Conservation Handbook*. (3rd Edition) Wildlife Conservation Research Unit.

Rose, F. (2006). *The Wild Flower Key* (Revised edition). Penguin books Ltd, London

Stace, C. (2010). *Field Flora of the British Isles*. Cambridge University Press

Sutherland, W.J. (1996) *Ecological Census Techniques*. Cambridge University Press.

Treweek, J. (1999) *Ecological Impact Assessment*. Blackwell Science.

Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Appendix 4. Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. (2019)
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- [REDACTED]
- The Natural Environment and Rural Communities Act 2006 (Including National and Local Biodiversity Action Plan (LBAP / HPI))
- Hedgerow Regulations 1997

Appendix 5. Legislation, Guidance and Methodology for Preliminary Ecological Appraisals.

Legislation, Guidance and Methodology

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February/March and continue through until September/October, however breeding birds can be found all year round depending on the given species and climatic conditions.

A sites habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:
Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Bats

Roosting Bats

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

Areas of concern; can be encountered in many types of structure and care should therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with: Collins, J (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd edition), Bat Conservation Trust, London. (Table 1 & 2 Below).

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points. The suitability of site features are also assessed because absence of bat evidence, is not confirmation of a negative result.

Within trees, features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree. If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys will be recommended.

Foraging and Commuting bats

Habitat features on site are assessed for their suitability to support foraging and commuting bat populations. This assessment is independent from the suitability of the site to support roosting bats, and provides information on the likeliness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Table 1: Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016)

Category	Description of roosting habitat	Number of additional presence / absence surveys required
Negligible Suitability	Suitable cavities may exist, but these are less than ideal.	None
Low Suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. The feature and surrounding habitat do not provide enough shelter, conditions* space for larger roost types such as a maternity or hibernation roost. A tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.	One survey between May and August Trees – No further surveys required
Moderate Suitability	A structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed).	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to ideally be undertaken at least two weeks apart.
High Suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn, undertaken at least two weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	

(* in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc)

Table 2: Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Suitability	Negligible habitat features on site likely to be used by commuting or foraging bats.	None
Low Suitability	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment.	Transect /spot count/ timed search survey: One survey visit per active season AND Static automated surveys: One location per transect, over a five-night period, per season.

	Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	
Moderate Suitability	<p>Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens.</p> <p>Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.</p>	<p>Transect /spot count/ timed search survey One survey visit per month At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Two locations per transect, over a five-night period, per month (April to October)</p>
High Suitability	<p>Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge</p> <p>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.</p> <p>Site is close to and connected to known roosts.</p>	<p>Transect /spot count/ timed search survey Up to two survey visit per month (April to October)</p> <p>At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Three locations per transect, over a five-night period, per month (April to October)</p>

(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).

Amphibians

The great crested newt and natterjack toad are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt, is fully protected under the Conservation of Habitat Regulations 2017 (as amended), making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond. Sites should be considered suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500m of the development or the development site includes suitable terrestrial habitat refuges.

Great crested newt site assessments are undertaken in accordance with:
English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and
Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Prior to a site visit, a desk study pond search is undertaken. When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location. The following online sources are used:
OS MAPPING VIA PRO MAP, GOOGLE EARTH PRO, GOOGLE MAPS and MAGIC MAPS

Each identified pond (Access permitting) is subjected to a Habitat Suitability Index (HSI) assessment providing a score for each pond. This survey should be undertaken during the summer period to be fully accurate, however assumptions can be made out of season to guide survey recommendations.

Reptiles

Two species of reptile, the sand lizard and smooth snake, and their habitats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed, undisturbed areas, such as areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. If these types of suitable features are found then further reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.
Gent T and Gibson S (2003) *Herpetofauna Workers Manual*. JNCC, Peterborough.

Water Vole (*Arvicola amphibius*)

The water vole receives full protection Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Legal protection makes it an offence to intentionally kill, injure or take (capture) a water vole. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.

Water vole site assessments were undertaken in accordance with:
Strachan R. Moorhouse T, and Gelling M (2011) *Water Vole Conservation Handbook*. (3rd Edition) Wildlife Conservation Research Unit.

Water vole are usually found along water bodies that have still or slow flowing deep water with an abundance of bankside herbaceous vegetation. Such areas include dykes, rivers, streams and drains, but they can also be found on isolated large ponds.

If these types of suitable features are found during a PEA, then water vole surveys are recommended.

Invasive non-native weeds

Plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) are examples of invasive non-native weeds classified under Part II of Schedule 9 of the Wildlife and Countryside act 1981. Any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. The plant and the soil these species are found growing in are classified as waste material and should be treated as such.

A simple walk over survey of the site to determine if these species are present was carried out during the PEA. A full list of Schedule 9 species can be found at Plantlife.org

Botanical Value

There are 60 plant species listed under Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the PEA, a phase one habitat survey was undertaken following JNCC guidance. Further assessments are made to determine whether habitats comprise those identified as Habitats of principle Importance under S42 of NERC Act 2006.

Surveys can be undertaken year-round, however, if species or site conditions suggest higher botanical interest a full botanical survey will be recommended.

Invertebrates

The following invertebrates are European protected species and it is considered an offence if you capture, kill, disturb or injure, on purpose or by not taking enough care. It is also against the law to damage or destroy a breeding or resting place, obstruct access to their resting or sheltering places, possess, sell, control or transport live or dead protected invertebrates, or parts of them.

Large blue butterflies (eggs, caterpillars, chrysalises and adults)
Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults)
Little ramshorn whirlpool snails

Approximately 400 additional species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981 and S41 of NERC Act 2006.

If suitable habitat for invertebrates is identified during the PEA further surveys will be recommended.

Ecological Enhancement

In March 2019 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged.*

For new buildings guidance such as in the following will be used:
Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build.* Riba Publishing.

Designated Sites

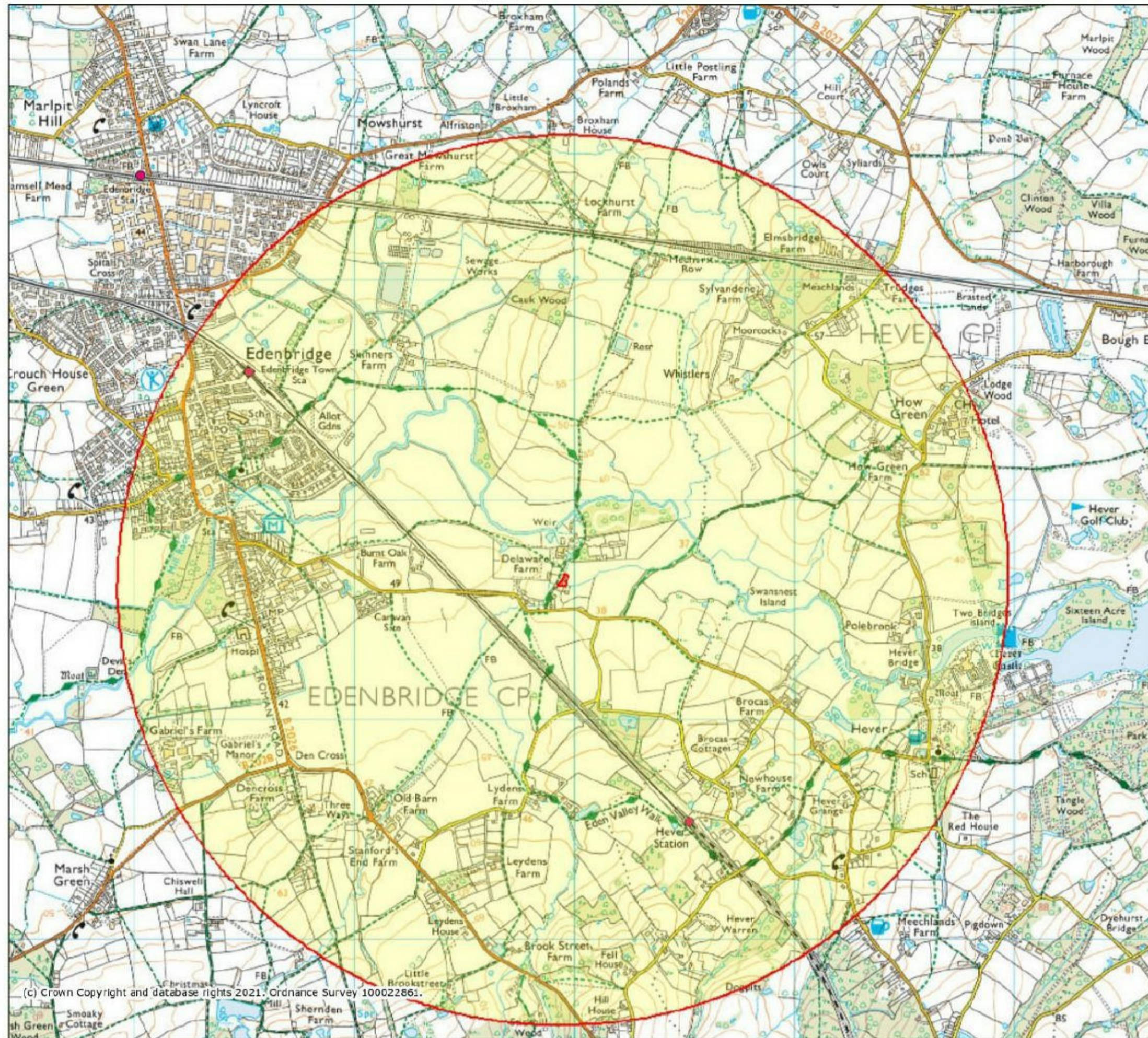
Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports.

Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 7. Magic Data

Two kilometre radius search of the project site.

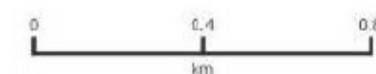


Legend

- | | |
|---|--|
| Limestone Pavement Orders (England) | Not Assessed |
| Local Nature Reserves (England) | Sites of Special Scientific Interest (England) |
| Moorland Line (England) | Special Areas of Conservation (England) |
| National Nature Reserves (England) | Possible Special Areas of Conservation (England) |
| National Parks (England) | Special Protection Areas (England) |
| Ramsar Sites (England) | Potential Special Protection Areas (England) |
| Proposed Ramsar Sites (England) | Biosphere Reserves (England) |
| Sites of Special Scientific Interest Units (England) | Less Favoured Areas (England) |
| Favourable Condition | Disadvantaged |
| Unfavourable Recovering | Severely Disadvantaged |
| Unfavourable no change | Wild Bird General Licence Protected Sites |
| Unfavourable Declining | Condition Zone (England) |
| Part Destroyed | |
| Destroyed | |

Projection = OSGB36
 xmin = 541300
 ymin = 143600
 xmax = 550800
 ymax = 148200

Map produced by MAGIC on 1 February, 2021.
 Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.



01/02/2021

Site Check Report Report generated on Mon Feb 01 2021
You selected the location: Centroid Grid Ref: TQ45944563
The following features have been found in your search area:

Granted European Protected Species Applications (England)

Case reference of granted application	2015-13316-EPS-MIT
Species group to which licence relates	Amphibian
Species on the licence	Great crested newt
Site county of licence	Kent
Licence Start Date	26/08/2015
Licence End Date	30/06/2016
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	N
Does licence allow damage of a resting place	Y
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	N
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Case reference of granted application	EPSM2011-3195
Species group to which licence relates	Amphibian
Species on the licence	Great Crested Newt
Site county of licence	Kent
Licence Start Date	01/08/2011
Licence End Date	30/04/2013
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	
Does licence allow damage of a resting place	
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Case reference of granted application	EPSM2011-3473
Species group to which licence relates	Bat
Species on the licence	C-PIP;S-PIP;BLE
Site county of licence	Kent
Licence Start Date	05/10/2011
Licence End Date	30/09/2014
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	
Does licence allow damage of a resting place	
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Areas of Outstanding Natural Beauty (England)

Reference	14
Name	High Weald
Date Designated	Oct-83
Hyperlink	http://www.landscapesforlife.org.uk/about-aonbs/visit-aonbs/high-weald-aonb
Statutory Area in Sq.km	1461.72

Limestone Pavement Orders (England)

No Features found

Local Nature Reserves (England) - points

No Features found

Local Nature Reserves (England)

No Features found

Moorland Line (England)

No Features found

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

National Parks (England)

No Features found

1/2

01/02/2021

Ramsar Sites (England) - points

No Features found

Ramsar Sites (England)

No Features found

Proposed Ramsar Sites (England) - points

No Features found

Proposed Ramsar Sites (England)

No Features found

Sites of Special Scientific Interest Units (England) - points

No Features found

Sites of Special Scientific Interest Units (England)

No Features found

Sites of Special Scientific Interest (England) - points

No Features found

Sites of Special Scientific Interest (England)

No Features found

Special Areas of Conservation (England) - points

No Features found

Special Areas of Conservation (England)

No Features found

Possible Special Areas of Conservation (England) - points

No Features found

Possible Special Areas of Conservation (England)

No Features found

Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

No Features found

Potential Special Protection Areas (England) - points

No Features found

Potential Special Protection Areas (England)

No Features found

Biosphere Reserves (England) - points

No Features found

Biosphere Reserves (England)

No Features found

Less Favoured Areas (England)

No Features found

Wild Bird General Licence Protected Sites Condition Zone (England)

No Features found

Appendix 8. Habitat Suitability Index – GCN

Water Bodies	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	T
W1	1	0.2	1	0.67	1	1	0.67	1	1	0.7	0.76
W2	1	0.7	1	0.67	1	0.67	1	1	1	0.7	0.86
W3	1	0.7	0.9	0.33	1	0.67	0.67	1	1	0.35	0.71
W4	1	1	0.9	0.67	1	1	0.67	1	1	0.3	0.81

$$\text{Total HSI Score} = (S1 \times S2 \times S3 \times S4 \times S5 \times S6 \times S7 \times S8 \times S9 \times S10)^{1/10}$$

Key:

W = Waterbody

S1 = Location

S2 = Pond Area

S3 = Pond Permanence

S4 = Water Quality

S5 = Shade

S6 = Water Fowl

S7 = Fish

S8 = Pond Numbers

S9 = Terrestrial Habitat Quality

S10 = Macrophyte Coverage

T = Total HSI Score

Appendix 9. Building Photographs

Figure 8:

Building 1 - Internal Inspection (southern portion)

Timber cladding present within the building sub-optimal surface for bats to cling to and roost on.



Figure 9:

Building 1 - Southern Elevation

Single storey barn supporting a corrugated asbestos pitched roof. The walls comprised sealed breezeblock with corrugated metal cladding towards the upper half.



