LIZARD
Landscape Design and Ecology

BIODIVERSITY NET GAIN ASSESSMENT

Land Adjacent to Paddock Grange, Homestead Road, Medstead

On behalf of: HF Architecture Ltd.

Client:	HF Architecture Ltd.			
Project:	Land Adjacent to Paddock Grange, Homestead Road, Medstead			
Reference:	LLD3070-ECO-REP-002-01-BNG			
Revision:	**Date:**	**Author**	**Proof**	**Approved**
01	15/01/2024	Hayley Swann PgCert	Caleb Fry MCIEEM	Caleb Fry MCIEEM

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Validity:

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

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1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by HF Architecture Ltd. to undertake a Biodiversity Net Gain (BNG) Calculation for works to the Land Adjacent to Paddock Grange, Homestead Road, Medstead.

1.2 A baseline habitat assessment in accordance with the UK Habitats Classification Manual (UKHabs Ltd., 2023) was undertaken on the 3rd November 2023 by Hayley Swann PgCert of Lizard Landscape Design and Ecology. However, due to the recent clearance of the site and the seasonal restrictions associated with the timing of the survey, the baseline used for this assessment was taken from the Preliminary Ecological Appraisal completed by J Taylor Ecology Consulting in 2019, which can be found in Appendix C, to ensure the baseline habitats were not undervalued.

1.3 The Biodiversity Net Gain calculations contained in this report were undertaken using The Defra Statutory Biodiversity Metric, to provide a quantitative analysis of the existing and proposed biodiversity value of the site in regard to emerging policy within the Environment Act, 2021.

Site Information

1.4 The site covers c. 0.3 hectares (ha) and is located to the south of Homestead Road within a line of residential dwellings. The village of Medstead is c. 600metres (m) north-east of the site. The site is formed of 2no. buildings, a native hedgerow, non-native hedgerows, a line of trees and artificial unvegetated unsealed surface with ruderal vegetation. The site is long and narrow in form, it is located between Paddock Grange to the west and Little Barn to the east. Access to the site is along Homestead Road, which is to the north of the site.

1.5 At the time of the survey, the site had been cleared of vegetation and as a result, much of the site was covered with chippings with ruderal vegetation growing through.

Surrounding Landscape

1.6 The surrounding landscape is rural, dominated by arable fields and grazing land interspersed with tree lines, hedgerows, and pockets of woodland. The nearest town is Alton, which is located c. 6km northeast of the site.

Proposals

1.7 It is understood that proposals include the demolition of the former onsite buildings, and the construction of a new residential dwelling with pond, associated parking, and areas of habitat creation throughout the site. The existing access is to be retained.

2.0 METHODOLOGY

2.1 Biodiversity Net Gain Assessment

2.1.1 The existing baseline value of the site was assessed during the site visit, where all area and linear habitats on site were mapped. However, due to the recent clearance of the site, the baseline used for the assessment was taken from the Preliminary Ecological Appraisal completed by J Taylor Ecology Consulting in 2019 to ensure the baseline habitats were not undervalued.

2.1.2 The distinctiveness of habitats was assessed using the *UK Habitat Classification system* (UKHabs Ltd., 2023) and the condition of habitats assessed in accordance with *The Statutory Biodiversity Metric - Technical Annex 1: Condition Assessment Sheets and Methodology* (DEFRA, 2023).

2.1.3 The habitats, their condition and strategic importance were input into the Statutory Biodiversity Metric Calculation Tool (DEFRA, 2023). The area of habitats which would be retained or enhanced based upon the current proposals was also added to the calculator. This allowed the existing baseline value and loss of biodiversity units to be established.

2.1.4 The following drawings were used when calculating the baseline and proposed habitat creation on site, which should be viewed alongside this report:

- Baseline Site Habitat Plan (LLD3070-ECO-FIG-001)
- Proposed Site Plan (HF Architecture Ltd.)

2.1.5 The proposed habitats areas and linear habitat lengths was calculated, and target condition determined based upon the existing and proposed management regimes of the site, in consideration with what could realistically be expected to be achieved. Once input into The Biodiversity Metric Calculation, the overall change in value of the site could then be determined.

2.2 Evaluation and Assessment

2.2.1 This report has been written with due regard to best practice guidance for ecological report writing (CIEEM, 2017) and the Biodiversity Net Gain: Good Practice Principles for Development (CIEEM, 2019).

2.3 Survey Constraints / Considerations

2.3.1 Due to imprecisions associated with mapping the extent of existing and proposed habitats using aerial imagery and mapping based on desktop study, the Biodiversity Net Gain (BNG) assessment cannot conclusively ensure that the extent of habitats is precisely quantified, although due care and attention has been given to ensure that the accuracy of the assessment is not misleading and is appropriate for the objectives proposed.

2.3.2 The Biodiversity Net Gain calculation does not take into account the provision of wildlife boxes, such as bat, bird and insect boxes, or log piles.

2.3.3 The baseline was taken from the Preliminary Ecological Appraisal completed by J Taylor Ecology Consulting in 2019, to ensure the value of the site was not undervalued or underestimated due to the recent clearance onsite.

3.0 EXISTING BASELINE ASSESSMENT

3.1 Habitats

Site Habitat Baseline

3.1.1 When assessed by J Taylor Ecology Consulting in 2019, a large part of the site was formed of artificial unvegetated, unsealed surface in the form of wood chippings. Tall ruderal vegetation was noted to run along the eastern boundary, and to a lesser extent adjacent to the western boundary. Additionally, tall ruderal vegetation was noted within the construction zone of the site. Species present included a dominance of bramble *Rubus fruticosus agg*, with abundant creeping thistle *Cirsium arvense* and ribwort plantain *Plantago lanceolata* with occasional creeping buttercup *Ranunculus repens*, smooth hawk's-beard *Crepis capllaris* and forget-me-not *Myosotis sylvatica*. Grass species such as perennial rye grass *Lolium perenne* and cocksfoot *Dactylis glomerata* were also noted along the eastern boundary.

3.1.2 There were 2no. buildings present on site, both of which are proposed for demolition. Building B1 comprised a corrugated steel covered timber shed and building B2 was a dilapidated brick and block building with a failed roof. Located south of the buildings, close to the eastern boundary, were 2no. mature Monterey Cypress *Cupressus macrocarpa* trees in good condition.

3.1.3 Condition of the existing habitats on site was assessed using the habitat condition sheets specific to each habitat, which can be found in Appendix A.

3.1.4 The Biodiversity Net Gain (BNG) assessment concluded that the existing baseline biodiversity value of the site was **0.71** Habitat Units, consisting of:

- 0.01ha of developed land, sealed surface providing 0 habitat units (condition assessment N/A).
- 0.269ha of artificial unsealed surface providing 0 habitat units (condition assessment N/A).
- 0.062ha of ruderal / ephemeral in 'poor' condition providing 0.12 habitat units.
- 0.073ha of 2no. large non-native trees in 'moderate' condition providing 0.58 habitat units.

3.2 Hedges

Site Hedge Baseline

3.2.1 Along the northern end of the eastern boundary of the site was a narrow, single line of shrubs which had been closely planted, and were subject to regular cutting. The native hedgerow was considered a Priority Habitat under Section 41 of the NERC Act 2006. Species present included a dominance of hawthorn *Crataegus monogyna* with frequent elder *Sambucus nigra* and ivy *Hedera helix*.

3.2.2 Located along the northern boundary, adjacent to Homestead Road, was a line of mature non-native cherry laurel *Prunus laurocerasus* with bramble to the base. There was a further short line of early mature non-native Leyland cypress *Cupressus* × *leylandii* along the northern end of the western boundary.

3.2.3 At the southern end of the eastern boundary was a line of trees, which were a continuation of the native hedgerow at the northern end. There were 2no. early mature ash *Fraxinus excelsior* trees at the northern end of the line, with frequent hawthorn and cherry *Prunus sp*., and occasional holly *Ilex aquifolium* towards the southern end.

3.2.4 Condition of the existing hedgerows on site was assessed using the habitat condition sheets specific to each habitat, which can be found in Appendix A.

3.2.5 The Biodiversity Net Gain (BNG) assessment concluded that the existing baseline biodiversity value of the site is **0.50** Hedgerow Units, consisting of:

- 0.03km of non-native and ornamental hedgerow in ‘poor’ condition providing 0.03 hedgerow units
- 0.058km of native hedgerow in ‘moderate’ condition providing 0.23 hedgerow units
- 0.06km of line of trees in ‘moderate’ condition providing 0.24 hedgerow units

4.0 BIODIVERSITY NET GAIN ASSESSMENT

4.1 Overview / Considerations

4.1.1 The site is currently dominated by very low or low distinctiveness habitats, with 2no. non-native mature trees in moderate condition. Habitat creation will take place on site in the form of developed land sealed surface, artificial unvegetated unsealed surface, modified grassland, other neutral grassland, mixed scrub, sustainable urban drainage system, a pond and 9no. native trees; the majority of these habitats are either medium or high distinctiveness. Bird, bat, and invertebrate boxes will be included into the scheme to provide species-specific habitat enhancements which are not able to be accounted for within the metric calculations.

4.1.2 Where the area of habitats is required in hectares, the area of habitats on site have been rounded to the nearest $10m^2$. Hedges have been measured in km.

4.1.3 The site is not within any ecological designation, such as a *Biodiversity Opportunity Area* or *Nature Improvement Area* and as such all habitats have been assessed as being of low ecological significance.

4.2 Baseline Inputs

A-1 Site Habitat Baseline

4.2.1 The existing habitat variables identified in section 3 of this report were inputted into the metric which calculated the ecological baseline. Total Habitat Units on site were **0.71**. A full condition assessment for each existing habitat type is detailed in Appendix A.

4.2.2 All habitat on site has been classified as lost for the purpose of this assessment.

B-1 Site Hedge Baseline

4.2.3 The existing hedge variables identified in section 3 of this report were inputted into the metric which calculated the ecological baseline. Total Hedgerow Units on site were **0.50.** A full condition assessment for each existing habitat type is detailed in Appendix A.

4.2.4 1no. small ash tree within the native hedgerow along the eastern boundary shall be removed due to ash dieback. The small gap will be infilled therefore the entire length of native hedgerow (0.058km) has been considered to be retained for the purpose of this assessment. 2no. ash tree within the line of trees are to be removed due to ash dieback, with the remainder of this boundary (0.04km) retained in its current condition. The non-native hedgerow along the northern boundary, and along the northern end of the western boundary will be lost. This shall result in the loss of 0.11 hedgerow units as a result of the development.

4.3 Proposed Habitats

A-2 Site Habitat Creation

4.3.1 Proposals are to result in the creation of new habitat on site including:

- 0.024ha of developed land, sealed surface which includes the proposed building and paving to the south of the building.
- 0.08ha of artificial unvegetated, unsealed surface which includes the track along the eastern boundary.
- 0.047ha of other neutral grassland proposed to the south of the site.
- 0.16ha of modified grassland proposed within the middle section of site.
- 0.002ha of sustainable urban drainage system next to the proposed pond within the northern section of the site.
- 0.006ha of pond proposed within the northern section of the site.
- 0.037ha of 9no. proposed native trees within the northern section of the site.
- 0.022ha of mixed scrub proposed to the north of the site.

4.3.2 Condition assessment of the proposed developed land, sealed surface and artificial unvegetated unsealed surface is not applicable, and a standard score has been applied to these habitats. The modified grassland has been assigned a target condition of ‘poor’ as this is considered to be the most realistic outcomes for this habitat.

4.3.3 The other neutral grassland, pond, sustainable urban drainage system, rural trees and mixed scrub have been assigned a target condition of ‘moderate’ which is considered to achievable within the context of the site.

4.3.4 The management of these habitats, and future monitoring requirements to ensure they achieve the target condition, should be detailed within a Habitat Management and Monitoring Plan or similar. A full target condition assessment for each proposed habitat creation type is detailed in Appendix B. Proposed habitats would deliver **0.93** habitat units.

4.4 Proposed Hedgerows

B-2 Site Hedge Creation

4.4.1 Proposals are to result in a total of 0.14km of native hedgerow along the western and northern boundaries of the site. This shall include species such as hazel *Corylus avellana*, hornbeam *Carpinus betulus*, hawthorn *Crataegus monogyna* and field maple *Acer campestre*. It is not necessary for the hedgerow to achieve anything over 'poor' to get the requisite habitat units, therefore this is considered to be the most realistic outcome for the proposed hedgerow, resulting in the delivery of **0.27** hedgerow units. A full target condition assessment for the hedgerow is detailed in Appendix B.

4.5 Trading Summary

4.5.1 The trading rules for the habitats are not currently met due to the loss of 2no. large non-native trees. The proposals however include the planting of 9no. new small native trees, areas of other neutral grassland and mixed scrub, as well as modified grassland, a pond and sustainable urban drainage system. These habitats will provide a range of environments for invertebrates, which will in turn attract species such as bats and birds. The proposed habitats are considered to provide the same functionality, if not better, as the 2no. non-native trees which are being lost, therefore the proposals should be considered to be acceptable despite the trading error.

4.6 Non-metric Enhancements

4.6.1 The development shall include enhancements which are not quantified within the metric, such as integrated bird and bat boxes, and installation of invertebrate boxes. These measures shall create additional habitat for a range of species.

4.7 Results

4.7.1 Once all habitat creation measures are taken into the account, the scheme shall deliver **0.93** habitat units, resulting in a net increase of **0.22** units and a **31.61% Biodiversity Net Gain** in **Habitat Units** across the site.

4.7.2 Once all hedge creation measures are taken into the account, the scheme shall deliver **0.66** hedge units, resulting in a net increase of **0.16** units and a **32.30% Biodiversity Net Gain** in **Hedgerow Units** across the site. All trading rules have also been satisfied for Hedgerow Units.

5.0 CONCLUSION

5.1 Metric calculations have identified that the proposed scheme would result in over +10% Biodiversity Net Gain, complying with the current Local Planning policy, subsequent to the provision of legal agreement / conservation covenant, to ensure that the proposed habitats are delivered for at least 30 years.

5.2 To ensure the above habitats are managed into the future, a suitable management plan should be produced. This shall include management prescriptions for new habitat areas including aspects such as mowing regimes, which shall ensure the target conditions are achieved.

6.0 REFERENCES

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

CIEEM. (2019). Biodiversity Net Gain: Good Practice Principles for Development. Winchester

Department for Environment Food and Rural Affairs (2023). *The Statutory Biodiversity Metric Calculation Tool.* Published by Department for Environment Food and Rural Affairs on 29th November 2023. The Statutory Biodiversity Metric Calculation Tool Available online: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides
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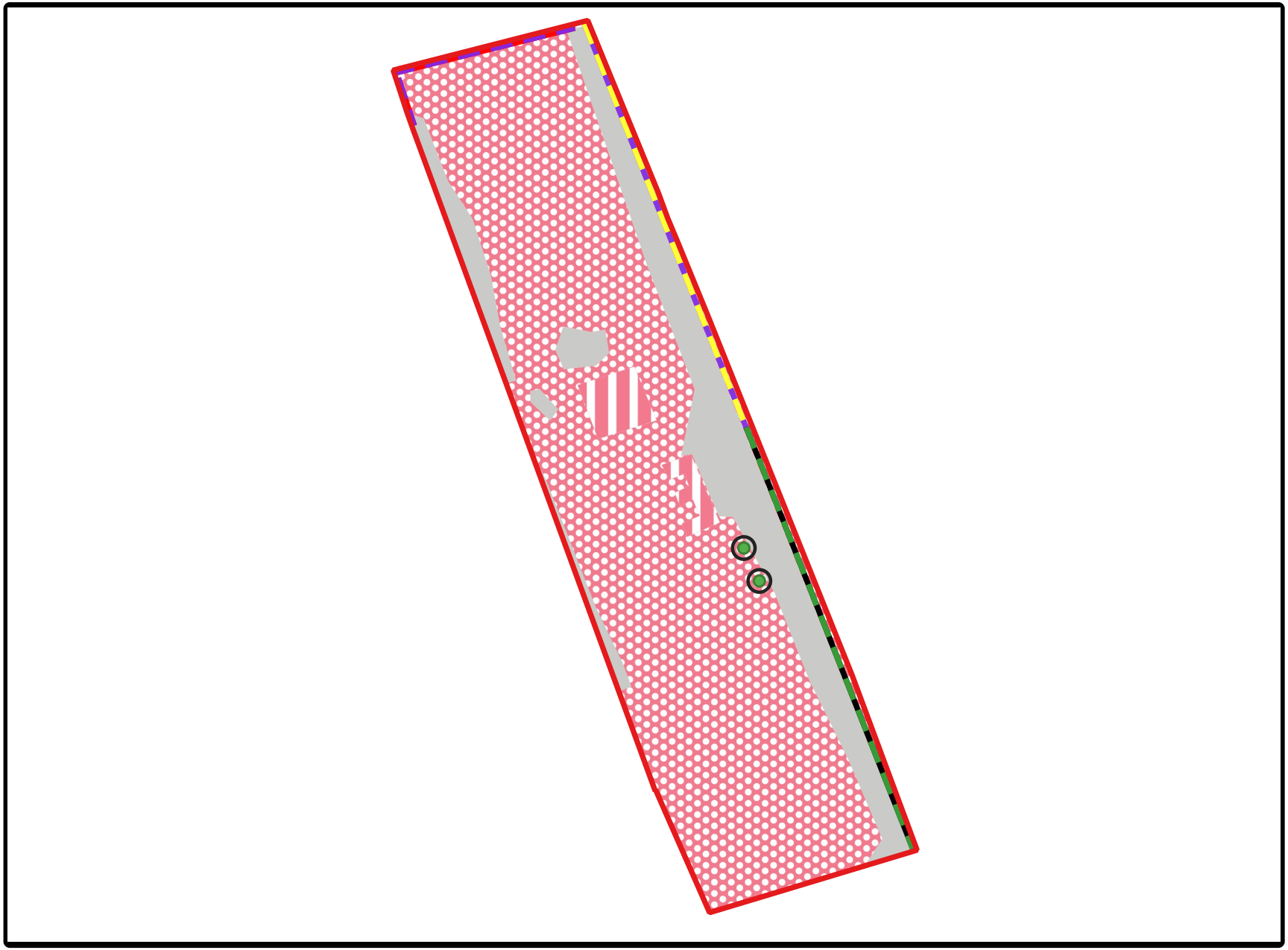
Department for Environment Food and Rural Affairs (2023). *The Statutory Biodiversity Metric - Technical Annex 1: Condition Assessment Sheets and Methodology.*

J Taylor Ecology Consulting (2019) *Land Adjacent to Paddock Grange, Homestead Road, Medstead: Ecological Appraisal* (Ref: 2019/5223/A)

UKHab Ltd (2023). UK Habitat Classification Version 2.0



Legend

- Red Line Boundary
- Existing Large Rural Tree
- Non-native and ornamental hedgerow
- Line of trees
- Native hedgerow
- Artificial unvegetated, unsealed surface
- Developed land; sealed surface
- Ruderal/Ephemeral

25 50 m

1:750

Figure No. 01 - Baseline Habitat Plan

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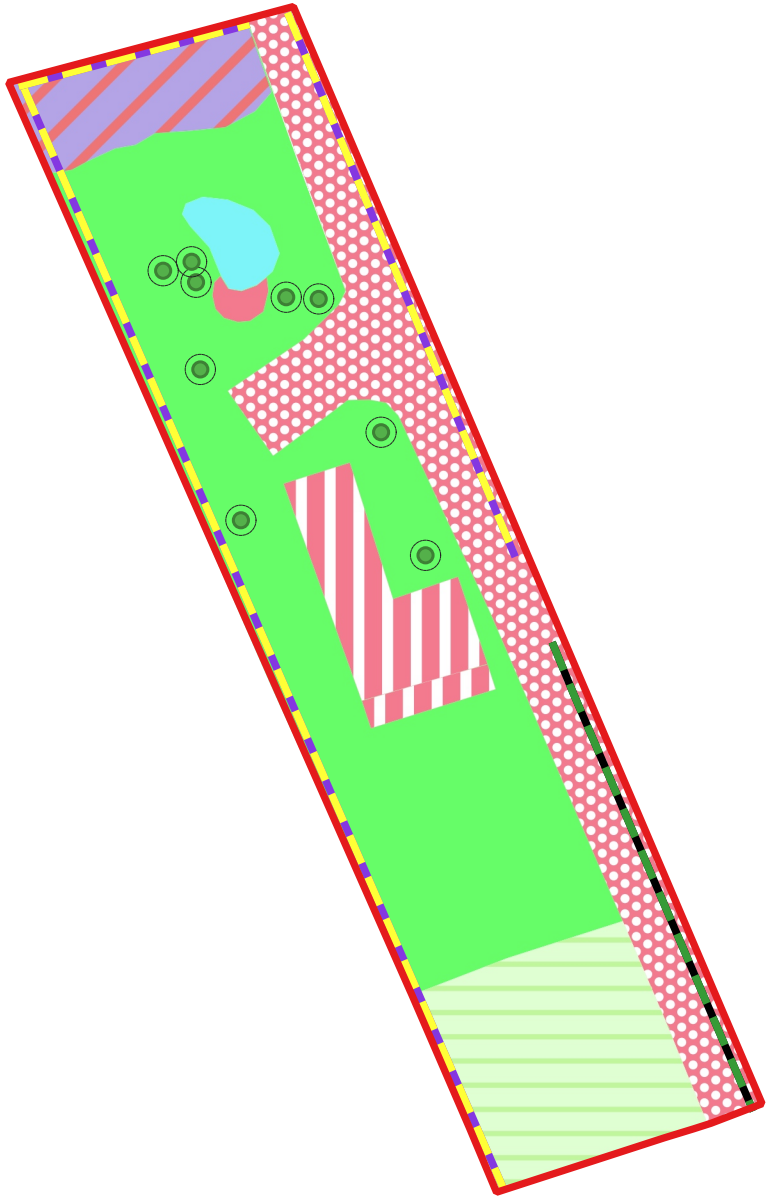
Drawn by	Approved by	Rev	Date
HS	CF	01	15/01/24



Legend

- Red Line Boundary
- Proposed Small Rural Tree
- Line of trees
- Native hedgerow
- Artificial unvegetated, unsealed surface
- Developed land; sealed surface
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Ponds (non-priority habitat)
- Sustainable drainage system

25 50 m

1:750

Figure No. 02 - Proposed Habitat Plan

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Appendix A – Condition Assessment for Existing Habitats and Hedges

Sparsely Vegetated Urban Land with Ruderal – Assessed as 'poor' condition:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for **all urban habitat types**:			
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	N	
C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	Y	No invasive species were noted within this habitat.

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Results for habitats requiring assessment of **3 core criteria** only **(all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs)**:		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)	
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	
• Passes 0 or 1 of 3 core criteria.	Poor (1)	x

Individual Trees – Assessed as 'moderate' condition:

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).	N	Non native species Monterey Cypress Cupressus macrocarpa
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).	Y	Individual trees automatically pass this criteria
C	The tree is mature (or more than 50% within the block are mature)[1].	Y	Both trees are mature
D	There is little or no evidence of an adverse impact on tree health by human activities (such as 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.	Y	Tree retained full canopy spread
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	Tree assessed as being of negligible bat roost suitability in 2019 report, with no features noted.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Trees are adjacent to line of trees and grassland which make up at least 20%.
	Number of criteria passed	4	

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)	X
Passes 2 or fewer criteria	Poor (1)	
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.		

Native Hedgerow – Assessed as 'moderate' condition:

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria 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).	Y	Hedgerow is c. 2m in height.
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 indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	N	Hedgerow is c. 1m in width.
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).	Y	
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).	Y	
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.	N	
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.	N	
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].	Y	No non-native invasive species present within the hedgerow.
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 (for example, excessive hedgerow cutting).	N	

Condition categories for hedgerows without 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 4 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
	Score achieved:	Moderate

Line of Trees – Assessed as 'moderate' condition:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	At least 70% of trees are native species.	Y	Tree species included cherry, ash and hawthorn.
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.	Y	Gappy but less than 5m wide.
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.	Y	Ivy present.
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].	N	Evidence of clearance of vegetation to base.
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.	N	Evidence of heavy flailing.
		Number of criteria passed	3

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

Appendix B – Target Condition Assessment

Other Neutral Grassland – Target Condition = 'moderate'

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).[1] **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	Y	UKHab category very broad for this habitat.
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.	N	Sward to be managed by 1-2 yearly cut. Unable to guarentee >20% shall be less than 7cm.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2].	Y	Area to be monitored and bare ground re-seeded.
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	Scrub encroachment shall be managed by mowing.
E	Combined cover of species indicative of suboptimal condition[3] 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[4] (as listed on Schedule 9 of WCA[5]) are present, this criterion is automatically failed.	Y	Area managed to avoid damage and monitored for presence of invasive species.
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 3 and 5 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	N	This cannot be guaranteed.
	Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)	N	
	Number of criteria passed	4	

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)	x
Passes 2 or fewer criteria	Poor (1)	

Modified Grassland– Target Condition = 'poor'

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs (these may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m^2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	N	Amenity lawn mix shall be used.
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 vertebrates and invertebrates to live and breed.	N	Sward to be managed.
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	Scrub encroachment shall be managed by mowing.
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	N	Areas of the grassland may be used for recreation.
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	Y	Area to be monitored and bare ground re-seeded.
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Y	Scrub encroachment shall be managed by mowing.
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Y	Area to be managed and monitored for presence of invasive species.
	Essential criterion achieved (Yes or No)		N
	Number of criteria passed		4

Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved ×/✓
Passes 6 or 7 criteria including passing essential criterion A	Good (3)	x
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)	
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	

Sustainable Urban Drainage System – Target Condition = 'moderate'

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for **all urban habitat types**:			
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	N	
C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	Y	

Additional Criteria - must be assessed for **Bioswale and SuDS** habitat types only:			
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife[4].	Y	Native species to be planted.
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.	Y	

Results for **Bioswale or SuDS** (requiring assessment of **5 criteria** - core criteria plus additional criteria specified for habitat type):		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group E)	Good (3)	
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	x
• Passes 2 or fewer of 5 criteria.	Poor (1)	

Pond– Target Condition = 'moderate'

	Condition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - applicable to all ponds (woodland[1] and non-woodland):			
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Y	
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	N	Modified grassland surrounds most of the pond.
C	Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.	Y	Duckweed monitored and managed.
D	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.	Y	
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams[2], pumps or pipework.	Y	
F	There is an absence of listed non-native plant and animal species[3].	Y	This will be monitored and managed.
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	N	This cannot be guaranteed.
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed)[4] cover at least 50% of the pond area which is less than 3 m deep.	N	This cannot be guaranteed.
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	Y	Trees are located around < 50% of the pond.
	Number of criteria passed	6	

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Results for woodland ponds which require assessment of 7 core criteria		
Passes 7 criteria	Good (3)	
Passes 5 or 6 criteria	Moderate (2)	
Passes 4 or fewer criteria	Poor (1)	
Results for non-woodland ponds which require assessment of 9 criteria		
Passes 9 criteria	Good (3)	
Passes 6 to 8 criteria	Moderate (2)	x
Passes 5 or fewer criteria	Poor (1)	

Individual Trees – Target Condition = 'moderate'

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).	Y	All 9no. trees are native.
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).	Y	
C	The tree is mature (or more than 50% within the block are mature)[1].	N	
D	There is little or no evidence of an adverse impact on tree health by human activities (such as 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.	Y	This shall be included within a management plan.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Trees are set within modified grassland.
	Number of criteria passed	4	

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)	x
Passes 2 or fewer criteria	Poor (1)	
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.		

Mixed Scrub– Target Condition = 'moderate'

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).[1] - At least 80% of scrub is native, - There are at least three native woody species[2], - No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover).	Y	Mixed species to be planted.
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[3]) shrubs are all present.	N	Likely to remain single age range present.
C	There is an absence of invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) and species indicative of suboptimal condition[6] make up less than 5% of ground cover.	Y	Habitat to be monitored for presence of invasive species.
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Y	Scrub left to develop.
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	Due to constained space, scrub shall form a continuous block.
		Number of criteria passed	3

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

Native Hedgerow – Target Condition = 'poor'

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria 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).	N	Newly planted hedgerow <1.5m high.
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 indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	N	Hedgerow c. 1m in width.
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).	Y	No gaps from the base.
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).	Y	Continuous hedgerow.
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.	N	Modified grassland along hedgerow likely to be mown near hedgerow.
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.	N	Not guarenteed to be > 20%.
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].	Y	Monitored for presence of invasive species.
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 (for example, excessive hedgerow cutting).	N	Potential to fail this dependant on future use of the grassland.

Condition categories for hedgerows without 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 4 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
	Score achieved:	Poor

Appendic C - Preliminary Ecological Appraisal completed by J Taylor Ecology Consulting in 2019

J Taylor
Ecology Consulting

www.jtaylorecology.co.uk

Land adjacent to Paddock Grange
Homestead Road
Medstead

Ecological Appraisal

A combined preliminary ecological appraisal and impact assessment of the proposed construction of a new residential dwelling on the site.

Version 2 dated 19th August 2019

Report for:
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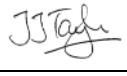
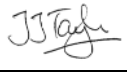
Quality Management

	Issue	Revision
Remarks:	DRAFT	FOR ISSUE
Date:	5th July 2019	19th August 2019
Prepared by:	Jonathan Taylor BEng(Hons) MSc PGCert MCIEEM	Jonathan Taylor BEng(Hons) MSc PGCert MCIEEM
Signature:		
Checked by:	Imogen Taylor BA(Hons)	
Signature:	*By email*	

Contents

Tables

1.0. Summary

1.1.1. J Taylor Ecology Consulting were commissioned to prepare an Ecological Appraisal in relation to a proposed new residential dwelling on land adjacent to Paddock Grange in Medstead, Hampshire.

1.1.2. The ecological work conducted followed the Preliminary Ecological Appraisal process (PEA), which identifies the ecological features present, or potentially present within the site, allowing any potential ecological constraints to be identified and the requirement for any additional surveys established. Any required mitigation was then detailed, together with ecological enhancements.

1.1.3. A desk study was undertaken, followed by a field survey of the site on 30th May 2019.

1.1.4. The following conclusions were identified in relation to protected wildlife sites and habitats.

- The site is not subject to any statutory or non-statutory wildlife designation and no impact on any designated wildlife sites is anticipated.
- The habitat subject to direct impact as a result of the proposals comprised predominantly of bare ground, given that recent vegetation clearance that had been conducted, together with small areas of tall ruderal vegetation along the site boundaries. Such habitats were considered common locally and to be of ecological value at the site level only.
- Along the eastern boundary was a narrow species poor hedgerow, which would be considered a Priority Habitat under Section 41 of the NERC Act 2006. Although no direct work to the hedgerow is proposed, it was considered to have an elevated ecological value at the local level and therefore protection measures will be required during the construction phase of the work.
- A small number of trees were also present along the eastern site boundary at the southern end, none of which will be impacted by the proposals.
- None of the flora species recorded are individually protected by the Wildlife and Countryside Act 1981 (as amended), listed under Section 41 of the NERC Act 2006 or a Priority Species.

1.1.5. The following conclusions were identified in relation to protected and priority species.

- The majority of the interior of the site offered limited potential for reptiles, given the recent vegetation clearance had resulted in the majority of the interior being bare ground. There were some limited areas of potential reptile habitat associated with the ruderal regrowth along the boundaries, however given the lack of connectivity to suitable reptile habitat in the wider area, presence is considered low. However, precautionary mitigation is required.
- The removal of the laurel hedgerow along the northern boundary (Section 7.4.3) and the clearance some of the denser areas of ruderal regrowth could impact on nesting birds. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Constraints regarding the timing of the work and clearance method is required.
- There is the potential for disturbance to occur to any bats that may use the adjacent hedgerow boundaries for commuting, particularly from the use of artificial light. Mitigation is required.
- There is also the potential for hedgehogs to be present, which is a Species of Principal Importance under Section 41 of the NERC Act 2006. Mitigation is required (Section 7.2.3).

1.1.6. Provided the required mitigation is implemented in full, no long-term impact is foreseen and the scheme would, therefore, comply with the relevant legislation. The assessment of the potential impacts of the proposals concluded that the magnitude and extent of the impact is considered to be minimal with no negative residual impacts.

1.1.7. There are opportunities for an increase in the biodiversity value of the site, which will need to be implemented in accordance with National Planning Policy Framework 2018 and local planning policy.

2.0. Introduction

2.1. Background

2.1.1. J Taylor Ecology Consulting were commissioned by Mr. Nick Beere of R Beere & Sons Builders Ltd, to prepare an Ecological Appraisal in relation to the construction of a proposed new residential dwelling on land adjacent to Paddock Grange, Homestead Road, Medstead, Alton, GU34 5PW (Ordnance Survey grid reference SU65193634).

2.1.2. The appraisal was required in conjunction with the submission of a planning application for a single new chalet style four bedroom dwelling, to be located in the northern part of the site, approximately in line with the adjacent Paddock Grange. The existing access is to be retained, with a car parking area located adjacent to the new dwelling. The farm access track, which runs adjacent to the eastern boundary, will also be retained.

2.1.3. At the time of the survey visit, the site had been largely cleared of self-seeded vegetation, which had arisen since cessation of the previous use of the site. As a result, much of the interior of the site was bare ground and covered with chippings, with some ruderal vegetation beginning to come through. Within the site were two former buildings, comprising of a corrugated steel covered timber shed, and a dilapidated brick and block former pony stables with a failed roof. A line of trees was present within the boundary at the southern end of the eastern boundary, with two Monterey cypress (*Cupressus macrocarpa*) trees within the site.

2.2. Site Description and Context

2.2.1. The site is located to the south of Homestead Road, approximately 800m to the south southwest of the village of Medstead in East Hampshire. The site is located within a line of residential dwellings in substantial plots which extend both to the north and south of Homestead Road.

Photograph 1. General view of the site looking north west towards Paddock Grange.

2.2.2. Located between Paddock Grange to the west and Little Barn to the east, the site is long and narrow in form, extending from Homestead Road southwards. A farm access track ran adjacent to the northern boundary, with provides access to the area of land to the south, part of Windy Ridge Farm.

2.2.3. The northern boundary of the site fronts Homestead Road, which was formed from a line of dense laurel (*Prunus laurocerasus*) with a gated access at the eastern end. Beyond the eastern boundary were the grounds of Little Barn, which included a large area of improved grassland used as a paddock.

2.2.4. Beyond the narrow southern boundary was an area of scrub and scattered trees within Windy Ridge Farm in general use for the storage of vehicles and other miscellaneous items, accessed from the farm track which runs along the inside of the eastern boundary.

2.2.5. Along the northern end of the western boundary was the garden surrounding the dwelling of Paddock Grange, comprising predominantly of amenity grassland. The southern part of the western boundary was located adjacent to a further large horse paddock, which appeared to be in use at the time of the survey visit.

Photograph 2. Two buildings located close to the eastern boundary, which will be removed.

2.2.6. Photographs of the site are provided in Appendix 10.1.

2.2.7. For the purpose of this report, the “site” is defined as the area highlighted on the Location Plan in Appendix 10.2 and is the area subject to this report. A plan showing the location of the proposed new dwelling is provided in Appendix 10.3.

2.2.8. A phase 1 habitat plan of the site (JNCC 2010) is provided in Appendix 10.4.

2.2.9. The study area (zone of influence) is defined as a 2km radius from the site boundary.

2.3. Pre-existing information on the site

2.3.1. No previously conducted ecological survey work was identified within the boundary of the site or in the immediate vicinity.

2.4. Personnel

2.4.1. The field survey of the site and subsequent ecological appraisal was undertaken by Jonathan Taylor BEng (Hons) PGCert MSc MCIEEM on 30th May 2019.

2.4.2. Jonathan is fully qualified practicing Ecological Consultant with over 20 years' experience and has an expert knowledge of ecological appraisals and impact assessments on an extensive range of habitats and species. He also has a practical understanding of factors affecting ecology in relation to construction and the built environment and regularly provides recommendations for ecological protection, enhancement and mitigation measures.

2.4.3. Jonathan has an expert knowledge of bat ecology and legislation, from both formal training and working alongside experienced bat surveyors and specialises in reptile and amphibian ecology. He holds Natural England Class Licenses for bats (2019-39970-CLS-CLS) and great crested newts (2015-18281-CLS-CLS).

2.4.4. As a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), Jonathan adheres to the Institute's Code of Professional Conduct and professional ethics and maintains a standard of knowledge and experience in accordance with the CIEEM Continuing Professional Development Policy. Jonathan meets or exceeds the mandatory survey competency requirements for most common protected species contained within the Technical Guidance Series published by CIEEM (2013).

2.5. Purpose

2.5.1. The purpose of this Ecological Appraisal is as follows:

- To undertake a desk study using resources appropriate and proportional to the potential scale and magnitude of ecological impact.
- To record the ecological baseline and identify the broad habitat types and key ecological features present on the site to enable a provisional assessment of the ecological value of the site to be made.
- To assess the potential of the habitats on and around the site to support legally protected or priority species, and to identify the requirement for any additional surveys that may be required to inform the impact assessment.
- To conduct a provisional impact assessment to identify any possible impacts of the proposals on the ecological receptors present and associated ecological constraints, clearly identifying any 'significant effects' as well as impacts on any designated sites or protected species.
- To make recommendations for design changes to reduce any possible impacts if appropriate.
- To propose mitigation measures to avoid, mitigate or compensate ecological impacts, as appropriate.
- To provide the required opportunities for wider biodiversity and ecological improvement, to detail measures to ensure that the biodiversity value of the site would be maintained and enhanced in accordance with Sections 170 and 174 of the National Planning Policy Framework (NPPF 2018).

3.0. Legislative and Planning Context[1]

3.1. Legislation Overview

3.1.1. The Wildlife and Countryside Act 1981 (as amended) provides the main legal framework for nature conservation and species protection in the UK. In England and Wales, enforcement provisions were extended and some amendments for protection were made by the Countryside Rights of Access Act 2000. In addition, the protection of European Protected Species in Great Britain is covered by the Conservation of Habitats and Species Regulations 2017.

3.1.2. The Countryside and Rights of Way Act 2000, and The Natural Environment and Rural Communities (NERC) Act 2006, provide supplementary protected species legislation. Specific protection for badgers (*Meles meles*) is provided by the Protection of Badgers Act 1992.

Wildlife and Countryside Act 1981

3.1.3. The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends the existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive). Animals listed under Schedule 5 receive full or partial protection under Section 9. The floral species subject to protection are listed in Schedule 8.

3.1.4. Wildlife and Countryside Act 1981 (as amended) also provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) – these sites are identified for their flora, fauna, geological or physiographical features by the country conservation bodies in England (Natural England) and Wales (Natural Resources Wales).

3.1.5. The Wildlife and Countryside Act 1981 also contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9.

The Conservation of Habitats and Species Regulations 2017

3.1.6. The Conservation of Habitats and Species Regulations 2017 serve to consolidate and update the Conservation of Habitats and Species Regulations 2010, which have been revoked. These changes do not reflect any changes in policy but serve to update references to related legislation and improve the text of the Regulations. The Regulations came into force on 30th November 2017.

3.1.7. The Regulations transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. All bat species together with otters, hazel dormouse and great crested newts are listed under Schedule 2 and hence are protected by Regulation 39.

3.1.8. The Regulations also place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species to the European Commission. These sites are then designated as Special Areas of Conservation (SACs) or Special Protection Areas (SPAs).

[1] Please note that this legal information is a summary and intended for general guidance only. In all cases, the original legal documents should be consulted for definitive information. Further information related to the protection afforded to specific species is provided in the Appendix.

3.2. Policy and Planning

Natural Environment and Rural Communities Act (NERC) 2006

3.2.1. All Local Planning Authorities are obliged under Section 40(1) of the Natural Environment and Rural Communities (NERC) Act 2006 to conserve biodiversity, and hence are required to consider the potential ecological impacts of development proposals on habitats and species prior to submission of a planning application. This obligation is implemented in relation to planning through Planning Policies, generally at two main administrative levels: nationally through the National Planning Policy Framework (NPPF) and locally through the respective local development plans.

3.2.2. Section 41 of the Natural Environment and Rural Communities Act 2006 requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. Fifty-six Habitats of Principal Importance are included on the Section 41 list, along with 943 Species of Principal Importance. Hence the presence of these habitats and species and any impact upon them are a material consideration in the determination of a planning application.

Planning Context

3.2.3. The planning policy framework that relates to nature conservation is at two main administrative levels: nationally through the National Planning Policy Framework 2018 (NPPF) and locally within Policy CP21 (Biodiversity) of the East Hampshire District Local Plan: Joint Core Strategy (June 2014).

3.2.4. The National Planning Policy Framework (NPPF), published in July 2018, sets out current government policy on biodiversity and nature conservation. Section 170 states that 'planning policies and decisions should contribute to and enhance the natural and local environment'. Section 174 includes for the specific protection and enhancement of biodiversity by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

3.2.5. Paragraph 175 of the National Planning Policy Framework (July 2018) states that when determining planning applications, local planning authorities should apply the following principle: "…*if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site…), mitigated or, as a last resort, compensated for, then planning permission should be refused*…" This includes development that results in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.

3.2.6. The NPPF also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development. The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

3.2.7. Locally, Policy CP21 (Biodiversity) of the East Hampshire District Local Plan: Joint Core Strategy states that "*Development proposals must maintain, enhance and protect the District's biodiversity and its surrounding environment*". New development will be required to "*maintain, enhance and protect district wide biodiversity…, and ensure wildlife enhancements are incorporated into the design to achieve a net gain in biodiversity*. In addition, development proposals are required to *"protect and, where appropriate, strengthen populations of protected species".*

The policy has a notable focus on maintaining a district–wide network of local wildlife sites, wildlife corridors and stepping stones between designated sites and other areas of biodiversity value.

4.0. Methodology

4.1. General

4.1.1. The methodology used in this report is based upon that contained within the Guidelines for Preliminary Ecological Appraisal (2nd edition) (CIEEM 2017a), the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2016a) and Guidelines for Ecological Report Writing (CIEEM 2017b), produced by the Professional Standards Committee of the Chartered Institute of Ecology and Environmental Management (CIEEM).

4.1.2. The Preliminary Ecological Appraisal (PEA) describes the process of identifying the ecological features present, or potentially present within the site and its surrounding area in relation to the specific proposals. This allows the identification of the likely ecological constraints associated with the project to be identified, any mitigation measures that may be required, the need for any additional surveys and the opportunities offered by the project to deliver ecological enhancement.

4.1.3. The PEA is then used to inform the following impact assessment stage, which is the process of identifying, quantifying and evaluating the potential effects of the proposals on the habitats, species and ecosystems present. Where no further ecological work is identified as necessary to establish the ecological value of the site, and there is sufficient information available about the proposals, the Impact Assessment can then be conducted. Where further surveys or other ecological work are identified as necessary, these must be conducted before the impact assessment can be completed.

4.1.4. Hence this Ecological Appraisal comprises both a Preliminary Ecological Appraisal and subsequent Impact Assessment, with the scope, structure and content of the report proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposals.

4.2. Desk Study

4.2.1. A desk study was undertaken to identify the presence of any statutory or non-statutory designated wildlife sites within the 1km study area (the Zone of Influence). The desk study was conducted in line with CIEEM's UK Guidelines for Accessing and Using Biodiversity Data (CIEEM 2016b).

- Basic initial information about the site and contextual information about the setting of the site within the landscape was obtained using QGIS v3.4 (Madeira), which is a desktop geographic information system (GIS).
- Up to date Natural England GIS Digital Boundary Datasets of UK and European designated wildlife sites were imported as Shape files under an Open Government Licence (OGL) and viewed on QGIS to identify their location and extent in relation to the site (https://data.gov.uk/).
- Hampshire Biological Information Centre (HBIC) consulted for up to date information on the location and descriptions of non-statutory sites and previously recorded protected and priority species within 1km of the site (dated June 2019).
- Information on bats within the study area was provided by Hampshire Bat Group.
- Current Ordnance Survey maps and aerial photographs were examined (again using QGIS v3.4) to identify all water bodies located within a 500m of the proposed development site. This was undertaken as great crested newts (*Triturus cristatus*) can use suitable terrestrial habitat up to 500m from a breeding pond (English Nature Report ENRR Number 576).

4.3. Field Survey

Phase 1 Habitat Survey

4.3.1. A detailed survey of the site and surrounding area was undertaken on 30th May 2019, which identified the habitat types located within the site in line with the guidelines stated in the Handbook for Phase 1 Habitat Survey (JNCC 2010).

4.3.2. All broad habitat types present were described, with the dominant plant species recorded and habitats classified according to their vegetation types. These are presented in the standard Phase 1 Habitat Plan format (Appendix 10.4). To supply additional information, target notes describe features of particular importance, which are referred to in the text.

4.3.3. The survey focused on the areas directly affected by the proposed work as well as habitats immediately adjacent. In addition, areas of the site not affected by the development but still considered to be suitable for protected species were also noted. The presence of any Habitats of Principal Importance under Section 41 of the NERC Act 2006 or Priority Habitats was also identified.

Faunal and Floral Species

4.3.4. An assessment was then made of the potential for the site to support protected species listed on Schedule 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance. The site and a 50m zone around the site (where land access was permitted) were searched for the presence of badger setts and evidence of badger activity e.g. latrines, hairs, scrapes, footprints and run-throughs.

4.3.5. The site was also examined for the presence of vascular plants listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance. The presence of any alien invasive species of plants listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed or giant hogweed, was also identified and their location recorded.

4.3.6. Plant species were recorded as encountered, together with estimates of cover and abundance where appropriate (on the DAFOR scale i.e. Dominant, Abundant, Frequent, Occasional, and Rare) and follows the nomenclature of Stace (1997) for vascular plant species. Bryophytes, lichen and fungi and the less common invertebrate groups were not surveyed.

4.3.7. The age class for a tree is estimated based on its expected life span in its given situation, taking into account any defects, the form of the tree etc. The categories are Young (Y), Early Mature (EM – less than 1/3 of expected life span), Mature (M 1/3 to 2/3 of expected life span), Late Mature (LM – more than 2/3 of expected life span) and Veteran (V).

Preliminary Ecological Appraisal for Bats Methodology

4.3.8. As part of the field survey, a Preliminary Ecological Appraisal for Bats (Collins J. 2016) was undertaken consisting of a non-invasive visual inspection of the trees within or directly adjacent to the proposed working area. In addition, the value of the wider area was also assessed for its potential to support roosting, foraging or commuting bats.

4.3.9. The assessment for bats was based on the guidance included in the Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins J. 2016) and Bat Workers Manual (JNCC 2010).

4.4. Evaluation

4.4.1. Following completion of the field survey, the site was evaluated to identify the presence of important ecological features that may be affected, with reference to the geographical context in which they are considered important (CIEEM 2016a). Important ecological features are habitats, species, ecosystems and their functions/processes, which are considered to be important and that could potentially be affected by the proposals.

4.4.2. The geographical value categories used in this assessment are: International (i.e. Europe), National (i.e. UK/England), County (i.e. Hampshire), District (i.e. East Hampshire), Local (i.e. within Medstead) and Site (i.e. within the immediate zone of influence). The evaluation categories for species are the same as those for habitats and where species are confirmed as present on site, and estimation of the species value is given, having consideration to its distribution, status and historical trends. The legislative and planning policy context are also important considerations and have been given due regard throughout the evaluation.

4.4.3. Where species were not confirmed as being present on the site following the field survey, the potential of the site to provide habitats for protected species was assessed. The likelihood of species occurrence is ranked as follows (partially adapted from Collins J (2016) in relation to bats).

4.4.4. **Negligible** – while presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species or species group. The surrounding habitat is considered unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species. In relation to bats, there are negligible habitat features on site likely to be used by roosting bats.

4.4.5. **Low** – on-site habitat of poor to moderate quality for a given species/species group, but presence cannot be discounted. In relation to bats, the structure has one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger number of bats (i.e. unlikely to be suitable for maternity or hibernation).

4.4.6. In relation to trees, the tree is of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.

4.4.7. **Moderate** – on-site habitat of moderate quality, providing all of the known key requirements of given species/species group, with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, habitat severance, and disturbance. For bats, the structure or tree has one or more potential roost sites that could be used by bats due to its size, shelter, protection, conditions and surrounding habitat but are unlikely to support a roost of high conservation status.

4.4.8. **High** – on-site habitat of high quality for given a species/species group. The site is within/peripheral to a national or regional stronghold. Good quality surrounding habitat and good connectivity. In relation to bats, the structure or tree has with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. They are located in sheltered locations with a stable temperature regime a number of suitable bat access points and could be suitable for a maternity roost.

4.4.9. **Present** – presence confirmed from the current survey or by recent confirmed records. For bats, the building, defined section of the building was found to contain conclusive evidence of occupation by bats, such as bat droppings.

4.5. Impact Assessment

4.5.1. Where possible, an assessment was then made as to whether the identified important ecological features will be subject to any impact from the proposed work, followed by a characterisation of these impacts and their effects. Where the evaluation has identified the potential presence of a protected species and the impact assessment indicates that should they be present, an impact could occur, further surveys are recommended to gain further information on their potential to be important ecological features, so that an impact assessment can be subsequently conducted.

4.5.2. Assessment of residual ecological impacts of the project remaining after mitigation and the significance of their effects, including cumulative effects was also determined where applicable.

4.6. Limitations

4.6.1. The survey of the site was conducted during late May, which lies within the optimum period of April to September for conducting Ecological Appraisals.

4.6.2. The weather conditions were satisfactory at the time of the survey, and hence not considered to pose a constraint to the appraisal.

4.6.3. Ecological appraisals are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the appraisal is unlikely to produce a complete list of all plants and animals and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. It should be noted that a full botanical survey has not been conducted. However, the results of the survey enable an initial evaluation of the ecological value of the site to be made.

4.6.4. The desk study is valuable in identifying past records and nature conservation designations. Understanding nature conservation issues within the wider area helps in the assessment of the ecological value of the site, the habitats and species that the site may support. However, desk study data is not likely to be exhaustive and is intended mainly to set a context for the study.

4.6.5. It should be acknowledged that bats in particular are highly mobile and may move between different roost sites throughout the year. In addition, new features such as cracks, crevices or openings may appear at any time. Hence the results of this survey are considered to be valid only at the time the survey was conducted.

5.0. Results and Ecological Baseline

5.1. Desk Study

Statutory Designated Sites

5.1.1. No statutory designated wildlife sites were identified within 1km of the site.

Non-Statutory Designated Sites

5.1.2. The following non-statutory designated wildlife sites have been identified within 1km of the site. These local wildlife sites are of substantive value for the conservation of biodiversity and form an essential ecological network.

5.1.3. Non-statutory designated wildlife sites are protected through the planning system in accordance with planning policies. They are a 'material consideration' in the determination of planning applications, providing a general presumption against development upon them or where there could a demonstrable detrimental impact as a result of the proposals.

Table 1 – Non-statutory designated wildlife sites identified within1km of the site

Site	Designation	Grid Ref (central)	Brief Description	Approximate distance and direction from site
Hook Wood	SINC	SU65003660	EH0017 1A	250m NW
Grove Wood	SINC	SU34003660	EH0009 1B	880m WNW
South Town Wood	SINC	SU65803590	EH0031 1A	512m ESE
Down Copse Medstead	SINC	SU66303690	EH0044 1A	1162m ENE
New Copse (Medstead Grange)	SINC	SU65503800	EH0021 1A	1545m N

SINC – Site of Importance for Nature Conservation. The aim of the selection process is to identify sites that support the most important habitats and species in Hampshire. For the full SINC designation criteria - http://www3.hants.gov.uk/hbic-sinccriteria.pdf.

Protected and Priority Species

5.1.4. The following legally protected and priority species records were identified within 1km of the site.

5.1.5. Legally protected are defined as species listed on Schedule 1 and 5 of the Wildlife and Countryside Act 1981 (as amended), Schedule 2 of the Conservation of Habitats and Species Regulations 2017, and badgers, which are protected under the Protection of Badgers Act (1992). Priority species are those listed under Section 41 of the NERC Act 2006 (as Species of Principal Importance) or listed on the Hampshire Biodiversity Action Plan.

5.1.6. Results were limited to those that were 20 years old or less and some species omitted where they were assessed as not relevant to the assessment. The resolution of the records has been limited / edited as needed to prevent sensitive or confidential records being made public.

Table 2 – Protected and Priority species identified within 1km of the site.

Species	Record Details
Terrestrial Mammals (bats)	*Barbastella barbastellus* (Western Barbastelle). 2 records nearest record 200m E (Flying over – Hill Top) *Eptesicus serotinus* (Serotine). 7 records nearest record 200m E (flying over Hill Top) – nearest roost Medstead. *Myotis* (Unidentified Bat) 4 records nearest 200m E (flying over Hill Top) *Nyctalus noctula* (Noctule Bat) 6 records nearest 200m E (flying over Hill Top) *Pipistrellus* (Pipistrelle Bat species) 6 records all droppings. Closest at Hill Top. *Pipistrellus pipistrellus* (Common Pipistrelle) 15 records nearest 200m E (**Roost at Hill Top x2).** *Pipistrellus pygmaeus* (Soprano Pipistrelle) 2 records 894m NE *Plecotus* (Long-eared Bat species) 6 records nearest 200m E (flying over) *Plecotus auritus* (Brown Long-eared Bat) 5 records nearest 566m E
Terrestrial Mammals (non-bats)	
	None recorded
Reptiles and Amphibians	
Natrix Helvetica *Grass snake*	Single record at Kingsmead. Adjoining grid square to NE
Invertebrates	A small number of invertebrate species listed under Section 41 of the NERC Act 2006 were recorded within the study area, either at Kingsmead in the adjacent 1km grid square to NE, or at Four Marks within the adjacent grid 1km square to the south.
Birds	As small number of birds listed under Wildlife and Countryside Act 1981 (Schedule 1 Part 1 Birds) and Section 41 of the NERC Act 2006 were identified. *Alauda arvensis* Skylark *Anthus trivialis* Tree Pipit *Cuculus canorus* Cuckoo *Emberiza citrinella* Yellowhammer *Falco peregrinus* Peregrine *Falco subbuteo* Hobby *Falco columbarius* Merlin *Regulus ignicapilla* Firecrest *Oceanodroma leucorhoa* Leach's Petrel *Lullula arborea* Woodlark *Milvus milvus* Red Kite *Turdus pilaris* Fieldfare *Tyto alba* Barn Owl

5.2. Water Body Search

5.2.1. To assess the potential for great crested newts to be present, Ordnance Survey maps and aerial photographs were examined for any potentially suitable water bodies within 500m of the site.

5.2.2. No water bodies were identified within 500m of the site.

5.3. Field Survey Results

Habitats

5.3.1. The following habitats were recorded in line with the standard Phase 1 Habitat Classification (JNCC 2010) during the field survey visit conducted on 30th May 2019. The following should be read in conjunction with the Phase 1 Habitat Plan in Appendix 10.4. The survey focused on the areas directly affected by the proposed work as well as habitats immediately adjacent. The nomenclature in relation to trees is commensurate with the submitted Tree Survey Report (Trevor Heaps 2018).

5.3.2. **Scattered Broadleaved Trees (A3.1):** A small number of broadleaved trees were present along the eastern boundary of the site, at the southern end. The trees were a continuation of the hedgerow at the northern end of the eastern boundary and are likely to have developed into trees as management ceased.

5.3.3. At the northern end the trees were more separated, consisting of early mature ash (*Fraxinus excelsior*, T3 and T4), mature cherry plum (*Prunus cerasifera*, T5, T6 and T7), and a single mature hawthorn (*Crataegus monogyna*, T8). Moving southwards, the line of trees was evenly spaced and more obviously part of an outgrown boundary hedgerow (G9), which were now a line of mature and maturing cherry plum and hawthorn (photograph 10).

5.3.4. At the southern end of the western boundary was a single mature oak (*Quercus robur*, T10). The tree was in good condition and prominent in the site context, with the trunk located outside of the site at the edge of the adjacent paddock.

5.3.5. **Scattered Coniferous Trees (A3.2):** Coniferous trees were present in two locations on the site. A short line of early mature Leyland cypress (*X Cupressocyparis leylandii*, H13) was present at the northern end of the western boundary. The trees were located adjacent to the front garden of the adjacent dwelling of Paddock Grange, presumably for screening. A number of self seeded hawthorn and honeysuckle were also present, growing within the Leyland cypress.

5.3.6. Located south of the two buildings, close to the eastern boundary were two mature Monterey Cypress (*Cupressus macrocarpa*, T11 and T12, photograph 10). The trees were again in good condition and visually prominent.

5.3.7. **Tall Ruderal (C3.1):** Located along the farm track which ran adjacent to the eastern boundary (photograph 9), and to a lesser extent adjacent to the western boundary, were areas of tall ruderal vegetation regrowth (target note 2, photograph 11). A number of smaller areas of tall ruderal vegetation were also present in the interior of the site, either where the chippings following the recent clearance were less dense, or around the remains of cut stumps.

5.3.8. The vegetation was dominated by bramble, with abundant creeping thistle (*Cirsium arvense*), ground elder (*Aegopodium podagraria*), cleavers (*Galium aparine*), ribwort plantain (*Plantago lanceolata*) and nettle, with frequent hogweed (*Heracleum sphondylium*), dock (*Rumex obtusifolius*), cow parsley (*Anthriscus sylvestris*) and oil seed rape (*Brassica napus*). There was also occasional forget-me-not (*Myosotis sylvatica*), creeping buttercup (*Ranunculus repens*), and bindweed (*Convolvulus arvensis*) and bracken (*Pteridium aquilinum*), rare bull thistle (*Cirsium vulgare*), smooth hawks beard (*Crepis capllaris*) and dandelion (*Taraxcum officinialis*).

5.3.9. Coarse grass species were present, particularly along the farm access track to the east of the site, with perennial rye grass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*) and common bent (*Agrostis capillaris*) noted.

5.3.10. **Introduced Shrubs (J1.4):** Located along the northern boundary adjacent to Homestead Road was a single large area of mature multi-stemmed laurel (*Prunus laurocerasus)*, G14, photographs14 and 15), with a narrow gap for the site access at the eastern end.

5.3.11. **Intact hedgerow – species poor (J2.1.2):** A section of species poor hedgerow was present along the northern end of the eastern boundary (photograph 9), which was subject to regular management. The hedgerow was narrow, formed from a single line of shrubs closely planted, and had recently been aggressively cut back.

5.3.12. The hedgerow was dominated by hawthorn, with frequent elder (*Sambucus nigra)* and ivy (*Hedera helix*). There was also abundant cherry plum and privet (*Ligustrum ovalifolium*). The ground flora was limited, given the narrow width of the hedgerows, although nettle (*Urtica dioica*) was notable along the base of the majority of the hedgerow.

5.3.13. **Fence (J2.4):** A close boarded wooden fence was present along the northern section of the western boundary, forming the border with the adjacent garden of Paddock Grange. The remaining section of the western boundary to the south comprised of a wooden post and rail fence, enclosing the paddock.

5.3.14. The fences were largely devoid of vegetation, and there were no significant associated vegetative communities.

5.3.15. **Bare Ground (J4):** The interior the site had been largely cleared of vegetation, which had arisen since cessation of the previous use of the site. Examination of the historical aerial photographs of the site (Google Earth), show the southern end of the site as scrub, with small self-seeded trees beginning to become established.

5.3.16. As a result of the clearance, the majority of the interior of the site was bare ground and covered with chippings, with some ruderal regrowth vegetation beginning to come through, predominantly bramble and ground elder (photograph 8). The chippings had been spread flat rather than being left in piles, and hence there were areas where the ground was covered in a thin layer of chippings. Some scattered stumps remained, indicating the previous location of the trees, the majority of which were sycamore *(Acer pseudoplatanus*) and hazel (*Corylus avellana*).

5.3.17. **Buildings (J3.6):** Within the site were two former buildings, comprising of a of corrugated steel covered timber shed, and a dilapidated brick and block outbuilding (thought to be former pony stables) with a failed roof. Both buildings will be demolished to facilitate the proposals.

- Building A – Lightly constructed corrugated steel shed (photograph 3 below).
- Building B – Brick outbuilding (former pony stables) with collapsed roof (photograph 4).

Photograph 3. Building A - corrugated steel shed.

Photograph 4. Building B - brick outbuilding.

Faunal Species -Overview

5.3.18. An overview of the legislation and planning policy relating to the protected faunal species in this section is provided in Section 3, with more detailed species specific information provided in Appendix 10.5. It should be noted that only species that are present within the same geographical range of the site, and where suitable habitats are present within or adjacent to the site were included.

5.3.19. **Badger (*Meles meles*):** No records of badgers were identified within the study area. However, badger records are generally treated as confidential and as a result, the absence of records does not necessarily indicate that badgers are not present in the wider area.

5.3.20. No evidence of badger activity was observed during the site survey to indicate either current or previous use of the site by badgers. The habitat within the site was considered not to be generally suitable given the level and open nature of the site. Beyond the southern boundary was a small area of scrub and woodland, however this was limited in extent, with the remainder of the surrounding area predominantly improved grassland intensively used as horse paddocks.

5.3.21. Hence given the absence of any suitable sett building habitat, and the suboptimal surrounding habitat, it was concluded that badgers were likely to be absent from the site, with a negligible likelihood of presence.

5.3.22. **Reptiles:** The desk study identified a single record of grass snake at Kingsmead (*Natrix Helvetica*), located a minimum of 690m to the north east in the adjoining grid square. Grass snake tend to occupy habitat in proximity to wetlands and watercourses given their primary food source is amphibians and fish, but can also occur in dry grasslands, particularly where there is a waterbody nearby. No other records of reptiles were identified.

5.3.23. Much of the interior of the site comprised of bare ground following the recent vegetation clearance (photograph 5 below). A thin layer of scattered wood chippings were present over parts of the bare ground, presumably in the areas were the chipper was located during the clearance process. Repeated poaching by machinery on the site has also mixed some of the areas of chippings into the topsoil and created deep tyre marks. Such open habitat devoid of vegetation or significant refugia offers little cover or foraging opportunities for reptiles, particularly given the dry free draining substrate.

Photograph 5. General view of the interior of the site.

5.3.24. However, outside of the areas of bare ground were areas of ruderal regrowth, particularly along the eastern boundary where the farm access track was located, and the northern end of the western boundary. Such areas provided some cover for reptiles within the more established vegetation. However, the extent was limited, and had been subject to significant disturbance during the recent clearance work.

5.3.25. Located at the southern end of the site was a large log pile (target note 4, photograph 12), which although recently created, could provide refugia opportunities given its location adjacent to the southern boundary. There was also some connectivity to a small area of suitable reptile habitat to the south. North of building A (target note 1, photograph 13) was an area of general debris and old building materials, which again could provide some suitable refugia opportunities, adjacent to the area of tall ruderal vegetation along the eastern boundary.

5.3.26. However, the potential for use of the more suitable areas of habitat on the site was limited, given there was little connectivity to suitable reptile habitat in the wider area. The habitat beyond the length of the eastern boundary comprised of short improved grassland used as a horse paddock, with the northern end of the western boundary adjacent to the managed garden of Paddock Grange, with another short amenity grassland paddock adjacent to the southern end. Hence the only potentially suitable reptile habitat adjacent to the site was beyond the southern boundary, furthest from the proposed location of the new dwelling, which comprised of an area of scrub and scattered trees within Windy Ridge Farm.

5.3.27. Hence overall, given the site had been recently cleared of vegetation resulting in the interior of the site being dominated by bare ground, the areas of potential reptile habitat were limited to the tall ruderal vegetation along the boundaries. Together with the limited connectivity to any suitable habitat surrounding the site, it was concluded that there was a low likelihood of use of the site by reptiles, according to the criteria in Section 4.4.

5.3.28. However, should the vegetation on the site be allowed to re-establish, there is the potential for the suitability of the site to increase. Given the suitability of the adjacent habitat is limited to the southern boundary, its is unlikely significant numbers of reptiles could enter the site, but the potential for individual reptiles to be encountered would increase.

5.3.29. **Great Crested Newt (*Triturus cristatus*):** There were no records of great crested newt identified during the desk study and no water bodies were identified within 500m of the site. Therefore, given the absence of suitable water bodies, the likelihood of great crested newts being present is considered to be negligible.

5.3.30. **Birds:** The desk study identified a number of Wildlife and Countryside Act 1981 Schedule 1 Part 1 Birds (which provides additional protection against disturbance whilst nesting) within the study area, in addition to a number listed under Section 41 of the NERC Act 2006 as a Species of Principal Importance. These included a number of raptor species (*Accipitriformes* and *Strigiformes*), which utilise large areas of habitat on a wider scale and woodland breeding birds such as firecrest (*Regulus ignicapilla*).

5.3.31. A small number of common bird species were observed during the survey, including robin (*Erithacus rubecula*), blue tit (*Cyanistes caeruleus*), great tit (*Parus major*), blackbird (*Turdus merula*), wood pigeon (*Columbia palumbus*), and feral pigeon (*Columba livia domestica*), none of which have statutory or non-statutory protection.

5.3.32. No signs of owl activity (feathers, splashing, feeding remains, nest or pellets) were observed on site.

5.3.33. The trees and hedgerows along the eastern boundary contained suitable habitat for use by nesting birds, such as yellowhammer (*Emberiza citrinella*), which was recorded during the desk study. The mature oak tree at the southern end of the western boundary also had potential to be used by nesting birds, as did the laurel along the northern boundary with Homestead Road which will be removed and replaced with a native hedgerow (Section 7.4.3).

5.3.34. The bird species recorded on site are common locally and are considered to be of ecological value at the Site level only. None of the Wildlife and Countryside Act 1981 Schedule 1 Part 1 Birds or those listed under Section 41 of the NERC Act 2006 identified during the desk study would rely on any of the habitats on site for breeding or foraging. However, all nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended).

5.3.35. The removal of the laurel hedgerow along the northern boundary and the clearance some of the denser areas of ruderal regrowth could impact on nesting birds. However, any impact would be temporary during the construction phase of the project, and highly unlikely to result in any impact upon the conservation status of birds in the local area.

5.3.36. **Common Dormouse (*Muscardinus avellanarius*):** No evidence of dormice was identified during the desk study. A visual inspection of the hedgerow along the eastern boundary was undertaken for evidence of dormice or their nests in accordance with the methodology outlined in the Dormouse Conservation Handbook (Natural England 1996). No signs or evidence of dormouse presence were found during the field survey.

5.3.37. Dormice are generally found where there is an abundance of connected hazel coppice woodland and given they do not normally travel far from their nests, dormice require a variety of fruiting species to maintain a sequence of foods through the seasons within a small area (Bright et al,.1996). The hedgerow was dominated by hawthorn and less than 1m wide, with only very limited quantities of other fruiting species.

5.3.38. An examination of the aerial photographs indicates that there was limited connectivity to the wider area, with no connectivity to areas of established woodland or copses. Given dormice reside at low densities, generally the larger area of suitable connected habitat the greater the probability of presence. Presence is considered more likely where the connected habitat or woodland is in excess of 20ha. Small unsuitable areas of habitat of less than 10 ha in extent which have poor habitat and are isolated are much less likely to support a population of dormice (Bright et al,.1996).

5.3.39. Hence it is considered the likelihood of dormice being present within the eastern hedgerow was negligible according to the criteria in Section 4.4.

5.3.40. **Bats (*Chiroptera*):** The desk study identified a significant number of bat records within the study area, including records of western barbastelle (*Barbastella barbastellus*), serotine (*Eptesicus serotinus*), *Myotis sp*., noctule (*Nyctalus noctula*), Pipistrelle bat (*Pipistrellus sp*.), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Long-eared bat (*Plecotus sp*.) and brown long-eared bat (*Plecotus auratus*).

5.3.41. The records indicated the presence of a common pipistrelle bat roost 200m to the east of the site at Hill Top. Two roost records were identified, based on information provided to HBIC from Hampshire Bat Group. As part of the survey, barbastelle, serotine, myotis species, noctule, common pipistrelle and long-eared bat were recorded flying over the site.

5.3.42. Hence the records indicate that a number of bat species are present in the area around the site, with a confirmed common pipistrelle roost 200m to the east.

5.3.43. Notably, the records also identified the presence of western barbastelle bat flying over Hill Top to the east, which is one of Europe's most threatened and rarest bat species. Barbastelle bats are a predominantly tree dwelling species, requiring a variety of roost sites typically found in large unmanaged ancient or semi-natural woodland habitats.

5.3.44. A Preliminary Ecological Appraisal for Bats (Collins J. 2016) was conducted on the two buildings present within the site, which assessed their potential to support roosting bats. All external elevations of the buildings were carefully inspected for signs of current use by bats, together with a thorough inspection of the roof area, by both ladder and binoculars, and an internal inspection where access was available.

5.3.45. Building A was a lightly constructed corrugated steel shed (photograph 3). The building was of adhoc construction, being formed from a light timber frame, much of it appearing to have been reused, with the walls and pent roof covered with a single thickness of corrugated sheet steel sheeting. Some sections of the walls were formed from wooden pallets, and there were central wooden props supporting the roof. It was noted that the roof had failed in a number of locations, with a large hole visible at the southern end (photograph 7 below).

Photographs 6 and 7. Interior of building A.

5.3.46. All horizontal surfaces, such as walls, stored items and roof joints were inspected for signs of bats, in particular droppings or feeding remains, and none were found. The single thickness corrugated sheet steel covering large number of openings in the building also resulted in the building being draughty, subject to extremes of temperature and humidity, and open to rain and wind ingress. Corrugated sheet steel is considered particularly unsuitable for use by bats, as the high thermal conductivity results in the surface becoming excessively hot or cold.

5.3.47. The absence of insulation or internal lining resulted in no enclosed wall cavity or opportunities for crevice dwelling bats. In addition, no enclosed roof space was present, with the roof supported on an exposed open timber frame. Internally, the interior was light, with two permanently open stable doors on the eastern elevation. Bats seek out dark areas or crevices in which to roost and the lack of such features significantly lowers the suitability for use by roosting bats.

5.3.48. Hence it was concluded that Building A had a negligible potential for supporting roosting bats, due to the absence of suitable features capable of supporting roosting bats, the single skin construction, absence of a roof void and high interior light-levels, with no insulation.

5.3.49. Building B was a brick and block outbuilding (former pony stables) with collapsed roof (target note 3, photograph 4). Opportunities for bats was limited to the remains of the brick and block structure, which was inspected for gaps or missing pointing that could be used by crevice dwelling bats. The brickwork was in good condition and appeared modern, with no suitable feature identified. The absence of any roof covering resulted in most of the brickwork being wet and damp.

5.3.50. Given no evidence of bats was identified, together with the absence of any suitable features, the building as assessed as having a negligible likelihood of use by bats.

5.3.51. Trees. No trees will be directly impacted by the proposals, with the trees present along the eastern boundary, and the oak tree at the southern end of the western boundary, some distance from the location of the proposed dwelling. Hence no direct impact on bats associated with the trees on site is anticipated.

5.3.52. Wider Area. Internally, the site lacked any significant vegetative cover and therefore it is unlikely to offer any significant foraging opportunities for bats. However, the species records indicate that bats are present in the area surrounding the site and hence are likely to use the site boundaries and trees for foraging and commuting. Hence, in the absence of mitigation, there is the potential for a low level of disturbance to occur to any bats that may use the area for commuting or foraging during construction and occupation, particularly from the use of artificial light. Research has found that bats are sensitive to artificial lighting and that excessive lighting can cause bats to move away from suitable foraging grounds to alternative dark areas (Jones 2000).

5.3.53. **European Hedgehog (*Erinaceus europaeus*):** No records of hedgehog were identified during the desk study and no signs of hedgehog were noted during the field survey.

5.3.54. The habitat within the interior of the site offered limited suitability for hedgehogs, given the presence of bare ground and tall ruderal vegetation, which is not generally considered suitable for use by hedgehogs. However, the adjacent hedgerows are considered suitable, and could provide an access route for hedgehogs to move around the local area.

5.3.55. Hence overall it was considered there was a low likelihood hedgehog presence within the interior of the site but could be present in the adjacent hedgerow habitat.

5.3.56. **Other Protected Species:** No other protected or priority species were found during the survey.

5.3.57. The proposed working area does not support habitat considered suitable for water vole (*Arvicola amphibius*), otter (*Lutra lutra*), or white- clawed crayfish (*Austropotamobius pallipes*).

5.3.58. The absence of water bodies makes it unlikely that significant numbers of common toad (*Bufo bufo*) or common frog (*Rana temporaria*) could be present.

5.3.59. Given the recent clearance of the site, and the lack of a diverse vegetation structure, the site is not considered likely to support protected or priority species of invertebrate.

5.4. Invasive Species

5.4.1. Certain species of plants and animals that do not naturally occur have become established in the wild and represent a threat to the natural fauna and flora. The Wildlife and Countryside Act 1981 (as amended) and the more recent Variation of Schedule 9 (England and Wales) Order 2010, makes it an offence to plant or otherwise cause such species listed on Schedule 9 to grow in the wild.

No invasive species which are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified as being present on the site during the site survey.

6.0. Evaluation of Potential Impacts and Ecological Constraints

6.1. General

6.1.1. The following section consists of an evaluation of the information provided by the desk study and field survey in Section 5, to identify the potential impact of the proposals and subsequent ecological constraints.

6.1.2. Where further surveys or information is required in order to complete the impact assessment, these have been identified and subsequently detailed in Section 7.1.

6.2. Designated Areas

6.2.1. The site is not subject to any statutory or non-statutory wildlife designation. No statutory designated wildlife sites were identified within 1km of the site, with the closest statutory designated wildlife site located 6.3km to the south west (Alresford Pond Site of Special Scientific Interest).

6.2.2. Five non-statutory protected Sites of Importance for Nature Conservation (SINC) sites were identified within 1km of the site, which are protected through the planning system. The closest identified was Hook Wood SINC, 250m to the north west of the site. Hook Wood is an area of ancient semi-natural woodland. All the remaining non-statutory protected wildlife sites were in excess of 500m from the site boundary.

6.2.3. Given the small scale of the proposals and the confined nature of the site, with the work confined to the northern part of the site where the new dwelling is proposed, both the statutory and non-statutory sites are considered to be of sufficient distance from the site not to be subject to either direct or indirect impact.

6.2.4. Therefore, no impact on statutory or non-statutory designated areas is foreseen as a result of the proposals and no mitigation or further survey work is required.

6.3. Habitats

6.3.1. The habitat in the within the site where the new dwelling is proposed comprised almost entirely of bare ground following the recent vegetation clearance, with some small areas of bramble and ground elder beginning to grow through the chippings. Outside of this area, tall ruderal vegetation was present along the eastern boundary where the farm access track was located, and the northern end of the western boundary. A small number of scattered trees were also present, mostly within the hedgerow along the eastern boundary.

6.3.2. Although narrow and species poor, the hedgerow along the eastern boundary would be considered to constitute a Priority Habitat under Section 41 of the NERC Act 2006. Hedgerows are also listed as a Hampshire Biodiversity Action Plan Habitat. Countryside hedgerows provide important habitat connectivity and support a range of species. However, given the section of hedgerow adjacent to the site was considered to be species poor, it would not qualify as an important hedgerow under the Hedgerow Regulations 1997.

6.3.3. Although no direct work to the hedgerow is proposed, it was considered to have an elevated ecological value at the local level and is considered to be important ecological feature (although more species rich and established hedgerows are prevalent in the local area).

6.3.4. The remaining habitats on site, comprising of the bare ground following the recent vegetation clearance and small areas of tall ruderal vegetation were common locally and considered to be of ecological value at the site level only. Neither of these habitats would be considered to be a Habitat of Principal Biological Importance on Section 41 of the NERC Act 2006 or listed as a Priority Habitat on the Hampshire Biodiversity Action Plan.

6.4. Legally Protected and Priority Species

Floral Species

6.4.1. No species of flora listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), Section 41 of the NERC Act 2006 as Species of Principal Importance or a Priority Species were observed within the site. The majority of the species identified are very common locally and typical of managed environments.

6.4.2. No work to the scattered broadleaved trees that were present along the eastern boundary (photograph 9), or the adjacent two mature Monterey Cypress trees (photograph 10) are proposed. At the southern end of the western boundary was a single mature oak, which will also be retained. The proposed new dwelling is to be located at the northern end of the site, with the remaining area used as a domestic garden. As such, with the scattered trees at the southern end of the site, there should be sufficient distance from the working area for the trees not to be impacted by the work.

Faunal Species

6.4.3. The anticipated ecological impacts on faunal species (based on the updated ecological appraisal detailed above) as a result of the proposals are detailed below.

- The majority of the interior of the site offered limited potential for reptiles, given the recent vegetation clearance had resulted in the majority of the interior being bare ground. There were some small areas of potential reptile habitat associated with the ruderal regrowth along the boundaries, however there was limited connectivity to any significant areas of adjacent suitable habitat, given the habitats in the wider area were predominantly short improved grassland paddocks.

  However, should the vegetation on the site be allowed to re-establish, there is the potential for the suitability of the site to increase, and for individual reptiles to find their way onto the site.

- Although no work to the eastern boundary trees or hedgerows is currently proposed, there is the potential for indirect impact in the form of disturbance. However, the removal of the laurel hedgerow along the northern boundary and the clearance some of the denser areas of ruderal regrowth could impact on nesting birds. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended).

- The Preliminary Ecological Appraisal for Bats (Collins J. 2016) conducted on the two buildings present within the site, concluded that both had a negligible likelihood of use by roosting bats. However, the desk study identified records of bats roosting within 200m of the site at Hill Top, with several species of bats recorded using the wider area, including the rare western barbastelle.

- There is the potential for hedgehogs to be encountered, which are a Species of Principal Importance under Section 41 of the NERC Act 2006.

6.4.4. Overall, the extent and magnitude of the impact on faunal species is considered to be limited, providing the required mitigation is implemented (Section 7.2). There is the potential for a positive impact on species diversity providing the required compensation and enhancement measures are realised (Section 7.4).

7.0. Further Surveys, Mitigation and Enhancement

7.1. Requirements for further work

7.1.1. Based on the results of the conduced desk study, field survey, and current proposals, and provided the mitigation in Section 7.2 is implemented, no further ecological surveys are currently considered necessary.

7.1.2. However, should the vegetation on the site be allowed to re-establish, there is the potential for reptiles to move into the site. Given the only potentially suitable reptile habitat adjacent to the site was beyond the narrow southern boundary, furthest from the proposed location of the new dwelling, it is unlikely any significant numbers of reptiles would move into the site.

7.1.3. However, as a precaution, a mitigation methodology had been devised (Section 7.2 below), to ensure that the interior of the site remains largely unsuitable for reptiles, and that precautionary measures are in place for the clearance of the areas of tall ruderal vegetation along the boundaries.

7.1.4. However, should the mitigation in Section 7.2 below not adhered to in full, especially if the vegetation on the southern part of the site is allowed to become established, it will be necessary for the potential for reptiles to be present and impacted by the proposals to be further assessed, and the respective parts of the ecological appraisal process to be repeated. This must occur should work not commence within 24 months of the date of this report.

7.2. Proposed Mitigation

Designated Areas

7.2.1. No mitigation in relation of designated areas is considered necessary.

Habitats and Flora

7.2.2. Although no work to the hedgerow along the adjacent eastern boundary is proposed, it is considered to constitute a Priority Habitat under Section 41 of the NERC Act 2006 and subject to the Hampshire Biodiversity Action Plan Habitat. They were also considered to be of elevated ecological value at the local level, and an important ecological feature.

7.2.3. Hence it will be necessary to ensure that the hedgerow is protected during the construction work from accidental or inadvertent damage. Prior to work commencing, a Herras type protective fence must be installed a minimum of 1m from the outer edge of the hedgerow. Given the hedgerow lies adjacent to a farm access track, where access will need to be maintained, it is not considered practical for the protective fencing to be located further from the hedgerow, with 1m considered sufficient.

7.2.4. In relation to trees, the proposed new dwelling is to be located at the northern end of the site, with the remaining area used as a domestic garden. As such, with the scattered trees at the southern end of the site, there should be sufficient distance from the working area not to be impacted by the work.

7.2.5. However, should this not be the case, and it becomes necessary to undertake any work in proximity to the trees being retained, work should only be conducted in accordance with BS5837:2012 Trees in relation to design, demolition and construction.

7.2.6. No other mitigation specifically related to habitats or flora is considered necessary.

Protected Species

7.2.7. **Reptiles:** As a precaution, the following mitigation methodology must be followed under the direction of a suitably qualified ecologist to ensure that the interior of the site remains largely unsuitable for reptiles, and that precautionary measures are in place for the clearance of the areas of tall ruderal vegetation along the boundaries.

7.2.8. The following mitigation methodology relies on reptiles being outside of their hibernation period. Hence it must be only be undertaken when reptiles are active, between March and the end of October.

1. Prior to any clearance work commencing, the protective fencing 1m from the eastern hedgerow installed (Section 7.2.3).
2. Under the supervision of a suitably qualified ecologist, all refugia within the site should be removed by hand and placed into a skip. Initially the pile of general debris and old building materials adjacent to the eastern boundary should be removed, with any potential refugia within the remainder of the working area removed by hand and placed into the skip.
3. The small areas of tall ruderal vegetation within the working area should be progressively cut in two steps, (preferably using a metal bladed cutting head, which provides better axial control), to progressively lower the height of the vegetation, encouraging any reptiles to move into adjacent areas.
4. The initial cut should be to approximately 150mm, and cleared progressively in small sections, working from the centre of the site outwards in a southerly direction, to encourage any reptiles to move away from the area unharmed and towards the boundary hedgerows. The ecologist will inspect the area being cleared as the work progresses. All arisings must be collected and removed by hand for disposal off site. This is to avoid the cut material creating any opportunities for reptiles to shelter, which would deter them from moving away.
5. The second cut must be between 50mm and 75mm, and carried out in the same manner, from the north working outwards towards the hedgerow boundaries, with the arisings removed. The ecologist will further inspect the area being cleared as the work progresses. The second cut must be undertaken following 3 days of suitable weather conditions (temperatures above 10°c).
6. Once the vegetation clearance is complete, the ecologist will conduct a final inspection to ensure that the area is clear and the work can progress. The demolition of the two building can also then be undertaken.
7. To avoid creating suitable habitat that could be used by reptiles during installation activities, should it be necessary to store materials on site, they must be stored on areas away from the site boundary vegetation, preferably on hard standing or bare ground. If this is not possible, all materials should be stored on raised pallets at least 30cm above the ground.
8. If any reptile is found during any stage of the demolition or construction works, all works must cease immediately, and the reptile allowed to move away unharmed. Should further advice be necessary, a suitably qualified and experienced ecologist should be consulted.

7.2.9. **Nesting birds:** The removal of the laurel hedgerow along the northern boundary and the clearance some of the denser areas of ruderal regrowth could impact on nesting birds. There is also the potential for disturbance should birds be nesting in the adjacent eastern boundary hedgerow.

7.2.10. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended).

7.2.11. Hence the following mitigation is required.

1. All nesting birds, their nests, eggs and young receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Therefore, any required vegetation clearance of the site should take place outside the bird-nesting season (mid-March to August inclusive – although it may extend longer depending on local conditions).
2. If there is no alternative to carrying out the clearance work during the bird nesting season, a thorough, careful and quiet examination of the affected area for wild nesting birds, their eggs, nests or young must be conducted before work commences.

   Should nesting activity be detected, all work must stop at that location, a qualified ecologist consulted and a suitable buffer zone (minimum 10m) must be established. The work will need to be rearranged until all young birds have fledged or nesting activity ceases.

7.2.12. Under no circumstance should netting or similar be used in an attempt prevent birds from nesting.

7.2.13. **Bats**: The appraisal concluded that there is the potential for disturbance to occur to any bats that may use the area surrounding the site, or particularly the adjacent hedgerow boundaries for commuting or foraging, particular from the use of artificial light.

7.2.14. Currently, the site is likely to be dark, with no artificial light in the immediate area. Hence it is important that a dark corridor is maintained along the hedgerow boundary, to retain the potential use of the hedgerow by commuting bats, and to ensure that bats roosting in the wider area are not isolated from their foraging grounds. Artificial lighting disrupts the normal 24-hour pattern of light and dark which is likely to affect the natural behavior of bats (Stone, E.L. 2013), with excessive lighting having a disrupting effect on bats, causing them to avoid or move away from suitable foraging and commuting routes (Jones 2000).

1. To minimise the impact on bats that may use the local area for commuting or foraging, construction activities undertaken between March and October inclusive must only be undertaken during daylight hours.
2. Should any permanent external lighting be required, it must be designed and installed in accordance with the Bat Conservation Trust and Institution of Lighting Professionals guidance on bats and artificial lighting published in September 2018 (Bat Conservation Trust 2018).

7.2.15. **Hedgehogs:** The following mitigation in relation to hedgehogs is required.

1. Given the potential for hedgehogs to be present in the boundary habitats, an examination for the presence of hedgehogs must be conducted by a suitably qualified ecologist before any clearance work commences. Should a hedgehog be found, it must be allowed to move away from the working area unhindered.
2. In addition, care must be taken not to create habitat that could become suitable for use by hedgehogs, particularly for hibernation, by not storing wood or other material in piles for significant periods.
3. Bonfires are not permitted on site, as hedgehogs commonly use the cover provided for shelter.

7.3. Compensation

7.3.1. No compensatory measures are considered necessary in relation to the proposals. At the time of the survey visit, the site had been largely cleared of self seeded vegetation, resulting in the interior of the site being dominated by bare ground, with little further vegetation clearance required.

7.4. Required Ecological Enhancements

7.4.1. In addition to providing compensation for the habitats lost as part of the proposals, Sections 170 and 174 of the National Planning Policy Framework (NPPF) 2018 and the Natural Environment and Rural Communities Act (NERC 2006), require that development proposal incorporate measures to further the conservation of protected species and biodiversity in general, in order to achieve the measurable net gain in biodiversity.

7.4.2. To maximise the biodiversity value of the site, and to ensure that a measurable net gain in biodiversity is achieved as required by the NPPF, the following ecological enhancements are considered necessary to comply with planning policy and are considered proportionate to the proposals.

7.4.3. **Replacement Northern Boundary Hedgerow:** Currently, the north boundary of the site adjacent to Homestead Road comprises of an area of dense laurel. Given this is a non-native species with little biodiversity value, it should be replacement with a new mixed native species hedgerow, using species of local provenance.

7.4.4. The hedgerow should comprise of a double staggered row of five whips per meter and be based on a mix of species, such as 30% hawthorn (*Crataegus monogyna*) and 30% blackthorn (*Prunus spinosa*), with the remaining species comprising of an equal mix of field maple (*Acer campestre*), hazel (*Corylus avellana*), dogwood (*Cornus sanguiea*), honeysuckle (*Lonicera periclymenum*), holly (*Ilex aquifolium*) and privet (*Ligustrum vulgare*).

7.4.5. **New Western Boundary Hedgerow:** A similar hedgerow should be created along the western boundary with Paddock Grange. At the time of the survey the boundary was a wooded panel and simple post and rail fence. A new native species hedgerow planting on the inside of the existing wooden fence would provide a range of opportunities and help link habitats around the site.

7.4.6. **General Biodiversity Planting:** Within the interior of the site, planting around the new dwelling should be based on native species with known wildlife benefits. Ideally, an ecological network approach should be taken, with the landscape scheme linked together to provide vegetated corridors across the site. This is to create habitat corridors that will allow wildlife to move around and into and out of the site.

7.4.7. The new planting scheme should seek to create a graduation of vegetation types that include native trees, shrubs and herb species. In particular flowering plants will be of benefit to invertebrate species and shrubs may provide nesting opportunities for birds. The new planting scheme should seek to create a graduation of vegetation types that include native trees and shrubs and tall grasses and herb species that will attract insects and provide a potential food source for birds throughout the season. Any planting within or around the new buildings should also be with native species with known wildlife benefits.

7.4.8. An outline planting schedule is included in Appendix 10.6, which should be used as a basis for species selection. All the species recommended are either native or wildlife friendly plant species chosen to attract insects and provide a potential food source for birds throughout the season. If additional species are required, further list of suitable species is given in the Natural England leaflet 'Plants for wildlife-friendly gardens', available at www.naturalengland.org.uk (Catalogue code NE29 /ISBN 978-1-84754-020-1).

7.4.9. In addition, regular maintenance will need to be implemented to ensure that the newly created habitat enhancement areas are managed for the long-term. Hence a management plan should be prepared and implemented to ensure that both the measures to compensate for the loss of habitat and the newly created habitat enhancement areas are managed for the long-term benefit of wildlife. This should include provision for area specific mowing and cutting regimes.

8.0. Conclusion

8.1.1. No further survey or ecological work was identified as necessary in relation to the current proposals. Hence a complete assessment of the potential impact of the proposals could be conducted.

8.1.2. The site is not subject to any statutory or non-statutory wildlife designation, and no statutory or non-statutory protected wildlife sites will be impacted by the proposals.

8.1.3. No species of flora listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance were observed.

8.1.4. The habitat subject to direct impact as a result of the proposals comprised predominantly of bare ground following the recent vegetation clearance, with some areas of vegetation re-growth. Small areas of tall ruderal vegetation were present along the eastern boundary, and at the northern end of the western boundary. Such habitats are common locally and considered to be of ecological value at the site level only.

8.1.5. Although narrow and species poor, the hedgerow along the eastern boundary would be considered to constitute a Priority Habitat under Section 41 of the NERC Act 2006. Although no direct work to the hedgerow is proposed, it was considered to have an elevated ecological value at the local level and is considered to be important ecological feature. Therefore, protection measures will be required during the construction phase of the work.

8.1.6. The assessment of the potential impacts of the proposals concluded that the magnitude and extent of the impact is considered to be minimal and limited to the interior of the site only. Provided the mitigation in relation to reptiles, nesting birds, bats and hedgehogs is implemented in full, no impact on protected or priority species is foreseen. No residual impacts envisaged.

8.1.7. Ecological enhancements are proposed in accordance with the NPPF 2018, to ensure that a measurable net gain in biodiversity is achieved post development.

9.0. References

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10.0. Appendix

10.1. Site Photographs

Photograph 8. Northern end of the site and location of proposed dwelling.

Photograph 9. Existing hedgerow along the eastern boundary looking south.

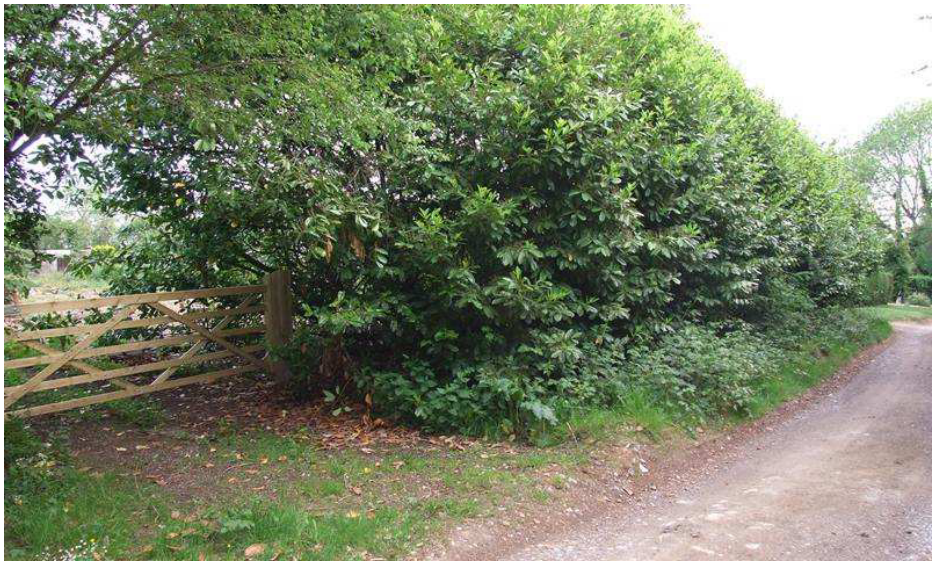
Photograph 10. Eastern boundary looking south, with the two Monterey Cypress trees.

Photograph 11. Bare ground and small area of tall ruderal vegetation.

Photograph 12. View of the site looking towards the southern boundary.

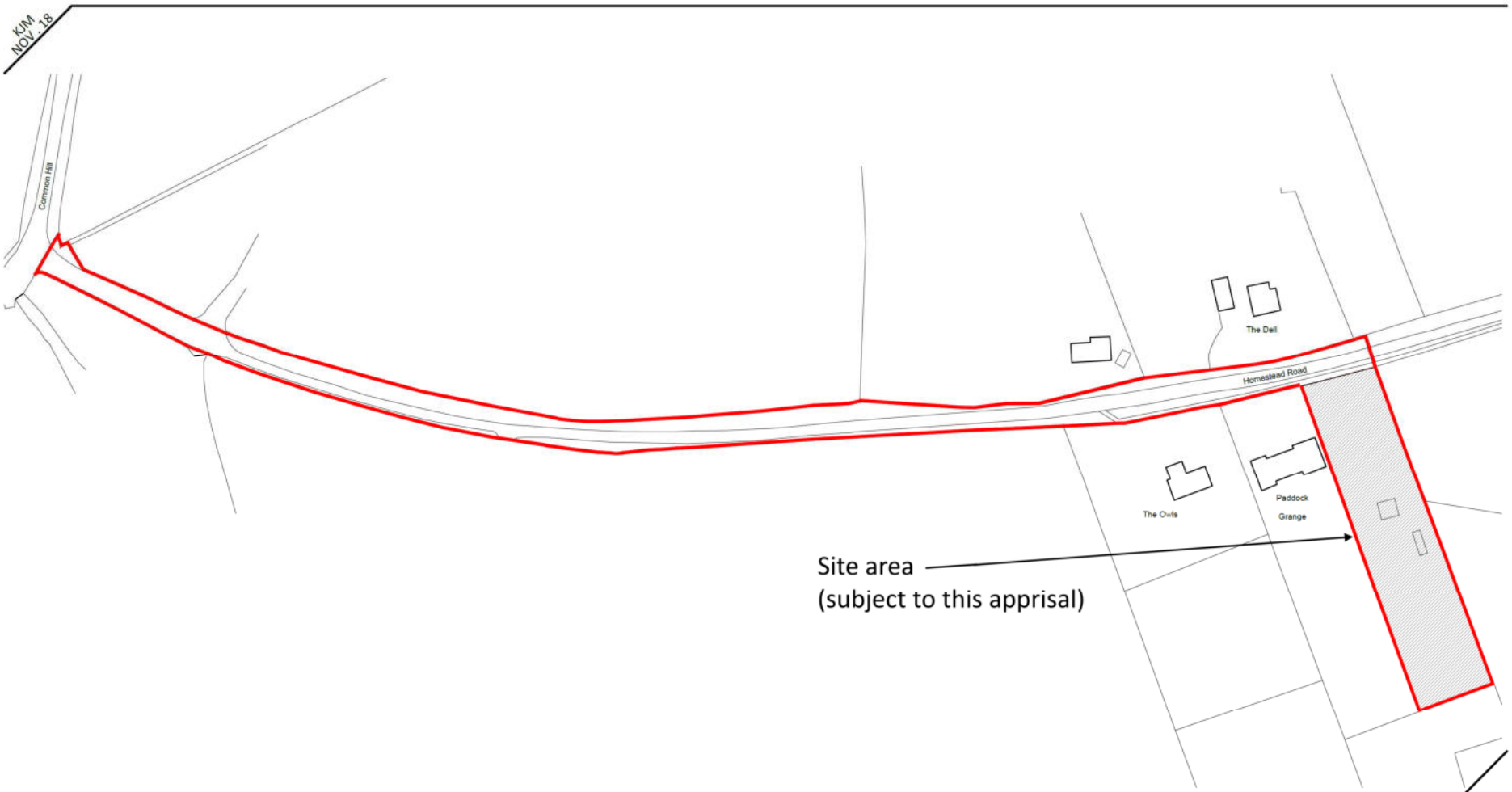
Photograph 13. Northern elevation of Building A and adjacent debris pile.

Photograph 14. Interior view of the laurel along the northern boundary.



Photograph 15. Existing site entrance off Homestead Road and laurel boundary.

10.2. Site Location Plan



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SITE LOCATION PLAN
SCALE 1:1250
RED LINE SHOWSSITE AND ACCESS TO ADOPTED HIGHWAY

PROJECT
PADDOCK GRANGE, MEDSTEAD

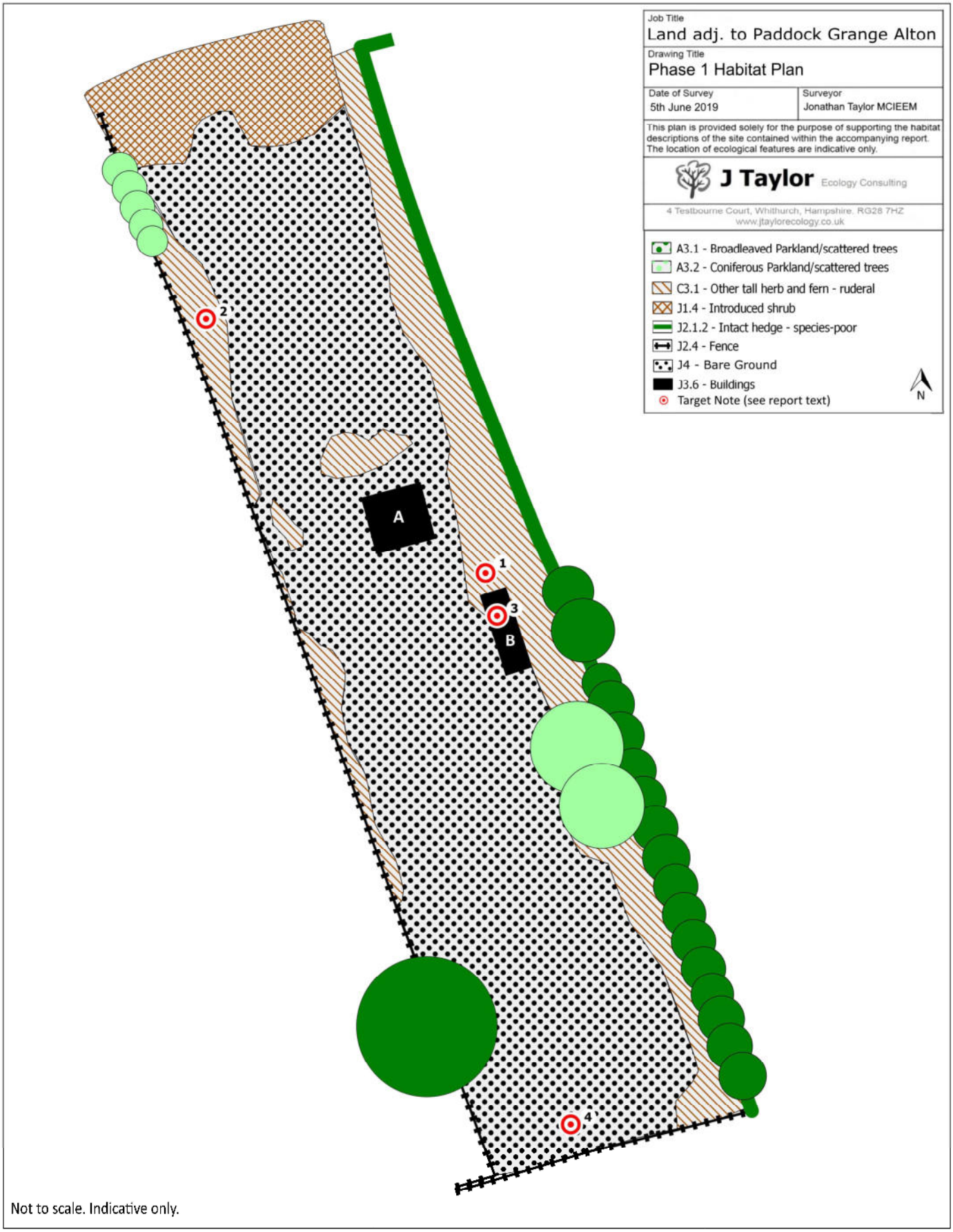
REVISION DATE AMENDMENTS
A AUG 2019 PLANNING APPLICATION

SCALE BAR - 1:1250

SITE LOCATION PLAN
1:1250 @ A3
MATHEWSON WATERS ARCHITECTS
The Old Surgery
Crowle Road . Lambourn
Berkshire . RG17 8NR
1873 .101A

10.3. Proposed Site Plan

10.4. Phase 1 Habitat Plan



10.5. Protected Species Legislation Summary

Badgers

10.5.1. Badgers and their setts are legally protected under The Protection of Badgers Act (1992), which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. A badger sett is defined in the legislation as "any structure or place, which displays signs indicating current use by a badger". Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so;
- possess any dead badger or any part of, or anything derived from, a dead badger; and,
- intentionally or recklessly interfere with a sett which includes, disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it.

Bats

10.5.2. All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act (2000) and the Conservation (Natural habitats &c.) Regulations 2010 (as amended). A bat roost is defined in the legislation as "any structure or place which a bat uses for shelter or protection". Together, this legislation makes it illegal to:

- Intentionally or deliberately take, kill or injure a bat;
- damage to, destruction of, and obstruction of access to, a bat roost; and,
- disturbance of a bat occupying a roost.

Breeding Birds

10.5.3. Under the Wildlife & Countryside Act 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting.

10.5.4. Section 1 of the Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

10.5.5. All birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to;

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while it is being built or in use;
- take or destroy the eggs of any wild bird; and,
- possess or control any wild bird or egg unless obtained legally.

10.5.6. In addition, bird species listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) receive extra protection. The Act states that ‘it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird’.

Hazel Dormouse

10.5.7. Hazel dormice are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, and The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations, 2010) (as amended) Schedule 2; the later designating them as 'European Protected Species' (EPS). Under those regulations, they are protected against:

- Deliberately, intentionally or recklessly, injuring, killing and capturing;
- deliberately, intentionally or recklessly disturbing;
- deliberately, intentionally or recklessly destroying a breeding site or resting place or damaging or obstructing a resting place used for shelter or protection; and,
- keeping, transporting, selling or exchanging; offering for sale or advertising.

10.5.8. Disturbance includes any disturbance likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

Reptiles and Amphibians

10.5.9. All native reptiles and amphibians receive some legal protection in Great Britain under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010, which applies to all life stages. All native reptiles and amphibians species are all listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the more threatened species, great crested newt (*Triturus cristatus*), natterjack toad (*Epidalea calamita*), pool frog (*Pelophylax lessonae*), sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are also listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2010, which designate them as European protected species.

10.5.10. The legislation creates two hierarchical levels of protection. The European protected species receive strict protection, making it an offence to capture, possess, disturb, kill, injure, or trade in individuals of these species. In addition, it is an offence to damage or destroy the places they use for breeding or resting.

10.5.11. The remaining reptile species, common lizard (Lacerta vivipara), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected against killing, injuring and unlicensed trade only. Whilst the remaining amphibian species, smooth newt (*Lissotriton vulgaris*), palmate newt (*Lissotriton helveticus*), common frog (*Rana temporaria*) and common toad (*Bufo bufo*) are protected only against sale.

Invasive Species

10.5.12. A number of non-native, invasive plants are listed on Schedule 9 (Part II, Section 14) of the Wildlife and Countryside Act 1981 (as amended), which states that it is an offence to "plant or otherwise cause to grow in the wild" any plant listed in Schedule 9, Part II of the Act. This includes spreading of the species or transferring polluted ground material from one area to another.

10.5.13. Schedule 9 lists over 30 plants including Japanese knotweed, giant hogweed and parrot's feather.

10.6. Plants with Known Wildlife Benefits

The species in bold are considered to be of particular value to wildlife.

Type	Species	Type	Species
Large trees	Ash *(Fraxinus excelsior)* Beech *(Fagus sylvatica)* **Oaks *(Quercus robur and Q. petraea)*** Small-leaved lime *(Tilia cordata)* White willow *(Salix alba)*	Wildflowers	Agrimony *(Agrimonia eupatoria)* Chicory *(Chichorium intybus)* Chives *(Allium schoenoprasum)* Common poppy *(Papaver rhoeas)* Corncockle *(Agrostemma githago)* Cornflower *(Centaurea cyanus)* Corn marigold *(Chrysanthemum segetum)* Cowslip *(Primula veris)* Dame's-violet *(Hesperis matronalis)* Devil's-bit scabious *(Succisa pratensis)* Field scabious *(Knautia arvensis)* **Foxglove *(Digitalis purpurea)*** Germander speedwell *(Veronica chamaedrys)* Great mullein *(Verbascum Thapsus)* Greater knapweed *(Centaurea scabiosa)* Harebell *(Campanula rotundifolia)* Herb-robert *(Geranium robertianum)* Lady's bedstraw *(Galium verum)* Marjoram *(Origanum vulgare)* Meadow cranesbill *(Geranium pratense)* Oxeye daisy *(Leucanthemum vulgare)* Primrose *(Primula vulgaris)* **Purple loosestrife *(Lythrum salicaria)*** Red campion *(Silene dioica)* Spiked speedwell *(Veronica spicata)* Tansy *(Tanacetum vulgare)* Teasel *(Dipsacus fullonum)* Toadflax *(Linaria vulgaris)* White campion *(Silene alba)* **Wild thyme *(Thymus drucei)*** Yellow loosestrife *(Lysimachia vulgaris)*
Medium/small trees	Apples *(Malus sp.)* **Cherries *(Prunus avium and P. padus)*** **Field maple *(Acer campestre)*** Holly *(Ilex aquifolium)* **Rowan *(Sorbus aucuparia)*** Silver birch *(Betula pendula)* Yew *(Taxus baccata)*		
Hedges	**Blackthorn *(Prunus spinosa)*** Guelder rose *(Viburnum opulus)* **Hawthorn *(Crataegus monogyna)*** Hazel *(Corylus avellana)* Privets *(Ligustrum vulgare)*		
Climbers	Brambles (Rubus futicosus) Dog rose (Rosa canina) Field rose (R. arvensis) **Honeysuckle (Lonicera periclymenum)** Wild clematis *(clematis vitalba)*		
Cultivated plants for borders	Angelica *(Angelica archangelica)* Aubretia *(Aubretia deltoidea)* **Barberry *(Berberis sp.)*** Candytuft *(Iberis sempervirens)* Christmas rose *(Helleborus niger)* Evening primrose *(Oenothera biennis)* Forget-me-not *(Myosotis spp.)* French marigold *(Tagetes spp.)* Globe thistle *(Echinops ritro)* Grape hyacinth *(Muscari botryoides)* Hollyhock *(Althaea rosea)* Phlox *(Phlox paniculata)* **Lavender *(Lavendula spp.)*** Red valerian *(Centranthus rubber)* Snapdragon *(Antirrhinum majus)* Snowdrop *(Galanthus nivalis)* Sweet William *(Dianthus barbatus)* Wallflower *(Cheiranthus cheiri)* **Ice plant *(Sedum spectabile)*** Michaelmas daisy *(Aster spp.)* Perennial cornflower *(Centaurea Montana)* **Perennial sunflower *(Helianthus decapetalus)***		
Other shrubs for nectar, pollen or fruits	Bodant viburnum *(Viburnum x bodnantense)* Californian lilac *(Ceanothus spp.)* **Firethorn *(Pyracantha spp.)*** Himalayan honeysuckle *(Leycesteria Formosa)* Laurustinus *(Viburnum tinus)* Lilac *(Syringa vulgaris)* Mahonia *(Mahonia spp.)*		

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