Former Sipson Garden Centre

Landscape and Ecology Managment Plan (LEMP)

Virtus Data Centres

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Delivering a better world

Quality information

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1. Introduction

1.1 Purpose

1.1.1 This Landscape and Ecology Management Plan (LEMP) has been prepared on behalf of Virtus Data Centres (hereafter referred to as 'the Applicant') in relation to a proposed data centre development (the 'Proposed Development') within Sipson Lane, Sipson, West Drayton (hereafter referred to as 'the Site').

1.1.2 It provides a framework for delivering the landscape strategy and the successful establishment and future management of proposed landscape works associated with the Proposed Development. It sets out the short and long-term measures and practices that will be implemented by the Applicant to establish, monitor, and manage landscape and ecology mitigation and enhancement (Biodiversity Net Gain) measures embedded in the design. The latter will be achieved through habitat creation over and above that used for habitat mitigation.

1.1.3 The Proposed Development includes the construction of buildings to comprise data centres, ancillary offices, associated plant, equipment and emergency backup generators and associated fuel storage, landscaping, sustainable drainage systems, an emergency access route, and parking and ancillary works.

1.1.4 The Site comprises 7 hectares (ha) of land located in the administrative boundary of Hillingdon. The LEMP forms part of the strategy for successfully integrating the Scheme within the local landscape.

1.1.5 This document outlines the landscape, biodiversity impact avoidance measures that would be implemented prior to, and during, construction of the Scheme, as well as the habitat restoration, enhancement, management, and monitoring measures to be implemented once the Scheme is operational

1.2 Purpose of the Landscape and Ecology Management Plan

1.2.1 The purpose of this LEMP is to set out the measures proposed:

- To mitigate the effects of the Proposed Development on landscape and biodiversity features.
- To enhance the biodiversity, landscape, and green infrastructure value of the Proposed Development. and
- To secure compliance with relevant national and local planning policies.

1.2.2 The Proposed Development has been designed, as far as is practicable, to avoid or reduce effects on landscape and biodiversity features through siting of the Proposed Development components, including structures and new planting.

1.2.3 This LEMP is structured as follows:

- Section 1 sets out the context, responsibilities and arrangements for delivery of the plan.
- Section 2 describes the landscape and ecology strategy for the Proposed Development which incorporate proposals for landscape and biodiversity impact mitigation.
- Section 3 details the measures required for the effective management and maintenance of the landscape and biodiversity mitigation proposals.
- Section 4 describes post-construction monitoring to determine that the functions documented within this LEMP are being achieved and whether remedial action may be required.

1.3 Objectives

1.3.1 The overarching objectives of the LEMP are to:

- Integrate the Scheme into its landscape setting and avoid or minimise adverse landscape and biodiversity effects as far as practicable.

- Diversify ecological value of existing habitats,
- Guide the design and management of landscape and biodiversity components that respond to and enhance the character of the landscape, local distinctiveness and sense of place.

1.4 Responsibilities

1.4.1 The Applicant will establish the appropriate roles and responsibilities for site staff. An Environmental Clerk of Works (ECoW) will be responsible for ensuring construction of environmental mitigation measures are correctly implemented, monitored and maintained. These measures will include, but not limited to, vegetation clearance, species identification and exclusion (protected or otherwise).

1.4.2 The ECoW's role will cover activities that have the potential to impact biodiversity, for example by advising on methods and techniques to prevent or minimise light spill and the delivery of Toolbox Talks prior to the start of works that could potentially affect habitats and species.

1.4.3 The Contractor appointed by the Applicant to construct the Scheme will be responsible for establishing, managing and monitoring the implementation and establishment of landscape and ecological mitigation within the five-year establishment aftercare period. The Applicant will inspect and report on the success of establishment during this period. For more detail, please refer to Section 3.14.

1.4.4 Any long-term biodiversity monitoring and management requirements are specified in this document and will be carried out by the Applicant and/or a Contractor appointed by the Applicant.

1.5 Legislation and Policy

1.5.1 The relevant legislation and policies are summarised below.

1.5.2 Legislation

- Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Birds Directive).
- Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive).
- Regulation (EU) 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (IAS).
- The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
- Wildlife and Countryside Act (WCA) 1981 (as amended).
- Countryside & Rights of Way Act 2000 (as amended).
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended).
- The Environment Act 2021.
- Invasive Alien Species (Enforcement and Permitting) Order 2019.
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.
- Animal Welfare Act 2006.

1.5.3 Planning Policy

- National Planning Policy Framework (NPPF), 2024 updated 2025.
- Planning practice Guidance (PPG) 2021.
- London Plan. The Spatial Development Strategy for Greater London (March 2021).
- London Local Nature Recovery Strategy (2026).
- London Borough of Hillingdon. A Vision for 2026: Local Plan Part 1 Strategic Policies (2012).
- London Borough of Hillingdon. Local Plan Part 2: Development Management Policies (2020)

1.5.4 Other Guidance

- 25-year Environment Plan. 2018 updated 2023
- UK Biodiversity Framework, 2024.
- London Invasive Species Initiative (LSIS), 2011.
- British Standards for post development tree maintenance in BS 5837.
- Landscape Institute, Infrastructure Technical Guidance Note 04/20 (2020).

1.6 Biodiversity Net Gain

1.6.1 It is government policy in NPS EN-1 that development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design and that such opportunities in and around developments should be maximised where appropriate and, in the NPPF 2025, that planning decisions should maximise impacts on and provide net gain for biodiversity.

1.6.2 In addition, the Environment Act 2021 includes a mandate for at least 10% Biodiversity Net Gain (BNG) for projects.

1.6.3 The Applicant will provide at least 10% BNG as part of the Scheme.

1.6.4 Further information on BNG including an analysis of the BNG potential of the Scheme will be provided in the BNG Assessment Report.

1.7 Existing Landscape Features

1.7.1 The Site is not within a designated landscape and there are no Registered Parks or Gardens within the immediate area.

1.7.2 The Site is a greenfield site located north of Sipson Lane. The surrounding area contains a mix of residential and arable land.

1.7.3 Landscape features adjacent to the Site include Heathrow airport which the runway is 1,345m from the closest site boundary, to the south. And the M4 running directly along the east boundary which is separated by mature tree belts and scrubland. To the north of the site there is a Holiday Inn hotel, separated again by mature tree belts and scrubland. Beyond the hotel lies the M4 motorway with residential estates located on the other side.

1.7.4 The Site falls within the London Metropolitan Green Belt. Beyond the residential estates to the east of the site, arable fields left fallow are present to the north and west.

1.8 Existing Biodiversity Features

1.8.1 An initial extended UK Habitat classification survey and protected species appraisal of the Site was undertaken on 15th April and 15th May 2026 to inform a Preliminary Ecological Appraisal[2] (PEA) . Further surveys for bats are being undertaken between May and September 2026 (including bat emergence survey of a building to the north of the Site and night bat walkover surveys along the boundary of the Site). Full details of the existing biodiversity features can be found in the PEA and the Bat Survey Report that will be prepared once surveys are completed. A summary of the recorded baseline in relation to notable and/ or protected habitats and species is listed below:

1.8.2 There are two sites with an international designation for their biodiversity significance within 10km of the Site, both related to the South West London Waterbodies Special Protection Area and Ramsar, located 4.7km to the southwest of the Site. No local or national statutory designated sites were located within 2km of Site.

1.8.3 There are nine non-statutory designated sites within 2km of the Site, being the closest Stockley Road Rough Sites of Borough Importance 800m to the north of Site .

1.8.4 The Site consists of grassland, hardstanding, buildings, lines of trees and small areas of young plantation.

[2] AECOM (2026) Former Sipson Garden Centre. Preliminary Ecological Appraisal.

1.8.5 One building was assessed as having high suitability for roosting bats. Other buildings and trees were assessed as negligible for roosting bats. Low suitable fly-path lines and foraging habitats is present on Site for bats along the boundaries of the Site.

1.8.6 No badger setts or signs of badger were identified during the badger walkover survey although grassland within the Survey Area provides suitable habitat for both foraging and sett building.

1.8.7 There are habitats within the Site that are suitable for nesting birds including trees and buildings.

1.8.8 Reptile and great crested newt terrestrial habitat is present on Site, mainly along the boundaries of the Site. Due to the regular mowing regimen on Site, the likelihood of its presence is low.

1.8.9 Buddleia (*Buddleija davidii*) listed on the London Invasive Species Initiative (LISI) list is present to the south of the Site.

1.8.10 The habitats on Site such as grassland and lines of trees may be suitable to support the presence of notable mammals such as hedgehog (*Erinaceus europaeus*).

2. Landscape and Ecology Strategy

2.1 Landscape Strategy

2.1.1 Good design has been a key consideration from the outset. With reference to the PFG-ACM-00-XX-DR-LA-20100 (Appendix A) the following design mitigation has been embedded in the Scheme to minimise effects on the environment, including landscape character, visual amenity, biodiversity, and heritage assets.

2.1.2 The overall objective of the landscape design is to enhance the biodiversity of the green space onsite, create interesting pedestrian spaces onsite and screen the Scheme to better match the character of the landscape setting and avoid or minimise adverse landscape and visual effects as far as practicable, with the outer boundary reflects the rural character of this space. The design achieves this objective whilst maximising opportunities to deliver net gains in biodiversity.

2.2 Overview Landscape Design Principles

2.2.1 This section describes the landscape design principles which underpin the landscape design strategy and explains how they have been applied to the design of the Scheme.

2.2.2 The layout of the Proposed Development has been designed to minimise the loss of, and avoid significant impacts on, existing vegetation.

The landscape strategy seeks to:

- Provide a landscape in keeping with surrounded landscape character.
- Minimise the visual impact of the Scheme on the existing landscape by utilising and following existing features, including vegetation, where practicable.
- Create a visual buffer with trees and shrubs along the Site's boundary.
- Provide biodiversity through suitable habitat creation.
- Increase native and climate resilient species of trees and scrub planting.
- Create planting scheme which minimises risk of bird strike by reducing habitats attractive to birds which fly in formation, by using non-berry planting and proposed tree spacing.
- Maintain security fence by 2 metres each side for security purposes.
- Integrate water attenuation into the landscape via a number of basins with associated wet meadow planting within sustainable urban drainage features.
- Enhance urban greening by installing semi-intensive and extensive green roofs fed partly by rainwater irrigation

2.3 Ecology Strategy

2.3.1 This section describes the ecological design principles which underpin the outline design and explains how they have been applied to the design of the Proposed Development.

Impact Avoidance

2.3.2 The Scheme has been designed to avoid the temporary or permanent loss of habitats as far as is practicable and will be constructed predominantly within hard standing or grassland habitats.

- The impact avoidance measures outlined below will be implemented, as relevant and appropriate, prior to and during the construction phase of the Scheme, the purpose being to minimise the impact of works on landscape and biodiversity features and to achieve legislative compliance:
- Standard environmental best practice and mitigation will be implemented to ensure construction and operation Proposed Development complies with legislation.
- The impact avoidance approach allows for the majority of trees and existing vegetation to be retained to ensure that the connectivity of the existing green infrastructure network is maintained.

- Utilising motion detection security lighting to avoid permanent lighting and developing a sensitive lighting scheme ensuring inward distribution of light and avoiding light spill on to existing boundary features during the construction and operational phase.
- Ecological mitigation measures to be implemented on Site during the works by the selected construction contractor should follow a Precautionary Method of Works (PMoW) and overseen by an Ecological Clerk of Works (ECoW), where required.
- Preparing mitigation strategies for protected species and, where required, applying for species licences from Natural England.
- Undertaking vegetation clearance in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of breeding birds, roosting bats, reptiles, amphibians and other notable species that could be present.

Protected Species Licences

2.3.3 To date, no protected species licences are expected to be needed, but bat surveys on Site has not yet been finalised. If during the bat surveys or the works the need for one is identified, works will be stopped until any necessary protected species licences is applied for and obtained prior to continue any works that might result in offences under the relevant legislation.

Ecological Clerk of Works

2.3.4 The PMoW will detail the role of the ECoW, including delivery of toolbox talks, pre-commencement walkovers, supervision of clearance works, etc.

2.3.5 Relevant site staff would receive toolbox talks as necessary from the ECoW on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks would be repeated as necessary over the duration of the works.

3. Management Prescriptions

The landscape and biodiversity mitigation measures relating to the Proposed Development are set out below by planting and management type.

3.1 Reinstatement of Temporary Infrastructure

3.1.1 This section describes how new habitats illustrated on the Landscape General Arrangement Plan, provided in Appendix A will be implemented during construction and maintained during the first five years.

Long Term Maintenance Activities

3.1.2 For existing mature trees:

- Annual tree safety inspections and removal of dead, dying or diseased branches, or other remedial works as required in accordance with recommendations.
- Dead wood to be stacked in piles in agreed locations

3.1.3 For tree planting/ Woodland:

- Annual tree safety inspections and removal of dead, dying or diseased branches, or other remedial works as required in accordance with recommendations.
- Dead wood to be stacked in piles in agreed locations

3.1.4 Shrub and hedge planting:

- Maintenance of shrub/ hedge in weed free condition through combined techniques of herbicides, cultivation and mulching.
- Pruning to promote bushy, healthy growth.
- Thinning out selected species where appropriate.
- Trimming back of growth overhanging adjacent footpaths. Removal of all clippings from site.

3.1.5 Fences and gates:

- Repair and replacement of fencing and gates where necessary. Repaired sections to match adjacent fence specification and colour.

3.2 Habitat Creation

3.2.1 This section describes how new habitats illustrated on the Landscape General Arrangement Plan, provided in Appendix A will be implemented during construction and maintained during the first five years.

3.2.2 Overview

3.2.3 The proposed landscape types illustrated on the Landscape General Arrangement Plan, provided Appendix A are:

- Proposed Trees
- Proposed PV Understorey Mix
- Proposed Shrub Mix
- Proposed Bulb Mixes
- Proposed Green Roofs Mixes – Extensive and Semi-Intensive
- Wildflower Meadow Mixes – Wetland and general mixes
- Native Hedgerows

3.3 Proposed Trees

3.3.1 Proposed trees are scattered throughout the Site in the proposed meadow, wet meadow attenuation basins and shrub planting to provide a naturalistic setting and enhance biodiversity.

3.3.2 Denser tree planting is located along the north and west boundaries of the Site within the buffer shrub understorey planting to provide screening and to enhance existing broadleaf woodland belts.

Implementation

3.3.3 The following steps and working methods will be used:

- Area identified for planting will be clearly marked out and agreed with the Project Landscape Architect in advance.
- Planting will take place in advance of construction or in the first available planting season.
- Plants will be inspected by the Project Landscape Architect at the nursery and on delivery to the Site prior to planting.
- Planting will be carried out during the planting season (November to March) and will be timed to avoid periods of frost, drought, or other inclement weather, as far as practicable.
- All plants will be planted as per the PFG-ACM-00-XX-DR-LA-20100
- Root ball planting will be protected by single staked weld mesh guard.
- The type of guard selected appropriate to species and growth habit.
- Trees will be staked to protect against wind-rock.

Establishment maintenance

3.3.4 The aim of establishment maintenance will be to support the early stages of growth to encourage bushy growth and the canopy to close, reducing future management requirements to address competition from weeds. The trees will be maintained in line the recommendations of a Project Landscape Architect and Arboriculturist.

3.3.5 Establishment maintenance will be based on the following principles and prescriptions:

- Maintain a 1 metre weed-free circle around trees through mechanical control, avoiding damage to the tree.
- Water new plants to minimise failures in periods of drought.
- Remove litter, rubbish, and debris from planted areas throughout the year.
- Re-firm soil around roots to ensure plants are supported and upright in Spring.
- Inspect and adjust guards, ties and stakes in Spring and Autumn and after strong wind events.
- Check and record failed or defective plants in September annually.
- Replace failed or defective plants with matching species of the same size during the next planting season after failure.
- Undertake quarterly check of plants to record their growth and condition.
- All trees inside the security fence to be limbed up to 2.4m in height.

Long term management

3.3.6 The long-term management of trees will focus on the following interventions:

- All trees will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and the Site requirements.
- At end of year 5 guards, ties and stakes will be removed from plants.
- Between years 7 and 10, planted areas will be reviewed and thinned out as necessary to remove any poor or weak specimens, which will facilitate other specimens to flourish and provide space for trees and shrubs to further establish.
- Arisings from thinning or other management functions will be retained on the Site in the form of log piles, for the benefit for fungi, lichen, and invertebrates, refer to section 5.10 for further information in the creation of log piles.
- Re-firm soil around roots to ensure trees are supported and remain upright in Spring.
- Inspect and adjust guards, ties and stakes in Spring and Autumn and after strong wind events.

- Inspect and top-up mulch as required.
- Undertake any formative pruning if required (all trees inside the security fence to be limbed up to 2.4m in height.
- Check and record failed or defective trees in September annually.
- Replace failed or defective trees with matching species of the same size during the next planting season after failure.
- Undertake quarterly check of trees to record their growth and condition.

Table 1 Proposed Trees

Name	Common Name	Height (mm)	Form	Girth (cm)	Clear Stem (cm)	Root
Alnus glutinosa	Common Alder	3000 - 4000	Well balanced Crown	14-16	200+	RB
Amelanchier lamarckii	Snowy Mespilus	3000 - 4000	Multi-stemmed	N/A	N/A	C
Betula utilis jacquemontii	Himalayan Birch	1500-2000	Multi-stemmed	N/A	N/A	C
Carpinus betulus	Hornbeam	1500-2000	Well balanced Crown	14-16	200+	RB
Cornus flordia	Flowering Dogwood	1500-2000	Multi-stemmed	N/A	N/A	C
Populus tremula	Aspen	1500-2000	Well balanced Crown	12-14	200+	C
Magnolia stellata	Star Magnolia	1500-2000	Multi-stemmed	N/A	N/A	C
Pinus sylvestris	Scots Pine	1500-2000	Well balanced Crown	14-16	200+	C
Sorbus aria	Whitebeam	3000 - 4000	Well balanced Crown	14-16	200+	RB
Taxus baccata	Yew	3000 - 4000	Well balanced Crown	14-16	200+	C
Tilia cordata	Common Lime	3000 - 4000	Well balanced Crown	14-16	200+	RB

3.4 Proposed PV Understorey Mix

The PV understorey mix will be a shaded wildflower mix, implemented under the PV panels to increase biodiversity and enhance the existing and proposed landscape of the Site. The EM1F contains a wide range of species and will be established across the Site.

Implementation

3.4.1 The following steps and working methods will be undertaken:

- Seed mixture shall be of Local Provenance and in accordance with the planting schedules.
- Seed shall be shown during March to May and October.
- Seed must be surface sown: broadcast by machine or broadcast by hand. Do not incorporate or cover the seed to any depth but roll to firm it in and achieve good soil/seed contact.

Establishment maintenance

3.4.2 Establishment maintenance to be carried out by specialists, view Appendix to

- Removal of windblown tree seedlings
- An automated irrigation system operated by sensor will be remotely calibrated to ensure the correct moisture levels are maintained in the green wall. These moisture levels will be manually checked monthly;.
- Visually check the health of plants monthly;
- Weed removal by hand monthly;

- Replace any dead or failing plants with the same species.
- Visually inspect for insect infestations that monopolise the green roof, remove as soon as discovered.

Long-term management

The long-term management will be undertaken to maintain a diverse species-rich grass, wildflowers and sedum in the long-term.

3.4.3 The long-term management of the green roofs will focus on the following interventions:

- All green roofs require a minimum of two inspections per year for general maintenance of planting, irrigation and fire breaks.
- Control of undesirable species and injurious weeds, will be undertaken in the early to late summer each year to prevent colonisation and domination of the Biosolar green roof.

Maintenance carried out quarterly, removal of leaf litter, remove weeds, cut wildflowers to a height of 50-70mm in the Spring and Autumn, apply slow release organic fertiliser for green roofs in the Spring if needed.

Table 2 Proposed Biosolar Green Roof Mix – 680m^2

150-300mm depth substrate the green roof mix is intended to survive the windy conditions of the roof top terrace with the shade conditions brought about by the solar panels.

Name	Common Name	Height (cm)	Density	Mix %
Achillea millefolium	Common Yarrow	10-15	2	3
Achillea millefolium 'Red Beauty'	Yarrow *'Red Beauty'*	10-15	2	3
Achillea millefolium Roseum 'Cerise Queen'	Yarrow *'Cerise Queen'*	10-15	2	4
Anthyllis vulneraria	Kidney vetch	10-15	3	10
Centaurea cyanus	Cornflower	10-15	4	10
Echium vulgare	Viper's bugloss	10-15	4	10
Galium verum	Lady's bedstraw	10-15	5	10
Iberis sempervirens	Perennial candytuft	10-15	5	10
Lotus corniculatus	Bird's foot trefoil	10-15	5	10
Prunella vulgaris	Selfheal	10-15	5	10
Sanguisorba minor	Salad burnet	10-15	3	10
Silene latifolia	White champion	10-15	3	10
Trifolium pratense	Red clover	10-15	11	10

3.5 Proposed Shrub Mix

3.5.1 The shrub mix will be implemented for screening, habitat creation and visual amenity for site users.

Implementation

3.5.2 The following steps and working methods will be used:

- Areas identified for planting will be clearly marked out and agreed with the ECoW in advance.
- Planting will take place in the first available planting season post construction depending on the planting phase.

- Plants will be inspected by the ECoW at the nursery and on delivery to site prior to planting.
- Planting will be carried out during the planting season (November to March) and will be timed to avoid periods of frost, drought, or other inclement weather, as far as practicable.
- To be planted in single species groups of 3, 5 or 7.
- Planting layouts will appear to be random and will avoid straight lines and regular geometric patterns.

Establishment Maintenance

3.5.3 The aim of establishment maintenance will be to support the early stages of growth to encourage busy growth, reducing future management requirements to address competition from weeds. The shrubs will be maintained in line the recommendations of a ECoW.

3.5.4 Establishment maintenance will be based on the following principles and outline prescriptions:

- Apply 100g/m2 compound, slow release fertiliser to each plant at spring in every two years.
- Water new plants to minimise failures in periods of drought.
- Remove litter, rubbish, and debris from planted areas throughout the year.
- Re-firm soil around roots to ensure plants are supported and upright in Spring.
- Inspect and adjust guards in Spring and Autumn and after strong wind events.
- Check and record failed or defective plants in September annually.
- Replace failed or defective plants with matching species of the same size during the next planting season after failure.
- Undertake quarterly check of plants to record their growth and condition.
- All shrubs inside the security fence to be pruned up to 0.9m in height
- Remove weeds, in March, June and October each year. Avoid damage to the shrub.

Long Term Management

3.5.5 The long-term management of the shrub mix will focus on the following interventions:

- All plants will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and site requirements.
- Between years 7 and 10, planted areas will be reviewed and thinned out as necessary to remove any poor or weak specimens, which will facilitate other specimens to flourish

Table 3 Proposed Shrub and Perennial Mix – 1906m^2

Name	Common Name	Height (mm)	Density	Container	Root	% Mix
Betula nana	Dwarf birch	600-900	1	3L	C	5
Buxus sempervirens	Common box	200-300	2	2L	C	10
Calluna vulgaris 'Robert Chapman'	Heather 'Robert Chapman'	200-300	3	2L	C	10
Cytisus scoparius	Common broom	300-400	3	2L	C	10
Erica cinerea	Bell Heather	200-300	3	2L	C	15
Erica vagans	Cornish heath	200-300	3	2L	C	10
Genista tinctoria	Dyer's greenweed	200-300	3	3L	C	10
Salix lapponum	Downy willow	300-400	3	3L	C	10
Salix repens	Creeping Willow	200-300	3	2L	C	10
Santolina chamaecyparissus	Lavender cotton	200-300	4	3L	C	10

3.6 Proposed Bulb Planting Mix

Implementation

3.6.1 Bulb planting will act as interest around the car and bicycle parking.

- Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
- Backfilling: Finely broken soil. Lightly firm to existing ground level.
- Naturalised planting existing grassed areas:
    - Scattering: Random. Plant bulbs where they fall.
    - Planting: Neatly remove a plug of turf and replace after planting.

Establishment maintenance

3.6.2 Establishment maintenance is shown in the Appendix maintenance table 'REF:04 BULB PLANTING MIX'.

- After flowering: Do not cut bulbs, allow bulbs to die down naturally.

Long-term management

3.6.3 The long-term management of the bulbs will focus on the following interventions:

- Cut flower heads of bulbs when flowers are dead.
- During growing season, water as necessary.

Table 4 Proposed Autumn Bulb Mix - 1010m^2

Name	Common Name	Density	Mix %
Allium sphaerocephalon	Round-headed leek	30	20
Colchiucum autumnale 'Major'	Meadow saffron	15	20
Cyclamen herafolium	Ivy-leaved cyclamen	11	20
Scilia autumnalis	Autumn squill	15	20
Sternbergia lutea	Winter daffodil	15	20

Table 5 Proposed Spring Bulb Mix – 1010m^2

Name	Common Name	Density	Mix %
Allium ursinum	Ramsons	30	20
Crocus vernus	Spring crocus	25	15
Fritillaria meleagris	Snake's head fritillary	11	20
Hyacinthoides non-scipta	Bluebell	15	15
Muscari neglectum	Common grape hyacinth	15	15
Ornithogalum nutans	Drooping star of Bethlehem	20	15

3.7 Proposed Green Roof Mix

3.7.1 Green roofs will increase biodiversity and urban greening.

Implementation

3.7.2 During installation of the green roof and during extended periods of drought, green roofs will be watered every 6 weeks. Irrigation systems should be in line with BS 7562-3:1995 “Planning, design and installation of irrigation schemes - Part 3: Guide to irrigation water requirements.” Remote monitoring systems can be used to observe any maintenance needed

Establishment maintenance

3.7.3 Establishment maintenance to be carried out by specialists, view Appendix to

- Removal of windblown tree seedlings
- An automated irrigation system operated by sensor will be remotely calibrated to ensure the correct moisture levels are maintained in the green wall. These moisture levels will be manually checked monthly;.
- Visually check the health of plants monthly;
- Weed removal by hand monthly;
- Replace any dead or failing plants with the same species.
- Visually inspect for insect infestations that monopolise the green roof, remove as soon as discovered.

Long-term management

3.7.4 The long-term management of the green roofs will focus on the following interventions:

- All green roofs require a minimum of two inspections per year for general maintenance of planting, irrigation and fire breaks.
- Maintenance carried out quarterly, removal of leaf litter, remove weeds, cut wildflowers to a height of 50-70mm in the Spring and Autumn, apply slow release organic fertiliser for green roofs in the Spring if needed.

Table 6 Proposed Semi-intensive Green Roof Mix – 1111m^2

Semi-intensive green roof 150-300mm deep substrate with varying substrate depths to maximise biodiversity. Bauder GREEN Flora 5 Seed Mix (urban) will be used to plant the semi-intensive green roof, an area of 1111m^2 at a sowing rate of 5g/m^3 with 38 species – 28 wildflowers, 6 annuals, 2 grasses and 2 sedum.

3.8 Wildflower Mix

3.8.1 Two meadow types will be established across the Site; Species Rich Grass and Wildflower Mix and SUDS Wet Wildflower Mix. The EM3 Special General Purpose Meadow Mixture contains a wide range of species and will be established across the Site. EM8 Meadow Mixture for Wetlands will be used in attenuation basins and includes flood tolerant species.

Implementation

3.8.2 The following steps and working methods will be undertaken:

- All clods will be broken up and alien material (such as plastics and metals) above 50mm in size will be removed.
- Cultivate existing subsoil soil to a depth of 100mm and strip off 100mm deep of topsoil if it is too rich in nutrients and add 150mm deep of free drain subsoil/ low nutrient free drain topsoil.
- Seed mixture shall be of Local Provenance and in accordance with the planting schedules.
- Seed shall be sown during March to May and October.
- Seed must be surface sown: broadcast by machine or broadcast by hand (do not drill). Do not incorporate or cover the seed to any depth but roll to firm it in and achieve good soil/seed contact.

Establishment maintenance

3.8.3 The aim of establishment maintenance will be to encourage development of a diverse sward of species. Establishment maintenance will include the following principles and outline prescriptions:

- Apply 100g/m2 compound, slow release fertiliser to each plant at spring in every two years.
- In appropriate growing conditions (warm soils and adequate rainfall) the grass will require its first cut around 6-10 weeks from sowing, by which time it will have reached around 10cm height.
- First cut: 1 no. cut 50mm high in October if sown in March to May. Leave 1/3 uncut to provide habitats for fauna.
- If remedial action is required, the Project Landscape Architect will agree action with suitably qualified ecologist and areas identified will be re-seeded.

Long-term management

3.8.4 The long-term management will be undertaken to maintain a diverse species-rich grass in the long-term.

3.8.5 Measures for General Purpose Meadow will focus on a regime of:

- Yearly cuts as follows, cut to 50mm mid-August/early October every year after the wildflowers have set seed, remove the hay. Leave 1/3 uncut to provide habitats for fauna.
- Rake the meadow thoroughly after mowing to remove the dense thatch of dead plant material which accumulates around the base of grasses.
- Control of undesirable species and injurious weeds, will be undertaken in the early to late summer each year to prevent colonisation and domination of the grassland.
- Hand pulling of ragwort to be undertaken in the summer of each year as required. and

3.8.6 Measures for Wetland Meadow will focus on a regime of:

- Cut 150mm high in late August/September every year after the wildflowers have set seed.
- Rake the meadow thoroughly after mowing to remove the dense thatch of dead plant material which accumulates around the base of grasses.
- Control of undesirable species and injurious weeds, will be undertaken in the early to late summer each year to prevent colonisation and domination of the grassland.
- Hand pulling of ragwort to be undertaken in the summer of each year as required.

Table 7 Proposed Species Rich Grass and Wildflowers Mix – 2005m^2

Mix Name		**Rate**
Emorsgate EM3		
Wildflowers		4g/m2
Botanical Name	Common Name	% Mix
Achillea millefolium	Yarrow	0.50%
Agrimonia eupatoria	Agrimony	0.70%
Agrostemma githago	Common Corn-Cockle	1.20%
Anthoxanthum odoratum	Sweet Vernal Grass	0.50%
Anthyllis vulneraria	Kidney Vetch	0.50%
Borago officinalis	Borage Starflower	0.50%
Centaurea cyanus	Cornflower	0.50%
Centaurea nigra	Common Knapweed	2.00%
Centaurea scabiosa	Greater Knapweed	1.00%
Digitalis purpurea	Foxglove	0.50%
Dipsacus fullonum	Wild Teasel	0.50%
Echium vulgare	Viper's-bugloss	0.80%
Festuca rubra 'Rubra'	Red fescue 'Rubra'	0.20%

Festuca rubra litoralis	Red fescue	0.80%
Helianthus annuus	Common Sunflower	0.30%
Geranium pratense	Meadow Crane's-bill	0.40%
Knautia arvensis	Field Scabious	0.10%
Leucanthemum vulgare	Oxeye Daisy	1.00%
Lotus corniculatus	Birdsfoot Trefoil	0.10%
Malva moschata	Musk Mallow	1.00%
Lythrum salicaria	Purple-loosetrife	0.40%
Onobrychis viciifolia	Sainfoin	0.20%
Origanum vulgare	Oregano	0.20%
Papaver rhoeas	Common Poppy	1.40%
Rhinathus minor	Yellow Rattle	0.60%
Salvia verbenaca	Wild Sage	1.00%
Scabiosa columbaria	Small Scabious	0.40%
Silene dioica 'Clifford Moor'	Red Campion 'Clifford Moor'	0.80%
Trifolium pratense	Red Clover	1.00%
Trifolium repend	White Clover	0.20%
Trisetum flavescens	Yellow Oatgrass	0.20%
Grasses 80%		
Agrostis capillaris	Common Bent	8.00%
Cynosurus cristatus	Crested Dogstail	28.00%
Festuca rubra 'Commutata'	Red Fescue 'Commutata'	24.00%

Table 8 Proposed SUDS Wet Wildflower Mix – 1232m^2

Mix Name		**Rate**
Emorsgate EM8		
		4g/m2
Botanical Name	Common Name	% Mix
Achillea millefolium	Yarrow	0.70%
Agrimonia eupatoria	Agrimony	0.60%
Agrostis capillaris	Common Bent	8.00%
Centaurea nigra	Common Knapweed	3.20%
Cynosurus cristatus	Crested Dogstail	28.00%
Festuca rubra 'Commutata'	Red Fescue 'Commutata'	24.00%
Festuca rubra 'Rubra'	Red fescue 'Rubra'	0.20%
Festuca rubra litoralis	Red fescue	0.80%
Filipendula ulmaria	Meadowsweet	1.40%
Galium mollugo	Bedstraw	0.40%
Galium verum	Lady's Bedstraw	2.00%
Leucanthemum vulgare	Oxeye Daisy	1.20%
Lycopus europaeus	Gypsywort	0.10%
Plantago lancelata	Ribwort Plantain	2.00%
Prunella vulgaris	Selfheal	0.80%
Ranunculus acris	Meadow Buttercup	1.20%

Rhinanthus minor	Yellow Rattle	0.80%
Rumex acetosa	Common Sorrel	0.60%
Silene dioica	Red campion	0.30%
Silene flos-cuculi	Ragged Robin	0.50%
Stachys palustris	Marsh woundwort	0.20%
Trisetum flavescens	Ruddy clover	0.20%
Verbascum nigrum	Dark mullein	4.00%

Table 9 Proposed Pond Edge Planting Mix – 420m^2

Mix Name		**Rate**
Emorsgate EP1		
		4g/m2
Wildflowers 20%		
Botanical Name	Common Name	% Mix
Angelica sylvestris	Wild Angelica	0.20%
Betonica officinalis	Betony	0.90%
Centaurea nigra	Common Knapweed	2.40%
Dipsacus fullonum	Wild Teasel	0.60%
Eupatorium cannabinum	*Hemp Agrimony*	0.20%
Filipendula ulmaria	Meadowsweet	2.00%
Galium album	Hedge Bedstraw	1.00%
Geum rivale	Water Avens	0.60%
Iris pseudacorus	Yellow Iris	4.00%
Lathyrus pratensis	Meadow Vetchling	0.40%
Lotus pedunculatus	Greater Birdsfoot Trefoil	0.10%
Lythrum salicaria	Purple Loosestrife	1.00%
Oenanthe pimpinelloides	Corky-fruited Water-dropwort	0.60%
Prunella vulgaris	Selfheal	2.00%
Ranunculus acris	Meadow Buttercup	1.00%
Silene dioica	Red Campion	0.80%
Silene flos-cuculi	Ragged Robin	1.20%
Vicia cracca	Tufted Vetch	1.00%
Grasses 80%		
Agrostis capillaris	Common Bent	8.00%
Carex echinata	Star Sedge (w)	4.80%
Cynosurus cristatus	Crested Dogstail	36.00%
Festuca rubra	Red Fescue	20.00%
Phleum bertolonii	Smaller Cat's-tail (w)	1.60%
Poa pratensis	Smooth-stalked Meadow-grass	6.40%

3.9 Hedgerow

Implementation

3.9.1 To be implemented surrounding the Site boundary.

- Topsoil to depth of 450mm to be cultivated prior to planting.
- Planting: in trenches to take full spread of roots. Set out plants evenly.
- 75mm compacted to 50mm medium grade bark mulch.

Establishment maintenance

3.9.2 The aim of establishment maintenance will be to encourage development of a full hedge to 1200mm high with a balanced variety of species as per the schedule to provide screening and a visual barrier for the site. Establishment maintenance will include the following principles and outline prescriptions:

- Prune plants to remove any dead, damaged or diseased shoots and to create desired hedge form in spring and autumn
- Undertake replacement of dead / diseased hedge stock of same size / species as originally planted. Replacement planting only to be undertaken once cause of death has been identified. (Annually during November).
- Collect litter and foreign debris from planted areas and remove from site. Fallen leaves and twigs to remain in-situ unless otherwise instructed (Quarterly).
- Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.
- Hedges will be trimmed as necessary to maintain the shape and density at a height of 1200mm

Refer to table in Appendix maintenance tables ‘REF 10: HEDGEROWS’ for maintenance for the first 5 years

Long-term management

3.9.3 Hedges will be trimmed as necessary to maintain the shape and density at a height of 1200mm.

- Keep planted areas in a weed free condition and treat emerging weeds appropriately throughout the growing season.
- Keep mulch layer in hedge trench topped up at 75mm mulch depth
- Check for pest and disease attack throughout the growing season and treat by hand or chemical control
- Check for root firmness in spring and autumn
- Prune plants to remove any dead, damaged or diseased shoots and to create desired hedge form in spring and autumn

Table 10 Proposed Native Hedgerow Mix – 2026m^2

Native hedgerow mix with no berry plants, 7 plants per linear metre

Name	Common Name	Height (cm)	Root	Mix %
Cytisus scoparius	Broom	100	BR	30
Corylus avellana	Hazel	100	BR	20
Populus alba	White poplar – male only	100	BR	20
Ilex aquifolium	Holly – male only	100	BR	30

3.10 Bat Boxes

3.10.1 Four bat boxes will be installed on trees along the northern, southern and western edge of the Site providing roosting opportunities within the Proposed Development, contributing to enhancing biodiversity for bats. It is proposed to install the below boxes (or similar):

- 2x boxes Schwegler 1FD
- 2x bat boxes Schwegler 2F

3.10.2 A range of commercially available bat boxes are available for installing on trees. It is recommended that Woodcrete material boxes are installed in preference to wood, as these boxes are aesthetically superior, will have a longer lifespan and require less maintenance.

Implementation

3.10.3 The following steps and working methods will be undertaken:

- Four bat boxes will be installed on semi-mature trees as per drawing PFG-ACM-00-XX-DR-LA-20100 landscape General Arrangement.
- The bat boxes will be located as follows:
  - avoiding prevailing wind/rain.
  - facing southern orientations (for daytime warming).
  - as high as possible (at least three metres above ground level to reduce chances of predation and disturbance) but allow access for maintenance.
  - away from artificial lighting. Where lighting is necessary, it will be directional, using down-lighting to avoid excessive light-spill onto bat boxes.
- The box will be fixed correctly by an aluminium (tree-friendly) long nail (85 mm) at an angle of about 45°. The nail is tapped in half-way and the box is hung from the nail by the wire hanger, with the box resting against the tree;
- The entrance of the boxes should not be obstructed and allow a fly path for bats entering; and
- Bat boxes can be installed at any time after the construction works.

Establishment maintenance and Long-term management

3.10.4 Establishment maintenance and long-term management to be as follows:

- Fixings will be checked annually;
- The integrity of the boxes, damages or degradation will be checked annually.
- Replacement of damaged elements will be done as soon as damaged is detected and if box is unoccupied. A check by a bat licensed ecologist might be needed in advance to avoid disturbance of roosting bats.
- Replace any damaged boxes.
- Replace any damaged or degraded fixings.
- The success of the use of the bat boxes by bats can be monitored. Monitoring of the use of the bat box by bats is recommended every two years. Bat emergence / re-entry surveys can only be conducted between May and August. This could be undertaken by a local bat group. Surveyors would seek to observe bats leaving or returning to the box during the period. Monitoring that requires the disturbance of a bat box (i.e. inspection) will be undertaken by a bat license registered ecologist. The results of the surveys will be held on file and submitted to the Local Environmental Records Centre (or can be submitted online via a recording platform e.g. iNaturalist https://www.inaturalist.org) or iRecord (https://www.brc.ac.uk/irecord/); and
- Any management action undertaken will be recorded on a logbook.

Table 11 Bat Box Further Information

Legal considerations	Roosting bats are protected from disturbance under UK and EU legislation. Only bat licensed ecologists will inspect bat boxes. if any boxes need to be removed and, or repaired, this must be done immediately after

	the box is checked by a licensed bat ecologist as there is a possibility of bats being present. Bat observation / listening surveys do not need to be undertaken by bat licensed ecologists.
Box types	Schwegler 2F Schwegler 1FD
Further Information	Further bat box information is available from a range of sources, including: Bat Conservation Trust (undated).Bat Boxes Bat Box Information Pack. Mitchell-Jones, A.J, and McLeish, A.P. Ed (2004). 3rd Edition Bat Workers' Manual. JNCC Reason, P.F. and Wray, S. (2023). Bat Mitigation Guidelines.
Example Suppliers	Bat boxes are available commercially from a range of suppliers including: Wildcare http://www.wildcareshop.com/ NHBS http://www.nhbs.com/ The Nestbox Company http://www.nestbox.co.uk/ CJ Wildlife http://www.birdfood.co.uk/ctrl/node:140;page:16;/bats

3.11 Bird Boxes

3.11.1 Six bird boxes will be installed on trees along the northern, southern and western edge of the Site providing nesting opportunities for birds within the Proposed Development, contributing to enhancing biodiversity for this group. Two different types of boxes will be installed to increase diversity with different diameter for the entrance hole to increase diversity of species using them:

- 3x Schwegler 1B with hole entrance of 32mm
- 3x Schwegler 2M with hole entrance of 26mm

3.11.2 A range of commercially available bird boxes are available for installing on trees. It is recommended that woodcrete material boxes are installed in preference to wood, as these boxes are aesthetically superior, will have a longer lifespan and require less maintenance.

Implementation

3.11.3 The following steps and working methods will be undertaken:

- Six bird boxes will be installed on semi-mature trees as per drawing 20250704 landscape General Arrangement;
- The bird boxes will be:
  - located facing north and east as preferred or in shade locations;
  - sheltered from the prevailing wind and rain. The front of boxes will be angled vertically or slightly downwards so that the rain cannot enter through the hole;
  - as high as possible (at least three meters above ground level to reduce chances of predation and disturbance) but allow access for maintenance; and
  - situated away from locations which are externally lit at night.
- The box will be fixed correctly by an aluminium (tree-friendly) long nail (85 mm) at an angle of about 45°. The nail is tapped in half-way and the box is hung from the nail by the wire hanger, with the box resting against the tree;
- The entrance of the boxes should not be obstructed and should have a clear fly path; and
- Bird boxes can be installed at any time after the construction works, preferably in Autumn, after the breeding season and before the start of the breeding season (generally February).

Establishment maintenance and Long-term management

3.11.4 Establishment maintenance and long-term management to be as follows:

- Unoccupied bird boxes will be cleaned at the end of the nesting bird season in autumn (October or November). This would entail the removal of nesting material, unhatched eggs or other debris inside the box and use of boiling water to reduce spread of infections. Boxes should not be disturbed during the breeding bird season March to August;
- Fixings will be checked annually ;
- The integrity of the boxes, damages or degradation will be checked annually;
- Replacement of damaged elements will be done as soon as damaged is detected and when boxes are unoccupied..

- Replace any damaged boxes by similar box or box for the same target group..
- Replace any damaged or degraded fixings..
- The success of the use of the boxes by birds can be monitored every two years. Surveyors would seek to observe early in the morning birds leaving or returning to the box on a day within the breeding bird season (March to August). Monitoring that requires the disturbance of a birdbox (i.e. inspection) should avoid the nesting season for birds. The results of the surveys will be held on file and submitted to the Local Environmental Records Centre (or can be submitted online via a recording platform e.g. iNaturalist https://www.inaturalist.org) or iRecord (https://www.brc.ac.uk/irecord/)..
- Any management action undertaken will be recorded on a logbook.

Table 12 Bird Boxes Further Information

Legal considerations	Birds and their nests are protected by the Wildlife and Countryside Act 1981 (as amended). Bird boxes used by birds cannot be cleaned, removed or replaced until it is not used by nesting birds and their chicks are fledged.
Box types	Schwegler 1B Schwegler 2M
Further Information	Further bird box installation information is available for a range of sources, including: RSPB All about nest boxes
Example Suppliers	Bird boxes are available commercially from a wide range of suppliers including: NHBS http://www.nhbs.com/ Wildcare http://www.wildcare.co.uk/ The Nestbox Company http://www.nestbox.co.uk/ CJ Wildlife http://www.birdfood.co.uk/

3.12 Creation of Log Piles

3.12.1 Four log piles will be created in areas of existing woodland on Site that will provide shelter for small mammals such as hedgehogs as well as reptiles, amphibians and invertebrates.

3.12.2 Deadwood should be utilized as part of the construction of the log piles on Site. These log piles should be positioned, if possible, in a location that can provide sunny and shaded areas, to increase the range of microhabitats created on Site.

Implementation

3.12.3 The following steps and working methods will be undertaken:

- At least four log piles will be installed within the existing woodland habitats present on Site.
- Logs of at least 1m in length will be stacked on top of each other to create a pile of approximately 50cm in height. Logs at the bottom of the pile should be of at least 30cm thick, with smaller diameter at the top.
- Trees to be felled, or limbs to be pruned in other areas of the Site could be used to create the log piles, if they are no invasive species.
- Where possible, log piles should be placed in partly shady partly sunny areas. Shady areas will reduce drying out of the wood and encourage fungi which in turn will be good for certain insects and other invertebrates.
- Drilling holes with varied hole size would increase diversity of species using the log pile as it creates nesting sites for bees, wasps and beetles as well as other invertebrates and encouraging wood-feeding invertebrates.
- Gaps at the bottom will be allowed to provide access to small mammals, reptiles and amphibians.
- Vegetation will be allowed to grow around the pile to provide cover.
- Installation of additional log piles at any time of the year.

Establishment maintenance and Long-term management

3.12.4 Establishment maintenance long-term management to be as follows:

- Annual monitoring of the structure and stability of the log pile.

  Creation of a new log pile when the initial log piles are found degraded or every 5-10 years, to provide continuity of habitat for the deadwood species attracted. This can be done by topping up the log pile.

Table 13 Log Piles Further Information

Legal considerations	None expected
Further Information	https://www.shgroup.org.uk/media/1023120/biodiversity-toolkit-008-_final-_anna_08022021.pdf https://ptes.org/wp-content/uploads/2019/06/Build-a-log-pile-for-stag-beetles.pdf https://cdn.buglife.org.uk/2019/07/Creating-Green-Roofs-for-Invertebrates_Best-practice-guidance.pdf

3.13 Five Year Programme for the Habitat Features

3.13.1 The five-year work programme outlined in Tables 15 and 16 indicates the actions to be taken each year following project completion.

3.13.2 Ongoing management will be required after the five-year period. it is recommended this management plan is used as a basis for the on-going management of the habitats and features on Site. The plan considers 'Year 1' to be formation of a habitat or feature e.g. installation of boxes. Annual establishment management from years 2 – 5 will be broadly similar each year. Management undertaken in years 2 – 5 can be used to guide ongoing future management beyond the scope of this management plan.

Table 14 Five Year Management Plan for the Ecology Enhancements

Ecological Feature	Action	Timing	Year 1	Year 2	Year 3	Year 4	Year 5	Subsequent Years
Bat Boxes	Installation of bat boxes	Any time after the construction works, but preferably in Autumn	✓					None, unless replacement required
	Monitor the use of the boxes by roosting bats	March to August inclusive		✓		✓		Biannually
	Maintenance (external inspection of box and fixings for damages or degradation), cleaning and replacement (will required a bat licensed ecologist check in advance).	In Autumn (October-November)	✓	✓	✓	✓	✓	Annual inspection and maintenance. Ad hoc replacement
Bird Boxes	Installation of nest boxes	Any time after the construction works	✓					None
	Monitor the use of the boxes by nesting birds	May to August inclusive		✓		✓		Biannually
	Maintenance (inspection of box and fixings for damages or degradation), cleaning and replacement.	In Autumn (October-November)	✓	✓	✓	✓	✓	Annual inspection and maintenance. Ad hoc replacement
Log piles	Creation of log piles within green infrastructure	Any time after the construction works	✓					Every 5-10 years
	Maintenance and monitoring of the structure and stability	Anytime	✓	✓	✓	✓	✓	Annually
Whole site	Keep a record of wildlife on Site and management actions and submit to the biological record centre or iNaturalist or iRecord	Any time	✓	✓	✓	✓	✓	Annually

4. Planting maintenance during establishment (0-5 years)

- This section gives the time period and tasks needed to carry out the establishment of the planting onsite through tables for each planting typology. The maintenance is indicated using the colours below, see the key. This should be used as guidance for maintenance scheduling throughout the year.

Landscape Management Programme Key

Blue box indicates that no maintenance actions apply	
Green colour box indicates that maintenance actions apply.	
Further to the maintenance schedules, day rates should be provided for unforeseeable works such as: • Excessive litter clearance • Clearance of fly-tipped items • Removal of fallen tree(s) / limb(s) • Grass cutting • Watering	

Appendix A : Five Year Management Plan for the Landscape Typologies proposed on site

Ref 01: Proposed Trees

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Establishment of the new trees will be monitored by a qualified arboriculturist. Any dead or defective planting stock would be replaced at the first appropriate opportunity for a period of 5 years after planting and monitored every 5 years or as instructed by the Client.																				
Check / adjust tree stakes / underground guying systems and repair / adjust / replace as necessary to ensure satisfactory tree growth / establishment. (Quarterly).																				

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Check strimmer and tree shelter guards for damage / displacement and adjust as necessary – report any mowing / strimming damage (Monthly during growing season).																				
Maintain a 1m diameter weed-free circle around trees by mechanical control. (Quarterly)																				
Provide bark mulch top-up to ensure minimum 75mm depth x 1m diameter bark mulch collar. (Annually in April).																				

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Undertake replacement tree planting of dead / diseased tree(s) with stock of same size / species as originally specified / planted. Replacement planting only to be undertaken once cause of death has been identified. (Annually during November-February).																				

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Undertake selective crown lifting of trees as an on-going process to the proportions of one third trunk to two thirds canopy and/or crown lift as necessary to maintain a 5.2m clearance of the roads and a 3m clearance of pedestrian paths. Ensure tree canopies do not obstruct street lighting and road signs etc. (Annually November – February).																				

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Sever / remove Ivy growth from trunks of new trees where health / amenity of individual trees is of greater importance than wildlife / ecology. (Ivy to remain in the latter instance) carried out operation at end of maintenance period. (Annually November – February).																				
Report any damaged / diseased / dead trees. (Quarterly).																				
Remove tree stakes/ties from site after tree planting has become established at Year 5 (January-February).																				

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.																				
If tree has reached sufficient size, undertake survey for presence of nesting birds prior to undertaking any pruning work (other than those required by Health and Safety).	GENERAL NOTE																			

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Pruning of trees only to be undertaken by qualified arboricultural contractor where necessary to tidy wounds / damaged limbs or to promote natural shape/form and in accordance with BS3998:2010 and good arboricultural practice. The leader shoot must not be cut.	GENERAL NOTE																			
In general, site won chippings from felled on-site vegetation is a preferred mulch method than imported material.	GENERAL NOTE																			

REF:01 PROPOSED TREES																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Long term management to Year 30:	From year five onwards, guards, ties and stakes will be removed from plants. On a five year cycle, planted areas will be reviewed and thinned out as necessary to remove any poor or weak specimens, which will help other specimens to flourish and provide space for trees and shrubs to further establish. New trees to be monitored every five years to check on general health and establishment by a qualified arboriculturalist. The understorey of the trees will be coppiced in stages to minimise disturbance to wildlife, as required, as part of good woodland management at 5 year cycles. Management of bramble will be carried out to prevent encroachment into adjacent areas. Arisings from thinning or other woodland management functions will be retained on site in the form of dedicated brash and wood piles or wind-rows, for the benefit for fungi, lichen, and invertebrates. (locations to be agreed with project Ecologist and Client).																			

Ref 02: Proposed PV understorey mix

REF:02 PROPOSED PV UNDERSTOREY MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Selective cutting to be undertaken by strimming: Establishment Year 1: Cut once in October to 70-100mm height. From Year 2: cut once per year in October to 50 mm height. Leave 1/3 uncut area each year on a rotational basis to allow over wintering habitat.																				
Allow some bramble to establish through self-seeding but manage to prevent becoming invasive and dominant (Quarterly).																				

REF:02 PROPOSED PV UNDERSTOREY MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods and/or as required June-September.																				
Apply 100g/m2 compound, slow release fertiliser to each plant at spring in every two years.																				
In appropriate growing conditions (warm soils and adequate rainfall) the grass will require its first cut around 6-10 weeks from sowing, by which time it will have reached around 10cm height.																				
All litter / debris will be removed from the site immediately prior to cutting.	GENERAL NOTE																			

REF:02 PROPOSED PV UNDERSTOREY MIX																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Cutting regime to maximise reptile and invertebrate habitat opportunities by leaving cuttings in place for a period of 2-3 days then raked up and removed.	GENERAL NOTE																			
Cutting will be undertaken by hand with a strimmer to avoid damage to plants in this area.	GENERAL NOTE																			
If remedial action is required, the Project Landscape Architect will agree action with suitably qualified ecologist and areas identified will be re-seeded.	GENERAL NOTE																			

REF:02 PROPOSED PV UNDERSTOREY MIX																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
The cutting operation shall include cutting around all obstacles such as trees, plants, posts and signs. Areas around obstacles shall be cut to the same height as specified for the surrounding area.	GENERAL NOTE																			
Retain some cuttings to be placed discretely to the side/back of woodland area to maintain habitat for hibernating reptiles.	GENERAL NOTE																			
All arisings otherwise will be removed and disposed of responsibly to a licensed green waste.	GENERAL NOTE																			
Presence of giant hogweed and Japanese knotweed should be reported the client and a method agreed for its control and removal.	GENERAL NOTE																			

REF:02 PROPOSED PV UNDERSTOREY MIX																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Fertilisers are not required.	GENERAL NOTE																			
Herbicide treatment within woodland areas not required.	GENERAL NOTE																			
Ground flora is to be encouraged to naturally regenerate.	GENERAL NOTE																			
Long term management to Year 30:	By Year 5 the tree and shrub planting will have established and thereon will develop a maturing canopy. The long-term maintenance will be to encourage natural regeneration with minimal maintenance.																			

Ref 03: Proposed shrub mix

REF:03 PROPOSED SHRUB MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Monitor every 3 months/quarterly; any dead or dying stock to be replaced for a period instructed by the Local Authority.																				
Check plant shelter guards and stakes for damage / displacement and adjust as necessary – report any damage / loss (Quarterly during growing season).																				
Re-firm plants affected by frost heave / wind-rock. (Quarterly).																				
Apply 100g/m2 compound, slow release fertiliser to each plant at spring in every two years																				

REF:03 PROPOSED SHRUB MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Remove weeds, in March June and October each year. Avoid damage to the shrub.																				
Inspect and adjust guards in Spring and Autumn and after strong wind events.																				
Undertake replacement of dead / diseased trees stock of same size / species as originally planted. Replacement planting only to be undertaken once cause of death has been identified. (Annually during November).																				

REF:03 PROPOSED SHRUB MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.																				
Check and record failed or defective plants in September annually.																				
Undertake thinning out of trees to promote natural development ensuring a balance of species is maintained within the mix. (After minimum 5 years growth and thereafter on a 5 year cycle).																				

REF:03 PROPOSED SHRUB MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Recycled tree guards are to be removed at end of year 3 and returned to manufacturer for recycling.																				
Ground flora is to be encouraged to naturally regenerate.	GENERAL NOTE																			

Ref 04: Bulb planting mix

REF:04 BULB PLANTING MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Re-firm plants affected by frost heave / wind-rock. (Quarterly).																				
Before flowering: Do not cut bulbs, allow bulbs to die down naturally.																				
Collect litter and foreign debris from planted areas and remove from site. Fallen leaves and twigs to remain in-situ unless otherwise instructed (Quarterly).																				

REF:04 BULB PLANTING MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.																				
Cut flower heads of bulbs when flowers are dead.																				
During periods of drought throughout growing season, water as necessary																				
Ground flora is to be encouraged to naturally regenerate.	GENERAL NOTE																			

Ref 05: Species rich grass and wildflowers

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
During establishment period (Year 1), each area of grassland to be visually inspected on a quarterly basis.																				
Remove all litter, rubbish and foreign debris and remove from site. (Immediately prior to cutting).																				

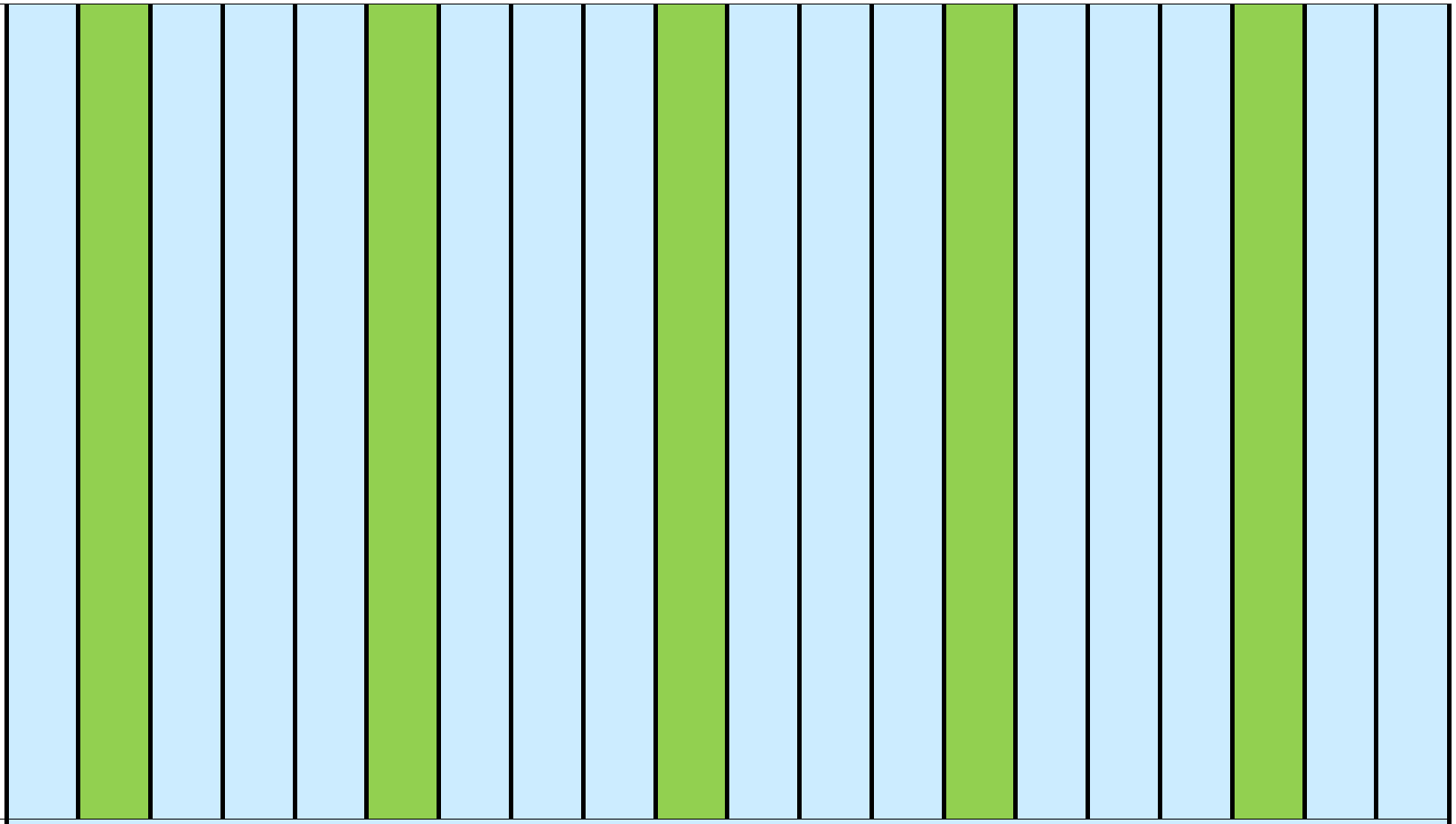
REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Control of undesirable species (e.g. arable weeds) and injurious weeds will be undertaken to prevent colonisation and domination of the grassland through the use of additional cuts during the growing season or if essential, a selective herbicide (where appropriate and managed in accordance with locality e.g. applying appropriate buffers to watercourses or grasslands managed for invertebrates).																				

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Grass cutting to be undertaken with mechanical mower of suitable size for the area to be cut and available access and/or strimmed: Apply 100g/m2 compound, slow release fertiliser to each plant at spring in every two years. From Year 2 cut once per year in October to 50 mm height. Maintain a height NOT EXCEEDING 300mm WITHIN VISIBILITY SPLAYS at road junctions requiring additional cuts throughout the year as required. Leave 1/3 uncut area each year on a rotational basis to allow over wintering habitat.																				

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Yearly cuts as follows, cut to 75mm mid-August/early October every year after the wildflowers have set seed, remove the hay.																				
Wetland Meadow: Cut 150mm high in late August/September every year after the wildflowers have set seed.																				
In appropriate growing conditions (warm soils and adequate rainfall) the grass will require its first cut around 6-10 weeks from sowing, by which time it will have reached around 10cm height.																				

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods and/or as required June-September.																				
First cut: 1 no. cut 70-100mm high in mid-September if sown in March to May. If sown in October first cut shall be in March or April next year.																				

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Adjacent scrub can be left to grow naturally but should be thinned out using a strimmer or brush cutter where and when the scrub canopy overshadows the wildflower grassland or where shows potential to encroach onto the maintenance access route. Selective removal of the most dominant competitive scrub species should be undertaken to inhibit this encroachment. Dead or dying scrub/trees to be cut down for safety, and wood to be retained in windrows in existing broad-leaved immature woodland, to provide habitat for invertebrates. (Annually November-February).																				

Botanical surveys will be carried out in late spring to confirm that the establishment of the grassland mosaic has been successful in achieving their intended aims and objectives. Spot checks will be undertaken at locations within each grassland area by a suitably qualified ecologist during years 1, 3 and 5, the purpose being to record plant species, their distribution, and the overall condition of the grassland. Other relevant indicators relating to the sward that may require remedial action during the contract period or in the future will also be recorded. If remedial action is required, the ECoW will agree action with a suitably qualified ecologist and areas identified will be re-seeded.	
Cut arisings are to be left in situ for 2-3 days, then raked up and removed; this process is designed to help with seed dispersal from the cut arisings.	GENERAL NOTE

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Cuttings will be removed to appropriate storage areas on site (to be agreed with project Ecologist and Client).	GENERAL NOTE																			
Report any instances of damage, compaction or excessive wear and submit proposals for reinstatement / repair. (Immediately when damage is identified). Areas where establishment has failed is to be re-sown, watered and aerated as required.	GENERAL NOTE																			
Report any instances of damage, compaction or excessive wear and submit proposals for reinstatement / repair (immediately when damage is identified).	GENERAL NOTE																			

REF:05 SPECIES RICH GRASS AND WILDFLOWERS																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Fertilisers are not required.	GENERAL NOTE																			

Ref 06: Proposed Green Roof

REF:06. PROPOSED GREEN ROOF																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
All green roofs require a minimum of two inspections per year for general maintenance of planting, irrigation and fire breaks.																				
Maintenance carried out quarterly, during the spring and autumn, removal of leaf litter, remove weeds, cut wildflowers to a height of 50-70mm, apply slow release organic fertiliser in the spring if needed.																				

REF:06. PROPOSED GREEN ROOF																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Undertake replacement of dead / diseased trees stock of same size / species as originally planted. Replacement planting only to be undertaken once cause of death has been identified. (Annually during November).																				
Watering: To be done by irrigation, check these lines are functioning and clean any blockages. Remote monitoring systems can be used to observe any maintenance needed																				

REF:06. PROPOSED GREEN ROOF																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Maximise diversity, some species can become competitive and take over the green roof and green facade, especially under extreme weather conditions and in flat intensive roofs. Maintenance requires that weed seedlings are removed to allow the biodiverse species to thrive.																				
Information on irrigation lines, structure will be provided to maintenance workers in addition to the H&S file as part of CDM regulations to reduce the risk of conflicts and disruptions to systems during maintenance work.	GENERAL NOTE																			

REF:06. PROPOSED GREEN ROOF																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Intensive green roofs will be required to maintained more regularly in line with a ground level green space, monthly	GENERAL NOTE																			
Teams carrying out green roof maintenance should be the only ones accessing the extensive green roof. Their safety must be ensured through both/either a 1.1m minimum upstand around the perimeter of the roof measured from the top of the substrate surface or fall arrest/restraint systems.	GENERAL NOTE																			

Ref 07: Hedgerows

REF:07. HEDGEROWS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Topsoil to depth of 450mm to be cultivated prior to planting.																				
75mm compacted to 50mm medium grade bark mulch																				
Prune plants to remove any dead, damaged or diseased shoots and to create desired hedge form in spring and autumn																				

REF:07. HEDGEROWS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Undertake replacement of dead / diseased hedge stock of same size / species as originally planted. Replacement planting only to be undertaken once cause of death has been identified. (Annually during November).																				

REF:07. HEDGEROWS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Collect litter and foreign debris from planted areas and remove from site. Fallen leaves and twigs to remain in-situ unless otherwise instructed (Quarterly).																				
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.																				

REF:07. HEDGEROWS																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Undertake thinning out of trees to promote natural development ensuring a balance of species is maintained within the mix. (After minimum 5 years growth and thereafter on a 5 year cycle).																				
Hedges will be trimmed as necessary to maintain the shape and density at a height of 1200mm.	GENERAL NOTE																			

Ref 08: SUDS Wet Wildflower Mix

REF:08 SUDS WET WILDFLOWER MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
During establishment period (Year 1), each area of grassland to be visually inspected on a quarterly (3 monthly) basis to monitor its uptake.																				
Remove all litter, rubbish and foreign debris and remove from site. (Immediately prior to cutting).																				
Grass cutting to be undertaken with mechanical mower of suitable size for the area to be cut and available access and/or strimmer. Includes cutting on 1:3 gradient slopes.																				

Grass cutting to be undertaken with mechanical mower of suitable size for the area to be cut and available access and/or strimmer. For flood compensation areas / basins: Establishment (Year 1): Mow once in October to 50mm height. From Year 2 cut once per year in October to 50 mm height. Leave 1/3 uncut each winter, on rotation, to provide overwintering habitat for invertebrates, small mammals, amphibians and reptiles etc.																					
Watering: Full depth of topsoil. As required to ensure successful establishment and continued thriving. Allow for 8 watering visits during dry periods as required June-September.																					

REF:08 SUDS WET WILDFLOWER MIX																				
PERIOD:	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Cut arisings are to be left in situ for 2-3 days, then raked up and removed; this process is designed to help with seed dispersal from the cut arisings.	GENERAL NOTE																			
Arisings can be left in discrete locations for the benefit of over wintering habitat for wildlife.	GENERAL NOTE																			
Report any instances of damage, compaction or excessive wear and submit proposals for reinstatement / repair (immediately when damage is identified).	GENERAL NOTE																			
Fertilisers are not required.	GENERAL NOTE																			

REF:08 SUDS WET WILDFLOWER MIX																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Herbicide not to be used within or near watercourses.	GENERAL NOTE																			
Maintain seeded basins reasonably free from excessive thatch with larger weeds such as ragwort and thistle to be removed by hand-weeding; small patches of moss are acceptable and only to be removed if excessive; allow for repair damage caused by trampling, abrasion or scalping. Edges should typically be neat and well defined, in clean straight lines or smooth flowing curves.	GENERAL NOTE																			

REF:08 SUDS WET WILDFLOWER MIX																				
PERIOD:	**YEAR 1**				**YEAR 2**				**YEAR 3**				**YEAR 4**				**YEAR 5**			
ACTION:	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec	Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Long term management to Year 30:	Riparian vegetation needs little management and as such no long-term management is proposed. However, there will be annual checks for the first five years following planting to ensure that the desired species have established, to undertake any remedial planting, and to identify and, if necessary, eradicate any invasive species that colonise. For example, Himalayan balsam (Impatiens glandulifera) and other invasive species under the Wildlife and Countryside Act (WCA) Schedule 9 invasive species would require measures to be introduced to prevent its spread.																			
NOTE:	**CONTACTORS AND MAINTENANCE PERSONEL TO ADHERE TO ENVIRONMENT AGENCY ALERTS AND TO BE MADE AWARE AS AND WHEN THE RISK OF FLOODING INCREASES. ENVIRONMENT AGENCY ALERT DETAILS TO BE INCLUDED IN THE HEALTH AND SAFETY RECORDS / FILES / METHOD STATEMENT FOR THE SITE MAINTENANCE STRATEGY. IF CONTRACTORS OR MAINTENANCE PERSONEL ARE ALERTED OF AN INCREASED FLOOD RISK, THEY ARE TO EVACUATE THE SITE AND REMAIN AWAY UNTIL THE RISK OF FLOODING IS NO MORE.**																			

Appendix B : Planting maintenance for the 5-20 Year Management Plan

Table 16 5-20 Year Management Plan for the Landscape Enhancements

5. Pre – and Post Construction Monitoring

5.1.1 Monitoring is required in order to determine that the functions documented within this LEMP are being achieved and whether any remedial management action may be required. The baseline against which the effects of the actions resulting from the monitoring can be compared against, comprise the pre-construction baseline data.

5.1.2 Post-construction monitoring for flora, birds (breeding and non-breeding) and, bats (bat box roosting and activity survey) will be undertaken in the respective seasons, with annual to bi-annual visits post-construction. This is likely to involve similar or scaled-down methods to the baseline surveys to enable cross-comparison with baseline data, to assess any changes in biodiversity as a result of the Proposed Development.

5.1.3 Results from the post-construction monitoring will feed into the management plan and if required management may be amended accordingly based on this monitoring