
Downtown Victoria North Phase 1

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1 INTRODUCTION OF PRINCIPLES

There should be a commitment to the ongoing high quality management and maintenance of any public realm. The long-term success of any landscape is reliant upon a detailed understanding of the parts and how they go together, but that is just the start of the journey. Perhaps the most important aspect and invariably overlooked, is to ensure that there is a defined and committed programme of maintenance.

Brief

The brief below describes the framework:

- The management plan will cover a time period of 1-2 years.
- The Management Plan must give consideration to environmentally sensitive design and management.
- The conservation of existing features will be a prime consideration.
- The Management Plan will seek to provide a net increase in the nature conservation value of the site.

Monitoring

The Management Plan's life span has been divided into key stages of 1-2 yearly intervals. These will be used as the basis for developing the plan and setting reviewing targets.

Monitoring is of fundamental importance, since this is the means by which the success of the plan will be measured. It is therefore important to establish standardised survey and monitoring methods, which enable valid year on year comparisons to be made. There will be a need for flexibility during its implementation. The Management Plan must be an evolving one, able to adapt to the specific needs of the space.

Management principles

Hardworks / Edgings / Site Furniture:

- To put in place procedures for regular inspections of all paved areas.
- To outline specification and requirements for work by Public Utilities and general surface reinstatement.
- To outline specification and sources of materials for repair / reinstatement (NBS Spec Public Realm).
- To establish winter maintenance procedures.
- To put in place procedures for street cleaning.
- To outline procedures for the maintenance of Site Furniture.

Proposed individual trees:

- To ensure satisfactory establishment and continuing health.
- To maintain the plants in a healthy condition and develop the site tree structure.
- To ensure the successful establishment and continuity of the overall design concept.
- To establish a valued and appropriate amenity.

Ornamental, herbaceous planting:

- To ensure satisfactory establishment and continuing health.
- To maintain plants in a healthy and attractive condition.
- To ensure the successful establishment and continuity of the overall design concept.
- To establish a mechanism for the replacement of any failing plant or one which has reached maturity.
- To ensure planting within public areas is maintained below a maximum height of 1m to meet the guidance set within Secure by Design.



2 HARDWORKS

Maintenance Operations

Surfaces need to be maintained such that they provide a safe passage for all pedestrians. The success of any streetscape project will greatly depend on the attention given to the maintenance. Typically, early life maintenance or aftercare of new works will be the responsibility of the Main Contractor that delivered the works. The maintenance and defects liability period will generally be 12 months. The Main Contractor should visit the site at regular intervals during the maintenance period, to inspect all areas and to undertake any remedial works. At the end of the maintenance period the contractor will be required to undertake remedial works to the satisfaction of the Client.

S12 Tarmacadam

After Installation

- Protect the system from construction and maintenance trades involving heavy plant and equipment.
- Prevent loose building and landscaping materials being dropped on the surface as these will clog the pores of the asphalt.
- Traditional pressure washing equipment should not be used as this forces dirt deeper into the asphalt.

New Building Work

Any new building or landscaping works on site may place the system at risk, hence an effective protection method should be agreed with all trades using the system area. In particular those requiring heavy plant, equipment and materials which may damage or clog the surface.

Emergency Intervention

Oil and fuel spillages can be cleaned up using absorbent cloths with any residues left for treatment within the pavement itself.

High levels of spillage or long term deposits of oil and fuel may force minor repairs to the system layers. An experienced contractor should be employed.

Routine Maintenance

Litter, leaves and spillages should be brushed or if possible vacuumed off the surface. Periodic use of a standard road sweeper is permitted.

Winter Maintenance

Winter maintenance can be undertaken using BS 3247 Fine Grade 6.3mm rock salt however, effective dispersal across the surface is highly recommended and reduces clogging of the asphalt pores. As such, applicators or spreaders should be employed.

Snow clearance by unmodified or general plant must be prohibited. All clearance equipment such as JCB type loading shovels or tractors should use either plastic / rubber ploughs or buckets protected with rubber sheaths to prevent damage to the surface.

Supplier

- Tarmac
- T: 03443 630 046
- E: tpsmmailbox@tarmac.com

Maintenance Operations

Natural Stone Paving - S1,S6, S7.1-6, S8

Initial Maintenance

Materials are available for sealing the surface of the paving. These can be either impregnators or sealants to help with stain removal or to provide some benefit in stabilising the sand in the joints in the short and longer term. If a surface sealant is used on paving, it must be applied in strict accordance with the manufacturers instructions. Sealants may affect the colour of the pavement and its slip / skid resistance and may require ongoing maintenance during the life of the paving. It is important that the surface of the paving is dry and clean before any sealant is applied.

Should any paving become loose or start to rock, the reason for the damage should be ascertained and then appropriate measures taken to avoid any ongoing problems. Where new services are to be installed or access is required to existing services under the paved area, the paving should be lifted carefully, cleaned and stockpiled for later use. Devices for removing individual slabs are available. Once the initial paving has been removed, it should be relatively straightforward to uplift the area of paving. During relaying a slight surcharge should be created in the sand bedding course to allow for settlement of the paving following initial compaction and early trafficking.

Typically, reinstated areas of paving should have a surcharge of 2-3mm over the surrounding paved area. As the majority of paving is rectangular in shape, there should be no difficulty in obtaining replacement paving. Ideally, these should be obtained from the original supplier. Any replacement paving should be mixed with the existing paving to ensure an adequate colour blend between the old and new products.

Cleaning of Paving

General Dirt and Detritus

To remove general dirt and detritus a cyclic maintenance regime is required. If detritus dulls the colour of the paving, it can be re-established by pressure washing or scrubbing with proprietary solutions following the manufacturers guidelines. This can be carried out by hand or by using industrial cleaning equipment. Ensure all soap has been thoroughly washed from the surface on completion of the cleaning.

Moss, Lichen and Algae

Moss, lichen and algae may grow on paving in areas which are heavily shaded or under trees, or are not laid to an adequate fall leading either to slow running off or ponding of surface water. If such growths do occur, the areas should be treated with an appropriate proprietary weed killer, used in accordance with the manufacturers instructions.

Such products are most effective when applied during a spell of dry weather.

Rust Stains

If rust stains occur on the paving, the first requirement is to eliminate the source of the staining. To remove rust stains, the surface should be wetted and the affected area treated with a prop solution. After cleaning, the paving should be well washed down to remove all traces of the acid.

Oil Stains

Oil does not penetrate readily into the body of granite paving, but if oil is spilt on the paving the spillage should be removed promptly with an absorbent material. After soaking up the majority of small spills, prompt washing with a prop solution should remove the stain. Steam cleaning can be used on paving to remove more extensive or stubborn stains, but if this is unsuccessful, an emulsifying degreasing agent should be employed. Brush the cleaner onto the affected area and then wash the emulsified oil away with plenty of water. Neither hot water, steam cleaning nor emulsifying agents will affect the colour of the paving.

Bitumen Stains

Bitumen does not penetrate readily into granite. The best method of removal is to leave the bitumen until it has cooled and remove it with a paint scraper or similar mechanical device.

Maintenance Operations

Clay Paving Mix - S2, S3, S9

Initial Maintenance

During the initial life of a flexible clay pavement, the joints between paviors will be relatively porous. The ingress of water may consolidate the joining sand and it is important that the joints are refilled at the earliest opportunity. The joints will soon become relatively impervious due to a build up of detritus. Until this has occurred, the paving should be cleaned, preferably by brushing with hand-held brooms or by low suction mechanical sweepers. Mechanical sweepers with high suction forces should not be used until flexible pavements are established. Even then there is a risk of loss of jointing sand from between the paviors.

Materials are available for sealing the surface of clay pavements. These are not necessary to protect the clay paving, but may provide some benefit in stabilising the sand in the joints in the short and longer term. Should paviors become loose or start to rock, the reason for this should be ascertained and then appropriate measures taken to avoid any ongoing problems. Paviors should be laid in accordance with the recommendations in BS 7533: Part 3:1997.

Cleaning of Paving

General Dirt and Detritus

To remove general dirt and detritus regular brushing is recommended. If detritus dulls the colour of the

paviors, it can be re-established by pressure washing or scrubbing with soap and water. This can be carried out by hand or by using industrial cleaning equipment. Ensure all soap has been thoroughly washed from the surface on completion of the cleaning processes. If pressure washing techniques are used, care must be taken to minimise the removal of jointing sand. Steps should also be taken to ensure that any sand lost is replaced at the earliest opportunity.

Moss, Lichen and Algae

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Bitumen Stains

Both paint and graffiti are difficult to remove. Wet paint should be soaked up with an absorbent material. The area should not be wiped, as this will spread the paint. The spillage should then be treated with a suitable solvent, such as white spirit and the area washed with a strong detergent and hot water solution. Steam cleaning can also be employed. When paint has dried, it should be scraped off as far as possible and an appropriate paint stripper applied. This should be used in accordance with the manufacturer's instructions. Once the paint has been removed by the chemical, the area should be washed with strong detergent and hot water solution. Paint manufacturers may often be able to give more detailed advice on the removal of their own products. There are companies specialising in the removal of graffiti and it may be necessary to consult them if there are large areas affected by accident or as a result of vandalism.

Maintenance Operations

Permeable Paving - S4,S10, S11

Initial Maintenance

For the best results the cleaning of concrete paving requires hot water pressure washing, initially the surface should be pre-swept to remove any loose debris. Once the debris has been removed then set the machine to between 80 and 100 bar and the temperature to 100 degrees centigrade. The first process is to remove the chewing gum using the lance with the low pressure option, using the high pressure keep the nozzle at a 45 degree angle 5cm away from the gum and remove in a methodical movement, once the gum is removed turn the lance to low pressure lift and move to the next piece without causing joint damage and repeat the process, When the gum is removed attach the rotary floor tool you may need to increase the pressure to 120 bar (depending on your nozzle sizes) use the rotary floor tool in a uniform manner cleaning either up and down or side to side slightly over lapping each pass.

area. As the majority of paving is rectangular in shape, there should be no difficulty in obtaining replacement paving. Ideally, these should be obtained from the original supplier. Any replacement paving should be mixed with the existing paving to ensure an adequate colour blend between the old and new products.

Cleaning of Paving

General Dirt and Detritus

To remove general dirt and detritus a cyclic maintenance regime is required. If detritus dulls the colour of the paving, it can be re-established by pressure washing or scrubbing with proprietary solutions following the manufacturers guidelines. This can be carried out by hand or by using industrial cleaning equipment. Ensure all soap has been thoroughly washed from the surface on completion of the cleaning.

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Surface Protection

To preserve and protect from staining and gum adhesion on the Kellen paving Planit would advise that it is protected using Pavesaver or Pavesaver Ultra a surface impregnator available from Hardscape.

SUPPLIER:
Tobermore
T: 0844 800 5736
E: sales@tobermore.co.uk

Maintenance Operations

Compacted Gravel - S5

CEDEC gravel must be delivered clean and dry, and stored on a clean surface to prevent contamination. Before laying, a compacted sub-base (typically Type 1 MOT) must be prepared, shaped with appropriate falls to aid drainage. Edging restraints should be in place to define and contain the gravel area.

Installation

Installation involves two layers: a 50 mm compacted base layer followed by a 25 mm compacted surface layer, resulting in a 75 mm total depth. The gravel should be laid evenly and compacted while slightly moist using a vibrating plate or roller. Installation should not occur in heavy rain or frost. In dry conditions, light watering may be required to aid compaction.

Once installed, the surface must be protected from foot and vehicle traffic for at least 48 hours, and ideally for up to 10 days to ensure full binding. Barriers and signage should be used to prevent early access.

Maintenance

Ongoing maintenance includes brushing loose material back into place, removing debris, and

occasional re-rolling in worn areas. If depressions appear, they should be topped up with fresh gravel and re-compacted. Seasonal inspections should be carried out to maintain surface levels and appearance.

The contractor is responsible for installation and early-stage protection. Maintenance will be carried out by the site team in line with this guidance.

SUPPLIER:

enquiries@cedstone.
co.uk

T: +44 (0)1708 867 237



3 EDGING

Maintenance Operations

In addition to the recommendations below, also refer to the maintenance and operational instructions from the individual suppliers. Advice from the suppliers can also be sought regarding the maintenance of their products using the contact details supplied.

Natural Stone /Flush/Transition Kerb -E1.1/E1.2/E1.3, E2

Same procedures at hardworks (see above pg 9)
Additional maintenance required due to drainage gullies. See previous section.

Supplier : Marshalls
Tel:+44 (0) 3332202737

Raised Steel Edge - E3.1

Check for loose or damaged edging pieces. Tighten or replace screws, bolts or fastening. For sever dents or cracks, replace the damaged section

Supplier : Kinley
Tel:+44 (0) 1580 830 688

Free Standing Planter - E3.2

Check for loose or damaged edging pieces. Tighten or replace screws, bolts or fastening. For sever dents or cracks, replace the damaged section

Supplier : Kinley
Tel:+44 (0) 1580 830 688

Flush Steel Edge -E3

Check for loose or damaged edging pieces. Tighten or replace screws, bolts or fastening. For sever dents or cracks, replace the damaged section.

Supplier : Kinley
Tel:+44 (0) 1580 830 688

A close-up, slightly high-angle shot of a wooden bench. The bench is composed of several horizontal wooden slats, showing natural wood grain and some weathering. The slats are supported by vertical posts. The background is a cobblestone path made of irregular, grey and brown stones. The lighting is soft, creating gentle shadows between the slats and on the stones.

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SITE FURNITURE

Maintenance Operations

In addition to the recommendations below, also refer to the maintenance and operational instructions from the individual street furniture suppliers. Advice from the suppliers can also be sought regarding the maintenance of their products using the contact details supplied.

Timber To Benches / Seating - F1,F1.2,F2.F3,F4

The timber should be treated with Osmo or Owatrol Rubbing Oil. Every 2 years the wood should be cleaned down using the a pre treatment solution which de-oxidises the wood before re-coating with the Oil. As long as this is done, the wood will keep its colour and will have a much greater lifespan than if left untreated. Osmo/Owatrol Oil are commercially available products and will be available through any good wholesaler or exterior furniture supplier.

Supplier: Bailey Streetscene Furniture
Tel: +44 (0) 1625 855 900
Email: enquiries@baileystreetscene.co.uk

Powder Coated Finishes -F8,F9 ,F10,F11,F12,F13,F14,F15,F16

Powder coatings can be treated like most other paints and will benefit from regular washing. If the powder coating is chipped or the steel is exposed in anyway, it is recommended that this should be 'touched up' using external grade paint. Cleaning should take place every 6 months. A mild detergent applied by cloth, sponge or soft brush should be used. The aesthetic life will be prolonged by waxing or polishing with good quality car shampoos and waxes.

A lush garden scene with various plants. In the foreground, there are clusters of small yellow flowers and green foliage. In the background, tall, spiky green plants with small blue flowers are visible. The overall scene is a dense, vibrant garden.

5

SOFTWARES

Trees Pruning Schedule

Trees	Action	Frequency
Acer campestre	Prune	Winter
Acer x freemanii	Prune	Winter
Acer greiseum	Prune	Winter
Albizia julibrissin	Prune	Spring
Alnus glutinosa 'Laciniata'	Prune	late Autumn – early Spring
Amelanchier lamarckii	Prune	Late Winter
Cercis siliquastrum 'Judas Tree'	Prune	Spring /summer after flowering
Crataegus laevigata 'Paul's Scarlet'	Prune	Prune in winter, or light prune in spring after
Malus sylvestris	Prune	Early Spring
Pinus sylvestris	Prune	Spring

Pinus mugo	Prune	Spring
Prunus avium 'plena'	Prune	Late Spring (Straight after Flowering)
Prunus Serrula	Prune	Late Spring (Straight after Flowering)
Pyrus calleryana 'Chanticleer'	Prune	late winter or early spring

Management Plan

Objectives

Consideration has been given to the future management requirements of the softworks elements within the public realm associated with the Ancoats Green development. As a result the following objectives have been identified:

- To ensure the successful establishment and continuity of the overall design concept.
- To prescribe all necessary management and maintenance principles and management tasks to ensure satisfactory establishment and to maintain plants in a continuing healthy and attractive condition.
- To establish appropriate amenity and biodiversity value.
- To provide a mechanism for the ongoing monitoring and reviewing of the management plan and the specific maintenance operations contained therein.
- To establish a mechanism for the replacement of any failing plant or one which has reached maturity.
- To ensure planting within public areas is maintained below a maximum height of 1m to meet the guidance set within Secure by Design.

Duration

Once the construction defects and maintenance period is complete, all of the general activities highlighted below will need to be addressed by the maintenance team as part of the standard maintenance procedures.

The management plan will cover a time period of 15 years. After this time a full review of the site should be undertaken and a new management and maintenance plan produced.

Monitoring

The Management Plan's life span has been divided into key stages of 5 yearly intervals. These will be used as the basis for developing the plan and setting reviewing targets.

Monitoring is of fundamental importance, since this is the means by which the success of the plan will be measured. It is therefore important to establish standardised survey and monitoring methods, which enable valid year on year comparisons to be made. There will be a need for flexibility during its implementation. The Management Plan must be an evolving one, able to adapt to the specific needs of the site.

This maintenance provider should undertake an annual review of the site, providing written documentation as to the ongoing establishment of the planting.

This report should include a condition review of all new and existing plant material, success rates of newly planted material, and recommendations for future management regimes and immediate management requirements.

Health and Safety

A Health and Safety plan is an important consideration for any area of public realm. The landscape maintenance team will be expected to produce a risk assessment and method statement for the maintenance of the planting areas.

Highways

Maintenance works associated with works adjacent to highways will need to be considered as part of the general management and maintenance procedures.

Chemicals

Chemicals generally should be restricted in use. All chemicals, herbicides, pesticides and fertilisers, should be approved by English Nature and should be used, stored and disposed of in accordance with EN guidelines and COSHH Regulations 2002.

Maintenance Operation

Set out in the tables overleaf are the maintenance operations that should be carried out over the next 15 years in order to achieve the design objectives.

They have been set out in a format that can be easily followed by all parties, ensuring that the Management Plan exists and a working document and not an archived report. The management prescriptions are flexible such that each section can be changed and updated on an annual basis, allowing targets to be set, progress monitored and accurate reporting made.

Trees

Projected Maintenance

The tree species have been carefully chosen for their suitability to the location. Formative pruning has already been carried out on the nursery and this will produce suitable growth and canopy shape for the space provided.

In the event of any structural damage to the trees by unknown circumstances such as an extreme weather event the following guidelines should be observed:

Where possible, pruning should be carried out in the dormant season to avoid excessive sap loss. Some deciduous trees and shrubs will bleed if pruned in

late winter.

Irrigation

Irrigation of the trees and shrub areas particularly during the frost growing season will be fundamental to their long term successful establishment.

Nutrition

The tree pits have been backfilled with a suitable growing medium containing nutrition sufficient for the initial period of establishment.

After three years it would be advisable to apply an application of fertiliser in the Spring as a top dressing. A broad spectrum fertiliser such as HortiTop Complete (available from Hortifeeds) would be suitable. A routine soil test carried out every 2 years would establish the need for any supplementary fertiliser.

Trees with hard standing should have a liquid fertiliser applied annually during spring.

Maintenance Operation

- Identification: Before starting work agree which trees are to be removed or pruned
- Protection: Avoid damage to neighbouring trees, plants and buildings
- Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'
- Removing branches: Cut as shown in Arboricultural Association Leaflet No 8 'Mature tree maintenance'. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater

- Appearance: Leave trees with a well balanced natural appearance
- Chain saw work: Operatives must hold a Certificate of Competence
- Tree work: To be carried out by an approved member of the Arboricultural Association

Additional Work

Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

Prevention of Wound Bleeding

Standard: To BS 3998, clause 8.

Prevention Of Disease Transmission

Standard: To BS 3998, clause 9 and Appendix B.

Water Restrictions

General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

Prescription	Year (s)	Season	Frequency (per year)
TREE PLANTING To establish new planting, maintain a 1m diameter weed free area around all trees	1 – 15	Spring - Autumn	1
UNDERGROUND TREE GUY WIRES Inspection / maintenance times: Quarterly and after strong winds Operations: Replace or re-secure loose or missing guy wires Adjust to suit stem growth and to provide correct and uniform tension	1 – 15	Throughout year	2

Prescription	Year (s)	Season	Frequency (per year)
Apply granular fertiliser according to manufacturer's recommendations	1 – 15	Spring - Autumn	Bi-annual
Ensure trees remain firmly bedded after disturbance and re-firm as necessary	1 – 15	As required	1
Control all pests and diseases as necessary	1 – 15	As required	TBD
Prune in accordance with good horticultural practice, thin, trim and shape as appropriate. Eg. Removing branches: Do not damage or tear the stem. Wounds: Keep as small as possible and cut cleanly back to sound wood. Cutting: Make cuts above and sloping away from an outward facing healthy, angled so that water will not collect on cut area. Larger branches: Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide. Tools: Use clean sharp secateurs, handsaws or other approved tools. Disease of infection: Give notice if detected. Growth retardants, fungicide or pruning sealant: Do not use unless instructed Prune all trees annually as needed to maintain a minimum 2.2m clear stem and desired form.	1 – 15	Autumn - early Winter	1 As required
Watering – Regular checks using a moisture probe testing during the first two years after planting on a monthly cycle during the summer months of May-September	1 – 2	Monthly	24
Water as necessary to ensure healthy growth	1 - 15	As required	As required
Replace dead or damaged trees to original specification. Remove within 1 month or as soon as possible and replace within the next available planting season	1 - 15	Autumn	1
Top up mulching to original specification annually	1 - 15	Spring/ Autumn	1
LEAF REMOVAL			
Collect accumulations of drifted leaves from the vicinity and from paved area	1 - 15	Autumn/Winter	As required
Arisings: Remove			

Prescription	Year (s)	Season	Frequency (per year)
New Tree Planting-Orchard Tree			
Exclude aggressively competitive plants from around the base of each plant. Weed control to be carried out by hand or by strimming (using appropriate guards to avoid damage to the plant) and / or herbicide application	1 – 3	As required	As required
Check stakes and ties for looseness, breaks or decay and adjust, re-fix or replace defective items	1 – 5	As required	Each maintenance visit / 12 visits
Remove all stakes and ties	5	Autumn	As required
Plants are to be maintained upright and adjustments to be made during strong winds. Ensure trees remain firmly bedded after disturbance and re-firm as necessary	1 – 5	As required	Each maintenance visit / required
New trees to be inspected by a suitably experienced arborist. Monitoring to inform action required to aid establishment, including watering and application of mulch and / or fertilisers	1 - 5	May-September	1
Water as necessary to ensure establishment and continuing health	1 - 3	As required	As required
Control all pests and diseases as necessary	1 - 5	As required	As required
Replace any dead or dying trees with trees of similar species and local origin	1-5	Autumn	1
Pruning-To be carried out in Winter to encourage growth. Deadwood and diseased limbs to be removed in Spring / Summer	1 - 5	Winter/Spring	As required

Herbaceous Planting

Maintenance Operation

Weed control

Keep planting beds clear by a combination of hand operations and herbicide applications

Watering

As necessary to ensure establishment of planting

Soil condition

Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.

Prescription	Year (s)	Season	Frequency (per year)
Maintain weed free area to the surface of all planting areas	1 – 15	March / October	9
Application of granular fertilizer (15:15:15)	1 – 15	Spring	1
Ensure plants remain firmly bedded after disturbance and re-firm as necessary	1 – 15	As required	Each visit
Re-firm plant supports and replace as needed	1 – 15	As required	Each visit
Prune as necessary to encourage healthy growth as illustrated on the drawings: Prune herbaceous perennials as required to maintain form and supply supports as needed during the growing season.	1 – 15	Spring / Summer	1
Prune hardy herbaceous perennials in autumn retaining feature flower heads or seed heads to provide interest through the winter months	1 – 15	Autumn	1
Prune tender perennials and borderline hardy perennials in spring once the risk of frost has passed (April / May). This is to protect the growing crown during winter.	1 – 15	April/May	1
Cut back early flowering perennials near to ground level after flowering to encourage fresh foliage and later summer flowering. Cut back again in spring.	1 – 15	Summer & spring	2

Prescription	Year (s)	Season	Frequency (per year)
Control all pests and diseases as necessary	1 – 15	As required	As required
Replace any dead / under performing plants. Where planting continually fails to establish, undertake investigations to ascertain any underlying cause.	1 - 15	March / October	As required
Watering – Regular checks using a moisture probe testing on a monthly cycle during the first two years after planting on a monthly cycle during the summer months of May-September.	1 - 2	May-September	5
Water as necessary to ensure healthy growth. If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.	1 – 15	As required	As required
Top up mulch planting to original specification at the start of each year after the cutting back of tender perennials.	1 – 15	Spring	1
Divide large groups of perennials every 3 years:			
Divide summer flowering plants in spring or autumn providing that the ground is dry enough to work.	3	Spring / Autumn	1
Divide spring flowering plants in summer after flowering.	3	Summer	1
Gaps in planting: Refill by replanting, allow 5 % replacement planting, species to be agreed with the LA.	1 - 15	As required	1

Prescription	Year (s)	Season	Frequency (per year)
Aquatic Wildflower Grassland			
In the first year annual weed growth may be cut back to encourage the development of a good perennial ground cover.	1	As required	As required
Establishment on sites prone to flooding may be patchy and may take several years to become fully colonised	2-5	As required	As required
Cut back and remove short sections/wedges of vegetation in rotation every 2-3 years			
Control undesirable herbaceous and woody material via hand weeding. Herbicides must not be used unless with prior approval.	2-5	As required	As required

Lawn

Maintenance Operation

Aims

- To maintain a neat and attractive grass edge to prominent approach routes.
- To establish a grassed landscape treatment that reflects the remainder of the campus.
- To ensure that grassed areas establish well and continue to thrive.

Key Actions

- Undertake the appropriate maintenance operations needed to ensure a healthy and complete grass sward.
- Manage broad leaved weeds in an appropriate manner.

Prescription	Year (s)	Season	Frequency (per year)
Water as necessary during the establishment period to ensure healthy growth. This may require weekly or even daily watering in particularly hot and dry spells	1-5	March - November	As needed to establish sward
Cutting - maintain grass between 25-30mm (not the reinforced grass wall) using suitable machinery and remove arisings	1-5	March - November	As needed to maintain sward height
Edge all close mown areas	1-5	Spring	1
Apply a spring fertiliser at a rate of 60g/m2 or as per manufacturers recommendations	1-5	Spring	1

Apply a winter fertilizer at a rate of 60g/m2 or as per manufacturers recommendations	1-5	Autumn	1
Undertake hand weeding operations to remove broad leaved weeds, only apply herbicide when absolutely necessary. Maintain the sward substantially free (95%) of broad leaved weeds	1-5	March - November	1
Reinstatement of damaged areas	1-5	As required	As required
Remove damaged turf to a depth of 40mm, cultivate substrate to a fine tilth, re-seed or turf and water as needed to ensure establishment. Quality and appearance of the grassed area is to match existing	1-5	Spring	As required

Trees							
Species	Common name	Specification	Girth/Spacing(cm)	Height (M)	Clear Stem Height	Pot	Number
<i>Acer x freemanii</i>	Acer Autumn Blaze	Specimen, min. 4x breaks	30-35	5-5.5	2m	RB	
<i>Acer greiseum</i>	Paperbark Maple	Specimen, min. 4x breaks	30-35	5-5.5	2m	RB	
<i>Albizia julibrissin</i>	Pink Silk Tree	Specimen, min. 4x breaks	30-35	4.5-5	1.7m	RB	
<i>Alnus glutinosa</i> 'Laciniata'	Cut leaved common Alder	Specimen, min. 4x breaks	30-35	5-5.5	2m	RB	
<i>Amelanchier lamarckii</i>	Snowy Mespilus	Specimen, min. 4x breaks (multi-stem)	16-18	4.5-5	2m	RB	
<i>Cercis siliquastrum</i>	Judas Tree	Specimen, min. 3x breaks (multi-stem)	16-18	4.5-5	1.7m	RB	
<i>Crataegus laevigata</i> 'Paul's Scarlet'	Hawthorn 'Paul's Scarlet'	Specimen, min. 4x breaks	20-25	4.5-5	2m	RB	
<i>Malus sylvestris</i>	Crab Apple	Specimen, min. 4x breaks	30-35	5-5.5	2m	RB	
<i>Pinus sylvestris</i>	Scots Pine	Specimen, min. 4x breaks	20-25	4.5-5	2m	RB	
<i>Prunus avium</i> 'plena'	Wild Cherry Tree	Specimen, min. 4x breaks	20-25	4.5-5	2m	RB	
<i>Prunus Serrula</i>	Tibetan Cherry	Specimen, min. 3x breaks (multi-stem)	16-18	4.5-5	1.7m	RB	
<i>Pyrus calleryana</i> 'Chanticleer'	Flowering Pear 'Chanticleer'	Specimen, min. 4x breaks	20-25	4.5-5	2m	RB	

Rain Garden Planting Mix @ 7 per m2					
Species - Latin	Common Name	Habit	Size: Pot (Ltr)	Percent of Mix (%)	Total No.
<i>Bistorta affinis</i> 'Superba'	Bistorta	Container grown	5L	8%	
<i>Calamagrostis brachytricha</i>	Korean feather reed grass	Container grown	5L	7%	
<i>Carex divulsa</i>	Grey sedge	Container grown	5L	5%	
<i>Deschampsia cespitosa</i>	Tufted hair grass	Container grown	5L	8%	
<i>Eupatorium cannabinum</i> 'Flore Pleno'	Hempagrimony	Container grown	5L	7%	
<i>Filipendula ulmaria</i>	Meadowsweet	Container grown	5L	6%	
<i>Geranium phaeum</i>	Hempagrimony	Container grown	5L	9%	
<i>Iris sibirica</i> 'Tropic Night'	Siberian iris	Container grown	5L	12%	
<i>Iris sibirica</i> 'White Swirl'	Siberian iris	Container grown	5L	7%	
<i>Lobelia cardinalis</i>	Cardinal flower	Container grown	5L	6%	
<i>Primula veris</i>	Cowslip	Container grown	5L	7%	
<i>Rudbeckia fulgida</i> var. <i>sullivantii</i> 'Goldsturm'	Cardinal flower	Container grown	5L	8%	
<i>Thalictrum delavayi</i>	Meadowsweet	Container grown	5L	10%	
Total				100%	
Notes: Individual species to be planted in groups of 3, 5 or 7. Rudbeckia and Symphyotrichum to be planted to the dryer edges of the rain garden.					

Ornamental Shrub and Herbaceous Planting - Shade Tolerant @ 7 per m2					
Species - Latin	Common Name	Habit	Size: Pot (Ltr)	Percent of Mix (%)	Total No.
<i>Asplenium scolopendrium</i>	Hart's-tongue fern	Container grown	5L	12%	
<i>Aster divaricatus</i>	White wood aster	Container grown	5L	8%	
<i>Asplenium scolopendrium</i> 'Crispum'	Hard's tongue fern	Container grown	5L	13%	
<i>Carex divulsa</i>	Grey sedge	Container grown	5L	11%	
<i>Cyclamen coum</i>	Eastern sowbread	Container grown	5L	5%	
<i>Deschampsia cespitosa</i>	Tufted hair grass	Container grown	5L	10%	
<i>Dryopteris erthrosora</i>	Shield fern	Container grown	5L	7%	
<i>Epimedium x versicolor</i> 'Sulphureum'	Barrenwort	Container grown	5L	5%	
<i>Geranium</i> 'Dreamland'	Cranesbill	Container grown	5L	9%	
<i>Geranium</i> 'Rozanne'	Cranesbill	Container grown	5L	7%	
<i>Hakonechloa macra</i>	Japanese forest grass	Container grown	5L	7%	
<i>Helleborus x hybridus</i>	Hellebore	Container grown	5L	7%	
<i>Lamium maculatum</i> 'Beacon Silver'	Dead nettle	Container grown	5L	5%	
<i>Omphalodes cappadocica</i> 'Cherry Ingram'	Cappadocian navelwort	Container grown	5L	5%	
<i>Primula veris</i>	Cowslip	Container grown	5L	7%	
<i>Pulmonaria</i> 'Blue Ensign'	Lungwort	Container grown	5L	8%	
<i>Thalictrum delavayi</i>	Meadow rue	Container grown	5L	7%	
Total				100%	
Notes: Individual species to be planted in groups of 3, 5 or 7. <i>Epimedium</i> , <i>Hakonechloa</i> , <i>Lamium</i> , <i>Omphalodes</i> & <i>Pulmonaria</i> to be planted to the front of beds					

Climbers					
Species	Common name	Pot	Size: height (mm)	Density (m2)	Total No.
<i>Clematis armandii</i>	Armand Clematis	10L	1.8-2m	As shown	
<i>Hedera helix</i> 'Buttercup'	Ivy 'Buttercup'	10L	1.8-2m	As shown	
<i>Trachelospermum jasminoides</i>	Star Jasmine	10L	1.8-2m	As shown	

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