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Biodiversity Net Gain Plan

88 and 100 Grays Inn Road, London

Site	*88 and 100 Grays Inn Road, London*
Project number	*133022*
Client name / Address	*Lawnmist Limited, Greenways 173 City Way, Rochester, Kent, ME1 2BG*

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1.0	*29 September 2022*	*Original*

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Declaration of compliance

The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

We are a Chartered Institute of Ecology and Environmental Management (CIEEM) Registered Practice. All of our ecologists are members of CIEEM and between them carry licences for the majority of protected species.

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1. EXECUTIVE SUMMARY

In September 2022, MKA Ecology Limited was commissioned to undertake a Biodiversity Net Gain assessment for 88 and 100 Grays Inn Road, London. This Biodiversity Net Gain Plan has been prepared to detail how the biodiversity enhancements in the proposed scheme will lead to an overall benefit to biodiversity.

The Site currently is dominated by the two multi-storey buildings present, along with associated hardstanding and soft landscaping. The development proposals involve the redevelopment of building B1 (100 Grays Inn Road) and the refurbishment of building B2 (88 Grays Inn Road). The proposals also include the provision of biodiverse green roofing, vegetated pergolas (which will function as green wall features) and herb rich shrub planting.

To provide an objective assessment of the potential value of the proposed biodiversity enhancements, the Defra Biodiversity Metric 3.1 (Panks *et al.,* 2022) is applied. The measures, a proxy for biodiversity that use habitat types and their areas, are compared before (the existing condition) and after the completion of the proposed development.

This assessment has calculated that the proposed development is likely to lead to a net gain of 0.29 biodiversity units, provided that these habitats are created, managed and maintained appropriately. This constitutes a net gain percentage of 4326.22% in biodiversity units.

It should be noted that the predicted net-gain in biodiversity is reliant on the successful restoration and/or creation of habitats and their maintenance for the foreseeable future. It will be critical to ensure that appropriate management activities are put in place in order to achieve the desired condition of the proposed habitats. It is recommended that measures to ensure the successful creation and long-term management of proposed habitats are outlined in a Landscape and Ecology Management Plan (LEMP) for the Site.

2. INTRODUCTION

2.1. Purpose

This Biodiversity Net Gain Plan is submitted for the approval of London Borough of Camden Council to fulfil the requirements of the Environment Act (2021). As stated within the Act, Biodiversity Net Gain (BNG) assessments must be accompanied by a Biodiversity Gain Plan (BGP) as part of the planning application. The aims of this BGP are to cover:

- How adverse impacts on habitats have been minimised;
- The pre-development biodiversity value of the onsite habitat;
- The post-development biodiversity value of the onsite habitat;
- The biodiversity value of any offsite habitat provided in relation to the development; and
- Any statutory biodiversity credits purchased.

The purpose of this assessment is to review the existing biodiversity value of the Site, comparing this to the proposed landscape masterplan and calculate an overall biodiversity net change for the Site. The primary method of calculating this change will follow Defra Biodiversity Metric 3.1 (Panks *et al*., 2022). The aim of using this method is to demonstrate whether the proposed development and landscape masterplan will deliver a net gain in biodiversity.

The process of achieving and assessing Biodiversity Net Gain should follow the below principles and rules, as set out within *Biodiversity Net Gain, Good Practice Principles for Development* (Baker *et al*., 2019) (Table 1) and *The Biodiversity Metric 3.1: auditing and accounting for biodiversity value. User guide* (Panks *et al.,* 2022) (Table 2). This Biodiversity Net Gain Plan is in line with British Standard BS8683.

Table 1: The UK's good practice principles for biodiversity net gain (Baker *et al.,* 2019)

Principle	In practice
1. Apply the mitigation hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.
2. Avoid losing biodiversity that cannot be offset elsewhere	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve NNL/net gain.
3. Be inclusive and equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to net gain. Achieve net gain in partnership with stakeholders where possible.

Principle	In practice
4. Address risk	Mitigate difficulty, uncertainty and other risks to achieving net gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between losses occurring and gains being fully realised.
5. Make a measurable net gain contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
6. Achieve the best outcomes for biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: - Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses - Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation - Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels - Enhancing existing or creating new habitat - Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity
7. Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).
8. Create a Net Gain legacy	Ensure Net Gain generates long-term benefits by: - Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity - Planning for adaptive management and securing dedicated funding for long-term management - Designing Net Gain for biodiversity to be resilient to external factors, especially climate change - Mitigating risks from other land uses - Avoiding displacing harmful activities from one location to another and - Supporting local-level management
9. Optimise sustainability	Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
10. Be transparent	Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

Table 2: Biodiversity net gain rules (Panks *et al.,* 2022)

Rule	In practice
1	Where the metric is used to measure biodiversity change, biodiversity unit values need to be calculated both prior to the intervention and post-intervention for all parcels of land / linear features affected.
2	Compensation for habitat losses can be provided by creating new habitat, by restoring or enhancing existing habitats, or by accelerating successional processes. Measures to improve existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.
3	'Trading down' must be avoided. Losses of habitat are to be compensated for on a 'like for like' or 'like for better' basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric.

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Rule	In practice
4	Biodiversity units generated by biodiversity metric 3.1 are unique to this metric and cannot be compared to unit outputs from versions 3.0, 2.0, the original Defra metric, or any other biodiversity metric. Furthermore, the three types of biodiversity units generated by this metric (for area, hedgerow and river habitats) are unique and cannot be summed, traded or converted.
5	It is not the area/length of habitat created that determines whether ecological equivalence or better has been achieved but the net change in biodiversity units. Risks associated with creating or enhancing habitats mean that it may be necessary to create or enhance a larger area of habitat than that lost, to fully compensate for impacts on biodiversity.
6	Deviations from the published methodology of biodiversity metric 3.1 need to be ecologically justified and agreed with relevant decision makers. While the methodology is expected to be suitable in the majority of circumstances it is recognised that there may be exceptions. Any local or project-specific adaptations of the metric must be transparent and fully justified.

3. HABITATS

3.1. Present – baseline condition survey

A Preliminary Ecological Appraisal was conducted by MKA Ecology Ltd on 15th September 2022 (MKA Ecology Ltd, 2022) to inform the baseline habitats present. The Site is dominated by the two multi-storey buildings present, along with associated hardstanding and soft landscaping. The habitats at the Site were mapped during the Preliminary Ecological Appraisal and are presented in Figure 1. The areas occupied by each habitat type are detailed in Table 4 in the next section.

A condition assessment of the baseline habitats was conducted on 15th September 2022. More information on how habitat conditions were assigned is provided in Appendix 1.

Survey constraints of the Preliminary Ecological Appraisal are described in Section 4.9.

No irreplaceable habitats are present within the redline boundary. Please note that any impacts on designated sites and protected species that may result from the development have been addressed in the Preliminary Ecological Appraisal, which also outlines plans for mitigation and enhancement where required (MKA Ecology Ltd, 2022).

3.2. Future – proposed landscape and enhancements

The proposed development involves the redevelopment of building B1 (100 Grays Inn Road) and the refurbishment of building B2 (88 Grays Inn Road). The landscape proposals for the Site are presented in Figure 2. Proposed habitats include biodiverse green roofing, vegetated pergolas (which will function as green wall features) and herb rich shrub planting

It is these proposed habitats that will form the basis of the calculation of 'net-change' in biodiversity using the Defra metric (see Section 4).

Figure 1: UK Habitat Classification Map of 88 and 100 Grays Inn Road, London

Figure 2. Landscape proposals for 88 and 100 Grays Inn Road, London
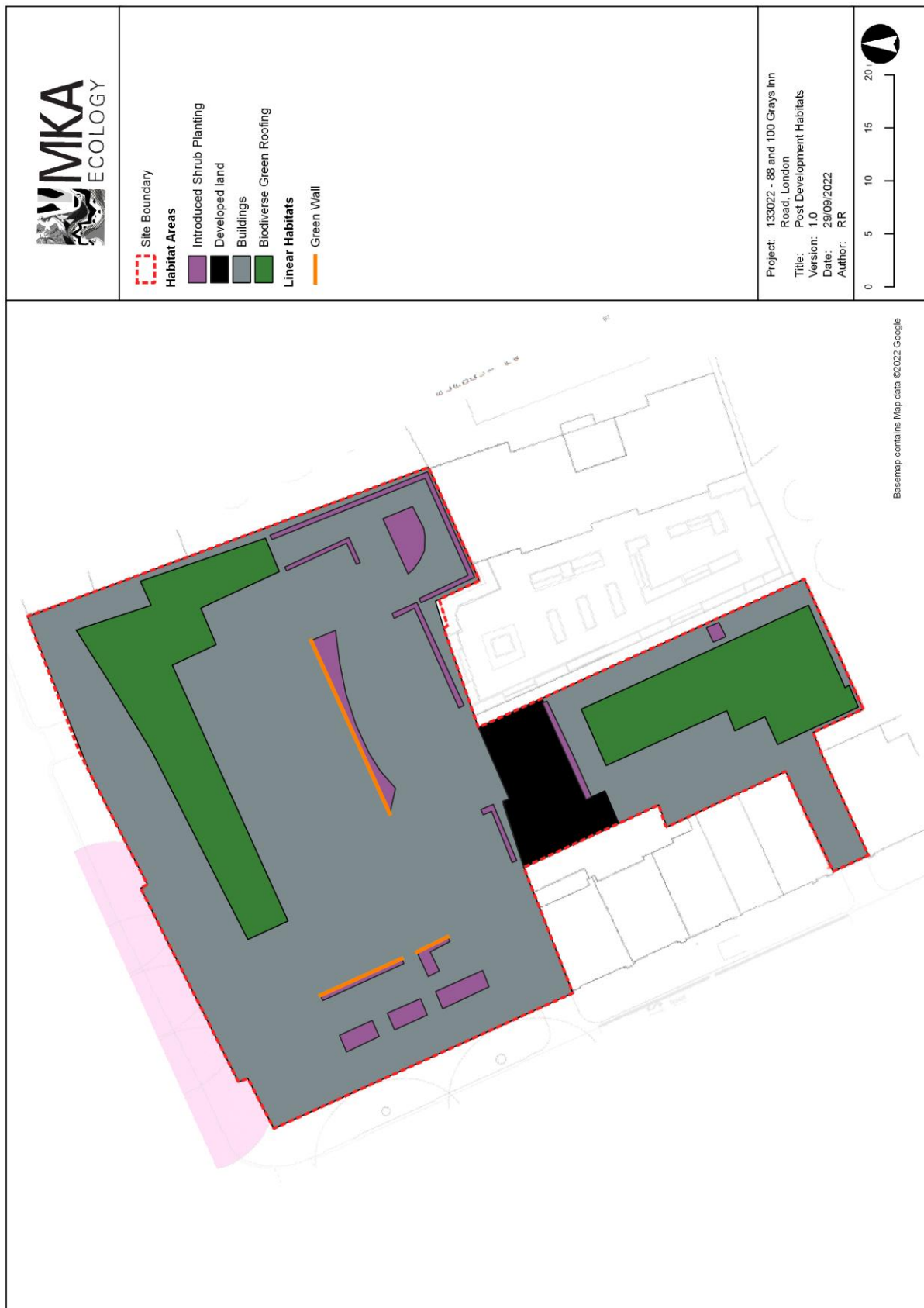
4. METHODOLOGIES

4.1. Biodiversity Net Gain assessor

This Biodiversity Net Gain assessment was conducted by Ross Oliver Qualifying CIEEM, Graduate Ecologist at MKA Ecology Ltd. Ross has a single years' experience conducting Biodiversity Net Gain assessments. The Biodiversity Net Gain Plan has been reviewed by Rory Roche ACIEEM, Senior Ecologist at MKA Ecology Ltd. Rory has six years' experience within the industry conducting Biodiversity Net Gain assessments and is considered a competent assessor under the Biodiversity Metric 3.1 requirements (Panks *et al.*, 2022a).

4.2. Assignment of habitats

To establish whether the proposed development will contribute positively to biodiversity we use the Defra Biodiversity Metric 3.1 (Panks *et al.,* 2022). This method uses habitat as a proxy for biodiversity and its primary application is to provide planners and developers with a method of establishing how much and what type of habitats should be created or enhanced in order to ensure that the proposed development results in a net gain for biodiversity. Habitats are assigned the following scores:

- Distinctiveness: A measure of the type and importance of a habitat.
- Condition: A measure of the present or predicted condition of a habitat type.
- Strategic significance: How a habitat is regarded within Local Planning Policy.

Habitat distinctiveness is automatically assigned in the Biodiversity Metric 3.1. Please see Appendix 1 for further information on how habitat condition and strategic significance was assigned in this assessment.

For proposed habitats, where there is an attempt to predict the habitat type following establishment additional handicaps or risk scores are imposed representing the following factors:

- Difficulty: More difficult habitats incur a greater risk.
- Time to condition: In general, it takes longer for habitats to reach a better condition, plus certain habitats by their very nature take longer to create or restore.
- If the creation or enhancement of habitats is delayed, an additional risk score is applied. This will not apply in the present case.
- If habitats are created off-site, an additional risk score is applied. This will apply in the present case.

The multipliers used in habitat assignment in the Biodiversity Net Gain Metric are detailed further in Table 3 below.

Table 3: Multipliers used in the calculation of Biodiversity Net Gain

Multiplier	When applied	Description
Distinctiveness	Before and after	A measure of the type of habitat, automatically assigned within the Metric 3.1. Habitats with greater value are assigned a higher score.
Condition	Before and after	The condition of the habitat. Uses the Technical Supplement (*Panks et al. 2022*); Higher levels of condition give rise to greater values. In some cases, no condition assessment is required and these habitats are automatically allocated a score.
Strategic significance	Before and after	Whether a habitat is important within its local context.
Time to target condition	After	Used to account for the fact that habitat creation as part of a development is rarely instant. A 'handicap' is applied, with habitats that take longer to establish resulting in a greater reduction.
Difficulty of creation/restoration	After	Habitats that are more difficult to create/restore cause a reduction in the biodiversity unit as they are associated with a greater risk of failure.
Spatial risk	After	Habitat that is created at a greater distance away from the development site carries a greater risk of removing other natural habitats.
Advanced and delayed habitat creation	After	Used to account for situations where there is a mismatch between a negative impact on biodiversity and work to create or enhance the 'post-intervention habitats'. This can either be in the form of habitat creation occurring in advance or being delayed beyond the point of baseline losses.

4.3. Trading Summary

The Defra Biodiversity Metric 3.1 includes a Trading Summary which must be satisfied to achieve a positive outcome in the Net Gain assessment. The trading rules ensures that habitat losses are compensated for on a "like for like" or "like for better" basis. Newly created or enhanced habitats should achieve a higher distinctiveness and/or condition than those lost. More information is provided in Table 2 (see Rule 3).

Further details on how the metric is calculated is provided in the aforementioned publications, with more site-specific detail provided in Appendix 1 and Appendix 2.

4.4. Mapping habitats

Current habitats were mapped and areas calculated using QGIS during the Preliminary Ecological Appraisal (see Section 3.1 for details of habitat types). The proposed habitats were calculated in QGIS using a digitised and geo-referenced version of the landscape proposals provided in Figure 2 (see Section 3.2 for details of habitat types).

4.5. Hedgerows

Hedgerows, given their unique linear characteristic and their position as 'edge habitats' are treated as linear features in the Biodiversity Metric calculator and are calculated as 'biodiversity metres'. The metrics calculated for hedgerows have therefore been calculated and presented separately. Current and proposed hedgerows were mapped, and their lengths calculated, using QGIS. No hedgerows are present on site and therefore this category is omitted in this assessment.

4.6. Rivers and streams

Rivers and streams, given their linear form and important role in habitat connectivity, are treated as linear features in the Biodiversity Metric calculator and are calculated as 'biodiversity metres'. The metrics calculated for rivers and streams have therefore been calculated and presented separately. No rivers are present on site and therefore this category is omitted in this assessment.

4.7. Habitat degradation

It is confirmed that the baseline habitats have not been significantly altered or modified since 30 January 2020 and, as such, it is appropriate to assess the baseline habitats in their current condition.

4.8. Sharing data

Relevant ecological data collected during baseline habitat and protected species surveys at the Site will be shared with Greenspace Information for Greater London (GiGL) following acceptance of this Biodiversity Net Gain Plan.

4.9. Assumptions and constraints

Several assumptions are made to enable this Biodiversity Net Gain assessment. In particular, the net gains in biodiversity that are estimated are reliant on the successful restoration and/or creation of habitats and their maintenance for the foreseeable future.

No constraints were experienced during the Preliminary Ecological Appraisal which would influence the baseline assessment of habitats present.

Table 4: Attribution of multiplier levels to each habitat type at present and for the proposed development

Habitat type and area	Multiplier (and score)					
	Distinctiveness (automatically assigned)	Condition	Strategic significance	Time to target condition	Difficulty of creation/ enhancement	Spatial risk
Current habitats						
Introduced shrub 0.0034 ha	Low (2)	N/A (1)	Low (1)	-	-	-
Developed land; sealed surface 0.2194 ha	Very low (0)	N/A (0)	Low (0)	-	-	-
Proposed habitats						
Biodiverse green roof 0.0410 ha	Medium (4)	Good (3)	High (1.15)	10 years (0.700)	Low (1)	Within site
Introduced shrubs 0.0084 ha	Low (2)	N/A (1)	Low (1)	1 year (0.965)	Low (1)	Within site
Ground based green wall (planted pergolas) 0.0070 ha	Low (2)	Moderate (2)	High (1.15)	3 years (0.899)	Medium (0.67)	Within site
Developed land; sealed surface 0.1664 ha	Very low (0)	N/A (0)	Low (1)	0 years (1.000)	Low (1)	Within site

5. RESULTS AND RECOMMENDATIONS

5.1. Results

The overall comparison of biodiversity units is presented in Table 5 below. The calculator used to derive these figures is provided as a separate appendix to this report. With the current layout, there will be a net gain of biodiversity of 4326.22% with a positive net change of 0.29 biodiversity units.

Table 5: Results of biodiversity metric calculations

Habitat	Biodiversity units (current)*	Biodiversity units (proposed)*	Biodiversity net-change*	Net percentage change
Habitats	0.00693	0.30	0.29	4326.22%

* Habitat areas are calculated as biodiversity hectares

Under the current proposals, there will be a net gain of 0.29 biodiversity units. These gains are dependent on the proposed habitats being subject to appropriate management and maintenance. As set out within the Environment Act 2021, a management plan should provide guidance on habitat creation, management and maintenance. In order to ensure the successful creation, management and maintenance of the habitats within the Site post development, a Landscape and Environmental Management Plan (LEMP) should be produced prior to commencement of the development.

Bird and bat boxes will also be installed in the new buildings as part of the proposed landscaping plans. The Defra Biodiversity Metric 3.1 has no means to formally account for these enhancements in the net gain assessment. However, they will provide additional value for biodiversity post-development and therefore should be noted.

5.2. Recommendations

The overall net gain in biodiversity units predicted in this assessment is reliant on the successful restoration and/or creation of habitats and their maintenance for the foreseeable future. It is critical that habitats on site reach the target condition estimated in this assessment and this will require careful consideration during both the planning and construction phase. It is particularly important that the proposed biodiverse green roofing reaches the targeted structure and condition for a net gain to be achieved.

It is recommended that a LEMP is produced for the Site. This will outline measures for the successful creation and management of habitats for a minimum of 30 years to ensure the target conditions for each habitat type is reached as outlined in this assessment.

Recommendation 1

Produce a Landscape and Ecology Management Plan (LEMP) for the Site covering a minimum of 30 years post-development.

6. CONCLUSIONS

The proposed development at 88 and 100 Grays Inn Road, London involves involve the redevelopment of building B1 (100 Grays Inn Road) and the refurbishment of building B2 (88 Grays Inn Road). The landscaping plans include the provision of biodiverse green roofing, vegetated pergolas (which will function as green wall features) and herb rich shrub planting.

The use of the Defra Biodiversity Metric 3.1 to calculate measures of biodiversity for the existing and proposed habitats confirm that the proposed development is likely to lead to a net gain of 4326.22% in biodiversity units.

The predicted net-gain in biodiversity is reliant on the successful restoration and/or creation of habitats and their maintenance for the foreseeable future. It will be critical to ensure that appropriate management activities are put in place in order to achieve the desired condition of the proposed habitats. It is recommended that measures to ensure the successful creation and long-term management of proposed habitats are outlined in a LEMP for the Site.

7. REFERENCES

Baker, J., Hoskin, R. & Butterworth., T. (2019) *Biodiversity net gain: Good practice principles for development. Part A. A practical guide.* CIRIA, UK

MKA Ecology Ltd (2022) *88 and 100 Grays Inn Road, London - Preliminary Ecological Appraisal.* MKA Ecology Ltd: Cambridge.

Panks, S., White, N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S., Heaver, M., Scott SH., Treweek, J., Butcher, B. & Stone, D. (2022a). Biodiversity metric 3.1: Auditing and accounting for biodiversity – technical supplement. Natural England.

Panks, S., White, N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S., Heaver, M., Scott SH., Treweek, J., Butcher, B. & Stone, D. (2022b). Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England.

8. APPENDICES

8.1. Appendix 1: Assignment of biodiversity metric multipliers

Strategic significance

The Strategic significance was set to 'high' for the biodiverse green roofing and green wall habitats, as they are formally identified as priorities within the London Plan (2021).

Condition

The below tables detail the rationale for the condition assessments made for each habitat type.

Current habitats

Habitat	Condition	Comments
Urban – Introduced shrub	N/A	Pre-assigned condition in metric.
Urban - Developed land; sealed surface (buildings and hardstanding)	N/A	Pre-assigned condition in metric.

Proposed habitats

Urban – Biodiverse green roof

	Condition Assessment Criteria	Rationale for Meeting Condition Assessment Criteria
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.*	The green roofing areas will include a diverse assemblage of appropriate species, with species selected to provide a varied vegetation structure to maximise the opportunities available for invertebrates and subsequent predatory faunal groups. The roof will include solar panels, undulating substrate depths, logs, crushed brick and stone and temporary water bodies, providing a number of eco-tones for the benefit of invertebrates, birds and bats.
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.* **NB - To achieve GOOD condition, this must be satisfied by native species only.**	All species to be planted are of native origin and have been selected due to the nectar and pollen they provide to invertebrate species. Guidance on the species to include within this habitat are provided within a future management plan.
3	*Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.* *NB - To achieve GOOD condition, criterion 3 must be satisfied by a*	All species to be planted are of native origin. Maintenance of this habitat is to be provided within a future management plan, with recommendations relating to the removal of non-native species that develop within these areas. Provided this is followed, it is considered that this criterion can be met.

	complete absence of invasive non-native species (rather than <5% cover).	
4	*Biodiverse green roofs have a varied depth of 80 - 150mm at least 50% is at 150mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. To achieve Good condition some additional habitat, such as sand piles, logs etc should be present.*	50% of the biodiverse green roof will be created to support a depth of 150mm and 50% will be created to support a depth of 80 - 150mm. The roof will be planted with native wildflower plugs at a density of sixteen plants per m2. The roof will include a variety of substrate materials, including logs, crushed stone and brick, along with temporary water bodies to create a variety of microhabitats for invertebrates and birds such as black redstart.
*	**Target Condition: Good** Passes all of the condition criterion	

Urban – Ground based green wall (vegetated pergolas)

	Condition Assessment Criteria	Rationale for Meeting Condition Assessment Criteria
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.*	The green wall will include a diverse assemblage of species selected to maximise the opportunities available for invertebrates and birds, and subsequent predatory fauna such as bats. However, as the green wall will comprise a single eco-tone, this criterion cannot be met.
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.* *NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).*	The green wall will include a diverse assemblage of appropriate species, with species selected due to the nectar and pollen they provide to invertebrate species and to maximise the opportunities available for subsequent predatory faunal groups. Guidance on the species to include within this habitat are provided within a future management plan.
3	*Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.* *NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).*	No invasive non-native species are to be included within this habitat. Maintenance of this habitat is to be provided within a future management plan, with recommendations relating to the removal of non-native species that develop within these areas. Provided this is followed, it is considered that this criterion can be met.
*	**Target Condition: Moderate** Passes two of three criteria. Criterion 2 is not met with native species only such that a Good condition cannot be achieved.	

Other Habitats

Habitat	Condition	Comments
Urban – Introduced shrub	N/A	Pre-assigned condition in metric.
Urban - Developed land; sealed surface (buildings and hardstanding)	N/A	Pre-assigned condition in metric.

8.2. Appendix 2: Biodiversity net gain calculator

As attachment.

8.2. **Appendix 2: Biodiversity net gain calculator**