PHILIP J LANDSCAPE ARCHITECTURE

Landscape Design Rationale

PROJECT
Citywise Science and Language Centre Development

PREPARED ON BEHALF OF
Citywise Education

PREPARED BY
Philip J Landscape Architecture

ISSUE DATE
22.08.2022

FOR
Planning, Further Information

1 Introduction – FI Response

The objective of this report is to satisfy the Further Information request relating to the development at Durkan Centre, Fortunestown Way, Jobstown, Dublin 24 (Registration Reference no. SD22A/0124). This report should be read in conjunction with documents issued and included in this submission by Philip J Landscape Architecture (PJLA) and MSW & Associates Consulting Engineers.

Please see the following landscape drawings and document which accompany this response:

Drawing no.	Title	Scale
201-CJ.01-DRW	Proposed Landscape Plan	1:200
230-CJ.01-DRW	Proposed Landscape Section Elevations	1:50
Appendix A	Landscape Works & Landscape Maintenance Specification	N/A

Item 1 *LANDSCAPE*

(A) There are concerns with the lack of information submitted in terms of a landscaping scheme and boundary treatment for the proposed development. The applicant is requested to submit a landscape design rationale and comprehensive and detailed proposals, prepared by a qualified Landscape Architect. Such proposals should include a scaled landscape plan(s) with cross- sections, showing the layout and hard and soft treatment of all boundaries, features, external areas and green spaces. The proposals should be accompanied by specifications for materials, workmanship and maintenance, together with proposed design details. Hard landscape details are to include, where applicable, those for any proposed lighting, seating, kerbing, boundaries, edging, surfacing and water features. Soft landscape details are to include detailed planting plans and planting schedules, stating species/varieties, quantities, sizes, rootball presentation and spacings. The landscape plan should be accompanied by a timescale for its implementation, including a minimum 18-month landscape maintenance period and defects liability clause.
(B) The applicant is requested to submit a Landscape and SUDS Management and Maintenance Plan including long term design objectives, management responsibilities and maintenance schedules for all landscape areas and proposed SUDS features for the approval of the Public Realm Section.

Response 1 Please see scaled drawing 201-CJ.01-DRW, '*Proposed Landscape Plan*', for tree planting arrangement, location of outdoor equipment, landscape finishes and boundary treatments. Construction design details are also included on this drawing. Drawing 230-CJ.01-DRW, '*Proposed Landscape Section Elevations*' illustrates three cross sections through the landscape proposal.
The implementation, maintenance and defects liability clause, please refer to Appendix A, '*Landscape Works & Landscape Maintenance Specification*'.
Please refer to Engineer's package, included as part of this submission, for SUDS information.

Item 2 *SUDs*

(A) The applicant has not provided site specific attenuation calculations...
(B) The applicant should explore the possibility of using additional features such as but not limited to the following, if required to limit run-off to pre-existing or

greenfield rates:
- *Permeable Paving*
- *Grasscrete*
- *Blue roofs*
- *Green roofs*
- *Swales*
- *Rain Gardens*
- *Planter boxes with overflow connection to the public surface water sewer.*

(C) SUDs Management...
(D)Additional natural SUDS features should be incorporated into the proposed drainage system for the development such as bio-retention/constructed tree pits, permeable paving, green roofs, filtration planting, filter strip etc.

Response 2

Please see drawing 201-CJ.01-DRW, '*Proposed Landscape Plan*'.
The landscape proposal includes 100sqm of permeable paving and a soakaway area with 26m³ capacity.
Please refer to Engineer's package, included as part of this submission, for detailed information.

Item 3

TREES

The applicant is to provide additional details in relation to the proposed woodland planting/landscaped area to the east of the new proposed MUGA Pitch. Details of the scheme should include: a) The location of the proposed tree planting. b) A schedule of planting to comprise species, plant sizes and proposed numbers and density. c) A programme for the implementation, completion and subsequent management of the proposed tree planting.

Response 3

Drawing 201-CJ.01-DRW, '*Proposed Landscape Plan*', shows the proposed woodland planting to the east of the proposed MUGA. It is proposed to utilise the 'Miyawaki Method' to establish the woodland.
The drawing includes, a) the location of the tree planting and b) the species, sizes and density.
Details of the Miyawaki Method and c) the programme for implementation, completion and management, along with selected images of the shrubs and trees, is included in Section 2 and 3 of this document.

Item 4

ROADS

(A) (i) The applicant is requested to submit a summary of the proposed staff and pupil numbers at the development. (ii) The applicant is requested to submit a revised layout not less than 1:200 scale showing the car parking, EV charging points, mobility impaired parking spaces, bicycle parking and pedestrian routes within the development. The applicant should show how their proposal compares to Table 11.22: Minimum Bicycle Parking Rates and Table 11.23: Maximum Parking Rates (Non-Residential) – SDCC County Development Plan 2016-2022.
(B) The applicant is requested to consider what access requirements there are for fire tenders and refuse vehicles. The applicant should therefore show or provide explanation for the adequacy of access to the site for the purposes of obtaining a fire

certificate. The applicant should also provide details on how refuse is collected, or is proposed to be collected. Where access to the site is required for fire tenders or refuse vehicles, the applicant should show that adequate access is possible by way of auto-track drawings. The applicant should have regard for provisions in DMURS in relation to occasional access for larger vehicles (section 4.3.3).

Response 4

(A) (i) The proposed extension will lead to approximately 14 no. staff on site at any one time, accommodating varying numbers of students throughout the day.

Morning use by school groups, via group transport, for specific activities, while the afternoon use is by individuals participating in the clubs, classes and study facilities.

(A) (ii) Drawing 201-CJ.01-DRW, '*Proposed Landscape Plan*' (1:200), provides car and bicycle parking layout, along with pedestrian routes within the development.

VEHICULAR PARKING

There is a total of 7 no. parking spaces proposed, with two assigned to EV charging and one assigned to mobility impaired.

As it is proposed that the Citywise Science and Language Centre will accommodate 30 no. activity rooms in total, the SDCC County Development Plan 2016-2022 restricts the maximum number of permissible parking spaces to 15 (see excerpt below for clarity).

CATEGORY	LAND USE	ZONE 1	ZONE 2
Education	Crèche, School	1 per classroom	0.5 per classroom

Excerpt of Table 11.23: Maximum Parking rates – SDCC County Development Plan 2016-2022

BICYCLE PARKING

30 no. bicycle parking positions are proposed as part of the proposed development.

With a typical expectation of 14 no. staff on site at any one time, the SDCC County Development Plan 2016-2022 requires a minimum of 3 no. bicycle parking spaces (see excerpt below for clarity).

CATEGORY	LAND USE	LONG TERM
Education	Post Primary Schools	1 per 5 staff 1 per 2 students

Excerpt of Table 11.22: Minimum Bicycle Parking rates – SDCC County Development Plan 2016-2022

(B) Please refer to Engineer's package, included as part of this submission.

Item 5

BOUNDARY

The applicant is advised that the Planning Authority has concerns in relation to the nature of the existing boundary proposed to be retained between the MUGA and the education use. The applicant is requested to advise on the justification and rationale for retaining such a boundary at this location.

Response 5

Following detailed design reviews, the existing boundary between the proposed MUGA and the Durkan Centre has been scheduled for removal. Drawing 201-CJ.01-DRW, '*Proposed Landscape Plan*', illustrates the unrestricted movement between the two spaces.

2 Miyawaki Method

2.1 GENERAL

The Miyawaki Method refers to the planting of native trees in a dense, diverse mosaic pattern to create a multi-layered forest community. It is based on the natural reforestation principles and, as a result of species choice and close-knit positioning, the trees establish quicker than traditional forestry methods.
It is proposed to establish 550sqm of native forest adjacent to the proposed MUGA using this method. This area is currently lawn.

2.2 TREE SPECIES

The key to the success of this method is the selection of appropriate trees. We are proposing a mix of the following native species:

- 20% (300 whips) – *Corylus avellana* (Hazel)
- 20% (300 whips) – *Crataegus monogyna* (Hawthorn)
- 20% (300 whips) – *Prunus spinosa* (Blackthorn)
- 10% (160 whips) – *Ilex aquifolium* (Holly)
- 10% (160 whips) – *Euonymus europaeus* (Spindle)
- 10% (160 whips) – *Salix caprea* (Pussy Willow)
- 5% (80 whips) – *Betula pendula* (Birch)
- 5% (80 whips) – *Pinus sylvestris* (Scots Pine)

As the proposed forest runs along private residential rear gardens and overall mature height may be a concern, only 10% of the proposed species are "large species" (*B. pendula* and *P. sylvestris*).
All species are beneficial for pollinators at different times of the year and will greatly improve the biodiversity within the locality.

2.3 METHODOLOGY

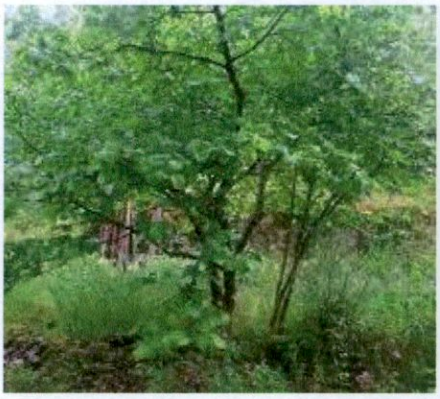
Detailed methodology will be laid out in the soft works specification, issued at tender stage.
All tree planting should be carried out between October and February, while the trees are dormant and the weather ensures plenty of rainfall during first months.

Preparing the ground begins with removing existing lawn turf layer. The entire area is then rotivated to a depth of 300mm. Large roots, stones, rubble and debris are discarded as appropriate. As there may be excess material generated during excavation for the proposed Science and Language Centre, additional soil can be incorporated into this forested area.

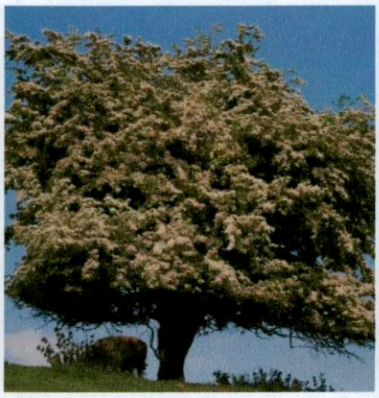
Spacing will be at 600mm centres, with whips planted at random, following no set pattern.

A strict maintenance regime is critical for the first two growing seasons, until the trees are established. The forest must be kept weed free and prevented from drying out, if possible. The general 18 month defects liability period for the landscape will extend to 24 months for this forest area.
After two years, selective thinning shall be carried out, reviewing which species are out-competing others, retaining a diverse mix of species.

3 Proposed planting images



Corylus avellana



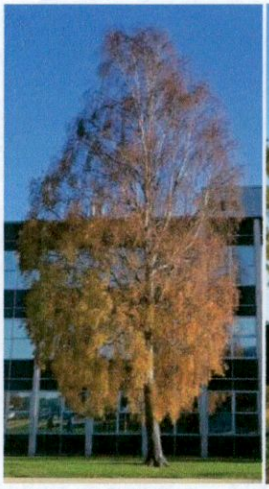
Crataegus monogyna

Prunus spinosa

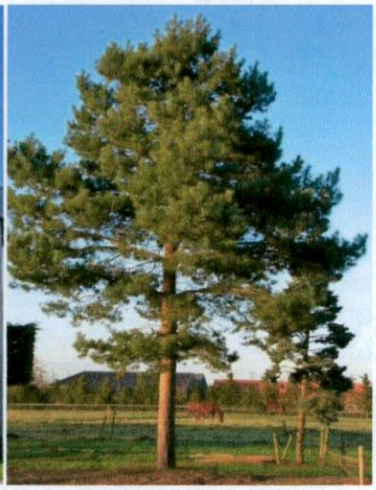
Ilex aquifolium

Euonymus europaeus

Salix caprea



Betula pendula



Pinus sylvestris

END.

PHILIP J LANDSCAPE ARCHITECTURE

APPENDIX A

Landscape Works and Maintenance Specification

PROJECT
Citywise Science and Language Centre Development

ISSUE DATE
22.08.2022

FOR
Planning, Further Information

NOTE

All landscape items shall be undertaken within the main building contract. Soft landscape defects liability will be defined separately to the main contract defects liability period. The date for practical completion of the building may not accord with the date for practical completion of the soft landscape items and is set out in Stage C below. Planting implementation times will be dependent upon the construction commencement. Maintenance is required during the defects liability period for soft landscape works i.e. those pertaining to trees, shrubs, herbaceous perennials and grassed areas. This shall be set out within the tender documentation for the soft landscape. All imported soil shall be the responsibility of the soft landscape contractor.

Area to the east of MUGA to utilise Miyawaki Tree Planting Method. Tree whips planted densely at 600mm centres.

STAGE A - PLANTING STAGE

LAWN TURF ESTABLISHMENT

Seeding/ turfing

GENERAL INFORMATION / REQUIREMENTS
SEEDED AND TURFED 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.

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

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.

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.

NOTICE
Give notice before:
-Setting out.
- Applying herbicide.
- Applying fertilizer.
- Preparing seed bed.
- Seeding or turfing.
- Visiting site during maintenance period.
Period of notice: 3 days.

SETTING OUT
Boundaries of seeding/ turfing areas: Mark clearly.

PREPARATION
PREPARATION MATERIALS
General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
Certification: Submit certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances:

PEAT
Peat or products containing peat: Do not use.

CULTIVATION
Compacted topsoil: Break up to full depth.
Soil ameliorant/ Conditioner/ Fertilizer: Fully incorporate into topsoil to a depth of 150mm.
Tilth: Reduce top 100 mm of topsoil to a tilth suitable for blade grading, particle size 10 mm (maximum).
Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

GRADING
Topsoil condition: Reasonably dry and workable.
Contours: Smooth and flowing, with falls for adequate drainage.
Remove minor hollows and ridges.
Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150mm.
Give notice: If required levels cannot be achieved by movement of existing soil.

FERTILIZER
Types: Apply both:
Superphosphate with a minimum of 18% water soluble phosphoric acid.
A sulfate of ammonia with a minimum of 20% nitrogen.
Application: Before final cultivation and three to five days before seeding/ turfing.
Coverage: Spread evenly, each type at 70 g/m^2, in transverse directions.

SEEDING
GRASS SEED
Mixture: pro Turf 24 hardwareing landscape mixture
Supplier and reference: Goldcrop limited, Centre Park Road, Cork
Rate of application: 90 kg/acre.

Wildflower meadow mix by 'Design by Nature' refer to planting schedule for planting mix and rate of application.

SOWING
General: Establish good seed contact with the root zone to promote healthy, consistent growth.
Method: Spread seed evenly at the specified rate(s) applied in two equal sowing in transverse direction.

- Lightly harrow or rake.
- On light soils roll and cross roll after seeding using a light weight roller.

PROTECTION/ CUTTING
First Cut of Grassed areas:
Timing: When grass reaches 60 mm high and is reasonably dry.
Preparation: Before cutting, remove debris, litter, and stones and earth clods larger than 25 mm in any dimension

Time of Year for Tree and Shrub Planting

TIMES OF YEAR FOR PLANTING

- 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.
- Dried bulbs, corms and tubers: September/ October.
- Colchicum (crocus): July/ August.
- Green bulbs: After flowering in spring.
- Wildflower plugs: Late August to mid November or March/ April.
- Aquatic and marginal plants: May/ June or September/ October.

TREE PLANTING

TREE PITS
Refer to tree pit construction details; Detail 3 'PROPOSED MULTI-STEM AND FEATHERED TREE PLANTING' and Detail 4 'PROPOSED STANDARD TREE PLANTING', Drawing 201-CJ.01-DRW 'Proposed Landscape Plan'.

Sizes: 75 mm deeper than root system and wide enough to accommodate roots when fully spread.
Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
Pit bottoms: With slightly raised centre. Break up to a depth of 150mm.
Pit sides: Scarify.
Backfilling material: Improved topsoil incorporating slow release fertilizer at rate of 30g/m2 refer also to growing medium specification for tree pits.

BACKFILLING MATERIAL
Composition: It is envisaged that all soil to receive imported soil as per soil specification unless soil analysis results prove suitable. Previously prepared mixture of topsoil excavated from pit and additional topsoil as required if deemed and approved by LA as suitable. Refer also to ecologist requirements in ecologist specification for biodiverse zone.

PERENNIAL AND SHRUB PLANTING

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS PLANT LAYOUT – RANDOM PLANTING APPEARANCE
Spacing: Evenly, avoiding straight lines.
Density: As scheduled.

SHRUB PLANTING PITS
Timing: Excavate 1-2 days (maximum) before planting.
Sizes: 150mm wider than roots when fully spread and 200 mm deeper.
Pit bottom improvement: Break up to a depth of 150 mm.
Backfilling material: Topsoil incorporating slow release fertiliser at a rate of 30g/m2.

PLANTING BULBS/ CORMS/ TUBERS
Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
Backfilling: Finely broken soil. Lightly firm to existing ground level.
Naturalized planting in existing grassed areas:
Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
Planting: Neatly remove a plug of turf and replace after planting.

PLANTING AQUATIC/ MARGINAL PLANT PLUGS
Handling: Keep plants watered and in shade until planted. Do not allow to dry out.
Preparation: Remove coarse weeds etc. from planting sites.
Root barrier membrane below soil: Do not puncture.
Planting: Into a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole to ensure good root hold into substrate.

BACKFILLING MATERIAL
Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.

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.

BULB PLANTING

To British Standard 4428:1989
Season of planting dependent on bulb type.

WATERING – ESTABLISHMENT PERIOD & DURING 18 MONTH DEFECTS LIABILITY PERIOD

Quantity: Wet full depth of topsoil.

- Application: Even and without damaging or displacing plants or soil.
- Frequency: Water as necessary to ensure the establishment and continued thriving of all planting.
- Irrigation system: Irrigation system required to all planted areas on podium. Frequency and rate of volume as agreed with LA/ Soft landscape contractor and or soft landscape maintenance contractor.

STAGE B - PLANTING ESTABLISHMENT STAGE

SHRUBS/TREES/HEDGES ESTABLISHMENT OF NEW PLANTING

During the initial establishment of newly planted trees and shrubs, carry out maintenance of planted areas as followed: Weed control: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of original planting pit. Keep planting beds clear of weeds, by maintaining full thickness of mulch as specified fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.
Only spray crown of trees when in leaf during warm weather and when necessary. Carry out in the evening. Preferably no use of herbicide weed by hand.

PRUNING GENERALLY
Pruning: In accordance with good horticultural and arboricultural practice.
Removing branches: Do not damage or tear the stem.
Wounds: Keep as small as possible and cut cleanly back to sound wood.
Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
Larger branches: Prune neither flushes nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.
Tools: Use clean sharp secateurs, hand saws or other approved tools.
Trim off ragged edges of bark or wood with a sharp knife.
Disease or infection: Give notice if detected.
Growth retardants, fungicide or pruning sealant: Do not use unless instructed.

TREES/HEDGES ESTABLISHMENT OF NEW PLANTING

Standard: Type and timing of pruning operations to suit the plant species.
Time of year: Do not prune during the late winter/ early spring sap flow period.
Young trees up to 4 m high:
Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
Remove duplicated branches and potentially weak or tight forks.
In each case, cut back to live wood.
Whips or feathered trees: Do not prune.

Operatives: Extensive pruning of young trees and any surgery to larger trees must be carried out by an approved member of the Arboricultural Association or other approved specialist.

PRUNING FLOWERING SPECIES OF SHRUBS

Time of year:
Winter flowering shrubs: Spring.
Shrubs flowering between March and July: Immediately after the flowering period.
Shrubs flowering between July and October: Back to old wood in winter.
Rose bushes: Early spring to encourage basal growths and a balanced, compact habit.

REMOVAL OF DEAD PLANT MATERIAL

Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

STAGE C - REPLACEMENT & DEFECTS

NOTE: Soft Landscape defects liability shall be a minimum of 18 months. Maintenance of all specified soft landscape material shall be required by the soft landscape contractor / main contractor for the duration of the 'soft landscape defects liability' period.

REINSTATEMENT OF SHRUBS/HERBACEOUS AREAS

Remove dead and damaged plants as identified by Landscape Architect/Contract Administrator.
Carefully move any mulch/matting materials to one side and dig over soil, leaving it fit for replanting. Take care not to disturb roots of adjacent plants. Replace plants, using pits and plants to the original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
Dress with SAI Enmag slow release fertilizer at 20g/m2 or E/A.
Agree details of replacement plants with Landscape Architect before ordering.

HAND WEEDING

General: Remove weeds entire, including roots.
Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
Completion: Rake area to a neat, clean condition.
Mulch: Reinstate to original depth.

WEED CUTTING BY HAND OR MACHINE

Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 75mm.

HERBICIDE TO KILL REGROWTH (limit to only minimal amounts/Weed by hand in all but severe situations.)

Type: Suitable foliar acting herbicide to kill regrowth.
Timing: Allow recommended period for herbicide to take effect before clearing arisings.

WEED CUTTING BY HAND OR MACHINE only where necessary. Limit use.

Type: Suitable residual soil acting herbicide.
Time of year: Unless otherwise agreed, complete before end of March.
Timing: Allow recommended period for herbicide to take effect before clearing arisings.

DIGGING OVER

General: Dig over beds. Do not damage existing plants, bulbs and roots.
Depth of dig (minimum): 100 mm.

SOIL AERATION

Compacted soil surfaces:
Prick up: To aerate the soil of root areas and break surface crust.
Size of lumps: Reduce to crumb and level off.
Damage: Do not damage plants and their roots.

SOIL LEVEL ADJUSTMENT

Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
Arisings (if any): Spread evenly over the bed.

WINTER LEAF REMOVAL

Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
Arisings: distribute evenly over planting beds.

PROTECTING/MAINTAINING/MAKING GOOD DEFECTS MAINTENANCE

Duration: Carry out the operations in the following clauses from completion of planting until the end of the defects liability period. (Minimum 18 month period to be included in tender requirements.)
Frequency of maintenance visits: Monthly during growing season.

FAILURES OF PLANTING

General: Plants/ trees/ shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during period stated above, will be regarded as defects due to materials or workmanship not in accordance with the Contract. Replace with equivalent plants/ trees/ shrubs. Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
Timing of making good: Submit proposals.

CLEANLINESS

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

PLANTING MAINTENANCE GENERALLY

Weed control: Maintain weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of original planting pit.
Keep planting beds clear of weeds, by hand weeding and hoeing until plants are established.

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.
Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
Staking: Check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark. Tie loose climbers back to support.

- Frequency of checks: 3 months.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.

Trees: Spray crown when in leaf during warm weather. Carry out in the evening.

PLANTING MAINTENANCE – FERTILIZER

Time of year: March or April, evenly spread SAI Enmag fertilizer, carefully incorporating below topsoil materials: 20 g per feathered, standard or larger tree.

PLANTING MAINTENANCE – PRUNING

General: Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape.
Prune trees to favour a single central leading shoot.

STAGE D - GENERAL MAINTENANCE

LANDSCAPE MAINTENANCE SCHEDULE

SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (accepting aquatic/ marginal planting) 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.

CLIMATIC CONDITIONS

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

MECHANICAL TOOLS

- Restrictions: Do not use within 100 mm of tree and plant stems.

WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without damaging or displacing plants or soil.
- Frequency: Water as necessary to ensure the establishment and continued thriving of all planting. Irrigation system required for all podium areas.

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: Provide 3 days notice to give the Landscape Architect/Contract Administrator the opportunity of being present.

NOTICE

Give notice before:

- Application of herbicide.
- Application of fertilizer.
- Watering.
- Each site maintenance visit.
- Period of notice: 3 days.

REINSTATEMENT

Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstate to original condition.

CONTROL OF MAMMALIAN PESTS

Specialist firms/Methods: employ only approved firms and methods.

WATERING

- Supply: Potable mains water.
- Quantity: Wet full depth of topsoil.
- Application: Do not damage or loosen plants.

- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: As necessary for the continued thriving of all planting.

DISPOSAL OF ARISINGS GENERALLY
Unless specified otherwise, dispose of arisings from all specifies operations by removing from site.

LITTER
Extraneous rubbish not arising from the contract work: Collect and remove from site.

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

TREE WORK

GENERAL TREE WORK

Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
Protection: Avoid damage to neighbouring trees, plants and property.
Standards: To BS 3998:2010 and Forestry and Arboriculture Training and Safety Council Safety Guides.
Removing branches: Cut as shown in Arboricultural Association Leaflet No 8 'Mature tree maintenance'. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
Appearance: Leave trees with a well balanced natural appearance.
Chain saw work: Operatives must hold a Certificate of Competence.
Tree work: To be carried out by an approved member of the Arboricultural Association.

ADDITIONAL WORK
Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

PREVENTION OF WOUND BLEEDING
Standard: To BS 3998, clause 8.
PREVENTION OF DISEASE TRANSMISSION
Standard: To BS 3998, clause 9 and Appendix B.

CLEANING OUT AND DEADWOODING
Remove:

- Dead, dying, or diseased wood, broken branches and stubs.
- Fungal growths and fruiting bodies.
- Rubbish, wind blown or accumulated in branch forks.
- Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
- Other unwanted objects, e.g. tree houses, swings.
- Climbing plants as scheduled.

CUTTING AND PRUNING GENERALLY
Tools: Appropriate, well maintained and sharp.
Final pruning cuts:
Chainsaws: Do not use on branches of less than 50 mm diameter.
Hand saws: Cut in one continuous operation to form a smooth cut surface.
Anvil type secateurs: Do not use.

- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
- Large branches: only with approval of Contract Administrator/Landscape Architect.

- Remove in small sections and lower to ground with ropes and slings.
- Dead branches and stubs: When removing, do not cut into live wood.
- Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
- Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- Protected area: Do not cut roots within an area which is the larger of:
- The branch spread of the tree.
- An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.

CUTTING

- Cutting: Make clean smooth cuts with a hand saw.
- Wounds: Minimize. Avoid ragged edges.
- Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling: - Protection: Cover cut roots with clean sharp sand.
- Material: Backfill with original topsoil.

BARK DAMAGE

- Wounds:
- Do not attempt to stop sap bleeding.
- Bark: Gently remove ragged edges using a sharp knife.
- Wood: Remove splintered wood from deep wounds.
- Size: Keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy barks: Give notice.

GRASSED AREAS

MAINTENANCE OF GRASSED AREAS

GRASSED AREAS MAINTENANCE OF GRASSED AREAS
General: Maintain turf in a manner appropriate to the intended use.
Grass height: Maintain within range 40-50mm for mown paths, cut four times a year for wildflower meadows to a height of 50mm.
Soil and grass condition:
Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
Waterlogging and compaction: Prevent.
Damage: Repair trampling, abrasion or scalping caused by mowing.
Ornamental turf and lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
Edges: Neat and well defined, in clean straight lines or smooth flowing curves.
Litter and fallen leaves: Remove regularly to maintain a neat appearance.

MAINTENANCE OF GRASSED AREAS
Standard: To BS 7370-3:1991. Carry out maintenance appropriate to each category of turf, as follows:
Objectives: To BS 7370-3:1991, table 6.
Programme: To BS 7370-3:1991, clause 11.
Mowing methods: To BS 7370-3,:1991 table 3.

GRASS CUTTING GENERALLY (exclusion zone biodiverse zone as per ecologist specification)
Before mowing: Remove litter, rubbish and debris.

Finish: Neat and even, without surface rutting, compaction or damage to grass.
Edges: Leave neat and well defined. Neatly trim around obstructions.
Adjoining hard areas: Sweep clear and remove arisings.
Drought or wet conditions: Obtain instructions.

MOWING
Location: all grass areas
Width (approximate): 150 mm.
Operations: Maintain by applying a suitable herbicide twice during the growing season.

LEAF REMOVAL
Operations: Remove fallen leaves.
Special requirements: by sweeping with a motorised vacuum sweeper or rotary brush sweeper.

MOWING LAWN
Grass height: maintain between 30 and 50mm with the exception of wildflower meadow.
Arisings: spread evenly.

ROLLING
Operations: Consolidate turf and reduce frost heave.

SPIKING
Operations: Aerate the soil and improve surface water penetration.
Depth: 100 mm into soil.

EDGES TO SEEDED AREAS
Location: Planting beds and around newly planted trees.
Timing: After seeded areas are well established.
Edges: Cut to clean straight lines or smooth curves. Draw back soil to permit edging.
Arisings: Remove

RE-FORMING GRASS EDGES
Location: Planting beds, paths, manhole covers and the like.
Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves, sloping slightly back from vertical.

RE-FORMING GRASS EDGES
Location: Planting beds, paths, manhole covers and the like.
Standard: To BS 7370-3:1991, clause 12.3.

LEVELLING HOLLOWS AND BUMPS IN TURF
Standard: To BS 7370-3:1991, clauses 12.4 and 12.5.

SELECTIVE HERBICIDE
Spray with a suitable selective herbicide.
Areas not to be sprayed: Wild flower or bulb and corm planted areas.

REINSTATEMENT OF WORN OR DAMAGED LAWNS
Worn or damaged areas: Make good by re-turfing or reseeding:
Re-turfing standard: To BS 7370-3:1991, Clause 12.2.
Reseeding standard: To BS 7370-3:1991, Clause 12.6.
Turf or seed: To match existing in appearance and quality.
Protection and watering: Provide as necessary to promote successful germination and/ or establishment.