

Biodiversity Net Gain Assessment

March 2025

**Carisbrook Road,
Mitcheldean**

Prepared by
CSA Environmental

On behalf of
Gladman Developments

Report No: CSA/4057/18

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

Report Reference	Revision	Date	Prepared by	Approved by	Comments
CSA/4057/18	-	05/12/2024	KK	TR	
	A	05/03/2025	KK	-	NPPF reference updated
	B	20/11/2025	KK	-	Additional text given on additionality



CONTENTS	Page
1.0 Introduction	4
2.0 Planning Policy & Legislation	6
3.0 Methods	8
Biodiversity Calculations	8
Baseline Habitats	8
Post-Development Habitats	9
Encroachment	10
Strategic Significance	10
Additionality and Wider Considerations	10
Assumptions & Limitations	10
4.0 Baseline Biodiversity	12
Strategic Significance	12
Encroachment	13
Baseline Biodiversity Units	13
5.0 Post-Intervention Biodiversity	14
Habitat Retention, Enhancement and Creation	15
Strategic Significance	15
Significant On-site Gain	16
6.0 Net Effect on Biodiversity	17
Biodiversity Units	17
Qualitative Appraisal	17
Additionality	18
7.0 Management & Monitoring	20
8.0 Summary & Conclusions	21
9.0 References	22

Appendices

Appendix A: Baseline Habitats Plan

Appendix B: Proposed Habitats Plan

Appendix C: Habitat & Hedgerow Condition Assessments

To assist the Forest of Dean District Council in their consideration of BNG and the proposed development, relevant statements have been set out in Box 1 and 2 in respect of applicable BNG policy and legal requirements.

Box 1. Biodiversity Net Gain Statements
Planning permission sought for the development, if granted, would be subject to the Biodiversity Gain Condition as set out within Schedule 14 of the Environment Act (2021) given the following: • Planning permission does not relate to development consented prior to 12 February 2024 ('major developments') and subject to a 'Section 73' amendment, or comprise a Reserved Matters application pursuant to such consent • Impacts to habitats are predicted on-site that either exceed 25 square metres per 5 linear metres with a value greater than zero, and/or impacts to any 'Section 41' habitat of principal importance • Planning permission sought does not relate to a 'householder application' or 'the high-speed railway transport network' • Planning permission is not for self-build or custom housebuilding and relates to more than 9 dwellings and/or proposals cover over 0.5ha • Planning permission does not relate directly to off-site gain developments to fulfil other BNG requirements
The biodiversity value of on-site habitats set out herein relate to the date of the planning application and not an earlier date.
The biodiversity value of on-site habitats set out herein are not lower than on date of application.
On-site biodiversity gain proposed herein is significant based upon the following: • Proposed habitats include those of medium and higher distinctiveness comprising neutral grassland, woodland and scrub.
The Site does not contain irreplaceable habitat as defined under the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations (2024).
As set out herein measures have been taken in a step-wise fashion to: • First avoid adverse effects of the development upon on-site medium or higher distinctiveness habitat and, where they cannot be avoided, mitigate these effects; • Taking an approach to first seek on-site habitat enhancement, then habitat creation

Box 2. Accordance with 'Biodiversity Net Gain: Good Practice Principles for Development' (Baker et al., 2019).	
Principle 1. Apply the 'Mitigation Hierarchy'	Designs decisions have been documented within the prepared EcIA due consideration for the CIEEM Guidelines for Ecological Impact Assessment (EcIA) (CIEEM, 2018) including the mitigation hierarchy. Trading rules have been accorded with in the prepared metric and ecologically justified decisions have been taken in respect of proposed habitats. By way of example, the Site access location was relocated from an earlier iteration of the Development Framework Plan (DFP) to reduce the need for hedgerow losses along the western Site boundary and to reduce potential conflict between built development and the need for high-quality bat mitigation in this area. The on-site landscaping scheme has been developed to include habitats of most value to local wildlife, principally horseshoe bats. The DFP has undergone several updates to increase the habitat provision, buffer sensitive habitats and ensure that BNG can be delivered on-site.
Principle 2. Avoid losing biodiversity which cannot be offset by gains elsewhere (e.g., irreplaceable habitats).	No irreplaceable habitats are present. Losses include agricultural land of low ecological value and small amounts of scrub. All hedgerows and trees are to be retained. There will be a net gain in scrub, grassland, woodland and tree habitats.
Principle 3. Be inclusive & equitable	Design decisions have considered the needs of local people and wildlife, ensuring that biodiversity contributions are appropriate to the local landscape and species that will use them. Open space design has sought to balance biodiversity benefits and access to nature, with recreational uses and delivery of housing.
Principle 4. Address risks (e.g., difficulty of achieving habitat creation/enhancement)	A precautionary approach has been taken to grassland habitat type and condition for on-site biodiversity gain provision, with the highest provision comprising other neutral grassland in moderate condition. Attenuation features are shown as urban (SuDS) habitats although these will be managed as grassland.
Principle 5. Make a 'measurable' Net Gain contribution (e.g., calculated using an appropriate metric).	The Statutory Biodiversity Metric has been used to demonstrate a clear and quantified calculation of the net effect of development upon biodiversity, using habitat as a proxy for wider biodiversity.
Principle 6. Ensure that Net Gain design achieves the best outcomes for biodiversity (quantitative and qualitative assessment) and create a net gain legacy for long-term benefits.	As mentioned above, the scheme has been designed with careful input from the project ecologist, and utilising survey data for the Site, to maximise the benefit of new planting (e.g. right type, right place). The proposals are appropriate for the local landscape and should establish well for long-term biodiversity value.
Principle 7. Be additional Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).	The proposals are above and beyond that needed to mitigate direct habitat impacts at the Site, and are tailored to maximise opportunities for local wildlife including rare horseshoe bats.

Principle 8. Create a Net Gain legacy Ensure Net Gain generates long-term benefits.	Significant proposed habitat will be managed and monitored for 30-years for the benefit of both nature and human stakeholders.
Principle 9. Optimise sustainability Optimise the wider environmental benefits for a sustainable society and economy.	Habitats to be used for amenity purposes are designed to be low maintenance to reduce costs and the need for any herbicides or pesticides.
Principle 10. Be transparent Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	Biodiversity net gain has been completed as an iterative process throughout the design of the Site. Input from stakeholders will be used to refine the approach as necessary through the planning process, and to inform the detailed layout design.

1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Gladman Developments Ltd and sets out the findings of a Biodiversity Net Gain (BNG) Assessment. Residential development is proposed at land off Carisbrook Road, Mitcheldean (hereafter 'the Site'). This report details the predicted net effect of the proposed development upon biodiversity.
- 1.2 This report has been prepared with due consideration for the Chartered Institute of Ecology and Environmental Management's guidance for design stage reporting on Biodiversity Net Gain (CIEEM, 2021). The report also takes into account wider CIEEM best-practice guidance (2017 & 2018), Biodiversity Net Gain: Good Practice Principles for Development (Baker et al., 2019) and the Biodiversity: Code of Practice for Planning and Development, published by the British Standards Institute (BS 42020:2013).
- 1.3 The Site occupies an area of c. 9.72ha and consists of a single agricultural field bounded by native hedgerows, scrub and scattered mature trees (see Habitats Plan in Appendix A). The Site is located around central grid reference SO 664 193, to the north of Mitcheldean, in the Forest of Dean (FoD), Gloucestershire.
- 1.4 This report should be read in conjunction with the Ecological Impact Assessment (EcIA) (CSA/4057/13A) prepared for the proposed development which provides full baseline habitat information upon which the post-development biodiversity value set out herein is based.
- 1.5 This 'Design Stage' BNG Assessment aims to:
 - Confirm whether planning permission sought for the development, if granted, would be subject to the Biodiversity Gain Condition as set out within the Environment Act (2021) [see Box 1].
 - Provide information about "...the steps taken or to be taken to minimise the adverse effect of the development on the biodiversity of the on-site habitat and any other habitat". Furthermore, evidence is provided as to how the Biodiversity Gain Hierarchy, as set out in as set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations (2024), has been applied.
 - Establish the following using the Statutory Biodiversity Metric Calculation, which uses habitat as a proxy for biodiversity and comprises three separate modules (Habitat Units, Hedgerow Units & Watercourse Units):
 - 'pre-development' (baseline) biodiversity value of the Site
 - 'post-development' (post-intervention) biodiversity value of the Site
 - Any off-site biodiversity values (baseline & post-intervention)

- Net effect of the proposed development
- Whether relevant 'trading' rules and other controls have been accorded with
- Whether the Biodiversity Gain Objective (10%) is met or not
- State whether "...the biodiversity value of the on-site habitat will be lower on the date of application (or an earlier date) because of the carrying on of activities ('degradation') in which case the value is to be taken as immediately before the carrying on of the activities, and if degradation has taken place supporting evidence of this".
- State whether any on-site biodiversity provision is 'significant' and if so, how the specific gains would be secured for 30 years, in accordance with Paragraph 9, Schedule 7A of the Town & Country Planning Act (1990).
- Confirm the presence and location of any irreplaceable habitat at the Site, as set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations (2024).
- Clearly identify any assumptions made or deviation from the Statutory Biodiversity Metric Guidance.
- Detail any legal frameworks for how Biodiversity Net Gain would be secured subject to grant of planning permission.

1.6 In accordance with the Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations (2024) the following drawings have also been prepared:

- Baseline Habitats Plan (CSA/4057/105) provided in Appendix A
- Proposed Habitats Plan (CSA/4057/122) provided in Appendix B

2.0 PLANNING POLICY & LEGISLATION

2.1 The following legislation brings into force Schedule 14 of the Environment Act (2021), making Biodiversity Net Gain (BNG) a condition of planning permission in England from 12 February 2024:

- The Biodiversity Gain (Town and Country Planning) (Consequential Amendments) Regulations 2024
- The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2024
- The Biodiversity Gain Site Register Regulations 2024
- The Biodiversity Gain Requirements (Exemptions) Regulations 2024
- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024
- The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024

2.2 The National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing & Communities, 2024) sets out existing government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 187, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity.

2.3 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Practice Guidance (PPG). That relating to the protection and enhancement of the Natural Environment was most recently updated in February 2024. The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular, the PPG promotes the delivery of measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.

2.4 The following local policies make reference to biodiversity and the protection and enhancement of priority habitats and species:

Policy CSP.1 – Design and Environmental Protection (FoD Core Strategy, 2012)

The design and construction of new development must take into account important characteristics of the environment and conserve, preserve or otherwise respect them in a manner that maintains or enhances their contribution to the environment, including their wider context.

Developments must support green infrastructure corridors that link to existing habitat features and networks.

Developments will be required to make long lasting biodiversity enhancements which could include the creation of new habitats where these would be appropriate. They should support existing features (trees, ponds, hedgerows etc), provide and manage public open space and should also provide additional features for a wide variety of species and habitats in appropriate locations throughout the development. Additional features provided should be consistent with the characteristics of the surrounding area.

Policy E4 – Biodiversity (Mitcheldean Neighbourhood Development Plan 2016-2026)

Wherever practical and feasible, development proposals should include measures to enhance biodiversity as part of landscaping and building design.

Where practicable, proposals should include enhancements such as sustainable drainage systems, re-naturalising watercourses, woodland planting, roosting opportunities for bats, the installation of bird nest boxes and the use of native species in the landscape planting.

3.0 METHODS

Biodiversity Calculations

- 3.1 The Statutory Biodiversity Metric (Defra, 2024) was used to determine baseline (pre-development) and post-intervention (post-development) biodiversity values, and to calculate the net effect of the development upon biodiversity. Specifically, the Statutory Biodiversity Metric Calculation Tool was populated and used to run all calculations present herein, and in accordance with the Statutory Metric User Guide (Defra, 2024).
- 3.2 The Statutory Biodiversity Metric uses habitat (vegetation and edaphic conditions) as a proxy for measuring biodiversity more widely. This approach allows for the relative biodiversity 'value' of land to be calculated and expressed as transferrable 'Biodiversity Units'. The metric adopts the UK Habitat Classification (UK Hab; Butcher et al., 2023) system with some minor deviation.
- 3.3 The metric consists of a primarily 'Area' module which calculates 'Habitat Units' such as grassland, woodland and urban habitats, as well as two linear modules for 'Hedgerow Units' (including lines of trees) and 'Watercourse Units' (including rivers, canals and ditches). The separate Biodiversity Unit types cannot be converted between these modules and are addressed separately herein.
- 3.4 'Habitat trading' controls are integrated into the Statutory Metric to ensure any losses of habitat are mitigated or compensated for appropriately, in respect of conservation priorities and ecological functionality. Any deviation from habitat trading is cleared flagged within the Statutory Metric, and justifications, where necessary, are set out herein.
- 3.5 Any consideration of temporary impacts, those where habitats can be reinstated within 2 years of impacts as set out within the User Guide, are explained in full herein.
- 3.6 A Statutory Biodiversity Metric Calculation Tool has been prepared for the proposed development and is provided separately in full for interrogation by Forest of Dean District Council, relevant consultees and stakeholders.
- 3.7 All metric calculations have been completed by Kate Kibble MCIEEM who has completed numerous net gain assessments.

Baseline Habitats

- 3.8 The accompanying EclA report (CSA/4057/103) provides details of UKHab survey work undertaken at the Site. Multiple visits have been

made over the course of other survey work during 2018, 2019 and 2024 during which the Site has undergone various management regimes, though it has always been intensive agricultural land.

- 3.9 Baseline (pre-development) habitat areas and linear measurements were taken from the Baseline Habitats Plan (Appendix A) prepared in mapping software Quantum Geographic Information Systems (QGIS). Mapping is based upon field survey, topographical survey, satellite imagery and OS mapping to an accuracy of 10m²/5m (area/linear).

Habitat and Hedgerow Condition Assessment

- 3.10 An assessment of habitat and hedgerow condition was undertaken on 13 June 2024 by Kate Kibble MCIEEM (FISC Level 4), in accordance with the Statutory Metric User Guide (Defra, 2024). Published condition assessment templates have been completed and are provided in Appendix C alongside wider condition information.

Watercourse Condition Assessment

- 3.11 An off-site ditch is included within the assessment as the Site falls within the 5m riparian zone. The ditch is partially culverted and a formal condition assessment has not been completed. An estimated condition of Poor was assigned with regards to the condition criteria set out within the Statutory Metric as it does not support sufficient water levels or aquatic plant life.

Post-Development Habitats

- 3.12 Post-development habitat areas and linear measurements were taken from the Proposed Habitats Plan (Appendix B) prepared in mapping software QGIS. This plan is based upon the Development Framework Plan (CSA/4057/116, Rev G) prepared by CSA Environmental on behalf of Gladman Developments Ltd. Ditch location and length, and the nature of likely impacts was determined using the Outline Drainage Strategy by Lees Roxburgh (6326, 01-04)
- 3.13 Wider consideration of construction methods, future land-use and management were used to determine the extent of existing habitat loss/deterioration, retention/enhancement and creation which would occur-post development.
- 3.14 Professional judgement was required throughout the calculation process to ensure target habitats were reasonable, achievable and ecologically justified. Habitat condition for both enhanced and created habitats was assigned taking a precautionary approach and with consideration of biotic and operational phase conditions (i.e. those which may limit the extent to which 'good' condition is likely to be reached).

Encroachment

- 3.15 Encroachment is a multiplier specific to the watercourses module of the metric and considers features that adversely affect the natural function of a watercourse and ditches, or result in localised changes in habitat, species and migratory pathways. The level of encroachment for both the watercourse and riparian zone at baseline and post-intervention for the on-site ditch were categorized based on the descriptions set out in Tables 11 and 12 of the User Guide (Defra, 2024) and typically consist of built structures, artificial features and management practices within these zones.

Strategic Significance

- 3.16 A desktop assessment was undertaken to determine relevant strategic significance multipliers for pre- and post-development habitats in accordance with Table 7 of the Statutory Metric User Guide (Defra, 2024) with particular consideration of Local Nature Recovery Strategies (LNRS).

Additionality and Wider Considerations

- 3.17 In accordance with the good practice principles as set out above, the following additional considerations have been given:
- Wider consideration of ecological functionality, with a qualitative ecological assessment presented herein
 - Consideration of non-ecological stakeholders, such as end-users (e.g. residents) of the scheme and choices with regard to access and multi-functionality
- 3.18 As requested by Forest of Dean District Council in their consultation response to the planning application, further consideration of additionality is given below, to ensure that at least 10% of the biodiversity gains provided on-site are delivered by measures 'additional' to any species mitigation measures required.

Assumptions & Limitations

- 3.19 Effort has been taken to ensure mapping, and measurements taken from mapping, are accurate to the level stated. However, given the nature of habitats, methods of field survey and the potential for inaccuracies in aerial photography and some other mapping, there remain some potential for errors in the calculations presented herein.
- 3.20 Professional judgement and a precautionary approach are required to establish baseline and post-development scenarios to assess current habitat type and condition, and to predict future changes. Accordingly outcomes for habitats and biodiversity more widely may differ from those presented herein.

- 3.21 Specific assumptions with regard to certain existing and proposed habitats have been identified where relevant throughout the report.

4.0 BASELINE BIODIVERSITY

- 4.1 For full habitat descriptions and species lists, please refer to the EclA (CSA/4057/13) with baseline habitats illustrated on the Habitats Plan (Appendix A). Appendix C sets out full details of habitat condition assessment including completed standard templates.

Strategic Significance

- 4.2 There is no currently published Local Nature Recovery Strategy (LNRS) for Gloucestershire however, as detailed within '*Guidance on Delivering Biodiversity Net Gain for planning applicants and developers in Gloucestershire*¹', the Nature Recovery Network maps published by the Gloucestershire Local Nature Partnership² should be used to guide habitat creation at a site and inform strategic significance of habitats.
- 4.3 High strategic significance can be assigned to:
- Existing core habitats (also applicable to proposed enhancements)
 - Areas indicated as high or medium priority opportunity areas for woodland or open habitats
 - Wetland opportunity areas
 - Any designated site or Local Wildlife Site not covered by core habitat
 - Any area allocated for Nature Recovery or Green Infrastructure Improvements within a Local Plan
 - Functionally-linked land for species (i.e. where habitat management contributes to relevant species requirements associated with the Wye Valley and Forest of Dean Bat Sites SAC)
 - Traditional orchard creation/restoration
- 4.4 Medium strategic significance can be assigned on the basis of the following criteria (where not already High significance above):
- Land within a Strategic Nature Area
 - Landscape-scale projects identified by Gloucestershire Local Nature Partnership
- 4.5 Other relevant plans and strategies have been identified within the BNG Guidance document.
- 4.6 Based on the above, the following strategic significance categories have been applied:
- Hedgerows and trees are assigned High strategic significance as they have been found to be used by horseshoe bat species likely associated to the Wye Valley and Forest of Dean Bat Sites SAC.

¹ Version 2, February 2024. Available at: <https://www.gloucestershire.gov.uk/media/p1xls25e/bng-guidance-for-lpa-february-2024.pdf>

² <https://naturalcapital.gcerdata.com/>

- All other habitat types are assigned Low strategic distinctiveness as although the Site is located within a Strategic Nature Area (SNA 37: Vale of Leadon and Dean Ridges - Mitcheldean Woods, this is noted for habitat types not currently present on-site (Woodland Mosaic incl. Heathland, Acid Grassland and Traditional Orchards).

Encroachment

- 4.7 Encroachment is applicable to the off-site ditch and multipliers have been selected for watercourse and riparian encroachment. The ditch measures c. 120m long with a c. 60m culverted section located within 5m of the Site boundary.
- 4.8 Encroachment has been selected as major for both bank tops of the ditch due to the presence of Carisbrook Road within a couple of metres of the ditch's entire length to the south, and the intensively managed farmland on-site to the north which reduce the quantity, quality and ecological function of these 5m riparian zones. The

Baseline Biodiversity Units

- 4.9 Full detail of the on-site habitat areas and baseline Biodiversity Units are provided in the accompanying Statutory Biodiversity Metric.
- 4.10 In summary, the baseline habitat value is **20.86 units**. This is dominated by habitats of low distinctiveness (farmland) with a small amount of medium-distinctiveness bramble scrub and trees.
- 4.11 The baseline hedgerow value is **5.93 units**, with all hedgerows of high distinctiveness. Hedgerow condition varies from moderate to poor on account of the gappiness (vertical and/or horizontal), nutrient enrichment and/or insufficient height and width.
- 4.12 Linear watercourse units relating to the on-site ditch and associated culverts result in a baseline unit value of **0.44 units**.

5.0 POST-INTERVENTION BIODIVERSITY

- 5.1 The proposed development comprises the construction of up to 180 dwellings with associated private gardens, access infrastructure, Sustainable Drainage System (SuDS) features and Public Open Space.
- 5.2 Development of the proposed layout has been an iterative process in consultation with the project ecologist, to ensure that the scheme protects and enhances key habitats at the Site and is able to deliver sufficient biodiversity net gain on-site. In accordance with the Biodiversity Gain Hierarchy this includes:
- Relocating the Site access to avoid impacts to existing woody vegetation of ecological value (within regards to other constraints such as slope, visibility, drainage etc)
 - Buffering all boundary habitats and providing high quality grassland, scrub and tree habitats of value to wildlife
 - Provision of extensive woodland planting to protect and enhance horseshoe bat flight paths. This also contributes to the local landscape character and opportunities for woodland creation
 - New hedgerow and scrub planting to strengthen existing boundary vegetation
- 5.3 Post-intervention habitats are illustrated on the Proposed Habitats Plan in Appendix B. This drawing is based upon development parameters set out within the Development Framework Plan (CSA/4057/116 Rev G) prepared by CSA Environmental. The following assumptions have been made with regard to these plans in line with the Statutory Metric User Guide (Defra, 2024) and professional judgement taking a precautionary approach where necessary:
- Residential development parcels are assumed to comprise 70% dwellings and built form, with 30% private gardens (the play area and pumping station are measured separately and not included in the 70% figure).
 - All individual trees are assumed to be 'small' in size, and in poor condition for 'urban'/street contexts and moderate condition for 'rural' contexts.
 - Proposed trees shown illustratively over woodland or scrub habitats are not included in the count of proposed trees as these will likely contribute to the associated area habitat.
 - A proposed culvert will link the attenuation basin to the existing culvert offsite.
- 5.4 On-site habitat retention, enhancement and creation set out below would be secured through planning conditions to control the detailed development design and landscaping scheme, and to secure a Habitat

Management & Monitoring Plan (HMMP) covering on-site habitats for a minimum 30-year period.

Habitat Retention, Enhancement and Creation

- 5.5 The proposed development retains all existing boundary hedgerows and trees. Open farmland, along with a small area of bracken and bramble scrub will be lost.
- 5.6 It is proposed to enhance hedgerow H4 through infilling of shrub vegetation to improve structure, connectivity and diversity.
- 5.7 On-site habitat creation includes extensive woodland planting along the northern and eastern boundaries to buffer and enhance flight paths used by horseshoe bat species in particular. Greenspace encircling the built development will include a mosaic of scrub, wildflower grassland and amenity grassland providing benefits for wildlife as well as new residents. New hedgerow planting is proposed along the south-west Site boundary and scattered tree planting is included throughout the development.
- 5.8 Encroachment values are considered to improve for the ditch's northern bank top from Major to None, as on-site agricultural land is replaced with semi-natural habitats. The south bank top encroachment value is unchanged and no other enhancements to the ditch itself are proposed as this is within offsite land.
- 5.9 Full details are included within the accompanying metric. The proposed biodiversity value post-development is **26.52 Habitat Units, 7.52 Hedgerow Units** and **0.53 Watercourse Units**.
- 5.10 As set out within the accompanying EclA the retention of these habitats will require protections during construction and in operation through the following:
- Tree protection measures in line with standard arboricultural practice (BS5837: 2012)
 - Construction Environmental Management Plan, to include standard pollution control measures to be implemented during construction
 - Landscape and Ecology Management Plan/HMMP
- 5.11 Enhancement works would be delivered and secured via planning condition for a suitable management plan, to include routine monitoring and reporting.

Strategic Significance

- 5.12 With reference to Nature Recovery Network Maps for Gloucestershire, the following approach to strategic significance as been taken for post-intervention habitats:

- Areas of proposed woodland and hedgerow around the boundaries of the development are assigned as High strategic significance as they will benefit bat species associated with the Wye Valley and Forest of Dean Bat Sites SAC.
- Although areas of thicket, tree planting and meadow will also have benefits for the bats, these are closer to/within the built development, and less directly relevant. However, land proposed as neutral grassland or trees along part of the eastern Site boundary is assigned as High strategic significance where it overlaps with an area of medium opportunity for open habitat.
- Other woodland and species-rich meadow habitat types outside this area are categorised as Medium strategic significance to acknowledge the Site's presence in a Nature Improvement Area (for forest and open habitats), a medium/high Tree Opportunity Area and a medium Biodiversity Opportunity area.
- All artificial/built habitats e.g. housing/gardens, hard-standing, SuDS basins, amenity grassland and play areas are assigned as having no strategic significance.

Significant On-site Gain

5.13 The following proposed habitat enhancement and creation proposals are likely to be considered 'significant' by the Forest of Dean District Council:

- Creation of habitats of medium distinctiveness, including other neutral grassland, individual trees, mixed scrub and broadleaved woodland.
- Enhancement of hedgerow H4 to 'good' condition

5.14 In accordance with Paragraph 9, Schedule 7A of the Town & Country Planning Act (1990) these habitats contributing to significant on-site gains require additional mechanisms to secure their creation/enhancement and management over 30-years, such as through an appropriate planning condition and/or legal agreement in accordance with an on-site HMMP.

6.0 NET EFFECT ON BIODIVERSITY

Biodiversity Units

- 6.1 The net effect on biodiversity as a result of the proposed development is set out within the accompanying Statutory Biodiversity Metric and summarised below in Tables 1A and 1B.

Table 1A. Net Effect on Biodiversity: Habitat Units

	Habitat Units	% Change
On-site baseline	20.86	
On-site post-intervention	26.52	
On-site net change	+5.66	+ 27.12%
<i>Trading Rules Satisfied</i>		

Table 1B. Net Effect on Biodiversity: Hedgerow Units

	Hedgerow Units	% Change
On-site baseline	5.93	
On-site post-intervention	7.52	
On-site net change	+1.59	+26.80%
<i>Trading Rules Satisfied</i>		

Table 1C. Net Effect on Biodiversity: Watercourse Units

	Watercourse Units	% Change
On-site baseline	0.44	
On-site post-intervention	0.53	
On-site net change	+0.08	+19.02%
<i>Trading Rules Satisfied</i>		

- 6.2 It is demonstrated that the proposed development will result in a net gain in excess of 10% for Habitat, Hedgerow and Watercourse Units with all relevant trading rules satisfied.

Qualitative Appraisal

- 6.3 A wider appraisal of the proposed development's effects upon biodiversity is set out below in Table 2 below. This includes factors not fully captured through the Statutory Biodiversity Metric, which uses only habitat type and condition as a proxy for biodiversity, omitting important factors such as connectivity and functioning of habitats.

Table 2. Qualitative Appraisal of effects upon Biodiversity

Ecological Features, Functions & Factors	Baseline Conditions	Potential Effects
Habitat Connectivity	Arable land at the Site contributes little to local ecological networks, with	Residential development will impede habitat connectivity across the Site for some species, though gardens and street tree planting

	the exception of field hedgerows to the boundaries of the Site.	provide some ancillary benefits to certain mobile species. The proposed access road is located within an area of limited habitat connectivity. New planting around this, as well as measures to strengthen existing boundary vegetation will improve habitat connectivity, contributing to wider ecological networks to the north, east and west.
Structural Diversity	The Site has very limited habitat structure with little or no interfaces between broad habitat types. Field margins are narrow and routinely cut/cultivated.	Proposed development and landscaping on-site will increase the structural diversity of habitat at the Site. Interfaces between formal (short mown) and informal habitats, as well as between broad habitat types (grassland, scrub, woodland and hedgerow) will provide a greater number of opportunities for biodiversity, at a range of scales.
Habitat Mosaics	The Site has a very low diversity of habitats.	Proposed development and habitats on-site will increase the number of habitat types and their structural diversity. The combination of grassland, scrub, woodland, trees and hedgerow will provide a medium-scale mosaic of habitat to benefit biodiversity.
Soil Biodiversity	Arable land which dominates the Site is subject to frequent chemical inputs (fertiliser) and physical disturbance. The soil biota is likely to be significantly impacted by such works, reducing soil carbon, other nutrient cycling and wider environmental benefits.	Residential development will include the loss and damage of soils to built form and will prevent natural functioning of this habitat. Where arable is converted to permanent grassland and other habitats substantive benefits are anticipated to soil environments and biodiversity.

Additionality

- 6.4 The habitat creation and enhancement measures delivered on-site partly provide mitigation for protected species, namely horseshoe bats associated with the Forest of Dean and Wye Valley Bat Special Area of Conservation (SAC).
- 6.5 To ensure that Biodiversity Net Gain on-site is additional to these requirements, a separate metric has been prepared to demonstrate that bat mitigation measures at the site contribute to no greater than 'no net loss'. This includes all proposed wildflower grassland, scrub and woodland habitats as well as all proposed trees on a precautionary basis (though it is assumed that trees within the urban areas will not contribute directly to horseshoe bat mitigation). These habitats would result in a BNG score of -0.82 units, which is less than 'no net loss'. Remaining urban

habitats including gardens, amenity grassland and SuDS features therefore deliver more than 10% of the on-site BNG provisions as summarised in Table 1A above.

- 6.6 The same approach is also applied to hedgerow habitats on-site. However, as there are no impacts to baseline habitats, the Site automatically delivers 'no net loss' without any additional creation or enhancement measures. Proposed hedgerow creation and enhancement measures form part of the mitigation strategy for horseshoe bats at the Site, extending existing flight paths and providing additional vegetation although this is offered as part of the overall strategy rather than as direct compensation for linear habitat impacts. To consider additionality in this scenario, the separate metric shows the result of providing only native hedgerows at the Site and no uplift in condition to existing hedgerows, as these measures would still provide mitigation for horseshoe bats. This would result in a net gain of 8.27% for hedgerow habitats at the Site. If the Site delivers additional enhancements above and beyond this basic provision, through delivery of species-rich native hedgerows and enhancement of western boundary hedgerow H4, then a net gain of 26.80% can be achieved, which represents a greater than 10% uplift on the mitigation measures.
- 6.7 On this basis, it is determined that BNG-only measures provide at least 10% of on-site biodiversity enhancements and are compliant with additionality requirements.

7.0 MANAGEMENT & MONITORING

7.1 Full details of management and monitoring for delivery of on-site biodiversity gains will be provided within a Habitat Monitoring and Management Plan (HMMP) for a 30-year period. This HMMP will include the following principal elements:

- Establishment and management of the following 'significant' biodiversity gains:
 - Other neutral grasslands within informal open spaces and SuDS features
 - Woodland, scrub and tree habitats
 - Hedgerow enhancement measures
- Adaptive management options
- Monitoring regime and reporting process
- Roles and responsibilities
- Processes to ensure remedial measures can be undertaken in the event that target habitat or condition is not achieved

8.0 SUMMARY & CONCLUSIONS

- 8.1 Planning permission sought for the proposed development will be subject to the Biodiversity Gain Condition in accordance with Schedule 14 of the Environment Act (2021).
- 8.2 As set out herein, a net gain in biodiversity in excess of 10% is predicted as a result of the proposed development, based upon provision of significant on-site gains. The Statutory Biodiversity Metric Calculation Tool was used to calculate the following outcomes:
- +5.66 Habitat Unit gain or +27.12%
 - +1.59 Hedgerow Unit gain or +26.80%
 - +0.08 Watercourse Unit gain or +19.02%
 - All relevant trading rules satisfied
- 8.3 A separate metric is provided to Forest of Dean District Council to demonstrate how the proposals accord with additionality requirements.
- 8.4 Following any grant of planning permission an application to discharge the Biodiversity Gain Condition would be submitted. This will need to take account of the detailed development design and landscaping specifications.
- 8.5 On-site significant biodiversity gain would be secured through an appropriate legal mechanism (as such planning condition) subject to an on-site HMMP for a 30-year period.

9.0 REFERENCES

Baker, J., 2016. *Biodiversity Net Gain: Good practice principles for development*. CIEEM, CIRIA & IEMA.

Baker, J., Hoskin, R., and Butterworth, T., 2019. *Biodiversity Net Gain: Good Practice Principles for Development. A practical guide*. CIEEM, CIRIA & IEMA.

Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J., 2023. *UK Habitat Classification Version 2.0* [pdf] UKHab Ltd. Available at <http://www.ukhab.org/> [Accessed July 2024].

Chartered Institute of Ecology and Environmental Management, 2017. *Guidelines for Ecological Report Writing*. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1*. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2021. *Biodiversity Net Gain Report and Audit Templates*. Winchester: CIEEM.

Defra, 2024. *The Statutory Biodiversity Metric User Guide*. London: Defra.

Department for Levelling Up, Housing & Communities, 2024. *National Planning Policy Framework (NPPF)*. London: Department for Levelling Up, Housing & Communities.

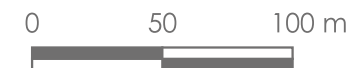
Forest of Dean District Council, 2012. *Forest of Dean District Core Strategy Adopted Version (2012)*. Available at: fdean.gov.uk/media/szpzpxj/core-strategy.pdf

Appendix A

Baseline Habitats Plan



- Site boundary
- Mature Tree
- Native hedgerow (h2a)
- Line of trees
- Cropland (c)
- Bracken (g1c)
- Bramble scrub (h3d)



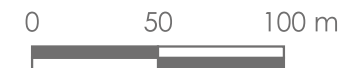
Project	Carisbrook Road, Mitcheldean	Date	July 2024	Drawing No.	CSA/4057/121
Drawing Title	Habitats Plan	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	KK	Checked	AM

Appendix B

Proposed Habitats Plan



- Site boundary
- Other neutral grassland (g3c)
- Modified grassland (g4)
- Mixed scrub (h3h)
- Urban (u)
- Other broadleaved woodland (w1g)
- Sustainable urban drainage feature
- Existing trees (retained)
- Proposed trees
- Native hedgerow (h2a)
- Line of trees
- Existing ditch (offsite)
- Existing culvert (offsite)
- Proposed culvert
- Proposed hedgerow



Project	Carisbrook Road, Mitcheldean	Date	Dec 2024	Drawing No.	CSA/4057/122
Drawing Title	Proposed Habitats Plan	Scale	Refer to scale	Rev	A
Client	Gladman Developments Ltd	Drawn	KK	Checked	TR

Appendix C

Habitat & Hedgerow Condition Assessments

Individual Trees Condition Assessment

Project Reference	4057
Project Name	Carisbrooke road, Mitcheldean
Survey Date	13-Jun-2024
Surveyor(s)	KK

Condition Assessment Criteria		Willow Tree (group of 2)	Ash tree in H2 (T2 on tree survey)	Oak tree in H2 (T1 on tree survey)
		Criterion passed (Yes or No)		
A	The tree is a native species (or at least 70% within the block are native species).	Y	Y	Y
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	Y	Y
C	The tree is mature (or more than 50% within the block are mature) ¹ .	Y	Y	Y
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	Y	Y
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Y	Y	Y
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Y	Y
Number of criteria passed		6	6	6
Condition		Good	Good	Good

Hedgerow Condition Assessment

Project Reference	4057
Project Name	Carisbrooke road, Mitcheldean
Survey Date	13-Jun-2024
Surveyor(s)	Kk

Hedgerow Reference	Type	A1. Height	A2. Width	B1. Gap - hedge base	B2. Gap - hedge canopy continuity	C1. Undisturbed ground and perennial vegetation	C2. Nutrient-enriched perennial vegetation	D1. Invasive and neophyte species	D2. Current damage	Condition	Notes
H1	Species-rich native hedgerow	Pass	Pass	Fail	Pass	Fail	Fail	Pass	Pass	Moderate	Base filled with herbs and bracken but hedge plants themselves >0.5m. species nettle dock cleavers. Elm holly elder field maple hazel blackthorn oak 5-7per 30m at n end s end poorer
H2	Native hedgerow	Pass	Pass	Fail	Pass	Fail	Fail	Pass	Pass	Moderate	Hazel hawthorn lime x1, blackthorn, some field maple and elm. 1 ash and 1 oak tree. High canopy to hedge abundant cleavers and nettle. Field edge mown within 0.5m of hedge on site side c. 1m grass on north side also cut/sprayed. <4 species/30m. Previously laid
H3	Native hedgerow	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Poor	Likely trimmed to <1.5m high. Lots gaps in woody vegetation at west end filled with bracken, nettle and cleavers. May be previously laid. Up to 4 species per 30m- hw, bt elder hazel
H4	Native hedgerow	Fail	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Poor	Trees on bank bank behind rather than in hedge. Hedge low and scrappy mostly bramble and clematis with some denser sections bt, ht, hazel, sycamore and dogwood. Along fence. Some snowberry <10%. Southern 15m is taller with trees closer, flowering currant, willow and prunus in hedge



Dixies Barns, High Street,
Ashwell, Hertfordshire
SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Office 20, Citibase,
95 Ditchling Road,
Brighton BN1 4ST

t 01273 573871
e brighton@csaenvironmental.co.uk
w csaenvironmental.co.uk

3 Ripple Court,
Brockridge Park, Twynning,
Tewkesbury GL20 6FG

t 01386 751100
e tewkesbury@csaenvironmental.co.uk
w csaenvironmental.co.uk

Wizu Workspace, 32 Eyre
St, Sheffield City Centre,
Sheffield S1 4QZ

t 07838 290741
e sheffield@csaenvironmental.co.uk
w csaenvironmental.co.uk

Worting House,
Church Lane, Basingstoke,
RG23 8PY

t 01256 632340
e basingstoke@csaenvironmental.co.uk
w csaenvironmental.co.uk