



Preliminary Ecological Appraisal and Preliminary Roost Assessment

The Coppers, Penny Lane, Wargrave, Reading, RG10 8PB

Mr & Mrs Pearson

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation, and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary, and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England. The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Mr & Mrs Pearson to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at The Coppers, Penny Lane, Wargrave, Reading, RG10 8PB (hereafter referred to as “the site”). The survey was required to inform a planning application for changes to the existing house and outbuildings to the south-east of the site which are anticipated to include replacement of the outbuildings and extensions and refurbishment of the house (hereafter referred to as “the proposed development”).

The following is work you will need to commission to obtain planning permission and to comply with legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 7 of this report.

Feature	Foreseen impacts	Recommendations <i>Measures required to adhere to guidance, legislation, and planning policies.</i>
Roosting bats (B1, B2, B3, and B4)	Bats are very unlikely to be roosting within buildings B2 and B4 and as such, there are not anticipated to be any impacts on bats in this location as a result of the proposed development. The proposed development may result in the demolition of building B3 and the renovation and extension of building B1. This could result in destruction of any bat roosts present and could cause disturbance, death, or injury to bats.	One bat emergence or re-entry survey is required during the active bat season (May – September) to confirm presence or likely- absence of a bat roost in buildings B1 and B3.
Hedgehog	Buildings, bare ground, and amenity grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs if present.	A precautionary working method will be implemented during construction.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Mr & Mrs Pearson to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at The Coppers, Penny Lane, Wargrave, Reading, RG10 8PB (hereafter referred to as “the site”). The survey was required to inform a planning application for changes to the existing house and outbuildings to the south-east of the site which are anticipated to include replacement of the outbuildings and extensions and refurbishment of the house (hereafter referred to as “the proposed development”).

A plan showing the proposed development will be provided in Appendix 1 when available.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. The aim of the PRA was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how bats could use the site for roosting, foraging, or commuting.

No previous ecology reports have been produced for this site by Arbtech Consulting Ltd or, to the author’s knowledge, by any other consultancy.

1.2 Site Context

The site is located at National Grid Reference SU78568067 and has an area of approximately 0.9ha. The site is characterised by a large two storey dwelling and three outbuildings with an associated garden. Habitats recorded on site include amenity grassland, buildings, bare ground, scattered trees, poor semi-improved grassland, introduced shrubs, tall ruderal, and fencing. The surrounding landscape comprises large arable fields, woodland copses, parkland, tree lines, hedgerows with the river Thames approximately 600m west of the site.

A site location plan is provided in Appendix 2.

1.3 Scope of the Report

The PEA element of this report describes the baseline ecological conditions at the site, evaluates habitats within the survey area in the context of the wider environment and describes the suitability of those habitats for notable or protected species. It identifies possible ecological constraints as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

The PRA element of this report provides a description of all features suitable for roosting, foraging and commuting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on possible constraints to the proposed development as a result of bats and summarises the requirements for any further surveys to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken to record baseline information on the site and surrounding area including habitat types and their suitability for notable or protected species, including roosting bats.
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Potential impacts on features of value, as a result of the proposed development, have been identified.
- Recommendations for further surveys and mitigation have been made.
- Opportunities for the enhancement of the site for biodiversity have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a review of the magic.gov.uk database for statutory designated sites within a 2km radius of the site. Landscape value and the presence of notable habitats as well as granted European Protected Species Licence (EPSL) and notable species records held on magic.gov.uk database has also been considered where these are within influencing distance of the site.

2.2 Field Survey

The survey was undertaken by Georgia Chapman (Accredited Agent on Natural England Bat Licence Number: 2016-22119-CLS-CLS) on Thursday 28th July 2022.

Preliminary Ecological Appraisal

An extended habitat survey was undertaken, following the methodology set out in *Phase 1 Habitat Survey Methodology* (JNCC, 2010). All land parcels are described and mapped and, where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure, and management. Botanical species lists were compiled with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species.

Preliminary Roost Assessment

The PRA focussed on four built structures and trees which will be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat.

For any surveyed buildings:

A non-intrusive visual appraisal was undertaken from the ground, using binoculars to inspect the external features of the buildings for features which bats could use for roosting, including access or egress points and for signs of bat use including droppings, scratch marks, insect remains and urine smear marks. An internal inspection of the buildings was also made, including the living areas and any accessible roof spaces, using a torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees:

A visual inspection was undertaken from ground level using binoculars and, where accessible and safe to do so, an internal inspection of any features which bats could use for roosting was completed using an endoscope, torch, and ladders.

Suitability Assessment

Built structures and trees were categorised according to the likelihood of bats being present and the types of roost that the identified features could support. This is summarised in Table 1 for buildings and Table 2 for trees below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats.

Classification	Feature of building and its context
Moderate to high	Buildings or structures with features of particular significance for larger numbers of roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data). Buildings with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.
Low	A small number of possible roost sites or features, used sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.
Negligible	Unsuitable for use by bats.

Table 2: Features of a tree that are correlated with use by bats.

Classification	Feature of tree and its context
Moderate to high	A 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. Trees with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential to be used sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators.
Negligible	Unsuitable for use by bats.

2.3 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

Specific limitations to the PRA were a lack of access through one of two loft hatches within B1 due to health and safety reasons. The loft hatch was positioned above a staircase and no safe location to position a ladder could be identified.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Designated Sites

No statutory designated sites were identified within 2km of the site.

3.2 Field Survey Results

The results of the field survey are illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 4.

Table 3: Weather conditions during the survey.

Date: 28/08/2022	
Temperature	19.4°C
Humidity	58%
Cloud Cover	40%
Wind	9mph
Rain	None

Habitats and Flora

The following habitats are present within and adjacent to the site:

- Amenity grassland (J1.2)
- Buildings (J3.6)
- Bare ground (J4)
- Broadleaved semi-natural woodland (A1.3.1)
- Scattered trees (A3.3)
- Tennis court (J5)
- Poor semi-improved grassland (B6)
- Introduced shrubs (J1.4)
- Tall ruderal (C3.1)
- Fencing (J2.4)
- Wall (J2.5)

A description and photographs of each habitat are provided in Table 4.

No protected or non-native invasive plant species (as listed under Schedules 8 or 9 of the Wildlife and Countryside Act 1981) were identified on the site.

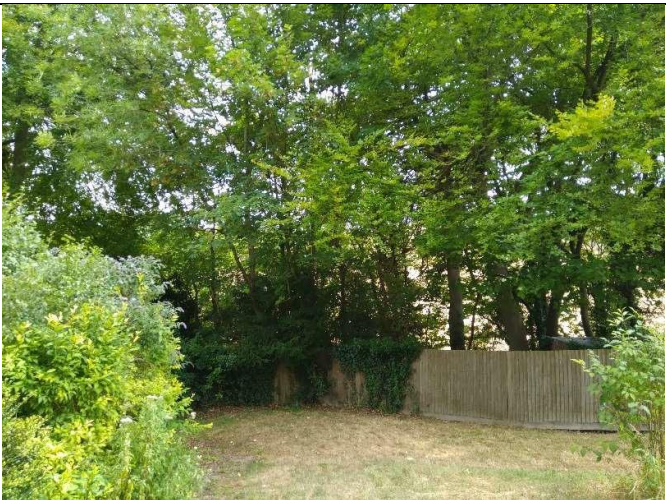
Table 4: Description and photographs of habitats within and adjacent to the site.

Habitat Type	Habitat description	Photograph
Amenity grassland (J1.2)	The site is dominated by large areas of intensively managed and regularly mown grassland retaining a short sward length of approximately 2cm. Species composition includes perennial ryegrass (D), broadleaf plantain (A), dandelion (A), and clover (F).	
Buildings (J3.6)	Four buildings are present on site. All four buildings were surveyed as they will be impacted by the proposed development, comprising one two storey dwelling (B1), one garage (B2), and two single storey outbuildings (B3 and B4). These buildings and their suitability to support roosting bats are described within the PRA section below.	

Bare ground (J4)	Bare ground comprising concrete and gravel is present within the centre of the site and towards the site entrance enabling vehicular and pedestrian access.	
Broadleaved semi-natural woodland (A1.3.1)	Mixed semi-natural woodland is present along the southwest and southeast site boundary. Species include hazel, sycamore, ash, and horse chestnut. The woodland along the site boundary is deciduous and is representative of the 'lowland mixed deciduous woodland' habitat of principal importance under Section 41 of the NERC Act 2006 as identified through a review of the Magic database.	

Scattered trees (A3.3)	There are several scattered trees located throughout the site comprising oak, beech, ash, and sycamore. The site boundary contains oak, ash, field maple, sycamore, hazel, and beech trees.	
Tennis court (J5)	A large tennis court is present on site with a porous wire fence surrounding it.	

Poor semi-improved grassland (B6)	Small areas of poor semi-improved grassland are present within the site, subject to less frequent management. Species composition is poor, comprising predominantly perennial ryegrass (D) and meadow grass species with occasional narrow leaved plantain (O), dandelion (O), creeping buttercup (F), and clover (F). This area of the site will be unaffected by the proposed development.	
Introduced shrubs (J1.4)	There are introduced shrubs scattered throughout the site. Species include buddleia, elder, beech, and laurel shrubs.	

Tall ruderal (C3.1)	Areas of tall ruderal vegetation are present along the site boundary. Species include willowherb, common nettle, hedge woundwort, common nettle, and hedge nettle. This habitat will not be affected by the proposed development.	
Fencing (J2.4)	A large wooden fence is present along the southeast boundary of the site. The fence is in good condition and would limit dispersal onto the site in this location.	

Wall (J2.5)	A wall is present at the edge of the amenity grassland southwest of the site. The garden is sloped and raised above the buildings.	
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Fauna

Bats

17 EPSL records for bats were returned by the Magic database within 2km of the site. The closest being approximately 620m southeast for the destruction of a brown long- eared, common pipistrelle, and soprano pipistrelle roost. The site is adjacent to broadleaved woodland to the west with the river Thames approximately 620m west of the site. It is likely bats will forage and commute regularly in the area.

The results of the PRA are provided in Table 5. No evidence of roosting bats was identified during the survey.

Table 5: Assessment of the suitability of the site for bats.

Feature Ref	Description	Photographs
B1 – southeast elevation (exterior)	B1 is a two-storey pitched and gabled roof clad in concrete interlocking tiles. The roof tiles are in very good condition with no raised, missing, or broken tiles present. The ridge tiles are in good condition with no missing mortar along the ridge for bats to access and roost. The verge tiles along the gable ends are very good condition with no missing mortar for bats to access and roost. There is one chimney present on the roof of B1, the brick is well mortared and in good condition and the lead flashing is flat with no raised areas under which bats could roost. The brickwork is rendered and in excellent condition with no damage or cracks for bats roost. The soffit boxes, windows, and doors are wooden and all in good condition with no gaps for bats to access and roost.	
B1 – southeast elevation (exterior)	The roof tiles are in very good condition with no raised, missing, or broken examples present under which bats could roost. The chimney brickwork is in very good condition with no missing mortar for bats to roost. The wooden soffits around the building are tight fitting to the wall and in good condition with no suitable areas for bats to roost.	

B1 – southeast elevation (exterior)	The verge tiles on the gable ends are in very good condition with no gaps in the mortar along the verge or at the apex for bats to roost. The brickwork around the building is rendered with no gaps or cracks for bats to access and roost.	
B1 – southeast elevation (exterior)	A dormer window is present on the northernmost side of the building. The roof of the dormer window has a flat bitumen felt roof and is clad in clay hanging tiles. The hanging tiles are in moderate condition with gaps between the tiles, and could therefore provide suitable roosting habitat for crevice dwelling bats.	

B1 – northeast elevation (exterior)	The verge tiles on the northeast elevation of the building are in very good condition with no gaps or cracks in the mortar along the verge tiles or at the apex for bats to roost. The brickwork on the gable end is rendered and in very good condition with no damage or cracks for bats to access and roost.	
B1 – northwest elevation (exterior)	The roof tiles on this elevation are in very good condition with no gaps or cracks for bats to roost. There is a sky light on this elevation of the building. There is no roof void within the northernmost section of the building. The brickwork is rendered and in very good condition, there are no gaps or cracks for bats to roost.	

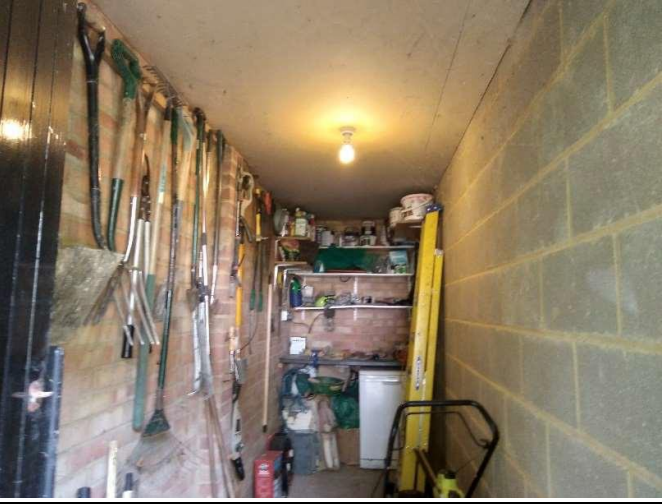
B1 – northwest elevation (exterior)	There is a bitumen felt flat roof section at the rear of building B1. The felt flat roof is in good condition with no raised areas under which bats could roost.	
B1 – northwest elevation (exterior)	The concrete interlocking roof tiles are in very good condition with no gaps raised, missing, or broken examples present for bats to roost. The chimney lead flashing on this elevation is in good condition with no raised areas under which bats could roost. The ridge tiles are in good condition with no gaps in the mortar for bats to roost. The verge tiles on the gable ends are in good condition and there are no raised areas under which bats could roost.	

B1 – southwest elevation (exterior)	The roof tiles on this elevation are in very good condition with no raised, missing, or broken tiles present under which bats could roost. The verge tiles along the gable ends are in good condition with no gaps in the mortar for bats to roost. There is a vent on this roof elevation the lead flashing at the base is slightly raised. The brickwork is rendered and in excellent condition with no areas of damage or cracks for bats to roost.	
B1 (interior)	There is one main loft space within the main roof void of B1. The roof is constructed of modern timber beams including the ridge beam. The loft space is lined with bitumen felt which is in good condition with no gaps or tears for bats to roost. The floor of the loft space is partially boarded and lined with mineral wool insulation.	

B1 (interior)	The bitumen felt lining is in good condition and the mineral wool insulation overhangs the eaves, no daylight enters the space indicating it is well sealed.	
B1 (interior)	The gable ends are lined with concrete breezeblocks. There are no gaps at the eaves for bats to roost.	

B2 – northeast elevation (exterior)	B2 is a single storey red brick building with a corrugated clear plastic roof. The building is single skinned with a wooden framed door and window. There are no gaps in the door frame for bats to access and roost and no gaps or cracks in the brickwork for bats to access and roost.	
B2 (interior)	The roof of B2 is corrugated clear plastic and the roof is constructed of modern timber beams. The walls are single skinned with no gaps or cracks in the brickwork for bats to access and roost. The roof and walls are well adhered with no gaps for bats to enter and roost. The building is also well lit due to the clear roof.	

B3 and B4 – southwest elevation (exterior)	B3 is a single storey rendered brick outbuilding with a pitched and gabled roof clad in clay interlocking tiles. The tiles appear in good condition. The soffit boxes appear in good condition with no areas for bats to access and roost. The rendered brickwork is in good condition with no gaps or cracks in the brickwork for bats to roost. There is a sloped extension on the northeast elevation of B3, the extension is constructed of timber beams with a clay tile roof. There are gaps in the timber walls which would allow access into the building for bats to access and roost. There is also a shed located on the northeast side of B3 between the main building and lean to roof. The interior of all three sections within B3 are connected. B4 is a single storey rendered brick outbuilding with a pitched and gable roof clad in clay interlocking tiles. The ridge and roof tiles are in very good condition with no gaps for bats to access and roost. The soffit boxes on this building are in good condition, with no gaps or cracks for bats to roost. B4 is circled in yellow for clarity.	
B3 – southwest elevation (exterior)	The tiles appear in good condition with no visible gaps for bats to access and roost. The soffit box on this elevation is in good condition with no gaps or cracks for bats to access and roost. The rendered brickwork is in good condition and with no areas of damaged paintwork for bats to roost.	

B3 (interior – sloped roof extension)	The single storey sloped roof extension on the northeast elevation of B3 is constructed of timber beams including the rafters, purlins, and walls. The roof is lined with bitumen felt which appears in good condition with no gaps or tears for bats to access and roost. The walls of the extension are in good condition; however, the timber boards are not tight fitting and would allow access for bats into the interior of B3 to roost. The extension is in regular use as a log store, no evidence of bat use was found including droppings or feeding remains.	
B3 (interior – shed)	There is a shed located between the sloped roof extension and main interior of B3. The shed is enclosed by a single skinned brick wall on all sides as well as a wooden door with no gaps in the frame for bats to access and roost and a wooden boarded ceiling. There are no opportunities for bats to access this section of the building to roost.	

B3 (interior)	The main interior of B3 has no separate loft void, which is open and connects to the single storey sloped roof extension. The roof is lined with bitumen felt which is in very poor condition with many gaps and tears exposing the tiles. The brickwork around the building is in good condition with no gaps or cracks for bats to access and roost. The building is in regular use as a storage and boxing room. No evidence of bat activity including droppings or feeding remains was found within the interior of B3.	
B4 (interior)	The roof of B4 is lined with timber sarking which is in good condition with no gaps for bats to access and roost. The walls of the building are single skinned and rendered, there are no gaps or cracks in the brickwork for bats to access and roost.	

Other Species

An assessment of the suitability of the site for protected or notable species is provided in Table 6.

Table 6: Assessment of the suitability of the site for protected or notable species.

Species	Assessment of suitability
Amphibians	Two EPSL records were returned by the Magic database for the destruction of a great crested newt resting place, approximately 1,614m west of the site. Great crested newts exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; great crested newts are typically found within terrestrial habitats up to 500m from breeding ponds (Langton et al. 2001). As such, the great crested newt metapopulation known to be present approximately 1.614km west are not suitably connected to the site. There are no ponds or suitable breeding habitats within 500m of the site and it is likely the roads and residential dwellings as well as enclosed gardens north of the site will present a significant barrier to dispersal. Wargrave Road approximately 190m west and the River Thames approximately 550m west of the site lies between the site and the metapopulation 1.614km east which is likely to be a significant barrier to dispersal to and from the site. Additionally, the site is dominated by intensively managed amenity grassland and hard standing which is considered sub optimal habitat to support great crested newts.
Reptiles	No EPSL records for reptiles was returned by the Magic database within 2km of the site. The surrounding landscape is likely to support reptiles due to suitable foraging, commuting and refugia opportunities present within scrub, grassland, and small woodland pockets in the wider area. However, the proposed development will result in limited vegetation removal, and it is unlikely reptiles will be encountered or impacted. Onsite habitats including amenity grassland and bare ground are considered sub optimal for reptiles.
Badgers	No evidence of badgers including snuffle holes, mammal paths, latrines, prints, hairs, or sett entrances were observed on site or adjacent to the site. However, it is possible badgers could forage within and commute to and from the site via farmland adjacent to the north and east, as well as woodland to the west. The habitats on site are predominantly amenity grassland and bare ground which do not provide sett opportunities for badgers. Badgers are not likely to be impacted by the proposed development.
Hazel Dormouse	No EPSL records for hazel dormouse was returned by the Magic database within 2km of the site. The site and surrounding area lack suitable complex vegetative structure and connectivity to support dormice. Within a different landscape context, habitats on site have potential to support dormice in the form of deciduous woodland. However, these habitats are small in extent and lack a continuous three-dimensional distribution. Dormice typically utilise a three-dimensional woodland ground flora as to commute between feeding and breeding sites whilst avoiding predation; the woodland on site supports a suboptimal understorey layer. Furthermore, for isolated woodland pockets in the UK, research indicates that dormice require 20ha of woodland habitat to support a viable population (Bright et al. 1994). The woodland on site is not suitably connected to further pockets of woodland or wide hedgerows and thus does not provide the coverage required to support a viable population.
Hedgehog	There is suitable habitat for hedgehogs in the wider landscape and surrounding areas with scrub, grassland, and small woodland pockets. Hedgehogs could use the site to forage and commute and there are opportunities for hedgehogs to shelter in edge habitats including tall ruderal and woodland. The proposed development will not result in the removal of these habitats, there will be minimal impacts to hedgehogs as a result.
Riparian mammal	The site has no watercourses present or immediately adjacent to support otter or water vole. The closest water body is the River Thames approximately 600m west of the site which is not due to be impacted. The proposed development will result in the removal of small areas of bare ground and amenity grassland, surrounding vegetative habitats will not be impacted.
Birds	Birds are likely to use on site habitats including shrubs, scattered trees, and the woodland to nest however, however, these will not be impacted by the proposed development. There was no sign of birds using the buildings to nest.
Invertebrates	The habitats on site including the amenity grassland and hard standing are of negligible ecological value and minimal vegetation will be impacted by the proposed development.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Likelihood of the Presence of Protected Species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Where this report supports a planning application, the ecological interest of the study area (i.e. the area covered by the desk study and field survey) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity.

4.2 Evaluation

Taking the desk study and field survey results into account, Table 7 presents an evaluation of the ecological value of the site and details any ecological constraints identified in relation to the proposed development for the existing house and outbuildings.

Table 7: Evaluation of the site and any ecological constraints.

Ref	Summary of Survey Findings	Foreseen Impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>	Biodiversity Enhancements <i>The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021).</i>
Designated sites	There are no statutory designated sites within 2km of the site.	None.	None.	None.
Habitats and flora	The site contains mixed deciduous woodland to the southwest which is listed as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Further notable habitats are present within 2km. Other habitats within the site are common and widespread and have low ecological value. No protected or notable plant species were identified during the survey.	No impacts to any notable habitats are anticipated due to the small scale and distance of the proposed development from such habitats. Furthermore, the topography of the land means that the woodland is elevated above the proposed development area and it is therefore unlikely they will be at risk of pollution or tree damage. Only buildings, bare ground and amenity grassland will be impacted by the works.	None.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development: • Native tree, hedgerow, and shrub planting. • Creation of wildflower grassland. • The creation of a wildlife pond for wildlife to include native plant species and no fish. • A green roof on new buildings. Species-specific enhancement opportunities are detailed later in this table.
Amphibians	Amphibians are unlikely to be present and are not considered to be a constraint of the proposed development.	No impacts are anticipated on amphibians, including great crested newt, as a result of the proposed development.	None.	None.
Reptiles	Reptiles are unlikely to be present and are not considered to be a constraint of the proposed development.	No impacts are anticipated on reptiles as a result of the proposed development.	None.	None.
Roosting bats B1, B2, B3 and B4)	Buildings B2 and B4 have negligible value for roosting bats due to a lack of potential roost features.	Bats are very unlikely to be roosting within buildings B2 and B4 and as such, there are not anticipated to be any impacts on bats in this location as a result of the proposed development.	One bat emergence or re-entry survey is required during the active bat season (May – September) to confirm presence or likely-absence	To be confirmed upon completion of the surveys.

	Both buildings B1 and B3 have low habitat value for roosting bats. Building B1 has clay hanging tiles from the dormer window on the northeast elevation of B1, lead flashing could also provide suitable habitat for a low number of crevice dwelling bats. No droppings were found internally or externally on the building. Building B3 has a timber framed single storey sloped roof extension which would allow bats access into the building to roost either within the extension or in the main interior of the building. No evidence of bat activity including droppings or feeding remains was found. The surrounding habitat is likely to provide abundant foraging and commuting opportunities for local bats, further increasing the likelihood features could be utilised by roosting bats.	The proposed development may result in the demolition of building B3 and the renovation of building B1. This could result in destruction of any bat roosts present and could cause disturbance, death or injury to bats.	of a bat roost in buildings B1 and B3. The survey can be either a dusk emergence or dawn re-entry survey. Four surveyors are required to provide full coverage of building B1, and two surveyors are required to provide full coverage of building B3. The survey is likely to be required before planning permission can be granted. If bat roosts are confirmed in the building two additional surveys will be required to inform an EPSL application to Natural England. Surveys should be a minimum of two weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission.	
Foraging and commuting bats	Scattered trees and adjacent deciduous woodland could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will not result in the removal of any habitats which could be used by foraging or commuting bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for foraging bats: • The creation of a wildlife pond. • Planting of native tree, shrub, and hedgerows to increase foraging opportunities.

			• Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers, and shields. Lights will also be directional to ensure that light is directed to the intended areas only. External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light	
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			intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	
Badger	Though there are suitable habitats within the landscape, the proposed development will impact minimal vegetation, including amenity grassland and bare ground. No evidence of badgers was observed on site.	No works will be undertaken within 30m of a badger sett. Buildings, bare ground, and amenity grassland will be heavily disturbed and removed during construction. The loss of such habitats is likely to be inconsequential to local badger populations owing to their low value and the presence of more extensive habitat locally.	None.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for badgers: Planting fruit bearing trees and species-rich grassland to increase foraging opportunities.
Hazel dormouse	The site lack's complex vegetative structure and connectivity to the wider landscape. In addition, the proposed works are only due to impact buildings, bare ground and amenity grassland.	No impacts are anticipated on hazel dormice as a result of the proposed development.	None.	None.
Hedgehog	Although there are suitable habitats on site and within the landscape, the proposed works are only due to impact limited on-site habitats including bare ground and amenity grassland. No evidence of hedgehogs was observed on site.	Buildings, bare ground and amenity grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs if present.	A precautionary working method will be implemented during construction, including the following measures: - Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. - The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. - Any chemicals or pollutants used or created by the development should be	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: - Planting fruit bearing trees and species-rich grassland to increase foraging opportunities. - Creation of brash piles or installation of hedgehog houses in shady areas. - Installation of gaps under boundary fencing to enable hedgehogs to move freely through the site.

			stored and disposed of correctly according to COSHH regulations. If a hedgehog is found, then this should be moved by gloved hand to an undisturbed and sheltered area of the site or adjacent land.	
Riparian mammals	There are no suitable water courses for otters and water voles on or adjacent to site. In addition, limited vegetation will be impacted by the proposed development.	No impacts are anticipated on otters as a result of the proposed development.	None.	None.
Birds	No nests were found on the buildings subject to the works, however, birds could use the woodland, scattered trees, and shrub habitats to nest.	No impacts are anticipated on nesting birds as a result of the proposed development.	None.	The installation of a minimum of two bird boxes on mature trees around the site boundaries or on retained buildings will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings) Schwegler 1SP Sparrow Terrace (buildings) Schwegler 1B Nest Boxes (trees) Schwegler 2H Robin Boxes (trees) Woodstone Nest Box (buildings or trees) Or a similar alternative brand. Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole.

				Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.
Invertebrates	Though there are suitable habitats onsite and in the surrounding landscape, the works will result in limited vegetation removal.	No impacts are anticipated on notable species or populations of invertebrates as a result of the proposed development.	None.	None.

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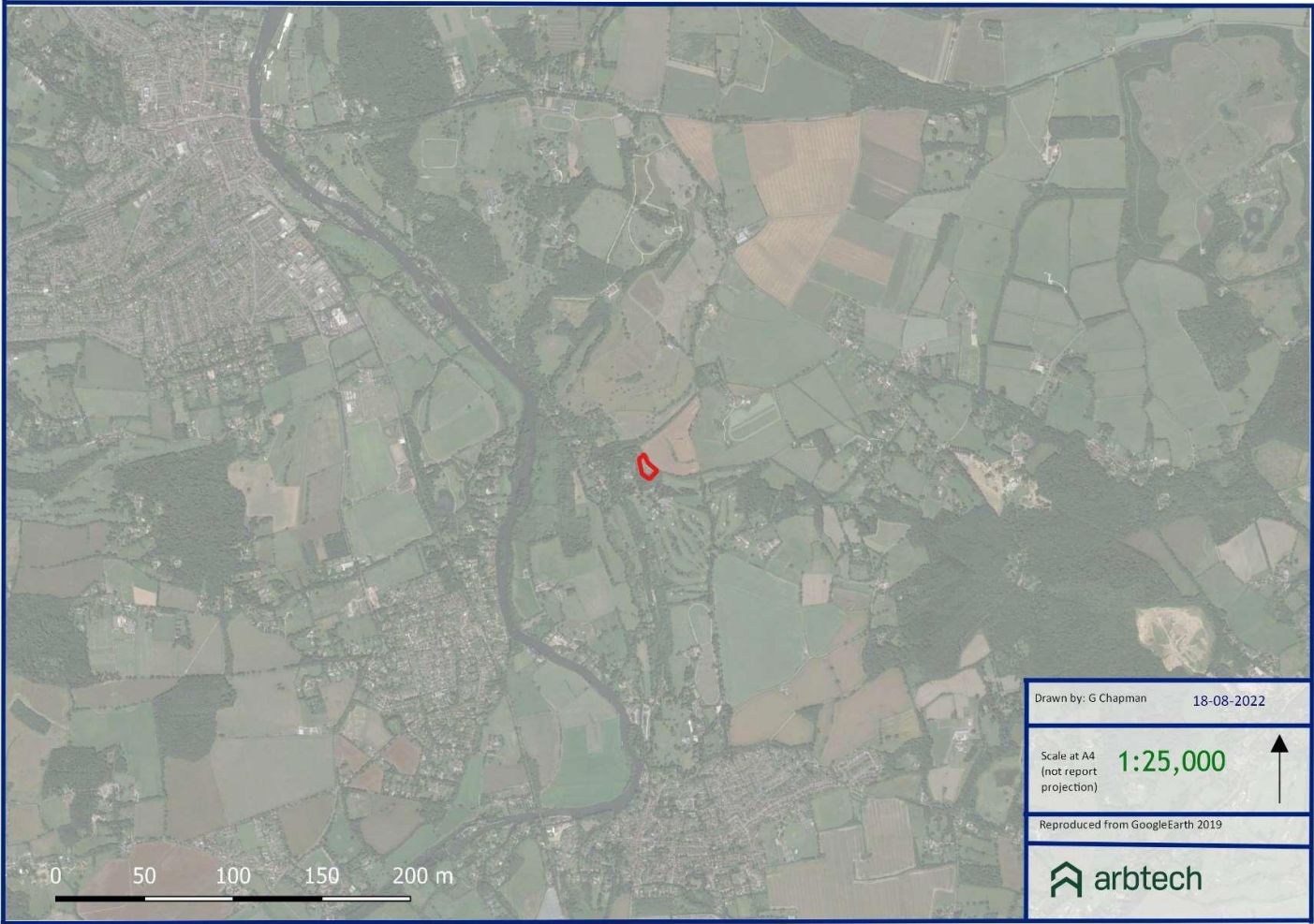
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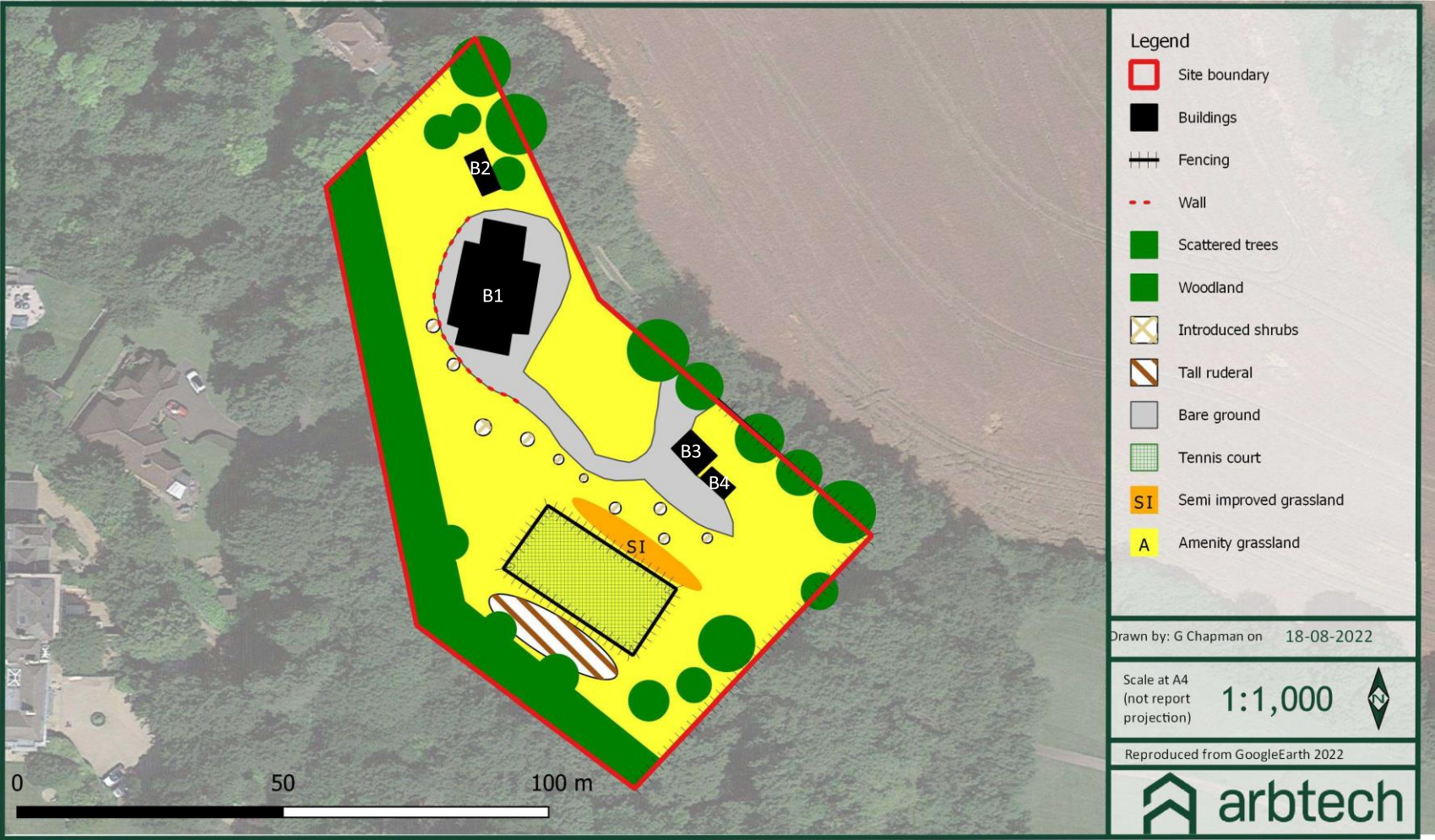
Appendix 1: Proposed Development Plan

Not available at the time of writing this report.

Appendix 2: Site Location Plan



Appendix 3a: Habitat Survey Plan



Appendix 3b: PRA Survey Plan



Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds (the Wild Birds Directive) respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as Sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many Annex II species): a strict protection regime must be applied across their entire natural range, both within and outside Natura 2000 sites.

Annex V species (over 90): their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

The Conservation of Habitats and Species Regulations 2017 (as amended) form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12 nautical miles in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*”. However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies, or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species***The Conservation of Habitats and Species Regulations 2017 (as amended)***

The Conservation of Habitats and Species Regulations 2017 (as amended) aims to promote the maintenance of biodiversity by requiring the Secretary of State to take measures to maintain or restore wild species listed within the Regulations at a favourable conservation status.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CROW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agencies to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and are commonly referred to as “Schedule 1” birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Amphibians and Reptiles

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water Voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection

- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored

e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Hazel Dormice

Hazel dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection Effects

on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require a European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White Clawed Crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation Afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

A European Protected Species Licence (EPSL) will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of plants listed on Schedule 5 of the Conservation of Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any landowner or occupier may be required prevent the spread of certain ‘injurious weeds’ including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

Effects on development works:

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)***Environment Act 2021***

The Environment Act 2021 (EA 2021) received Royal Assent on 9 November 2021 and is expected to become fully mandated within the next couple of years. The Act principally creates a post Brexit framework to protect and enhance the natural environment. Through amendments to the Town and Country Planning Act 1990, the Act will require all planning permissions in England (subject to exemptions which is likely to include householder applications) to be granted subject to a new general pre- commencement condition that requires approval of a biodiversity net gain plan. This will ensure the delivery of a minimum of 10% measurable biodiversity net gain. The principal tool to calculate this will be the Defra Biodiversity 3.0 Metric. Works to enhance habitats can be carried out either onsite or offsite or through the purchase of ‘biodiversity credits’ from the Secretary of State. However, this flexibility may be removed (subject to regulations) if the onsite habitat is ‘irreplaceable’. Both onsite and offsite enhancements must be maintained for at least 30 years after completion of a development (which period may be amended).

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland. ***The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty***

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.