Biodiversity Net Gain Assessment

Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN

Presented to: Angle Property (RLP Shepperton) LLP

Issued: November 2022

Delta-Simons Project No: 17-0684.13

Protecting people and planet

Report Details

Client	Angle Property (RLP Shepperton) LLP
Report Title	Biodiversity Net Gain Assessment
Site Address	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN
Project No.	17-0684.13
Delta-Simons Contact	Jennifer Britt (jennifer.britt@deltasimons.com)

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
2	Final	16th November 2022		J. Britt		
				Jennifer Britt Associate Ecologist	Charlotte Sanderson-Lewis Associate Director	Charlotte Sanderson-Lewis Associate Director

About us

Delta-Simons is a trusted, multidisciplinary environmental consultancy, focused on delivering the best possible project outcomes for customers. Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from across the UK we employ over 180 environmental professionals, bringing experience from across the private consultancy and public sector markets.

As part of Lucion Services, our combined team of 500 in the UK has a range of specialist skill sets in over 50 environmental consultancy specialisms including asbestos, hazardous materials, ecology, air and water services, geo-environmental and sustainability amongst others.

Delta-Simons is proud to be a founder member of the Inogen Environmental Alliance, enabling us to efficiently deliver customer projects worldwide by calling upon over 5000 resources in our global network of consultants, each committed to providing superior EH&S and sustainability consulting expertise to our customers. Through Inogen we can offer our Clients more consultants, with more expertise in more countries than traditional multinational consultancy.

Delta-Simons is a 'Beyond Net-Zero' company. We have set a Science-Based Target to reduce our Scope 1 and Scope 2 carbon emissions in line with the Paris Agreement and are committed to reducing Scope 3 emissions from our supply chain. Every year we offset our residual emissions by 150% through verified carbon removal projects linked to the UN Sustainable Development Goals. Our consultancy services to you are climate positive.

If you would like support in understanding your carbon footprint and playing your part in tackling the global climate crisis, please get in touch with your Delta-Simons contact above who will be happy to help.

Table of Contents

Tables

Figures

Drawings

Appendices

1.0 Introduction

1.1 Context and Purpose

Delta-Simons Ltd was instructed by Angle Property (RLP Shepperton) LLP ("the Applicant") to undertake a Biodiversity Net Gain (BNG) Assessment to determine the potential of a residential scheme ("the Proposed Development") at land situated at Bugle Nurseries, off Halliford Road, Shepperton, in Surrey (hereafter referred to as "the Site") to achieve a net gain in biodiversity.

The revised National Planning Policy Framework (NPPF, 2021) states, "*Planning policies and decisions should contribute to and enhance the local environment by…(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…*", it also places greater emphasis on achieving a measurable net gain in biodiversity.

Biodiversity net gain is based around 10 key principles:

- Principle 1: Apply the mitigation hierarchy;
- Principle 2: Avoid losing biodiversity that cannot be offset elsewhere;
- Principle 3: Be conclusive and equitable;
- Principle 4: Address risk;
- Principle 5: Make a measurable net gain contribution;
- Principle 6: Achieve the best outcomes for biodiversity;
- Principle 7: Be additional;
- Principle 8: Create a net gain legacy;
- Principle 9: Optimise sustainability; and
- Principle 10: Be transparent.

1.2 Proposed Development

It is understood that the proposed development will comprise the construction of 80 residential properties, with associated gardens and access in the south-eastern of the Site. The remainder of the Site will be landscaped for use as public open space (Drawing 1).

2.0 Methodology

2.1 Overview

The approach used to assess biodiversity impacts resulting from the proposed development is detailed below. This assessment has been based on the DEFRA Metric 3.1 (the Metric), the Landscape Masterplan and the Preliminary Ecological Appraisal (PEA) undertaken in March 2022.

2.2 Biodiversity Metric

The quantitative assessment is based on the Metric to provide a transparent and repeatable measure of biodiversity at each of the stages identified above. The biodiversity score considers a number of factors including:

- Habitat distinctiveness;
- Habitat condition;
- Temporal risk: time required to reach target condition;
- Difficulty to create/restore;
- Connectivity; and
- Spatial area of loss/gain of each habitat.

The pre-development value is compared to the proposed habitat composition post development to assess the change in biodiversity value using biodiversity units as a proxy numeric value.

The Metric only considers habitats and does not take protected and notable species or associated enhancement measures such as bird/bat boxes into account.

2.3 Habitat Distinctiveness

Distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. Habitats are assigned to distinctiveness bands. These are based on an assessment of the distinguishing features of a habitat or linear feature, including the consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats.

The distinctiveness band of each habitat is preassigned in the Metric. The bands are based upon the UK habitat classification system. Where no directly comparable DEFRA habitat type was available to match the vegetation recorded by Phase 1 Habitat survey, the closest approximation was selected.

The DEFRA habitat typologies are split into five distinctiveness bands:

- **Very High** - Priority habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 that are highly threatened, internationally scarce, and require conservation action;
- **High** - Priority habitats as defined in Section 41 of the NERC Act requiring conservation action;
- **Medium** - Semi-natural habitats not classed as Priority Habitat;
- **Low** – Habitat of low biodiversity value; and
- **Very low** – Little or no biodiversity value.

Under the supplementary habitat calculations for linear habitats, hedgerows are assigned a distinctiveness weighting based on their physical structure and the species composition of the woody element of the

hedgerow, and their association with physical features (ditches and banks) that may enhance their ecological value by providing additional niches or enhanced capacity to provide habitat connectivity.

2.4 Habitat Condition

The condition of a habitat is defined by its particular quality. For example, a habitat is in poor condition if it fails to support the notable/protected species for which it is valued, or if it is in unfavourable condition due to degradation from external factors, such as pollution, erosion or invasive species. Condition assessment criteria is based on Common Standards Monitoring of protected sites in the UK where key attributes and positive and negative indicators are used. Habitat condition categories are as follows:

- Good;
- Fairly good;
- Moderate;
- Fairly poor;
- Poor;
- N/A – Agricultural; and
- N/A – other.

For linear features, condition assessment is based on the dimensions and other physical characteristics of a hedgerow or line of trees against a set of minimum requirements for the feature to be considered in a 'favourable' condition. The condition assessment is based on the Hedgerow Survey Handbook.

2.5 Baseline Assessment

The baseline biodiversity score for the Site has been determined using the PEA of the Site undertaken by Delta Simons in March 2022. The baseline habitats are shown in Figure 1.

2.6 Post Development Biodiversity Unit Calculation

Biodiversity Units and Linear Units resulting from ecological mitigation for the Scheme to compensate for potential losses are referred to as post-development Biodiversity Units / Linear Units (BUs / LUs).

To calculate the BUs which may be achieved post-development, risk factors are introduced. The aim of a risk factor is to correct for a disparity or risk, associated with the uncertainty surrounding the creation of habitats. There are three main types of risk that are accounted for within the Metric. These are categorised as follows:

- **Spatial Risk** – these reflect ecological risks deriving from the change in location of the habitat or resource. By way of example, it may be that recreating a habitat in a new location distant from the area of loss could reduce its biodiversity value, through reduced connectivity and a decrease in habitat availability for the species affected by the development;
- **Temporal Risk** – the risk associated with the time required for created habitats to reach their target suitability and for the functionality of the habitat to be restored; and
- **Delivery Risk** – the risks associated with the actual delivery of the offset due to, for instance, uncertainty in the effectiveness of habitat creation/management.

Each risk multiplier is assigned a numerical score which enables post development Biodiversity Units to be calculated.

2.7 Proposed Scheme

In order to calculate the post-intervention score, the Landscape Masterplan (Drawing 1) has been used as well as assumptions for targeted habitat conditions as set out in Section 3.0.

2.8 Future Auditing

This Report sets out the predicted biodiversity impacts of the scheme based on a set of assumptions and professional judgement for target habitat conditions post-development. In order to ensure the development achieves the targets set out below, the scheme should be accompanied by an appropriate Landscape and Ecology Management and Monitoring Plan (LEMMP). The LEMMP should allow for regular monitoring of the habitat establishment and their progression to the desired condition target, allowing for changes to management regimes as necessary to achieve the targets set.

3.0 Assumptions and Application of Professional Judgement

3.1 Baseline Habitats

Professional judgement has been made in relation to the baseline habitats and their conditions based on the criteria provided within the DEFRA Metric Technical Supplement, User Guide and Habitat Condition Assessment Sheets.

3.2 Future Habitats

Assumptions and professional judgement have been applied in relation to the habitat target condition. These judgements are based on realistic targets according to the location and context of the development. Future management of the landscaping at the Site should be informed by an appropriate management and monitoring plan to achieve these target conditions.

4.0 Results

4.1 Baseline

Baseline habitats are shown in Figure 1. Overall, the baseline for the Site is calculated to provide 16.33 area BUs and 0.36 LUs.

Table 1, below, provides a summary of the baseline habitats, areas and biodiversity units for the Site. As trees do not provide a groundcover area, they are included in addition to the ground vegetation within the calculator, meaning that the total areas presented are higher than the total area of the Site.

Table 1 – On-Site Area Habitat Baseline Score

Existing Habitats (Area)	Area (ha)	Biodiversity Units
Grassland – Modified grassland (amenity grassland)	0.169	0.34
Heathland and shrub – Mixed scrub	0.845	3.72
Urban – Developed land; sealed surface	1.058	0.00
Urban – Artificial unvegetated, unsealed surface	0.125	0.00
Urban – Introduced shrub	0.009	0.02
Grassland – Other neutral grassland	0.07	0.28
Grassland – Modified grassland (poor semi-improved grassland)	2.514	10.06
Urban – Urban tree	0.24*	1.92
Total	**5.00***	**16.33**

*The area of urban trees is not included in the total area measurement.

Table 2, below, provides a summary of the baseline linear habitats on Site (i.e. hedgerows).

Table 2 – On-Site Linear Habitat Baseline Score

Existing Habitats (Linear)	Length (km)	Linear Units
Hedgerow Ornamental Non Native	0.06	0.06
Native Hedgerow	0.15	0.30
Total	**0.21**	**0.36**

4.2 Proposed Scheme

Post-development habitat compositions are shown in Drawing 1 and detailed in Tables 3 and 4, below.

Table 3, below, provides a summary of the post-development habitats, areas and baseline biodiversity units for the Site.

Table 3 – Post Development Area Habitat Score

Proposed Habitats (Area)	Retained (ha) Area	Area (ha) Created	Area (ha) Enhanced	Biodiversity Units Delivered
Urban – developed land; sealed surface	0.00	1.43	000	0.00
Heathland and shrub – mixed scrub	0.00	0.18	0.3	3.75
Urban – Vegetated garden	0.00	0.64		1.24
Grassland – other neutral grassland	0.00	1.26	0.00	9.28
Grassland – modified grassland	0.00	0.98	0.00	1.89
Urban – urban tree	0.049	0.51	0.00	1.56
Total	**0.049**	**4.49**	**0.30**	**18.11**

Table 4, below, provides a summary of the post-development linear habitats on Site (i.e. hedgerows).

Table 4 – Post Development Linear Habitat Score

Existing Habitats (Linear)	Length (km)	Linear Units
Hedgerow Ornamental Non-native (created)	0.093	0.09
Native Hedgerow (retained)	0.07	0.15
Total	**0.163**	**0.24**

All of the hedgerows to be delivered on-Site have been combined to provide the above length measurement. The created hedgerows will consist of non-native species.

5.0 Conclusions

The above assessment results in a total net unit change of:

Habitat Units = +1.78 **Total net % change = +10.88%**

Hedgerow Units = -0.12 **Total net % change = -32.85%**

See the attached completed DEFRA Metric for detailed results (Appendix A).

Based on the information currently available, this assessment indicates that the development has the potential to achieve a net gain in biodiversity of over 10% for area habitats, and to satisfy the trading summary, assuming the post-development assumptions contained in this assessment are applied.

The current landscape masterplan results in a loss of linear/hedgerow units at the Site, however, with the incorporation of at least 50 m of native hedgerow, targeting a moderate condition within the area of public open space, the scheme has the potential to achieve more than 10% in linear/hedgerow units.

It should be noted that any habitat creation is required to be managed in perpetuity to ensure habitats meet the target conditions (which for the purposes of BNG is considered to be 30 years). Monitoring of this should be implemented through an appropriate LEMMP.

The requirement for further consideration of Biodiversity Net Gain will depend on the current approach and requirements of the LPA.

6.0 Disclaimer

The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free of Bats or other protected species.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 – Baseline Habitats

Legend

- Site boundary
- Scrub - dense/continuous
- Scrub - scattered
- SI — Neutral grassland - semi-improved
- SI — Poor semi-improved grassland
- A — Amenity grassland
- Introduced shrub
- Buildings
- Hardstanding
- Bare ground
- Intact hedge - species-poor
- Defunct hedge - species-poor
- Line of trees
- Fence
- Wall
- Scattered scrub
- Scattered tree
- Target note

0 15 30 45 60 Meters

N

Figure	Baseline Habitats		
Job	Bugle Nurseries, Upper Halliford Road, Shepperton, TW17 8SN		
Client	Angle Property (RLP Shepperton) LLP		
Figure No. 1	Revision A	Date 15/11/2022	
Drawn BB	Checked JB	Scale 1:1,250 @ A3	
Job No. 17-0684.13		Central GR 508994E 168650N	

DO NOT SCALE.
NOT FOR CONSTRUCTION.

DeltaSimons

Drawing 1 – Landscape Masterplan

New pedestrian and cycle linkages connecting wider landscape to the public open space, recreational lake and public rights of way

Parkland specimen trees define boundary between residential development and new public open space

Active frontages to plots in this area overlooking public open space

Ornamental tree, hedge and shrub planting are proposed within the development will create individual characteristics to areas of the site. Tree and specimen shrubs will add a vertical interest to the street scene

Proposed formal hedgerow and tree planting to Upper Halliford Road frontage

Section of existing bund retained to form visual separation from the site and railway. This will also aid as an acoustic barrier.

Proposed new bund formations created from cleaned and consolidated existing soil in this area, New land formations create recreational and visual interest, whilst acting as a visual and acoustic barrier from the railway line. Native tree, shrub and wildflower planting will enhance the sites biodiversity

Informal kickabout area

UPPER HALLIFORD

177

175

139

137

11.3m

Proposed tree planting to southern boundary of site, to contain views and create a defensible edge from existing residential development

BRAMBLE CLOSE

NOTES:
Based upon the Ordnance Survey map with permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright.
Aspect Landscape Planning Ltd, West Court, Hardwick Business Park, Noral Way, Banbury OX16 2AI Licence 100045345

Copyright reserved

0m 10m 20m 40m

Key:

- Application Site Boundary
- Proposed Existing Vegetation
- Proposed Street Tree Planting
- Proposed Garden Tree Planting
- Proposed Open Space Trees Planting
- Proposed Ornamental Shrub Planting
- Proposed Native Shrub Planting
- Proposed Feature Shrub Planting
- Proposed Ornamental Hedge Planting
- Proposed Playspace
- Proposed Wildflower

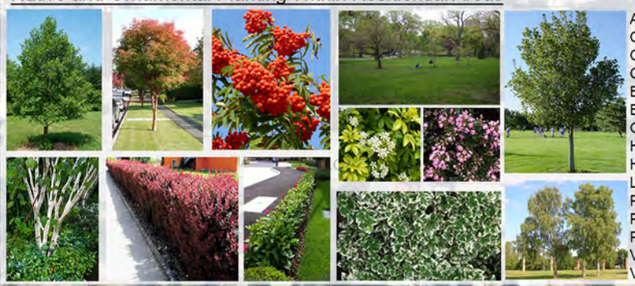
Public Open Space Potential

Bike Trails
Play Mounds
Natural Play Features
Walking and Cycle Ways
Viewing Mounds

Native Planting

Downy Birch
Hazel, Hawthorn,
Holly, Blackthorn,
Oak, Hornbeam,
Rowan, Elder,
Dogwood, Privet,
Bird Cherry, Crab Apple.

Native and Ornamental Planting Within Residential Areas



Aucuba japonica
Choisya ternata
Ceanothus 'Concha'
Cistus x corbariensis
Escallonia 'Apple Blossom'
Euonymus fortunei
Genista lydia
Hebe 'Red Edge'
Hebe 'Green Globe'
Lavandula angustifolia
Perovskia 'Blue Spire'
Potentilla 'Red Ace'
Photinia 'Red Robin'
Viburnum davidii
Vinca minor

REV	DATE	NOTE	DRAWN	CHK'D
D	09.11.22	Updated to latest layout	AS	CJ
C	21.3.22	Updated to latest layout	SB	CJ
B	11.4.18	Landscape updated to new layout	BS	AM
A	10.4.18	Landscape updated to client comments	BS	AM

REVISIONS

aspect landscape planning

TITLE

Bugle Nurseries, Shepperton Landscape Masterplan

CLIENT

Angle Properties

SCALE	DATE	DRAWN	CHK'D
1:1000 @ A3	MAR 2018	BS	AM

DRAWING NUMBER	REVISION
6500/LM / ASP4.0	D

Appendix A – DEFRA Metric 3.1 Calculation Tool (Issued Separately)