Landscape Specification

Kingswood High School
Bringelly Road, Kingswood
February 2019

Contract No. SINSW-18-1442

Issue T1	**22.11.18**
Issue T2	**22.11.18**
Issue DA	**19.02.19**

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LANDSCAPE SPECIFICATION

This Landscape Specification shall cover all work to be accomplished and materials to be used in the landscape works. It is intended that this landscape specification be read in conjunction with the following documentation dated February 2019:

- Landscape Plan Dwg No. 175.19(18)/512

1. GENERAL CONDITIONS

1.1 GENERAL CONDITIONS

Refer to main specification for all general conditions.

1.2 STAGING OF WORKS

Any contractor asked to submit a tender for the landscape works must examine the program for the building works and develop a program to suit.

1.3 DEFECTS LIABILITY & PLANTING ESTABLISHMENT PERIODS

The landscape contractor shall be held responsible for replacement of any work and/or materials which fail during the first twelve (12) months following the date of issue of a final occupation certificate.

This includes the replacement of all failed plants.

2. LANDSCAPE WORKS

2.1 SITE PREPARATION

Any minor levelling, either cutting or filling, shall be undertaken by the Landscape Contractor so that areas are left ready for final finishes. Adequate watering points shall be provided to enable the Landscape Contractor to maintain planted area throughout construction and the maintenance period. Weeds are to be sprayed with 'Roundup', or equal, to manufacturers directions and must be dead before being disturbed.

2.2 DEMOLITION WORKS

The following items are to be demolished and removed by the landscape contractor:

- Weeds within proposed planting and lawn areas

All demolished material is removed from site (unless indicated otherwise below) and disposed of in accordance with waste management requirements. All demolished material shall be deemed the property of the landscape contractor.

2.3 WORKS BY THE BUILDER (prior to the landscape works)

The following work shall be carried out by the builder prior to the commencement of the landscape works:

- Tree Protection Measures;
- Existing trees to be removed;
- All earthmoving and earthworks required to form the ground levels to the profiles and levels shown on the drawings, ie. to the finished levels to allow for mulching, topsoiling and turfing;
- Any required drainage works (unless stated otherwise below);
- Raised planters & walling works;
- Paving and pathways;
- Provision of hose cocks for watering;
- Construction zone fencing (see 2.4 below); and
- Soil erosion control measures (see 2.5 below).

2.4 CONSTRUCTION ZONE FENCING

Refer to main specification. By the builder.

2.5 SOIL AND WATER MANAGEMENT WORKS

Refer to main specification. By the builder.

2.6 EXISTING TREES TO BE RETAINED

2.6.1 Generally

All existing trees that are shown on Drawings and/or specified to be retained shall be adequately protected from damage as described hereafter.

There are a number of significant existing trees on the site to be retained and protected.

2.6.2 Tree roots

During excavation for service or other excavation, tree roots in excess of 50mm diameter shall not be cut. Hand digging and tunnelling shall be carried out wherever necessary to avoid cutting roots and especially under the branch spread of trees. Where necessary tree roots shall be saw cut back to a clean cut and then treated with an approved bitumen emulsion dressing. Trenches dug under the branch spread of trees shall remain open for as short a time as possible. Backfilling shall remain open for as short a time as possible. Backfilling shall be carefully rammed and watered in around the roots to eliminate voids.

2.6.3 Around trees

Disturbance to existing ground levels beneath branch spread, either by compaction, heavy machinery, piling up materials or cutting away soil, shall not take place unless so specified. If ground has been unavoidably compacted by heavy machinery, the soil shall be loosened by tyning.

Construction materials generally, and particularly oil, paints, waste concrete, cleanings or other deleterious materials shall not be stored or dumped under branch spread. Concrete mixers shall be sited in positions where the deposit of wind-blown cement on the trees is reduced to a minimum. No fires shall be lit under the branch spread or where damage to trees could result.

In the event that oil or other harmful material has been spilt under the trees on the sub-grade or topsoil to be retained, the affected soil is to be excavated and the damaged vegetation removed to the approval and under the direction of the Superintendent. Dispose of soil and replace with soil as specified for mass planted areas.

2.6.4 Tree Pruning

All works to be in accordance with AS 4373-1996 Pruning Amenity Trees, modern arboricultural practices and Workcover's Code of Practice: Amenity Tree Industry - 1998.

2.6.5 Damage

The Contractor shall be responsible for damage to or destruction of any new or existing trees, unless such trees are cut or removed as specified or as directed in writing by the Superintendent.

Partial damage to any tree shall be rectified immediately damage occurs at the Contractor's expense, as specified previously and under the direction of the Superintendent.

In the case of total destruction of a tree or trees, damages shall be assessed by the Superintendent and shall be calculated as the amount necessary to replace and establish in that position a similar tree of a similar species from within a radius of 150km.

Refer to ArborSafe section 6 for tree protection fencing details.

2.7 EARTHWORKS

2.7.1 Base Levels

Excavate (cut or fill) to the following levels to accommodate the final surface treatments.

Item	Excavation Depth Below Finished Levels
Brick sitting wall	300mm
Sandblasted coloured concrete paving	150mm
Mass planted areas	350mm
Lawn areas	150mm

Landscape contractor is to provide a "Site Safety Management Plan" prior to the commencement of any works. A nominated access track to the construction site is to be determined on site by the contractor and client's representative. All access to and from the construction zone is to be within this track. Any damage outside this track will be repaired by the contractor at his expense.

2.8 DRAINAGE WORKS

In general the mass planted areas are to be build atop existing levels to improve drainage and to deflect water runoff around the site. Due to the nature of the site it is considered that sub-surface drains are not be required to drain the mass planted areas and lawns. If the contractor considers that certain other areas require drainage then the Superintendent should be immediately notified for an inspection. Set out below are the requirements for any drainage works.

2.8.1 Materials

Agricultural drains to be 100mm flexible coil & filter sock.
Aggregate to be 10-20mm blue metal.
Connections to be 100mm black polyethylene stormwater pipe.

2.8.2 Installation

Install agricultural drains with a maximum 1:60 gradient and backfill trenches with a minimum 200mm layer of aggregate. Connect into the stormwater system for the buildings.

2.9 SANDBLASTED COLOURED CONCRETE PAVING

2.9.1 Materials

Concrete - 25mPa strength at 28 days
Sandblasted: Coloured Expose from Boral or equal.
Aggregate to be “Stone Moss” or equal. Precoloured concrete from Boral or equal using CCS pigment concentrates for full depth colouring of concrete. Colour to be “Caramel”. Sandblasted samples to be shown to client’s representative for approval prior to installation.
Reinforcing - SL72 steel mesh
Expansion Joint - PE Polyethylene 30kg density 10mm x 100mm
Connolly or Danley key joint expansion joint in all paving
Mortar - Clean fine sand & Portland cement Type A in a 4:1 ratio.

2.9.2 General Installation

All paving to be laid atop a 50mm compacted sand bedding layer.
All concrete paving to be installed at a depth of 100mm to the finished levels as indicated on plan unless otherwise specified below. Where concrete adjoins pavements or walls ensure that a foam rubber expansion joint are placed between the different materials to allow for movement.

All proposed concrete paving to finish flush with adjoining surfaces.

2.9.3 Paving Installation

All paving to be installed to the levels nominated by the civil engineer.

Install aggregate mix concrete as above with full depth coloured pigment as specified. Sandblast to expose the aggregate and create a rough finish. Sample of sandblasting to be provided for approval prior to being carried out.

2.10 MASONRY SITTING WALLS

2.10.1 Materials

Walls -	230mm x 110mm x 76mm dry pressed bricks to match the proposed building works Bricks to be approved by Superintendent.
Capping -	230mm x 110mm x 76mm double bullnose dry pressed bricks to match the proposed building works Bricks to be approved by Superintendent.
Mortar joints -	Clean fine sand & Portland cement Type A in a 4:1 ratio.
Concrete -	25mPa strength at 28 days
Reinforcing -	L12TM3 (200mm wide)

Expansion Joint - PE Polyethylene 30kg density 10mm x 100mm

2.10.2 Installation

Excavate a level trench of minimum width 300mm. Install a rough concrete footing of minimum thickness 200mm and reinforced with trench mesh as specified. Finish the footing minimum 100mm below finished concrete paving or adjoining turf levels. Install 230mm wide brickwork to finish 450mm (sitting height) above finished paving levels (including 120mm high coping course). Install mortar into a uniform 10mm joint between blocks to create flush struck joints. End bricks to be dowelled to brick wall below to ensure that end bricks do not come loose.

2.11 PLANTING PREPARATION

2.11.1 Materials

Soil mix to be suitable for improving soils such as Botany Humus Mix from Australian Native Landscapes or equal. Samples to be shown to Superintendent for approval before installation. Also provide written breakdown of contents, pH and trace elements and suitability for improving existing soil. Soil mix to comply with AS 3743-2003: Potting mixes, AS 4419-2003: Soils for landscaping and garden use & AS 4454-2003: Composts, soil conditioners and mulches.

Soil above TPZs to be largely sand composition.

2.11.2 Installation

Where plants are to be installed in garden areas excavate to a depth of 350mm below finished ground levels. Deep rip the excavated base to an additional depth of 300mm to break up the clay base. Install imported garden soil mix as supplied by to a depth of 300mm in maximum 100mm layers. The first layer is to be thoroughly mixed into the existing soil to ensure the materials integrate.

Where trees are to be installed in lawn areas excavate a hole minimum twice the depth and diameter of the plant container. Backfill with imported garden soil mix as specified. Install a 1m diameter mulched area around each tree in lawn areas. Mulched area to reduce in depth around plant stem to form a shallow watering dish.

Garden areas to be installed atop existing ground levels within TPZs.

2.12 PLANTS AND PLANTING METHODS

2.12.1 Materials

Trees and plants shall be true to name and variety. Substitutes in size or variety shall not be made without the approval. All plants shall be true to size, in well-developed healthy condition, free from insect and diseases, with well established root systems. Samples of each species to be shown to Superintendent prior to installation.

Water crystals to be Garden King Wettasoil Granular deep watering agent from Amgrow or equal product.

2.12.2 Installation

The contractor is to rigidly observe planting positions as shown on plan and planting shall not be carried out in dry soil or in extreme weather conditions.

The root system must be moist before planting to ensure the turgidity. The plants shall be removed from their containers with as little disturbance as possible to the root system. Plants should be planted at the same depth as the plants were in the containers and allow for a shallow saucer of soil to be formed around the plant to aid penetration of water.

Avoid hilling up of top soil around young plant stems. Firm soil around the root ball and thoroughly soak the areas after planting. On completion, cultivate, rake and leave all garden areas in a neat and tidy condition. Fertilise with an approved 9 months formulation general purpose slow release fertiliser such as "Nutricote" or "Osmocote" that is mixed into the prepared planting space just prior to planting. Fertiliser to be applied at the rate as specified by the manufacturer for the plant size and type.

Also apply water crystals around each plant (dug into the soil) at a rate of 50ml per m2.

Labels shall be removed entirely from the plants. Stake according to the Schedule of Plant Material with 50 x 50 x 1800mm long hardwood stakes and hessian ties. Stakes to be located outside the rootball of the nominated plant. Maintain all plants and ties and provide adequate watering for the duration of contract.

2.13 LAWN AREAS

2.13.1 Materials

Turf shall be cultivated Kikuyu obtained from an approved commercial grower. It shall be weed and disease free.

Topsoil to be a turf topdressing with a high organic content (to improve the existing soils) such as Nitro-Top from Australian Native Landscapes or equal. Samples to be shown to Superintendent for approval before installation. Also provide written breakdown of contents, pH and trace elements and suitability for improving existing soil. Topsoil to comply with AS 4419-2003: Soils for landscaping and garden use.

2.13.2 Installation

Excavate to a depth of 150mm below finished ground levels. Deep rip the excavated base to an additional depth of 300mm to break up the clay base. Install imported topsoil soil mix as specified to a depth of 100mm. Level and lightly compact topsoil to ensure a smooth surface. Prior to final raking add fertiliser such as Dynamic Lifter to manufacturer's directions. Turf to finish flush with adjoining pavements and edgings. Topdress edges or low areas to ensure even surface.

Lawn to be installed atop existing ground levels within TPZs.

2.14 MULCHING

2.14.1 Materials

Mulch to be comprised of maximum 25mm fresh hardwood chips such as Eucalyptus Mulch from Australian Native Landscapes or equal. Samples to be shown to Superintendent for approval before installation. Mulch to comply with AS 4454-2003: Composts, soil conditioners and mulches.

2.14.2 Installation

Mulch shall be applied to all new garden areas where bare earth is exposed. Following planting, rake all garden areas and tamp lightly to give an even graded surface. Care shall be taken not to mix soil and mulch together. Mulch to be laid in the following depths:

- Wood Chip 100mm deep

2.15 BRICK GARDEN EDGING

2.15.1 Materials

Bricks - 110 x 230 x 50mm precise form clay paver or equivalent. Colour to match the proposed building works. To be selected by the Superintendent after samples are shown by landscape contractor.

Mortar - Clean fine sand & Portland cement Type A in a 4:1 ratio.

Reinforcing - Galvanised brick tor

2.15.2 Installation

Excavate a trench of minimum width 200mm and 100mm below finished landscape levels. Install a rough mortar footing of minimum thickness 50 mm and bed bricks into the mortar before it hardens. Install mortar into a uniform 10 mm joint between each brick to create flush struck joints. Saw cut pavers to accommodate tight curves. Install edging to finish flush with adjoining turf levels.

2.16 PRACTICAL COMPLETION

Sweep down, clean up and remove all waste landscape material from the site. Hose down paved areas, fences, footpaths, etc. Notify Superintendent of progress and arrange practical completion inspection with Superintendent or representative. Following satisfactory completion of initial installations and/or rectification of defects, then a notice of practical completion shall be issued.