

Baseline Ecological Walkover Survey with Metric Assessment

Project Information & Site Context

Site Name & Location	Stairfoot Quarry Phase 2 – Barnsley	Grid Reference	SE 3815 0517
Client Name	Green Earth Developments Group	Report Number	RT-MME-181397-Rev B
Site Area (ha)	5.05	Topography	Relatively flat quarry basin with steep embankments
Scope of the survey	<p>The Baseline Ecological Walkover Survey with Metric Assessment report is an assessment of the current ecological and biodiversity conditions at the site, that will form part of a suite of due diligence information to determine the onsite biodiversity gains and losses associated with the site's development.</p> <p>The proposed development will comprise of landfill within a previously quarried area, with capping and landscaping.</p> <p>This assessment is based on the documentation provided by the client and detailed below:</p> <ul style="list-style-type: none"> Drawing Axis: 3263-01-L-001 Landscape Proposals Rev A¹ 		

Methods

Field Survey	<p>An ecological walkover survey of the site was undertaken on 12th February 2025 by Chris Walsh, Natural Capital Solutions Leader and Kristie Charlesworth, Senior Biodiversity Consultant, during which the location and extent of all habitat types present within the site were noted. During the survey, a Habitat Condition Assessment was carried out to determine the ecological status of each habitat recorded.</p> <p>Field data for each habitat was input into The Statutory Biodiversity Metric by Joscelin Moran (Principal Consultant), using the Statutory Biodiversity Metric User Guide². Each habitat recorded within the site was assigned a score for 'Distinctiveness', 'Condition' and 'Strategic Significance'.</p>				
Weather Conditions	Date	Temperature (°C)	Cloud Cover (%)	Wind Force (Beaufort)	Precipitation
	12-02-2025	4	100	F2	None
Survey Constraints	<p>The recommended timeframe for completing a Phase 1/UK Hab Habitat Survey is April – September. The survey was carried out in February and therefore it is possible that some plant species were entering a period of winter dormancy and so may have been under-recorded or underestimated. However, these constraints are not considered to have impaired the condition assessment of habitats on site.</p> <p>Habitat classification had already been decided by the UG_1773_ECO_PEA_DRAFT report produced by Urban Green.</p>				

¹ This drawing has been remapped by Middlemarch Environmental in drawing C181397-02 (in Appendix 2), with all proposed post development habitats translated into their corresponding UK Habitats definitions.

² Defra (2024) *The Statutory Biodiversity Metric – User Guide*. Available:

<https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

Methods	
Biodiversity Metric	The biodiversity calculations used within this assessment were undertaken by Joscelin Moran (Principal Consultant) and Bo Stewart (Biodiversity Project Officer) using 'The Statutory Biodiversity Metric' ³ and associated User Guide ⁴ .
Data Sources	<p>The baseline habitat data and condition assessment for the site is detailed in Appendix 1.</p> <p><i>Note - the habitat classifications were informed by the Preliminary Ecological Appraisal carried out by Urban Green.</i></p> <p>A UK Hab Plan showing the extent and location of each habitat recorded on site pre-development is included in Appendix 2 (Drawing C181397-01-Rev B). A post development habitat map is also included in Appendix 2 (Drawing C181397-02-Rev B).</p>
Habitat Attributes	<p>Distinctiveness</p> <p>An automated score based on the type of habitat present and its value to wildlife. Highly diverse habitats such as those listed as Habitats of Principal Importance under the NERC Act (2006) or Annex 1 habitats in the Habitats Directive (1992) score highly in this category, whilst highly modified and low diversity habitats such as arable crops will have low distinctiveness scores.</p>
	<p>Condition</p> <p>A score based on the quality of the habitat parcel against published condition criteria (See Appendix 1).</p>
	<p>Strategic Significance</p> <p>A score based on information set out in local plans or policies. In this instance, a strategic location was defined as⁵:</p> <ul style="list-style-type: none"> • Barnsley Local Plan (2019), • Barnsley Biodiversity and Geodiversity SPD (2024), • Barnsley Local Biodiversity Action Plan (LBAP), 2nd edition (2010), and, • Section 41 NERC Act (2006) list habitats.
Metric Constraints & Assumptions	<p>The assumptions regarding target habitat types, or condition, in this report are founded on professional opinion with reference to the likely achievable habitat outcomes at the site, based on the proposed planting plans and presumed management resources. All target habitats presume the implementation of a long-term Management Plan to achieve these ends and a recommendation to this effect is given.</p> <p>Where the baseline value for any area, linear or watercourse features is zero (i.e. no such feature exists at the site), and where new creation of these features is proposed, the percentage uplift cannot be mathematically calculated, and the metric outputs 'N/A' in the headline results tab. However, it is accepted that any new creation where there was previously no area, linear or watercourse habitat, constitutes meeting the statutory biodiversity requirement.</p>

³ Department for Environment, Food and Rural Affairs (DEFRA) (2024) Statutory Biodiversity Metric Calculation Tool. <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

⁴ Department for Environment, Food and Rural Affairs (DEFRA) (2024) Statutory Biodiversity Metric Condition Assessments. <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

⁵ Barnsley Local Plan (2019), Available at: <https://www.barnsley.gov.uk/media/17249/local-plan-adopted.pdf>

Barnsley Biodiversity and Geodiversity SPD (2024), Available at: <https://www.barnsley.gov.uk/media/uqcn3wiv/biodiversity-and-geodiversity-spd-2024.pdf>

Barnsley Local Biodiversity Action Plan (2010), Available at: <http://www.barnsleybiodiversity.org.uk/biodiversityplan.html>
 Natural Environment and Rural Communities Act, Section 41, Habitats and Species of Principle Importance to England

Results

Overview of Habitats and Baseline Biodiversity Value

Habitat	Area (ha)/ Length (Km)	Distinctiveness (Score)	Condition (Score)	Strategic Significance (Score)	Baseline Value (BU)
Area Based Habitats					
Sparsely vegetated land – ruderal/ ephemeral	0.88	Low	Poor	Low	1.76
Mixed scrub	0.04	Medium	Poor	Low	0.16
Sparsely vegetated land – ruderal/ ephemeral	0.41	Low	Good	Low	2.46
Pond (non-priority)	1.33	Medium	Poor	Low	5.32
Woodland – other broadleaved	0.75	Medium	Poor	High	3.45
Urban – bare ground	0.31	Low	Moderate	Low	1.24
Woodland – other broadleaved	0.30	Medium	Poor	High	1.38
Modified grassland	0.20	Low	Poor	Low	0.40
Woodland – other broadleaved	0.29	Medium	Moderate	High	2.67
Modified grassland	0.15	Low	Poor	Low	0.30
Sparsely vegetated land – ruderal/ ephemeral	0.10	Low	Moderate	Low	0.40
Developed land – sealed surface	0.29	Very Low	N/A	Low	0
Totals	5.05	-	-	-	19.54
Linear					
Native hedgerow (H1, H2)	0.66	Low	Moderate	High	3.04
Line of Trees (LT1)	0.08	Low	Poor	Low	0.16
Totals	0.74	-	-	-	3.20

Headline Results				
On-Site Baseline	On-Site Baseline	Habitat units	19.54	
		Hedgerow units	3.20	
		Watercourse Units	0.00	
	On-Site Post Intervention	Habitat units	38.74	
		Hedgerow units	7.22	
		Watercourse Units	0.00	
	On-Site Net Unit Change (units & percentage)	Habitat units	19.20	98.29%
		Hedgerow units	4.02	125.86%
		Watercourse Units	0.00	0.00%
Off-Site Baseline	Off-Site Baseline	Habitat units	N/A	
		Hedgerow units	N/A	
		Watercourse Units	N/A	
	Off-Site Post Intervention	Habitat units	N/A	
		Hedgerow units	N/A	
		Watercourse Units	N/A	
	Off-Site Net Unit Change (units & percentage)	Habitat units	N/A	N/A
		Hedgerow units	N/A	N/A
		Watercourse Units	N/A	N/A
Combined Net Unit Change (including all on-site & off-site habitat retention, creation & enhancement)		Habitat units	19.20	
		Hedgerow units	4.02	
		Watercourse Units	0.00	
Spatial Risk Multiplier (SRM) Deductions		Habitat units	0.00	
		Hedgerow units	0.00	
		Watercourse Units	0.00	

Final Results

Total Net Unit Change <i>(including all on-site & off-site habitat retention, creation & enhancement)</i>	Habitat units	19.20
	Hedgerow units	4.02
	Watercourse Units	0.00
Total Net % Change <i>(including all on-site & off-site habitat retention, creation & enhancement)</i>	Habitat units	98.29%
	Hedgerow units	125.86%
	Watercourse Units	0.00%.
Trading Rules Satisfied*		No

***you must state if irreplaceable habitats are on-site at baseline:**
 No irreplaceable habitats were identified on-site at baseline

Unit Type	Target**	Baseline Unit	Units Required	Unit Deficit
Habitat units	10.00%	19.54	21.49	0.00
Hedgerow units	10.00%	3.20	3.52	0.00
Watercourse Units	10.00%	0.00	0.00	0.00

**From January 2024, the UK Mandatory minimum is a 10% net gain in biodiversity for all development. Barnsley Borough Council have set the minimum biodiversity net gain at 10%.

Discussion

The assessment has identified that the proposals would result in a gain of + 19.20 Habitat Units (equivalent to 98.29% gain) and 4.02 Hedgerow Units (equivalent to 125.86% gain). This meets and exceeds the minimum statutory requirement of 10% net gain in biodiversity units.

However, the proposals do not satisfy the trading rules. To achieve 'no net loss' and enable the biodiversity gains objective to be met, the development needs a further 5.32 HU (non-priority ponds) It is intended that this loss will be offset on the adjacent Stairfoot Habitat Bank.

The calculations used within the metric to quantify biodiversity units differ between habitat and hedgerow features, consequently, the values generated are not comparable, and a net gain in one feature cannot compensate for a net loss within another feature.

How is the biodiversity gains objective being delivered?	Habitat units	Both on-site & off-site.
	Hedgerow units	Only on-site.
	Watercourse Units	N/A
How many Biodiversity Units are needed off-site to meet no net loss/ satisfy the trading rules	Habitat units	5.32
	Hedgerow units	0.00
	Watercourse Units	0.00

Recommendations

The recommendations below are based on Middlemarch's current understanding of the project. If works are changed in any way these recommendations will need to be amended if appropriate.

R1	Stairfoot Brickworks Site of Special Scientific Interest (SSSI) is located c. 100 m south. This site is designated for its geological interest but there are statutory protected sites designated for their biological interest present within the wider landscape, some of which are functionally linked to the site (e.g. Dearne Valley Wetlands SSSI). Any future planned changes to the management and habitat within the Stairfoot Quarry site must give full consideration of their potential indirect impacts to the qualifying habitats, species, and criterions of the adjacent nature conservation sites. Any changes in management actions or habitat type which could potentially negatively impact these nature conservation sites must be avoided, or else the impacts fully mitigated via the incorporation of Reasonable Avoidance Measures (RAMs) within any management prescription (for example, avoiding working at sensitive times of the day, or in sensitive seasons). Any opportunities to assist with the delivery of the Conservation Objectives of the adjacent nature conservation sites should be incorporated within any future Habitat Management and Monitoring Plan (HMMP), becoming a management aim, alongside measurable biodiversity uplift.
R2	All non-native invasive plant species (snowberry), should be treated and their presence removed from site as soon as is possible.
R3	After planning permission has been approved a Biodiversity Gain Plan needs to be produced and submitted to the Local Planning Authority to provide evidence for all BNG decisions and show how BNG will be achieved.
R4	A 30-year Habitat Management and Monitoring Plan (HMMP) should be produced to set out the detailed habitat creation and enhancement specifications and long-term management prescriptions, that will be required to ensure the scheme will achieve its conservation objectives over the lifespan of the project. The HMMP should also be inclusive of a long-term monitoring strategy to measure progress against conservation objectives and inform an adaptive approach to long-term management

Quality Assurance

Date	Version	Author	Checked & Approved By
12/03/2025	Final	Joscelin Moran (Principal Consultant)	Chris Walsh (Natural Capital Solutions Leader)
03/06/2025	Final Rev A	Bo Stewart (Biodiversity Project Officer)	Joscelin Moran (Principal Consultant)
07/07/2025	Final Rev B	Bo Stewart (Biodiversity Project Officer)	Chris Walsh (Natural Capital Solutions Leader)

Appendix 1

The following tables include full habitat descriptions and summarise the condition assessment for habitats and hedgerows using Natural England (2024)⁶.

Habitat classification has been determined by the UG_1773_ECO_PEA_DRAFT report produced by Urban Green.

⁶ Statutory Biodiversity Metric Condition Assessments. Available: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

Habitat				Condition Sheet Criteria Score															Total Score	Condition Assessment
Polygon / Line Ref.	Phase 1 Habitat Type	UK Hab Habitat Equivalent *	Habitat Description *	Condition Sheet Used	A	B	C	D	E	F	G	H	I	J	K	L	M			
P01	Ephemeral / short perennial (J1.3)	Ruderal/Ephemeral s1d81	Sparsely vegetated land consisting of areas of bare ground/ hard surfaces occasionally supporting ruderal/ ephemeral vegetation located within the quarry basin. Vegetation included teasel <i>Dipsacus fullonum</i> , <i>Sphagnum</i> moss, annual meadow grass <i>Poa</i> sp., St Johns-wort <i>Hypericum</i> sp., prickly sow-thistle <i>Sonchus asper</i> , cat's-ear <i>Hypochaeris radicata</i> and birch <i>Betula</i> sp.	Urban (22)	F	F	P	-	-	-	-	-	-	-	-	-	-	1	Poor	
P02	Dense scrub (A2.1)	Mixed scrub h3h	An area of dense scrub located on the northern quarry embankment; comprising birch, bramble <i>Rubus fruticosus</i> agg., teasel and rose <i>Rosa</i> spp..	Scrub (20)	F	F	P	F	F	-	-	-	-	-	-	-	-	1	Poor	
P03	Ephemeral / short perennial (J1.3)	Ruderal/Ephemeral s1d81	Sparsely vegetated land located on the northern quarry bank. The bank was relatively steep. Species recorded were as noted in P01.	Urban (22)	P	P	P	-	-	-	-	-	-	-	-	-	-	3	Good	
P04	Standing water (G1)	Pond (non-priority) r1g41	The southern extent of the quarry held a large pool of standing water which had accumulated naturally in the basin. The pool of water supported no aquatic vegetation.	Pond (18)	F	F	P	F	P	P	P	F	P	-	-	-	-	5	Poor	
P05	Broadleaved semi-natural woodland (A1.1.1)	Other broadleaved woodland w1g	Area of woodland located on the embankment to the north-east corner of the quarry pool (P04). Continues off site to the south. Self-set specimens of birch <i>Betula</i> sp., goat willow <i>Salix caprea</i> , and grey willow <i>Salix cinerea</i> , with lesser frequent hawthorn <i>Crataegus monogyna</i> , ash <i>Fraxinus excelsior</i> , sycamore <i>Acer pseudoplatanus</i> and elm <i>Ulmus</i> sp.	Woodland (24)	1	2	3	1	3	2	2	3	1	2	1	1	2	24	Poor	
P06	Bare ground (J4)	Bare ground u1c510	Area of bare ground located to the south of the pool of standing water.	Urban (22)	P	F	P	-	-	-	-	-	-	-	-	-	-	2	Moderate	
P07	Broadleaved semi-natural woodland (A1.1.1)	Other broadleaved woodland w1g	Area of woodland located on the southern embankment of the quarry basin. Species recorded were as noted in P05.	Woodland (24)	1	2	1	2	3	1	2	3	1	1	1	1	2	21	Poor	
P08	Poor semi-improved neutral grassland (B6)	Modified grassland g4	Narrow grass access path located to the south of the quarry basin; predominantly bare ground due to public trampling. The sparse vegetation comprised annual meadow grass, daisy <i>Bellis perennis</i> and red clover <i>Trifolium pratense</i> .	Grassland low (5)	F	F	F	F	F	P	P	-	-	-	-	-	-	2	Poor	
P09	Broadleaved semi-natural woodland (A1.1.1)	Other broadleaved woodland w1g	Area of woodland which forms part of the proposed access route and extends off site to east and west. Consists of self-set birch, wild cherry <i>Prunus avium</i> , goat willow, ash, white willow, field maple <i>Acer campestre</i> , hawthorn, aspen, dogwood <i>Cornus sanguinea</i> and hazel <i>Corylus avellana</i> .	Woodland (24)	2	2	3	2	3	3	2	3	1	2	1	1	1	26	Moderate	
P10	Poor semi-improved neutral grassland (B6)	Modified grassland g4	Area of species poor grassland located to the south-west of site. Species present included willowherb <i>Epilobium</i> sp., teasel, <i>Buddleja</i> sp., white clover <i>Trifolium repens</i> , creeping buttercup <i>Ranunculus repens</i> , Yorkshire fog <i>Holcus lanatus</i> , annual meadow-grass, bramble, cock's-foot <i>Dactylis glomerata</i> , tiny vetch <i>Vicia hirsute</i> , and St John's-wort.	Grassland low (5)	F	F	F	P	P	P	P	-	-	-	-	-	-	4	Poor	
P11	Ephemeral / short	Ruderal/Ephemeral s1d81	Bare earth/ hard surface supporting occasional ruderal/ ephemeral vegetation. Species recorded were as recorded in P01.	Urban (22)	P	F	P	-	-	-	-	-	-	-	-	-	-	2	Moderate	

Habitat				Condition Sheet Criteria Score															
Polygon / Line Ref.	Phase 1 Habitat Type	UK Hab Habitat Equivalent *	Habitat Description *	Condition Sheet Used	A	B	C	D	E	F	G	H	I	J	K	L	M	Total Score	Condition Assessment
	perennial (J1.3)																		
P12	Built-up areas (J3)	Developed land; sealed surface u1b	The south-western corner of the site occupied by hard standing supporting very little vegetation growth.	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A
LT1	Line of broadleaved trees	Line of trees w1g 33	Single line of trees located along the northern edge of the proposed access route (south-western extent of the site). Tree species included goat willow, birch, alder, blackthorn and ash <i>Fraxinus excelsior</i> .	Line of trees (16)	P	F	F	F	P	-	-	-	-	-	-	-	-	2	Poor
H1	Hedges defunct species-poor (J2.2.2)	Native hedgerow (h2a)	Hedgerow running parallel to H2 along the southern side of the grass track (P08). Measures c. 330 m in length and comprised dominant hawthorn, with occasional field maple, blackthorn, dog-rose and bramble.	Hedgerow (8a)	P	F	P	P	F	F	P	F	-	-	-	-	-	-	Moderate
H2	Hedges defunct species-poor (J2.2.2)	Native hedgerow (h2a)	Hedgerow running parallel to H1 along the northern side of the grass track (P08). Measures c. 330 m in length and comprised dominant hawthorn, with occasional field maple, blackthorn, dog-rose and bramble.	Hedgerow (8a)	P	F	P	P	F	F	P	F	-	-	-	-	-	-	Moderate

* Habitat classifications and habitat descriptions were determined by Urban Green and taken from the UG_1773_ECO_PEA_DRAFT report (February 2025).

Key:

P – Criteria passed

F – Criteria failed

- – Criteria not applicable for condition sheet and habitat type

N/A – Condition assessment not required for habitat

Woodland Condition Assessment

3 (points) = Good

2 (points) = Moderate

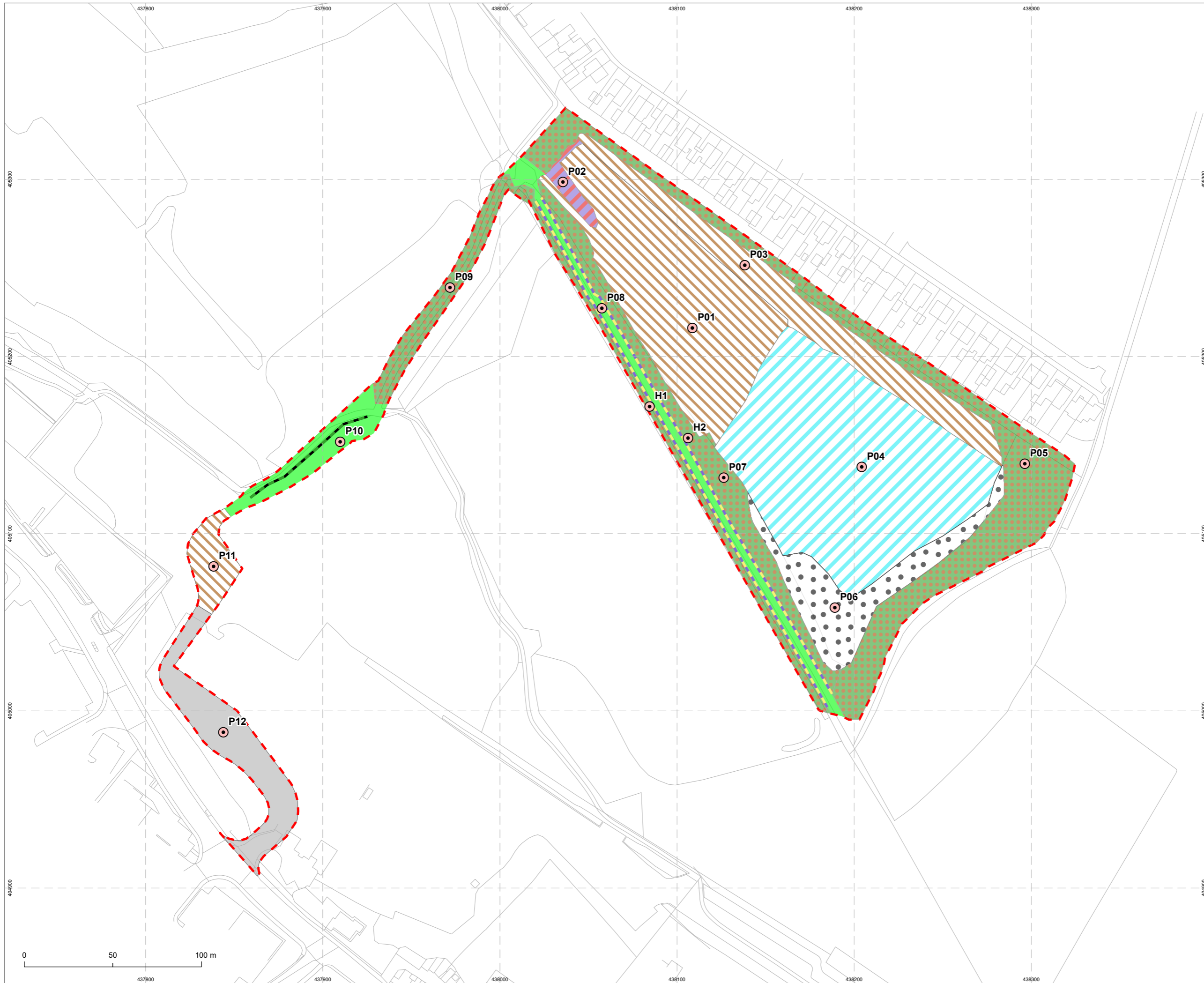
1 (point) = Poor

Total Score: >32 = Good 26-32 = Moderate <26 = Poor

Appendix 2

Drawing C181397-01-Rev B: Baseline Habitat Map of Stairfoot Quarry Phase 2, Barnsley

Drawing C181397-02- Rev B: Biodiversity Metric Assessment Map of Stairfoot Quarry Phase 2, Barnsley



C181397-01

Legend

- - - Site boundary Rev B
- Hedgerow - Line of trees
- - - Hedgerow - Native hedgerow
- 17 - Sparsely vegetated land - Ruderal/Ephemeral
- NE0012 - Lakes - Ponds (non-priority habitat)
- NE0015 - Urban - Bare ground
- g4 - Grassland - Modified grassland
- h3h - Heathland and shrub - Mixed scrub
- u1b - Urban - Developed land; sealed surface
- w1g - Woodland and forest - Other woodland; broadleaved
- Target note - habitat parcel

Note: Baseline Habitat layout is partly reproduced from report UG_1773_ECO_PEA_DRAFT (Figure 3. Habitat Map) by Urban Green



Project		Stairfoot Quarry Phase 2	
Drawing		Baseline Habitat Map	
Client		Green Earth Development Group (GEDG)	
Drawing Number	Revision	C181397-01	Rev B
Scale @ A3	Date	1:2,000	June 2025
Approved By	Drawn By	KC/CW	RP



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C181397-02

Legend

- - - Site boundary Rev B
- Retained hedgerow
- Retained line of trees
- / / / Retained habitat
- / / / Neutral grassland
- Native species woodland
- Native species scrub



Project		Stairfoot Quarry Phase 2	
Drawing		Biodiversity Metric Assessment Map	
Client		Green Earth Development Group (GEDG)	
Drawing Number	Revision	C181397-02	Rev B
Scale @ A3	Date	1:2,000	June 2025
Approved By	Drawn By	CW	RP



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