



Biodiversity Net Gain Assessment

Land West of Oakleigh Acres, Draycot Cerne, Chippenham, Wiltshire SN15 5LH

Status	Issue	Name	Date
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Final	2	Hayley Roberts, BSc., MSc, Principal Ecologist	17/03/2025

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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)

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed to undertake a Biodiversity Net Gain (BNG) Assessment at a parcel of land off of Junction 17 of the M4, near Oakleigh Acres, Draycot Cerne, Chippenham (hereafter referred to as “the site”). The assessment was required to inform a planning application for the construction of a new premises for a transport business, comprising new building and associated hardstanding (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 (Arbtech 2024).

1.2 Site Location, Geology and Landscape Context

The site comprises 1.7ha of agricultural land which appears fallow and out of rotation and at the time of the survey had a short, patchy sward. The wider area appears to support a mix of woodland, arable fields and water courses with a new development with multiple warehouses immediately adjacent to the site.

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). The requirement for biodiversity net gain is also enshrined within the National Planning Policy Framework (NPPF, 2021).

The 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 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 baseline UK Habitat Classification Survey as a part of a wider Preliminary Ecological Appraisal (PEA; Arbtech, 2024). 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. Class sizes for urban trees are set out in Table 8-1 of the Statutory Metric User Guide (Natural England, 2023).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Statutory 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 Local Plan.

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by Proposed Site Plan drawing which is included in Appendix 1. A post development habitat plan is provided in Appendix 4.

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 Metric. Class sizes for urban trees are set out in Table 8-1 of the Statutory Metric User Guide (Natural England, 2024).

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 Local Plan

2.3 Limitations

No specific limitations on the assessment were noted.

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
[c1] (605) Fallow agricultural field	1.17ha	The main body of the field was a former arable field which appears to have been left fallow for some time and regularly topped to control vegetation regrowth. Vegetation cover was superficial with bare ground visible throughout and little grass cover was present in the field with arable weeds dominating. Where present, grasses comprised, creeping bent <i>Agrostis stolonifera</i> (R), perennial rye <i>Lolium perenne</i> (R) and Yorkshire fog <i>Holcus lanatus</i> (R). The field was dominated by forbs including black medick <i>Medicago lupulina</i> (A) with white clover <i>Trifolium repens</i> (F), red clover <i>Trifolium pratense</i> (O), knotgrass <i>Polygonum</i> sp. (F), creeping buttercup <i>Ranunculus repens</i> (O), common ragwort <i>Jacobaea vulgaris</i> (O), broadleaved plantain <i>Plantago major</i> (O), hemlock <i>Conium maculatum</i> (R), scarlet pimpernel <i>Anagallis arvensis</i> (R), field pansy <i>Viola arvensis</i> (R), spear mint <i>Mentha spicata</i> (R), hoary mullein <i>Verbascum pulverulentum</i> (R) and imperforate St. John's wort <i>Hypericum maculatum</i> (R).	N/A	Not strategically significant.
[h2] (32) Hedgerow with rural trees	0.189km	The western boundary of the site is marked by a poor-quality hedgerow (H1) with little cover by woody species and higher coverage of ruderals. The average height of the hedgerow was 1-1.5m and comprised spindle <i>Euonymus europaeus</i> , elder <i>Sambucus nigra</i> , snowberry <i>Symphoricarpos albus</i> , blackthorn <i>Prunus spinosa</i> and privet <i>Ligustrum vulgare</i> with bindweed <i>Calystegia sepium</i> , black bryony <i>Dioscorea communis</i> and woody nightshade <i>Solanum dulcamara</i> relatively abundant at the base. Two mature oak <i>Quercus robur</i> trees were present within the hedgerow, both of which supported numerous areas of deadwood. The northernmost tree appeared to have been subject to pruning by the neighbouring development which has reduced the canopy notably.	Poor	Not strategically significant
[h2](32) Native hedgerow	0.078km	The southern boundary of the site was marked by an unmanaged hedgerow (H2). H2 appeared to be lacking recent management,	Moderate	Not strategically significant

		and as a result lacks dense growth low down the plants, with tall leggy growth characterising the hedgerow. H2 stood at approximately 3m high. Species present included one ash tree <i>Fraxinus excelsior</i> , wild clematis <i>Clematis vitalba</i> , field maple <i>Acer campestre</i> , hawthorn <i>Crataegus monogyna</i> , dog rose <i>Rosa canina</i> , and wych elm <i>Ulmus glabra</i> .		
		H2 was assessed as being in moderate condition.		

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. The proposed development will result in the loss of a limited extent of the existing grassland, with allowance in the calculation for the felling of two large trees, two medium trees and two small trees.

Table 2: Post Development Biodiversity Value

Habitat	Area / Length	Description	Target Condition	Strategic Significance
[g3c] other neutral grassland	0.2779ha	Fallow arable land to be planted with a species rich grassland mix. The existing seedbank will be incorporated and as such the grassland will retain a high diversity of native arable species along with introduced wildflowers and native grasses. This will allow for a species diverse sward.	Good After a 30-management period the grassland is capable of passing condition assessment Criteria A, B, D, E and F provided a suitable management plan is implemented.	Not strategically significant.
[u1b] Developed land, sealed surface	0.2462ha	New buildings and sealed hardstanding a the north of the site.	N/A	N/A
[u1c] artificial, unvegetated, unsealed surface	0.7524ha	New parking space to be laid with shingle	N/A	N/A
(32) Rural trees	0.055ha	Planting of 13 small trees of value to wildlife. Fruiting species are recommended e.g. crab apple <i>Malus sylvestris</i> .	Good Projected to pass condition assessment criteria A, B, D, E and F	Not strategically significant

[h3] Mixed native scrub	0.005ha	Mixed native scrub to be planted along the northern boundary of the site.	Good Capable of passing condition Assessment Criteria A, B, C, D and E.	Not strategically significant
[h2](32) Native hedgerow	0.189km	The western boundary of the site is to be enhanced to reduce the gappiness of the hedgerow and increase species richness	Moderate	Not strategically significant
[h2](32) Native hedgerow	0.078ha	Retained southern boundary vegetation.	Moderate	Not strategically significant

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 2.34 units.

The post development habitat value of the site is 2.59 units.

This results in a net change in biodiversity of 10.58% (i.e. a net gain).

Hedgerows

The baseline habitat value of hedgerows is 0.74 units.

The post development value of hedgerows is 1.16 units.

This results in a net change in biodiversity of 55.57% (i.e. a net gain).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The current proposed plan results in a 10.58% net gain in habitat units and a 55.57% net gain with respect to hedgerows. This is more than the 10% target of biodiversity net gain. Full details of planting location are available in the associated soft landscaping plan (Poulsom 2024).

A Habitat Management and Monitoring Plan (HMMP) must be produced for the site. This should include recommendations for the implementation, management and monitoring of the site for at least 30 years to ensure that biodiversity net gain is delivered. This could be secured through the use of a suitably worded planning condition.

5.0 Bibliography

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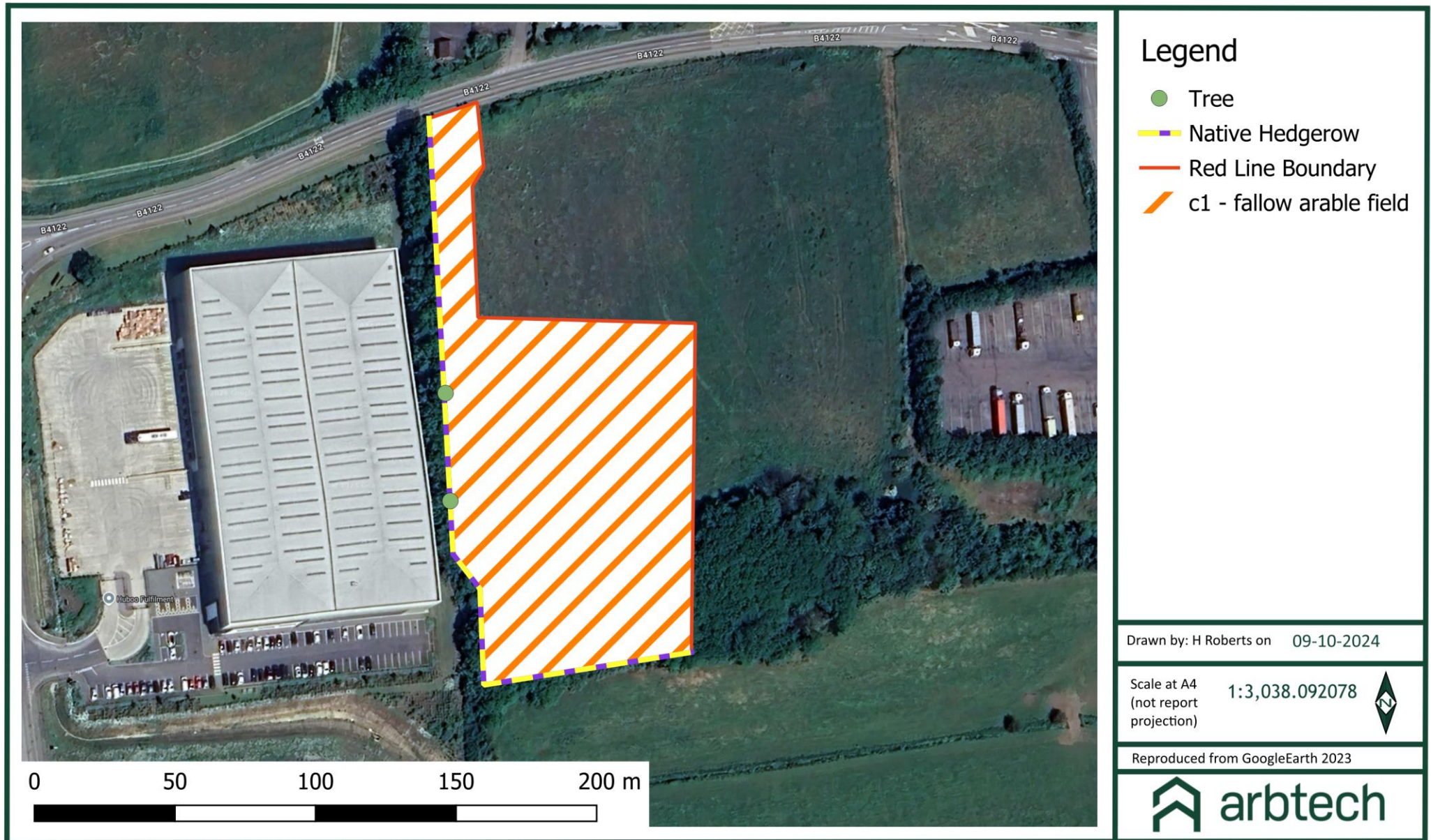
Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: Baseline Habitat Plan



Appendix 4: Post Development Habitat Plan



Appendix 5: 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)	<i>Habitat units</i>	0.25
	<i>Hedgerow units</i>	0.41
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	10.58%
	<i>Hedgerow units</i>	55.57%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	Yes ✓	