

Biodiversity Net Gain Assessment

Survey site:

Hillybarn Farm, The Mount, Ifield, Crawley, West Sussex, RH11 0LF

Client:

Prowe Planning

Report date:

12th February 2025

Amended: 26th January 2026

Project:

This report is prepared to inform a planning application with Horsham District Council. The proposal is described as:

The demolition of existing barn, and build of four residential units, with new drive way access, associated car parking areas, garages and gardens.

Limitations and Copyright

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Version Control			
Status	Issue	Name	Date
Draft	0.1	Olga Hermann, Consultant Ecologist	13/02/2025
Final	1.0	Olga Hermann, Consultant Ecologist	13/02/2025
Amended	2.0	Olga Hermann, Consultant Ecologist	05/08/2025
Amended	3.0	Paige Robertson, BS (Hons); Graduate Ecologist	26/01/2026

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 Prowe Planning to undertake a Biodiversity Net Gain (BNG) Assessment at Hillybarn Farm, The Mount, Ifield, Crawley, West Sussex, RH11 0LF (hereafter referred to as “the site”). The assessment was required to inform a planning application for the demolition of existing barn, and build of four residential units, with new drive way access, associated car parking areas, garages and gardens (hereafter referred to as “the proposed development”).

The baseline value of the site in habitat units is **13.73**, which is comprised of one barn structure and two temporary buildings (no value), 11.23 units of good condition modified grassland, 1.65 units of moderate condition modified grassland, 0.79 units of poor condition traditional orchard, and 0.07 units of one medium scattered tree at poor condition.

The post development value, with enhancements and creation of additional habitats within the site is **15.10** units. It is comprised of 5.40 units of retained modified grassland of good condition, newly created sealed surfaces including access roads, pathways, car parking areas, and buildings (no value), 0.77 units of new vegetated gardens, 1.02 units of created traditional orchards of moderate condition, 7.85 units of enhanced modified grassland to other neutral grassland of good condition, 0.07 units of rural trees. This results in a net change in biodiversity of **+10.01%** (i.e. a net gain).

As such, the proposed development is compliant with current legislation (Environment Act 2021) and planning policies (National Planning Policy Framework, 2024) as a minimum biodiversity net gain of +10% was achieved for area-based habitat units.

All trading conditions have been satisfied.

A Biodiversity Net Gain (BNG) Management Plan will be required for the site, which will contain further details on how to best implement these changes, as well as an appropriate management and monitoring scheme of the enhanced and created habitats for at least 30 years- to ensure that the anticipated biodiversity net gain is delivered.

Contents

Biodiversity Net Gain Assessment1

1.0 Introduction and Context6

1.1 Background 6

1.2 Site Location, Geology and Landscape Context 6

1.3 BNG Informative..... 7

2.0 Methodology.....8

2.1 Baseline Biodiversity Value..... 8

2.2 Post Development Biodiversity Value..... 9

2.3 Limitations 10

3.0 Results10

3.1 Baseline Habitats..... 10

3.2 Post Development Habitats 12

3.3 Off-site Baseline and Recommended Post Development Habitat Enhancement/Creation**Error! Bookmark not defined.**

3.3 Change in Biodiversity Value of the Site 13

4.0 Recommendations to Deliver BNG13

4.1 Discussion..... 13

Appendix 1: Proposed Development Plan..... 15

Appendix 2: Site Location Plan 16

Appendix 3: Baseline Habitat Plan 17

..... 17

Appendix 4a: Post Development Habitat Plan..... 18

Appendix 4b: Proposed Habitat Plan within Wider Site.....**Error! Bookmark not defined.**

Appendix 5: Habitat Condition Assessment Sheets – Proposed off site enhancement and creation 19

Appendix 6: Headline BNG Results- with Proposed Enhancements 20

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Prowe Planning to undertake a Biodiversity Net Gain (BNG) Assessment at Hillybarn Farm, The Mount, Ifield, Crawley, West Sussex, RH11 0LF (hereafter referred to as “the site”). The assessment was required to inform a planning application for the demolition of existing barn, and build of four residential units, with new drive way access, associated car parking areas, garages and gardens (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:

- Defra Statutory Biodiversity Metric Hillybarn Farm, RH11 0LF (Arbtech 2026)
- Preliminary Ecological Appraisal Hillybarn Farm, RH11 0LF (Arbtech, February 2025)

1.2 Site Location, Geology and Landscape Context

The survey site is centred on National Grid Reference TQ 23101 38235 and has an area of approximately 2.5ha, situated within a larger total ownership boundary comprised of ~13ha, however the entirety of this was not subject to survey at the time of the assessment.

The site consists of a disused agricultural plot, including a poultry barn, traditional orchard and modified enriched grassland, with off-site adjacent line of trees to the west. Located within a rural setting, the immediate surroundings of the site are dominated by natural and semi natural habitats such as arable fields, woodlands, hedgerows and tree lines. Several small rural roads are located within the surroundings, however an absence of significant urban infrastructure is found within. The wider landscape context includes significant woodland parcels to the north of the site, Gatwick Airport 3km to the north-east, along with the urban settlement of Langley Green to the far east. A site location plan is provided 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 Environment Act (2021) states biodiversity net gain is mandatory for sites over 0.5ha as of February 2024. The requirement for biodiversity net gain is also enshrined within the National Planning Policy Framework (NPPF, 2024). 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 a Preliminary Ecological Appraisal (Arbtech 2025). A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The Preliminary Ecological Appraisal 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, 2023).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2023).

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 Horsham District Local Plan (2023-2040)

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by the Proposed Site Plan titled 2409HI_R8 -4no. New Builds – FINAL which is included in Appendix 1. A post development habitat plan is provided in Appendix 4. A final landscaping plan showing the recommended additional habitat creation within the wider site should be produced to accurately show the change in biodiversity value of the site post-development- this should be submitted to the planning authority when available, to be read in conjunction with this report.

Habitat Classification

Proposed habitats were translated to their equivalents in the UK Habitat Classification using The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023) and the information provided within the Proposed Site Plan.

Habitat Area/Length

The area or length of each proposed 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 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 newly created.

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, 2023).

Habitat Condition

Target habitat condition for each proposed habitat was determined assessed using the Temporal Multipliers Tool and the Enhancement Temporal Multipliers Tool included in the Statutory Biodiversity Metric spreadsheet as well as the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2023). This is based on the assumption that a 30-year management plan will be adopted for the site.

Strategic Significance

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

- Likely ecological value
- Function within the landscape
- Any site or habitat allocations under the Horsham District Local Plan (2023-2040)

2.3 Limitations

The survey was completed outside of the optimal survey period (April to October) limiting the identification of ground flora species. However, given the nature of the habitats present within the site, it is considered that the information collected as part of the site visit provides a robust assessment of the ecological value of the site.

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 the PEA report (Arbtech 2025).

Habitat	Area (ha) / Length (km)	Description	Condition Assessment	Strategic Significance
Developed land; sealed surface Buildings	0.073	There is one permanent building on site, designated as B1. This structure is comprised of a disused agricultural barn which has recently been subject to arson, with the southern portion now completely burnt and in a state of ruin. Two temporary structures designated as B2 and B3 are also found within, both comprised of metal shipping containers.	N/A	Low Strategic significance. Area/compensation not in local strategy/ no local strategy
Modified grassland	0.41156	The survey site is dominated by grassland of enriched properties, with an abundance of grass and herb species associated with high soil fertility. Several areas of bare ground and damage are found within, attributed to the existing entrance tracks and storage of shipping containers and other materials. The habitat is mainly dominated by common and often highly managed species of grasses, forbs and tall ruderals. Species density per m2 is identified at 6. The parcel is assumed to be subject to regular maintenance, due to a short sward length of <5cm throughout.	Moderate	
Modified grassland	1.87102	The survey site is dominated by grassland of enriched properties, with an abundance of grass and herb species associated with high soil fertility. This can likely be attributed to the long continuity arable and grazed nature of the site and wider ownership plot. The habitat is mainly dominated by common and often highly managed species of grasses, forbs and tall ruderals.	Good	
Traditional Orchard	0.114	The site includes a 0.1ha parcel of traditional orchard (according to HAP Inventory 2024), which is comprised of a mixture of fig, apple and cheery, along with a single birch, willow and walnut, with approximately 25 trees. DBH varied within this, with four measuring at 12cm, one at 14cm, two at 15, one 16cm, one 17cm, one 20cm and a 35cm, with the remainder under 7.5cm. The trees within are considered young of age,	Poor	High Strategic significance. Formally identified in local strategy

		with an absence of ecological niches. A review of aerial imagery reveals this to have been planted prior to 2000, with peak vegetation coverage seen in 2013.		
Scattered tree-rural	0.0163	A single coppiced ash is located at the east of the site, which appears in poor quality and passes only one criterion within its associated condition assessment sheet (A).	Poor	Medium Strategic significance. Ecologically desirable but not in local strategy.

3.2 Post Development Habitats

Table 2 details the post development habitats present within the site along with their area/length, condition and strategic significance. The proposed development will result in the loss of some baseline habitats.

Habitat	Area (ha)	Description	Target Condition	Strategic Significance
Developed land, sealed surface Including buildings	0.2001	Newly created sealed surfaces including access roads, pathways, car parking areas, and buildings.	N/A	Low Strategic significance. Area/compensation not in local strategy/ no local strategy
Vegetated garden	0.397	New associated gardens for each dwelling plot.	N/A	Low Strategic significance. Area/compensation not in local strategy/ no local strategy
Modified grassland	0.9001	A section of the modified grassland will be retained. The grassland has enriched properties, with an abundance of grass and herb species associated with high soil fertility. This can likely be attributed to the long continuity arable and grazed nature of the site and wider ownership plot. The habitat is mainly dominated by common and often highly managed species of grasses, forbs and tall ruderals.	Good	Low Strategic significance. Area/compensation not in local strategy/ no local strategy
Other neutral grassland	0.82467	Enhancement of the existing modified grassland to other neutral grassland.	Good	Low Strategic significance. Area/compensation not in local strategy/ no local strategy
Rural Tree	0.0204	Planting of five native trees within existing grassland within wider site.	Moderate	Medium Strategic significance. Ecologically desirable but not in local strategy
Traditional orchards	0.151	Creation of a small traditional orchard to replace the loss of existing orchard.	Moderate	High Strategic significance. Formally identified in local strategy

3.3 Change in Biodiversity Value of the Site

Full details are provided in the Defra Statutory Biodiversity Metric. The headline results are presented in Appendix 6.

Areas of Habitat

The baseline value of the site in habitat units is **13.73**, with the post development value is **15.10** units. This results in a net change in biodiversity of **+10.01%** (i.e. a net gain).

4.0 Results and Next Steps

4.1 Discussion

The baseline value of the site in habitat units is **13.73**, which is comprised of one barn structure and two temporary buildings (no value), 11.23 units of good condition modified grassland, 1.65 units of moderate condition modified grassland, 0.79 units of poor condition traditional orchard, and 0.07 units of one medium scattered tree at poor condition.

The post development value, with enhancements and creation of additional habitats within the site is **15.10** units. It is comprised of 5.40 units of retained modified grassland of good condition, newly created sealed surfaces including access roads, pathways, car parking areas, and buildings (no value), 0.77 units of new vegetated gardens, 1.02 units of created traditional orchards of moderate condition, 7.85 units of enhanced modified grassland to other neutral grassland of good condition, 0.07 units of rural trees. This results in a net change in biodiversity of **+10.01%** (i.e. a net gain).

As such, the proposed development is compliant with current legislation (Environment Act 2021) and planning policies (National Planning Policy Framework, 2024) as a minimum biodiversity net gain of +10% was achieved for area-based habitat units.

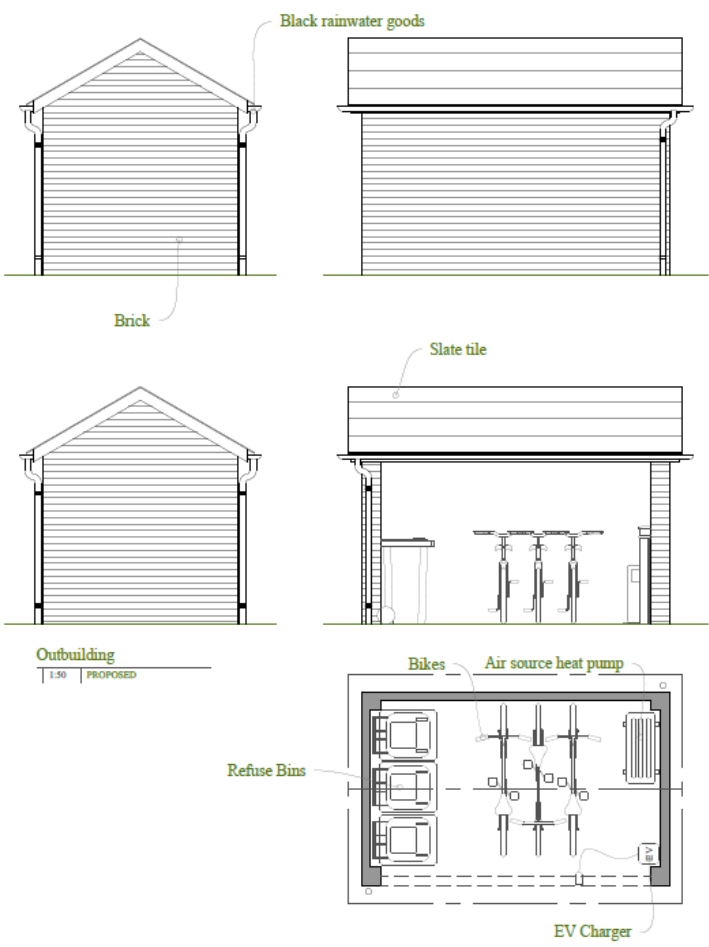
All trading conditions have been satisfied.

A Biodiversity Net Gain (BNG) Management Plan will be required for the site, which will contain further details on how to best implement these changes, as well as an appropriate management and monitoring scheme of the enhanced and created habitats for at least 30 years- to ensure that the anticipated biodiversity net gain is delivered.

5.0 Bibliography

- Arbtech (2025). PEA-PRA – Hillybarn Farm, RH11 0LF.
- Arbtech (2026). Statutory Biodiversity Metric- Hillybarn Farm, RH11 0LF.
- 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 (2023). The Statutory Biodiversity Metric (JP039).
- Natural England (2023). The Statutory Biodiversity Metric User Guide (JP039).
- Natural England (2023). The Statutory Biodiversity Metric Technical Annex 1 - Condition Assessment Sheets and Methodology (JP039).
- Natural England (2023). 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



This drawing is the copyright of Manorwood Construction Ltd but may be used for planning purposes by the Local Authority without breach of copyright.

Do not scale from this drawing unless for Local Authority planning purposes.

All dimensions must be checked on site prior to commencement of works.

Construction (Design and Management) Regulations 2015

This drawing is intended for Planning purposes only and as such does not highlight residual design related health and safety risks.

This information can be provided on request; however, it is anticipated that the full extent of residual risks will be identified during the detailed Building Regulations or construction design. Status and prior to construction works commencing on site.

All responsibilities and duties of Principle Designer as stated within the above regulations now revert to the client unless Manorwood are appointed to undertake Building Regulations or construction drawings.


MANORWOOD
building on tradition

Suite 114
26 The Hornet
Chichester
West Sussex
PO19 7BB

tel: 01243 201 102
email: enquiries@manorwood.co.uk
web: www.manorwood.co.uk

Address
Hillybarn Farm, The Mount
Ifield Crawley West Sussex
RH11 0LF

Drawing No. 2409HI_RS_001

Scale @ A3 1:500

Job No. 2409HI_RS

Drawn By MD

Checked By BK

Drawn On 22.11.2024

Issued On 22.11.2024

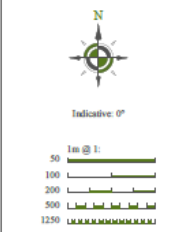
Status Proposed

Drawing Block Plan

Submission Planning

Revision 000

Application Area: 6313 m²



Appendix 2: Site Location Plan



Appendix 3: Baseline Habitat Plan



Appendix 4: Post Development Habitat Plan



Appendix 5: Habitat Condition Assessment Sheets – Proposed off site enhancement and creation

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)

Condition Assessment Criteria		Criterion passed (Yes or No)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). ¹ Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Yes
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ² .	Yes
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Yes
E	Combined cover of species indicative of suboptimal condition ³ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) are present, this criterion is automatically failed.	Yes
Additional Criterion - must be assessed for all non-acid grassland types		
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	Yes

Condition Sheet: ORCHARD Habitat Type

Condition Assessment Criteria		Criterion passed (Yes or No)
A	Presence of ancient ¹ and or veteran ¹ trees. Note - this criterion is essential for achieving Good condition.	No
B	Presence of deadwood in or on trees, or on the ground: at least 20% of mature trees have deadwood associated with them. Some examples of deadwood are: standing, attached and fallen trees or limbs; dead stems; branches and branch stubs greater than 10 cm diameter; and internal cavities. The types and distribution of deadwood provide a range of habitats suitable to support a wide assemblage of saproxylic invertebrates. Note - this criterion is essential for achieving Good condition.	No
C	Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and or scattered scrub growing between trees can be beneficial to biodiversity, however these occupy less than 10% of ground cover.	Yes
D	There is evidence of formative and or restorative pruning to maintain longevity of trees.	Yes
E	At least 95% of the trees are free from damage caused by humans or animals, for example browsing, bark stripping or rubbing on non-adjusted ties.	Yes
F	Grassland is not overgrazed, poaching is not evident around the trees, with no more than 10% of trees poached under the canopy.	Yes
G	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.	Yes
H	There is an absence of invasive non-native plant species ² (as listed on Schedule 9 of WCA ³) and species indicative of suboptimal condition ⁴ make up less than 10% of ground cover.	Yes

Appendix 6: Headline BNG Results- with Proposed Enhancements

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

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	1.37
	Hedgerow units	0.00
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	10.01%
	Hedgerow units	0.00%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	13.73	15.10	0.00
Hedgerow units	10.00%	0.00	0.00	0.00
Watercourse units	10.00%	0.00	0.00	0.00

No additional area habitat units required to meet target ✓

No additional hedgerow units required to meet target ✓

No additional watercourse units required to meet target ✓