Biodiversity Net Gain Assessment

Orchard Primary Academy Princess Road, Chickenley, Dewsbury West Yorkshire, WF12 8QT

Aradis

Status	Issue	Name	Date
Draft	1	Rebecca Gane BSc (Hons), Graduate Ecologist	18/03/2025
Reviewed	1.1	Abby Pidgen BSc (Hons) MSc, Consultant Ecologist	19/03/2025
Final	2	Rebecca Gane BSc (Hons), Graduate Ecologist	19/03/2025

Arbtech Consultant's Contact Details:

Rebecca Gane BSc (Hons), Graduate Ecologist
Email: rebeccagane@arbtech.co.uk
https://arbtech.co.uk

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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 Arcadis to undertake a Biodiversity Net Gain (BNG) Assessment at Orchard Primary Academy Princess Road, Chickenley, Dewsbury West Yorkshire, WF12 8QT (hereafter referred to as "the site"). The assessment was required to inform a planning application for the expansion of the existing carparking area within the school grounds (hereafter referred to as "the proposed development").

Areas of Habitat

- The baseline habitat value of the site is 0.92 units,
- The post development habitat value of the site 1.01 units,
- This results in a net change in biodiversity of +10.02% (i.e. a net gain).

Hedgerows

- The baseline hedgerow value of the site is 0.02 units
- The post development habitat value of the site is 0.02 units.
- This results in a net change in biodiversity of +15.80% (i.e. a net gain).

Contents

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Arcadis to undertake a Biodiversity Net Gain (BNG) Assessment at Orchard Primary Academy Princess Road, Chickenley, Dewsbury West Yorkshire, WF12 8QT (hereafter referred to as "the site"). The assessment was required to inform a planning application for the expansion of the existing carparking area within the school grounds (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:

- Statutory Metric.
- Preliminary Ecological Appraisal (PEA), Arbtech Consulting Ltd, February 2025.

1.2 Site Location, Geology and Landscape Context

The site is located at National Grid Reference SE 26397 21356 and has an area of approximately 0.17ha. The site is situated in a suburban area west of the centre of Dewsbury and is surrounded by dwellings and gardens with scattered pockets of urban greenspaces including playing fields and parks. Further north and south are more rural areas with grassland, pockets of woodland, linear hedgerow networks, and agricultural land. 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) is mandatory as of February 2024. The requirement for biodiversity net gain is also enshrined within the National Planning Policy Framework (NPPF, 2024).

The Statutory Metric is the widely accepted tool used to calculate BNG. It enables the calculation of habitat value pre- and post-development to determine the overall change in biodiversity value because of the proposed development. The Statutory 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 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 the PEA (Arbtech Consulting Ltd, February 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 Metric.

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Statutory Metric (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 Kirklees Council Local Policy

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by the proposed plans which is included in **Appendix 1**. A post development habitat plan is provided in **Appendix 4**.

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 plans.

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.

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 Metric spreadsheet as well as the relevant condition assessment sheets found in the Statutory Metric User Guide (Natural England, 2024). 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 Kirklees Council Local Policy

2.3 Limitations

The PEA survey was completed outside of the optimal botanical survey period (April to October) limiting the identification of ground flora communities which might not yet be present for full assessment. However, given the habitat types present on-site, minor omissions on this basis are unlikely to alter the characterisation of the site, and therefore it is not considered to be a significant limitation.

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. An assessment of the anticipated condition for each habitat (where relevant) is provided in Appendix 5a (where necessary).

Table 1: Baseline Biodiversity Value

Habitat	Area / Length	Description	Condition Assessment	Strategic Significance
u1b - Developed land; sealed surface	0.031ha	Hardstanding	N/A	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
847 – Introduced shrub	0.002ha	Areas of non-native shrub planting within the area of grassland. This habitat is to be removed.	N/A	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
g3c – Other neutral grassland	0.101ha	The majority of the site is grassland which best represents 'other neutral grassland'. The sward height is retained to a short sward of ~5cm. Species richness among the swards is 20% cover of broadleaved herbs and sedges. Species include: **D**: Annual meadow grass. **F**: Red fescue, and daisy.	**Poor**	Low strategic significance. Area/compensation not in local strategy/ no local strategy.

		O: Perennial rye-grass, dandelion., ribwort plantain, hairy bittercress, creeping buttercup, springy turf moss, and common feather moss. **R**: Hoary willowherb.		
32 – Individual trees	0.057ha	Six small and two medium tree are located onsite. One small tree is due to be removed.	**Moderate**	Medium strategic significance. Location ecologically desirable but not in local strategy.
h2b – Non-native ornamental hedgerow	0.015km	Along the western site boundary is a non-native ornamental hedgerow. Species include: **D**: Garden privet Ligustrum ovalifolium. **O**: Barberry Berberis sp., Indian cluster berry, Leyland cypress, buddleia, holly, rose., dogwood, and ivy. This habitat is to be removed.	**Poor**	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
845 - Ground level planters	0.001ha	Small patches of the site are shrubs including occasional garden privet, rose, dogwood, Japanese Pieris, and sage. This habitat is to be removed.	**N/A**	Low strategic significance. Area/compensation not in local strategy/ no 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. An assessment of the anticipated condition for each habitat (where relevant) is provided in Appendix 5b, which is based on the assumption that a 30 year management plan will be implemented for the site.

Table 2: Post Development Biodiversity Value

Habitat	Area / Length	Description	Condition Assessment	Strategic Significance
u1b - Developed land; sealed surface	0.081ha – created	Hardstanding	N/A	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
g3c – Other neutral grassland	0.014ha – retained 0.042ha enhanced 0.005ha - created	Retained grassland as well as enhancement of a portion to moderate condition, and in place of the planters and introduced shrub.	**Poor (retained - no change expected)** **Moderate (enhanced and created)**	Low strategic significance. Area/compensation not in local strategy/ no local strategy.
32 – Individual trees	0.0529ha – retained 0.285ha - created	Retained and six newly planted native trees.	**Moderate (no change expected)**	Medium strategic significance. Location ecologically desirable but not in local strategy.

3.3 Change in Biodiversity Value of the Site

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

Areas of Habitat

The baseline habitat value of the site is 0.92 units, 0.4 units of other neutral grassland, 0.5 units of individual trees, 0.11 units of introduced shrub and developed land; sealed surface (no value).

The post development habitat value of the site 1.01 units, comprising 0.45 units of other neutral grassland, 0.56 units of individual trees, and developed land; sealed surface (no value).

This results in a net change in biodiversity of +10.02% (i.e. a net loss).

Hedgerows

The baseline hedgerow value of the site is 0.02 units, comprising 0.02 units of ornamental hedgerow.

The post development habitat value of the site is 0.02 units, comprising 0.02 units of native hedgerow.

This results in a net change in biodiversity of +15.80% (i.e. a net loss).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The current proposed plan results in a +10.02%% net gain in habitat units and 15.80% gain in hedgerow units. This is more than the 10% target of biodiversity net gain.

4.2 Post Development

A Biodiversity Net Gain (BNG) Management Plan must be produced for the site. This should include recommendations for the implementation, management and monitoring of the site for at least 30 years.

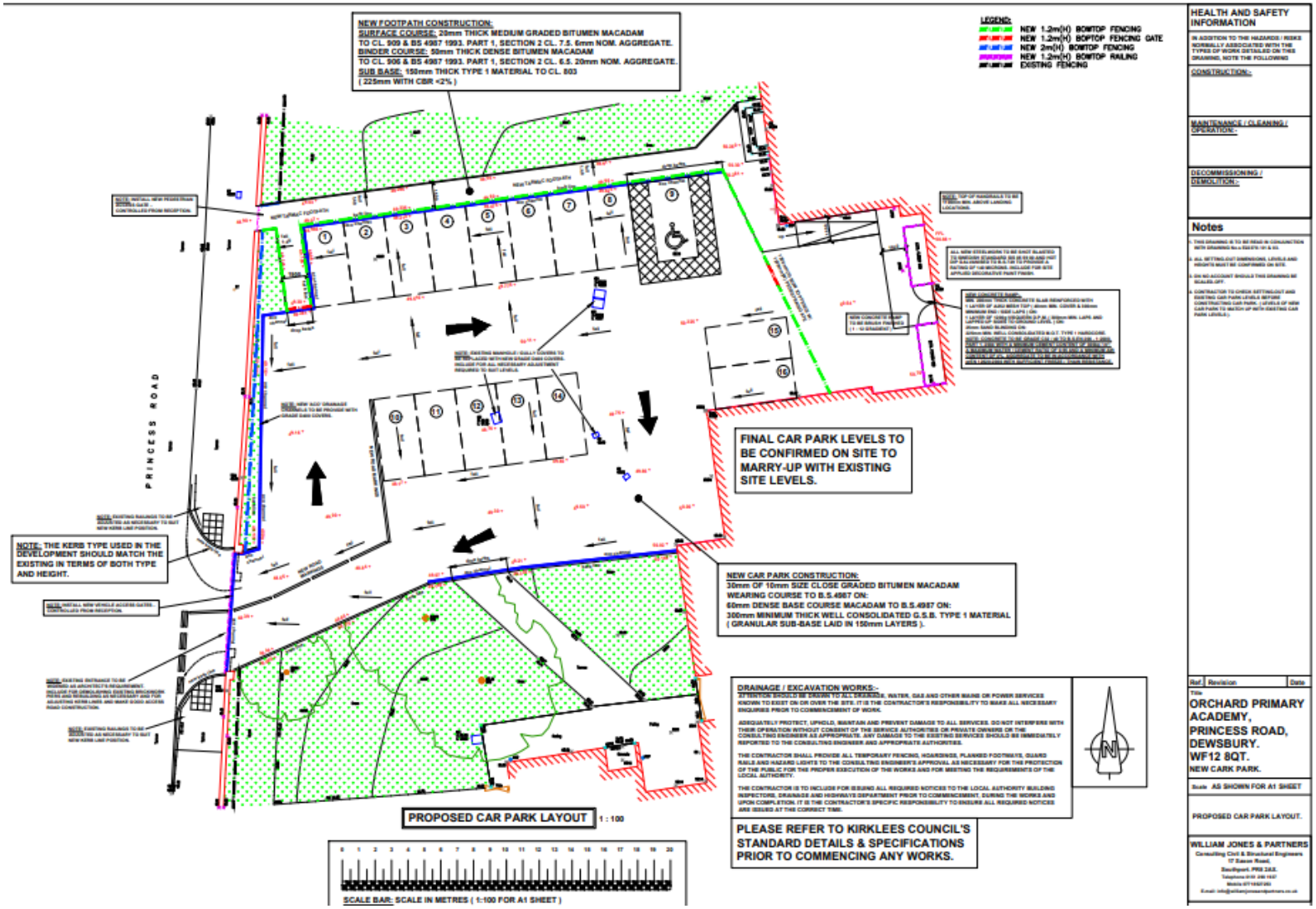
4.3 Design Statement

This report contains recommendations on measures for achieving BNG. These recommendations do not constitute a design for BNG. In submitting these recommendations, Arbtech Consulting has no Design Liability associated with these recommendations for BNG. The strategy sets out the criteria which the landscape team can use to design the creation and management of the site.

5.0 Bibliography

- 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
- Kirlees Council. Kirklees Development Plan (2015)
- 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).
- Preliminary Ecological Appraisal (PEA), Arbtech Consulting Ltd, February 2025.
- The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023) Appendix 1: Proposed Development Plan

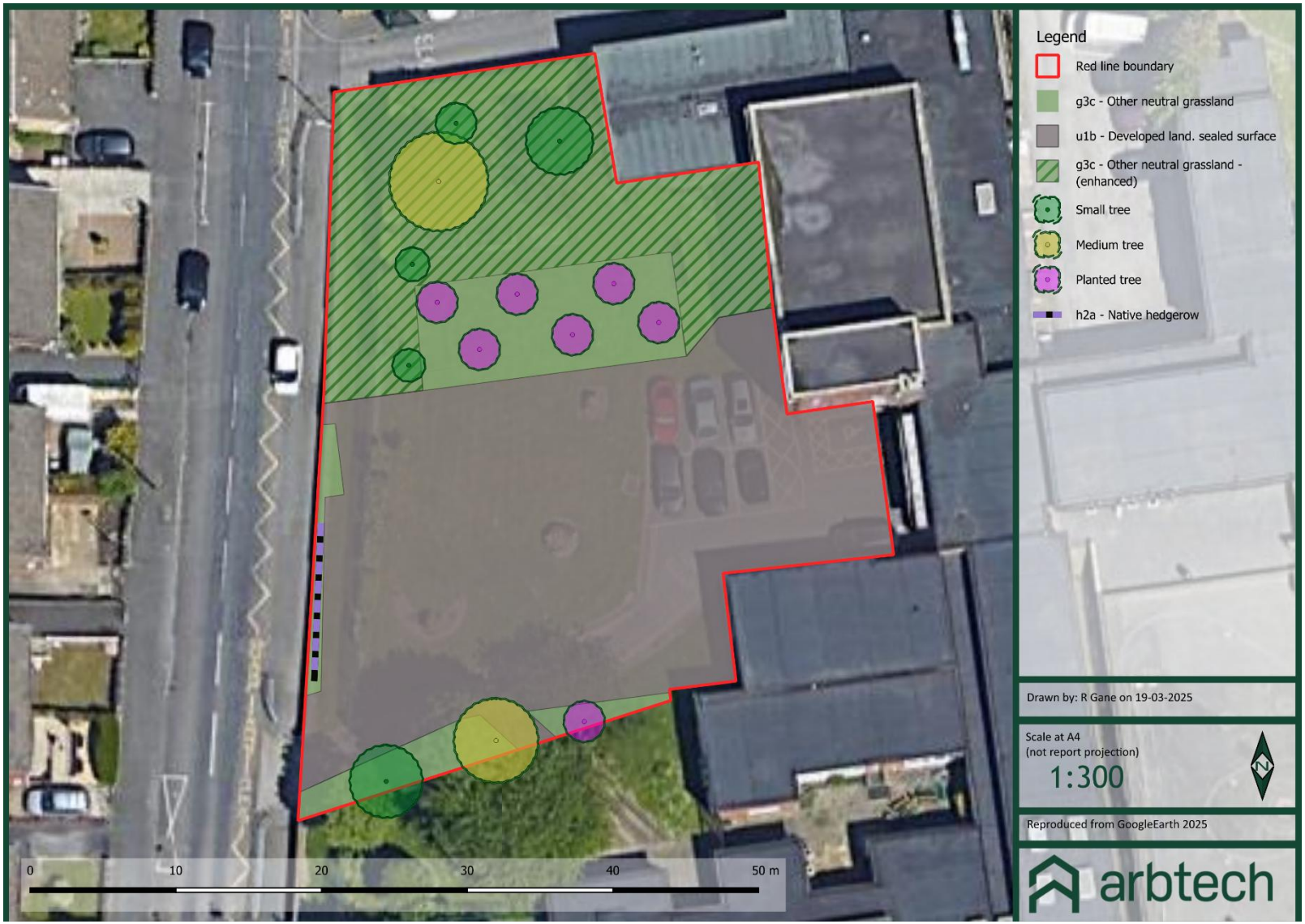
Appendix 1: Proposed Plan



Appendix 2: Site Location Plan

Appendix 3: Baseline Habitat Plan

Appendix 4: Post Development Habitat Plan



Appendix 5a: Habitat Condition Assessment Sheets – Baseline

INDIVIDUAL TREES					
Condition Assessment Criteria		**Criterion passed**	**Condition Assessment Result**	**Metric Score**	**Score Achieved ×/✓**
A	The tree is a native species (or at least 70% within the block are native species).	N	Good Passes 5 or 6 criteria	3	
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	Moderate Passes 3 or 4 criteria	2	✓
			Poor Passes 2 or fewer criteria	1	
C	The tree is mature (or more than 50% within the block are mature)[1].	N	**Score achieved:**	MODERATE	
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.	N			
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y			

OTHER NEUTRAL GRASSLAND					
Condition Assessment Criteria		**Criterion passed**	**Condition Assessment Result**	**Metric Score**	**Score Achieved ×/✓**
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). Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only."	N	**Good** Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	3	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	**Moderate** Passes 3 - 5 criteria, including essential criterion A.	2	
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	Y	**Poor** Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F."	1	✓
D	Cover of bracken Pteridium aquilinum is less than 20% and cover of scrub (including bramble Rubus fruticosus agg.) is less than 5%.	Y	**Score achieved:**	**POOR**	
E	Combined cover of species indicative of suboptimal condition 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 species4 (as listed on Schedule 9 of WCA5) are present, this criterion is automatically failed.	Y			
F	There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. Note - this criterion is essential for achieving Good condition for non-acid grassland types only."	N			
Number of criteria passed		4			

Appendix 5b: Habitat Condition Assessment Sheets – Proposed

OTHER NEUTRAL GRASSLAND					
Condition Assessment Criteria		**Criterion passed**	**Condition Assessment Result**	**Metric Score**	**Score Achieved ×/✓**
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). Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only."	Y	**Good** Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	3	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	**Moderate** Passes 3 - 5 criteria, including essential criterion A.	2	✓
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	Y	**Poor** Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F."	1	
D	Cover of bracken Pteridium aquilinum is less than 20% and cover of scrub (including bramble Rubus fruticosus agg.) is less than 5%.	Y	**Score achieved:**	**MODERATE**	
E	Combined cover of species indicative of suboptimal condition 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 species4 (as listed on Schedule 9 of WCA5) are present, this criterion is automatically failed.	Y			
F	There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. Note - this criterion is essential for achieving Good condition for non-acid grassland types only."	N			
Number of criteria passed		4			

INDIVIDUAL TREES					
Condition Assessment Criteria		**Criterion passed**	**Condition Assessment Result**	**Metric Score**	**Score Achieved ×/✓**
A	The tree is a native species (or at least 70% within the block are native species).	N	Good Passes 5 or 6 criteria	3	
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	Moderate Passes 3 or 4 criteria	2	✓
			Poor Passes 2 or fewer criteria	1	
C	The tree is mature (or more than 50% within the block are mature)[1].	N	**Score achieved:**	MODERATE	
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.	N			
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y			

Appendix 6: Headline BNG Results

The Statutory 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*	0.09
	Hedgerow units	0.00
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.02%
	Hedgerow units	15.80%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	0.92	1.01	0.00
Hedgerow units	10.00%	0.02	0.02	0.00
Watercourse units	10.00%	0.00	0.00	0.00