

**LANDSCAPE SPECIFICATION
PLANTING WORKS**

MACARTHUR MEMORIAL PARK

VARROVILLE

**Prepared by
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Issue for DA

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S.1.0 GENERAL CONDITIONS

S.1.1 DESCRIPTION OF WORK

Generally the works covered by the Specification includes site preparation and softscape garden works described below for:

*MACARTHUR MEMORIAL
VARROVILLE*

S.1.2 EXTENT OF WORK AND DRAWINGS

Pursuant to and in conformity with the requirements of this Landscape Specification and the included Drawings, this contract includes all work detailed or implied on the following drawings, prepared by **Narelle Sonter BOTANICA**, September 2017:

L501	Site Plan
L502	Grid 1
L503	Grid 2
L504	Grid 3
L505	Grid 4
L506	Grid 5
L507	Grid 6
L508	Grid 7
L509	Grid 8
L510	Grid 9
L511	Grid 10
L512	Grid 11
L513	Grid 12
L514	Grid 13
L515	Grid 14
L516	Grid 15
L517	Chapel Landscape Plan
L518	Chapel Carpark Landscape Plan
L519	Function Centre Landscape Plan
L520	Café Landscape Plan
L521	Administration Landscape Plan
L522	Workshops Landscape Plan
L523	Outbuildings Landscape Plan
L524	Entry Gatehouse Landscape Plan
L525	Burial Screen Plan
L526	Burial Screen Details
L527	Street Tree Plan
L528	Typical Road Sections
L529	Softscape Details
L530	Image Sheet

S.1.4 SERVICES

Prior to the commencement of any works on the site, the Landscape Contractor shall fully inform himself of the position of services: sewer, water, electricity and gas. Details of the exact location of services should be discussed with the General Manager, Metropolitan Catholic Cemeteries Board, Rookwood.

The Landscape Contractor shall take appropriate measures to ensure that any services are not interfered with or damaged in the course of the work. The Landscape Contractor shall bear the total cost of reinstatement of or repair of any services that are damaged.

S.1.5 PRACTICAL COMPLETION

The time for Practical Completion is as per the terms and conditions of the general contract.

S.1.6 COMPETENCE

The Landscape Contractor shall have on site during the whole of the construction period a competent Foreman who is able to supervise efficiently the work being performed. The Landscape Foreman is to be able to accept and respond to instructions from the Project Manager/Landscape Architect.

The successful Landscape Contractor shall nominate in writing the name and position of the Landscape Foreman within 7 days of the issue of the letter of acceptance.

The Landscape Foreman can be changed only with the written permission of the Project Manager/Landscape Architect.

S.1.7 ORDERING OF PLANT MATERIAL

All plant material listed is to be ordered immediately following the receipt of letter of acceptance.

The supplier, or a list of suppliers, shall be submitted to the Project Manager for approval prior to placing an order for the plants.

A copy of the order is to be submitted to the Landscape Architect. The Landscape Contractor is to advise the Landscape Architect of any problems with the plant order as soon as their suppliers have advised them. It will not be acceptable to advise of problems with the plant order less than fourteen (14) days prior to planting.

S.2.0 SOFTSCAPE WORKS

S.2.1 PROTECTION OF EXISTING TREES & VEGETATION

The Landscape Contractor is responsible to ensure the survival and growth of all existing trees to be retained during landscape works. Where necessary they are to be protected by fencing and / or armouring. Refer Tree Plan prepared by Travers Bushfire & Ecology.

Should there be some concern that the trees are unstable and a potential hazard then the Landscape Contractor is to advise the Catholic Cemeteries Board immediately.

No trees shall be removed or lopped unless specific approval to do so is given in writing by the Catholic Cemeteries Board which is to include the Council authority to remove or lop said trees.

Storage of materials, mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refuelling, site office and sheds, and the lighting of fires shall not occur within a minimum distance of four (4) metres from any existing trees.

Do not stockpile soil, rubble or other debris cleared from the site, or building materials, within the dripline of existing trees. Vehicular access shall not be permitted within a minimum distance of four (4) metres from any existing trees.

The services of an approved Arborist are to be used to make good any damage to tree crowns or root systems immediately after it occurs. When a tree has been damaged to such an extent that it in the opinion of the Landscape Contractor it should be removed, the Landscape Contractor shall inform the Catholic Cemeteries Board of the same.

If the tree is to be removed (with Catholic Cemeteries Board approval) a new suitable tree of equal size and species as approved by the Landscape Architect will be provided as a replacement.

S.2.2 SITE PREPARATION & CULTIVATION

In all areas to be planted, as detailed in Botanica Landscape Plans L517-L529:

Weed Eradication

All weeds and grass are to be effectively removed by spraying the areas to be planted twice with the equivalent of "Round-up", at least two (2) weeks apart (assuming minimal rainfall has occurred in that

two (2) week period). All dead weed material, stones, builders' rubble, concrete slurry and rubbish are to be removed from areas of planting.

All natural grade and on slab areas are to be free of all dead weed material, stones, builders rubble, concrete slurry, spoil material, general waste and the like before any landscape work is to be undertaken.

S.2.2.1 Cultivation

Removal and stockpiling of topsoil

The Landscape Contractor is to remove the top 150mm depth of soil from the unbuilt upon areas of the site and stockpile it on site.

A cover crop is to be sown on the site topsoil stockpiles to prevent erosion.

Removal of soil from site

In order to prepare the site for the later addition of topsoil and mulch the Landscape Contractor is to remove excess existing subgrade from the unbuilt upon areas of the site and dispose of it off site.

The Landscape Contractor is to achieve the finished levels as follows:

Landscape garden areas -225mm below finished level (to allow for topsoil and mulch)

Cultivation of subgrade

The resultant subgrade is to be rotary hoed or hand cultivated to a depth of 300mm.

NOTE: Deep ripping & the Addition of Gypsum

Where cultivation intrudes into podzol soils the area is to be deep ripped to a depth of 500mm, then rotary hoed to a depth of 300mm. Gypsum is to be added at the rate of 0.25 kg / square metre.

S.2.3 TOPSOIL TO NATURAL GROUND PLANTING BEDS

All topsoil to be used on site for natural ground planting beds is to be topsoil won from the site or imported topsoil which is to conform to **AS.4419**.

The Landscape Contractor is to provide a sample of the imported topsoil for approval by the Landscape Architect prior to commencement on site.

Prior to commencement of planting the Landscape Contractor is to satisfy himself that 150mm depth of topsoil has been installed to all planting areas.

Should settling of the soil medium occur the Landscape Contractor will be responsible for providing additional topsoil to ensure the required finished levels are achieved and maintained. Finished levels of mulched garden beds should marry into adjoining paved areas unless otherwise indicated on the landscape plan.

S.2.4 PLANT MATERIAL

Supply of Plants:

The Landscape Contractor will be responsible for the planting of all plants identified on the Landscape Plans.

Size of Plants:

All plants shall be supplied in the size specified on the landscape drawings and shall be of optimum size for the containers, that is, with roots established well in the whole of the pot, but not root bound to the pot. To ensure plants are at optimum size for the plants the Landscape Contractor will order one extra of all species over 150mm indicated in the plant schedule, to check root ball for evidence of being pot bound.

Condition of Plants:

All plants shall be vigorous, well established, of good form, not soft or forced, free from disease and insect pests, with well developed, healthy root systems, not root bound. Plant containers shall be free from weeds. All trees ordered are to be freestanding, without the support of stakes.

Substitution of Materials:

The Landscape Contractor shall not make any substitutions unless approved.

If plants are found to be unavailable, details of alternative plants shall be submitted for written approval. It will not be acceptable to advise of problems with the ordering of plants less than thirty (30) days prior to planting.

S.2.5 PLANTING

Location of Planting:

The Landscape Contractor shall not vary the plant locations from those shown on the contract drawings unless otherwise directed. Should it appear necessary to vary the locations and spacing to avoid service lines, or to cover the area uniformly, or for similar reasons, the Landscape Contractor should contact the Landscape Architect (LA) and ask for instructions on how to proceed.

In locations where impermeable sub-soil or rock conditions are encountered close to the surface, or unsatisfactory sub-soil drainage conditions are found to exist that could affect the establishment of plants, the Landscape Contractor shall draw the LAs attention to this fact and shall not proceed with planting until approval is obtained.

Protection & Replacement of Plant Material:

The Landscape Contractor shall not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain, or when the soil is very wet or waterlogged or during periods of frost.

It is the responsibility of the Landscape Contractor to ensure that plants on site awaiting planting are adequately watered and protected from strong winds so that they are in optimum condition when planted. Stock that has been allowed to dry out or which has suffered any mechanical damage prior to planting shall be replaced at no contract variation.

The Landscape Contractor will be responsible for the protection and maintenance of all planting after its installation is complete up until Practical Completion and following this milestone up until the end of the Defects Maintenance Period. If required the Landscape Contractor will be responsible for the erection of temporary fencing to protect their planting from damage and vandalism by others.

The Landscape Contractor shall allow for plant failures, and replace at their own expense, any plants that are damaged during planting, have failed to thrive or died following installation. This includes all plants.

Planting Procedure:

The Landscape Contractor shall ensure that the following planting procedures are adhered to unless directed otherwise:

(a) Planting Areas for 5 to 25 Litre Stock: Refer Details

1. Holes dug to accommodate plants are to be of adequate depth and width. (The depth can be tested by inserting the plant, still in its

containers, into the hole). The sub-grade is to be cultivated to a depth of 300mm. For 5 litre plants, the hole is to be the width of the plant container plus 300mm and the depth of the hole is to be the depth of the plant container plus 100mm. For 25 litre plants, the hole is to be the width of the plant container plus 400mm and the depth of the hole is to be the depth of the container plus 150mm.

2. Backfill the hole with 100mm depth of imported topsoil (as before specified).
3. Thoroughly soak the plant and carefully remove it from its container with minimum disturbance of the root ball other than a gentle teasing out of the root system.
4. The plant is to be centred in the planting hole before the hole is backfilled with soil mix as above specified. At the time of backfilling, apply *Osmacote Plus Organics All Purpose* plant fertiliser at manufacturer's recommended rates.
5. After backfilling, water thoroughly.
6. When the hole is backfilled, the topsoil level of the plant root ball is to be level with the finished surface of the soil surrounding the hole.
7. The finished level of mass planting beds after planting and application of 75mm specified mulching material is to be flush with adjoining paving, edge strips, etc.

(b) Greater than 25 Litre and Individual Trees in Garden Areas:

1. Excavate holes in accordance with the dimensions of the container. (For semi mature trees, the depth of the hole is to be equivalent to the container height plus 300mm, and the width of the hole is to be equal to that of the container plus 600mm.) Break up the sub-base within the excavated hole to a minimum depth of 300mm and remove rocks and debris.
2. Backfill planting hole with imported topsoil as before specified.
3. Thoroughly soak the plant and carefully remove it from its container with minimum disturbance of the root ball other than a gentle teasing out of the root system.
4. The plant is to be centred in the planting hole before the hole is backfilled with soil mix as above specified. At the time of

backfilling, apply Dynamic Lifter plant fertiliser at manufacturer's recommended rates.

5. Apply immediately after planting adequate water to thoroughly soak each planting hole.
6. Spread a 75mm layer of mulch (for garden areas) as specified in section S.2.7 MULCH, to the top of the soil surrounding the tree trunk.
7. Remove all surplus soil and containers from the site at the time of excavation and planting.

Note: After planting, it is the Landscape Contractor's responsibility to ensure that each plant receives adequate water to ensure its optimum growth until the commencement of the Maintenance Period.

S.2.6 FERTILISER

Fertiliser is to be slow release fertiliser equivalent to *Osmacote Plus Organics All Purpose* and is to be applied to the bed at manufacturer's specified rates before mulch is applied.

The Landscape Contractor shall ensure that the fertiliser does not come into contact with the roots of the plant. Application rates as recommended by the manufacturer shall be strictly adhered to.

S.2.7 MULCH

All garden beds, planter beds and tree planting areas are to be mulched. Mulch shall be free of soil, weed growth and any other foreign matter, and shall be spread evenly over entire planting area to a depth of 75mm. Allow for settlement of mulch material.

Mulch Type to Garden Areas: *Aged organic mulch
equivalent to ANL Horticultural Fines.*

S.2.8 STAKES AND TIES

Stakes:

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Stake sizes: 3 x 50mm x 50mm x 1800mm stakes per plant of 75 litre size or greater (unless otherwise specified on the drawing).

Installation: The Landscape Contractor is to drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Ties:

Provide 50mm hessian webbing tie as a triangular surround, stapled securely to the stakes at a point 1/3 below the top of the stakes.

S.2.9 SUBSOIL DRAINAGE

It is the responsibility of the Landscape Contractor to ensure all of the items of stormwater drainage work by others have been carried out prior to the commencement of their works. If they have not been satisfactorily completed in the opinion of the Landscape Contractor, they are to inform the Landscape Architect immediately and not carry out the required works, until the works by others are complete to the satisfaction of the Landscape Contractor.

Prior to the backfilling of select garden areas the Landscape Contractor is to install any sub soil drainage lines to hard garden edges, the back of retaining walls and garden areas with natural rock subgrade as necessary to ensure optimum drainage of the beds for the plant species specified.

The Landscape Contractor is not to install any sub soil drainage systems unless:

- The required sub soil drainage lines on natural ground or over rock sub-grade can be connected to the site stormwater system.

It will not be acceptable for any water to sit on the natural rock subgrade of planter bed within the planting areas.

Sub Soil Drainage Lines on Natural Ground:

Flexible 90mm sub soil drainage coil with sock is to be installed to all planting areas along hard outer garden edges, behind retaining walls, and over rock sub-grade.

The extent of any rock outcrop below garden area is to be determined by the Landscape Contractor through their own on site inspections prior to the submission of their tender price. All sub soil drainage lines

are to fall towards and be connected to the site stormwater system provided by others.

All sub soil drainage lines are to be covered with free draining gravel, which is in turn to be covered with filter fabric as before specified. When installing sub soil drainage lines, free draining gravel and filter fabric the Landscape Contractor is to ensure lines are installed so that soil to a minimum depth of 200mm covers all installed drainage lines. The depths of the sub soil drainage lines in garden areas must allow for the installation of the specified plant material and mature trees.

Free draining gravel is to be covered with filter fabric as before specified. All sub soil drainage lines are to be connected to the site stormwater system.

Atlantis drain cell is to be used behind retaining walls in entry area as specified in landscape drawings.

S.2.10 IRRIGATION SYSTEM

The Landscape Contractor is to install an automatic irrigation system to the works and link the system to a controller.

The system is to access and adequately water all garden areas. It is to be designed and installed by/ or under the supervision of a Landscape Contractor licensed for irrigation installation and is to include an automatic timing device, installed in lockable, dustproof, rustproof metal cabinet and backflow prevention device, installed to AS 3500-part 1-section 4.

Ensure drip lines are spaced no further than 400mm apart in garden areas for adequate irrigation coverage. The Landscape Contractor is to submit drawings and specifications for the system to the Project Manager for approval prior to commencing any installation work.

The irrigation system is to be tested and installed after all soil and garden edging works are complete and prior to planting.

The irrigation is to be maintained in good working order at all times during the construction and subsequent defects maintenance period.

The Landscape Contractor will be responsible for the provision of 'As Built' drawings and an Operation Manual to the Landscape Architect, for the client, at the completion of the installation phase of the project.

S.3.0 HARDSCAPE WORKS

S.3.1 GENERAL

The Landscape Contractor will be responsible for the installation of the hardscape works included in the drawings and is to ensure that they are installed strictly in accordance with the drawings. In the event of any inconsistencies in the documentation the Contractor should seek clarification from the Landscape Architect prior to proceeding with the works.

S.3.2 GARDEN EDGING

Mild Steel Edge:

Equivalent to *Form Boss* steel garden edging

Height: 100mm

Refer Landscape Plan. Edging shall finish flush with adjoining surfaces. Unless angles are shown on the plan, the edges shall be laid in a smoothly curving form. The layout is to be approved before installation.

S.4.0 MAINTENANCE

S.4.1 GENERAL

The Landscape Contractor will be responsible for the complete maintenance of the landscape works for the time up until Practical Completion is awarded and then for a Defects Maintenance Period of twelve (12) months under this contract following the award of Practical Completion.

The Landscape Contractor should take into consideration all items included in this Specification when submitting their price for maintenance during the Construction Period and the Defects Maintenance Period.

S.4.2 LENGTH OF THE MAINTENANCE PERIODS

As identified above there are two (2) maintenance periods under this contract, the Construction Maintenance and the Defects Maintenance Period.

The Construction Maintenance Period will extend for the entire length of time from when the Landscape Contractor commences work on the site up until the award of Practical Completion.

The Defects Maintenance Period will be of twelve (12) months duration. It will commence at the date of Practical Completion, the date of which shall be notified by the Project Manager.

S.4.3 GENERAL MAINTENANCE REQUIREMENTS

During the maintenance periods the following activities are to be undertaken on a regular basis:

- site visit & assessment of all landscape works (weekly visit & inspection);
- watering (weekly programme);
- weeding and mulch replenishment (weekly);
- disease and pest control (as required);
- stake adjustment, removal, installation and reinstallation (as required);
- pruning of groundcovers, shrubs and trees (as required);
- fertilising (as required);
- litter and rubbish removal (as required)

- maintenance of all installed irrigation systems to ensure optimum watering regime for species installed.

S.4.4 WEEDS AND MULCH

In all areas of mass planting, weeds and grass are to be kept under control and removed / eradicated regularly so that they do not interfere with the optimum growth of the plants. Mass planted areas are to be kept mulched to a depth of 75mm or 100mm to boundary planting areas.

Should weed growth occur due to germination of weed seeds in mulch material the Landscape Contractor is to ensure prompt eradication of weeds.

S.4.5 DISEASE AND PEST CONTROL

If pathological diseases or insect pests appear, control them by appropriate chemical sprays applied in strict accordance with the manufacturer's recommendations.

S.4.6 STAKES

Straighten falling stakes and replace damaged stakes as required. Replaced damaged ties as required.

At the end of the Defects Liability Period all stakes should be checked and removed where possible.

S.4.7 PRUNING AND TYING PLANTS

Trim and prune all groundcovers, shrubs and trees as required or directed to promote optimum growth, density of foliage and to prevent growth into plants of a different species and over kerbs, gutters and path edges.

Adjust stakes and ties as required. Replace broken or damaged ties as necessary and remove them only when directed by the Project Manager.

S.4.8 REPLACEMENT OF STOCK

The Landscape Contractor on a weekly basis shall inspect plants and any plant that has died, or is failing to thrive, shall be replaced immediately, at the Landscape Contractor's expense.

Any plants that fail, deteriorate in condition, or become damaged during the maintenance period shall be replaced. Replacements shall be of equal size and quality to those specified or originally provided.

The Landscape Contractor shall arrange for the supply of plant material with a minimum of delay and under no circumstances shall different species be substituted without prior approval. The maximum number of times any plant is to be replaced is twice, unless failure is due to negligence on the part of the Landscape Contractor.

At the time of the first replacement of the stock, if the Project Manager feels that the Landscape Contractor has been negligent, the Project Manager must furnish the Landscape Contractor with details of such negligence so that the Landscape Contractor can rectify their level of performance. Should the Project Manager deem that the same negligence is continuing and occasioning the necessity for further replacement of that particular stock, they are at liberty to have the stock replaced and maintained by another Landscape Contractor. The cost of the engagement of this second Landscape Contractor is to be deducted from the contract price.

S.4.9 FERTILISING

The Landscape Contractor will be responsible for the fertilising of all garden areas on two (2) occasions per year, generally at the beginning of Spring (September) and the end of Summer (February) with a slow release fertiliser suited to the individual plant materials.

S.4.10 WATERING

During the Construction Maintenance and Defects Maintenance periods, as an indication only, plants are to be given a thorough watering three (3) times a week as a minimum frequency. This frequency will have to be determined by the Landscape Contractor during the hotter and colder months of the year, with the requirement being to ensure that the plants do not dry out or become waterlogged at any stage.

The Landscape Contractor will be responsible for advising if any problems occur with the water supply to the gardens that interrupts their watering programme.

Generally the Landscape Contractor will be responsible for hand watering as required should the irrigation system be non operational. The Landscape Contractor will be responsible for the supply of manual watering systems (hose and sprinklers) required to complete this work.

S.4.11 IRRIGATION

The Landscape Contractor will be responsible for the ongoing maintenance of the irrigation system both during the Construction Maintenance Period and for the full twelve (12) months of the Defects Maintenance Period.

Generally the Landscape Contractor will be responsible for any adjustments or repairs the system requires after installation unless the damage is a direct result of damage as a result of other Contractors working or visitors vandalising the system.

Adjustments will include adjustments to the controller in line with seasonal requirements and to sprinkler heads to ensure no over-spray on to non garden areas. The Landscape Contractor will also be responsible for the replacement of poorly performing heads.

S.4.12 MAKING GOOD

The Landscape Contractor shall make good erosion of mulch, soil or subsidence that may occur in landscape areas at no contract variation.

S.4.13 DEFECTS MAINTENANCE PERIOD

During the Defects Maintenance Period plants should be thoroughly watered on a weekly basis or as required by the plant material. All general maintenance requirements as detailed in Clauses S.3.1 - S.3.14 will also apply to the Defects Maintenance Period.

S.4.14 QUALITY OF MAINTENANCE

Notwithstanding anything stated in the Contract, the Project Manager may instruct the Landscape Contractor to perform maintenance works. Should the Landscape Contractor fail to carry out the work within seven (7) days of such notice, the Project Manager reserves the right, without further notice, to employ others to carry out such work and deduct the cost from the contract sum.