

SPECIFICATION NOTES

1. **General.**
This plan to be read in conjunction with the following documents:
- SO-2168-03-LA-003 Hard Landscape and other drawings by terra firma
- Arboricultural, drainage and other reports by specialist consultants
2. **General landscaping.**
i. Existing levels to be preserved around retained existing trees and vegetation. Existing trees and vegetation to be retained are to be protected in accordance with BS5837: 2012 during construction or as detailed by Tree Protection Plans.
ii. All landscape works to be undertaken by competent persons, with appropriate training and equipment.
iii. All sitings to be removed from site at contractor's expense unless noted otherwise.
3. **Services.**
The contractor must ascertain for himself/herself the exact location of underground services before commencing work.
4. **Soil Materials Generally.**
i. **Purity:** Soils shall be free from roots, stolons, rhizomes, propagules of perennial or invasive weeds couch grass, bindweed, docks, Japanese knotweed, giant hogweed and horse tail/mare's tail (Equisetum arvense).
ii. Foreign matter: On visual inspection, free from non-soil material, brick and other building materials and wastes, sharps, and any other foreign matter or material or substance that would render the soil or soil ameliorant unsuitable for use.
iii. Contamination: Do not use topsoil, subsoil, sand or compost contaminated with rubbish or other materials that are:
- Corrosive, explosive or flammable;
- Hazardous to human or animal life;
- Detrimental to healthy plant growth.
iv. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil, subsoil, sand or compost or other planting media to be used.
5. **Soil testing**
Each soil sample (imported and site-won subsoil and topsoil - see items 6-9 below) shall be analysed by Tim O'Hare Associates, Howbery Park, Wallingford, Oxon OX10 8BA. Tel: 01491 822653. Email: info@toha.co.uk, www.toha.co.uk (or equivalent approved).
6. **Subsoil for general planting areas (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)**
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use for planting; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants, including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	35
Silt (0.002-0.05mm)	%	0	35
Sand (0.05-2.0mm)	%		
Of which at least 40% shall fall into fine to medium sand range	%	50	90
Stones (2-50mm)	%DW	--	50
Stones (>50mm)	%DW	--	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	--	1.5

7. **Subsoil for tree pits (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)**
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants, including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	35
Silt (0.002-0.05mm)	%	0	35
Sand (0.05-2.0mm)	%		
Of which at least 40% shall fall into fine to medium sand range	%	50	90
Stones (2-50mm)	%DW	--	50
Stones (>50mm)	%DW	--	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	--	1.5

8. **Topsoil for general landscaping (sample of imported topsoil to be sent for testing to check compliance with parameters below and to inform any necessary amelioration - see 9 below)**
Imported topsoil to be good quality sandy loam or manufactured topsoil (from approved source, meeting parameters given below). Topsoil is to be tested to determine suitability for proposed use and should be free from commonly tested contaminants, including asbestos; test report to be submitted to Landscape Architect for approval and to enable amelioration recommendations to be made:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	18
Silt (0.002-0.05mm)	%	0	25
Sand (0.05-2.0mm)	%		
Of which at least 40% shall fall into fine to medium sand range	%	60	90
Stones (2-50mm)	%DW	--	50
Stones (>50mm)	%DW	--	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	--	1.5

9. **Ameliorant: fertilizer and compost (contractor is responsible for submitting a sample of imported or site-won topsoil to inform requirements).**
Topsoil amelioration to be determined by analysis. Once amelioration requirements ascertained as required, approved (peat) free composts to PAS100 and/or fertilizers to be incorporated during cultivation at required rate to full depth of growing medium.
10. **Soil handling and depths.**
Management of soils to be in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
- i. Topsoil and subsoil to be handled (i.e. excavated and/or imported, stored, spread, cultivated) in accordance with method agreed in writing by Landscape Architect prior to work commencing. All topsoil and subsoil areas shall be thoroughly cultivated by hand or suitable machinery to the full depth of the topsoil layer, incorporating ameliorants as required. If compaction is suspected in sub-grade, subsoil or topsoil surfaces, these should be ripped as necessary to decompact and ensure adequate drainage.
- ii. Hand cultivations shall be carried out to achieve the required finish on areas where machine cultivation is impossible ie adjacent to kerbs, manholes and footpath junctions, around retained trees etc. Surplus plant matter, rubbish and surface stones having any dimension greater than 25 mm shall be collected and removed from the site. Topsoil and subsoil is to be stored in heaps, maximum of 2m in height, providing soil is reasonably dry and friable during stripping and handling - using a tracked excavator. To protect from wet weather, once final height is achieved, an excavator should regrade the sides and top of stockpile to firm surface by tracking across it to form a smooth gradient.
- iii. Final topsoil depth (allowing for settlement) to be 300mm for tree pits and general planting areas and 150mm for grass. Finished soil levels to be 25mm above adjoining paving or kerbs and graded down at edges; not less than 150mm below dpc of adjoining buildings; shrub areas to be higher than adjoining grass areas by 25 mm.

11. **Plant handling and establishment.**
Plant handling shall be in accordance with 'Handling and establishing landscape plants', published by the CPSE through the JCLL (<http://www.gchdcofs.co.uk/wp-content/uploads/2014/04/Plant-Handling-2014.pdf>). The contractor shall comply with Part 3 Recommendations for plant handling from delivery to site to ensure successful establishment.
12. **General planting notes.**
Details for tree, hedge and general planting to be finalised once final site conditions are known (ie compaction and permeability of ground). General plant stock to conform to BS 3936, advanced nursery stock to BS 8545, and planting to BS 4428. Plants shall be first class examples of their species or variety, free from all pests and diseases, with good fibrous root systems and materially undamaged. All planting operators to be in general compliance with BS4428: 'Code of Practice for general landscape operations'. Only carry out all planting while soil and weather conditions are suitable:
- Do not plant during periods of frost or strong winds. Plant only during the following periods
- Deciduous trees: Late October to late March (rootball and bare root)
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering is provided
- Bulbs: September/October

- Setting out of planting beds to be approved by Landscape Architect before work commences. Ensure that plant beds are neatly defined, and rise from adjacent paved areas as specified above. All tree pits and planting beds are to be mulched with approved bark mulch to 75mm settled depth after planting.
13. **Tree planting**
Any proposed substitutions of species shown on plan to be approved by landscape architect prior to planting. Details for tree planting to comply with BS8545. As a guide all trees to be planted in square pits with base undisturbed unless drainage / compaction problems known. Plant at a depth where the root flare is clearly visible at the soil surface. Where trees have been supplied with the root flare too deep excess soil or fibrous root growth should be removed before planting. All trees to have 'Ridder' tree irrigation/aeration system installed as supplied by Platipus 01737 762300 www.platipus-anchors.com or approved equivalent. Water-in heavily after planting and mulch surface, ensuring mulch is not in contact with trunk of tree. Tree support to comply with BS 8545: RB or CG trees to have double stake and bridge with adjustable tie; multi-stem trees to have single diagonal stake; tree stakes to be stained black. Any necessary remedial tree works are to be carried out by an approved tree surgeon to BS 3998.
- i. **Trees up to 20cm girth.**
Depth of tree pits to be the same as the rootball and with overall width to be 150mm wider than the diameter of the rootball (75mm min. from rootball edge to tree pit side) - minimum 750 x 750mm. Pits to be backfilled with 300mm depth of specified topsoil over subsoil as per spec.
- ii. **Trees - 20cm girth and above.**
Depth of tree pits to be 200mm deeper than rootball and with overall width to be 150mm wider than the diameter of the rootball (75mm min. from rootball edge to tree pit side) - minimum 950 x 950mm. Pits to be backfilled with 400mm depth of specified topsoil over washed medium coarse grade sand to a depth of 200mm below rootball.

14. **Hedges.**
Depth of planting trench to be same as rootball, overall width 150mm wider than rootball (75mm min. from rootball edge to sides of trench). Trench to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Central post and wire supporting to be provided with two line wires and plants to be tied in using horticultural ties. On planting, hedges to be trimmed to 1000mm ht, and sides trimmed to neat shape where necessary.
15. **Specimen Shrubs.**
Depth of planting pit to be same as rootball, overall width 300mm wider than rootball (50mm min. from rootball edge to sides of pit). Pit to be backfilled with 300mm depth of specified topsoil over subsoil as per spec.
16. **Shrub and Ground Cover Planting.**
All plants to be planted into cultivated planting beds (with 300mm depth specified topsoil) at densities shown in plant schedule, backfilled with same topsoil.
17. **Bulb planting.**
All bulbs to be planted at the rate given in the schedule in areas indicated on the plan. For planting, naturalize bulb positions by dropping bulbs from waist height. Neatly remove a plug of turf and replace after planting. Plant so that the top of the bulb is at a depth of approximately twice its height with base in contact with bottom of hole. Bulbs should be no closer together than approximately twice the width of a single bulb.

18. **Grass.**
Turfing or seeding shall be carried out only during appropriate seasons and while soil and weather conditions are suitable for the relevant operations. Only machinery and tools suitable for the site conditions and the work to be carried out shall be used. Hand tools shall be used around trees, plants and in confined spaces where it is impractical to use machinery. The soil shall be weed free prior to turfing and seeding. Contact herbicide as specified should be applied to all areas of weed growth 4-6 weeks before grassing and repeated if necessary to maintain a weed free bed. Where deep rooted weeds are present (docks, thistles etc) approved Glyphosate-based herbicide should be applied as a spot treatment. Turf or seed shall be laid on prepared, levelled soil (minimum 150mm depth) in the areas indicated on the drawings in accordance with BS 4428:1989 'Code of practice for general landscape operations'. All grass areas to be approved lawn turf for garden areas, or equivalent seed.
19. **Root barrier.**
Root barrier system to be used in locations where tree roots may cause problems with underground services in future. To be supplied by GreenBlue Urban 01424 717797 or other approved supplier. Thickness, size and depth of installation of root barrier to be to manufacturer's recommendations for particular circumstances.
20. **Maintenance.**
Establishment maintenance for all planting for 5 years from Practical Completion to include weed control, watering and replacement of failures to original specification in the planting season following failure.
i. All plant material to receive annual pruning and hedges and groundcover to be trained and edged with minimum 2 trims per year.
ii. Check tree stakes and ties annually and after strong winds.
iii. Lawn & amenity grass areas - Mowing is to be carried out using approved machinery to maintain the vegetation length within the limits of 30 mm and 50 mm during April to August inclusive and between 50 mm and 70 mm during the rest of the year.

Plant Schedule

Abbreviation	Species	Specification	Density	Qty.
Betu_pend 'Tris.'	Betula pendula 'Tristis'	20-25cm girth min. 4.5m	4/m²	40 No.
Betu_util 'Jacq'	Betula utilis var. jacquemontii	multistem RB 2.5-3m ht. 1 No.		
Cata 'Aure.'	Catalpa bignonioides 'Aurea'	20-28cm girth 5-5.5m ht. 1 No.		
Prun 'Kazan'	Prunus 'Kanzan'	16-18cm girth 4-4.5m ht. 7 No.		
Tili_cord 'Str.'	Tilia cordata 'Streetwise'	20-25cm girth 5-5.5m ht. 3 No.		

Abbreviation	Species	Specification	Density	Qty.
Esca 'A.B'	Escallonia 'Apple Blossom'	60-80cm ht. 10L CG	3/m	265 No.
Prun_lusi	Prunus lusitanica	60-80cm ht. 10L CG	3/m	219 No.

Abbreviation	Species	Specification	Density	Qty.
Berb_thun 'Atr.'	Berberis thunbergii 'Atropurpurea'	30-40cm ht. 3L CG	4/m²	40 No.
Berb 'H.P'	Berberis thunbergii 'Helmmond Pillar'	60-80cm ht. 10L CG	Counted	4 No.
Corn_alba 'Sibirica'	Cornus alba 'Sibirica' Variegata	60-80cm ht. 5L CG	4/m²	40 No.
Corn_alba 'Eleg.'	Cornus alba 'Elegantissima'	60-80cm ht. 5L CG	4/m²	14 No.
Corn 'AWO'	Cornus sanguinea 'Amey's Winter Orange'	40-60cm ht. 3L CG	4/m²	34 No.
Elae_ebbi	Elaeagnus ebbingii	40-60cm ht. 10L CG	2/m²	32 No.
Euon 'E.G.'	Euonymus fortunei 'Emerald Gaiety'	30-40cm ht. 3L CG	4/m²	150 No.
Fats_japo	Fatsia japonica	60-80cm ht. 10L CG	Counted	5 No.
Fuch 'Mrs. Poppie'	Fuchsia 'Mrs Poppie'	40-60cm ht. 10L CG	3/m²	40 No.
Hama_moll	Hamamelis mollis	100-125cm ht. 55L CG	Counted	5 No.
Hebe 'N.B.'	Hebe 'Nicola's Blush'	30-40cm ht. 5L CG	4/m²	107 No.
Hydr 'L.W.'	Hydrangea macrophylla 'Lanarth White'	60-80cm ht. 10L CG	2/m²	11 No.
Hydr 'MMM'	Hydrangea macrophylla 'Mme Emile Mouillere'	40-60cm ht. 10L CG	3/m²	15 No.
Hyper_caly	Hypericum calycinum	20-30cm ht. 2L CG	4/m²	118 No.
Hype_mose	Hypericum x moserianum	40-60cm ht. 10L CG	3/m²	40 No.
Hype 'Hidcote'	Hypericum 'Hidcote'	40-60cm ht. 10L CG	2/m²	14 No.
Lava 'Hidc'	Lavandula angustifolia 'Hidcote'	20-30cm ht. 3L CG	0.35Ctr	310 No.
Loni_pile	Lonicera pileata	40-60cm diam. 10L CG	3/m²	82 No.
Maho_apol	Mahonia aquifolium 'Apollo'	20-30cm ht. 3L CG	5/m²	74 No.
Maho 'Cha.'	Mahonia x media 'Charity'	30-40cm ht. 3L CG	3/m²	33 No.
Phil 'M.H.'	Philadelphus 'Manteau d'Hermine'	30-40cm ht. 3L CG	4/m²	21 No.
Rosm_off 'MJU'	Rosmarinus officinalis 'Miss Jessopp's Upright'	20-30cm ht. 5L CG	4/m²	41 No.
Rosm_pros	Rosmarinus prostratus	20-30cm diam. 3L CG	4/m²	11 No.
Sarc_con	Sarcococca confusa	30-40cm ht. 3L CG	4/m²	80 No.
Sarc_humil	Sarcococca hookeriana humilis	30-40cm ht. 3L CG	4/m²	33 No.
Skim 'Rub.'	Skimmia japonica 'Rubella'	30-40cm ht. 3L CG	5/m²	162 No.
Skim 'Rub.'	Skimmia japonica 'Rubella'	40-60cm ht. 10L CG	3/m²	17 No.
Spir 'Argu'	Spiraea Arguta	40-60cm ht. 10L CG	Counted	3 No.
Symp 'M.B.'	Symphoricarpos doorei 'Magic Berry'	40-60cm ht. 3L CG	4/m²	69 No.
Syril_vulg 'M.L.'	Syringa vulgaris 'Madame Lemoine'	1.75-2m ht. 80L CG	Counted	1 No.
Vibu_davi	Viburnum davidii	30-40cm ht. 10L CG	3/m²	50 No.
Vibu_davi	Viburnum davidii	20-30cm ht. 3L CG	5/m²	61 No.
Vibu_tinu	Viburnum tinus	30-40cm ht. 3L CG	3/m²	13 No.
Vibu 'Gwen'	Viburnum tinus 'Gwenllian'	80-100cm ht. 55L CG	Counted	19 No.
Vin 'G.C.'	Vinca minor 'Green Carpet'	20-30cm diam. 2L CG	5/m²	90 No.
Wald_tern	Waldsteinia ternata	30-40cm ht. 3L CG	5/m²	8 No.

Abbreviation	Species	Specification	Density	Qty.
Alch_moll	Alchemilla mollis	2L CG	4/m²	77 No.
Berg 'Purp.'	Bergenia cordifolia 'Purpurea'	2L CG	5/m²	276 No.
Euph_amyg_robbi	Euphorbia amygdaloides var. robbiae	2L CG	5/m²	56 No.
Gera_phae 'Alb.'	Geranium phaeum 'Album'	2L CG	4/m²	36 No.
Gera_roz	Geranium Rozanne	2L CG	4/m²	39 No.
Liri_musc	Liriope muscari	2L CG	5/m²	51 No.
Pers_bist	Persicaria bistorta 'Superba'	2L CG	5/m²	13 No.
Sedu 'R.G.'	Sedum Ruby Glow	2L CG	5/m²	58 No.

Abbreviation	Species	Specification	Density	Qty.
Dryo_fili	Dryopteris filix-mas	3L CG	4/m²	7 No.

Abbreviation	Species	Specification	Density	Qty.
Luz_niv	Luzula nivea	2L CG	7/m²	200 No.

Abbreviation	Species	Specification	Density	Qty.
Croc_tomma	Crocus tommasinianus	Grade 5/7	15/m²	112 No.
Narc 'D.M.'	Narcissus 'Dutch Master'	Grade 12/14	10/m²	75 No.

