



L I Z A R D

Landscape Design and Ecology

ECOLOGICAL IMPACT ASSESSMENT

**The National Trust Slindon, Slindon Estate,
Slindon**

On Behalf of: Phillips Surveyors

Planning Issue

Client:	Phillips Surveyors			
Project:	The National Trust Slindon, Slindon Estate, Slindon			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.



LIZARD

Landscape Design and Ecology

The Old Bank, 34 South Street, Ticehurst, Worthing, West Sussex, BN15 7JH

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L I Z A R D

Landscape Design and Ecology

The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LN

SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Phillips Surveyors to undertake an Ecological Impact Assessment of the proposed development of The National Trust Slindon, Slindon Estate, Slindon (*Grid Reference: SU 9535 0727 – hereafter referred to as 'the site'*). A Preliminary Ecological Appraisal of the site was undertaken on 5th April 2022. An assessment of the ecological impact of the proposals was then undertaken using this information.

The site is owned by the National Trust and is set amongst a large parcel of Ancient and Semi-Natural Woodland and Deciduous Woodland known as Slindon wood. The site is bounded to the north and east by Slindon Wood, to the south by the A27 and residential developments and a nursey and cottages to the west; it lies adjacent to Dukes Road. The site is approximately 0.2 ha.

The main body of the site is dominated by broadleaved woodland and neutral grassland habitats which are to be retained within the proposals.

The proposals require the loss of a small area of bramble scrub. This habitat is widespread and of low ecological value.

The proposals will not result in the damage to habitats of significant value to any protected species, and as such no further surveys will be required. The bramble scrub, neutral grassland and woodland offer some suitable habitat for reptiles, bats, hedgehogs, breeding birds and invertebrates; a series of avoidance and mitigation measures have been compiled to ensure that works has no adverse impact upon these species' groups.

Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity are likely to be **negligible and non-significant**. Proposed ecological enhancements shall result in creation of neutral grassland on site, resulting in Biodiversity Net Gain in accordance with local and national planning policy.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by Phillips Surveyors to undertake an Ecological Impact Assessment of the proposed development of The National Trust Slindon, Slindon Estate, Slindon (*Grid Reference: SU 9535 0727 – hereafter referred to as 'the site'*).
- 1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).
- 1.3 An initial Preliminary Ecological Appraisal of the site was undertaken on 5th April 2022; no suitable habitat found and therefore no further surveys are needed. The baseline of this report was produced using the information from the PEA.
- 1.4 A summary of the survey, potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. Residual impacts are then discussed once all mitigation and compensation measures have been taken into account.

Site Information

- 1.5 The site is owned by the National Trust and is set amongst a large parcel of Ancient and Semi-Natural Woodland and Deciduous Woodland known as Slindon wood. The site is bounded to the north and east by Slindon Wood, to the south by the A27 and residential developments and a nurseury and cottages to the west; it lies adjacent to Dukes Road. The site is approximately 0.2 ha.

Surrounding Landscape

- 1.6 The surrounding landscape is characteristic to that of the South Downs, consisting of chalk grassland and woodland. The site is located to the east of Chichester and to the west of the River Arun.
- 1.7 There are 2no. ponds within 500m of the site.

Development Proposals

- 1.8 It is understood that developments involve repairs to and a realignment of the existing bridge way on Dukes Road, repairs to the boundary walls, the replacement of an existing kissing gate ~~with~~ a disabled friendly designed kissing gate, and replacement of the northern boundary fencing and extending its extent along the western and southern boundaries with associated signage.

Report Aims

- 1.9 The aim of the baseline surveys and Ecological Impact Assessment has been:
- *Describe baseline conditions at the site;*
 - *Determine the importance of features which may be impacted by the scheme;*
 - *Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures;*
 - *To identify any residual impacts;*
 - *To provide details of enhancements to be incorporated into the scheme;*
 - *Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be proposed by the relevant authority.*

2.0 PLANNING POLICY AND LEGISLATION

Legislation

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EcIA includes:
- *The Conservation of Habitats and Species Regulations 2017;*
 - *The Wildlife and Countryside Act 1981 (as amended);*
 - *The Natural Environment and Rural Communities (NERC) Act 2006.*
- 2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

- 2.3 The National Planning Policy Framework (NPPF) 2021 sets out the government planning policies for England and how they should be applied. 'Chapter 15: *Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'
- 2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

- 2.5 South Downs Local Plan: Adopted 2 July 2019 (2014 – 33) Relevant Policies include: Strategic Policy SD8: Dark Night Skies, Strategic Policy SD9: Biodiversity and Geodiversity, Strategic Policy SD10: International Sites and Development Management Policy SD11: Trees, Woodland and Hedgerows, which are summarised below:

- *Proposals must seek to reduce light pollution as much as possible and negative impacts upon dark night skies must be avoided;*
- *Proposals must conserve and enhance biodiversity and geodiversity, giving particular regard to ecological networks and areas with high potential for priority habitat restoration or creation;*
- *Proposals must set out specific protection and mitigation measures for individual International Protected Sites within the National Park, alongside requirements for financial contributions from development;*
- *Proposals will be permitted where they conserve and enhance trees, hedgerows and woodlands. Development proposals that affect trees, hedgerows and woodland must demonstrate that they have been informed by a full site survey, including an Ecological Survey, Arboricultural Method Statement and associated Tree Protection Plan, and include a management plan.*

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAG/C*) was consulted for all designated sites, priority habitats and protected species licence records within a practicable zone of influence of the site.

3.2 Preliminary Ecological Appraisal

- 3.2.1 The field survey was undertaken on 5th April 2022 by Will Mills, an experienced ecologist with 04 years experience. Weather conditions were mild (c.9°C), with a moderate south-westerly wind (Beaufort Scale 3-4), 20% cloud coverage.
- 3.2.2 The field survey comprised a walkover inspection of the land and covered all accessible parts of the site, including boundary features. Habitats were recorded according to the UK-Habs Classification System as described within the UK Habitats Manual (Butcher *et al*, 2020).
- 3.2.3 A list of plant species was compiled, together with an estimate of abundance made according to the DAFOR scale (*Table 05*).
- 3.2.4 The survey methodology was extended to provide more detail in relation to the sites potential to support rare or protected fauna, as described by the *Chartered Institute of Ecology and Environmental Management's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017b)*. The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual (Gent and Gibson, 2003)* and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collin (ed.), 2016)*.

3.3 Preliminary Bat Roost Assessment

3.3.1 A Preliminary Bat Roost Assessment was undertaken on 5th April 2022 by Will Mills (accredited agent under 2016-20460-CLS-CLS), who undertook a ground level assessment of the existing trees within and adjacent to the site. The bat surveyor assessed the trees visually and searched for direct evidence of bats evidence, such as;

- *Grease Marks;*
- *Urine Stains;*
- *Bat Droppings;*
- *Feeding Remains;*
- *Dead or Live Bats.*

3.3.2 Trees were visually identified from the ground, using binoculars where necessary, for any features that could be used by bats such as:

- *Woodpecker Holes;*
- *Knot Holes;*
- *Tear-outs;*
- *Flush Cuts;*
- *Double Leaders.*

3.3.3 Once features had been assessed the trees were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below):*

Table No. 01 – Bat Roost Suitability Guidelines (BCT, 2016)

Category	Trees
Negligible	No suitable features identified.
Low	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
Moderate	Tree with features which, may support a bat roost of low conservation status.
High	A tree with several potential bat roost sites that are suitable for use by a large number of bats.

3.4 Badger Walkover Survey

3.4.1 The site was systematically searched during the site visit for any evidence of badger such as:

- Setts.
- Latrines.
- Snuffle Holes.
- 'Push-unders' through boundary fencing.
- Hair caught on fencing or sett entrances.
- Prints left in mud or sand.
- Mammal tracks.

3.4.2 All areas within the site, and where possible in the immediate surroundings were searched. Any evidence was then mapped to allow the status and distribution of badger activity to be assessed.

3.5 Ecological Impact Assessment

3.5.1 The methodology for Ecological Impact Assessment (EclA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

3.5.2 The CIEEM guidelines (2018) state that ecological features should be considered within a 'defined geographical context'. The geographical frame of reference used to determine ecological importance in this assessment is detailed below:

- *International and European;*
- *National;*
- *Regional;*
- *County;*
- *District;*
- *Local;*
- *Site Level;*
- *Negligible.*

3.5.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- *Its inclusion as a Designated Site or other protected area;*
- *The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);*
- *The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);*
- *The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;*
- *The sites social and economic value.*

3.5.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018). When describing impacts, the assessment refers to characteristics such as the extent; magnitude; duration; frequency; and, reversibility of the impact in order to provide justification for any conclusions about the nature and likelihood of the impact described.

3.5.6 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. This assessment then considers residual impacts (*once all mitigation has been taken into account*), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*". Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

3.6 Constraints and Limitations

3.6.1 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible and hence overlooked. These are accepted constraints associated with the standard Survey Methodology.

- 3.6.2 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

- 4.1.1 The desk study identified national statutory designated sites including Local Nature Reserves (LNRs), National Nature reserves (NNR) and Sites of Special Scientific Interest (SSSIs) within a 2.0km radius of the site, and international statutory designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and RAMSARs (Wetlands of International Importance) within a 10.0km radius of the site. Where SAC's designated for their bat interest are present this ZOI has been extended to 12km in accordance with recent guidance (SDNP, 2020).
- 4.1.2 The following statutory protected sites are noted within the zone of influence of the proposed site:

Table No. 02 – Statutory Protected Sites

Site	Description	Location
<i>Duncton and Bignor Escarpment SSSI/SAC</i>	<i>Duncton and Bignor Escarpment is a beech forest with ash, Fraxinus excelsior, woodland, scrub and grassland. There are rare plants present, which include the white helleborin, Cephalanthera damasonium, yellow bird's nest, Monotropa hypopitys, and green hellebore Helleborus viridis.</i>	<i>5.9km N</i>
<i>Solent and Dorset Coast SPA</i>	<i>Solent and Dorset Coast supports breeding populations of: sandwich tern, Sterna sandvicensis, common tern, Sterna hirundo, and little tern, Sternula albifrons.</i>	<i>7.7km S</i>

<i>Arun Valley SAC/SPA</i>	<i>The Arun Valley is one of three main population sites for ramshorn snail, <i>Anisus vorticulus</i>, in the UK. The Arun Valley is an important site for bewick's swan, <i>Cygnus columbianus bewickii</i>.</i>	<i>9km NE</i>
<i>Singleton and Cocking Tunnels SAC/SSSI</i>	<i>Singleton and Cocking Tunnels are an important site for hibernating bats in south-east England, and are the only known location in Britain for the Greater Mouse-eared bat, <i>Myotis myotis</i>.</i>	<i>10.5km NW</i>

- 4.1.3 The site is located within the *Impact Risk Zone* of *Duncton and Bignor Escarpment SSSI* and *Fairmile Bottom SSSI*; however, development proposals do not meet the criteria which would require consultation with Natural England.

Non-Statutory Protected Areas

- 4.1.4 *Sites of Nature Conservation Importance (SNCIs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2021)* and as such are material considerations when assessing planning applications. The following SNCI's are located within 2.0km of the site.

Table No. 03 – Non-Statutory Protected Sites

Site	Location
<i>Fontwell Park Racecourse</i>	<i>0.6km W</i>

- 4.1.5 Proposals involve repairs or replacements of footpaths, fencing and signage and would have no impact upon the above *Non-Statutory Protected Site*.

4.2 Habitats

- 4.2.1 Within 2.0 km of the site there are *Priority Habitats* of *Deciduous Woodland*; *Ancient and Semi-Natural Woodland*; *Ancient Replanted Woodland*; *Lowland Meadows*; *Traditional Orchards* and *Woodpasture and Parkland*. *The northern part of the site is dominated by ancient woodland.*

4.2.2 Habitats within and adjacent to the site include:

- *g3c5 Neutral Grassland*;
- *h3d Bramble Scrub*;
- *w1g7 Broadleaved Woodland*;
- *u1e Built Linear Feature – fence*

g3c5 Neutral Grassland

- 4.2.3 The southern area of the site is dominated by neutral grassland. Typical species are present within this habitat, including a abundance of perennial rye grass (*Lolium perenne*) and cock's-foot grass (*Dactylis glomerata*), interspersed with abundant herb species including dandelion (*Taraxacum officinale*), yarrow (*Achillea millefolium*), sorrel (*Rumex acetosa*), common mouse-ear (*Cerastium fontanum*) common hawkbit (*Leontodon hispidus*) and field wood rush (*Luzula campestris*). Other herb species of varying abundance include but were not limited to common and greater knapweed (*Centaurea nigra*), (*Centaurea scabiosa*), bush vetch (*Vicia sepium*), salad burnet (*Sanguisorba minor*), creeping buttercup (*Ranunculus repens*) and lesser celandine (*Ficaria verna*). This common habitat is of **site/local value**.

h3d Bramble Scrub

- 4.2.4 The proposed area for the re-alignment of the bridle way onto Dukes road contains a small patch of bramble (*Rubus fruticosus* agg.) scrub interspersed with spindle (*Euonymus europaeus*), the scrub reaches a height of up to 1.5m. This habitat is of **site value**.

w1g Lowland Broadleaved Woodland

- 4.2.5 The northern area of the site is dominated by ancient deciduous woodland called Slindon wood consisting of species including abundant common beech (*Fagus sylvatica*) and other tree species at varying abundance including oak (*Quercus robur*), hazel (*Corylus avellana*) and silver birch (*Betula pendula*); ground species include native bluebell (*Hyacinthoides non-scripta*), hedge bedstraw (*Galium mollugo*) ivy (*Hedera helix*) and germander speedwell (*Veronica chamaedrys*). The woodland habitat is of **district value**.

Built Linear Feature - Fence

- 4.2.6 A 1.0 m high metal fence runs along the northern boundary of the site through the woodland. This habitat is of **negligible value**.

4.3 Protected Species Assessment

Amphibians

Desk Study

- 4.3.1 8no. records of common toad (*Bufo bufo*), common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*) were returned within the 2.0km site area; there were no records of great crested newt (GCN) (*Triturus cristatus*).

Site Assessment

- 4.3.2 The bramble scrub and woodland within the site may provide some suitable terrestrial habitat for GCN and common toad. However, the closest ponds to the site are located approximately 480 m to the southwest on the other side of the A27. Given the heavy traffic of the A27, it is considered to be a significant physical barrier. Therefore the site is considered to be of **negligible value** to GCN and other amphibians.

Reptiles

Desk Study

- 4.3.3 4no. records of slow-worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*) were returned within the 2.0km site area.

Site Assessment

- 4.3.4 The small area of bramble scrub and woodland within the site provide some suitable habitat for common, widespread reptile species such as slow worm and grass snake. The short sward length of the grassland at approximately 10cm however reduces its suitability as reptile habitat. The site area as a whole is considered to be of value within the **site** only.

Bats

Desk Study

- 4.3.5 Common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*), western barbastelle (*Barbastella barbastellus*), natterer's (*Myotis nattereri*), brown long-eared (*Plecotus auratus*), Whiskered (*Myotis mystacinus*) and Daubenton (*Myotis daubentonii*) bats have been recorded within 2.0km of the site area; both brown long-eared and common pipistrelle bats have been recorded within the site area.

Preliminary Roost Assessment

- 4.3.6 The trees that will be directly affected by the proposals and those adjacent were assessed. None of the trees were found to have potential roost features which could be used by bats.

Foraging Value

- 4.3.7 The woodland is considered likely to support foraging and commuting bat species. This habitat is likely to be of **local importance** to the local bat community.

Dormouse

Desk Study

- 4.3.8 63no. records of dormouse (*Muscardinus avellanarius*) were returned within the 2.0km search area, the nearest 0.7km south of the site.

Site Assessment

- 4.3.9 The woodland and bramble scrub within the site contain favoured food plants such as hazel, while mature trees and bramble scrub provide suitable cover for hibernation. However, the presence of foraging food plants within areas to be affected by the proposals is limited to the small area of bramble scrub. Given that the bramble scrub is small in its size of approximately 5-6m² and relatively isolated from other habitat which may provide cover or food, the habitat on site is therefore of no more than **site value** to dormice.

Badger

Desk Study

- 4.3.10 4 no. records of badger (*Meles meles*) were returned within 2.0km of the site, the nearest 0.3km north of the site.

Site Assessment

- 4.3.11 No evidence of badgers was noted within 30m of the site. The grassland and woodland habitats on site may provide foraging opportunities for badgers. The area is considered to be of **site value** to foraging and commuting badgers.

Hedgehog

Desk Study

- 4.3.12 16no. records of hedgehog (*Erinaceus europaeus*) were returned within 2.0km of the site, the nearest 0.5km to the west of the site.

Site Assessment

- 4.3.13 The bramble scrub, woodland and grassland habitats on site, offers suitable foraging and/or shelter opportunities for hedgehogs. The site is therefore of **site value** to hedgehogs.

Birds

Desk Study

- 4.3.14 A total of 86no. bird species have been recorded within 2.0km of the site, including The Wildlife and Countryside Act 1981 (as amended) Schedule I species redwing (*Turdus iliacus*) and fieldfare (*Turdus pilaris*). The data search also returned BoCC Red List species including house sparrow (*Passer domesticus*), Linnet (*Linaria cannabina*) and skylark (*Alauda arvensis*).

Site Assessment

- 4.3.15 Optimal nesting habitat is limited to the woodland and bramble scrub habitats. The grassland may be of value to winter visitors such as redwing and fieldfare, however, this is reduced by the short sward length and disturbance due to its proximity to the A27. The area overall is likely to be of **local value** to breeding / foraging birds.

Invertebrates

Desk Study

- 4.3.16 The data search returned records of numerous species of invertebrates within 2.0km of the site, including stag beetle (*Lucanus cervus*) and notable butterflies including purple emperor (*Apatura iris*), small heath (*Coenonympha pamphilus*) and white-letter hairstreak (*Satyrrium w-album*).

Site Assessment

- 4.3.17 The grassland, woodland and bramble scrub provide suitable habitat for invertebrates. Given that these habitats are common and widespread the site is likely to be of **site value** only to local invertebrate populations.

5.0 ASSESSMENT OF EFFECTS

- 5.0.1 Using the Guidelines for Ecological Impact Assessment (IEEM, 2006 & updated by CIEEM, 2018), the assessment set out below considers the potential impacts of the scheme prior to mitigation. Detailed avoidance, mitigation and compensation measures are then discussed, with residual impact identified once these measures have been taken into account. Wherever possible mitigation measures have been designed into the scheme as this gives greater certainty over deliverability and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).
- 5.0.2 Protected species for which the site offers negligible suitability have been scoped out of further assessment.

5.1 Designated Sites

Potential Impacts

- 5.1.1 The proposed development does not impact upon any statutory or non-statutory sites.

Mitigation and Compensation

- 5.1.2 No mitigation or compensation is required.

Residual Impacts

- 5.1.3 There will be no likely significant effects arising from these proposals.

5.2 Habitats

Potential Impacts

- 5.2.1 Development proposals will result in the permanent loss of a small area of bramble scrub. This habitat is of low ecological value, the loss of which would be negligible.
- 5.2.2 In the absence of mitigation, areas of high value such as the woodland could be degraded through dust and emissions, pollution events during the construction phase, as well compaction of Root Protection Areas.

Mitigation and Compensation

- 5.2.3 Works during the construction phase will be undertaken in accordance with best practise guidelines to control any excess dust creation which may impact the woodland.
- 5.2.4 All re-fuelling and chemical storage if required shall take place in a suitable location at least 10 m from the woodland edge, with appropriate containment measures in place and spill kits available.
- 5.2.5 The proposals include the removal of an existing footpath through the grassland habitat. Given the abundance and diversity of herb species on site, the disturbed ground from the removal of the footpath is to be left to naturally colonise to become neutral grassland.
- 5.2.6 All trees around the proposed bridal way re-alignment are to be protected in accordance with BS58737:2012.

Residual Impacts

- 5.2.7 Provided mitigation and protection measures are followed, no priority or other important habitats or plant species will be affected by this development, the

impact of which is **not significant**.

5.3 Reptiles

Potential Impacts

- 5.3.1 In the absence of mitigation, works could result in the killing or injuring of common, widespread reptiles and removal of small areas of suitable habitat. Given the generally low suitability of the site impacts would be minor.

Mitigation and Compensation

- 5.3.2 Vegetation to be removed shall first be cut to no lower than 150mm with all arisings removed. After 24 hours in suitable conditions to allow reptiles to disperse (+9°C, sunny, dry), a second cut shall take place with vegetation cut to <50mm.

Residual Impacts

- 5.3.3 Once mitigation measures are taken into account, the impact of the scheme shall be **negligible**.

5.4 Bats

Potential Impacts

- 5.4.1 In the absence of mitigation, impacts could include the disruption of commuting corridors and foraging habitat through inappropriate lighting of the woodland during construction.

Mitigation and Compensation

- 5.4.2 Artificial light spill upon the woodland shall be avoided to allow the use of this area as a foraging resource and commuting route for bats. No lighting shall be used during the operational phase. All areas of trees and woodland shall be retained.

Residual Impacts

- 5.4.3 The overall impact of the scheme will be **negligible**.

5.5 Badger

Potential Impacts

- 5.5.1 None identified.

Mitigation and Compensation

- 5.5.2 None required.

Residual Impacts

- 5.5.3 The overall impact of the scheme will be negligible, non-significant.

5.6 Breeding Birds

Potential Impacts

- 5.6.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest.

Mitigation and Compensation

- 5.6.2 Any vegetation scheduled for removal will be removed outside the nesting season (*season: March-August, although pigeons may nest all year*) or shall be checked prior to removal by a suitably qualified ecologist. To compensate for the loss of a small area of suitable nesting habitat, bird boxes shall be fitted to the northern side of mature trees within the wider site area.

Residual Impacts

- 5.6.3 The overall impact of the scheme will be **negligible**.

5.7 Invertebrates

Potential Impacts

- 5.7.1 In the absence of mitigation, small areas of suitable habitat for common widespread invertebrates would be lost.

Mitigation and Compensation

- 5.7.2 The proposed increase in neutral grassland habitat shall provide compensation

for the loss of the small area of bramble scrub.

Residual Impacts

- 5.7.3 The overall impact of the scheme will be **negligible**.

5.8 Dormouse

Potential Impacts

- 5.8.1 In the absence of mitigation, habitat removal and fragmentation could result in the loss of dormice habitat.

Mitigation and Compensation

- 5.8.2 As a precautionary measure the scrub shall be removed from south to north to ensure that any in the highly unlikely situation that dormice are present they can disperse in the direction towards more suitable habitat. In the highly unlikely event that any evidence of dormice is found during works, all works shall stop while a suitably qualified ecologist is consulted for advice. A number of hazel whips are to be planted within the wider site area to compensate for the small area of bramble scrub to be removed.

Residual Impacts

- 5.8.3 Given the small amount of possible dormouse habitat to be removed and its isolation from more suitable dormouse habitat the overall impact of the scheme will be **negligible**

5.9 Hedgehogs

Potential Impacts

- 5.9.1 In the absence of mitigation, works could result in the killing or injuring of hedgehogs during habitat removal for the construction access.

Mitigation and Compensation

- 5.9.2 As a precautionary approach, a phased vegetation clearance, from west to east, is needed to encourage any hedgehogs present to disperse into suitable areas of retained habitat. There must be no removal of brash log piles during hibernation.

Residual Impacts

5.9.3 The overall impact of the scheme will be **negligible**

6.0 ECOLOGICAL ENHANCEMENTS

6.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife to ensure compliance with *Local Planning Policy* and the emerging *Environment Bill 2020* which mandates a minimum 10% net gain in biodiversity across all development sites. Ecological enhancements which will be included as part of development proposals include.

- *The incorporation of bird boxes on the northern aspect of mature trees post construction;*
- *The incorporation of bat boxes on the southern side of trees post construction;*
- *The planting of hazel whips within the wider site area;*
- *The expansion of the neutral grassland from the removal of the existing footpath through natural colonisation.*

7.0 CONCLUSIONS

- 7.1 The main body of the site is dominated by broadleaved woodland and neutral grassland habitats which are to be retained within the proposals.
- 7.2 The proposals require the loss of a small area of bramble scrub. This habitat is widespread and of low ecological value.
- 7.3 The proposals will not result in the damage to habitats of significant value to any protected species, and as such no further surveys will be required. The bramble scrub, neutral grassland and woodland offer some suitable habitat for reptiles, bats, hedgehogs, breeding birds and invertebrates; a series of avoidance and mitigation measures have been compiled to ensure that works has no adverse impact upon these species' groups.
- 7.5 Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity are likely to be **negligible and non-significant**.
- 7.6 Proposed ecological enhancements shall result in creation of neutral grassland on site, resulting in Biodiversity Net Gain in accordance with local and national planning policy.

8.0 REFERENCES

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Table No. 05 – Species List for Habitat Parcels

g3c5 Neutral Grassland

Common Name	Scientific Name	DAFOR
Broadleaved Dock	<i>Rumex obtusifolius</i>	R
Bugle	<i>Ajuga reptans</i>	F
Burdock	<i>Arctium sp.</i>	O
Bush Vetch	<i>Vicia sepium</i>	R
Cock's-foot Grass	<i>Dactylis glomerata</i>	A
Common Cat's-ear	<i>Hypochaeris radicata</i>	F
Common Daisy	<i>Bellis perennis</i>	F
Common Knapweed	<i>Centaurea nigra</i>	A
Common Mallow	<i>Malva sylvestris</i>	O
Common Mouse-ear	<i>Cerastium fontanum</i>	A
Common Nettle	<i>Urtica dioica</i>	R
Common Sorrel	<i>Rumex acetosa</i>	A
Common Thistle	<i>Cirsium vulgare</i>	F
Cow Parsley	<i>Anthriscus sylvestris</i>	R
Creeping Buttercup	<i>Ranunculus repens</i>	F
Creeping Jenny	<i>Lysimachia nummularia</i>	R
Dandelion sp.	<i>Taraxacum officinale</i>	F
Dove's-foot Cranes-bill	<i>Geranium molle</i>	A
Field Wood Rush	<i>Luzula campestris</i>	A
Germander Speedwell	<i>Veronica chamaedrys</i>	F
Greater Knapweed	<i>Centaurea scabiosa</i>	O
Hawkbit	<i>Leontodon sp.</i>	A
Horay Plantain	<i>Plantago media</i>	F
Lesser Celandine	<i>Ficaria verna</i>	O
Lord's and Ladies	<i>Arum alpinum</i>	O
Moss	<i>Bryophyte sp.</i>	A
Perennial Rye grass	<i>Lolium perenne</i>	A
Prickly Ox-tongue	<i>Helminthotheca echioides</i>	O
Red Clover	<i>Trifolium pratense</i>	O
Red Deadnettle	<i>Lamium purpureum</i>	F
Ribwort Plantain	<i>Plantago lanceolata</i>	A
Sheppard's Purse	<i>Capsella bursa-pastoris</i>	R
Smooth Sow-thistle	<i>Sonchus oleraceus</i>	O
Tree Mallow	<i>Malva arborea</i>	R
White Deadnettle	<i>Lamium album</i>	F
Wild Strawberry	<i>Fragaria vesca</i>	R
Yarrow	<i>Archillea milfolium</i>	A

w1g Lowland Broadleaved Woodland

Common Name	Scientific Name	DAFOR
Beech	<i>Fagus sylvatica</i>	A
Blue Bells	<i>Hyacinthoides non-scripta</i>	O
Field Maple	<i>Acer campestre</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Hazel	<i>Corylus avellana</i>	O
Hedge Bedstraw	<i>Galium mollugo</i>	O
Ivy	<i>Hedera helix</i>	A
Oak	<i>Quercus robur</i>	R
Silver Birch	<i>Fraxinus excelsior</i>	F

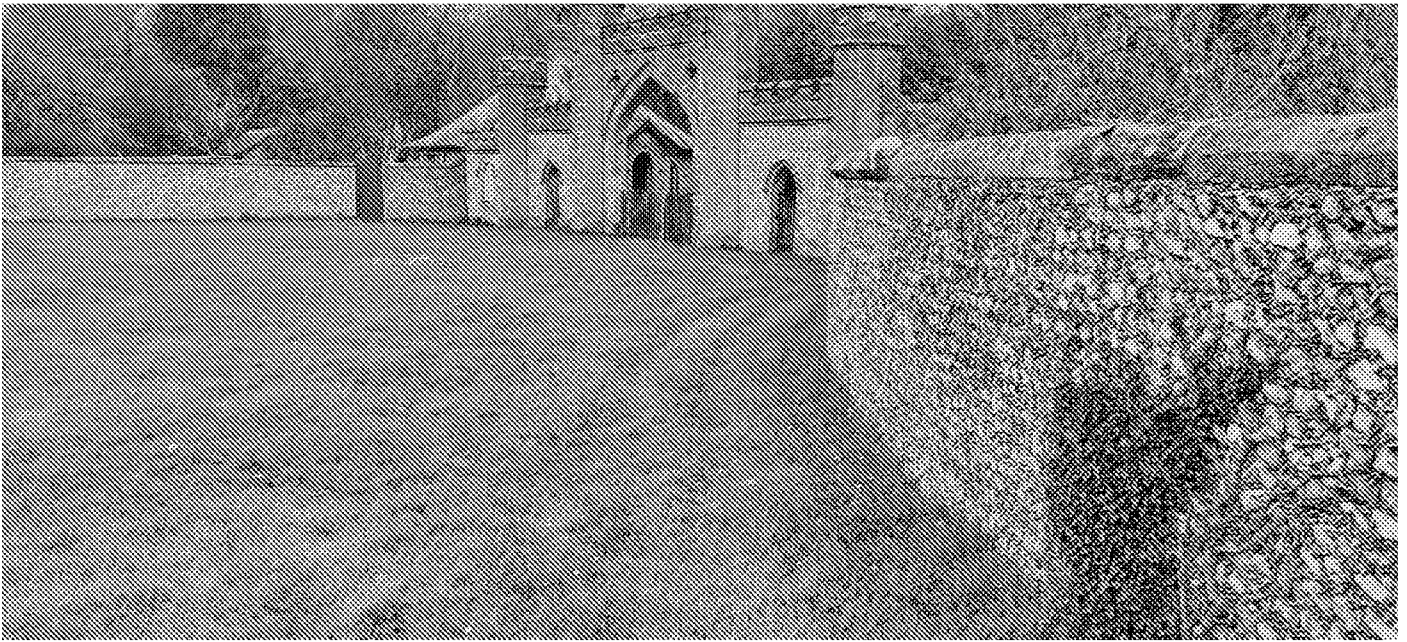
h3d Bramble Scrub

Common Name	Scientific Name	DAFOR
Ivy	<i>Hedera helix</i>	A
Bramble	<i>Rubus fruticosus</i> agg.	A
Hedge Bedstraw	<i>Galium mollugo</i>	O
Germander Speedwell	<i>Veronica chamaedrys</i>	O

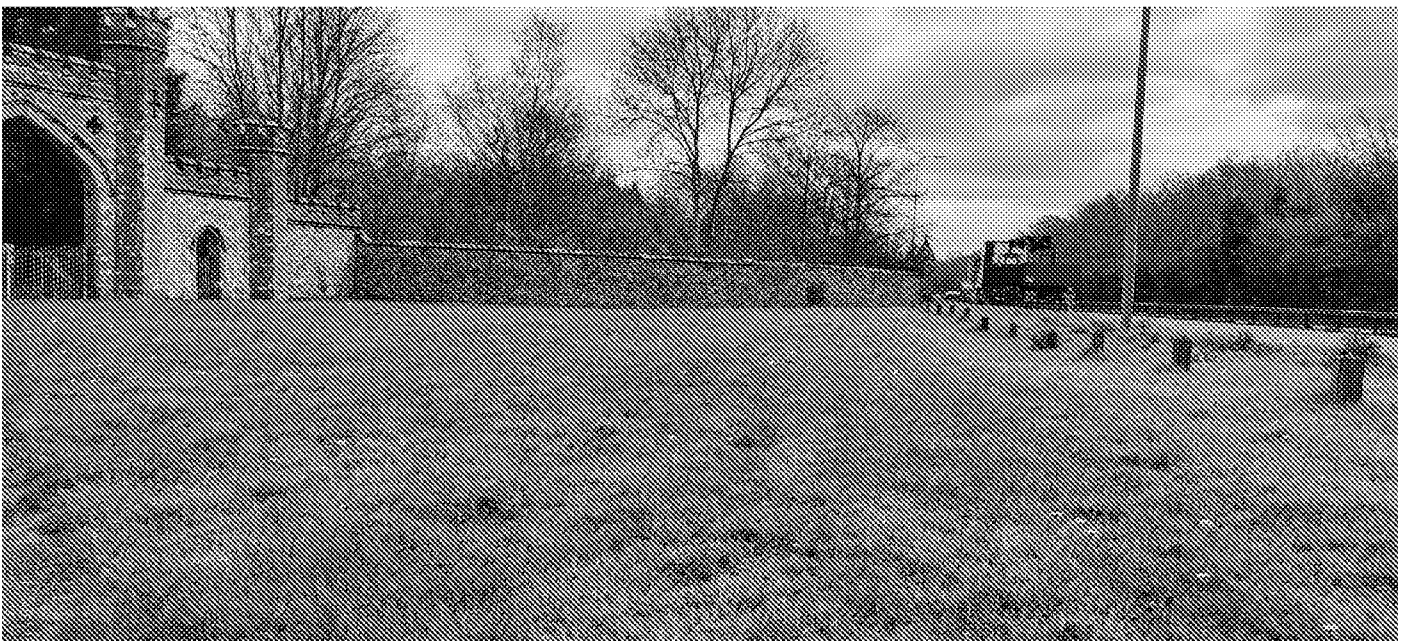
D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Appendix A – Site Photographs

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 1 - View of the neutral grassland in the south of the site looking from the south-east corner towards the north-west.



Photograph No. 2 - View of the neutral grassland in the south of the site looking from the south-west corner towards the east.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 3 - The grassland contains an existing sealed footpath which is proposed for removal.



Photograph No. 4 - A view of the area for the proposed bridle way re-alignment. The area contains a small discreet patch of bramble scrub.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 5 - A view of the proposed disabled friendly kissing gate location in the north of the site.