

Biodiversity Net Gain Assessment
Land off Rockingham Roundabout

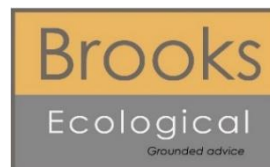
Gregory Projects (Barnsley) Limited

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11/08/2021

Report Title:	Biodiversity Net Gain Assessment Land off Rockingham Roundabout
Report Reference:	ER-3806-06C
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Introduction

1. Brooks Ecological was commissioned by Gregory Projects (Barnsley) Limited to complete a Biodiversity Net Gain (BNG) Assessment of the proposed development Site at land off Rockingham Roundabout.
2. The assessment applies to the development Site as defined by the red line boundary, and to a parcel immediately east of this designated for offsetting within a blue line boundary; see Figure 1 opposite.
3. To inform the assessment, a Preliminary Ecological Appraisal was carried out in February 2019. This did not include habitats within the blue line boundary; these have been interpolated from aerial imagery, on-the-ground photography, and the ecologist's professional experience.
4. So as to conform with DEFRA's Biodiversity Metric 2.0, habitats have been mapped in accordance with the UK Habitat Classification descriptions. While newer versions of the Metric have since been released, we have continued to use the version under which the Site was initially surveyed, as per DEFRA guidance.
5. 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.
6. 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

7. The Site supports the following habitats:
 - g4 – Modified grassland
 - g3c – Other neutral grassland
 - 310 – Amenity grassland
 - 351 – Vacant/derelict land/bareground
 - u1b – Developed land; sealed surface
 - w1g – Other woodland; broadleaved
 - HR8 – Native hedgerow
8. Each habitat is mapped in Figure 2 opposite.

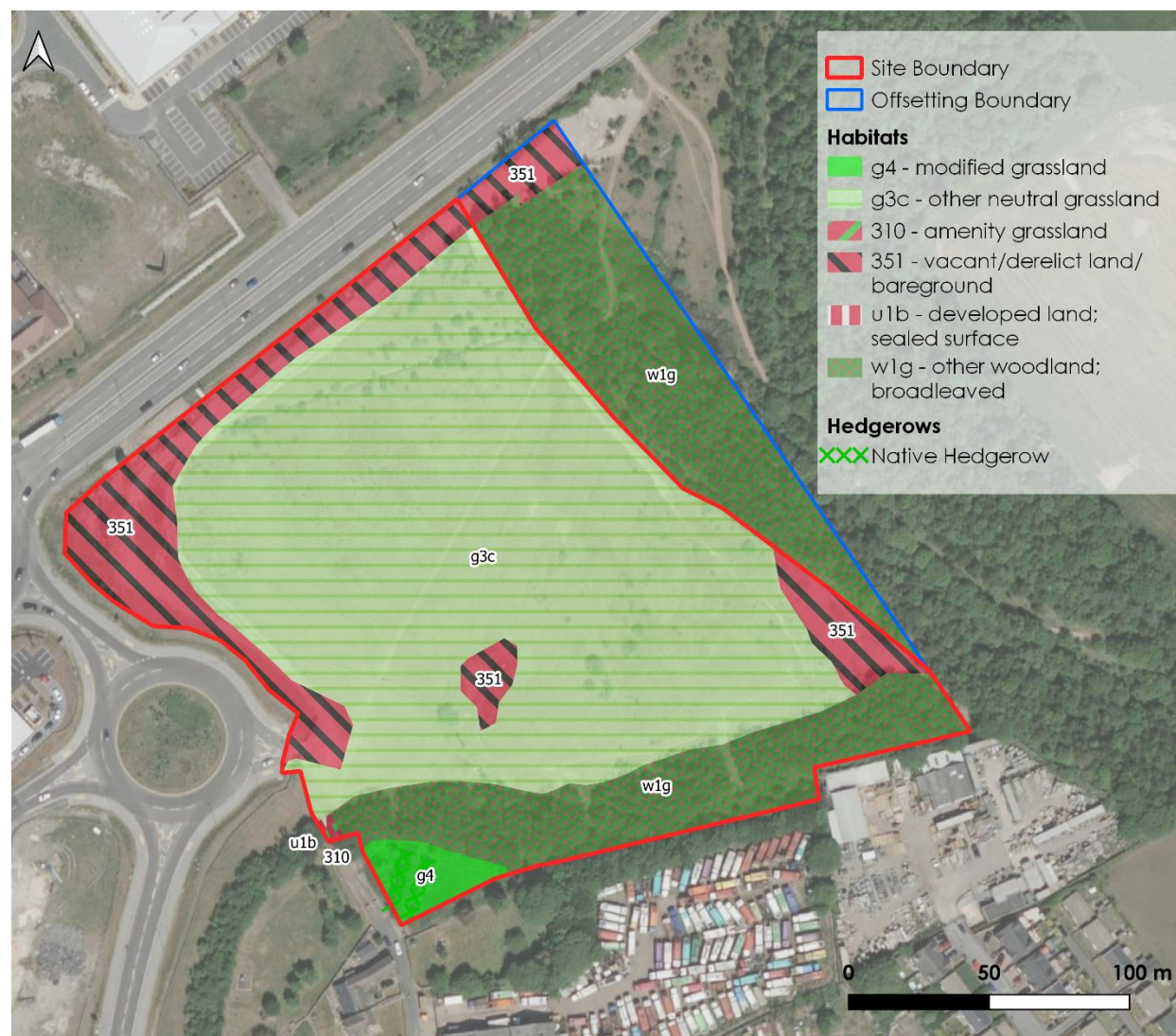
Condition Assessment

9. 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

10. The Site has been assessed as having a baseline score of 14.64 Habitat Units and 0.08 Hedgerow Units (see tables overleaf).
11. The blue-line areas has been assessed as having a baseline score of 2.82 Habitat Units.

Figure 2 Habitat map – pre-development.



DEFRA Metric (Baseline)¹

12. 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.

On-Site Baseline

Land at Rockingham Roundabout										
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	Area retained
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units	
1	Grassland	Grassland - Modified grassland	0.0855	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.17	0
2	Grassland	Grassland - Other neutral grassland	2.7834	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	11.13	0
3	Urban	Urban - Amenity grassland	0.0031	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.01	0
4	Urban	Urban - Developed land; sealed surface	0.0017	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00	0
5	Urban	Urban - Vacant/derelict land/ bareground	0.5697	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	1.14	0
6	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.5477	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	2.19	0.1785
7										
8										
9										
10										
11										
Total site area ha			3.99					Total Site baseline	14.64	0.18

¹ Our report provides an estimate of the Site's 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 relevant version of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification, and relevant guidance. 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.

On-Site Hedgerow Baseline

Land at Rockingham Roundabout									
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		Ecological baseline
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Total hedgerow units
1	1	Native Hedgerow	0.019	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.038
2	2	Native Hedgerow	0.019	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness band or better	0.038
3									
4									
5									
6									
7									
Total Site length/KM			0.04					Total Site baseline	0.08

Off-Site Baseline

Land at Rockingham Roundabout											
D-1 Off Site Habitat Baseline											
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Baseline ref	Habitats and areas			Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline		
	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units	Area retained	Area enhanced
1	Urban	Urban - Vacant/derelict land/ bareground	0.0668	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.13		0.0668
2	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.6722	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	2.69		0.6722
3											
4											
5											
6											
7											
Total site area ha			0.74					Total Site baseline	2.82	0.00	0.74

Post-development Score

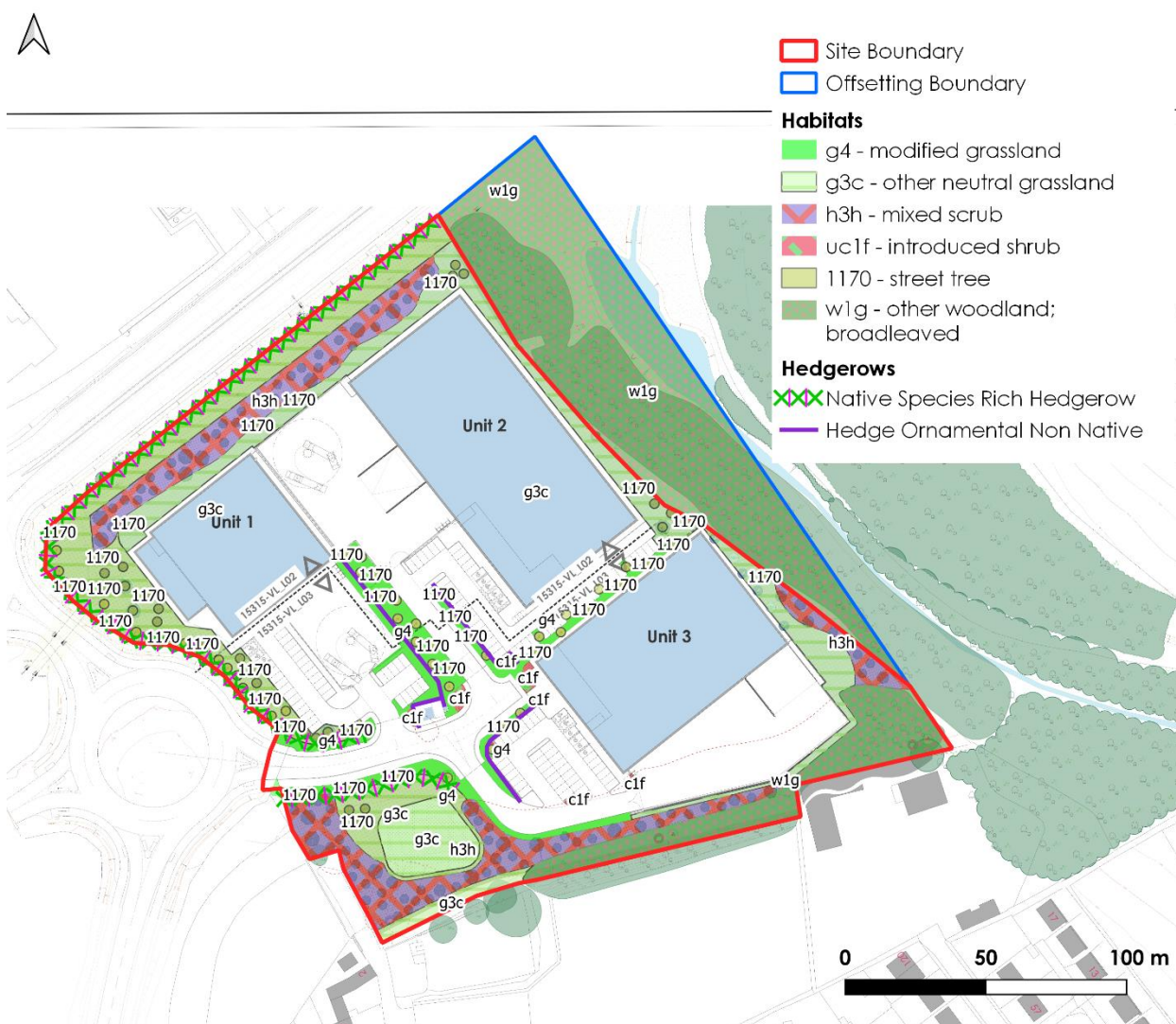
Proposed Habitats

13. Habitats present on-Site post-development have been based on the Landscape Masterplan produced by Vector Design Concepts, drawing 15315-VL_L01 Rev. E (July 2022) and the Ecological Impact Assessment produced by Brooks Ecological (ER-3806-05).
14. Planting types specified in the Landscape Masterplan have been assigned a UK Habitat Classification description that best fits the target habitat.
15. Area measurements for each of the planting types has been measured using QGIS mapping software.

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.

Figure 3 Habitat map – post-development.



DEFRA Metric (Post-development)

17. This metric sets out the predicted baseline for the Site following the completion of development. This is based on the Landscape Masterplan provided by the client.

On-Site Post-Development

Land at Rockingham Roundabout

A-2 Site Habitat Creation

Condense / Show Columns

Condense / Show Rows

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Post development/ post intervention habitats								Habitat units delivered
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	
Urban - Developed land; sealed surface	2.498	V.Low	N/A - Other	Low	Area/compensation not in local strategy/ no local strategy	0	Low	0.00
Grassland - Modified grassland	0.1817	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	10	Low	0.51
Grassland - Other neutral grassland	0.749	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	10	Low	4.20
Heathland and shrub - Mixed scrub	0.3672	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3	Low	2.64
Urban - Introduced shrub	0.0167	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	Low	0.03
Urban - Street Tree	0.354	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	27	Low	0.54
Totals	3.81							7.92

On-Site Hedgerows Post-Development

Land at Rockingham Roundabout

B-2 Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

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Instructions

Baseline ref	New hedge number	Proposed habitats		Habitat distinctiveness	Habitat condition	Multipliers			Hedge unit delivered
						Ecological connectivity	Spatial quality	Temporal multiplier	
		Habitat type	Length km	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Time to target condition/years	
1		Hedge Ornamental Non Native	0.175	V.Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	1	0.00
2		Native Species Rich Hedgerow	0.394	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	5	1.77
3									
4									
5									
6									
7									
		Creation Length/KM	0.57						1.77

Off-Site Post-Development

Land at Rockingham Roundabout

D-3 Off Site Habitat Enhancement

Condense / Show Columns

Condense / Show Rows

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Instructions

Post development/ post intervention habitats													
Baseline habitats		Change in distinctiveness and condition			Area ha	Distinctiveness	Condition	Ecological connectivity	Strategic significance	Temporal multiplier	Difficulty of enhancement	Spatial risk multiplier	Habitat units delivered
Baseline ref	Baseline habitat	Proposed habitat (Pre-Populated but can be overridden)	Distinctiveness change	Condition change					Strategic significance	Time to target condition/years	Spatial risk category		
1	Urban - Vacant/derelict land/ bareground	Woodland and forest - Other woodland; broadleaved	Low - Medium	Lower Distinctiveness Habitat - Poor	0.067	Medium	Poor	Low	Area/compensation not in local strategy/ no local strategy	20	Medium	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	0.18
2	Woodland and forest - Other woodland; broadleaved	Woodland and forest - Other woodland; broadleaved	Medium - Medium	Poor - Moderate	0.672	Medium	Moderate	Low	Area/compensation not in local strategy/ no local strategy	15	Medium	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	3.74
Total site area					0.74	Total off-site area							3.92

Net Gain Assessment

18. This exercise identifies an overall Net Loss of 4.91 Habitat Units (-33.53%), and a Net Gain of 1.69 Hedgerow Units (+2225.33%).
19. Calculations for the change in Habitat Units have been based on most of the Site being cleared of existing vegetation and the land reprofiled, apart from a small section of woodland in the southeast corner, which is retained post-development.
20. Additional post-development units are supplied by the planting of wildflower lawns, meadow-type grassland, and native mixed scrub, and urban trees throughout the site.
21. The off-Site section contributes 1.1 additional Habitat Units, through planting of broadleaved woodland at the northern end, and enhancement of the existing broadleaved woodland from poor to moderate condition.
22. A net gain in Hedgerow Units is achieved by planting of native species-rich hedges along the boundaries; ornamental hedges surrounding parking areas accrue no Hedgerow Units.
23. The client has been provided with a copy of the Biodiversity Metric 2.0 Calculation Tool Excel spreadsheet.

Land at Rockingham Roundabout		
Headline Results		
Return to results menu		
On-site baseline	Habitat units	14.64
	Hedgerow units	0.08
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	8.63
	Hedgerow units	1.77
	River units	0.00
Off-site baseline	Habitat units	2.82
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	3.92
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	-4.91
	Hedgerow units	1.69
	River units	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	-33.53%
	Hedgerow units	2225.33%
	River units	0.00%