

BIODIVERSITY ENHANCEMENT MANAGEMENT PLAN

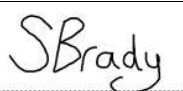
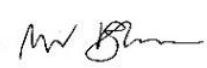
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JD Campus,
Hollins Brook Way,
Bury,
BL9 8RR

U R B A N
G R E E N



QUALITY MANAGEMENT

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1 Introduction

1.1 Background to the Scheme

JD Group are proposing to develop land in Bury, adjacent to the existing JD Group head office (hereafter referred to as ‘the site’). The proposals include the development of the site in two phases. Phase 1 plans to develop a creche, private garden and car park. The second phase would provide one multi-purpose all weather pitch, a new Hub facility containing spaces for the wider office campus, including eating spaces, meeting and presentation areas, and offices with associated hard and soft landscaping. 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 Biodiversity Net Gain Consultant Shannon Brady. Shannon has experience providing BNG consulting services for a range of development schemes across the UK, including residential and commercial schemes.

1.2 Site Context

The site is located at National Grid Reference SD 81523 08675 and comprises a total area of approximately 1.9ha (see Figure 1).

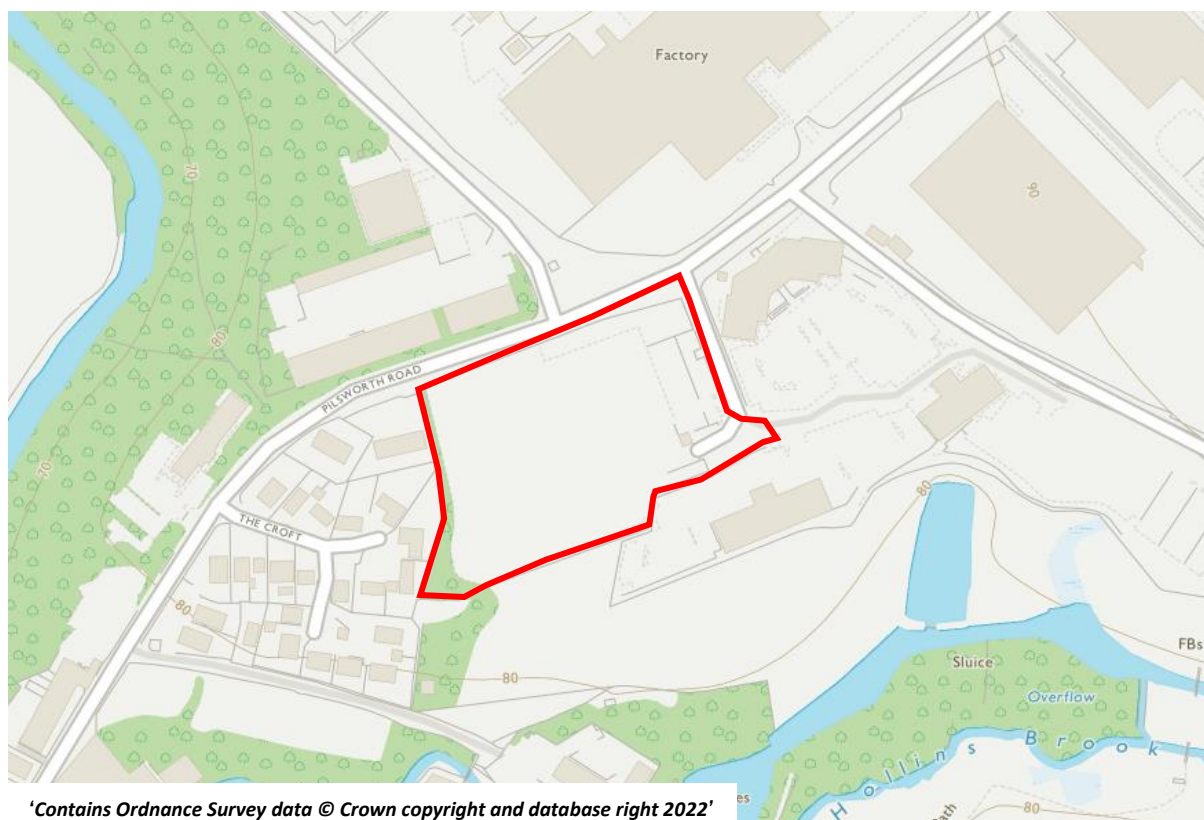


Figure 1 – Site Extent

The site is located on the rural-urban fringe of Bury, which is located approximately 2.5km north-west of the site. Pilsworth Industrial Estate is present immediately to the north-east and east of the site, comprising office blocks and commercial retail outlets. Hollins Vale Local Nature Reserve immediately

borders the south of the site. Hollins Brook and the River Roch are present close to the site, located approximately 100m south and 200m west of the site, respectively.

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 178.18% in area biodiversity units and 19.45% in linear habitat 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.

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, Bury 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 Proposed Landscape Design (CW Studio, 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.
- Notices will be provided at strategic locations, such as beside footpath entrances and POS areas to encourage self-removal of general litter and dog waste. A general litter pick should be undertaken as appropriate to avoid harm to wildlife or encouragement of pests.
- 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 notable/protected species and habitats identified on site is provided below though full descriptions are available within the PEA. The baseline habitat map for the site can be found in Appendix 1.

Table 1 – Protected/Notable Fauna Species

Species / Species Group	Field Evidence	Considered within Assessment	Rationale for Consideration
Fauna			
Birds (nesting)	None	Yes	There is little suitability for ground nesting bird species, however, there is suitable nesting potential for passerine birds. 43 records of protected/notable bird species were returned from the data search.
Hedgehog (<i>Erinaceus europaeus</i>)	None	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>)	None	No	There were no records of badger returned through the data search and no evidence of badger during the field survey. The site offers limited potential for sett construction and foraging.
Aquatic Mammals	None	No	There is no suitable habitat for otter or water vole present within, or within influencing distance of, the site.
Bats (all species)	None	Yes	The potential for foraging and commuting bats was discounted as the site is of low quality with poor opportunities. There were however, 3 trees with bat roosting potential. 59 records of field signs of bats were returned in the data search.
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.

Great crested newt (<i>Triturus cristatus</i>)	None	No	One record was returned in the data search and there are no water bodies on site and other ponds are cut off by a larger watercourse. The presence of great crested newts has therefore been discounted.
Invertebrates	None	No	No records for notable invertebrates were found during the data search, no aquatic habitats were located on site and there was low floristic diversity. As a result, the presence of notable invertebrates on site was reasonably discounted.
Common Amphibians	None	Yes	One pond is located 140m south of the site, although it is separated by Hollins Brook. The unmanaged habitats on site and ornamental water bodies in neighbouring residential gardens may provide suitable conditions. It is possible that amphibians may occur on 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	No records for invasive, non-native species were returned during the data search. However, cotoneaster (<i>Cotoneaster</i> sp.), montbretia (<i>Crocsmia</i> sp.), and rhododendron (<i>Rhododendron</i> sp.) were recorded during the field survey.

Table 2 – Pre-development Habitats Identified

Uk Hab Classification	Dominant Species / Description	Development Actions and Mitigation
Area Habitats		
1) Buildings – Developed Land, Sealed Surface	Two buildings present on site which are automatically allocated a condition score of N/A in the metric.	This habitat type provides no ecological opportunities and does not need to be compensated for.
2) Hardstanding – Developed Land, Sealed Surface	Hardstanding was present across the site as car parks and pathways associated with the two buildings. This is automatically allocated a condition score of N/A in the metric.	This habitat type provides no ecological opportunities and does not need to be compensated for.
3) Ephemeral/Short Perennial – Ruderal/Ephemeral	Areas of ephemeral/short perennial vegetation were present in the north-west and centre of the site.	These areas are currently in poor condition and will be lost to development. Larger areas of other neutral grassland will be created to compensate for the loss of this habitat.
4) Ornamental Shrub – Introduced Shrub	An area of introduced shrub was present at the west of the site comprising non-native invasive species. This is automatically allocated a condition score of N/A.	87 urban trees of expected moderate condition are due to be planted which will provide foraging and nesting opportunities. Tree species are expected to be primarily native.
5) Scattered scrub – Mixed Scrub	Scattered scrub was found across site, mainly around the boundaries, and appeared unmanaged. Non-native invasive species were found within this habitat.	Non-native invasive species will be removed, and areas of mixed scrub will be created around the periphery of the site which will provide a higher quality habitat provision.
6) Amenity Grassland – Modified Grassland	The south-western section of the site comprised an area of grassland that appeared to be highly damaged.	New areas of modified grassland are to be created, as well as a rain garden which is expected to reach good condition.
Linear Habitats		
1) Species Poor Hedgerow – Native Hedgerow with Trees	A single hedgerow that had recently been cut to stumps was present along the western boundary.	New areas of native species rich hedgerow are to be created across the site.
2) Scattered Trees – Line of Trees	Multiple lines of trees were present along the northern, western and southern boundaries.	Some of the existing trees are to be retained, as well as creating new lengths of native species rich hedgerow across the site.

4 Development Proposals

The development covers approximately 1.9ha and will be carried out in two phases. The first phase plans to develop a creche, private garden and car park, with associated soft landscaping. The second phase plans to develop a multi-purpose all weather pitch, Hub facility with office space and associated hard and soft landscaping. None of the existing area habitats are to be retained or enhanced within the development. A proportion of the existing line of trees will be retained, however, this is the only linear feature being maintained within the development.

New habitats will be created to compensate for those lost, including:

- Urban trees
- Rain garden
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Native species rich hedgerow

The development is expected to achieve a 178.18% net gain in area habitat units and a 19.45% gain in linear hedgerow 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 an area of existing mixed scrub not being sufficiently compensated for. In this case, the scrub contained non-native invasive species which the landowner is legally required to control and prevent the spread of. For this reason, the habitat would need to be removed and couldn't be retained or enhanced. The creation of many other habitats on site and the high habitat heterogeneity produced offsets the need for this area of mixed scrub to be replaced.

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 (CW Studio, 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 Creation

5.1.1 Urban trees

87 new urban trees will be planted across the site. The trees will be planted across the whole site and are expected to be a mix of native and non-native species, with the majority being native. The targeted condition for the urban tree habitat is moderate, with an expected target condition time of 27 years. Detailed management techniques are detailed within Table 3 along with the corresponding condition criteria. In order to reach the expected targeted condition of moderate at least 3 of the following criteria are expected to be achieved. As 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 activities and no current regular pruning regime so the trees retain	- Only undertake management activities where necessary - Limit use of herbicides around trees - Tree works/pruning should be undertaken by a qualified professional	Promotes healthy growth and supports growth to maturity.	From year 1

>75% of expected canopy	• Avoid cutting all specimens across the plot in a single period, particularly where this is likely to removes all flower/fruit interest for wildlife. • Ensure tree canopy is balanced and consistent with the natural structure for the species		
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.	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 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

5.1.2 Rain Garden

Several areas of rain garden will be created adjacent to areas of hardstanding across the site. The species mix will include species suited to wet and dry conditions, including ornamental grasses and flowering perennials. The targeted condition for this habitat is good, with an expected target condition time of 5 years. In order to reach the expected targeted condition, 3 of the following criteria are expected to be achieved. An annual schedule of works is detailed in Table 11.

Table 4: Management Objectives for Rain Garden

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. Vegetation structure is varied	- To be encouraged through appropriate selection of species during development - Monitoring to ensure balance of species across habitat areas is consistent with original planting mix - Replace any lost plants with plants of the same species, size and quality	A wide range of species provides varied habitats and foraging opportunities for birds, invertebrates and small mammals	From year 1
2. There is a diverse range of flowering plant species, providing nectar sources for insects	- To be encouraged through appropriate selection of species during development - Replace any lost plants with plants of the same species, size and quality - Avoid undertaking management of all plants in one short period to retain important habitat provisions	Different life stages provide different foraging and habitat opportunities	From year 1
3. Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.	- 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 rain garden. Prevents competition from aggressive non-native species.	From year 1

5.1.3 Mixed scrub

New areas of mixed scrub are to be created primarily around the periphery of the site, adjacent to areas of hardstanding. This habitat will be comprised of flowering, evergreen shrubs and perennials with the final species mix expected to be primarily, if not entirely, native species. The expected condition for all areas of mixed scrub is poor, with an expected target condition time of 1 year. 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 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

5.1.4 Modified Grassland – Entrance Planting and Woodland Planting

There are two types of planting identified within the landscape proposal – entrance planting and woodland planting - which are categorised as modified grassland. The planting within these areas will be

similar, comprised of flowering perennial and ornamental species, and so can be managed in a similar way. The expected condition of both areas of modified grassland is poor and the expected time to target condition is 1 year. As condition criterion 1 is fixed by the landscape design, this has not been assessed. An annual schedule of works is detailed in Table 13.

Table 6: Management Objectives for Modified Grassland

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type.	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% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Plant different species in a way that promotes varied vegetation structure across the habitat	Varied sward heights provide increased opportunities for commuting and foraging for birds, invertebrates and small mammals	From year 1
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	- Consistent monitoring of habitat for growth of shrub species - Hand removal of any growth of woody species - Mulching of beds where appropriate to prevent growth of species not included within the habitat species mix	Maintains the characteristic of the habitat and prevents succession to a heathland and shrub habitat type	From year 2
4. Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive	- Ensure areas of bare ground are kept to a minimum to reduce erosion - Only carry out necessary maintenance activities	Preventing physical damage promotes healthy growth of vegetation and development of a high quality habitat which can offer resources for	From year 1

	poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	- when specified and at the appropriate time of year - Management activities to be carried out by a suitably qualified person using the correct equipment	shelter, commuting and foraging	
5.	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	- Re-cultivate and re-plant any empty space in beds when required - Replace any failed plants with those of the same species, size and quality	Ensures widespread cover of desired species and reduces space for more dominant or shrubby species to colonise	From year 1
6.	Cover of bracken less than 20%.	- Consistent monitoring of the habitat for bracken growth - Hand removal of bracken upon discovery	Removing bracken at an early stage prevents species from dominating the habitat and outcompeting other desired species	From year 2

5.1.5 Other Neutral Grassland – Groundcover Planting and Pictorial Meadow Planting

There are two types of planting identified within the landscape proposal –groundcover planting and pictorial meadow planting - which are categorised as other neutral grassland. Both created habitats will consist of wildflower species, such as bird's-foot trefoil (*Lotus corniculatus*), common knapweed (*Centaurea nigra*), common vetch (*Vicia sativa*) and autumn hawkbit (*Scorzoneroide autumnalis*). The expected condition for groundcover planting is poor with a time to target condition of 2 years. The expected condition for pictorial meadow planting is moderate, passing all but criteria 6, with a time to target condition of 5 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 14.

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	N/A	N/A	N/A
2. Sward height is varied (at least 20% of the sward)	Once established, mow wildflower meadows to 50-75mm in spring and	Varied sward heights provide increased opportunities for	From year 1

is less than 7 cm and at least 20 per cent is more than 7 cm)	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	commuting and foraging for birds, invertebrates and small mammals	
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

5.1.6 Modified Grassland

Small compartments of amenity grassland will be created in the south-west corner of the site and towards the centre of the site adjacent to recreational space and this will be created by laying turf. The expected condition for these compartments of grassland is poor, with a time to target condition of 1 year. As it is often difficult for amenity grassland habitats to achieve condition criterion 1 and this is fixed by the turf selected in the landscape design, this criterion has not been assessed. Management of this habitat will primarily involve a consistent mowing regime to maintain a neat appearance to amenity spaces

Table 8: Management objectives for Modified Grassland

Condition Assessment Criteria / objective	Management Activities	Benefit to environment	Target time for Positive Assessment
1. There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type.	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% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	- Where appropriate, leave an unmown boundary around the periphery of the grassland area to promote structural diversity - Stagger mowing of different sections of grassland	Varied sward heights provide increased opportunities for commuting and foraging for birds, invertebrates and small mammals	From year 1
3. Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	- Consistent monitoring of habitat for growth of shrub species - Hand removal of any growth of shrub species	Maintains the characteristic of the habitat and prevents succession to a heathland and shrub habitat type	From year 1
4. Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of	- Seed areas which are bare due to damage with grass seed suitable for the area - Use management practices and equipment appropriate for the area - Management should be carried out by a suitably qualified person	Preventing physical damage promotes healthy growth of vegetation and development of a high quality habitat	From year 1

	access, or any other damaging management activities.			
5.	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	Re-seeding of bare ground with appropriate grass seed	Ensures widespread cover of desired species and reduces space for more dominant or shrubby species to colonise	From year 1
6.	Cover of bracken less than 20%.	- 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 desired species	From year 2
7.	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. Prevents competition from aggressive non-native species.	From year 1

5.2 Linear Habitat Creation

5.2.1 Native Species Rich Hedgerow

Two lengths of native species rich hedgerow totalling 0.14km will be created along the northern and western boundaries of the site. The species mix is expected to be native and comprised of species such as hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*) and blackthorn (*Prunus spinosa*). The expected condition of the hedgerows is moderate, with a time to target condition of 5 years. The landscape proposals already state that the hedge will be maintained at 0.9m high and therefore criteria A1 has not been assessed. An annual schedule of works is detailed in Table 15.

Table 9: Management objectives for Native Species Rich 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	Hedgerows serve several important roles for birds, mammals and invertebrates. Firstly, they act as valuable wildlife corridors, facilitating	5 years

	Formative pruning should be undertaken to encourage growth	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.	
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		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

5.3 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 Rain Garden

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Rain Garden	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												
	Control and removal of 'weed' species not within the initial species mix	Every three months years 1 to 5												
	Pruning or cutting back of plants	Every 3 months in first year and every 6 months after in subsequent years												
	Monitoring throughout growing and dormant period to ensure successful establishment and control damage	Every three months years 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 Modified Grassland – Entrance Planting and Woodland Planting

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Modified Grassland	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												
	Removal of ‘weed’ species not identified in original planting mix	As required year 1 to 5												
	Watering during warmer months	Every three months years 1 to 5												
	Removal of dead heads or dead plant material	As required year 1 to 5												

Table 14 – 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 15 – Five Year Work Programme for Native Species Rich Hedgerow

Habitat	Action	Frequency Notes	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Native Species Rich 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												

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APPENDIX 1 - PRE- DEVELOPMENT HABITAT MAP

U R B A N
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- Red Line Boundary
- Hardstanding
- Ephemeral/Short Perennial
- Poor Semi-Improved Grassland
- Scattered Scrub
- Building
- Introduced Shrub
- Bareground
- Defunct Hedge
- Line of Trees



- TN1 - Invasive Species (Cotoneaster)
- TN2 - Deadwood Pile
- TN3 - Marshy Grassland
- TN4 - Ash Tree (Low Bat Roost Suitability)
- TN5 - Invasive Species (Montbretia)
- TN6 - Invasive Species (Rhododendron)
- TN7 - Dead Tree (Moderate Bat Roost Suitability)
- TN8 - Scattered Tree (Low Bat Roost Suitability)

0 5 10 20 Meters

U R B A N
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Project:
JD Campus

Title:
Phase One Habitat Map

Issue:
02

Drawn: AB	Checked: JH	Approved: JH
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Project: UG1466	Scale @ A3: 1:750	Date: 24/02/2022
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Dwg No: UG_1466_ECO_HM_02	Revision: 02
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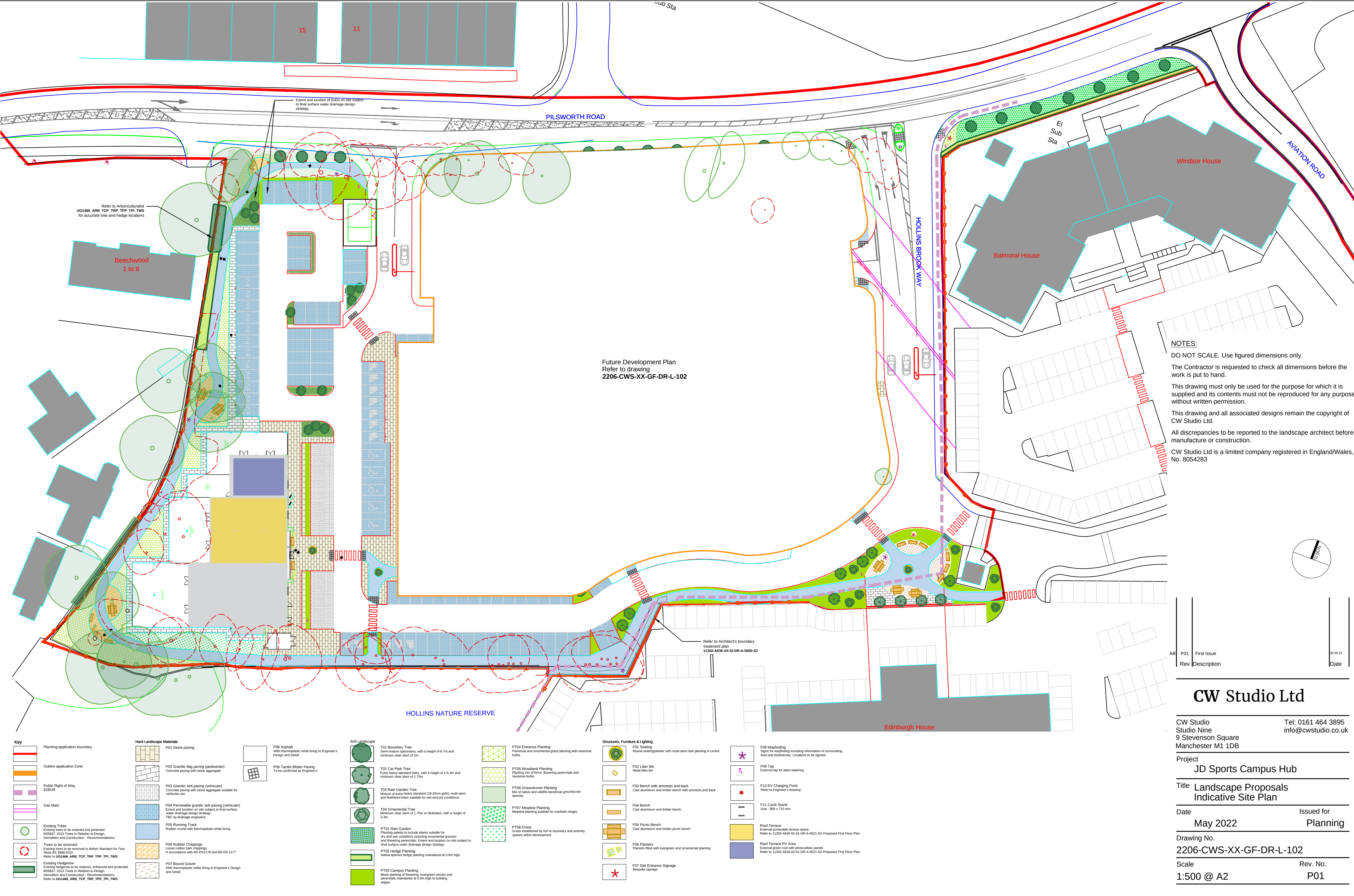
APPENDIX 2 -

SOFT

LANDSCAPE

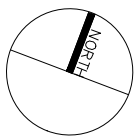
PLAN

U R B A N
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AB	P01	First issue	30.05.22
Rev	Description		Date

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Project
JD Sports Campus Hub

Title **Landscape Proposals
Future Development Outline Plan**

Date **May 2022** Issued for **Planning**

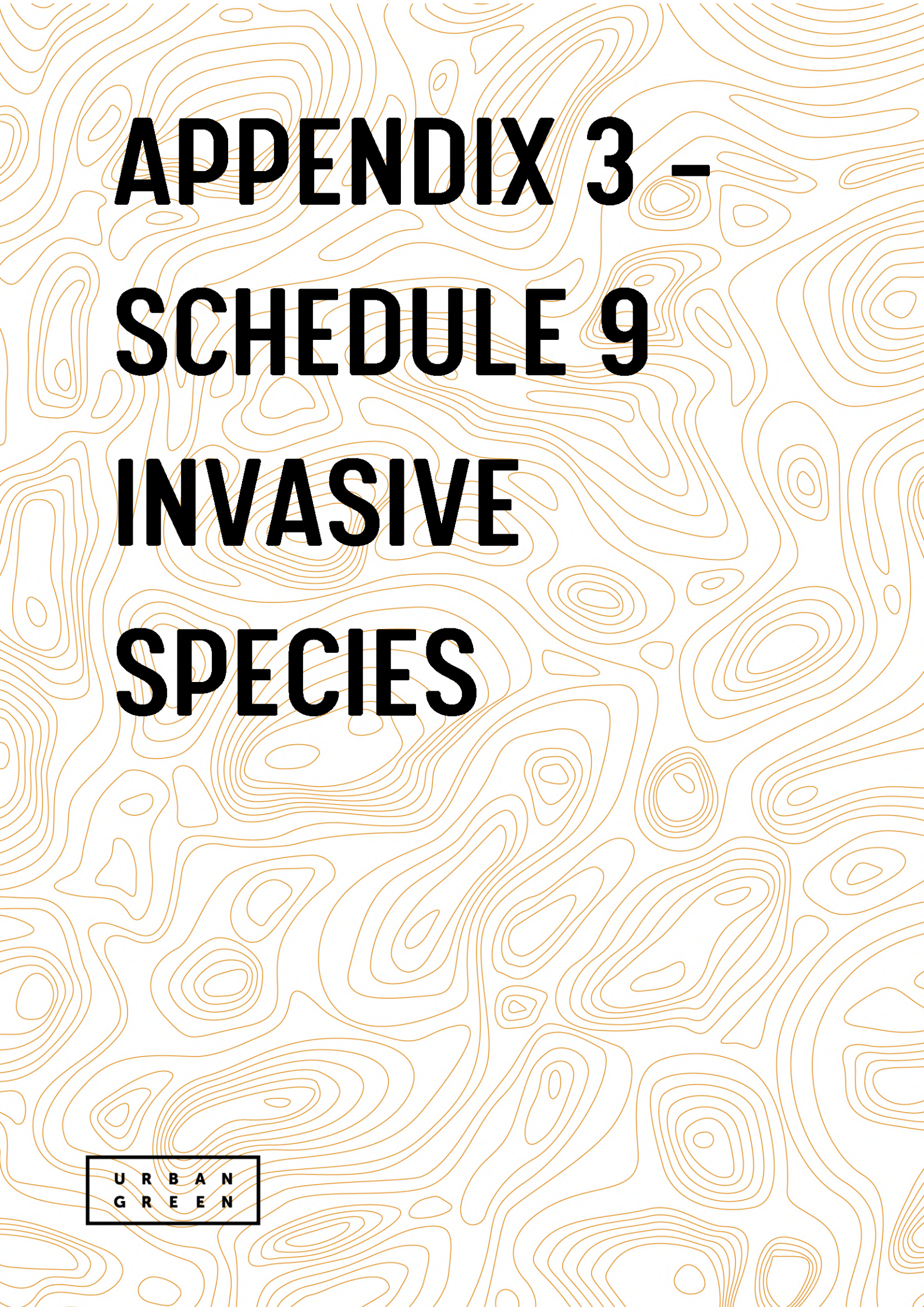
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Scale **1:500 @ A2** Rev. No. **P01**

Key	Planning application boundary.
	Outline application Zone
	Public Right of Way S1BLUR
	Gas Main
	Existing Trees Existing trees to be retained and protected BS5837:2012 Trees in Relation to Design Demolition and Construction - Recommendations. Refer to UG1466_ARB_TCP_TRP_TPP_TPI_TWS
	Trees to be removed Existing trees to be removed to British Standard for Tree Work BS:3698:2010 Refer to UG1466_ARB_TCP_TRP_TPP_TPI_TWS
	Existing Hedgerow Existing hedgerow to be retained, enhanced and protected. BS5837:2012 Trees in Relation to Design Demolition and Construction - Recommendations. Refer to UG1466_ARB_TCP_TRP_TPP_TPI_TWS
Hard Landscape Materials	P01 Stone paving
	P02 Granitic flag paving (pedestrian) Concrete paving with stone aggregate
	P03 Granitic sett paving (vehicular) Concrete paving with stone aggregate suitable for vehicular use
	P04 Permeable granitic sett paving (vehicular) Extent and location on site subject to final surface water drainage design strategy TBC by drainage engineers.
	P05 Running Track Rubber crumb with thermoplastic white lining
	P06 Bound Gravel With thermoplastic white lining to Engineer's Design and Detail
Soft Landscape	T01 Boundary Tree Semi-mature specimens, with a height of 6-7m and minimum clear stem of 2m
	T02 Car Park Tree Extra heavy standard trees, with a height of 2.5-4m and minimum clear stem of 1.75m
	T03 Rain Garden Tree Mixture of extra heavy standard (18-20cm girth), multi-stem and feathered trees suitable for wet and dry conditions.
	T04 Ornamental Tree Minimum clear stem of 1.75m or Multistem, with a height of 3-4m.
	PT01 Rain Garden Planting palette to include plants suitable for dry and wet conditions including ornamental grasses and flowering perennials. Extent and location on site subject to final surface water drainage design strategy.
	PT02 Hedge Planting Native species hedge planting maintained at 0.9m high.
	PT03 Campus Planting Block planting of flowering, evergreen shrubs and perennials maintained at 0.9m high to building edges.
	PT04 Entrance Planting Perennial and ornamental grass planting with seasonal butterflies
	PT05 Groundcover Planting Mix of native and wildlife beneficial groundcover
	PT06 Pictorial Meadow Planting Meadow turf
	PT07 Grass Grass established by turf to boundary and amenity spaces within development

Structures, Furniture & Lighting	F01 Seating Round seating/planters with multi-stem tree planting in centre
	F02 Litter Bin Metal laser bin
	F03 Bench with armrests and back Cast aluminium and timber bench with armrests and back
	F04 Bench Cast aluminium and timber bench
	F05 Picnic Bench Cast aluminium and timber picnic bench
	F06 Bleachers Tiered spectator seating
	F07 Site Entrance Signage Bespoke signage

F08 Wayfinding Signs for wayfinding including information of surrounding area and biodiversity. Locations to be agreed.
F09 Tap External tap for plant watering
F10 EV Charging Point Refer to Engineer's drawing
F11 Cycle Stand Size - 800 x 715 mm Hemlock Stainless Steel cycle stand by Broxap or equal approved.

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

U R B A N
G R E E N

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 some of the most common Schedule 9 listed species which may occur on land within the UK and the recommended management practices.

Common name (scientific name)	Identification		Management
Japanese knotweed (<i>Fallopia japonica</i>)	- Red, mottled stems - Shovel/heart shaped leaves - Hollow stems - White, clustered flowers		- Spraying or injection of glyphosate-based herbicides - Application to be carried out by a qualified individual - Herbicide to be applied after the flowering period (late summer onwards) - Approved herbicides only to be used

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)
Giant hogweed (<i>Heracleum mantegazzianum</i>)	• Very tall stems – 7ft+ tall – with purple blotches • Large, white, umbrella shaped flowers • Large, lobed leaves, up to 1.5m wide		• Spraying of glyphosate-based herbicides • Application to be carried out by a qualified individual • Herbicide to be applied in May, when young leaves are emerging • Approved herbicides only to be used • Full PPE to be worn during management as sap can cause burns to skin