



Doyle &
O'Troithigh
Landscape
Architecture

Landscape Maintenance & Management

Taylor's Lane - LRD



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Client: Shannon Homes Dublin Unlimited Company

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100 LANDSCAPE MAINTENANCE & MANAGEMENT

101 Period

Landscape maintenance works as outlined below shall commence immediately post practical completion. The landscape maintenance requirements as outlined below shall be captured to ensure a quality landscape finish is achieved. Whilst there may be minor alterations from year to year; the operations as outlined below are necessary to achieve a successful landscape scheme.

102 Organisation

The maintenance programme will be organised as follows:-

Scheduled operations, in whose timing the Contractor will be permitted some flexibility, and which will be the basis of payment to the Contractor.

Critical dates, by which time scheduled operations shall have been completed, and at which performance will be assessed.

103 Performance Standards

General items only shown below:

Trees:

- All weeds within tree planters shall be killed at each maintenance site visit.
- Weeds shall not exceed 100 mm in height at any stage.
- If newly planted trees (<35cm girth) are noted as dead, the contractor shall remove these and dispose of appropriately off site.

104 Inspections

The Employer's Representative shall attend a review on site on each critical date, or as soon as possible thereafter.

105 Trees: Maintenance

Maintenance Objective: Establish a stable and healthily growing tree with a well-shaped framework for future growth.

Allow for hoeing up of soil once every 4 weeks in the growing season (5 times per year). Allow for herbicide treatment once in the winter or spring and 3 additional treatments.

Note: In some areas this operation may be replaced by the application of bark mulch as ground cover.

Cut back any tall vegetation that is threatening to shade or smother the young tree
Allow for cutting back regularly (3/4 times a year).

Water the newly planted trees throughout the summer months (May to August) as required after any period of 4 weeks without significant rainfall (less than 5 mm). Apply sufficient water to thoroughly wet the top 150 mm of soil around the tree

roots. This will normally require approximately 10 litres for a seedling or whip and 20 litres for larger trees, include transport of water to the site.

Every month check condition of stakes, and ties. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark.

Firm the soil around the roots to ensure that the plant is securely planted in the ground and upright (as necessary and after periods of strong winds)

Formative prune to remove any dead, diseased or damaged shoots and create a balanced form for future growth. Prune trees to favour a single central leading shoot, unless specified otherwise. Remove all arisings from site. Allow for pruning once in the season after planting.

Apply 150g slow release fertiliser (Emnag 4+19+10+7.5% Mg or equivalent) to each tree as growth commences in early spring. Allow for liquid feed on 4no. occasions throughout the year for all trees located within constructed tree pits.

106 Shrub and Herbaceous Areas – Maintenance

Maintenance Objective: Maintain shrub growth to cover as much as the planters as possible and allow the individual plants to achieve as nearly as possible their natural form. Maintain the borders free of visible weeds and shape and prune the shrubs to avoid obstructing pathways or blocking light to windows.

Maintenance operations

After planting, if appropriate and in season for the species involved, prune shrubs to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape and to develop their desirable ornamental characteristics. At the same time remove intermediate plants that are restricting the natural and attractive development of their neighbours. Remove all arisings from site.

Lightly cultivate the surface soil, to a depth of approximately 50 mm, remove or bury all annual weed or natural litter and break any surface capping. Take special care to avoid unnecessary damage to the shrub plants and ensure that all the shrubs are firmly bedded in the soil. Leave the surface with a fine and even tilth with soil crumbs of less than 50 mm in diameter. **Note:** This operation is only essential where the soil is compacted or as a means of incorporating mulch. Not required where the areas are mulched.

Maintain the soil surface substantially free of weeds (less than 10 per cent weed cover) by hand removal and spot treating with Glyphosate, or approved equivalent. Spot treatment at approximately four-weekly intervals in the main growing season, to a total of five times per season.

Note: As an alternative the borders can be regularly hand-hoed at up to two-weekly intervals in the main growing season, to 6 times per year. This procedure is recommended for the first year after planting when the plants may be more sensitive to contact herbicide damage and residual herbicides may not be used.

Immediately after planting or, when and where subsequently directed, mulch the surface of the border with a 50 mm layer of pulverised bark (maximum particle size 50 mm), or other approved equivalent. Thereafter, top dress the mulch as necessary and at least once a year to maintain effective cover. Spot treat or remove any emergent weeds as specified above but do not cultivate or incorporate the mulch into the soil.

Apply slow release fertiliser to all planted areas in Autumn (NPK 0:20:30) at 25g/sq.m to encourage strong root structure and winter hardiness.

Water as necessary to ensure the establishment and continued thriving of all planting. Water to be brought onto site at Main Contractors expense. Water using a fine rose or sprinkler until full depth of topsoil is saturated.

107 Grass Maintenance Objective

To provide an even stand of vegetation of uniform height and colour comprising predominantly grass species, although a small percentage of dichotyledenous plants - no more than 5 per cent - will be accepted.

Maintenance Operations

Before each cut remove all litter and debris.

At the time of each cut, trim all grass edges round the base of trees, manholes, etc. and remove arisings. Sweep all adjoining hard areas clear of cuttings and remove from site.

Mowing shall be carried out using a to maintain the vegetation length within the limits of 30 mm and 75 mm during April to August inclusive and between 50 mm and 90 mm during the rest of the year. (This will normally require mowing at up to once a week in the peak of the season and up to, 30 times per year).

The arisings shall be let fly but must be distributed evenly over the surface and at no time shall the layer of clippings be of such a depth that will affect the growth of vegetation. At no stage must arisings come to rest on paved or planted areas.

Ensure that trees and shrubs are not damaged by the use of mowers, nylon filament rotary cutters and similar powered tools.

Additional Operations

All edges of grass areas, against buildings, footpaths, roadways, trees, posts and any other obstruction shall be kept neat, trimmed and tidy.

Mowing strips against walls, etc. shall be 100 mm wide and may be maintained by the use of an appropriate approved herbicide.

Border edges shall be clipped and not be allowed to exceed 75mm length. **No spraying of grass verges is deemed acceptable. The base of kerbs may be sprayed but a 'cowl' must be used. A review with the landscape architect is required in advance of the same. The contractor shall allow for ensuring all hard landscaped**

zones (within the contract boundary) are maintained in a weedfree manner throughout the course of the contract.

Grass areas may be sprayed overall with a suitable approved selective herbicide in accordance with the manufacturer's instructions. Alternatively, spot weeding of isolated weed infestation may be carried out.

Fertilisers to be applied in the period of March to April to provide 40 kg N, 10 kg P and 40 kg K per hectare annually.

Reinstatement by re-turfing or re-seeding of worn areas will be undertaken as necessary. On flat areas, and feature mounds worn areas shall be repaired with suitable turf and protected until it roots into the subgrade.

Water as necessary to ensure the establishment and continued thriving of all seeding. Water to be brought onto site at Main Contractors expense.

Wildflower areas and managing meadow grass land areas – allow for 3 to 5 cuts per annum (allowing for cut and collect) in line with timings as agreed with the landscape architect/suppliers recommendations. A formal programming of grass cutting operations is requested in advance of proceeding with the maintenance programme to ensure the strategy is aligned. Seed suppliers recommendations are noted below to allow this formal programming to be prepared.

- **Short Cut Floral Lawn**
<http://www.wildflowers.ie/mixes/dw/dw01.htm>
- **Medium Height Wildflower Meadow Mixture**
<http://www.wildflowers.ie/mixes/dw/dw02.htm>
- **Woodland Wildflower Mixture**
<http://www.wildflowers.ie/mixes/ec/ec03.htm>

108 Failures of seeding

Bare areas, areas of dead grass that have failed to thrive, which are apparent during the defects liability period, will be regarded as defects due to materials or workmanship not in accordance with the Contract and must be made good by recultivation and reseeded/returfing at times agreed with the Employers Representative.

109 Final Mulching

Allow for application of enrich fine grade mulching on all areas of formal shrub planting, hedge planting, 1.0m circles around existing and newly planted trees, edging to existing trees (limited to main entrance), pole structures and various site structures (i.e. mini-pillars, postbox) to a depth of 100mm.

110 Weedkilling

HERBICIDES AS IDENTIFIED BELOW CAN ONLY BE APPLIED PRIOR TO PLANTING; ALL FUTURE WEED MAINTENANCE OF PLANTING ZONES SHALL BE 'BY HAND'.All weedkillers shall be applied to manufacturer's recommendations with properly

designed equipment, maintained in good working order and calibrated to deliver the specified volume, evenly and without local over-dosing.

The Contractor may, with the Employer's Representative's prior agreement, apply foliar acting weedkillers with an ultra low-volume applicator. The rate of application shall be such as to achieve the same control as the general rate specified. Such application shall not be used post-planting, nor with fosamine ammonium.

Protect foliage of all plants during applications of a non-selective foliar-acting herbicide with an 'Arboguard', 'Politec' guard, or equivalent to the satisfaction of the Employer's Representative. No plant, foliage or stem, shall be directed sprayed, even in winter. Take particular care when using Glyphosate.

Dig out all roots of deeply rooted or noxious species. Remove all weeds from site each day and dispose. Make good disturbance to mulch.

For clover, a formulation of Mecoprop and 2, 4-D suitable for turf. Apply when clover is growing vigorously, according to the manufacturer's instructions. Do not spray in windy conditions, or within 1.5 m of shrub planting without protection. Apply in two half-doses, at right angles to each other.

111 Watering

The Contractor will be responsible for watering planting in all trees, grass, hedges, shrubs, ground-cover, herbaceous and annual bedding areas necessitated by dry weather. Apply water as a fine spray, to moisten full depth of root run. Avoid washing or compaction of the soil surface.

112 Firming

Firm any plant loosened by frost, wind or cultivation.

113 Pruning

Any shoot damaged or found to be dying back on a periodic visit shall be cut back neatly to sound growth with a sharp pruning knife. Prune off wind-damaged shoots to sound growth.

114 Fertilizer:

Trees

Slow Release Fertilizer 'Osmo Pro 2' or similar and approved and lightly rake through mulches. Apply to manufacturers recommendations

A combination of slow release fertilizer and an approved organic seaweed meal can be used as an alternative. Manufacturer and reference: Arramara Teoranta, Kilkieran, Connemara, Co. Galway. Product: Asco Top Dress Fertiliser. (or similarly approved organic seaweed meal).

Apply evenly over all planted areas at manufacturers specified rate g/sq m prior to the 'topping up' of bark mulch. Horticultural graded bark from coniferous trees, particles 25-75mm, free of fine material, dust or wood. Spread to 50mm deep, over full areas of planting described in the schedule.

See clause 306 above for fertilizer requirements for shrub beds.

115 Soil Conditioner/Ameliorant

Manure: Spread well rotted horse or farmyard manure or farmyard dung over all planted areas @ 1cubic metre per 10 Sq.m. on one occasion during the landscape maintenance contract. Timing of application to be reviewed with Employer's Representative. (Poultry or pig manure will not be permitted on this site.)

116 Protection

The Contractor shall verify the position of any overhead and underground services, and shall ensure that none will be damaged by his work.

The Contractor shall take all necessary steps to protect paving, roads, kerbs, channels, gullies, walls, fences, structures, furnishings and existing vegetation during the course of his works. Include where necessary temporary coverings, planked barrow runs, etc. Clean mud and soil of all hard surfaces and surroundings to the work.

Any damage to services, surfaces or structures or to existing vegetation caused in consequence of the work shall be made good at the cost of the Contractor.

117 Tidiness and Clearance

All areas of work and access routes shall be kept in a tidy condition. The Contractor shall clean all debris from beds and surrounding surfaces daily during his visits to site, and at more frequent intervals if necessary for the safety of users of the site.

Maintenance Operations

Collect and remove to the contractor's tip all extraneous rubbish, and material arising from maintenance works, which is detrimental to the appearance of the site. This rubbish to include stones, bricks, debris, paper, confectionery and other wrappings, bottles, cans and plastic containers and all other rubbish.

Sweep all paved areas at regular intervals and remove all arisings from the site. Frequency may vary according to time of year or other maintenance operations. Hand or mechanical -sweeping may be used.

Control all annual weed (moss) growth by the application of residual weedkiller. A single application in March/April should normally be sufficient but follow-up spot treatment may be necessary in late summer.

Clear silt and extraneous matter from the drainage gulleys, including the lifting and replacement of the drain cover. Inspect and clear any leaves and other litter from drain gully covers.

Collect and remove from site all leaf litter in Autumn (allow two visits monthly in October, November and December).

Border edges shall be clipped and not be allowed to exceed 75mm length.

Allow for this operation to be carried out at regular intervals organised in conjunction with other maintenance visits and operations.

Collect and remove to the contractor's tip all extraneous matter which has deliberately been deposited on the site by persons known or unknown (fly-tipping). Such matter to include, inter alia, bricks, rubble, garden and household refuse, discarded domestic appliances, furniture and scrap metal.

118 Other specific site items to be address:

- All newly **planted hedging** to be retrained into the temporary support fencing. All hedging to receive 4 trims per year for native hedging and 3 trims for all other ornamental hedging propoped.
- All **whip planting** shall be refirmed and formative pruning be carried out on 1no. occasions during the maintenance period to ensure good form and growth.
- Where **bulbs are grown in grass swards**, these shall be left die in the grass sward. Grass shall not be mowed in this areas for some 6-8 weeks and this shall be addressed in the grass programming schedule as referenced previously.
- **Climbers** shall be trimmed back 2/3 times per annum to ensure good 'connection' to walling from the base. Climbers shall be cut off at height of walling and maintained as so.
- Where used, **Gator bags** to be continually 'topped up' as necessary to ensure a continued supply. Filling of bags to be inline with manufacturers recommendations.

General Landscape Performance Standards

The regular care and maintenance of any area of landscape has a profound effect on its appearance, its value as an amenity and, even in the longer term, its plant structure and overall nature. The right levels of maintenance, and the methods to be used, will vary considerably from site to site and as well as being influenced by the layout and use, will also be a reflection of the soil types, topography, exposure to the elements and local climatic variations.

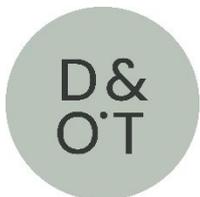
Matching the maintenance regimes to the needs of a site is a major part of landscape management and it is not possible to give any absolute prescription or standard specification that can be applied for a particular type of landscape. However, this chapter attempts to describe and define the main operations that go into routine maintenance. Under the heading of each main type of landscape feature there are performance specifications and objectives for the various operations.

General Landscape Performance Standards

Type	Description	Maintenance Objective	Maintenance Operations
Amenity Grassland	Amenity grassland describes all natural and semi-natural grassland used for recreation purposes as distinct from that used for productive agriculture. It forms the major part of the landscape and its maintenance requires more time during the summer growing season than any other activity.	To provide an even stand of vegetation of uniform height and colour comprising predominantly of grass species, although a small percentage of dicotyledenous plants - no more than 5 per cent - will be accepted.	<ul style="list-style-type: none"> Mowing shall be carried out using a cylinder mower to maintain the vegetation length within the limits of 30 mm and 35mm during April to August inclusive and between 35 mm and 50 mm during the rest of the year. (This will normally require mowing at up to once a week in the peak of the season and up to, 20 times per year). The 'arisings' shall be collected and discarded appropriately off site by the Landscape Contractor. At no stage must arisings come to rest on paved or planted areas. All edges of grass areas, against buildings, footpaths, roadways, trees, posts and any other obstruction shall be kept neat, trimmed and tidy. Mowing strips against walls, etc. shall be 100 mm wide and may be maintained by the use of an appropriate approved herbicide. Border edges shall be clipped and not be allowed to exceed 75mm length. Grass areas may be sprayed overall with a suitable approved selective herbicide in accordance with the manufacturer's instructions. Alternatively, spot weeding of isolated weed infestation may be carried out. Fertilisers to be applied in the period of March to April and in period September to October as noted above. Provisional item Reinstatement by re-turfing or re-seeding of worn areas may be undertaken as necessary.
Planting Areas (Shrubs/Herbaceous)	The borders must be kept weed free, particularly of perennial weeds, to allow planting to give early cover. However, the plants may be required to be thinned so that the shrubs that are retained are able to achieve an attractive form. This may involve removing the intermediate plants soon after shoots are touching.	Maintain shrub growth to cover as much as possible of the border area and allowing the individual plants to achieve as nearly as possible their natural form. Maintain the borders free of visible weeds and shape and prune the shrubs to avoid obstructing pathways or blocking light to, or adhering to windows.	<ul style="list-style-type: none"> After planting, if appropriate and in season for the species involved, prune shrubs to develop their desirable ornamental characteristics. At the same time remove intermediate plants that are restricting the natural and attractive development of their neighbours. Remove all arisings from site. If plants have become over mature, rejuvenation by a once over complete coppice is recommended; however this should be reviewed with the Employer in the first instance. Lightly cultivate the surface soil, to a depth of approximately 50 mm, remove or bury all annual weed or natural litter and break any surface capping. Take special care to avoid unnecessary damage to the shrub plants and ensure that all the shrubs are firmly bedded in the soil. Leave the surface with a fine and even tilth with soil crumbs of less than 50 mm in diameter. Once a year operation (in early winter). Note: This operation is only essential where the soil is compacted or as a means of incorporating mulch. Not required where the areas are mulched. Maintain the soil surface substantially free of weeds (less than 10 per cent weed cover) by hand removal and spot treating with Glyphosate, or approved equivalent. Spot treatment at approximately four-weekly intervals in the main growing season, to a total of five times per season.

Type	Description	Maintenance Objective	Maintenance Operations
<p>Newly Planted Trees</p>	<p>Young trees will need regular attention to ensure establishment. Either guards or fencing have been used to protect the plant against rabbits, etc. The most important operation is to keep the soil around the base of the tree free from weeds or grass and to ensure secure and correct staking.</p>	<p>Establish a stable and healthily growing tree with a well-shaped framework for future growth.</p>	<p>Note: As an alternative the borders can be regularly hand-hoed at up to two-weekly intervals in the main growing season, to 6 times per year. This procedure is recommended for the first year after planting when the plants may be more sensitive to contact herbicide damage and residual herbicides may not be used.</p> <ul style="list-style-type: none"> Immediately after planting or, as required and where subsequently directed, mulch the surface of the border with a 50 mm layer of pulverised bark (maximum particle size 40 mm), or other approved equivalent. Thereafter, top dress the mulch as necessary and at least once a year to maintain effective cover. Spot treat or remove any emergent weeds as specified in c) above but do not cultivate or incorporate the mulch into the soil. <ul style="list-style-type: none"> Maintain a 1 m diameter circle of plant-free soil around the base of each isolated tree by hoeing <i>or</i> the use of approved herbicide other than a residual. Avoid strimming around the base of standard trees which readily damages young bark. Allow for hoeing up of soil once every 4 weeks in the growing season (5 times per year). Allow for herbicide treatment once in the winter or spring and 3 additional treatments. Note: In some areas this operation may be replaced by the application of bark mulch as ground cover. Cut back any tall vegetation that is threatening to shade or smother the young tree (i.e. taller vegetation growing from outside the 1 m weed free area). Allow for cutting back regularly (3/4 times a year). If required, water the newly planted trees throughout the summer months (May to August) as required after any period of 4 weeks without significant rainfall (less than 5 mm). Apply sufficient water to thoroughly wet the top 150 mm of soil around the tree roots. This will normally require approximately 10 litres for a seedling or whip and 20 litres for a standard tree. Supply/transport of water to be the responsibility of the Landscape Contractor. Check stakes and ties for firmness and support and adjust as necessary. Allow for checking twice a year, preferably in late spring and late summer. Firm the soil around the roots to ensure that the plant is securely planted in the ground and upright. Allow for firming once in the spring after planting. Formative prune to remove any dead, diseased or damaged shoots and create a balanced form for future growth. Allow for pruning once in the season after planting. Where tree guards, stakes, ties, strimmer guards, rabbit guards and temporary fencing is no longer deemed necessary, the contractor shall allow for removing and discarding of these elements appropriately off site.
<p>Hedging</p>		<p>Regularly clip hedges to maintain a uniform and tidy appearance (according to the type of hedge and situation) and a well-developed cover of vegetation over the whole of the hedge surface. Control any weed or grass growth at the base of the hedge so that it does not detract from the overall appearance or adversely compete with the hedge.</p>	<ul style="list-style-type: none"> Clip the top and sides of the hedge to maintain true and even levels and using suitable mechanical cutters to maintain the shape and height. Remove any cuttings lodged in the surface of the hedge and rake up and remove all arisings. Allow for the operation to be carried out to suit the species and position of the hedge. Maintain weedfree 750mm wide band at the base of the hedge (weeds at a maximum height of 100mm and a maximum ground cover of 10%) by regular hand removal, hoeing or by the use of approved herbicide. Allow for control once every 6 weeks in the main growing season (4 times per year).

Type	Description	Maintenance Objective	Maintenance Operations
Litter Clearance		Collect and remove from the site, all extraneous litter and rubbish on a regular basis so that its presence is not detrimental to the appearance of the site. (This means that the site should be free from litter after each visit to site).	<ul style="list-style-type: none"> Collect and remove and dispose appropriately off site all extraneous rubbish, not arising from maintenance works, which is detrimental to the appearance of the site. This rubbish to include stones (over 50mm dia. which may be buried), bricks, debris, paper, confectionery and other wrappings, bottles, cans and plastic containers. Allow for this operation to be carried out at regular intervals based in conjunction with other maintenance visits and operations. Collect and removed and disposed of appropriately off site all extraneous matter which has deliberately been deposited on the site by persons known or unknown (fly-tipping). Such matter to include bricks, rubble, garden and household refuse, discarded domestic appliances, furniture and scrap metal. Priced per occasion based on an estimate of the volume of material to be collected.
Paved Areas		Regularly sweep or clean paved surfaces to keep it clear of litter or other debris that will detract from the appearance of the site. Keep the surface free from weed (including moss) growth and all associated drainage gullies in working order.	<ul style="list-style-type: none"> Sweep all paved areas at regular intervals and remove all arisings from the site. Frequency may vary according to time of year or other maintenance operations. Hand or mechanical - sweeping may be used. Control all annual weed (moss) growth by the application of residual weed killer. A single application in March/April should normally be sufficient but follow-up spot treatment may be necessary in late summer. Clear silt and extraneous matter from the drainage gullies, including the lifting and replacement of the drain cover. Programme for once every six months but more frequently where silting up is a particular problem. Inspect and clear any leaves and other litter from drain gulley covers. Programme at up to once a week in the autumn when the where there is likely to be heavy leaf fall.



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