



Biodiversity Net Gain Assessment

Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ

Jo Shopland

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Industry Guidelines and Standards

This report has been written with due consideration to:

- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- 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. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management, Construction Industry Research and Information Association & Institute of Environmental Management and Assessment (2019). Biodiversity Net Gain – Good Practice Principles for Development.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Jo Shopland to undertake a Biodiversity Net Gain (BNG) Assessment at Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ (hereafter referred to as “the site”). The assessment was required to inform a planning application described as the construction of ten detached homes and garages, with the demolition of the existing commercial barn structures (hereafter referred to as “the proposed development”).

The site comprises primarily of modified grassland with several scattered trees around the site.

The post development area-based habitat must include 5.72 units to achieve a 10% net gain, including 4.18 units of scattered tree units to satisfy trading rules. The remaining 1.54 units can be from any habitat type. As many trees as possible should be retained, especially those with a diameter at breast height >300 mm. The remaining grassland is poor condition modified grassland, and therefore has high potential for enhancement, as well as additional tree planting.

The post development linear-based habitat must include 0.33 habitat units to achieve a 10% net gain, including at least 0.13 units of native hedgerow to satisfy trading rules. This should be done through retention of as much of the hedgerow as possible. There may be scope to enhance sections of the hedgerow to good condition to generate a 10% net gain. Alternatively, planting more hedgerows around the site will help contribute units.

As the proposed development will include residential dwellings with private gardens, it is worth noting that the BNG Guidelines do not allow for any habitat creation including planted trees to count towards the post-development BNG units. All vegetation within private gardens must be mapped as ‘vegetated garden’, a low scoring habitat. Therefore, sections of land should ideally be kept outside of the residential curtilage for ecologically valuable habitat creation and enhancement.

Recommendations in this section can be updated when post-development consideration is required, and once final plans have been decided.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Jo Shopland to undertake a Biodiversity Net Gain (BNG) Assessment at Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ (hereafter referred to as “the site”). The assessment was required to inform a planning application for the construction of ten detached homes and garages, with the demolition of the existing commercial barn structures (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

This report should be read in conjunction with the following documents:

- The Statutory Biodiversity Metric: BNG Metric - Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ- v1.
- Preliminary Ecological Appraisal Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ (Arbtech Consulting Ltd, 2024).
- BS5837 - Hill View and Wayside (Arbtech Consulting Ltd, 2024)

1.2 Site Location, Geology and Landscape Context

The site is located at grid reference SU94850605 and encompasses an area of 0.8ha. This includes residential house and gardens, commercial barn buildings and ‘priority-listed’ orchards. The priority-listed orchard according to MAGIC is listed to cover 0.4ha of the overall site boundary. However, this is not the case when visiting the site; most of the orchard no longer exists. Many of the trees were cleared several years ago due to deer damage. The retained orchard only covers 0.1ha of the site only in the northwestern half and none exists in neighbouring fields. There are also continued listed orchard areas and mature trees on the southwest boundary of the site. The distribution of the trees in these listed areas would suggest this is not full commercial fruit production and this has turned into scrub and woodland instead. This orchard/woodland and scrub area continues for 480m south of the site and 660m southeast. Numerous developments are happening close to the site. New housing development is occurring 190m west and 520m north and is currently ongoing. Eastergate Lane runs across the site’s north boundary, but no other roads run within 100m of the site in any other direction. The site sits on freely draining, slightly acid-loamy soils with freely draining soils. A site location plan can be seen In Appendix 2.

1.3 BNG Informative

BNG is a specific, measurable outcome of project activities that deliver demonstrable and quantifiable benefits to biodiversity compared to the baseline situation. In order to achieve BNG, a project must be able to demonstrate that it has followed all 10 of the Principles of Biodiversity Net Gain (as outlined in the British Standard 8683:2021 Process for Designing and Implementing Biodiversity Net Gain).

The legalised Environment Act (2021) requires developments in England to demonstrate a measurable net gain in biodiversity and sets a target of a minimum of 10% BNG for all developments. It also stipulates that a management plan with a minimum 30-year term, should be adopted to ensure biodiversity net gain can be delivered. The requirement for biodiversity net gain is also enshrined within the National Planning Policy Framework (NPPF, 2023). The DEFRA Statutory Biodiversity Metric is the widely accepted tool used to calculate BNG. It enables the calculation of habitat value pre- and post-development in order to determine the overall change in biodiversity value as a result of the proposed development. The Biodiversity Metric has separate BNG assessments for areas of habitat, hedgerows and watercourses. The biodiversity value of a site should be maximised. However, it may not always be possible to achieve a 10% biodiversity net gain within a site and therefore the Statutory Biodiversity Metric can also account for offsite habitat creation, where land is available. Alternatively, developers can seek to provide an agreed financial contribution to an appropriate third party (such as the Local Authority, the UK Government or another landowner) to deliver the required biodiversity net gain elsewhere on their behalf.

2.0 Methodology

2.1 Baseline Biodiversity Value

The baseline BNG Calculation was informed by Preliminary Ecological Appraisal (PEA) of Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ (Arbtech Consulting Ltd, 2025). A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The PEA classified the habitats on site according to The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023).

Habitat Area/Length

The area or length of each habitat was calculated using qGIS software. In calculating the area or length of each habitat, habitats which occur as two or more isolated parcels across the site were combined, where they were deemed to be of a similar composition and condition. Distinctions were made between habitats to be retained (i.e. left as found in baseline), enhanced (i.e. improved condition) or lost (i.e. destroyed by proposed development).

Areas of scattered trees were calculated using the Tree Helper tool within the Statutory Biodiversity Metric. Class sizes for urban trees are set out in Table 14 of the Statutory Biodiversity Metric User Guide (Natural England, 2024).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2024).

Strategic Significance

Strategic significance was assigned for each habitat based upon a review of the following:

- Ecological value

- Function within the landscape
- Any site or habitat allocations under the Arun District Council Local Plan

2.2 Post Development Biodiversity Value

This section can be updated when post-development consideration is required, and once final plans have been decided.

2.3 Limitations

No significant limitations encountered.

3.0 Results

3.1 Baseline Habitats

Table 1 details the baseline habitats present within the site along with their area/length, condition and strategic significance. A full condition assessment for each habitat (where relevant) is provided in Appendix 5a.

Table 1: Baseline Biodiversity Value

Habitat	Area / Length	Description	Condition Assessment	Strategic Significance
Developed land; sealed surface (u1b)	0.179 ha 0 units	Areas of buildings and hardstanding.	N/A	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
Artificial unvegetated, unsealed surface (u1c)	0.126 ha 0 units	Areas of gravel.	N/A	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
Vegetated garden (u, 828)	0.039 ha 0.08 units	Area of private garden near the residency to the east of the site.	N/A	Low strategic significance.

				Area/compensation not in local strategy/ no local strategy.
Modified grassland (g4)	0.472 ha 0.94 units	Majority of the site comprises species poor modified grassland. See detailed description within the PEA Assessment.	Poor	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
Scattered trees (g, 32)	0.523 ha 4.18 units	There are 50 scattered trees across the site, including 42 small, 3 medium, 2 large, and 3 very large trees. See the S1 report for detailed explanation and location of all trees.	Good	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
Native hedgerow (h2a)	0.031 km 0.13 units	There is a native hedgerow which divides the west and eastern half of the site. See detailed description within the PEA.	Moderate	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
Non-native and ornamental hedgerow (h2b)	0.173 km 0.17 units	Other hedgerows around the site are dominantly non-native species. This includes hedgerows that form part of an adjacent garden situated in the	Poor	Low strategic significance.

		middle of the site, as well as hedgerows on the northeastern boundary that is adjacent to another garden. See detailed description within the PEA.		Area/compensation not in local strategy/ no local strategy.
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3.2 Post Development Habitats

This section can be updated when post-development consideration is required, and once final plans have been decided.

Areas of Habitat

The baseline habitat value of the site is 5.20 units; comprised of vegetated garden (0.08 units), modified grassland (0.94 units), urban trees (4.18 units), artificial unvegetated, unsealed surface (0 units), and developed land; sealed surface (0 units).

Linear based habitat

The baseline linear based habitat value of the site is 0.30 units; comprised of native hedgerows (0.13 units) and non-native hedgerows (0.17 units).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The site comprises primarily of modified grassland with several scattered trees around the site.

The post development area-based habitat must include 5.72 units to achieve a 10% net gain, including 4.18 units of scattered tree units to satisfy trading rules. The remaining 1.54 units can be from any habitat type. As many trees as possible should be retained, especially those with a diameter at breast height >300 mm. The remaining grassland is poor condition modified grassland, and therefore has high potential for enhancement, as well as additional tree planting.

The post development linear-based habitat must include 0.33 habitat units to achieve a 10% net gain, including at least 0.13 units of native hedgerow to satisfy trading rules. This should be done through retention of as much of the hedgerow as possible. There may be scope to enhance sections of the hedgerow to good condition to generate a 10% net gain. Alternatively, planting more hedgerows around the site will help contribute units.

As the proposed development will include residential dwellings with private gardens, it should be noted that current BNG Guidelines do not allow for planted trees or hedgerows within private gardens, and all vegetated habitat, to count towards the BNG units. All vegetation within private gardens must be mapped as 'vegetated garden', a low scoring habitat. Therefore, sections of land should ideally be kept outside of the residential curtilage for ecologically valuable habitat creation enhancement.

Recommendations in this section can be updated when post-development consideration is required, and once final plans have been decided.

5.0 Bibliography

- Arbtech Consulting Ltd. (2024). Preliminary Ecological Appraisal (PEA): Hill View and Wayside, Eastergate Lane, West Sussex, PO20 3SJ.
- Arun District Council Local Plan (2018). <https://www.arun.gov.uk/adopted-local-plan/>
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- CIEEM-CIRIA-IEMA (2019) Biodiversity Net Gain – Good Practice Principles for Development.
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey a technique for environmental audit.
http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- Natural England (2024). The Statutory Biodiversity Metric (JP039).
- Natural England (2024). The Statutory Biodiversity Metric User Guide (JP039).
- Natural England (2024). The Statutory Biodiversity Metric Technical Annex 1 - Condition Assessment Sheets and Methodology (JP039).
- Natural England (2024). The Statutory Biodiversity Metric Technical Annex 2 – Technical Information (JP039).
- The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023)

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: Baseline Habitat Plan



Appendix 4: Post Development Habitat Plan

This section can be updated when post-development consideration is required, and once final plans have been decided.

Appendix 5a: Habitat Condition Assessment Sheets – Baseline

Modified grassland

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type			
Grassland - Modified grassland			
ukhab – UK Habitat Classification - - -			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	N	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Y	

C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Y	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	
Essential criterion achieved (Yes or No)			N
Number of criteria passed			6
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved ×/√	

Passes 6 or 7 criteria including passing essential criterion A	Good (3)		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	✓	

Urban trees

Condition Sheet: INDIVIDUAL TREES Habitat Type

Habitat Types

Individual trees – Urban trees

Individual trees – Rural trees

Complete a condition sheet for each tree or block of trees.

Please see the separate Line of trees condition sheet for a line of rural trees. You should only use the Line of trees condition assessment and record that habitat type in rural locations.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).	N	
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y	
C	The tree is mature (or more than 50% within the block are mature) ¹ .	N	
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Y	

F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	
Number of criteria passed		4	
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved ×/✓	
Passes 5 or 6 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)	✓	
Passes 2 or fewer criteria	Poor (1)		

Native hedgerow

Condition sheet: HEDGEROW Habitat Types					
Habitat Type					
Native hedgerow					
Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		Criteria - the minimum requirements for 'favourable condition'	Criteria description	Criterion passed (Yes or No)	Notes (such as justification)
Core groups - applicable to all hedgerow types					
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	

A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Y	
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Y	
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y	

C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: • Measured from outer edge of hedgerow; and • Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	N	
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	N	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website⁴, as well as the BSBI website⁵ where the 'Online Atlas of the British and Irish Flora'⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website⁷.	Y	

D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	N	
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Additional group - applicable to hedgerows with trees only

E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	Y	
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.	Y	

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

Condition categories for hedgerows without trees					
Category	Category Requirements	Metric Score			
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3			

Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2	
Poor	Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1	
Score achieved:		2	

Appendix 5b: Habitat Condition Assessment Sheets – Post-development

This section can be updated when post-development consideration is required, and once final plans have been decided.

Appendix 6: Headline BNG Results

The Defra Statutory Biodiversity Metric is provided as a separate excel spreadsheet.

This section can be updated when post-development consideration is required, and once final plans have been decided.