

SPECIFICATION FOR EARTHWORKS & TREE PROTECTION

Lu.01

Project:

LUCAN COMMUNITY COLLEGE

Prepared on behalf of

ETB DDL

by

DERMOT FOLEY LANDSCAPE ARCHITECTS

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REVISIONS:

Specifications included in this document:

Q28 Earthworks (& Tree Protection)

ISSUED FOR: INFORMATION/BILLING/PLANNING/TENDER/CONSTRUCTION

10 PART 1 - GENERAL SUMMARY

Employer:

ETB DDL

Landscape Architect Name & Address:

*Dermot Foley Landscape Architects, Argus House, Malpas Street, Blackpitts, Dublin 8.
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This specification relates to the proposed works at Lucan Community College, Lucan, Co. Dublin, and should be read in conjunction with documents issued by Dermot Foley Landscape Architects and documents issued by Wejchert Architects, DOBA, KSN and others.

Please note in relation to this tender document; where reference is made to a particular make, source, process, standard, trademark, type or patent that this is not to be regarded as a de facto requirement. In all such cases it should be understood that the reference in question is accompanied by the words "or equivalent".

Q28 EARTHWORKS (& TREE PROTECTION)

To be read with Preliminaries/General Conditions.

GENERAL INFORMATION - REQUIREMENTS

- 110 SITE INVESTIGATION, GROUND WATER LEVEL, EXISTING SERVICES, EXISTING FEATURES:
- Refer to reports included in the tender documents.
- 112 SITE CLEARANCE:
- Existing areas contaminated by *Fallopia japonica* (Japanese knotweed) to be removed. All contaminated material must be disposed of in accordance with the relevant legislation. All contaminated areas to be cordoned off for the duration for the works, following the removal of material, to ensure contaminated material is not transferred to other parts of the site during the works.
- Remove rubbish, concrete, metal, glass, decayed vegetation, contaminated topsoil, and stones with largest dimension exceeding 50mm.
- Contamination includes subsoil, rubble, fuel, lubricants or other substances injurious to plant growth.
- Grub up and dispose of large roots without undue disturbance of soil and adjacent areas.
- Apply a suitable non-residual herbicide, as per clause 431 of this document, to areas other than those areas, if any, in which vegetation is to be retained.
- Do not use machines within the root spread, drip line (or, within 3m of the trunk, whichever is greater) of existing trees to be retained (in same position or retained and relocated on site).
- 113 TRANSPLANTING EXISTING TREES:
- Does not form part of this specification.
- 114 PROTECTING EXISTING TREES:
- Site Clearance
It is the responsibility of the Contractor to remove and dispose of, off-site, any rubbish still occurring in areas to be fenced off for tree protection, including rubble, wire & concrete. Any masonry or stonework found are to be reported immediately to the Architect. Care is to be taken by the Contractor at this stage to minimise disturbance of the existing ground conditions and vegetation. All scrub areas in the construction zone, i.e. not to be protected, shall be grubbed and all existing plants of same shall be removed and disposed of, off site, to licensed tip including all root systems unless otherwise specified.
- Extreme care shall be taken when felling, removing and transporting trees and during tree surgery operations, so that no damage is done to existing trees to be retained and the ground flora.
- Existing Tree Roots
Comply with BS 5837:2012.
Do not cut roots of existing trees to be retained without approval of the Landscape Architect.
- Protective Chainlink Fencing
Contractor to supply and erect minimum 1.8m high chainlink fencing, with steel posts and anti debris cloth, to the alignment agreed with the Landscape Architect and Consultant Arborist. Fencing to comply with BS 1722:Part 4 and to be erected in accordance with BS 5837:2012.
- Depending on proximity of construction, the following fencing types shall be constructed by the Contractor;
- Type A:
- Where scaffolding is not required inside the tree canopy zone, the contractor shall erect a 1.8m high chainlink fence with steel posts and anti debris cloth. Fence to be erected 2 (two) metres outside the canopy line or the distance outlined in *Table 1* below, whichever is the greatest distance from the centre of the tree.

The Contractor must erect minimum 2 (two) panels of Type A fencing for approval of the Architect before proceeding with construction of the entire fence.

Type B:

Where building activity does not allow the minimum distance specified in *Table 1*, the tree protection fence is to be erected as close as practicably possible to scaffolding structure. Ground outside tree protection fence but inside the tree canopy line or the zone outlined in *Table 1* is to be protected by geotextile fabric and side butted scaffold boards.

The Contractor must erect minimum 2 (two) panels of Type B fencing for approval of the Architect before proceeding with construction of the entire fence.

Fencing to be removed only when directed by the Landscape Architect.

TABLE 1: Protection of trees: Minimum Distances for protective Fencing around trees

| Tree Age | Tree Vigour | Trunk Diameter | Minimum Distance |
|---|---------------|----------------|------------------|
| Young Trees (age less than 1/3 life expectancy) | Normal vigour | mm <200 | m 2.0 |
| | | 200 - 400 | 3.0 |
| | | >400 | 4.0 |
| Young Trees | Low vigour | mm <200 | m 3.0 |
| | | 200-400 | 4.5 |
| | | >400 | 6.0 |
| Middle Age Trees (1/3 to 2/3 life expectancy) | Normal vigour | mm <250 | m 3.0 |
| | | 250-500 | 4.5 |
| | | >500 | 6.0 |
| Middle Age Trees | Low vigour | mm <250 | m 5.0 |
| | | 250-500 | 7.5 |
| | | >500 | 10.0 |
| Mature Trees | Normal vigour | mm <350 | m 4.0 |
| | | 350-750 | 6.0 |
| | | >750 | 8.0 |
| | Normal vigour | mm <350 | m 6.0 |
| | | 350-750 | 9.0 |
| | | >750 | 12.0 |

Note: this table relates to distances from centre of tree to protective fencing

- Maintenance of Tree Protection Fencing: The Contractor to maintain the line of tree protection fencing and the lands bounded by it for the duration of the project. Under no circumstances must rubbish, building material, waste, plant or machinery be stored or deposited behind the protection fence. Under no circumstances must vehicles or machinery track over the ground protected by the fence.

All litter collected along the base of the fence, in the debris cloth or in the land bounded by the tree protection fence is to be removed by the Contractor at the end of each week.

Existing stones, rocks, deadfall and undergrowth to be left untouched. There is no requirement to cut the grass, prune undergrowth or spray weeds behind the tree protection fence unless otherwise directed by the Landscape Architect.

- Tree Surgery & Removal

Tree Surgery must be carried out by a licensed Tree Surgeon at any time of the year except nesting season, February to May.

Before starting work the Contractor shall verify with the Architect and Arboricultural Consultant the full extent of the priced works to be undertaken.

The Contractor shall liaise with the Landscape Architect and Arboricultural Consultant to clearly mark or otherwise indicate on site, trees to be removed and trees on which surgery will take place.

All tree work shall be in accordance with current arboricultural practice and all operations shall be carried out with due regard to current safety regulations and requirements and using appropriate machinery tools and guards for the same as necessary.

All treeworks to comply with BS 3998 'Tree Work' and the Forestry and Arboriculture Safety and Training Council Safety Guides.

Tree removal shall include the grubbing up of rootball and stump in areas where construction is to take place. In areas where no construction is to take place the Contractor shall grub up all roots of shrubs and smaller trees if directed by the Landscape Architect.

The Contractor shall allow for backfilling of all voids created as a result of tree stump removal, with approved compacted fill material.

All branches, roots, debris and all arisings to be chipped and disposed of in the fell area. All large timber (as identified by the Landscape Architect) to be left on site in approved storage location (to be determined). All large timber to remain the property of the Employer unless the Contractor is instructed to remove it from site, or purchases it at a price to be agreed.

The Contractor is to ensure that trees are taken down carefully in small sections to avoid damage to adjacent trees, structures that are to be retained, where tree canopies overlap and in confined spaces generally.

The Contractor is to obtain the Landscape Architect's approval before removing stumps by winching and must not use other trees as supports or anchors during removal.

No temporary buildings, machinery, storage areas, or materials are to be located within 5m (horizontal distance) of the canopy spread of trees or shrubs unless approved by the Landscape Architect.

- Replacement Costs

The value of all trees to be retained shall be calculated in accordance with the Arboricultural Association guidelines.

The Contractor shall be liable for vegetation loss or damage to roots, trunks or branches, which in the opinion of the Contract Administrator significantly affects the value or life of existing trees to be retained.

Replacement plants or any tree surgery work that the Architect may decide to be appropriate as a result of damage by the Contractor's works, shall be carried out by the Contractor, at the Contractor's own expense and to the requirements and satisfaction of the Landscape Architect.

118 SOIL & CLIMATIC CONDITIONS:

- Carry out the work while soil and weather conditions are suitable for the relevant operations.
- Do not strip and move topsoil when site is waterlogged.

130 MACHINES AND TOOLS:

Use only machinery and tools suitable for the site conditions and the work to be carried out. Use hand tools around trees, plants and in confined spaces where it is not practical to use machinery. Comply with clause 112 of this document.

131 TOPSOIL STRIPPING:

- Provide catchment drains or ditches to collect excess run-off and prevent water entering from adjacent land. Remove scrub as well as top growth by cutting with flail or swipe mowers. Where turf is excessively thick, plough, disc harrow, and reduce vegetative content by weathering and cultivation.
- Strip topsoil from all areas liable to disturbance of any kind, including building works, roads, underground services, all temporary access routes, compounds and storage areas. Strip the full designated working area, and any other areas liable to encroachment and traffic.
- Do not run machinery over ground before stripping.
- Strip the full depth of sod and topsoil. Avoid stripping into the subsoil layers.

160 NOTICE TO LANDSCAPE ARCHITECT:

Provide three working days notice of the following operations, to give the Landscape Architect the opportunity of being present:

Setting out
 First stripping of topsoil
 Tree surgery

370 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS:

- Remove buildings, walls, roads, foundations, disused services, drains, manholes, and other obstructions in areas in which landscape works are to be carried out, to a minimum depth below finished levels of:

| | |
|--|--------|
| Grass, groundcover and perennial planting: | 500mm |
| Shrub planting: | 750mm |
| Within 2m of tree planting: | 1000mm |
| Hard landscape areas: | 500mm |

380 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS:

- Provide a hole not less than 600mm diameter for every 10 sqm of wall or slab allowed to remain in areas in which landscape works are to be carried out, to promote free drainage.

381 SUBSOIL LEVELS IN LANDSCAPE AREAS:

- Subsoil levels shall be 200mm below the finished ground levels in all areas for grass seeding to allow for 250mm of topsoil and 50mm settlement.
- Subsoil levels shall be 400mm below the finished ground levels in all areas for shrub planting to allow for 450mm of topsoil and 50mm settlement.
- Subsoil levels in all areas for tree planting shall be 1000mm below the finished ground levels to allow for 1050mm of topsoil and 50mm settlement.

DISPOSAL/STORAGE OF MATERIALS

431 EXCAVATED TOPSOIL:

- Where a hedgerow is to be retained, do not strip within 4 metres of its outer edge. Soil must not be stripped from any part of the area under the canopy of a tree or hedgerow which is to be retained.
- When soil is in a condition for stacking, remove all topsoil to its full depth and place it in heaps on the neutral line of cut and fill. Take care to prevent loss of topsoil and/or mixture with subsoil.
- Topsoil stockpile heaps should be formed in areas designated on site and in positions which facilitate eventual respreading, reduce travel to a minimum and will not result in interference with subsequent

major levelling and/or grading operations. Stockpiles shall be located on dry, free draining ground, not subject to standing water. If water ponds against the stockpile, temporary drains shall be cut to relieve the flooding. Avoid running machinery over stockpiles.

- Stockpile heaps shall not exceed 1.5m in height to avoid compaction. Stockpile areas shall be fenced off, using a minimum 1.8m high temporary chainlink fence. The fence shall be removed at the end of the works and the fence shall remain the property of the Contractor.
- Prevent weeds from seeding and perennial weeds from becoming established. Maintain all areas weed free at all times.
- Do not use herbicide in any of the areas where existing trees are to be retained. No work is to be carried out within areas where trees are to be retained. Topsoil stockpiles shall not be covered by subsoil, rock, rubble, site debris, fuel or chemical pollution. Temporary yards, storage areas, or hard-standing areas shall not drain towards topsoil stockpiles.
- Topsoil is the property of the Employer, and shall not be removed from site without consent given from the Employer or Landscape Architect.

443 SURPLUS SUBSOIL:

- Remove from the site surplus excavated material not specified to be spread and levelled or stockpiled.

450 WATER:

- Keep all excavations free from water until formations are covered and below ground constructions are completed.

454 GROUND WATER LEVEL:

- Inform the Landscape Architect immediately if it is considered that the excavations are below the water table so that the ground water level can be determined.

460 PERMANENT DRAINAGE SYSTEM:

- Do not use for disposal of water from the excavations.

END OF SPECIFICATION