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Revision: P01

Sci-Tech Upper Brook Street, Manchester Landscape Maintenance Specification

A Introduction

This report outlines the maintenance operations required for the landscape and public realm to the Sci-Tech Building, Upper Brook Street, Management. The purpose of this management plan is to aid the efficient and effective management of the site, preserving the design intent for the lifetime of the development. Private management of the site will be necessary to ensure the continued use of high quality specification material finishes and planting.

In the event of failure, the contractor will replace the soft landscape elements (trees, planting) for a period of **24 months** from practical completion, or completion of the soft landscape works, whichever is later.

All maintenance will be conducted a chosen maintenance contractor(s) after this period.

Whilst the intention is to create visual greening on day 1, the planting for the site will only fully become apparent after 2 years of establishment and growth.

The maintenance team should have relevant horticultural qualifications and up to date training, so they can competently recognise any planting that is failing or struggling and raise it with the client to ensure appropriate replacements are provided or remediation action, such as additional feeding or pruning takes place.

A detailed risk assessment should be undertaken by the selected competent contractor prior to any maintenance works being undertaken.

This document should be read in conjunction with the following drawings and documents

- UBS-RFM-XX-00-DR-L-0101-Landscape General Arrangement
- UBS-RFM-XX-00-DR-L-0105-Planting Strategy
- UBS-RFM-XX-00-DR-L-0107-Detailed Planting Plan 01 of 03
- UBS-RFM-XX-00-DR-L-0108-Detailed Planting Plan 02 of 03
- UBS-RFM-XX-00-DR-L-0109-Detailed Planting Plan 03 of 03
- UBS-RFM-XX-XX-DR-L-8001-Hard Landscape Details
- UBS-RFM-XX-XX-DR-L-8002-Soft Landscape Details
- UBS-RFM-XX-XX-DR-L-8003-Street Furniture Details
- UBS-RFM-XX-XX-SP-L-0002-Landscape NBS Specification
- UBS-RFM-XX-XX-HS-L-0001-Designers Risk Assessment

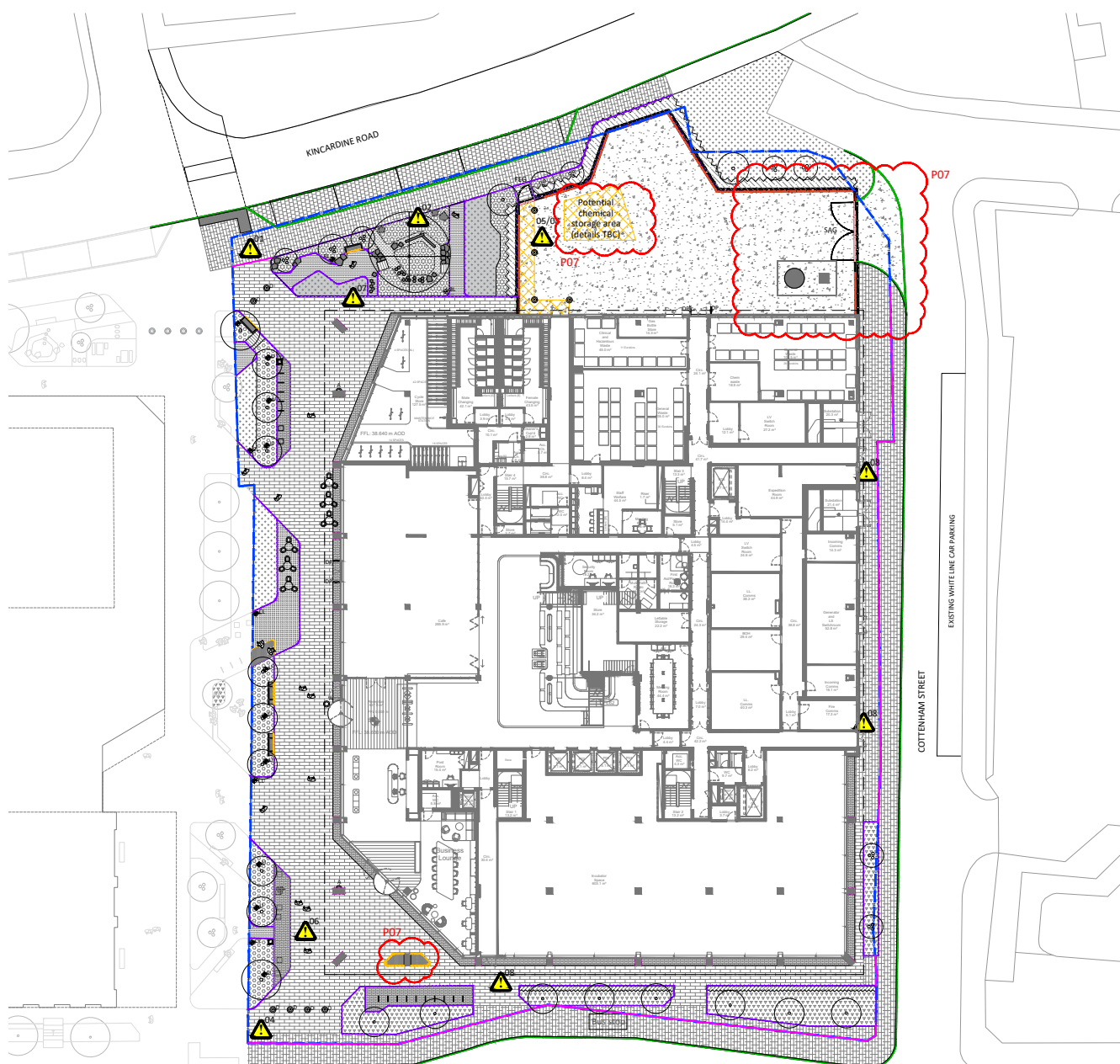
B Design intent

The landscape is intended to create an attractive and high quality setting for the building and to promote biodiversity and a pedestrian focussed public environment.

The introduction of new tree planting and ornamental planting will provide habitat and food for birds and invertebrates. Tree planting will also create shade and mitigate against wind, whilst creating a human scale to the public realm and providing interest and variety for the general public.

Mixed evergreen and perennial planting will extend the period of seasonal interest and will soften the external environment at ground level. A combination, grasses and shrubs will provide a green foil year round, through which flowering perennials and bulbs will emerge.

The management of hard landscape will be required to ensure that footpaths, carriageways and the demise of the building are clean, litter free and do not present a risk of slips and falls.



Landscape General Arrangement. (Refer to drawings and documents listed on previous page for full details)

C Maintenance operations

General notes and conditions

The objectives of the management plan are summarised as;

- Maintain a safe, unthreatening, clean, litter free environment
- Ensure the development is an attractive place for people of all ages to use
- Ensure the original design intent is realised and helped to establish and mature as intended
- Increase biodiversity throughout the site by providing food and habitat

General Conditions

- All cleaning materials and products to be in accordance with all relevant policies of Manchester City Council, e.g. Waste Policy.
- At the time of tendering, maintenance contractors are to provide details of proposed materials/cleaning products. Products to be chosen based on minimum level of environmental impact.
- Maintenance contractors are to provide a method statement before commencement of any maintenance operations.
- Use only machines and tools suitable for the site conditions and the work to be carried out. Use hand tools around trees, plants and in confined spaces where it is impracticable to use machinery.

Good Practice

- Where products are not fully specified they are to be suitable for the purposes of the works stated and in accordance with good horticultural practice, including the relevant provisions of current British Standard documents.
- Maintenance standards should at all times reflect the development's high quality status and position in the city.

Health & Safety

Chemicals

The Maintenance Contractor must comply with The Control of Pesticides Regulations 1986' made under the 'Food and the Environment Protection Act 1985', 'The Control of Substances Hazardous to Health Regulations 1988' made under the 'Health and Safety at Work Act 1974' and any other legislation enacted during the contract period.

The Maintenance Contractor must comply with all relevant Codes of Practice issued by DefRA.

A recognised nominated storekeeper's certificate of competence (BASIS) is required by a Contractor storing more than 200 litres of pesticides.

The Maintenance Contractor shall dispose of waste pesticides and containers in accordance with the Control of Pesticides Regulations 1986, Control of Pollution Act 1974', and 'Water Act 1989'. Safe disposal arrangements shall be made before starting to apply pesticides.

Concentrated pesticides shall be disposed of in arrangement with the local Environmental Health Department or with a specialist waste disposal contractor.

The Maintenance Contractor shall be responsible for making good and or compensation for any damage resulting from negligence in the application, handling and storage of pesticides.

The Maintenance Contractor shall be responsible for keeping up to date with all legislation and regulations regarding the use of pesticides.

The Maintenance Contractor shall inform Kadans of any subsequent changes to legislation and regulations that affect the contract.

In general the following precautions should be taken:

- Prior to maintenance/cleaning being undertaken a site specific risk assessment is to be carried out.
- Prior to any chemicals being used a COSHH assessment is to be undertaken
- When using chemicals, protective clothing such as gloves, goggles, boots and overalls should be worn.

C Maintenance operations

General notes and conditions

- Adequate ventilation is required when using chemicals in confined spaces.
- When using flammable materials, cigarettes, naked flames and other sources of ignition should be carefully controlled.
- When diluting acids, ALWAYS add acid to water and not water to acid.
- Any clothing that is contaminated with chemicals should be disposed of safely.
- When using any chemicals, care must be taken not to damage, contaminate or stain any adjoining materials, landscaping or finishes.
- Care must be taken to protect personnel operating in the area of the cleaning from any injury or hazard created by the cleaning. The appropriate First Aid must be available on-site.
- All operatives should be properly trained / supervised / and hold up to date certificates where necessary.
- Before undertaking any cleaning operation a trial should be carried out on a small, preferably inconspicuous area, to determine the effect of the chemicals before treating a large area.

Acid Washing

Stubborn and persistent stains that will not generally weather away naturally will require the application of a specific acid cleaning treatment to remove them.

Prior to any acid cleaner being applied, the surface must be thoroughly wetted with clean water to prevent the acid being absorbed directly into the paving. A dilution of 7 to 10% of hydrochloric acid should then be prepared and applied to the affected area.

As the staining begins to dissolve, some frothing may be apparent, which should be followed by agitation of the surface using a stiff bristle brush to completely remove all trace of the stain.

Once this process is complete the whole surface should be rinsed thoroughly with clean water, taking care to dispose of the run off safely. In the vast majority of cases, one treatment will be sufficient; however, in some cases re-treatment may be required.

When using any form of chemical treatment the following guidelines should be strictly adhered to:

- With deeper stains, the degree of acid treatment may result in an acid etched appearance.
- Protective clothing (gloves, boots, goggles etc.) should be worn at all times when using chemicals and the appropriate first aid measures must be available on-site.
- Take care to ensure that surrounding materials and landscape are protected.
- Soft landscape and exposed metals can be severely affected by chemical treatments.
- It is better to treat several times with the correct dilution than to use concentrated acid, which may damage the surface of the unit.
- Extreme care must be taken when using chemical cleaners on wet cast concrete products as these are less resistant to such treatments. Please refer to the manufacturer for other cleaning solutions.
- When diluting acids, always add acid to water and not water to acid.
- Keep the general public out of any work area.

C Maintenance operations

General notes and conditions

Tree management

General Notes

The Contractor shall maintain all tree stock in accordance with the specification set out below.

- All works should be in accordance with BS:3998 and Forestry and Arboricultural Training and Safety Council Safety Guides. All operatives undertaking chainsaw work must hold appropriate certification and should be approved members of the Arboricultural Association.
- When cutting, cut at fork or at the main stem to avoid stumps wherever possible.
- Large branches — remove only if unavoidable. Remove in small sections and lower to the ground with ropes and slings.
- Dead branches and stubs— when removing do not cut into live wood.
- Unsafe branches — remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
- Disease of fungus — give notice if detected. Do not apply fungicide or sealant unless instructed.
- Bark Damage — wounds — do not attempt to stop sap bleeding. Gently remove ragged edges and remove splintered wood from deep wounds as small as possible. Give notice if there is any liquid or flux oozing from apparently healthy bark.
- Cavities in Trees — Cavities should be investigated. If bats are found present in the cavities, no further investigative work is to be carried out until a suitable trained ecologist has visited the site to investigate further and to agree a course of action with Natural England. Rubbish and rotten wood should be removed, subject to the above. The cavity should be probed to find the extent of any decay, and give notice. The cavities should not be covered.
- Where cavities occur in a building mounted planter, the tree should be removed immediately and replaced with the same species and original specification.

Crown Lifting

- Removing branches: remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.
- In general for clearance remove branch systems to give clearances as follows:
2.5m above pathways, 3m above vehicle carriageways.

Crown Thinning

- When removing branches, remove inward growing, crossing, rubbing, dead and damaged branches. When thinning selectively remove an agreed percentage of secondary and small live branch growth evenly throughout the crown. When cutting make no cuts of more than 50mm diameter.
- Cut portions of branches back to lateral or sub lateral buds or branches without leaving stumps. The appearance should be uniform with a well balanced structure of branches and foliage.

Watering

- Care should be taken to ensure all trees are watered sufficiently to encourage good establishment and healthy growth.

Maintenance operations generally are scheduled in the following pages. For locations of elements to be maintained, refer to drawings;

- UBS-RFM-XX-00-DR-L-0101-Landscape General Arrangement
- UBS-RFM-XX-00-DR-L-0105-Planting Strategy
- UBS-RFM-XX-00-DR-L-0107-Detailed Planting Plan 01 of 03
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C Maintenance operations

General notes and conditions

General Stipulations

Failures of planting

- Any trees/shrubs/plants that have died or failed to thrive (not developing full foliage throughout all branches) within the period of this maintenance plan should be replaced. Years 0 – 2 replacements must match the size of adjacent or nearby plants of the same species or should match the original specification, whichever is the greater. Years 3 – 10 replacements to be as original specification.

Watering

- The contractor shall make due allowance in his rates for carrying out these tasks outside normal working hours when necessary to avoid premature evaporation or leaf damage caused through watering in bright sunlight.
- The contractor is to allow for the provision of water, water carts or hoses with a fine hose attachment or sprinklers at normal mains pressure. The contractor is to include and state in his tender the cost of compliance with this clause so that the cost of visits can be deducted in whole or in part if not required to be used.

Drought Conditions

- Should emergency legislation restricting the use of water during drought conditions be imposed, the contractor will be required to ascertain - before operations - the availability and cost of, and arrange to collect and apply second class water by bowser or other means from an approved sewage works, deliver to site and apply as specified. When required by the Architect, the contractor shall arrange for tests of this water to be carried out in accordance with BS 6068:2000 Water Quality.

Pests and Diseases

- Maintenance shall include the control of insects, fungus and disease by spraying with an approved insecticide or fungicide.

Litter Collection

- The contractor shall at all times keep the site clean, tidy and free from litter and carry out litter collection at each maintenance visit.

Cleanliness

- At completion and at each visit, remove soil and other debris from all hard surfaces and planting areas and leave the works in a clean and tidy condition.

Leaf Clearance:

- The contractor is responsible for the clearance of leaves, twigs, etc. from all areas of the grounds including planting beds, lawns, paths, channels, drains, car park steps and other areas specified by the Client, from leaf fall (normally October until end December). The Client will instruct the contractor when to begin.
- The clearance shall be carried out with hand raking or sweeping, or using machinery appropriate and approved by the Client.
- All collected leaves to be removed from site and should not be left in piles awaiting removal but cleared immediately. Leaves should not be left on ground for more than a week. The contractor shall schedule operations to achieve this standard.

Clear Snow and Supply and Apply Rock Salt

- The Client may at times of inclement weather require the Contractor to clear snow and ice and apply approved rock salt, evenly spread at 20 grammes per square metre, to specified areas within the Contract area.
- The Contractor shall take care to avoid spreading rock salt near and around trees, shrubs, turf and other plant material. Any damage caused by the Contractor's negligence shall be fully reinstated at the Contractor's expense to the Client's satisfaction.
- The Contractor may be required to undertake these operations during normal working hours, outside normal working hours; at weekends and during Bank Holidays.

C Maintenance operations

Soft landscape

This maintenance schedule details how and when maintenance work items are to be carried out. In each identified month, the number in the shaded box details the number of times per month when a work item is to be carried out. Where a number "1" is indicated, the maintenance work item must be carried out once a month at the beginning of the month. Where a number "4" is indicated, the maintenance work item must be carried out once per week during the month. Where a number "2" is indicated, the maintenance work item must be carried out once at the beginning of the month, and once halfway through the month.

This schedule is for guidance only, and site conditions should be considered when determining the number of visits required. In times of exceptionally warm weather, for example, watering may be required more than once weekly.

Item	Description	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1.0	Trees generally												
1.1	Check for general health in line with good horticultural practice. Any signs of disease or decreasing health to be reported to site management.	1	1	1	1	1	1	1	1	1	1	1	1
1.2	Cut back broken, diseased or dying branches.	1	1	1	1								
1.3	Top up mulch to base of trees in soft areas. Mulch depth of 50mm to be maintained.			1			1		1				
1.4	Check branches for litter, especially after strong winds, and remove.	1	1	1	1	1	1	1	1	1	1	1	1
1.5	All shoots or suckers emanating from roots or the root stock and all epicormic shoots arising from dormant or adventitious buds growing from the trunk should also be removed.	1	1	1	1	1	1	1	1	1	1	1	1
1.6	Selectively prune trees to Kincardine Road, Upper Brook Street and Cottenham Street to maintain a minimum clearance of 1.2m from building facade. Works to be undertaken as required during dormant months	1	1									1	1

2.0	Newly planted trees												
2.1	Prune trees to maintain a desirable shape in the first three years after planting.	1	1									1	1
2.2	Check stakes and ties monthly (assume they will need adjusting at least twice annually.) Any broken or damaged stakes will be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting. Remove stakes at year 5.	1	1	1	1	1	1	1	1	1	1	1	1
2.3	Water trees as necessary, minimum 2 x per summer month during Years 1 and 2. This is dependent on weather conditions, and the frequency may increase during spells of hot weather or drought. Where manual tree irrigation system exists i.e. root rain, fill reservoir.			1	1	1	2	2	2	2			
2.4	To reduce excessive competition, retain a weed free area around all trees to a diameter of 1m around the base of the trees using glyphosate spray twice a year. Newly planted trees will require refirming as required during the first three years.			1							1		
2.5	Rebalance/realign trees that have moved with wind or bad weather. Tree anchor systems and stakes to be tightened and adjusted on affected trees as necessary to ensure trees are stable and upright.	1	1	1	1	1	1	1	1	1	1	1	1

C Maintenance operations

Soft landscape

3.0	Ornamental planting												
3.1	Check for general health in line with good horticultural practice. Any signs of disease or decreasing health to be reported to site management.	1	1	1	1	1	1	1	1	1	1	1	1
3.2	Water as required to ensure good establishment of planting. This is dependent on weather conditions, and the frequency may increase during spells of hot weather or drought.			1	1	1	1	1	1	1			
3.3	Apply fertiliser as per NBS specification to manufacturer's recommendations.				1					1			
3.4	Weeding. Remove arisings from site.					1	1	1	1	1			
3.5	Cut back and comb out old and dead growth to herbaceous perennials and ornamental grasses in late winter / early spring when risk of hard frost has passed (Ensure stems are not cut back before the winter months). Remove arisings from site.			1									
3.6	Formal Yew hedges. Trim to a formal box form once a year during late summer to early autumn (Aug-Oct). Maintain to a maximum height of 1.2m									1			
3.7	Mixed native hedgerows. Trim any overly competing plants, or foliage that overhanging footpaths in February or March. Do not cut between March and Sept to protect nesting birds.		1	1									
3.8	Top up mulch. Mulch depth of 50mm to be maintained.			1			1			1			

C Maintenance operations

Hard landscape

Item	Description	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
5.0	General												
5.1	Leaf fall for all areas: Sweep up all leaf fall. Adjust frequency during to reflect leaf fall at different times of year or in spells of windy or frosty weather.	1	1	1	1	1	1	1	1	1	1	1	1
5.2	Litter and detritus for all areas: Remove litter from paved and planted areas.	1	1	1	1	1	1	1	1	1	1	1	1
5.3	Fly tipping for all areas: Check the site for fly tipping and depending on size of items, bag and remove or arrange. For removal to skip. Target must be removed within 24 hours.	1	1	1	1	1	1	1	1	1	1	1	1

6.0	Paving and kerbs												
6.1	Jet washing for all hard landscape surfaces: Utilise a rotary floor tool in a uniform manner, slightly overlapping each pass. With a hot water pressure washer, utilise the lance on a low pressure and rinse any loose sand back into the joints to leave paving clean. Once surface is completely dry, top up joints with dry kiln sand as necessary. Cleaning to be undertaken to manufacturer's recommendations.				1				1				1
6.2	Cleaning for all hard landscape surfaces: Attend to spillages and other arisings efficiently, adopting current H&S procedures regarding warning signs etc. Run off cleansing solution to be prevented from entering planted areas/tree grilles.	1	1	1	1	1	1	1	1	1	1	1	1
6.3	Chewing gum for all paved areas: Undertake hot pressure washing using the lance as per the paving manufacturer's recommendations.	1	1	1	1	1	1	1	1	1	1	1	1
6.4	Smoke, fire, tobacco stains, for all paving, steps, seating & kerbs: Scrub with a biodegradable detergent and hot water.	1	1	1	1	1	1	1	1	1	1	1	1
6.5	De-icing for all hard landscape surfaces: Non Sodium chloride based de-icer product to be used in maintenance.	1	1	1								1	1
6.6	Rust stains for all areas of pedestrian and vehicle traffic: Identify & eliminate the sources of staining. Wet the surface with clean water and then treat the affected area with a 7 to 10% dilution of Hydrochloric acid solution.	1	1	1	1	1	1	1	1	1	1	1	1
6.7	Paint stains for all areas: Check for and remove graffiti from around the site. Fresh wet paint should be soaked up with an absorbent material without wiping the paint, as this will spread the stain. It should then be treated with a suitable solvent such as white spirit and then the area washed with a degreasing agent taking care in the disposal of the run-off material. Dried paint should be scraped off as far as possible and then an appropriate paint remover applied. Alternatively, consult a specialist company should the affected area be large or as a result of vandalism.	1	1	1	1	1	1	1	1	1	1	1	1
6.8	Epoxy/polyester stains	1	1	1	1	1	1	1	1	1	1	1	1

C Maintenance operations

Hard landscape

6.9	Oil stains for all paving, steps & kerbs: Remove immediately with an absorbent material e.g. paper towels, cloth or absorbing granules. Do not attempt to wipe the stain as this will drive the oil into the surface of the units and spread it over a wider area. If the stain persists then an emulsifying degreaser should be employed. Brush the cleaner onto the affected area, leave for a period of time according to the manufacturer's instructions and then wash the emulsified oil away with plenty of clean water. Alternatively the surface can be scrubbed with a biodegradable detergent and hot water taking care to ensure that the strength of the detergent is not detrimental to the appearance of the paving.	1	1	1	1	1	1	1	1	1	1	1
6.10	Scuff marks for all paving, steps & kerbs: Scrub area with detergent and hot water or steam clean.	1	1	1	1	1	1	1	1	1	1	1
6.11	Cement/lime stains for all paving, steps & kerbs: Cement and lime deposits are generally insoluble and therefore require treatment by a suitable acid cleaner to fully remove them. Experiment on a small section of the affected pavement with a weak solution of water mixed with hydrochloric acid.	1	1	1	1	1	1	1	1	1	1	1
6.12	Moss, lichen, algae for all areas of pedestrian and vehicle traffic: Remove by vigorously brushing the affected area when it is dry. It is necessary to 'sterilise' the area with a strong fungicide/weed killer or proprietary brands from garden centres. Follow manufacturer's instructions and test their effect on a small area initially.	1	1	1	1						1	1
6.13	Weeds for all areas of pedestrian and vehicle traffic: Remove by vigorously brushing the affected area when it is dry. It is necessary to 'sterilise' the area with an appropriate strong weed killer or proprietary brands from garden centres. Follow manufacturer's instructions and test their effect on a small area initially.	1	1	1	1	1	1	1	1	1	1	1
6.14	Drainage channels, slot drains, service covers: Inspect monthly and clear or rod as necessary to ensure an unimpeded flow of surface water.	1	1	1	1	1	1	1	1	1	1	1
6.15	Damage to all paving, steps & kerbs: Inspect for any movement or deterioration and defects reported to the management.	1	1	1	1	1	1	1	1	1	1	1

7.0	General site furniture											
7.1	Emptying litter bins: Weekly bin collections or as required.	4	4	4	4	4	4	4	4	4	4	4
7.2	Litter bin cleaning: Bi-monthly bin cleaning, or as required.	1		1		1		1		1		1
7.3	Litter bin maintenance: Inspect bins monthly during site inspections and repair/replace any damaged or worn sections as required.	1	1	1	1	1	1	1	1	1	1	1
7.4	Cycle stands, seating & bollards: Inspect monthly. Replace damaged components or repair in accordance with manufacturers guidance. Clean as necessary.	1	1	1	1	1	1	1	1	1	1	1
7.5	Lighting columns, bollards and uplighters: Inspect monthly and repair as necessary in accordance with manufacturers guidance.	1	1	1	1	1	1	1	1	1	1	1

Thorn House
Rose Lane
Edinburgh
EH2 2PR

T 0131 354 1876
E info@re-formlandscape.com

Department, Leeds Dock
4 The Boulevard
Leeds
LS10 1PZ

T 0113 2454695
E info@re-formlandscape.com

Beehive Mill
Jersey Street
Manchester
M4 6JG

T 0161 397 4953
E info@re-formlandscape.com

www.re-formlandscape.com

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landscape architecture