ECOLOGICAL IMPACT ASSESSMENT

LAND OFF BEECHLANDS ROAD
MEDSTEAD
ALTON
HAMPSHIRE

APRIL 2024

ON BEHALF OF BARGATE HOMES LTD

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Authorisation

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The contents of this report were correct at the time of the last survey visit. The report is provided for the sole use of the named client and is confidential.

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1.0 EXECUTIVE SUMMARY

1.1 This Ecological Impact Assessment (EcIA), prepared by LC Ecological Services Limited (LCES), was undertaken to assess the potential ecological impacts and effects of a proposed residential development on land to the west of Beechlands Road, Medstead, Alton, Hampshire. The development proposals comprise up to 70 new residential units with associated access, infrastructure, and hard and soft landscaping.

1.2 Preliminary ecological appraisals, habitat surveys, and phase 1 and 2 protected species surveys have been undertaken on site by LCES between March 2018 and March 2024. A suite of update phase 2 protected species surveys are currently in progress on the site in 2024.

1.3 This EcIA is based on the scoping information gathered from the phase 1 and 2 ecological surveys and the desk-based study undertaken by LCES between 2018 and 2024. It includes a detailed account of the survey findings and ecological baseline, the survey and assessment methods employed, the potential ecological impacts and effects of the site proposals, and the recommended mitigation, compensation and enhancement measures for the development project.

1.4 The zone of influence for the site was determined by the sensitivity of the identified ecological features, within the site and the surrounding area, to environmental change in accordance with the guidelines for Ecological Impact Assessment (CIEEM, 2019).

1.5 This EcIA identified 25 Important Ecological Features (IEFs) which could potentially be impacted by the development proposals, this included thirteen non-statutory designated sites for nature conservation, neutral grassland, native hedgerows, line of trees, non-native hedgerows, bramble scrub, scattered rural trees, scattered debris, badgers, roosting bats (trees), foraging and commuting bats, birds, and reptiles (slow-worm and grass snake).

1.6 This assessment identified that the proposed development will result in a residual loss of neutral grassland habitat and a -76.35% overall net loss in the biodiversity value of the site. There is also potential for significant adverse effects on foraging and commuting bats. However, it is considered that the full suite of mitigation and enhancement measures detailed in this report, as well as securing an off-site compensation solution for loss of grassland habitat, will prevent and minimise the risks of all the adverse ecological effects considered in this assessment to an appropriate level and will deliver a biodiversity net gain, in accordance with the relevant national and local planning policy, wildlife legislation, and guidance.

2.0 INTRODUCTION

2.1 This Ecological Impact Assessment (EcIA), prepared by LC Ecological Services Limited (LCES), was undertaken to assess the potential ecological impacts and effects of a proposed residential development on land to the west of Beechlands Road, Medstead, Alton, Hampshire, GU34 5EQ (approximate central Grid Ref: SU 66726 35744). The development proposals comprise up to 70 new residential units with associated access, infrastructure, and hard and soft landscaping. The site location and survey boundaries are depicted on the plan included as appendix I. The current development layout and landscaping plan is included as appendix II.

2.2 The proposed development does not fall within the criteria for Environmental Impact Assessment (EIA) as set out in the Town and Country Planning (environmental impact assessment) Regulations 2017. Preliminary ecological appraisals, habitat surveys, and phase 1 and 2 protected species surveys have been undertaken on site by LCES between March 2018 and March 2024. A suite of update phase 2 protected species surveys are currently in progress on the site in 2024.

2.3 The purpose of this report is to outline the following:

- To identify and describe all potentially significant ecological impacts and effects associated with the site proposals.
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and relevant policy, and to address any potentially significant ecological effects.
- To identify appropriate ecological enhancement measures for the site.
- To provide an assessment of the significance of any residual effects.
- To provide an assessment of any cumulative and/or in-combination effects with other plans or proposals.

3.0 LEGISLATION AND POLICY CONTEXT

Legislation

3.1 Full details of statutory obligations with respect to biodiversity and the planning system can be found in DEFRA Circular 06/2005. Relevant legislation to this application site includes the following:

- **Internationally Designated Sites:** Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are protected under the *Conservation of Habitats and Species (Amendment) Regulations 2017 and Ramsar sites are protected under the Ramsar Convention (1971).*
- **Nationally Designated Sites:** Sites of Special Scientific Interest (SSSIs) are protected under section 28 of the *Wildlife and Countryside Act (WCA) 1981* (*as amended).*
- **Native hedgerows:** 'Important' hedgerows in England and Wales are protected under the *Hedgerow Regulations 1997*.
- **Badgers:** *Protection of Badgers Act 1992*.
- **Bats:** all species of British bats and their roosts are fully protected under the *Wildlife and Countryside Act (WCA) 1981 (as amended)* and the *Conservation of Habitats and Species (Amendment) Regulations 2017.*
- **Birds:** all birds, their nests, eggs and young are protected by the *WCA 1981 (as amended).*
- **Mammals:** *Wild Mammals (Protection) Act 1996.*

National Planning Policy

3.2 Chapter 15 of the National Planning Policy Framework (NPPF, 2023) '*Conserving and enhancing the natural environment*' sets out the Government's planning policies relating to biodiversity, landscape and geological conservation. The relevant paragraphs within this chapter are from 180 to 188.

Local Planning Policy

3.3 The East Hampshire District Council Local Planning Application Requirements document (EHDC, 2018).

3.4 East Hampshire District Local Plan: Housing and Employment Allocations, Adopted in 2016 (EHDC, 2016a).

3.5 Medstead and Four Marks Neighbourhood Plan 2015 - 2028 (EHDC, 2016b).

3.6 The East Hampshire District Local Plan: Joint Core Strategy, Adopted 2014 (EHDC & SDNPA, 2014)

Biodiversity Action Plans

3.7 Biodiversity Action plans (BAPs) which may be of relevance to the site include the following:

- Hedgerows (UK BAP)
- Noctule (*Nyctalus noctula*) (UK BAP)
- Soprano pipistrelle (*Pipistrellus pygmaeus*) (UKBAP)
- Barbastelle (*Barbastella barbastellus*) (UK BAP)
- Bullfinch (*Pyrrhula pyrrhula*) (UK BAP)
- Song thrush (*Turdus philomelos*) (UK BAP)
- Dunnock (*Prunella modularis*) (UK BAP)
- Starling (*Sturnus vulgaris*) (UK BAP)
- Reptiles (UKBAP)

4.0 ASSESSMENT METHODOLOGY

Study Area

4.1 The site is located at the approximate central Ordnance Survey (OS) grid reference SU 66726 35744 and the study area comprises the site plus the additional surrounding radii detailed below:

- 5 kilometres for any international statutory designated sites for nature conservation.
- 2 kilometres for any national statutory designated sites for nature conservation.
- 2 kilometres for any non-statutory designated sites for nature conservation.
- 2 kilometres for all records of protected, notable and invasive species.
- 30 metres for badgers (*Meles meles*).

Sources of Information

4.2 The following sources of information were used to inform the impact assessment:

Table 1: Summary of survey work and sources of information for the site off Beechlands Road.

Survey type	Year(s)	Comment
Desk study - biodiversity records search and details of any local non-statutory designated sites for nature conservation	2018, 2020 and 2024	Hampshire Biodiversity Information Centre (HBIC)
Desk study - information on statutory sites designated for nature conservation, granted protected species mitigation licences, and any licenced surveys undertaken for great crested newt (*Triturus cristatus*).	2018, 2020 and 2024	Information obtained from Natural England's web-based Multi-Agency Geographic Information for the Countryside (MAGIC)
Ecological appraisal, phase 1 habitat survey, and phase 1 bat survey of buildings / structures	2018 and 2020	LC Ecological Services
Update ecological appraisal, UKHabs survey, habitat condition assessments, and phase 1 bat survey of buildings / structures	2023	LC Ecological Services
Hedgerow Regulations assessment	2021	LC Ecological Services
Ground-level tree assessment for roosting bats and walkover badger survey	2024	LC Ecological Services

Survey type	Year(s)	Comment
Bat activity transect surveys and static detector monitoring	2018, 2021 and 2024 (this work is still ongoing in 2024)	LC Ecological Services
Hazel dormouse (*Muscardinus avellanarius*) presence / absence surveys	2018, 2021 and 2024 (this work is still ongoing in 2024)	LC Ecological Services
Reptile surveys	2021 and 2024 (this work is still ongoing in 2024)	LC Ecological Services

Assessment Process

4.3 The EcIA is in accordance with the CIEEM *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2019).

4.4 The starting point was to determine which features should be subject to detailed assessment, that is, those receptors:

a) Of sufficient value that impacts upon them may be significant (in terms of legislation or policy); and
b) Potentially vulnerable to significant impacts arising from the development.

4.5 This approach is consistent with the EIA Regulations, which only require investigation of likely significant effects.

4.6 The CIEEM guidelines recommend that the value of ecological receptors or features is determined based on a geographic frame of reference that includes the following levels:

Table 2: Level of Value Assigned to each Ecological Feature (adapted from CIEEM, 2019)

Level of Value	Example of Definitions
International	An internationally important site e.g. SPA, SAC, Ramsar (or a site considered worthy of such a designation). A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitats which are essential to maintain the viability of a larger whole. A regularly occurring population of an internationally important species (listed on Annex IV of the Habitats Directive).
UK / National	A nationally designated site e.g. SSSI or a site considered worthy of such designation. A viable area of a priority habitat identified within the UK BAP, or of smaller areas of such habitat which are essential to maintain the larger whole. Any recurring population of a nationally important species e.g. listed on Schedules 5 and 8 of the Wildlife and Countryside Act 1981 (as amended).

Level of Value	Example of Definitions
	A feature identified as of critical importance in the UK BAP.
Regional (Hampshire / Southern England)	A site designated as a Site of Importance for Nature Conservation (SINC), or habitats that meet the designation criteria for SINCs in Hampshire. Areas of internationally or nationally important habitats which are degraded but are considered readily restored. A regularly occurring, locally significant population of a species listed as being nationally scarce. A regularly occurring, locally significant number of a regionally important species.
Local (the zone of influence including the site and its immediate vicinity, including habitats within or linked to those on site)	Areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration. A good example of a common or widespread habitat in the region. A notable population or assemblage of common or widespread species in the region.

Assessment Criteria

Predicting and Characterising Ecological Impacts

4.7 The assessment of the magnitude of effect assesses whether an impact will be positive or negative; its extent; duration; reversibility and timing and frequency as well as the cumulative effect. A combination of quantitative information and qualitative assessment based on professional judgment was used whilst considering all of these factors to assign effects on the receptors to one of four categories as detailed in table 3 below.

Table 3: Assessment of the Magnitude of Effects

Category	Definition
High	A permanent or long-term effect on the extent/size or integrity of a site, habitat, species assemblage or community, population or group. If adverse this is likely to threaten its sustainability. If beneficial this is likely to enhance its conservation status.
Medium	A permanent or long-term effect on extent/size or integrity of a site, habitat, species assemblage or community, population or group. If adverse this is unlikely to threaten its sustainability. If beneficial this is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short-term but reversible effect on the extent/size or integrity of a site, habitat or species assemblage or community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but reversible effect on the extent/size or integrity of a site, habitat or species assemblage or community, population or group that is within the normal range or annual variation.

4.8 For each ecological feature, the significance of the effects of the proposed development during construction and operation are assessed and the type of impacts are characterised according to their importance and magnitude. Where there is uncertainty over the appropriate level of significance to assign, this will be stated but as a precautionary measure the higher level of significance will be applied. Where impacts will arise, mitigation and enhancement measures are provided.

Direct and Indirect Ecological Impacts

4.9 Both direct and indirect impacts are considered within this assessment. A direct impact is a defined action such as the physical loss of a habitat or the immediate mortality of an individual of a particular species. Indirect impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or receptor e.g. the loss of an important prey species for a predator.

Limitations

4.10 The static bat detectors deployed on site during the bat activity survey work malfunctioned on a number of occasions and failed to record any data. Despite these constraints, it is considered that a sufficient amount of data was gathered during the static detector monitoring work in 2018 and 2021 to enable an accurate evaluation of the site's importance for foraging and commuting bats.

4.11 No other significant limitations were experienced during this assessment.

5.0 BASELINE

5.1 The key baseline ecological features that have been identified are summarised in this section and an appropriate level of nature conservation value is also assigned to each one.

5.2 The relevant desk study information is included as appendix III; the full results of the UKHab survey, together with a habitat map of the site, are provided as appendix IV; photographs of the habitats and features recorded on site are included as appendix V; the full results of the habitat condition assessments are included as appendix VI; the full results of the hedgerow regulations assessment are included as appendix VII; and the full results of the various protected fauna surveys and assessments are included in appendices VIII to XII.

Designated sites

5.3 A total of thirteen non-statutory designated sites for nature conservation (including Sites of Importance for Nature Conservation (SINCs) and Road Verges of Ecological Importance (RVEIs) were identified within two kilometres of the site, the nearest of which is the Redhill Copse, Medstead SINC which is located approximately 0.3 kilometres to the north-east. These non-statutory sites include semi-natural ancient woodland sites, scrub and grassland sites, sites where dormice have been recorded, and roadside verges that support notable wildflowers. **It is considered that the development proposals could potentially have significant adverse effects on the identified non-statutory designated sites.**

Habitats on site

5.4 The site is approximately 3.293 hectares in total area, and it primarily comprised two horse-grazed paddocks of neutral grassland which were bordered by native hedgerows and one non-native hedgerow, with some scrub, scattered trees and scattered debris also present. In the north-western corner of the site there was a small fenced-off area which included a storage shed, a horse stable block, two steel storage containers, rough neutral grassland / ruderal vegetation, scrub, a line of mature beech (*Fagus sylvatica*) trees, and various scattered debris.

g3c Other neutral grassland and g3c5 Arrhenatherum neutral grassland

5.5 The majority of the site comprised two adjoining paddocks of horse-grazed, moderately species-rich, neutral grassland, which was approximately 3.123 hectares in total area. The sward was relatively short and well grazed in most places, although there were also scattered patches of taller and rougher sward. The sward was largely dominated by the common grasses common bent (*Agrostis capillaris*), perennial rye-grass (*Lolium perenne*) and red fescue (*Festuca rubra*), although the more desirable grass species sweet vernal-grass (*Anthoxanthum odoratum*) and crested dog's-tail (*Cynosurus cristatus*) were also recorded frequently. Coarse grass species, including Yorkshire-fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*) and false oat-grass (*Arrhenatherum elatius*), were locally-abundant to occasional. White clover (*Trifolium repens*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), meadow buttercup

(*Ranunculus acris*) and yarrow (*Achillea millefolium*) were generally the most abundant herbaceous species, and these occurred together with a variety of other herbaceous plants, including a number of more desirable grassland axiophytes such as common bird's-foot-trefoil (*Lotus corniculatus*), meadow vetchling (*Lathyrus pratensis*), common knapweed (*Centaurea nigra*), and common sorrel (*Rumex acetosa*).

5.6 There were minor sections of rough neutral grassland habitat in the north-west of the site, which included a 1.75 to 2 metre width margin alongside the north-western boundary hedgerow and minor sections directly adjacent to the buildings and structures in the north-western corner of the site and in the northern end of the northern paddock, amounting to approximately 0.113 hectares in total area. This grassland habitat comprised a rough and overgrown tall sward that was mainly dominated by false oat-grass and cock's-foot. There were also locally-dominant stands of common nettle amongst this vegetation. Other species recorded included Yorkshire-fog, red-fescue, rough meadow-grass (*Poa trivialis*), hogweed (*Heracleum sphondylium*), field bindweed (*Convolvulus arvensis*), broadleaved dock (*Rumex obtusifolius*), cow parsley (*Anthriscus sylvestris*), ribwort plantain, yarrow, meadow buttercup and ground-elder (*Aegopodium podagraria*). There was also a minor amount of scattered scrub establishment, including bramble (*Rubus fruticosus* agg.) and seedlings / small saplings of elder (*Sambucus nigra*), rose (*Rosa sp*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*).

5.7 The condition of the other neutral grassland habitat resource on the site, as a whole (including both g3c and g3c5 areas), was assessed as being 'Good'.

h3d Bramble scrub

5.8 A minor amount of bramble dominated scrub was recorded alongside the eastern and western boundaries in the central region of the site and also adjacent to the buildings / structures in the north-west corner of the site, amounting to approximately 0.046 hectares in total area. These stands of scrub were very limited in extent and comprised dominant bramble growth together with lesser amounts of elder, hazel, hawthorn, holly, and saplings of sycamore (*Acer pseudoplatanus*) ash (*Fraxinus excelsior*) and cherry (*Prunus sp*). Coarse grasses and common ruderals were also present amongst this vegetation. There was no evidence of any recent management of the bramble scrub stands on the site and they appeared to be largely neglected.

h2a Native hedgerows (hedgerows H1 - H6)

5.9 There were a number of native hedgerows on site which ranged from recently planted examples comprising rows of establishing young native shrub specimens with tree guards still in place (H3 and H5), to older and more established native hedgerows (H1, H2, H4 and H6) of varying condition and botanical diversity comprising a variety of woody species, moderately diverse ground flora, and standard trees of varying size classes. A number of non-native woody species were also recorded within these hedgerows, including sycamore, horse-chestnut (*Aesculus hippocastanum*), garden privet (*Ligustrum ovalifolium*) and cherry laurel (*Prunus laurocerasus*), although these species all comprised less than 20% of the hedgerow canopy cover in each example where they were present. The recently planted hedgerows ranged from between approximately 1.2 to 1.5 metres in average height and 0.75 to 1 metres in average width.

The more established native hedgerows on site ranged from between approximately 1.5 and 5.5 metres in average height and 1 to 3.5 metres in average width. All of the native hedgerows on site appeared to be managed infrequently via ad-hoc light flailing.

5.10 The condition of each of the native hedgerows on site (H1 to H6) was assessed as being 'Good'. Despite this, it is considered that all of the assessed native hedgerows still hold considerable scope for enhancement.

h2b Non-native and ornamental hedgerow (hedgerow H7)

5.11 A small section of species-poor non-native hedgerow was recorded along part of the western site boundary. This hedgerow was largely dominated by the non-native woody shrub species garden privet, which occurred with lesser amounts of cherry laurel, forsythia (*Forsythia sp*), barberry (*Berberis sp*), hawthorn and elder. The hedgerow field layer vegetation included bramble, ivy (*Hedera helix*), cleavers, hogweed, common nettle, broad-leaved dock, red dead-nettle (*Lamium purpureum*) and forget-me-not (*Myosotis sp*). This non-native hedgerow was 1.8 metres in average height and 1.2 metres in average width, it appeared to be regularly managed via trimming and clipping.

w1g Other broadleaved woodland (line of trees)

5.12 There was a single row of 33 beech (*Fagus sylvatica*) trees, in the far north-western corner of the site, directly behind the buildings and structures, which ranged from small to very large in size class, although medium was the most frequent size class recorded. It was assumed that these trees had been purposely planted to form a landscaping feature and/or natural screen on the north-western boundary. This line of trees habitat feature, essentially comprised only the row of beech trees, there was no understorey layer and the field and ground layer largely comprised only bare ground / leaf litter cover.

5.13 The condition of the line of trees habitat feature was assessed as being 'Moderate'.

Scattered rural trees

5.14 There were a low number of scattered trees present in the south of the site which included two isolated small specimens of hawthorn and one medium specimen of ash.

5.15 The condition of all three of the scattered trees was assessed as being 'Good'.

u1b5 Buildings

5.16 There was a small timber storage shed, a small timber horse stables block, and two steel storage containers (shipping type containers) in the north-western corner of the site.

Scattered debris

5.17 Various items of scattered debris were recorded both around the buildings / structures in the north-western corner of the site and alongside the south-eastern boundary. This scattered debris included pieces of stone, concrete blocks, paving slabs, bricks, pieces of wood, fencing panels, brushwood, logs, broken timber gates, plastic sheets and containers, old agricultural equipment, and other items.

Assessment of the habitats

5.18 The level of ecological value of the habitats recorded during the baseline survey work is summarised in table 4 below.

Table 4: Level of ecological value of habitats recorded (on-site)

Habitats	Evaluation rationale	Value of receptor
On-site		
Other neutral grassland (g3c and g3c5 areas combined)	Two paddocks of horse-grazed, moderately species-rich, semi-improved neutral grassland. This grassland habitat type is widespread and relatively common, it is considered to be of low to moderate botanical value and moderate value as an ecological resource for wild fauna.	Local
h3d Bramble scrub	Minor sections of species-poor bramble (*Rubus fruticosus* agg.) dominated scrub. This habitat type is very common and widespread and the extent of it on site was very limited, it was therefore not considered to provide any substantial ecological value.	Negligible
h2a Native hedgerows	Six species-poor to moderately species-rich native hedgerows which were all assessed to be in 'Good' condition, but still with considerable scope for enhancement.	Local
h2b Non-native and ornamental hedgerow	A short section of species-poor hedgerow which was dominated by non-native and ornamental woody species.	Negligible
w1g Other broadleaved woodland (line of trees)	An unexceptional habitat feature comprising a short row of mostly mature beech (*Fagus sylvatica*) trees which lacked any understorey or field / ground layer vegetation.	Local
Scattered rural trees	Three unexceptional specimens of native tree species on the site, including two isolated small specimens of hawthorn (*Crataegus monogyna*) and one medium specimen of ash (*Fraxinus excelsior*). These trees do not provide any substantial ecological value.	Negligible
Buildings / structures	The small timber storage shed, small timber horse stables block, and the steel storage containers recorded on site do not provide any substantial ecological value.	Negligible
Scattered debris	The various items of scattered debris recorded on the site do not provide any substantial ecological value, however they would provide potential refugia and hibernacula features for wild fauna.	Negligible

5.19 The development proposals will potentially have significant impacts and effects on identified on-site habitats of local importance, including the species-poor broadleaved woodland, scrub and tall ruderal vegetation / rough grassland. These potential impacts and effects are discussed in section 6. **All other identified habitats and features on site are very limited in extent and considered to be of negligible value, these have therefore been excluded from this assessment.**

Protected, notable and invasive species

5.20 An evaluation of the site's potential to support protected and notable species of fauna is provided below. This is based on the suitability of the habitats present both on site and in the surrounding area, and the desk study information provided by HBIC.

5.21 Targeted phase 1 and 2 surveys for protected species have been undertaken on site between March 2018 and November 2021, with update surveys currently progressing in 2024. These include badger (*Meles meles*) surveys, phase 1 and 2 surveys for roosting bats, activity transect surveys for foraging and commuting bats, hazel dormouse (*Muscardinus avellanarius*) surveys, and reptile surveys.

Badger

5.22 The mosaic of habitats on site, including neutral grassland, scrub, hedgerows and trees, provide a limited area of suitable foraging, commuting and sett-building habitat for badger. The site also has connectivity with further suitable habitat for badger within the surrounding locality, including grasslands, mixed farmland, native hedgerow networks, scrub, extensive areas of broad-leaved and coniferous woodlands, railway embankments/cuttings, and residential gardens. The HBIC data search returned 29 records of badger within 2 kilometres of the site.

5.23 The site and a 30 metres radius outside of its boundaries were surveyed for evidence of badger activity, including setts, latrines, pathways, footprints, snuffle holes and fur (English Nature, 2002), by senior ecologist Ben Willers on 19th March 2024. Any badger setts recorded were classified according to the published criteria (Harris, Cresswell and Jefferies, 1989). No evidence of any badger activity was recorded on site.

5.24 It is concluded that badgers are not currently using the site, however the data search shows that they have previously been recorded within the locality and could potentially move into the site at any time. **Therefore, best practice measures to ensure that badgers are safeguarded from harm during construction works have been included as part of this impact assessment.**

Bats: Buildings and Structures

5.25 A preliminary bat roost assessment (PRA) of the buildings and structures on the site was undertaken by senior ecologist Ben Willers (Natural England Class Licence: 2021-50896-CLS-CLS) on 19th March 2024, the full methodologies and results of this assessment are included as appendix VIII. No evidence of roosting bats was recorded, however the PRA identified that the storage shed and horse stables block both had 'Low' potential to support roosting bats, whilst the two storage containers were assessed as having 'Negligible' potential to support roosting bats.

5.26 In line with the Bat Conservation Trust (BCT) guidance (Collins, 2023), a single dusk emergence bat activity survey of both the storage shed and horse stables is planned to be undertaken in May 2024 in order to determine whether these structures are being used by bats for roosting.

Bats: Trees

5.27 A ground-level tree assessment for roosting bats (GLTA) was undertaken by senior ecologist Ben Willers on 19th March 2024, the full results of the GLTA are provided as appendix IX. The GLTA identified two trees with potential to support roosting bats located within hedgerow H1 and five trees with potential to support roosting bats located within hedgerow H6. An additional four trees located in hedgerow H6 were identified to require further assessment for roosting bats as it was not possible to either confirm or rule out the presence of potential roosting features during the GLTA.

5.28 The current development proposals include the retention of all existing hedgerow trees on site, although it is not yet known whether any of these trees will require management works, therefore **roosting bats (in relation to trees) have been included in this assessment.**

Bats: Foraging and Commuting

5.29 The mosaic of habitats on the site, including neutral grassland, scrub, hedgerows and trees, were assessed as 'Moderate' in terms of their suitability to support foraging and commuting bats (Collins, 2023). The habitats present on site are limited in extent due to the relatively small size of the site, however it is considered that they will likely provide a valuable foraging resource and commuting link to support local bat populations. The site is also relatively well connected to further suitable foraging and commuting habitat within the surrounding local landscape, including grasslands, mixed farmland, native hedgerow networks, scrub, extensive areas of broad-leaved and coniferous woodlands, railway embankments / cuttings, and residential gardens.

5.30 Bat activity transect surveys, together with static detector monitoring, was undertaken on the site in 2018 and 2021 in accordance with the 3rd edition survey guidelines established by the BCT (Collins, 2016). The full methodology, results and analysis of the bat activity surveys undertaken on site to date is included as appendix X, whilst a summary of the key findings is provided below:

- The transect surveys in 2018 recorded low numbers of common pipistrelle (*Pipistrellus pipistrellus*), Nathusius pipistrelle (*Pipistrellus nathusii*), brown long-eared bat (*Plecotus auritus*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*) and myotis bat species (*Myotis sp*) on the site. The majority of the recorded foraging and commuting activity on site was over the boundary hedgerows, with occasional commuting passes across the site and very little foraging activity directly over the paddocks/pasture.

- Static detector monitoring of the site in 2018 recorded a total of five species of bat, including common pipistrelle, soprano pipistrelle, noctule, serotine and *Myotis* species. The vast majority of recorded activity comprises common pipistrelle passes, with passes recorded for each monthly session apart from static 2 in April and a maximum count of 721 passes per night recorded on static 2 in October. Low numbers of myotis bat passes were recorded on both detectors, although a greater number of passes were recorded on static 2. Low numbers of noctule passes were recorded on both detectors with the exception of the October session where a significantly greater number of

noctule passes were recorded. A very low number of soprano pipistrelle passes were recorded for each monthly session only on static 1. A very low number of serotine passes were recorded on both detectors, with a greater number recorded on static 1.

- During the transect surveys in 2021 the foraging and commuting activity on site was dominated by low numbers of common pipistrelle bats, although common pipistrelles were also recorded on site in moderate numbers during the months of June, July and August, with a maximum count of up to five individual bats noted on any one occasion during these months. Only one serotine bat pass was recorded during the month of April. Two brief foraging passes of the rare Annex II bat species barbastelle (*Barbastella barbastellus*) were recorded over the south-western boundary hedgerow in June. No other bat species were recorded during any of the transect surveys in 2021. The transect surveys identified that the key areas of the site where the vast majority of the bat activity (mostly foraging) was recorded was over the southern, western and north-eastern boundary hedgerows, with relatively limited activity being recorded elsewhere on site and directly over the open paddock areas.

- Static detector monitoring of the site in 2021 recorded a total of five bat species and three bat genera, including common pipistrelle, soprano pipistrelle, Pipistrellus species, Myotis species, noctule, *Nyctalus* species, serotine and barbastelle. The vast majority of the activity comprised common pipistrelle passes, totalling 18,212 passes recorded on both detectors. A significantly higher number of common pipistrelle passes were recorded on static detector 2, totalling 17,829 passes, compared with 383 total common pipistrelle passes recorded on static detector 1. Only very low levels of soprano pipistrelle activity were recorded, with a slightly higher level of soprano pipistrelle activity recorded on static detector 1. Unidentified pipistrelle bat species were also recorded in low numbers. Myotis bat species were recorded in low numbers on both detectors. Noctule and unidentified Nyctalus species were only recorded in very low numbers on both detectors in September. A very low number of serotine passes were recorded on static detector 2 in August and September. A very low number of passes of the rare Annex II bat species barbastelle were recorded on static detector 2 in August and September. Overall, a significantly higher number of total bat passes were recorded at static detector location 2 (Static 2 =18,120 bat passes; Static 1 = 522 bat passes), a greater overall diversity of bat species was also recorded at static location 2.

5.32 The results of the bat activity survey work in 2018 and 2021 generally indicate that the key areas of the site where the vast majority of the bat activity was occurring was over the southern, western and north-eastern boundary hedgerows, with relatively limited activity being recorded elsewhere on site including directly over the open paddock areas.

5.33 On the basis of the habitat quality both on- and off-site, and the bat species and levels of activity recorded during the survey work undertaken in 2018 and 2021 (acknowledging the presence of the rare species barbastelle), **it is concluded that the site is of Regional importance for foraging and commuting bats.**

5.34 Update bat activity transect surveys and static detector monitoring are currently in progress on the site in 2024, following the 4th edition BCT survey guidelines (Collins, 2023).

Birds

5.35 The site was assessed for its potential to support nesting, foraging and overwintering birds.

5.36 The limited mosaic of habitats on site, including neutral grassland, scrub, hedgerows, trees, and buildings / structures, provides suitable nesting, foraging and overwintering resources that could potentially support a range of mostly common resident and migrant bird species, including some declining species of conservation concern, such as starling (*Sturnus vulgaris*), mistle thrush (*Turdus viscivorus*), song thrush (*Turdus philomelos*), redwing (*Turdus iliacus*), bullfinch (*Pyrrhula pyrrhula*) and dunnock (*Prunella modularis*).

5.37 The impacts associated with the proposals could potentially have both negative and positive effects on nesting, foraging and overwintering birds. **Birds are therefore included in this impact assessment.**

Great crested newt

5.38 The mosaic of habitats on site, including neutral grassland, scrub, hedgerows, trees and scattered debris, provide suitable terrestrial habitat for great crested newt (*Triturus cristatus*) with opportunities for foraging, refuge and hibernation.

5.39 No ponds or waterbodies were identified within the site boundary and a review of online mapping identified no other ponds or waterbodies within a 500 metres radius of the site that might potentially support breeding great crested newt. The HBIC data search returned one local record of great crested newt, although this was located approximately 2 kilometres to the south of the site. A review of the MAGIC website identified no granted European Protected Species Mitigation (EPSM) licences or survey licence returns for great crested newt within the immediate surrounding locality (2 kilometres radius).

5.40 Given the lack of any suitable aquatic breeding habitat for great crested newt, either on site or within the surrounding 500 metres typical dispersal range, as well as the absence of any recorded evidence to indicate the presence of the species in close proximity to the site, **it is therefore considered that great crested newt is likely absent from this particular study area and can be excluded from this assessment.**

Hazel dormouse

5.41 The hedgerows and scrub on site provide suitable habitat for hazel dormouse (*Muscardinus avellanarius*), including a variety of food plants and flowering shrubs, such as bramble, hazel, elder and hawthorn, as well as some dense woody shrub growth that could be used for building nests within. The site is also relatively well connected with further suitable habitat for dormice within the surrounding locality, including native hedgerow networks, scrub stands, extensive areas of broad-leaved and coniferous woodlands, and residential gardens. No evidence of dormice, such as the characteristically opened hazel nuts or breeding nests, has been recorded on site during any of the walkover habitat surveys.

5.42 The desk study returned 10 records of hazel dormouse within two kilometres of the site and a granted EPSM licence for dormouse was identified 1.3 kilometres to the south-west of the site. There were also a number of further granted EPSM licences for dormouse noted within the wider locality.

5.43 Dormouse nest tube surveys were conducted between May and September 2018 and between May and November 2021, the full methodologies and results of the survey work are included as appendix XI. An update nest tube survey is currently in progress on the site, and this will be concluded by end of October 2024. **No dormice or evidence thereof has been recorded on the site during the survey work to date, therefore the species is assumed to be absent from this particular study area and can be excluded from this assessment.**

Reptiles

5.44 The mosaic of habitats on site, including neutral grassland, scrub, hedgerows, trees and scattered debris, are of suitability for common species of reptiles, including slow-worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*). These habitats on site provide opportunities for foraging, basking and commuting, as well as potential refugia and hibernacula features. The site is also connected with further suitable habitat for reptiles within the surrounding landscape, including grasslands, mixed farmland with hedgerow networks, scrub stands, extensive areas of broad-leaved and coniferous woodlands, railway embankments and cuttings, and residential gardens. The HBIC data search returned 11 records of slow-worm, three records of grass snake, two records of common lizard, and three records of adder within two kilometres of the site.

5.45 A targeted reptile survey was undertaken across the proposed development site during May and June 2021, a full summary of the survey methodology and results is included as appendix XII. This survey identified the presence of a good population of slow-worm and a low population of grass snake on the site and the key areas where these reptile species were recorded was along the field edges in the north-western, central and south-eastern areas of the site. An update reptile survey is currently in progress on the site, and this will be concluded by end of June 2024. **Slow-worm and grass snake have therefore been included in this assessment.**

Assessment of the site's value for key fauna

5.46 The level of value that the site provides for the identified key fauna species and groups is summarised in table 5 below.

Table 5: Site value for the identified key fauna

Key fauna	Evaluation rationale	Value of the site
Badger	The site holds potential to support badger, which have previously been recorded in the locality and could potentially move into the site at any time.	Local
Bats: tree roosting	The site provides a limited resource of tree roosting opportunities which could potentially support low numbers of crevice dwelling bat species.	Local

Bats: foraging and commuting	A small area of moderate suitability foraging and commuting habitat available on site situated within a semi-rural / partly urbanised surrounding landscape. Low to moderate numbers of mostly common bat species, but also including the rare species barbastelle, were recorded on site during the survey work.	Regional
Birds	The site encompasses habitats of low to moderate value for nesting, foraging and overwintering birds and could support a number of widespread species that are currently of conservation concern.	Local
Reptiles	The site provides a limited area of suitable habitat mosaic for reptiles and it has been identified to support a good population of slow-worm and a low population of grass snake.	Local

6.0 ASSESSMENT OF POTENTIAL IMPACTS

6.1 The potential ecological impacts have been assessed against the development proposals comprising up to 70 new residential units with associated access, infrastructure, and hard and soft landscaping. Potential impacts on identified ecological features of at least local value or subject to any legal or policy considerations are outlined in this section. The ecological features to be assessed from this point on are therefore limited to the following:

- A total of thirteen non-statutory designated sites for nature conservation (Local value)
- Other neutral grassland (g3c and g3c5) (Local value)
- Native hedgerows (h2a) (Local value)
- Line of trees (w1g) (Local value)
- Non-native hedgerows (h2b) (Negligible value)
- Bramble scrub (h3d), Scattered rural trees, and Scattered debris (Negligible value)
- Badgers (Local value)
- Bats: tree roosts (Local value)
- Bats: foraging and commuting habitat (Regional value)
- Birds (Local value)
- Slow-worm and grass snake (Local value)

Construction Phase Impacts

Non-statutory designated sites

Redhill Copse, Medstead SINC, Chawton Park Wood SINC, South Town Wood SINC, Blackberry Lane, Four Marks SINC/RVEI, Telegraph Lane, Four Marks SINC/RVEI, Down Copse, Medstead SINC, Meadow at Four Marks SINC, The Shrave, Four Marks RVEI, Alton Lane, Four Marks SINC/RVEI, Alton Lane, Four Marks 2 SINC/RVEI, Firtree Copse SINC, Four Marks Scrub SINC, and Hook wood SINC

6.2 It is considered that there is potentially a low risk of adverse impacts to the identified non-statutory designated sites during the construction phase of the project, mainly as a result of dust pollution and construction traffic. Dust from building works and construction plant / vehicle movements can potentially degrade habitats and affect plant growth, construction traffic could also potentially damage ecologically valuable roadside verges and cause disturbance to sensitive fauna supported by the identified sites (such as dormice). Taking into account the considerable intervening distances between the development site and identified non-statutory sites, as well as the relatively small scale of the project proposals, it is therefore concluded that **the magnitude of any such adverse effects would be low and not significant.** Nevertheless, mitigation measures are outlined in section 7.1.

Habitats (on-site)

Other neutral grassland (g3c and g3c5)

6.3 The construction works and land-take of the proposed development will result in a permanent loss of the majority of the existing neutral grassland habitat on the site, amounting to a total loss of approximately 2.59 hectares. Taking into account the moderate botanical value of the neutral grassland habitat on site and the extent of the habitat loss, it is therefore concluded that **the magnitude of the adverse effect would be medium and not significant.**

Native hedgerows (h2a) and Line of trees (w1g)

6.4 The proposed construction works will result in the permanent loss of approximately 29 metres of hedgerow H3 and approximately 5 metres of hedgerow H1, which is essential to accommodate the main access to the development (including visibility splays) and pedestrian links with Beechlands Road and Boyneswood Lane. The remaining lengths of the hedgerows H3 and H1 and the other native hedgerows on site, as well as the line of beech trees, will all be retained within the development layout. The proposed pedestrian link with Stoney Lane will not require any clearance of hedgerow H5 as it will be in precisely the same location as the existing access gateway (hedgerow gap) on the north-western boundary of the site.

6.5 There is also a risk of both direct and indirect construction impacts to the retained native hedgerows and the line of trees on site, including accidental damage caused by construction vehicles and working plant, and construction pollution, siltation and dust resulting in degradation of the hedgerows and/or line of trees.

6.6 Taking into account the 'Local' value of the native hedgerows and line of trees on site, and the small-scale nature of the habitat loss and possible construction impacts, it is therefore concluded that **the magnitude of the adverse effects would be low and not significant.**

Non-native hedgerows (h2b)

6.7 The development proposals and associated landscaping strategy will involve the complete removal of the existing section of non-native hedgerow on the site and its direct replacement with species-rich native hedgerow planting (same location and

extent). It is considered that this will represent a positive long-term effect as the non-native hedgerow of 'Negligible' value will be directly replaced by a more ecologically valuable native hedgerow habitat feature. **The magnitude of the positive effect would be low and not significant.**

Bramble scrub (h3d), Scattered rural trees, and Scattered debris

6.8 The development proposals and associated landscaping strategy will involve the complete removal of all bramble scrub (amounting to approximately 0.281 hectares), the three scattered trees, and all scattered debris from the site. Taking into account the 'Negligible' value and very limited extent of these habitat features, it is therefore concluded that **the magnitude of the adverse effect is low and not significant.**

Protected and Notable Fauna

Badger

6.9 The proposed construction works pose a minor risk of causing harm to badgers as this species has previously been recorded in the locality and could potentially start using the development site at any time. The likelihood and magnitude of the effect is expected to be **low** and **not significant**, however mitigation measures are outlined in section 7.5.

Bats: tree roosts

6.10 During the construction phase of the development there could be a requirement for management works, such as crown lifting, to existing retained hedgerow trees identified as holding potential to support roosting bats. Such management works could therefore potentially result in unlawful impacts to roosting bats, as well as the destruction and loss of existing or potential roosting sites. The likelihood and magnitude of these adverse effects is expected to be **low and not significant**.

Bats: foraging and commuting

6.11 The proposed construction works will result in a small-scale permanent loss of suitable foraging and commuting habitat for bats on site, including 2.59 hectares of neutral grassland, bramble scrub (amounting to approximately 0.281 hectares), and the three scattered trees. The construction works could also have some level of disturbance impacts on foraging and commuting bats throughout the duration of the construction phase. **The magnitude of such adverse effects is expected to be low and of minor significance.**

Birds

6.12 The proposed construction works will result in a small-scale permanent loss of suitable nesting, foraging and overwintering habitat for birds on site, including 2.59 hectares of neutral grassland, bramble scrub (amounting to approximately 0.281 hectares), and the three scattered trees. The site preparation and construction works could also result in the disturbance of actively nesting birds, accidental destruction of bird nests, and/or accidental injury or mortality of individual birds. **The magnitude of any such adverse effects is expected to be low and not significant.**

Slow-worm and grass snake

6.13 The proposed construction works will result in a small-scale permanent loss of suitable habitat for slow-worm and grass snake on site, including 2.59 hectares of neutral grassland, bramble scrub (amounting to approximately 0.281 hectares), and the three scattered trees. The site preparation and construction works could also result in accidental injury and/or killing of individual slow-worms or grass snakes. **The magnitude of any such adverse effects is expected to be low and not significant.**

Operational Phase Impacts

Non-statutory designated sites

Redhill Copse, Medstead SINC, Chawton Park Wood SINC, South Town Wood SINC, Blackberry Lane, Four Marks SINC/RVEI, Telegraph Lane, Four Marks SINC/RVEI, Down Copse, Medstead SINC, Meadow at Four Marks SINC, The Shrave, Four Marks RVEI, Alton Lane, Four Marks SINC/RVEI, Alton Lane, Four Marks 2 SINC/RVEI, Firtree Copse SINC, Four Marks Scrub SINC, and Hook wood SINC

6.14 When operational, the proposed development could potentially have adverse impacts and effects on the identified non-statutory designated sites due to an increase in recreational pressure. Some potential adverse effects from increases in recreational pressure on these sites, as a result of the proposed residential development, might include increased levels of ground trampling and associated degradation of woodland ground flora, littering, dog fowling, and disturbance of wild fauna.

6.15 A review of online mapping has identified that Chawton Park Wood SINC is fully accessible land, and this would be a most likely destination for any new residents for walking and other recreational activities, especially given its large size, its close proximity to the proposed development site, and the availability of numerous well used access tracks and paths within the SINC. There is also some limited public access to Hook Wood SINC and South Town Wood SINC via designated public footpaths, although it is considered unlikely that these would be visited frequently by any new residents due to them being smaller and more obscure sites and situated further away from the proposed development site. None of the other identified non-statutory sites have any public access, aside from the RVEIs, although these are considered unlikely to be significantly affected by potential increases in recreational pressure (associated with the development) due to them being roadside verge sites and all located at a substantial distance from the application site.

6.16 Taking into account the above factors and the relatively small-scale of the proposed development, it is therefore considered that **the magnitude of any such operational phase adverse effects on non-statutory designated sites will be low and not significant.**

Habitats

Native hedgerows

6.17 When operational, the proposed development is expected to have a long-term positive impact in relation to native hedgerow habitat as all of the retained native hedgerows will be enhanced, and there will also be a substantial net increase in native hedgerow habitat on site as a result of the proposed new hedgerow planting scheme, which will also bolster and link with the retained sections. All retained and newly created native hedgerows on site will also be separated and protected from the main footprint of the development by a minimum two metres buffer margin of retained grassland habitat, as well as installed closeboard fencing along the boundaries of any private residential gardens which directly abut hedgerows on site. **The magnitude of the positive effect is expected to be low and not significant.**

Protected and Notable Fauna

Badger

6.18 When operational, the proposed development could potentially have a long-term adverse impact on badger as a result of the loss of grassland habitat and the local expansion of residential development and urban infrastructure. However, no evidence of badger activity has been recorded on site to date and the site is only considered to provide a limited amount of sub-optimal habitat for this species. Taking these factors into account, **the magnitude of any adverse effects are expected to be negligible and not significant.**

Bats (Roosting)

6.19 When operational, the proposed development is likely to have a substantial long-term positive impact on roosting bats as a result of the integrated roosting features which are being proposed on up to 40% of the new dwellings as a site enhancement measure, as well as a number of additional roosting features to be installed on retained mature hedgerow trees on site (refer to section 8). It is considered that these features will provide a substantial amount of high-quality roosting opportunities to support local bat populations in the long-term. **The magnitude of the positive effect is expected to be moderate and not significant.**

Bats (Foraging and Commuting)

Habitat

6.20 When operational, the proposed development is likely to have a long-term positive impact on foraging and commuting bats as a result of the proposed enhancements to the retained native hedgerow sections and the new native hedgerow planting, together with buffer margins of retained and enhanced neutral grassland, which will collectively form a valuable foraging resource and commuting link around the entire perimeter of the site. There will be a substantial net increase in tree cover across the whole site, due to the generous level of tree planting that is proposed within the landscaping scheme for the

development, and it is considered that this will also provide a valuable long-term foraging resource for bats as the trees mature and their canopies spread out. The proposed ornamental planting and the private residential gardens within the development layout may also offer potential long-term foraging resources for bats. **Taking these factors into account and the small scale of the site, the magnitude of the positive effects is expected to be low and of minor significance.**

Lighting

6.21 When operational, the proposed development could potentially have a long-term adverse impact on foraging and commuting bats as a result of increased light disturbance from streetlamps and any other external lighting systems. Such lighting associated with the development could potentially dissuade bats from using the site for foraging purposes and disrupt existing commuting routes. This in turn could potentially impact on the ability of the local bat populations to meet their ecological requirements. Taking into account the relatively small scale of the development and the level of habitat retention and enhancement proposed (refer to section 8), **the magnitude of these adverse effects is expected to be low and could be of minor significance.**

Birds

6.22 When operational, the proposed development is considered likely to have a long-term positive impact on nesting, foraging and overwintering birds as a result of the various proposed site enhancement measures, including integrated nesting features on up to 40% of the new dwellings, nest boxes to be installed on existing mature hedgerow trees, enhancements to the retained native hedgerow sections, the new native hedgerow planting, provision of grassland buffer margins, and a generous level of tree planting across the development layout. It is also considered that the proposed ornamental planting and the private residential gardens within the development layout may also offer potential long-term habitat resources for birds. **The magnitude of these positive effects is expected to be low and not significant**.

Slow-worm and grass snake

6.23 When operational, the proposed development is expected to have a long-term positive impact on both slow-worm and grass snake, as a result of the proposed enhancements to the retained native hedgerow sections and the new native hedgerow planting, together with buffer margins of retained and enhanced neutral grassland, which will collectively form a valuable and well-connected habitat resource around the entire perimeter of the site providing opportunities for basking, foraging and refuge. There will also be multiple log / brushwood heaps and artificial hibernacula installed within the habitat buffer zones on site to provide a generous supply of refugia and hibernacula resources. The proposed ornamental planting and the private residential gardens within the development layout may also offer potential long-term habitat resources for both slow-worm and grass snake. **Taking these factors into account and the small scale of the site, the magnitude of the positive effects is expected to be low and not significant.**

7.0 MITIGATION

Construction Phase

Non-statutory designated sites

Redhill Copse, Medstead SINC, Chawton Park Wood SINC, South Town Wood SINC, Blackberry Lane, Four Marks SINC/RVEI, Telegraph Lane, Four Marks SINC/RVEI, Down Copse, Medstead SINC, Meadow at Four Marks SINC, The Shrave, Four Marks RVEI, Alton Lane, Four Marks SINC/RVEI, Alton Lane, Four Marks 2 SINC/RVEI, Firtree Copse SINC, Four Marks Scrub SINC, and Hook wood SINC

7.1 A Construction Management Plan (CMP) will be produced and implemented during the construction phase of the project in order to avoid and mitigate for potential impacts that could occur to the identified non-statutory designated sites. The CMP will detail specific construction methods and precautionary measures which will likely include the following:

- Dust control and suppression methodologies.
- Use of construction hoarding to screen the works and restrict the spread of dust.
- Preventing any site personnel from accessing any of the non-statutory sites and making them aware of their presence and ecological importance.
- Identification of a specific haulage route to the site for all construction traffic which avoids passing by any of the identified non-statutory sites as far as possible, especially the RVEIs which would be at highest risk of damage from construction traffic.
- Details of how any building materials, fuels and chemicals will be stored and controlled on site to avoid the risk of pollution and siltation, for example all building materials will be stored appropriately in specific designated areas within the construction site compound to avoid potential pollution incidents and creation of dust.
- A waste control strategy, including designated waste disposal and storage facilities provided on the site, as far as possible.
- Implementation of specific measures to prevent and limit siltation, such as installation of silt wattles and silt mats at key working areas where surface water runoff could be an issue.
- All plant will be fitted with drip trays in order to avoid potential pollution incidents and refuelling of plant and/or vehicles will either take place off site or within the construction site compound.

- Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of works, use of lighting and working hours.

Habitats (on-site)

Native hedgerows and associated trees

7.2 All of the existing native hedgerows and associated trees on site that are to be retained and enhanced shall be suitable protected during the construction phase in accordance with the British Standards Institute guidance (British Standards Institute, 2012) by installing construction hoarding along the root protection zones before works.

7.3 Implementation of a CMP during the construction phase (refer to section 7.1 above) will ensure that the retained native hedgerows and associated trees are protected from degradation as far as reasonably possible.

Protected and Notable Fauna

Badger

7.4 The following measures will be implemented on site to safeguard badger from harm throughout the duration of the construction phase:

- Prior to works commencing the working area will be delineated with construction hoarding which should largely prevent and discourage badger from entering the construction site.

- A check for any badger activity on site will also be undertaken prior to works commencing.

- Where possible, excavations will not be left open overnight. However, if excavations are left open at night, then an earth or wooden ramp will be installed to enable any animals that fall in to escape.

- The work areas will be checked daily to ensure that no animals are trapped.

- Any piping will be capped over-night to prevent animals becoming trapped.

Bats (tree roosts)

7.5 If there are any requirements for management works, such as crown lifting, to existing retained hedgerow trees identified as holding potential to support roosting bats, then the scope of any such works should first be assessed on site with a licenced bat ecologist to determine whether any potential roosting features might be impacted. If any required tree works (that are essential and cannot be avoided) may impact a potential bat roosting feature or concealed bat roosting feature, then a further tree climbing inspection survey with the use of endoscopic equipment will be required to establish the presence / absence of any bat roosts immediately prior to the works.

Bats (Foraging and Commuting)

7.6 The following measures will be implemented on site to limit any disturbance impacts on foraging and commuting bats during the construction phase:

- Dusk and night-time working with the use of flood lights will be strictly forbidden on site during the bat activity season (April to October inclusive), unless there are exceptional circumstances were night working is absolutely essential. In such exceptional circumstances an ecologist will be contacted and a suitable method of works devised so that no light spill onto retained foraging and commuting habitats occurs.

Birds

7.7 To avoid the risk of disturbing, injuring or killing nesting birds, all vegetation clearance and building / structure demolitions required as part of the site preparation works should ideally be undertaken outside of the bird nesting season which is considered to run from March to August (inclusive). Where any vegetation clearance or demolition works must be undertaken within the nesting bird season, the working areas must first be checked by an ecologist for the presence of any nesting birds (including both arboreal and ground nesters) immediately prior to clearance. Should any active nests be encountered, the clearance in those particular areas must be postponed and a suitable protection zone established until either the nestlings have fledged, or the nest is abandoned.

Slow-worm and grass snake

7.8 A reptile translocation and exclusion exercise, followed by a destructive search, will be implemented on site. This will involve the following methodologies and standard practices:

- Specialist herptile exclusion fencing will be installed around the perimeters of the proposed construction zones to form a protective barrier that will prevent reptiles from accessing the works site and being at risk of harm. The fencing will be installed under the supervision of an experience reptile handler.

- On-site receptor areas for reptiles will be established within the retained and enhanced buffer habitat around the margins of the site, outside of the primary construction zones, with the implementation of the various proposed site enhancement measures (refer to section 8) making the habitat in these receptor areas ideal for reptiles.

- Once the herptile fencing is installed, artificial refuges, such as those used during the reptile survey (refer to appendix XII), will be placed within the works area from which the reptiles are to be excluded. The mats will be visited during suitable weather conditions between March and October, and any reptiles encountered will be caught by hand and safely moved to the receptor areas. These translocation visits to the site will be repeated until it can be demonstrated that no further reptiles can be caught. A minimum of 30 translocation visits will

be made, and if reptiles are still being encountered then visits will be continued until there are five consecutive visits where no reptiles are observed before the subsequent destructive search of the area can commence.

- Following completion of the translocation exercise, then a destructive search of the works areas will be undertaken to render the areas unsuitable for reptiles and prepare the site for construction works, whilst also checking for any remaining reptiles which may have been missed during the translocation exercise. The destructive search will primarily involve a supervised topsoil strip of the neutral grassland habitat present across the works area, but will also include the dismantling and removal of existing debris, small buildings/structures, scrub and hedgerow vegetation on the site. An ecological watching brief will be maintained on site at all times during the destructive search, involving a suitably qualified ecologist working alongside construction plant, undertaking checks for reptiles, supervising the relevant contractors and/or machine operators, and providing toolbox talks where required. Any reptiles discovered during the destructive search will be safely caught by the supervising ecologist and moved to the on-site receptor areas.

- All of the above reptile exclusion and translocation works, and the destructive search must be conducted during suitable, dry weather conditions, with temperatures above 10°C, between the months of March and October (inclusive), to ensure that any hibernating reptiles are not harmed. A suitably qualified ecologist must also be present on site at all times to ensure that the correct methodologies are being adopted and that reptiles are safeguarded from harm.

Operational Phase

Non-statutory designated sites

Redhill Copse, Medstead SINC, Chawton Park Wood SINC, South Town Wood SINC, Blackberry Lane, Four Marks SINC/RVEI, Telegraph Lane, Four Marks SINC/RVEI, Down Copse, Medstead SINC, Meadow at Four Marks SINC, The Shrave, Four Marks RVEI, Alton Lane, Four Marks SINC/RVEI, Alton Lane, Four Marks 2 SINC/RVEI, Firtree Copse SINC, Four Marks Scrub SINC, and Hook wood SINC

7.9 To provide mitigation for potential adverse impacts and effects on the identified non-statutory designated sites, due to increases in recreational pressure, the development layout will incorporate generous areas of publicly accessible greenspace, pedestrian walkways that link into adjacent byways, and outdoor play areas for children. Taking into account the relatively small-scale and restricted nature of the development proposals, it is considered that these measures will provide adequate mitigation for potential increases in recreational pressures on non-statutory designated sites by creating opportunities within the site for recreation and dog walking, as well as linking to adjacent pedestrian routes and byways that lead away from the identified designated site locations.

Bats (Foraging and Commuting)

7.10 The extensive proposed site enhancement measures (refer to section 8), including the enhancement of retained native hedgerow sections, new native hedgerow planting, buffer margins of neutral grassland, tree planting, and ornamental planting, are all expected to have a long-term positive effect on foraging and commuting bats and will off-set any adverse effects resulting from the small-scale habitat losses associated with the development land take. The site enhancement measures will collectively form a valuable foraging resource and commuting link around the entire perimeter of the site, as well as providing some additional foraging habitat resources for bats within the main central developed area of the site. The private residential gardens will also very likely offer additional long-term foraging resources on the site for bats.

7.11 The impact of additional lighting as a result of the proposed development will be minimised via the following measures:

- Incorporating only a minimal amount of external lighting systems within the development layout where it is essential for pedestrian and vehicle access.

- Ensuring that the retained, enhanced and newly created habitats on site are un-lit and not affected by light-spill. These areas of habitat will be maintained as dark, un-lit zones as far as possible, especially the southern, western, northern and north-eastern margins of the site.

- Considered selection and design of any lighting systems across the development layout with the aim of minimising light pollution and light-spill.

- Use of alternative lighting systems wherever feasible, such as downward directional luminaires, and by using accessories such as cowls or hoods to minimise light spill.

- Preferentially using security lighting that is set on a timer and only triggered at waist height.

- Use of low intensity LED luminaires which lack UV elements, are of a warm white spectrum (ideally <2700Kelvin), and with peak wavelengths higher than 550nm.

Birds

7.12 The extensive proposed site enhancement measures (refer to section 8), including the proposed integrated nesting features on up to 40% of the new dwellings, the enhancement of retained native hedgerow sections, new native hedgerow planting, buffer margins of neutral grassland, tree planting, and ornamental planting, are all expected to have a long-term positive effect on nesting, foraging and overwintering birds and will off-set any adverse effects resulting from the small-scale habitat losses associated with the development land take.

Slow-worm and grass snake

7.13 The extensive proposed site enhancement measures (refer to section 8), including the enhancements to the retained native hedgerow sections, the new native hedgerow planting, buffer margins of neutral grassland, the creation of numerous log / brushwood piles and artificial hibernacula, ornamental planting, and tree planting, as well as the residential gardens, are all expected to have a long-term positive effect on slow-worm and grass snake and will off-set any adverse effects resulting from the small-scale habitat losses associated with the development land take.

8.0 SITE ENHANCEMENT

Habitats

Native hedgerows

8.1 The existing and retained native hedgerow sections on the site will be enhanced through the implementation of a range of measures, which will include the removal of non-native woody species (garden privet and cherry laurel), gap planting using a selection of suitable native shrub species, planting of further standard trees in the hedgerows, removal of tree guards, crown lifting of mature hedgerow trees to enable more light penetration to the shrub and ground level, and laying (pleaching) of hedgerow growth (by a professional hedge-layer) to improve long-term structure of the hedgerows. The hedgerows will also be maintained in the long-term via light biannual flailing or trimming, with the hedgerow sculpted into a rounded A-shape during management. This management will ensure that good hedgerow structure and habitat connectivity is maintained in the long-term.

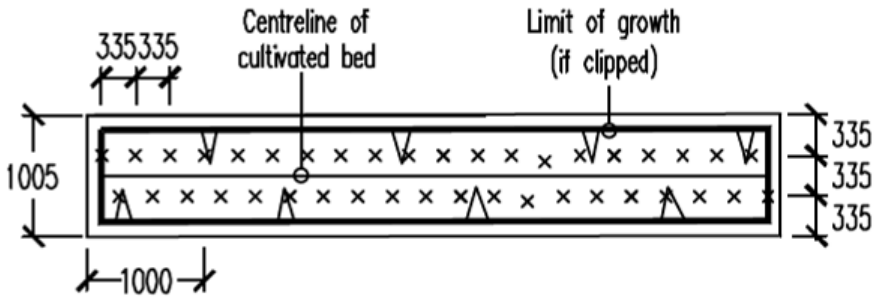
8.2 The development layout will incorporate a considerable level of new species-rich native hedgerow planting to fill in gaps along the northern, central and south-eastern boundaries of the site and link up the existing / retained hedgerow sections. The existing non-native hedgerow section on the western boundary of the site will also be replaced with native hedgerow planting. Any new hedgerow planting on site will incorporate a selection of appropriate native species, an example of the recommended species and planting proportions is detailed in table 6 below and an example planting pattern is illustrated in diagram 1. Once this hedgerow planting has become well-established, it is advised that a low intensity management regime should be applied. This should comprise light flailing on a biannual basis with the hedgerows sculpted into a rounded A-shape during flailing. It is also recommended that the hedgerows should be pleached by a professional hedge-layer once they have sufficiently matured in order to enhance their long-term structure and connectivity and to prevent the hedgerows from becoming 'leggy'.

Table 6: Species to be included in hedgerow planting

Species	Proportion within hedgerow
Spindle (*Euonymous europaea*)	10%
Hawthorn (*Crataegus monogyna*)	25%
Blackthorn (*Prunus spinosa*)	15%
Field maple (*Acer campestre*)	15%

Dog rose (*Rosa canina*)	5%
Hazel (*Corylus avellana*)	20%
Crab apple (*Malus sylvestris*)	5%
Guelder-rose (*Viburnum opulus*)	5%

Diagram 1: Hedgerow planting pattern



Neutral grassland areas

8.3 The development layout will incorporate generous buffer margins of retained and enhanced neutral grassland around the peripheries of the site. These buffer sections of grassland will be left to grow to a tall sward during the summer, and thereby provide wildflower meadow habitat, and will be managed via a single annual hay cut in late summer (late-August or early-September) with all the arisings to be collected and removed from the site. These areas of neutral grassland will also be botanically enhanced via plug planting of suitable species.

Amenity grassland areas

8.4 The areas of grassland comprising the amenity greenspace areas and the private residential gardens on site will be sown with a suitable hard wearing amenity lawn mixture comprising a selection of native grasses and herbaceous species.

Ornamental planting

8.5 The landscaping plans for the development will include sections of ornamental planting in the residential frontage areas and these will consist of a varied mix of native and ornamental shrubs and herbaceous perennials that will benefit pollinating insect species by providing nectar sources throughout the growing season.

Tree planting

8.6 The landscaping plans for the development will include a substantial amount of tree planting across the whole site. This tree planting will comprise a mixture of native and non-native ornamental, small broad-leaved tree species and fruit trees. It is considered that the tree planting on site will provide a valuable habitat resource for various fauna, including invertebrates, foraging and commuting bats, and foraging birds, when they become established over time.

Bats (Roosting)

8.7 The site will be enhanced for roosting bats with the installation of integrated bat roosting features on up to 40% of the new residential units, these features will be sited on building elevations which face out towards retained habitat on the site peripheries. A number of further bat roosting features will also be installed on suitable mature existing hedgerow trees.

Nesting birds

8.8 The site will be enhanced for nesting birds with the installation of integrated bird nesting features on up to 40% of the new residential units, these features will be sited on building elevations which face out towards retained habitat on the site peripheries. A number of further bird nesting features will also be installed on suitable mature existing hedgerow trees.

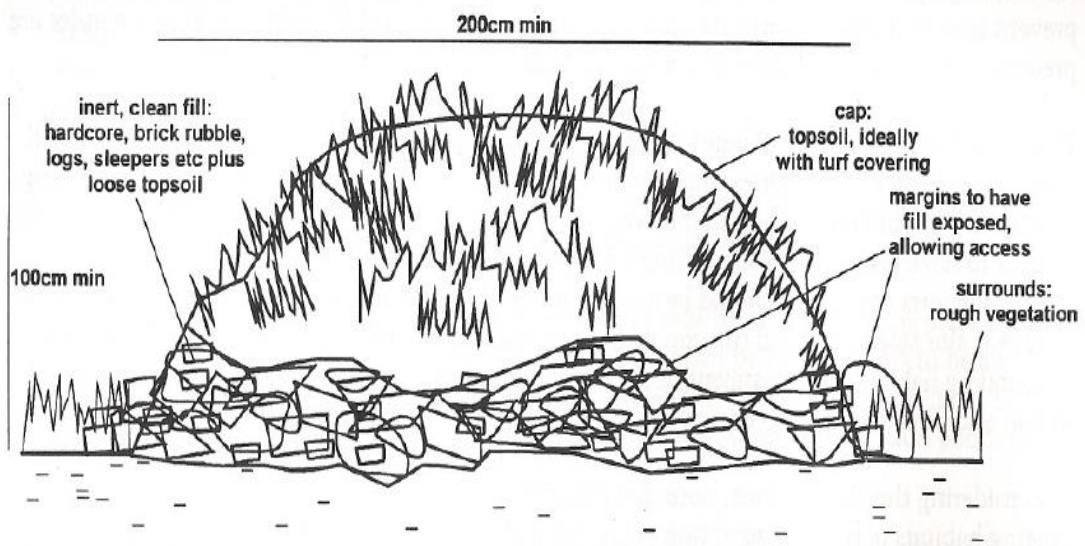
Other enhancements

8.9 All of the proposed new residential units will incorporate two bee bricks and hedgehog-friendly gravel boards with holes of 10 x 10 centimetres will be included within all garden fencing.

8.10 A number of log and brushwood piles will be created within the retained and enhanced areas of buffer habitat around the peripheries of the site in order to provide refugia and hibernacula features for reptiles, invertebrates and small mammals such as hedgehog.

8.11 A number of artificial reptile hibernacula will also be created within the areas of buffer habitat around the peripheries of the site to provide additional refugia and hibernation features for slow-worm and grass snake. The artificial hibernacula will consist of a shallow excavation, approximately 2 metres in length, 1 metre in width and 0.5 metres in depth, which will be filled with logs and clean rubble with the excavated earth laid on top as depicted in Diagram 2 below.

Diagram 2: Reptile hibernacula design



9.0 BIODIVERSITY NET GAIN

The results of the statutory biodiversity metric calculation are provided in table 7 below. To summarise, the proposed development layout with associated landscaping strategy (appendix II), as well as the relevant ecological enhancement measures (refer to section 8.0), will result in a -76.35% biodiversity net loss resulting after development, which is a substantial decrease below the site's original baseline ecological value. There will also be a positive 15.42% increase in hedgerow units delivered.

Table 7: Results of the Statutory Biodiversity Metric calculation for the development

	Habitat Units	Hedgerow Units
On-site Baseline (existing ecological baseline prior to development)	43.24	6.26
On-site post-development (including habitat retention, creation, enhancement & succession)	10.23	7.22
Total net unit change (including all habitat retention/creation)	-33.01	0.96
Total net % change (including all habitat retention/creation)	**-76.35%**	**15.42%**

10.0 RESIDUAL EFFECTS

10.1 The proposed development will result in a small-scale residual loss of neutral grassland habitat. The developer will be seeking to secure an appropriate off-site solution to offset this habitat loss and to meet the mandatory biodiversity net gain requirements. No other significant residual effects are anticipated.

11.0 IN-COMBINATION EFFECTS

11.1 A search of the recent planning applications (dated between 2015 and 2024) on the East Hampshire District Council website using the search terms 'Boyneswood', 'Lymington Bottom Road' and 'Medstead' was undertaken to identify any development proposals or works within the immediate locality that could potentially have significant adverse ecological effects in-combination with the site proposals.

11.2 The search identified a number of planning applications for a range of small to large scale residential housing developments within the locality, some of which have now been built and are in their operational phase. A granted medium scale residential housing development (Ref no: 55258/004), which lies in close proximity to the south-east of the proposed development site off Beechlands Road, has now been built and is operational. A further one small-scale (Ref no: 55010/004) and two medium-scale (Ref

no: 53305/005 and 55197/002) granted residential housing developments have also been recently built within the locality and are now operational. The search also identified approved planning applications (not yet under construction) in the immediate locality for two small-scale (Ref no: 32407/004 and 20253/026) and one medium-scale residential developments (Ref no: 25256/049), as well as an outline planning application (currently under consideration) and request for an EIA (environmental impact assessment) screening opinion for a large-scale residential development (Ref no: 58788/002 and 58788/003). In addition to the above, a review of the East Hampshire District Local Plan – Housing and Employment Allocations document (EHDC, 2016) has identified one small plot of land (VL7 Land rear of Junipers, South Town Road, Medstead) which is allocated for residential development for approximately 12 dwellings, and this land is yet to be developed.

11.3 It is considered that the proposed development could potentially have significant long-term adverse effects in-combination with the identified local residential developments (particularly if all are eventually approved and move forward to construction and operational phases) due to the collective loss of lowland agricultural land (mainly grassland plots) and associated habitat types within the locality, habitat fragmentation, increased urbanisation in the local area, and associated adverse impacts on wild fauna. There would also be increased potential for adverse recreational impacts, as well as other indirect adverse impacts, on the non-statutory designated sites for nature conservation in the local area. **In this instance, the IEFs affected would in most cases be of Local value and the potential magnitude of the in-combination adverse effects would be Medium (at worst) and therefore Not significant.**

11.4 No further planning applications of significance were identified within the locality of the proposed development site. All of the other reviewed recent applications were only for small-scale works and projects in the local area, such as improvements and/or small extensions to existing local properties, as well as various minor arboricultural works.

12.0 CONCLUSIONS

12.1 The proposed development will result in a residual loss of neutral grassland habitat and an overall net loss in the biodiversity value of the site. There is also potential for significant adverse effects on foraging and commuting bats. However, it is considered that the full suite of mitigation and enhancement measures detailed in this report, as well as securing an off-site compensation solution for loss of grassland habitat, will prevent and minimise the risks of all the adverse ecological effects considered in this assessment to an appropriate level and will deliver a biodiversity net gain, in accordance with the relevant national and local planning policy, wildlife legislation, and guidance.

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APPENDIX I: Site location plan

APPENDIX II: Development and landscaping plan

APPENDIX III: Desk study information

Statutory designated sites for nature conservation within five kilometres and non-statutory designated sites for nature conservation within two kilometres of the land off Beechlands Road

Site name	Conservation status	Distance and direction from site	Level of Value	Habitat description
Redhill Copse, Medstead	SINC[1]	0.3 km north-east	Local	Habitat includes ancient semi natural woodland.
Chawton Park Wood	SINC	0.5 km north-east	Local	Habitat includes a significant amount of ancient, semi-natural woodland.
South Town Wood	SINC	0.6 km west	Local	Habitat includes ancient, semi-natural woodland.
Blackberry Lane, Four Marks	SINC, RVEI[2]	0.7 km east	Local	The site supports violet helleborine (*Epipactis purpurata*) and is of value to the local community.
Telegraph Lane, Four Marks	SINC, RVEI	0.8 km east	Local	The site supports violet helleborine and is of value to the local community.
Down Copse, Medstead	SINC	0.9 km north-west	Local	Habitat includes ancient, semi natural woodland.
Meadow at Four Marks	SINC	1 km south-west	Local	The site supports hazel dormouse (*Muscardinus avellanarius*).
The Shrave, Four Marks	RVEI	1.1 km east	Local	The site supports violet helleborine and is of value to the local community.
Alton Lane, Four Marks	SINC, RVEI	1.2 km south-east	Local	The site supports violet helleborine and is of value to the local community.
Alton Lane, Four Marks 2	SINC, RVEI	1.3 km south	Local	The site supports violet helleborine and is of value to the local community.
Firtree Copse	SINC	1.4 km east	Local	The site supports a significant amount of ancient, semi-natural woodland.
Four Marks Scrub	SINC	1.5 km south-west	Local	The site supports hazel dormouse.
Hook wood	SINC	1.7 km north-west	Local	Habitat includes ancient, semi natural woodland.

[1] SINC: Site of Importance for Nature Conservation
[2] RVEI: Road verge of ecological importance

Records of protected, notable and invasive species within a two-kilometre radius of the land off Beechlands Road

Records of protected, notable and invasive species within a two-kilometre radius of the site were provided by HBIC on 21st February 2024. A full copy of the data search can be provided on request, whilst a summary of the most relevant records is provided below.

Amphibians and reptiles

Seven records of common toad (*Bufo bufo*), one record of great crested newt (located approximately 2 kilometres to the south of the site), 11 records of slow-worm, three records of grass snake, two records of common lizard, and three records of adder were provided.

Birds

Records of 48 protected and/or threatened bird species were provided, the most relevant of these included records of lesser redpoll (*Acanthis cabaret*), skylark (*Alauda arvensis*), hawfinch (*Coccothraustes coccothraustes*), cuckoo (*Cuculus canorus*), yellowhammer (*Emberiza citronella*), brambling (*Fringilla montifringilla*), linnet (*Linaria cannabina*), red kite (*Milvus milvus*), spotted flycatcher (*Muscicapa striata*), house sparrow (*Passer domesticus*), grey partridge (*Perdix perdix*), redstart (*Phoenicurus phoenicurus*), marsh tit (*Poecile palustris*), bullfinch (*Pyrrhula pyrrhula*), firecrest (*Regulus ignicapilla*), woodcock (*Scolopax rusticola*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*), mistle thrush (*Turdus viscivorus*), barn owl (*Tyto alba*) and lapwing (*Vanellus vanellus*).

Mammals

Bat records included western barbastelle (*Barbastella barbastellus*), serotine (*Eptesicus serotinus*), *Myotis* bat species (*Myotis sp*), Brandt's bat (*Myotis brandtii*), Daubenton's bat (*Myotis daubentonii*), whiskered bat (*Myotis mystacinus*), natterer's bat (*Myotis nattereri*), lesser noctule (*Nyctalus leisleri*), noctule (*Nyctalus noctula*), pipistrelle bat species (*Pipistellus sp*), common pipistrelle (*Pipistellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), long-eared bat species (*Plecotus sp*) and brown long-eared bat (*Plecotus auritus*).

27 records of European hedgehog (*Erinaceus europaeus*), 3 records of brown hare (*Lepus europaeus*), 29 records of badger, 10 records of hazel dormouse, and 2 records of water shrew (*Neomys fodiens*) were also provided.

Invertebrates

Records of 32 UKBAP invertebrate species were provided, which also included the protected species stag beetle (*Lucanus cervus*).

Higher plants

Local records of relevant, notable vascular plant species included green-winged orchid (*Anacamptis morio*), lousewort (*Pedicularis sylvatica*) and greater broomrape (*Orobanche rapum-genistae*).

Invasive species

Records provided of the WCA Schedule 9 invasive plant and fauna species included montbretia (*Crocosmia* x *crocosmifolia*), Japanese knotweed (*Reynoutria japonica*), variegated yellow archangel (*Lamiastrum galeodbolon ssp argentatum*), rhododendron (*Rhododendron ponticum*), and grey squirrel (*Sciurus carolinensis*).

These records of protected, notable and invasive species in the vicinity of the site increase the likelihood of them being present on site where suitable habitat is identified during the field survey.

APPENDIX IV: UKHab survey

Methodology

A detailed walkover habitat survey of the site was undertaken by senior ecologist ARH on 23rd August 2023. The habitat types present on site were recorded and mapped following the UKHab methodology (UKHab Ltd, 2023) which uses a system of codes to categorize and describe habitat types. The habitats were classified and evaluated according to their vegetative composition, species abundances (using the DAFOR scale) and general condition, as well as environmental parameters such as soil type, soil moisture content (dampness), altitude and aspect. The full results of the UKHab survey are provided below, for each habitat type recorded the primary habitat code and name is given (in bold text) together with a list of any relevant secondary habitat codes (following a semi-colon). A habitat map of the site is provided as figure 1 below, photographs of the habitats and features recorded on site are included as appendix V.

Site overview

The site is approximately 3.293 hectares in total area and it primarily comprised two horse-grazed paddocks of neutral grassland which were bordered by native hedgerows and one non-native hedgerow, with some scrub, scattered trees and scattered debris also present. In the north-western corner of the site there was a small fenced-off area which included a storage shed, a horse stable block, two steel storage containers, rough neutral grassland / ruderal vegetation, scrub, a line of mature beech (*Fagus sylvatica*) trees, and various scattered debris.

g3c Other neutral grassland; 16, 103, 501, 516, 522 (Target note 1)

The majority of the site comprised two adjoining paddocks of horse-grazed, moderately species-rich, neutral grassland, which was approximately 3.123 hectares in total area. The sward was relatively short and well grazed in most places with an average height of between 4.5 and 5.5 centimetres, although there were also patches of taller and rougher sward of between 15 and 24 centimetres in average height. The sward was largely dominated by the common grasses common bent (*Agrostis capillaris*), perennial rye-grass (*Lolium perenne*) and red fescue (*Festuca rubra*), although the more desirable grass species sweet vernal-grass (*Anthoxanthum odoratum*) and crested dog's-tail (*Cynosurus cristatus*) were also recorded frequently throughout the sward. Coarse grass species, including Yorkshire-fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*) and false oat-grass (*Arrhenatherum elatius*), were locally-abundant to occasional. White clover (*Trifolium repens*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), meadow buttercup (*Ranunculus acris*) and yarrow (*Achillea millefolium*) were generally the most abundant herbaceous species present throughout the sward, and these occurred together with a good variety of other herbaceous plants, including a number of more desirable grassland axiophytes such as common bird's-foot-trefoil (*Lotus corniculatus*), meadow vetchling (*Lathyrus pratensis*), common knapweed (*Centaurea nigra*), common sorrel (*Rumex acetosa*), lesser stitchwort (*Stellaria graminea*), field scabious (*Knautia arvensis*) and lady's bedstraw (*Galium verum*). Springy-turf moss (*Rhtidiadelphus squarrosus*) was the most abundant bryophyte recorded within the sward and this occurred together with lesser amounts of common feather-moss

(*Kindbergia praelonga*) and pointed spear-moss (*Calliergonella cuspidata*). A full species list is provided in table 1 below.

Table 1: Species recorded within the g3c Other neutral grassland areas on site

Common name	Latin name	Abundance	Status
Bryophytes			
Pointed spear-moss	*Calliergonella cuspidata*	F-O	Common and widespread
Common feather-moss	*Kindbergia praelonga*	F-O	Common and widespread
Springy-turf moss	*Rhtidiadelphus squarrosus*	A-F	Common and widespread
Grasses, sedges and rushes			
Common bent	*Agrostis capillaris*	D	Common and widespread
Sweet vernal-grass	*Anthoxanthum odoratum*	F-O	Typically occurs in unimproved and more diverse semi-improved grasslands
False oat-grass	*Arrhenatherum elatius*	LA-O	Common and widespread
Crested dog's-tail	*Cynosurus cristatus*	F-O	Typically occurs in unimproved and more diverse semi-improved grasslands
Cock's-foot	*Dactylis glomerata*	LF-O	Common and widespread
Red fescue	*Festuca rubra*	A	Common and widespread
Yorkshire-fog	*Holcus lanatus*	LA-F	Common and widespread
Perennial rye-grass	*Lolium perenne*	A	Common and widespread
Field wood-rush	*Luzula campestris*	LF-R	Typically occurs in unimproved and more diverse semi-improved grasslands
Herbaceous plants			
Yarrow	*Achillea millefolium*	A-F	Common and widespread
Daisy	*Bellis perennis*	O-R	Common and widespread
Common knapweed	*Centaurea nigra*	F	Typically occurs in unimproved and more diverse semi-improved grasslands
Common mouse-ear	*Cerastium fontanum*	F-O	Common and widespread
Field bindweed	*Convolvulus arvensis*	F-O	Common and widespread
Lady's bedstraw	*Galium verum*	R/L	Typically occurs in unimproved grasslands
Hogweed	*Heracleum sphondylium*	O-R	Common and widespread
Cat's-ear	*Hypocharis radicata*	F-O	Common and widespread
Common ragwort	*Jacobaea vulgaris*	O-R	Common and widespread
Field scabious	*Knautia arvensis*	R/L	Typically occurs in unimproved grasslands
Meadow vetchling	*Lathyrus pratensis*	O-R	Typically occurs in unimproved and more diverse semi-improved grasslands
Common bird's-foot-trefoil	*Lotus corniculatus*	F-O	Typically occurs in unimproved grasslands

Common name	Latin name	Abundance	Status
Red bartsia	*Odontites vernus*	F	Typically occurs in unimproved and more diverse semi-improved grasslands
Ribwort plantain	*Plantago lanceolata*	A	Common and widespread
Greater plantain	*Plantago major*	LO-R	Common and widespread
Meadow buttercup	*Ranunculus acris*	A	Common and widespread
Common sorrel	*Rumex acetosa*	F-O	Typically occurs in unimproved and more diverse semi-improved grasslands
Broad-leaved dock	*Rumex obtusifolius*	LF-R	Common and widespread
Lesser stitchwort	*Stellaria graminea*	LO-R	Typically occurs in unimproved and more diverse semi-improved grasslands
Dandelion	*Taraxacum* agg.	O-R	Common and widespread
Red clover	*Trifolium pratense*	A-F	Common and widespread
White clover	*Trifolium repens*	A	Common and widespread
Common nettle	*Urtica dioica*	LF-R	Common and widespread

g3c5 Arrhenatherum neutral grassland; 10, 16, 81, 128, 501, 518, 522, 524 (Target notes 2 and 3)

There were minor sections of rough neutral grassland habitat in the north-west of the site, which included a 1.75 to 2 metre width margin alongside the north-western boundary hedgerow (TN2) (separated from the grazed paddock area by a protective fence line for the hedgerow) and minor sections directly adjacent to the buildings and structures in the north-western corner of the site (TN3) and in the northern end of the northern paddock, amounting to 0.113 hectares in total area. This grassland habitat comprised a rough and overgrown sward, between approximately 25 and 40 centimetres in average height, that was mainly dominated by false oat-grass and cock's-foot. There were also locally-dominant stands of common nettle amongst this vegetation. Other species recorded included abundant to frequent Yorkshire-fog and red-fescue, frequent to occasional rough meadow-grass (*Poa trivialis*), hogweed (*Heracleum sphondylium*), field bindweed (*Convolvulus arvensis*), broadleaved dock (*Rumex obtusifolius*), cow parsley (*Anthriscus sylvestris*), ribwort plantain, yarrow and meadow buttercup, locally-frequent to rare ground-elder (*Aegopodium podagraria*) (ground-elder is a non-native and invasive herbaceous species), and occasional to rare common mouse-ear (*Cerastium fontanum*), wood avens (*Geum urbanum*) and hedge woundwort (*Stachys sylvatica*). There was also a minor amount of scattered scrub establishment amongst this vegetation, which included bramble (*Rubus fruticosus* agg.) and seedlings and small saplings of elder (*Sambucus nigra*), rose (*Rosa sp*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*).

There was no evidence of any recent management of the areas of rough neutral grassland habitat on the site and they appeared to be largely neglected, although the margin of rough neutral grassland alongside the north-western hedgerow was likely partially grazed by horses reaching over the protective fence line. The rough vegetation adjacent to the buildings and structures in the north-western corner of the site may be strimmed on an ad-hoc basis to maintain accessibility.

h3d Bramble scrub; 10, 16, 81, 501, 518, 522 (Target note 4)

A minor amount of bramble dominated scrub was recorded alongside the eastern and western boundaries in the central region of the site (TN4) and also adjacent to the buildings / structures in the north-west corner of the site, amounting to 0.046 hectares in total area. These stands of scrub were very limited in extent and comprised dominant bramble growth together with lesser amounts of elder, hazel, hawthorn, holly, and saplings of sycamore (*Acer pseudoplatanus*) ash (*Fraxinus excelsior*) and cherry (*Prunus sp*). Other species recorded amongst these scrub stands included false oat-grass, red fescue, lesser burdock, common nettle, bush vetch (*Vicia sepium*), dandelion, red clover and red campion.

There was no evidence of any recent management of the minor bramble scrub stands on the site and they appeared to be largely neglected.

h2a Native hedgerows; 11, 16, 81, 116, 501, 517, 522, 524 (Target note 5, H1 - H6)

There were a number of native hedgerows on site which ranged from recently planted examples comprising rows of establishing young native shrub specimens with tree guards still in place (H3 and H5), to older and more established native hedgerows (H1, H2, H4 and H6) of varying condition and botanical diversity comprising a variety of woody species, moderately diverse ground flora, and standard trees of varying size classes. A number of non-native woody species were also recorded within these hedgerows, including sycamore, horse-chestnut (*Aesculus hippocastanum*), garden privet (*Ligustrum ovalifolium*) and cherry laurel (*Prunus laurocerasus*), although these species all comprised less than 20% of the hedgerow canopy cover in each example where they were present. The recently planted hedgerows ranged from between approximately 1.2 to 1.5 metres in average height and 0.75 to 1 metres in average width. The more established native hedgerows on site ranged from between approximately 1.5 and 5.5 metres in average height and 1 to 3.5 metres in average width. All of the native hedgerows on site appeared to be managed infrequently via ad-hoc light flailing. The native hedgerows on site are summarised in table 2 below.

Table 2: Native hedgerows recorded on site

Key (refer to habitat map)	Woody species	Ground flora	BAP status (80% native woody species)	General description
H1	Sycamore (*Acer psuedoplatanus*) Hornbeam (*Carpinus betulus*) Hawthorn (*Crataegus monogyna*) Hazel (*Corylus avellana*) Ash (*Fraxinus excelsior*) (including two medium size standard trees) Holly (*Ilex aquifolium*)	Common bent (*Agrostis capillaris*) Garlic mustard (*Alliaria petiolata*) Cow parsley (*Anthriscus sylvestris*) Lord's-and-ladies (*Arum maculatum*) Wood sedge (*Carex sylvatica*)	Yes	Intact, moderately species-rich hedgerow, between 1.5 and 2 metres in average height, and 1.5 to 2 metres in average width, with semi-mature standard trees. Some minor gaps and thin sections noted.

Key (refer to habitat map)	Woody species	Ground flora	BAP status (80% native woody species)	General description
	Cherry laurel (*Prunus laurocerasus*) Rose (*Rosa sp*) Yew (*Taxus baccata*) Common lime (*Tilia* x *europaea*)	Rough chervil (*Chaerophyllum temulum*) Cleavers (*Galium aparine*) Wood avens (*Geum urbanum*) Ground ivy (*Glechoma hederacea*) Ivy (*Hedera helix*) Yorkshire-fog (*Holcus lanatus*) Honeysuckle (*Lonicera periclymenum*) Daffodil (*Narcissus sp*) Meadow-grass (*Poa sp*) Creeping buttercup (*Ranunculus repens*) Gooseberry (*Ribes uva-crispa*) Bramble (*Rubus fruticosus* agg.) Wood dock (*Rumex sanguineus*) Greater stitchwort (*Stellaria holostea*) Common nettle (*Urtica dioica*)		
H2	Sycamore Hawthorn Garden privet (*Ligustrum ovalifolium*) Blackthorn (*Prunus spinosa*) Elder (*Sambucus nigra*)	Garlic mustard Cow parsley Lord's-and-ladies Male fern (*Dryopteris filix-mas*) Cleavers Herb Robert (*Geranium robertianum*) Wood avens Ground-ivy Ivy Hogweed (*Heracleum sphondylium*) Yorkshire-fog Creeping buttercup (*Ranunculus repens*) Bramble Common sorrel (*Rumex acetosa*) Broad-leaved dock (*Rumex obtusifolius*) Red campion (*Silene dioica*) Common nettle Bush vetch (*Vicia sepium*)	Yes	Intact, moderately species-rich hedgerow. Relatively tall, ranging from 2.5 to 4 metres in average height and 1.5 to 1.75 metres in average width. Multiple gaps and thin sections were noted.

Key (refer to habitat map)	Woody species	Ground flora	BAP status (80% native woody species)	General description
H3	Field maple (*Acer campestris*) Sycamore Hazel (*Corylus avellana*) Hawthorn Blackthorn (*Prunus spinosa*) Rose (*Rosa sp*)	Yarrow (*Achillea millefolium*) Cow parsley Lords-and-ladies Cleavers Wood avens Ground-ivy Yorkshire-fog White dead-nettle (*Lamium album*) Forget-me-not (*Myosotis sp*) Daffodil Meadow-grass Bramble Wood dock Greater stitchwort Dandelion (*Taraxacum* agg.) Common nettle Bush vetch	Yes	Recently planted native hedgerow with tree guards still in place, between 1.5 and 2 metres in average height, and 1.5 to 2 metres in average width.
H4	Hawthorn Holly Elder	Garlic mustard Cow parsley Lord's-and-ladies Cock's-foot (*Dactylis glomerata*) Cleavers Wood avens White dead-nettle Honeysuckle Bramble Broad-leaved dock (*Rumex obtusifolius*) Wood dock Common nettle	Yes	Intact, species-poor native hedgerow. Relatively tall, ranging from 3 to 5.5 metres in average height and 3 to 3.5 metres in average width. Multiple gaps and thin sections were noted.
H5	Field maple Hazel Hawthorn Blackthorn	Yarrow Common bent Cow parsley False oat-grass (*Arrhenatherum elatius*) Field bindweed (*Convolvulus arvensis*) Cock's-foot Cleavers Yorkshire-fog Hogweed Ribwort plantain (*Plantago lanceolata*) Creeping buttercup (*Ranunculus repens*) Bramble Common nettle	Yes	Recently planted native hedgerow with tree guards still in place, between 1.5 and 2 metres in average height, and 1.5 to 2 metres in average width.

Key (refer to habitat map)	Woody species	Ground flora	BAP status (80% native woody species)	General description
H6	Sycamore (numerous standard trees) Horse-chestnut (*Aesculus hippocastanum*) (standard trees) Hazel Hawthorn Beech (*Fagus sylvatica*) (numerous standard trees) Ash (standard trees which appeared to be in a healthy condition) Holly Pedunculate oak (standard trees) Garden privet Elder	Yarrow Ground-elder (*Aegopodium podagraria*) Common bent Garlic mustard Cow parsley Lord's-and-ladies Red fescue (*Festuca rubra*) Lesser celandine (*Ficaria verna*) Cleavers Herb Robert Wood avens Ground-ivy Ivy Hogweed Yorkshire-fog Bluebell (*Hyacinthoides non-scripta*) White dead-nettle Daffodil Meadow buttercup (*Ranunculus acris*) Bramble Wood dock Red campion (*Silene dioica*) Hedge woundwort (*Stachys sylvatica*) Greater stitchwort Common nettle Germander speedwell (*Veronica chamaedrys*)	Yes	Intact, moderately species-rich hedgerow with numerous standard trees ranging from small to very large in size class. Shrub layer growth was sparse with numerous gaps, between 1.5 and 2 metres in average height, and 1.5 to 2 metres in average width.

h2b Non-native and ornamental hedgerow; 16, 81, 116, 501, 516, 523, 524 (Target note 6, H7)

A small section of species-poor non-native hedgerow was recorded along part of the western site boundary (TN6, H7). This hedgerow was largely dominated by the non-native woody shrub species garden privet, which occurred together with lesser amounts of cherry laurel, forsythia (*Forsythia sp*), barberry (*Berberis sp*), hawthorn and elder. The hedgerow field layer vegetation included bramble, ivy (*Hedera helix*), cleavers, hogweed, common nettle, broad-leaved dock, red dead-nettle (*Lamium purpureum*) and forget-me-not (*Myosotis sp*). This non-native hedgerow was approximately 1.8 metres in average height and 1.2 metres in average width, it appeared to be regularly managed via trimming and clipping.

w1g Other broadleaved woodland; 33, 203, 501, 510, 521, 522 (Target note 7)

There was a single row of 33 beech (*Fagus sylvatica*) trees (TN7) in the far north-western corner of the site, directly behind the buildings and structures, which ranged from small to very large in size class, although medium was the most frequent size class recorded. It was assumed that these trees had been purposely planted to form a landscaping feature and/or natural screen on the north-western boundary line. This line of trees habitat feature essentially comprised only the row of mature beech trees, there was no understorey layer and the field and ground layer largely comprised only bare ground / leaf litter cover.

Scattered rural trees (Target note 8)

There were a low number of scattered trees present in the south of the site which included two isolated small specimens of hawthorn and one medium specimen of ash.

u1b5 Buildings (Target note 9)

There was a small timber storage shed, a small timber horse stables block, and two steel storage containers (shipping type containers) in the north-western corner of the site (TN9).

Scattered debris (Target note 10)

Various items of scattered debris were recorded both around the buildings / structures in the north-western corner of the site and alongside the south-eastern boundary (TN10). This scattered debris included pieces of stone, concrete blocks, paving slabs, bricks, pieces of wood, fencing panels, brushwood, logs, broken timber gates, plastic sheets and containers, old agricultural equipment, and other items.

Figure 1: UKHab survey plan

APPENDIX V: Site photographs (August 2023)

Photo 1: view (south-westward) across the southern horse-grazed paddock on the site showing an open area of g3c Other neutral grassland habitat

Photo 2: view (northwards) across the northern horse-grazed paddock on the site showing an open area of g3c Other neutral grassland habitat

Photo 3: view of native hedgerow H5 (a recently planted example with tree guards still fitted) and adjacent margin of rough g3c5 Arrhenatherum neutral grassland, both enclosed within a protective fence line.

Photo 4: view showing a section of g3c5 Arrhenatherum neutral grassland with stands of dominant common nettle (*Urtica dioica*) alongside the buildings and structures in the north-western corner of the site.

Photo 5: view showing a minor stand of bramble (*Rubus fruticosus* agg.) dominated scrub in the east-central area of the site.

Photo 6: view showing native hedgerow H1 with two standard ash (*Fraxinus excelsior*) trees on the far southern boundary of the site.

Photo 7: view showing native hedgerow H2 along the south-western boundary of the site.

Photo 8: view showing native hedgerow H3 (a recently planted example with tree guards still fitted) along part of the south-eastern boundary of the site.

Photo 9: view showing native hedgerow H4 in the west-central region of the site.

Photo 10: view showing native hedgerow H6 with numerous mature standard trees along the north-eastern boundary of the site.

Photo 11: view showing non-native hedgerow H7 along part of the western boundary of the site.

Photo 12: views showing the line of mature beech (*Fagus sylvatica*) trees in the north-western corner of the site.

Photo 13: scattered rural trees recorded in the south of the site, including two isolated small specimens of hawthorn and one medium specimen of ash.

Photo 14: view showing the timber storage shed building in the north-western corner of the site.

Photo 15: view showing the timber stable block building in the north-western corner of the site.

Photo 16: view showing the two steel storage containers in the north-western corner of the site.

Photo 17: view showing various items of scattered debris alongside the buildings / structures in the north-west corner of the site.

Photo 18: view showing various items of scattered debris alongside the south-eastern boundary of the site, including a pile of large logs (background right).

APPENDIX VI: Baseline habitat condition assessments

Methodology

A baseline condition assessment of the habitats on site was undertaken on 23rd August 2023 by senior ecologist Andrew Heideman. This fieldwork involved a detailed assessment of each habitat type present on site using the relevant statutory habitat condition assessment sheets, included as Technical Annex 1 of the Statutory Biodiversity Metric (Department for Environment, Food & Rural Affairs, 2023). The specific methods detailed on each separate condition assessment sheet were followed and an appropriate score and any relevant supporting notes were recorded against each individual criteria on the sheets. Refer back to appendices IV and V for the full baseline habitat descriptions and photographs (respectively).

Results - completed habitat condition assessment sheets

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Other neutral grassland			
Site name and location	Land to the west of Beechlands Road, Medstead, Alton, Hampshire, GU34 5EQ.	**On-site or off-site**	On-site
Limitations (if applicable)	No significant limitations, the assessment was undertaken within the optimal summer period for botanical survey work. Weather conditions during the assessment were fair and dry.	**Survey reference (if relating to a wider survey)**	N/A
Grid reference	Approximate central Grid Ref: SU 66726 35744	**Habitat parcel reference**	N/A
Habitat Description			
Two adjoining paddocks of horse-grazed, moderately species-rich neutral grassland, together with some minor sections of rougher sward neutral grassland and stands of tall ruderals (refer back to appendix IV for the full habitat descriptions).			

Condition Assessment Criteria		**Criterion passed (Yes or No)**	**Notes (such as justification)**
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely	Yes	The grassland habitat on site is a good example of a lowland, moderately species-

	matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**		rich, semi-improved neutral grassland. It fits well with the UKHab description for 'g3c Other neutral grassland' and generally meets the four defining criteria for g3c.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes	Sward height is variable across the site. The majority is relatively well-grazed by horses with an average height of between 4.5 and 5.5 centimetres, although there were also patches and sections of taller and rougher sward of between 15 and 24 centimetres in average height.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[1].	Yes	There was a limited amount of bare ground cover noted across the grassland habitat area on site, amounting to between 1 and 2%. This was mostly attributed to poaching of the ground by the horses being kept in the paddocks, with some localised areas showing a greater extent of ground poaching.
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Yes	No bracken was recorded on the site, and scrub growth was minimal and mostly confined to the peripheries of the site.
E	Combined cover of species indicative of sub-optimal condition[2] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species[3] (as	Yes	White clover was relatively abundant within the sward, and common nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*) and cow parsley (*Anthriscus sylvestris*) were locally-frequent.

	listed on Schedule 9 of WCA[4]) are present, this criterion is automatically failed.		However, the combined cover of negative indicator species across the grassland habitat on site was judged to be less than 5%. No thistles (*Cirsium spp*), creeping buttercup (*Ranunculus repens*) or curled dock (*Rumex crispus*) was recorded.
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	Yes	Two representative one $metre^2$ quadrat samples of the grassland vegetation on site were recorded (one in the northern paddock and one in the southern paddock) and each one comprised more than 10 vascular plant species. Acceptable species recorded within the quadrat samples included: *Agrostis capillaris, Festuca rubra, Lolium perenne, Holcus lanatus, Anthoxanthum odoratum, Cynosurus cristatus, Plantago lanceolata, Achillea millefolium, Trifolium pratense, Bellis perennis, Convolvulus arvensis, Rumex acetosa, Centaurea nigra, Hypocharis radicata, Odontites vernus, Ranunculus acris* and *Cerastium fontanum.*
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		**Yes**	
Number of criteria passed		**6**	

Condition Assessment Result		**Condition Assessment Score**	**Score Achieved ×/✓**
Acid Grassland Types (Result out of 5 criteria)			
Passes 5 criteria		Good (3)	
Passes 3 or 4 criteria		Moderate (2)	

Passes 2 or fewer criteria	Poor (1)		
Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)	✓	
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		
Suggested enhancement interventions to improve condition score			
N/A			
Notes			
Footnote 1 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover. **Footnote 2** - Species indicative of sub-optimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*. There may be additional relevant species local to the region and or site. **Footnote 3** – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement. **Footnote 4** – Wildlife and Countryside Act 1981 (as amended).			

Condition sheet: HEDGEROW Habitat Types			
Habitat Type			
Native hedgerow **Native hedgerow with trees**			
Habitat Description			
Native hedgerows – H2, H3, H4 and H5 Native hedgerows with trees - H1 and H6 (refer back to appendix IV for the full habitat descriptions for each hedgerow)			
See the Biodiversity Metric 4.0 User Guide Section 9. Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.			
Site name and location	Land to the west of Beechlands Road, Medstead, Alton, Hampshire, GU34 5EQ.	**On-site or off-site**	On-site

Limitations (if applicable)	No significant limitations, the assessment was undertaken within the optimal summer period for botanical survey work. Weather conditions during the assessment were fair and dry.	**Survey reference (if relating to a wider survey)**	N/A
Grid reference	Approximate central Grid Ref: SU 66726 35744	**Habitat parcel reference**	N/A

Condition Assessment Criteria

A series of ten attributes, representing key physical characteristics are used for this assessment. This assessment is based on the Hedgerow Survey Handbook[1] and Favourable Conservation Status document[2]. For further clarification please refer to the Hedgerow Survey Handbook.
Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.

Hedgerow favourable condition attributes

Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Description**	**Criterion passed (Yes or No)**	**Notes (such as justification)**
Core groups - applicable to all hedgerow types					
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - Yes	All native hedgerows on site exceeding 1.5 metres in average height across their total lengths.
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - Yes	All native hedgerows on site exceeding 1.5 metres in average width across their total lengths.

			indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).		
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - No	Hedgerows H1 to H5 met this criterion and had dense vertical shrubby growth from near ground level. Hedgerow H6 had numerous significant gaps in the shrub layer and mostly sparse and 'leggy' shrub growth. It was therefore considered to fail this criterion.
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - No	Hedgerows H1 to H5 met this criterion and had mostly dense horizontal shrubby growth, with any gaps comprising less than 10% of the total length.

					Hedgerow H6 had numerous significant gaps in its horizontal shrub layer exceeding 10% of the total length and therefore it failed this criterion.
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	H1 - No H2 - No H3 - No H4 - No H5 - Yes H6 - No	Only hedgerow H5 was considered to meet this criterion as it had a buffer margin of rough grassland which was approximately 1 metre width and protected from grazing and poaching damage by a fence line. All other native hedgerows on the site had no protected buffer margins and were heavily grazed by horses, including

					some poaching damage, up to their edges.
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - Yes	None of the native hedgerows on site exhibited any signs of significant soil nutrient enrichment.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - Yes	All of the native hedgerows on the site meet this criterion, although a number of non-native woody species were recorded within these hedgerows, including sycamore (*Acer pseudoplatanus*), horse-chestnut (*Aesculus hippocastanum*), garden privet (*Ligustrum ovalifolium*) and cherry laurel (*Prunus lauroceras us*).

D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).	H1 - Yes H2 - Yes H3 - Yes H4 - Yes H5 - Yes H6 - Yes	All of the native hedgerows on the site meet this criterion and did not exhibit any obvious signs of any significant damage.
Additional group - applicable to hedgerows with trees only					
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient[8]), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	H1 - No H6 - Yes	Hedgerow H6 comprised numerous standard trees along its entire length, including the full range of size classes (small to very large). Hedgerow H1 did not meet this criterion as it only included two medium sized specimens of ash along its entire length.
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	H1 - Yes H6 - Yes	Both hedgerow H1 and H6 were considered to meet this criterion

		valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.			as all standard trees present in these hedgerows were assessed to be in a healthy and undamaged condition. The only exception to this was some very minor signs of likely ash dieback disease (*Hymenoscyphus fraxineus*) on one of the ash standards in hedgerow H1.

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The scores for each are set out in the tables below.

Condition categories for hedgerows with trees

Category	**Category Requirements**	**Metric score**
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; **AND** Does not fail both attributes in more than one functional group (e.g.,	2

	fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	
Poor	Fails a total of more than 5 attributes; **OR** Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).	1
Score achieved:		**H1 - 3 Good** **H2 - 3 Good** **H3 - 3 Good** **H4 - 3 Good** **H5 - 3 Good** **H6 - 3 Good**

Suggested enhancement interventions to improve condition score

N/A

Footnotes

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook. A standard procedure for local surveys in the UK.* [online] Available on: layout (hedgelink.org.uk)

Footnote 2 – STALEY, J.T. ET AL. (2020) *Definition of Favourable Conservation Status for Hedgerows.* [online] Available on: Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)

Footnote 3 – Wildlife and Countryside Act 1981 (as amended).

Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain.* Species Status 7: 1-116. [online] Available on: The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub

Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?* [online] Available on: Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora.* [online] Available on:

Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk)
Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on: Home » NNSS (nonnativespecies.org)
Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Condition Sheet: LINE OF TREES Habitat Type			
Habitat Types			
Line of trees			
Habitat Description			
A single row of 33 mostly mature beech (*Fagus sylvatica*) trees in the far north-western corner of the site (refer back to appendix IV for a full description of the habitat).			
See the Statutory Biodiversity Metric User Guide. This assessment is based on the Hedgerow Survey Handbook[1]. For further clarifications please refer to the Handbook. Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.			
Site name and location	Land to the west of Beechlands Road, Medstead, Alton, Hampshire, GU34 5EQ.	**On-site or off-site**	On-site
Limitations (if applicable)	No significant limitations, the assessment was undertaken within the optimal summer period for botanical survey work. Weather conditions during the assessment were fair and dry.	**Survey reference (if relating to a wider survey)**	N/A
Grid reference	Approximate central Grid Ref: SU 66726 35744	**Habitat parcel reference**	N/A
Condition Assessment Criteria		**Criterion passed (Yes or No)**	**Notes (such as justification)**
A	At least 70% of trees are native species.	Yes	All of the trees were mature specimens of native beech (*Fagus sylvatica*).
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Yes	Mature tree canopy and connected along the full length of the tree line.

C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Yes	A minor amount of standing dead wood, including dead tree stems and limbs, was noted.
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice[2].	No	Does not meet this criterion due to the presence of adjacent buildings / structures to the south of the tree line and a residential garden adjacent to the north.
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Yes	All specimens within this tree line were assessed to be in a good, healthy and undamaged condition.
		Number of criteria passed	**4**

Condition Assessment Result (out of 5 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	✓
Passes 2 or fewer criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Footnotes

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 2 – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and:
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Condition Sheet: INDIVIDUAL TREES Habitat Type

Habitat Type(s)

Individual trees – Rural trees

Habitat Description

A low number of scattered trees present in the south of the site which included two isolated small specimens of hawthorn (*Crataegus monogyna*) and one medium specimen of ash (*Fraxinus excelsior*).

Individual trees (description applied to the urban or rural environment):
Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.

Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):
Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.

Site name and location	Land to the west of Beechlands Road, Medstead, Alton, Hampshire, GU34 5EQ.	**On-site or off-site**	On-site
Limitations (if applicable)	No significant limitations, the assessment was undertaken within the optimal summer period for botanical survey work. Weather conditions during the assessment were fair and dry.	**Survey reference (if relating to a wider survey)**	N/A
Grid reference	Approximate central Grid Ref: SU 66726 35744	**Habitat parcel reference**	N/A
Condition Assessment Criteria		**Criterion passed (Yes or No)**	**Notes (such as justification)**
A	The tree is a native species (or at least 70% within the block are native species).	Yes	Each of the scattered trees recorded on site are UK native species.
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Yes	All of the scattered trees assessed on site meet this criterion and have healthy, continuous canopies.
C	The tree is mature (or more than 50% within the block are mature).	No	None of the scattered trees on site were mature specimens.
D	There is little or no evidence of an adverse impact on tree health by human activities (such as	Yes	All of the assessed trees pass this criterion. The only exception was some very minor signs of

	vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.		ash dieback disease (*Hymenoscyphus fraxineus*) on the medium specimen of ash.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Yes	All of the assessed trees did support some natural ecological niche features including loose / peeling bark and small crevices.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes	All of the assessed trees pass this criterion and supported healthy spreading canopies oversailing the vegetation beneath.
Number of criteria passed		**All scattered trees on the site pass 5 of the criteria.**	

Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 5 or 6 criteria	Good (3)	✓
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.		

Suggested enhancement interventions to improve condition score
N/A

Footnotes
Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

APPENDIX VII: Hedgerow regulations assessment

Methodology

The initial site appraisals undertaken in 2018 and 2020 identified that hedgerows H1, H2, H4 and H6 on site could potentially qualify as 'Important' under the Hedgerow Regulations 1997. A follow-up hedgerow assessment was therefore undertaken by senior ecologist Andrew Heideman on 26th April 2021 to determine whether any of the hedgerows on site may qualify as 'Important' under the regulations. The hedgerows were assessed in relation to the various criteria used to classify 'Important' hedgerows, as stated within the Hedgerow Regulations 1997. A summary of qualifying hedgerows and additional features is presented in table 1 below.

Table 1. Hedgerows qualifying as 'Important' under the Hedgerow Regulations 1997 and a summary of additional features

Summary of 'Important' hedgerows
Hedgerows that are at least 20 metres in length, have existed for 30 years or more, and either support species protected under the Wildlife and Countryside Act 1981, or meet the following criteria: Hedgerow must include: (a) at least 7 woody species; (b) at least 6 woody species and has associated with it at least 3 additional features. (c) at least 6 woody species, including one of the following - black-poplar tree *(Populus nigra* ssp *betulifolia)*; large-leaved lime *(Tilia platyphyllos)*; small-leaved lime *(Tilia cordata)*; wild service-tree *(Sorbus torminalis)*; or (d) at least 5 woody species and has associated with it at least 4 additional features. Or hedgerow must: be adjacent to a bridleway or footpath, a road used as a public path, or a byway open to all traffic, and include at least 4 woody species, and at least 2 additional features.
Additional features
• a bank or wall which supports the hedgerow along at least one half of its length. • gaps which in aggregate do not exceed 10% of the length of the hedgerow. • where the length of the hedgerow does not exceed 50 metres, at least one standard tree. • where the length of the hedgerow exceeds 50 metres but does not exceed 100 metres, at least 2 standard trees. • where the length of the hedgerow exceeds 100 metres, such number of standard trees (within any part of its length) as would when averaged over its total length amount to at least one for each 50 metres. • at least 3 woodland (ground flora) species present within one metre, in any direction, of the outermost edges of the hedgerow. • a ditch along at least one half of the length of the hedgerow.

- hedgerow connections scoring 4 points or more (a connection with another hedgerow scores one point and a connection with a pond or a woodland in which the majority of trees are broad-leaved trees scores 2 points; and a hedgerow is connected with something not only if it meets it but also if it has a point within 10 metres of it and would meet it if the line of the hedgerow continued).
- a parallel hedge within 15 metres of the hedgerow.
- The hedgerow is adjacent to a bridleway or public footpath, or a byway open to all traffic.

For each individual hedgerow assessment, the length of the hedgerow was measured and the number of woody species and any additional features recorded. For woody species counts the following guidelines were applied (as stated within the Hedgerow Regulations 1997):

(a) where the length of the hedgerow does not exceed 30 metres, count the number of woody species present in the hedgerow.
(b) where the length of the hedgerow exceeds 30 metres, but does not exceed 100 metres, count the number of woody species present in the central stretch of 30 metres.
(c) where the length of the hedgerow exceeds 100 metres, but does not exceed 200 metres, count the number of woody species present in the central stretch of 30 metres within each half of the hedgerow and divide the aggregate by two.
(d) where the length of the hedgerow exceeds 200 metres, count the number of woody species present in the central stretch of 30 metres within each third of the hedgerow and divide the aggregate by three.

Results

Table 2: Results of the hedgerow regulations assessment

Hedge number	Hedge length (metres)	Woody species recorded in hedgerow	Average/total number of woody species recorded in surveyed sections	Hedgerow adjacent to a bridleway or footpath, a road used as a public path, or a byway open to all traffic	Additional features	Total number of additional features	Qualifies as 'Important' under the Hedgerow Regulations 1997 (Yes/No)
H1	85	Ash (*Fraxinus excelsior*) Elder (*Sambucus nigra*) Hawthorn (*Crataegus monogyna*) Hazel (*Corylus avellana*) Holly (*Ilex aquifolium*) Hornbeam (*Carpinus betulus*)	6	Yes	• Gaps present comprise less than 10% of the hedgerow length. • At least one standard tree per 50 metres of hedgerow. • A parallel hedgerow present within 15 metres. • At least 3 woodland species present within one metre of the outermost edges of the hedgerow (*Arum maculatum, Carex sylvatica, Geum urbanum*)	4	**Yes**

Hedge number	Hedge length (metres)	Woody species recorded in hedgerow	Average/total number of woody species recorded in surveyed sections	Hedgerow adjacent to a bridleway or footpath, a road used as a public path, or a byway open to all traffic	Additional features	Total number of additional features	Qualifies as 'Important' under the Hedgerow Regulations 1997 (Yes/No)
H2	146	Blackthorn (*Prunus spinosa*) Elder Hawthorn	3	Yes	• Gaps present comprise less than 10% of the hedgerow length. • At least 3 woodland species present within one metre of the outermost edges of the hedgerow (*Arum maculatum, Geranium robertianum, Geum urbanum*)	2	**No (Borderline)**
H4	48	Blackthorn Elder Hawthorn Holly	4	No	No additional features present.	0	**No**
H6	176	Ash Beech (*Fagus sylvatica*) Elder Field rose (*Rosa arvensis*) Hawthorn Hazel Holly Pedunculate oak (*Quercus robur*)	6	No	• At least one standard tree per 50 metres of hedgerow. • At least 3 woodland species present within one metre of the outermost edges of the hedgerow (*Arum maculatum, Geranium robertianum, Geum urbanum, Hyacinthoides non-scripta*)	2	**No (Borderline)**

APPENDIX VIII: Preliminary bat roost assessment – buildings and structures

Methodology

The potential for the buildings and structures on site to support roosting bats was assessed by licensed ecologist Ben Willers (Level 2 license ref: 2021-50896-CLS-CLS) on 19th March 2024 in accordance with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th ed* (Collins, 2023).

Bats may roost in various places within buildings e.g. in cracks, crevices, brickwork, under tiles and within timber beam joints. They will often access roosts at key places such as the gable end, soffits, barge-boards, ridge tiles, under broken/lifted tiles, between double lintels, around window frames, through open joints in brickwork, and through open doors or other building entrances. The presence of roosting bats can be identified by signs such as accumulations of moth or butterfly wings, urine staining, bat droppings or bats themselves. The absence of these signs cannot, however, be treated as conclusive evidence that bats are not using a building. An assessment of the potential for the buildings on site to support roosting bats was carried out using the following scale presented in table 1 below:

Table 1: Classifying the bat roosting potential of buildings

Confirmed Roost	Evidence of bat occupation found.
High roosting potential	Buildings/structures with significant roosting potential, because they contain a large number of suitable features, and/or the features present appear to be optimal and could be used by larger numbers of bats for longer time periods.
Moderate roosting potential	One of more features with obvious potential to support roosting bats but unlikely to support a bat roost of high conservation status, such as a maternity or hibernation roost site.
Low roosting potential	One or more potential bat roosting features that could be used by individual bats opportunistically at any time of the year, although these features would not be suitable for use on a regular basis or by larger numbers of bats.
Negligible roosting potential	No obvious features with potential to support roosting bats, however an element of uncertainty remains as bats can sometimes use small and apparently unsuitable features.
No roosting potential	Total absence of any features likely to be used by roosting bats at any time of the year.

Limitations

For reasons of health and safety it was not possible to undertake a thorough internal inspection of the storage shed and horse stables due to the presence of likely asbestos and high concentrations of airborne dust inside these structures.

Results

The habitat map provided in appendix IV indicates the locations of the surveyed buildings/structures within the fenced area in the north-west corner of the site (TN9), photographs of the surveyed buildings/structures are included in appendix V. Details of the surveyed buildings/structures are provided below:

Storage shed

The following was noted about the storage shed:

- A small, single-storey, timber framed structure with timber cladding. The external walls and cladding are in a good/sealed condition throughout. The building appears to be used for storing hay and some horse equipment.
- The building has a single open entranceway.
- The building has a pitched roof covered with corrugated sheets (material not known) and a metal ridge cap. The roof is in good condition throughout with no gaps or damage noted.
- The internal space is small in size, approximately 8 metre^2, and is very open with wooden framework, cladding and roofing all exposed. Scattered cobwebs were noted on the walls and underside of the roofing.

Preliminary roost assessment result for the storage shed:

- No evidence of roosting bats was identified.
- The open entryway to the storage shed provided a significant access point, however the internal space appeared to be very open and exposed with no obvious gaps, cracks or crevices that could provide a suitable sheltered roosting location for bats (although it was not possible to fully inspect the interior of this building). This building was considered to hold **Low** potential to support roosting bats.

Horse stables

The following was noted about the horse stables:

- A single-storey, timber framed structure with timber cladding. The external walls and cladding are in a relatively good/sealed condition throughout. The building has three compartments for keeping horses and one compartment for storage.
- The building has wooden ventilation windows and wooden doors. The ventilation windows have large gaps to provide air circulation within the stables. Two of the stable doors were partially open during the survey.
- The building has a pitched roof covered with corrugated sheets (thought to be asbestos containing material) and a metal ridge cap. The roof is generally in good condition throughout with no gaps or damage noted.

- The internal compartments of the building are very open with wooden framework, cladding and roofing all exposed. Scattered cobwebs were noted on the walls and underside of the roofing.

Preliminary roost assessment result for the horse stables:

- No evidence of roosting bats was identified.
- The ventilation windows and partly open stable doors provided significant access points to the interior of the building. However, the internal spaces appeared to be very open and exposed with no obvious gaps, cracks or crevices that could provide a suitable sheltered roosting location for bats (although it was not possible to fully inspect the interior of this building). This building was considered to hold **Low** potential to support roosting bats.

Storage containers

The following was noted about the storage containers:

- One of the storage containers consisted of a metal shipping container that was completely sealed at the time of the survey.
- The other storage container appeared to have formerly been part of a removal type truck or other vehicle. The rear shutter of this container was partly open and various items and equipment was visible inside.

Preliminary roost assessment result for the storage containers:

- No evidence of roosting bats was identified.
- The partly open shutter on one of the storage containers provided a significant access point to the interior of the structure, however the internal space comprised a simple metal-sided compartment with no gaps, cracks or crevices identified that could provide a suitable sheltered roosting location for bats.
- The exteriors of both of the storage container units were fully intact and sealed with no potentially suitable bat roosting features identified.
- Both of the storage containers were considered to hold **negligible** potential to support roosting bats.

APPENDIX IX: Ground-level tree assessment for roosting bats

Methodology

A ground-level tree assessment for roosting bats was undertaken on site by licenced ecologist Ben Willers (Natural England Level 2 license ref: 2021-50896-CLS-CLS) on 19th March 2024 following the BCT guidelines (Collins, 2023). This assessment was conducted from ground-level and the trees were surveyed for any evidence of roosting bats, such as urine staining or droppings, and any features which could potentially be used as roosting sites by bats, such as cracks, crevices, loose bark or hollows.

Results

A full summary of the findings of the ground-level tree assessment for roosting bats undertaken on site is presented in table 1 below. The locations of the identified trees with bat roosting potential are depicted on the plan included as Figure 1 below.

Table 1: Results of the ground-level tree assessment for roosting bats.

Tree reference number	**Tree description**	• **PRF (potential roosting feature)** • **PRF-I (PRF is only suitable for individual bats or small numbers of bats)** • **PRF-M (PRF is suitable for multiple bats)** • **FAR (further assessment required)** • **No PRF (no potential roosting features)**	**Direction of PRF**
H1 – T1 (Approximate NGR: SU 66882 35639)	Ash (*Fraxinus excelsior*), alive, medium size class, c.10 metres in height. Located in hedgerow H1.	**PRF-I** Dense ivy (*Hedera helix*) with thick stems is present on the trunk.	All directions.
H1 – T2 (Approximate NGR: SU 66853 35612)	Ash, alive, medium size class, c.10 metres in height. Located in hedgerow H1.	**PRF-I** Dense ivy with thick stems is present on one of the tree stems.	All directions.
H6 – T1 (Approximate NGR: SU 66770 35757)	Beech (*Fagus sylvatica*), alive, large size class, c.15 metres in height. Located in hedgerow H6.	**PRF-M** Butt rot leading to cavity within the stem.	South.
H6 – T2 (Approximate NGR:	Beech, alive, large size class, c.15 metres in height. Located in hedgerow H6.	**PRF-M** A wound is present at the base of the stem. The wound leads to a cavity.	South-west.

SU SU 66768 35760)			
H6 – T3 (Approximate NGR: SU SU 66766 35764)	Pedunculate oak (*Quercus robur*), alive, large size class, c.10 metres in height. Located in hedgerow H6.	**PRF-I** Wound at the base of the tree.	South-west.
H6 – T4 (Approximate NGR: SU 66708 35856)	Sycamore (*Acer pseudoplatanus*), alive, medium size class, c.10 metres in height. Located in hedgerow H6.	**PRF-I** Wound leading to cavity.	North-west.
H6 – T5 (Approximate NGR: SU 66705 35862)	Sycamore, alive, medium size class, c.15 metres in height. Located in hedgerow H6.	**FAR** Dense ivy is present on the trunk. There is potential for PRFs to be obscured by the ivy.	All directions.
H6 – T6 (Approximate NGR: SU 66699 35858)	Sycamore, alive, medium size class, c.15 metres in height. Located in hedgerow H6.	**FAR** Dense ivy is present on the trunk. There is potential for PRFs to be obscured by the ivy.	All directions.
H6 – T7 (Approximate NGR: SU 66694 35876)	Sycamore, alive, medium size class, c.15 metres in height. Located in hedgerow H6.	**FAR** Dense ivy is present on the trunk. There is potential for PRFs to be obscured by the ivy.	All directions.
H6 – T8 (Approximate NGR: SU 66691 35883)	Sycamore, alive, large size class, c.15 metres in height. Located in hedgerow H6.	**FAR** Dense ivy is present on the trunk. There is potential for PRFs to be obscured by the ivy.	All directions.
H6 – T9 (Approximate NGR: SU 66684 35894)	Horse-chestnut (*Aesculus hippocastanum*), alive, very large size class, c.15 metres in height. Located in hedgerow H6.	**PRF-I** Tear-out.	South-west.

Figure 1: Locations of surveyed trees with bat roosting potential

APPENDIX X: Bat activity surveys

Methodology

Transect surveys

Monthly bat activity transect surveys were undertaken on site between April and October 2018 (inclusive) and between April and October 2021 (inclusive) in accordance with the 3rd edition guidelines established by the BCT (Collins, 2016). These transect surveys were undertaken by ecologists Louisa Jones (Natural England Level 1 licence ref: 2016-22038-CLS-CLS), Jenny Sutch (Natural England Level 2 licence ref: 2015-12971-CLS-CLS), Sam Williams, William Davis, Matt Tennent, Pete Duffy, Joe Marcroft, Colin Sutch, Lisa Sharp, Jonty Denton, Holly Denton, and Stuart Woodley.

A single transect route was established on the site, which covered the development site comprehensively and incorporated key areas of habitat likely to be important for foraging and/or commuting bats. The transect route was walked by a pair of surveyors during each survey visit and any bat activity recorded. The route was walked up to two times at a steady speed during any one survey visit and a number of listening station stops were also included along the route. Surveyors paused at each listening stop for a duration of five minutes to record any bat activity. The site transect route is illustrated in figure 1 below. The dusk transect surveys began at or just before sunset and continued for approximately two hours afterwards in order to record any bats commuting from roost sites to foraging grounds as well as general foraging activity. The pre-dawn transect survey began two hours before sunrise and continued up to sunrise in order to record any foraging activity and bats returning to roosting sites. Bat activity was recorded by the surveyors using a combination of Echometer 3, Echometer touch and heterodyne (Magenta MKII) bat detectors. Visual observations of flight lines and behaviour were recorded onto a plan of the site. Notes on times, species and behaviour were also recorded to aid identification to species level. The bat detector recordings were analysed using Anabat Insight and Kaleidoscope Pro software programmes to confirm where possible the bat species recorded during the survey.

Static monitoring

Two static monitoring devices were deployed on site on a monthly basis between April and October 2018 (inclusive) and between April and October 2021 (inclusive) in order to record any bat activity for periods of at least five consecutive nights on each occasion, in accordance with the 3rd edition BCT guidelines (Collins, 2016). The recording devices used on site included Song Meter 2, Song Meter 4 and Anabat express. The static monitoring devices were deployed at the same strategically selected locations on the site on each occasion. All analysis of the static detector recordings was undertaken using Anabat Insight and Kaleidoscope Pro software programmes to confirm as far as possible the bat species recorded.

The static bat detectors were deployed at the following locations, as depicted in figure 1 below:

- Static monitor 1 (SU 6668 3588): positioned on a tree at the north-eastern corner of the site.
- Static monitor 2 (SU 6684 3561): positioned on a hedgerow tree at the south-western corner of the site.

Figure 1: Bat activity transect route, stopping points and static detector locations 2018 and 2021

Limitations and Constraints

No bat passes were recorded on static 2 during April 2018 despite this detector functioning as normal. A review of online historical weather data for the local area during the period in which the detector was deployed does not show any significantly poor weather conditions that would affect bat activity. It is therefore considered that the absence of bat records for static detector 2 in April 2018 is coincidental.

Static detectors 1 and 2 both malfunctioned and failed to record any data in April, May, June and July 2021.

Despite these constraints, it is considered that a sufficient amount of data has been gathered during the static detector monitoring work in 2018 and 2021 to enable an accurate evaluation of the site's importance for foraging and commuting bats.

Assessment of foraging and commuting habitat importance

A methodology for the ecological impact assessment of bats has been developed by Wray *et al.* (2010). This uses a number of factors such as the species and number of bats involved, presence of roosts nearby and characteristics for foraging and commuting habitat to produce a score indicating level of importance. This scoring system has been applied to the foraging area and commuting routes for the site to assess their level of importance. The value of the habitat can be assessed for each of the bat species recorded during the survey, but the highest score

(normally obtained for the rarest species) is used when defining the value of the habitat. The scores relate to the following levels of importance:

- 0–10 = not valuable
- 11–20 = locally important
- 21-30 = important at county level
- 31-40 = important at regional level
- 41-50 = nationally important

Results

Transect surveys 2018

Summary

Low numbers of common pipistrelle (*Pipistrellus pipistrellus*), Nathusius pipistrelle (*Pipistrellus nathusii*), brown long-eared bat (*Plecotus auritus*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*) and myotis bat species (*Myotis sp*) were recorded on site during the activity surveys. The majority of the recorded foraging and commuting activity on site was over the boundary hedgerows, with occasional commuting passes across the site and very little foraging activity directly over the paddocks / pasture. A full monthly breakdown of the survey results is provided below.

25th April 2018 - Dusk transect

Common pipistrelles were recorded on five occasions between 20:40 and 21:32, with a maximum of two individuals recorded on one occasion. These bats were mostly recorded foraging over the boundary hedgerows within the south-eastern paddock.

	BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Land off Beechlands Road		**SURVEYORS:**	LJ & JS	**DATE:**	25.04.2018
TEMP AT START:	9°c		**SUNSET:**	20:15	**START TIME:**	20:15
TEMP AT END:	7°c		**CLOUD COVER (oktas):**	2/8	**END TIME:**	22:15
WIND (bft):	0/12		**RAINFALL:**	Nil	**WEATHER:**	Dry
Data Analysed Y/N:	Y		**Additional information:**			
TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**		**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**	
20:40		Common pipistrelle		1	Flew around field.	
21:07		Common pipistrelle		1	Foraging along short hedgerow just after point B.	
21:08	B	Common pipistrelle		2	Foraging at point B.	

21:32		Common pipistrelle	1	Foraging along northern part of hedgerow between points F and G

14th May 2018 – Dusk transect

Common pipistrelles were recorded on 13 occasions between 21:09 and 22:42, with a maximum of two individuals recorded on two occasions. Brown long-eared bat was recorded on one occasion at 21:53 and Nathusius pipistrelle was recorded on one occasion at 22:45. These bats were mostly recorded foraging over the boundary hedgerows of both paddocks, with the exception of some common pipistrelle foraging/commuting activity over Stoney Lane to the west of the site and the Nathusius pipistrelle which was recorded foraging in the centre of the south-eastern paddock.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	WD & SW	**DATE:**	14.05.2018
TEMP AT START:	18°c	**SUNSET:**	20:57	**START TIME:**	20:57
TEMP AT END:	18°c	**CLOUD COVER (oktas):**	1/8	**END TIME:**	22:57
WIND (bft):	1/12	**RAINFALL:**	Nil	**WEATHER:**	
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
20:57-21:02	A	-	-	-
21:08-21:13	G	-	-	-
21:09-21:14	G	Common pipistrelle	2	Foraging around point G. Heading N along hedgerow.
21:18	F	Common pipistrelle	1	Heard not seen.
21:25		Common pipistrelle	1	Heard not seen foraging.
21:28	E	-	-	-
21:33		Common pipistrelle	1	Heard not seen.
21:35		Common pipistrelle	1	Commuting along road next to field along points D to E.
21:36	D	Common pipistrelle	2	Foraging constantly over road next to point D.
21:44	C	-	-	-
21:51		Common pipistrelle	1	Commuting north to south over northern-most field.
21:53		Brown long-eared	1	Heard not seen foraging.
21:55	B	-	-	-
22:02	A	-	-	-
22:05		Common pipistrelle	1	Heard not seen.

22:10	G	Common pipistrelle	1	Heard not seen.
22:18	F	-	-	-
22:19	F	Common pipistrelle	1	Heard not seen.
22:23	B	-	-	-
22:25	B	Common pipistrelle	1	Heard not seen.
22:31	B	Common pipistrelle	1	Heard not seen.
22:33	A	-	-	-
22:42	G	Common pipistrelle	1	Heard not seen.
22:45		Nathusius pipistrelle	1	Circling over centre of southern-most field.

19th June 2018 – Dusk transect

Individual noctule bats were recorded commuting directly across the site on two occasions at 21:44 and 22:07. Common pipistrelles were recorded on eight occasions between 22:05 and 23:12, with a maximum of three to four individuals recorded on one occasion. The common pipistrelles were almost entirely recorded foraging over the boundary hedgerows, with the peak activity occurring in the central and south-western areas of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Sam W & Matt T	**DATE:**	19.06.2018
TEMP AT START:	17	**SUNSET:**	21:22	**START TIME:**	21:22
TEMP AT END:	15	**CLOUD COVER (oktas):**	0/8	**END TIME:**	23:22
WIND (bft):	2/12	**RAINFALL:**	Nil	**WEATHER:**	Clear, dry
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
21:22-21:27	A	-	-	-
21:28-21:33	B	-	-	-
21:39-21:44	C	-	-	-
21:44	C	Noctule	1	Commuting west to east over northern end of field. Flying quite low.
21:47-21:52	D	-	-	-
21:55-22:00	E	-	-	-
22:05-22:10	F	-	-	-
22:05	F	Common pipistrelle	2	Foraging west to east to west along hedgerow dividing the two fields.
22:07	F	Noctule	1	Commuting southeast to northwest diagonally across field.
22:12	F-G	Common pipistrelle	1	Foraging west to east to west along hedgerow dividing the two fields. Flying between fields through gap

				in hedgerow and around end of hedgerow.
22:14-22:19	F-G	Common pipistrelle	3-4	Foraging constantly along northwest to southeast hedgerow.
22:19-22:24	G	-	-	-
22:19-22:28	G	Common pipistrelle	3	Foraging continuously in corner over G and along both hedgerows.
22:29-22:34	A	-	-	-
22:36-22:41	B	-	-	-
22:42	B-C	Common pipistrelle	2	Foraging along hedgerow between fields.
22:45-22:50	C	-	-	-
22:51-22:56	D	-	-	-
22:54	D	Common pipistrelle	1	Heard not seen.
22:58-22:03	E	-	-	-
23:01	E	Common pipistrelle	1	Heard not seen.
22:07-22:12	F	-	-	-
23:12	F	Common pipistrelle	1	Heard not seen.
23:17-23:22	G	-	-	-

20th June 2018 – Dawn transect

Individual common pipistrelle bats were recorded on six occasions between 03:03 and 04:15. These bats were all recorded foraging over the boundary hedgerows of both paddocks.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Sam W & Matt T	**DATE:**	20.06.2018
TEMP AT START:	15	**SUNRISE:**	04:48	**START TIME:**	02:48
TEMP AT END:	14	**CLOUD COVER (oktas):**	8/8	**END TIME:**	04:48
WIND (bft):	3/12	**RAINFALL:**	Nil	**WEATHER:**	Very heavy mist/fog throughout
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
02:48-02:53	A	-	-	-
02:48-02:53	B	-	-	-
03:03	B-C	Common pipistrelle	1	Heard not seen.
03:06-03:11	C	-	-	-

03:08	C	Common pipistrelle	1	Heard not seen. Between C and gate between fields.
03:15-03:20	D	-	-	-
03:23-03:28	E	-	-	-
03:33-03:38	F	-	-	-
03:39	F	Common pipistrelle	1	Heard not seen. Foraging.
03:47 -03:50	F-G	Common pipistrelle	1	Foraging along hedgerow north of point G.
03:51-03:56	G	-	-	-
03:51-03:55	G	Common pipistrelle	1	Foraging constantly along hedgerow north of point G.
04:00-04:05	A	-	-	-
04:07-04:12	B	-	-	-
04:15	B-C	Common pipistrelle	1	Heard not seen. Between C and gate between fields.
04:18-04:23	C	-	-	-
04:24-04:29	D	-	-	-
04:33-04:38	E	-	-	-
04:41-04:46	F	-	-	-

18th July 2018 - Dusk survey

Common pipistrelles were recorded on 27 occasions between 21:35 and 23:03, with a maximum of two individuals recorded on one occasion. These bats were mostly recorded foraging over the boundary hedgerows within both paddocks.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Pete D & Joe M	**DATE:**	18/07/18
TEMP AT START:	19.0	**SUNSET:**	21.10	**START TIME:**	21.10
TEMP AT END:	18.0	**CLOUD COVER (oktas):**	3/8	**END TIME:**	23.10
WIND (bft):	0/12	**RAINFALL:**	0	**WEATHER:**	Still/calm/dry
Data Analysed Y/N:	Y	**Additional information:**	EM3-2		

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
21.10	C	-	-	-
21.19	D	-	-	-
21.26	E	-	-	-
21.33	F	-	-	-
21.35	F	Common pipistrelle	1	Foraging hedgerow from north to south
21.38	F	Common pipistrelle	1	Commuting heard not seen

21.39	F-G TN1	Common pipistrelle	1	Foraging hedgerow from south east to north west
21.41-42	F-G TN2	Common pipistrelle	1	Foraging overhead
21.43	G	-	-	-
212.44-45	G	Common pipistrelle	1	Foraging overhead (feeding buzz)
21.46/47	G	Common pipistrelle	1	Continuous foraging overhead (feeding buzz)
21.49	G-A TN3	Common pipistrelle	1	Foraging along hedgerow from north east to south west
21.51	A	-	-	-
21.51	A	Common pipistrelle	1	Very brief heard not seen
21.52/53	A	Common pipistrelle	2	Foraging up and down hedgerow south east to north west, social calls (feeding buzz)
21.56/57	A	Common pipistrelle	1	Foraging hedgerow (feeding buzz)
21.59	B	-	-	-
22.01	B	Common pipistrelle	1	Foraging overhead
22.04	B	Common pipistrelle	1	Foraging overhead
22.07	B-C TN4	Common pipistrelle	1	Heard not seen foraging
22.10	B-C	Common pipistrelle	1	Foraging along the hedgerow from south east to north west
22.12	C	-	-	-
22.12	C	Common pipistrelle	1	Heard not seen, very quiet continuous foraging
22.15/17	C	Common pipistrelle	1	Heard not seen, very quiet continuous foraging (feeding buzz)
22.18	D	-	-	-
22.20-21	D	Common pipistrelle	1	Heard not seen continuous foraging
22.23	D	Common pipistrelle	1	Foraging overhead
22.26	E	-	-	-
22.31-32	E-F	Common pipistrelle	1	Heard not seen foraging
22.33	F	-	-	-
22.33/34	F	Common pipistrelle	1	Continuous foraging along hedgerow
22.35	F	Common pipistrelle	1	Foraging (feeding buzz)
22.36-38	F	Common pipistrelle	1	Foraging (feeding buzz)
22.41	G	-	-	-
22.44	G	Common pipistrelle	1	Foraging overhead
22.46	G	Common pipistrelle	1	Heard not seen commuting
22.48	G-A	Common pipistrelle	1	Heard not seen commuting
22.50	A	-	-	-
22.50	A	Common pipistrelle	1	Continuous foraging heard not seen
22.56	B	-	-	-
23.03	B	Common pipistrelle	1	Heard not seen commuting

18th August 2018 - Dusk survey

Common pipistrelles were recorded on 17 occasions between 20:57 and 22:00, with a maximum of two individuals recorded on one occasion. Common pipistrelles were recorded foraging/commuting along the western boundary hedgerows, however the majority of these records were of bats detected but not observed. Brown long-eared bat was recorded on one occasion at 21:42 and noctule was recorded on one occasion at 21:44, these bats were detected but not observed.

	BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Land off Beechlands Road		**SURVEYORS:**	Colin S & Liza S	**DATE:**	13/8/18
TEMP AT START:	19◦c		**SUNSET:**	20.30	**START TIME:**	20.25
TEMP AT END:	18◦c		**CLOUD COVER (oktas):**	4/8	**END TIME:**	22.20
WIND (bft):	1/12		**RAINFALL:**	nil	**WEATHER:**	Cool dry
Data Analysed Y/N:	Y		**Additional information:**	IPAD 4 EMT 6		

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
20.25	A	-	-	-
20.33	B	-	-	-
20.35	C	-	-	-
20.47	D	-	-	-
20.54	E	-	-	-
20.57	E	Common pipistrelle	1	Heard not seen
21.01	F	-	-	-
21.03	F	Common pipistrelle	1	Commuting north west to south east
21.05/06	F	Common pipistrelle	1	Heard not seen
21.08	G	-	-	-
21.10	G	Common pipistrelle	1	Commuting south east to north west along hedge line
21.13	G	Common pipistrelle	2	Commuting south east to north west and back
21.14	G	Common pipistrelle	1	Heard not seen
21.15	G-A	Common pipistrelle	1	Heard not seen
21.17	A	-	-	-
21.22	A	Common pipistrelle	1	Heard not seen
21.24	A-B	Common pipistrelle	1	Heard not seen
21.26	B	-	-	-
21.30	B	Common pipistrelle	1	Heard not seen
21.31	B-C	Common pipistrelle	1	Heard not seen
21.32	B-C	Common pipistrelle	1	Heard not seen
21.34	C	-	-	-
21.40	C-D	Common pipistrelle	1	Heard not seen

21.41	D	Common pipistrelle	1	Heard not seen
21.42	D	Brown long eared	1	Heard not seen
21.44	D	Noctule	1	Heard not seen
21.48	E	-	-	-
21.55/57	F	Common pipistrelle	1	Heard not seen
21.57/58	F	Common pipistrelle	1	Heard not seen foraging
22.00	F	Common pipistrelle	1	Heard not seen
22.02	G	-	-	-
22.09	A	-	-	-

10th September 2018 - Dusk survey

Individual common pipistrelle bats were recorded on 11 occasions between 19:50 and 21:15. Common pipistrelles were recorded foraging/commuting over boundary hedgerows at the north-west of the site, however the majority of these records were of bats detected but not observed. Serotine was recorded on one occasion at 20:12 and myotis bats were recorded on two occasions at 20:25 and 20:28, these bats were detected but not observed.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Joe + Sam W	**DATE:**	10/09/18
TEMP AT START:	17 C	**SUNSET:**	19:31	**START TIME:**	19:31
TEMP AT END:	16 C	**CLOUD COVER (oktas):**	5/8	**END TIME:**	21:31
WIND (bft):	4/12	**RAINFALL:**	None	**WEATHER:**	
Data Analysed Y/N:		**Additional information:**	iPad 5, EMT 5		

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
19:31	A	-	-	-
19:40	B	-	-	-
19:50	C	-	-	-
19:50	C	Common pipistrelle	1	Foraging around point C – Continuous (TN1)
19:57	D	-	-	-
19:59	D	Common pipistrelle	1	Commuting south to north over point D
20:06	E	-	-	-
20:06-09	E	Common pipistrelle	1	Heard not seen – Continuous
20:12	E-F	Serotine	1	Heard not seen
20:16	F	-	-	-
20:16-17	F	Common pipistrelle	1	Heard not seen -Continuous
20:19	F	Common pipistrelle	1	Heard not seen
20:23	F-G	Common pipistrelle	1	Heard not seen

20:25	G	-	-	-
20:25	G	Myotis sp.	1	Heard not seen – Foraging along hedgerow
20:28	G	Myotis sp.	1	Heard not seen
20:31	G-A	Common pipistrelle	1	Heard not seen
20:34	A	-	-	-
20:41	B	-	-	-
20:49	B-C	Common pipistrelle	1	Heard not seen – Brief
20:51	C	-	-	-
20:55	C	Common pipistrelle	1	Heard not seen
20:58	D	-	-	-
20:59	D	Common pipistrelle	1	Heard not seen – Social calls
21:06	E	-	-	-
21:14	F	-	-	-
21:15	F	Common pipistrelle	1	Heard not seen
21:24	G	-	-	-

8th October 2018 - Dusk survey

Individual common pipistrelle bats were recorded on six occasions between 19:05 and 20:18. One bat was recorded commuting along Stoney Lane to the west of the site and another bat was recorded foraging close to the boundary hedgerow near stopping point F, the rest of the records were of bats detected but not observed.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Sam W & Stuart W	**DATE:**	08/10/2018
TEMP AT START:	14°c	**SUNSET:**	18:26	**START TIME:**	18:26
TEMP AT END:	13°c	**CLOUD COVER (oktas):**	8/8	**END TIME:**	20:26
WIND (bft):	3-4/12	**RAINFALL:**	Nil	**WEATHER:**	Overcast
Data Analysed Y/N:	Y	**Additional information:**	EM3-4		

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
18:26-18:31	A	-	-	-
18:34-18:39	B	-	-	-
18:44-18:49	C	-	-	-
18:52-18:57	D	-	-	-
19:00-19:05	E	-	-	-
19:05	E	Common pipistrelle	1	Commuting north to south over lane.
19:00-19:05	F	-	-	-
19:11-19:14	F	Common pipistrelle	1	Foraging near hedgerow.

19:18-19:023	G	-	-	-
19:18-19:22	G	Common pipistrelle	1	Heard not seen, foraging
19:26	G-A	Common pipistrelle	1	Heard not seen, foraging. Social calls.
19:29-19:34	A	-	-	-
19:36-19:41	B	-	-	-
19:46-19:51	C	-	-	-
19:55-20:00	D	-	-	-
20:05-20:10	E	-	-	-
20:15-20:20	F	-	-	-
20:16	F	Common pipistrelle	1	Heard not seen
20:18	F	Common pipistrelle	1	Heard not seen

Transect surveys 2021

Summary

The foraging and commuting activity recorded on site was dominated by low numbers of common pipistrelle bats, although common pipistrelles were also recorded on site in moderate numbers during the months of June, July and August, with a maximum count of up to five individual bats noted on any one occasion during these months. Only one serotine bat pass was recorded during the month of April. Two brief foraging passes of the rare Annex II bat species barbastelle (*Barbastella barbastellus*) were recorded over the south-western boundary hedgerow in June. No other bat species were recorded during any of the transect surveys in 2021. The transect surveys identified that the key areas of the site where the vast majority of the bat activity (mostly foraging) was recorded was over the southern, western and north-eastern boundary hedgerows, with relatively limited activity being recorded elsewhere on site and directly over the open paddock areas. A full monthly breakdown of the survey results is provided below.

19th April 2021 - Dusk survey

Individual common pipistrelle bats were recorded on six occasions between 20:20 and 21:08. These bats were mainly recorded foraging and commuting over the north-eastern and south-western boundary hedgerows. A single commuting pass by a serotine bat was recorded at the south-western corner of the site at 21:52.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Stuart W & Jonty D	**DATE:**	19/04/2021
TEMP AT START:	11°c	**SUNSET:**	20:06	**START TIME:**	20:06
TEMP AT END:	8°c	**CLOUD COVER (oktas):**	0/8	**END TIME:**	22:06
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Cool and clear skies.

Data Analysed Y/N:	Y	**Additional information:**	IPAD 2, EMT 1	
TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
20:06	D	-	-	-
20:14	C	-	-	-
20:20	C - B	Common pipistrelle	1	Brief call, commuting, not seen.
20:25	B	-	-	-
20:33	A	-	-	-
20:46	G	-	-	-
20:44	G	Common pipistrelle	1	Commuting, not seen.
20:46	G	Common pipistrelle	1	Foraging with feeding buzzes, not seen.
20:49	G - F	Common pipistrelle	1	Foraging over hedgerow, not seen.
20:52	F	-	-	-
21:00	F	Common pipistrelle	1	Foraging, not seen.
21:05	E	-	-	-
21:08	E	Common pipistrelle	1	Foraging, not seen.
21:15	D	-	-	-
21:22	C	-	-	-
21:32	B	-	-	-
21:41	A	-	-	-
21:49	G	-	-	-
21:52	G	Serotine	1	Commuting, not seen.

16th May 2021 - Dusk survey

Individual common pipistrelle bats were recorded on seven occasions between 21:07 and 22:25. The majority of this bat activity was from common pipistrelles foraging over the western boundary hedgerows, with lesser amounts of activity recorded along the eastern and southern margins of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	16/05/2021
TEMP AT START:	12°c	**SUNSET:**	20:50	**START TIME:**	20:50
TEMP AT END:	11°c	**CLOUD COVER (oktas):**	7/8	**END TIME:**	22:50
WIND (bft):	2-3/12	**RAINFALL:**	Brief light shower at start of survey, then cleared.	**WEATHER:**	Cool and overcast.

Data Analysed Y/N:	Y	**Additional information:**	

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
21:07 – 21:09	G – F	Common pipistrelle	1	Continuous foraging over south-west hedgerow.
21:11 – 21:12	F - E	Common pipistrelle	1	Foraging over hedgerows between points F and E.
21:13 – 21:14	E - D	Common pipistrelle	1	Foraging, not seen.
21:24	D	Common pipistrelle	1	Foraging passes over point D.
21:41 – 21:42	C	Common pipistrelle	1	Foraging over north-east corner of field.
22.04 – 22:05	B - A	Common pipistrelle	1	Commuting pass, heading southwards.
22:23 – 22:25	A - G	Common pipistrelle	1	Foraging around southern end of the site.

12th June 2021 - Dusk survey

Common pipistrelles were recorded on 10 occasions between 21:44 and 23:09, with a maximum count of up to five individuals recorded on one occasion. The majority of this bat activity was from common pipistrelles foraging and commuting over the western boundary hedgerows, with lesser amounts of activity recorded on the eastern and southern margins of the site. Two brief foraging passes of the rare Annex II bat species barbastelle were recorded over the south-western boundary hedgerow at 22:15 and 22:20.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	12/06/2021
TEMP AT START:	19°c	**SUNSET:**	21:20	**START TIME:**	21:20
TEMP AT END:	17.5°c	**CLOUD COVER (oktas):**	4/8	**END TIME:**	23:20
WIND (bft):	2-3/12	**RAINFALL:**	None	**WEATHER:**	Mild, dry, patchy cloud cover.
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
21:44 – 21:46	F	Common pipistrelle	1	Foraging over hedgerow.

21:56	E	Common pipistrelle	2	Commuting pass northwards alongside north-west hedgerow.
21:57	D	Common pipistrelle	1	Brief call, commuting, not seen.
22:00 – 22:03	C	Common pipistrelle	2	Up to two bats foraging around north-eastern field corner.
22:09	A - G	Common pipistrelle	1	Brief call, commuting, not seen.
22:12 – 22:16	G - F	Common pipistrelle	5	Up to five individual bats observed foraging.
22:15 and 22:20	G - F	Barbastelle	1	Two brief foraging passes.
22:21	G – F	Common pipistrelle	1	Brief call, commuting, not seen.
22:30	F	Common pipistrelle	1	Brief call, foraging, not seen.
22:45 – 22:50	E - D	Common pipistrelle	2	Up to two bats foraging over north-west hedgerow.
23:09	D	Common pipistrelle	1	Brief call, foraging, not seen.

11th July 2021 - Dusk survey

Common pipistrelles were recorded on 12 occasions between 21:31 and 23:25, with a maximum count of up to five individuals recorded on any one occasion. The majority of this bat activity was from common pipistrelles foraging over the southern, south-western and north-eastern boundary hedgerows, with lesser amounts of activity recorded in the central and northern regions of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	11/07/2021
TEMP AT START:	17°c	**SUNSET:**	21:19	**START TIME:**	21:19
TEMP AT END:	15.5°c	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:19
WIND (bft):	2-3/12	**RAINFALL:**	Intermittent light showers.	**WEATHER:**	Mild and overcast with intermittent showers.
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**
21:31	G - F	Common pipistrelle	1	Foraging over south-west hedgerow.
21:38 – 21:42	D - C	Common pipistrelle	2	Up to two bats foraging over the northern end of the site.
21:43 – 21:50	C - B	Common pipistrelle	4	Up to four individual bats foraging over the north-east hedgerow.

22:00 – 22:03	A - G	Common pipistrelle	3	Up to three individual bats foraging over hedgerows in the south of the site.
22:09 – 22:14	G - F	Common pipistrelle	5	Up to five individual bats foraging over the south-west hedgerow.
22:22 – 22:27	C - B	Common pipistrelle	5	Up to five individual bats foraging over the north-east hedgerow.
22:31 – 22:32	C - B	Common pipistrelle	1	Foraging over central area of the site.
22:40	A - G	Common pipistrelle	2	Foraging over southern hedgerow.
22:49 – 22:54	G - F	Common pipistrelle	3	Up to three individual bats foraging over the south-west hedgerow.
22:57	F	Common pipistrelle	1	Foraging over hedgerow in the central area of the site.
23:07 – 23:13	C - B	Common pipistrelle	5	Up to five individual bats foraging over the north-east hedgerow.
23:20 – 23:25	G	Common pipistrelle	4	Up to four individual bats foraging over the southern hedgerows.

5th August 2021 - Dusk survey

Common pipistrelles were recorded on 11 occasions between 20:39 and 22:17, with a maximum count of up to five individuals recorded on any one occasion. The majority of this bat activity was from common pipistrelles foraging over the southern, south-western and north-eastern boundary hedgerows, with lesser amounts of activity recorded in the central, south-eastern and southern regions of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	05/08/2021
TEMP AT START:	17°c	**SUNSET:**	20:43	**START TIME:**	20:43
TEMP AT END:	16.5°c	**CLOUD COVER (oktas):**	8/8	**END TIME:**	22:43
WIND (bft):	2-3/12	**RAINFALL:**	Some light drizzle.	**WEATHER:**	Mild and overcast with some light drizzle.
Data Analysed Y/N:	Y	**Additional information:**			

TIME	**STOPPING POINT/TARGET NOTE**	**SPECIES**	**NUMBER OF BATS**	**ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.**

20:39	B-A	Common pipistrelle	1	Commuting pass, heading westward.
20:45	A-G	Common pipistrelle	3	Up to three individual bats foraging over southern hedgerow and adjacent land.
20:53 – 20:56	G-F	Common pipistrelle	5	Up to five individual bats foraging over the south-western hedgerow.
21:06	E-D	Common pipistrelle	2	Two bats foraging over north-western hedgerow and adjacent land.
21:11	D-C	Common pipistrelle	5	Up to five individual bats foraging around the north-eastern corner of the site.
21:25	C-B	Common pipistrelle	1	One bat foraging in the east-central area of the site.
21:38 – 21:40	A-G	Common pipistrelle	1	Brief commuting pass over the southern boundary of the site, not seen.
21:41 – 21:50	G-F	Common pipistrelle	3	Up to three individual bats foraging over the south-western hedgerow.
21:59 – 22:00	E-D	Common pipistrelle	2	Two bats foraging over north-western hedgerow and adjacent land.
22:05 – 22:07	D-C	Common pipistrelle	1	Foraging in the northern area of the site and off-site land adjacent to the north.
22:15 – 22:17	B-A	Common pipistrelle	2	Two bats foraging over the open area of the southern paddock.

11th September 2021 - Dusk survey

Common pipistrelles were recorded on nine occasions between 19:34 and 21:42, with a maximum count of two individuals recorded on any one occasion. The majority of this bat activity was from common pipistrelles foraging over the south-western and north-eastern boundary hedgerows, with lesser amounts of activity recorded in the southern and northern regions of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	11/09/2021
TEMP AT START:	17°c	**SUNSET:**	19:27	**START TIME:**	19:27
TEMP AT END:	16.5°c	**CLOUD COVER (oktas):**	8/8	**END TIME:**	21:27
WIND (bft):	2/12	**RAINFALL:**	None	**WEATHER:**	Mild and overcast.
Data Analysed Y/N:	Y	**Additional information:**			

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
19:34	A-G	Common pipistrelle	1	Commuting pass, not seen.
19:40 – 19:41	G-F	Common pipistrelle	2	Two bats foraging over south-western hedgerow and adjacent land.
19:48	F	Common pipistrelle	1	Commuting pass across northern paddock, heading eastward.
19:54	D-C	Common pipistrelle	1	Foraging over northern area of the site adjacent to northern boundary.
19:56 – 19:58	C	Common pipistrelle	2	Two bats foraging over north-eastern hedgerow.
20:11	A-G	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
20:22	C-B	Common pipistrelle	1	Foraging passes, not seen.
20:30 – 20:32	G-F	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
21:42	D-C	Common pipistrelle	1	Brief commuting pass, heading northwards.

3rd October 2021 - Dusk survey

Common pipistrelles were recorded on 11 occasions between 18:36 and 20:32, with a maximum count of two individuals recorded on any one occasion. The majority of this bat activity was from common pipistrelles foraging over the southern and south-western boundary hedgerows, with lesser amounts of activity recorded along the northern and eastern margins of the site.

	BAT DETECTOR ACTIVITY SURVEY				
SURVEY LOCATION:	Land off Beechlands Road	**SURVEYORS:**	Jonty D & Holly D	**DATE:**	03/10/2021
TEMP AT START:	15°c	**SUNSET:**	18:35	**START TIME:**	18:35
TEMP AT END:	13.5°c	**CLOUD COVER (oktas):**	3/8	**END TIME:**	20:35
WIND (bft):	2-3/12	**RAINFALL:**	None	**WEATHER:**	Mild with patchy cloud and light breeze.
Data Analysed Y/N:	Y	**Additional information:**			

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
18:36	A-G	Common pipistrelle	1	Commuting pass, heading eastward along Boyneswood Lane.

18:43 – 18:45	A-G	Common pipistrelle	1	Foraging over southern boundary hedgerow and adjacent land.
19:48	G-F	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
19-14 – 19:17	C-B	Common pipistrelle	1	Brief commuting pass, not seen.
19:19	C-B	Common pipistrelle	1	Brief commuting pass, not seen.
19:30 – 19:35	A-G	Common pipistrelle	1	Foraging over southern boundary hedgerow and adjacent land.
19:38 – 19:41	G	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
19:43 – 19:50	G-F	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
20:08 – 20:10	A-G	Common pipistrelle	1	Foraging around the southern area of the site, adjacent to southern boundaries.
20:15 – 20:20	G - F	Common pipistrelle	2	Two bats foraging over south-western hedgerow.
20:32	D-C	Common pipistrelle	1	Brief commuting pass, not seen.

Static monitoring - 2018

The results of the static detector monitoring of the site in 2018 are presented in table 1 below which details the average number of bat passes per night per species, a descriptive summary of the static detector monitoring results is also provided below.

Table 1: 2018 Static monitoring – average bat passes per night for each month

Static 1							
Averages	**April**	**May**	**June**	**July**	**August**	**September**	**October**
C.pip	11	73	0.2	300	32	12	26
Myotis sp.	-	0.2	-	-	-	11	0.6
Noctule	-	0.7	-	-	-	3	63
S.pip	-	-	-	-	2	-	0.2
Serotine	0.2	2	0.2	3.2	0.4	0.9	0.1
Static 2							
Averages	**April**	**May**	**June**	**July**	**August**	**September**	**October**
C.pip	-	485	511	6	5.3	593	721
Myotis sp.	-	1.3	2	0.2	-	3.4	17
Noctule	-	-	-	1.2	0.5	-	2.1
Serotine	-	0.6	0.2	-	-	0.3	0.6

A total of five species of bat were recorded during the static monitoring survey in 2018 including common pipistrelle, soprano pipistrelle, noctule, serotine and *Myotis* bat species (*Myotis sp*). The vast majority of recorded activity comprises common pipistrelle passes, with passes recorded for each monthly session apart from static 2 in April and a maximum count of 721 passes per night recorded on static 2 in October. Low numbers of myotis bat passes were recorded on both detectors, although a greater number of passes were recorded on static 2. Low

numbers of noctule passes were recorded on both detectors with the exception of the October session where a significantly greater number of noctule passes were recorded. A very low number of soprano pipistrelle passes were recorded for each monthly session only on static 1. A very low number of serotine passes were recorded on both detectors, with a greater number recorded on static 1.

Static monitoring - 2021

The results of the static detector monitoring of the site in 2021 are presented in table 2 below which details the average number of bat passes per night per species, a descriptive summary of the static detector monitoring results is also provided below.

Table 2: 2021 Static monitoring – average bat passes per night for each month

Static 1							
Averages	**April**	**May**	**June**	**July**	**August**	**September**	**October**
Common pipistrelle	Detector failed	Detector failed	Detector failed	Detector failed	0.2	21.625	21.9
Soprano pipistrelle	Detector failed	Detector failed	Detector failed	Detector failed	-	2.375	0.3
Pipistrelle species	Detector failed	Detector failed	Detector failed	Detector failed	0.2	4	0.9
***Myotis* species**	Detector failed	Detector failed	Detector failed	Detector failed	0.2	0.125	6.1
Noctule	Detector failed	Detector failed	Detector failed	Detector failed	-	0.5	-
***Nyctalus* species**	Detector failed	Detector failed	Detector failed	Detector failed	-	0.625	-
Serotine	Detector failed	Detector failed	Detector failed	Detector failed	-	-	-
Static 2							
Averages	**April**	**May**	**June**	**July**	**August**	**September**	**October**
Common pipistrelle	Detector failed	Detector failed	Detector failed	Detector failed	1,076.6	1,095	352.8
Soprano pipistrelle	Detector failed	Detector failed	Detector failed	Detector failed	-	1.375	-
Pipistrelle species	Detector failed	Detector failed	Detector failed	Detector failed	0.4	2.125	-
***Myotis* species**	Detector failed	Detector failed	Detector failed	Detector failed	10.4	8.625	-
Noctule	Detector failed	Detector failed	Detector failed	Detector failed	-	0.25	-
***Nyctalus* species**	Detector failed	Detector failed	Detector failed	Detector failed	-	0.625	-
Serotine	Detector failed	Detector failed	Detector failed	Detector failed	0.2	0.5	-
Barbastelle	Detector failed	Detector failed	Detector failed	Detector failed	0.2	0.375	-

A total of five bat species and three bat genera were recorded during the static monitoring survey in 2021 including common pipistrelle, soprano pipistrelle, *Pipistrellus* species, *Myotis* species, noctule, *Nyctalus* species, serotine and barbastelle. The vast majority of the recorded

activity comprised common pipistrelle passes, with an overall total of 18,212 passes recorded on both detectors during the monitoring. A significantly higher number of common pipistrelle passes were recorded on static detector 2, totalling 17,829 passes, compared with only 383 total passes recorded on static detector 1. Only very low levels of soprano pipistrelle activity was recorded totalling 33 passes recorded on both detectors, with a slightly higher level of soprano pipistrelle activity recorded on static detector 1. Unidentified pipistrelle bat species were also recorded in low numbers. Myotis bat species were recorded in low numbers on both detectors. Noctule and unidentified *Nyctalus* species were only recorded in very low numbers on both detectors during the month of September. A very low number of serotine passes, 5 in total, were recorded on static detector 2 during the months of August and September. A very low number of passes of the rare Annex II bat species barbastelle were recorded on static detector 2 on 8th August 2021 (1 pass) and 9th September 2021 (3 passes).

Overall, a significantly higher number of total bat passes were recorded at static detector location 2 (Static 2 =18,120 bat passes; Static 1 = 522 bat passes), a greater overall diversity of bat species were also recorded at static location 2.

Value of the habitat for foraging and commuting bats

An assessment of the value of the site for foraging and commuting bats using the results gathered from the activity surveys in 2018 and 2021 is provided in tables 3 and 4 below.

Table 3: Scores for foraging areas (bold indicates the relevant criteria)

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common (2)	**Individual bats (5)**	None (1)	Industrial or other site without established vegetation (1)
Uncommon(3)	-	**Small number (3)**	Suburban areas or intensive arable land (2)
Rarer (5)	**Small number of bats (10)**	Moderate number/Not known (4)	**Isolated woodland patches, less intensive arable and/or small towns and villages (3)**
-	-	Large number of roosts, or close to a SSSI for the species (5)	Larger or connected woodland blocks, mixed agriculture, and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)
20	10	3	3
Total score			**36 (Regional value)**

Table 4: Scores for commuting routes (bold indicates the relevant criteria)

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common (2)	**Individual bats (5)**	None (1)	Absence of (other) linear features (1)
Uncommon(3)	-	**Small number (3)**	Unvegetated fences and large field sizes (2)
Rarer (5)	**Small number of bats (10)**	Moderate number/Not known (4)	**Walls, gappy or flailed hedgerows, isolated well-grown hedgerows, and moderate field sizes (3)**
-	-	Large number of roosts, or close to a SSSI for the species (5)	Well-grown and well-connected hedgerows, small field sizes (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Complex network of mature well-established hedgerows, small fields and river/streams (5)
20	10	3	3
Total score			**36 (Regional value)**

Using the scoring system above, the foraging areas and commuting routes across the site are assessed to be of Regional importance for bats. This assessment was based on a recorded assemblage of mostly common bat species in low to moderate numbers, but also including some infrequent recordings of barbastelle which is one of the rarest bat species in the UK, an estimated low number of local roosting sites, and moderate quality habitat available both on site and within the immediate surrounding land.

The results of the bat activity survey work in 2018 and 2021 generally indicate that the key areas of the site where the vast majority of the bat activity was occurring was over the southern, western and north-eastern boundary hedgerows, with relatively limited activity being recorded elsewhere on site including directly over the open paddock areas.

APPENDIX XI: Hazel dormouse surveys (2018 and 2021)

Methodology

A total of fifty artificial dormouse nest tubes were distributed within suitable habitat on site, primarily within the field boundary hedgerows, on 24th April 2018. The nest tubes were sited within hedgerow vegetation spaced at least 10 metres apart and at a height of 1 to 2 metres above ground level. The nest tube locations are illustrated on the plan included below. Monthly checks of the nest tubes were undertaken between May and September 2018. This survey was repeated in 2021 with 50 nest tubes deployed in the same hedgerow locations on site, on the on 7th April 2021, and monthly survey checks undertaken between May and November 2021.

During the survey visits each nest tube was inspected for characteristic signs of dormice, including the following:

- Presence of dormice themselves.
- Presence of dormouse nests. Typically, these are grapefruit-sized and woven from strips of honeysuckle bark or similar material with whole fresh green leaves incorporated into the outer layers. The nests are spherical and lack an obvious entrance hole.
- Presence of droppings: Typically, these are larger and crinklier compared to droppings of other small rodents. However, identification of faecal pellets is not fully reliable and should not be used to confirm presence or absence of dormice.
- Presence of characteristically gnawed hazelnuts or other hard fruit: dormice leave a smooth round hole with few tooth marks on the surface.

Hazel dormouse survey plan - 2018 and 2021

Results

The results from the nest tube surveys undertaken in 2018 and 2021 are presented in table 1 below. In summary, no dormice or evidence thereof was recorded during the survey work. Wood mouse (*Apodemus sylvaticus*) nests were recorded in a number of the deployed nest tubes on site during both the 2018 and 2021 surveys.

Table 1: Nest tube survey results - 2018 and 2021

Visit	Date	Time	Weather	Temp (°C)	Results
1	22/05/2018	10:15	Dry and warm	15	No evidence of dormice or other species recorded.
2	20/06/2018	13:05	Dry and warm	19	No evidence of dormice or other species recorded.
3	18/07/2018	20:00	Still and mild, cloud 3/8, wind 1/12	19	No evidence of dormice or other species recorded.
4	20/08/2018	10:00	Dry, warm and calm, cloud 6/8, wind 1/12	19	No evidence of dormice or other species recorded.
5	17/09/2018	11:21	Dry, warm and calm, cloud 4/8, wind 1/12	19	No evidence of dormice. Loose green leaves were recorded in tube 26 which may indicate nest building by wood mouse (*Apodemus sylvaticus*).
1	15/05/2021	09:30 - 11:00	Dry, mild, clear skies, light breeze	15	No evidence of dormice or other species recorded.
2	07/06/2021	09:30 - 11:00	Mostly overcast, warm, humid, dry, light breeze	18	No evidence of dormice. Loose green leaves and wood mouse droppings were recorded in tube 47.
3	12/07/2021	09:30 - 11:00	Warm, dry, mostly clear skies, light wind	20	No evidence of dormice or other species recorded.
4	08/08/2021	09:30 - 11:00	Mostly overcast with some light drizzle, mild, moderate to light winds	15 - 16	No evidence of dormice or other species recorded.
5	05/09/2021	09:30 - 11:00	Mostly clear skies 2/8, dry, light winds.	16-17	No evidence of dormice. Wood mouse nests recorded in tubes 34 and 41.
6	03/10/2021	09:30 - 11:00	Mostly overcast, mild, light winds.	15	No evidence of dormice. Wood mouse nests recorded in tubes 34 and 41.
7	09/11/2021	12:30 - 15:00	Overcast, dry, mild, wind - F3	13	No evidence of dormice. Wood mouse nests recorded in tubes 12, 14, 23, 27, 28, 29, 31, 34, 37, 38, 40 and 41.

APPENDIX XII: Reptile survey (2021)

Methodology

A targeted reptile survey was undertaken across the site during May and June 2021 in order to determine presence or likely absence of any reptile species and to estimate any population sizes. A total of 75 artificial refugia (0.5 metre^2 sections of bitumen felt) were set out in suitable areas of habitat on site identified as having potential to support reptiles (refer to the plan below). The refugia were distributed on site on the 4th May 2021 and left to 'settle' for a period of five days before the survey visits commenced. The refugia were checked for presence of reptiles between the hours of 09:00 and 11:00 or 16:00 and 19:00 during suitable weather conditions, cloudy and/or with sunny breaks, with temperatures between 9 and 18 degrees centigrade when the refuges provide warmer conditions than the open ground (Froglife, 1999). A total of seven checks were conducted between 9th May and 11th June 2021.

Reptile survey results

Table 1 below provides the full results from the targeted reptile survey. To summarise, the site supports a good population of slow-worm with a maximum count of seven adults recorded on 7th June 2021, and a low population of grass snake with only one adult recorded on one occasion. The key areas where reptiles were recorded on the site were the north-western, central and south-eastern field edges. The survey results are also illustrated on the plan below.

Table 1: Reptile survey results - land off Beechlands Road

Visit	Date	Time	Weather	Temp (°C)	Slow-worm	Common lizard	Grass snake	Adder
1	09/05/2021	10:00 - 11:00	Mostly overcast and dry with light breeze.	11	1 sub-adult	-	-	-
2	12/05/2021	10:00 - 11:00	Cloud with sunny intervals, dry, light breeze.	15	5 sub-adult	-	-	-
3	15/05/2021	16:00 - 17:00	Cloud with sunny intervals, dry, light breeze.	17	1 adult male, 1 adult female, 3 sub-adults	-	-	-
4	19/05/2021	16:00 - 17:00	Cloud with light showers and sunny intervals, light winds.	16	1 adult male, 1 adult female, 4 sub-adults	-	-	-
5	30/05/2021	16:30 - 17:30	Clear skies, warm and sunny, light breeze.	19	1 adult male, 4 adult female, 7 sub-adults	-	-	-
6	07/06/2021	16:00 - 17:00	Mostly overcast with brief sunny spells, humid, light breeze.	18	2 adult male, 5 adult female, 8 sub-adults	-	1 adult	-
7	11/06/2021	10:00 - 11:00	Mostly overcast with brief sunny spells, humid, light breeze.	19	3 adult female, 6 sub-adults	-	-	-

Reptile survey plan