



Biodiversity Net Gain Assessment

Former Grove Lawn Tennis Club, The Chine, Cascade Avenue, London, N10 3PY

Rok Enterprises One Ltd

Status	Issue	Name	Date
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Industry Guidelines and Standards

This report has been written with due consideration to:

- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management, Construction Industry Research and Information Association & Institute of Environmental Management and Assessment (2019). Biodiversity Net Gain – Good Practice Principles for Development.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Areas of Habitat

The baseline habitat value of the site is 5.40 units, comprising the urban trees around the site boundaries. The sealed surfaces, walls and buildings around the site are assigned no value.

The post development habitat value of the site is 6.05 units, comprising the creation of green walls (0.01 units), replacement of the ornamental hedge (0.013), green roofing on bin stores (0.001), vegetated gardens (0.068) and 3 small and four medium urban trees (0.53). The sealed surfaces and buildings are assigned no value.

This results in a net gain in biodiversity of 12.22%

Hedgerows

The baseline hedgerow value of the site is 0.01 units, comprising an ornamental non native hedgerow encircling three sides of the site.

The post development habitat value of the site is 0.02 units, comprising replacement of the encircling hedgerow and addition of hedgerows dividing garden areas with a mixture of native and non native species of known wildlife value.

This results in a net gain in biodiversity of 18.77%

No further action is required as the mandatory net gain of 10% has been exceeded and trading standards satisfied.

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1.0 Introduction and Context

Arbtech Consulting Limited was instructed by Rok Enterprises One Ltd to undertake a Biodiversity Net Gain (BNG) Assessment at Former Grove Lawn Tennis Club, The Chine, Cascade Avenue, London, N10 3PY (hereafter referred to as “the site”). The assessment was required to inform a planning application for submission to London Borough of Haringey for the construction of 8 new dwellings on the former tennis club site and conversion of the former pavilion building into a 9th dwelling (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

This report should be read in conjunction with the following documents:

- Defra Biodiversity Metric 3.1
- PEA/Survey Report for the site (Arbtech February 2023).
- Jersey cudweed Mitigation and Enhancement plan (Arbtech January 2023).

1.2 Site Context

TQ 2906 8919 and has an area of approximately 0.2ha comprising a former tennis pavilion (designated as B1), hardstanding tennis courts with mature trees and vegetation forming the site boundaries. It is surrounded by terraced housing with amenity gardens with Queen’s wood ~360m to the southwest and Alexandra Palace ~820m to the northeast. A site location plan is provided in Appendix 2.

1.3 BNG Informative

BNG is a specific, measurable outcome of project activities that deliver demonstrable and quantifiable benefits to biodiversity compared to the baseline situation. In order to achieve BNG, a project must be able to demonstrate that it has followed all 10 of the Principles of Biodiversity Net Gain.

The recently legalised Environment Act (2021) requires developments in England to demonstrate a measurable net gain in biodiversity and sets a target of a minimum of 10% BNG for all developments. It also stipulates that a management plan with a minimum 30-year term, should be adopted to ensure biodiversity net gain can be delivered. The Environment Act (2021) is still in a transitional phase and is not expected to become mandatory until 2023. However, the requirement for biodiversity net gain is also enshrined within the National Planning Policy Framework (NPPF) and is now a requirement of an increasing number of local plans.

The DEFRA Biodiversity Metric 3.1 is the widely accepted tool used to calculate BNG. It enables the calculation of habitat value pre- and post-development in order to determine the overall change in biodiversity value as a result of the proposed development. The Biodiversity Metric has separate BNG assessments for areas of habitat, hedgerows and watercourses.

The biodiversity value of a site should be maximised. However, it may not always be possible to achieve a 10% biodiversity net gain within a site and therefore the Biodiversity Metric 3.1 can also account for offsite habitat creation, where land is available. Alternatively, developers can seek to provide an agreed financial contribution to an appropriate third party (such as the Local Authority, the UK Government or another landowner) to deliver the required biodiversity net gain elsewhere on their behalf.

2.0 Methodology

2.1 Baseline Biodiversity Value

The baseline BNG Calculation was informed by a Preliminary Ecological Appraisal which was completed by Arbtech Consultancy Ltd originally undertaken in April 2021 and updated in February 2023 and a Jersey cudweed mitigation and enhancement plan completed in 2021 and updated in January 2023.

A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The PEA classified the habitats on site according to the methodology set out in the UK Habitat Classification as found in the UK Habitat Classification Habitat Definitions Version 1.0 (The UK Habitat Classification Working Group, May 2018)

Habitat Area/Length

The area or length of each habitat was calculated using qGIS software. In calculating the area or length of each habitat, habitats which occur as two or more isolated parcels across the site were combined, where they were deemed to be of a similar composition and condition. Distinctions were made between habitats to be retained (i.e. left as found in baseline), enhanced (i.e. improved condition) or lost (i.e. destroyed by proposed development).

Areas of scattered trees were calculated using the Urban Tree Helper tool within the Biodiversity Metric 3.1. Class sizes for urban trees are set out in Table 7-2 of the Biodiversity Metric 3.1 User Guide (Panks et al., 2022).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Biodiversity Metric 3.1 Technical Supplement (Panks et al., 2022). The habitat condition assessments were based on the information provided within the PEA, including the habitat descriptions, species list and site photos.

Strategic Significance

Strategic significance was assigned for each habitat based upon a review of the following:

- Ecological value (based on the PEA)
- Function within the landscape (based on a review of Google and OS imagery)

- Any site or habitat allocations under the London Plan 2021 or Haringey local plan, which is under construction and currently made up of the Strategic Policies, Development Management Policies, Site Allocations and Tottenham Area Action Plan, alongside the London Plan. and the Haringey Biodiversity Action Plan (2009).

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by The Grove Landscape Plan which was completed by Richard Miers Garden Design in February 2023 which is provided in Appendix 1 (please see original plan as low resolution of reproduction impacts detail).

Habitat Classification

Proposed habitats were translated to their equivalents in the UK Habitat Classification using The UK Habitat Classification Habitat Definitions Version 1.0 (The UK Habitat Classification Working Group, May 2018) and the information provided within The Grove Landscape Plan.

Habitat Area/Length

The area or length of each proposed habitat was calculated using qGIS software. In calculating the area or length of each habitat, habitats which occur as two or more isolated parcels across the site were combined, where they were deemed to be of similar composition and condition. Distinctions were made between habitats to be retained (i.e. left as found in baseline), enhanced (i.e. improved condition) or newly created.

Areas of scattered trees were calculated using the Urban Tree Helper tool within the Biodiversity Metric 3.1. Class sizes for urban trees are set out in Table 7-2 of the Biodiversity Metric 3.1 User Guide (Panks et al., 2022).

Habitat Condition

Target habitat condition for each proposed habitat was determined assessed using the G-4 Temporal Multipliers Tab included in the Biodiversity Metric 3.1 spreadsheet. This is based on the assumption that a 30-year management plan will be adopted for the site and measures outlined in the Jersey Cudweed Ecological Enhancement and Management Plan, alongside the requirements of Natural England Licencing will be followed.

Strategic Significance

Strategic significance was assigned for each proposed habitat based upon a review of the following:

- Likely ecological value (based on the Grove Landscape Plan and professional judgement)

- Function within the landscape (based on the location of the proposed habitats and a review of Google and OS imagery)
- Any site or habitat allocations under the London Plan 2021 or Haringey local plan, which is under construction and currently made up of the Strategic Policies, Development Management Policies, Site Allocations and Tottenham Area Action Plan, alongside the London Plan. and the Haringey Biodiversity Action Plan (2009).

2.3 Limitations

An assumption value of 0.001 ha was assigned to the post development score of the biodiverse green roofing as the area was too small to register in the metric. This is not considered a significant limitation.

3.0 Results and Evaluation

3.1 Baseline Habitats

Table 1 details the baseline habitats present within the site (as identified in January 2023 when the PEA was undertaken) along with their area/length, condition and strategic significance.

Table 1: Baseline Biodiversity Value

Habitat	Area / Length ha/km	Description	Condition Assessment	Strategic Significance
u1b 10 17 532 – Sealed surface; Tennis courts u1b5 – Buildings (Developed land sealed surface)	0.21	The site is dominated by tarmac and concrete hardstanding, forming the old tennis courts and access pathways. Ruderal vegetation has begun to encroach upon the hardstanding, colonising cracks and mulch that has accumulated on top. Colonising plant species include brambles (D), ivy <i>Hedera sp.</i> (D), buddleia (A), herb Robert (F), dandelion (O), comfrey (O), cleavers (O), fleabane (O), common milk thistle (O), goat willow (O), Yorkshire fog (O), Jersey cudweed (R), large-leaved avens (R), white stonecrop (R), petty spurge (R), leather-leaved viburnum (R), spiny oleaster (R) and Darwin's barberry (R). There are also tree saplings growing in places. Species include ash (R) and birch <i>Betula sp.</i> (R). Buddleia is a London Invasive Species Initiative (LISI) Category 3 species. A small population of Jersey Cudweed plants (initially identified in the 2021 PEA survey) is still present in front of B1 (See TN1; Appendix 3). These plants are	N/A	Location ecologically desirable due to presence of tree lined linear features encircling site but not in local strategy. Medium strategic significance.

		Schedule 8 protected species under WAC 1981. A pavillion building is also present on site.		
u1e 68 – Mortared wall	0.004	There are brick walls along the northern boundary of the site and join to B1, as well as a small section in front of B1. The wall to the west of B1 is heavily covered with climbing vegetation including ivy <i>Hedera sp.</i>, common white jasmine and Virginia creeper. The wall in front of B1 also supported some ivy-leaved toadflax. Virginia creeper <i>Parthenocissus quinquefolia</i> is a Schedule 9 invasive non-native species under WAC 1981.		As above
h2b 190 1160 other hedgerow with trees and introduced shrubs (ornamental non native hedge with urban trees)	0.013 km Trees 0.6140 ha (5 large, 6 medium, 3 small, 13 retained).	There is a tree line which runs along the western, southern and eastern boundaries of the site. It contains ash, blackthorn, horse chestnut cypress <i>Cupressus sp.</i>, and yew trees, as well as ivy <i>Hedera sp.</i> (D), brambles (A), giant sedge (F), spiney oleaster (O), cyclamen sp. (R), Japanese astonia (R) and snowberry (R). Snowberry, <i>Symphoricarpos</i> is a London Invasive Species Initiative (LISI) Category 2 species. One horse chestnut tree (T1) in the southwest corner of the site was identified as having suitable roosting features for bats. The tree is visible on the left side of the adjacent photo.	Condition assessment set at POOR for ornamental non-native hedgerows. Urban tree Condition assessment Criteria: 1. More than 70% of trees are native species. PASS 2. Tree canopy is predominantly continuous with gaps in canopy making up <10% of total area and no individual gap being >5m wide FAIL 3. More than 50% of trees are mature or veteran FAIL 4. There is little to no evidence of adverse anthropological impact such as vandalism or arson. There is no current regular pruning regime so the trees retain >75% of the expected canopy for their age range and height. PASS 5. Management regime has encouraged micro habitat sites for birds, mammals and insects, e.g presence of deadwood, cavities, loose bark etc. PASS	As above

			6. Trees are immediately adjacent to other vegetation and tree canopies are oversailing other vegetation beneath. FAIL Passes 5 or 6 of 6 criteria = GOOD (3) Passes 3 or 4 of 6 criteria = MODERATE (2) Passes 0, 1 or 2 of 6 criteria = POOR (1) The urban tree cover passes 3 out of 6 criteria and is assessed as MODERATE condition.	
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3.2 Post Development Habitats

Table 2 details the post development habitats present within the site (as identified on The Grove Landscape Plan) along with their area/length, condition (under the assumption that a 30 year management plan will be followed) and strategic significance.

Other biodiversity enhancements are incorporated into the proposed development which aren't accounted for in the Biodiversity Metric 3.1. These include:

- Bat boxes
- Bird boxes
- Invertebrate boxes and log piles

Table 2: Post Development Biodiversity Value

Habitat	Area / Length ha/km	Description	Target Condition	Strategic Significance
Ornamental non native hedge	0.014	The former hedgerow encircling the site will be recreated using a range of native and non native species of known wildlife value.	Condition Assessment N/A	Location ecologically desirable due to presence of tree lined linear features encircling site but not in local strategy. Medium strategic significance
Urban trees	0.1587	3 small and 4 medium sized new native trees. This will exceed numbers lost to the development.	Moderate on the assumption that proper tree care is followed and any dead or diseased trees are replaced.	As above

Biodiverse green roof	0.001	Extensive green roof using gravel/sand based substrates to be colonised by species present on site and to be used as a receptor site for Jersey cudweed.	Good	As above
Vegetated garden	0.068	Areas of ground level plantings and modified grassland. Flora turf meadow mats or seed mixes are recommended for the grass and a mixture of native and non native herbaceous plants and shrubs of known wildlife value are recommended for planted areas.	Condition Assessment N/A	As above
Developed land sealed surface	0.138	Paving around the site will comprise permeable floating paving.	Condition Assessment N/A	
Green wall	0.003	Native and non native with known wildlife value species of climber, planted either in the ground or in ground level planters	Good	

3.3 Change in Biodiversity Value of the Site

Full details are provided in the Biodiversity Metric 3.1.

Areas of Habitat

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Hedgerows

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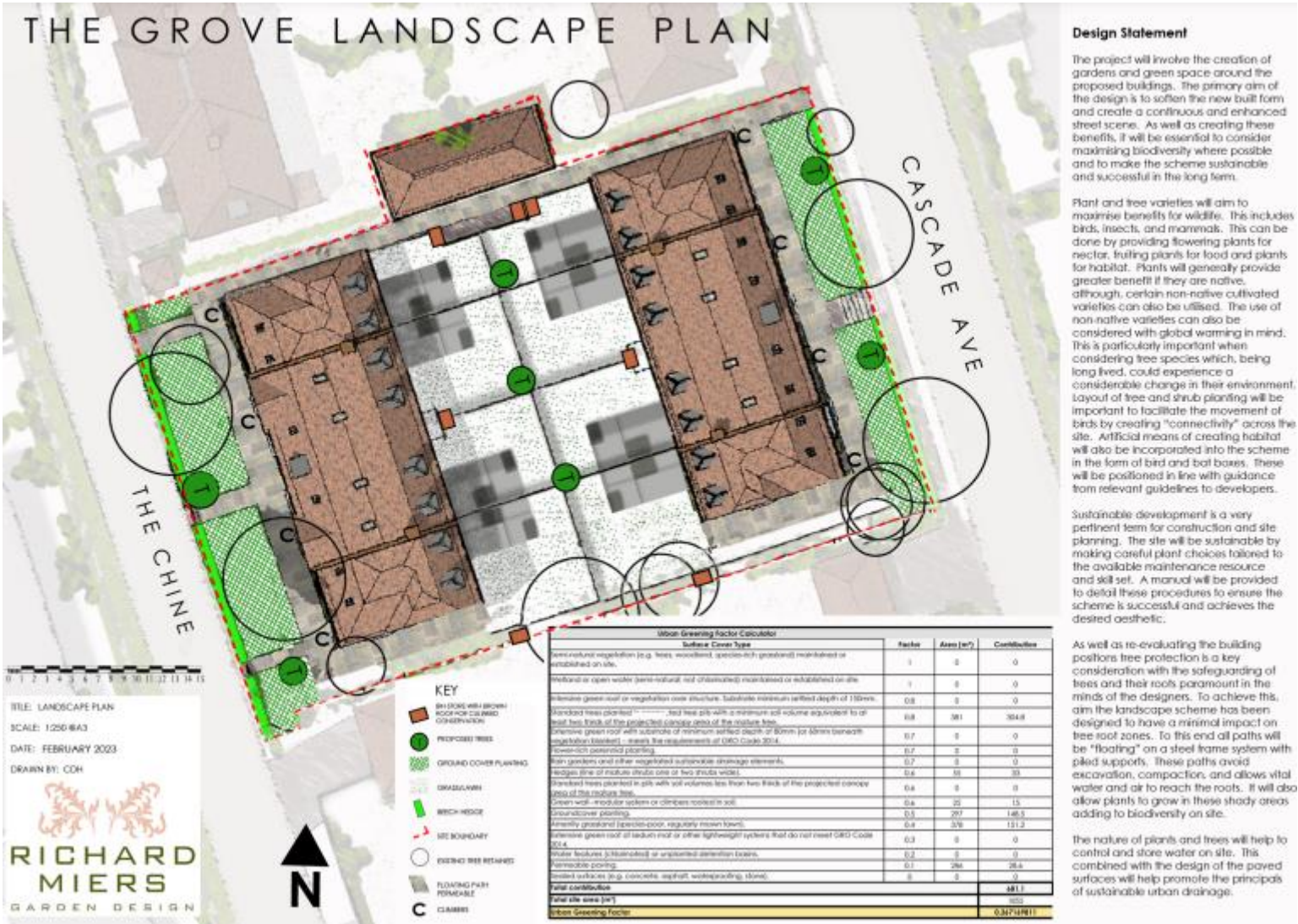
4.0 Recommendations

No further action is required as the mandatory net gain of 10% has been exceeded and trading standards satisfied.

5.0 Bibliography

- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- CIEEM-CIRIA-IEMA (2019) Biodiversity Net Gain – Good Practice Principles for Development.
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- London Plan 2021 or Haringey local plan
- Haringey Biodiversity Action Plan (2009).

Appendix 1: Proposed Development Plan



Design Statement

The project will involve the creation of gardens and green space around the proposed buildings. The primary aim of the design is to soften the new built form and create a continuous and enhanced street scene. As well as creating these benefits, it will be essential to consider maximising biodiversity where possible and to make the scheme sustainable and successful in the long term.

Plant and tree varieties will aim to maximise benefits for wildlife. This includes birds, insects, and mammals. This can be done by providing flowering plants for nectar, fruiting plants for food and plants for habitat. Plants will generally provide greater benefit if they are native, although, certain non-native cultivated varieties can also be utilised. The use of non-native varieties can also be considered with global warming in mind. This is particularly important when considering tree species which, being long lived, could experience a considerable change in their environment. Layout of tree and shrub planting will be important to facilitate the movement of birds by creating "connectivity" across the site. Artificial means of creating habitat will also be incorporated into the scheme in the form of bird and bat boxes. These will be positioned in line with guidance from relevant guidelines to developers.

Sustainable development is a very pertinent term for construction and site planning. The site will be sustainable by making careful plant choices tailored to the available maintenance resource and skill set. A manual will be provided to detail these procedures to ensure the scheme is successful and achieves the desired aesthetic.

As well as re-evaluating the building positions tree protection is a key consideration with the safeguarding of trees and their roots paramount in the minds of the designers. To achieve this, aim the landscape scheme has been designed to have a minimal impact on tree root zones. To this end all paths will be "floating" on a steel frame system with piled supports. These paths avoid excavation, compaction, and allows vital water and air to reach the roots. It will also allow plants to grow in these shady areas adding to biodiversity on site.

The nature of plants and trees will help to control and store water on site. This combined with the design of the paved surfaces will help promote the principals of sustainable urban drainage.

Appendix 2: Site Location Plan



Appendix 3: Habitat Survey Plan



Appendix 3: Post Development Habitat Map

