

Land East of Newgate Lane East

BIODIVERSITY NET GAIN ASSESSMENT

784-B030739

Miller Homes and Bargate Homes Limited

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EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site comprises a series of arable fields, bordered by hedgerows, fencing and scattered trees, located in Fareham, Hampshire. The site is centred at OS Grid Reference SU 57430 03563. The fields form part of farmland surrounded by the built-up areas of Fareham to the north, Gosport to the east and south and Stubbington to the west. The newly constructed Newgate Lane East is to the west of the site.
Proposals	The development proposals being assessed are an outline application with all matters reserved except Access for residential development of up to 375 dwellings, access from Newgate Lane East, landscaping and other associated infrastructure works on land east of Newgate Lane East, Fareham, Hampshire.
Existing Site Information	An Ecological Appraisal and Ecological Impact Assessment undertaken by ECOSA in 2021.
Scope of this Survey(s)	Assess the project biodiversity losses / gains as a result of the proposed site layout and landscaping.
Results	The Proposed Development is predicted to result in a net gain of 23.01% for habitat units and a net gain of 23.45% for hedgerow units.



G00LOSSARY

CIEEM	Chartered Institute of Ecology & Environmental Management
DEFRA	Department for the Environment, Food and Rural Affairs
HAP	Habitat Action Plan
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
SAC	Special Area of Conservation
SSSI	Site(s) of Special Scientific Interest
W&CA	Wildlife & Countryside Act 1981 (as amended)



1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Miller Homes and Bargate Homes Limited to produce a Biodiversity Net Gain Assessment of the site known as Land East of Newgate Lane East.

This report has been prepared by Project Ecologist Ben Cooke and the conditions pertinent to it are provided in Appendix A.

1.2 SITE LOCATION

The site comprises a series of arable fields, bordered by hedgerows, fencing and scattered trees, located in Fareham, Hampshire. The site is centred at OS Grid Reference SU 57430 03563. The fields form part of farmland surrounded by the built-up areas of Fareham to the north, Gosport to the east and south and Stubbington to the west. The newly constructed Newgate Lane East is to the west of the site.

1.3 DEVELOPMENT PROPOSALS

The development proposals being assessed are an outline application with all matters reserved except Access for residential development of up to 375 dwellings, access from Newgate Lane East, landscaping and other associated infrastructure works on land east of Newgate Lane East, Fareham, Hampshire.

1.4 PURPOSE OF THE REPORT

The purpose of this report is to:

- Assess the distinctiveness and condition of the vegetation types and other habitats; and
- Quantify the pre-development baseline habitat and hedgerow units present on site;
- Quantify the post-development biodiversity units on site; and
- Present biodiversity off-setting calculations based on the submission masterplan.



2.0 METHODOLOGY

2.1 BIODVERISTY METRIC 3.0

A Biodiversity Net Gain (BNG) assessment involves making a comparison between the biodiversity value of habitats present within the site prior to development (i.e., the 'baseline') and the predicted biodiversity value of habitats following the completion of the development (i.e., 'post-development'). The comparison is made in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.

Biodiversity Metric 3.0 (Natural England, 2021a) calculates the overall loss or gain of biodiversity for development projects by assessing the distinctiveness (i.e., type of habitat and its value), condition, extent, and strategic significance of habitats on site pre- and post-development. To achieve biodiversity net gain, the biodiversity unit score must have a post-development score higher than the baseline score. When calculating the post-development biodiversity units, the metric includes a series of standard 'risk multipliers' to account for the inherent risk of creating and restoring habitats, the time taken to establish habitats and the location of the mitigation in relation to the habitats lost on site. The risk multipliers have the effect of reducing the value of the proposed habitats, which means larger areas, habitats of higher distinctiveness, and/or condition are required to achieve net gain.

The metric assesses and generates separate outputs for area-based habitats (measured in habitat units) and linear based habitats, including hedgerows (measured in hedgerow units) and rivers (measured in river units). For the purpose of the BNG assessment, the output with the lowest value is used to determine whether following development there has been a net gain in biodiversity. A development cannot claim to achieve an overall net gain unless this is predicted across all areabased and linear based habitats.

All habitats surveyed within the development site boundary have been included within the calculation to provide the baseline and post-development biodiversity values.

The information required to undertake the calculation is described below.

2.2 BASELINE DATA

2.2.1 Habitat Data

The Phase 1 habitat data collected by ECOSA (ECOSA, 2022) on 18th September 2020 and 3rd August 2021 (hereafter referred to as the baseline) have been utilised to determine the baseline habitats. All the habitats recorded within the site were converted from JNCC Phase 1 habitat types to UK Habitat Classification (UKHab) categories (UK Habitat Classification Working Group, undated), before being digitised in Geographic Information System (GIS) to provide area measurements of each habitat type in hectares (ha) (the Baseline Habitat Plan is provided in Figure 2); conversions are outlined in Appendix F.

The data collected from this survey was then used to determine the habitat condition of each habitat parcel using the condition assessment criteria outlined in the Biodiversity Metric 3.0 - Technical Supplement (DEFRA, 2021c) in conjunction with the user guide ((Natural England, 2021b)). These and the target notes are outlined in Appendix B – E. The data was aggregated and entered into the metric to calculate the baseline biodiversity units.

2.3 POST-DEVELOPMENT DATA

The Illustrative Masterplan (Drawing No. P20-3154-03-C) has been used to determine the extent and type of habitats to be retained, created and enhanced post-development (collectively referred to as the 'Landscape Proposals') were converted to UK Habitat Classification categories before being



digitised into GIS to produce the Post-Development Habitat Plan (Figure 3); conversions are outlined in Appendix F.

Target condition scores for the proposed habitats were selected in accordance with Biodiversity Metric 3.0 User Guide and Technical Supplement using professional judgement to ensure the condition scores selected were realistic. The data was utilised to predict the post development biodiversity units.

2.4 DISTINCTIVENESS

Each habitat is assigned a score for distinctiveness. Distinctiveness includes parameters such as species richness, diversity, rarity (at local, regional, national, and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek et al., 2010). The categories for distinctiveness within the metric are shown within the Natural England, *The Biodiversity Metric 3.0: Auditing and accounting for biodiversity value: technical supplement* (Natural England, 2021b). The scores for each distinctiveness criteria is given in Table 1.

Table 1 Categories and score for distinctiveness

Categories	Score
Very High (Section 41 Priority Habitats that are threatened, internationally scarce and require conservation action)	8
High (Section 41 Priority Habitats)	6
Medium (Semi-natural habitats not classified as Priority Habitat)	4
Low (Habitat of low biodiversity value)	2
Very Low (Little or no biodiversity value)	0

2.5 CONDITION

The condition of each habitat is assessed using the methods set out in the *Biodiversity Metric 3.0: Auditing and accounting for biodiversity value: technical supplement* (Natural England, 2021c).

This approach determines how many of the condition criteria descriptions for each habitat type are met or are not met.

This is used as a guide but may be superseded where appropriate by other evidence and best ecological judgement. Where this is the case, additional information is provided in the tables used to the condition assessment.

Conditions and associated scores in the DEFRA 3.0 Metric are as follows:

•	Good:	3
•	Fairly Good:	2.5
•	Moderate:	2
•	Fairly Poor:	1.5
•	Poor:	1
•	N/A Agriculture:	1
•	N/A:	0

Fairly good and fairly poor condition assessments are relevant to Rivers and Streams only.

Certain habitats are allocated a fixed condition score and do not need their condition to be assessed. Some Low distinctiveness habitats are assigned '*No assessment required – condition fixed at 'Poor'*' and all Very Low distinctiveness habitats are assigned '*No assessment required – condition N/A*'.



2.6 STRATEGIC SIGNIFICANCE

Metric 3.0 requires that the strategic significance of all baseline and post-development habitats be defined. Strategic significance refers to areas of local priority for biodiversity and nature improvement, identified within local planning policies. As part of this assessment, the relevant local planning policy documents were reviewed to determine the strategic significance of the habitats on site. The site is not identified as a priority location for biodiversity.

2.7 RISK FACTORS

As part of any proposed habitat creation and restoration, risk factors must be considered to correct for disparity, delay, or risk, these are:

- Time to target condition; and,
- Difficulty of restoration / creation.

To take this into account, creation of a habitat which will take many years to get to target condition or is difficult to recreate would have a reduced biodiversity value compared to the same habitat already in situ. Therefore, to compensate for loss of that original habitat a larger area would be required as an offset.

Default values are provided for a range of habitats as part of the DEFRA 3.0 metric. These may be altered if informed by knowledge of the site and proposed management prescriptions.

In addition, an update to the DEFRA 3.0 metric has added a functionality which allows for delay or advancement in creation or enhancement of habitats and linear features thereby allows the time to reach a set condition to be reduced or extended.

2.8 ASSUMPTIONS

In undertaking the calculation, the following assumptions have been made:

- The retained western field is excluded from the assessment to avoid double-counting as it will form mitigation for impacts on Portsmouth Harbour Special Protection Area (loss of functionally linked habitat);
- Habitats created as part of the Proposed Development will be subject to appropriate ongoing management to enable them to reach the assigned target condition; and
- Urban habitats have a Habitat Action Plan (HAP) within Hampshire, and this habitat is present within the baseline or post-development. Although the baseline habitat is classified as 'Urban' it is not considered to meet the criteria of the HAP. In addition, although the habitat has an associated HAP all related habitats have been assigned low strategic significance in line with the default low scoring associated with such habitats in both distinctiveness and condition.



3.0 RESULTS

3.1 ON-SITE BASELINE HABITATS

The calculation covers a total area of 16.6 ha; this includes the habitats shown on the Baseline Habitat Plan (Figure 2). The habitats identified on site prior to development varied in ecological value, ranging from low to high distinctiveness.

Habitat descriptions for the on-site baseline are provided within the Ecological Impact Assessment (ECOSA, 2021).

3.2 ON-SITE BASELINE HABITAT UNITS

The respective baseline biodiversity value for area-based habitats are provided in Table 3. In total, the baseline biodiversity value of the habitats present was calculated as **42.36** area-based habitat units and **23.88** hedgerow units.

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Other neutral grassland	Medium	Poor	4.36	17.44
Cereal crops	Low	N/A -	11.9	23.80
		Agricultural		
Developed land; sealed surface	V.Low	N/A -	0.64	0.00
		Other		
Bramble scrub	Medium	Poor	0.28	1.12
Modified grassland	Low	Poor	0.81	1.62

Table 3 Baseline Area-based Habitats

Table 4 Baseline Hedgerow

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Native Hedgerow	Low	Good	1.26	7.56
Native Species Rich Hedgerow with trees	High	Good	0.7	12.60
Native Hedgerow with trees	Medium	Good	0.5	6.00
Line of Trees	Low	Good	0.47	2.82

3.3 POST-DEVELOPMENT HABITATS

3.3.1 Total Post-Development Units

In total, the post-development biodiversity value for onsite habitats is predicted to be **51.64** habitat units and **31.28** hedgerow units.

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Bramble scrub	Medium	Poor	0.28	1.12
Modified grassland	Low	Poor	0.40	0.80

Table 5 Retained habitats on site

Table 6 Created Post-development Habitat Data



Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Vegetated garden	Low	Poor	2.83	5.46
Developed land; sealed surface	V.Low	N/A -	2.83	0.00
		Other		
Modified grassland	Low	Moderate	4.13	14.33
Developed land; sealed surface	V.Low	N/A -	3.36	0.00
		Other		
Other neutral grassland	Medium	Good	3.72	31.26
Sustainable urban drainage	Low	Moderate	0.47	1.13
feature				

Table 7 Created Post-development Hedgerow Data

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Native Species Rich Hedgerow with trees	High	Good	0.32	2.82
Native Species Rich Hedgerow	Medium	Good	0.4	3.13

Table 8 Enhanced Post-development Hedgerow Data

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Native Hedgerow with trees	High	Good	0.5	5.10

3.3.2 Summary of Results

All habitats present within the baseline plan and the Proposed Development, including baseline, retained, and created are present within the accompanying biodiversity metric calculation tool assessment for the Proposed Development; refer to Appendix H.

A summary of the results is shown in Table 9. Based on the current Post-Development Plan, the development would result in a net gain of 10.12 habitat units (23.01 %) and a gain of 6.80 hedgerow units (23.45 %). Note that these are separate measurements and in accordance with the guidance on Metric 3.0 they should be reported separately, and not summed or averaged.

Habitat / Hedgerow Units	On site baseline	On site post- development	Total net unit change	Total net % change
Habitat	43.98	54.10	10.12	23.01%
Hedgerow	28.98	35.78	6.80	23.45%

Table 9	Summary	of Results
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4.0 CONCLUSION

Based on the current proposals and outlined assumptions, the Proposed Development is predicted to result in a net gain of 23.01% for habitat units and a net gain of 23.45% for hedgerow units.

The outputs of the metric are dependent on all created, retained, and enhanced habitats meeting the target conditions, subject to the criteria outlined within Natural England's Biodiversity Metric 3.0 Technical Note. Management methodology to meet the BNG target condition assigned to each habitat would therefore need to be outlined within an overarching Landscape Management Plan for the Proposed Development. Monitoring of habitats over a 30-year period will be required to ensure habitats develop in line with the predicted biodiversity as calculated within the Biodiversity Metric for



the Proposed Development and management adapted where required to achieve the objectives. Indicative management prescriptions have been outlined in Appendix G.



5.0 REFERENCES

- Natural England, (2021a), *The Biodiversity Metric 3.0 Calculation Tool -* [online] Available at http://publications.naturalengland.org.uk/file/5985083561607168, Accessed October 2021.
- Natural England, (2021b), *The Biodiversity Metric 3.0 auditing and accounting for biodiversity User Guide, First published 7th July 2021*, [online] Available at http://publications.naturalengland.org.uk/file/5366205450027008 Accessed October 2021.
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FIGURES

- Figure 1 Site Location Plan
- Figure 2 Pre-development Plan
- Figure 3 Post-development Plan









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APPENDIX A – REPORT CONDITIONS

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The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.



APPENDIX B: A-1 SITE HABITAT BASELINE

Table 10: Heathland & shrub - Bramble scrub

Target Note	:		
Habitat Con	dition:		
Poor – Fails	5 criteria.		
Criterion	Criterion Description	Res	sult
		Pass	Fail
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).		Х
2	There is a good age range – all of the following are present: seedlings, young shrubs, and mature shrubs.		Х
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species make up less than 5% of ground cover.		Х
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).		Х
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.		Х
	Total	0	5
-Notes:			
Fewer than t	hree woody species, lack of age diversity, presence of undesirable s	pecies, no	

developed edge, no clearings.

Table 11: Grassland – Other neutral grassland

Target Note:			
Habitat Con	dition:		
Poor - Passe	s 2 of the 5 criteria.		
Criterion Description			
		Pass	Fail
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges, and indicator	Х	



Target	Note:		
Habitat	Condition:		
	species for the specific grassland habitat type are very clearly and easily visible throughout the sward.		
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds, and small mammals to live and breed.	Х	
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.		X
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.		X
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species 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.		X
	Total	2	3
Notes:			

Examples of indicator species are present, sward height is varied, less than 1% cover of bare ground, over 5% cover of bramble scrub, over 5% cover of undesirable species (thistles, docks, nettle, creeping buttercup).

Table 12: Cropland – cereal crops

Target Note:				
Habitat Con	dition:			
N/A - Agricult	tural			
Criterion	Criterion Description		Result	
			Pass	Fail
No condition	assessment required.			
		Total		
Notes:				
-				

Table 14: Urban – Developed land; sealed surface



Target Note			
Habitat Con	dition:		
N/A - Other			
Criterion	Criterion Description	Re	sult
		Pass	Fail
No condition	assessment required.		-
	Total	N	/A

Habitat Con	dition:		
Poor - Passe	es 3 of the 7 criteria.		
Criterion	Criterion Description	Res	sult
		Pass	Fail
1	"There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition."		Х
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		Х
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Х	
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.		Х
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.		Х
6	Cover of bracken less than 20%.	Х	
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species1 make up less than 5% of ground cover.	Х	
	Total	3	4
Notes:		•	•

Table 13: Grassland – Modified Grassland



Habitat Condition:

Fewer than 8 species/m2, unsuitable mix of sward heights, less than 20% scrub cover, more than 5% damage, target levels of bare ground not met, bracken absent, undesirable species absent.



APPENDIX C: A-2 SITE HABITAT CREATION

Table 14: Urban - Vegetated Garden

Habitat Con	dition:				
Condition for the habitat is fixed at 'Poor'.					
Criterion	Criterion Description	Result			
		Pass	Fail		
No condition	assessment required.				
Total N/A					
Notes:					

Table 15: Urban – Developed Land; Sealed Surface

Habitat Con	dition:			
Condition for	the habitat is fixed at 'Poor'.			
Criterion	Criterion Description	Result		
		Pass	Fail	
No condition	assessment required.			
	Total	N/	Ά	
Notes:				

Table 16: Grassland – Modified Grassland

Habitat Cor	ndition:				
Moderate - I	Moderate - Passes 4 of the 7 criteria.				
Criterion	Criterion Description	Result			
		Pass	Fail		
1	 "There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition." 	X			
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		X		
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note -	Х			



Habitat Con	dition:		
	patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.		
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.		X
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.		Х
6	Cover of bracken less than 20%.	Х	
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species1 make up less than 5% of ground cover.	Х	
	Total	4	3
Notes:			
Species mix achieved, les to more than	will include 6-8 species/m2, unclear whether suitable mix of sward h s than 20% scrub cover will be allowed, public access will be possib 5% damage, unclear whether target levels of bare ground are achie	eights can le potentia vable, brac	be Ily leading :ken will

not be planted, undesirable species will be avoided in planting scheme.

Table 17: Urban – Developed land; sealed surface

Habitat Con	dition:		
N/A - Other			
Criterion Criterion Description Res Pass		Result	
		Pass	Fail
No condition	assessment required.		
	Total	N/	Ά
Notes:			

Table 18: Grassland – Other neutral grassland

Target Note	:		
Habitat Con	dition:		
Good - Pass	es 5 of the 5 criteria.		
Criterion	Criterion Description	Result	
		Pass	Fail



Target Note	e:		
Habitat Cor	ndition:		
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges, and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Х	
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds, and small mammals to live and breed.	Х	
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Х	
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Х	
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species 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.	Х	
	Total	5	0
Notes:			
Indicator spe managemer	ecies will be included in planting mix, management will achieve varied to will achieve target areas of bare ground, management will avoid sc	d sward hei rub encroad	ght, chment,

Table 19: Urban - SuDS

undesirable species will be avoided in planting mix.

Target Note:			
Habitat Con	dition:		
Moderate - P	asses 3 of the 4 criteria.		
Criterion	Criterion Criterion Description		
		Pass	Fail
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	Х	



Target Note:			
Habitat Con	dition:		
2	"There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife)."		X
3	"Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover)."	Х	
4	The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.	Х	
	Total	3	1
Notes:			
SuDS will inc flowering spe species will b	clude a varied vegetation structure including grassland and margin acies will be included but unclear if all SuDS will support a diverse be avoided, soil will be saturated with periodic inundation.	al vegetation, range, invasiv	native ve



APPENDIX D: B-1 HEDGE BASELINE

Habitat Con	dition:		
Good - No m	ore than two failures in total and no more than one failure in any one	functional	group.
Criterion	Criterion Description	Result	
		Pass	Fail
A1	Height is greater than 1.5 m on average along the length	Х	
A2	Width is greater than 1.5 m on average along the length		Х
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	Х	
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.	Х	
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.	Х	
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х	
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х	
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х	
	Total	7	1
Notes:			

Table 20: Native hedgerow

Table 21: Native species-rich hedgerow with trees

Habitat Con	Habitat Condition:				
Good - No m	Good - No more than two failures in total and no more than one failure in any one functional group.				
Criterion	Criterion Description	Result			
		Pass	Fail		
A1	Height is greater than 1.5 m on average along the length	Х			
A2	Width is greater than 1.5 m on average along the length	Х			
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	х			
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.	Х			



Habitat Con	dition:		
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.		Х
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х	
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х	
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	х	
	Total	7	1
Notes:			

Table 22: Native hedgerow with trees

Habitat Co	ndition:		
Good - No more than two failures in total and no more than one failure in any one functional group.			
Criterion	Criterion Description	Result	
		Pass	Fail
A1	Height is greater than 1.5 m on average along the length	Х	
A2	Width is greater than 1.5 m on average along the length	Х	
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	Х	
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.	Х	
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.		Х
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х	
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х	
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х	
	Total	7	1
Notes:			



Good - No more than two failures in total and no more than one failure in any one functional group.			
Criterion	Criterion Description	Result	
		Pass	Fail
A1	Height is greater than 1.5 m on average along the length	Х	
A2	Width is greater than 1.5 m on average along the length	Х	
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	Х	
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.		Х
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.		X
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х	
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х	
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х	
	Total	6	2
Notes:			

Table 23: Line of trees



APPENDIX E: B-2 HEDGE CREATION

Habitat Condition:								
Good - No more than two failures in total and no more than one failure in any one functional group.								
Criterion	Criterion Description	Re	Result					
		Pass	Fail					
A1	Height is greater than 1.5 m on average along the length	Х						
A2	Width is greater than 1.5 m on average along the length	Х						
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	Х						
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.		Х					
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.	Х						
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х						
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х						
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х						
	Total	7	1					
Notes:								

Table 24: Native species-rich hedgerow with trees

Table 25: Native species-rich hedgerow

Habitat Condition:							
Good - No n	nore than two failures in total and no more than one failure in any on	e functional	group.				
Criterion	Result						
		Pass	Fail				
A1	Height is greater than 1.5 m on average along the length	Х					
A2	Width is greater than 1.5 m on average along the length		Х				
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	X					
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.	X					



Habitat Condition:							
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.	х					
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х					
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х					
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х					
	Total	7	1				
Notes:							



APPENDIX F: HEDGE ENHANCEMENT

Habitat Con	dition:							
Good - No more than two failures in total and no more than one failure in any one functional group.								
Criterion	Criterion Description	Result						
A1	Height is greater than 1.5 m on average along the length	Х						
A2	Width is greater than 1.5 m on average along the length	Х						
B1	Gap between ground and base of the canopy is less than 0.5 m for more than 90 % of the length	Х						
B2	Gaps make up less than 10 % of total length and there are no canopy gaps greater than 5 m.		Х					
C1	There is a greater than 1 m width of undisturbed ground with perennial herbaceous vegetation for greater than 90 % of the length (measured from the outer edge of the hedgerow) and is present on at least one side of the hedge.	Х						
C2	Plant species indicative of nutrient enrichment of soils dominate greater than 20 % cover of the area of undisturbed ground.	Х						
D1	Greater than 90 % of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Х						
D2	Greater than 90 % of the hedgerow or undisturbed ground is free of damage caused by human activities.	Х						
	Total	7	1					
Notes:								
Enhanced fr	om native hedgerow to native hedgerow with trees.							

Table 26: Native hedgerow with trees



APPENDIX G: HABITAT CLASSIFICATION

Table 27: Habitat Classification Conversion – Baseline Habitat Plan

Phase 1 Habitat Classification / Landscape Classification	UK Habitat Classification
Scrub – Dense / continuous	Heathland – Bramble scrub
Neutral grassland – semi-improved	Grassland – Other neutral grassland
Arable	Cropland – Cereal crops
Hardstanding	Grassland – Modified grassland
Intact species-poor hedgerow	
Intact species-rich hedge with trees	
Intact species-poor hedge with trees	
Treeline	

 Table 28: Habitat Classification Conversion – Post-development habitat plan (Retained and created)

Phase 1 Habitat Classification / Landscape Classification	UK Habitat Classification
Proposed residential development	Urban – Developed; sealed surface
	Urban – Vegetated garden
Proposed roads and paths	Urban – Developed; sealed surface
Proposed central green and open space within development	Grassland – Modified grassland
Proposed linear park and boundary open	Grassland – Other neutral grassland
spaces	
SuDS	Urban – Sustainable drainage feature



APPENDIX H: BIODIVERSITY METRIC 3.0 CALCULATION



APPENDIX I: HABITAT MANAGEMENT REQUIRED TO ACHIEVE TARGET CONDITION

Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.0 recommendations – to be further developed for the site in agreed management plan)
Grassland – Modified grassland	Created	Moderate	4	Urban Habitat Type	 In order to achieve this all of the following 5 criteria need to be passed: "There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is nonnegotiable for achieving good condition." Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. 	 Species mix to include minimum of 6 species; Management measures to avoid encroachment of scrub, bracken or invasive species.

Table 29: Summary of Management Proposals for Habitats to Achieve Target Condition



	 Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type. 	
	 Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities. 	
	 Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens. 	
	 Cover of bracken less than 20%. 	
	 There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species1 make 	



					up less than 5% of ground cover.	
Urban – Vegetated garden	Created	Poor	1	Urban Habitat Type	The target condition (Poor) is pre- set in the metric.	NA – no set prescription required due to the habitat's pre-set condition.
Urban – Developed land; sealed surface	Created	N/A - Other	0	Urban Habitat Type	The target condition (N/A -Other) is pre-set in the metric	NA – no set prescription required due to the habitat's pre-set condition.
Urban – Sustainable drainage system	Created	Moderate	3	Urban Habitat Type	 In order to achieve this three of the following criteria need to be passed: Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area. "There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than 	 Planting mix to varied species and structure; Management to ensure invasive species are not allowed to become established; and Design to maintain saturated conditions within the soil for most of the year (supporting wetland or wet grassland habitats).



					non-natives beneficial to wildlife)."	
					species (Schedule 9 of WCA) cover less than 5% of total vegetated area.	
					NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non- native species (rather than <5% cover)."	
					 The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface. 	
Grassland – Other neutral grassland	Created	Good	10	Grassland Habitat Type	 In order to achieve this all of the following 5 criteria need to be passed: Appearance of habitat closely matches characteristics of habitat. Wildflowers, sedges, and indicator species are clearly and easily visible throughout sward. Sward height (20 % is less than 7 cm and at least 20 % is more than 7 cm). 	 Planting mix to include characteristic native species for neutral grassland/meadow; Ensure mowing practices are sufficient to create variation in the sward; Management to include rotovation in suitable locations to promote areas of bare ground. Any bracken or scrub identified is removed is removed; and Carry out planting with due diligence and do not introduce neophyte or invasive non- native species.



					 Cover of bare ground between 1 – 5 % Cover of bracken less than 20 % and cover of scrub less than 5 %. Invasive non-natives less 	
Native species- rich hedgerow with trees	Created	Good	20	Hedgerow Habitat Type	than 5 %. In order to achieve this condition, the hedgerow needs to fail no more than two of the following criteria, it can also no fail no more than one criteria in any one functional group: A1 – Height – Average of > 1.5m along length A2 – Width – Average of > 1.5m along length B1 – Gap – hedge base – gaps between ground and base of canopy < 0.5 m for > 90 % of length B2 – Gap – hedge canopy continuity – gaps make up < 10 % of total length with no gap being > 5 m. C1 – Undisturbed ground and perennial vegetation - > 1 m width of undisturbed ground with perennial herbaceous vegetation for > 90 % of length. C2 – Undesirable perennial vegetation – Plants indicative of nutrient enrichment of soils dominate < 20 % cover of undisturbed ground D1 – Invasive species and neophyte species - > 90% of	 Hedgerow maintained at least a height and width of 1.5 m over the course of its length Perennial herbaceous vegetation maintained surrounding hedgerow Any undesirable perennial vegetation is removed Carry out planting with due diligence and do not introduce neophyte or invasive non- native species; and Ensure that hedgerow is protected from human activity and damage is rectified following impact.



					hedgerow is free from invasive non- native and neophyte species. D2 – Current damage - > 90 % of the hedgerow is free from damage caused by human activities.	
Native species- rich hedgerow	Created	Good	12	Hedgerow Habitat Type	See above.	See above.
Native hedgerow with trees	Enhanced	Good	10	Hedgerow Habitat Type	See above.	 Maintain in current condition. Planting scheme to introduce trees within existing native hedgerow.