

Moorhill Road, West End

BIODIVERSITY NET GAIN ASSESSMENT

B029375, V1

Highwood Homes Ltd

October 2022

Document control

Document:	Biodiversity Net Gain Assessment
Project:	Moorhill Road, West End
Client:	Highwood Homes Ltd
Job Number:	B029375
File Origin:	N:\Projects\784-B029375 Moorhill Road West End\60 Project Output\61 Work in Progress\BNG

Revision:	1	Status:	Final
Date:	October 2022		
Prepared by:		Checked by:	Approved By:
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Revision:		Status:	
Date:			
Prepared by:		Checked by:	Approved By:
Description of revision:			

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Date:			
Prepared by:		Checked by:	Approved By:
Description of revision:			

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EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site is located at Moorhill Road, West End in Hampshire and is centred at Ordnance Survey National Grid Reference SU 47110 13549. The site is shown on Figure 1 and comprises the grounds of a former residential property with areas of scrub and scattered trees.
Proposals	The development proposals are for the construction of a 70-bed care home (use class C2) with access to Moorhill Road, parking, landscaping and other associated works.
Existing Site Information	An Ecological Appraisal was conducted by Tetra Tech in May 2021. Subsequent targeted protected species surveys were undertaken, including reptile and bat emergence surveys.
Scope of this Survey	• To assess the distinctiveness and condition of the vegetation types and other habitats present within the site; and • Present biodiversity net gain calculations, based on the most recent proposals, to inform the project on any potential biodiversity losses / gains as a result of the proposal site layout and landscaping.
Results	Based on the current Post-Development Plan, the development would result in a net gain of 0.31 habitat units (15.19 %) and a gain of 1.03 hedgerow units (322.23 %). The trading rules are also satisfied.

GLOSSARY

BSI	British Standards Institution
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
DBH	Diameter at Breast Height
DEFRA	Department for the Environment, Food and Rural Affairs
HAP	Habitat Action Plan
HBP	Hampshire Biodiversity Partnership
HPI	Habitat of Principal Importance
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
RPA	Root Protection Area
RPZ	Root Protection Zone
SAC	Special Area of Conservation
SSSI	Site(s) of Special Scientific Interest
W&CA	Wildlife & Countryside Act 1981 (as amended)

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Highwood Homes Ltd in May 2022 to prepare a Biodiversity Net Gain Assessment for the site known as Moorhill Road, West End.

The purpose of this assessment is to quantify the biodiversity value of the site prior to development, and the predicted value post development. This is measured in biodiversity units calculated according to the habitats present and their size, distinctiveness and condition. Risk factors are taken into account when quantifying habitats post-development. This enables the quantitative calculation of the predicted change in biodiversity value as a result of the proposed development, with the objective of achieving a net gain in biodiversity.

This report has been prepared by Project Ecologist Ben Cooke. The conditions pertinent to the report are provided in Appendix A.

1.2 SITE LOCATION

The site is located at Moorhill Road, West End in Hampshire and is centred at Ordnance Survey National Grid Reference SU 47110 13549. The site is shown on Figure 1 and comprises the grounds of a former residential property with areas of scrub and scattered trees.

1.3 DEVELOPMENT PROPOSALS

The development proposals are for the construction of a 70-bed care home (use class C2) with access to Moorhill Road, parking, landscaping and other associated works.

1.4 PURPOSE OF THE REPORT

The purpose of this report is to:

- Assess the distinctiveness and condition of the vegetation types and other habitats;
- Quantify the pre-development baseline habitat and hedgerow units present on site;
- Quantify the post-development biodiversity units on site; and
- Compare both figures to determine if the proposals result in a net-gain or net-loss of biodiversity units.

2.0 METHODOLOGY

2.1 BIODIVERSITY METRIC 3.1

A Biodiversity Net Gain (BNG) assessment involves making a comparison between the biodiversity value of habitats present within the site prior to development (i.e., the 'baseline') and the predicted biodiversity value of habitats following the completion of the development (i.e., 'post-development'). The comparison is made in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.

Biodiversity Metric 3.1 (Natural England, 2022a) calculates the overall loss or gain of biodiversity for development projects by assessing the distinctiveness (i.e., type of habitat and its value), condition, extent, and strategic significance of habitats on site pre- and post-development. To achieve biodiversity net gain, the biodiversity unit score must have a post-development score higher than the baseline score.

The metric assesses and generates separate outputs for area-based habitats (measured in habitat units) and linear based habitats, including hedgerows (measured in hedgerow units) and rivers (measured in river units). For the purpose of the BNG assessment, the output with the lowest value is used to determine whether following development there has been a net gain in biodiversity. A development cannot claim to achieve an overall net gain unless this is predicted across all area-based and linear based habitats.

When calculating the post-development biodiversity units, the metric includes a series of standard 'risk multipliers' to account for the inherent risk of creating and restoring habitats, the time taken to establish habitats and the location of the mitigation in relation to the habitats lost on site. The risk multipliers have the effect of reducing the value of the proposed habitats, which means larger areas, habitats of higher distinctiveness, and/or condition are required to achieve net gain.

As per paragraph 7.9 of *The Biodiversity Metric 3.1 auditing and accounting for biodiversity User Guide* (Natural England, 2022b), where a detailed measurements of the trees within the site are available through an Arboricultural Impact Assessment (AIA) or similar, these should be used to determine the area measurements for use in the metric. In case of the site the associated Tree Survey Report (James Fuller Arboriculture, 2021) was used.

The methodology for the calculation of the area for Urban – Urban trees uses the Root Protection Area (RPA) formula, $\text{area} = \pi \times r^2$ (as described within The British Standards Institution (BSI), *Trees in relation to design, demolition and construction – recommendations*, (BSI, 2012)). In the formula the radius (or r) is given as twelve times the tree's Diameter at Breast Height (DBH) for a single stemmed tree. For multi-stemmed trees the DBH of the largest stem is used to determine radius.

The area of all the trees within the site boundary should be accounted for regardless of whether a tree requires root protection measures.

When calculating the area for newly planted Urban – Urban trees the values as shown within Table 7-2 of the *The Biodiversity Metric 3.1 auditing and accounting for biodiversity User Guide* (Natural England, 2022b) should be used. The size classes of small, medium and large should be used based on their projected sizes 30 years after planting.

2.1.1 Distinctiveness

Each habitat is assigned a score for distinctiveness. Distinctiveness includes parameters such as species richness, diversity, rarity (at local, regional, national, and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek et al., 2010). The categories for distinctiveness within the metric are shown within the Natural England, *The Biodiversity*

Metric 3.1: Auditing and accounting for biodiversity value: technical supplement (Natural England, 2022c). The scores for each distinctiveness criteria are given in Table 1.

Table 1: Categories and score for distinctiveness

Categories	Score
Very High (Section 41 Priority Habitats that are threatened, internationally scarce and require conservation action)	8
High (Section 41 Priority Habitats)	6
Medium (Semi-natural habitats not classified as Priority Habitat)	4
Low (Habitat of low biodiversity value)	2
Very Low (Little or no biodiversity value)	0

2.1.2 Condition

The condition of each habitat is assessed using the methods set out in the *Biodiversity Metric 3.1: Auditing and accounting for biodiversity value: technical supplement* (Natural England, 2022c).

This approach determines how many of the condition criteria descriptions for each habitat type are met or are not met.

This is used as a guide but may be superseded where appropriate by other evidence and best ecological judgement. Where this is the case, additional information is provided in the tables used to the condition assessment.

Conditions and associated scores in the Natural England 3.1 Metric are as follows:

- Good: 3
- Fairly Good: 2.5
- Moderate: 2
- Fairly Poor: 1.5
- Poor: 1
- N/A Agriculture: 1
- N/A: 0

Fairly good and fairly poor condition assessments are relevant to Rivers and Streams only.

Certain habitats are allocated a fixed condition score and do not need their condition to be assessed. Some Low distinctiveness habitats are assigned '*No assessment required – condition fixed at 'Poor'*' and all Very Low distinctiveness habitats are assigned '*No assessment required – condition N/A*'.

2.1.3 Strategic Significance

Metric 3.1 requires that the strategic significance of all baseline and post-development habitats be defined. Strategic significance refers to areas of local priority for biodiversity and nature improvement, identified within local planning policies. As part of this assessment, the relevant local planning policy documents listed in Table 2 were reviewed to determine the strategic significance of the habitats on site. None of the habitats on site met the criteria associated with the Hampshire HAPs. Hedgerows are present on site, which are listed within the Biodiversity Action Plan for Hampshire.

Table 2: Relevant Planning Policies within Eastleigh

Plan	Policy
Hampshire Biodiversity Action Plan Volume 2, (HBP, 2000)	Habitat Action Plans include: • Ancient semi-natural woodland • Pasture woodland / parkland • Hedgerows • Arable land • Unimproved neutral dry grassland / hay meadows • Lowland calcareous grassland • Lowland wet grassland • Heathland • Acid grassland and bog • Fen, Carr, Marsh, Swamp, Reedbeds • Open Standing Water • Ephemeral Ponds • Chalk Streams • Rivers and Streams • Canals • Maritime Cliffs • Shingle • Saltmarsh • Coastal grazing marsh • Sand dunes • Mudflats and eelgrass beds • Saline Lagoons • Road Verges • Urban; and • Marine
Local Plan	The Eastleigh Borough Local Plan (2016 -2036) (Adopted 2022) includes Policy DM11, Nature Conservation, General Approach, states that, <i>‘1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to...</i> <i>c. seek a net gain of biodiversity on all development sites (including sites for development through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils’</i>

2.1.4 Risk Factors

As part of any proposed habitat creation and restoration, risk factors must be considered to correct for disparity, delay, or risk, these are:

- Time to target condition; and
- Difficulty of restoration / creation.

To take this into account, creation of a habitat which will take many years to get to target condition or is difficult to recreate would have a reduced biodiversity value compared to the same habitat already in situ. Therefore, to compensate for loss of that original habitat a larger area would be required as an offset.

Default values are provided for a range of habitats as part of the Natural England 3.1 metric. These may be altered if informed by knowledge of the site and proposed management prescriptions.

In addition, an update to the Natural England 3.1 metric has added a functionality which allows for delay or advancement in creation or enhancement of habitats and linear features thereby allows the time to reach a set condition to be reduced or extended.

2.2 PRE-DEVELOPMENT BASELINE DATA

The initial Phase 1 habitat survey of the site was undertaken on the 5th May 2021 by Tetra Tech Project Ecologist, Ben Cooke.

An assessment of the site to inform the BNG report was also undertaken on 29th July 2022 by Tetra Tech Project Ecologist, Ben Cooke.

The pre-development habitats were originally mapped in accordance with the JNCC Phase 1 habitat types (JNCC, 2010). These habitats were assessed during the BNG site survey and, where necessary, were updated to reflect the habitats as currently present on site. The habitats were converted into UKHab classification (UK Habitat Classification Working Group, undated) using the DEFRA 3.1 Metric which are shown on Figure 2 and set out in Table 3.

Table 3: Phase 1 habitats present on site pre-development and their conversion into UKHab

Phase 1 habitat Category (Tetra Tech, 2021)	Corresponding UKHab Category (Figure 2)
Bracken	Grassland – Bracken
Amenity grassland	Grassland – Modified grassland
Poor semi-improved grassland	Grassland – Modified grassland
Scrub – dense / continuous	Heathland and shrub – Mixed scrub
Scrub – scattered	Heathland and shrub – Mixed scrub
Tall ruderal	Sparsely vegetated land – Ruderal / Ephemeral
Hardstanding	Urban – Developed land; sealed surface
Introduced shrub	Urban – Introduced shrub
Scattered tree	Urban – Urban trees
Bare ground	Urban – Vacant / derelict land/ bare ground
Line of trees	Line of trees

2.3 POST-DEVELOPMENT DATA

The Landscape General Arrangement Plan (Drawing No. DD560L01A) has been used to determine the extent and type of habitats to be retained, created and enhanced post-development (collectively referred to as the 'Landscape Proposals'). The habitats were converted to UK Habitat Classification categories before being digitised into GIS to produce the Post-Development Habitat Plan (Figure 3).

Target condition scores for the proposed habitats were selected in accordance with *The Biodiversity Metric 3.1: Auditing and accounting for biodiversity value: technical supplement* (Natural England,

2022c) using professional judgement to ensure the condition scores selected were realistic. The data was utilised to predict the post development biodiversity units.

3.0 HABITAT DESCRIPTIONS

3.1 CONDITION ASSESSMENTS

All condition assessments for habitats both pre-and-post development are listed within Appendices C – D.

3.2 ON-SITE BASELINE HABITAT SUMMARY

The calculation covers a total area of 0.72 ha; this includes all the habitats shown on the Pre-development Plan (Figure 2). The habitats identified on site prior to development varied in ecological value, ranging from very low to high distinctiveness. The following descriptions provide a summary of the baseline habitats within the site and their condition.

3.2.1 Grassland – Bracken

An area of bracken was situated adjacent to the north of the line of trees within the southern extent of the site (TN41). The bracken had died back and therefore the coverage of the species was sparse.

3.2.2 Grassland – Modified grassland

Amenity grassland is situated along the roadside verge of Moorhill Road (A27) at the western extent of the site adjacent to the existing site entrances (TN40). Species included perennial ryegrass *Lolium perenne*, white clover *Trifolium repens* and daisy *Bellis perennis*. The grassland was well maintained and appeared regularly mown. The location and species composition of the quadrats used to assess the above area of grassland are summarised in Table 15, Appendix B.

Areas of poor semi-improved grassland were located with the centre and western extent of the site (TN5, TN8 and TN19). The majority of the grassland comprised the remnants of the garden of the former residential property on site which has since been demolished. The grassland was dominated by false oat grass *Arrhenatherum elatius*, perennial rye grass *Lolium perenne* and annual meadow grass *Poa annua*. The location and species composition of the quadrats used to assess the above area of grassland are summarised in Table 15, Appendix B.

3.2.3 Heathland and shrub – Mixed scrub

Scrub composed of bramble *Rubus fruticosus* and hawthorn *Crataegus monogyna* was present across much of the site although concentrated within the eastern and southern extents (TN16 and TN20). The areas of dense scrub were considered to be where the habitat has been long established within the site. The areas of scattered scrub represented areas where the habitat had begun to extend into adjacent areas and encompassed the existing habitat, particularly former areas of grassland and existing areas of hardstanding (Table 20).

3.2.4 Sparsely vegetated land – Ruderal / Ephemeral

Tall ruderal vegetation had established within the centre of the site (TN9). The vegetation was dominated by common nettle *Urtica dioica*, butterfly bush *Buddleia davidii* with rosebay willowherb *Epilobium angustifolium* (Table 21).

3.2.5 Urban – Developed land; sealed surface

The remnants of two outbuildings were recorded within the site (TN13 and TN17). All had been partially or completely demolished.

Areas of tarmac and concrete (which comprised foundations and driveway of the former residential property) (TN2). These areas were concentrated primarily within the western extent of the site.

3.2.6 Urban – Introduced Shrub

Strips of laurel *Prunus laurocerasus* hedge were located along the northern and western boundaries of the former property (TN4 and TN13).

3.2.7 Urban – Urban trees (& Line of trees)

Individual and groups of trees (including lines of trees) were present within the site however the majority were located within the western half of the site. These are described within Table 4.

Table 4: Tree Descriptions

Target Note	Description
TN3	Western red cedar <i>Thuja plicata</i> containing a small, dilapidated treehouse.
TN6	A cluster of trees within the north-western corner of the site. Species included sweet chestnut <i>Castanea sativa</i> , common holly <i>Ilex aquifolium</i> and Lawson cypress <i>Chamaecyparis lawsoniana</i> .
TN7	A mature sycamore <i>Acer pseudoplatanus</i> .
TN10	A mature sweet chestnut.
TN11	A dead sweet chestnut.
TN12	A sweet chestnut.
TN18	A line of trees to the north of a tarmac track. Species included sweet chestnut, common beech <i>Fagus sylvatica</i> , pedunculate oak <i>Quercus robur</i> and sycamore.
TN22	A mature field maple <i>Acer campestre</i> .
TN23	A mature narrowleaf ash <i>Fraxinus angustifolia</i> .
TN24	A mature Turkey oak <i>Quercus cerris</i> .
TN25	A mature pedunculate oak.
TN26	A mature pedunculate oak.
TN28	A mature sweet chestnut.
TN29	A mature common lime.
TN30	A mature sycamore.
TN31	A mature sycamore.
TN34	A mature sycamore.
TN35	A cluster of trees adjacent to the north of the southern site entrance. Species included Western red cedar, common beech, holly and Monterey pine <i>Pinus radiata</i> .
TN36	A mature sweet chestnut.
TN37	Western red cedar within the roadside verge along Moorhill Road (A27).
TN38	Mature pedunculate oak within the roadside verge along Moorhill Road (A27).
TN39	Mature Monterey pine within the roadside verge along Moorhill Road (A27).

3.2.8 Urban – Vacant / derelict land / bare ground

The remains of the property previously located on site (brick and building waste) had been piled into a large heap within the western extent of the site (TN1). In addition, there were patches of bare earth identified within the site.

4.0 BASELINE HABITAT UNITS

4.1 ON-SITE BASELINE HABITAT

The respective baseline biodiversity value for area-based and linear habitats on-site are provided in Tables 5 and 6. In total, the baseline biodiversity value of the habitats present on-site was calculated as **2.05** area-based habitat units and **0.32** linear hedgerow units.

Table 5: On-site Baseline Area-based Habitats

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Grassland – Bracken	Low	Condition Assessment – N/A	0.05	0.10
Grassland – Modified grassland (Area within the site)	Low	Moderate	0.08	0.32
Grassland – Modified grassland (Adjacent to Moorhill Road)	Low	Moderate	0.01	0.04
Heathland and shrub – Mixed scrub	Medium	Poor	0.27	1.08
Sparsely vegetated land – Ruderal / Ephemeral	Low	Poor	0.11	0.22
Urban – Developed land; sealed surface	V.Low	N/A - Other	0.09	0.00
Urban - Introduced shrub	Low	Condition Assessment – N/A	0.02	0.04
Urban – Urban trees	Medium	Moderate	0.006	0.05
Urban – Vacant / derelict land / bare ground	Low	Poor	0.1	0.20
Total	-	-	0.74	2.05

Table 6: On-site Baseline Linear Habitats

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Line of trees	Low	Moderate	0.08	0.32

5.0 POST-DEVELOPMENT HABITAT UNITS

The proposal for habitats within the site as detailed adheres to the mitigation hierarchy of avoidance, mitigation, and compensation. The hierarchy prioritises the avoidance of damage to habitat, then where this is not an option reducing impacts through mitigation (where possible) and finally if there is loss of habitat, compensation through creation of habitat elsewhere (i.e., off-site).

Where the removal of habitat cannot be avoided or mitigated within the site (due to existing development proposals), it is proposed to be compensated through the creation of additional appropriate habitat on-site.

The condition of the existing habitats within the site and their corresponding justifications for passing or failing each of assessed criteria relevant to their UKHab habitat type are detailed in Appendix C.

The management practices considered necessary to achieve the proposed conditions for habitats post-construction, whether retained, enhanced, or created are detailed within Appendix D.

5.1 ON-SITE CREATED, RETAINED AND ENHANCED HABITAT

In total, the post-development biodiversity value on-site is predicted to be **2.17** area-based habitat units and **1.07** linear hedgerow units (Table 7 - 11).

Table 7: Created On-site Post-Development Habitat Data

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Grassland – Other lowland acid grassland	Medium	Moderate	0.10	0.56
Grassland – Modified grassland	Low	Moderate	0.02	0.07
Heathland and shrub – Mixed scrub	Medium	Moderate	0.14	0.94
Urban – Developed land; sealed surface	V.Low	N/A - Other	0.34	0.00
Urban – Introduced shrub	Low	Condition Assessment – N/A	0.08	0.15
Urban – Rain garden	Low	Moderate	0.01	0.04
Urban – Sustainable urban drainage feature	Low	Moderate	0.02	0.05
Urban – Urban trees	Medium	Moderate	0.12	0.37
Total	-	-	0.83	2.17
Total (excluding Urban trees)	-	-	0.71	-

Table 8: Enhanced On-site Post-Development Habitat Data

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Heathland and shrub – Mixed scrub	Medium	Moderate	0.02	0.15

Table 9: Retained On-site Post-Development Habitat Data

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Urban – Urban trees	Medium	Moderate	0.005	0.04

Table 10: Created On-site Post-Development Hedgerow Data

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Native species-rich hedgerow	Medium	Moderate	0.16	1.07

Table 11: Retained On-site Post-Development Hedgerow Data

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Line of trees	Low	Moderate	0.07	0.28

5.2 HABITATS LOST ON-SITE TO PROPOSED DEVELOPMENT

The majority of habitats on site will be lost to facilitate the proposed development. A summary of the areas and lengths lost is presented in Table 12 and 13.

Table 12: Habitats Lost On-site due to Proposed Development

Habitat Type (UKHab)	Distinctiveness	Condition	Area (ha)	Habitat Units
Grassland – Bracken	Low	Condition Assessment – N/A	0.05	0.10
Grassland – Modified grassland	Low	Moderate	0.08	0.32
Grassland – Modified grassland	Low	Moderate	0.01	0.04
Heathland and shrub – Mixed scrub	Medium	Poor	0.25	1.00
Sparsely vegetated land – Ruderal / Ephemeral	Low	Poor	0.11	0.22
Urban – Developed land; sealed surface	V.Low	N/A - Other	0.09	0.00
Urban – Introduced shrub	Low	Condition Assessment – N/A	0.02	0.04
Urban – Urban trees	Medium	Moderate	0.001	0.01
Urban – Vacant / derelict land / bare ground	Low	Poor	0.10	0.20
Total	-	-	0.71	1.93

Table 13: Linear Features Lost On-site due to Proposed Development

Habitat Type (UKHab)	Distinctiveness	Condition	Length (km)	Habitat Units
Line of trees	Low	Moderate	0.01	0.04

6.0 CONCLUSION

6.1 SUMMARY OF RESULTS

All habitats present within the baseline plan and the Proposed Development (including baseline, retained, enhanced and created) are present within the accompanying biodiversity metric calculation tool assessment for the Proposed Development; refer to Appendix C.

A summary of the results is shown in Table 14. Based on the current Post-Development Plan and proposed off-site mitigation, the development would result in a net gain of **0.31** habitat units (**15.19 %**) and a gain of **1.03** hedgerow units (**322.23 %**). Note that these are separate measurements and in accordance with the guidance on Metric 3.1 they should be reported separately, and not summed or averaged.

Table 14: Summary of Results

On-site baseline	Habitat units	2.05
	Hedgerow units	0.32
On-site post-intervention	Habitat units	2.36
	Hedgerow units	1.35
Total net unit change	Habitat units	0.31
	Hedgerow units	1.03
Total on-site net change (%)	Habitat units	15.19%
	Hedgerow units	322.23%

6.2 CONCLUSION

The biodiversity net gain metric for the proposed development predicts that the current landscape layout for the site will result **in an overall net gain of biodiversity units for habitats and hedgerows on site. The trading rules for the metric have also been satisfied.**

As referenced in the revised NPPF paragraph 174, section 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*” and paragraph 180, section D “*development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity*”, LPA’s should determine development on their opportunities to incorporate measurable net gains for biodiversity.

The current layout of the site, in conjunction with off-site mitigation, shows that a measurable gain will be achieved. The threshold of 10% gain in biodiversity as required by legislation, has also been achieved¹.

¹ Please note that it is not current national or local policy that an application is required to deliver a measurable gain in biodiversity units of 10 % on site or through the enhancement of off-site areas.

The outputs of the metric are dependent on all created, retained and enhanced habitats meeting the target conditions, subject to the criteria outlined within Natural England's Biodiversity Metric 3.1. These conditions would therefore also need to be outlined within an overarching Landscape Masterplan / Ecological Management Plan for the proposed development. The monitoring of habitats over a 30-year period need to be outlined within such a document to ensure habitats develop in line with the predicted biodiversity as calculated within the Biodiversity Metric. This would also be used to inform the management adapted where required to achieve the objectives. Indicative management prescriptions have been outlined in Appendix D.

7.0 REFERENCES

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FIGURES

Figure 1 – Site Location Plan

Figure 2 – Pre-development Habitat Plan

Figure 3 – Post-development Habitat Plan



Site Location Plan
Moorhill, Moorhill Road, West End
Highwood Homes Ltd



Legend
 Site boundary

Notes:

Drawn by: JADE.BOWLING	Figure No. 1
Checked by: BC	Revision No. B
Office: Southampton	26 September 2022

 0 5 10 15 20 25 Meters	British National Grid
Scale 1:500 @A3	NGR: 447107E 113542N

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Southampton
Hampshire, SO30 2AF



BNG Pre-Development Habitat Plan

Moorhill, Moorhill Road, West End



Highwood Homes Ltd

Legend

- Site boundary
- Grassland - Modified grassland
- Heathland and shrub - Bramble scrub
- Grassland - Bracken
- Sparsely vegetated land - Ruderal / ephemeral
- Urban - Introduced shrub
- Urban - Vacant / derelict land / bare ground
- Urban - Developed land; sealed surface
- Fence
- Line of trees
- Scattered tree

Notes:

Drawn by: JADE.BOWLING
Checked by: BC
Office: Southampton

Figure No. 2
Revision No. C
03 October 2022

0 10 20 30 Meters
Scale 1:750 @A3

British National Grid
NGR: 447104E 113542N

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BNG Post-Development Habitat Plan

Moorhill, Moorhill Road, West End

Highwood Homes Ltd

Legend

- Site boundary
- Grassland - Modified grassland
- Grassland - Other acid grassland
- Heathland and shrub - Mixed scrub
- Urban - Developed land; sealed surface
- Urban - Introduced shrub
- Urban - Rain garden
- Urban - Sustainable urban drainage feature
- Native hedgerows
- Line of trees
- Urban - Urban trees



Notes:

Drawn by: JADE.BOWLING	Figure No. 3
Checked by: BC	Revision No. C
Office: Southampton	03 October 2022

0 10 20 30 Meters
Scale 1:750 @A3

British National Grid
NGR: 447104E 113542N

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APPENDIX A – REPORT CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of Highwood Homes Ltd (“the Client”) for the proposed uses stated in the report by [Tetra Tech Environment Planning Transport Limited] (“Tetra Tech”). Tetra Tech exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder’s permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections’. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B – GRASSLAND QUADRAT LOCATIONS AND SPECIES COMPOSITION

Table 15: Quadrat Locations and Species Composition within Grassland TN40²

Quadrat	OS Grid Reference	Species	Images
1	SU 47073 13500	Daisy <i>Bellis perennis</i> Doves-foot cranes-bill <i>Geranium molle</i> False barley <i>Hordeum murinum</i> Perennial ryegrass <i>Lolium perenne</i> Rough hawkbit <i>Leontodon hispidus</i>	 

² Following the assessment completed on 29th July 2022 the size of the site was decreased following the exclusion of land from the southern extent of the site. This meant that two of the quadrat samples (4 and 5) are now located outside of the site boundary however the quadrats have been included within the report to provide an overall assessment of the grassland.

Quadrat	OS Grid Reference	Species	Images	
2	SU 47062 13514	Perennial ryegrass		

Quadrat	OS Grid Reference	Species	Images	
3	SU 47047 13535	Perennial ryegrass Greater plantain <i>Plantago major</i>		

Quadrat	OS Grid Reference	Species	Images	
4	SU 47047 13545	Dandelion <i>Taraxacum officinale</i> Greater plantain Perennial ryegrass Ribwort plantain <i>Plantago lanceolata</i> Yarrow <i>Achillea millefolium</i>		

Quadrat	OS Grid Reference	Species	Images	
5	SU 47059 13535	Perennial ryegrass		

Table 16: Quadrat Locations and Species Composition within Grassland TN5, TN8 and TN19³

Quadrat	OS Grid Reference	Species	Images	
1	SU 47039 13551	Bramble <i>Rubus fruticosus</i> Feathermoss <i>Hypnales</i> spp. Ragwort <i>Jacobaea vulgaris</i> Yorkshire fog <i>Holcus lanatus</i>		

³ Following the assessment completed on 29th July 2022 the size of the site was decreased following the exclusion of land from the southern extent of the site. This meant that one of the quadrat samples (2) is now located outside of the site boundary however the quadrat has been included within the report to provide an overall assessment of the grassland.

Quadrat	OS Grid Reference	Species	Images	
2	SU 47073 13509	Perennial ryegrass Feathermoss Yorkshire fog		

Quadrat	OS Grid Reference	Species	Images	
3	SU 47100 13531	Bramble Feathermoss Yorkshire fog		

Quadrat	OS Grid Reference	Species	Images	
4	SU 47092 13545	Bramble Feathermoss Meadow foxtail <i>Alopecurus pratensis</i> Ragwort St John's Wort <i>Hypericum perforatum</i> Yorkshire fog		

Quadrat	OS Grid Reference	Species	Images	
5	SU 47111 13541	Creeping thistle <i>Cirsium</i> <i>arvense</i> Curled dock <i>Rumex crispus</i> Feathermoss Ragwort Yorkshire fog		

APPENDIX C – CONDITION ASSESSMENT PRE-DEVELOPMENT

ON-SITE AREA-BASED HABITATS

Table 17: Grassland – Bracken

Criterion	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Condition: N/A													
Criteria Assessment	No condition assessment required, assigned default score of 1, equivalent to 'poor' condition.													

Table 18: Grassland – Modified Grassland (Area within the site)

Criterion	1	2	3	4	5	6	7	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	✓	X	✓	✓	✓	X							4 / 7
	Condition: Moderate													
Criteria Assessment	1. The average number of species per 1 m² across five quadrats was less than 6 species (4) 2. The height of the sward was varied throughout the site with at least 20 % less than 7 cm and 20 % more than 7 cm. 3. Scattered scrub encroachment was present from adjacent habitat. The scrub accounted for more than 20 % of the total grassland area. 4. Physical damage due to the presence human activity accounted for less than 5 % of the total grassland area. 5. The cover of bare ground comprised 1 - 10 % of the total grassland area 6. Encroachment of bracken within the grassland was recorded, however the cover of bracken was less than 20 %. 7. Montbretia <i>Crocasmia x crocosmiiflora</i>, an invasive non-native species (as listed on Schedule 9 of WCA, 1981) was recorded. Species indicative of sub-optimal condition (white clover, common nettle and creeping thistle) comprised less than 5 % of ground cover within the field compartment¹													
Footnotes	Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> , cow parsley <i>Anthriscus sylvestris</i>													

Table 19: Grassland – Modified Grassland (Adjacent to Moorhill Road)

Criterion	1	2	3	4	5	6	7	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	X	✓	✓	✓	✓	✓							5 / 7
Condition: Moderate														
Criteria Assessment	1. The average number of species per 1 m² across five quadrats was less than 6 species (2.8) 2. No variation in sward, consistent height throughout field compartment 3. No scattered scrub encroachment was present therefore scrub accounted for less than 20 % of the total grassland area. 4. Physical damage due to the presence of livestock and human activity accounted for less than 5 % of the total grassland area. 5. The cover of bare ground comprised 1 - 10 % of the total grassland area. 6. No bracken identified. 7. No invasive non-native species (as listed on Schedule 9 of WCA, 1981) were recorded. Species indicative of sub-optimal condition (white clover, common nettle and creeping thistle) comprised less than 5 % of ground cover within the field compartment¹													
Footnotes	Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> , cow parsley <i>Anthriscus sylvestris</i>													

Table 20: Heathland and shrub – Mixed Scrub

Criterion	1	2	3	4	5	-	-	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	X	✓	X	X									1 / 5
Condition: Poor														
Criteria Assessment	1. The habitat is considered representative of the UKHab description however habitat is dominated by a single species (bramble) which is considered to comprise more than 75 % of the total area of the habitat. 2. The scrub habitat is all considered to comprise of a two-age class, young shrubs and mature shrubs. As none of the third category (seedlings) were identified the habitat is considered to have failed this criterion. 3. No invasive non-native species (as listed on Schedule 9 of WCA, 1981) were recorded and species indicative of sub-optimal condition¹ 4. The scrub did not have a well-developed edge with scattered scrub and tall grassland and / or herbs present between the scrub and adjacent habitat(s) 5. There were no clearings, glades or rides present within the scrub, providing sheltered edges.													
Footnotes	Footnote 1 – Species indicative of sub-optimal for this habitat type include: tree of heaven <i>Alianthus altissima</i> , holm oak <i>Quercus ilex</i> , turkey oak <i>Quercus cerris</i> , creeping thistle <i>Cirsium arvense</i> , common nettle <i>Urtica dioica</i> , cherry laurel <i>Prunus laurocerasus</i> , snowberry <i>Symphoricarpos</i> spp., cotoneaster <i>Cotoneaster</i> spp., Spanish bluebell <i>Hyacinthoides hispanica</i> (or hybrids).													

Table 21: Sparsely vegetated land – Ruderal / Ephemeral

Criterion	1	2	3	-	-	-	-	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	X	✓											1 / 3
Condition: Poor														
Criteria Assessment	1. The vegetation was not considered to be varied in structure with a single structural habitat component / vegetation type (tall ruderal) accounting for more than 80 % of the total habitat area. 2. There was a combination on native and non-native species present however these were not considered to constitute a diverse range of flowering plant species. 3. No invasive non-native species (as listed on Schedule 9 of WCA, 1981) were recorded. NB – To achieve GOOD condition, criterion three must be satisfied by a complete absence of invasive non-native species (rather than 5 % cover).													
Footnotes	N/A													

Table 22: Urban – Developed land; sealed surface

Criterion	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Condition: N/A - Other														
Criteria Assessment	No condition assessment required, assigned default score of 0.													

Table 23: Urban – Introduced Shrub

Criterion	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Condition: N/A														
Criteria Assessment	No condition assessment required, assigned default score of 1, equivalent to 'poor' condition.													

Table 24: Urban – Urban trees

Criterion	1	2	3	4	5	6	-	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	X	✓	✓	✓	✓								4 / 6
Condition: Moderate														
Criteria Assessment	1. Less than 70 % of the trees throughout the site comprise native species ¹ .													

	2. The canopy of the of the trees within the site were predominantly continuous, with gaps in the canopy cover making up less than 10 % of the total area. One of the trees within the site however was dead and therefore had no canopy which was greater than 5 m in width. 3. All the trees within the site were mature² although none were considered veteran³ 4. There was little evidence of adverse impacts on tree health caused by human activity. The site is unoccupied and therefore there is no current pruning regime. 5. Presence of deadwood, cavities, loose bark etc noted which offer microhabitat for birds, mammals and insects. 6. More than 20 % of the tree canopy area is oversailing the vegetation beneath.
Footnotes	Footnote 1 - This covers all trees in artificial urban habitats such as private gardens, private land, institutional land and land used for transport functions, roads, streets, canals, rail, footpaths etc. Trees in urban areas can under the right conditions provide a large range of habitat opportunities, supporting lichens, invertebrates and birds. Tree planting in urban areas has for over two hundred years also introduced non-native species into towns and cities. In the context of biodiversity native species are the preferred option. However, non-native tree species can contribute positively to biodiversity richness particularly in relation to providing a seasonal food source for nectar feeders and other invertebrates as well as supporting vertebrates that feed on species that are hosted by non-native trees. Examples are early and late flowering species of Prunus and aphids on varieties of Acer providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species. Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features: 1. Rot sites associated with wounds which are decaying >400cm²; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter; 3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs; 5. Fruit bodies of fungi known to cause wood decay

Table 25: Urban – Vacant / derelict land / bare ground

Criterion	1	2	3	-	-	-	-	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	X	X	✓											1 / 3
													Condition: Poor	
Criteria Assessment	1. The vegetation was not considered to be varied in structure with a single structural habitat component / vegetation type (bare ground) accounting for more than 80 % of the total habitat area.													

	2. There was some vegetation present, however this had minimal coverage within the habitat. Therefore, there was not considered to be a diverse range of flowering plant species, providing nectar sources for insects. 3. No invasive non-native species (as listed on Schedule 9 of WCA, 1981) were recorded.
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ON-SITE LINEAR HABITATS

Table 26: Line of trees

Criterion	1	2	3	4	5	-	-	-	-	-	-	-	-	Total pass
Results (Pass or Fail)	✓	✓	✓	X	✓									4 /5
													Condition: Moderate	
Criteria Assessment	1. More than 70 % of the trees within the line comprised native species. 2. Tree canopy is predominately continuous, gaps in the canopy cover are less than 10 % of the total area and there were no individual gaps more than 5 m wide 3. All the trees within the line were mature². None were veteran³. 4. Within 6 m south of the line of trees was an access track of bare earth and aggregate. 5. All of the trees within the line were considered to be in healthy condition and there was little or no damage noted on the trees.													

APPENDIX D - POST DEVELOPMENT HABITAT CONDITIONS AND MANAGEMENT

The below habitat creation and enhancements measures are based on the required management to fulfil the proposed post-development habitat condition. A separate detailed Landscape and Ecological Management Plan will be required to fulfil the management and monitoring requirements for the below created and enhanced habitats.

Table 27: Summary of Management Proposals for On-site Habitats to Achieve Target Condition

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
1	Grassland – Other lowland acid grassland	Created	Moderate	10	Grassland habitat type (medium, high & very high distinctiveness)	Target condition is 'moderate' in ten years. In order to achieve this the grassland needs to pass three or four of the five criteria presented within the condition assessment sheet. The achieved criteria are in bold below: Appearance of habitat closely matches characteristics of habitat. Wildflowers, sedges and indicator	In order to create and manage this habitat to reach good condition, the following measures are recommended: - Carry out planting according to the specification in the Landscape Plan (e.g., grassland wildflower seed mix, native trees suited to acidic soils). - Manage with a minimum of an annual (timing and number of cuts likely to vary through lifespan of management plan), selective weed control and remove all arisings; and - Any bracken, scrub or invasive species identified is removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						species are clearly and easily visible throughout sward. • Sward height (20% is less than 7cm and at least 20% is more than 7cm). • Cover of bare ground between 1 – 5% • Cover of bracken less than 20% and cover of scrub less than 5%. • Invasive non-natives less than 5%.	
2	Grassland – Modified grassland	Created	Moderate	4	Grassland habitat type	Target condition is 'moderate' in four years.	In order to create and manage this habitat to reach good condition, the following measures are recommended:

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
					(low distinctiveness)	In order to achieve moderate condition, the grassland needs to pass four or five of the seven criteria presented within the condition assessment sheet. The achieved criteria are in bold below: • There must be 6-8 species per m². • 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.	• Carry out planting according to the specification in the Landscape Plan • Monitoring of grassland for signs of physical damage; and • Any bracken, scrub or invasive species identified is removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						- Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. - Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						- Cover of bare ground between 1 % and 10 %, including localised areas, for example, rabbit warrens. Cover of bracken less than 20 %. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	
3	Heathland and shrub – Mixed scrub	Created	Moderate	5	Scrub habitat type	Target condition is 'moderate' in five years. In order to achieve three or four of the following five criteria need to be passed. The achieved criteria are in bold below: At least three woody species	In order to create and manage this habitat to reach good condition, the following measures are recommended: At least three woody species are included within the planting regime for this habitat

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						present with no one species accounting for more than 75 % of the cover. • Good age range present: seedlings, young shrubs, and mature shrubs. • Invasive non-native species make up less than 5 % of ground cover. • Scrub has a well-developed edge • There are clearings, glades or rides present within the scrub.	• Rotating periodic clearance within the habitat to allow for the growth of seedlings and young shrubs alongside mature shrubs. • Regime of clearance and planting along edge of habitat to create a well-developed edge habitat of tall grassland and / or herb species. • Any invasive species identified are removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
4	Urban – Developed land; sealed surface	Creation	N/A - Other	0	Urban Habitat Type	The target condition (N/A) is pre-set in the metric	NA – no set prescription required due to the habitat's pre-set condition.
5	Urban – Introduced shrub	Creation	N/A	1	Urban Habitat Type	The target condition (N/A) is pre-set in the metric	NA – no set prescription required due to the habitat's pre-set condition.
6	Urban – Rain garden	Creation	Moderate	3	Urban Habitat Type	Target condition is 'moderate' in 3 years. In order to achieve this two of the following three criteria need to be passed. The achieved criteria are in bold below: Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single structural habitat component / vegetation type should not account for more than 80 % of the total habitat area	In order to create and manage this habitat to reach moderate condition, the following measures are recommended: - Carry out planting according to the specification in the Landscape Plan; and - Any invasive species identified are removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						• 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; and • Invasive non-native species (Schedule 9 of WCA) cover less than 5 % of total vegetated area.	
7	Sustainable urban drainage feature	Creation	Moderate	3	Urban Habitat Type	Target condition is 'moderate' in 3 years. In order to achieve this two or three of the following four criteria need to be passed. The achieved criteria are in bold below: • Vegetation structure is varied, providing opportunities for	In order to create and manage this habitat to reach moderate condition, the following measures are recommended: • Carry out planting according to the specification in the Landscape Plan; and Any invasive species identified are removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						insects, birds and bats to live and breed. A single structural habitat component / vegetation type should not account for more than 80 % of the total habitat area • 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. • Invasive non-native species (Schedule 9 of WCA) cover less than 5 % of total vegetated area; and • The water table is at or near the	

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						surface throughout the year. This could be open water of saturation of soil at the surface.	
8	Urban – Urban tree	Created	Moderate	27	Urban Habitat Type	Target condition is 'moderate' in 27 years. In order to achieve this three or four of the following six criteria need to be passed. The achieved criteria are in bold below: • More than 70 % of trees are required to be native species • Tree canopy is continuous • More than 50 % of trees are mature / veteran • Trees are in healthy	In order to create and manage this habitat to reach moderate condition, the following measures are recommended: • Carry out planting according to the location and specification in the Landscape Plan; and • Maintenance (i.e., pruning regime) is completed only where necessary (e.g., reasons of health and safety) to allow tree to retain > 75 % if expected canopy for age and height)

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						condition and free from adverse impacts from human influence (vandalism / herbicide). The is no regular pruning regime so the trees retain 75 % of expected canopy for their age and height • Management regime has encouraged micro habitat sites for birds, mammals, and insects e.g., deadwood, cavities, and loose bark etc. • Trees are immediately adjacent to other	

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						vegetation and tree canopies are oversailing vegetation beneath	
9	Native Species-rich Hedgerow	Created	Moderate	10	Hedgerow habitat type	Target condition is 'good' in ten years. In order to achieve this condition, the hedgerow needs to fail no more than two of the following criteria and does not fail both criteria in any one functional group. The achieved criteria are in bold below: • A1 – Height – Average of > 1.5m along length • A2 – Width – Average of > 1.5m along length • B1 – Gap – hedge base – gaps between ground and base	In order to create and manage this habitat to reach moderate condition, the following measures are recommended: • No cutting regime of the hedgerow for first five years to allow the hedgerow to grow to height and width greater than 1.5 m • Any failed planting is replaced at the next available opportunity (i.e., September each year) to prevent gaps forming within the hedgerow; and • Any invasive species identified are removed.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						of canopy < 0.5 m for > 90 % of length • B2 – Gap – hedge canopy continuity – gaps make up < 10 % of total length with no gap being > 5 m. • C1 – Undisturbed ground and perennial vegetation - > 1 m width of undisturbed ground with perennial herbaceous vegetation for > 90 % of length. • C2 – Undesirable perennial vegetation – Plants indicative of nutrient enrichment of soils dominate < 20 % cover of undisturbed ground	

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						• D1 – Invasive species and neophyte species - > 90% of hedgerow is free from invasive non-native and neophyte species. • D2 – Current damage - > 90 % of the hedgerow is free from damage caused by human activities.	
10	Heathland and shrub – Mixed scrub	Enhanced	Moderate	10	Scrub habitat type	See habitat 3 above.	See habitat 3 above.
11	Line of trees	Retained	Moderate	N/A	Line of trees habitat type	In order to maintain this condition, the line of trees needs to pass at least three or four of the following five criteria. The achieved criteria are in bold below:	In order to maintain the existing habitat in its current condition, the following measures are recommended: • Maintenance (i.e., pruning regime) is completed only where necessary (e.g.,

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						• More than 70 % of trees are native species • Tree canopy is predominantly continuous with gaps in canopy cover making up less than 10 % of total area and no individual gap being more than 5 m wide. • Includes one or more mature or veteran tree • 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 • At least 95 % of the trees are in healthy	reasons of health and safety); and • Periodic monitoring for damage from livestock, pests, or diseases or human activity.

No.	Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (yrs.)	Habitat Condition Sheet	Condition Criteria	Associated Habitat Management Requirements (indicative based on Metric 3.1 recommendations – to be further developed for the site in agreed management plan)
						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.	
12	Urban – Urban trees	Retained	Moderate	N/A	Urban Habitat Type	See habitat 8 above.	See habitat 8 above.

APPENDIX E: BIODIVERSITY METRIC 3.1 CALCULATIONS

Please see 784-B029375, Moorhill Road, West End, Biodiversity Metric 3.1.