

Gnoll Park – Northern Car Park

Soft Landscape Specification

DLA-2080-04-SPEC-01-REV-P01

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Q28

Topsoiling

200A Grading placed subsoil

- General: Where necessary grade subsoil to smooth flowing contours to achieve finished levels for topsoil coverage-
 - subsoil depth for
 - Grass 300mm
 - hedge planting 550mm

250B Subsoil surface preparation

- General: Excavate and/ or place fill to required profiles and levels.
 - Loosening:
 - When ground conditions are reasonably dry, loosen thoroughly to a depth of 350 mm.
 - Stones: Immediately before spreading topsoil, remove stones larger than: 50mm.
 - Other items: Remove: arisings, contaminants and debris.

300 Topsoil analysis

- Soil to be analysed: Existing site topsoil and Imported topsoil to make up any soil deficiency on site.
- Soil analyst: Tim O'Hare Associates, Howbery Park, Wallingford, Oxfordshire, OX10 8BA, Or equal approved consultant
- Samples: Collect in accordance with BS 3882, Annex A.
- Submit originals of:
 - Declaration of analysis of: soil in accordance with BS 3882 figure 3
 - Report detailing soil analyst's recommendations.

340A Imported topsoil (to BS 3882)

- Quantity: Provide as necessary Multipurpose Topsoil to make up any deficiency of topsoil existing on site and to complete the work.
- All sampling shall be undertaken in accordance with standard industry procedures for contaminated land and topsoil, using appropriate sampling techniques and storage. Organic Compost shall be sampled and analysed in accordance with the requirements of PAS 100: 2011.
- The sample(s) should be truly representative of the materials intended for import.

- Visual Examination: the soil shall have a visible homogeneity and shall be free from non-soil material, brick and other building materials and wastes, hydrocarbons, plant matter, roots of perennial weeds and any other foreign matter or material or substance that would render the topsoil unsuitable for use.

Maximum Limits for Phytotoxic Contaminants Multipurpose Topsoil.

Parameter	Unit	Lower Limit	Upper Limit
Boron mg/kg		0	3
Zinc mg/kg		0	300
Copper mg/kg		0	200
Nickel mg/kg		0	110

The horticulture soil composition criteria for Multipurpose Topsoil

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm) %		5	20
Silt (0.002-0.05mm) %		5	35
Sand (0.05-2.0mm) %		55	85

Of which at least 45% shall fall into fine sand (0.15-0.25mm) to medium sand (0.25-0.50mm) range

Stones (2-20mm) %DW	15	
Stones (20-50mm) %DW	15	
Stones (>50mm) %DW	0	
pH Value Unit	5.5	8.5
Electrical Conductivity		
(1:2.5 water extract) µS/cm	--	1500
Electrical Conductivity		
(CaSO ₄ extract) µS/cm	--	2800
Exchangeable Sodium Percentage%	--	15
Organic Matter %	4.0	8.0
Total Nitrogen % 0.20	--	
Carbon: Nitrogen Ratio	--	20:1
Extractable Phosphorus mg/l	26	100
Extractable Potassium mg/l	240	1200
Extractable Magnesium mg/l	50	600

Calcium Carbonate %	--	5
Percolation Rate mm/hr	N/A	N/A
Potential Contaminants – in accordance with SSACs		

390A Topsoil storage heaps

- The maximum height of temporary stockpiles shall not exceed 1m high x 2m wide unless otherwise approved by the Employer or Employer' Representative.
- Stockpiles shall be shaped to shed water, and shall be fenced and covered as appropriate to prevent compaction and contamination.
- Locations of stockpiles to be agreed with Employer' Representative prior to commencing earthworks operations.
- Other materials shall not be placed on top of or adjacent to each stockpile, and other, different soil types shall not be placed on top of or adjacent to each stockpile.
- Once formed, the Contractor shall not permit construction plant to pass over the stockpile.
- The Contractor shall take appropriate measures to prevent compaction and contamination.
- Topsoil shall not be stored in a stockpile for a period greater than 15 months unless authorised by the Employer. After this time, the topsoil shall be excavated, reconditioned and formed into a new stockpile if necessary.

410A General soil requirements and handling

- The Contractor shall comply with the requirements for laying soils for particular uses as given in:
- Chapter 6, Code of Practice for Sustainable use of soils on Construction Sites.
- Different soil types shall not be mixed or stored with one another.
- Soils to be used to construct landscape areas shall not be mixed with landfilled materials, stone, hardcore, rubbish, or material from demolition work.
- Plant shall be selected and used to minimise disturbance, trafficking and compaction
- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping or delivery.
- The Contractor shall provide a structured, uncompacted soil profile for the successful establishment and subsequent growth of trees, shrubs and grass.
- For the duration of the soiling works safe soil handling measures shall be implemented.
- The Contractor shall ensure there is no further physical degradation during all phases of the soil handling (e.g. during storage, re-spreading, and planting).

- To preserve soil structure and limit compaction, all soils shall only be moved and handled when reasonably dry and friable in consistency (i.e. at least 5 % below the soil's lower plastic limit), as defined by BS3882, Annex N2
- The Contactor shall cease all soil handling during and immediately after rainfall and not recommenced until the soil has dried out sufficiently in the opinion of the Employer.
- Soil shall not be placed or spread when the soil is frozen or covered with snow.
- Soft landscape areas shall be prepared as necessary to ensure that the existing land raise material is in a suitable state for soiling operations specified.

420A Spreading topsoil

- Temporary roads/surfacing: Remove before spreading topsoil.
- Placement of all soil or soil materials shall be undertaken by end-tipping methods in order to avoid trafficking and potential compaction of the soil. All soil-carrying vehicles shall run on the base layer or haul route or equivalent, whether loaded or empty. The soils will be spread and levelled using a tracked hydraulic excavator with a grading bucket or with a light-weight dozer equipped with low ground pressure tracks (maximum pressure 5 psi).
- The Contractor shall carry out soiling operations to achieve finished levels and shall be responsible for remedying any settlement, erosion, slippage or wash-out prior to completion of soiling the site area.
- Provided the topsoil is not anaerobic, the topsoil shall be spread in depths of 150 mm max to achieve the specified topsoil depths and lightly firmed using the bucket before spreading the next. If the topsoil is anaerobic, it shall be left to re-aerate to its full depth before firming. Only once the topsoil has lost its grey colouration and sour odour may it be firmed into place.
- The minimum depths after firming and settlement for general purpose topsoil shall be in accordance with the following: 450mm hedging trenches, and 150mm for grass areas.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.
- Areas shall be uniformly graded to a smooth surface, free from irregular surface changes so as to achieve smooth and flowing contours, with falls for adequate drainage.
- Topsoil thickness shall be appropriate to sustain the required vegetation cover to meet the requirements of the landscape design.
- Following topsoil spreading, the soil shall have a clearly defined soil structure comprising granules and/or small to medium blocks and be uncompacted and well aerated to the full topsoil depth.

450 Finished levels of topsoil after settlement

- Above adjoining paving or kerbs: 20mm.

- Below dpc of adjoining buildings: Not less than: 150mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

Ω End of Section

Q30

Seeding/turfing

115 Seeded areas

- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
- Appearance: A closely knit, continuous ground cover of even density, height and colour.

120 Climatic conditions

- General: Carry out the work while soil and weather conditions are suitable.

145 Watering

- Quantity: Wet full depth of topsoil.
- Application: Even and without displacing seed, seedlings or soil.
- Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.

150 Water restrictions

- Timing: 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.

Preparation

212 Seed bed cleaning before sowing

- Description: All grassed areas
- Operations: Kill pernicious weeds with selective contact herbicide and remove weeds by hand weeding and hoeing if necessary near watercourses

280A Final cultivation for grass areas

- The final topsoil profile shall be free of large compacted lumps stones etc. and shall be broken down by appropriate cultivation to produce a fine tilth suitable for seeding/turfing (<10 mm).
- Timing: After grading.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.

Depth: 25 mm.

Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.

Remove surface stones/earth clods exceeding: 10 mm

Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

Seeding

310 Grass seed

- Description: Grasscrete areas
- Mixture: Germinal A24
- Application rate: 50g per sq.m surface sowing and topdressing

310A Grass seed

- Description: General grass areas
- Mixture: Germinal A19
- Application rate: 50g per sq.m surface sowing and topdressing

319 Quality of seed

- Description: All grass areas
- Freshness: Produced for the current growing season.
- Certification: Blue label certified varieties.

Standard: EC purity and germination regulations.

Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.

- Samples of mixtures: Submit when requested.

330 Sowing

- General: Establish good seed contact with the root zone @ 10mm depth.
- Method: Manually broadcast and rolled

Distribution: 2 equal sowings at right angles to each other

335 Grass sowing season

- Grass seed generally: April to June or August to October

340 Pre-emergent herbicide

- Description: For all amenity grassed areas only – excluding swale embankments
- Standard: Pesticide Safety Directorate approved.
- Application rate: In accordance with manufacturer's written recommendation.

Timing: Immediately after sowing.

Protecting/cutting

530A First cut of grassed areas

- Timing: When grass is reasonably dry.

Height of initial growth: 60 mm

- Preparation:

Debris and litter: Remove.

Stones and earth clods larger than 25 mm in any dimension: Remove

- Height of first cut: 40 mm
- Mower type: Contractor's choice
- Arisings: Remove from site

590 Cleanliness

- Soil and arisings: Remove from hard surfaces.
- General: Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

Maintenance

599A Maintenance

- For 12 months from practical completion
- Maintenance of grass swards shall be undertaken to achieve a vigorous sward, free from disease, fungal growth, discolouration, moss, excessive thatch, weeds, frost heave, worm casts and mole hills, scorch or wilt. .

Amenity grass areas

- Maintain to an height between 20-40mm during the first year;
- Edging off paths, hard surfaces and landscape beds prior to mowing;
- Frequent trimming (or herbicide treatment) to areas abutting fences and built elements;

- Application of herbicide to suppress perennial weeds on a monthly basis during the growing season and if necessary remove by hand weeding bagging and removing arisings off site – to insure lawns are maintained in a weed free state;
- Water areas to ensure moisture levels are maintained appropriate to develop a healthy grass sward;
- Reinstate and repair failed, damaged, disturbed or worn areas (to be undertaken within 3 months of defective area being identified);
- Remove all litter and deleterious material from sward on fortnightly basis – all arisings to be removed off site;
- Reduce moss growth by raking in Spring and Autumn;
- Fertilise using suitable slow release fertiliser as per manufacturer's instructions. in April and August

610 Failures of seeding

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the 12 month rectification period.
- Defective materials or workmanship: Areas that have failed to thrive shall be rectified.
 - .1. Exclusions: Theft or malicious damage.
- Method of making good: Recultivation and reseeding/ returfing.
- Timing of making good: (to be undertaken within 3 months of defective area being identified).

680 Maintenance fertilizer

- Description: For all high profile amenity grassed areas only
- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period
- March application: 15:10:10 Spring turf fertilizer at 35 g/m².
- September application: 5:10:10 Autumn turf fertilizer at 50 g/m².

Ω End of Section

Q31

External planting

699 Protecting/ maintaining/ making good defects

General information/ requirements

112 Site clearance generally

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with largest dimension exceeding: 50 mm
- Contamination: Substances injurious to plant growth including subsoil, rubble, fuel, and lubricants.

118 Soil conditions

- Soil for cultivating and planting: Moist, friable and not waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

120 Climatic conditions

- General: Carry out the work while soil and weather conditions are suitable. Do not plant during periods of frost or strong winds.

125A Times of year for planting

- At Practical completion all Landscape works to High Profile areas shall be completed. -
- all remaining boundary planting shall be undertaken during the following periods.
- Deciduous trees and shrubs: Late October to late March.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including aquatic and marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering and weed control is provided.
- Aquatic and marginal plants: May/ June or September/ October.

130 Mechanical tools

- Restrictions: Do not use within 500 mm of tree and plant stems, areas within 500mm shall be undertaken by hand tools or herbicide spot treatment.

145 Watering

- Quantity: Wet full depth of topsoil.
- Application: Even and without damaging or displacing plants or soil.
- Frequency: As necessary to ensure establishment and continued thriving of planting.

150 Water restrictions

- General: If 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.

160 Notice

- Give notice before
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
- Period of notice: 7 days

165 Preparation, planting and mulching materials

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification: Submit a certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances.
 - Certified materials: Manufactured planting media and Imported composts
 - Give notice before ordering or using.

200 Plants – general

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.

- Budded or grafted plants: Bottom worked.
- Root system and condition: To requirements of: The National Plant Specification and balanced with branch system.
- Species: True to name.
- Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved
- Origin and Provenance have the meaning given in the National Plant Specification.

216 Plants – specification criteria

- Name, forms, dimensions and other criteria: To the relevant part of BS 3936.

246 Labelling and information

- Standard: To BS 3936.

250 Supply of plants

- Suppliers: Members of the Horticultural Trades Association Nursery Certification Scheme.

260 Plant substitution

- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - .1. Price.
 - .2. Difference from specified plants/ trees.
- Further alternatives: Proposed substitutions may not be acceptable and submission of further alternatives may be required.
- Approval: Obtain before making any substitution.

265 Plant handling, storage transport and planting

- Standard: To HTA 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
- Frost: Protect plants/ trees from frost.
- Handling: Handle plants/ trees with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Coextruded polyethylene bags with black interior and white exterior
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped

270 Planting generally

- Standard: To HTA 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part III, paragraphs 6.2 to 6.6.
- Appearance: Plant upright or well balanced with best side to front.

290 Surplus material

- General: Remove subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, prunings and other arisings/ rubbish.

Preparation of Hedge planting

300 Herbicide

- Locations: All hedgerow
- General: Prevent weeds from seeding and perennial weeds from becoming established, by applying a suitable herbicide or if necessary by hand weeding..

Delay cultivation as recommended by manufacturer.

335 General fertilizer

- Locations: All hedgerows
- Product reference: In accordance with soil report
- Application: Spread evenly.

Timing: Immediately before cultivation.

Coverage: in accordance with soil report

357 Soil ameliorant/ conditioner to hedge planting

- Locations: All hedge trenches
- Type: Mushroom compost
- Coverage: 7 kg/m²
- Timing: Apply prior to cultivation.

357A Additional soil ameliorant/ conditioner

- Locations: All Planting areas
- Type: in accordance with soil report
- Coverage: in accordance with soil report
- Timing: Apply prior to cultivation.

375 Cultivation

- The final topsoil profile shall be free of large compacted lumps stones etc and shall be broken down by appropriate cultivation to produce a fine tilth suitable for planting (<40 mm),
- Compacted topsoil: Break up to full depth.
- Cultivation: Loosen, aerate and break up soil into particles of <40mm.

Depth: Top: 250 mm of planting areas.

Timing: Within a few days before planting.

Weather and ground conditions: Suitably dry.

- Surface: Leave regular and even.
- Undesirable material brought to the surface: Remove, including weeds, roots, stones and clods larger than 50 mm in any dimension, tufts of grass and foreign matter.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

Planting hedges

410A Water retention granules

- Description: To all tree planting pits
- Manufacturer: Greentech
Product reference: Broadleaf P4
- application and rate to manufactures recommendation.:

417 Mycorrhizal inoculant

- Manufacturer: PlantWorks Ltd
Product reference: Rootgrow professional
- Application: Apply to roots of bare root plants before planting and backfilling, as scheduled.

471 Naturalized hedges

- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

476 Backfilling material

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required, together with:
Ameliorant/ Conditioner: additional ameliorants recommended in soil analysis report.
Coverage: in accordance with soil analysis report.
Fertilizer: Slow release

Coverage: To suit soil report recommendations

480 After planting

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
- Top dressing: Not required

485 Mulching to hedgerows.

- Material: Amenity grade bark mulch
Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 65 mm depth
- Finished level of mulch: 20mm below adjacent grassed or paved areas

596 Protection to all transplants to hedges

- Manufacturer: Tubes
Product reference: Standard 12D 600mm high
- Type: Tree Shelters
- Size/ Colour: Green Tint
- Support: 50x50mm softwood stake
- General: Ensure that protection methods do not impede natural movement of shrubs or restrict growth.

Protecting/ maintaining to practical completion

710A Maintenance

- Duration: Carry out the operations in the following clauses from completion of planting until: the end of the rectification period
- Frequency of maintenance visits: fortnightly during growing season.

720 Failures of planting

- General: Plants/ trees/ shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during period stated in clause 710, will be regarded as defects due to materials

or workmanship not in accordance with the Contract. Replace with equivalent plants/ trees/ shrubs as soon as the defect has been identified to ensure fully stocked planting beds.

- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Timing of making good: as soon as the defected plants have been identified.

740 Cleanliness

- Soil and arisings: Remove litter and deleterious material from hard surfaces and planting beds, remove off site;
- General: Leave the works in a clean tidy condition at Completion and after any maintenance operations.

750A Planting maintenance

- For 12 months from practical completion
- Monthly maintenance record sheets shall be submitted to the main contractor for circulation to the clients team. A client's representative will inspect and sign off the works as being complete and acceptable, any maintenance operations that fail shall be re-undertaken by additional herbicide or hand weeding.

HEDGEROW

- Maintain hedgerow by hand weeding and or herbicide treatment to ensure weed free hedge at all times - to be undertaken on a fortnightly basis with all arisings removed from site ;
- Remove litter and deleterious material during every site visit and remove from site;
- Top up bark mulch levels in accordance with clause 790 to ensure full depth on mulch is retained;
- Application of fertiliser in accordance with clause 755 in April and August;
- Treat against pests and disease;
- Adjust and refirm supporting fence to hedgerow;
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch;
- Refirm plants after heavy winds, frost or other disturbances;
- Prune plants in accordance with best practice and appropriate to species, remove arisings;
- Watering to ensure moisture levels are maintained appropriate for optimum growth.
- Remove any vandalised plants

- Remove any dead or dying trees and replace with original specification (to be undertaken within 3 months of defective stock being identified) Planting out of season, replacement stock shall be replaced with container grown stock.

755 Planting maintenance - fertiliser

- Time of year: March or April.
- Fertilizer: Slow release
 - .1. Manufacturer: Contractors choice
 - .2. Product reference: Contractors choice
- Application: Evenly spread, carefully incorporating below mulch materials.
- Coverage: To suit soil report recommendations

780 Maintenance instructions

- General: Before end of the period stated in clause 710, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide a schedule of any ongoing maintenance problems experienced during the defects liability period

790A Final mulching

- Timing: At end of the period stated in clause 710.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds, trees and hedgerows: Remulch as clause 485.
- Coverage: 65 mm thick

