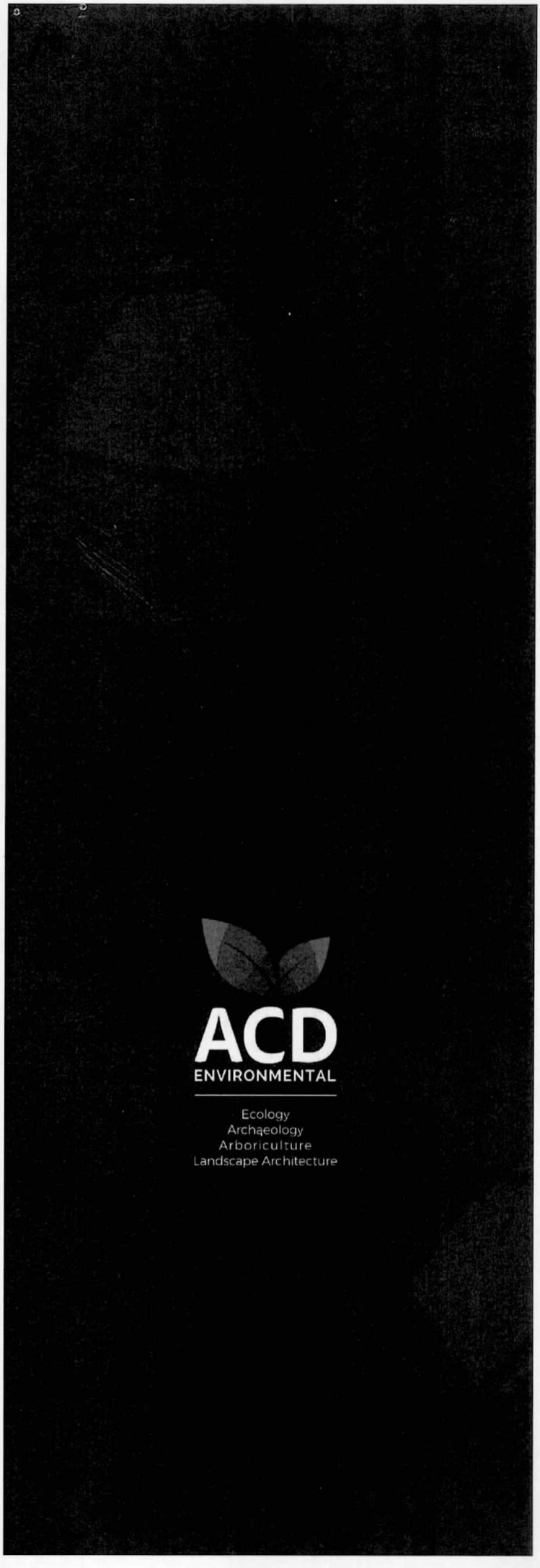


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NEW ROAD HILLINGDON

SOFT LANDSCAPE SPECIFICATION

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1.0 Site Preparation and Earthworks

1.1 Programme of Operation: The exterior planting shall be installed over the minimum period to complete the whole of the works. Dates are subject to discussion and agreement with suitable environmental conditions prevailing. The Contractor must verify this programme of works before commencing on site.

1.2 Protect Work: The Contractor shall provide adequate temporary protection to the work during the installation and shall include temporary coverings, and all other measures for protecting the work from damage.

Any work damaged or soiled by traffic or other causes due to inadequate temporary protection shall be removed and made good at the cost of the Contractor. If other work is damaged by the Contractor he will be held responsible for the cost of rectification.

1.3 Rubbish: All rubbish is to be immediately cleared and removed as it accumulates during the course of the work. At completion the site is to be left clean and tidy.

1.4 Water must not be allowed to accumulate in any part of the works and the Contractor is to allow for providing for all necessary pumping or bailing that may be required to keep any excavations, or any part of the site free from water at all times.

1.5 Existing Vegetation: No existing trees, shrubs or other plants shall be removed or cut without specific instructions from the Architect. Existing trees are to be retained, protected and undisturbed throughout the contract in accordance with BS5837:2012 Trees in relation to design, demolition and construction- Recommendations (Section 6). No branches are to be cut or damaged and no roots larger than 25mm in diameter are to be cut or damaged in accordance with the British Standard. No fires are to be lit under or anywhere near the trees. No debris, fuel, or building material of any sort to be stacked against or piled around the trunks.

1.6 Weed Control: All weeds shall be cut down and taken off site to a tip found by the contractor. One contact, approved, herbicide spray shall be applied to all areas of site to eliminate any remaining green weed vegetation.

1.7 Loose Debris: All loose debris, rubbish and foreign matter of any kind shall be cleared from the site and taken to a tip found by the Contractor.

1.8 Topsoil storage is to be in line with BS3882:2015 Specification for topsoil and be narrow and not more than 1m in height. The topsoil storage is to be protected by not placing any other material on top of the storage heap, not allowing construction plant to pass over the storage heaps and prevent compaction and contamination. Application of a suitable herbicide, at appropriate times, is to be undertaken to prevent seeding of weeds.

1.9 Filling: Carry out all necessary filling to form new soil formation levels which will give finished levels as shown on drawings. Include for loading and depositing sub-soil on site, and for importing fill material. All material in making up levels shall be to the approval of the Architect and shall be spread and consolidated in layers of 150mm.

1.10 All imported fill material shall be free from metal, vegetable matter and any toxic wastes or pollutants. Rock and/or masonry of limited size will be permissible provided that the dimension does not exceed 50mm. A sample load shall be stored intact for comparison with further loads which shall be of similar standard.

1.11 Grading: Allow for grading and cross grading over the site to achieve final grades in accordance with the grading and contour drawings. All finished gradients are to be smooth flowing, marrying in with all existing levels (back of pavement etc.) eliminating all abrupt angles and changes of levels. All shaping works are to be carried out in consultation with the Architect on site. Minor fillings and excavations are to be made as necessary.

1.12 Measurements: Attention is drawn to the fact that all measurements of the above area are net measurements and the contractor shall allow in his prices for increases in bulk and for transporting material to and from temporary store as may be necessary.

1.13 Sub-Soil Preparation: All stone, brick, concrete, wood, wire, pipes debris, rubbish, weed roots and foreign matter of any kind above a maximum dimension of 75mm shall be removed from the sub-soil formation layer to a minimum depth of 600mm below topsoil and broken up immediately prior to sub-soil application.

1.14 The sub-soil shall be evenly graded to the appropriate formation levels below the finished levels of the top soil to the appropriate depth, as outlined in section 2.0

1.15 Removal of surplus excavated material: Remove all surplus excavated material from the site.

1.16 Re-Use of Top Soil: The re-use of existing top soil shall only be permitted with the strict approval of the Architect. Any surplus top soil is to be removed from site.

Relieving Compaction

1.17 Generally all works should be undertaken in line with the following principles:

- Moisture content of the soil is at least 5% below their plastic limit.
- Identified root protection areas are to be avoided.

  Mechanical method recommendations:
- The ripping pattern must be overlapping passes.
- The tines should be sufficiently closely spaced to ensure full lateral de-compaction, which also needs overlapping passes.
- The use of winged tines is recommended.
- Tine length and width must be compatible with the proposed depth of de-compaction.
- Tine and wings must have wear plates and be in a good condition.
- The towing unit must be capable of working efficiently without undue weaving and track slippage.

1.18 To relieve compaction in turf (beyond identified root protection areas), works are to be undertaken in line with BS7370-2:1994 Ground maintenance- Recommendations, using spiking or vertical lifting and applying a top dressing of medium- fine sand to a depth 2-3mm.

1.19 To relieve compaction in all other areas (beyond identified root protection areas), works are to be either deep- jetting (high pressure soil injection), aeration and mychorrizal inoculation, complete soil replacement, mechanical ripping or manual ripping. Contractor is to submit proposals to the Contract Administrator, prior to undertaking works.

2.0 Topsoiling and Cultivation

2.1. Imported Top-Soil: Imported top-soil is to be a 'multipurpose topsoil' in accordance with BS3882:2015 Specification for topsoil, unless there is a requirement for a 'specific purpose topsoil' which will also be in accordance with the British Standard.

2.2. As well as being in accordance with BS3882:2015 Specification for topsoil, the multi-purpose topsoil should be a quality loam and have the following properties:

pH value	5.5-8.0
Nitrogen (N)	0.15% min
Phosphorous (P)	16- 100 mg/l
Potash (K)	121- 900 mg/l
Magnesium (Mg)	51- 600 mg/l
Clay	5% min- 35% max
Silt	0% min- 65% max
Sand	30% min- 85% max
Organic matter	3% min- 20% max

2.3. The top soil shall be free from stone, rubbish of any kind, roots of perennial weed or any other injurious matter.

2.4. The topsoil must be supplied with a BS3882:2015 Specification for topsoil, declaration of analysis, analysis certificate and sampling protocol.

2.5. At the outset of the works a sample 5m³ load must be deposited on site for approval and comparison and all subsequent loads shall be at least equal in quality to the sample, which shall remain until top-soil spreading is completed.

2.6. In line with BS3882:2015 Specification for topsoil, the depth of topsoil spread shall not normally exceed 300 mm. Suitable (loosened) subsoil shall provide the remainder of the minimum rooting depth, both minimum topsoil and subsoil depths are to be in line with the following table:

	Subsoil Depth	Topsoil Depth	Overall Soil Depth
Grass	150mm	300mm	450mm
Shrubs	300mm	300mm	600mm
Trees (within soft landscape areas)	600mm	300mm	900mm

2.7. Approved Chemicals: All chemicals used shall be non-toxic to human beings, birds and animals, under normal use and chemicals which are not on the "Agricultural Chemicals Approved Scheme" current list of Approved Products shall not be used.

2.8. Organic fertilizer is not be applied within 10m of surface water (including ditches), hedges, field margins or environmentally sensitive sites or 50m from springs, wells or boreholes.

2.9. Artificial fertilizer is not be applied within 2m of water (including ditches), hedges, field margins or environmentally sensitive sites.

2.10. Fertilizers: The bone-meal is to be medium coarse and is to contain not less than 20% soluble PO (Phosphates) and between 3 – 5% NO (Nitrogen).

2.11. Compost: Peat free compost to be used such as Richmoor Soil Improver as supplied by Greentech or similar approved should be used.

2.12. Soil Improver: Tree pits and shrub beds will be treated as follows:

Alginure Soil Improver incorporated into tree pits at 1.5 Kg per m^3

Alginure Soil Improver incorporated into the shrub beds at 75g per m^2

3.0 Plants and Planting

3.1. Planting Operations: Planting operations shall be carried out in general accordance with the requirements BS4428:1989 Code of practice for general operations (excluding hard surfaces).

3.2. Damage: All plants shall be adequately and carefully packed and protected to survive transport, by whatever means, to the site without damage in loading, transit or unloading

3.3. If in spite of these precautions, roots, branches or shoots suffer slight damage, they shall be carefully pruned. If major damage has occurred, the plant shall be rejected and replaced.

3.4. Container and Pot Grown plants: Container and pot grown shrubs must have grown in weed free containers of the sizes specified for at least one complete growing season and must be healthy, bushy, vigorous and well-rooted but not pot bound and equal to all clauses of this specification.

3.5. Species and Varieties: All plants are to be of the species and variety indicated on the schedules and drawings. If however, any plants are unobtainable at the time of ordering, the contractor is to inform the Employer immediately and submit a list of alternatives for consideration.

3.6. Container and pot grown plants which are not planted on arrival on site must be watered frequently to prevent drying out. Plants which have been allowed to dry out to the extent where their health is affected will be replaced at the Contractor's expense. Immediately before planting, all container and pot grown plants will be well watered. Care will be taken during planting not to break up the root ball. Where plants have become pot bound, the roots on the outside of the ball will be gently eased out before planting.

3.7. Heeling In: After delivery, if planting is not carried out immediately, root balled plants shall be placed next to each other and the ball covered with sand or fine soil and watered to prevent drying out. Bare rooted plants shall be heeled-in by placing the roots in a prepared trench and covering them with fine soil which shall be watered in to avoid air pockets round the roots.

3.8. Shrubs: Shrubs shall comply, at least, with the requirements of BS3936-1:1992 Nursery Stock. Shrubs shall be to the minimum height or spread as specified. Cutting back shall occur if necessary for the normal development of the plant.

3.9. Herbaceous Plants: Herbaceous plants shall be exactly true to name, well grown, healthy, vigorous clumps, in at least their second season of growth from division or propagation. They shall be planted to the correct depth in staggered rows at approximately equal centres and well-watered in at the time of planting and subsequently, as necessary.

3.10. Planting shrubs, climbers and Herbaceous Plants: Dig out holes large enough to receive the roots of the plant fully extended and well spread out. Carefully work top-soil among roots and backfill. Plants to be well firmed by heeling and the surface left neat and even. Planting must be to the same depth as in the nursery. Care must be taken not to disturb the root balls of pot grown plants and not let any roots dry out at any time.

3.11. Plants are to be arranged in a random layout, with spacing and density in line with landscape proposals.

3.12. Watering: All plants are to be well watered immediately after planting operations. To be wet to full depth of topsoil or wet to field capacity using either potable mains water, recycled or treated grey water. If there is any surface compaction the soil is to be loosened to direct water to the rootzone, taking care not to damage or loosen plants. Watering operations are to be undertaken as many time as necessary in order to ensure the continued thriving of all planting materials.

3.13. Water restrictions: 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.

3.14. Mulch: Apply 75mm depth of mulch over whole of planting bed immediately after watering in. Mulch to consist of 'Melcourt Amenity Bark Mulch' available from, www.Melcourt.co.uk; 01666 504398 or similar. Free from pests, disease, weeds and additives. Rose beds shall have organic manure spread after planting in addition, at a rate of $1m^3$ to every $20m^2$, before applying mulch.

Hedge Planting

3.15. Free standing hedges a 3 strand galvanised wire and tanalised softwood timber post fence, to BS1722- 2: 2006 Fences, is to be erected through the centre of the staggered row of hedge or along the back edge of a single line of hedge. This is to prevent access through the site by pedestrians until the hedges are fully established.

3.16. Formal hedgerows: Consistent in species, cultivar and clone to ensure a uniform hedge. Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

3.17. Immediately following planting operations, watering operations are to be undertaken thoroughly and without damaging or displacing plants or soil. Soil is to be lightly firmed around plants and forked/ or rake soil without damaging roots, to a fine tilth with gentle cambers and no hollows. Bark mulch is then to be applied to surface, in line with previous clauses.

4.0 Trees

4.1. Planting of Trees shall be in accordance with BS8545:2014 Trees: from nursery to independence in the landscape- Recommendations.

4.2. Tree Stock: All stock must comply in all respects with the current edition of the British Standard (as outlined above).

4.3. Trees shall be well grown nursery stock free from disease, true to type and of a size scheduled in accordance with the approved method of measurement. All young trees shall exhibit a clearly defined stem taper, evident from crown through to root flare, appropriate to the species. All young trees shall have been formatively pruned at the nursery to give well-balanced crown formation, a well formed straight central leader and lateral branches subordinated to that leader. All root-balled trees shall have been transplanted the correct number of times as specified in the plant schedule. All rootballs shall contain a fully fibrous root system with obvious evidence of root pruning or transplanting.

4.4. Identification: Every specimen tree, and one tree from each group of similar trees, shall bear labels with the correct full botanical name. These to be of 6mm Dymo tape (or equal) stuck onto white plastic labels and tied loosely to tree in a position where it can be seen clearly.

4.5. Trees to Correspond with Varieties Specified: Trees supplied shall correspond exactly with the species, varieties and sizes stated.

4.6. No Substitutes will be permitted unless expressly authorized in writing by the Local Planning Authority. Trees shall be of good stock, hardy and well rooted and where applicable shall be furnished with straight sturdy trunks, and well branched balanced heads.

4.7. Plants should have been regularly transplanted during growth in the nursery, and be generally in compliance with the requirements of the relevant parts of BS8545:2014 Trees from nursery to independence in the landscape- Recommendations. Any damaged plants must be replaced by the planting Contractor.

4.8. Trees brought onto the site shall have their roots protected from drying out until planting is carried out.

4.9. Protection of Planting Material: All trees shall be adequately and carefully packed and protected to survive transportation to the site without damage.

4.10. Particular care must be taken that the roots are not allowed to dry out and plants must be protected by damp straw moss, sacking or the like. Trees which are not used immediately on site shall be heeled in to ready prepared trenches and shall be kept thus in a moist condition until planting on the same day. Trees not used on the same day of arrival may be heeled in and stored at a site to be agreed with the Architect. Plants so stored will not be subject to an extra cost on the contract.

4.11. Tree Pits: Tree pits shall be of a diameter at least 75mm greater than the root ball. The depth of the pit shall be no deeper than the existing root-ball or container depth. The base of the tree pit should not be disturbed unless there are specific problems such as poor drainage, soil smearing or pans resulting from pit construction which need to be rectified. The use of geotextiles or any other barrier to root growth, either at the base or along the sides of tree pits can limit root development into surrounding soils. Unless there is a specific requirement to inhibit root growth such barriers should not be used. During excavation of the tree pit, the soil dug shall be placed to one side separating topsoil and subsoil as far as possible.

4.12. Planting: Once a root-balled tree has been positioned in the planting pit, hessian, twine and the wire cage shall be loosened. If wire encircles the stem diameter as part of the wire cage of the rootball, this shall be cut and removed. The tree's root system shall be wetted prior to planting. The tree shall be planted at the correct depth taking into account the position of the root flare. Allowances shall be made for the settling of the soil after planting. The rootball or root-stem transition shall be level with the host soil or surface.

4.13. Backfill of tree pit: 300mm depth topsoil in line with BS3882:2015 Specification for topsoil (multi-purpose topsoil), with 600mm subsoil for trees within soft landscape.

4.14. All backfill applied shall, as far as possible, replicate the horizons within the original soil profile. Topsoil shall not be used below the depth of the original topsoil layer. Backfill shall be added gradually in layers of 150mm depth, ensuring the tree is held upright. At each stage the fill shall be firmed in to eliminate all air pockets under and around the root system, but with care being taken not to excessively compact the soil.

4.15. Planting Season: Unless otherwise specified all transplanting shall be carried out between the end of October and the end of March. Container grown trees may be transplanted at times other than these at the discretion of the Landscape Architect.

4.16. The transplanting shall be carried out when the weather is dull and the ground is moist and workable. On no account must the planting take place when there is freezing wind. Where approval is given by the developer to transplant between March and September, the trees shall be given a transplanting spray before transplanting and again between 7 and 10 days after planting, at the Contractor's expense.

4.17. In the case of evergreens, transplanting spray shall be applied both before and after transplanting whatever time of year.

4.18. Planting Depth: This is critical to transplanting success. The root flare of the newly planted tree shall be clearly visible at the soil surface. It should not be buried by excess soil or mulch. Where rootballed trees have been supplied with the root flare too deep, any excess soil shall be removed from the top of the rootball to reveal the root flare. Where containerized trees have been planted too deep in the container during the production process there is often a matting of fibrous roots above the root flare and across the container surface. These roots shall be removed and the root flare exposed prior to planting.

4.19. Transplanting in Frosty Conditions: Planting of trees in frosty conditions will only be permitted if adequate precautions are taken. The prepared root balls must have additional wrapping. The bottom and sides of the tree pits, and the piles of top-soil, must be protected from freezing by the use of boards, tarpaulins or other approved materials.

4.20. Watering: At the time of planting the tree pit shall be saturated to the point of field capacity. If there is a risk of frost within 24 hours the watering shall be delayed until such risk has passed.

Tree Pit Accessories (trees within soft landscape)

4.21. Tree Supports: Stakes to be requisite length, pressure impregnated (with preservative non injurious to plants) de-barked softwood 100mm square or diameter. Stakes shall allow for canopy and stem movement as low down the tree as possible, whilst supporting the structural function of the root system. Tree stakes shall be driven into the ground before the tree is planted, to a sufficient depth to provide full support for the tree.

4.22. Tree Ties: To be expandable rubber tree tie with spacer block between tree and cross bar fixed with heavy duty galvanized nails.

4.23. Irrigation tubing: Root Rain Metro pit irrigation system to be installed in line with suppliers recommendations, as supplied from GreenBlue Urban or similar.

4.24. Mulch: Apply 75mm depth of mulch over whole of planting bed immediately after watering in. Mulch to consist of 'Melcourt Amenity Bark Mulch' available from, www.Melcourt.co.uk; 01666 504398 or similar. Free from pests, disease, weeds and additives. The root flare and the base of the stem shall be maintained free from mulch.

5.0 Grass Works

5.1. Time of sowing: While grass seeding works may be carried out from May to September in appropriate weather conditions, a program for sowing in either early or late summer will normally be agreed.

5.2. Grassing Works: Preparation and grassing works shall be carried out in general accordance with the requirements of Section 5 of BS4428: 1989 Code of practice for general landscape operations (excluding hard surfaces).

5.3. Grass Finished Levels: Grass finished levels at kerbs, gulleys, manholes and other horizontal surfaces will finish 25mm above these hard surfaces and be as indicated in the appropriate standard detail.

5.4. Cultivation: The top soil in areas to be seeded shall be ploughed or disc harrowed to a depth not exceeding 150mm, care being taken not to bring the subsoil to the surface. All weeds, rubbish and stones 75mm and above shall be removed from the site.

5.5. Preparation of Seed Bed: The areas shall be cultivated to produce a fine tilth suitable for seeding and firmed by lightly rolling.

5.6. Fertilizer shall be granular fertilizer, obtained from an approved reputable horticultural supplier, stored in approved dry building until required for use.

5.7. Grass Seed Mixture: Seed shall be certified as to source, purity and germination, and the certificates shall be handed to the Architect.

5.8. Sowing: Seed shall be cross-sown in two directions at right angles to each other(half the seed being used in each direction) at the rate of 35g/m² and the ground lightly raked over on a still dry day when the top 25mm of soil is dry.

5.9. Rolling: After sowing areas are to be lightly rolled, weather permitting.

5.10. First roll and cut: When grass has grown to 38mm it shall be lightly rolled and, two days later, mowed with an approved mower having no roller and sufficiently sharp to avoid root pulling.

5.11. Finished Grass Levels: Finished grass levels are to 40mm above surrounding kerbs, paving and plant bed edges and the addition of imported topsoil shall be undertaken where required.

Turf

5.12. Turf: Turfs shall be in accordance with BS3969: 1990 Recommendations for turf for general purposes. Turfs shall be clean meadow or downland turfs, fibrous and well-rooted, free from matted dead grass and perennial weeds, and shall have been subject to proper maintenance and treatment with selective weed-killers and insecticides during the previous growing season.

5.13. On completion of laying, the whole turf shall be top dressed with finely sifted soil well worked into the joints.

5.14. No turf shall be laid during frost, exceptionally dry weather or on water-logged ground.

5.15. Correction of Hollows: Any slight hollows which appear within the aftercare period due to settlement or other causes are to be top dressed early in the growing season, with a mixture of good quality topsoil and fine peat-free compost lightly rolled in and the grass allowed to grow through before cutting.

5.16. Deep hollows are to be treated by neatly cutting out a square of turf, building up beneath with the same mix plus an equal quantity of sharp sand, and the turf replaced at the correct level for rolling. Cutting may proceed without interruption.

5.17. Hollows repaired as above are to be kept watered as necessary until the turf has fully married in.

5.18. Watering: On completion of laying and top dressing, turf areas shall be well watered.

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