

BIODIVERSITY ENHANCEMENT MANAGEMENT PLAN

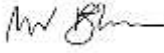
December 2022

Albert Bridge House
1 Bridge Street
Manchester
M60 9AF

U R B A N
G R E E N



QUALITY MANAGEMENT

Project No.:	UG1452			
Project:	Albert Bridge House			
Location:	1 Bridge Street, Manchester, M60 9AF			
Title:	Biodiversity Enhancement Management Plan			
Document Type:	BEMP	Issue No.:	01	
Date:	01/12/2022			
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Revision Status:				
Rev:	Date:	Issue/Purpose/Comment:	Prepared:	Checked:

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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 provide a Biodiversity Enhancement Management Plan (BEMP) for the site which has been written to accompany the Biodiversity Net Gain Assessment of this site.

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 Management Plan

The purpose of this management plan is to provide a schedule for the long-term management of habitats on site, ensure that existing and proposed habitats are suitably maintained and ensure good establishment and continued improvement of habitat condition. This allows those responsible for the management and maintenance of the site to understand the existing habitats, the development and ongoing management requirements of the site. Habitats should be maintained under a formal management regime for a minimum of 30 years, in accordance with the Environment Act 2021, with regular assessments during this period to assess the development and condition of habitats.

1.4 Aims of this Management Plan

This management plan covers the habitat creation and enhancement on site, as detailed within the Biodiversity Net Gain (BNG) Assessment (Urban Green, 2022a & 2022b). This report assessed the development as scoring a gain of 27.65% in area biodiversity units and no net loss of river units utilising the Biodiversity Metric 3.1.

Appropriate management practices are essential to ensuring that the proposed habitats reach the condition outlined within the Biodiversity Net Gain assessment and that the development achieves the predicted gain in value to the environment. The aim of this management plan is to provide a habitat management plan that:

- Maintains and enhances site biodiversity, through the sustainable management of on-site habitats;
- Promotes the successful establishment and growth of newly created habitats;
- Ensures the health and safety of all site user's post development is protected;
- Outlines a process for the regular monitoring and review of management practices and site habitats; and
- Provide measurable and achievable targets appropriate to each habitat to ensure condition targets are met as set out in Section 6 in accordance with Biodiversity Metric 3.1 habitat condition sheets.

2 Development Proposals

The site comprises approximately 0.85ha in total. The applicant is seeking approval for the demolition of all buildings currently present on site and the construction of a mixed-use scheme with residential and office buildings. The development is expected to achieve a 27.65% gain in area habitats and no net loss of linear river units. The trading rules within the metric are also satisfied by the scheme. Consequently, this development provides an increased ecological benefit to wildlife compared to the habitats currently found on site. The development also conforms to the relevant National Planning Policy Framework and Local Planning Policies and satisfies 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.

3 Management Considerations

3.1 Management Responsibilities

The implementation of this management plan will be the responsibility of the landowner for a minimum of 30 years, based on requirements within the Environment Act (2021). Any transference of responsibility of this plan should be undertaken with the appropriate appointment of a competent organisation capable of delivering the management detailed within the document.

The organisation implementing this plan will be a management company with the necessary certificates of competence to implement landscape management operation on site. The managing organisation will ensure that all site management complies with good practice standards and all relevant health and safety procedures. The managing organisation will also ensure that measures outlined to avoid pollution incidents, comply with protected species and habitats legislation, and ensure overall environmental protection are enforced.

A maintenance specification is provided in Section 6. This sets out the detailed maintenance requirements for the habitats onsite, which must be followed at all times. Any deviations from the management plan must be highlighted to the site owners or management company.

3.2 Controlling Authority

The controlling authority, Manchester City Council, should be consulted on any matters relating to the approved landscape proposals for the scheme.

3.3 Health and Safety

The site will be managed to comply with all relevant health and safety legislation, approved codes of practice (ACOP) and Health and Safety Executive (HSE) guidance.

As the managing organisation will be the main company involved in on site works, the managing organisation will fulfil the landowner's role and the work manager's role. This places an obligation on the managing company to ensure that any contractor understands and fulfils their health and safety role and any work undertaken on the site will follow the guidelines of the HSE.

3.4 Monitoring and Review

Regular monitoring of the development against measurable targets (as detailed within Section 6) will be undertaken across all habitats detailed within this management plan during the 30-year period. The outcome of this monitoring will form part of a Monitoring and Audit Report to be submitted to the site owner annually to inform the forthcoming year's work. The report will include management operations undertaken, any unexpected changes or declines in habitat condition and any actions required that fall outside those detailed within this report.

A more in-depth habitat assessment of the created habitats on site should also be undertaken between April and September annually by an experienced ecologist. Results should be reported back and feed into a five-year management plan review, to enable assessment of the management prescriptions against the defined objectives for each habitat. Where objectives are not being adequately met, appropriate action will be put in place, with any refinements incorporated into the updated management plan and annual work programme. This review will enable maintenance operations to evolve in accordance with habitat requirements as they establish, and mature and targeted conditions are met.

3.5 General Measures

Habitat creation on site will follow details set out in the Detailed Planting Plan, provided by Studio Egret West (2022a & 2022b). The following general measures shall be met to ensure successful habitat creation and succession on site.

- All planting is to follow guidance set out in the relevant British Standard or Horticultural Trades Association documents and carried out by a competent person.
- Planting is to remain undamaged, with healthy and vigorous growth, and is to be planted upright and well balanced. Trees and shrubs are to be of good shape and without elongated shoots, grown in a suitable environment and hardened off before being delivered to the site.
- All planting is to be true to name and free from pests, diseases, discoloration, weeds, fungus, and physiological disorders upon planting.
- If plants/trees are unobtainable alternatives are to be agreed with the Ecologist/Landscape Architect in writing prior to ordering.
- After planting ensure that the full depth of topsoil is wetted. Apply water evenly and without damaging or displacing plants or soil. Continue to water as necessary to ensure the successful establishment and continued thriving of planting.
- All tree/shrub/hedgerow works shall be completed outside of nesting bird season (i.e. between October and February inclusive). If works are required within the nesting bird season, a check must be undertaken of all affected trees by a suitably qualified ecologist.
- All tree works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with BS3998: 2010 'Tree Work – Recommendations'.

4 Ecological Baseline

The ecological baseline for the site was assessed within the Preliminary Ecological Assessment (PEA) (Urban Green, 2022c) informed by an extended Phase 1 habitat survey.

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

A summary of notable and/or protected species and habitats identified is provided below, with full descriptions of each feature available within the PEA. The baseline habitat map for the site can be found in the Biodiversity Net Gain Report (Urban Green, 2022a).

Table 1 – Identified Ecological features relevant to the site.

Species / Species Group	Evidence	Considered within Assessment	Rationale for Consideration
Fauna			
Invertebrates	Limited quality habitats for invertebrates	No	11 records for notable invertebrates were found during the data search, however there is limited habitat provision on site
Amphibians	None	No	No records of amphibians were identified in the data search and the site does not contain suitable habitat for amphibians
Reptiles	None	No	No records of reptiles were returned during the desk search and the site was considered to have limited value to reptiles
Birds	Suitable habitats present for nesting birds	Yes	The site is considered suitable for nesting birds only. 95 records of protected/notable bird species were returned from the data search
Bats (all species)	Suitable foraging/commuting habitat present	Yes	39 records of bat roosts and 74 auditory records were returned. The site is not considered to support roosting bats and has low value for commuting and foraging bats
Hedgehog (<i>Erinaceus europaeus</i>)	Limited quality habitats for hedgehogs	No	Two records of hedgehogs were returned, however the site offers limited suitable habitat and is surrounded by busy roads
Badger (<i>Meles meles</i>)	None	No	One record of badger returned through the data search, however there is no suitable habitat on site
Water vole (<i>Arvicola amphibius</i>)	None	No	No records of water vole were returned and the River Irwell is not considered suitable to support water vole

Species / Species Group	Evidence	Considered within Assessment	Rationale for Consideration
Otter (<i>Lutra lutra</i>)	Limited quality habitats for otter	No	Two records of otter returned in the data search, however no signs of otter were present on site and the site offers limited habitat value
Flora			
Vascular plants	Limited quality habitats for vascular plants	No	The data search returned four records of bee orchid (<i>Ophrys apifera</i>), but the site lacks the characteristics to support notable plant species
Invasive Animal Species	Observed on site	Yes	Giant hogweed (<i>Heracleum mantegazzianum</i>) was present on the site during the field survey

Table 2 – Pre-development Habitats Identified

UK Hab Classification	Dominant Species / Description	Development Actions and Mitigation
Area Habitats		
Urban – Developed Land; Sealed Surface	The site is predominantly areas of hardstanding, which make up the car park and access routes, and buildings	Developed Land; Sealed Surface is automatically allocated a pre-determined condition score of N/A within the metric, as it as its ecological value is negligible.
Urban – Introduced Shrub	Contained in beds comprised of predominantly non-native species, including snowberry (<i>Symphoricarpos albus</i>), cherry laurel (<i>Prunus laurocerasus</i>), and ivy (<i>Hedera helix</i>).	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.
Urban – Urban Trees	Scattered broadleaved trees were present along the northern and western site boundaries. Species included crack willow (<i>Salix fragilis</i>), sycamore (<i>Acer pseudoplatanus</i>), small-leaved lime (<i>Tilia cordata</i>), and elder (<i>Sambucus nigra</i>).	15 trees will be lost to accommodate for the development, however an additional 98 trees will be planted which will provide additional habitat and resources for wildlife.
Sparsely Vegetated Land – Ruderal/Ephemeral	A strip of ruderal/ephemeral vegetation is present, associated with an artificial embankment along the River Irwell. This area comprises bare ground as well as frequent ivy and giant hogweed.	This is habitat has low ecological value. New proposed habitats containing more ecological value and native species are to be planted on the site.

5 Biodiversity Enhancements

The landscape plans for this site, as shown in design stage report (Urban Green, 2022a), have been designed with native species in mind to provide the most benefit for native pollinator and invertebrate species. To therefore increase the overall biodiversity value provided by this site, it is recommended that 4 bat boxes and 3 bird boxes are installed on site. Details on bat and bird box specification and maintenance are provided below, as well as location information to maximise use by local bird and bat populations.

5.1 Bat Boxes

A total of 4 bat boxes are to be installed across the site. The bat boxes selected will provide a range of suitable conditions and target pipistrelle species that were confirmed present within the area during the data search for the PEA (Urban Green, 2022c).

Externally mounted bat boxes are to be positioned on mature trees or newly constructed buildings. Please refer to Table 3 for the bat box specifications examples. A bat box design of similar specification can be selected for the site.

Table 3 - Bat box specification

Bat Box Type	Image		Total Number of Boxes
Greenwoods Ecohabitats Two Crevice Bat Box Dimensions: External: 43 high x 21.5 wide x 6.8 deep Internal: 41 x 16.5 x 1.8 Weight: 6.75 kg			2
Greenwoods Ecohabitats Medium Hollow Bat Box Dimensions: External: 43 x 21.5 x 13.5 Internal: 41 x 16.5 x 8.5 Weight: 6.75			2

5.1.1 Positioning of Bat Boxes

Bat boxes must be positioned between 4–6m high and are most effective when located on a south-east to south-western facing aspect, as this will provide additional heat throughout the day. Bats prefer to change roosts to benefit from varying ambient temperatures, so bat boxes are to be clustered in small groups (i.e., three boxes per tree stem, on the eastern, western, and southern aspects). Please refer to Appendix 1 for the Biodiversity Enhancements Location Plan.

5.1.2 Timing of Installation

Bat boxes are to be installed prior to construction works beginning on site; the boxes are to be situated upon retained trees.

5.1.3 Maintenance of Bat Boxes

Bat boxes are considered self-cleaning and require minimal maintenance once installed. The boxes are made of hard-wearing material that is generally long-lasting. Bat boxes should be checked periodically (e.g., every two years) to assess their use and the condition of the boxes. Section 2.4 includes the maintenance schedule.

If any boxes are identified as damaged or missing, they are to be replaced with a box of similar specification.

Note only those holding the appropriate Natural England Class 2 bat licence may open and inspect these boxes. It is an offence for anyone without this licence to open a bat box. If a bat box becomes occupied by a bird the nest must be left *in situ* until after the bird nesting season (March to September inclusive).

5.2 Bird Boxes

The development has the potential to enhance bird nesting opportunities through the provision of bird nest boxes. A total of 3 bird boxes are to be installed across the site. The existing 3 bird boxes present will be retained.

Bird boxes come in several types and sizes, which vary in their suitability from species to species. Table 4 provides details of bird nest box types and the likely species they attract. Bird species that are known to inhabit the local area and readily utilise artificial nest boxes have been selected. Boxes of similar specifications as those detailed in Table 5 can be selected, in the case the example boxes are not available.

Table 4 - Bird nest box hole sizes and associated species

Box entrance hole size	Associated species
28mm	Great tit (<i>Parus major</i>), tree sparrow (<i>Passer montanus</i>), pied flycatchers (<i>Ficedula hypoleuca</i>)
32mm	House sparrow (<i>Passer domesticus</i>)
45mm	Starling (<i>Sturnus vulgaris</i>)

Table 5 – Bird nest boxes that can be bought from websites such as nhbs.com, habitat.co.uk or other online retailers

Bird box type	Image	Target Species	Number of boxes
BilBao Woodstone Nest Box <u>Specification</u> Height: 210mm Width: 305mm Depth: 120mm Entrance Hole Diameter: 28mm Weight: 6kg Material: Woodstone		Coal tit, blue tit, great tit	1
BilBao Woodstone Nest Box <u>Specification</u> Height: 210mm Width: 305mm Depth: 120mm Entrance Hole diameter: Oval Weight: 6kg Material: Woodstone		House sparrow, tree sparrow, great tit, blue tit, nuthatch	1
Vivara Pro Woodstone Starling Nest Box <u>Specification</u> Height: 385mm Width: 220mm Depth: 215mm Entrance hole diameter: 45mm Weight 7.4kg Material: Woodstone		Starling	1

5.2.1 Positioning of Bird Boxes

Bird boxes are most effective when positioned on a north-east to north-west facing aspect to prevent overheating during the summer nesting season. Care should be taken to make sure boxes are not angled in such a manner to allow rain to enter them. Nest boxes are to be affixed to vertical surfaces on retained trees at a minimum height of 3m. Please refer to Appendix 1 for the Biodiversity Enhancements Location Plan.

5.2.2 Timing of Installation

The bird boxes must be installed at the earliest opportunity in order to compensate for the disturbance of the on-site nesting habitat. Bird boxes can be installed at any time of the year. However, they must remain undisturbed throughout the bird nesting season (March to September inclusive) to avoid disturbing nesting birds and committing an offence under the Wildlife and Countryside Act 1981 (as amended). Section 2.3 includes the Schedule of Works.

5.2.3 Maintenance of Bird Boxes

The boxes are made of Woodstone, which have been selected due to their durability compared traditional softwood boxes.

The following maintenance measures are to be completed, following the installation of the boxes:

- Bird boxes will require periodic checking and cleaning, (e.g., once every two years).
- Unhatched eggs may be removed legally between September and January and must then be disposed of.
- Disused nests must be removed and cleaned using boiling water to remove parasites. Boxes should be left to dry before replacing the lid. Insecticides and flea powders must not be used.
- If any boxes are identified as damaged or missing, they are to be replaced with a box of similar specification.

Note bird boxes must only be opened and cleaned outside the bird nesting season (which is between March to September inclusive).

5.3 Work Schedule

Key

	Recommended times when works can be conducted
	Times to avoid work

5.3.1 Post-Construction

Works	J	F	M	A	M	J	J	A	S	O	N	D
Bird box check and cleaning			Avoid bird nesting season									
Bat box checks												

Bird and bat box checks should be conducted in October of every other year to ensure that there is sufficient time for any repairs or replacements to be conducted.

6 Ecological Strategy

This section summarises the management strategy for each habitat proposed to be introduced within the final design of the scheme and the recommended management practices for habitats to be retained within the development. Each objective includes a target time for positive assessment provided to enable identification of failing management and trigger early intervention. The actions detailed in the management plans will be valid for 30 years to ensure that all proposed habitats reach their expected condition, however, creating a rigid management plan for a 30-year period is not advised. Therefore, we recommend regular monitoring of the site against the management objectives to be conducted over this 30-year period, and for the management plan to be updated at least every 5 years. A detailed management plan for an initial 5-year period post-development is included in this document. After this initial 5 years, and for every subsequent 5 years, the management strategies should be reviewed, with any updates or changes incorporated for the next five years of the management plan.

The proposed landscape layout (Studio Egret West, 2022a & 2022b), found in the Biodiversity Net Gain Report (Urban Green, 2022a), displays the final proposed habitats and their location on site. Areas that are classified as ‘developed land, sealed surface’ are automatically allocated condition scores of N/A as they offer no ecological value and require no ecologically driven management.

6.1 Area Habitat Creation

6.1.1 Urban - Urban trees – Proposed Trees (ground-level) and Multi Stem Trees (roof terraces)

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.

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*).

The targeted condition for the urban trees is moderate, with an expected target condition time of 27 years. Detailed management techniques are detailed within Table 6 along with the corresponding condition criteria. In order to reach the expected targeted condition of moderate, at least 3 of the following criteria are expected to be achieved. As individual trees automatically pass criterion 2, this is not assessed. An annual schedule of works is detailed in Section 6.3 (Table 9).

Table 6: Management Objectives for Urban Trees

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. The tree is a native species	Replace failed trees like for like to ensure >70% native species mix is retained	Native trees provide more biodiverse habitats and support native species that non-native trees cannot	From year 1

2. The tree canopy is predominantly continuous	N/A	N/A	N/A
3. The tree is mature or veteran	- Limit the use of damaging management practices e.g., herbicide use - After 10-20 years, trees will reach semi-maturity and appropriate corrective surgery may be necessary. - Undertake regular arboricultural assessments based on formal recommendations (Urban Green, 2022d)	Mature and veteran trees are more effective than young trees at providing air filtration services and sequester carbon. Veteran trees provide additional niches for wildlife.	10 years
4. There is little or no evidence of an adverse impact on tree health by anthropogenic activities and no current regular pruning regime so the trees retain >75% of expected canopy	- Only undertake management activities where necessary - Limit use of herbicides around trees - Tree works/pruning should be undertaken by a qualified professional - Avoid cutting all specimens across the plot in a single period, particularly where this is likely to removes all flower/fruit interest for wildlife. - Ensure tree canopy is balanced and consistent with the natural structure for the species	Promotes healthy growth and supports growth to maturity.	From year 1
5. Micro-habitats for birds, mammals and insects are present	- Leave any micro-habitat features, such as ivy and loose bark, in place - Where it is safe and appropriate, retain areas of dead wood - No management activities to take place during nesting season (March to September) - Avoid undertaking management activities on all trees in a single month period to retain important resources for wildlife.	Ensures diversity is maintained throughout by allowing the creation of additional habitat niches which can be exploited by wildlife.	By year 5

	Installation of bird and bat boxes in suitable locations on trees or buildings (Appendix 1)		
6. More than 20% of the tree canopy area is oversailing vegetation beneath	- Leave a 2m unmown buffer zone around each tree to allow natural succession of surrounding vegetation - No use of herbicides within this zone - Periodic removal of non-native invasive species (Appendix 2)	Creates a buffer habitat around trees to allow movement of wildlife and increases diversity of flora	From year 1

6.1.2 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 should be created by firstly removing all current vegetation, digging over the earth (to at least 15cm), and raking to produce a tilth over 2.5cm deep which is left for 2-3 weeks to allow all weeds in the seed bank to germinate. After 2-3 weeks, any additional weeds will be removed and then ground raked again. Seed sowing must be undertaken immediately, ideally during March, April or September using a specially selected seed mix containing 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*).

The targeted condition for this grassland habitat is poor, with an expected target condition time of 2 years. Detailed management techniques are detailed within Table 7 along with the corresponding condition criteria. At least 5 of the following criteria are expected to be achieved, however, the condition criteria is expected to be poor due to essential criteria 1 not being met. An annual schedule of works is detailed in Section 6.3 (Table 10).

Table 7: Management Objectives for Other Neutral Grassland

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Indicator species are clearly visible throughout sward	- Re-seeding of habitat and bare ground to introduce species indicative of other neutral grassland habitats according to UKHab guidance - Desirable species examples include perennial ryegrass (<i>Lolium perenne</i>) (<30% cover), Yorkshire fog (<i>Holcus lanatus</i>), cock's foot (<i>Dactylis glomerata</i>), red clover (<i>Trifolium pratense</i>) and daisy (<i>Bellis perennis</i>)	Ensures the grassland remains as a medium distinctiveness habitat and contains a high species richness	From year 1

	No fertiliser application within this habitat and removal of arisings after mowing to maintain low nutrient conditions		
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)	- Once established, mow wildflower meadows to 50-75mm in spring and autumn to encourage seasonal growth. - Remove arisings to keep nutrient levels low - Stagger mowing of different sections of meadow/groundcover planting to encourage maximum diversity	Varied sward heights provide increased opportunities for commuting and foraging for birds, invertebrates and small mammals	From year 1
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	- Ensure adequate seeding of bare ground at 4g/m² - Monitor growth and seed areas of bare ground when seasonally appropriate	Ensures widespread cover of wildflower assemblages and reduces space for more dominant species to colonise	From year 2
4. Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	- Regular inspection of meadow area for bracken and scrub growth - Hand removal of bracken and scrub species where cover is approaching 20%	Removing bracken at an early stage prevents species from dominating the habitat and outcompeting other desired species	From year 2
5. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	- Identification and removal of invasive non-native species as soon as possible - Where possible, do this by hand. If necessary, application of herbicide should be carried out by an experienced contractor	Ensure native assemblage of species throughout grassland habitat. Prevents competition from aggressive non-native species.	From year 1
6. There are greater than 9 species per metre squared	- No fertiliser to be used on wildflower areas - Reduce mowing to twice yearly to allow flowers to set seed - Monitoring and removal of non-native invasive species - Monitoring and removal of more dominant shrub species	Ensures high floristic diversity and a wide range of habitat and foraging provisions for pollinator and bird species	From year 1

6.1.3 Urban – Intensive Green Roof

Roof gardens 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 (*Scorzoneroide autumnalis*), bladder campion (*Silene vulgaris*) and betony (*Stachys officinalis*).

The targeted condition for this green roof habitat is moderate, with an expected target condition time of 3 years. Detailed management techniques are detailed within Table 8 along with the corresponding condition criteria. In order to reach the expected targeted condition of moderate, at least 2 of the following criteria are expected to be achieved. An annual schedule of works is detailed in Section 6.3 (Table 11).

Table 8: Management Objectives for Intensive Green Roof

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. Vegetation structure is varied providing opportunities for insects birds and bats to live and breed	- Once established, mow wildflower turf to 25-50mm once in autumn/winter to encourage seasonal growth - Remove arisings to keep nutrient levels low - Stagger mowing of different sections of meadow/groundcover planting to encourage maximum diversity and to allow mammals/insects to translocate	Varied sward heights provide increased opportunities for commuting and foraging for birds, invertebrates and small mammals	From year 1
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	- Remove arisings after mowing to prevent nutrient enrichment of soils and the likelihood of a handful of species dominating - Re-vegetate areas of bare ground using the same seed mix/turf	Ensures the wildflower turf retains a high species richness, providing pollen for invertebrates	From year 1
3. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981)	- Identification and removal of invasive non-native species as soon as possible - Where possible, do this by hand. If necessary, application of herbicide should be carried out by an experienced contractor	Ensure native assemblage of species throughout grassland habitat. Prevents competition from aggressive non-native species.	From year 1

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)	• No fertiliser to be used on wildflower areas • Reduce mowing to twice yearly to allow flowers to set seed • Re-vegetate bare areas by introducing species rich wildflower seed or laying turf • Monitoring and removal of non-native invasive species • Monitoring and removal of more dominant shrub species	Ensures high floristic diversity and a wide range of habitat and foraging provisions for pollinator and bird species	From year 1
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6.1.4 Urban - Introduced Shrub

This habitat will be planted as blocks using either Planting Mix 01, Planting Mix 02, or Roof Planting Mix (see Landscape Plans provided by Studio Egret West [2022a & 2022b] and Biodiversity Net Gain Design Stage Report [Urban Green, 2022a] for more details). Planting will provide a positive visual impact but has limited value as a habitat. Introduced shrub is automatically assigned a condition score of N/A within the metric and, due to the ornamental nature and limited ecological value that this habitat type provides, only basic aesthetic management is required.

6.2 Linear River Habitats

6.2.1 Other Rivers and Streams – River Irwell

The section of the River Irwell which runs adjacent to the site will not be altered during the development and measures will be taken to ensure that it is not disturbed during construction.

Appropriate for management
 Not appropriate for management

6.3 Five Year Work Programme

Table 9 – Five Year Work Programme for Urban Trees

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Urban trees	Initial and replacement planting – Bare root	Year 1 then as required to year 5												
	Initial and replacement planting – Root ball	Year 1 then as required to year 5												
	Control and removal of non-native species surrounding trees	As required year 1 to 5												
	Monitoring throughout growing and dormant period to ensure successful establishment and control browsing and other damage	Every three months years 1 to 5												
	Any required pruning to damaged or diseased trees	As required year 1 to 5												

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
	Water twice a month during warmer months	Annually during warmer months or as needed in periods of hot weather												
	Visual inspection of tree health	Every 3 years, based on recommendations made in the tree survey report (Urban Green, 2022d)												

Table 10 – Five Year Work Programme for Other Neutral Grassland (Wildflower Meadow and Wildflower Turf)

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Wildflower meadows	Initial and replacement seeding	Year 1 then as required to year 5												
	Control and removal of non-native species	As required year 1 to 5												
	Monitoring throughout growing and dormant period to ensure successful establishment and control browsing and other damage	Every three months years 1 to 5												
	Mowing of meadow areas	Spring and autumn cut and removal of arisings, annually years 1 to 5												
	Removal of dense bracken and shrub growth	Annually years 1 to 5, outside of nesting season												

Table 11 – Five Year Work Programme for Intensive Green Roof

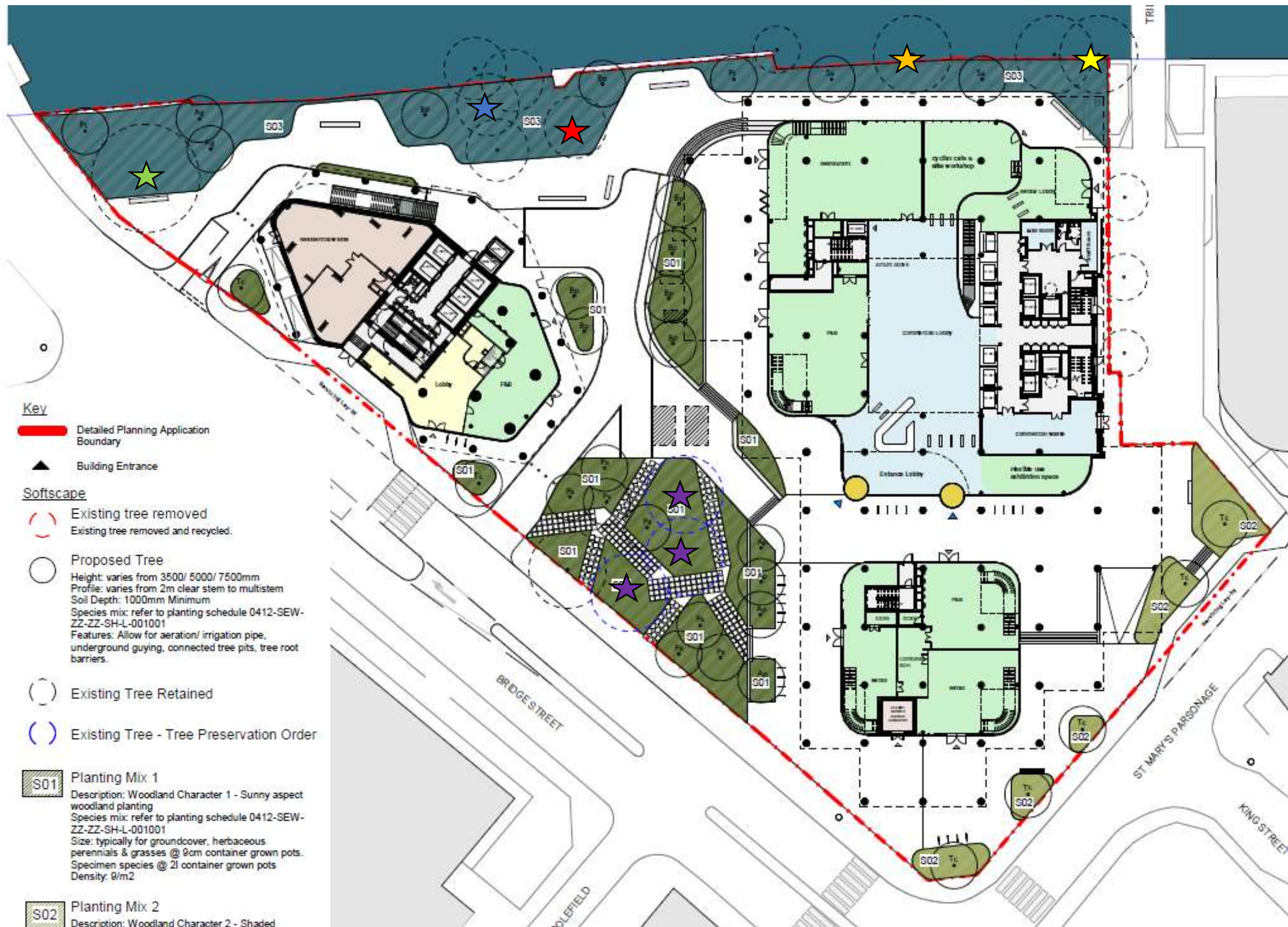
Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Other Neutral Grassland/Wildflower Meadow	Initial and replacement turf/seeding	Year 1 then as required to year 5												
	Control and removal of non-native species	As required year 1 to 5												
	Monitoring throughout growing and dormant period to ensure successful establishment and control damage	Every three months years 1 to 5												
	Mowing of meadow areas	Autumn cut and removal of arisings, annually years 1 to 5												

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APPENDIX 1 – BIODIVERSITY ENHANCEMENTS LOCATION PLAN

U R B A N
G R E E N



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- Two Crevice Bat Box
- Medium Hollow Bat Box
- BilBao Woodstone Nest Box (28mm)
- BilBao Woodstone Nest Box (32mm)
- Vivara Pro Woodstone starling Nest Box
- Existing Bird Boxes



A: Ground Floor, The Tower,
Deva City Office Park, Trinity Way,
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T: +44 (0) 161 312 3131

Client

The Oval

Project:

Albert Bridge House

Title:

Biodiversity Enhancements Location Plan

Issue:

01

Drawn:

SC

Checked:

SB

Approved:

MB

Project:

UG1452

Scale @ A:3:

1:5,000

Date:

01/12/2022

Dwg No:

UG_1452_ECO_BEMP_01

01

APPENDIX 1 – SCHEDULE 9 INVASIVE SPECIES

U R B A N
G R E E N

Schedule 9 Invasive Species

An invasive, non-native species is a species that is present outside of its native range but has established populations after accidental or intentional introduction to a geographical region. These species have negative ecological impacts on the environments in which they are present by outcompeting native flora and fauna for resources, facilitating the spread of disease, and interrupting natural food webs.

Schedule 9 of the Wildlife and Countryside Act 1981 lists the species within the UK which are considered invasive and are damaging to biodiversity. It is the legal responsibility of the landowner to control populations of invasive species and prevent their growth and spread.

The table below details invasive, non-native species listed on Schedule 9 which have been observed on site, and the recommended management practices.

Common name (scientific name)	Identification		Management
Giant Hogweed	• Up to 4m in height • Large white flower clusters • Green stem with purple blotches • Large compound leaves with serrated edges, up to 1.5m across		• Spraying of glyphosate-based herbicides • Application to be carried out by a qualified individual with the correct PPE. Extra care must be taken when working around giant hogweed as the sap can cause burns to the skin • Herbicide to be applied in April/May before flowering period • Approved herbicides only to be used • Organic waste must be disposed of at a landfill site licensed to handle invasive plant matter