

# Biodiversity Net Gain Report



<b>Site Name</b>	Land at Grey Towers	<b>Location (Address):</b>	Grey Towers, Nunthorpe Middlesbrough North Yorkshire TS7 0AY
<b>Grid Reference:</b>	NZ 53617 13805	<b>Report Date:</b>	23/02/2023

## RELEVANT LEGISLATION

Environment Act (2021) <a href="https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted">https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted</a>	<b>Biodiversity Metric:</b>  Version 3.1
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## SCOPE OF WORKS

To undertake a biodiversity baseline calculation and biodiversity net gain calculation for Grey Towers, Nunthorpe. The calculation was conducted using the information gained during the desktop study and the preliminary ecological appraisal conducted on 06/02/2022. Habitats on site were classified and condition scored to enable accurate data input for the biodiversity baseline calculation. The biodiversity net gain calculation has been conducted in conjunction with the landscaping and planting schedule information supplied by Summerhouse Architects.

## SITE DESCRIPTION

The site comprised an area of modified grassland which was populated by areas of tall ruderal vegetation and mixed scrub.

## Biodiversity Baseline Calculations

Following the completion of the desktop study and survey work, a biodiversity baseline has been undertaken to determine the number of 'biodiversity units' present on site prior to the works and demonstrate how these will be enhanced following the completion of the works. The baseline has been determined using the current DEFRA Biodiversity Metric tool (Version 3.1).

The overall area of the site has been calculated at 0.8 hectares (ha). The total habitat units are calculated at 2.94, with a total gain of 0.31 habitat units.

### Section A1 – Habitat Baseline

Habitats on-site have been classified in line with the UK Habitat Classification (UKHab) system (UK Habitat Classification Working Group, 2018) to which the Defra Biodiversity Metric relates. The habitats are listed as the following:

Habitats present (using UKHAB System of habitat classification)	Area (Ha)	Condition assessment	Habitat units
<i>Grassland – Modified grassland</i> (UKHab g4)	0.7401	Poor	2.72
<i>Sparsely vegetated land – Ruderal/ephemeral</i> (UKHab u17)	0.0164	Poor	0.03
<i>Heathland and shrub – Mixed scrub</i> (UKHab h3h)	0.0473	Poor	0.19
		<b>Total habitat units present</b>	2.94

## Biodiversity Net Gain Calculation

The biodiversity net gain calculation has been conducted utilising the information from the landscaping plan provided by Summerhouse Architects.

### Section A2 – Habitat Creation

The habitats created on-site are separated into the following:

Habitats created (using UKHAB System of habitat classification)	Area (Ha)	Target Condition	Habitat units
<i>Urban – Developed land, sealed surface</i> (UKHab u1b)	0.0886	N/A	0
<i>Urban – Developed land, sealed surface</i> (UKHab u1b)	0.0768	N/A	0
<i>Urban – Vegetated garden</i> (UKHab u 231)	0.2503	N/A	0.48
<i>Urban – Sustainable urban drainage feature</i> (UKHab u 1190)	0.016	Moderate	0.04
<i>Grassland – Modified grassland</i> (UKHab g4)	0.0275	Moderate	0.1
<i>Urban – Urban tree</i> (UKHab u 11)	0.3052	Moderate	0.93
<i>Heathland and shrub – Mixed scrub</i> (UKHab h3h)	0.03	Moderate	0.2
<b>Total habitat units achieved</b>			1.75

### Section B2 – Habitat Enhancement

In order to achieve a net gain, the retained areas of modified grassland will be enhanced into other neutral grassland.

Proposed Habitat (using metric-specific habitat classification for BNG)	Area (Ha)	Target Condition	Habitat units
<i>Grassland – Other neutral grassland</i> (UKHab g3c)	0.0932	Good	0.73
<i>Grassland – Other neutral grassland</i> (UKHab g3c)	0.0879	Good	0.76
<b>Total habitat units achieved</b>			1.5

### **Habitat Condition Prescriptions**

Outlined below are the criteria that must be achieved in order to meet the requirements for the assigned condition targets of each habitat type.

#### *Modified grassland.*

In order to achieve moderate condition for modified grassland, 4/5 of the following 7 criteria must be met, with criteria 1 being essential for achieving moderate condition;

- 1- There must be 6-8 species per m<sup>2</sup>.
- 2- Sward height is varied (at least 20% of the sward s less than 7cm, and at least 20% is more than 7cm).
- 3- Any scattered scrub accounts for less than 20% of the total area of the grassland.
- 4- Physical damage is evident in less than 5% of the total grassland area. (poaching, machinery damage, erosion, damaging management activities)
- 5- Cover of bare ground is between 1% and 10%.
- 6- Cover of bracken is less than 20%.
- 7- There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).

#### *Sustainable urban drainage feature*

In order to achieve moderate condition for sustainable urban drainage features, 2/3 of the following 4 criteria must be met, or the feature passes all 4 but does not meet requirements for good within criterion 2 and 3.

- 1- Vegetation structure is varied, providing opportunities for insects, birds, and bats to live and breed. A single ecotone should not account for more than 80% of the total habitat area.
- 2- There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native or non-native but beneficial to wildlife.
  - To achieve good condition, criterion 2 must be satisfied with native species only.
- 3- Invasive non-native species (Schedule 9 of WCA, 1981) cover less than 5% of total vegetated area.
  - To achieve good condition, criterion 3 must be satisfied with a complete absence of non-native species.
- 4- The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.

#### *Mixed Scrub*

In order to be classified as moderate condition mixed scrub, 3 or 4 of 5 of the following criteria are acceptable.

- 1- Habitat is representative of UKHab description (when in its natural range). There are at least 3 woody species, with no species comprising more than 75% cover.
- 2- There is a good age range – all of the following are present: seedlings, young shrubs, and mature shrubs.
- 3- There is an absence of non-native species (as listed on Schedule 9 of WCA, 1981).
- 4- The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between scrub and adjacent habitats.
- 5- There are clearings, glades, or rides present within the scrub.

### *Urban tree*

In order to achieve moderate condition for urban trees, 3/4 of 6 of the following criteria must be met;

- 1- The tree is a native species.
- 2- The tree canopy is predominantly continuous, no gaps making up <10% of total area and no gap being >5m wide (individual trees pass this criteria automatically).
- 3- The tree is mature or veteran.
- 4- Little to no evidence of an adverse impact to the health of the tree by anthropogenic activities (vandalism, herbicide use etc.). No current regular pruning scheme so trees retain >75% of expected canopy for their age and height.
- 5- Micro-habitats for birds, mammals, and insects are present (deadwood, cavities, ivy, loose bark).
- 6- More than 20% of the tree canopy area is oversailing vegetation beneath.

The suggested tree planting scheme includes both small and medium sized trees based on the BNG metric size definitions. Small trees are defined as trees which have a trunk diameter, at breast height, of <30cm, and medium trees are defined as trees with a trunk diameter, at breast height, of between 30-90cm.

The standard frame time for BNG is 30 years, however not all tree species will reach medium size within this time period therefore it will be necessary to either; plant fast growing species, or to buy saplings at an appropriate mature stage before planting on site so that they will reach the target size within 30 years.

In order to ensure that the planted trees will reach the target condition and size within the 30-year time frame, they will have to be monitored yearly in order to assess their rate of growth.

### *Other neutral grassland*

In order to achieve good condition for other neutral grassland, 5 of the following 6 criteria must be met, with criteria 1 and 6 being essential for good condition;

- 1- The appearance and composition of the vegetation closely matches characteristics of the specified grassland habitat type. Wildflowers, sedges, and indicator species are very clearly and easily visible throughout the sward.
- 2- Sward height is varied (at least 20% of the sward is less than 7cm, and at least 20% is more than 7cm).
- 3- Cover of bare ground between 1% and 5%.
- 4- Cover of bracken less than 20% and cover of scrub less than 5%.
- 5- Absence of non-native invasive species (as listed on Schedule 9 of WCA, 1981) and physical damage accounts for less than 5% of total grassland area.
- 6- There are greater than 9 species per m<sup>2</sup>.

### **Summary**

Overall, the Net project biodiversity habitat units is 3.25 and the total project biodiversity change for habitats is +10.6%. See full Biodiversity metric sheet for full breakdown of changes.

**BNG metric table**

Grey Towers, Nunthorpe (AMS-22-06)

Headline Results

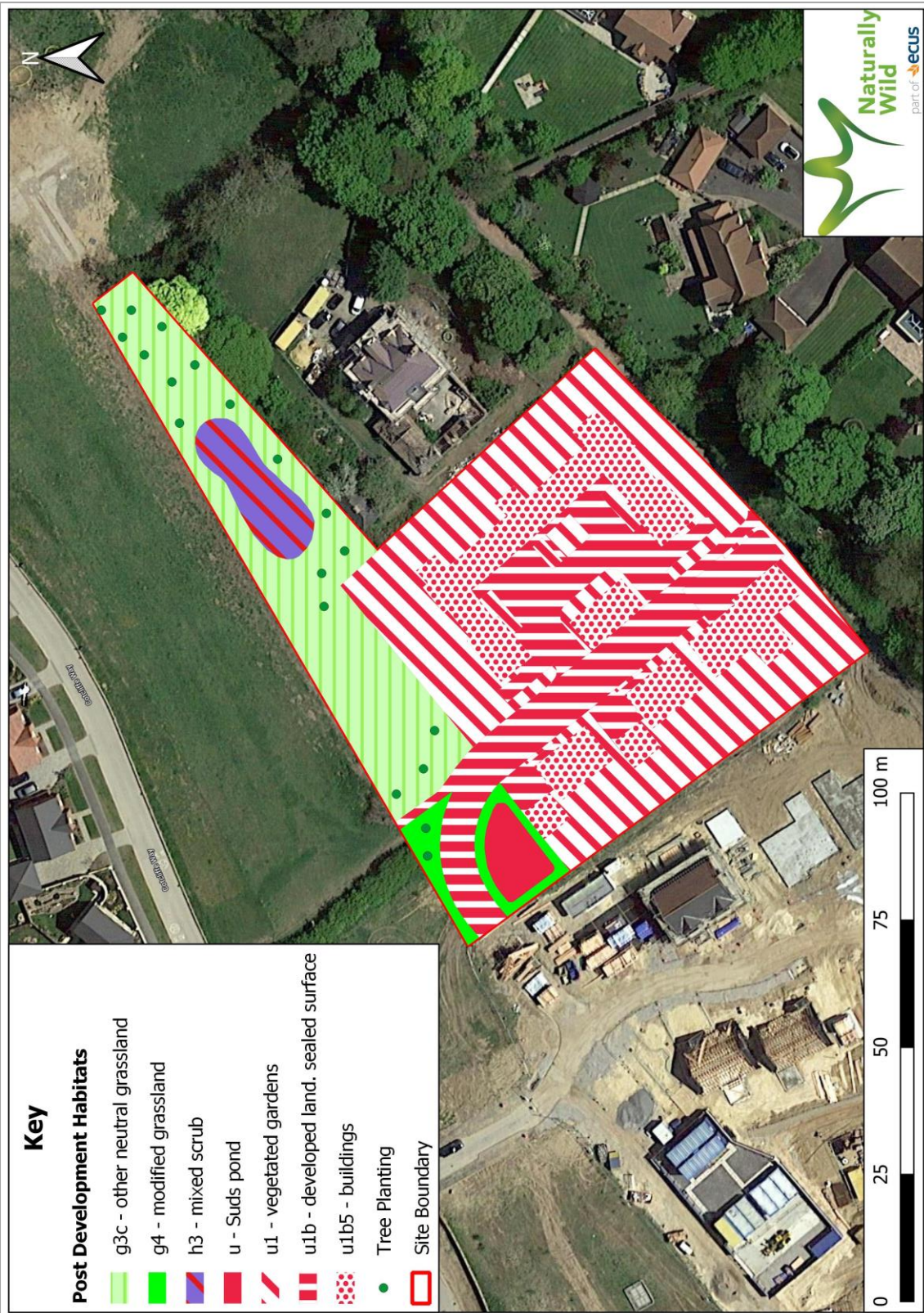
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On-site baseline	<i>Habitat units</i>	2.94
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention <small>(Including habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	3.25
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site net % change <small>(Including habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	10.60%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention <small>(Including habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	0.31
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus <small>(including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	<i>Habitat units</i>	10.60%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

Baseline Habitat Map



Suggested Post Development Habitat Map





# Landscape Plans

Original drawings provided by Summerhouse Architects.

