OUTLINE SPECIFICATION (FOR PLANNING)

STANDARD OF OPERATIONS
All works shall be carried out in accordance with good professional horticultural practice by qualified and experienced staff. Works shall comply with all relevant and current British Standards and codes of practices including:
Topsoil: BS 3882: 2015 Multipurpose Grade
Nursery Stock: BS 3936 1-9
Turf, BS 3969: 1998 +A1: 2013
Tree work, BS 3998: 2010
Transplanting root balled trees, BS 4043: 1989
Trees from nursery to independence, BS8545: 2014
Code of Practice for general landscape operations, BS 4428: 1989
Trees in relation to construction BS 5837: 2012
Grounds maintenance, BS 7370: 1998
Joint Council for Landscape Industries (JCLI) Committee for Plant Supply and Establishment 'Guidance on Handling and Establishing Landscape Plants' see Appendix 1, HTA National Plant Specification.

SITE PREPARATION

General Requirements for Site Clearance , Preparation and Cultivation
Old foundations, slabs and the like in areas to be planted/ seeded: break out in locations and to the extents stated by engineer.
Foreign matter: On visual inspection, areas to be planted or seeded to be free of fragments and roots of aggressive weeds, sticks, straw,
subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
- Corrosive, explosive or flammable.
- Hazardous to human or animal life.
- Detrimental to healthy plant growth.
Purity: Free of pests and disease.
Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
Objectionable odour: None.
Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

Grading Subsoil for Soft Landscaped Areas
Standard: In accordance with BS 8601.
General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
Areas of thicker topsoil: Excavate locally.
Avoid compaction.
Excess subsoil: Remove.

Subsoil Surface Preparation
Standard: In accordance with BS 3882.
General: Excavate and/ or place fill to required profiles and levels.
Loosening:
- When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth:
  Light and non-cohesive subsoils: 150mm
  Stiff clay and cohesive subsoils: 300mm
  Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Wet conditions: Do not loosen subsoils.

Stones: Immediately before spreading topsoil, remove stones larger than 75mm.
Remove from site: all coarse rubble or artefacts greater than 75mm in diameter, remove to a licenced facility.

TOPSOIL

Preparation of Undisturbed Topsoil:
Standard: In accordance with BS 4428.
- Grading and cultivation: Surface cultivation and regulation within the topsoil depth.

Hard ground: Break up thoroughly.
Clearing: Clear of rubbish, debris, remove visible roots and large stones with a diameter greater than 75mm.
Do not compact topsoil.
Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
Fallow period (minimum): One month.
- Weed control: At appropriate times treat with a suitable translocated non-residual herbicide.

Grading of Topsoil:
Topsoil condition: Reasonably dry and workable.
Contours: Smooth and flowing, with falls for adequate drainage.
- Hollows and ridges: Not permitted.

Give notice: If required levels cannot be achieved by movement of existing soil.

Handling Topsoil:
Standard: In accordance with BS 3882.
Aggressive weeds: Give notice and obtain instructions before moving topsoil.
Plant: Select and use plant to minimize disturbance, trafficking and compaction.
Contamination: Do not mix topsoil with:
- Subsoil, stone, hardcore, rubbish or material from demolition work.
- Other grades of topsoil.

Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall.

Imported Topsoil to BS3882:
Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
Standard: To BS 3882.
Classification: either Multipurpose Grade
- Soil textural class to BS 3882, Figure 1: Any Class

Spreading Topsoil
Standard: In accordance with BS 3882.
Temporary roads/ surfacing: Remove before spreading topsoil.
Layers:
- Depth (maximum): 150 mm.
- Gently firm each layer before spreading the next.

Depth after firming and settlement: Grass – 150mm, Planting/ shrubs – 450mm, Trees 750mm (or to dimensions shown on any tree pit detail).
Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

Loose Tipping Of Topsoil:
Standard: In accordance with BS 3882.
General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

Final Cultivation of Areas to be Planted/ Seeded
Compacted topsoil: Break up to full depth.
Tilth: Loosen, aerate and break up topsoil to a fine tilth depth of 150mm suitable for blade grading.
Particle size (maximum): 10mm.
Timing: Prior to seeding and planting. Weather and ground conditions: Suitably dry.
Surface: Leave regular and even.
Undesirable material brought to the surface:
- Remove visible weeds.
- Remove roots and large stones with any dimension exceeding 25mm in turfed areas, 50mm planted areas.

Finished Levels of Topsoil after Settlement
In relation to adjoining paving, kerbs or hard surfaces: 25mm above (including bark mulch).
In relation to dpc of adjoining buildings: minimum 150mm below.
In relation to adjacent grass areas: 25mm above.
Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
Adjoining soil areas: Marry in.
Thickness of turf or mulch: Included.

Weed Treatment
All areas to be planted are to be treated with Roundup a minimum of 10 days prior to planting. Planted areas are to be kept weed free with the use of herbicides. Following the use of herbicides remove dead vegetation.

PLANTING

Planting General
All plant material to be supplied in accordance with HTA National Plant Specification.
All planting to be local provenance wherever possible and from local supplier.

General Planting Notes
All plants to be healthy, hardened-off and with good fibrous root systems and to comply with the requirements of BS3936 Specification for Nursery Stock. All planting to be undertaken in accordance with BS4428 Code of Practice for General Landscape Operations.
All plants to be protected from wind exposure at all times. All plants to be soaked in water for several hours prior to planting and to be well watered in.
No planting to be carried out during poor weather conditions, i.e. when ground is frozen, waterlogged, or during droughts, hot sunshine or persistent dry or cold winds. All plant material to receive enough water to ensure healthy establishment.

Labelling and Information:
General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
- Full botanical name.
- Total number.
- Number of bundles.
- Part bundles.
- Supplier's name.
- Employer's name and project reference.
- Plant specification, in accordance with scheduled National Plant Specification categories.

Additional information: Submit on request: Country of Origin.

Times of year for planting/ seeding:
Deciduous trees and shrubs: Late November to late March.
Container grown stock - Any time of year as providing adequately watered, autumn planting desirable.
Conifers and evergreens: September/ October or April/ May.
Herbaceous plants: September/ October or March/ April.
Container grown plants: At any time if ground and weather conditions are favourable.
- Watering and weed control: Provide as necessary.

Dried bulbs, corms and tubers: September/ October.
Turfing: All year round providing adequately watered, avoid hot sunny conditions.
Grass seeding: March - September (best in Spring or Autumn)
Wildflower seeding: Spring or autumn

Soil Conditioner/ Ameliorant
As part of good horticultural practice, use peat-free composts, mulches and soil conditioners.
Soil analysis shall be completed by a reputable laboratory to determine any nutritional requirements, and any pH and organic matter adjustments necessary. Once determined, the soil shall be appropriately amended to a range suitable for the species to be established.
Locations: All new trees, plant beds and new turf and seeded areas.
• Type: Peat free sanitized and stabilzed compost or spent mushroom compost and to conform to the Numerical Product Specification for Landscape Compost..
• Reference/Description/Grading: Compost shall be produced from biodegradable materials and shall fall within the recommended ranges for the horticultural parameters outlined in the specification table, as well as fall within the limits for contaminant parameters in PAS 100.
• Coverage: Plant beds -Uniformly apply a 25mm layer over the area to be treated, trees - incorporate into backfill 1:3 mixture of compost and topsoil, grass seeding / turf cover the entire treatment area at an average depth of 25mm, then incorporate it to a minimum depth of 150 mm using a rotovator or other appropriate equipment
• Timing: Apply prior to cultivation.

Compost: typical specification.
Horticultural Parameters Reported as (units of measure) Recommended Range
pH pH units (1:5 water extract) 7.0 – 8.7
Electrical Conductivity µS/cm or mS/m (1:5 water extract) 2000 µS/cm or 200 mS/m max
Moisture Content % m/m of fresh weight 35 – 55
Organic Matter Content % dry weight basis >25
Particle Sizing % m/m of air-dried sample passing 99% pass through 25mm screen the selected mesh aperture size 90% pass through 10mm screen
C:N Ratio 20:1 maximum
Contaminant Parameters Various Meet BSI PAS 100* Criteria

Cultivation
Cultivate the soil of all areas prior to seeding and planting. This should include loosening, aerating and breaking up soil into particles 2-8mm to depth of 150mm.
Remove any undesirable material brought to surface to a depth of 100mm including visible weeds, roots and large stones or clay balls with any dimension exceeding 30mm.
Final Cultivation prior to seeding topsoil shall be brought to a fine tilth by approved mechanical means or by hand raking, and if necessary regrading of the surface will be carried out to conform to the prescribed finished levels.

TREES

Tree Planting
Trees to be pit planted with root access to a minimum 7m3 area of topsoil. Minimum pit size to be 300mm greater than rootball in all directions. Excavate tree pits with slightly raised centre. Retain topsoil for reuse. Dig a hole which is substantially bigger than the volume of roots to be accommodated. Break up and loosen the base and sides of the pit and shape base to falls towards the edge of pit to aid drainage. All tree pits should be constructed to be free draining - in areas of impeded drainage, additional measures may be required such as adding 150mm depth clean pea gravel to base of pit. The trees will be planted to the same depth as they were in the nursery. Back fill the pit in stages, whilst firming up the soil around the roots until the original ground level is restored. Tree pits to be filled with 1:3 mixture of compost and topsoil. Topsoil to contain peat free organic matter and Growtab fertiliser to be incorporated into each pit.

Tree Support
Extra heavy standard trees, rootballed trees and bareroot trees: short double stakes as BS8548:2014 with an adjustable rubber tie from each stake, and no spacer pad. Stake to be driven into the ground either side of the tree pit. Height of stakes: cut to no higher than approximately one third of the tree height above ground level, and at least 300mm into the ground.

Tree Accessories
Rootbarrier: Trees adjacent to hard surfacing and/or services to have growing area defined by Greenleaf Reroot 1000 high density root barrier, or similar approved, in accordance with manufacturer's and Engineer's guidance.
Irrigation:
Trees in soft landscape (EHS and Standard trees) - All trees to receive a Greenblue Rootrain Metro irrigation pipe, or similar and approved.

SHRUBS

Ornamental Shrub Planting
Soil analysis shall be completed by a reputable laboratory to determine any nutritional requirements necessary. Once determined, the soil shall be appropriately amended to a range suitable for the species to be established. If required, apply an organic based fertiliser to manufacturer's recommended rates.
To be pit-planted, with sufficiently large pit to accommodate root system without bending roots (minimum size of 150mm wider than roots when fully spread and 200mm deep).

Climbing Plants Used as Ground Cover:
Planting:
- Canes or other supports: Remove.
- Arrangement: Spread stems.

Fixing: Pinned to ground to ensure good contact.

GRASS SEEDING/TURF

Turfed Areas
Turf must meet the Turfgrass Grower's Association (TGA) Quality Standards for Cultivated Turf for the supply and laying of turf.
The turf soil should be of a sandy loam nature with no stones. The grass will be dense, of uniform green colour, free of broadleaved weeds and not visibly affected by pest or disease. Existing vegetation and stones should be removed and a light tilth prepared. Turf to be laid within 24 hours of receipt. Turfing shall comply with BS 3969 and be carried out when the weather and soil conditions are suitable. Turfing should not be carried out in exceptionally dry or frosty weather or when the ground is waterlogged. Allowance should be made to keep the turf watered during dry periods encountered throughout the establishment period.

Grass Seeding
After cultivation operations have been carried out, use a pre-seed herbicide on areas to be seeded. Existing vegetation and stones should be removed and a light tilth prepared. Sow areas to be seeded with grass seed which has been stored off the ground in a clean, dry place free from vermin. Following an even distribution of seed, the contractor shall carry out a light raking or light harrowing of the area and ensure consolidation of the seed with the soil by the use of a light roller.
All reasonable precautions shall be taken to ensure that pedestrian and other traffic does not cross areas during cultivation and until the grass has established.
The grass will be dense, of uniform green colour, free of broadleaved
weeds and not visibly affected by pest or disease.
Allowance should be made to keep the grass watered during dry periods
encountered throughout the establishment period.
300mm mowing strips to perimeter of all grassed and planted areas abutting building

MULCH

Bark Mulch Materials
General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life, all to be Forestry Stewardship Council (FSC) Certifie and have fire resistant characteristics, being certified in accordance with BS4790: 1987.
Submit certification of source, analysis, suitability for purpose and absence of harmful substances.
Certified materials: Composted bark mulch, 2 years minimum service life.
Purity: Free of pests, disease, fungus and weeds. Preparation: Clear all weeds. Water soil thoroughly.
Mulch: ornamental fine grade mulch (5-35mm nominal particle size) to all shrub/ herbaceous beds and ornamental trees in grass (Melcourt Ornamental Bark Mulch or similar), coarse grade bark mulch (15-65mm nominal grade) to structure planting / woodland mix / hedgerow (Melcourt Bark Nuggets or similar approved).
Coverage: planted areas and ornamental trees to 75 mm settled depth.
Trees in grass: 500mm radius from trunk.
Finished level of mulch: 30 mm below adjacent grassed or paved area.

GENERAL NOTES
- Drawing for Planning purposes only
- Refer to drawing references:
15297_LD_01 planting plan
15297_LD_02 outline specification
15297_LD_03 plant and maintenance schedules
- Refer to Arboricultural report for details of existing vegetation to be retained and protection measures.
- Building / Site Layout provided by Triangle Architects on drawing number G-01-02.
- Building foundations to be confirmed by Engineer with reference to planting proposals and NHBC guidance (or alternative where applicable). Tree locations to be fully co-ordinated once building foundation depth are confirmed. Requirements for root barriers to be confirmed by an engineer.
- Refer to Engineer's details for level and drainage information
- Setting out on site to be agreed with Landscape Architect
- Check all dimensions on site.
- Do not scale from this drawing
- Report any discrepancies and omissions to Ecus Ltd
- This drawing is Copyright
- All levels indicative only. Extrapolated from site levels. All require to be checked.
- All details subject to approval by the local authority for the discharge of relevant planning conditions.

3RD-PARTY INFORMATION
NB This drawing includes information provided by independent surveyors and / or consultants, to whom all queries shall be made. Ecus Ltd can accept no liability for its context or accuracy.

DESIGN
Unless stated otherwise, the designs shown are subject to detailed site survey, investigations, and legal definition, the CDM regulations and the comments and / or approval of the various relevant Local Authority Officers, Statutory Undertakers, Fire Officers, Engineers and the like. They are copyright, project specific and confidential. No part is to be used or copied in anyway without the express prior consent of Ecus ltd.

TREE NOTES:
Note that all tree and shrub locations are subject to coordination with services, to be undertaken by others. **The requirement for root barriers is to be confirmed by an engineer.**
Note that it is best practice that root barriers are required to extend 2m beyond the mature canopy spread of new trees to protect all structures and hard landscape elements, such as highways, services and buildings. In addition, root barriers are required for all new trees within 5m of highways - e.g. Greenleaf 'Reroot 2000' or similar. Depth of tree root barrier to be confirmed by an engineer once services design has been produced at construction detail. Install to manufacturer's and engineer's guidance.

CDM - Risks / Hazards
1. Proposed locations of landscape elements shown are subject to the presence of below ground services. A detailed survey is to be undertaken and necessary method statements prepared and approved prior to undertaking any excavations / work within this area.
2. Care to be taken when working in proximity to the surrounding existing roads and railway.
3. Care to be taken when clearing the existing site due to the potential presence of needles, litter etc.

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
A	18.08.20	AS	Ecus	Preliminary

DRAWING STATUS: Preliminary

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Title
Outline Specification

Drawn by	Date	Scale	Drg. no.
AS	AUG 20	N/A at A1	15297_LD_02