

GENERAL DESIGN RULES - ENVIRONMENTAL DESIGN

Safety and Security

The use of landscape elements can assist in the reduction of crime risk, particularly in public areas. Landscape design should have regard to the principles of Crime Prevention through Environmental Design (CPTED) as outlined in the "Crime prevention and the assessment of development applications" guidelines issued by the Department of Infrastructure, Planning and Natural Resources.

Privacy

Landscape design should be planned, executed and maintained to contribute to the maintenance of privacy, especially along boundaries with adjoining properties and where private open space areas are located adjacent to each other. The minimum height of landscape screening to be provided is 1.8m.

Solar Access and Energy Efficiency

The use of landscape elements shall assist in the maintenance of solar access and the improvement of energy efficiency. Landscape elements should not result in significant loss of solar access in winter to private open space areas and adjoining properties, while during summer should assist in the provision of shade to private open space and common areas. The landscape design of a development must have regard to the prevailing weather conditions.

Paving

Paved areas shall be designed to drain onto landscaped areas or into absorption trenches where applicable rather than directly into stormwater drains. Use of semi-permeable or porous interlocking pavers shall be maximised in hard surface areas, particularly those in private open spaces. Paving shall be laid on a stable sub-base, eg, concrete, dry sand/cement mixture to avoid slumping. All paving shall be laid flat to eliminate trip points.

General Landscaping Guidelines

Soil Preparation

Undisturbed sites.

-For an indigenous garden, soil preparation may only involve ripping of compacted soils or the use of herbicide to control weeds prior to planting and mulching. If an indigenous garden is required, rocky sandstone soil can be an excellent substrate. Perhaps only a few handfuls of soil will be required around the root ball at the planting stage.

Disturbed sites.

Generally, soils have been degraded because of the addition of fertiliser, lime, and organic matter to enable cultivation of lawns and exotic plants. High nutrient soils cause rapid leggy growth in indigenous plants. No added fertilisers should be used in old garden sites or soils that support lush herbaceous weeds.

The most detrimental practice is the inversion of the natural soil profile through earthworks associated with cut and fill. If the natural soil profile has been disturbed through earthworks, then a garden mix 'soil' can be used to improve soil structure. It should have a pH of 5-6, contain up to 50% river sand and be low in Phosphorus. Any imported fill or topsoil to be used at the development site shall be free of noxious and hazardous weeds

Turf and Garden Beds

Subsoil for turf shall be ripped and cultivated to a depth of 150mm. 100mm topsoil shall be spread and graded evenly over the prepared subsoil base. Topsoil used in turfed areas shall be free from materials detrimental to plant growth. After settlement, turf shall finish flush with adjoining pavements. Subsoil for garden beds shall be ripped and cultivated to a depth of 200mm. 200mm garden soil mix shall be spread and graded evenly over the prepared subsoil base. Soil used in garden beds shall be formulated to suit selected plant species and shall be free from materials toxic to plant growth, stones, clay, weeds, tree roots, pests and disease and other extraneous matter.

Tree planting in lawn area and deep soil planting bed area is to have a 600mm combined depth of general purpose soil to base with a 150mm top cover of a soil blend. In the vicinity of the root zone of any existing tree to be retained, the existing soil level is to be maintained intact.

Any imported soils or soil blends using soil topsoil materials used in the top 600mm and in local mounding of any landscape finished soil profile shall meet the requirements of AS 4419 - +2003 "Soils for Landscaping and Garden Use". Soils shall be placed and compacted in layers to prevent undue settlement. Sub-base soil filling and placement shall meet the engineer's materials and compaction requirements.

Podium, Rooftop and Raised Planter Landscape Works

Podium areas where planting is to be established shall have a minimum soil depth of 600mm combined depth. The soil should be free draining mineral soil to the base with a 150mm top cover of a soil blend and organic soil mixture including waterproofing membrane, membrane protection layer, horizontal drainage media layer at soil sub-base and surface mulch. Turfed areas on podium planting areas shall have a minimum soil depth of 300mm.

Podium planting areas shall be constructed from masonry and shall be appropriately waterproofed and properly drained.

Garden beds and turf areas on podium slabs will require a fully automatic irrigation system to maintain plant and turf growth.

Raised planting beds should have 600mm combined depth of general purpose soil to the base with a 150mm top cover of a soil blend and organic soil mixture.

Edging

All grassed areas adjacent to garden beds are to be bounded by a mowing strip. Edging is to be flush with adjoining turf areas.

Site Works

All site management measures must be installed prior to the commencement of site works and must be retained in place during site works.

When a pavement or other structure is to be removed as part of a landscaping project, the base coarse gravel material and footings should also be excavated out and removed.

Site works are to be carried out to ensure that existing natural ground levels within the tree dripline are maintained. Cut and fill within such areas is not permitted.

To minimise the potential for erosion to occur, on steep land where development is not proposed, existing vegetation, with the exception of weeds, shall not be removed or disturbed in any way. An arborist or bush regenerator shall be employed to supervise works on or near areas of bushland or within the dripline of individual trees. Temporary fencing and siltation control measures shall be provided between site works and any trees or bushland on or adjacent to the site.

Site sheds, building and stockpile materials and rubbish must not be located within the drip line of any tree or bushland.

Surface and ground water flows to bushland areas and individual trees shall be maintained in their natural state.

Proposed garden and lawn areas shall be cleared of all rubbish and debris (including building rubble) prior to the commencement of landscape works.

All areas disturbed as a result of excavation shall be stabilised prior to the carrying out of landscape works.

The best time to carry out planting is in the cooler months when temperatures are low, growth rates slow, soils are still warm and demand on plants for water is low.

For new planting of general landscaping, minimum recommended plant container sizes are as follows:

- 100-175mm for ground covers
- 200mm for shrubs
- 300mm to 25 litre for accent planting
- 45-100 litre for specimen plants and trees unless otherwise required.

Plants shall be healthy, of good form and true to species and size. They shall not be rootbound and shall be free from disease and insect pests.

The sides and base of planting holes shall be cultivated to a minimum depth of 150mm to ensure pit is free draining prior to backfilling.

Planting holes shall be backfilled with garden soil mix so that the top of the root ball is flush with the garden bed. The backfilled soil shall be tamped down firmly and watered immediately.

All trees generally and shrubs which are not self-supporting shall be provided with pointed hardwood stakes as follows:

- Trees up to container size 25 litre: 2 x 25mm x 25mm x 1.8m high stakes for each.
- Trees above container size 25 litre: 2 x 50mm x 50mm x 2.1m high stakes for each.
- Shrubs: 1 x 25mm x 25mm x 1.5m high stake for each.

Ties shall be of 50mm jute mesh webbing tied 'figure of 8' pattern to support the plant and ties to be fixed securely to stakes. Stakes shall be driven firmly into the ground as close to the rootball as possible, but shall not penetrate the rootball. Trees and shrubs requiring support shall be secured to the stakes using strips of hessian tied in a loose figure of eight and stapled to the stakes.

The location of small trees and shrubs not requiring support, eg tubestock, should be identified by timber marker stakes.

New plants shall be fertilised with a suitable 9 month formulation slow release fertiliser at the manufacturer's recommended rates of application.

The use of mulch keeps the ground from drying out, reducing water usage, suppresses weed growth, and adds nutrients to soil as it decomposes. General planting areas including podiums and courtyards should be mulched to a minimum depth of 75mm depth organic material eg woodchips, bark chips or leaf litter. Mulch must be free from extraneous material and shall be composed of particles not greater than 50mm in diameter. Mulch should be spread at an even depth and clear of plant stems.

Mulch material to roof top planters, paving slab open joints and to other selected courtyard and podium areas can consist of 50-75 mm depth of selected ornamental gravels.

Noxious and environmental weeds such as Privets, Camphor laurels, and African Olives, and Cotoneasters should not be used to make mulch as seeds from these plants germinate and spread through its use.

The diagrams below show minimum recommended planting specifications.

Landscape Maintenance

Watering at the time of planting is most crucial and great care should be taken to ensure both the planting holes and containerised plants are well irrigated before removal and placing in the ground.

Long deep watering irregularly is better than short shallow watering often. Long deep watering irregularly encourages deep root growth ensuring successful establishment. If growth is unusually slow, the foliage yellowing or the plant showing symptoms of nutrient deficiency slow release fertiliser with trace elements and low phosphorus for native plants can be applied.

Establishment maintenance should consist of works necessary to satisfactorily establish the landscaping and to satisfy at least a six month effective landscaping maintenance period. The establishment maintenance period shall commence from the date given on the Landscape Practical Completion Certificate.

Tree Management

Indigenous street trees shall be retained and protected during landscape works. Where appropriate, additional street trees shall be provided

Indigenous plant species are encouraged in landscape designs to minimise the need for fertilising. Where planting requires the use of fertilisers, organic fertiliser is preferred.

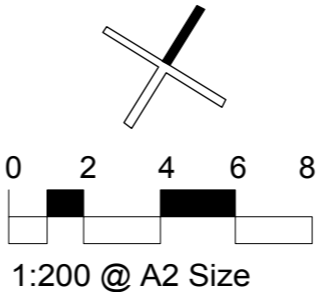


AMENDMENTS

ISSUE	AMENDMENT	DATE
A	DA ISSUE	04/12/15
B	DA ISSUE	10/12/15
C	DA ISSUE	18/12/15
D	DA ISSUE	05/02/16

LEGEND

- BOUNDARY
- As Selected Concrete Driveway
- As Selected Concrete Paving
- As Selected Tile
- Artificial Turf
- As Selected Concrete Paving



PROJECT:

AKALAN
North Side Development

CLIENT:

Ramsay Healthcare

LANDSCAPE ARCHITECT:

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Drawing Title:

Landscape Plan
Ground Floor

Scale:

1:200 @ A2

Date:

05/02/16

Project #:

15-863

Drawing #:

LP01

Drawn:

JB

Checked:

JB

Revision:

C

Planting Schedule

Botanical Name	Common Name	Pot Size	Height (m)	Quantity
TREE/ BAMBOO				
<i>Bambusa "Slender Weaver"</i>	Slender Weaver Bamboo	100L	5	2E
<i>Banksia integrifolia</i>	Coastal Banksia	100L	8	4
<i>Pyrus calleryana</i>	Capital Pear	100L	3	11
SHRUBS/ACCENT				
<i>Cycas revoluta</i>	Cycad/ Sango Palm	75L	1.8	1E
<i>Gardenia augusta</i>	Gardenia	45L	1.5	3C
<i>Leptospermum Pink Cascade</i>	Tea Tree	45L	2	54
<i>Michelia figo</i>	Port Wine Magnolia	45L	1.5	4
<i>Raphiolepis Orientalis</i>	Oriental Pearl	150mm	1	4C
GROUNDCOVERS				
<i>Ajuga reptans</i>	Carpet Bølge	140mm	0.4	5E
<i>Banksia ericifolia</i>	Heath Banksia	140mm	0.8	2C
<i>Gahnia sieberiana</i>	Saw Sedge	140mm	0.4	10E
<i>Lavandula "Avon View"</i>	Avon View Lavender	140mm	0.4	12E
<i>Lomandra tanika</i>	Fine Leafed mat Rush	140mm	0.4	42C
<i>Trachelospermum "Tricolour"</i>	Tri Colour Star Jassmine	140mm	1.2	73C
<i>Westringia fruticosa</i>	Westringia	140mm	0.8	1E



Cycas revoluta
Cycad



Banksia integrifolia
Coastal Banksia



Pyrus calleryana - Capital
Capital Pear



Gardenia augusta
Gardenia



Banksia ericifolia
Heath Banksia



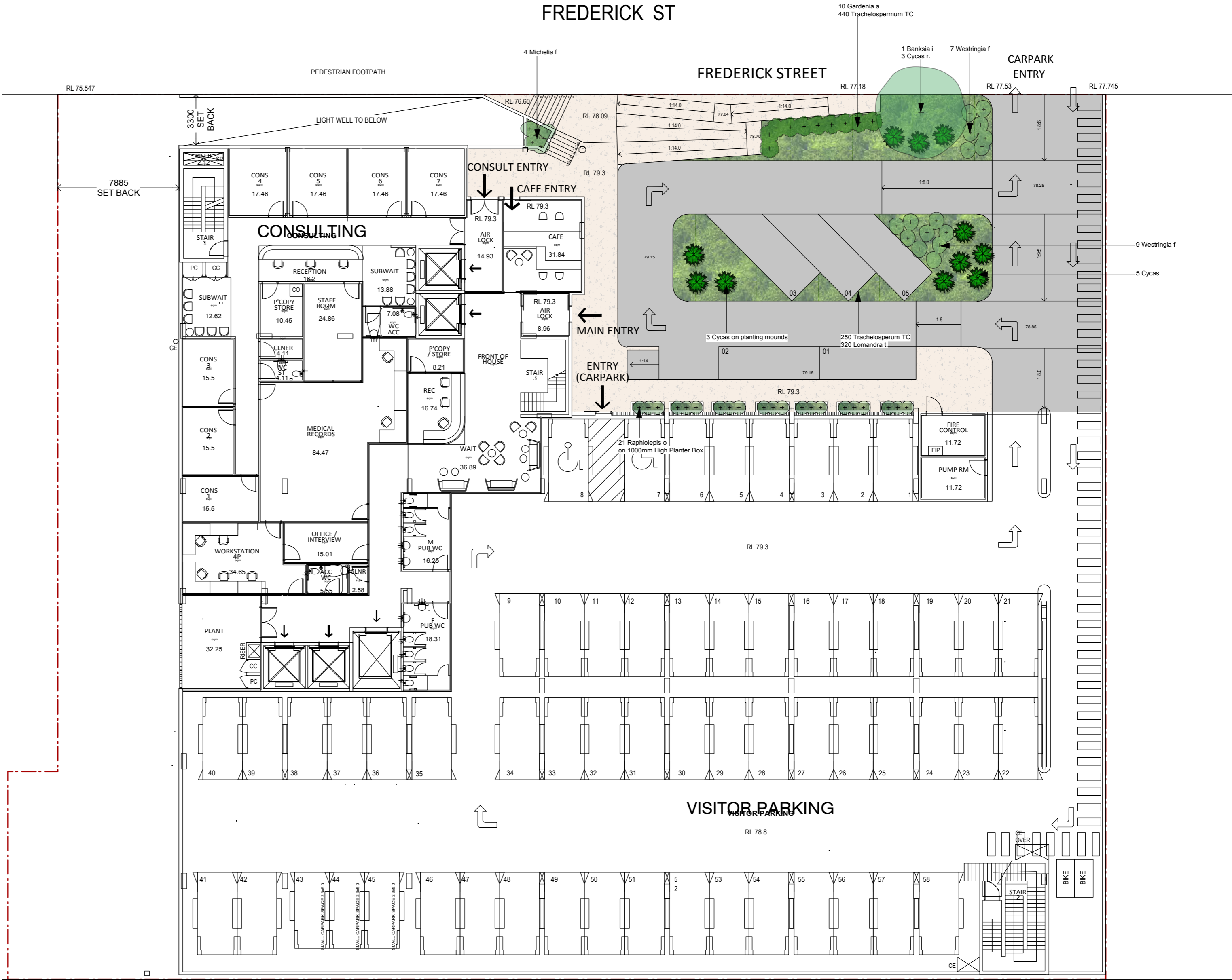
Westringia fruticosa
Westringia



Bambusa Slender Weaver
Slender Weaver Bamboo



Raphiolepis
Oriental Pearl

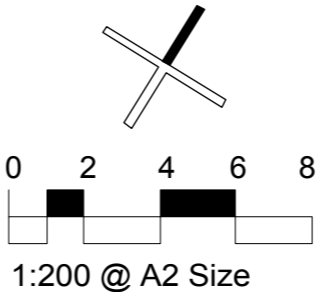


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	BOUNDARY		Artificial Turf
	As Selected Concrete Driveway		As Selected Concrete Paving
	As Selected Tile		



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AKALAN
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CLIENT:
Ramsay Healthcare

LANDSCAPE ARCHITECT:
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Drawing Title: Landscape Plan Level 1			
Scale: 1:200 @ A2	Date: 05/02/16	Project #: 15-863	Drawing #: LP02
Drawn: JB	Checked: JB	Revision: C	



Trachelospermum
Tri Colour Star Jasmine



Ajuga reptans
Carpet Bugle



Lomandra Tankia
Fine Leafed Mat Rush



Gahnia sieberiana
Saw sedge



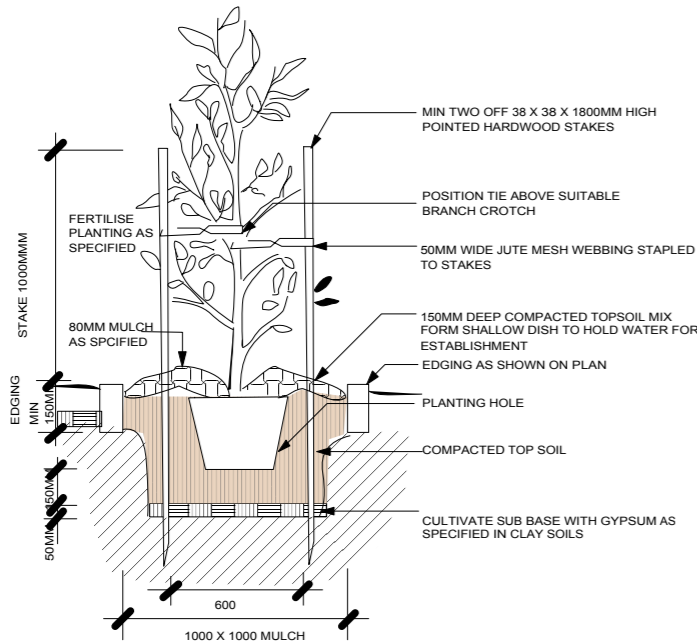
Michelia figo
Port Wine Magnolia



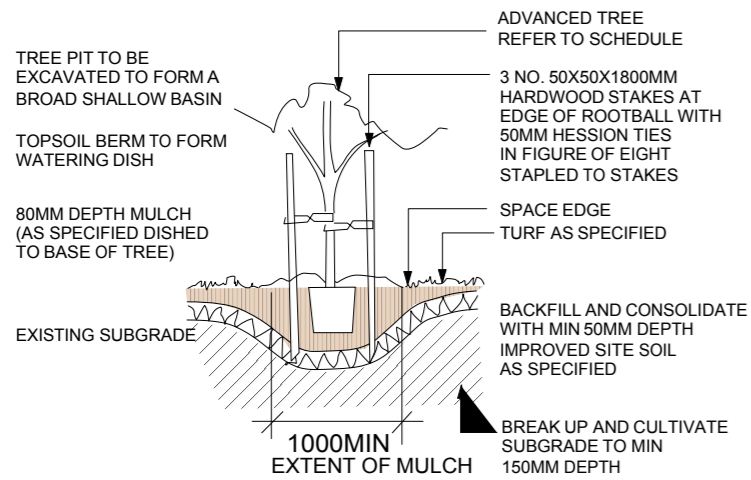
Leptospermum Pink Cascade
Tea Tree



Lavandula Avon View
Avon View Lavender



TYPICAL TREE PLANTING/STAKING DETAIL



TYPICAL EDGING, TURF AND PLANTING DETAIL

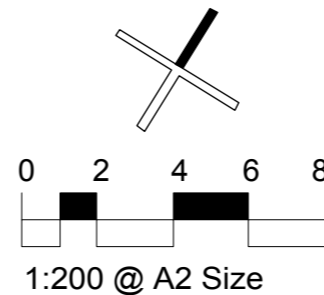


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1:200 @ A2 Size

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AKALAN
North Side Development

CLIENT:
Ramsay Healthcare

LANDSCAPE ARCHITECT:

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Drawing Title:

Landscape Plan
Level 2

Scale:

1:200 @ A2

Date:

05/02/16

Project #:

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Revision:

C

Drawing #:

LP03