APPENDIX 8.4: BIODIVERSITY NET GAIN ASSESSMENT

Ham Close Regeneration

Planning Application:

Biodiversity Net Gain Assessment

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TECHNICAL NOTE - BIODIVERSITY NET GAIN

Introduction

This technical note details the Biodiversity Net Gain that the proposed Ham Close development is expected to achieve based on the current landscape masterplan. Post development habitat areas have been provided by the landscape architects on the project (LUC) from the Urban Greening Factor Calculations, Drawing Ref LD-SKE-220110 P01, March 2022 (Appendix A). The baseline habitat areas are based on the results of the Preliminary Ecological Appraisal and Arboricultural Survey, completed by Greengage in September 2021 and December 2021 respectively.

Natural England Metric

To calculate the ecological value of the pre- and post-development site, the Natural England Biodiversity Metric 3.0 methodology was utilised, following best practice guidance from Natural England and joint guidance from CIEEM, IEMA and CIRIA.

The areas of each habitat parcel are measured, with each parcel assigned a 'Distinctiveness' and 'Condition' score. Distinctiveness is a default score for the habitat classification, representing its inherent ecological value, whereas condition refers to the state each parcel is in relative to predetermined set of criteria outlined in the supplementary guidance.

For post-development habitat areas, additional multipliers are applied taking into account the time taken to reach maturity and difficulty of creation of the habitats, and whether the habitat creation is in a strategically beneficial location.

An assessment of the predicted change in ecological value is undertaken comparing the Biodiversity Units and assessing percentage change. Changes in broader habitat types (for example, 'Urban', 'Woodland' and 'Grassland' habitats) are also tracked, and trading habitats is discouraged unless specifically targeted within a local strategy. Trading down of habitats is not permitted.

Baseline

The baseline biodiversity value of the site is calculated to be **6.32** biodiversity units as broken down in the table below. It should be noted that Ham Village Green has been excluded from these calculations in accordance with previous consultation comments received from London Borough of Richmond upon Thames (LBRuT).

Table 1.1   Baseline Biodiversity Units

Broad Habitat	Habitat Type	Area (Hectares)	Distinctiveness	Condition	Biodiversity Units
Grassland	Modified Grassland	1.6	Low	Poor	3.20
Urban	Developed land	1.88	Very Low	N/A	0.00
Urban	Tree	0.39	Medium	Moderate	3.12
				TOTAL	6.32

Modified grassland comprises the regularly mown amenity lawns across the site. These are heavily managed, species-poor lawns which meet criteria 3, 6 and 7 (Appendix B), therefore score 'poor' condition.

Developed land scores 'very low' by default.

Existing urban trees are a mix of species (approximately 62% native), and score on criteria 2, 4 and 6 (Appendix B), therefore score 'moderate' condition.

Proposed Development

Based on the current masterplan drawings, the proposed development is predicted to provide 7.79 biodiversity units (an increase of 1.47 units). This equates to a **23.2% increase.**

Table 1.2   Post-Development Biodiversity Units

Broad Habitat	Habitat Type	Area (Hectares)	Distinctiveness	Condition	Biodiversity Units
Grassland	Other neutral grassland	0.1729	Medium	Moderate	1.16
Urban	Urban Tree*	0.6625	Medium	Moderate	2.03
Urban	Extensive green roof	0.3428	Medium	Moderate	1.54
Urban	Introduced shrub	0.1801	Low	Poor	0.35
Urban	Rain garden	0.0389	Low	Poor	0.08
Urban	Urban Tree**	0.0772	Medium	Moderate	0.24
Urban	Introduced shrub	0.0773	Low	Poor	0.15

Greengage

Broad Habitat	Habitat Type	Area (Hectares)	Distinctiveness	Condition	Biodiversity Units
Grassland	Modified grassland	0.5065	Low	Poor	0.98
Urban	Urban Tree***	0.16	Medium	Moderate	1.28
				TOTAL	7.79

*Standard trees planted in connected tree pits

**Standard trees planted in tree pits (soil volume less than two thirds the projected volume)

***Existing trees retained

Other neutral grassland represents the proposed wildflower grass mix. This is predicted to achieve 4 of the 5 criteria, therefore scores 'moderate' condition. A 'good' condition score is achievable if the grassland is managed with a varied sward height, creating different microclimates within.

The 'green roofs' will be biodiverse roofs, scored as 'moderate' using a precautionary principle. 'Good' condition is achievable through use of varied substrate depths and 100% native species seeding / plug planting.

The new urban trees are >70% native species, and meet criteria 1, 2 4 and 6, therefore score 'moderate' condition.

Introduced shrub represents the areas of flower-rich perennial planting and groundcover planting. Introduced shrub scores 'poor' by default in the Metric.

Rain gardens / swale will be vegetated - a condition of 'poor' is used as a precaution, however 'moderate' or 'good' are achievable, through use of varied, native species planting pallettes.

Modified grassland represents the areas of amenity lawn.

Linear Habitats

In addition to the above, 389m^2 of hedges are proposed. Hedges are calculated in the Metric as linear units, and have been included using as assumed width of 0.5m^2 (i.e. an overall length of 0.19km). Beech (*Fagus sylvatica*) and yew (*Taxus baccata*) are proposed as the main hedge species. Using a precautionary condition score of 'poor', the hedgerows provide a further 0.38 hedge units. This represents a net gain of 100% in linear biodiversity features, due to the baseline score of zero hedgerows.

Other Enhancements

Further biodiversity enhancements are also proposed. These are not quantifiable in the Natural England Metric but will offer additional features to further enhance the site's biodiversity value. These include bat and bird boxes and insect habitats such as stag beetle loggeries.

Conclusions

Development proposals, based on the above calculations, are expected to achieve net gains in biodiversity of over 23% in terms of area-based habitat value. Further enhancements will also be provided in the form of linear habitats and non-quantifiable features. A precautionary approach has been adopted to ensure gains are not overstated, however further gains are possible if the recommendations regarding biodiverse roofs and rain gardens above are implemented.

The proposals are therefore in compliance with local and is compliant with the emerging BNG Mandate which states a target of 10% net gain in biodiversity.

APPENDIX A LUC UGF PLAN

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KEY

— **Site Boundary**

— **OOLTI Boundary**
Ham Village Green

UGF (Excluding Ham Village Green)

Surface cover type [factor]
Area sqm/score

Semi-natural vegetation [1.0]
1,729.36 sqm/1,729.362

Standard trees planted in connected tree pits [0.8]
8,224.76 sqm/6,579.809

Extensive green roof [0.7]
3,428 sqm/2,399.6

Flower rich perennial planting [0.7]
1,801.08 sqm/1,260.755

Vegetated sustainable drainage [0.7]
388.61 sqm/272.025

Hedges [0.6]
388.60 sqm/233.160

Standard trees in tree pits (soil volume less than two thirds of projected canopy area) [0.6]
771.89 sqm/463.134

Groundcover planting [0.5]
773.16 sqm/386.578

Amenity grassland [0.4]
5,064.6 sqm/2,025.84

Total contribution = 15,350.3
Site area (m²) = 34,785.60
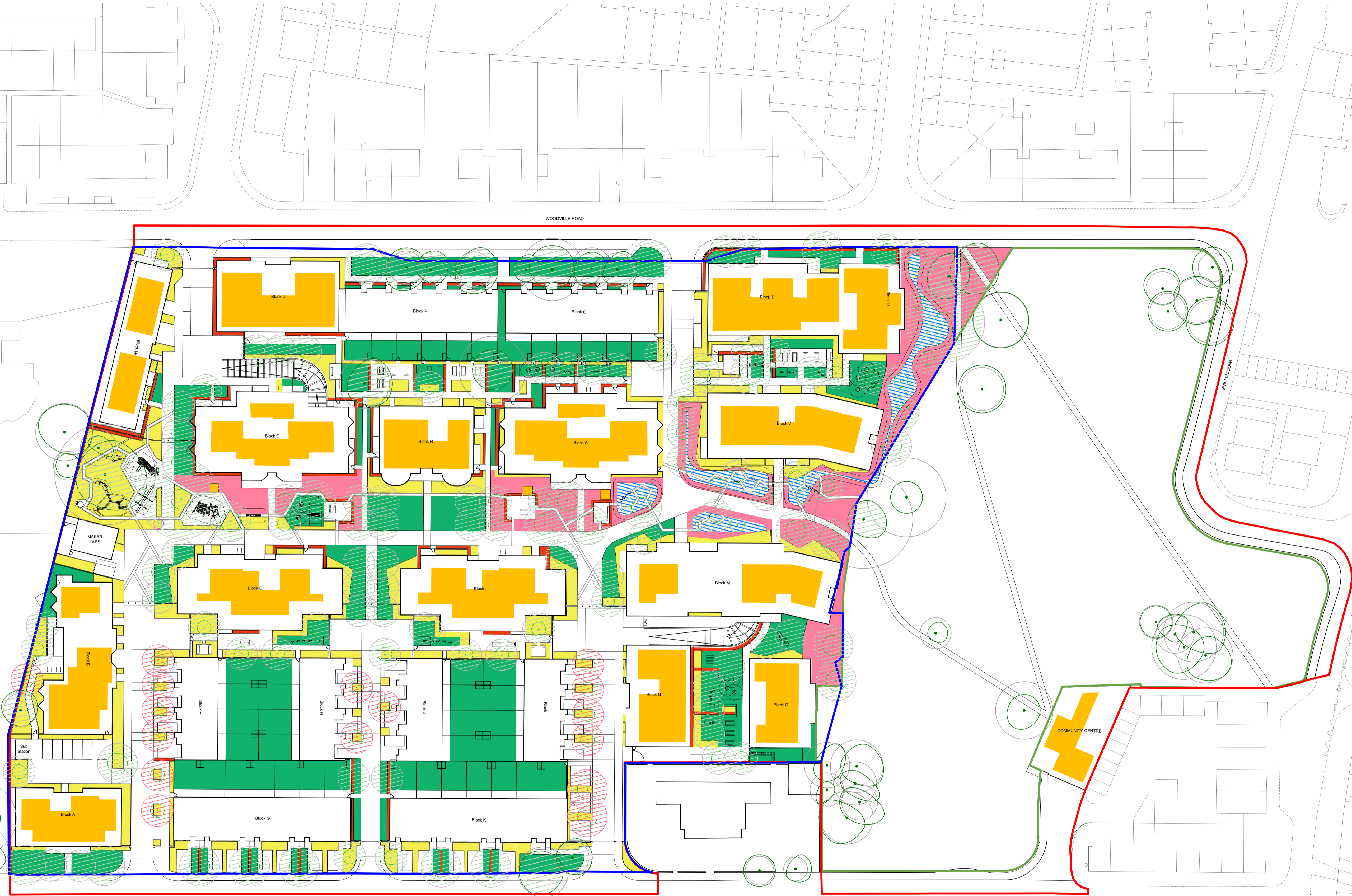
Score/area (Urban Greening Factor) = 0.441

UGF (Including Ham Village Green)

Surface cover type [factor]
Area sqm/score

Semi-natural vegetation [1.0]
5,188.36 sqm/5,188.356

Standard trees planted in connected tree pits [0.8]
9,934.97 sqm/7,947.977

Extensive green roof [0.7]
3,428 sqm/2,399.6

Flower rich perennial planting [0.7]
2,191.56 sqm/1,534.093

Vegetated sustainable drainage [0.7]
436.83 sqm/305.778

Hedges [0.6]
388.60 sqm/233.160

Standard trees in tree pits (soil volume less than two thirds of projected canopy area) [0.6]
771.89 sqm/463.134

Groundcover planting [0.5]
773.16 sqm/386.578

Amenity grassland [0.4]
12,524.99 sqm/5,009.994

Total contribution = 23,468.7
Site area (m²) = 46,602.30

Score/area (Urban Greening Factor) = 0.503

WOODVILLE ROAD

ASHBURNHAM ROAD

RIVER MEADOW

Block D
Block P
Block Q
Block T
Block U
Block W
Block C
Block R
Block S
Block V
MAKER LABS
Block B
Block E
Block I
Block M
Block N
Block O
Block F
Block H
Block J
Block L
Sub Station
Block A
Block G
Block K
COMMUNITY CENTRE

0 20 40 60m

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Project
HAM CLOSE REGENERATION

Client
HILL RESIDENTIAL

Scale @A1	Status
1:500	FOR PLANNING

Drawing Title
URBAN GREENING FACTOR DRAFT CALCULATIONS

Job Nr	Drawing Nr	Issue
11265	LD-SKE-220110	P01

Ins	Date	Description	Drn	Chk
P01	22.03.22	First Issue	AT	JL

APPENDIX B CONDITION ASSESSMENT CRITERIA

B.1   CONDITION ASSESSMENT SHEET FOR URBAN HABITATS

1. Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) 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.

3. NB - to achieve GOOD condition, criterion 2 must be satisfied by native species only (rather that non-natives beneficial to wildlife).

4. Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.

5. NB - to achieve GOOD condition, criterion 3 must be satisfied by a complete absence of non-native species (rather than <5% cover).

Condition	Assessment Criteria	Score
Good	• Passes 3 of 3 core criteria; and • Meets the requirements for good condition within criteria 2 and 3.	3
Moderate	• Passes 2 of 3 criteria; or • Passes 3 of 3 core criteria but does not meet the requirements for good condition criteria 2 and 3.	2
Poor	• Passes 0 or 1 of 3 criteria.	1

B.2   CONDITION ASSESSMENT CRITERIA FOR URBAN TREES

1. More than 70% of trees are native species.

2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.

3. More than 50% of trees are mature or veteran.

4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.

5. Management regime has encouraged micro habitat sites for birds, mammals and insects e.g. presence of deadwood, cavities or loose bark etc.

6. Trees are immediately adjacent to other vegetation, and tree canopies are oversailing vegetation beneath.

Condition	Assessment Criteria	Score
Good	• Passes 5 or 6 of 6 criteria	3
Moderate	• Passes 3 or 4 of 6 criteria	2
Poor	• Passes 0, 1 or 2 of 6 criteria	1

B.3 CONDITION ASSESSMENT CRITERIA FOR GRASSLAND HABITAT (LOW DISTINCTIVENESS)

1. There must be 6-8 species per m2 . Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type.

2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.

3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.

4. Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.

5. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.

6. Cover of bracken less than 20%.

7. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species1 make up less than 5% of ground cover.

Condition	Assessment Criteria	Score
Good	• Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	3
Moderate	• Passes 4 or 5 of 7 criteria; • OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	2
Poor	• Passes 0, 1, 2 or 3 of 7 criteria	1