

DYE HOUSE, PRESCOTT

BIODIVERSITY NET GAIN ASSESSMENT

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1. INTRODUCTION

1.1 SCOPE & PURPOSE

1.1.1. Collington Winter Environmental Ltd was commissioned by Group D Developments Ltd to prepare a Biodiversity Net Gain (BNG) Assessment for the proposed residential development at Dye House, Prescott. The report and calculation have been produced in support of the planning application at the site.

1.1.2. The author of this report is Olivia Collington BSc (Hons), MEnvSc, CEnv, Director at Collington Winter Environmental Ltd. Olivia is highly experienced managing schemes and has produced many ecological reports to inform management plans and BNG assessment.

1.1.3. This report has been written broadly following the Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021).

1.2. LOCATION

1.2.1. Please refer to Figure 1.1 for the site location. The site is located within Prescott, a town and civil parish within the Metropolitan Borough of Knowsley in Merseyside, England. It is situated north of the M57 and Liverpool Road and south of the A58 road.

Figure 1.1 Site Location



1.3. OBJECTIVES

1.3.1. The report has been produced to document the methods, results and conclusions of a BNG Assessment undertaken based on the proposed development for the site to fulfil the following:

- Ensure that the mitigation hierarchy has been applied;
- Identify the baseline habitats present and provide a condition assessment;
- Identify the post development habitats on site, assess the possible target condition and provide an indication of the likely importance of those habitats;
- Calculate the overall change in biodiversity score from pre- post development
- Provide design recommendations to maximise potential net gain achievable
- Provide an indication of likely outcomes and indicative cost as required.

1.4. PLANNING CONTEXT

- 1.4.1. Paragraph 174(d) of the revised National Planning Policy Framework (2021) states that “*Planning policies, and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity...*”
- 1.4.2. The Government 25-year Environment Plan states that government will “*embed environmental net gain principle for development.*”
- 1.4.3. Sefton Council – A Local Plan for Sefton (2030) Policy NH2 – Nature states that Paragraph 9 of the NPPF is to be followed which moves from a net loss of biodiversity to achieving net gains on site.

2. METHODS

2.1 EXISTING HABITAT (BASELINE)

- 2.1.1. A Preliminary Ecological Appraisal (PEA) of the site was undertaken in August 2022 by Collington Winter Environmental Ltd. This PEA has been used as the baseline habitats of the site.
- 2.1.2. The purpose of the survey was to ascertain the ecological value, identify habitat types, record any evidence of protected species, and to establish if further surveys needed to be undertaken. The survey recorded the general vegetation present, making a list of vascular plant species and made relevant target notes. Any features of wildlife interest were recorded, and the potential for protected / important species to be present were noted.
- 2.1.3. Habitat types were converted to UKHab classifications (The UK Habitat Classification Working Group, May 2018) using the UK Habitat Classification V1 guidance tool based on the assessor's judgment of how JNCC habitat descriptions best meet the criteria of the UK habitat classification.

2.2 DEVELOPMENT MASTERPLAN

- 2.2.1 The Indicative Layout Plan (5125-01) provides outline habitats and developable areas for the site which have been used to inform this calculation.

2.3 THE BIODIVERSITY METRIC 4.0

- 2.3.1 The BNG calculation was undertaken utilising The Biodiversity Metric 4.0 from DEFRA (full calculation available in Appendix), the site's Habitat map and the Indicative Layout Plan. The calculation was performed by a technically competent and experienced ecologist as detailed in British Standard BS8683 – Suitably qualified person – definition in BS8683:2020.
- 2.3.2 The Biodiversity Metric 4.0 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric takes into account the size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

2.4 HABITAT SCORING

- 2.4.1 The Biodiversity Metric 4.0 supplies reference documents and user guides in which to accurately evaluate and assess the different habitats on site. The methodology for the baseline and post development calculations are demonstrated in the following sections.

Baseline Units

- 2.4.2 To assess the quality of a habitat and therefore calculate the units scored the Biodiversity Metric 4.0 utilises three scoring factors as detailed below.

Condition

- 2.4.3 The condition of a habitat is assessed utilising the Condition Sheets provided for each habitat type. These list positive indicators for each habitat and indicate how many of these indicators need to be present to meet certain thresholds of condition. These condition sheets can be found in the Biodiversity Metric 4.0 habitat condition assessment sheets with instructions tool Technical (Natural England Joint Publication, 2023).

Distinctiveness

- 2.4.4 The distinctiveness of each habitat (area and linear) is automatically assigned by the tool, based upon national records of the occurrence and rarity of each habitat (Biodiversity Metric 4.0).

Strategic Significance

- 2.4.5 The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are in preferred locations for biodiversity and other environmental objectives. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such as Nature Recovery Areas, local biodiversity plans, National Character Area objectives and green infrastructure strategies.

Post Development Units

2.4.6 Additional factors are implemented when assessing post development habitats.

- Difficulty of Creation/Enhancement
- Temporal Risk “Time to target condition”
- Spatial Risk (when offsite mitigation is necessary)

2.5 LIMITATIONS OF ASSESSMENT

2.5.1 Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

2.5.2 Habitat areas predevelopment have been measured using online mapping, and therefore will not be completely accurate. Post development areas have been provided by Group D Developments Ltd.

2.5.3 The PEA was undertaken in 2022, and therefore it is possible that the condition assessments of habitats may have changed in the intervening time period.

3. BASELINE CONDITIONS

3.1. BASELINE HABITATS

3.1.1. Please refer to the following reports for full details of baseline conditions within the site, including flora species, conditions and management practices (where applicable):

- Preliminary Ecological Appraisal (2022) Dye House, Prescott (CW20-488 R1).

3.2. STRATEGIC SIGNIFICANCE

3.1.2. The site is assessed as being located within an area of “Medium Strategic Significance” as the location is ecologically desirable but not in the relevant local strategy. The site is reasonably well linked to the wider area through a network of hedgerows and treelines. These features will provide linear commuting features for wildlife and provide connectivity to the local area.

3.1.3. Urban trees have been classed as “High Strategic Significance” due to being listed under the Local Biodiversity Action Plan.

3.3. CONDITION ASSESSMENT

3.3.1. The following section summarises the condition assessment based on the condition sheets present within the Biodiversity Metric 4.0.

Grassland – Modified Grassland

3.3.2. An area of managed amenity grassland was present to the northeast of the site which surrounded the buildings. It was maintained at a short sward height and covered an area of 0.2004 ha.

3.3.3. The habitat condition assessment output was “Poor” due to passing 4 out of 7 criteria, and containing less than 6-8 species per m²:

- Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area.
- Cover of bare ground between 1% and 5%, 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) and undesirable species make up less than 5% of ground cover.

Grassland – Neutral Grassland

3.3.4. A large grassland field was present to the west of the site which comprised neutral semi improved grassland covering 0.4523 ha, categorised on the metric as “Other Neutral Grassland”.

3.3.5. The habitat condition output was “Poor” due to passing 2 out of 5 criteria, which included:

- 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.
- Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.

3.3.6. Greater than 9 species were observed within the grassland across its extent, however not more than 9 species were observed in a standard m² quadrat.

Other Woodland – Broadleaved

3.3.7. An area of broadleaved woodland (covering 0.1658 ha associated with the brook corridor) was identified to the centre of the site which was found to be in a moderate habitat condition due to scoring 28 out of 32 points.

Urban – Developed Land; sealed surface

A total area of 0.3495 ha was covered by buildings and hardstanding which have pre-set habitat conditions of “N/A – Other” in the 3.1 Metric.

Urban – Urban Tree

3.3.8. A single Medium sized Urban Tree was identified to the north east of the site. All other trees were classed within woodland blocks or treelines within the site. Using the Urban Tree Calculator, this tree covered an area of 0.0366 ha.

3.3.9. Table 3.1 summarises the baseline habitats, condition assessment and area size. Please refer to the UKHAB Map of the Site for the representation of the habitats. References have been given in Table 3.1 for ease of cross referencing.

Table 3.1 Habitat Type and Condition Assessment (pre- development)

HABITAT TYPE	CONDITION ASSESSMENT	AREA SIZE (ha)
<i>Grassland – Modified Grassland</i>	Poor	0.2004
<i>Grassland– Other Neutral Grassland</i>	Poor	0.4523
<i>Woodland – Other Woodland; Broadleaved</i>	Moderate	0.1658
<i>Urban – Developed Land; sealed surface</i>	N/A – Other	0.2295
<i>Urban – Urban Tree</i>	Poor	0.0366

River Baseline

3.3.10. A brook runs to the north of the site which has been adopted by the Environment Agency as a Main River. This area is to be retained within the development and is outside of the developer control in terms of management. Therefore, as no works are proposed to the brook, or the 8 m standoff either side, this area has been excluded from the BNG assessment and no river habitat condition assessment undertaken.

Hedgerows and Treelines

3.3.11. Two Line of Trees are present within the scheme, the first extends the length of the southern boundary and along the western boundary. Whilst this appears from aerial photography to be thick in canopy, on the ground it is actually just 1 – 2 trees in depth and a continuous line. Therefore, it was more appropriate to include as Line of Trees. This extended 138 m and was found to be in Moderate condition.

3.3.12. The second treeline formed a square around the southeastern field and covered a total length of 170 m and scored a Moderate habitat condition.

3.4. RETAINED AND ENHANCED HABITATS AND HEDGEROWS

3.4.1. The area of 0.1658 ha of broadleaved woodland associated with the brook is to be retained through management.

3.4.2. In addition, an area covering 0.0631 ha of Modified Grassland associated with the brook corridor is to be retained and enhanced through management.

3.5. LOST HABITATS

3.5.1. All areas of each habitat group above are to be lost to facilitate the development.

3.6. PRE- DEVELOPMENT HABITAT BASELINE

3.6.1. Please refer to Table 3.5 summarising the Habitat Baseline for the calculation, demonstrating habitats to be retained, enhance and/or lost.

Table 3.5 Habitat Baseline

	<i>On site Baseline</i>	<i>Retained</i>	<i>Enhanced</i>	<i>Lost</i>
<i>Habitat (Area) Units</i>	<i>4.06 units</i>	<i>1.46</i>	<i>0.14</i>	<i>2.46</i>

Table 3.6 Hedgerow Baseline

	<i>On site Baseline</i>	<i>Retained</i>	<i>Enhanced</i>	<i>Lost</i>
<i>Hedgerow Units</i>	<i>1.36 units</i>	<i>0.84</i>	<i>0</i>	<i>0.51</i>

4. HABITAT CREATION

4.1.1. The following sections detail the condition assessments that the habitats will be required to meet in order to achieve the relevant target condition.

4.2. HABITATS TO BE CREATED

Urban – Developed Land; sealed surface

4.2.1. A total area of 0.6456 ha is to be used as the developable area supporting buildings and hardstanding within the site. The metric pre-sets this condition assessment to “N/A – Other”.

Urban – Vegetated Garden

4.2.2. A total area of 0.1985 ha of vegetated residential gardens are to be present within the scheme. The metric pre-sets the condition assessment of vegetated garden as “Condition Assessment N/A”.

Grassland – Neutral Grassland

A total area of 0.0416 ha of Neutral Grassland is proposed within the site. This is to be made up of a mixture of rough grassland and wildflower meadow. This habitat is to target a “Poor” condition.

4.2.3. The condition criteria targeted are as follows:

- Management of grassland to provide varied sward height (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.
- Control cover of bracken and scrub to ensure cover is less than 20% and cover of scrub (including bramble) less than 5%.
- Controlled absence of invasive non-native species and undesirable species make up less than 5% of ground cover.

Grassland – Modified Grassland

4.2.4. An area of 0.0254 ha of modified grassland is proposed within the scheme, outside of private residential gardens and to be managed by a management company. The grassland is to achieve a “Poor” habitat condition based on seeking to achieve the following condition criteria:

- Some scattered scrub (including bramble *Rubus fruticosus* agg.) may be present, but scrub accounts for less than 20% of total grassland area.
- Cover of bracken *Pteridium aquilinum* is less than 20%.
- There is an absence of invasive non-native plant species³ (as listed on Schedule 9 of WCA4).

Urban – Introduced Shrub

4.2.5. An area of 0.028 ha of introduced ornamental shrub is proposed within the scheme. The metric pre-sets this habitat type as “Condition Assessment N/A”.

Urban – Urban Tree

4.2.6. A total of 58 new small sized trees are proposed within the scheme. The trees included within the calculation are outside of the residential gardens and will be managed by an appointed management company. These scattered trees are all to target a “Moderate” habitat condition by following management to achieve the below condition assessment:

- The trees are all to be native species.
- There will be little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is to be no regular pruning regime so the trees retain >75% of expected canopy for their age range and height.
- More than 20% of the tree canopy area is oversailing vegetation beneath.

Hedgerows

4.2.7. New native hedgerows covering a total length of 0.287 km are to be planted within the scheme. The hedgerow

to the north of the site, covering 0.097 km is to target Moderate condition, with the remainder targeting Poor condition.

4.2.8. Please refer to Table 4.1 for a summary of Habitats to be created within the site during the restoration.

Table 4.1 Summary of Habitats to be Created.

HABITAT TYPE	TOTAL AREA SIZE (ha)	TARGET CONDITION
<i>Urban – Developed Land; Sealed Surface</i>	<i>0.6456</i>	<i>N/A</i>
<i>Urban – Vegetated Garden</i>	<i>0.1985</i>	<i>N/A</i>
<i>Grassland – Other Neutral Grassland</i>	<i>0.0416</i>	<i>Poor</i>
<i>Grassland – Modified Grassland</i>	<i>0.0254</i>	<i>Poor</i>
<i>Urban – Introduced Shrub</i>	<i>0.028</i>	<i>N/A</i>
<i>Urban – Urban Tree</i>	<i>0.2361</i>	<i>Moderate</i>

5. CONCLUSION

5.1.1. This report and the DEFRA 4.0 Metric submitted have demonstrated that the proposed habitat creation will result in a net loss of habitats of -20.40 %. The trading rules have not been satisfied due to the loss of grassland and within the scheme. The calculation has shown that a net gain in Hedgerow Units is achievable with +18.57%.

5.1.2. It is calculated that 1.23 habitat units would be required to achieve a 10% net gain within the development. Consultation will be required with MEAS to determine appropriate offsite receptors for habitat enhancements, or an alternative payment scheme to satisfy the biodiversity net gain.

Figure 5.1 On site net % change

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-0.83
	<i>Hedgerow units</i>	0.25
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-20.40%
	<i>Hedgerow units</i>	18.57%
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	No - Check Trading Summaries ▲	

5.1.3. It is recommended that a production of a Biodiversity Enhancement Management Plan (BEMP) is conditioned as part of the planning application. The BEMP will need to set out the actions required to achieve and maintain the biodiversity value of the site for a period of 30 years. All habitats whose value is contributing to the overall biodiversity value of the site must be detailed in the BEMP, including any habitats which are to be maintained in their pre-development state and areas created as Public Open Space.

5.1.4. The BEMP objectives would need to include:

- a plan of the areas of habitat to be maintained, enhanced and/or created;
- a schedule of actions to create or enhance and maintain each habitat at the required
- quality for a period of 30 years;
- a schedule of ecological monitoring for the 30 year period identifying when key indicators
- of habitat maturity should be achieved; and
- schedule of actions to be undertaken in case signs of failing are identified

6. BIBLIOGRAPHY

- CIEEM (2021) Biodiversity Net Gain Report and Audit Templates.
- DEFRA (2023) The Biodiversity Metric 4.0: Auditing and Accounting for Biodiversity
- DEFRA (2023) The Biodiversity Metric 4.0: Auditing and Accounting for Biodiversity. Condition Assessment Sheets (Excel Format)
- Natural England (2019). Lake Naturalness Assessment Guidance

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