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Biodiversity Net Gain Assessment

NETA Relocation

April 2024

Hall and Partners



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1. Introduction

1.1 OS Ecology Ltd were commissioned by Hall and Partners in March 2024 to provide a Biodiversity Net Gain Feasibility Report for the proposed development at Stockton Riverside College.

Site Location

1.2 The site is located east of the river Tees in Stockton at approximate central grid reference of NZ 45359 18674. The site location is illustrated within figure 1 in the appendices.

Site Description

1.3 The site is approximately 1.17ha in size and comprises large grassland areas with a hedgerows, introduced planting and built development.

Objectives of the Study

1.4 The objectives of this report are:

- To assess and map the habitats present within the proposed development area using the UK Habitat Classification¹ criteria.
- To calculate the baseline 'Biodiversity Units' using Natural England's Statutory Biodiversity Metric².
- To use the above metric to assess the anticipated change in biodiversity as a result of the proposed development.

Development Proposals

1.5 It is proposed to develop the site for use as a carpark with associated landscaping.

¹ UKHab Ltd (2023) UK Habitat Classification Version 2.0 (at <http://www.ukhab.org>)

² Department for Environment Food and Rural Affairs, The Statutory Biodiversity Metric User Guide, February 2024

2. Methodology

Scope of Study

- 2.1 This study aims to utilise the Natural England's Statutory Biodiversity Metric³ to provide a measure of the existing biodiversity value of the proposed development site and of the anticipated change in biodiversity units as a result of the development proposals.

Assessment of Baseline Conditions

Habitat Mapping

- 2.2 The proposed development site was mapped as different habitat types using the habitat classifications detailed within the UK Habitat Classification User Manual⁴.
- 2.3 Habitat maps were digitised and area calculations for each UK Habitat Classification habitat type present within the site were undertaken using QGIS.
- 2.4 Area measurements are provided in hectares with linear features measured in kilometres.

Condition Assessment

- 2.5 Each area of habitat was assigned a condition score based on the relevant statutory biodiversity metric condition assessment as per the Statutory Biodiversity Metric User Guide⁵.
- 2.6 Habitat parcels are assigned one of three categories: Good, Moderate or Poor. If condition varies across an area of the same habitat type, the habitat will be split into separate parcels, each assigned a different condition category.
- 2.7 Certain habitat categories are allocated a fixed condition score and do not need the condition assessed as per the User Guide⁵.
- 2.8 Where appropriate, completed habitat condition sheets for each parcel of habitat are provided within the appendices.

Use of the Calculation Tool

- 2.9 The Statutory Biodiversity Metric Calculation Tool is used to calculate biodiversity units for the existing baseline conditions within the proposed development area.
- 2.10 Habitat type, area (ha) and condition score as calculated above are entered into the metric for each parcel of habitat present within the proposed development site.
- 2.11 The metric assigns a 'Distinctiveness' category and score to each habitat parcel.

³ Department for Environment Food and Rural Affairs, The Statutory Biodiversity Metric User Guide, February 2024

⁴ UKHab Ltd (2023) UK Habitat Classification Version 2.0 (at <http://www.ukhab.org>)

⁵ Department for Environment Food and Rural Affairs, The Statutory Biodiversity Metric User Guide, February 2024

- 2.12 A 'Strategic Significance' score is then assigned to each habitat parcel. The assessment of strategic significance is based on local planning policy in the first instance. For example, if the site is located within a Nature Recovery Area then it would be of 'High Strategic Significance'.
- 2.13 Areas of 'Moderate Strategic Significance' would be classified as areas not formally designated, but which are ecologically desirable. 'Areas of Low Strategic Significance' are those which do not meet the above criteria.
- 2.14 Based on the above information, the metric then calculates Biodiversity Units for each habitat parcel and a total number of Biodiversity Units for the proposed development area.

Post Development Conditions

- 2.15 The areas of habitat to be retained within the proposed development are specified within the metric. Data is then entered into the metric with respect to enhanced habitats and new areas of habitat to be created as part of the development, in the same way as for the baseline conditions.
- 2.16 The same criteria detailed above are input for each habitat parcel, as well as an additional criterion for any off-site creation/enhancement proposed. A spatial risk category is associated with any off-site works. This spatial risk category specifies whether the proposed off-site mitigation is within the same local authority as the proposed development site, within an adjacent local authority or beyond the neighbouring authority.
- 2.17 The metric tool automatically applies an appropriate difficulty level associated with each type of habitat creation proposed and a temporal category based on the likely time taken to reach the assigned target condition.
- 2.18 For habitat enhancement the metric identifies the change in distinctiveness and condition of the habitat. Full details are provided within the Statutory Biodiversity Metric User Guide⁶.

Biodiversity Metric Calculation


- 2.19 Once both the pre-development and post-development habitat calculations have been assessed, the metric provides the results in a range of tables and graphs. These highlight whether biodiversity losses or gains have been achieved based on pre and post development Biodiversity Units. The metric presents a total net unit change and a total net percentage change.

⁶ Department for Environment Food and Rural Affairs, The Statutory Biodiversity Metric User Guide, February 2024


3. Results

Baseline Habitat Types and Condition Assessment

- 3.1 The following table details the results of the habitat survey and assigns the relevant UK Habitat Classification to each parcel of habitat, the metric category to which this relates and the condition of the habitat. The survey area covered the land within the applicant’s control. Full survey information is provided within the Preliminary Ecological Appraisal report for this site⁷. Figures illustrating the habitat within the site are provided within the appendices with relevant condition assessment forms.
- 3.2 The following sections of this report focus on those habitats within the planning application boundary to calculate the baseline Biodiversity Units.

Table 3.1: Baseline Habitat Types		
Habitat Description	Photographs	Habitat Classification
<p>Grassland</p> <p>Grassland (G2) was the largest of the grasslands within the Site located to the southwest and bordered by Harvard Avenue to the west and buildings to the south and east. It was dominated by rye grass spp. with other frequent species included yarrow <i>Achillea millefolium</i>, dandelion, common daisy <i>Bellis perennis</i>, ribwort plantain <i>Plantago lanceolata</i>, white clover <i>Trifolium repens</i>, ragwort <i>Jacobaea vulgaris</i>, cranesbill spp. and occasional fungi.¹</p>		<p>UK Habs. Category: g3c – Other neutral grassland</p> <p>BNG Metric Category: Other neutral grassland</p> <p>Condition: Poor</p>
<p>Hedgerow</p> <p>Hedgerow (H2) was located in the west of the Site, bordering car park areas and the large grassland. This hedgerow is maintained with the dominant species being managed</p>		<p>UK Habs. Category: h2b – Non-native and ornamental hedgerow</p>

⁷ Preliminary Ecological Appraisal, NETA Relocation, Stockton-on-Tees, November 2023, BSG Ecology

Table 3.1: Baseline Habitat Types		
Habitat Description	Photographs	Habitat Classification
<p>beech. Other tree species present included sycamore, lime <i>Tilia</i> spp., goat willow and pedunculate oak <i>Quercus robur</i>, none of which exceed 5 m in height. The hedgerow was ornamental in nature and this is reflected by the presence of cotoneaster spp., rhododendron spp. and cordyline spp. Ground flora included red fescue and birds foot trefoil <i>Lotus corniculatus</i>.¹</p>		<p>BNG Metric Category: Non-native and ornamental hedgerow</p> <p>Condition: Poor²</p>
<p>¹ Habitats description and photographs from Preliminary Ecological Appraisal, NETA Relocation, Stockton-on-Tees, November 2023, BSG Ecology</p> <p>² Non-native and ornamental hedgerow habitats are automatically assigned 'Poor' condition by the Statutory Biodiversity Metric</p>		

Baseline Biodiversity Units

3.3 Based on the results of field survey, the following table details the baseline Biodiversity Units associated with the proposed development area.

Table 3.2: Baseline Biodiversity Units					
Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Biodiversity Units
Habitat Element					
Other neutral grassland	0.72	Medium	Poor	Low	2.88
Introduced shrub	0.026	Low	Condition Assessment N/A	Low	0.05
Developed land; sealed surface	0.422	V.Low	N/A - Other	Low	0.00
Urban tree	0.2117	Medium	Moderate	Low	1.69
Baseline Habitat Units:					4.63
Non-native and ornamental hedgerow	0.145	V Low	Poor	Low	0.15
Baseline Hedgerow Units:					0.15

Post Development – Baseline Habitat Retention Category

3.4 The following table details for each of the baseline habitat types present on site the relevant retention category (retained, enhanced or lost) as a result of the proposed development.

3.5 For each category the area of each habitat type that falls into each category is provided. Where habitat is to be lost the number of Biodiversity Units to be lost is provided. In this case, all existing habitats are anticipated to be lost through development of the site.

Table 3.3: Post Development – Baseline Habitat Retention Category				
Habitat Type	Area Retained (Ha)	Area Enhanced (Ha)	Area Lost (Ha)	Biodiversity Units Lost
Habitat Element				
Other neutral grassland	0	0.347	0.37	1.49
Introduced shrub	0.026	0	0.00	0.00
Developed land; sealed surface	0.422	0	0.00	0.00
Urban tree	0	0.1791	0.03	0.13
Habitat Units Lost:				1.62
	0.125	0	0.02	0.02
Hedgerow Units Lost:				0.02

Post Development – Habitat Enhancement

3.6 The following table details the proposed habitat enhancement within the site and the units delivered.

Baseline Habitat Type	Proposed Habitat Type	Area (ha)	Target Condition	Strategic Significance	Time to target condition (years)	Difficulty of Enhancement	Biodiversity Units Delivered
Habitat Enhancement							
Other neutral grassland	Other neutral grassland	0.347	Good	Low	15	Low	3.01
Urban tree	Urban tree	0.1791	Moderate	Low	16	Low	1.12
Habitat Units:							4.13

Post Development – Habitat Creation

3.7 The following table details the post development habitats proposed within the site and the metric category considered to match the proposed habitat types most closely.

Habitat Type	Metric Category	Area/Length/No. ¹
New tree planting	Urban tree	0.0774
New carpark	Developed land; sealed surface	0.373

3.8 For the purposes of the metric, it is assumed that a detailed management plan will be produced and adhered to, to ensure delivery of the target habitats and conditions.

3.9 A figure illustrating the location of habitat creation proposals is provided within the appendices. The following table details each element of the habitat creation proposed, including the target condition, other criteria assigned by the metric and the associated biodiversity units delivered by each element.

3.10 For the areas of modified grassland and tree planting it is anticipated that a target condition of 'moderate' can be achieved given the nature of the habitats and urban location. For the remaining habitat types, the metric assigns a condition of 'poor', or a condition assessment is not applicable based on the habitat type.

Table 3.6: Post Development Habitats - Biodiversity Units Delivered (Habitat Creation)							
Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Time to target condition/years	Difficulty of Creation	Biodiversity Units Delivered
Habitat Creation							
Urban tree	0.0774	Medium	Moderate	Low	27	Low	0.24
Developed land; sealed surface	0.373	V.Low	N/A - Other	Low	0	Low	0.00
Habitat Units:							0.24

4. Net Gain Assessment

4.1 The following extract details the anticipated change in Biodiversity Units as a result of the proposed development, including the associated habitat creation proposals. The full results broken down per habitat type, are detailed within the Statutory Biodiversity Metric Calculation Tool for this site which can be provided on request.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.65
	<i>Hedgerow units</i>	0.17
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	17.10%
	<i>Hedgerow units</i>	119.31%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	Yes ✓	

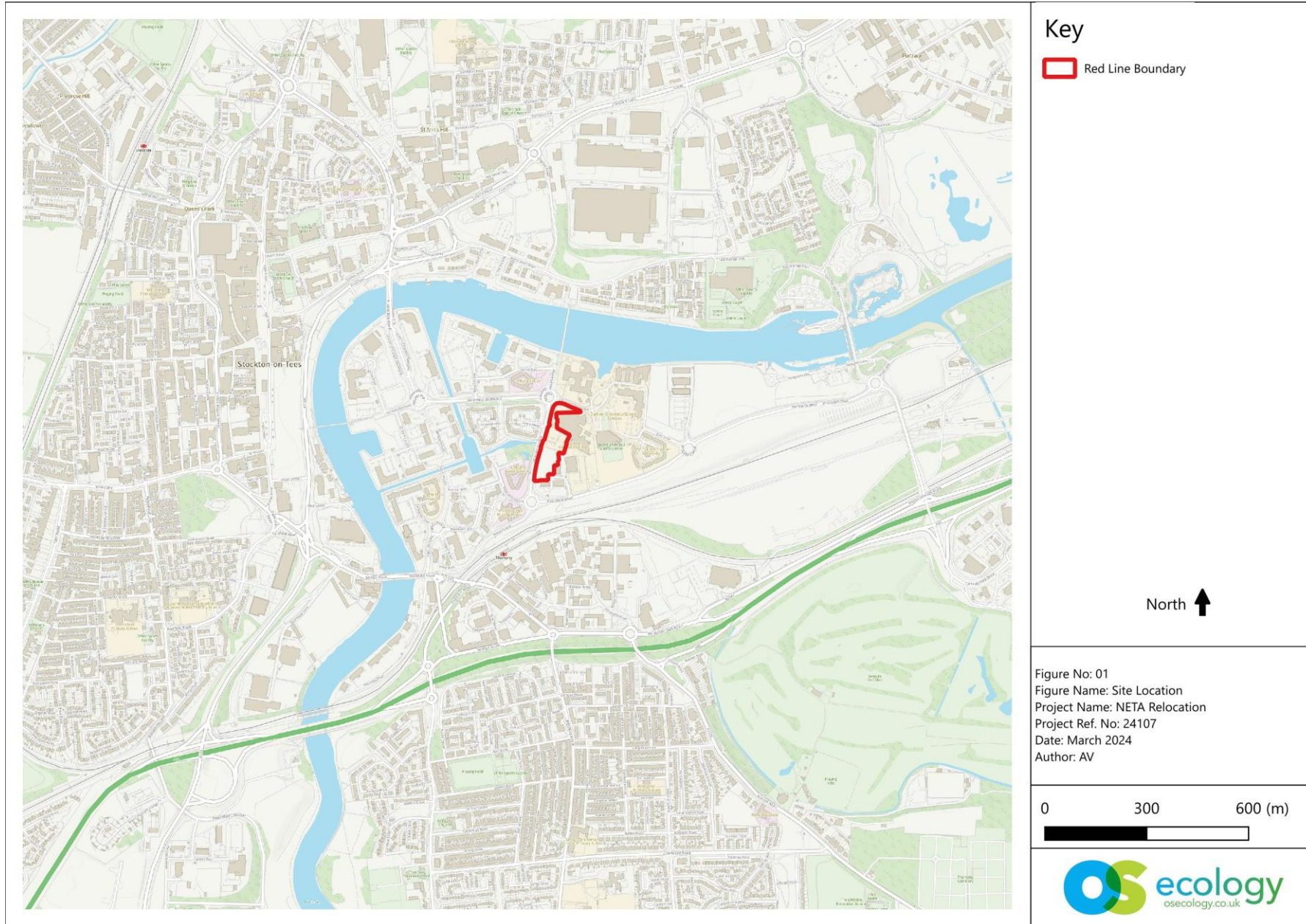
4.2 The current proposals will result in a **net gain in biodiversity units** with a **net gain of 0.65 units** in terms of habitats and 0.17 units in terms of hedgerows.

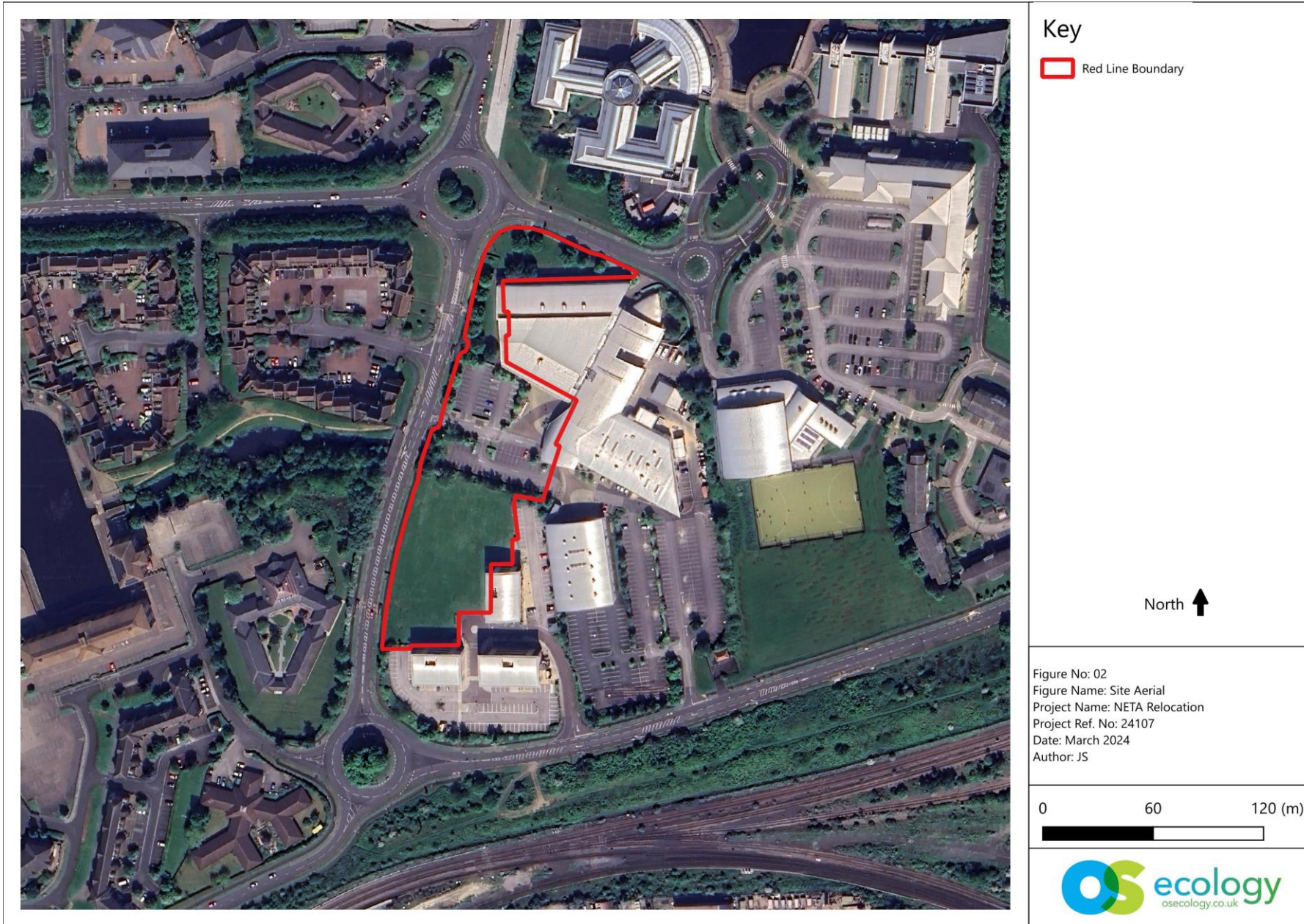
Appendix 1: Condition Assessment

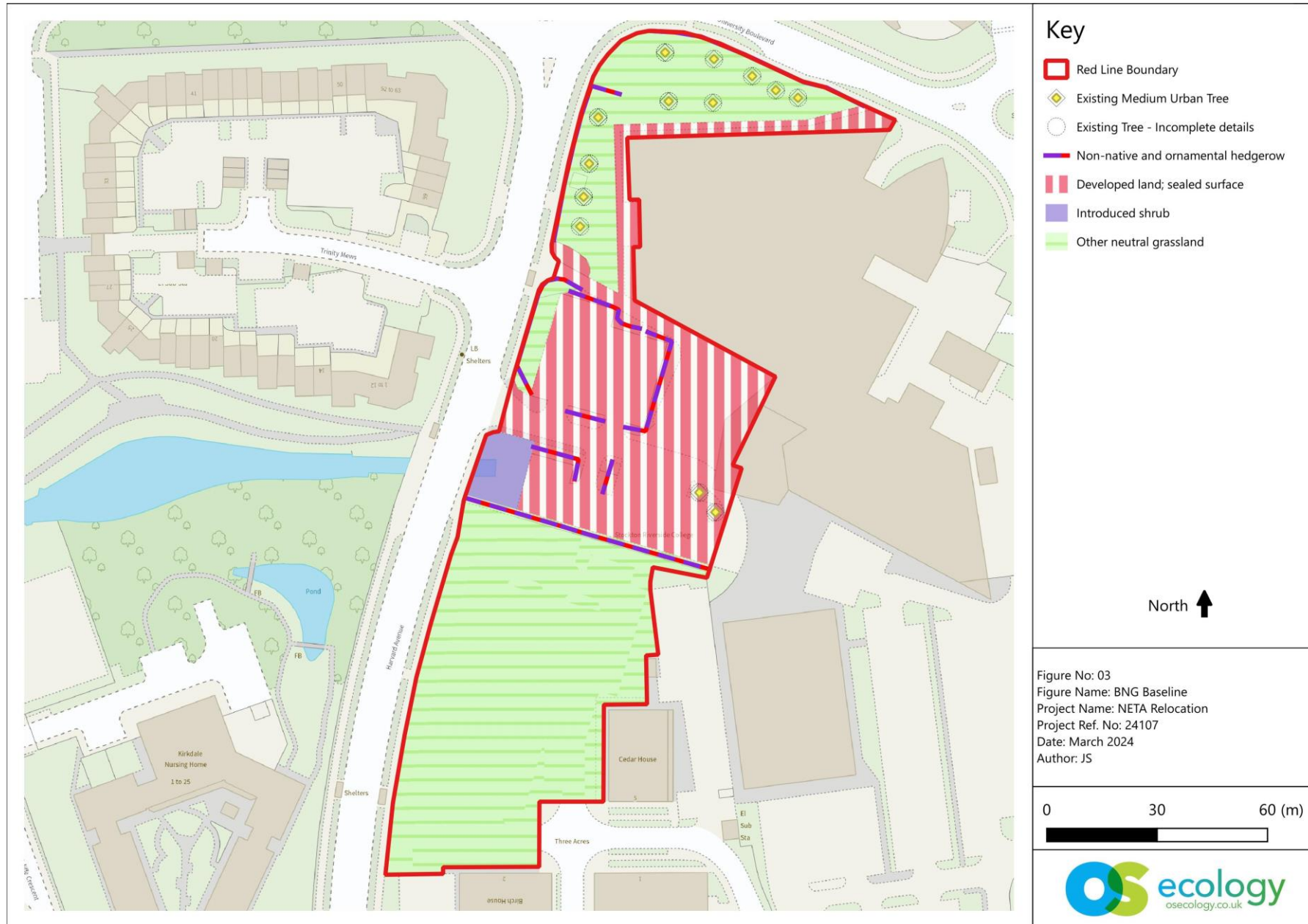
Condition Assessment Criteria - Trees		Criterion passed
A	The tree is a native species (or at least 70% within the block are native species).	No
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Yes
C	The tree is mature (or more than 50% within the block are mature) ¹ .	No
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	No
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	No
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes
Number of criteria passed		
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved x/√
Passes 5 or 6 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	Yes

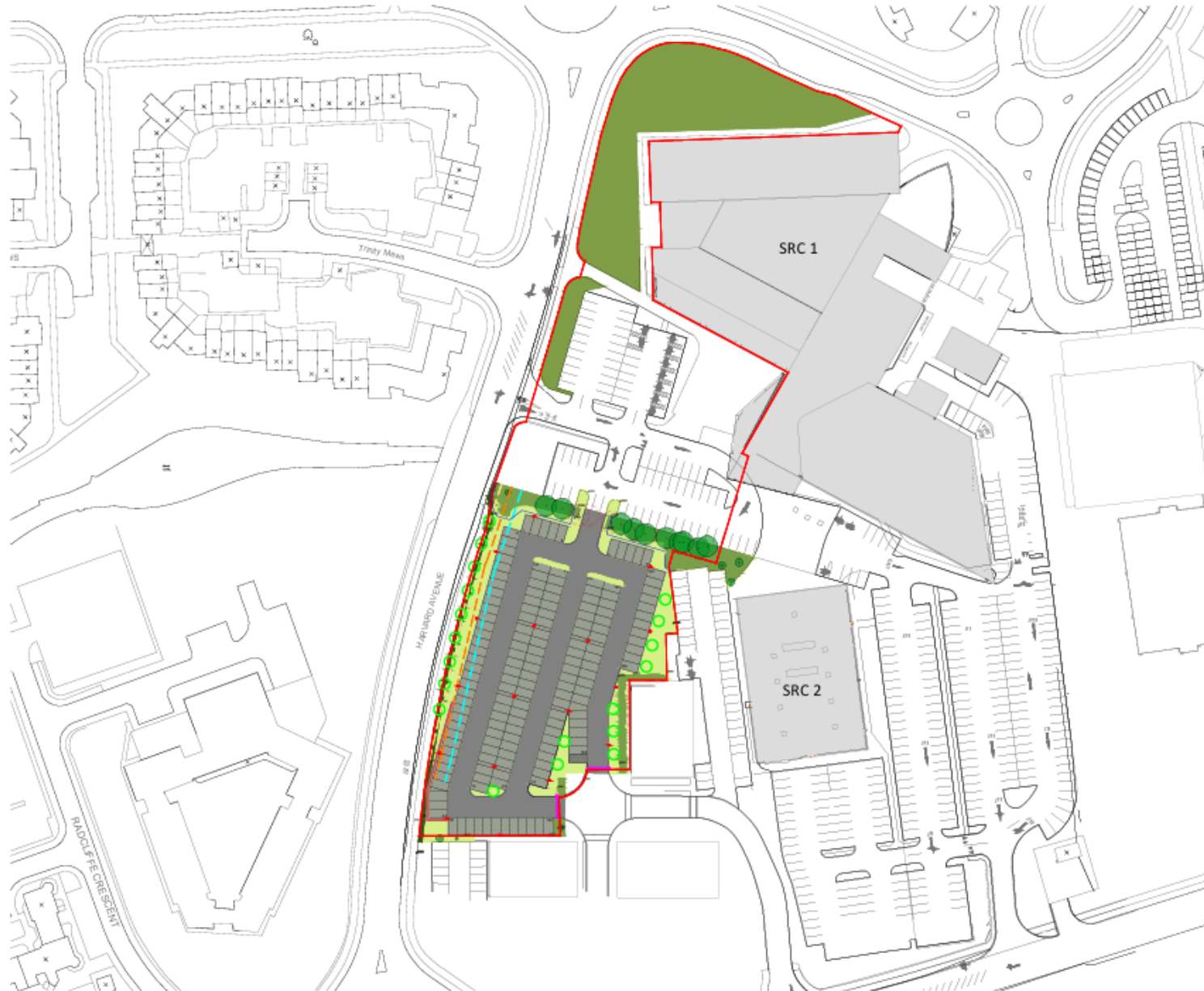
Condition Assessment Criteria - Grassland		Criterion passed (Yes or No)
A	<p>The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).¹</p> <p>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>	No
B	<p>Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p>	No
C	<p>Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens².</p>	No
D	<p>Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.</p>	Yes
E	<p>Combined cover of species indicative of suboptimal condition³ 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.</p> <p>If any invasive non-native plant species⁴ (as listed on Schedule 9 of WCA⁵) are present, this criterion is automatically failed.</p>	Yes
F	<p>There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count).</p> <p>Note - this criterion is essential for achieving Good condition for non-acid grassland types only.</p>	No

Appendix 2: Figures









*Our Environments Ltd. This drawing is not to be used. All dimensions to be verified on site prior to commencement of works. The preparer, draughtsman and/or contractor between this drawing & information supplied by others must be updated immediately for the Reader before proceeding.

- NOTES
- Site boundary
 - Existing spot level (meters AOD)
 - Existing vegetation
 - Proposed vegetation - grassed areas to be retained (as per BNG assessment)
 - Proposed native hedge support bed by post and wire fencing
 - Proposed native tree (m2) (to be retained as of standard)
 - Existing trees to be retained
 - Tree protection fencing to BS5822 (2012)
 - Existing trees to be removed
 - Tarmac
 - Proposed block paving
 - Proposed retaining wall (2m or less) with timber lagged sub (min 1m above ground)
 - Proposed lighting column (6m high)
 - Asphalt that will wear with 40kN load over the ground
 - Proposed outdoor furniture

REVISED P02	DATE 16/04/24	BY AJC	CHECKED AJC
Minor amendments issued for planning			
REVISED P01	DATE 18/04/24	BY AJC	CHECKED AJC
Final issue issued for planning			
CLIENT The Education Training Collective			
PROJECT NETA Relocation - Stratton Riverside College			
VLS CIV PAVE PROPOSAL - Overall SPA			
DATE	ISSUE 04/04/24-22/03/24-L-0002	REV P02	
DRAWN Pathways			
SCALE 1:500 @ A1 DATE 18.04.24 BY AJC			
			
			