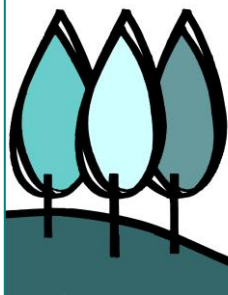


**Specification for Soft Landscape Works
5 year Maintenance Plan**

Oxford Technology Park

Land East of Evenlode Crescent and South of Langford Lane
Kidlington
Oxfordshire

OS 1346-16-Doc1
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Specification for Soft Landscape Works

Setting Out

The Contractor is responsible for setting out of all plants in accordance with the contract drawings. The Contractor should ensure that his work will not interfere with, or damage any part of existing cables, pipes or other services, above or below ground level. Any damage to existing services caused by the Contractor must be rectified at his own expense.

Delivery of Plants

The Contractor shall ensure that adequate protection is given to all plants and their root systems to preclude failure due to lack of moisture or exposure during transportation to the site. Where plants cannot be planted immediately upon arrival, they shall be stored safely until required. Representatives of each plant species delivered to site shall be tagged with labels with the botanical name clearly printed thereon. Labels shall be removed after planting.

Plants - Generally

Plants to be in accordance with BS 3936-1:1992 'Specification for trees and shrubs' for nursery stock.

Plants shall be well branched and symmetrically shaped, of normal habit for particular species. All plants shall conform to the measurements and requirements in the plant list or within this Specification and shall be the minimum acceptable size for each species. All necessary pruning shall be carried out at the time of planting. All container grown plants must be well established in order that, on removal, the root ball remains intact through the planting operation.

Any stock which subsequently deteriorates in quality through mishandling or maltreatment shall be replaced by the Contractor at his own expense.

The Contractor shall be held fully responsible for the condition of all trees under his possession at all times.

Planting Generally

Plants shall be planted at the same depth at which they were previously growing. Care should be taken to avoid damage to the root system and stems when planting and the root ball around pot grown plants.

All plastic and other imperishable containers shall be removed before planting.

Any broken or damaged roots shall be cut cleanly back to sound growth. Backfill should be firmed as filling proceeds, layer by layer, care being taken to avoid damaging the roots.

Soil is to be firmed around plants to ensure that no voids are left.

Backfill once placed should not form an obvious mound around the base of any shrub or transplant. Any excess backfill, after planting shall be evenly distributed around the immediate vicinity of the plant.

Planting is to be carried out in suitable weather. On no account shall stock be planted in conditions of frost, frozen ground, strong winds or heavy rainfall that renders the soil water logged or in a "sticky" condition. All plants lifted during frosts should be re-firmed.

Trees – Generally

Generally, trees will be procured, handled, planted and maintained in accordance with BS 8545:2014 'Trees: from nursery to independence in the landscape – Recommendations'.

Planting of Trees

Trees should be well-branched trees with symmetrical crowns and straight stems and leaders. Trees of the same species shall be uniform in size, shape and in good condition. All trees to be supplied in 'air pots', or as pot grown, unless otherwise stated.

All trees to be pit planted in accordance with BS 8545:2014 and the requirements of this Specification. Topsoil is to be used for backfill, firmed thoroughly during the planting operation. Remove all arisings.

Any dead, damaged or diseased branches or roots to be removed prior to planting using a sharp knife or secateurs. Pruning is to be carried out in such a manner as not to change the natural habit or shape of the trees. All tree work shall comply with the recommendations set down in BS 3998: 2010 'Tree work. Recommendations'. Arisings from tree works shall be carted off site to tip at the Contractors own expense.

Tree Stakes and Ties

Trees girth to 12cm.

Trees up to 12cm girth at time of planting should be staked with one: stout, round straight, pressure impregnated softwood stake of approx. 1.5m length and 75mm diameter pointed at one end. The stake is to be driven at a 45° angle to ensure that the stake penetrates no part of the root ball and in such a way as to hold the tree securely vertical.

The tree shall be secured to the stake using 1 No. bio-degradable tie and one bio-degradable spacer per tie. Ties to be fixed to stake with a minimum of 1 No. 50mm flat head galvanised nail.

Stakes must not chafe against any part of the tree or damage the roots during planting. Any excess length to the top of the stake should be removed to within 50mm above the tie.

Planting of Shrubs

Plants are to be positioned in the locations and numbers shown on the drawings and placed to achieve even spacing and proper matching of shapes.

Pits for shrubs shall be of a sufficient size to take rootlets without breaking them or roots without bending or cramping. Planting pits shall be excavated 100 mm wider than the root spread.

Planting of Bare root Whips/Transplants (Hedging) and Feather/ Maidens (Scrub Planting)

The planting of whips and transplants are to conform to the mix, siting and spacing in accordance with planting plans.

The roots of all plants shall be kept moist at all times by heeling into a temporary storage area and regular watering prior to planting. In any event, temporary storage on site shall be limited to a maximum of 3 No. days.

Plants shall be notch planted into prepared ground and shall be firmed in and planted so as to adopt a truly vertical position. All plants shall withstand a firm but gentle pull and be planted at the same depth as their original growing position. Damaged or broken plants will be rejected from site and require immediate replacement with matching species.

Any surplus soil arising from planting operations shall be evenly distributed throughout the planted area.

Whips and transplants are to be protected with a biodegradable spiral guard, or a single plastic shelter-guard, 0.4m high, supported and secured in an upright position by the use of a single bamboo cane and tie.

Feathers/ Maidens are to be protected with a biodegradable spiral guard, or a single plastic shelter-guard, 0.6m high and a single wooden stake (refer to Tree Stakes and Ties).

Upper 1/3rd of transplants/whips to be removed after planting to promote branched growth.

Planting of Bulbs

Bulbs are to be planted, according to species and in the areas shown on the soft landscape plan. Where planting is required 'in drifts', bulbs are to be scattered randomly (or in the case of bulbs in the green, placed randomly) over the allocated area and planted where they fall.

All bulbs are to be planted at the correct depth, according to species, with the base of the bulb in contact with the soil and the tip pointing up. Topsoil is to be used to back-fill.

If bulbs are to be planted into existing turf areas, turf it to be neatly removed and replaced after planting and re-firmed.

Plant Maintenance Prior to Practical Completion

Prior to the date of Certificate of Practical Completion, the Contractor shall maintain the works to the standards specified at no additional cost.

Mulching with Chipped Bark

A 75mm deep trench, 100 - 150mm wide will be formed at the edges of planting beds abutting paved areas prior to mulching so as to prevent mulch spilling off the plant beds. 75mm of semi-composted chipped bark to be laid.

Topsoil – Generally

Generally, imported topsoil will conform to BS 3882: 2015 'Specification for topsoil'.

Topsoil – Imported

Topsoil shall be of medium texture with a high proportion of loamy material. It shall not be "sticky" or leave a polished surface when smeared. It shall be free from subsoil, rubbish, roots or perennial weeds and other material injurious to plant growth. It shall be easily moulded when moist and have a neutral reaction with a pH 6.0-7.5. The topsoil shall contain less than 20 percent by dry weight stones which shall be less than 38mm in any one dimension.

Topsoil – Placement

Once all pernicious weeds and all stones in excess of 38mm in any one dimension have been removed, topsoil is to be laid in layers not exceeding 150mm thick where so described in the specification. Care must be taken that the subsoil and topsoil are not contaminated by any other deleterious material. If any subsoil or topsoil which was suitable become contaminated it shall be replaced at the Contractor's expense.

The Contractor must not carry out this operation if the subsoil is in a saturated or “sticky” condition.

Topsoil which becomes compacted shall have compaction relieved by ripping or cultivation.

Topsoil – Cultivation and Grading

Final grading of the top 150mm is to be carried out to ensure a true specified level and slope to avoid any dishing or other depression where water may collect. The level of the topsoil, at the time of spreading is to be at least 50mm above adjacent paved areas and kerbs etc. to allow for shrinkage and/or settlement. Slopes and banks shall, where space allows, be slightly concave in section and with well rounded shoulders and even transitions into adjacent levels and existing soiled or grass areas. Where possible, slopes are to even out into a flat area adjacent to kerbs, paved areas etc. in order to prevent soil washing onto areas of hard standing.

Cultivation of the top 50mm of topsoil should be carried out in accordance with BS 4428: 1989 ‘Code of Practice for general landscape operations (excluding hard surfaces)’ to obtain a fine crumb size.

Emorsgate Flowering Lawn Mixture (EL1) and Meadow Mixture for Wetlands (EM8) – Ground preparation

Areas to be sown to be cleared of all existing vegetation, including weeds, stones greater than 38mm in any one dimension and any other item of rubbish, all to be carted off site to tip.

Cleared ground to be raked to produce a medium tilth, and rolled to produce a level firm surface.

Emorsgate Flowering Lawn Mixture – Sowing

Seed to be surface sown by machine or broadcast by hand, and evenly distributed by sowing in overlapping sections, at a rate of 4g per m². Sown seed to be firmed in with a roller to ensure good contact with soil. On no account is seed to be covered or raked in. Seeds are best sown in autumn or spring but can be sown any other time of the year if there is sufficient warmth and moisture.

Emorsgate Meadow Mixture for Wetlands – Sowing

Seed to be surface sown by machine or broadcast by hand, and evenly distributed by sowing in overlapping sections, at a rate of 4g per m². Sown seed to be firmed in with a roller to ensure good contact with soil. On no account is seed to be covered or raked in. Sowings on ground prone to winter flooding are safest either in the early autumn or in spring once the land has drained. Most plants need time to grow mature enough to withstand flooding.

Emorsgate Flowering Lawn Maintenance Prior to Practical Completion

Flowering Lawn seeded areas to receive a first cut when lawn is greater than 50mm in height or when weed growth requires controlling. At no time prior to Practical Completion will flowering lawn areas be allowed to grow greater than 150mm in height. At no time will the lawn be cut below 35mm in height. To permit flowering, mowing may be suspended between July to beginning of September.

Cuttings to be collected and removed from site.

Seeded areas to be watered using a fine spray whenever required to ensure continuing healthy growth until Practical Completion.

Emorsgate Meadow Mixture for Wetlands Maintenance Prior to Practical Completion

Wetland Meadow Mix seeded areas to receive a first cut when lawn is greater than 50mm in height or when weed growth requires controlling. At no time prior to Practical Completion will wetland meadow areas be allowed to grow greater than 150mm in height. At no time will the lawn be cut below 35mm in height. To permit flowering, mowing is to be suspended in spring and early summer.

Cuttings to be collected and removed from site. It is important to cut back the annuals before they die back, set seed and collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Seeded areas to be watered using a fine spray whenever required to ensure continuing healthy growth until Practical Completion.

FLOWERING LAWN MIXTURE (Emorsgate EL1)	
Species - Wildflowers	Percentage
Galium verum	3.6
Leontodon hispidus	0.4
Leucanthemum vulgare	1.5
Lotus corniculatus	0.5
Primula veris	4
Prunella vulgaris	3
Ranunculus acris	3
Rumex acetosa	2
Trifolium pratense	2
Species - Grasses	
Agrostis capillaris	8
Cynosurus cristatus	40
Festuca rubra	28
Phleum bertolonii	4

MEADOW MIXTURE FOR WETLANDS (Emorsgate EM8)	
Species-Wildflowers	Percentage
Yarrow	0.5
Sneezewort	0.2
Betony	1
Common Knapweed	2.5
Meadowsweet	2
Lady's Bedstraw	1
Water Avens	0.5
Daisy	0.6
Greater Birdsfoot Trefoil	0.8
Ribwort Plantain	1
Cowslip	0.2
Selfheal	1.5
Meadow Buttercup	2.5
Yellow Rattle	1.5
Common Sorrel	1.5
Great Burnet	1
Ragged Robin	0.2
Tufted Vetch	1.5
Species-Grasses	
Common Bent	10
Meadow Foxtail	4
Sweet Vernal-grass	1
Quaking Grass	1
Crested Dogstail	32
Tufted Hair-grass	1
Red Fescue	24
Meadow Barley	1
Meadow Fescue	6

Implementation for Soft Landscape Works

- i) Generally, the works will be implemented at the earliest opportunity after the completion of all construction works.
- ii) Bare root whips and transplants, including feathers, will be planted in the first dormant season following the completion of all construction works.
- iii) Emorsgate Flowering Lawn Mixture and Meadow Mixture for Wetlands to be sown in first autumn or spring following completion of all construction works.
- iv) All planting works shall be in accordance with the Specification.

Maintenance Schedules

Maintenance Schedule - Establishment Period - Year 1

General Maintenance of Soft Landscape Works

General maintenance shall include regular watering, weeding, pruning, removal of litter from planted areas, repair of minor washouts and other horticultural operations necessary for the proper growth of the plants and for keeping the landscape areas neat in appearance.

No chemical weed killer, insecticide or fungicide shall be allowed in the first year, or subsequent 4 years of maintenance.

No strimmer shall be used within 1m of the base of any tree unless a suitable guard is in place.

Maintenance Schedule for Planted/Grass Areas

Items to be carried out as required:

- i) Keep planted areas free from rubbish and weed growth. No chemical weed killer shall be allowed.
- ii) Water sufficiently to allow water to fully penetrate the rooting zone.
- iii) Fork over panned down soil in areas covered with chipped bark.
- iv) Maintain mulched areas at specified depth, topping up as necessary to maintain a 75 mm cover of chipped bark.
- v) Check that each plant is growing healthily and remove all dead wood, damaged or diseased branches, water shoots and reversion growth. Prunings to be removed off site to tip.
- vi) Re-firm plants which have been loosened by wind or frost.
- viii) Maintain Emorsgate Flowering Lawn areas to a height of between 35-40mm during the growing season.
- ix) Maintain Emorsgate Wetland Meadow areas to a height of approx. 50mm, avoiding cuts in the spring and early summer. Allow annuals to flower and cut in mid-summer and remove vegetation.

Maintenance in Years 2 – 5

Maintenance operations for the following four years are as shown in the Maintenance Table for years 2-5.

Maintenance Schedule Years 2-5

Description	Operation
Newly planted trees	Remove stakes and ties at the end of year 2
Native shrub mix planting/ scrub	Prune margins as required to keep from encroaching onto hard landscape or grass areas, outside of nesting season Remove spiral guards at the end of year 2
Shrubs	Trim shrub species to keep within bounds of planting beds Remove flowering stems of <i>Lavandula</i> after flowering
Emorsgate Flowering Lawn areas	Cut as prescribed, suspending cutting during July and August to permit flowering, and when cowslips are flowering in spring
Emorsgate Meadow Mixture for Wetlands sown areas	Cut as prescribed, suspending cutting from spring to late July/ August. After flowering carry out 'hay cut' and cut re-growth through to late autumn/ winter and again in spring if needed.
Bulb planting	Where bulb planting is within grass areas allow top growth to die down before mowing off
Mulched areas	Top up chipped bark mulch to 75mm as required
Watering	Water to fully penetrate the rooting zone in times of drought or as prevailing weather conditions require