

Vastern Road

O453

Landscape Maintenance & Management Plan

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Landscape Maintenance & Management Plan

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1. Introduction

This document has been prepared on behalf of Berkeley in support of the proposed Vastern Road application.

This Plan was developed following detailed design development, and with a mind to ensuring the long-term success of the landscape scheme. In addition, the management and maintenance plan will guide future maintenance tasks safeguarding the proposed ecological and biodiversity enhancements.

1.1 Purpose Of The Document

This Landscape Maintenance and Management Plan (LMMP) has been prepared by Fira to provide a long-term framework for the management and maintenance of external spaces through Vastern Road. The Plan sets out management responsibilities, management and maintenance objectives, and specific management prescriptions for landscape components during the establishment period. Beyond the establishment period, this Plan will serve as a guide that can be updated for the future maintenance and management of the site in the long-term, which will be subject to the longer term management responsibilities and any future transfer of the estate to other parties as detailed in Sections 2.1 and 2.5, and in accordance with the approved Estate Management Plan.

The overarching aim of this LMMP is to provide a framework that will ensure the continuing successful management of the 'Estate', through which landscape and ecological elements can be maintained and developed to contribute to the quality of the area and to ensure that the original concept and design intent is realised. Once implemented, this plan will help to maximise the overall quality and appearance of Vastern Road, its amenity value and residents' enjoyment of it.

1.2 Structure of the Document

This plan is divided into the following sections:

- **Section 2** provides an overview of the general responsibilities and objectives associated with external spaces, including maintenance operations and ongoing management. Finally, it describes how the plan must be reviewed, monitored and updated, including legal considerations that will need to be taken into account.
- **Section 3** provides a more detailed breakdown of management prescriptions for each soft landscape typology. For each typology, element or area, management objectives describe the original design intent, including the anticipated appearance once successfully established. Instructions for maintenance requirements during the first 5 years are provided along with recommendations for ongoing long-term maintenance. Targets are given for achieving successful establishment, with details of how the establishment must be monitored. Guidance is also provided for actions to be taken to remedy instances of establishment targets not being met.
- **Section 4** describes the management prescriptions for each hard landscape typology or element. As with Section 3, the first 5 years' maintenance requirements are given along with recommendations for ongoing long-term management and monitoring. However, due to the differing nature of hard landscape elements, details of management objectives and establishment targets are not included.

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1.3 Associated Documents

The Landscape Maintenance & Management Plan has been developed as part of a suite of information and must be read in conjunction with the following submitted drawings and documents.

- Landscape General Arrangement Sheet 01_O453-FIR10-XX-XX-DR-L-810-1001
- Landscape General Arrangement Sheet 02_O453-FIR10-XX-XX-DR-L-810-1002
- Landscape General Arrangement Sheet 03_O453-FIR10-XX-XX-DR-L-810-1003
- Landscape General Arrangement Sheet 04_O453-FIR10-XX-XX-DR-L-810-1004
- Landscape General Arrangement Sheet 05_O453-FIR10-XX-XX-DR-L-810-1005
- Landscape General Arrangement Sheet 06_O453-FIR10-XX-XX-DR-L-810-1006
- Landscape Planting Plan Sheet 01_O453-FIR10-XX-XX-DR-L-810-5001
- Landscape Planting Plan Sheet 02_O453-FIR10-XX-XX-DR-L-810-5002
- Landscape Planting Plan Sheet 03_O453-FIR10-XX-XX-DR-L-810-5003
- Landscape Planting Plan Sheet 04_O453-FIR10-XX-XX-DR-L-810-5004
- Landscape Planting Plan Sheet 05_O453-FIR10-XX-XX-DR-L-810-5005
- Landscape Planting Plan Sheet 06_O453-FIR10-XX-XX-DR-L-810-5006
- Q31 Tree Schedule - Semi Mature_O453-FIR10-XX-XX-SC-L-810-0001
- Q31 Shrub Schedule_O453-FIR10-XX-XX-SC-L-810-0002
- Q31 Tree Schedule - Nursery Stock_O453-FIR10-XX-XX-SC-L-810-0003
- Q31 Bulb Schedule_O453-FIR10-XX-XX-SC-L-810-0004
- Q28 Topsoil Specification_O453-FIR10-XX-XX-SPC-L-810-0001
- Q30 Seeding/Turfing_O453_FIR10-XX-XX-SPC-L-810-0002
- Q31 External Planting_O453_FIR10-XX-XX-SPC-L-810-0003
- Q35 Landscape Maintenance_O453-FIR10-XX-XX-SPC-L-810-0004

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2. Landscape Maintenance & Management Plan

2.1 Management Responsibilities

The maintenance operations outlined in this plan will run for a minimum of 5 years commencing on the date of certification of Practical Completion. For the first 24 months (subject to contractual agreement) after certification of Practical Completion, maintenance will be undertaken by the Landscape Contractor responsible for the implementation of these works. After certification of Final Completion, maintenance for the following 3 years will be undertaken by the appointed Landscape Contractor or the appointed Estate Management Company.

This maintenance period will run concurrently with the Defects Liability Period. During this time the Landscape Contractor responsible for implementing the works will be liable for any defects in accordance with the landscape specification.

The defects liability periods (subject to contractual agreement) will be as follows:

- Ornamental /amenity planting, hedgerow planting, grassland and ecological specific features: 24 months.
- Extra heavy standard trees and sizes below: 24 months.
- Semi-mature trees: 24 months.
- Further 12 months for any required replacements.

After the 5 year establishment period, maintenance must be (if not already) transferred to an Estate Management Company. The Management Company must manage all ongoing long-term maintenance operations associated with these works following the establishment maintenance period.

2.2 Relevant Standards

The following list includes a number of key standards to be adhered to when undertaking maintenance operations, however this is not exhaustive.

- BS 3998: Tree Work - Recommendations.
- BS 5837: Trees in relation to design, demolition and construction.
- BS 7370-1: Grounds maintenance. Recommendations for establishing and managing grounds.
- BS 7370-2: Grounds maintenance. Recommendations for the maintenance of hard areas.
- BS 7370-3: Grounds maintenance. Recommendations for maintenance of turf (other than sports turf).
- BS 7370-4: Grounds maintenance. Recommendations for maintenance of soft landscape.
- BS 7370-5: Grounds maintenance. Recommendations for the maintenance of water areas.
- BS 8516: Recommendations for tree safety inspection.
- BS 8545: Trees from nursery to independence in the landscape.

2.3 Key Management Objectives

The following key objectives for maintenance and management set out the approach to maintenance operations throughout the site. Objectives specific to different landscape features have been detailed in sections 3 & 4.

Whilst the creation of optimum planting conditions combined with high standards of implementation are essential to give

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properly specified plant material the best start in life, the establishment and future success of the landscape will be dictated by the quality and frequency of the subsequent maintenance and management it receives.

The following key objectives have been informed directly by best practice guidance to ensure a robust regime will be adopted for the site both during the establishment period and thereafter.

Key objectives for maintenance and management include:

- To facilitate an efficient and sustainable landscape management and maintenance regime throughout the lifetime of the development, that avoids intensive long-term maintenance requirements.
- To balance the objectives of ecology, hydrology, recreation and amenity functions.
- To provide a high quality external environment for all site users.
- To ensure that the landscape develops in a manner commensurate with the original design intentions.
- To accommodate appropriate public use of the site, by promoting a management regime which is appropriate to the site's role.
- To ensure the successful establishment and continued growth through to maturity of the trees and other planting identified on the Planting Plan drawings.
- To secure a long-term future for the new trees and grasslands with particular emphasis upon achieving visual amenity and, where native & wildlife friendly planting is proposed, the enhancement of its ecological potential.
- To manage the landscape in a manner which ensures the safety of site users, such as maintaining visibility splays, maintaining good surveillance, removal of dead, dying or diseased trees and plants.
- To be flexible and adaptable to changing needs of the landscape through its establishment and long-term management.
- To ensure suitable habitat and connective corridors (either continuous or 'stepping-stones') across the site to allow natural dispersal and exchange of wildlife, both flora and fauna.

2.4 Amenity Management Objectives

- To ensure all new tree planting is given the necessary care required in order to establish successfully, promote healthy growth and form, through to independence and maturity in the landscape.
- New hedgerows and native shrub planting shall receive the appropriate maintenance to achieve good establishment and that a dense and bushy form will be created and maintained to maximise amenity and ecological value.
- All ornamental and amenity planting to be established to provide a dense cover to minimise weeds and maintain a neat appearance. Species must be managed to ensure continued successful flowering each year, providing year round interest and amenity value.
- Maintain the whole of the grassed and planted areas in a manner which ensures the establishment of healthy and vigorous plants and a close textured, weed-free sward, which creates a tidy appearance. Keep all shrub beds and tree planting areas weeded and cleared of litter.
- Establish a regular pattern of maintenance operations throughout the season and according to best practice and including ecological considerations.
- Ensure all areas are regularly fertilised with appropriate fertilisers. Wildflower areas are not to be fertilised.
- Water if required to provide optimum conditions for early establishment of all planting and seeding.

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Following the establishment phase, water during prolonged dry periods, particularly in spring, with water focused onto roots of trees and shrubs, particularly semi-mature specimens.

- Allow for extra maintenance in any periods of unusually prolific grass and weed growth.
- Ensure that the height of amenity grass areas shall not exceed 35mm except in prolonged periods of dry weather, when the mown height must be raised to 50mm.
- Correct any defects which become apparent during the earliest suitable weather conditions / planting season.
- Check all tree ties, stakes and other accessories, and remove when appropriate (typically after 3-5 years).
- Ensure all hard surfaces and footways are swept and kept weed & litter free.
- The Maintenance Contractor shall employ skilled supervisors and operatives who deliver a high-quality level of workmanship.
- Where necessary, employ specialists, such as arboriculturists, where specialist workmanship and knowledge are required.
- Special attention must be given to the maintenance of all newly planted schemes during their most sensitive phase, which is for several years following planting. Particular focus must be placed on watering, tree pruning etc. during this period.
- Where there is an issue which may affect the initial design or a change in the overall design intent, the Maintenance Contractor must seek instruction from the Project Landscape Architect before any work begins on site.

2.5 Management Review, Monitoring and Updates

It is essential that the maintenance and management plan is reviewed regularly so that the key objectives and design intent for the site is understood by all involved in the management of the site, who are ultimately critical in accomplishing the long-term management objectives.

It is intended that this Landscape Maintenance and Management Plan must form the basis of a long-term management plan for the site, which must be updated as and when needed to respond to site specific issues that only become apparent through the day to day management on site, and to remedy any management and maintenance practices which have failed to achieve the desired outcome. It is only through this monitoring, review and update process that the long-term management will be successful in accomplishing the design aspiration. Through this process it is intended that the management plan will eventually become a reference manual for the long-term maintenance and management of all green spaces and ecology features across the site.

Monitoring the success of establishment needs to take place on a regular basis ranging from month to month to year to year, in order that management practices can be tailored appropriately and to ensure establishment and long-term success can be achieved. Monitoring will take place to assess the success of particular areas or items against targets that are set out with Section 3 of this document. These targets give time frames for when particular successful establishment must be achieved. If targets are not being met then measures will need to be taken to try and remedy the situation through the adaptation of management practices.

Section 3 also provides some guidance detailing potential remediation solutions that could be explored, however the list is not exhaustive as it is not possible to foresee all situations or issues that may arise through the duration of the establishment period or indeed the long-term. It is therefore critical that issues are discussed with all involved in the maintenance and management process (e.g. Developer, Contractor, Estate Management Company and Landscape, Arboricultural & Ecological consultants) and any methods adopted on site as remedy must be recorded within an updated management plan as future reference for the duration of the development.

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Alongside updates to respond to monitoring of targets, the plan must be reviewed on an annual basis to make sure any maintenance and management changes identified have been recorded. Beyond this a review must take place every 3 years as a minimum to ensure any updates to current good practice guidance can be captured and incorporated within this management plan in order for it to remain relevant, appropriate and sustainable in the long-term.

2.6 Legal Considerations

In consultation with the ecologist the following legal considerations must be reviewed.

Badgers

Badgers and their setts are protected under the following legislation:

- Protection of Badgers Act 1992.
- Wild Mammals (Protection Act) 1996.
- Wildlife and Countryside Act 1981 (as amended) (Schedule 6) (strengthened through the Countryside and Rights of Way Act 2000)

This suite of legislation protects badgers from cruel ill-treatment; wilful killing, injuring and taking; disturbance whilst occupying setts and intentional infliction of unnecessary suffering. Their setts are also protected from intentional or reckless damage, obstruction and destruction and having dogs sent down. A license from Natural England is required to disturb or close badger setts.

Bats

Bats are protected under European (Conservation of Habitats and Species Regulations 2017 – Schedule 2) and UK (Wildlife and Countryside Act 1981 (as amended): Schedule 5, Section (9)(4b, 4c) and (5)) wildlife legislation. Some species are also a Priority Species (Natural Environment and Rural Communities Act (2006) – Section 40, listed in accordance with Section 41). A license from Natural England is required to disturb or destroy a bat roost site.

Nesting Birds

All birds are protected from harm while building a nest or using a nest. The nesting season is typically taken to be March to August inclusive, however, some species will nest all year round, such as barn owl and pigeon.

Some species are afforded additional protection and penalties are more severe. Management will be carried out outside of the main bird breeding season (March to September) where feasible. Where works are required within this time frame, a qualified Ecologist will carry out a check to ensure no nesting birds are present or would be disturbed by works. 5m Buffer zones of no disturbance can be set up to protect nests. Within these areas no cutting can take place. No works to take place in the buffer zone until a qualified Ecologist has confirmed that the nests are no longer active.

Reptiles

While licenses are not required for works in relation to reptiles they are protected against harm. The reptile species occurring on Site are common and widespread species (grass snake and common lizard) and are protected under the Wildlife and Countryside Act 1981 (as amended) (Section 9 (1)) against intentional killing and injury. Where it is predictable that reptiles could be killed or injured by activities such as site clearance, this may legally constitute intentional killing or injuring. Appropriate measures must be deployed such as directional cutting and timings etc. for grassland management in line with best practice methods of working. To protect reptiles, grassland is to only be cut during conditions when reptiles are active and able to move away from machinery (air temperatures above 9 °C). Cut from the centre outwards to encourage movement of reptiles into adjacent suitable habitat and avoid trapping reptiles in the path of machinery.

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Japanese Knotweed

Japanese knotweed is classed as a controlled plant under the Wildlife and Countryside Act 1981 section 114 (2) (WCA 1981). It is not illegal to have Japanese knotweed on a property, but it is against the law to cause or allow the plant to spread in the wild. A landowner will not be seen to be breaking the law until Japanese knotweed from his land spreads into another's property or onto public land. As this plant is such a fast grower, it is usually only a matter of time before this happens. It is however a legal requirement to prevent Japanese knotweed spreading off site, into the wild, or onto neighbouring land.

If it is discovered treatment to eradicate Japanese Knotweed must be sought from a specialist contractor immediately

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3. Management Prescriptions - Soft Landscape

The following section sets out management prescriptions specific to the proposed soft landscape treatments and features included within the Vastern Road site. Each sub section below describes the unique management objectives, establishment protocols and maintenance schedules relevant to that landscape component.

- 3.1 Tree Planting
- 3.2 Single Species Hedgerows
- 3.3 Amenity Shrub Planting
- 3.4 Ornamental Planting
- 3.5 Native Shrub & Foraging Planting
- 3.6 Amenity Grassland
- 3.7 Species Rich Grassland
- 3.8 Bulb Planting

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3.1 Tree Planting

Management Objectives

Landmark / Large Feature Trees

Trees will be larger growing species, planted as single specimens or as pairs in key locations, such as entrance gateways and within prominent public spaces. The location of landmark and large feature trees will provide them with sufficient space to grow to their full potential without significant future intervention. Maintenance will most likely be limited to light, formative pruning to maintain an attractive canopy shape. Individual specimens will display more natural variation in form whilst trees planted in pairs may require additional pruning to maintain visually balanced canopies. Clear stems will be maintained at a minimum of 2m and no low branches must be allowed to overhang the carriageway, footpaths or interfere with visibility splays. Resident requests to prune trees which interfere with views will be resisted. Tree pruning must only be carried out for critical arboricultural or health and safety reasons.

Street Trees

Trees will be of a regular form, exhibiting a bushy and dense canopy. All trees must have a fairly uniform appearance, being similar in size and shape to adjacent trees of the same species or cultivar. All trees, with the exception of multi-stems, must have a clear stem of 2m. Clear stems must be maintained at this height and selective branch reduction must be carried out where trees are being clipped by passing vehicles. When trees have reached a mature size, crown lifting to maintain a clear carriageway may be carried out. In such instances, the footpath side of the canopy must also be raised to match, ensuring a balanced form. No low branches must be allowed to overhang the carriageway, footpaths or interfere with visibility splays. Resident requests to prune trees which interfere with views will be resisted. Tree pruning must only be carried out for critical arboricultural or health and safety reasons.

Parkland Trees

Trees will be larger growing specimens, having a natural shape and form. Trees will mostly be species rather than clonal cultivars, so canopies will likely be more open, varied and asymmetrical. Form of the same species growing adjacent to each other will most likely naturally vary in shape and size. Clear stems do not need to be maintained unless the trees location requires this, such as next to footpaths, cycleways etc. Where space allows, species with a natural tendency to droop their branches down to the ground must be allowed. Resident requests to prune trees which interfere with views will be resisted. Tree pruning must only be carried out for critical arboricultural or health and safety reasons.

Tree water requirements

Size of Tree	Volume of water required per week
12-14cm girth	25 litres
14-16cm girth	35 litres
16-20cm girth	80 litres
20-25cm girth	100 litres
25-40cm girth	120 litres
40-60cm girth	150 litres
60-80cm girth	200 litres

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80-100cm girth	250 litres
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Establishment Maintenance (first 5 years after planting)

To ensure survival and optimal development these trees will be subject to intensive establishment maintenance.

- Trees adjacent to footpath cycleways are to have no branches that might impede the movement of cyclists or pedestrians.
- Trees in grass will have a circular area of bark mulch and be maintained weed free and topped up regularly to keep a 75mm layer. Trees within planting must have all weeds around the trunk removed by hand or application of herbicide.
- Watering to ensure moisture levels are maintained appropriate for optimum growth.
- Inspect and ensure tree pit drainage is working; tree pits must never be waterlogged at any time of year. Ensure positive systems are not blocked. Where soakaway drainage is provided to base of pits, the level of water must be checked via the inspection pipe at each maintenance visit. Any pits subject to sitting water will require pumping out via the inspection pipe.
- Application of a slow-release fertiliser in spring around the base of all trees to ensure soil fertility is maintained.
- The removal of any vandalised, unhealthy or dead specimens as soon as possible and replacement with trees of the same size to those adjacent where practicable, during the next available planting season.
- Inspection, adjustment and maintenance of anchors, stakes and ties. Stakes and ties to be removed when instructed and when the tree(s) has established successfully.
- Removal of any items that have been attached to trees, such as posters, signage, cable ties or bike locks/chain etc
- Re-firming of trees after strong winds, frost heave or other disturbances.
- Inspect trees for dead, dying or diseased wood. Prune back to living wood, good growing points or main branches, do not leave snags, cut back to branch collars avoiding any flush cutting. Avoid making spring cuts which could cause bleeding.
- Remove suckers / epicormic growth.
- Formatively prune if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments or narrow V crotches and to favour a strong single leader.
- Crown lift if needed to maintain clearance of circulation routes and visibility splays.
- Any deadwood must be used to create small log piles to provide habitat in areas inaccessible or out of view of the public.
- Inspect trees for signs of pest and disease, in cases of serious attack employ appropriate control measures.
- Check trees where bat or bird boxes have been installed, check for damage and any boxes that are missing or have fallen.
- Replace damaged boxes to original specification and reinstate any that have fallen to the original height and location specified. No boxes to be removed unless they have been checked by a qualified Ecologist. Disturbing bat boxes in use will be in breach of UK & European legislation, disturbing nesting birds will be in breach of UK legislation.
- Topping up mulch at the end of the defects liability period to achieve a 75mm layer.

Targets, Monitoring and Remediation

- **Target:** Tree pit drainage is functioning correctly and no pits are waterlogged.
- **Monitoring:** Monitor pits at monthly intervals. If waterlogging is found remediation action must be taken immediately.
- **Remediation:** For positively drained trees, the system must be cleared of blockages. For trees with soakaway drainage, water must be pumped out of pits via the inspection pipe. For other trees check for signs of soil compaction, if found de-compaction methods must be employed such as air injection etc. All remediation to be agreed with the Contract administrator.
- **Target:** Trees have established and are largely independent in the landscape by 5 years after planting.
- **Monitoring:** Monitor trees in quarterly intervals. Check for healthy growth and form, review dieback and disease.
- **Remediation:** If any issues are identified action must be taken to remedy any issues before tree failure. Review soil fertility, ensure adequate watering is provided, ensure drainage is working and carry out restorative pruning to encourage growth.

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Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Re-firming of trees	As required	All Year											
Replace damaged / vandalised / unhealthy stock	Annually												
Apply slow-release fertiliser to base of tree	Annually			1									
Inspect tree pit drainage	Monthly	1	1	1	1	1	1	1	1	1	1	1	1
Watering of area to ensure moisture levels are appropriate	Weekly												
Top up mulch	1 x Annually			1									
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Pruning (general)	As required												
Inspect trees for pest and disease	2x Annually	1						1					
Check bird boxes	1x Annually												
Check bat boxes	1x Annually												
Check for nesting bird presence prior to any necessary remedial action.	As required												
Removal of items attached to trees (except bird & bat boxes)	As required	All Year											

Long-term Management (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

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3.2 Single Species Hedgerows

Management Objectives

To create a single species hedgerow providing definition and / or screening to amenity spaces and housing from undesirable views, and aid species permeability through the development. Hedgerow will be free from any gaps and be maintained at a height suitable to the specific location.

Establishment Maintenance (first 5 years after planting)

- Control and removal of weeds by hand weeding or application of herbicide.
- Application of a slow-release fertiliser in spring.
- Regular trimming in the first three years to maintain a neat appearance, encourage bushy growth down to ground level and maintain hedge at desired height of at least 1.2m to boundaries and private patios, and 0.6m adjacent to buildings. In some locations, hedging may require additional height to sufficiently perform its screening function.
- Beyond three years natural hedgerows must be cut on a three year rotation, with identified sections cut in different years to provide varied age and structure as well as allowing flowering and fruiting to be maximised.
- Formal hedgerows to be cut square annually or twice a year (if required) to form a flat top at the desired height.
- Remove any failed, vandalised, unhealthy or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- Removal of litter to maintain site in a tidy condition.
- Top up mulch annually to achieve a 75mm layer.
- Inspect and restock areas where hedgerows have become thin. Species and stock size to match the original specification.

Targets, Monitoring and Remediation

- **Target:** Hedgerows will be reasonably established by year three to allow long-term management to begin. Bushy growth will be evident down to ground level and hedgerows must be mostly free from any large gaps.
- **Monitoring:** Monitor hedgerows progress twice annually. Check for healthy growth, density of cover, failed plants, dieback and disease. Damage from the public via high attrition areas and desire lines must be noted.
- **Remediation:** If any issues are identified action must be taken to remedy as soon as possible. Review soil fertility, check for soil compaction and employ soil de-compaction methods, ensure adequate watering is provided, carry out restocking to plug gaps and where needed and provide temporary fencing to protect high attrition areas until fully established.
- **Target:** Beyond three years after planting, long-term maintenance will have begun as described above. Hedgerows will now begin to flower and fruit successfully each year (dependent upon species).
- **Monitoring:** Monitor hedgerows annually inspecting for strong, healthy growth and that successful flowering and fruiting is being achieved (dependent upon species).
- **Remediation:** If any problems are identified through the monitoring process, such as weak growth or if a lack of flowering and fruiting is recognised, action must be taken to address the issue. A review of the cutting cycle must be carried out and amended accordingly to remedy the situation. An inspection of the hedgerow must be carried out to ensure additional species have not established to create competition with the favoured species. Remove inappropriate specimens and consider introducing additional stock of the specified species.

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Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Apply slow-release fertiliser	Annually			1									
Top up mulch	1 x Annually			1									
Replace damaged / vandalised / unhealthy stock	Annually												
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of litter from planting beds (Long-term frequency to be reviewed and reduced as required)	4 x Annually	1			1			1			1		
Watering of areas to ensure moisture levels are appropriate	As required												
Trimming & cutting (on a 3 year rotation after year 3). Do not cut hedgerow trees	Annually												
Check for Hedgehogs prior to cutting	As required												
Check for nesting bird presence prior to any necessary remedial action	As required												

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.3 Amenity Shrub Planting

Management Objectives

Shrub planting will provide year round interest by use of colour, structure and evergreen plants. Plants will provide a dense ground cover that will minimise weeds, be tough and resilient, contributing to the green infrastructure. Shrub planting beds will provide nectar, pollen and fruit/berries which will serve a range of species throughout the year, notably invertebrates (including bees and birds)

Establishment Maintenance (first 5 years after planting)

- Control and removal of weeds by hand weeding and /or application of herbicide.
- Application of a slow-release fertiliser.
- Pruning of shrubs for floral, foliage and stem colour effect and to remove weak, dead and diseased branches.
- Pruning of species to ensure correct bushy, dense and compact form, to promote flowering/berry production/retention (where appropriate).
- Pruning works to be staggered to avoid removing all fruit, nut or berry production to leave a good foraging resource over the winter months.
- The removal of any failed, vandalised, unhealthy or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- Removal of litter from all planting beds to maintain site in a tidy condition.
- Top up mulch annually to achieve a 75mm layer.
- Review of the percentage of native and wildlife friendly plant species present in the beds.

Targets, Monitoring and Remediation

- **Target:** Shrubs by year 3 or 4 will have a closed canopy cover over the entire planting bed. Make sure a proportion of the overall planting area retains a specified percentage of native and wildlife friendly species within them. Also make sure that no invasive and garden escape plants are present.
- **Monitoring:** Monitor shrub planting quarterly. Inspect beds for strong healthy growth, ensure dense cover is going to be achieved quickly, check that all shrubs have a compact and dense form, have good level of leaf cover, have not become leggy or over woody. Review plants for signs of failure to thrive, do plants look healthy, review any signs of pests or disease being present, is soil compacted or waterlogged and check soil fertility. Monitoring to be carried once a year by conducting a site walk over to assess percentage of species present within planting bed. Invasive plants, garden escapes and weeds etc. will be monitored year round at each scheduled maintenance visit.
- **Remediation:** If any problems are identified through the monitoring process, remedy must be sought before bare patches become overly apparent or specimens /areas of plants fail. Remediation would include application of fertiliser, de-compacting soil, improving soil drainage, adjusting pruning regimes, providing control for pest and disease, adding additional stock to increase density, reviewing competition from neighbouring plants and considering replacement of species or cultivars – depending on the situation. Where any invasive plants, garden escapes etc. are identified, appropriate control and removal methods will be employed. Other remediation methods will be dependent on the monitoring survey results, these will likely include replacement or reintroduction of certain species.

Landscape Maintenance & Management Plan

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Apply slow-release fertiliser.	Annually			1									
Replace damaged / vandalised / unhealthy stock	As required												
Selective pruning of shrubs for optimum growth any encourage flowering, fruiting and stem colour	As required												
Review % of native or wildlife friendly species still present in beds	1 x Annually				1								
Top up mulch	1 x Annually			1									
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of litter from planting beds (Long-term frequency to be reviewed and reduced as required)	4 x Annually	1			1			1			1		
Watering of areas to ensure moisture levels are appropriate (Long-term watering to be undertaken during drought only)	As required												
Pruning of shrubs & removal of dead growth	As required												
Check for nesting birds prior to any management works	As required												
Check for hibernating hedgehogs prior to any management works	As required												
Check for resting hedgehogs prior to any management works	As required												

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.4 Ornamental Planting (Shrubs, Grasses and Herbaceous)

Management Objectives

Planting will provide year round interest by use of colour and structure as well as seasonal interest by use of flowering plants and grasses. Dead herbaceous plant and grass foliage can be left standing over winter to provide structural interest as well as providing seed foraging for birds. Plants will provide a dense ground cover that will minimise weeds, be tough and resilient contributing to the green infrastructure. Planting will provide nectar, pollen and fruit/berries which will serve a range of species throughout the year, notably invertebrates (including bees and birds).

Establishment Maintenance (first 5 years after planting)

- Control and removal of weeds by hand weeding and /or application of herbicide.
- Application of a slow-release fertiliser.
- Pruning of shrubs for floral, foliage and stem colour effect and to remove weak, dead and diseased branches.
- Pruning of species to ensure correct bushy, dense and compact form, to promote flowering/berry production/retention (where appropriate).
- Remove dead growth and trim herbaceous perennial and ornamental grass plants, avoiding damage to any new shoots that have emerged.
- Pruning works to be staggered to avoid removing all fruit, nut or berry production to leave a good foraging resource over the winter months.
- Stake and support plants as necessary to ensure healthy growth
- Split and thin perennials as required. Use plants to infill gaps.
- The removal of any failed, vandalised, unhealthy or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- Removal of litter from all planting beds to maintain site in a tidy condition.
- Top up mulch annually to achieve a 75mm layer.
- Review of the percentage of native and wildlife friendly plant species present in the beds.

Targets, Monitoring and Remediation

- **Target:** By year 3 ornamental grass will have spread to provide good swards, herbaceous plants will be well established and providing regular flowering each year and shrubs will be well established specimens or form dense clumps of single species. Make sure that no invasive and garden escape plants are present.
- **Monitoring:** Monitor planting beds quarterly. Inspect beds for strong healthy growth, ensure dense cover is achieved quickly, check that all shrubs have a compact and dense form, have good level of leaf cover, have not become leggy or over woody. Ensure herbaceous flowering species are not being crowded out by shrub or grass species. Review plants for signs of failure to thrive, do plants look healthy, review any signs of pests or disease being present, is soil compacted or waterlogged and check soil fertility. Thin out plants as necessary to create healthy clumps. Invasive plants, garden escapes and weeds etc. will be monitored year round at each scheduled maintenance visit.

Landscape Maintenance & Management Plan

- Remediation:** If any problems are identified through the monitoring process, remedy must be sought before bare patches become overly apparent, specimens /areas of plants fail or herbaceous species disappear through competition. Remediation would include application of fertiliser, de-compacting soil, improving soil drainage, adjusting pruning regimes, proving control for pest and disease, adding additional stock to increase density, reviewing competition from neighbouring plants and considering replacement of species or cultivars – depending on the situation Where any invasive plants, garden escapes etc, are identified appropriate control and removal methods will be employed. Other remediation methods will be dependent on the monitoring survey results, these will likely include replacement or reintroduction of certain species.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Apply slow-release fertiliser.	Annually			1									
Replace damaged / vandalised / unhealthy stock	As required												
Selective pruning of shrubs for optimum growth any encourage flowing, fruiting and stem colour	As required												
Review % of native or wildlife friendly species still present in beds	1 x Annually				1								
Top up mulch	1 x Annually			1									
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of litter from planting beds (Long-term frequency to be reviewed and reduced as required)	4 x Annually	1			1			1			1		
Watering of areas to ensure moisture levels are appropriate (Long-term watering to be undertaken during drought only)	As required												
Pruning of shrubs	As required												
Pruning, thinning operations and trimming of herbaceous species (e.g. seed heads) reposition surplus plants to infill gaps	As required												
Pruning operations and trimming of ornamental grass species (non evergreen)	As required												

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Stake plants as necessary													
Check for nesting birds prior to any management works	As required												
Check for hibernating hedgehogs prior to any management works	As required												
Check for resting hedgehogs prior to any management works	As required												

Long-term Management (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.5 Native Shrub Planting

Management Objectives

Planting will provide year round interest through the use of colour, structure and the seasonal display provided by fruiting and flowering varieties. Foraging planting mixes will produce edible fruits and create a dense ground cover that will minimise weeds, be tough and resilient contributing to the green infrastructure. Planting will provide nectar, pollen and fruit/berries which will serve a range of species throughout the year, notably invertebrates (including bees and birds).

Establishment Maintenance (first 5 years after planting)

- Management of existing woodland must be in accordance with a long-term Woodland management plan.
- Control and removal of weeds by hand weeding or application of herbicide.
- Monitoring of any invasive or unwanted non-native species, carry out control measures according to best practice at the time.
- Re-firming of plants/trees after strong winds, frost heave or other disturbances.
- Inspect and replace any missing or defective shelters, guards and stakes.
- Carry out soil fertility tests to determine if an application of a slow-release fertiliser is required.
- Inspect trees/shrubs for dead, dying or diseased wood. Prune back to living wood, good growing points or main branches, do not leave any snags, cut back to branch collars avoiding any flush cutting. Avoid making any large spring cuts which could cause excessive bleeding.
- Prune if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments. Pruning works to be staggered to avoid removing all fruit, nut or berry production to leave a good foraging resource over the winter months.
- Any deadwood must be used to create small log piles to provide habitat in areas inaccessible or out of view of the public.
- The removal of any failed, vandalised, unhealthy or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- Removal of litter from all planting areas to maintain site in a tidy condition.
- Inspection for signs of pest and disease, in cases of serious attack employ appropriate control measures.
- Top up mulch annually to achieve a 75mm layer.
- Review of the percentage of native and wildlife friendly plant species present in the beds.

Targets, Monitoring and Remediation

- **Target:** Native and Foraging shrub planting to be well on the way to successful establishment by 5 years after planting. Height and density may be sufficient for thinning works to be considered.
- **Monitoring:** Monitor shrub planting progress annually. Check for healthy growth, density of cover and review dieback and disease.
- **Remediation:** If any issues are identified action must be taken to remedy any issues before areas fall behind on the timescale to establishment. Review soil fertility, review soil compaction and employ soil de-compaction methods, ensure adequate watering is provided and carry out selective thinning if required for best practice forestry management purposes.

Landscape Maintenance & Management Plan

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Re-firming plants	As required	All Year											
Test soil fertility and if required apply slow-release fertiliser.	Annually			1									
Selective pruning for optimum growth	Annually												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Establishment & Long-term Maintenance Operations (years 6+)													
Monitor and control invasive and non-native species.	As required												
Pruning and trimming operations	Annually												
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of litter from planting beds (Long-term frequency to be reviewed and reduced as required)	4 x Annually	1			1			1			1		
Inspect for pest and disease	2x Annually	1						1					
Check for nesting bird presence prior to any necessary remedial action.	As required												

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.6 Amenity Grassland

Management Objectives

Amenity grass areas are to be maintained to establish a healthy vigorous sward free of moss, thatch, weeds, casts, discolouration, scorch, litter or leaves. Grass areas must remain attractive year round, providing important greenery in every season. Areas are to be maintained in a tidy condition within specified height ranges. Where different mowing regimes are intended to provide varying character to the landscape these shall be closely followed to ensure the design intent is achieved. Maintenance operations must aim to deliver high quality grasslands with optimum use of fertilisers and minimal use of pesticides and herbicides.

Establishment Maintenance (first 5 years after planting)

- Regular mowing between March and October to max. height of 35mm.
- Mowing strips to be maintained adjacent all paths and hard landscape areas, cut to max. height of 35mm.
- Trim edges to hard standing, planting beds & tree pit mulch circles.
- Do not cut areas containing bulbs until 6 weeks after flowering has finished.
- Control and removal of aggressive self-seeded weeds.
- Reform edges once per year with edging tool to create clean straight lines and flowing curves, form clean edge and remove soil as required.
- Application of a slow-release fertiliser as necessary to ensure soil fertility is maintained at appropriate levels.
- Watering to ensure moisture levels are maintained appropriate for optimum growth.
- Repair damaged or failed areas by re-seeding and top dressing or turfing.
- Removal of litter to maintain the site in a tidy condition.
- Aerate soil by spiking or hollow tines once a year to depth of 75mm. Spike when needed to relieve compaction and areas of ponding.
- Scarifying to be carried out in spring to remove excess thatch and moss.
- Remove leaves regularly in autumn.

Targets, Monitoring and Remediation

- **Target:** Grass will be fully established within 12 months after seeding. A dense sward will be evident and no bare ground visible. Grass will be free of weeds or moss. Edges will be well formed and crisp.
- **Monitoring:** Establishment must be monitored every two weeks in the first growing season. Check for good seed germination rate and healthy establishment growth afterwards. Bare or sparse areas must be noted. Review if soil compaction, waterlogging or dry conditions apparent.
- **Remediation:** Action will be required to be taken for areas where grass establishment is unsatisfactory or has failed.
- Remediation would require soil de-compaction, additional drainage, reseeding and an amended watering schedule.
- **Target:** Grass must be in excellent condition by year 5, a dense sward will have been maintained that is free of weeds and moss. No areas of compaction or bare patches from wear will be visible. All edges will be in a neat and tidy condition, with straight lines and clean flowing curves.
- **Monitoring:** All areas must be reviewed regularly in accordance with the cutting schedule. Problem areas subject to compaction, wear and tear or waterlogging must be noted. Measures can then be put in place as part of the regular maintenance schedule, avoiding total failure in these areas. A general review must also be taken twice yearly, in spring and autumn in line with the seasonal maintenance requirements.
- **Remediation:** This would include additional fertiliser application, change to fertiliser type, soil de-compaction /aeration, scarification to remove dead thatch, providing additional drainage, regular reseeding, change to seeding species mix

fira landscape architecture and urban design

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specification – depending on the situation.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Mowing in first growing season	As required												
Trim edges to hard standing and tree mulch circles	As required or every two weeks in growing season												
Repair of damaged & failed areas	As required												
Removal of weeds	As required												
Watering of area to ensure moisture levels are appropriate	As required												
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of Litter	At time of each maintenance visit												
Removal of leaves from swales	As required												
Removal of scrub	1x Annually											1	
Check for nesting birds prior to any management works	As required												
Harrowing and seeding of yellow rattle (existing grassland only)	1x Annually												

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.7 Species Rich Grassland

Management Objectives

An area of grassland where a single species or few species of grass will not dominate the sward. Species will be structurally diverse comprising a variety of grass and herb species that flower providing nectar and pollen resources throughout the growing season. A varied micro-topography e.g. localised hollows and rises will be created rather than a consistent even and flat surface.

Establishment Maintenance (first 5 years after planting)

- Regular mowing within the first growing season to max. height of 75-100mm.
- Cutting 2x or 3x annually after first growing season to height of 50-75mm. Optional late spring / early summer cut to be undertaken dependent on establishment and species prevalence.
- Cutting regime to vary, sections must be cut at different times ranging from late July to late August. An additional cut must take place before November to ensure grassland is left short over winter.
- To protect reptiles, only cut grassland during conditions when reptiles are active and able to move away from machinery (air temperatures above 9 °C). Cut from the centre outwards to encourage movement of reptiles into adjacent suitable habitat and avoid trapping reptiles in the path of machinery.
- Trim edges to hard standing and tree pit mulch circles.
- Arisings to be left in situ for several days to allow seed to fall, before removing.
- Undesirable weeds species will be removed or managed by spot treatment with herbicides.
- Watering to ensure moisture levels are maintained appropriate for optimum growth.
- Repair damaged or failed areas by re-seeding.
- Removal of litter to maintain the site in a tidy condition.
- Review and remove areas of encroaching scrub.
- Existing and retained grassland are to be enhanced by harrowing and seeding with yellow rattle in autumn.

Targets, Monitoring and Remediation

- **Target:** Grassland will be on way to establishment by 24 months after seeding. A good ground covering will be evident, without excessively large bare patches. Grassland will show a mixture of perennial plants and grasses, being free of undesirable weeds and invasive non-natives.
- **Monitoring:** Establishment must be monitored every two months in the first growing season. Check for good seed germination rate and healthy establishment growth afterwards. Review the amount of grass and perennial flowering plants in general, ensuring that grass growth is not dominating. Bare or sparse areas must be noted. Review if soil compaction, waterlogging or dry conditions apparent. Survey by conducting a site walk over to assess percentage of species present within grasslands. Invasive plants and weeds etc. will be monitored year round at scheduled maintenance visits.
- **Remediation:** Action will be required to be taken for areas where establishment is unsatisfactory or has failed. Excessive and aggressive grass growth must be controlled in the first growing season. Remediation would include increased cutting frequency, soil de-compaction, additional drainage, reseeding, reseeding areas with perennial flower plants only and amending the watering schedule – depending on the situation. Where any invasive plants or weeds are identified control and removal methods will be employed. Other remediation methods will be dependent on the monitoring survey results, these will likely include replacement or reintroduction of certain species through seeding and /or plug planting.

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Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Mowing in first growing season	As required												
Trim edges to hard standing and tree mulch circles	As required or every two weeks in growing season												
Repair of damaged & failed areas	As required												
Removal of weeds	As required												
Watering of area to ensure moisture levels are appropriate	As required												
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of Litter	At time of each maintenance visit												
Removal of leaves from swales	As required												
Removal of scrub	1x Annually											1	
Check for nesting birds prior to any management works	As required												
Harrowing and seeding of yellow rattle (existing grassland only)	1x Annually												

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant Long-term maintenance operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements. The type, extent and frequency of maintenance operations to be undertaken in the long-term are subject to review, and must be monitored in perpetuity to align with the management objectives.

Landscape Maintenance & Management Plan

3.8 Bulb Planting

Management Objectives

Bulb planting will create naturalistic swathes of seasonal colour within grassed areas and their life-cycle must therefore be considered in establishing an appropriate mowing regime. Whilst most notable flowering will be during spring, flowering can continue throughout every month of the year and this will be determined by the bulb species. Understanding the range of flowering seasons and adequate planning will ensure that grassed areas remain tidy and maintained to a high standard whilst giving bulbs sufficient opportunity to flower.

Establishment Maintenance (first 5 years after planting)

- Where bulbs are planted under amenity grass, the grass must be close-mown before emergence of leaves and buds and then left from spring through to late August / September to give the sown species an opportunity to flower. After 4-6 week of flowering cut back with a scythe, petrol trimmer or tractor mower to c50mm.
- Watering to ensure appropriate moisture levels are maintained while in growth and for six weeks after flowering;
- Apply general purpose fertiliser if required in late February
- Cut back spent flowers to the stalk base if seed not required for propagation. A minimum of six weeks after flowering, cut back dead foliage.
- Repair damaged or failed areas by re-seeding, and if required, replenish bulbs.
- Remove litter to maintain the site in a tidy condition.

Targets, Monitoring and Remediation

- **Target:** Bulb planting may be fully established within 12 months after planting. The planting must be healthy, offering a seasonal display with a fully naturalised distribution of bulbs rather than appearing artificial.
- **Monitoring:** Establishment must be monitored throughout the first full growing season to observe each species. Checking for good growing rate and healthy establishment. Bare, sparse or over-dense areas must be noted. Review if soil compaction, waterlogging or dry conditions are apparent.
- **Remediation:** Action must be taken for areas where bulb establishment is unsatisfactory or has failed. Remediation would require soil de-compaction, additional drainage, replanting bulbs at appropriate depth or an amended watering schedule – depending on the situation.

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

Landscape Maintenance & Management Plan

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Watering of area to ensure moisture levels are appropriate throughout flowering and 6 weeks thereafter	As required												
Replace damaged / vandalised / unhealthy stock													
Apply fertilizer	As required												
Establishment & Long-term Maintenance Operations (years 6+)													
Remove flower heads once they start to fade	As required	Timing requirement dependent upon species											
Cut back bulb foliage (six weeks after end of flowering)	As required	Timing requirement dependent upon species											

Long-term (year 6 onwards)

Following the establishment maintenance period, the appointed Estate Management Company and/or appointed contractor must undertake the relevant operations listed in the maintenance schedule and use these as a basis for a long-term management plan / strategy, including the ongoing inspection and maintenance requirements.

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3.9 Green Roofs

Management Objectives

The intensive green roof contains shrub beds and trees and must be maintained in the same fashion as planting across the rest of the site. The other green roof will be designed by a professional living roof company and the substrate will be porous, freely drained and at least 75mm deep (reused aggregates can be used). The roof will not be planted with sedum as this has limited biodiversity benefits - it will be sown with wildflowers and grasses of dry meadow habitats. A mix of ER1 Turf Roof Mixture and EM7 Meadow Mixture for Sandy Soils or similar will be used as these are most suited to dry, nutrient poor conditions.

Establishment Maintenance (first 5 years after planting)

- The seed will be sown at optimum times - ideally August-September or alternatively March-April.
- Watering is required for the first 6 weeks after seeding to ensure appropriate moisture levels are maintained during establishment.
- Occasional cuts may be carried out for aesthetic reasons.
- Weeding of undesirable species will be carried out as necessary.
- Remove litter to maintain the site in a tidy condition.

Targets, Monitoring and Remediation

- **Target:** Plants must be allowed to dry up in summer and then re-establish from seed. The roof will be allowed to colonise with mosses and other species that are also able to survive on dry, low-nutrient shallow substrates.
- **Monitoring:** Establishment must be monitored throughout the first full growing season to observe each species. Checking for good growing rate and healthy establishment. Bare, sparse or over-dense areas must be noted.
- **Remediation:** Action must be taken for areas where establishment is unsatisfactory or has failed. Remediation would include re-seeding sparse areas and weeding undesirable species – depending on the situation.

Landscape Maintenance & Management Plan

Maintenance Schedule

The below schedule includes the initial maintenance operations as well as long-term maintenance requirements. The frequency and timings of each operation has been indicated for a typical annual cycle or as required.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establishment Maintenance Operations (years 0-5 only)													
Watering	First 6 weeks after sowing only												
Re-seeding of failed areas	As required												
Cutting	As required												
Removal of weeds	As required												
Removal of litter	As required												
Establishment & Long-term Maintenance Operations (years 6+)													
Weed control and removal (Long-term frequency to be reviewed and reduced as required)	4 x Annually				1		1		1		1		
Removal of Litter	At time of each maintenance visit												
Check for nesting birds prior to any management works	As required												
Cutting	As required												

Landscape Maintenance & Management Plan

4. Management Prescriptions - Hard Landscape

The following section sets out management prescriptions specific to hard landscape treatments and features included within the Vastern Road site. Each sub section below describes the maintenance operations and schedule relevant to that hard landscape component.

- 4.1 Hard Surfaces
- 4.2 Street Furniture
- 4.3 Structures and Fencing

Landscape Maintenance & Management Plan

4.1 Hard Surfaces

Maintenance

Blacktop & Coloured Macadam:

- Collect and remove all litter and any fouling at each scheduled maintenance visit.
- Brush surface to remove debris and either hose down or use a light pressure washer to remove dirt build up once every year.
- Inspect surface for damage such as cracking or potholes, make good as required.
- Apply weed and moss removal treatments if required. Ensure treatments are suitable for use on asphalt surfaces.
- Inspect path edging for damage or failure, make good or replace as required.
- Autumn leaves are to be removed from the surface as required.

Block & Flag Paving:

- Collect and remove all litter at each scheduled maintenance visit.
- Brush surface to remove general dirt and detritus and either scrub the area with soapy water or use a light pressure washer to remove dirt build as required. Particular care must be taken to ensure no loss of jointing material through the use of pressure washers, Pressure washers must be angled at 30 degrees and sprayed diagonally on a medium pressure to minimise potential loss of jointing material. Replace any lost jointing material immediately to maintain the paving's structural integrity. This will be especially important for the areas of permeable block paving.
- Stubborn and persistent stains may require the application of a specific acid cleaning treatment. Extreme care must be taken when using chemical cleaners and specialist advice on specific products is must occur prior to use.
- Inspect surface for loose, broken, cracked and uneven units, make good as required.
- Apply weed and moss removal treatments if required. Check manufacturer's guidance to ensure any chemical treatments are suitable for use on each specific paving type.
- Inspect path edging for damage or failure, make good or replace as required.
- Autumn leaves are to be removed from the surface as required.

Landscape Maintenance & Management Plan

Maintenance Schedule

The below schedule includes required maintenance operations with frequency and timings of the works throughout the year.

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Remove litter, debris and fouling from footpaths /cycleways/carriageways and decking	1x per month or at each scheduled maintenance visit	1	1	1	1	1	1	1	1	1	1	1	1
Footpaths/cycleways/carriageways: Brush and wash surface	1 x Annually			1									
Removal or treatment of weeds, moss and algae from all surfaces	2x Annually			1						1			
Remove Autumn leaves from all surfaces	As Required												
Inspect all surfaces and edging, make good, repair or replace.	2x Annually or as part of the play area			1						1			

Landscape Maintenance & Management Plan

4.2 Street Furniture

Maintenance

Seats and Benches:

- A visual check to identify any signs of damage, vandalism, breakdown of surface finish, build-up of salt, dirt or atmospheric residue, and loose fixings must be completed monthly. Any splinters or sharp edges of wood to be lightly sanded to remove them. Apply wood stain if needed post sanding.
- In the event of serious damage to any main component, the seating element must be isolated and the manufacturer contacted immediately for detailed technical advice.
- Wood must be coated with a proprietary wood treatment on an annual basis so as to preserve its appearance and longevity.
- Inspect all timber for signs of rot and decay twice yearly. Any benches or seats identified as no longer fit for purpose must be removed and replaced with a product either to the original specification or an equivalent product.
- Inspect all ground fixing to ensure benches and seating are secure and free from movement. Re-secure and make good as needed.
- Cleaning must be undertaken every three months or at frequencies noted in manufacturer's specific guidance, whichever is more frequent. The application of mild, soapy, warm water followed by a clean water rinse must be adequate for most products. For any more stubborn markings, refer to manufacturer's guidance.
- All cleaning and maintenance must be recorded, detailing the method of cleaning, what products have been used, and what repair work has been undertaken to support any warranty claims.

Cycle Stands:

- Visually inspect every month for signs of damage. Repairs to be made in accordance with manufacturer's instructions.
- Clean every three months using mild soapy water or car wash and wax products using a soft brush or sponge, then rinsing with clean water.
- Remove graffiti using non-solvent cleaners such as car t-cutting compound or other specialist cleaner.

Litter / Recycling and Dog Waste Bins:

- Empty bins every two weeks or to a scheduled time period agreed to meet usage requirements.
- Visually inspect every month for signs of damage. Repairs to be made in accordance with manufacturer's instructions.
- Clean every three months using mild soapy water or car wash and wax products using a soft brush or sponge, then rinsing with clean water.
- Remove graffiti using non-solvent cleaners such as car t-cutting compound or other specialist cleaner.

Bollards:

- A visual check must be completed twice annually, any splinters or sharp edges of wood to be lightly sanded to remove them.
- Apply wood stain if needed post sanding.
- Wood must be coated with a proprietary wood stain system on an annual basis so as to preserve its appearance and longevity
- Inspect all timber for signs of rot and decay twice yearly. Any bollards identified as no longer fit for purpose must be removed and replaced with a product either to the original specification or an equivalent product.
- Inspect all ground fixing to ensure bollards are secure and free from movement. Re-secure and make good as needed.

Landscape Maintenance & Management Plan

Signage, way-markers and interpretation boards:

- A visual check must be completed twice annually, any splinters or sharp edges of wood to be lightly sanded to remove them.
- Apply wood stain if needed post sanding.
- Wood must be coated with a proprietary wood stain system on an annual basis so as to preserve its appearance and longevity
- Inspect all timber for signs of rot and decay twice yearly. Any items identified as no longer fit for purpose must be removed and replaced with a product either to the original specification or an equivalent product.
- Inspect all ground fixing to ensure they are secure and free from movement. Re-secure and make good as needed.
- Remove graffiti as required using methods recommended by the manufacturer.

Maintenance Schedule

The below schedule includes required maintenance operations, with frequency and timings of the works throughout the year.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All Street Furniture: Visually inspect for signs of damage. Repairs to be made in accordance with manufacturer's instructions.	12x Annually	1	1	1	1	1	1	1	1	1	1	1	1
Seating & benches: Inspect all fixings, repair and replace as required.	4x Annually			1			1			1			1
All timber street furniture: check for any splinters or sharp edges of wood to be lightly sanded to remove them.	2x Annually			1						1			
All timber street furniture: apply wood stain	1x Annually									1			
All timber street furniture: inspect for sign of decay, Repair or replace	2x Annually			1						1			
All Street Furniture: Inspect ground fixings, re-secure as required.	12x Annually												
Powder coated steel street furniture: wash down with soapy water	4x Annually			1			1			1			1
Remove graffiti	As required												
Empty bins	Every two weeks or as agreed												

Landscape Maintenance & Management Plan

4.3 Structures and Fencing

Maintenance

Masonry Walls:

- Walls must be checked annually for damage. Maintenance must be undertaken without delay to prevent further deterioration.
- The ground above and below the wall must also be inspected for signs of any movement. Inspect every 3 months.

Fencing:

- Inspect all fixings every 3 months, repair and replace as required to maintain fencing in a safe and fit for purpose condition.
- Inspect all timber for signs of rot and decay twice yearly. Any timber with rot and decay identified must be replaced as soon as possible.

Steps, handrails and Balustrades:

- Inspect all fixings every 3 months, repair and replace as required to maintain elements in a safe and fit for purpose condition.
- Inspect all units for signs of damage twice yearly. Any damaged units identified must be replaced as soon as possible.
- If any balustrade adjacent to a fall from height is damaged, the surrounding area must be immediately secured from public access until the issue is rectified.
- Collect and remove all litter and any fouling at each scheduled maintenance visit.
- Autumn leaves are to be removed from the steps as required.
- Once a year give a thorough cleaning using a gentle pressure spray or a purpose-made cleaning product which is formulated to remove grease and Algae.

Pedestrian Bridge:

- Inspect all fixings every 3 months, repair and replace as required to maintain bridges in a safe and fit for purpose condition.
- Inspect all bridge for signs of damage twice yearly. Any damage identified must be rectified or replaced as soon as possible.
- Inspect all timber for signs of rot and decay twice yearly. Any timber with rot and decay identified must be replaced as soon as possible.
- If any balustrade adjacent to a fall from height is damaged, the surrounding area must be immediately secured from public access until the issue is rectified.
- Once a year give a thorough cleaning using a gentle pressure spray or a purpose-made cleaning product which is formulated to remove grease and Algae.

Landscape Maintenance & Management Plan

Maintenance Schedule

The below schedule includes required maintenance operations, with frequency and timings of the works throughout the year.

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Brickwork walls: check for damage and repair as required	1x Annually			1									
Brickwork walls: inspect ground to top and base for signs of movement	4x Annually			1			1			1			1
Steps and bridge: Clean using pressure spray or deck cleaning products	1x Annually												1
Steps, handrails, fences, balustrades and bridges: inspected and repair all fixings	4x Annually			1			1			1			1
Steps, handrails, fences, balustrades and bridges: inspect for damaged or decay and replace	2x Annually			1						1			

Landscape Maintenance & Management Plan
