

BIODIVERSITY NET GAIN DESIGN STAGE ASSESSMENT

December 2022

Albert Bridge House
1 Bridge Street
Manchester
M60 9AF

U R B A N
G R E E N



QUALITY MANAGEMENT

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NON-TECHNICAL EXECUTIVE SUMMARY

Oval Real Estate are proposing to develop Albert Bridge House in Manchester (hereafter referred to as 'the site'). The proposals include the demolition of all buildings currently present on site and the construction of a mixed-use scheme with residential and office buildings.

Urban Green have been appointed to complete a Biodiversity Net Gain Design Stage Assessment in order to assess the change in value to the environment provided by the proposed development.

The Assessment was conducted using the Biodiversity Metric 3.1 to calculate the pre-and post-development biodiversity habitat units of the site for the proposed development. The results of this calculation are summarised in the following table:

	Habitat Unit Change					On-site post development	Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created		Habitat units	%
Area Habitat	10.11	4.80	-5.31	-	+8.10	12.90	2.79	+27.65%
Linear River Habitat	5.24	5.24	-	-	-	5.24	0.00	0%

Overall, the current landscape proposals for the development of the site produce a 27.65% gain in area habitats and no net loss of linear river units. Consequently, this development provides an increased ecological benefit to wildlife compared to the habitats currently found on site and conforms to the relevant National Planning Policy Framework and Local Planning Policies. The proposed habitats also satisfy the trading rules laid out by the metric. Therefore, no offsetting will be required to compensate for the loss of habitat units due to development.

To ensure habitats are maintained at the expected condition, a habitat management plan covering 30 years has been produced for this development which should be consistently followed (Urban Green, 2022a).

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1 Introduction

1.1 Background to the Scheme

Oval Real Estate Limited are proposing to develop Albert Bridge House in Manchester (hereafter referred to as 'the site'). The proposals include the demolition of all buildings currently present on site and the construction of a mixed-use scheme with residential and office buildings.

Urban Green have been appointed to complete a Biodiversity Net Gain Design Stage Assessment in order to assess the change in value to the environment provided by the proposed development.

The author of the report is Biodiversity Net Gain Consultant, Sarah Child. Sarah has experience providing consulting services in Biodiversity Net Gain for a range of development schemes, both residential and commercial, across the UK.

1.2 Site Context

The site is located at National Grid Reference SJ 83417 98369 and comprises a total area of approximately 0.85ha (see Figure 1).



Figure 1 – Site Extent

The site is located in the north of Manchester city centre, immediately adjacent to the River Irwell. Commercial and residential buildings surround the site on all aspects. Bridge Street is present along the south-western border of the site which is a busy main road through the centre of Manchester. A footpath is present along the eastern site boundary which connects to a footbridge over the River Irwell.

1.3 Purpose of this Report

This report has been produced to document the methods, results and conclusions of a BNG Design Stage Assessment that was undertaken on site. The advice herein is based on both desk and field-based studies and intends to fulfil the following purposes:

- Ensure the core principles of Biodiversity Net Gain including the mitigation hierarchy are applied;
- Identify the baseline habitats present on site (pre-development), assess the condition and provide an indication of the ecological value of those habitats;
- Identify the post-development habitats present on site, assess the possible target condition and provide an indication of the likely importance of those habitats;
- Calculate the overall change in biodiversity score from pre- to post-development habitats (measured as habitat units).

1.4 Planning Context

BNG means leaving biodiversity in a better state than it was before. As part of the Government's 25 Year Environment Plan, this requirement is being introduced and mandated for all developments. National planning policy and several Local Plans already require developments to deliver BNG.

Currently the National Planning Policy Framework (NPPF, 2021) details:

Paragraph 174 of the NPPF states:

Planning policies and decisions should contribute to and enhance the natural and 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;

Manchester City Council adopted a local plan in 2012, which will remain in place until 2027. While this document does not directly reference Biodiversity Net Gain, Policy EN 15 (Biodiversity and Geological Conservation) states:

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate.

Additionally, Greater Manchester Combined Authority (GMCA) have produced guidance relating to Biodiversity Net Gain within the 10 GM boroughs and set out a 10% target (GMCA, 2021):

The minimum level of Biodiversity Net Gain is considered to be achieved when the biodiversity units for the habitats (for example, area based habitats, rivers and/or hedges) impacted by the development is increased by 10% or more after the development. If the calculations indicate that a

net gain will not be delivered at this stage, either the design should be updated or additional areas for habitat compensation identified (either onsite or outside the development boundary).

1.5 Good Practice Principles

To ensure holistic development that makes a lasting positive change to the site's biodiversity, the Good Practice Principles as detailed in Biodiversity Net Gain: Good Practice Principles for Development (Baker *et al.*, 2019) must be followed. Key principles include:

- Following the 'Mitigation Hierarchy':
 - Avoid impacts on biodiversity
 - Minimise impacts on biodiversity
 - Compensate for biodiversity losses on site
 - Compensate for biodiversity loss off site
- Avoid irreplaceable habitats and losing biodiversity that cannot be offset elsewhere;
- Address risks including difficulty and time of habitat creation and enhancement;
- Make a measurable net gain contribution calculated with a suitable metric with limitation and assumptions clearly identified;
- Achieve the best outcome for biodiversity creating lasting long-term benefits that exceed current expectations.

These principles are also referenced and described extensively in the GMCA Biodiversity Net Gain Guidance Document (GMCA, 2021).

2 Previous Surveys

2.1 Preliminary Ecological Appraisal (PEA)

A preliminary ecological appraisal (PEA) was conducted on the site in February 2022 by Urban Green. This constituted a desk-based study and a field survey. Key information obtained is summarised below; full details can be found within the PEA (Urban Green, 2022b). Due to the size and low impact of the proposed development, a 1km Local Data Search was conducted as it is deemed an appropriate distance for the Zone of Influence.

Designated sites

No sites that form part of the National Site Network were located within 5km of the site boundary. No statutory sites or non-statutory designated sites are located within 1km of the site.

The site falls within the Impact Risk Zone of Rochdale Canal Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI). This site is located approximately 6.2km east of the site. This site is designated for the significant populations of floating water-plantain (*Luronium natans*) and diversity of pondweed species (*Potamogeton* sp.) supported within the predominantly mesotrophic waters, based on consultation with MAGIC.

Table 1 – Summary of the PEA (Urban Green, 2022b)

Flora/Fauna	Results
Vascular plants	The data search returned four records of bee orchid (<i>Ophrys apifera</i>), which is protected under Section 13 of the Wildlife and Countryside Act 1981. No rare or notable plants were present, and the site was not considered suitable to support populations of protected or notable plant species.
Invertebrates	Three records of cinnabar moth (<i>Tyria jacobaea</i>) and eight records of white-letter hairstreak (<i>Satyrus w-album</i>) were returned in the data search. Both species are listed under Section 41 of the NERC Act (2006), however, the site was not anticipated to support these species or any other notable invertebrate species.
Amphibians	No records of amphibians were identified in the data search and the site does not contain suitable habitat for amphibians.
Reptiles	No records of reptiles were returned during the desk search and the site was considered to have limited value to reptiles.
Birds	A total of 95 records of protected or notable birds were returned, including black redstart (<i>Phoenicurus ochruros</i>), peregrine falcon (<i>Falco peregrinus</i>) and kingfisher (<i>Alcedo atthis</i>). All species are listed under Section 41 of the NERC Act (2006), Schedule 1 or 5 of the Wildlife and Countryside Act 1981, or on Birds of Conservation Concern 5. The black redstart is also listed under the Greater Manchester BAP. The site was not considered suitable for ground nesting birds, wintering birds or birds of prey, but does have value to nesting birds.
Badger (<i>Meles meles</i>)	One record of badger was returned approximately 900m south-east of the site, however, no signs of badger were present, and the site was not considered suitable for badger. Badgers are protected the Protection of Badgers Act 1992.

Flora/Fauna	Results
Bats	Thirty-nine records of bat roosts and 74 auditory field records were returned during the data search relating to common pipistrelle (<i>Pipistrellus pipistrellus</i>), Daubenton's bat (<i>Myotis daubentonii</i>), and soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), and brown long-eared bat (<i>Plecotus auritus</i>). All species of bat are protected under Schedule 5 of the Wildlife and Countryside Act 1981 and the Greater Manchester BAP, and all except common pipistrelle are listed on Section 41 of the NERC Act (2006). The site is not considered to support roosting bats and has low value for commuting and foraging bats.
Hedgehog (<i>Erinaceus europaeus</i>)	Two records of hedgehog were returned, with the most recent record from 2020 approximately 500m from the site. Hedgehog are listed on Section 41 of the NERC Act (2006). The site offers limited suitable habitat for hedgehog and is surrounded by busy roads.
Water vole (<i>Arvicola amphibius</i>)	No records of water vole were returned and the River Irwell is not considered suitable to support water vole. The water vole is protected under Schedule 5 of the Wildlife and Countryside Act 1981 and the Greater Manchester BAP.
Otter (<i>Lutra lutra</i>)	Two records of otter were returned, with the most recent from 2018. Otter is a European protected species under Annex II of the Conservation of Habitats and Species Regulations and are also listed on Section 41 of the NERC Act (2006). No signs of otter were present on site and the site offers limited habitat value for the species.
Invasive species	Giant hogweed (<i>Heracleum mantegazzianum</i>) was present on the site during the field survey. This species is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as an invasive non-native species.

3 Methods

3.1 Sources of Information

Table 2 – Desk Study Sources of Information

Source	Date Consulted	Information Sought
MAGIC website (www.magic.gov.uk)	07/11/2022	Locations of statutory designated sites within 1km of the site boundary. Locations of the designated sites within the National Site Network (Ramsar, SAC and SPA) within 5km of the site boundary. Locations of European Protected Species Licences (EPSL) and Class Licences within 1km.
Natural England (https://designatedsites/naturalengland.org.uk/)	07/11/2022	Relevant statutory designated site citations.
JNCC (https://jncc.defra.gov.uk/)	07/11/2022	Information on European wildlife sites. Details of relevant Section 41 species and habitats.
Greater Manchester Ecology Unit	07/11/2022	Locally designated wildlife sites within 1km of site boundary. Records of protected and notable species within 1km of the site boundary.
Greater Manchester Local Biodiversity Action Plans	07/11/2022	Species and habitats which are given special conservation status at the local level.
Main River Map (Environment Agency)	07/11/2022	The main river map shows which rivers in England are designated as ‘main rivers’. Other rivers are called ‘ordinary watercourses’.
Preliminary Ecological Appraisal (Urban Green, 2022b)	07/11/2022	Notable species, habitats and designations identified on site and within a 1km radius.

Source	Date Consulted	Information Sought
The Biodiversity Metric 3.1 Natural England Publications (http://nepubprod.appspot.com/publication/6049804846366720)	07/11/2022	The Biodiversity Metric 3.1, including the tool itself, user guides and reference documentation associated with the tool.

3.2 Site Mapping

3.2.1 Existing Habitat (Baseline)

The site was subject to a field survey on 4th February 2022, by Assistant Ecologist Jake Healy and Senior Ecologist Mark Blacker. The weather conditions were 8°C, overcast (5/8 oktas), wind speed 1 Beaufort scale.

Habitat types were identified and recorded using the Coreo habitat mapping application (version V3.1) which utilises UKHab classifications (Butcher *et al.* 2020). Habitat types were based on the UKHab guidance provided and the assessor's best judgment while using these guidelines.

Plant species were identified and recorded and species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and those which are indicators of important and/or uncommon habitats, were searched for during the survey. Any invasive species, including those listed on the revised (April 2010) Schedule 9 of the *Wildlife and Countryside Act 1981* were also searched for during the field survey.

These habitats were subsequently mapped using ESRI ArcGIS Pro software, and habitat areas and lengths were calculated to demonstrate habitats within the proposed development and the surrounding area. The baseline habitat map is displayed in Appendix 1.

3.2.2 Post-Development Habitats

The planning layout as provided by Studio Egret West (2022a & 2022b) (see Appendix 2) was provided in PDF and DWG format and used to categorise the proposed habitats and calculate the associated areas and lengths.

3.3 The Biodiversity Metric 3.1

The BNG calculation was undertaken utilising The Biodiversity Metric 3.1 from Natural England (full calculation available Urban Green [2022d]) using data obtained from the field survey.

The calculation was performed by a technically competent and experienced person as detailed in British Standard BS8683 - Suitably qualified person –definition in BS8683:2020.

The Biodiversity Metric 3.1 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric considers the size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

3.4 Habitat Scoring

The Biodiversity Metric 3.1 supplies reference documents and user guides to accurately evaluate and assess the different habitats on site. The methodology for the baseline and post development calculations are demonstrated in the following sections.

3.4.1 Baseline Units

To assess the quality of a habitat, and therefore calculate the units scored, the Biodiversity Metric 3.1 utilises three scoring factors detailed as follows:

Condition

The condition of a habitat is assessed utilising the Condition Sheets provided for each habitat type. These list positive indicators for each habitat and indicate how many of these indicators need to be present to meet certain thresholds of condition. These condition sheets can be found in Biodiversity Metric 3.1 Technical Supplement Part 1a (Natural England, 2022). Condition sheets used within this assessment for pre- and post-development habitats are Urban Trees, Urban, Grassland (Low), Grassland (Medium, High and Very High) (Table 3). A MoRPh river survey was conducted to assess the condition of the River Irwell (Section 3.5).

Table 3 – Conditions Sheets for Habitat Assessment

Condition Sheet	Habitats Assessed
Area Habitats	
Urban Trees	Urban Trees
Urban	Sparsely Vegetated Land – Ruderal/Ephemeral Intensive Green Roof
Grassland (Medium, High & Very High)	Other Neutral Grassland
Grassland (Low)	Modified Grassland
Linear Habitats	
MoRPh River Survey	Other Rivers and Streams

Distinctiveness

The distinctiveness of each habitat is automatically assigned by the tool, based upon national records of the occurrence and rarity of each habitat. Table 4 provides the basis of the distinctiveness assessment for area habitats.

Table 4 – Distinctiveness Assessment

Distinctiveness Categories		
Category	Scores	Description
Very High	8	Priority habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act that are highly threatened, internationally scarce and require conservation action e.g. blanket bog.

Distinctiveness Categories		
Category	Scores	Description
High	6	Priority habitats as defined in Section 41 of the NERC Act requiring conservation action e.g. lowland fens.
Medium	4	Semi-natural habitats not classed as a Priority Habitat.
Low	2	Habitat of low biodiversity value. Temporary grass and clover ley; intensive orchard; rhododendron scrub.
Very Low	0	Little or no biodiversity value e.g. hard standing or sealed surface.

Strategic Significance

The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are in preferred locations for biodiversity and other environmental objectives. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such as Nature Recovery Areas, local biodiversity plans, National Character Area 14 objectives and green infrastructure strategies (see Table 5).

Table 5 – Strategic Significance Assessment

Strategic Significance Categories	
Category	Score
High strategic significance High potential & within area formally identified in local policy	1.15
Medium strategic significance Good potential but not in area defined in local policy	1.1
Low Strategic Significance Low potential and not in area defined in local policy	1

3.4.2 Post-Development

Post-development habitats are subject to the same condition assessments as baseline habitats, based on information provided by the proposed landscape layout and planting proposals (Appendix 2). Two additional factors are considered within post-development landscapes which are detailed below.

Temporal Multiplier

For post development habitat creation or enhancement, a risk multiplier will be automatically applied by the tool to account for the period of diminished ecological value while the habitat reaches the targeted post development condition. This time and therefore risk multiplier differs between habitat types, if the habitat is being created or enhanced and how the habitat is to be managed. The predetermined multiplier is based on the average time to meet targeted condition assuming good practice principles and appropriate management strategies are applied.

Difficulty Multipliers

A risk multiplier will be automatically applied by the tool to account the 'difficulty' of habitat-specific enhancement or creation. There are two separate difficulty multipliers assigned to each habitat, one for

creation and one for enhancement/restoration, recognising that the technical challenges will not necessarily be the same for both.

3.5 MoRPh River Survey

Condition of the linear river habitat present within 10m of the site was assessed by a Modular River Physical Survey (MoRPh Survey), undertaken by a certified ecologist. Assessment of linear river habitats condition is based on the extent and diversity of a number of physical features within in both the river channel and riparian as well as the extent and type of any human modifications. This assessment is implemented in two parts:

- A field based sub-reach scale assessment that captures channel dimensions, physical features / habitats, vegetation structural features, and human interventions to assess the condition of the river at the development site, taking into account the type of river.
- A desk-based reach-scale assessment to define river type of the homogenous reach of the river to be affected by development.

The field element of the assessment included five MoRPh field surveys conducted on contiguous lengths (modules) of river. Each MoRPh module covers a river length of 40m which is approximately 1.5x the river width (28m). These five contiguous modules covered a sub reach of the river 200m in length. Approximately 135m of the river was adjacent to the red line boundary and the rest of the length surveyed extended beyond the development site. Despite this, the allocated condition score is still considered to be accurate as the physical and hydrological characteristics of the river outside of the site boundary remained consistent with the habitat adjacent to the boundary. The River Condition Assessment captures information on sediments, vegetation, morphological and water-related features; and the extent and severity of physical modification within the channel, channel margins, banks, and riparian zone (to 10m from the bank tops).

3.6 Constraints to the Survey

Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

February is a suboptimal time for carrying out UKHab Habitat Surveys due to being outside of the optimal plant growing season. Therefore, it is likely that some plants are present on the site but were not evident at the time of the survey and were not recorded. This is not considered to be a significant constraint with regards to the general UKHab survey results as, due to the size and location of the site and limited extent of the habitats, it is considered very unlikely that any rare or priority plant species were missed.

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

Best possible effort was made during the mapping process to ensure that the habitat map accurately represents the area of habitats present on site. Some margin of error is possible due to the continuous

and difficult to define nature of habitat boundaries, however this margin of error has been minimised using professional opinion of two experienced ecologists and up to date aerial imagery. As such this is not expected to be a significant constraint and affect the overall Biodiversity Net Gain Calculation provided within this report.

4 Baseline Habitat Assessment

Baseline habitat condition was assessed following the methodology outlined in Section 3.4. Habitat descriptions and the results of this assessment are provided below. The habitats have been given reference numbers for clarity regarding in-text and the metric calculation (Urban Green, 2022d) illustrates the numerical data. Full habitat descriptions can be found in the PEA (Urban Green, 2022b).

4.1 Area Habitats

4.1.1 1, 2, 3 & 4) Buildings – Developed land; sealed surface

Four buildings were identified within the site, each connected by covered ground level walkways. Buildings were constructed of concrete and glass, and were of a range of heights, from one storey up to 18 stories. Three of the buildings had structures on the roof that were inspected at the time of survey. Buildings are automatically allocated a pre-determined condition score of N/A within the metric.

4.1.2 5) Hardstanding – Developed land; sealed surface

Hardstanding was prevalent throughout the site within the car parks and pedestrian walkways. This surface provides negligible ecological value and formed the majority of the surfaces within the site. Hardstanding is automatically allocated a condition score of N/A by the metric.

4.1.3 6) Urban – Introduced Shrub

This habitat was present in small patches within the borders of the car park to the west of the site. This habitat contained predominantly non-native species, with snowberry (*Symphoricarpos albus*) dominant, with cherry laurel (*Prunus laurocerasus*) present frequently. Ivy (*Hedera helix*) was also dominant in the ground layer within this habitat. Introduced shrub provides little ecological value, therefore it is automatically allocated a condition score of N/A by the metric.



Photograph 1 – Introduced scrub within the car park of Albert Bridge House

4.1.4 7) Urban – Sparsely Vegetated Land – Ruderal/Ephemeral

A strip of ruderal/ephemeral vegetation is present along the northern boundary of the site, associated with an artificial embankment along the River Irwell. This area comprises bare ground as well as frequent ivy and giant hogweed (*Heracleum mantegazzianum*).



Photograph 2 – Sparsely vegetated land along the riverbank

Table 6 – Condition Assessment for Sparsely Vegetated Land – Ruderal/Ephemeral

Table 6 – Condition Assessment for Sparsely Vegetated Land – Ruderal/Ephemeral						
Phase 1 Habitat Classification		Ephemeral/short perennial				
UK Hab Classification		Sparsely Vegetated Land – Ruderal/Ephemeral				
Condition Sheet		Urban				
Condition Criteria 1.		Vegetation structure is varied providing opportunities for insects birds and bats to live and breed	Pass	Condition Criteria 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).	Fail
Condition Criteria 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).	Fail			
Condition	Poor	Passes 1 of 3 criteria.				
Distinctiveness		Low				

4.1.5 8) Urban Trees

A total of 31 trees (5 small, 23 medium, and 3 large) were present on the site, along the northern and western site boundaries. Most of these trees were mature and well established, with some cover of ivy present on the tree stems. Species present included crack willow (*Salix fragilis*), sycamore (*Acer pseudoplatanus*), small-leaved lime (*Tilia cordata*) and elder (*Sambucus nigra*). Three trees within this area were noted to have bird boxes present on the main stems, these have been marked on the habitat map provided in the PEA (Urban Green, 2022b).



Photograph 3 – Scattered trees within the car park of Albert Bridge House



Photograph 4 – Trees around building entrance of Albert Bridge House

Table 7 – Condition Assessment for Urban Trees

Phase 1 Habitat Classification	Scattered Trees				
UK Hab Classification	Urban tree				
Condition Sheet	Urban tree				
Condition Criteria 1.	The tree is a native species (or more than 70% within the block are native species).	Fail	Condition Criteria 4.	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Pass
Condition Criteria 2.	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	Pass	Condition Criteria 5.	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	Pass

		trees automatically pass this criterion).			
Condition Criteria 3.		The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Fail	Condition Criteria 6.	More than 20% of the tree canopy area is oversailing vegetation beneath.
Condition	Moderate	Passes 3 of 6 criteria			
Distinctiveness		Medium			

4.2 Linear River Habitats

4.2.1 Other Rivers and Streams – River Irwell

A section of the River Irwell runs along the north-western boundary, adjacent to the red line boundary of the site.



Photograph 4 – Bank of River Irwell running along north-western site boundary



Photograph 5 – Bank of River Irwell running along north-western site boundary

Table 8 – Condition Assessment for Other Rivers and Streams

Name	River Irwell		
UK Hab Classification	Other Rivers and Streams		
Condition Assessment	River MoRPh Survey		
River Category	Other Rivers and Streams	Reach Valley Gradient	0.0013
Braiding Index	1	Bedrock Reach	No
Sinuosity Index	1.02	Coarsest Bed Material	Gravel-pebble
Anabranching Index	1	Average Bed Material	Sand
Level of Confinement	Unconfined	Condition Score	Fairly poor
Condition Score	Fairly Poor		
Distinctiveness	High		
Extent of watercourse encroachment	Major		
Extent of riparian encroachment	Major		

5 Retained Habitats

Using the Biodiversity Metric 3.1, the habitat units of the pre-development habitats to be retained were calculated.

5.1 Area Habitats

Under current landscape proposals, 19 of the original trees will be retained, with 15 being removed (detailed in Section 6.1).

Table 9 – Retained Area Habitats

Habitat Parcel Reference	Total Area (ha)	Total Units	Area Retained (ha)	Units Retained
Urban Trees	1.24	9.92	0.60	4.80

5.2 Linear River Habitats

The section of river that lies adjacent to the site boundary will remain unchanged, and measures will be taken to ensure that the river isn't impacted during construction. Table 10 shows a summary of the linear river habitat, the corresponding length (km) and unit score to be retained on site.

Table 10 – Retained Linear River Units

Habitat	Total Length (km)	Total Units	Length Retained (km)	Units Retained
River	1.35	5.24	1.35	5.24

6 Lost Habitats

Using the Biodiversity Metric 3.1, the habitat units of the pre-development habitats to be lost were calculated.

6.1 Area Habitats

Both the entirety of the sparsely vegetated land (ruderal/ephemeral) running along the riverbank and the full length of the introduced shrub bordering the carpark will also be removed. As mentioned in Section 5.1, 15 of the trees onsite will be lost. Table 11 shows a summary of the area habitats and their corresponding area (ha) and unit score to be lost on site, along with planned mitigation.

Table 11 – Lost Area Habitats

Habitat Parcel Reference	Total Area (ha)	Total Units	Area lost (ha)	Units lost	Planned Mitigation
1, 2, 3, 4 & 5) Urban – Developed Land; Sealed Surface	0.76	0	0.76	0	This habitat provides no ecological value, therefore no mitigation is necessary.
6) Introduced Shrub	0.027	0.05	0.027	0.05	Despite the low ecological value of this habitat, it has a high aesthetic value for schemes. Additional areas of introduced shrub will be planted in the proposed development.
7) Sparsely Vegetated land – Ruderal/ Ephemeral	0.067	0.13	0.067	0.13	This is habitat has low ecological value. New proposed habitats containing more ecological value and native species are to be planted on the site.
8) Urban Trees	1.24	9.92	0.64	5.12	Although most of these trees are in good condition, they overlap with the proposed building footprint. An additional 98 trees are proposed to be added which will more than compensate for the 15 original trees lost.
Total	2.09	10.11	1.49	5.31	

7 Pre-Development Unit Summary

Using the Biodiversity Metric 3.1, the habitat units of the existing site habitats were calculated; the habitat units to be retained within site development were calculated; and, the habitat units that are anticipated to be lost in site development were calculated.

The results of these calculations are presented in Table 12.

Table 12: Pre-Development Unit Summary

	On-site baseline	Retained	Lost
Area Habitat Units	10.11	4.8	5.31
Linear River Units	5.24	5.24	-

8 Habitat Creation

8.1 Area Habitats

8.1.1 Urban – Urban Trees

A total of 32 urban trees (7 small, 21 medium, and 4 large) will be planted at ground level within the new planted areas. The ground-level mix incorporates predominantly native species, including wild cherry (*Prunus avium*), silver birch (*Betula pendula*), aspen (*Populus tremula*), and white willow (*Salix alba*), though a small number of non-native sycamore trees will also be included.

Table 13 – Condition Assessment for Proposed Urban Trees (ground-level)

Classification within Landscape Designs		Proposed Tree (ground-level)			
UK Hab Classification		Urban tree			
Condition Sheet		Urban tree			
Condition Criteria 1.	The tree is a native species (or more than 70% within the block are native species).	Pass	Condition Criteria 4.	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Pass
Condition Criteria 2.	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).	Pass	Condition Criteria 5.	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	Fail
Condition Criteria 3.	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Fail	Condition Criteria 6.	More than 20% of the tree canopy area is oversailing vegetation beneath.	Pass
Condition	Moderate	Passes 4 of 6 criteria			
Distinctiveness		Medium			
Time to Target Condition		27 years			
Difficulty of Creation		Low			

An additional 66 trees (35 small, 31 medium) will be planted on the roof terraces within raised steel planters. The roof-level mix includes non-native black birch (*Betula nigra*) and native seaberry (*Hippophae rhamnoides*).

Table 14 – Condition Assessment for Proposed Urban Trees (Roof-level)

Classification within Landscape Designs		Proposed Tree/Multi Stem Tree (Roof-level)				
UK Hab Classification		Urban tree				
Condition Sheet		Urban tree				
Condition Criteria 1.		The tree is a native species (or more than 70% within the block are native species).	Fail	Condition Criteria 4.	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Pass
Condition Criteria 2.		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).	Pass	Condition Criteria 5.	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	Fail
Condition Criteria 3.		The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Fail	Condition Criteria 6.	More than 20% of the tree canopy area is oversailing vegetation beneath.	Pass
Condition	Moderate	Passes 3 of 6 criteria				
Distinctiveness		Medium				
Time to Target Condition		27 years				
Difficulty of Creation		Low				

8.1.2 Grassland – Other Neutral Grassland (Wildflower Meadow)

A strip of wildflower meadow will be created along the riverbank to the north of the site. Meadow habitat will be created by seeding the earth with specially selected plant mix including native and non-native floral species, such as lady's bedstraw (*Galium verum*), oregano (*Origanum vulgare*), and red clover (*Trifolium pratense*), and grass species, such as sheep's fescue (*Festuca ovina*) and crested dog's tail (*Cynosurus cristatus*).

Table 15 - Condition Assessment for Proposed Other Neutral Grassland

Classification within Landscape Designs		Planting Mix 3				
UK Hab Classification		Other Neutral Grassland (Wildflower Meadow)				
Condition Sheet		Grassland (Medium, High & Very High)				
Condition Criteria 1.		The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.	Fail	Condition Criteria 4.	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Pass
Condition Criteria 2.		Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Pass	Condition Criteria 5.	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	Pass
Condition Criteria 3.		Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass	Condition Criteria 6.	There are greater than 9 species per m ² . NB - This criterion is essential for achieving good condition (non-acid grassland types only).	Pass
Condition	Poor	Passes 5 of 6 criteria but fails essential criteria 1.				
Distinctiveness		Medium				
Time to Target Condition		2 years				
Difficulty of Creation		Low				

8.1.3 Urban – Intensive Green Roof

Green roofs will be planted with wildflower turf (from www.wildflowerturf.co.uk). This turf contains 41 native wildflower and grass species, including sheep's fescue (*Festuca ovina*), autumn hawkbit (*Scorzoneroides autumnalis*), bladder campion (*Silene vulgaris*) and betony (*Stachys officinalis*).

Table 16 – Condition Assessment for green roofs

Phase 1 Habitat Classification		Ephemeral/Short Perennial				
UK Hab Classification		Intensive Green Roof				
Condition Sheet		Urban				
Condition Criteria 1.		Vegetation structure is varied providing opportunities for insects birds and bats to live and breed	Fail	Condition Criteria 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).	Pass
Condition Criteria 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).	Pass	Condition Criteria 4.	Intensive green roofs – have a minimum of 50% native and non-native wildflowers - 70% of the roof area is soil and vegetation (including water features)	Fail
Condition	Moderate	Passes 2 of 4 criteria.				
Distinctiveness		Low				
Time to Target Condition		3 years				
Difficulty of Creation		Low				

8.1.4 Urban – Introduced shrub

Areas of ornamental introduced shrub will be planted at ground-level in beds containing trees, using species that are found in British woodlands to create a woodland atmosphere. Beds of ornamental introduced shrubs will also be included on the roof gardens and terraces, in raised beds which will also include some tree species (described in Section 8.1.1). Although introduced shrubs do provide nectar for pollinators, their overall ecological value is minimal, therefore this habitat has a predetermined condition of N/A within the metric.

The areas of woodland planting are comprised of two different seed mixes, tailored to the different locations, while the roof gardens are all planted with the same alpine mix.

Planting Mix 01 – Woodland Character 1

This planting mix will be used in beds between the buildings and will be predominantly shaded, therefore this mix incorporates more shade-tolerant species. The mix comprises predominantly non-native species and contains ground covering plants such as wild strawberry (*Fragaria vesca*) and ivy (*Hedera helix*), seasonal planting such as ice plant (*Hylotelephium spectabile*), Alpine wood fern (*Dryopteris wallichiana*), and Baltic parsley (*Cenolophium denudatum*), and emergent grasses such as pheasant's tail grass (*Anemanthele lessoniana*) and snow rush (*Luzula nivea*).

Planting Mix 02 – Woodland Character 2

This planting mix will be used along the site's south-eastern boundary, which is south facing and will receive plenty of light. Again, the mix is predominantly non-native species and includes ground covering species such as lady's mantle (*Alchemilla mollis*) and ivy, seasonal planting such as remote sedge (*Carex remota*), plantain lily (*Hosta* 'Patriot'), and autumn moor-grass (*Sesleria autumnalis*), and emergent grasses such as garden Solomon's seal (*polygonatum* × *hybridum*) and goat's beard (*Aruncus* 'Horatio').

Roof Planting Mix – Alpine Roof

This planting mix is comprised of alpine species which are robust and will be well-adapted to the exposed conditions on the roof gardens. The majority of the mix is non-native, and includes ground cover evergreen species such as heather (*Calluna vulgaris*) and creeping thyme 'Snowdrift' (*Thymus serpyllum* 'Snowdrift'), seasonal grasses and ferns such as spiky fescue (*Festuca gautieri*) and spikey melic (*Melica ciliate*), and structural evergreen shrubs such as dwarf mountain pine (*Pinus mugo*).

8.1.5 Urban – Developed Land; Sealed Surface

Large areas of hard surfacing will be created across the development as predominantly paved walkways and access routes, and a wooden walkway around the wildflower meadow. Hard surfacing as well as the new buildings are categorised as developed land; sealed surface, which has a predetermined condition of N/A within the metric.

9 Post-Development Summary and Conclusion

Using the Biodiversity Metric 3.1, the habitat units of the proposed and created habitats were calculated; the habitat units to be retained within site development were calculated; and the habitat units that are anticipated to be lost in site development were calculated.

The results of these calculations are presented in the Table 17.

Table 17: Post Development Biodiversity Net Gain Calculation

	Habitat Unit Change					On-site post development	Net change in Biodiversity	
	On-site baseline	Retained	Lost	Enhanced	Created		Habitat units	%
Area Habitat	10.11	4.80	-5.31	-	+8.10	12.90	2.79	+27.65%
Linear River Habitat	5.24	5.24	-	-	-	5.24	0.00	0%

As illustrated in Table 17, the current landscape proposals for the development of the site produce a 27.65% gain in area habitats and no net loss of linear river units. Consequently, this development provides an increased ecological benefit to wildlife compared to the habitats currently found on site and conforms to the relevant National Planning Policy Framework and Local Planning Policies. The proposed habitats also satisfy the trading rules laid out by the metric. Therefore, no offsetting will be required to compensate for the loss of habitat units due to development.

To ensure that the habitats proposed as part of the post-development design of this site reach the condition detailed within this report and the full gain in value to the environment is achieved by this site, a long-term management plan (usually 30 years) is required. This length of management plan is required due to the complex nature of the habitats to be enhanced/created on site and the high value they will provide to the environment. This management plan is provided by Urban Green (Urban Green, 2022a) as a separate document and covers the recommended management practices for the proposed habitats discussed in this report.

10 References

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- Urban Green (2022b). UG_1452_ECO_PEA_02.
- Urban Green (2022d). UG_1452_ECO_BNG_CALC_01.
- Urban Green (2022e). UG_1452_ARB_AIA_REV_00_FINAL.

APPENDIX 1 - PRE-DEVELOPMENT HABITAT MAP

U R B A N
G R E E N

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- Urban Trees

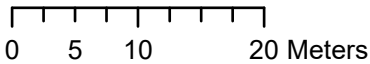
Sparsely Vegetated

Building

Urban

Developed Lane Sealed Surface

Red Line Boundary
-



A: Ground Floor, The Tower,
Deva City Office Park, Trinity Way,
Manchester M3 7BF

T: +44 (0) 161 312 3131

weareurbangreen.co.uk

Client: **Oval Real Estate**

Project: **Albert Bridge House**

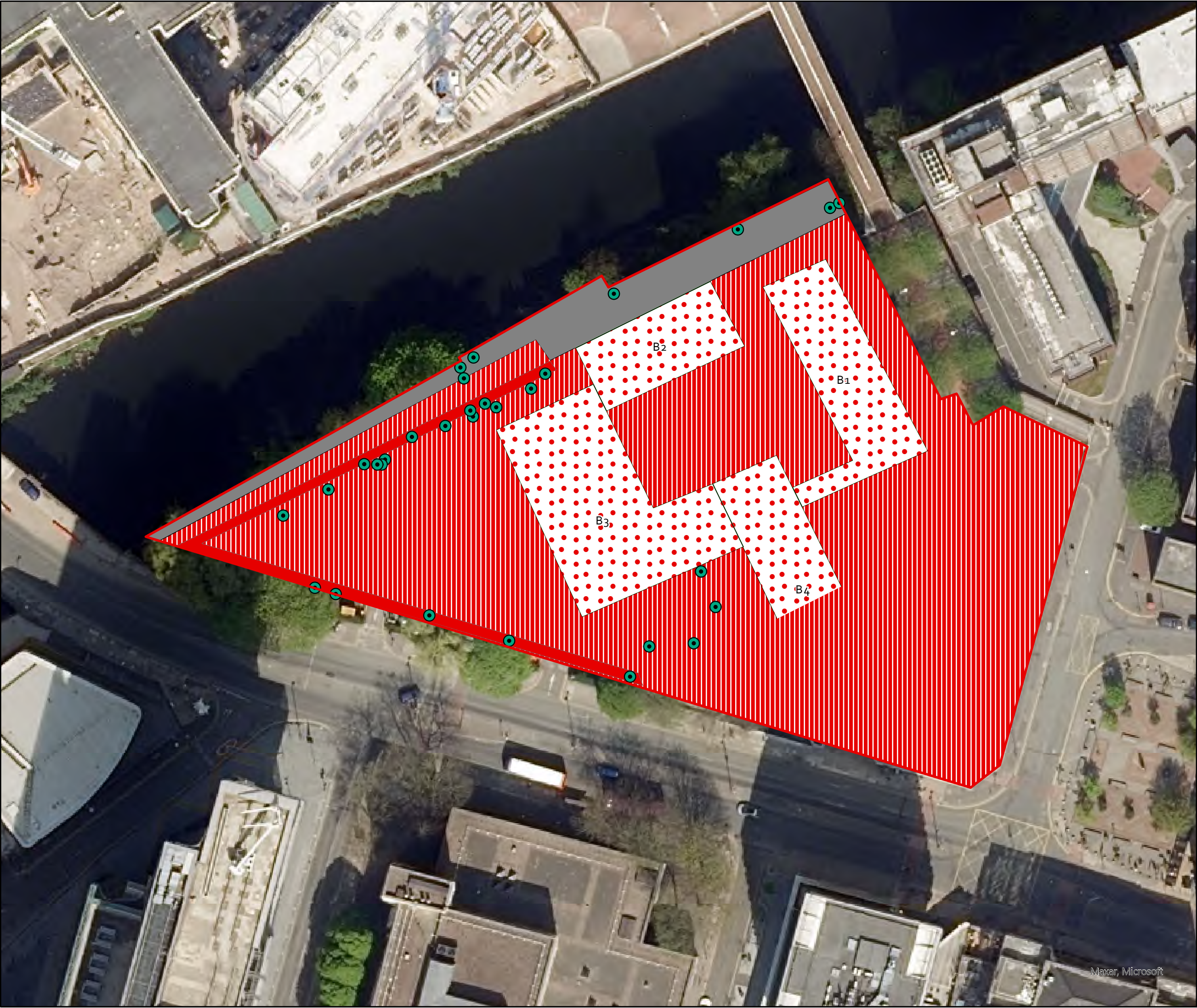
Title: **UKHAB Habitat Map**

Issue: **01**

Drawn: CL	Checked: SB	Approved: MB
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Project: UG1452	Scale @ A3: 1:600	Date: 16/11/2022
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Dwg No: UG_1452_ECO_HM_01	Revision: 04
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APPENDIX 2 - SOFT LANDSCAPE PLAN

U R B A N
G R E E N

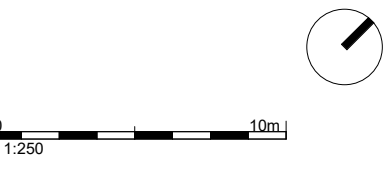


General Notes

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Do not scale this drawing for construction purposes. All dimensions to be checked on site by the contractor and such dimensions to be their responsibility.
All work must comply with relevant British Standards and Building Regulations requirements. Drawing errors and omissions to be reported to the architect.

Notes

- Key**
- Detailed Planning Application Boundary
 - Building Entrance
- Softscape**
- Existing tree removed
 - Existing tree removed and recycled
 - Proposed Tree
 - Height: varies from 3500/5000/7500mm
 - Profile: varies from 2m clear stem to multistem
 - Soil Depth: 1000mm Minimum
 - Species mix: refer to planting schedule 0412-SEW-ZZ-ZZ-SH-L-001001
 - Size: typically for groundcover, herbaceous perennials & grasses @ 50cm container grown pots
 - Specimen species @ 20 container grown pots
 - Density: 8/m2
 - Existing Tree Retained
 - Existing Tree - Tree Preservation Order
- S01 Planting Mix 1**
- Description: Woodland Character 1 - Sunny aspect woodland planting
Species mix: refer to planting schedule 0412-SEW-ZZ-ZZ-SH-L-001001
Size: typically for groundcover, herbaceous perennials & grasses @ 50cm container grown pots
Specimen species @ 20 container grown pots
Density: 8/m2
- S02 Planting Mix 2**
- Description: Woodland Character 2 - Shaded woodland planting
Species mix: refer to planting schedule 0412-SEW-ZZ-ZZ-SH-L-001001
Size: typically for groundcover, herbaceous perennials & grasses @ 50cm container grown pots
Specimen species @ 20 container grown pots
Density: 8/m2
- S03 Planting Mix 3**
- Description: Wildflower Meadow - Ecologically rich, shaded wildflower embankment to the River walk
Species mix: refer to planting schedule 0412-SEW-ZZ-ZZ-SH-L-001001
Product: Pre-grown as wildflower turf



Key Plan

3 Brewhouse Yard
London, EC1V 4JG
hello@getwest.com
+44 (0) 20 7549 1730

PLANNING

Project No. 0412
Project Name Albert Bridge House
Drawing Title

Landscape Planting Plan

Client Oval Real Estate
Scale 1: 250
Date 29/11/2022
Drawn by SH
Checked by SEW

00	29/11/22	Issue for Planning	SEW	
Re	Date	Reason	Chk	
v				

Drawing Number	Rev
0412-SEW-ZZ-ZZ-DR-L-PL0101	00



General Notes

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Notes

Key

Detailed Planning Application Boundary

Building Entrance

Softscape

Multi Stem Tree

Height: 3000mm

Flange: Underground gully

Soil Depth: 1000mm Minimum

Roof Planting Mix

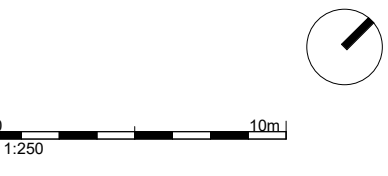
Description: Alpine Roof Mix - sunny aspect, wind tolerant roof terrace mix, comprising ferns, grasses and evergreen shrubs.

Species mix refer to planting strategy in DAS.

Star: typically for groundcover, herbaceous perennials & grasses @ 5cm container grown pots. Specimen species @ 75 container grown pots

Density: 5/m2

Green Roof Meadow Turf



Key Plan

3 Brewhouse Yard
London, EC1V 4JG
hello@getwest.com
+44 (0) 20 7549 1730

PLANNING

Project No. 0412

Project Name

Albert Bridge House

Drawing Title

Landscape Planting Plan - Roof Level

Client Oval Real Estate

Scale 1: 250

Date 29/11/22

Drawn by SH

Checked by SEW

00	29/11/22	Issue for Planning	SEW	

Re	Date	Reason	Chk
v			

Drawing Number	Rev
0412-SEW-ZZ-ZZ-DR-L-PL0201	00