Landscape Management Plan

Lower Acre, One Horton Heath

Tender

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1 Introduction

Purpose of This Document

1.1 This Landscape Management Plan (LMP) has been prepared to inform the landscape management and maintenance operations for the proposed development at Lower Acre, One Horton Heath.

1.2 The strategy encompasses details of maintenance regimes for new landscape assets associated with open space, street tree planting and communal landscape areas with ornamental planting. Additional landscape assets include habitat provision and native planting for biodiversity gain, which is to be integrated with the proposed surface water attenuation that will contribute landscape amenity benefit.

1.3 This LMP describes the range of proposed landscape mitigation, biodiversity planting and amenity planting, objectives, and post construction aftercare to safeguard specific landscape features, habitats, and species. It should be regarded a live document that will evolve during the course of the delivery implementation. Once implementation is completed, 'As-built' plans and schedules will be appended to this LMP, so that it can be periodically reviewed, appraised and updated where appropriate during the initial 12 months establishment period. The LMP can then be used as a tool to guide and inform the future management of the site landscape by periodic review on an annual basis.

1.4 This LMP may require adaptation to take cognisance of coordination requirements for building, access or utility infrastructure maintenance requirements. Examples of this may include (and not be limited to) the provision of access clearance for Mobile Elevating Working Platforms (MEWPs).

Site Location

1.5 The site is located at the southern part of the One Horton Heath Strategic Development site, which occupies land between Burnetts Lane and Allington Lane at the western edge of the existing Horton Heath settlement. The site is as defined within the red line planning application boundary as identified on the General Arrangement and Planting Plans, excluding the Chalcroft Avenue landscape to the western side of the site, which is to be implemented separately.

The OHH strategic site comprises former farmstead sites and associated agricultural land with areas of woodland and wetland alongside a series of watercourses that transverse the wider outline application site. The proposed development at Lower Acre comprises a residential development at the southern end of the strategic site. A hedge lined track link to the former Chalcroft Farm at the northern edge of the site. The eastern site boundary is defined by hedgerow alongside Burnetts Lane. The proposed development will comprise residential dwellings with areas of private gardens, communal parking courts and amenity space. There are also proposed areas of public

open space with equipped play provision at the centre of the development (The Acre) and alongside the northern perimeter (Chalcroft Tolls).

1.6 Most of the wider site area comprises Soilscape 18: a slowly permeable, seasonably wet slightly acid but base-rich loamy and clayey soil. Impeded drainage that is reliant on drainage to a stream network is a notable character of this soilscape, with moderate fertility that readily supports wet pasture and woodland.

1.7 Lower Acre lies much closer to Burnetts Lane, so does coincide with the more sandy, freely draining Soilscape 10. Recent site investigations indicate the separation between soilscales in not particularly distinct, so exhibit as slowly permeable, loamy and clayey soils, with incidental pockets of sandy material.

1.8 The site former agricultural use is the likely cause of anomalies in nutrients levels, which reflects in notable depletions of nutrient (N:P:K) and trace element levels in previous soil testing. The soils particularly lack organic matter and a defined structure, which is likely to exacerbate soil drainage and hinder healthy plant establishment. It will be particularly important that soil handling movement is kept to an absolute minimum in order to preserve the remaining structure. Soils amelioration with organic matter, such as compost products that meet BSI PAS 100. Specimen tree planting pits are likely to require positive drainage. Staking, guards and other horticultural sundries will need to be suitable for clay (high shrinkability soils) and regularly inspected and adjusted for healthy establishment and to prevent chafing damage.

1.9 The wider OHH strategic development site includes a range of habitats and Green Infrastructure Assets that support Protected Species and some adjoining assets covered by Nature Conservation Designations (e.g. SINCs and Ancient Woodland), which tend to closely coincide with the existing watercourse network. These habitat assets are not located within the Lower Acre site, but the proposed landscape is designed to contribute linking and complementary habitat for biodiversity gain and green infrastructure connectivity benefit.

1.10 Quobleigh Stream, Foxwood Stream and Tollbrook comprise a series of small watercourses that transverse the wider OHH strategic site in a broadly East to West direction. These streams outflow into Hearts Stream, a tributary of the River Itchen that flows alongside the Western site perimeter of the outline application site boundary. The Lower Acre site, therefore, includes surface water attenuation along Chalcroft Tolls to support filtration of particulates and the reduction of leached nutrients, included nitrates.

1.11 There are numerous Public Rights of Way that extend through the OHH strategic site, which connect with the existing settlement and wider landscape setting. The retention and enhancement of this sustainable transport network intends the improvement of network connectivity, usability of surfacing, improved wayfinding and mitigation amenity benefit so that users can continue to enjoy attractive outlooks and access to natural green spaces. Lower Acre is designed to support public access and sustainable transport modes of walking and cycling.

Baseline Information

Landscape Strategy

1.12 The Landscape Strategy for Lower Acre, One Horton Heath will guide the implementation of a sustainable development that responds sensitively to the rural edge setting. The existing landscape contributes a strong green infrastructure framework of woodland and field boundary hedgerows. Lower Acre includes proposed native landscape and street tree planting that will link with and complement the existing framework, so that it can better assimilate into the wider landscape setting.

1.13 The development has been strongly informed by published local landscape character assessments and field survey studies. The landscape vision therefore seeks to retain and enhance the existing site features of landscape character for benefit to the wider green infrastructure framework by:

- Creation of opportunities for landscape recreation and amenity, so that the proposed and surrounding communities can enjoy healthy outside activities and the therapeutic benefit of contact with nature.
- Retention and enhancement of existing native hedgerow planting along existing Public Rights of Way, with additional tree and native understorey planting (proposing species that are tolerant of wet conditions to increase habitat opportunities and filter views).
- Proposed SUDs feature to be designed to reduce risk of bird strikes in line with Southampton Airport requirements with smaller aquatic planting areas to increase SUDs habitat opportunity. With a series of Swales/ Rain gardens along main verges to capture and filter nitrates and sediments.
- The incorporation of native, pollinator friendly and night-scented planting species to provide ecological enhancements within the ornamental and mixed native planting, this will provide seasonal interest and contribute to climate resilience.

Aims and Objectives

1.14 This LMP provides a comprehensive programme of landscape and ecological management, enhancement, and future monitoring. Proposals for on-going landscape management and maintenance operation will support the proposed site development to preserve and enhance assets of biodiversity value.

1.15 The landscape design and ecological mitigation proposals will reinforce the existing green infrastructure connectivity to be sufficiently robust so that it can withstand human activity nearby, when the site developments are constructed, and during day-to-day operation.

1.16 A carefully considered palette of pre-dominantly native species, particularly within the Chalcroft Tolls and Lower Acre Public Open Space, is intended to better immerse the existing site and proposed development into the wider landscape context.

1.17 The Landscape Plans associated with this document are designed to complement the existing habitat provision through the site. This includes the introduction of diverse native planting and species-rich grassland within Chalcroft Tolls and where possible within the other Lower Acre open spaces and communal amenity grounds, with street tree planting and hedge planting offering potential for supplementary wildlife and visual amenity benefit.

1.18 This strategy document is intended to provide an overview of the key landscape and ecological areas and associated plant typologies through the course of the site's enhancement and establishment. It provides the basis for the minimum standards to be achieved and a 'benchmark' system, which is capable of adjustment and review in the future to best meet the needs of the site ecology and use.

1.19 It should be noted that as the establishment of the new planting progresses, the operation and management may need to be altered from that included within this document to better suit a maturing landscape.

2 Preliminaries

2.1 This document should be read in conjunction with the supporting Landscape GAs, Planting Plans and Schedules for Lower Acre, including subsequent revisions that may emerge following coordination or variations agreed with the LPA to discharge planning conditions.

2.2 The landscape implementation maintenance of the Lower Acre site (excluding private gardens) will remain the responsibility of the Landscape Contractor until the end of the agreed Rectification Period. After successful resolution of the agreed Rectification Period, the responsibility for the Lower Acre landscape areas shall transfer back to the landowner for management and maintenance by a dedicated on-site team of operatives.

2.3 The maintenance of trees, shrubs, and other plants after the date of agreed Practical Completion will be carried out by the appointed contractor for the duration of the agreed Rectification / Defects liability period. After this is completed, the responsibility will transfer to site owner responsibility for future site management for all landscape areas (with the exception of private gardens).

2.4 Any tree and plant showing the following attributes must be replaced within a period of 5 years from the date of completion unless sated elsewhere within this document. These include those plants that:

- Dead, diseased or dying
- Are missing or not in accordance with the specification
- Lack any vigour

Replacements will be carried out during the next suitable planting season.

2.5 Any additional topsoil applied to the planting should be quality loam to BS 3882.

2.6 Inspection checks shall be carried out by a competent person, either a current member of BALI or the Landscape Institute, acting for the local authority and/or Management Company, at minimum monthly intervals and as appropriate work is carried out.

2.7 An Operation & Maintenance Manual will be required for identified site risks and made available to all site operatives.

2.8 No existing trees, shrubs or other plants shall be removed or cut without specific instructions from the Contract Administrator. Existing trees are to be retained, protected and undisturbed throughout the construction contract.

3 Planting / Habitat Creation

All Planting

3.1 All planting within the boundaries of site ownership will be maintained by the Landscape Contractor until the end of the agreed Rectification Period. After this, all planting will be managed in perpetuity by the landowner (except for private gardens).

Trees

3.2 New tree planting will create habitat connectivity along the site boundaries and via streets for GI connectivity between the gardens, shared amenity spaces and areas of public open space. Tree species selection is based on native varieties of local provenance, prevalence, and complementary cultivars to add seasonal interest and additional wildlife benefit.

3.3 New tree planting should conform to the National Plant Specification, with current DEFRA and Landscape Institute Biosecurity best practices being strictly complied with.

3.4 All trees, from saplings right through to semi-mature trees should be planted in accordance with nursery instructions and in accordance with good horticultural practice. Bio-degradable tree guards, stakes supports and ties shall be incorporated as appropriate for the tree size and species, so that they can provide protection during establishment. During establishment, grasses and tall herb species should be cut annually to reduce competition for resources – damage to bark must be avoided by use of strimmer guards or similar. Supports, ties, guards and stakes require regular checking and adjustment for effectiveness and to prevent chafing damage. Once trees are sufficiently established (at least 2 years post planting), tree support sundries should be removed and cleared from site.

3.5 Proposed trees requiring root cell systems shall be planted within specialist tree pits incorporating aeration and irrigation inlets, underground anchoring, and a structural load-bearing root cell solution designed to provide the minimum soil volume required for successful establishment and long-term healthy growth to maturity. Root directing barriers will need to be installed for the protection of below ground utilities in accordance with the manufacturer's guidance. Changes to installed utilities may necessitate the details to be updated or the tree pit to be relocated – it is vital that the CA and Project Landscape Architect are involved with site coordination decisions that may impact the tree planting proposals at an early stage as possible. The integration of trees through the site design a key planning requirement.

3.6 Existing and established trees should be managed under guidance from an arboriculturist, only in accordance with the approved application documentation and/or to ensure trees do not present a health and safety hazard to site users. Deadwood within tree canopies and fallen deadwood should be retained in-situ to provide habitat

for deadwood invertebrates. Healthy trees should not be pruned or have their crowns lifted unnecessarily.

3.7 Occasional thinning of understorey scrub will maintain healthy growth, or to encourage the development of larger trees and to increase space for formative shrubs to develop.

3.8 Any tree failures during establishment should be replaced during autumn or winter of the same year and will be undertaken annually for 5 years' post-construction. Replacement planting species may require adaptation e.g., where cause derives from endemic disease or pest, where replacement with 'like for like' would perpetuate failures. Any requirement for plant substitution will need to be locally appropriate species of native and non-invasive varieties.

Watering

3.9 Watering should be applied to the base of the tree during the growing season (bud burst through to full leaf fall) and evenly distributed over the entirety of the root-ball and/or the irrigation pipe (where specified) to encourage even root development.

3.10 Newly planted trees will need watering dependant on the size of tree planted, soil type and species. Below is a guide estimation as to how much water is required in the first 2 years of planting[1].

Size of Tree	Volume of Water per week
12-14 CMG	25 litres: 6 Gallons
14-16 CMG	35 litres: 9 Gallons
16-18 CMG	80 litres: 20 Gallons
18-20 CMG	80 litres: 20 Gallons
20-25 CMG	100 litres: 25 Gallons
25-40 CMG	120 litres: 30 Gallons
40-60 CMG	150 litres: 32 Gallons
60-80 CMG	200 litres: 43 Gallons
80-100 CMG	250 litres: 54 Gallons

[1] Hillier Trees Tree Aftercare Maintenance Checklist

Native Hedgerows & Scrub

3.11 During construction, existing native hedgerow, and scrub areas to be retained within the site will be protected in accordance with the measures described in 'British Standards 5837:2012 Trees in relation to design, demolition & construction – Recommendations'. A generous protection buffer will be established alongside these areas to facilitate the establishment of taller herbaceous field margins to discourage disturbance and contribute for linking habitat.

3.12 Existing hedgerow planting will be managed to enhance existing habitats at a range of heights agreed with the project Ecologist. New infill/gapping up hedgerow planting with native species of local provenance can be used for enhancement during the planting season (November to March). Traditional hedge-laying techniques to improve vegetation density and encourage regeneration may be appropriate, particularly where the existing hedgerows become too sparse at the base or excessively 'leggy' in habit.

3.13 Any new hedgerows, including infill planting, will assist in reinforcement of the hedgerow framework character to improve green infrastructure connectivity for wildlife to migrate and forage through the site. The plant species selected have been chosen for their native status and to complement these natural edges, avoiding unnecessary maintenance operations and instead allowing their natural form to establish.

3.14 Short-term after-care of native plants should include using mulched materials to keep the base of the hedgerow free of competitive weed growth until well established, which will increase survival rates and promote growth. Once hedgerows are established, vegetation can be left to colonise the ground layer.

3.15 Adopting the management principles for a field hedgerow the maintenance regime will aim to increase flowers, fruits, and seeds for wildlife. Apart from visibility splays, hedges should be trimmed on a three-year rotation. Alternate sides should be cut in the first two years with the top cut within the third season. Management should aim to create an 'A-shape' hedgerow to increase levels of light reaching the ground, and to improve structure. Trimming should ensure a consistent screen from ground level and to provide suitable nesting habitat for birds.

3.16 Any failures to new hedgerows should be replaced during the next suitable planting period for that species. This will be undertaken in September annually for five years' post construction.

3.17 Pruning operations should take place between November and February to avoid harm to nesting birds and plant health during the spring / summer growing period. During this period, no cutting of the hedgerow bases should take place to avoid harm to small mammals and hibernating reptiles. If bases require cutting this should occur in April after an appropriate check for nesting birds.

Grassland / Meadows

Field Margins & Meadows

3.18 Post-construction, new areas of wildflower meadow will be created through the sowing of a wildflower meadow seed mix, incorporating locally prevalent species from the surrounding locality. This shall comprise of 30% native wildflower and 70% grass species sown at 5gm per m2 and then lightly raked into the surface.

3.19 During the first year after sowing, the sward will comprise of perennials which will be slow to germinate and therefore unlikely to flower during the first growth season. This will result in persistent annual weeds such as Common Nettle which will need to be dug up using hand tools only.

3.20 The meadow should be mown twice a year; once in September to give wildflowers time to set seed, and once in March. Arisings from mowing should be composted or removed off-site. Removing the arisings will lower the nutrient content of the soil over time, favouring a range of wildflowers and reducing competition from grasses which may otherwise come to dominate the sward.

3.21 The sowing of wildflowers will ensure flower-rich habitats that provide foraging opportunities for a range of birds and insects.

3.22 Annual mowing will also prevent the encroachment of scrub into the site and will maintain current management in areas that may have increased ecological sensitivity and value.

Mown Verges & Amenity Grass

3.23 To provide a sense of order and legibility to site access routes , mown amenity lawn strips of a minimum of 1m either side of routes for any areas of meadow. Additional paths through the grassed areas for recreational benefit to residents may also be incorporated.

3.24 The extent of mowing should be adapted seasonally to balance the use of the space with biodiversity protection.

Invasive Species

3.25 Where necessary annual monitoring of the site for invasive species will be carried out each summer by a qualified ecologist or site manager. Non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981) may become established within the site during the lifetime of the development. In such an event, appropriate action will be required to eradicate invasive species from the site.

4 SUDS Strategy

4.1 This section has been informed by the drainage design approved within the planning application, which comprises a site-wide strategic network of interconnected attenuation basins, swales and ditchlines.

4.2 This section summaries the sustainable drainage potential maintenance requirements for SuDS features such as attenuation basins, swales and similar features that need to be integrated within the landscape spaces and combined with ecological planting.

Attenuation basins, swales and rain gardens

4.3 The proposed attenuation basins within the Chalcroft Tolls Public Open Space will contain marginal and aquatic planting designed to be a permanent standing water basin. Management of this will be designed to maximise conservation of nature and surrounding habitats.

4.4 Proposed attenuation basins, swales and filter ditches will trap sediments and slowly release surface run-off into existing watercourses for protective benefit to the wider hydrology network. Supporting the hydrology filtration systems, will be the adoining margins of native grass / wildflower that will also contribute beneficial filtration and biodiversity benefit.

4.5 All proposed attenuation areas will be monitored for non-native invasive species such as: Canadian pondweed or waterweed (Elodea canadensis), floating pennywort (Hydrocotyle ranunculoides), and New Zealand pigmyweed (Crassula helmsii).

4.6 Should undesirable plant species be identified, these should be removed with hand tools avoiding damage to other vegetation. Works timing between October to January (inclusive) will help to avoid the amphibian breeding season and whilst reptiles are active. Vegetation removal should be stockpiled for 24 hours to allow trapped invertebrates / amphibians times to egress and return to the habitat.

4.7 It is proposed to monitor the attenuation features for vegetation encroachment and manage for effective run-off capacity by maintaining as 1/3 of it is free of tall vegetation. Clearance to sections of the basins may only be undertaken on rotation and completed between October and January (inclusive). Periodic inspections by a suitably qualified ecologist will help identify the presence of invasive species or recommendations to adapt management regime for biodiversity benefit.

4.8 Arisings should be left next to the attenuation basin for 7 days before removal from site for composting, to allow amphibians or invertebrates to return to their wetland habitats.

4.9 Should desilting be required, this should be undertaken in accordance with the Engineer's Management Plan. Regular maintenance and clearance of inlets and outlets of the basin should form part of routine visit operations (to remove debris/ sediments)

undertaken monthly or in the case of heavy rainfall. The basins should be monitored annually to assess any indications of drying, colonisation of vegetation and accumulation of debris/ sediment.

4.10 The banks of the basins and any headwalls should be inspected for damage, if damaged an ecologist should be consulted prior to any works to highlight potential constraints regarding protected species present.

4.11 Any bankside vegetation should be rotationally cut/ strimmed to a minimum height of 100mm with and bankside arisings above water level should be removed from site to designated compost site. Any weeds on the banks and within marginal planting should be pulled/ removed by hand.

5 Proposed Planting

Specimen Tree Planting

5.1 Native tree planting has been proposed on site where possible. Large trees are located towards the site edges and existing boundary vegetation.

5.2 Management operations may include formative pruning and deadwood removal.

5.3 All tree works to be undertaken by an Arboricultural Association Approved Contractor to British Standard 3998 Tree Work specifications.

5.4 Any thinning works are to be carried out outside of the nesting bird season to avoid disturbance to breeding birds.

5.5 Trees planted within amenity grass areas to have a weed free circle of 1.2 metre diameter and mulched to a depth of 50mm.

5.6 A strimmer guard must always be fitted to all standard sized trees upwards within grass areas to protect the trunk from any strimmer damage. Strimming operations may not be undertaken without protection measures in place for existing tree stems. Instances of strimming damage to trees may necessitate remedial works that could include tree replacement at the Landscape Contractors' expense.

Native Hedgerow Planting

5.7 A series of native hedgerows will be established through the site for enhanced green infrastructure connectivity and screening benefit.

5.8 Where these form boundary treatments, temporary post and wire fence will be positioned along the middle of the hedge prior to planting to prevent trampling / uncontrolled access. It is envisaged that once the hedge has fully established this fencing will not need to be replaced.

5.9 These hedgerows should be managed for species diversity and consistent density by trimming areas on rotation and traditional hedge-laying at appropriate intervals.

5.10 The maintenance regime for these hedgerows will aim to increase a dense structure for habitat provision. Maintenance is limited to an annual trim ensuring a consistent screen from ground level, with hedge-laying planned for the longer term.

Shrub Planting

5.11 Shrub planting varieties have been chosen for their native provenance, aesthetic value and their suitability to the site conditions. Proposed species will provide year-round interest for residents, while attracting wildlife with shelter and food.

5.12 Management operations will include thinning of shrubs to remove any deadwood and promote growth and regular pruning to maintain a healthy and attractive form. Thinning promotes new dense growth thus encouraging a strong, more robust planting in the mid to long term, and also increases air flow within the planting to maintain its good health.

5.13 A programme of thinning will also maintain a balance between the shrub and perennial planting types, increasing biodiversity rather than allowing one to dominate and kill off the weaker which would potentially happen in a natural situation. This system is to be managed to maintain a point in succession, which provides a greater ecological and aesthetic benefit to the residential areas.

5.14 Any growth which will obscure windows, signs or sightlines shall be removed. Once established, any support canes shall be removed from the shrubs.

5.15 Any thinning works are to be carried out outside of the nesting bird season to avoid disturbance to breeding birds.

5.16 Operations are to be carried out by hand and waste is to be recycled as compost wherever possible or appropriate.

5.17 The density of planting will require that all weeding is carried out by hand (unless agreed with CA otherwise), using the appropriate tools. All resultant material should be removed from site.

5.18 Litter should be collected and cleared every two weeks.

5.19 All plants shall be watered as may be required to maintain healthy growth following planting, during the maintenance period and subsequently in periods of extreme drought.

5.20 Whilst species in drier locations especially prone to drought have been chosen for their drought tolerance, if the local temperature exceeds 25 degrees centigrade then planting should be watered daily during the first season, and at least every three days in the second and third seasons until the onset of natural rainfall.

5.21 Bark mulch, which also helps to retain soil moisture, should be maintained at an even spread, 75mm. deep, of consistent thickness, to ensure that it is effective as a weed suppressant and moisture conserver.

5.22 Following any maintenance operations and on a biannual basis, the mulch shall be supplemented to allow for any material which may have been lost.

Herbaceous Planting

5.23 Herbaceous plants will provide seasonal interest to the planting. The proposed species will provide flowers and attractive leaf structure.

5.24 Perennials will need selective cutting back in the autumn and early winter. Most herbaceous plants will need aesthetical pruning after their flowering period, although some species will provide winter interest when dry flowers and long shoots remain.

5.25 Any attractive dead stems or flowerheads can be left until early spring.

Ornamental Grasses

5.26 Similar to management of the herbaceous plant, attractive flower heads can be left on during winter. With this treatment, ornamental grasses will provide striking winter structure within the planting beds.

5.27 Detailed pruning methods of ornamental grasses are described in Section 6 of this document.

Mown Grass Areas

5.28 Continuing the fluid nature of the landscape design, provision is included for areas of grass to be mown for habitat variation and site employee use for wellbeing breaks.

5.29 Areas shall be cut by means of ride-on or pedestrian guided motor cylinder mowers. Arisings should always be removed from site unless a suitable composting on site is prepared well away from existing watercourses.

5.30 Frequency of cutting shall be regulated so that the grass, including any flowering stalks, does not exceed 70 mm. in height at any time unless otherwise agreed. Machines shall be so adjusted to cut no lower than 25 mm.

5.31 When cut, the turf must not show any corrugated or 'wash-boarding' effect caused by travelling at excessive speed, incorrect gear selection or by the use of cutting reels having insufficient blades. There must be no uncut grass due to failure to overlap adjacent passes on straight runs or at the turning points.

5.32 Any slight hollows which appear due to settlement or other causes shall be top dressed early in the growing season, with fine compost lightly rolled in and the grass allowed to grow through before cutting.

5.33 Deeper hollows shall be treated by neatly cutting out a square of turf, building up beneath with the fine compost plus and equal quantity of sharp sand, and the turf replaced at the correct level for rolling. Cutting may proceed without interruption.

5.34 Grassed edges to planted areas to be trimmed to maintain a clear smooth edge to planted beds; strim edges elsewhere but not against trees; spike annually in October.

5.35 Nylon Line Grass Cutters. This specification refers to the hand-held machines which utilise horizontally revolving strips of nylon to cut grass and other herbage obstacles.

5.36 Particular care must be exercised when cutting grass and weed growth close to trees and shrubs. No damage is to be caused to the bark of such trees and shrubs by the nylon cutting line. Guards and protective measure must be in place before starting.

5.37 The nylon line is not to be allowed to touch the ground, thereby creating the danger of throwing soil and stones into the air. Strimming work shall cease when members of the public or residents are passing the working space to minimise risk of harm. Use temporary cordons for working areas to best manage operations away from residents / public.

5.38 Risk Assessment Method Statements are required for any grass mowing and maintenance on sloping banks (no banks steeper than 1:3 gradient are proposed for the Lower Acre).

Bulb Planting within Grassland Areas

5.39 Bulb planting within verges and mown areas will provide seasonal interest and a swathe of colour amongst the grassland areas throughout the winter months and early spring whilst other areas of the site are dormant.

5.40 Once established they require little maintenance but will need to be factored into the mowing regime for the lawn areas to encourage growth and avoid damage before and during flowering periods.

6 Maintenance Schedule – General Schedule

6.1 Maintenance activities for all areas of soft landscaping under management control:

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Watering	All areas of grass, perennials, shrub and tree planting for healthy establishment.	As required during periods of dry weather
Plant replacements	Replace dead plants as soon as practical. Remove dead material within 1 week. Replace within next planting season, using originally specified plants (unless precluded by a specific disease /pest issue).	As required
Clearing of services	All plant material is to be kept clear of the following structural elements where present: ventilation ducts and openings, drainage channels and gullies, service access points, and light fittings	Once a month
Debris and Litter	Keep planting beds clear of litter and debris	Total 18 visits. Twice a month from May to October. Once a month from November to April
Weed Control	Keep ornamental planting beds around the Headquarter Offices free from weeds at all times. Remove weeds entirely, including roots. Remove the minimum quantity of soil, and disturb plants, bulbs and mulch as little as possible. Rake area to a neat and tidy condition. Where present reinstate mulch. Do not mulch where ground cover planting has established and no bare ground is visible	Total 18 visits
Soil Aeration	All areas of planting suffering compaction by pedestrian or vehicular movements should be lightly forked over Prick surface to a depth of 75mm Reduce soil to crumbs and level off Do not damage plant roots	Once every 2 months

Digging Over	All planting beds, should be lightly forked over to maintain health soil condition to a depth of 75mm	Once a year in Spring

7 Maintenance Schedule

7.1 The following maintenance activities are specific to the plant types and habitats created within the site. To be carried out in addition to the above standard activities.

Tree Planting

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Establishment	Inspect newly planted trees to ensure healthy development, carry out arboricultural works as necessary	Twice a year Spring and Autumn for first 3 years
Assessment	Arrange for all site trees to be inspected by a qualified arboriculturist. Obtain a recommendation report to identify any health problems or arboricultural works	Once every 5 Years
Formative Pruning Young trees up to 4m	Type and timing to suit species Do not prune during late winter/ early spring sap flow period Crown prune by removing dead branches and reducing selected side branches by 1/3rd to preserve a well-balanced head and ensure development of a single leader Remove duplicated branches and potential weak or tight forks Whips and feathers do not prune	Once a year late spring or early autumn
Crown Lifting	Where required and as growth of tree allows crown lift street trees to maintain a clear stem of 2.5m along pedestrian areas and 2.5- 3m where crowns overhang roads Ensure clear stem does not represent more than 50% of total height of tree to maintain a natural appearance	Once a year until mature

Annual Maintenance	Check tree ties, stakes, irrigation pipes and adjust as required Stakes: replace loose, broken or decayed stakes Ties: Adjust, re-fix and replace loose or defective ties allowing for growth and to prevent chafing. Where chafing has occurred, reposition or replace ties to prevent further chafing	Twice a year March and August
Replacement planting	Inspect short lived wood stemmed shrub species and carry replacement planting to maintain healthy stock and appearance	
Annual Maintenance year 4 onwards	Remove tree ties, stakes and guys, make good stake holes on adequately established trees	Once in August

Native Hedgerows

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Pruning / Trimming	Trim to specified heights and profiles using suitable mechanical cutters In accordance with good horticultural and arboricultural practice to suit species To encourage healthy and busy growth Type and timing to suit species Do not prune during late winter/ early spring sap flow period Allow hedge to reach planned dimensions only by gradual degrees, depending on growth rate and habit.	To suit species - three-year rotation. Alternate sides should be cut in the first two years with the top cut within the third season. Any hedge cutting to take place between December and February to avoid disturbance of nesting birds. Arisings must be removed by hand and not dragged.
Replacement planting	Inspect hedgerow for gaps and carry replacement planting to maintain healthy stock and appearance	Once every 10 years
Removal of dead plant material	At end of growing season, check all plants and remove all dead foliage, wood and broken or damaged branches and stems	Once a year in late autumn

Native Understorey Planting / Coppicing

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Pruning / Trimming / Coppicing	Trim to specified heights / profiles using suitable mechanical cutters – in accordance with good horticultural / arboricultural practice to suit species To encourage healthy and bushy growth Do not prune during late winter/ early spring sap flow period	To suit species – Areas should be cut on a three-year rotation to maintain shelter across the site and allow for consistent fruit bearing. Any cutting to take place in autumn/early winter to avoid disturbance of nesting birds
Replacement planting	Inspect hedgerow for gaps and carry replacement planting to maintain healthy stock and appearance	As required straight away or during the next planting season

Removal of dead plant material	At end of growing season, check all plants and remove all dead foliage, wood and broken or damaged branches and stems	Once a year in late autumn

Wildflower Meadow Areas

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Watering	- During establishment / germination of seed / wildflower mixtures	As required
Cutting (Existing Course Grassland)	- Arisings to be removed from site - First Cut: Mow to just top grass (100mm minimum) - Remove arisings - Annually to no greater than 150mm - Remove arisings (Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.) - Mow or graze the re-growth through to late autumn/winter to 50mm. - Mown path edges / recreational areas to be maintained at 40-60mm depths - Arisings to be removed from site	See left column
Cutting (Newly Created Grassland / wildflower meadows) -	- First Cut: Mow to just top grass (100mm minimum) - Remove arisings	Once during July/August to remove annual weeds
	- Subsequent cuts (100mm minimum) - Remove arisings two weeks after cutting to allow wildflowers to set seed. - For wildlife benefit, cut on a rotational basis to leave uncut areas as an undisturbed refuge.	Once during September / October.
	- Mown path / clearings to be maintained at 40-60mm depths - Arisings spread across adjacent grassland areas no deeper than 50mm	Fortnightly during summer / Monthly all other times
Scrub / Invasive Weed Management	- To control scrub, bramble development and unwanted perennial weeds (docks, thistles) occasional herbicide spot treatment control may be required. This should not be undertaken where there is risk of dispersal into any watercourse or SuDS system.	Once a year

Assessment	- Arrange for all wildflower meadow areas / ponds / swales to be inspected by a qualified ecologist to check establishment & and associated habitat enhancements. - Obtain recommendations as necessary to address any health problem or remedial works.	Once every 5 Years
Swales	- Check Swales periodically to ensure functioning requirements are being achieved.	Once a year

Hedgerow Edge Mixture

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Watering	- During establishment / germination of seed / wildflower mixtures -	As required
Cutting (Newly Created Hedgerow Edge mixture	- First Cut: Mow to just top grass (100mm minimum) - Remove arisings	Once during July/August to remove annual weeds.
	- Subsequent cuts (to match existing course grassland treatment) - Cut to no lower than 40mm depth - To prevent the onset of succession whilst maintaining a dense, tussocky structure. - Arisings left in situ	Annually in Late Autumn (For wildlife this cutting is best done on a rotational basis so that no more than half the area is cut in any one year leaving part as an undisturbed refuge. Ecologist to advise location strategy for rotational cutting)
Scrub / Invasive Weed Management	- To control scrub, bramble development and unwanted perennial weeds (docks, thistles) occasional spot treatment control with a herbicide may be required. This should not be undertaken where there is risk of dispersal into any watercourse or SuDS system. -	Once a year
Assessment	- Arrange for all wildflower meadow areas / ponds / swales to be inspected by a qualified ecologist to ascertain the establishment of the meadow areas and associated habitat enhancements. - Make recommendations as necessary to address any health issues or necessary remedial works.	Once every 5 Years

Specimen Shrub Planting

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Removal of dead plant material	At end of growing season, check all shrubs and remove all dead foliage, wood and broken or damaged branches and stems	As required
	Trim to specified heights and profiles using suitable mechanical cutters	To suit species (once or twice a year)
Pruning Ornamental Shrubs	In accordance with good horticultural and arboricultural practice to suit species To encourage healthy and busy growth and desirable ornamental features, such as flowers, fruit or autumn colour	To suit species. Once a year
Replacement planting	Inspect short lived wood stemmed shrub species and carry replacement planting to maintain healthy stock and appearance	As required straight away or during the next planting season

Herbaceous Planting

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Removal of dead plant material	At end of growing season, check all perennials and remove all dead foliage and flower heads	As required
	Trim to specified heights and profiles using suitable mechanical cutters	To suit species (once or twice a year)
Replacement planting / Splitting	Inspect species and carry out replacement planting to maintain healthy stock and appearance / Lift and split healthy stock periodically (in accordance with good horticultural principles) to maintain coverage	As required / Lift and split every 2-4 years

Ornamental Grasses

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Deciduous Species	Prune to remove dead and remaining foliage in late November to 150mm	Once a year in Winter
	Remove remaining last season's foliage by hand when first buds of new growth appear	Once a year in Spring
Evergreen Species	Trim down foliage to 150 mm above ground	Once every two years in Spring
Large Specimens	DO NOT PRUNE	
Selective Thinning	Selectively remove 1/3rd of plants. Where possible select larger, mature and over developed individuals to encourage natural regeneration	Once every 3 years
Lift and split	Lift and split healthy stock periodically (in accordance with good horticultural principles) to maintain coverage	Every 2-4 years

Amenity Grass

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Watering	Area of high-quality turf should be watered as required during period of prolonged dry weather	As required
Cutting - Bulbs in grassed Areas	Do not cut before flowering	Intervals between end of flowering and start of grass cutting to be agreed by landscape architect and maintenance contractor.
Cutting – all other areas	First Cut: Mow to just top grass (50-75mm)	Once during March
	Spring Cut: (50mm)	As required to maintain between 30-50mm
	Summer Cutting: (30mm)	As required to maintain between 30-50mm
	Late summer cutting: once a week (50mm)	Four times during September
	Autumn cutting: Once every two weeks (50-75mm)	Twice during October
Topdressing	Apply to a depth of 5-6mm	As required to maintain heath thatch in October / November
Scarifying	To a depth of 25mm	As required to maintain heath thatch in October / November
Fertilizer	Apply organic fertilizer at recommended rate	Twice a year Spring and Autumn

Any Bulb Planting within grass areas

ITEM	ACTIVITIES	SUGGESTED FREQUENCY
Establishment	- During flowering season, ensure area is NOT mown. - Mowing must only recommence when flowering stems have completely dried out and turned yellow.	
Watering	- During period of prolonged dry weather	As required
Fertilizer	- Apply organic fertilizer at recommended rate	Twice a year Spring and Autumn

Mowing regime	- Once flowering season over, and stems have completely dried out, mowing regime to continue as amenity lawns.	See amenity lawns

Summary of Planting Management once Established

PLANTING TYPOLOGY	MANAGEMENT ACTIVITIES	NOTES	TIMING	SUGGESTED FREQUENCY
All areas	Scrub Management	Maintain diversity, limit bramble dominance & perennial weeds (docks, thistles)	September to February	As required
Standard Trees +	Formative Pruning	Crown pruning only	Late spring or early autumn Avoid bird nesting season	Annually
Native hedges	Cutting and trimming Fill gaps	Cut one side only and avoid cutting to less than 3m. Gaps should be filled if hedgerows are damaged.	November to February October - December	Once every 2-3 years. As required
Understorey Planting	Thinning of woody understorey to retain herbaceous species that encourage invertebrate diversity.	Thinning of understory plants by hand.	January to February	Once, in year 1 post construct'n, and then monitored in year 5.
Hazel Stands	Coppicing	Coppice 50% of area to height of 300mm.	November to February	Once every 10 years

Meadow Areas	Mowing Regime: 100-150mm to aid seasonal regeneration and prevent scrub encroachment	Cutting on a rotational basis so that no more than half the area is cut in any one year, to leave areas as undisturbed refuge. Remove arisings offsite or to agreed location for compost	September/ October	Annually
Existing Ditches	Invasive species removal & 1/3 clearance to maintain run-off capacity on rotation. Leave arisings at edge of ditch for approximately 48 hours and then remove.	Remove with the hand tools avoiding damage to other vegetation.	October to November	Annually

8 Monitoring and Ongoing Review

8.1 During the construction period, a suitably qualified Landscape Architect will monitor the success of the scheme implementation and ongoing maintenance of the works during Year 1. Thereafter a Landscape Manager will manage ongoing operations. This will ensure compliance and appropriate development of the scheme and remedial action is taken with regard to plant replacements and habitat creation.

8.2 Close monitoring of the environmental indicators, watering requirements and species identification will provide a clearer view of the actual performance of the landscape planting and will form a closer indicator of possible changes in management focus to respond to climate change.

8.3 The management objectives and maintenance prescriptions should be reviewed regularly and any refinements incorporated into an updated management plan for on-going medium and long-term management.

8.4 Methods and techniques identified in these documents will be updated where relevant to respond to updated best practices in landscape and ecological management.

8.5 The results of all any monitoring surveys/reports will feed back into the general management of the site, and management strategies will be altered where necessary to ensure the long-term objectives for the landscape and ecological planting is achieved.