

BIODIVERSITY ENHANCEMENT MANAGEMENT PLAN

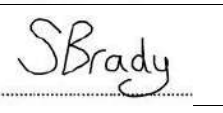
December 2023

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, MSc, QCIEEM
Checked By:	Mark Blacker	Signature		Qualifications	Senior Ecologist, MSc, ACIEEM
Revision Status:					
Rev:	Date:	Issue/Purpose/Comment:	Prepared:	Checked:	
02	22/12/2023	Update to 4.0 and to reflect arb data and changes to red line boundary	SB	SC	

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	Watercourse Enhancement	12
5.3	Area Habitat Retention.....	12
5.4	Area Habitat Creation.....	12
5.5	Linear Habitat Creation.....	21
5.6	Five Year Work Programme.....	24
6	References	28

APPENDIX 1 - Baseline Habitat Map

APPENDIX 2 - Proposed Landscape Plan

APPENDIX 3 - Schedule 9 Invasive Species

1 Introduction

1.1 Background to the Scheme

Maro Developments Ltd. is 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 Senior Biodiversity Net Gain Consultant, Shannon Brady. Shannon has experience providing consulting services for a range of development schemes across the UK, including residential, commercial, and infrastructure schemes.

1.2 Site Context

The site is located at National Grid Reference SJ 46758 89304 and comprises a total area of approximately 10.2ha (see Figure 1).

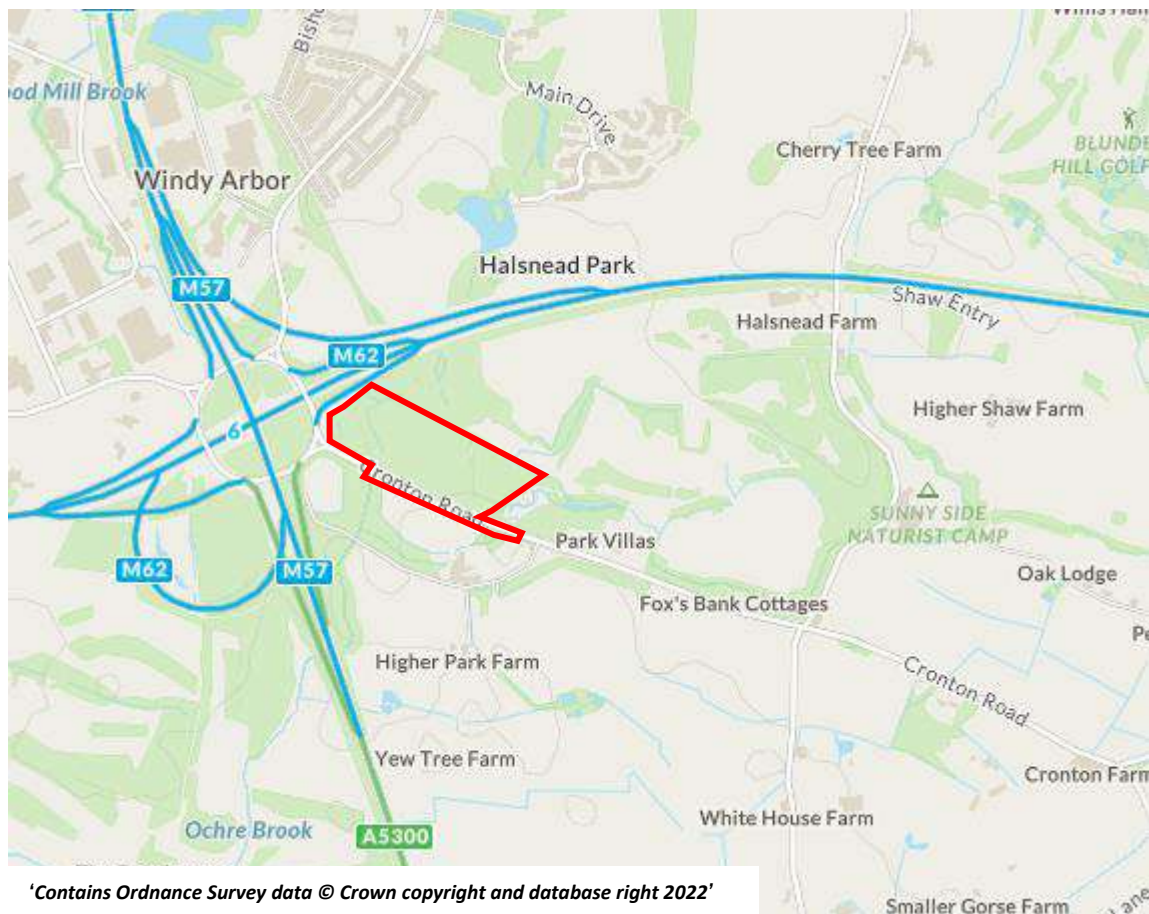


Figure 1 – Site Extent

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, 2023a). This report assessed the development as scoring a net gain of 1.66 area habitat units (2.61%), a net gain of 7.14 hedgerow units (percentage not applicable as baseline was zero) and a net gain of 0.38 watercourse units (15.18%). The trading rules have not been satisfied due to insufficient compensation for broadleaved woodland and other neutral grassland.

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.

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 Langhorn Landscape Planning Ltd, 2023). 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, 2023b) informed by a UKHab 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>). Further compartments of woodland are present around the periphery of the site.	This habitat will be mostly retained within the development. Additional woodland planting will be created within the site, along with supplementary 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 other neutral grassland habitats will be created across 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 wildflower 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 (ruderal/ephemeral)	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.
Developed land; sealed surface	Cronton Road falls within the red line boundary	No mitigation needed
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

UK Hab Classification	Dominant Species / Description	Development Actions and Mitigation
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

4 Development Proposals

The site comprises approximately 10.2ha 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 net gain of 1.66 area habitat units (2.61%), a net gain of 7.14 hedgerow units (percentage not applicable as baseline is zero) and a net gain of 0.38 watercourse units (15.18%). The trading rules have not been satisfied due to insufficient compensation for broadleaved woodland and other neutral grassland habitats.

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., 2023), 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

The woodland along the south-eastern boundary will be enhanced from moderate to good condition through the removal of invasive, non-native species and introduction of a shade tolerant wildflower mix to supplement the existing ground flora. The woodland will be buffered from damage and disturbance by an area of grassland.

Management techniques for the enhanced woodland are described in Table 3, along with the corresponding condition criteria. The expected condition of the enhanced woodland is **good**, with a time to target condition of 10 years. In order to achieve good condition, the woodland must achieve at least 33 points from the condition table. An annual schedule of works is provided in Table 11 in Section 6.

Table 3 – Management Objectives for Enhanced Broadleaved Woodland

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. Age distribution of trees	- Supplementary planting of native tree and shrub whips where gaps in the canopy are present or existing trees fail - Thinning of existing dense young growth to 2m spacing to reduce competition and encourage successful growth to maturity	Trees of various life stages offer a variety of niches and ecosystem services e.g. carbon sequestration	By year 10
2. Browsing damage	- Consistent monitoring for herbivores and resulting browsing damage - Installation of deer fencing / rabbit guards or other protection if deemed necessary	Ensures successful tree growth, natural development and ongoing regeneration of structurally diverse woodland.	From year 1
3. Invasive plant species	Removal of invasive, non-native species and consistent monitoring for, and removal of, regeneration	Ensure native assemblage of species through all storeys of woodland. Prevents competition from aggressive non-native species.	From year 1
4. Number of native tree species	- Maintenance of 5 or more native tree and shrub species - Supplementary planting of native species, consistent with existing	Ensure high diversity of plants to create maximum foraging, pollination and	From year 1

	species composition and planting proposals, where gaps in the canopy arise	sheltering opportunities for a wider range of fauna.	
5. Cover of native tree and shrub species	- Supplementary planting of native tree and shrub species to achieve 80% threshold - Removal of natural regeneration of non-native species and Schedule 9 species	Ensure native assemblage of species through all storeys of woodland. Prevents competition from aggressive non-native species.	From year 5
6. Open space within woodland	- Supplementary planting of native tree and shrub whips where there are gaps in the canopy - Monitoring for, and removal of, aggressive, non-native species, such as snowberry (<i>Symphoricarpos albus</i>) and rhododendron (<i>Rhododendron</i> spp.)	Ensures successful tree growth, natural progression and ongoing regeneration of structurally diverse woodland.	From year 5
7. Woodland regeneration	- Thinning of dense woodland growth to 2m spacings to increase light levels at the woodland floor - Removal of growth of non-native species to create bare ground for colonisation	Increase woodland biodiversity by encouraging microhabitats to develop providing differing microclimates, foraging opportunities, refuge and shelter for fauna.	By year 5
8. Tree health	- Arboricultural assessments (frequency based on recommendation in the AIA) to evaluate tree health - Consistent monitoring of woodland to assess presence of disease/crown dieback - Appropriate tree works or removal of diseased specimens where suitable and necessary	Prevents uncontrolled spread of disease, promotes healthy growth of trees and shrubs to maturity	From year 1
9. Vegetation and ground flora	- Introduction of native groundcover mix containing species such as foxglove (<i>Digitalis purpurea</i>) and woodruff (<i>Galium odoratum</i>) - Re-seeding of ground, or introduction of plugs, where necessary	Promotes the development of a diverse ground layer which encourages structural diversity within the woodland and offers foraging and cover opportunities for pollinators	From year 2
10. Woodland vertical structure	Infrequent management of selective stands including thinning of stands and light trimming to aid succession of canopy species	A diverse vertical woodland structure offers an increased number of niches and habitat opportunities	From year 10
11. Veteran trees	Encouragement of mature trees to veteran status by: Thinning young growth to 4m spacing around mature trees	Veteran trees offer ecological niches that younger trees do not provide, for example,	Dependent on maturity of existing trees

	- Removal of Schedule 9 species - Regular monitoring of tree health and arboricultural works where necessary	wounds and decaying wood important for xylophagous organisms	
12. Amount of deadwood	- Retention of non-diseased pruned material following management into brush piles and hibernacula - Retention of non-diseased standing deadwood, including branches and whole trees (where safe to do so)	Deadwood provides further microhabitats within the woodland with benefit for a wide range of fauna and fungi.	By year 1
13. Woodland disturbance	No nutrient enriched substrate, topsoil or fertilizers are to be used at any time	Damage caused by anthropogenic activities can delay or prevent the natural succession of woodland	By year 1

5.2 Watercourse 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 Retention

5.3.1 Broadleaved Woodland

The majority of the woodland to the west of the site will be retained. Management practices should follow those laid out in Table 3 (Section 5.1.1) and Table 11 (Section 6) and within the Arboricultural Impact Assessment (AIA) (Urban Green, 2023c).

5.4 Area Habitat Creation

5.4.1 Urban trees

A total of 168 new urban trees will be planted across the site (excluding trees in woodland planting and lines of trees), primarily to the north and east of the site. Species within the planting mix include 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 4 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 4: 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 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 remove 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	Leave any micro-habitat features, such as ivy and loose bark, in place	Ensures diversity is maintained throughout by allowing the creation of	By year 5

and insects are present	- 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 (Urban Green, 2022)	additional habitat niches which can be exploited by wildlife.	
6. More than 20% of the tree canopy area is oversailing 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

5.4.2 Other Woodland, Broadleaved

The existing woodland is to be extended by planting the area within the northern corner of the site with native tree and shrub whips and creating a new woodland strip along Cronton Road. 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. Standard trees will also be planted within the habitat. 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 in Section 6.

Table 5: 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 influence 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 - Manage anthropogenic activity within the woodland to limit damage and disturbance e.g. installation of paths	Limiting nutrient enrichment and disturbance prevents a handful of species dominating and ensures healthy growth of natural regeneration	From year 1.

5.4.3 Mixed Scrub

New areas of mixed scrub are to be created primarily around the boundaries of the site and additional blocks will be created in the car parking area. This scrub will be planted with native scrub species.

The expected condition of the scrub around the periphery of the site is moderate, with an expected target condition time of 5 years. To achieve moderate condition, at least 3 of the condition criteria provided in Table 6 must be met.

The expected condition of the scrub in the car park is poor, with a time to target condition of 1 year.

An annual schedule of works is detailed in Table 12 in Section 6.

Table 6: 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	As many native, shrubby species as possible to be	A wide range of species provides varied foraging, commuting nesting	From year 1

and there are at least three woody species	- 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.	opportunities to birds, invertebrates and small mammals	
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 the scrub and adjacent habitat(s).	- Limit mowing in the immediate habitat surrounding the areas of mixed scrub to allow succession of natural vegetation - Avoid using fertiliser on site to prevent a small number of species dominating	Creates a gentle habitat gradient to allow movement of fauna and increases diversity around the mixed scrub habitat.	From year 1
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

5.4.4 Other Neutral Grassland – General purpose Wildflower Mix/Flowering Lawn Mix/Wetland Meadow 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, 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. An annual schedule of works is detailed in Table 13 in Section 6.

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	- Implement a limited mowing regime as described under criterion 2 - Remove arisings after mowing to prevent nutrient enrichment of soils and the likelihood of a handful of species dominating - No use of fertiliser within the grassland - Seed any areas of bare ground with the appropriate seed mix specified in the planting proposals	Ensures the grassland remains as a medium distinctiveness habitat and contains a high species richness which benefits pollinators	From year 2
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 - 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

5.4.5 Pond (Non-Priority Habitat)

A large pond will be created to the north-west of the site, adjacent to the 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 8: 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	Prune excess (>50% cover) growth around the periphery of the pond	Allows maximum light levels to reach the pond surface to encourage	From year 2.

by woody bankside species.		growth of aquatic vegetation	
----------------------------	--	------------------------------	--

5.5 Linear Habitat Creation

5.5.1 Native Hedgerows/Species Rich Native Hedgerows/ Species Rich Native Hedgerows with Trees

New lengths of species rich native hedgerow will be created around the boundary of the proposed development footprint. Seven native shrub species will make up hedges, including field maple (*Acer campestre*), dogwood (*Cornus sanguinea*), hazel, hawthorn, European spindle (*Euonymus europaeus*), holly (*Ilex aquifolium*) and guelder rose (*Viburnum opulus*). Some of the proposed hedgerows will contain standard trees and have therefore been classified as species rich native hedgerows with trees. Both of these types of hedgerow are expected to achieve good condition. To achieve this, there must be no more than 2 fails in total from the criteria in table 9 and no functional group may have more than 1 failure.

Additionally, 0.02km of evergreen hedgerow will be created as small lengths of hedgerow bordering a stretch of parking bays. The only species within this hedge is hornbeam (*Carpinus betulus*). These hedgerows are expected to reach moderate condition. To achieve this, there must be no more than 4 fails in total from the criteria in table 9 and both attributes may not fail in more than one functional group.

An annual schedule of works is detailed in Table 14.

Table 9: Management objectives for Hedgerows (with trees)

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
A1. Height >1.5m average along length.	- Formative pruning should be undertaken to encourage growth - Prune mature plants only when necessary and in a way that promotes natural form - No management to take place during bird nesting season	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	5 years
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		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 - Pruning 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	predators, spaces to rest and shelter.	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
E1. At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	- Encourage the succession of trees to maturity by restricting pruning of trees to essential works only - Undertake visual tree assessments annually for the first 3 years post-planting to monitor tree health and then frequency should be based on formal recommendations following this	Mature trees increase the structural diversity of the habitat and offer increased nesting and foraging provisions	30+ years
E2. At least 95% of hedgerow trees are in a healthy condition (excluding veteran features)	- All work to be undertaken by a qualified individual and using the appropriate tools and methods - Only essential works to be undertaken	Preventing physical damage promotes healthy formation of trees and encourages growth to maturity. Trees free from damage and	From year 1

valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Undertake regular arboricultural assessments on trees based on formal recommendations	disturbance offer greater habitat potential.	
--	---	--	--

5.6 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 14 – Five Year Work Programme for Native Hedgerows/Species Rich Native Hedgerows/ Species Rich Native Hedgerows with Trees

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Native Hedgerows/Species Rich Native Hedgerows/ Species Rich Native Hedgerows with Trees	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												
	Visual inspection of tree health	Once annually for the first three years post-planting and then frequency based on formal recommendations after this												

6 References

Annabelle Langhorn Landscape Planning Ltd. (2023) Proposed Landscape Plan. Ref: CLPD 075 Po1d Detailed Planting Plan 20122023.

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). Bird and Bat Box Plan. Ref: UG_1602_ECO_BBBP_01.

Urban Green (2023a). Biodiversity Net Gain Assessment. Ref: UG_1602_BNG_02.

Urban Green (2023b). Preliminary Ecological Appraisal (PEA). Ref: UG_1602_ECO_PEA_03.

Urban Green (2023c). Arboricultural Impact Assessment (AIA). Ref: UG_1459_ARB_AIA_01_REV_05_FINAL

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
- Other Rivers and Streams
- Sparsely Vegetated
- Mixed scrub
- Modified Grassland
- Other neutral grassland
- Developed Land Sealed Surface
- Target Note
- TN1 - Himalayan balsam
- TN2 - Himalayan balsam
- TN3 - Marshy grassland
- TN4 - Marshy grassland



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

T: +44 (0) 161 312 3131

weareurbangreen.co.uk

Client:
Maro2

Project:
Mercury 62

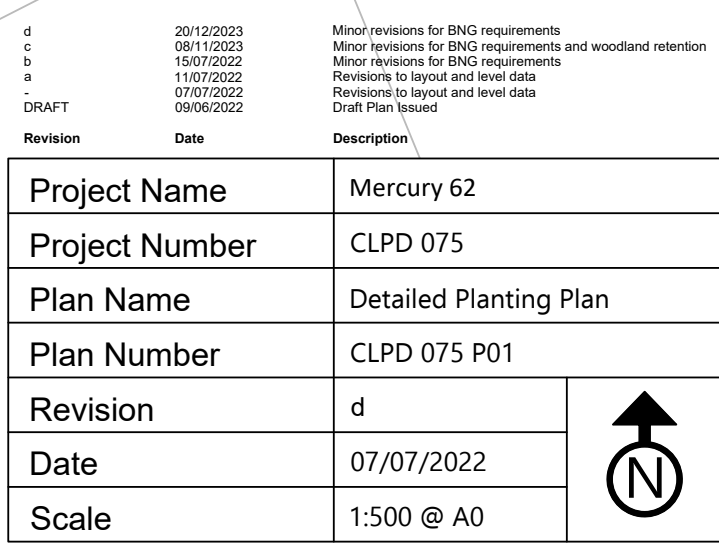
Title:
Habitat Map

Issue:
02

Drawn: CL	Checked: SB	Approved: SC
Project: UG1602	Scale @ A3: 1:1850	Date: 09/10/2023
Dwg No: UG_1602_ECO_HM_02		Revision: 01

APPENDIX 2 - PROPOSED LANDSCAPE PLAN

U R B A N
G R E E N



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)