ethos
Environmental Planning

Biodiversity Net Gain Results

Rollestone Camp, Wiltshire



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EXECUTIVE SUMMARY

This report summarises the delivery of biodiversity net gain on Land at Rollestone Camp, Wiltshire, in accordance with national planning policy. The report relates to the land within the current planning permission, shown within the red line boundary, and includes information on habitats within the wider site ownership (blue line) which is being used to offset the biodiversity loss of the project, see Figure 1. This report should be read in conjunction with the EcIA produced by Ethos (2022).

The existing baseline habitats within the red line boundary include priority lowland calcareous grassland, non-priority lowland calcareous grassland, broadleaved woodland and developed land sealed surface. The existing land uses total 1.93 hectares which generates 20.83 biodiversity units. The linear habitats comprise a line of beech trees which is being retained within the proposals. There are no riparian habitats onsite.

Land within the blue line boundary comprises priority lowland calcareous grassland, non-priority lowland calcareous grassland and broadleaved woodland which total 5.25 hectares which generates 38.80 biodiversity units.

The mitigation hierarchy has been used regarding the calcareous grassland which is a priority habitat (JNCC 2022) and a high distinctiveness habitat within the BNG metric. This has included minimising the impacts on the grassland, retaining areas of the most suitable calcareous grassland, and the enhancement of grassland within the red line boundary from a moderate to a good ecological condition. Two areas have also been provided to enhance calcareous grassland within the blue line boundary of the site. This will compensate for the loss of the grassland and will ensure that trading standards are met within the metric 3.1.

Based on DEFRA biodiversity net gain metric 3.1 calculations, the proposed habitats on the site would result in a net gain of 8.19 Area habitat Units (AHU's) which will result in an overall 39.30% for AHU's.

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1 INTRODUCTION

1.1.1 The following report provides the results of the biodiversity net gain calculations undertaken for Rollestone Camp; Wiltshire henceforth referred to as 'the site'. The site includes the red line area which includes the land within the planning permission and the blue line area which includes land for offsetting the biodiversity loss of the development.

1.1.2 Within the redline boundary the site comprises areas of species-rich lowland calcareous grassland which is classed as a priority habitat and species-poor lowland calcareous grassland which is not a priority habitat, woodland habitat bordering the western edge and a line of beech trees to the south. Within the blue line boundary areas of species rich and species poor lowland calcareous grassland are present and broad-leaved woodland. In addition, there are seven structures on site which are used as training facilities, accommodation blocks and offices.

1.1.3 The report sets out the policy background for biodiversity net gain, the baseline conditions of the site, the proposed site layout, and the results of the net gain calculations.

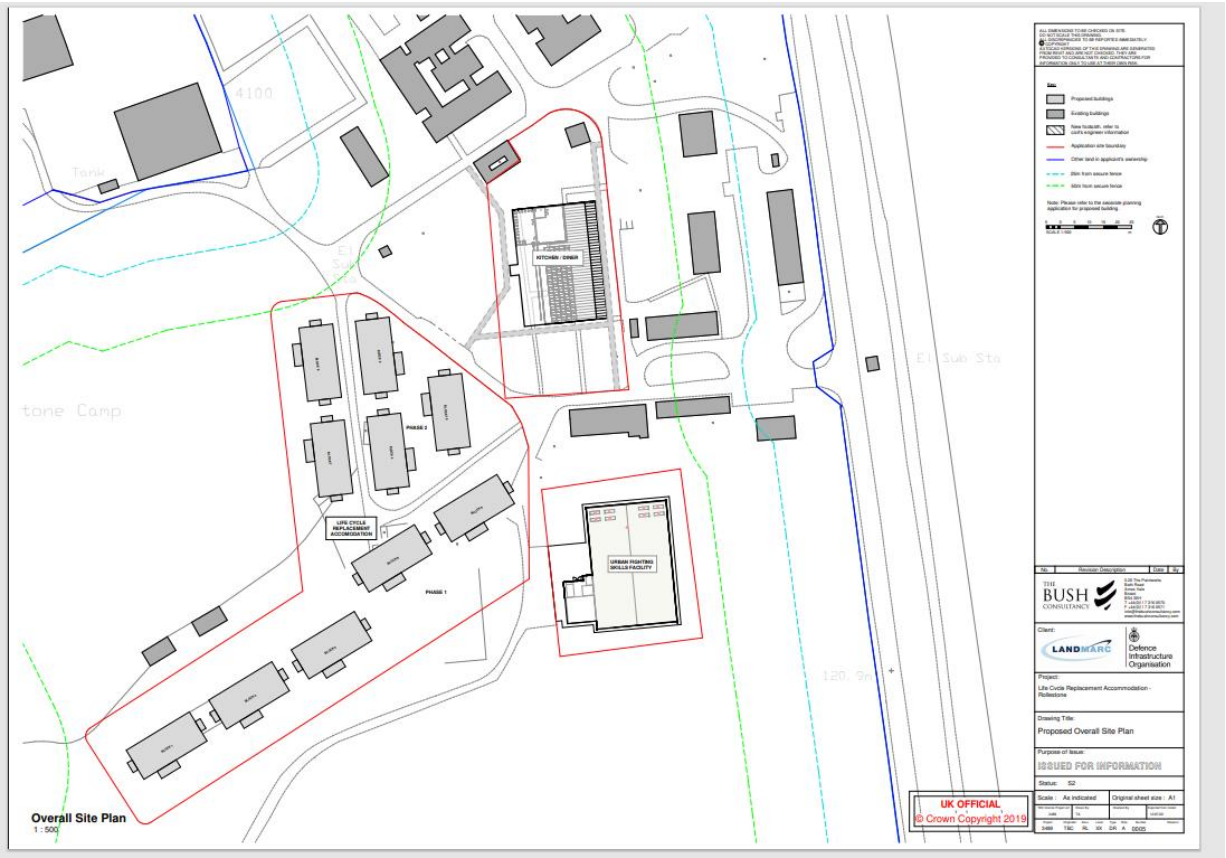


Figure 1 Site proposals

2 POLICY BACKGROUND

National Planning Policy Framework

2.1.1 The National Planning Policy Framework (NPPF) sets out planning policy for England. Paragraph 174 of the NPPF states
"Planning policies and decisions should contribute to and enhance the natural and local environment by:
d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;…"

2.1.2 Paragraph 179 states
"To protect and enhance biodiversity and geodiversity, plans should:
b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

2.1.3 Paragraph 180 states
"d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

Wiltshire Local Plan

Relevant policy taken from the adopted **Wiltshire Core Strategy 2015**

Core Policy 50

2.1.4 Biodiversity and geodiversity Protection Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity, and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource and secure the integrity of local ecological networks and provision of ecosystem services. All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development. Any development potentially affecting a Natura 2000 site must provide avoidance measures in accordance with the strategic plans or guidance set out in paragraphs 6.75-6.77 above where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the Natura 2000 network. Any development that would have an adverse effect on the integrity of a European nature conservation site will not be in accordance with the Core Strategy.

2.1.5 Biodiversity enhancement All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement measures will contribute to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/ Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character. Local sites Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

1) cannot reasonably be avoided
2) are reduced as far as possible
3) are outweighed by other planning considerations in the public interest, and
4) where appropriate compensation measures can be secured through planning obligations or agreements.

Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term.

Wiltshire Local Plan 2026 (Under Consultation)

2.1.6 Wiltshire Council is reviewing the Wiltshire Core Strategy adopted in January 2015 (to be recast as the Wiltshire Local Plan) which identifies land for development for the period to 2026.

Environment Act 2021

2.1.7 The Environment Act 2021 includes provision for biodiversity net gain to be applied to every planning permission.

Schedule 14 of the draft Environment Bill sets out amendments to the Town and Country Planning Act 1990 for the inclusion of biodiversity net gain as follows:

"Biodiversity gain objective

(1) The biodiversity gain objective is met in relation to development for which planning permission is granted if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least the relevant percentage.
(2) The biodiversity value attributable to the development is the total of—
(a) the post-development biodiversity value of the onsite habitat,
(b) the biodiversity value, in relation to the development, of any registered offsite biodiversity gain allocated to the development, and
(c) the biodiversity value of any biodiversity credits purchased for the development.
(3) The relevant percentage is 10%."

2.1.8 The Environment Act received Royal Assent in November 2021, meaning that by November 2023 the expectation for all planning permissions to include a biodiversity net gain of at least 10% will become a legal requirement.

3 METHOD

UK Habitat Classification survey

3.1.1 The habitat survey was carried out on 30th June 2022 according to the UKHab Classification system[1]. The survey included a detailed assessment of the land within the development boundary, including a description and mapping of all key features and habitat types. The survey was carried out to identify the range of habitats within the site and the predominant and notable species of flora.

3.1.2 Condition assessments were undertaken alongside the UKHab survey, in accordance with the technical guidance that accompanies the DEFRA biodiversity metric 3.1[2]. This involves assessing a series of attributes representing key physical characteristics of each habitat type. The attributes are used to assess whether the habitat is in a favourable condition. The habitats present on site were assessed as either poor, moderate or good condition. Guidance for assessment of hedgerows is detailed within Appendix 1.

Biodiversity Net Gain (BNG) assessment

3.1.3 This BNG assessment uses the following industry recognised best practice methods:

- *CIEEM, IEMA & CIRIA (2016). Biodiversity Net Gain: Good Practice Principles for Development;*
- *Natural England (2021). Biodiversity Metric 3.0 – Auditing and Accounting for Biodiversity;*
- *CIEEM (2021). Biodiversity net gain report and audit templates.*

3.1.4 Applying these standardised methods results in the calculation of a baseline biodiversity value, a post-development biodiversity value and a net change in biodiversity value associated with the proposed development.

3.1.5 The quantitative outcomes of the calculations are one component of the BNG assessment and associated good practice principles. A BNG assessment also requires the collation of qualitative evidence on the application of the mitigation hierarchy, stakeholder engagement and post-development habitat management. Collectively, these quantitative outcomes and qualitative evidence are used to inform the outcomes of the project-wide BNG assessment.

[1] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). UK Habitat Classification – Habitat Definitions V1.1 at http://ukhab.org

[2] Stephan Panks, Nick White, Amanda Newsome, Jack Potter, Matt Heydon, Edward Mayhew, Maria Alvarez, Trudy Russell, Sarah J. Scott, Max Heaver, Sarah H Scott, Jo Tredweek, Bill Butcher and Dave Stone 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England.

Achieving BNG Good Practice Principles

3.1.6 This section sets out the 10 principles of biodiversity net gain and provides a summary of how these principles have been applied to the project from its inception to the current proposals.

Table 1 10 Principles of biodiversity net gain

PRINCIPLE	APPLICATION TO PROJECT
Principle 1: Apply the mitigation hierarchy Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	The proposals will see the loss of priority calcareous grassland. To mitigate for the loss of this grassland the mitigation hierarchy has been followed. This has included avoiding areas of calcareous grassland, minimising the impact on the existing grassland, retaining, and enhancing grassland within the red line boundary of the site, and compensating for the loss of units by enhancing grassland within the blue line areas which are also within the site ownership boundary. The proposed BNG metric meets trading standards regarding the loss of priority calcareous grassland. The grassland compensation does not achieve a 10% net gain regarding AHU biodiversity. Therefore, it has been proposed that the adjacent woodland will also be enhanced as a part of this application. This will provide a 39.30% gain in terms of AHU and will provide a significant improvement in terms of habitat suitability on site.
Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve no net loss or net gain.	The proposal will see a loss in priority calcareous grassland. However, the site will provide a significant gain in terms of biodiversity within the site ownership with no requirement to offset outside of the ownership parcel.
Principle 3: Be inclusive and equitable Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Biodiversity Net Gain. Achieve net gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.	Within this project Ethos have been in consultation with the Ecologist team at the MOD, with Fairhurst, and with the county ecologist. Therefore, it was considered that the project has been open and inclusive.

Principle 4: Address risk Mitigate difficulty, uncertainty and other risks to achieving net gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.	The main risks concern the enhancement of the high and medium distinctiveness habitats on site. To address this risk the enhancements will be detailed within the corresponding EMP. This will include detailed timings, planting schedules, monitoring and remedial measures if required. The enhancement measure to achieve a good target condition are relatively simple and includes the cut and removal of grassland, three times, across the year. This reduces the risk of technical management which would be of higher risk. Following discussion with the client, it was confirmed that the MOD has their own woodland management department. This will lower the risk of relying on external contractors to undertake the woodland management. It was assessed that this team would have had experience with similar projects which would also reduce the risk of failure.
Principle 5: Make a measurable net gain contribution Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.	The proposals provide a 39.30% gain in AHU biodiversity and will provide a significant increase in terms of habitat suitability for wildlife.
Principle 6: Achieve the best outcomes for biodiversity Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly justified choices when: • *Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses;* • *Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation;* • *Achieving Biodiversity Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels;* • *Enhancing existing or creating new habitat; and*	The site meets the requirement regarding the loss of priority habitat and has met the trading standards within the calculator. The incorporation of the woodland within the scheme has ensured that the project exceeds the 10% gain which is often seen as being what is required to achieve as a measurable net gain in local policy. The project will see the enhancement of significant areas of lowland calcareous grassland which is a habitat of strategic importance within the landscape. Although there is no change in the extent of woodland and grassland on site it was considered that the grassland and woodland enhancement will see an increase in their habitat suitability for wildlife and as such would improve the ecological connectivity, enhance the existing wildlife networks, and would see biodiversity restored on a site and landscape scale.

• *Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity.*	
Principle 7: Be additional Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. doesn't deliver something that would occur anyway).	The gain shown on site has demonstrated that this project has been additional and exceeds the requirements within local and national policy.
Principle 8: Create a net gain legacy Ensure Biodiversity Net Gain generates long-term benefits by: • *Engaging stakeholders and jointly agreeing practical solutions that secure net gain in perpetuity;* • *Planning for adaptive management and securing dedicated funding for long-term management;* • *Designing net gain for biodiversity to be resilient to external factors, especially climate change;* • *Mitigating risks from other land uses;* • *Avoiding displacing harmful activities from one location to another; and* • *Supporting local-level management of Biodiversity Net Gain activities.*	The proposals could achieve a net gain without the incorporation of the woodland and if more areas of calcareous grassland were restored on site. However, it was considered that the smaller areas of grassland may not be as beneficial for wildlife on a landscape scale and may be under threat from future land use within the MOD Camp. It was considered that this addresses the risk from adjacent land uses and provides the most suitable habitat parcels for enhancement. It was considered that the site proposals will ensure the long-term protection and enhancement of high and medium distinctiveness habitats which would have been left and subsequently degraded in terms of its biodiversity value. Therefore, this development has the scope to be able to enhance and secure the long-term protection of these habitats. It was considered that the grassland management will improve habitats which are highlighted within local plans which will improve the habitat suitability for ecological connectivity on site and within the wider environment.

Principle 9: Optimise sustainability Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.	Habitat enhancements are being undertaken using traditional methods. For example, the grassland will need to be cut less than the current management. The woodland will also be managed within a coppicing cycle which is a sustainable form of woodland management.
Principle 10: Be transparent Communicate all Biodiversity Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	The BNG calculator and all working will be shared with invested stakeholders.

Strategic Significance

3.1.7 Strategic significance relates to the spatial location of a habitat parcel at a landscape scale. It is based on the habitat type and its location, depending on their status in a local plan, strategy, or policy. The user guide that accompanies the DEFRA metric 3.1 provides some guidance on how to assign strategic significance.

3.1.8 Strategic significance will be high if the location of the habitat is identified in a local plan, strategy or policy related to biodiversity. Medium strategic significance can be used where a location is deemed ecologically desirable for that particular habitat type. In the absence of any locally or nationally relevant strategic document indicating areas of significance for biodiversity, or robust ecological justification for a medium score, a low strategic significance score should be used.

3.1.9 The Natural England guidance provides the following example:

- *If woodland is planted in an area that has been identified in a Local Nature Recovery Strategy as a strategic corridor between two existing areas of woodland, it would be of high strategic significance.*
- *If the same location was not recognised in a local plan or strategy but the woodland would still create a strategic corridor, this would be of medium strategic significance.*
- *If the woodland was in a location not recognised in a local plan or strategy and was isolated from other woodland habitat it would be of low strategic significance.'*

3.1.10 Assessing strategic significance relies on published local strategies and objectives to identify local priorities for targeting biodiversity and nature improvement. These include (but are not limited to) Local Nature Recovery Strategies, local biodiversity action plans, National Character Area objectives, Local Planning Authority Local Ecological Networks, Shoreline Management Plans, estuary strategies and green infrastructure strategies that specifically identify strategic locations for biodiversity.

Assigning strategic significance

3.1.11 The guidelines above have been used to assign strategic significance to habitats on the site. A search for published local strategic plans for biodiversity was undertaken to inform this assessment. The following published strategies were identified for the site's location:

- *Wiltshire Biodiversity Action Plan (BAP) (Wiltshire Wildlife Trust 2008)*
- *Wiltshire Core Policy 50 (Wiltshire Council 2015)*

3.1.12 Strategic significance was assigned as follows:

- *If the site was within and identified strategic location and the specific habitats identified in that strategy were present on site, they were assigned high strategic significance.*
- *If the site was not in a strategic location, or none of the specific habitats identified in the strategy were present on site, then habitats could not be assigned high strategic significance.*
- *If a habitat was considered to provide a strategic feature within the landscape, or supported another ecological function within the landscape (e.g. provided a foraging resource for a priority species), then it was assigned medium strategic significance.*
- *Habitats which met none of the above criteria were assign low strategic significance.*

3.1.13 A discussion of each habitat parcel's strategic significance is provided in the relevant habitat section below.

Limitations and assumptions

3.1.14 The Biodiversity Metric 3.1 (Natural England, 2022) is an updated version of the old metric 3.0, however, it is likely it will be subject to further change and enhancement in the future. Known errors in the calculator tool have been avoided, however there are potentially further errors not yet identified.

3.1.15 The biodiversity net gain calculations based on field survey of habitats and their condition and mapping of habitat parcels in GIS. Habitat areas have been calculated in GIS and rounded to two decimal places.

3.1.16 Habitat surveys were carried out at a suitable time of year, but surveys were not exhaustive and may not have recorded all species present on site.

3.1.17 Non-Priority lowland calcareous grassland was identified within the UKhab classification survey. The habitat was species poor and did not meet the criteria for priority habitat even though it contained several indicator species. However, the BNG calculator does not have category for this habitat and as such this habitat was input into the calculator as lowland calcareous grassland in a poor condition. Because of this the grassland value is likely increased as the value is effectively more synonymous of neutral grassland. Although this is the case it was considered that this was not a significant limitation regarding this BNG assessment.

3.1.18 There are considered to be no significant limitations to the assessment.

4 BASELINE HABITATS

Introduction

4.1.1 The site covers 7.18 hectares. The baseline biodiversity map showing the existing habitats across the site is shown in Figure 2 and the habitats are listed below:

- *Grassland – calcareous grassland (g2);*
- *Grassland – lowland calcareous grassland (g2a5);*
- *Woodland and scrub – other broadleaved woodland (w1g);*
- *Line of trees – (w1g6).*
- *Developed land; sealed surface (u1b)*



Figure 2 Existing habitats

Area habitats (onsite)

(A1) Lowland calcareous grassland priority habitat

4.1.2 The main habitat on the site was 1.31 hectares comprising calcareous grassland. The grassland is species rich and synonymous with priority calcareous grassland.

4.1.3 The grassland was regularly mown to maintain a short sward and was used for amenity but had good species diversity. Several test pits were present at the time of the survey which showed a thin layer of soil over the chalk bedrock.

4.1.4 Species present included: dandelion (*Taraxacum officinale*), ribwort plantain (*Plantago lanceolata*), thyme-leaved speedwell (*Veronica serpyllifolia*), smaller cat's tail (*Phleum bertolonii*) daisy (*Bellis perennis*), self-heal (*Prunella vulgaris*), white clover (*Trifolium repens*), yarrow (*Achillea millefolium*), cock's foot (*Dactylis glomerata*), glaucous sedge (*Carex flacca*), lady's bedstraw (*Galium verum*), ground ivy (*Glechoma hederacea*), black medick (*Medicago lupulina*), common mouse-ear (*Cerastium fontanum*), common ragwort (*Senecio jacobaea*), dwarf thistle (*Cirsium acaule*) and Yorkshire fog (*Holcus lanatus*).

4.1.5 Table 2 shows the condition assessment, which categorises the habitat as High distinctiveness grassland in moderate condition. The habitat does not meet high condition standards due to the sward height being unvaried but is classed as moderate as there is no evidence of invasive non-native species, excessive poaching or damage from machinery on site.

4.1.6 The site is within a location identified as a strategic priority. The habitat is generally of high value for biodiversity and is directly connected with other similar habitat in the area. A loss or change in this habitat parcel would have a high impact on wider ecosystem function in this location. As such it is of high strategic significance.



Photo 1 Lowland calcareous grassland



Photo 2 Calcareous grassland

Table 2 Grassland – lowland calcareous grassland condition assessment

Condition Assessment Criteria	Evidence	Pass / Fail
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Wildflowers are present throughout the sward and it was assessed that the grassland meets lowland calcareous grassland.	**Pass**
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	The sward is the same height throughout < 5cm	**Fail**
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Bare ground is approximately 3%	**Pass**
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	No bracken recorded	**Pass**
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species1 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.	Poaching is less than 5% and there were no non-native species present. Undesirable species included white clover and ragwort but this comprised <5% of grassland composition.	**Pass**

(A2) Calcareous grassland non-priority habitat

4.1.7 There was 0.32 hectares of additional lowland calcareous grassland on site. The grassland was assessed to be in poor condition.

4.1.8 The grassland contained calcareous indicator species but was species poor and not considered to meet the criteria required for lowland calcareous grassland

4.1.9 Table 3 shows the condition assessment, which categorises the habitat as medium distinctiveness grassland in poor condition. As there is no category for non-priority calcareous grassland within the calculator this habitat has been input as lowland calcareous grassland.

4.1.10 The site is within a location identified as a strategic priority. The habitat is generally of low value for biodiversity but is directly connected with other similar habitat in the area. A loss or change in this habitat parcel would have a high impact on wider ecosystem function in this location. This habitat is restorable to a priority habitat, so it has been recorded as being of strategic significance.



Photo 3 Calcareous grassland (g2) in poor condition



Photo 4 Species poor sward

Table 3 Grassland – lowland calcareous grassland condition assessment

Condition Assessment Criteria	Evidence	Pass / Fail
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Indicators of calcareous present but is species poor and as such does not meet the criteria to meet lowland priority habitat.	**Fail**
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	The sward is uniform and all under 5cm. It is managed for amenity value and was assessed to be cut regularly.	**Fail**
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Bare ground is approximately 3%	**Pass**
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	No bramble and bracken is present.	**Pass**
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species1 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.	Poaching is less than 5% and there were no non-native species present. Undesirable species included white clover and ragwort but this comprised <5% of grassland composition.	**Pass**

(A3) Woodland and forest – Other woodland; broadleaved

4.1.11 A woodland copse called Rollestone Clump was located adjacent to the western site boundary. There was 0.08 hectares of woodland fringe present on site on the western boundary which comprised hazel (*Corylus avellana*), beech (*Fagus sylvatica*), elder (*Sambucus nigra*), privet (*Ligustrum vulgare*) and hawthorn (*Crataegus monogyna*). The woodland showed historic signs of coppicing.

4.1.12 Table 4 shows the condition assessment, which categorises the habitat in moderate condition.

4.1.13 The woodland is comprised of a canopy layer of mature beech trees and the understorey comprised hazel, hawthorn, and elder. The woodland includes several glades, but the majority is heavily shaded and as such the ground flora is dominated by ivy with limited herbaceous species present. The site is not within a location identified as a strategic priority; however it provides good habitat for wildlife and provides steppingstone habitat connectivity regarding all of the woodland parcels within the wider area. A loss or change in this habitat parcel would likely have a negative impact on biodiversity and ecology beyond the site. As such it is of medium strategic significance.



Photo 5 Other broadleaved woodland edge



Photo 6 Other broadleaved woodland interior

Table 4 Woodland – broadleaved condition assessment

Indicator	Result	Evidence	Score per indicator
1 Age distribution of trees	Moderate	Two age classes present, mature beech, but <150 years (100yrs)	2
2 Wild, domestic, and feral herbivore damage	Good	No sign evidence of browsing damage	3
3 Invasive plant species	Good	No invasive species present in woodland	3

Indicator	Result	Evidence	Score per indicator
4 Number of native tree species	Good	Five or more native trees and shrubs found across the woodland parcel including beech, elder, hazel, hawthorn, and privet	3
5 Cover of native tree and shrub species	Good	> 80% of canopy trees and >80% of understory shrubs are native	3
6 Open space within woodland	Poor	One area where a tree has fallen otherwise no gaps, very dark and little understorey vegetation	1
7 Woodland regeneration	Moderate	Some coppice re-growth but not advanced and more at the edges of the woodland. Little presence of saplings	2
8 Tree health	Good	All trees are healthy	3
9 Vegetation and ground flora	Poor	No recognisable NVC community, mostly ivy ground cover	1
10 Woodland vertical structure	Moderate	Two stores across all survey plots	2
11 Veteran trees	Poor	No veteran trees present in the woodland	1
12 Amount of deadwood	Poor	Less than 25% of all survey plots within the woodland have standing deadwood, large dead branches/ stems and stumps	1
13 Woodland disturbance	Good	No nutrient enrichment or damaged ground evident	3

(A4) Developed land; sealed surface

4.1.14 The area of developed land; sealed surface on site totals 0.22 hectares. There are eight single-storey buildings on site with associated roads and paths.

Offsite Habitats (Blue line)

4.1.15 The habitats within the blue line area include 1.74 Ha of lowland non-priority calcareous grassland and 0.07 ha of lowland priority habitat calcareous grassland of high strategic significance, 0.52 Ha of lowland non-priority calcareous grassland of low strategic significance and 2.84 ha of broad-leaved woodland. Descriptions for these habitats are as above (onsite baseline habitats) and these habitats meet the same habitat condition as shown within tables 2, 3, and 4.

(L1) Line of trees

4.1.16 A line of beech trees is present within the blue line area. The tree line is being retained and not impacted in the proposals.

Summary of baseline units

4.1.17 Within the site, area-based habitats total 1.93 hectares and generate 20.83 biodiversity units, detailed in Table 5.

Habitat	Area (ha)	Distinctiveness	Condition	Strategic significance	Units
Grassland – Lowland Calcareous grassland	1.31	High	Moderate	High Strategic Significance	18.08
Grassland – Lowland Calcareous grassland	0.32	High	Poor	High Strategic Significance	2.11
Woodland - broadleaved	0.08	Medium	Moderate	Low Strategic Significance	0.64
Urban	0.22	Very Low	N/A	Low Strategic Significance	0.00
Total	**1.93**				**20.83**

Table 5 Summary of onsite baseline habitat units' assessment results

4.1.18 Within the offsite (blue line) boundary, area-based habitats total 5.25 hectares and generate 38.80 biodiversity units, detailed in Table 6.

Habitat	Area (ha)	Distinctiveness	Condition	Strategic significance	Units
Grassland – Lowland Calcareous grassland	0.07	High	Moderate	High Strategic Significance	0.97

Habitat	Area (ha)	Distinctiveness	Condition	Strategic significance	Units
Grassland – Lowland Calcareous grassland	1.79	High	Poor	High Strategic Significance	11.81
Woodland - broadleaved	2.84	Medium	Moderate	Low Strategic Significance	22.72
Grassland – Lowland Calcareous grassland	0.55	High	Poor	Low Strategic Significance	3.30
Total	**5.25**				**38.80**

Table 6 Summary of offsite baseline habitat units' assessment results

5 PROPOSED HABITATS

Habitat Map

5.1.1 The post-development habitats expected on site after construction are based on the development proposals and shown in figure 3 below.



Figure 3 Proposed habitats

Enhanced Habitats (red line areas)

(A6) Grassland – priority lowland calcareous grassland

5.1.2 0.84 hectares of onsite lowland calcareous grassland will be enhanced to achieve good condition on site. Table 7 shows the current condition of the grassland and how it will be enhanced to achieve its target condition. The habitat management and monitoring will be detailed within the corresponding EMP.

Condition Assessment Criteria	Proposed management outcome	Condition
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Cut and remove the grassland three times a year to reduce its fertility, reduce the prevalence of dominant species and allow herbaceous species to flower.	**Good**
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	A percentage of the grassland will be left uncut to allow microclimate for wildlife	**Good**
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	No damaging practices e.g., Cattle grazing, only cut three times a year	**Good**
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	It is expected that regular cutting will remove the any bracken or bramble which may be present within the grassland	**Good**
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species1 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.	It is expected that the new management regime will see a reduction in undesirable and invasive species.	**Good**

Table 7 Priority lowland calcareous grassland condition assessment and proposed management

(A7) Grassland – calcareous grassland non-priority habitat

5.1.3 0.19 hectares of onsite non-priority calcareous grassland will be enhanced to achieve good condition on site. Table 8 shows the current condition of the grassland and how it will be enhanced to achieve its target condition. The habitat management and monitoring will be detailed within the corresponding EMP.

Condition Assessment Criteria	Proposed management outcome	Condition
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Cut and remove the grassland three times a year to reduce its fertility, reduce the prevalence of dominant species and allow herbaceous species to flower.	**Good**
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	A percentage of the grassland will be left uncut to allow microclimate for wildlife	**Good**
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	No damaging practices e.g., Cattle grazing, only cut three times a year	**Good**
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	It is expected that regular cutting will remove the any bracken or bramble which may be present within the grassland	**Good**
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species1 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.	It is expected that the new management regime will see a reduction in undesirable and invasive species.	**Good**

Table 8 Calcareous grassland condition assessment and proposed management

(A8) Woodland – other woodland; broad-leaved

5.1.4 0.08 hectares of woodland will be enhanced on site. Table 4 shows the current condition of the woodland and how it will be enhanced to achieve its target condition. Table 4 details the outcome and evidence of the woodland condition assessment. The main negative drivers influencing the woodland condition include the lack of regrowth within the woodland, limited deadwood, and limited areas of open space within the woodland. These factors have resulted in the woodland floor becoming shaded and species poor with no recognisable NVC category present. If these factors are addressed, then the woodland can be enhanced from a moderate to good condition. This will be achieved through the introduction of coppice management which will provide open areas within the woodland, the provision of retained deadwood, and the creation of glades, rides, and open areas which have been created through coppicing.

Enhanced Habitats (blue line areas)

(O5) Grassland – priority lowland calcareous grassland

5.1.5 0.07 hectares of offsite lowland calcareous grassland will be enhanced to achieve good condition on site. Table 7 shows the current condition of the grassland and how it will be enhanced to achieve its target condition. The habitat management and monitoring will be detailed within the corresponding EMP.

(O6, O8) Grassland – calcareous grassland non-priority habitat

5.1.6 2.26 hectares of offsite non-priority calcareous grassland will be enhanced to achieve good condition on site. Table 8 shows the current condition of the grassland and how it will be enhanced to achieve its target condition. The habitat management and monitoring will be detailed within the corresponding EMP.

(O7) Woodland – other woodland; broad-leaved

5.1.7 2.84 hectares of woodland will be enhanced offsite. Table 4 shows the current condition of the woodland and how it will be enhanced to achieve its target condition. Table 4 details the outcome and evidence of the woodland condition assessment. The main negative drivers influencing the woodland condition include the lack of regrowth within the woodland, limited deadwood, and limited areas of open space within the woodland. These factors have resulted in the woodland floor becoming shaded and species poor with no recognisable NVC category present. If these factors are addressed, then the woodland can be enhanced from a moderate to good condition. This will be achieved through the introduction of coppice management which will provide open areas within the woodland, the provision of retained deadwood, and the creation of glades, rides, and open areas which have been created through coppicing.

Created Habitats

(A5) Urban – developed land; sealed surface

5.1.8 The construction of 0.81 hectares of developed land; sealed surface has been proposed onsite, which will include various buildings and a 4 metre wide access road extending to the southwest corner of the site.

Summary of Proposed Habitats

5.1.9 Within the site, area-based habitats generate 20.83 biodiversity units, of which 3.78 are from newly created habitats, with the remaining 8.31 from retained and enhanced habitats.

Table 8 Summary of biodiversity units within the red line area

Habitat	Area (ha)	Distinctiveness	Condition	Strategic significance	Units	Type
Developed Land Sealed surface	0.81	V.Low	N/A	Area/Compensation not in local strategy	0	Creation
Grassland Lowland calcareous grassland	0.84	High	Moderate - Good	Formally identified within local plan	12.93	Enhance
Grassland Lowland calcareous grassland	0.19	High	Poor - Good	Formally identified within local plan	1.74	Enhance
Woodland - broadleaved	0.08	Medium	Moderate - Good	Area/compensation not in local strategy	0.86	Enhance
Total	**1.92**				**15.53**	

Table 8 Summary of biodiversity units within the blue line area

Habitat	Area (ha)	Distinctiveness	Condition	Strategic significance	Units	Type
Grassland Lowland calcareous grassland	0.07	High	Moderate - Good	Formally identified within local plan	1.08	Enhance
Grassland Lowland calcareous grassland	1.74	High	Poor - Good	Formally identified within local plan	15.89	Enhance
Woodland - broadleaved	2.84	Medium	Moderate - Good	Area/compensation not in local strategy	30.68	Enhance
Grassland Lowland calcareous grassland	0.52	High	Poor - Good	Area/compensation not in local strategy	4.13	Enhance
Total	**5.17**				**51.78**	

6 SUMMARY OF OVERALL BIODIVERSITY CHANGE

6.1.1 The baseline habitats within the red line boundary currently provide 20.83 habitat units with this decreasing to 15.53 habitat units post-development, meaning a loss of 25.44%. The current offsite baseline habitats provide 38.80 habitat units and this will increase to 52.28 habitat units post-development. Therefore, with the enhancement of offsite habitats there will be an increase of 8.19 habitat units, delivering an overall net gain of 39.30% for habitats. Figure 4 shows the headline results from the metric.

On-site baseline	*Habitat units*	20.83
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	15.53
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-25.44%
	Hedgerow units	0.00%
	River units	0.00%
Off-site baseline	*Habitat units*	38.80
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	52.28
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	8.19
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	39.30%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?		Yes ✓

Figure 4 Headline result from the DEFRA metric 3.1

7 CONCLUSION AND RECOMMENDATIONS

The baseline habitats within the red line boundary currently provide 20.83 habitat units with this decreasing to 15.53 habitat units post-development, meaning a loss of 25.44%. The current offsite baseline habitats provide 38.80 habitat units and this will increase to 52.28 habitat units post-development. Therefore, with the enhancement of offsite habitats there will be an increase of 8.19 habitat units, delivering an overall net gain of 39.30% for habitats.

This increase through biodiversity has been delivered following the BNG mitigation hierarchy. This has included minimising the impacts on the grassland, retaining areas of the most suitable calcareous grassland, and the enhancement of grassland within the red line boundary from a moderate to a good ecological condition. Two areas have also been provided to enhance calcareous grassland within the blue line boundary of the site. This will compensate for the loss of the grassland and will ensure that trading standards are met within the metric 3.1.

It was assessed that the proposals will provide a significant gain in terms of biodiversity. This includes the retention and enhancement of lowland calcareous grassland and the enhancement of an extensive area of broad-leaved woodland. Both of these habitats have been degraded through the lack or through inappropriate management. This report sets out the management to restore these medium/high distinctiveness habitats to a good condition within the BNG metric. This will provide 39.30% gains in terms of AHU biodiversity and will improve the habitat suitability for a range of species.

8 APPENDIX 1

Hedgerow condition criteria

Table 2Hedgerow favourable conditions attributes

Hedgerow favourable condition attributes			
Attributes and functional groupings (A, B, C and D)		**Criteria (the minimum requirements for 'favourable condition'**	**Description**
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 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).
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 (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	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).
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

Hedgerow favourable condition attributes			
Attributes and functional groupings (A, B, C and D)		**Criteria (the minimum requirements for 'favourable condition'**	**Description**
Core groups – applicable to all hedgerow types			
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 hedge (at least)	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).
C2.	Undesirable 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, should not exceed the 20% cover threshold.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).
Additional group – applicable to hedgerows with trees only			
E1.	Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	This criterion addresses if there are sufficient mature trees (within the scope of planning timescales) which are of higher value to biodiversity.
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.

Table 3Hedgerow condition assessment and weighting

Condition categories for hedgerows without trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric Score**
Good	No more than 2 failures in total; AND No more than 1 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 (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1
Condition categories for hedgerows with trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric score**
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1