SF3339 | Roughbirchworth Lane, Oxspring

BIODIVERSITY NET GAIN ASSESSMENT

June | For Planning

SMEEDEN FOREMAN

Landscape Architecture • Ecology • Arboriculture

Somerset House, Low Moor Lane, Scotton, Knaresborough, North Yorkshire, HG5 9JB
www.smeedenforeman.co.uk tel: 01423 863 369

Quality Assurance

Job Title: Roughbirchworth Lane, Oxspring			**Job Number:** SF3339	
Document title: Biodiversity Net Gain Assessment				
Issue	**Date**	**Prepared by**	**Checked by**	**Approved by**
Original	June 2022	CW	JS	CW

Name:	**Initials:**	**Status:**	**Licence number(s):**
Catherine White *Associate Ecologist*	CW	BSc (Hons) MA (LD) CMLI MCIEEM	Bats: 2016-24337 (Class 2) GCN: 2015-19280 (Class 1)
Jonathan Siberry *Senior Ecologist*	JS	BSc (Hons) MCIEEM	Bats: 2020-44500 (Class 1) GCN: 2018-38304 (Class 1) Barn owl: CL29/00512

CONTENTS

1.0 INTRODUCTION 2
2.0 THE SITE 4
3.1 BASELINE ASSESSMENT 5
4.0 DEVELOPMENT PROPOSALS 10
5.0 SUMMARY 17
6.0 REFERENCES 18

Appendices 19

LIST OF FIGURES AND TABLES

Figure 01: Aerial view of site location 4
Figure 02: Phase 1 Habitat Plan / UKHAB Habitat Plan 6
Figure 03: Post development habitat plan 11
Table 01: Site Habitats Baseline 7
Table 02: Habitat Baseline On-site – Metric Calculation Tool 8
Table 03: Hedgerow Baseline On-site – Metric Calculation Tool 9
Table 04: Site Habitat Post Developement 10
Table 05: Habitat Creation – Post Development 12
Table 06: Habitat Retention – Linear habitats 13
Table 07: Habitat Enhancement – Area Habitats 15
Table 08: Headline Results – Metric Calculation Tool 15

LIST OF APPENDICES

Appendix 01: Habitat Survey and Condition Assessments
Appendix 02: Landscape Proposals (*Proposed Development, Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services)*

1.0 INTRODUCTION

1.1 Smeeden Foreman Limited has been commissioned by PB Planning on behalf of Jason Frudd to produce a Biodiversity Net Gain (BNG) assessment for a site off Roughbirchworth Lane, Oxspring (approx. central grid reference SE27162-02085) hereafter referred to as the 'site'.

1.2 This report details the BNG assessment which has been completed for the above scheme in order to demonstrate the net biodiversity gains / losses, with reference to the DEFRA Biodiversity v3.1 Metric. Site proposals are for 7 residential units.

1.3 The principle of 'net gain' is set out in the National Planning Policy Framework (NPPF July 2021):

Paragraph 174: '*Planning policies and decisions should contribute to and enhance the natural and local environment by:…*

d) minimising impacts on and providing ***net gains for biodiversity****, including by establishing coherent ecological networks that are more resilient to current and future pressures;'*

Paragraph 179: ''*To protect and enhance biodiversity and geodiversity, plans should:*

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable ***net gains for biodiversity.'***

Paragraph 180: *When determining planning applications, local planning authorities should apply the following principles:*

d) development whose primary objective is to conserve or enhance biodiversity be supported; while opportunities to incorporate biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable ***net gains for biodiversity*** *or enhance public access to nature where this is appropriate.*

1.4 The requirement for developers to secure a minimum biodiversity net gain of 10% is currently progressing through the legislative process within the Environment Bill.

1.5 The Barnsley Metropolitan Borough Council (BMBC) adopted Local Plan (adopted January 2019) does not refer to the provision of biodiversity net gain.

1.6 The Supplementary Planning Document (*Biodiversity and Geodiversity*, adopted May 2019) produced by BMBC notes in section 4.2 that:-

At present there is no nationally-agreed system for measuring biodiversity or geodiversity losses proposed on a site through a development and creating a comparable biodiversity element off-site (biodiversity compensation). It is likely that one will be made available in the near future. The LPA may choose to adopt such a 'metric' and apply it in cases where compensation works are the only possible solution – in which case a new policy will be produced and publicised. Until such time the LPA will continue to use its best judgement, based on precedents, as to what the appropriate compensation amount, as a monetary value, should be.

1.7 Advise obtained from the Local Authority indicates that schemes are currently required to achieve 'no net loss of biodiversity', that provision of habitat creation on site is favoured over compensation off-site and that there is an option to pay commuted sums in respect to biodiversity of £25,000.00 per habitat unit direct to BMBC.

1.8 It is understood that a Biodiversity Net Gain design should improve the extent or condition of biodiversity affected by a project. It should not result in lost or damaged features being replaced by features of lower biodiversity value. The mitigation hierarchy principle of avoid – minimise – remediate – compensate should be followed within the design process with irreplaceable features retained.

2.0 THE SITE

2.1 The site is located within the village of Oxspring, which lies approximately 7km south-west of Barnsley, South Yorkshire. Oxspring is a small residential village surrounded by open countryside. Refer to Figure 01 below.

2.2 The proposed development site is approximately 0.6 hectares and is composed principally of species-poor semi-improved grassland and a line of young and semi-mature trees

2.3 It is bound to the north by the River Don; to the west by a dry stone wall beyond which lies woodland comprising of mature/semi-mature broad leaf trees and a playground; to the south by a stone wall beyond which lies Roughbirchworth Lane; to the east by a fence beyond which lies an embankment of grassland/tall herb vegetation adjacent to Bower Hill Road.



Figure 01: Aerial view of site location

3.0 BASELINE ASSESSMENT

3.1 The DEFRA Biodiversity Metric v3.1 has been used to carry out the calculation with reference made to *The Biodiversity Metric 3.1 User Guide* (Panks *et al.* April, 2022a) and *Technical Supplement* (April, 2022b). The Metric has been developed by Natural England, the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency with input from various environmental NGOs, developers, councils and other interested parties.

3.2 The site was subject to a Preliminary Ecological Assessment in February 2021 by Absolute Ecology (refer to *Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring*, February 2021, produced by Absolute Ecology). Habitat types and key species were presented in accordance with the Phase 1 Habitat format proposed by the Joint Nature Conservation Committee (JNCC, 2010), see *Figure 02*.

3.3 As the survey was undertaken during a sub-optimal season for recording flowering plants, a site survey was undertaken by Smeeden Foreman in May 2022 (see *Appendix 01*). Habitat types and key species were recorded in accordance with the UK Habitats Classification System (Version 1.1 UK Habs, September 2020) as required for the DEFRA Metric v3.1 and condition assessments were undertaken in accordance with the Natural England Technical Supplement (Panks et al 2022a).

3.4 Values for distinctiveness are pre-set within the Metric spreadsheet according to habitat type. The condition of each habitat type was assessed in accordance with the appropriate Condition Sheet (Technical Supplement, Panks et al 2022a). The strategic significance has been allocated as high 'within area formally identified in local strategy' because, although there is no current strategic habitat network plan, the site lies within a Network Enhancement Zone identified by Natural England (ref MAGIC: magic.defra.gov.uk/magicmap.aspx) and within the River Don Corridor identified as part of the district's Green Infrastructure network (Barnsley Local Plan, Supplementary Planning Document, Biodiversity and Geodiversity, Adopted May 2019 and Local Plan, Adopted January 2019).

3.5 The River Don has not been included within the calculation as it lies outside the site although adjacent to it. The riparian zone (10m from the river) has been included within the calculation as part of the area/linear habitat units under the relevant habitat types. With the development set back 8-30m from the river with no outfall, the encroachment of the development is considered to be minor to negligible (Biodiversity User Guidelines Table 9-3; any development 8-10m from bank-top, up to 100% of area equates to minor encroachment).

3.6 Habitats on site comprise the following when assessed using the Phase 1 Habitat / UKHabs classification system. This system includes the use of secondary (2°) codes to provide further information on the habitat parcels identified, where relevant. The extent and locations of the habitats identified are provided in Figure 02.

Habitat Areas: **Parcel Reference A1:** B6 Poor semi-improved grassland, Modified grassland **g4**
Parcel Reference A2: Other neutral grassland - tall herb (**g3c 16**) (2° Tall herbs)
Linear features: **Parcel Reference LOT1:** A3 Scattered trees, Line of trees (ecologically valuable) (**w1g6**)

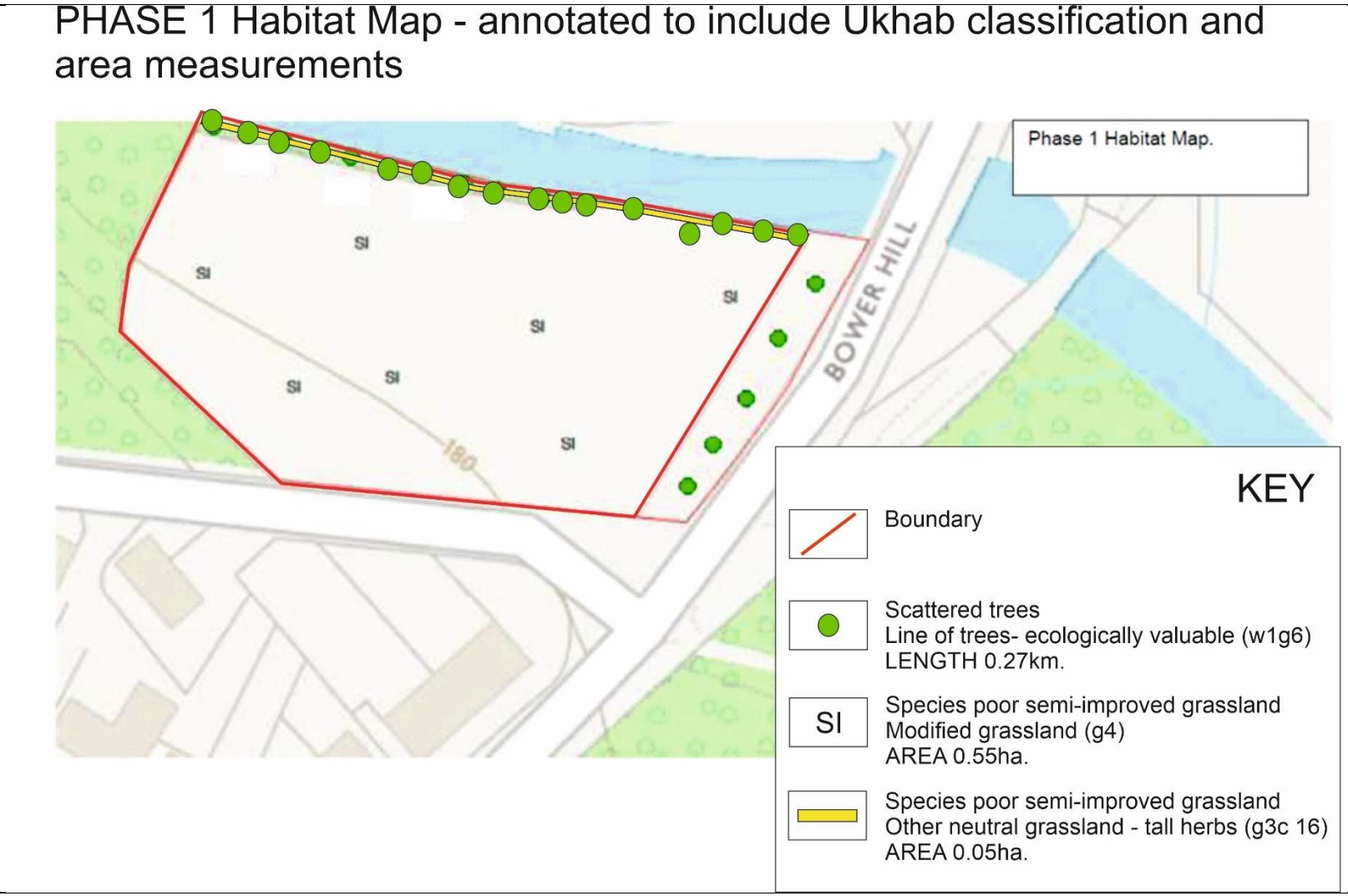


Figure 02: Phase 1 habitat plan (refer to *Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring,* February 2021, produced by Absolute Ecology with additional information provided by an updating survey undertaken in June 2022 by Smeeden Foreman, see Appendix 01)

3.7 Details of the on-site habitats are summarised in Table 01 along with the measurements for each habitat type. Baseline habitats have been mapped and measured using scaled CAD topographical and layout drawings (*Figure 02 and Figure 03*). Please refer to *Appendix 01* for the condition assessment for each habitat type.

Table 01: Site Habitats Baseline Summary

Ref No.	Phase 1 Habitat	Area (ha) / Length (km)	UKHAB Code	UK Habitat Type	Distinctiveness (pre-set)	Condition	Strategic significance	Justification/notes
Area-based Habitats								
A1	B6 Poor semi-improved grassland	0.55 ha	g4	Modified grassland	Low	Moderate	High	Dominated by grass species with few forbs (< 9 species per m^2 but >6 species per m^2). Even sward high, lack of bare ground and presence of non-native invasive species.
A2	-	0.05 ha	g3c 16	Other neutral grassland - tall herb	Medium	Poor	High	Dominated by tall herbs with < 9 species per m^2. Even sward hight. Presence of non-native invasive species with bramble and suboptimal species >5%.
Linear-based Habitats								
LOT1	Scattered trees	0.27 km	w1g6	Line of trees – ecologically valuable	Medium	Poor	High	Low proportion of native species (<70%), with gaps and disturbance within 6m.

3.8 Inputting the above site habitat baseline information into the Metric Calculation Tool (*SF3339 Biodiversity Metric 3.1 Calculation Tool, June 2022*) provides the excerpts shown below in Tables 02 and 03.

3.9 On-site baseline units calculated within the Metric equate to a total of **2.76 habitat units** for area-based habitats and **1.24 hedgerow units** for linear-based habitats.

Table 02: Habitat Baseline On-site – Metric Calculation Tool

A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units
1	Grassland	Modified grassland	0.55	Low	2	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	Same distinctiveness or better habitat required ≥	2.53
2	Grassland	Other neutral grassland	0.05	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	Same broad habitat or a higher distinctiveness habitat required (≥)	0.23
3												
4												
5												
6												
7												
		Total habitat area	0.60									2.76

Retention category biodiversity value					
Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost
	0.14	0.00	0.64	0.41	1.89
0.05		0.23	0.00	0.00	0.00
0.05	0.14	0.23	0.64	0.41	1.89

Table 03: Hedgerow Baseline On-site – Metric Calculation Tool

B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units
1	LOT 1	Line of Trees (Ecologically Valuable)	0.27	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	Like for like or better	1.24
2												
3												
4												
5												
			0.27									1.24

Retention category biodiversity value

Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost
0.27		1.24	0.00	0.00	0.00
0.27	0.00	1.24	0.00	0.00	0.00

4.0 DEVELOPMENT PROPOSALS

4.1 Landscape proposals for the site have been prepared by Phoenix Landscape Services (*Soft Landscape proposals, G3H0-OXSP-001 rev E,* included as *Appendix 02*). These proposals form the basis for post-development calculations, with the additional proposal to enhance all grassland areas outside of designated garden boundaries. The comparable area measurements for the habitats were taken using CAD from the External Works Plan (RAB Engineering Design Ltd, drawing no. 1135-11 Rev J) included as *Figure 03.* These measurements have been used to inform the Metric.

4.2 The proposals include habitat retention, creation and enhancement as given in Table 04.

Table 04: Summary: Site Habitats Post Development

Ref No.	UK Habitat Type	UKHAB Code	Area (ha) / Length (km)	Retained, created or enhanced	Distinctiveness (pre-set)	Condition	Strategic significance	Justification/notes
Area-based Habitats								
A1 (part)	Other neutral grassland	g3c	0.14	Enhanced (previously modified grassland g4)	Medium	Moderate	High	Previously dominated by grass species with few forbs (< 9 species per m^2 but >6 species per m^2). Scarify and over sow with wildflower seed mix to increase species to >9/m^2. Scarify periodically to provide 1-5% bare ground and control non-native invasive species.
A2	Other neutral grassland – tall herb	g3c 16	0.05 ha	Retained	Medium	Poor	High	Retained
A3	Developed land sealed surface	u1b	0.2 ha	Created	Very Low	n/a	High	Condition assessment not required
A4	Vegetated garden	u1 231	0.2ha	Created	Low	n/a	High	Condition assessment not required
A5	Mixed scrub	h3h	0.01	Created	Medium	Moderate	High	Potential to pass 3 criteria; scrub species >3 species, absence of non-native species and sub-optimal species <5% with a well-developed edge.
A6	Urban trees	u 11	0.37 (19no.)	Created	Medium	Poor	High	Potential to pass 2 criteria; >70% native species, >20% canopy oversails vegetation.
Linear-based Habitats								
LOT1	Scattered trees	0.27 km	w1g6	Line of trees – ecologically valuable	Medium	Poor	High	Retained habitat.

4.3 Inputting the above site habitat retention, creation and enhancement information into the Metric Calculation Tool (*SF3339 Biodiversity Metric 3.1 Calculation Tool*, June 2022) provides the excerpts shown below in Tables 05, 06 ad 07. *Table 05* summarises proposed area habitat creation, *Table 06* shows habitat retention and *Table 07* shows the habitat enhancement.



Figure 03: Post development habitat area based on the Landscape proposals (Phoenix Landscape Services Soft Landscape proposals, G3H0-OXSP-001 rev E, included as Appendix 02) with area measurements taken using CAD from the External Works Plan (RAB Engineering Design Ltd, drawing no. 1135-11 Rev J).

Table 05: Site habitat creation - Post Development Area habitats

A-2 Site Habitat Creation

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Post development/ post intervention habitats

Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness		Condition		Strategic significance			Standard time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years
			Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier			
Urban	Developed land; sealed surface	0.2	V.Low	0	N/A - Other	0	Formally identified in local strategy	High strategic significance	1.15	0	0	0
Urban	Vegetated garden	0.2	Low	2	Condition Assessment N/A	1	Formally identified in local strategy	High strategic significance	1.15	1	0	0
Heathland and shrub	Mixed scrub	0.01	Medium	4	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	5	0	0
Urban	Urban Tree	0.37	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	10	0	0
	Total habitat area	0.78										
	Site Area (Excluding area of Urban trees and Green walls)	0.41										

elopment/ post intervention habitats

Temporal multiplier					Difficulty multipliers				Habitat units delivered
Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	
0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00
0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.44
0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.08
0	0	Standard time to target condition applied	10	0.700	Low	Standard difficulty applied	Low	1	1.19
								Total Unit	1.71

Table 06: Site Habitat Retention: Area Habitats and Linear Habitat

AREA HABITATS

A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units
1	Grassland	Modified grassland	0.55	Low	2	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	Same distinctiveness or better habitat required ≥	2.53
2	Grassland	Other neutral grassland	0.05	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	Same broad habitat or a higher distinctiveness habitat required (≥)	0.23
3												
4												
5												
6												
7												
		Total habitat area	0.60									2.76

Retention category biodiversity value

Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost
	0.14	0.00	0.64	0.41	1.89
0.05		0.23	0.00	0.00	0.00
0.05	0.14	0.23	0.64	0.41	1.89

LINEAR HABITATS

B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units
1	LOT 1	Line of Trees (Ecologically Valuable)	0.27	Medium	4	Poor	1	Formally identified in local strategy	High strategic significance	1.15	Like for like or better	1.24
2												
3												
4												
5												
			0.27									1.24

Retention category biodiversity value					
Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost
0.27		1.24	0.00	0.00	0.00
0.27	0.00	1.24	0.00	0.00	0.00

Table 07: Site Habitat Enhancement: Area Habitat

A-3 Site Habitat Enhancement

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

Baseline habitats										
Baseline ref	Baseline habitat	Total habitat area (hectares)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action to address habitat losses
1	Grassland - Modified grassland	0.55	Low	2	Moderate	2	High strategic significance	1.15	2.53	Same distinctiveness or better habitat required ≥

Proposed Habitat (Pre-populated but can be overridden)		Change in distinctiveness and condition		Area (hectares)	Distinctiveness	Score	Condition
Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change				
Grassland	Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Moderate	0.14	Medium	4	Moderate
				0.14			

nce		Temporal risk multiplier						Difficulty risk multipliers				Habitat units delivered
Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied	
High strategic significance	1.15	10	0	0	Standard time to target condition applied	10	0.700	Low	Standard difficulty applied	Low	1	1.09
												1.09

4.4 On-site post development habitat units calculated within the Metric equate to a total of **3.04 habitat units for area-based habitats** (1.71 created, 0.24 from retention and 1.09 from enhancement) and **1.24 hedgerow units** for linear-based habitats, all from retention.

4.5 Table 08 shows the headline results with the increase in habitat units providing a net gain of approximately 10% and retention of linear features delivering no net loss for hedgerow units.

Table 08: Headline Results – Metric Calculation Tool

On-site baseline	*Habitat units*	2.76
	Hedgerow units	1.24
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	3.04
	Hedgerow units	1.24
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	10.06%
	Hedgerow units	0.00%
	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)	*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 & enhancement)	*Habitat units*	0.28
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.06%
	Hedgerow units	0.00%
	River units	0.00%
Trading rules Satisfied?	Yes ✓	

5.0 SUMMARY

5.1 The Barnsley Metropolitan Borough Council (BMBC) adopted Local Plan (adopted January 2019) does not refer to the provision of biodiversity net gain.

5.2 The Supplementary Planning Document (Biodiversity and Geodiversity, adopted May 2019) produced by BMBC notes in section 4.2 that:-

At present there is no nationally-agreed system for measuring biodiversity or geodiversity losses proposed on a site through a development and creating a comparable biodiversity element off-site (biodiversity compensation). It is likely that one will be made available in the near future. The LPA may choose to adopt such a 'metric' and apply it in cases where compensation works are the only possible solution – in which case a new policy will be produced and publicised. Until such time the LPA will continue to use its best judgement, based on precedents, as to what the appropriate compensation amount, as a monetary value, should be.

5.3 Advise obtained from the Local Authority indicates that schemes are currently required to achieve 'no net loss of biodiversity', that provision of habitat creation on site is favoured over compensation off-site and that there is an option to pay commuted sums in respect to biodiversity of £25,000.00 per habitat unit direct to BMBC.

5.4 The site proposals include the following features which have been used to inform the metric:-

- Habitat creation: Developed land (sealed surface), Vegetated garden, Mixed scrub and individual trees
- Enhanced: Other neutral grassland (formerly modified grassland)
- Retained: Line of trees (ecologically valuable)

5.5 Units obtained for the site post-development, based on retained habitats, habitat creation and enhancement included within the landscape proposals (*Appendix 02* and *Figure 03*) indicate that a net gain in respect to habitat areas is likely to be achieved with the current scheme **with a potential biodiversity net gain of 0.28 habitat units (10% net change)**. With respect to linear features the retention of these habitats allows for the **potential to achieve 'no net loss' with no change in hedgerow units.**

5.5.1 In order to ensure that the predicted gains are achieved the finalised landscape proposals should be implemented in accordance with an appropriate landscape specification which will ensure that the proposed habitat creation and enhancement measure are detailed appropriately; and a Construction Environmental Management Plan: Biodiversity (CEMP: Biodiversity) which will detail measures to avoid accidental impacts on retained habitats. Commitment to long term future management of the site will be required to achieve the target habitat conditions and should be undertaken in accordance with a site-specific Biodiversity and Ecological Management Plan (BEMP) which should be implemented for a minimum period of thirty years. The provision of these details can be provided by condition.

6.0 REFERENCES

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020a) *The UK Habitat Classification User Manual Version 1.1* at http://ukhab.org

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) *UK Habitat Classification– Habitat Definitions V1.1* at http://ukhab.org

Barnsley Metropolitan Borough Council (BMBC) adopted Local Plan (adopted January 2019)

Barnsley Metropolitan Borough Council (BMBC) Supplementary Planning Document, Biodiversity and Geodiversity (adopted May 2019)

JNCC, (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit (revised 2016),* JNCC, Peterborough.

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell T., Cashon, C., Goddard, F., Scott, S.H., Heaver, M, H. Scott, S.J., Treweek, J., Butcher, B., and Stone, D., (2022a). *Biodiversity metric 3.1: Auditing and accounting for biodiversity – Technical Supplement.* Natural England. Published April 2022.

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell T., Cashon, C., Goddard, F., Scott, S.H., Heaver, M, H. Scott, S.J., Treweek, J., Butcher, B., and Stone, D., (2022b). *Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide.* Natural England. Published April 2022.

Staton, H. (2021) *Preliminary Ecological Appraisal, Land off Roughbirchworth Lane, Oxspring,* Absolute Ecology, February 2021.

APPENDICES

Appendix 01: Habitat Survey and Condition Assessments

Appendix 02: Landscape Proposals (*Proposed Development, Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services)*

APPENDIX 01: HABITAT SURVEY AND CONDITION ASSESSMENTS

6.1 A walk over survey was undertaken by Catherine White on 25th May 2022. Habitat types and key species were noted and are presented in accordance with the UK Habitats Classification System (Version 1.1 UKHabs, September 2020) including associated condition assessments undertaken in accordance with the BNG Technical Supplement (Natural England, Panks et al 2022a).

6.2 Habitats on site were found to comprise the following:

Parcel reference	Area (ha) Length (km)	Phase 1 habitat survey (Survey February 2021)	UK Habitat Classification (Survey May 2022)	BNG Condition sheet	Condition Assessment
A 1	0.55 ha	B6 Poor semi-improved grass	Modified grassland (g4)	Modified grassland Condition Sheet 5	Moderate
A 2	0.05 ha	-	Other neutral grassland - tall herb (g3c 16)	Other neutral grassland Condition Sheet 6	Poor
LOT 1	0.27 km	A3 Scattered trees	Line of trees (ecologically valuable) (w1g6)	Line of trees (Condition Sheet 15)	Poor

HABITAT CONDITION ASSESSMENTS

Parcel ref A1: Modified grassland (low distinctiveness) g4 (Condition Sheet 5)

	Condition Assessment Criteria	SITE	PASSED/FAILED CRITERIA
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 essential for achieving moderate condition.**	Average of 7.4 species per m2 (see quadrat data below)	Pass
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.	Sward height is uniform, sward not subject to regular cutting (all>7cm)	Fail
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.	Minimal scrub present to site boundaries (<20%)	Pass
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.	No physical damage evident.	Pass
5	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	No areas of bare ground evident	Fail
6	Cover of bracken less than 20%.	No bracken evident	Pass
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Himalayan balsam identified to northern and north west boundary.	Fail
	SCORE TOTAL PASSED CRITERIA		4
	CONDITION		Moderate

Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good (3)	
Passes 4 or 5 of 7 criteria; OR Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)	
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)	

Quadrat data												
Species	1	2	3	4	5	6	7	8	9	10	Ave /m²	Overall
Yorkshire fog grass	O		O	O	A	R	A	F	O	F		A
Rough meadow grass	O	O	F	D	O	O	F	O	A	F		
False oat grass		F							O			F
Perennial rye grass					O		R					R
Meadow foxtail						O		R				
Red fescue												
Cocksfoot												O
Barren brome												R
White clover	F		O		O	R		A		O		F
Creeping buttercup	R	R	R	R		A	R		R	R		O
Ribwort plantain	R											R
Dandelion	R	R	R	R	R	R	R	R	R	R		O
Broad leaved dock		R	R	R								R
Creeping thistle		R			R	R		R		R		R
Forget me not sp.			R		R	R	R					R
Common nettle			R		R		R	R				R
Common hogweed			R	R			R					R
Broad leaved willow herb					R							R
Common mouse ear							R			R		R
Germander speedwell								R				R
Bush vetch										R		R
Cleavers												R
Common sorrel												R
Geranium sp.												R
Lesser celendine												R
Nipplewort												R
Himalayan balsam												R
Meadow buttercup												R
Angelica												R
	6	6	9	6	9	8	9	8	5	8	7.4	

Parcel Ref A2: Other Neutral Grassland - tall herb g3c 16 (Condition Sheet 6)

	Condition Assessment Criteria	SITE	PASSED/FAILED CRITERIA
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. **NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.**	Indicator species for neutral grassland – tall herbs present.	Pass
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.	Vegetation height is uniform. (>7cm)	Fail
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Areas of bareground evident (>5%)	Fail
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	No bracken, cover of bramble >5%	Fail
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition 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.	Invasive species, Himalayan balsam present and species indicative of sub-optimal condition >5%.	Fail
	Additional Group (Non-acid types only)		
6	There are greater than 9 species per metre squared. **NB - This criterion is essential for achieving good condition (non-acid grassland types only).**	Average of 7.1 species per m2 (see quadrat data below)	Fail
	SCORE — TOTAL PASSED CRITERIA		1
	CONDITION		Poor

Acid grassland types		
Passes 5 of 5 criteria	Good (3)	
Passes 3 or 4 of 5 criteria	Moderate (2)	
Passes 0, 1 or 2 of 5 criteria	Poor (1)	
Non-acid grassland types		
Passes 5 of 6 criteria, including essential criterion 1 and 6.	Good (3)	
Passes 3 or 4 of 6 criteria, including essential criterion 1.	Moderate (2)	
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor (1)	

Footnote 1 – Species indicative of sub-optimal condition for this habitat type include: Creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, curled dock Rumex crispus, broad-leaved dock Rumex obtusifolius, common nettle Urtica dioica, creeping buttercup Ranunculus repens, greater plantain Plantago major, white clover Trifolium repens, cow parsley Anthriscus sylvestris.

Quadrat data

Species	1	2	3	4	5	6	7	8	9	10	Ave /m²	Overall
Yorkshire fog grass	/	/	/		/	/		/	/	/		O
Rough meadow grass	/	/		/			/	/				O
False oat grass		/		/					/			R
Meadow foxtail									/			R
Red fescue			/									R
Bramble	/		/	/				/	/	/		O
Common nettle			/	/	/				/	/		O
Broad leaved dock								/	/			O
Rosebay willowherb	/			/			/			/		O
Cow parsley	/											R
Sweet cecily		/			/	/				/		O
Forget me not sp.	/	/										R
Cleavers	/				/	/		/				O
Common sorrel	/											R
Red campion				/								R
Meadow sweet			/					/	/			O
Hedge woundwort			/		/				/	/		O
Common hogweed							/					O
Foxglove				/								R
Ground elder		/		/		/	/					F
Bush vetch							/					R
Greater stitchwort							/					R
Himalayan balsam			/		/			/	/			O
Wood avens					/							R
Great wood rush						/			/	/		O
Wood sage												R
Angelica												R
Broad buckler fern												R
Germander speedwell												R

Blue bell												R
Garlic mustard												R
Herb robert												R
	8	6	7	8	7	5	6	7	10	7	7.1	

Parcel Ref LOT 1: Line of Trees w1g6 (Condition Sheet 15)

	Condition Assessment Criteria	SITE	PASSED/FAILED CRITERIA
1	More than 70% of trees are native species.	65% of trees are native. (sycamore = 8/23)**	Fail
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Three individual gaps >5m All gaps >10%*	Fail
3	Includes one or more mature or veteran trees.	Includes 4 mature tree**	Pass
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.	No: grassland is cut and subject to herbicide within 6m.	Fail
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	95.6% of trees are in Fair/good condition (1/23 is poor)**	Pass
	SCORE **TOTAL PASSED CRITERIA**		**2**
	CONDITION		**Poor**

Passes 5 of 5 criteria	Good (3)	
Passes 3 or 4 of 5 criteria	Moderate (2)	
Passes 0, 1 or 2 of 5 criteria	Poor (1)	

o

*Four gaps measured from *Tree Constraints Plan, Land at Roughbirchworth Lane*, ref AWA3548, produced by AWA Tree Consultants. Measuring 15m, 10m 5m and 20m. Total 50m out of 270m = 18%.
**Refer to tree report: *Arboricultural Report and Impact Assessment, Land at Roughbirchworth Lane*, ref AWA3548, produced by AWA Tree Consultants, dated December 2020.

APPENDIX 02: Landscape Proposals (*Proposed Development, Soft Landscape proposals, G3H0-OXSP-001 rev E, by Phoenix Landscape Services)*

