

McLaren (Broad Street Mall) Limited
1st and 2nd Floors
61 Curzon Street
London
W1J 8PD

Sweco UK Limited
3rd Floor, Eldon House
2 Eldon Street
London
EC2M 7LS
+44 (0) 20 3002 1210

11/01/2024

Project Name: Broad Street Mall

Project Reference: 65208344

Document Reference: 65208344-SWE-XX-XX-T-J-0002-C03

Broad Street Mall - Biodiversity Net Gain Assessment

To whom it may concern,

Introduction

This biodiversity net gain (BNG) letter report has been prepared by Sweco UK Ltd for McLaren (Broad Street Mall) Limited and UREF III LP and relates to proposed residential and commercial development at Broad Street Mall, Broad St, Reading RG1 7QE, for which planning permission will be sought. The development consists of three interconnected tower blocks and an adjacent smaller residential block. The buildings are comprised of apartments and residential amenity and servicing space. The ground floor of the development also consists of a mix of non-domestic units which include retail spaces, residential lobbies and a gym.

A UK habitat classification system survey of the site was undertaken on 06 December 2022 and updated to include the courtyard in the southeast and the grassland and trees to the south on 01 August 2023. The findings are included in the preliminary ecological appraisal report (PEAR) [1] and discussed herein.

The DEFRA Biodiversity Metric 4.0 (hereafter 'the Metric') will be used to calculate whether a post-development biodiversity net gain of at least 10% can be achieved. The Environment Act 2021 legally requires all developments to deliver a minimum of 10% BNG through the Metric¹, though some local authorities are already requiring up to 20% as part of their local plans. The Reading Borough Local Plan 2019 [2] identifies that the Council is seeking to retain the 10% BNG requirement.

¹ The Environment Act 2021 stipulated a two-year delay on enforcement of the 10% Net Gain requirement, and it will come into effect from February 2024.

The scope of this document is to:

- Detail the results of the biodiversity metric calculations to demonstrate whether the site can achieve the target 10% net gain for biodiversity; and
- Outline aims and objectives of proposed ecological enhancement and habitat creation to achieve biodiversity net gain.

Methodology

The Metric was used to calculate whether the site can achieve a 10% biodiversity net gain. This was completed following the guidance within the Metric technical supplement and user guide [3] [4].

The information entered into the Metric comprised:

- Broad Habitat;
- Habitat Type (used to determine Distinctiveness);
- Area (ha) OR Length (km);
- Condition (N/A, Poor, Moderate, Good); and
- Strategic Significance (whether the location is within the local plan (e.g. within a Biodiversity Opportunity Area) or not).

These data then provided a calculation of the Biodiversity Units (BU) for each habitat parcel which when summed gives the total BU of the site as a whole. The formula is set out below:

$$\text{Baseline Biodiversity Unit} = (\text{Area} \times \text{Distinctiveness} \times \text{Condition}) \times (\text{Strategic Significance})$$

The site baseline was taken to be the habitat types, areas and conditions on site during the UK Habitats Classification survey and condition assessments undertaken on 06 December 2022 and 01 August 2023 detailed with the PEAR report [1].

The Metric is divided into three sections: area-based habitats, hedgerow linear habitats, and watercourse linear features. The overall biodiversity score of the project is taken as the lowest-scoring change of these different habitat groups. There are no watercourses within the development boundary nor are any expected to be impacted by the works in the immediate surroundings and as such, these do not feature within the BNG calculations for this site.

The Reading Borough Local Plan 2019 [2] was used to assess whether the site is likely to be within the local strategy for habitat creation.

Post development habitats and areas were taken from the Urban Greening Factor (UGF) Table in the Landscape Statement [5] and associated drawings, with post-development habitat conditions based on the Landscape Maintenance and Management Plan [6].

Baseline Biodiversity Net Gain Calculations

Full calculations are attached separately as Appendix A - 65208344-SWE-XX-XX-C-J-2001-C03.

1. Strategic Significance

The site location was determined not to be in an area of strategic significance and was classified within the category of 'area/compensation not in local strategy/no local strategy'. This was based on searches within the Reading Borough Local Plan 2019 [2], which did not include the site within a local strategy for habitat creation.

2. Pre-development Baseline Biodiversity Units

Table 1 summarises the baseline area habitats present on site, with their assessed conditions, baseline area and biodiversity units. Full condition assessments results, within the condition assessment tables taken directly from the Metric, for each baseline habitat are presented in Appendix B, with the exception of the habitats for which condition assessments are not applicable.

Table 1. Summary of the Pre-Site Baseline Habitats Present

UK Habitat Classification	BNG Habitat Type	Condition	Area (ha)	BU
Modified grassland with scattered trees (g4 11)	Grassland - Modified grassland	Good	0.01	0.07
Mixed scrub; ruderal/ephemeral (h3 17)	Sparsely vegetated land - Ruderal/Ephemeral	Poor	0.01	0.02
Buildings (u1b5) and Developed land; sealed surface (u1b6)	Urban - Developed land; sealed surface	N/A	0.70	-
TOTAL			0.72	0.08

The baseline BU of the site total 0.08 BU. To deliver 10% biodiversity net gain, the site needs to deliver an additional 0.01 BU (minimum), or 0.09 BU in total.

3. Habitats to be Retained and Enhanced

It is assumed that all habitats within the development boundary will be lost, with none retained and/or enhanced. Within the temporary construction area, established trees will be retained. Further details are included within the Arboricultural Impact Assessment [7].

4. Habitats to be Created

Habitats to be created include areas of green roof, perennial planting, urban trees and hedges, shown in the Landscape Statement [5] and associated drawings.

Biodiverse Green Roof

With a substrate of at least 150 mm, 814 m² of biodiverse green roof will be created. To achieve a moderate condition, at least two of the following criteria should be met.

- A Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.
- B The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.
- C Invasive non-native plant species (listed on Schedule 9 of the Wildlife and Countryside Act) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total vegetated area.
- D The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers.

Intensive Green Roof

An area of 134m² green roof with a substrate of 80 mm will be created. To achieve a moderate condition, at least two of the following criteria should be met.

- A Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.
- B The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.
- C Invasive non-native plant species (listed on Schedule 9 of the Wildlife and Countryside Act) and others which are to the detriment of native wildlife (using professional judgement) cover less than 5% of the total vegetated area.
- D The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).

Introduced Shrub

Perennial planting has been classified as Introduced Shrub and does not require a condition assessment.

Urban trees

A selection of urban trees will be planted at ground level. Due to the species palette, age and ornamental nature of the trees, it is expected that the trees will achieve a poor condition. However, to achieve a moderate condition, at least three of the following criteria should be met:

- A The tree is a native species (or at least 70% within the block are native species).
- B The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
- C The tree is mature (or more than 50% within the block are mature).
- D There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
- E Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
- F More than 20% of the tree canopy area is oversailing vegetation beneath.

Hedges

A length of 142m of ornamental hedges will be planted. The Metric assigns a condition assessment of poor for this habitat.

Biodiversity Metric Results

The baseline calculations show a value of 0.08 BU for area habitats on site. There are no baseline linear habitats on site. The landscape plans indicate the creation of 0.45 BU in area habitats and 0.14 BU in linear habitats across the post-development habitats, a **463% and >100% net gain** for area and linear habitats respectively, assuming all baseline habitats are lost. The development is therefore expected to exceed the target +10% net gain for both area and linear habitats.

Conclusions

The results of the UKHab survey concluded the habitats recorded within the site include buildings and hardstanding, modified grassland and ruderal/ephemeral vegetation.

Habitats to be created include green roofs, perennial planting, amenity grassland and urban trees.

The baseline biodiversity habitat units for the site are 0.08 BU with post development biodiversity habitat units achieving a value of 0.45 BU and 0.14 BU, a +463% and >100% increase in biodiversity for area and linear habitats respectively and in excess of the target +10%.

Yours faithfully



Leonora Hunt MSc

Ecologist

leonora.hunt@sweco.co.uk

1 References

- [1] Sweco, "65208344: Preliminary Ecological Appraisal: Broad Street Mall. Report ref. 65208344-SWE-XX-XX-T-J-0001-C04," 2023.
- [2] Reading Borough Council, "Reading Borough Local Plan," 2019.
- [3] Natural England, "Biodiversity metric 4.0: Auditing and accounting for biodiversity – User Guide," 2023.
- [4] Natural England, "The Biodiversity Metric 4.0 (JP039)," 2023. [Online]. Available: <https://publications.naturalengland.org.uk/publication/6049804846366720>. [Accessed July 2023].
- [5] Macfarlane and Associates, "Landscape Statement: Broad Street Mall," 2023.
- [6] Macfarlane and Associates, "Landscape Maintenance and Management Plan: Broad Street Mall," 2023.
- [7] The Environment Partnership, "Arboricultural Impact Assessment and Method Statement," 2023.

Appendix A – DEFRA Biodiversity Net Gain 4.0 Metric Calculator

Attached separately - 65208344-SWE-XX-XX-C-J-2001-C03.

Appendix B – Condition Assessments

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Modified grassland			
Site name and location	Broad Street Mall	On-site or off-site	On-site
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 71220 73279	Habitat parcel reference	
Habitat Description			
Small patch of amendity grassland. Frequently mown to maintain short sward height.			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.	Y	
B	Sward height is varied (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 vertebrates and invertebrates to live and breed.	N	
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Y	
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	
Essential criterion achieved (Yes or No)			Y
Number of criteria passed			6
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/□	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)	X	
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)		
Suggested enhancement interventions to improve condition score			
While this low distinctiveness habitat has a good condition, increasing the species diversity by sowing species mix e.g. Emorsgate's Flowering Lawn Mixture EL1 or similar, and implementing a management regime to encourage a varied sward height, could result in the medium distinctiveness habitat "other neutral grassland".			
Footnotes			
Footnote 1 – Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover. Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement. Footnote 4 – Wildlife and Countryside Act 1981 (as amended).			

Condition Sheet: URBAN Habitat Type			
Habitat Type			
Where a parcel contains areas of higher distinctiveness habitats within it, then the area of higher distinctiveness habitat must be separated and recorded and assessed as such. Sparsely vegetated land - Ruderal/Ephemeral Sparsely vegetated land – Tall forbs Urban – Allotments Urban – Biodiverse green roof Urban - Bioswale Urban - Cemeteries and churchyards Urban - Facade-bound green wall Urban - Ground based green wall Urban - Intensive green roof Urban - Open mosaic habitats on previously developed land Urban - Rain garden Urban - Sustainable drainage system (SuDS) Urban - Vacant or derelict land Urban – Bare ground			
Habitat Description			
A small area of road verge. Ruderal / ephemeral species present.			
See Biodiversity Metric 4.0 User Guide for green roofs and UK Habitat Classification (UKHab) for other habitats:			UKHab – UK Habitat Classification
Site name and location	Broad Street Mall	On-site or off-site	Onsite
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 71224 73258	Habitat parcel reference	
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for all urban habitat types :			
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N	Too small an area for variation.
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	N	Some, but generally limited species variety.
C	Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5% of the total vegetated area ³ . Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	N	Butterfly bush present.
Additional Criteria - must be assessed for Open mosaic habitat on previously developed land only:			
D1	The parcel shows spatial variation and forms a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.		
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.		
Additional Criteria - must be assessed for Bioswale and SuDS habitat types only:			
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife ⁴ .		
E2	The vegetation is comprised of plant species suited to wetland or riparian situations.		
Additional Criterion - must be assessed for Intensive green roofs only:			
F	The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).		
Additional Criterion - must be assessed for Biodiverse green roofs only:			
G	The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc are present.		
Essential criteria relevant for habitat type achieved (Yes or No)			N
Number of criteria passed			0

Condition Assessment Result	Condition Assessment Score	Score Achieved x/□
Results for habitats requiring assessment of 3 core criteria only (all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs):		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)	
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	
• Passes 0 or 1 of 3 core criteria.	Poor (1)	X
Results for Green roofs (requiring assessment of 4 criteria only - core criteria plus additional criterion specified for habitat type):		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes additional criterion relevant to specific habitat type (F or G).	Good (3)	
• Passes 2 or 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	
• Passes 0 or 1 of 4 criteria.	Poor (1)	
Results for Open mosaic habitat on previously developed land, Bioswale or SuDS (requiring assessment of 5 criteria - core criteria plus additional criteria specified for habitat type):		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group D or Group E)	Good (3)	
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	
• Passes 2 or fewer of 5 criteria.	Poor (1)	
Suggested enhancement interventions to improve condition score		
Footnotes		
Footnote 1 – Wildlife and Countryside Act 1981 (as amended).		
Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNS) website:		
Home » NNS (nonnativespecies.org)		
and Natural England Access to Evidence page should also be checked for up-to-date information:		
Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk)		
For criterion C – For green roof habitat types only – buddleia <i>Buddleja davidii</i> should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.		
Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.		
Footnote 4 – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNS website:		
Alternative plants » NNS (nonnativespecies.org)		