

Biodiversity Net Gain Assessment
Land off New Smithy Avenue, Thurlstone

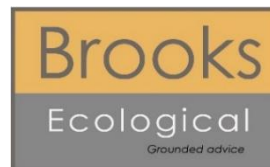
Newett Homes

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Report Title:	Biodiversity Net Gain Assessment Land off New Smithy Avenue, Thurlstone
Report Reference:	ER-4006-02B
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Introduction

1. Brooks Ecological was commissioned by Newett Homes to complete a Biodiversity Net Gain (BNG) Assessment of the proposed development Site off New Smithy Avenue, Thurlstone, South Yorkshire, Grid Reference SE 232 035. The assessment applies to land with the red line boundary as shown in Figure 1.
2. To inform the assessment, a Preliminary Ecological Appraisal was carried out in April 2019 (R-4006-01A). So as to conform with DEFRA's Biodiversity Metric 2.0, habitats have been mapped in accordance with the UK Habitat Classification descriptions, rather than the long established JNCC codes. These habitat classifications and 'the metric' are work in progress and could be subject to future change.
3. Biodiversity Accounting metrics are used to quantify the value of a Site in Biodiversity Units - which helps in assessing the ecological impacts of the proposed development on the Site.
4. Biodiversity Units can help to inform avoidance, or on-Site mitigation levels required; or as a last resort can translate to a direct monetary value where compensation (off-Site) is required. Please be aware that they can significantly impact on costs and viability.

Figure 1 Extent of BNG Assessment.



Pre-development Baseline

Habitats identified

5. The Site supports the following habitats:
 - g3c – Other neutral grassland
 - h3h- Mixed scrub
 - HR8 – Native hedgerow
 - LT4 – Line of Trees
6. Each habitat is mapped in the figure opposite.

Condition Assessment

7. The condition assessment for each habitat is based on the available criteria set out in The Biodiversity Metric 2.0 Auditing And Accounting For Biodiversity Technical Supplement Beta Edition.

Habitat Score

8. The Site has been assessed as having a baseline score of 4.0 Habitat Units and 0.30 Hedgerow Units (see tables overleaf).

Figure 2 Habitat map – pre-development.



DEFRA Metric Condition Assessment

g3c- Other neutral grassland

9. Habitat condition – Poor. Meets one of the criteria, with an abundance of rye-grass.

	Condition Assessment Criteria Grassland habitat type	Pass or Fail?
1	Clearly and easily recognizable as a good example of this type of habitat.	Fail
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	Fail
3	Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency.	Fail
4	Undesirable species and physical damage is below 5% cover.	Pass
5	Cover of bare ground greater than 10%	Fail
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	Fail

h3h, 17- Mixed scrub

10. Habitat condition - Poor. Meets 1 out of 5 criteria, bramble dominates and undesirables between 5-20%.

	Condition Assessment Criteria: Scrub broad habitat type	Pass or Fail?
1	There are at least three woody species, with no one species comprising more than 75% of the cover	Fail
2	There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs	Fail
3	Pernicious weeds and invasive species make up less than 5% of the ground cover.	Fail
4	Well-developed edge with un-grazed tall herbs	Pass
5	There are many clearings and glades within the scrub.	Fail

hr8- Native hedgerow

11. Habitat condition - Good. Fails one criteria.

	Favorable condition attributes and criteria: Hedgerows		Pass or Fail?
A1	Height	>1.5m average along length	Pass
A2	Width	>1.5m average along length	Pass
B1	Gap – hedge base	Gap between ground and base of canopy <0.5m for >90% length	Pass
B2	Gap – hedge canopy continuity	Gaps make up <10% of total length and no canopy gaps >5m	Pass
C1	Undisturbed ground and perennial vegetation	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length & present on one side of hedge at least	Pass
C2	Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of area of undisturbed ground	Fail
D1	Invasive and neophyte species	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass
D2	Current damage	>90% of hedgerow of undisturbed ground is free of damage caused by human activities	Pass

lt4- Line of trees

12. Habitat condition – Good. Meets both 'good' criteria.

Category	Condition Assessment Criteria Line of Trees habitat type	Pass or Fail?
Good	Mature trees with continuous canopy, i.e. • a 'mature tree' in this context is one that is at least 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	Pass
Moderate	Continuous canopy, i.e. • trees < 1/3 expected fully mature height • gaps make up <10% of total length and there are no canopy gaps >5 m	-
Poor	Broken canopy, i.e. • gaps make up >10% and / or gaps are >5 m in length.	-

DEFRA Metric (Baseline)¹

13. This metric sets out the baseline for the Site - proposals should seek to achieve at least a 'no net loss' situation through **Avoiding** areas of higher value, **Mitigating** any loss on-Site through retention and enhancement, or habitat creation. The Local Planning Authority may require you to **Compensate** any residual loss elsewhere - either through direct works or an off-setting contribution.

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A-1 Site Habitat Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Habitats and areas				Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units
1	Grassland	Grassland - Other neutral grassland	0.95	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	3.80
2	Heathland and shrub	Heathland and shrub - Mixed scrub	0.05	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.20
3									
4									
5									
6									
Total site area ha			1.00					Total Site baseline	4.00

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B-1 Site Hedge Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

UK Habitats - existing habitats				Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total hedgerow units
1	1	Native Hedgerow	0.03	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.18
2	2	Line of Trees	0.02	Low	Good	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.12
3									
4									
5									
Total Site length/KM			0.05					Total Site baseline	0.30

¹ Our report provides an estimate of the sites value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used the 2.0 DEFRA's Biodiversity Metric Tool, the UK Habitats Classification and relevant guidance- the latest 3.0 Metric Tool has not been used based on guidance to continue the use of 2.0 when started. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk.

Post-development Baseline

Proposed Habitats

- 14. Habitat present on Site post-development have been based on the Landscape Masterplan produced by Brooks Ecological (DR-4006-01.04, October 2021).
- 15. Planting types specified in the Landscape proposal have been assigned a UK Habitat Classification description that best fits the target habitat.

Condition Assessment

- 16. The condition assessment for each proposed habitat is based on what is realistic and achievable for the Site, based on the Landscape Masterplan.

Habitat Score

- 17. The Site has been assessed as having a post development score of 2.03 Habitat Units and 1.66 Hedgerow Units (see tables overleaf).

Figure 3 Landscape Masterplan- DR-4006-01.04, October 2021

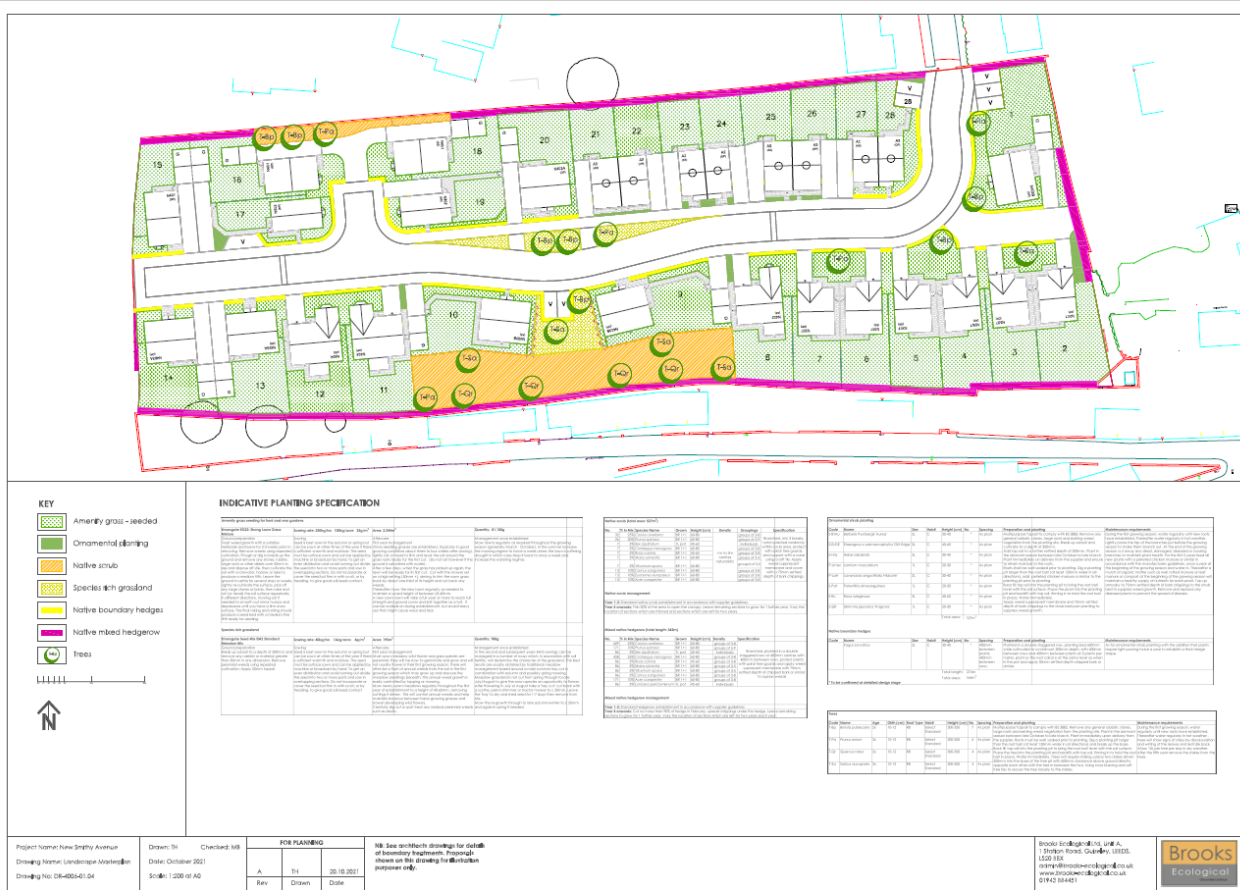


Figure 4 Proposed habitat map based on DR-4006-01.04



DEFRA Metric (Post-development)

18. This metric sets out the predicted baseline for the Site following the completion of development. This is based on the Site Layout provided by the client and the Landscape Masterplan (DR-4006-01.04).

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A-2 Site Habitat Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Post development/ post intervention habitats									
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	Habitat units delivered	Comments
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category		
Urban - Developed land; sealed surface	0.19	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	0	Low	0.00	Access road, footpaths & visitor parking.
Urban - Suburban/ mosaic of developed/ natural surface	0.73	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	1.41	Housing plots.
Heathland and shrub - Mixed scrub	0.05	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3	Low	0.36	Mix of native shrub beds.
Urban - Introduced shrub	0.01	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.04	Mix of non-native pollinator friendly (rhs.org.uk/plantsforpollinators) shrub beds in POS.
Grassland - Other neutral grassland	0.02	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	10	Low	0.11	EM2 grassland.
Urban - Street Tree	0.07	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	27	Low	0.11	16 Native trees in POS.
Totals	1.00							2.03	

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B-2 Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Baseline ref	New hedge number	Proposed habitats		Habitat distinctiveness	Habitat condition	Multipliers		Hedge units delivered	Comments	
		Habitat type	Length km			Spatial quality				Temporal multiplier
						Ecological connectivity	Strategic significance			
1		Native Hedgerow	0.34	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	5	1.14	Mixed native hedgerow around boundaries
2		Native Hedgerow	0.27	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	0.52	Beech hedgerow around plots
3										
4										
5										
		Creation Length/KM	0.61						1.66	

Net Gain Assessment

19. This exercise identifies an overall Net Loss of 1.97 Habitat Units (-49.35%). A significant Net Gain of 1.36 Hedgerow Units (453%) is gained.
20. The client has been provided with a copy of the Biodiversity Metric 2.0 Calculation Tool excel spreadsheet. This will be made available for review if required.

Habitat Units

21. Calculations for the change in Habitat Units has been based on the entire Site being cleared of existing vegetation and land reprofiled, which results in the loss of all 4 Habitat Units present pre-development.
22. Post-development calculations include 0.19ha of access roads / footpaths / visitor carparking which score 0 Habitat Units. Within public open space, 0.15 Habitat Units are gained through the creation of native mixed scrub and native tree planting, wildflower grassland and pollinator friendly landscape planting. The final 0.73 Habitat Units are gained through the creation of gardens.

Hedgerow Units

23. The Site previously only supported 50m of species-poor hedgerow / tree line.
24. A considerable Net Gain in Hedgerow Units is achieved through the creation of 340m of mixed native hedgerows around the boundaries and through the planting of beech hedgerows around the individual plots.

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Headline Results

Return to results menu

On-site baseline	Habitat units	4.00
	Hedgerow units	0.30
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	2.03
	Hedgerow units	1.67
	River units	0.00
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-1.97
	Hedgerow units	1.37
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-49.35%
	Hedgerow units	456.41%
	River units	0.00%