

BIODIVERSITY ENHANCEMENT MANAGEMENT PLAN

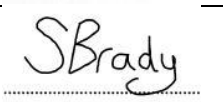
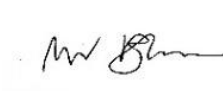
JULY 2022

Mercury 62,
Cronton Road,
Prescot,
Merseyside

U R B A N
G R E E N



QUALITY MANAGEMENT

Project No.:	UG1602				
Project:	Mercury 62				
Location:	Cronton Road, Prescott, Merseyside				
Title:	Biodiversity Enhancement Management Plan				
Document Type:	BEMP				
Date:	18/07/2022				
Prepared By:	Mark Blacker	Signature		Qualifications	Senior Ecologist, MSc, ACIEEM
Checked By:	Shannon Brady	Signature		Qualifications	Biodiversity Net Gain Consultant
Checked By:	Mark Blacker	Signature		Qualifications	Senior Ecologist, MSc, ACIEEM
Revision Status:					
Rev:	Date:	Issue/Purpose/Comment:	Prepared:	Checked:	

CONTENTS

1	Introduction.....	1
1.1	Background to the Scheme	1
1.2	Site Context	1
1.3	Purpose of this Management Plan	2
1.4	Aims of this Management Plan	2
2	Management Considerations	3
2.1	Management Responsibilities	3
2.2	Controlling Authority.....	3
2.3	Health and Safety	3
2.4	Monitoring and Review	3
2.5	General Measures.....	4
3	Ecological Baseline	5
4	Development Proposals.....	9
5	Ecological Strategy	10
5.1	Area Habitat Enhancement	10
5.2	Linear Habitat Enhancement	10
5.3	Area Habitat Creation.....	11
5.4	Linear Habitat Creation	19
5.5	Five Year Work Programme.....	21
6	References.....	26

1 Introduction

1.1 Background to the Scheme

Maro are proposing to develop land off Cronton Road in Prescott, Merseyside (hereafter referred to as 'the Site'). The applicant is seeking approval for the erection of a single warehouse (Use Class B8) with ancillary office space, associated parking, access, landscaping, and other works. 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 which has also been completed.

The author of the report is Mark Blacker, ACIEEM, Senior Ecologist at Urban Green. Mark has experience providing ecological consulting services for a range of development schemes across the UK, including residential, commercial, and large infrastructure schemes.

1.2 Site Context

The Site is located at National Grid Reference SJ 46758 89304 and comprises a total area of approximately 10.7ha (see Figure 1).

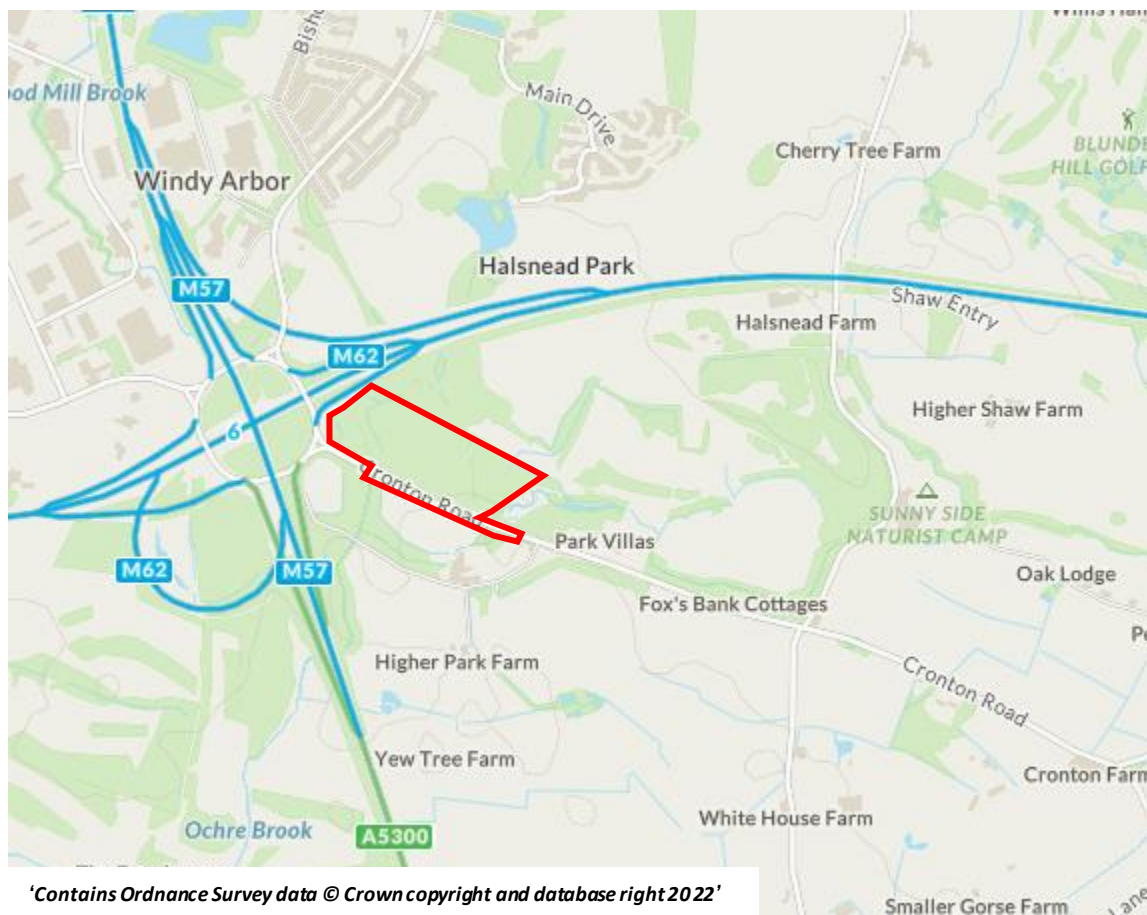


Figure 1 – Site Extent

The Site is located to the east of Junction 6 of the M62, bound by Tarbock roundabout to the west, M62 to the north, Cronton Road to the south and undeveloped land to the east. The Site is irregular in shape and comprises approximately 10ha of undeveloped land and 0.7ha developed land which covers Cronton Road (A5080).

Whilst the surrounding area is undeveloped, land adjacent to the east of the Site is subject to two large development proposals: construction of a new country park, which awaits determination (ref: 20/00578/FUL); and a hybrid application which secured full consent for the development of 15,273sqm of storage and distribution floorspace (B8) and outline consent for a further 77,629sqm of storage and distribution floorspace (B8) (ref: 20/00494/HYB) which was approved at planning committee on 10th June 2021. These developments, once brought forward in accordance with the adopted Halsnead Garden Village Masterplan SPD will inevitably change the character, use, and appearance of the area.

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.

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, 2022). This report assessed the development as scoring a gain of 10.71% in area biodiversity units, 100% in linear hedgerow habitat units and 17.35% in linear 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 5 in accordance with Biodiversity Metric 3.1 habitat condition sheets.
- This Biodiversity Enhancement Management Plan should be read in conjunction with the Landscape and Ecological Management Plan that has also been produced for this site (Landscape Planning, 2022).

2 Management Considerations

2.1 Management Responsibilities

The implementation of this management plan will be the responsibility of the landowner. 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 5. 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.

2.2 Controlling Authority

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

2.3 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.

2.4 Monitoring and Review

Regular monitoring of the development against measurable targets (as detailed within Section 5.) will be undertaken across all habitats detailed within this management plan. 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.

2.5 General Measures

Habitat creation on site will follow details set out in the Detailed Planting Plan (Annabelle Langhom Landscape Planning Ltd, 2022). 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'.

3 Ecological Baseline

The ecological baseline for the site was assessed within the Preliminary Ecological Assessment (PEA) (Urban Green, 2022) informed by an extended phase one habitat survey. A summary of designated sites, 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 Appendix 1.

Table 1 – Identified Ecological features relevant to the site.

Species / Species Group	Evidence	Considered within Assessment	Rationale for Consideration
Designated Sites			
Mersey Estuary SPA and Ramsar	No qualifying features of these designated sites were identified	No	Distance from the site is sufficient that no impacts expected.
Strettles Bog, Tarbock LWS	Present within the site	Yes	Present within the site
The Old Wood, South LWS	Present immediately adjacent to the north of the site	Yes	Present within close proximity of the site
Mine Waste, Cronton LWS	Present immediately adjacent to the east of the site	Yes	Present within close proximity of the site
Five other LWSs	Present within 1km of the site.	No	Present within close proximity of the site
Fauna			
Invertebrates	Limited quality habitats for invertebrates in habitats to be lost	No	No records for notable invertebrates were found during the data search, aquatic habitats are located on site, however they will be retained within the development.
Common Amphibians	Suitable habitat present	Yes	No ponds located within the site and four ponds located within 250m. The unmanaged habitats on site may provide suitable conditions. It is possible that amphibians may occur on site.
Great crested newt (<i>Triturus cristatus</i>)	None	No	No ponds located within the site and four ponds located within 250m. eDNA surveys for GCN came back negative. The presence of great crested newts has therefore been discounted.

Species / Species Group	Evidence	Considered within Assessment	Rationale for Consideration
Reptiles	None	No	The desk study returned no records for reptiles and the habitats available provided limited opportunity for reptiles. Reptiles were not considered to be on site.
Birds (nesting)	Suitable habitat present	Yes	There is little suitability for ground nesting bird species, however, there is suitable nesting potential for passerine birds. 91 records of protected/notable bird species were returned from the data search.
Bats (all species)	None	Yes	The site was assessed to have low value for foraging and commuting bats. No structures or trees with bat roosting potential were present within the site.
Hedgehog (<i>Erinaceus europaeus</i>)	Suitable habitat present	Yes	The scrub habitats and areas of dead wood have potential to support hedgehog and there is connectivity with residential gardens and other suitable habitats. The site therefore has potential to support hedgehogs.
Badger (<i>Meles meles</i>)	Suitable habitat present	No	There were no records of badger returned through the data search and no evidence of badger during the field survey. The site offers potential for sett construction and foraging.
Aquatic Mammals	None	No	Ochre Brook and the ditch present on site have limited suitable habitat for otter and water vole due There is no suitable habitat for otter or water vole present within, or within influencing distance of, the site.
Flora			
Protected Plant Species	No	No	No records were returned for notable vascular plants in the data search and none were recorded during the field survey.
Invasive Plant Species	Yes	No	Extensive areas of Himalayan balsam identified during the site survey.

Table 2 – Pre-development Habitats Identified

UK Hab Classification	Dominant Species / Description	Development Actions and Mitigation
Area Habitats		
Mixed Scrub	Dense scrub exists along the southern boundary of the site and is also present as a well-established edge layer around the broadleaved semi-natural woodland.	This habitat will be mostly lost to facilitate the development. New native scrub will be created to provide transitional habitat between the retained woodland and the new development.
Modified grassland	Small area of this vegetation present as an edge habitat adjacent to small area of scrub within the site.	This habitat will be lost to facilitate the development. This habitat was small in extent and of poor quality and will be replaced by habitats of higher distinctiveness.
Other woodland, broadleaved	Broadleaved woodland is present within the western section of the site, with canopy species comprising sycamore (<i>Acer pseudoplatanus</i>), pedunculate oak (<i>Quercus robur</i>), ash (<i>Fraxinus excelsior</i>), and silver birch (<i>Betula pendula</i>).	This habitat will be mostly retained within the development. Additional woodland planting will be created within the site, along with understorey planting to create a more structured woodland.
Other neutral grassland	This habitat covered the majority of the site, showing some evidence of recent disturbance within the site. Yorkshire fog was mostly dominant within this habitat, with common sorrel (<i>Rumex acetosa</i>), creeping cinquefoil (<i>Potentilla reptans</i>), and marsh thistle (<i>Cirsium palustre</i>) present frequently.	A mix of grassland habitat will be created throughout the site. A wet meadow mix will be seeded around the new pond area which will provide a diversity of forb and grass species. A meadow seed mix will be implemented around the woodland and scrub edge, additionally a lawn mix will be used within amenity areas within the site.
Sparsely vegetated land	This habitat was present on spoil heaps leftover from emergency works carried out on site to prevent flooding. Largely comprised compacted soil with concrete chunks also present.	This habitat is an early successional stage habitat and will be replaced with habitats of greater distinctiveness within the site.
Linear Habitats (Rivers)		
Other rivers and streams	Ochre Brook flows through the broadleaved woodland present within the western section of the site. This watercourse was heavily shaded, fast flowing, with minimal aquatic or marginal vegetation present, and was approximately 2m in width and approximately 50cm deep. The banks were steep to vertical in places throughout the site and reached a maximum height of 3m above the water level.	This habitat type will be retained within the development and will be enhanced through improved management practices and removal of invasive non-native species
Ditch	Two ditches are also present on site that flow from a culvert adjacent to the northern boundary into Ochre Brook.	This habitat type will be retained within the development and will be enhanced through improved management practices and removal of invasive non-native species

UK Hab Classification	Dominant Species / Description	Development Actions and Mitigation
Linear Habitats (Hedgerow)		
Native Species Rich Hedgerow	This habitat type is not present within the baseline for this site.	Installation of new species rich hedgerow habitat within the site will increase connectivity across the site and provide increased foraging/sheltering habitat for invertebrates, birds, and bats.
Native Hedgerow	This habitat type is not present within the baseline for this site.	Installation of new hedgerow habitat within the site will increase connectivity across the site and provide increased foraging/sheltering habitat for invertebrates, birds, and bats.

4 Development Proposals

The site comprises approximately 10.7ha in total. The applicant is seeking approval for the erection of a single warehouse (Use Class B8) with ancillary office space, associated parking, access, landscaping and other works.

The development is expected to achieve a 10.71% net gain in area habitat units, 100% gain in linear hedgerow units and a 17.35% gain in linear river units. This is above the requirements laid out in national and local planning policy.

However, the new habitats fail to satisfy the trading rules laid out by the metric. This is due to units of existing other neutral grassland and other broadleaved woodland not being sufficiently compensated for. If this was to be mediated, additional areas of the same broad habitat or higher distinctiveness habitats would need to be incorporated into the landscape design. However, the retention of large areas of woodland, creation of a wide range of habitats on site and the resulting gain in biodiversity provide a greater diversity in habitats than is currently present on site and therefore has greater value of the environment compared to the pre-development baseline.

5 Ecological Strategy

This section summarises the management strategy for each habitat proposed to be introduced within the final design of the scheme. Each objective includes a target time for positive assessment provided to enable identification of failing management and trigger early intervention. The proposed landscape layout (Annabelle Langhorn Landscape Planning Ltd., 2022), found in Appendix 2, displays the final proposed habitats and their location on site. Areas which are classified as ‘developed land, sealed surface’ offer no ecological opportunities and therefore require no management.

5.1 Area Habitat Enhancement

5.1.1 Broadleaved Woodland

All areas under the retained woodland will be seeded with EH1 shade tolerant wildflower mix, containing 80% slow growing grasses and 20% native wildflowers. The woodland has already achieved good condition and therefore, within the Biodiversity Metric 3.1, the condition of the woodland cannot be further improved. However, seeding within the woodland should still be encouraged to increase the diversity of ground vegetation within the woodland and provide increased resources for pollinators, birds, and small mammals.

Furthermore, it is the legal responsibility of the landowner to control the invasive species present on site to prevent further spread. Efforts should be made to remove invasive, non-native species using appropriate methods before any additional enhancements are made.

To ensure that the woodland remains at the quality it is currently in, the following management recommendations have been provided:

- Undertake selective thinning to increase light levels within the woodland and encourage balanced canopies and growth of ground flora
- Continuous monitoring and removal of invasive plant species
- Pruning of dead and damaged limbs as necessary. To be done during winter, outside of nesting season and when trees are dormant.
- Replacement of failed trees with new planting of similar species composition
- Retention of standing deadwood where safe and possible

5.2 Linear Habitat Enhancement

5.2.1 Ditch

The section of the ditch which emerges from the culvert and flows into Ochre Brook is to be enhanced by establishing new vegetation on the banks of the ditch which are currently heavily damaged and contain low cover of ruderal vegetation. The banks will be seeded with a wetland meadow mix, EM8 specification, which contains a mix of 80% grasses and 20% wildflowers. Species within this mix are suited to seasonally wet soils and include species such as: betony (*Betonica officinalis*), common knapweed (*Centaurea nigra*), meadowsweet (*Filipendula ularia*), common bent (*Agrostis capillaris*), sweet vernal grass (*Anthoxanthum odoratum*) and red fescue (*Festuca rubra*). The condition score of the ditch is expected to be elevated from **poor** to **moderate**. To ensure the ditch remains in moderate condition, the following management recommendations have been provided:

- Remove invasive species within and around the periphery of the ditch
- Remove litter from waterway
- Remove duckweed and other filamentous algae cover to less than 10%
- Cut back vegetation heavily shading the ditch
- Ensure there is continuous cover of marginal vegetation present along >75% of the length of the ditch and seed bare areas

5.3 Area Habitat Creation

5.3.1 Urban trees

A total of 330 new urban trees will be planted across the site, primarily along the north-east and south-west boundaries, with scattered trees across the rest of the site. These are categorised as ‘scattered native trees’ which are entirely native species and ‘ornamental trees’ which consist of two non-native species. Native species comprise 97% of the proposed urban trees, with the mix including species such as common alder (*Alnus glutinosa*), silver birch (*Betula pendula*), hornbeam (*Carpinus betulus*), bird cherry (*Prunus padus*) and common oak (*Quercus robur*). The targeted condition for the urban tree habitat is good, with an expected target condition time of 30+ years. Detailed management techniques are detailed within Table 3 along with the corresponding condition criteria. In order to reach the expected targeted condition of good, at least 5 of the following criteria are expected to be achieved. As condition criterion 1 is fixed by the landscape design, and individual trees automatically pass criterion 2, these are not assessed. An annual schedule of works is detailed in Table 10.

Table 3: 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	N/A	N/A	N/A
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 annual arboricultural assessments	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	- Only undertake management activities where necessary - Limit use of herbicides around trees	Promotes healthy growth and supports growth to maturity.	From year 1

activities and no current regular pruning regime so the trees retain >75% of expected canopy	• 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 remove all flower/fruit interest for wildlife. • Ensure tree canopy is balanced and consistent with the natural structure for the species		
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 (February to August) • Avoid undertaking management activities on all trees in a single month period to retain important resources for wildlife. • Installation of bird and bat boxes in suitable locations on trees	Ensures diversity is maintained throughout by allowing the creation of additional habitat niches which can be exploited by wildlife.	By year 5
6. More than 20% of the tree canopy area is overhanging vegetation beneath	• Leave a 6m 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 3)	Creates a buffer habitat around trees to allow movement of wildlife and increases diversity of flora	From year 1

5.3.2 Introduced Shrub

This habitat will be planted in blocks of native and non-native species within the car park area of the site. Due to the ornamental nature and limited ecological value that this habitat type provides, basic aesthetic management is required.

5.3.3 Other Woodland, Broadleaved

The existing woodland is to be extended by planting the area within the north-east corner of the site with native tree and shrub whips. This new area of woodland will not be covered by the TPO which protects the existing woodland. The species composition is a mixture of tree and shrub species which are entirely native and, once mature, the balance of trees and shrubs will create a diverse vertical structure. The expected condition of the woodland to be created is moderate, with an expected target condition time of 15 years. An annual schedule of works is detailed in Table 11.

Table 4: Management Objectives for Other Woodland, Broadleaved

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. Age distribution of trees	Monitor health of trees and plant gaps in the canopy with new young trees of similar species to existing woodland composition	Provides diverse vertical structure, increase foraging and nesting opportunities, and ensures continuous cover of trees in good health	From year 5
2. Wild, domestic, and feral herbivore damage	Install fencing/tree guards to protect from grazing if necessary	Ensures trees reach full maturity and good condition	From year 1
3. Invasive plant species	- Identify and remove 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 habitat. Prevents competition from aggressive non-native species.	From year 1
4. Number of native tree species	- Additional planting within woodland should be native species only. Species selected should be similar to those already in woodland. - Removal of regeneration of non-native tree species	Native species within a habitat provide more niches and foraging resources for native wildlife.	From year 5.
5. Cover of native tree and shrub species	- Supplementary planting of shrub species in the understory - Ensure all planting is of native species e.g. hawthorn (<i>Crataegus monogyna</i>) and hazel (<i>Corylus avellana</i>)	Native species within a habitat provide more niches and foraging resources for native wildlife and a balance of shrubs and trees provides a diverse vertical structure within woodland	From year 3.

6. Open space within woodland	Ensure open space is maintained at less than 20% by planting gaps in canopy with new, native trees	Ensures continuous tree cover which is important for commuting and nesting wildlife.	From year 5.
7. Woodland regeneration	- Appropriate management of trees to promote good health and encourage growth to maturity - Allow natural regeneration and manage anthropogenic influences so areas where regeneration is present is undisturbed	Encourages growth of different age classes	From year 5.
8. Tree health	- Continuous monitoring for signs of disease - Implement biosecurity measures if works are taking place within the woodland and there is a risk of cross contamination with other sites - Remove diseased trees when possible	Promotes healthy growth and prevents regional and national spread of disease	From year 1.
9. Vegetation ground flora	Allow natural regeneration of ground flora and manage anthropogenic influence so areas where regeneration is present is undisturbed	A diverse ground flora layer provides additional habitat opportunities for wildlife and promotes overall floral diversity of the woodland	From year 2.
10. Woodland vertical structure	- Supplementary planting of shrub species in the understory - Appropriate management of trees to promote good health and encourage growth to maturity	Varied vertical structure offers broader nesting, commuting and foraging opportunities to a wider range of birds, invertebrates and small mammals	From year 10.
11. Veteran trees	- Appropriate management of trees to promote good health and encourage growth to maturity - Removal of invasive species which could negatively impact growth	Veteran trees provide habitat niches to native wildlife which younger trees lack	From year 10.
12. Amount of deadwood	- Retain standing deadwood where safe and possible - If dead wood is pruned, leave removed limbs in the woodland	Deadwood is a habitat and foraging resource for bird and invertebrate species	From year 1.
13. Woodland disturbance	Avoid using fertilisers within the woodland	Limiting nutrient enrichment and	From year 1.

	Manage anthropogenic activity within the woodland to limit damage and disturbance e.g. installation of paths	disturbance prevents a handful of species dominating and ensures healthy growth of natural regeneration	
--	--	---	--

5.3.4 Mixed Scrub

New areas of mixed scrub are to be created primarily around the periphery of the existing woodland, ditch and along the north-east boundary of the site. This habitat will be planted with native scrub species and the expected condition for all areas of mixed scrub is moderate, with an expected target condition time of 5 years. An annual schedule of works is detailed in Table 12.

Table 5: Management Objectives for Mixed Scrub

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. Habitat is representative of UKHab description and there are at least three woody species	- As many native, shrubby species as possible to be incorporated at design stage - Replace lost plants with another of the same species, size and quality to ensure diversity is maintained and one species cannot dominate.	A wide range of species provides varied foraging, commuting nesting opportunities to birds, invertebrates and small mammals	From year 1
2. There is a good age range	- Allow natural seeding of new shrubs - Appropriate pruning of shrubs to promote health and reach full growth - Replace lost shrubs with young plants, according to the landscape plan	Different life stages provide different foraging and habitat opportunities	From year 4
3. There is an absence of invasive non-native species	- 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 mixed scrub habitat. Prevents competition from aggressive non-native species.	From year 1
4. The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between	Limit mowing in the immediate habitat surrounding the areas of mixed scrub to allow succession of natural vegetation	Creates a gentle habitat gradient to allow movement of fauna and increases diversity around the mixed scrub habitat.	From year 1

the scrub and adjacent habitat(s).	Avoid using fertiliser on site to prevent a small number of species dominating		
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.	Hand removal of woody species in clearings/rides/glades which would close the open spaces within this habitat	Creates edge habitat which provides additional foraging and commuting benefits for birds, invertebrates and small mammals	By year 5

5.3.5 Other Neutral Grassland – General purpose Wildflower Mix/Flowering Lawn Mix

Three types of other neutral grassland are to be created. All areas will be seeded with a mixture of grass and wildflower species with slight variances in composition. A new wildflower meadow is to be created adjacent to the north-west boundary of the car park and bordering the ditch, pond and woodland habitats, with an additional patch of meadow along the south-west boundary. Further flowering wildflower areas will be created in compartments adjacent to the car park and along the south-east boundary. Finally, marginal vegetation will be established around the existing ditch and proposed pond, as well as in the south-west corner of the site, by seeding with EM8 seed mixture containing 80% grasses and 20% wildflowers.

The expected condition for all areas of other neutral grassland is good with a time to target condition of 10 years. Criteria 1 is dependent on the selection of seed at design stage and therefore has not been assessed. An annual schedule of works is detailed in Table 13.

Table 6: 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	N/A	N/A	N/A
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	Varied sward heights provide increased opportunities for commuting and foraging for birds, invertebrates and small mammals	From year 1

	planting to encourage maximum diversity		
3. Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	• Ensure adequate seeding of bare ground • 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 the cover is approaching the limit	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

5.3.6 Pond

A large pond will be created to the north-west of the site, adjacent to the hardstanding access road, woodland and wildflower meadow. The banks of the pond will be sown with wetland wildflower seed, aquatic plants introduced to approximately 50% of pond area and the water levels in the pond will be allowed to fluctuate naturally. The target condition for this pond is anticipated to be good, with a time to target condition of 5 years. As condition criteria 4, 5 and 7 are fixed during design and construction, these have not been assessed. There will be no fish introduced to the on-site pond.

Table 7: Management Objectives for Pond

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	• Ensure marginal habitats are suitably maintained to reduce run-off of sediment into the pond • Avoid intensive management activities around the pond edge • Remove large litter regularly	Ensures aquatic vegetation receives adequate light levels	From year 1
2. There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.	• Maintain marginal habitats and re-seed any areas of bare ground • Manage anthropogenic activity around the pond edge to avoid unnecessary disturbance	Marginal semi-natural habitat provides a transitional habitat between the pond and other site areas. Valuable for amphibious species.	From year 1.
3. Less than 10% of the pond is covered with duckweed or filamentous algae.	• Remove duckweed and filamentous algae by hand using a pond net or a rake	Ensures aquatic vegetation receives adequate light levels	From year 1
4. The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.	N/A	N/A	N/A
5. Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.	N/A	N/A	N/A
6. There is an absence of non-native plant and animal species.	• Identification and removal of invasive non-native species as soon as possible. • Invasive species to be removed by hand	Ensure native assemblage of species. Prevents competition from aggressive non-native species.	From year 1

7. The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	N/A	N/A	N/A
8. In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds), should cover at least 50% of the pond area that is less than 3 m deep.	• Ensure duckweed is removed to prevent dominant cover • Monitor health of aquatic plants, remove and replace dead plants with the same species	Aquatic plants provide foraging and resting opportunities for aquatic and amphibious species	From year 1.
9. The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.	• Prune excess (>50% cover) growth around the periphery of the pond	Allows maximum light levels to reach the pond surface to encourage growth of aquatic vegetation	From year 2.

5.4 Linear Habitat Creation

5.4.1 Native Hedgerows

A total of 0.89km of native, species rich hedgerow (double staggered) will be created which will encompass the car park and provide a buffer between hardstanding and the habitats across the wider site, as well as between the development and the A5080. Seven native shrub species will make up the hedge, including field maple (*Acer campestre*), dogwood (*Cornus sanguinea*), hazel, hawthorn, European spindle (*Euonymus europaeus*), holly (*Ilex aquifolium*) and guelder rose (*Viburnum opulus*). Additionally, 0.02km of evergreen hedgerow will be created as two small lengths of hedgerow bordering a stretch of parking bays. The only species within this hedge is hornbeam (*Carpinus betulus*).

Both types of hedgerow are anticipated to reach a good condition, with the time to target condition expected to be 12 years. An annual schedule of works is detailed in Table 14.

Table 8: Management objectives for Native Hedgerow

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
A1. Height >1.5m average along length.	N/A	N/A	N/A

A2. Width >1.5m average along length.	- Damaging practices and activities should be avoided around the hedge e.g., use of machinery to allow plants to grow to maturity and in good health - Formative pruning should be undertaken to encourage growth	Hedgerows serve several important roles for birds, mammals and invertebrates. Firstly, they act as valuable wildlife corridors, facilitating the movement of species between different habitats, which is especially important in urban environments where there is likely to be a high level of anthropogenic disturbance. Hedgerows, particularly those containing native species, provide plentiful foraging opportunities and can support complex food webs. Finally, hedgerows offer nesting habitat for some bird species, as well as refuge from predators, spaces to rest and shelter.	5 years
B1. Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees').	- Formative pruning should be undertaken to encourage dense growth - Prunings should promote the natural form of shrubs within the hedgerow		
B2. Gaps make up <10% of total length and no canopy gaps >5 m	Replace any failed plants with others of the same species, size and quality		From year 1
C1. >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least).	- Leave a 1m buffer zone around the base of the hedge which is free from management activity e.g. weeding, mowing - Limit use of fertilisers in this area to ensure habitat isn't dominated by a handful of species		From year 1
C2. Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	Limit the use of fertilisers to allow for a higher diversity of flora and prevent a few species dominating		From year 1
D1. >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	- 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.		From year 1
D2. >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	- Leave a 1m buffer zone around the base of the hedge which is free from management activity e.g. weeding, mowing - Damaging practices and activities should be avoided around the hedge e.g., use of machinery to allow plants to grow to maturity and in good health		2 years

5.5 Five Year Work Programme

Table 10 – 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	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												
	Water twice a month during warmer months	Annually during warmer months or as needed in periods of hot weather												

Table 11 – Five Year Work Programme for Other Broadleaved Woodland

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Other Broadleaved Woodland	Replace failed trees	Dormant months years 1-5												
	Monitoring of health and viability	Monthly throughout the year and safety audits every 5 years												
	Control and removal of invasive non-native species	As required year 1 to 5												
	Pruning of dead and damaged limbs	Every three months years 1 to 5												
	Thinning of dense woodland growth	As required year 1 to 5												

Table 12 – Five Year Work Programme for Mixed Scrub

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Mixed scrub	Initial and replacement planting	As required year 1 to 5												
	Visual inspection to assess plant health	Bi-monthly every year												
	Control and removal of invasive 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												
	Pruning of plants using appropriate methods.	As required year 1 to 5												

Table 13 – Five Year Work Programme for Other Neutral Grassland

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Wildflower planting	Initial and replacement planting	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												

Table 14 – Five Year Work Programme for Native Hedgerows

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Native Hedgerow	Initial and replacement planting	Year 1 then as required to year 5												
	Control and removal of non-native species	As required year 1 to 5												
	Formative pruning	During winter months for first 2 years then once annually after this												
	Mulching	Twice a year in first year then once annually after this												
	Watering	During warmer months or as needed in periods of hot weather												

6 References

Annabelle Langhorn Landscape Planning Ltd. (2022) Landscape and Ecological Management Plan.

GOV.UK. 2022. Manage scrub and scrub mosaics. [online] Available at:

<https://www.gov.uk/guidance/manage-scrub-and-scrub-mosaics#:~:text=Managing%20scrub%20edges&text=Avoid%20topping%20dense%20patches%20of,to%20avoid%20destroying%20seeding%20herbs.>

Knowsley Council (2020) Design and Local Distinctiveness Guide.

Urban Green (2022). UG_1602_ECO_BNG_01.

Urban Green (2022). UG_1602_BNG_CALC_01

Urban Green (2022). UG_1602_ECO_PEA_02.

Wildlife and Countryside Act (1981).

Appendix 1 – Pre- Development Habitat Map

U R B A N
G R E E N

Do not scale this drawing (printed or electronic version).
 This drawing is copyright and is for use on this site only. This drawing
 should be read in conjunction with all relevant consultants drawings
 and specialist subcontractors / supply chain drawings and
 specifications.
 Responsibility for the reproduction of this drawing in paper form, or
 issued in electronic format, lies with the recipient to check that all
 information has been replicated in full and is correct when
 compared to the original paper or electronic image.

- Red Line Boundary
- Target/Notes
- Other Rivers and Streams
- Sparsely Vegetated
- Mixed scrub
- Modified Grassland
- Other neutral grassland
- Other Broadleaved Woodland Types
- Developed Land Sealed Surface



A: Ground Floor, The Tower,
 Deva City Office Park, Trinity Way,
 Manchester M3 7BP
 T: +44 (0) 161 312 3131
 weareurbangreen.co.uk

Client:	Maro2	
Project:	Mercury 62	
Title:	Habitat Map	
Issue:	01	
Drawn:	CL	Checked: MB
Approved:	MB	
Project:	UG1602	Scale @ A3: NTS
Date:	9/6/2022	
Dwg No:	UG_1602_ECO_HM_01	
Revision:	01	

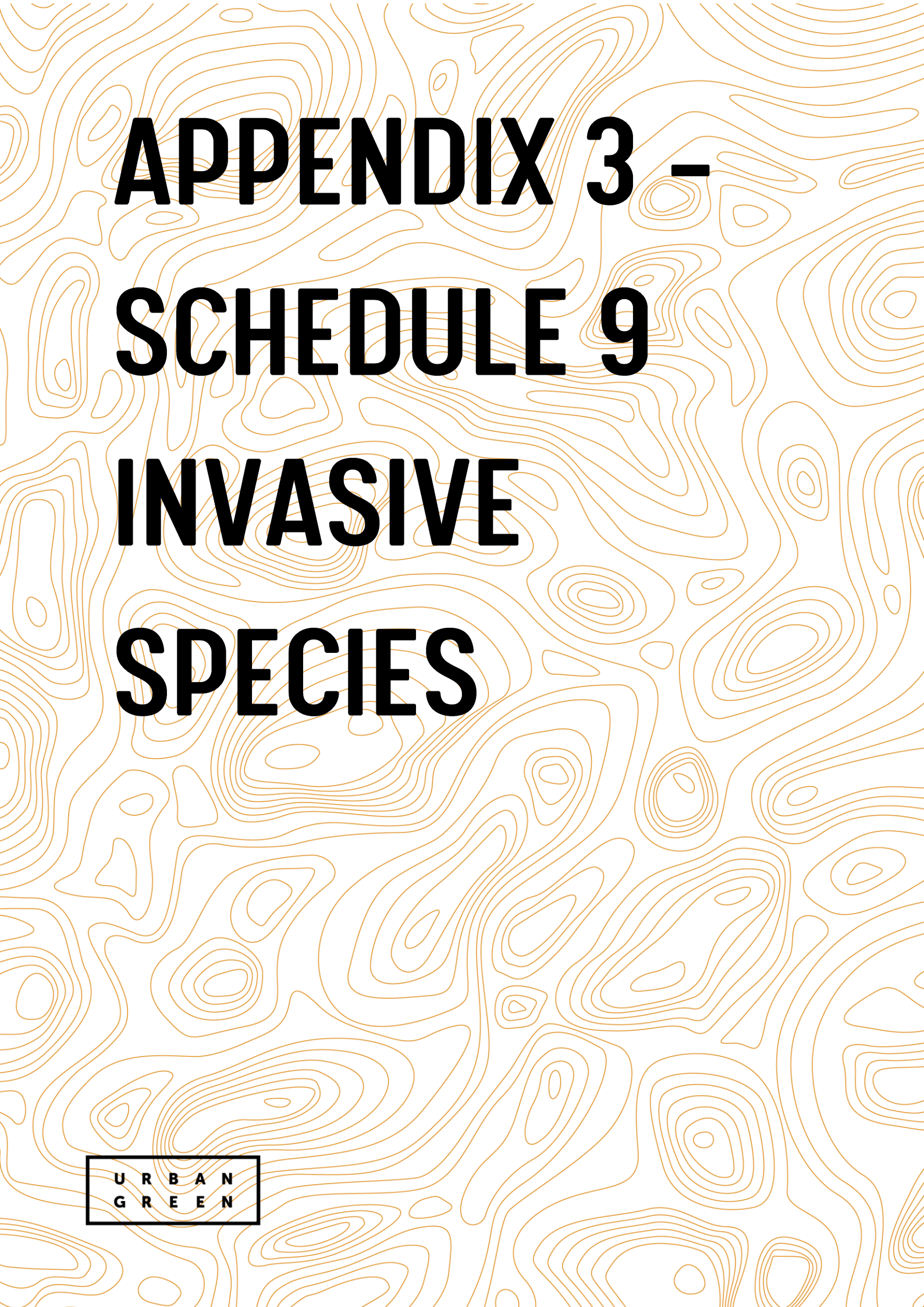


Appendix 2 - Proposed Landscape Plan

U R B A N
G R E E N



Project Name	Mercury 62
Project Number	CLPD 075
Plan Name	Detailed Planting Plan
Plan Number	CLPD 075 P01
Revision	b
Date	01/07/2022
Scale	1:500 @ A0

The background of the entire page is a topographic map with orange contour lines on a white background. The lines are of varying thickness and form irregular, concentric shapes that suggest a landscape with hills and valleys.

APPENDIX 3 – 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 the invasive non-native species listed on Schedule 9 that have been identified on site and the recommended management practices.

Common name (scientific name)	Identification		Management
Himalayan balsam (<i>Impatiens glandulifera</i>)	- Green or red stems - Serrated oval leaves growing in a whorl round the stem - Bright pink flowers		- Spraying of glyphosate-based herbicides - Application to be carried out by a qualified individual - Herbicide to be applied in spring, before the flowering period but after germination of seeds - Approved herbicides only to be used - Balsam bashing – pulling plants up by the root before seeds are set (before July/August)