



Biodiversity Net Gain Assessment

Land on Old Market Street, Manchester, M9 8DX

Mr Arjan

Status	Issue	Name	Date
Draft	0.1	Kelly Clarke, Consultant Ecologist	19/08/2024
Reviewed	0.2	Kelly Clarke, Consultant Ecologist	24/08/2024
Final	1.0	Kelly Clarke, Consultant Ecologist	29/08/2024
Updated	1.2	Kelly Clarke, Consultant Ecologist	04/10/2024

Arbtech Consultant's Contact Details:

Kelly Clarke
Consultant Ecologist
Tel: 07512 321517 **Email:** kellyclarke@arbtech.co.uk
<https://arbtech.co.uk>

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.

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 Mr Arjan to undertake a Biodiversity Net Gain (BNG) Assessment at Land on Old Market Street, Manchester, M9 8DX (hereafter referred to as “the site”). The assessment was required to inform a planning application with Manchester City Council for the construction of a single dwelling (hereafter referred to as “the proposed development”).

Areas of Habitat

The baseline habitat value of the site is 0.14 units, comprising 0.14 units of modified grassland and hard standing (no value). The post development habitat value of the site is 0.5 units, comprising the creation of buildings and hardstanding (no value), and 0.05 units of vegetated garden. This results in a net change in biodiversity of **-67.83%**.

Hedgerows

The baseline hedgerow value of the site is zero units as there are no hedgerows present on site. The post development habitat value of the site is 0.06 units, comprising the creation of 0.06 units of non-native an ornamental hedgerow. Given that the baseline is zero, this results in a net change in biodiversity of **+100%**.

Table 1. BNG net change summary

Unit Type	Baseline Units	Units Required to Meet Target	Post Development Units	Net Loss/Gain	Unit Deficit
Habitat Units	0.14	0.16	0.05	-67.83%	0.11
Linear Units	N/A	N/A	0.06	+100%	N/A
Watercourse Units	N/A	N/A	N/A	N/A	N/A

Based on the proposed plans, it is unlikely that net gain will be achieved on site without significant changes to the proposals. As such a financial contribution to off-site ecological enhancements within an approved scheme is required to make up the 10% net gain for area-based habitat units.

In order to achieve a 10% biodiversity net gain, a minimum area-based unit score of 0.16 (baseline unit score of 0.14 + 10% of this value) will need to be achieved. In order to calculate the required financial contribution to offset the loss in biodiversity, a payment relative to gaining an additional 0.11 area-based biodiversity units will be required. This is calculated by subtracting the current post-development unit score from the minimum unit score required to achieve a 10% net gain in biodiversity: $0.16 - 0.05 = 0.11$. Of this 0.11, 0.10 units must be of medium distinctiveness grassland habitat.

Contents	
1.0 Introduction and Context.....	6
1.1 Background	6
1.2 Site Location, Geology and Landscape Context.....	6
1.3 BNG Informative	6
2.0 Methodology	7
2.1 Baseline Biodiversity Value	7
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	13
4.1 Discussion.....	13
5.0 Bibliography	15
Appendix 1: Proposed Development Plan	16
Appendix 2: Site Location Plan.....	17
Appendix 3: Baseline Habitat Plan	18
Appendix 4: Post Development Habitat Plan	19
Appendix 5: Habitat Condition Assessment Sheets - Baseline.....	20
Modified Grassland Condition Assessment.....	20
Appendix 6: Headline BNG Results.....	21

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Mr Arjan to undertake a Biodiversity Net Gain (BNG) Assessment at Land on Old Market Street, Manchester, M9 8DX (hereafter referred to as “the site”). The assessment was required to inform a planning application with Manchester City Council for the construction of a single dwelling (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:

- Biodiversity Metric Calculation Tool – Old Market Street, Manchester, M9 8DX
- Preliminary Ecological Assessment – Land on Old Market Steet, M9 8DX

1.2 Site Location, Geology and Landscape Context

The survey site is centred on National Grid Reference SD 85639 02926 and has an area of approximately 0.05ha. The site consists of an area of disturbed ground that has been succeeded by ruderal herbs. There are also two areas of hardstanding present within the site, that previously formed lay-by areas, along with a footpath, connecting the site to Old Market Street. The site is surrounded by Heras security fencing, which is likely to act as a dispersal barrier for a variety of faunal groups. The site is located on the northern fringe of Manchester and is surrounded by residential development and roads. 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, 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 Preliminary Ecological Appraisal (Arbtech Consulting Ltd). 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 8-1 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 on a review of the following:

- Ecological value
- Function within the landscape

- Any site or habitat allocations under the Manchester City Council Core Strategy 2012 – 2027

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by the development 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 development 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 8-1 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 Manchester City Council Core Strategy 2012 - 2027

2.3 Limitations

There were not considered to be any limitations to the assessment.

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 5.

Table 2: Baseline Biodiversity Value

Baseline Biodiversity Value				
Area Based Habitats (A-1)				
Habitat	Area/Length	Description	Condition Assessment	Strategic Significance
Urban: Developed land; sealed surface	0.008ha	Two small areas of hardstanding are present within the site, that were previously utilised as lay-by areas, along with a footpath. These areas are of minimal ecological value, with no associated vegetation present	Habitat condition pre-determined as ' N/A ' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Grassland: Modified grassland	0.036ha	The survey site is dominated by ruderal herb growing over the disturbed ground. Small areas of common bent and creeping buttercup are found in isolated grass areas, but the habitat is mainly forbs. Examples are broad leaved dock, teasel, burdock, ragwort, buddleia black medick, willowherb, creeping thistle, hawkbit, bramble and borage.	Moderate: passes 5 of 7 criteria including essential criterion A. Assessed using the 'Grasslands Low Distinctiveness' habitat type condition sheet.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is 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. The proposed development will result in the loss of grassland and hard standing.

Table 3: Post Development Biodiversity Value

Post Development Biodiversity Value					
	Area Based Habitats				
	Habitat	Area/Length	Description	Condition Assessment	Strategic Significance
Created (A-2)	Urban: Developed land; sealed surface	0.01ha	Creation of the new dwelling.	Habitat condition pre-determined as 'N/A' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
	Urban: Developed land; sealed surface	0.01ha	Creation of patio and driveway.	Habitat condition pre-determined as 'N/A' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
	Urban: Vegetated garden	0.024ha	Creation of gardens for the new dwelling, to include grass lawn, trees and two small areas of wildflowers.	Habitat condition pre-determined as 'N/A' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Created (B-2)	Linear Based Habitats				
	Non-native and ornamental hedgerow	0.06km	Planting of a single species yew hedgerow around the eastern garden.	Condition automatically assigned as 'poor' within the Statutory Metric	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is 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 Proposed Development - Biodiversity Metric Calculation Tool - Old Market Street, Manchester, M9 8DX - 19-08-24. The headline results are presented in Appendix 6.

Areas of Habitat

The baseline habitat value of the site is 0.14 units, comprising 0.14 units of modified grassland and hard standing (no value). The post development habitat value of the site is 0.5 units, comprising the creation of buildings and hardstanding (no value), and 0.05 units of vegetated garden. This results in a net change in biodiversity of **-67.83%**.

Hedgerows

The baseline hedgerow value of the site is zero units as there are no hedgerows present on site. The post development habitat value of the site is 0.06 units, comprising the creation of 0.06 units of non-native an ornamental hedgerow. Given that the baseline is zero, this results in a net change in biodiversity of **+100%**.

4.0 Recommendations to Deliver BNG

4.1 Discussion

The current proposed plan results in a **67.83%** net loss in habitat units and a **100%** net gain in hedgerow units. This is less than the 10% target of biodiversity net gain and therefore not compliant with current legislation (Environment Act 2021) and current planning policies (National: National Planning Policy Framework, 2023; Local: Manchester City Council Core Strategy 2012 – 2027).

Based on the proposed plans, it is unlikely that net gain will be achieved on site without significant changes to the proposals. As such a financial contribution to off-site ecological enhancements within an approved scheme is required to make up the 10% net gain for area-based habitat units.

In order to achieve a 10% biodiversity net gain, a minimum area-based unit score of 0.16 (baseline unit score of 0.14 + 10% of this value) will need to be achieved. In order to calculate the required financial contribution to offset the loss in biodiversity, a payment relative to gaining an additional 0.11 area-based biodiversity units will be required. This is calculated by subtracting the current post-development unit score from the minimum unit score required to achieve a 10% net gain in biodiversity: $0.16 - 0.05 = 0.11$. Of this 0.11, 0.10 units must be of medium distinctiveness grassland habitat.

4.3 Biodiversity Offsetting

If the trading rules cannot be satisfied by amendment of the landscaping plans, the deficit will need to be delivered in a suitable offsite location i.e. biodiversity offsetting.

According to the Defra Statutory Biodiversity Metric an additional 0.10 habitat units are required to meet the trading rules. The mechanism for securing this off-setting will need to be proposed to, and confirmed by the LPA e.g., purchasing conservation credits through a registered provider, habitat creation directly through the client-owned or LPA offered land or a financial contribution towards another provider such as a local nature reserve or park. As well as the creation of new habitats, this should also secure the management of the proposed habitats to help achieve the desired condition for at least 30 years. This would be linked to the application through a planning obligation Section 106 (S106) agreement. The proposed habitat compensation should be of an appropriate distinctiveness to meet the trading rules of BNG. An ecology survey of the baseline habitat of any off-site land will be required to inform the baseline conditions of any land subject to off-site compensation measures.

- The costs of BNG compensation using statutory credits have been issued by the government as outlined here: <https://www.gov.uk/guidance/statutory-biodiversity-credit-prices>.

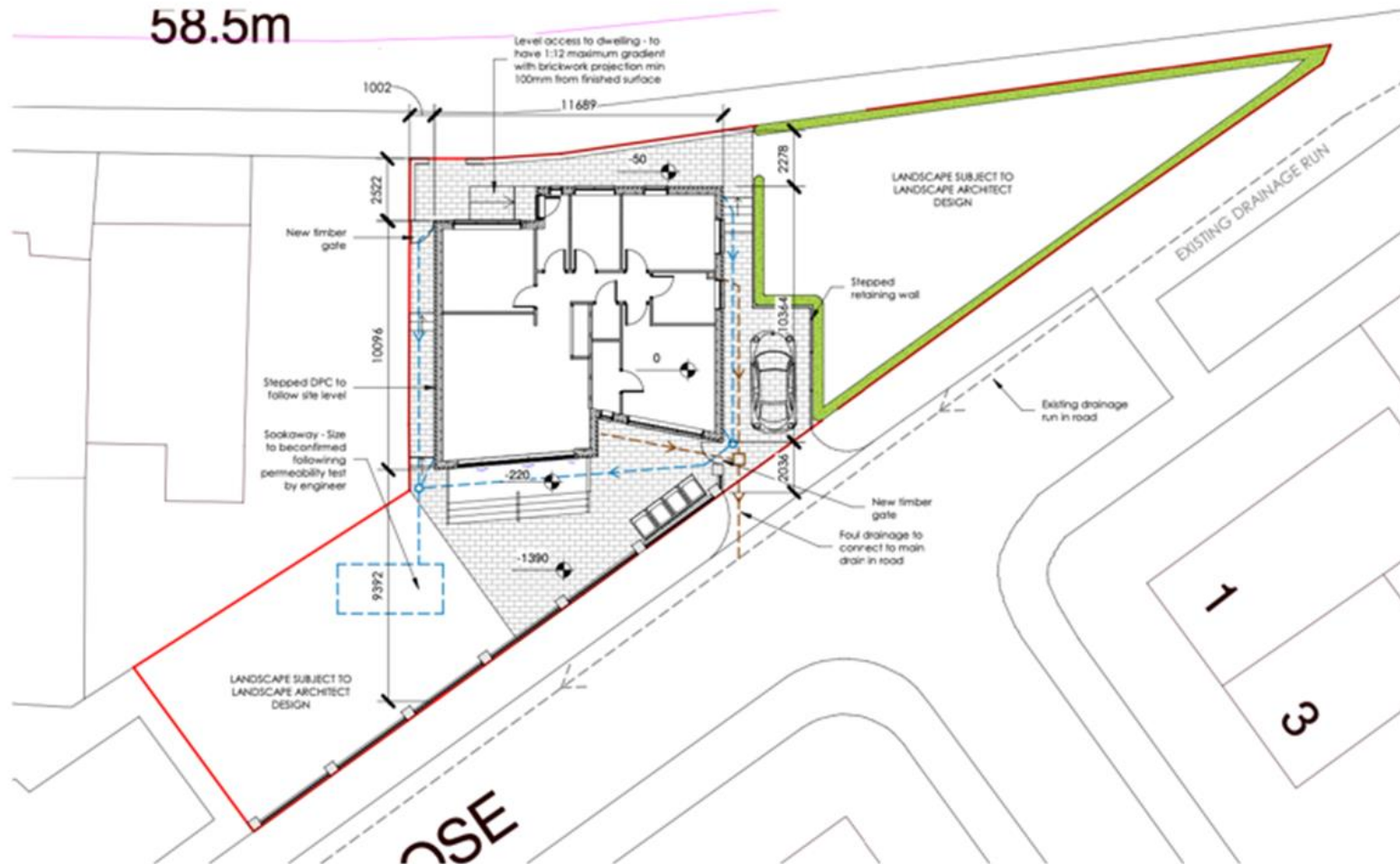
- Statutory prices are not guideline prices for biodiversity units sold in the off-site private market. Credit prices are set high to ensure they do not compete with the development of the private market.
- These units may be cheaper to source in the local third party BNG unit market, or in collaboration with the LPA.
- If you buy statutory credits, a 'spatial risk multiplier' (SRM) will apply, which doubles the number of statutory credits you need.

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
- 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

All These drawings are for the purpose of achieving local authority planning and building regulations plans approval only and should not be used as a working drawings for building construction. These design drawings must be read in conjunction with structural engineers design, drawings and calculations.
All rights reserved. © Crown copyright 2019. These plans & specifications are the property of P4B Architecture Ltd, and shall not be re-printed, reproduced, modified in whole or part without written consent, nor shall any building or structure be constructed in accordance with such plans or specifications thereof without written consent.



02/01
19003

Proposed Site Plan

0m 2 4 6 8 10m

1 : 150 @ A3

New Build Dwelling
Old Market Street, Manchester, M9 8DX

P4bA

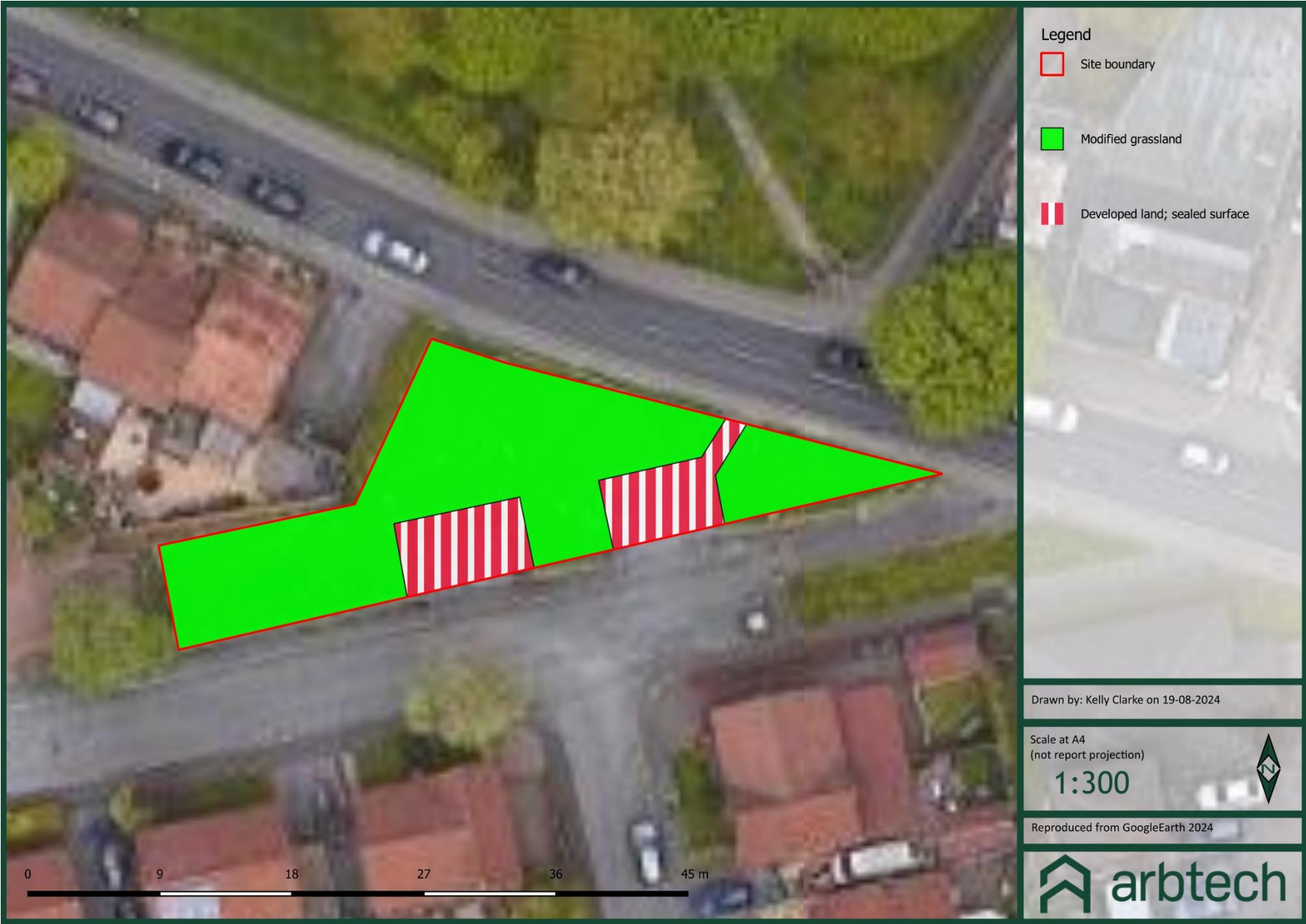
P4B ARCHITECTURE
P4BA.COM
INFO@P4BA.COM
0800 731 4707

15 MEMORIAL ROAD
WORSLEY
MANCHESTER
M28 3AQ

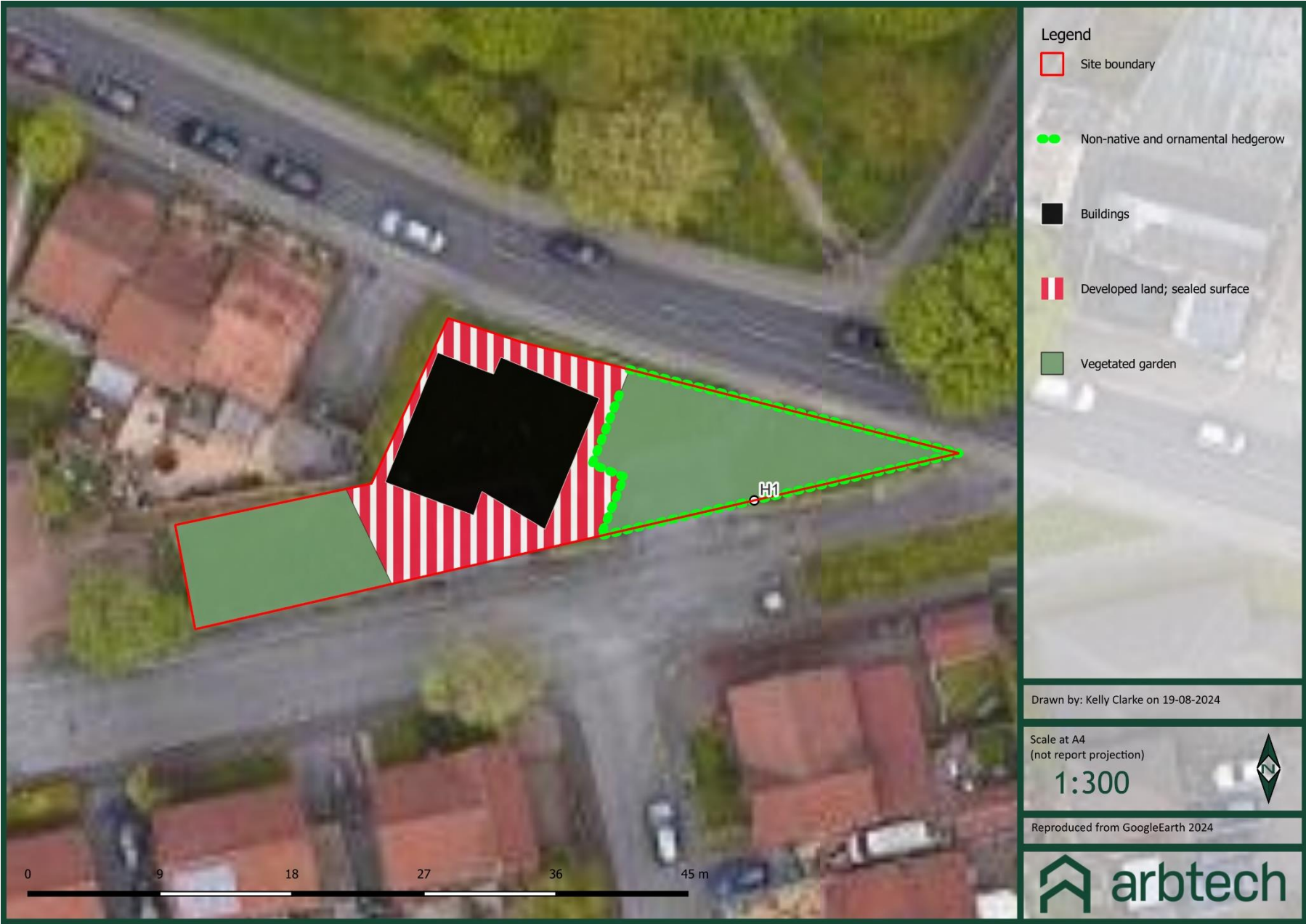
Appendix 2: Site Location Plan



Appendix 3: Baseline Habitat Plan



Appendix 4: Post Development Habitat Plan



Appendix 5: Habitat Condition Assessment Sheets - Baseline

Modified Grassland Condition Assessment

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² 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.	Yes	More than 6 species per metre squared
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.	No	Sward height tall and unmanaged
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).	Yes	No scrub present
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.	No	More than 5% physical damage
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Yes	Less than 10% bare ground
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes	No bracken present
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Yes	No invasives
Essential criterion achieved (Yes or No)			5
Number of criteria passed			
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)		

Appendix 6: Headline BNG Results

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

FINAL RESULTS				
Total net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	-0.10		
	Hedgerow units	0.06		
	Watercourse units	0.00		
Total net % change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	-67.83%	Total net gain achieved is less than target set ▲	
	Hedgerow units	N/A	0 baseline units - % cannot be calculated	
	Watercourse units	0.00%		
Trading rules satisfied?	No - Check Trading Summaries ▲			
Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	0.14	0.16	0.11
Hedgerow units	10.00%	0.00	0.00	0.00
Watercourse units	10.00%	0.00	0.00	0.00
				No additional hedgerow units required to meet target ✓
				No additional watercourse units required to meet target ✓