



AIRPETS SOUTH LANE NORTH HEATHROW

SOFT LANDSCAPE SPECIFICATION

Written By:	AD
Checked By:	JS
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Revision	Date	Details	Revised

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 and should be undertaken at the appropriate time of year, as outlined below. The Contractor must verify this programme of work before commencing on-site. Works are only to be carried out while soil and weather conditions are suitable. Works are not to be carried out in strong winds.

Times of year for planting:

- Deciduous trees and shrubs: late October to late March.
- Grass seed: April to October.

- 1.2. Soil Conditions: Soil for cultivating and planting is to be moist, friable and (except in aquatic/ marginal planting) not waterlogged. Prevent planting pit sides, bases and backfilled material from freezing using boards, tarpaulins, landscape fleeces or other protective materials.
- 1.3. 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, they will be held responsible for the cost of rectification.
- 1.4. Site Clearance: All rubbish, concrete, metal, glass, decayed vegetation, any materials containing toxins, pathogens, and other extraneous substances harmful to plant, animal or human life, and contaminated topsoil are to be removed. Stones larger than 50mm are to be removed. Larger roots of existing vegetation proposed for removal and beyond root

protection zones are to be grubbed up and disposed of without undue disturbance of soil and adjacent areas subject to ecological constraints.

- 1.5. Cleanliness: All rubbish is to be immediately cleared and removed as it accumulates during work, including from hard surfaces and grass areas. At completion, the site is to be left clean and tidy.
- 1.6. Weed Control General: All weeds shall be hand weeded using hand tools or cut down and taken off-site to a tip found by the contractor.
- 1.7. Invasive Weeds: Flail mowers should not be used for the removal of invasive weeds, such as Japanese knotweed (*Reynoutria japonica*) or giant hogweed (*Heracleum mantegazzianum*) and should be removed using a suitable non-residual herbicide.
- 1.8. Water: 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 always keep any excavations or any part of the site free from water.
- 1.9. Watering: All planted areas, including grassland, are to be watered to the full depth of topsoil, evenly and without damaging or displacing plants or soil immediately after planting operations. Watering is to be undertaken as necessary to ensure the establishment and continued thriving of all plants, including before planting. If the water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.
- 1.10. Relieving Compaction Generally: All works should be undertaken in line with the following principles:
 - The moisture content of the soil is at least 5% below its 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 good condition.
- The towing unit must be capable of working efficiently without undue weaving and track slippage.

1.11. Relieving Compaction in Turf: 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 of 2-3mm.

1.12. Relieving Compaction in Planting Areas: 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 mycorrhizal inoculation, complete soil replacement, mechanical ripping, or manual ripping. The contractor is to submit proposals to the Contract Administrator before undertaking work.

1.13. Topsoil Storage Heaps: Topsoil storage is to be in line with BS3882:2015 Specification for topsoil. Topsoil and subsoil are to be stored separately and topsoil is not to be contaminated with subsoil. Soil storage heaps should be narrow and not more than 1m in height and should be loose-tipped and shaped from the sides only, without running machinery on the heap at any time. This maximum height will help prevent the killing of

earthworms, compaction, and waterlogging. Ideally, soil storage heaps should only be in place for a maximum of 12 months to retain the soil's natural structure. The soil storage heap is to be protected by fencing and any other material is not to be placed on top of the storage heap. Construction plants and other vehicles are not to pass over the storage heap, to prevent compaction and contamination. Wind-borne weeds are to be managed with either non-residual herbicide to prevent weed growth or a temporary crop such as green manure should be sown at the appropriate time of year.

- 1.14. Topsoil Grading: Topsoils are to be graded to smooth-flowing contours to achieve the finished levels of topsoil and are to marry in with all existing levels, eliminating all abrupt angles and changes of levels. Compaction is to be avoided. Topsoil shall be spread and settled in layers of 150mm. Minor fillings and excavations are to be made as necessary.
- 1.15. Subsoil: Subsoil is to be free from fragments and roots of aggressive weeds, sticks, straw, pieces of brick, concrete, glass, wire, corrosive, explosive or flammable materials, hazardous to human or animal life and detrimental to healthy plant growth. The subsoil is to be handled in line with BS8601:2013 Specification for subsoil and requirements for use as per multipurpose subsoil classification unless specific acidic or calcareous subsoil is required to aid the establishment of specific grassland habitats.
- 1.16. Subsoil Surface Preparation: Subsoil is to be excavated and/ or placed and filled to required profiles and levels. The subsoil is only to be loosened when ground conditions are sufficiently dry to allow the breaking up of soils and is to be loosened thoroughly to a depth of 600mm. Should any rock or chalk subgrades be found these are to be lightly scarified to promote free draining. Any stones larger than 50mm

diameter, arisings, contaminants, debris, and rubble are to be removed before spreading topsoil. Excess material is to be removed from the site.

- 1.17. Subsoil Grading: Subsoils are to be graded in line with BS8601:2013 Specification for subsoil.
- 1.18. Soil Moving Operations: Soil should not be moved or handled unless the weather is forecast to be dry for at least 24 hours. Handling soil in wet conditions and compaction will contribute towards a diminished soil structure. Spoil heaps scheduled to be moved must first be checked for the presence of mammal tunnels and an ecologist contacted as required.
- 1.19. Imported Materials: All imported topsoil, subsoil and manufactured topsoil/ growing media shall be free from metal, vegetable matter, peat and any toxic wastes or pollutants. A sample load shall be stored intact for comparison with further loads which shall be of a similar standard.
- 1.20. Failures of Planting: Defects due to materials or workmanship not in accordance with the contract include all plants that have failed to thrive. Exclusions include theft or malicious damage after completion. Replacements are to match the size of adjacent or nearby plants of the same species or match the original specification, whichever is greater. All rectification and making good works are to be made in the next suitable planting season, with any plants that have failed to thrive or been maliciously damaged removed immediately to maintain a clean and tidy appearance.

2.0 Existing Vegetation

- 2.1. Existing Vegetation: No existing trees, shrubs, or other plants shall be removed or cut without specific instructions from the Contract Administrator. Existing trees are to be retained, protected, and undisturbed throughout the contract following 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 following the British Standard. Any trees expected to be subject to works must be inspected by a suitably experienced ecologist to assess the potential for roosting bats before commencing. No fires are to be lit under or anywhere near the trees. No debris, fuel, or building material of any sort is to be stacked against or piled around the trunks.
- 2.2. Any vegetation clearance should be undertaken in the autumn and winter months outside of the time during which birds are most likely to nest (March-August) where possible. If this is not possible then the vegetation to be removed must be subject to a nesting bird check by a suitably experienced ecologist no more than 24 hours before the work. Should nesting birds be recorded then a suitable exclusion zone will be established where no works can proceed until it has been confirmed that the young have fledged.
- 2.3. Woodland Work Generally: Check for below and above-ground services, including land drainage, in the vicinity. Give notice of five days if they may be affected and obtain instructions before proceeding. Works are to comply with Arboricultural and Forestry Advisory Group Safety Leaflets.
- 2.4. Existing Vegetation/ Weed Clearance: In all areas to receive new soft landscape, as shown on detailed landscape proposals. All arisings are to be removed from the site.

- 2.5. Existing Trees/ Seedlings/ Coppice Shoots: Existing trees and seedlings are to be retained, as shown on detailed landscape proposals. All coppice shoots are to be thinned to 3-5 stems per stool, removing all damaged, dead, or diseased shoots.
- 2.6. Removing Trees and Hedges: Trees and hedges scheduled for removal are to be marked to be removed. Any work near retained trees is to be undertaken carefully. Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained. Tree stumps are to be removed mechanically to a minimum depth of 300mm below ground level. All arisings are to be removed.
- 2.7. Treatment of Tree Wounds: Cuts are to be as small as possible and cut cleanly back to sound wood using sharp, clean tools. Branch collars are to be left and not cut flush with the stem or trunk. Cut to that water will not collect on the cut area. No fungicide or sealant is to be applied to the cut unless otherwise instructed.
- 2.8. Existing Grassland: Existing grassland indicated for retention on the detailed landscape proposals is to be protected using protective fencing to prevent plant vehicles' egress. Then during planting operations, grassland is to be protected using boards/ tarpaulins. Excavated or imported material is not to be placed directly onto retained grassland.

3.0 Topsoiling and Cultivation

3.1. Existing Topsoil: Existing topsoil, retained on site, shall only be permitted with strict approval of the Contract Administrator. The contractor is to submit a method statement for reusing topsoil including full details of how the topsoil complies fully with general specifications and requirements (outlined below) which should outline its storage, handling, classification, and compliance with multipurpose topsoil requirements outlined in BS3882:2015 Specification for topsoil. Any surplus topsoil is to be removed from the site.

3.2. Imported Topsoil: Topsoil should be imported only as necessary to make up any deficiency existing on site. Imported topsoil is to be a 'multipurpose topsoil' following BS3882:2015 Specification for topsoil unless there is a requirement for a 'specific purpose topsoil' which will also be following the British Standard.

3.3. As well as following BS3882:2015 Specification for topsoil, the multipurpose topsoil should be a quality loam and have the following properties:

pH value	5.5-7.8
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

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

- 3.5. The topsoil shall be free from stone, rubbish of any kind, roots of perennial weed, or any other injurious matter.
- 3.6. Topsoil Analysis: Whether topsoil is natural or manufactured, a chemical and physical analysis of the material is the only quantifiable method to ensure it is appropriate for the intended use. A basic analysis will include the following:
- A description of samples in terms of colour, structure, consistency, stone content, presence of foreign matter, and evidence of pernicious weeds.
 - A laboratory analysis detailing the dry weight of organic matter, fertility, and physical-chemical characteristics.
 - Recommendations for amelioration required to improve the structure or nutrient quality of the soil.
- 3.7. 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.

- 3.8. 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, and 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

- 3.9. Soil Additives: Additives for ecological mitigation areas should be limited and may not be needed at all except to mimic the indigenous soil conditions. BS3882:2015 Specification for topsoil permits the supply or manufacture of soils for specific purposes.
- 3.10. The need for any type of fertiliser is established by site soil analysis. Fertiliser is not recommended for shrub planting during the first year of establishment unless deficiencies are shown by testing.
- 3.11. Soil Fertilisers: If analysis shows that the soil is nutrient deficient then an appropriate organic fertiliser should be used, as required to ensure planting thrives.
- 3.12. Approved Chemicals: All chemicals used shall be non-toxic to human beings, birds, and animals, under normal use, shall not be used.
- 3.13. Organic fertiliser is not to be applied within 10m of surface water (including ditches), hedges, field margins, or environmentally sensitive sites or 50m from springs, wells, or boreholes.
- 3.14. Artificial fertiliser is not to be applied within 2m of water (including ditches), hedges, field margins, or environmentally sensitive sites.
- 3.15. Compost: Peat-free compost to be used, as necessary to ensure planting

thrives.

3.16. Cultivation of Undisturbed Topsoil: All landscaped areas are to receive appropriate cultivation using either:

- Disc harrow to the full depth of topsoil can be used on larger areas that require the breaking of clods, chopping surface growth and levelling of soil.
- Plough to full depth of topsoil can be used for larger areas that require the uppermost soil to be turned to bring fresh nutrients to the surface whilst burying weeds.
- Ripping at 500mm centres to the full depth of topsoil can be used for larger areas that require the soil to be broken up to allow plants to penetrate the soil to access soil, water and nutrients to aid healthy plant growth.
- Rotary cultivation to the full depth of topsoil can be used on smaller areas.

3.17. Areas that have been cultivated are to be left for one month to allow for consolidation, with topsoil levels made up and weeds managed during the settlement period.

3.18. The soil within the root spread of existing trees, hedgerows, and other vegetation to be retained is not to be cultivated.

3.19. Immediately before cultivation soil improver is to be applied at an even spread over all areas to be planted.

3.20. Final cultivation, after the consolidation period, any compacted topsoil is to be broken up to full depth. The tilth is to be loosened, aerated and suitable for blade grading during suitably dry weather conditions—maximum particle size to 10mm. Any undesirable material brought to the surface including visible weeds, roots, and large stones with a dimension exceeding 50mm are to be removed.

3.21. Finished Levels After Settlement:

- Adjacent to grass areas: 50mm above adjoining paving, kerbs or hard surface (to allow a mower to pass freely over both grass and hard landscape areas).
- Seeded areas: Extend cultivation into existing adjacent soft landscape areas sufficient to ensure full marrying in of the levels.
- Adjoining soil areas: Marry in.
- Existing trees, hedgerows, and other vegetation: Do not dig or cultivate, levels to marry in on the edge of the root protection area.
- Planted areas including the thickness of mulch: 75mm below adjoining paving, kerbs or hard surface (to avoid topsoil and mulch from spilling onto adjacent hard landscape areas).

4.0 Plants Generally

4.1. Plants Generally: All plants are to be materially undamaged, sturdy, healthy and vigorous. Plants are to be in good shape without elongated shoots with a balanced branch system. They are to be free from pests, diseases, discolouration, weeds, and physiological disorders. Species are to be true to name and ideally of local provenance. If plants arrive on site with any defects or damage the plants shall be rejected and replaced.

4.2. Plants shall comply with the relevant parts of BS3936 Nursery Stock, including:

- Part 1 Specification for Trees and Shrubs.

Plant Biosecurity

4.3. All planting material shall be sourced from a nursery which is accredited with the Plant Healthy accreditation, holders of the Woodland Trust UK and Ireland Sown and Grown (UKISG), as well as the ISO 14001 Environmental management accreditation.

4.4. Suppliers of plant material shall hold a plant passport.

4.5. On delivery of plant material, all materials should be inspected for pest and diseases by a person with a suitable qualification in Horticulture or Landscape, if any plant materials are deemed to be unsuitable then they shall not be used on site and sent back to the supplier.

4.6. Any planting material that shows signs of issues which is mentioned on the high-profile pests and diseases list:

(<https://planthealthportal.defra.gov.uk/pests-and-diseases/high-profile-pests-and-diseases/>)

should be quarantined and reported to DEFRA:

(<https://planthealthportal.defra.gov.uk/pests-and-diseases/reporting-a-pest-disease/>)

Planting Operations

- 4.7. Planting Operations: Planting operations shall be carried out in line with the requirements of BS4428:1989 Code of Practice for general landscape operations (excluding hard surfaces).
- 4.8. Plant Substitutions: Plants unobtainable or known to be unobtainable at the time of ordering are to have suitable substitutions submitted to the Contract Administrator for approval before making any substitutions.
- 4.9. Planting, Handling, Storage, Transport and Planting: All plants are to be handled, stored, transported, and planted to CPSE 'Handling and Establishing Landscape Plants'. All plants are to be protected from frost and handled with care. Plants are planted upright or well-balanced with the best side to the front.
- 4.10. 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 around the roots.
- 4.11. Random Plant Layout: Unless otherwise stated on the drawing plants are to be evenly distributed throughout the bed, with densities as shown in the detailed proposals. All plants are to be evenly spaced to avoid straight lines.

- 4.12. All Shrubs: Planting holes to be excavated a maximum of 2 days before planting. Holes are to be wide enough to accommodate roots when fully spread and 75mm deeper than the root system. Topsoil is then to be carefully backfilled into the planting holes. Plants to be well-firmed by heeling and the surface left neat and even. Care must be taken not to disturb the root balls of pot-grown plants and not let any roots dry out at any time.
- 4.13. All plants that are not planted on arrival on site must be watered frequently to prevent drying out. Plants that 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 plants will be well watered. Care will be taken during planting so as not to break up the root ball.

4.14. Plant Protection for Native Whips and Transplants: Native whips and transplants are to be protected using an appropriately sized biodegradable/ recycled tree, shrub guards and spiral guards. Secured into place using a single timber stake or bamboo cane with all fixing to be biodegradable.

- Bare root native transplants (40-100cm): Recycled spiral guard to be secured in place using bamboo cane with biodegradable fixings.
- Containerised native transplants/ bushy native shrubs (40-60cm): Biodegradable plastic-free shrub shelter guard to be secured in place using single timber stake with biodegradable fixings.
- Native whips (100-125cm height): Biodegradable plastic-free shrub shelter guard to be secured in place using single timber stake with biodegradable fixings.

5.0 Planting Operations

Plants

All Container-Grown Plants

- 5.1. All Container-Grown Plants: The growing medium is to have adequate nutrients for plants to thrive until permanently planted. Plants are to be centred in containers, firmed, and well-watered. The root balls of the plants are to substantially fill the containers, but not root bound, and in a condition conducive to successful transplanting. All plants are to be hardy and grown in the open for at least two months before being supplied. Containers of plants are to have holes to provide adequate drainage when placed on any substrate commonly used under irrigation systems.

Hedge Planting

- 5.2. Planting: In trenches large enough to take the full spread of roots. Set out plants evenly.
- 5.3. Formal hedgerows: Consistent in species, cultivar, and clone to ensure a uniform hedge.
- 5.4. Naturalised hedgerows: Planting: In trenches large enough to take the full spread of roots. Set out plants evenly.
- 5.5. Fencing Support for New Hedges: A 3-strand galvanised wire and tanalised softwood timber post fence, to BS1722-2:2020 Fencing, is to be erected through the centre of the staggered row of hedge or along the back edge of a single line of hedge, before planting hedge. This is to prevent access through the site by pedestrians until the hedges are fully established. Hedge plants are to be lightly secured to fence wires at appropriate intervals.

Planting within Root Protection Areas (RPA)

- 5.6. Planting within RPA: Any existing vegetation is to be removed by hand. Turf may be removed using a hand-driven mechanised turf cutter. Do not reduce any high spots or excavate in any way. Topsoil is to be imported by hand (wheelbarrow), as required, without raising the soil levels within the RPA. Planting is to be undertaken in individual planting pits. If it is likely too severe or damages any roots larger than 25mm in diameter, the planting pit is to be relocated. Mulch is to be imported and spread by hand.

Transplants

- 5.7. Transplant Planting: Transplants (80-100cm in height) or smaller are to be notch planted. 'I', 'L' or 'H' shaped notch to be made in the soil to a depth to accommodate the depth of roots. Transplant to be placed in notch, notch closed with root collar at ground level and firm the soil. Plants are to be protected for the first 3-5 years with appropriately sized biodegradable tree, shrub guards and spiral guards.

6.0 Mulch

- 6.1. Bark Mulch: Apply 75mm depth of mulch over the whole planting bed, including the base of hedgerows, immediately after watering in. Mulch consists of 'Melcourt Amenity Bark Mulch' available from, Melcourt Industries or similar. Free from pests, disease, weeds, and additives.

7.0 Grass

- 7.1. Seeded Areas: All seeded and turfed areas are to have healthy, vigorous grass sward, free from the visible effects of pests, weeds, and disease. The appearance is to be closely knit, with a continuous ground cover of even density, height and colour.
- 7.2. Climatic conditions: Only carry out the work while soil and weather conditions are suitable.
- 7.3. Water of Seeded Areas: Topsoil is to be wet to full depth and applied evenly and without displacing seed, seedlings, or soil. Watering is to be carried out as necessary to ensure the establishment and continued thriving of all seeding/ turfing. If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/ turfing until instructed. If seeding/ turfing has been carried out, obtain instructions on watering.

Grass Seed

- 7.4. Quality of Grass Seed: All grass seed is to be produced in the current growing season; all blue-label certified varieties are to have appropriate certification. All grass seeds are to comply with EC purity and germination regulations. Official seed testing station certification of germination, purity, composition, and samples of mixtures are to be submitted when requested.

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