Biodiversity Net Gain Assessment

Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0GB

Harley Cooper

Status	Issue	Name	Date
Draft	1	Jade Lemm BSc (Hons) DipHE MRSB, Consultant Ecologist	05-06-2024
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Arbtech Consultant's Contact Details:

Jade Lemm
Consultant Ecologist
Email: jadelemm@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 Harley Cooper to undertake a Biodiversity Net Gain (BNG) Assessment at Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0GB (hereafter referred to as "the site"). The assessment was required to inform a planning application for the creation of 2 commercial buildings to form 8 No units (hereafter referred to as "the proposed development").

The proposed plan results in a -100% net loss in habitat units (0.76 habitat unit deficit). This is less than the 10% target of biodiversity net gain for habitat units. The habitats currently proposed to be created maximised in terms of their target condition, and alterations to the landscaping proposals are unlikely to yield significant changes to the results as its small size and proposed usage, limits the habitat types which could be created. Therefore, there will be a requirement to provide these habitat units through one of the offsetting options, including offsite habitat creation, third-party biodiversity unit purchase and statutory credit purchase.

Contents

1.0 Introduction and Context 7

1.1 Background 7

1.2 Site Location, Geology and Landscape Context 7

1.3 BNG Informative 7

2.0 Methodology 8

2.1 Baseline Biodiversity Value 8

2.2 Post Development Biodiversity Value 8

2.3 Limitations 9

3.0 Results 10

3.1 Baseline Habitats 10

3.2 Post Development Habitats 10

3.3 Change in Biodiversity Value of the Site 11

4.0 Recommendations to Deliver BNG 12

4.1 Discussion 12

4.2 Biodiversity Offsetting 12

4.3 Habitat Management and Monitoring Plan 12

4.4 Biodiversity Net Gain Plan 12

5.0 Bibliography 13

Appendix 1: Proposed Development Plan 14

Appendix 2: Site Location Plan 15

Appendix 3: Baseline Habitat Plan 16

Appendix 4: Post Development Habitat Plan 17
Appendix 5a: Habitat Condition Assessment Sheets - Baseline 18
Appendix 5b: Habitat Condition Assessment Sheets - Proposed 20
Appendix 6: Headline BNG Results 21

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Harley Cooper to undertake a Biodiversity Net Gain (BNG) Assessment at Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0GB (hereafter referred to as "the site"). The assessment was required to inform a planning application for the creation of 2 commercial buildings to form 8 No units (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.
- Preliminary Ecological Appraisal of Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0G

1.2 Site Location, Geology and Landscape Context

The survey site is centred on National Grid Reference TF 23424 09305 and has an area of approximately 0.33ha. The site comprises a field covered with silage tarp. The site is located in a suburban area, southeast of Crowland. The site is bordered by industrial sites to the west and east with agricultural fields present in the wider landscape north and south of the site. The site has loamy and sandy soils. 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 (Commencement No. 6) Regulations 2023 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 enshrined within the National Planning Policy Framework (NPPF, 2021).

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 the Preliminary Ecological Appraisal of Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0G (Arbtech, 2024). A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The reliminary Ecological Appraisal of Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0G 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 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

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by '24139-PL002A-PLANNING-PROPOSED SITE PLAN' 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 '24139-PL002A-PLANNING-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 the Statutory Biodiversity 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 Biodiversity Metric spreadsheet as well as the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2024). This is based on the assumption that a 30-year Ecological Management Plan will be followed.

Strategic Significance

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

- Likely ecological value
- Function within the landscape

2.3 Limitations

No site-specific limitations were identified.

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
Bare ground	0.3452 ha	A field covered by silage tarp was present on site. The field lacks vegetation and had approximately 70% cover of bare ground. Ruderal species recorded growing on top of the tarp consisted of abundant common couch Elymus repens, frequent common reed Phragmites australis, fat-hen Chenopodium album, occasional redshank Persicaria maculosa, hedge mustard Sisymbrium officinale and oil-seed rape Brassica napus.	**Poor** The condition assessment was assessed as poor due to the lack of vegetational structure and ecological niches.	**Low strategic significance** Area/compensation is not in the local strategy, and there is no local strategy or evidence to suggest that the habitat could be of medium strategic significance (not part of a habitat corridor or steppingstone).

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. Appendix 5 b provides an assessment of the anticipated condition for each habitat (where relevant), 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 the bare ground.

Table 2: Post Development Biodiversity Value

Habitat	Area / Length	Description	Target Condition	Strategic Significance
Developed land sealed surface	0.3051 ha created	An area (0.3051 ha) of hardstanding and buildings will be constructed.	**Condition Assessment N/A** Developed land and sealed surfaces are excluded from habitat condition assessments.	**Low strategic significance** Area/compensation is not in the local strategy, and there is no local strategy or evidence to suggest that the habitat could be of medium strategic significance (not part of a habitat corridor or steppingstone).

Artificial unvegetated unsealed surface	0.0401 ha created	Areas of gravel will be created around the new buildings.	**Condition Assessment N/A** Artificial unvegetated unsealed surface is excluded from habitat condition assessments.	**Low strategic significance** Area/compensation is not in the local strategy, and there is no local strategy or evidence to suggest that the habitat could be of medium strategic significance (not part of a habitat corridor or steppingstone).

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 habitat value of the site is 0.69 units, comprising completely bare ground.

The post-development habitat value of the site is zero.

This results in a net change in biodiversity of -100% (i.e. a net loss).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The proposed plan results in a -100% net loss in habitat units (0.76 habitat unit deficit). This is less than the 10% target of biodiversity net gain for habitat units. The habitats currently proposed to be created maximised in terms of their target condition, and alterations to the landscaping proposals are unlikely to yield significant changes to the results as its small size and proposed usage, limits the habitat types which could be created.

4.2 Biodiversity Offsetting

Therefore, there will be a requirement to provide these habitat units through one of the following options:

- Undertaking habitat creation and enhancement in a suitable offsite location in the site's locale. This may be via other land holdings or an agreement with a third-party landowner. The new site would need to be subject to a habitat survey assessment to ascertain its baseline value and a biodiversity net gain strategy drawn up. The new site would also need to be registered on the Biodiversity Net Gain Register at the following link: https://www.gov.uk/guidance/register-a-biodiversity-gain-site
- Purchasing biodiversity units from an existing biodiversity net gain site already registered on the Biodiversity Net Gain Register. This will be via a financial contribution to the relevant third party.
- Purchasing statutory credits using the credit sales service at the following link: https://www.gov.uk/guidance/statutory-biodiversity-credits. This should be the last resort If neither of the above options are achievable, as these credits are not guaranteed to be within the locale of the development site.

4.3 Habitat Management and Monitoring Plan

A 30-year habitat management and monitoring plan is usually required to accompany the Biodiversity Net Gain calculations to ensure that onsite habitat creation and enhancements are delivered.

4.4 Biodiversity Net Gain Plan

Once the biodiversity net gain strategy for the site, including offsetting and a habitat management plan (If required), developers are required to complete the standard biodiversity net gain plan template which can be found at the following link: https://www.gov.uk/guidance/submit-a-biodiversity-gain-plan.

5.0 Bibliography

- Arbtech (2024). Preliminary Ecological Appraisal of Pinnacle Close, Crowland, Peterborough, Lincolnshire, PE6 0G
- 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.
- Natural England (2024). The Statutory Biodiversity Metric User Guide.
- 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



Appendix 5a: Habitat Condition Assessment Sheets - Baseline

Bare ground; assessed using the 'Urban' habitat condition assessment sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for **all urban habitat types**:			
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N	
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	N	
C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	Y	
Essential criteria relevant for habitat type achieved (Yes or No)			Y
Number of criteria passed			1
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**	
Results for habitats requiring assessment of **3 core criteria** only **(all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs)**:			

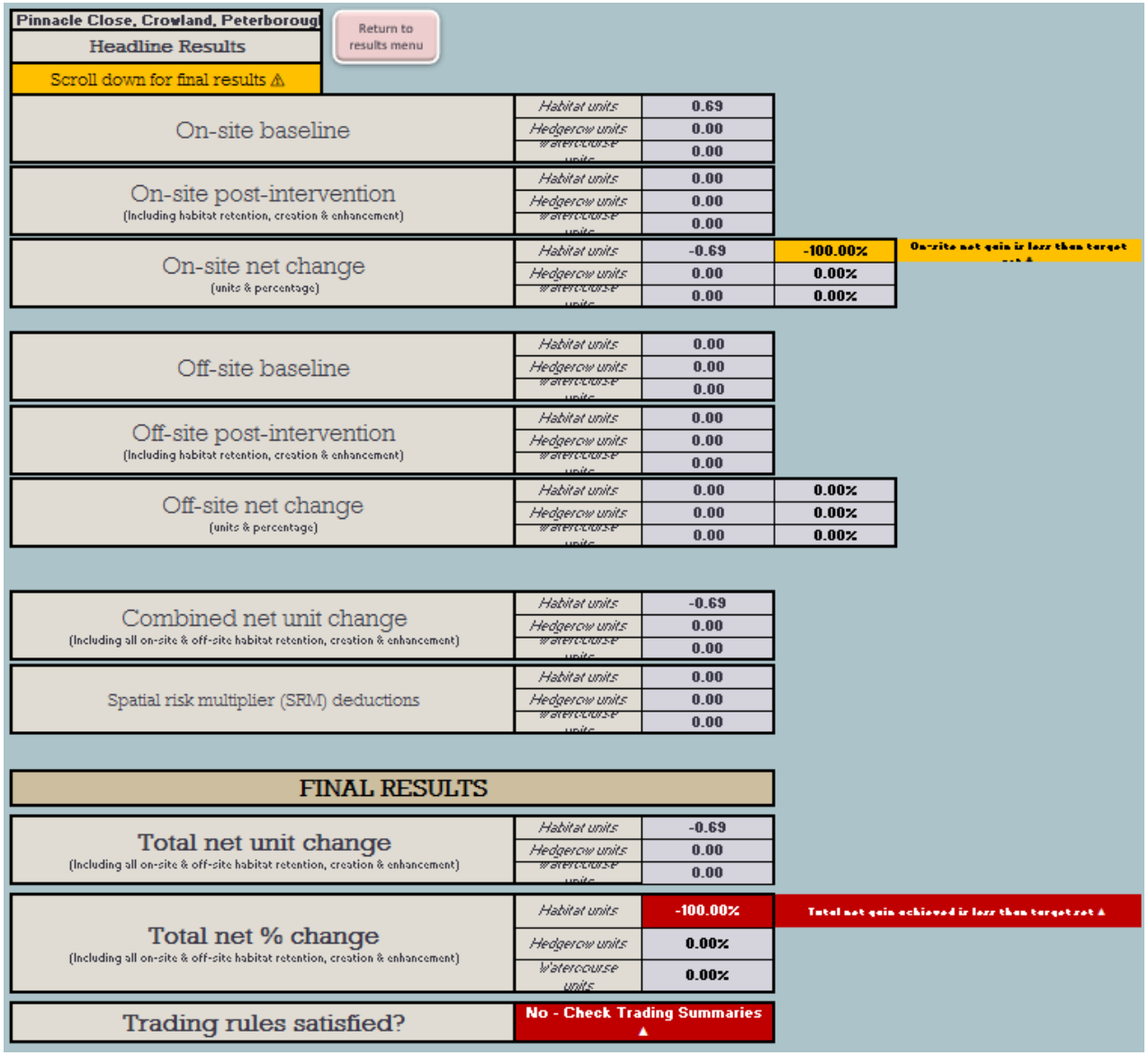
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)		
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)		
• Passes 0 or 1 of 3 core criteria.	Poor (1)	X	

Appendix 5b: Habitat Condition Assessment Sheets - Proposed

All proposed habitats are excluded from condition assessment.

Appendix 6: Headline BNG Results

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



Pinnacle Close, Crowland, Peterborough				
Headline Results	Return to results menu			
Scroll down for final results ⚠				
On-site baseline	Habitat units	0.69		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	-0.69	-100.00%	On-site net gain is less than target set ▲
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Off-site baseline	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	Habitat units	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-0.69		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
FINAL RESULTS				
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-0.69		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-100.00%	Total net gain achieved is less than target set ▲	
	Hedgerow units	0.00%		
	Watercourse units	0.00%		
Trading rules satisfied?	No - Check Trading Summaries ▲			