

3. Specification

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SECTION 1. GENERAL INFORMATION

1.1 CO-ORDINATION WITH SUPPLIERS OF PLAY EQUIPMENT

Where a manufacturer's products have to be attached to a structure or are to be used in the works, it is required that the Contractor ensures that allowance is made for the correct installation, and that openings are the correct dimensions to fit the product.

1.2 SITE LOCATION

The site is located at Garden City Reserve. The site is bounded by Beacon Road and Tucker Avenue and is just north of the Trugo Club in Port Melbourne.

1.3 SCHEDULE OF WORKS

The Contractor is requested to fill in ALL sections within the schedule of rates. Please note that the following Schedules may not be fully inclusive, should any items have been omitted the Contractor is to inform the Contract Administrator and insert additional items in the section nominated as "other".

No.	Item	Unit	QTY	Rate	Total
1.0	Preliminaries, site preparation, earthworks & drainage				
1.1	On site building overheads and preliminaries as required inc. security fencing, portable toilet, container for secure storage etc	ITEM			
1.2	Removal and stockpiling of top soil to required levels in areas other than proposed garden/lawn areas	M2			
1.3	Excavation and fill to design levels.	M2			
1.4	Construction of mound using on site fill - [Mounds: Lookout, Fairy Ring]	M3			
1.5	Dismantle existing play equipment structure. Retain Swings. Salvage Chain Bridge for relocation. Salvage Wavy Bridge inc. handrails and deliver to council depot. Pass on any other components to council depot that can be salvaged. Allowance removal of existing equipment and subsoil and cartage from site	ITEM			
1.6	Allowance for stormwater drainage works	ITEM			
2.0	Concrete & Masonry Works -footings, walls, play elements				

No.	Item	Unit	QTY	Rate	Total
2.1	Concrete footings including excavation (all exc. play equipment & climbing wall)	No.			
2.2	Concrete steps up to ramping path (coloured Riverblend beige 4.15% in grey cement)	ITEM			
2.3	Concrete edge (coloured Riverblend beige 8.3% in grey cement) around crushed brick pavement ('pacman' deck area)	LN.m			
2.4	Coloured concrete Ramping Path up onto mound. (Coloured Riverblend beige 8.3% in grey cement) . 75mm thick reinforced coloured concrete pavement including crushed rock base	M2			
2.5	Concrete base slab to Castlemaine slate paving	ITEM			
2.6	Rock climb wall - concrete wall 1700-2200 high reinforced insitu formed concrete wall inc. footings, tunnel with vent, openings and extrusions.	ITEM			
2.7	'Eye' Tunnel - paint interior of tunnel. One coat of White Knight, Ultra Pave White and 3 coats of Glow Safe.	ITEM			
2.8	Anti-graffiti treatment to masonry & concrete surfaces	ITEM			
3.0	Metal Work				
3.1	Formboss steel edging including double height where shown on drawings.	LN.M			
3.2	Powdercoated galvanised steel handrails to each side of steps	ITEM			
3.3	Pre-drill and install Hilti anchors through the render and into the Dragon wall at 200ctrs across extent of wall that will be used for climbing	No.			
4.0	Slate paving and pebbles				
4.1	Castlemaine slate pavement on concrete base (Around north picnic table)	M2			
4.2	Castlemaine slate pavement on concrete base (Around central picnic table)	M2			
4.3	Pebble paving around drink fountain	ITEM			
5.0	Other Surfaces				
5.1	Compacted, recycled crushed brick (Around circular 'pacman' decks) over 20mm Envirocrete Class 3 or FCR	M2			
5.2	Main Path through space. Compacted crushed brick over 20mm Envirocrete Class 3 or FCR	M2			
5.3	Top of lookout mound - 75mm granitic gravel over 20mm Envirocrete Class 3 or FCR	M2			
5.4	Fairy circle -crushed brick over 20mm Envirocrete Class 3 or FCR	M2			

No.	Item	Unit	QTY	Rate	Total
5.5	Terracing at side of mound -crushed brick over 20mm Envirocrete Class 3 or FCR	M2			
5.6	250 deep impact absorbing mulch in fall zones	M2			
5.7	75mm impact absorbing wetpour synthetic surface including terraced concrete sub base on side of mound (double slide area & flying fox launch)	M2			
5.8	75mm impact absorbing wetpour synthetic surface including sub-base (basket swing area)	M2			
6.0	Rocks/Boulders				
6.1	Supply & install Mansfield Mudstone stepping stones steps up to Fairy Ring	NO			
6.2	Supply & install Mansfield Mudstone rocks to form terracing on mound	NO			
6.3	Supply & install Mansfield Mudstone slabs to form 'scramble'	NO			
6.4	Supply & install Mansfield Mudstone boulders at East of Mound (finished height 1200)	NO			
7.0	Timberwork				
7.1	Construct Y-shaped timber bench	ITEM			
7.2	Construct circular 'pacman' decks	ITEM			
7.3	Construct 2 small decks to back of dragon wall. Deck over tunnel inc. metal vent recessed between timbers	ITEM			
7.4	Construct linear stepped deck to back of dragon wall	ITEM			
7.5	Install low timber arch using timber already salvaged from site	ITEM			
7.6	Supply and install 3 toadstools including staining and treatment. Construct with timber salvaged from site.	NO			
7.7	100x25mm Timber edging				
7.8	Supply & install horizontal Cupressus Macrocarpa timber logs	NO			
7.9	Coating to timber structures	ITEM			
8.0	Other Landscape works				
8.1	Supply & install Furphy's Metro picnic tables and two benches finished with recycled timber.	ITEM			
8.2	Install COPP drink tap inc. all connections to potable water, pit, fittings etc.	ITEM			
8.3	Semi-permanent bamboo & rope fencing around garden bed areas	LN.M			
9.0	Soft landscape				
9.1	Soil preparation				
9.2	Supply and plant semi-advanced trees	NO			

No.	Item	Unit	QTY	Rate	Total
9.3	Supply and plant 140mm pots	M2			
9.4	Supply and plant all tubestock	M2			
9.5	Imported or site top soil (min. 300 deep including compost) and garden mulch 75mm deep.	M2			
9.6	Make good grass	ITEM			
10.0	Play equipment items				
10.1	Supply & install Adventure Playground Industries, Senior swing frame (powdercoated steel) with 2 adult seats.	ITEM			
10.2	Paint existing swing frame with Resene Enamacryl Metallic Waterborne Enamel	ITEM			
10.3	Supply and install Kompan Arc Swing with Bird's Nest (#SPMA40095). Supplied by Kompan	ITEM			
10.4	Supply and install plastic toddler slide to suit 800h deck	ITEM			
10.5	Install relocated chain bridge. Modify to fit new timber posts. Paint handrails with Resene Enamacryl Metallic Waterborne Enamel	ITEM			
10.6	Supply and install Hags 1m wide, 1.5m high steel slide and deck (#131123). Supplied by Omnitech.	ITEM			
10.7	Supply and install 30m Flying Fox - Lappset 'Aerial Runway' (#160050-1). Supplied by Lappset.	ITEM			
11.0	Work with other nominated parties				
11.1	Liase with artist James Cattel regarding the formwork, reinforcing and pouring of the dragon wall. Artist to render wall to form dragons head including claws, ear, eye, mouth and nostril. Co-ordinate with artist for fixing of horns and timing of bolts/installation of rock climbing holds	ITEM			
11.2	Liase with "Infinite Holds" regarding position, fixing and installation of rock climbing holds	ITEM			
12.0	Other				

No.	Item	Unit	QTY	Rate	Total
13.0	Maintenance				
13.1	13 Week maintenance period				
14.0	GST & TOTALS				
14.1	Subtotal				
14.2	GST				
14.3	Overall Total including GST				

1.4 PROJECT WORKS PROGRAMME

The Project Works Program need not be submitted at the closing time of Tender but the Tenderer shall submit a Project Works Programme within seven days of a written request to do so.

The Project Works Program shall be attached to upon receipt, and form part of the Final Contract Document

The Project Works Program shall be based on a date of acceptance of tender or commencement date that will be nominated in this document.

The Project Works Program shall include sufficient detail for tender analysis and be in a form as necessary to show:

- (a) the duration of each activity in working days;
- (b) the sequence of interdependent activities;
- (c) milestones which identify significant events including completion of separable parts.
- (d) Company rostered days off & public holidays and non-working days.

The Project Works Programme will be included in the Contract as the construction programme until varied in accordance with any other provision of the Contract.

1.5 DETAILS OF CURRENT & PREVIOUS WORK

A list of current works, their value and completion dates along with previous works that are similar in nature to this Contract shall be listed below.

Client / Principal	Location	Value	Completion Date	Description
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CURRENT WORKS

\$

\$

\$

PREVIOUS WORKS

\$

\$

\$

1.7 SCHEDULE OF DRAWINGS

1.7.1 Project Specific Drawings

The following documents prepared by Mary Jeavons Landscape Architects form part of this Contract:

Drawing Number	Description	Revision	Prepared by	Approval Status
1300-WD-01	Overall Layout Plan 1:200	A	MJLA	
1300-WD-02	Demolition and Existing Conditions	A	MJLA	
1300-WD-03	Layout Plan 1:100	A	MJLA	
1300-WD-04	Setout Plan	A	MJLA	
1300-WD-05	Detail Key Plan	A	MJLA	
1300-WD-06	Planting Plan	A	MJLA	
1300-WD-07	Elevations - Dragon Rock Climbing Wall	A	MJLA	
1300-WD-08	Sections	A	MJLA	
1300-WD-09	Sections	A	MJLA	
1300-WD-10	Details	A	MJLA	
1300-WD-11	Details	A	MJLA	
1300-WD-12	Details	A	MJLA	
1300-WD-13	Details	A	MJLA	
	Technical Specification		MJLA	

The following drawings prepared by external consultants form part of this Contract unless otherwise noted.

Drawing Number	Description	Revision	Prepared by	Approval Status
S1	Structural Computations and drawings		Geoff Nixon & Associates	
S2	Structural Computations and drawings		Geoff Nixon & Associates	
S3	Structural Computations and drawings		Geoff Nixon & Associates	

SECTION 2. GENERAL LANDSCAPE CLAUSES

2.1 DESCRIPTION OF WORKS

This Contract comprises the execution generally of the Landscape Works including supply of all labour and materials as detailed within the landscape plans, associated documents and this specification.

The whole of the work shall be executed in strict accordance with this Specification, the General Conditions of Contract, the accompanying Drawings and with any working drawings furnished by the Superintendent as the work proceeds, and to the satisfaction of the Superintendent.

The Specification and Drawings represent as fully as possible the requirements and intentions of the Contract. Any other operations which may be reasonably inferred from these documents to form part of the true intent and meaning of this Contract, although not specifically stated as such, will be deemed to have been included and due allowance for their execution must be made.

2.2 OCCUPATIONAL HEALTH & SAFETY

The Contractor shall be responsible for ensuring that the requirements of the Occupational Health and Safety Act and all relevant Occupational and Safety Authority and Workcover regulations are adhered to.

It is important that work be carried out in a safe manner to ensure the safety of the Contractors work force, the Principals staff or agents who have access to the site as well as the general public.

Works shall be carried out in accordance with the O H & S requirements of the Quality Assurance Specification. Prior to commencing work the Contractor shall supply to the Superintendent a job specific OH & S plan which, on approval shall be implemented throughout the duration of the works.

The site safety plan shall include O.H. & S. procedures relating to Plant Safety, workers safety and Public safety shall be instituted as a minimum requirement under this Contract.

The Contractor is to be registered as an employee pursuant to the provision of the Accident Compensation Act 1985 (Workcare) from the date of commencement of the works to the expiration of the maintenance period.

2.3 SITE EXCLUSION TO PUBLIC

The construction site shall be temporarily fenced off from any possible access to public. All fences and gates shall be left closed at all times; tools shall not be left accessible to the public.

It is the responsibility of the Contractor to ensure that all visitors and Sub-Contractors are made aware of these conditions. The Contractor is responsible for the actions of all Sub-Contractors.

2.4 QUALITY ASSURANCE SYSTEM

The Quality Assurance system to be employed under this Contract shall be in accordance with the quality requirements of the Relevant Authorities/Agencies.

The Contractor shall plan, establish and maintain a quality system in accordance with the requirements of the contract.

2.5 HOURS OF WORK & INSPECTIONS BY RELEVANT AUTHORITIES

The Contractor shall comply with the regulations of the Environmental Protection Authority, Local Regulations and other Statutory Regulations, which may prevail in respect of working hours. He shall not unless otherwise specified be restricted by this Contract in this respect other than for complying with the inspection requirements of the Relevant Authorities specified or not. Such inspection shall only be available within the hours, and with the appropriate notice satisfactory to the Relevant Authority.

This can only be varied if required or approved by the Relevant Authorities

Any extraordinary inspections desired by the Contractor shall be arranged directly with and to the satisfaction of the Relevant Authority and payment of any fees associated with extraordinary inspections shall be borne directly by the Contractor.

2.6 SITE ACCESS

Site access shall be restricted as otherwise authorised in writing by the Superintendent.

2.7 SITE CLEARING

Requirement: Clear only the site areas to be occupied or affected by the works. Refer to drawings for specific extent of demolition.

Old Works: Remove old slabs, foundations, paving, drains, manholes and the like found on the surface.

Existing Grass: Remove existing grass to a depth just sufficient to include the root zone.

Contractor's Site Areas: Do not clear areas for contractors site access. Limit access to one location. Access not to be located below trees.

2.8 SITE COMPOUND / ACCESS & SECURITY

The Contractor shall allow for a site compound to adequately and safely store all materials necessary for the construction works. Where security is a concern fencing and/or security surveillance shall be arranged.

At the completion of each working period the site shall be secure as to prevent illegal access, vandalism and accident. Under no circumstance shall the Principal or Superintendent be held liable for accident, theft or vandalism.

2.9 STATUTORY AUTHORITIES' FEES

The Contractor shall pay all permit fees and fees to local or statutory authorities to complete the work.

2.10 PROTECTION OF PROPERTY AND SERVICES

2.10.1 General

The Contractor will execute and maintain the whole of the Works in such a manner that injury and damage will not be occasioned to any person, or private or public property including all roads used for transport of materials or plant, buildings, fencing, public utility service or other structures. In the event of any injury to such structure, service or property, the party controlling it must be immediately informed of the injury. The Contractor will at his own expense arrange the repair and restore any structure, service or property injured in any way, to the like order and condition in which it was before such injury.

The repairs may be made by the party controlling the structure, service or property, and the cost of such repairs is to be at the expense of the Contractor. The Contractor will also be liable for any loss or damage which may result from such an injury or interference to any structure, service or property, and for any claim arising from delay in repairing and restoring it.

2.10.2 Location of Existing Services

It is the sole responsibility of the Contractor to be fully informed of the location of services and to make the necessary provisions.

The Contractor shall be held responsible for the cost of making good any damage to existing services and mains, whether or not they are shown on the drawings.

2.10.3 Damage by Others

The Contractor is to be responsible for the watching and safe keeping of his own Works. Damage caused by others is to be repaired by the Contractor and any necessary action to secure recovery of costs from the offending party will be the Contractor's responsibility as outlined in Defects Liability and Maintenance.

2.10.4 Protection of Roads

The Contractor will be held responsible for any vehicle engaged on the works depositing material or rubbish on road pavements, road reserves, or other improvements. The Contractor, at his own expense, will ensure that all material or rubbish deposited is promptly and effectively removed and the area cleaned up before the completion of work each day.

2.10.5 Protection of Assets

The Contractor will be held responsible for any new damage to existing assets. It is the Contractor's responsibility to identify any defective works prior to the commencement of their Contract. It is recommended that all existing damage is fully documented and distributed to the Superintendent prior to works commencing.

It is the Contractor's responsibility to notify the Superintendent of any damage that has resulted throughout the currency of their Contract. Approved vehicle crossings shall only be used to access the site.

The Contractor, at his own expense, will ensure that all material or rubbish deposited on roads or damage caused to existing assets is promptly and effectively removed and repaired as soon as possible.

2.11 SPOIL DISPOSAL FROM EXCAVATIONS BY OTHERS

Where failure by the Relevant Authorities and external Contractors to remove spoil from their operations will result in delays to the progress of works, the Contractor shall be responsible to remove and dispose of the spoil. Adequate notice (min 48 hours) and approval by the Superintendent is required prior to works. This work shall be treated as a variation.

2.12 SITE CONDITIONS

It will be expected that the Contractor has made a thorough assessment of the site conditions during the tender period, and the impact of these on the works program, method and tendered price.

It is recommended that the Contractor undertake site photos of the existing site conditions with the Superintendent prior to commencement of works.

No variations in price or Contract time will be approved for any rock encountered in excavations, wet site conditions, need for construction of temporary access haul roads or like situations that were evident or should have been anticipated at the time of tendering given the likely timing of construction.

2.13 UNAUTHORISED DISPOSAL

The Contractor is to ensure that the Site is properly signed and barricaded to prevent unauthorised disposal of waste material on the Site by others. Any rubbish or waste deposited is to be cleared from the Site immediately.

The Contractor is also responsible for all excess spoil to be removed and disposed off site except where detailed in the documents or directed by the Superintendent.

2.14 SITE MANAGEMENT PLAN

The Contractor shall submit a Site Management Plan prior to works commencing.

The plan shall as a minimum detail:

2.14.1 Safety Devices

Where required by the relevant authority, the Contractor shall prepare and submit a Temporary Traffic Management Plan which accords to the requirement of VicRoads or Relevant Authority for approval prior to undertaking the works. Works shall not commence until authority approval has been granted.

The Contractor shall be responsible for any damage arising from the neglect or insufficiency of such precaution.

2.14.2 Dust Control

If dusty conditions exist resulting in reduced visibility for road users and a nuisance factor to abutting property owners the Contractor shall take immediate action to minimise the dust hazard.

All costs associated with this work shall be borne by the Contractor and is deemed as part of the Contractors lump sum price.

2.14.3 Noise Control

The Contractor shall take all practicable precautions to minimise noise arising out of or resulting from any activity associated with the work under the Contract. All construction equipment shall be fitted with noise suppressors unless specially designed for quiet operation.

2.14.4 Site Facilities

The Contractor shall provide site facilities in accordance with the Occupational Health and Safety Act 2004.

2.14.5 Environmental Control Measures

The successful tenderer is required to prepare and submit an Environmental Management Plan (EMP).

Please refer to attached EMP submission guidelines.

The EMP will be required to include the following items, as well as contractor-specific items.

- Machinery access
- Site compound
- Storage of loose materials

- Work in drainage lines
- Remediation techniques

2.14.6 Tree Preservation

Only those trees nominated to be removed may be removed during construction. The utmost care must be taken by the Contractor to preserve those trees which remain.

The Contractor shall ensure that all workers and sub-Contractors on the site are informed that the trees are not to be lopped, disturbed or damaged except those referred to above.

Severe financial penalties will be imposed for each and every incident of disturbance or damage to any tree.

Disturbance or damage to trees shall be construed to mean any action which endangers the survival of a tree and may include any or all of the following:

- a) Breaking of substantial limbs (being limbs of size greater than 20% of the trunk diameter).
- b) Removal of any portion of the bark of the tree trunk.
- c) Cutting of major root systems of the tree (being roots of size greater than 20% of the trunk diameter).
- d) Filling around a tree trunk without the precautions prescribed by the Superintendent being observed.
- e) Compacting soil above the root zone (area within the spread of the tree canopy) by repeated passage or parking of equipment.
- f) Spillage of toxic substances within the spread of the tree canopy (ie Fuel, oil, etc).

Where any tree is so located that it may conflict with the works, the Superintendent's advice as to its treatment shall be obtained prior to those works being commenced.

The Contractor's attention is drawn to the fact that some services require installation by tunnelling under, boring or hand excavation to avoid damage to root systems. In such instances boring will be the preferred method and the Contractor shall ensure that the depth of the bore is at least 0.7 metres below the ground surface at the base of the tree.

If considered necessary, the Superintendent may request protection for the trunk of a tree. Such protection shall take the form of timber slats tied to the trunk in a manner which permits later removal without damaging the bark.

Where disturbance or damage does occur the Contractor shall arrange for a qualified tree surgeon to inspect the damaged tree and with the prior approval of the Superintendent, have the necessary repairs effected.

2.14.7 Other Site Safety Control Measures

The Contractor shall implement any other Site Safety Control measures in accordance with authority requirements.

The Contractor shall maintain the control measures until the end of the Defects Liability Period.

2.15 WATER & POWER SUPPLY

The Contractor shall make arrangements for any temporary water or electrical supply required. This shall include tapping / connection fees, permits and usage costs. Where it is necessary for the Contractor to extend the water or electrical services, this will be deemed to be included in the Contract sum.

2.16 SITE MEETINGS

The Contractor, Superintendent and representative of the Principal shall meet on site at generally fortnightly intervals to review progress of the works.

The Superintendent or a nominated Superintendent's Representative shall be Chairman of the meeting and shall arrange for the recording of minutes.

After each meeting the Superintendent shall promptly issue to the Contractor and the Principal a copy of the minutes. The Contractor shall notify the Superintendent if the Contractor does not agree that the minutes are a true record of the meeting. The minutes shall be confirmed at the next site meeting held.

2.17 AS CONSTRUCTED INFORMATION

Prior to the issuing of the Certificate of Practical Completion the Contractor shall furnish to the Superintendent "as constructed" details of elements that are not consistent with construction plans. These shall include all construction details, design elements and any other information requested by the Superintendent to assist in the preparation of 'as constructed' drawings.

2.18 EXCAVATION IN ROCK

The Contractor shall allow for excavation in whatever type of material is encountered including all types of rock and groundwater. No variation for rock removal shall be considered.

2.19 FINISHED LEVELS

The Contractor shall allow for any trimming and grading to the subsoil as required for the works and in conformity with the requirements shown on all Landscape Drawings and Schedule of Quantities and Prices.

The Contractor shall visit the site to determine the extent of grading and trimming required before submitting the tender. The Contractor shall allow for erosion control measures as required, with particular care to prevent soil washing into any swale or stormwater system.

The Contractor should allow for the removal of excess fill, rock and debris in order to conform to finished grades or level with existing elements. Any unsuitable excavated debris is to be removed from site.

2.20 BACKFILLING

Filling shall be with excavated material if appropriate and approved by the Superintendent. Filling shall be clean soil free from clay, rock, vegetable material or other deleterious matter. It shall have good regular homogenous structure suitable for consolidation.

Consolidation shall be achieved on site by placing and compacting 150mm layers. Each layer must achieve 95% of standard maximum dry density.

2.21 CLEANING UP OF WORKS

The Contractor shall clean up and leave tidy the work as it proceeds and upon completion of the Contract shall remove all temporary structures, which may have been constructed for the Contractor's convenience while carrying out the work, and remove all equipment and surplus materials from the site.

The Contractor will be held responsible for any vehicle engaged on the works of the Contract depositing material or rubbish on road pavements and shall, at the Contractor's own expense, ensure that all materials or rubbish so deposited is promptly and effectively cleaned off such pavements.

2.22 WATER RESTRICTIONS

The Contractor shall comply with all existing and proposed water restrictions no matter the level of restriction. The Contractor will be held responsible for any fines incurred as a result of any violation to the water restriction laws.

All prices submitted by the Contractor are to make allowance for additional costs associated with any current or future water restriction. The Contractor shall allow for any permits and costs associated with water restriction and applying for exemptions. No variation to the accepted tender price will be considered for costs incurred as a result of current or future water restrictions.

It is the responsibility of the Contractor to be aware of the requirements of the water restrictions, which may change during the construction and maintenance periods. Any fines incurred for violation of the water restrictions in force (regardless of level) are borne by the Contractor.

2.23 FIRES

No fires shall be lit for any purpose in connection with this Contract unless authorised in writing by the Superintendent and not forbidden by any current State or Local Government Regulations.

The Contractor shall give occupiers of adjoining properties and other Contractors forty-eight (48) hours notice of the intention to burn.

Authority shall only be given in special circumstances after other reasonable methods of disposal have been denied to the Contractor.

The Contractor shall be held responsible for any damage to fences, trees, grass cultivation, buildings or other property occasioned by fires lit for any purpose in connection with this Contract.

2.24 INSPECTION OF WORKS & SUPERVISION

The work shall be carried out under the directions and to the satisfaction of the Superintendent. All orders and instructions to the Contractor shall be given by the Superintendent or a nominated Superintendent's Representative on behalf of the Principal.

When requested to do so, the Contractor shall give to the Superintendent or a nominated Superintendent's Representative, access to the work and shall provide every reasonable facility necessary for the inspection, examination and testing of any works or materials for

the Contract and any places where the said work or materials are being carried out or prepared.

Before commencing the spreading of any materials in the works, concreting, drainage works, bituminous works, or other works as directed by the Superintendent, the Contractor shall give the Superintendent at least 24 hours notice, exclusive of non-working days, of intention to do so, in order that arrangements may be made for the Superintendent or a nominated Superintendent's Representative to be present to observe the materials used and the manner of execution of the works.

The Contractor should note that the failure of the Superintendent to condemn any material being used or any work being done, shall not relieve the Contractor of the responsibility to see that all materials used and all work done complies with this specification and Contract, nor the obligation to make good any faults or defects which might develop or be detected during the progress of the work or during the defects liability and maintenance period.

If the Contractor fails to comply with the requirements of this Clause, the Superintendent may correct the faults referred to and deduct the cost of so doing from any payments due to the Contractor by the Principal.

2.25 CRITICAL INSPECTIONS

The Contractor is to set out all works for on site confirmations by the Superintendent prior to commencement of construction.

Inspections by the Superintendent are required to confirm the following stages of work:

Set out of all hard landscape works on site prior to the commencement of any works. The Contractor is to set out all works using pegs or markers for confirmation on site by the Superintendent.

Inspection of soil preparation prior to procurement of planting

Set out of all planting works on site prior to the commencement of any works. The Contractor is to set out all works using pegs or markers for confirmation on site by the Superintendent.

Practical Completion Inspection

Final Completion Inspection

2.26 SAMPLES & APPROVALS

The Contractor is to allow for sufficient time to provide samples as listed to the Superintendent for approval prior to commencement of works.

The following samples are required to be supplied to the Superintendent for approval prior to ordering and commencement of works:

- A true and accurate sample of the pebbles is to be approved by the Superintendent prior to commencement.
- Enviroblend 7mm Crushed Brick
- Envirocrete Class 3, 20mm - Base material
- Impact absorbing mulch to meet AS/NZ 4422
- Synthetic surfacing
 - Name and details of synthetic wetpour supplier.
 - Sample mix of colours as specified.
- Imported topsoil - if required.
- Natural rope
- Bamboo stakes

- Timber and decking materials

- Rocks for use on site (photos)

- Garden mulch

- All paving and surface materials. A 1.0 x 1.0m sample is to be prepared on site for inspection and approval by the Superintendent.

2.26.1 Approvals

The Contractor is to allow for sufficient time to seek approvals prior to continuing with work. The contractor is to notify the Superintendent with min. 3 working days prior to any site inspections.

The set out will need to be approved by the Landscape Architect at least one day prior to installation; at least three days notice of the approval time will be required.

The contractor is to seek approval from the Superintendent at the following stages, before continuing with work.

- OH&S plan
- Tree protection measures
- Items to be demolished
- Cultivated subgrade
- For use of imported fill
- Approval of onsite topsoil prior to use
- If imported topsoil is required then a provide a sample and certification that the topsoil meets Australian Standards
- Sections of log to be used for arch and toadstools
- Use of admixtures within the concrete
- For use of site mixed concrete
- Tree surgery works if required
- For all cut and fill or cutting of roots in tree protection zone
- Formwork for Dragon Wall. (Note: contractor to seek approval from artist as well as landscape architect)
- Prior to drilling and install anchors - seek approval from artist.
- Setout of all works including:
 - Setout & construction of base course around fountain (contractor to demonstrate how the basin drains into the garden)
 - Edges, excavation, base course for all pavements
 - Setout of synthetic area and base course
 - All advanced trees and shrubs prior to planting
 - Sample setout of smaller plants

2.26.2 Certificates & Warranties

Contractor to provide certification:

- For Synthetic Impact Absorbing Surface to meet AS/NZ 4422
- For Impact Absorbing Mulch to meet AS/NZ 4422
- For play equipment to meet all Australian Standards including AS4685 - all parts
- that any imported topsoil meets Australian Standards

Contractor to provide proof that the timber is all ACQ treated pine or an alternative approved timber. (Not CCA)

Contractor to provide warranties for:

- Play equipment
- Furniture
- Synthetic surfacing
- Any other products, fixtures and fittings

2.26.3 Shop Drawings

CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING PROPOSED FIXING METHOD FOR SLIDE.

DRAWINGS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASING SLIDE.

2.27 INFERRED WORK

Detail, labour and/or materials not shown or specified, but reasonably or obviously inferred as necessary for the proper execution and complete finishing of works, shall be carried out at no extra cost to the Principal. Work described in either the working drawings or specification but not necessarily in both shall be deemed to be part of the Contract Works.

2.28 CONSTRUCTION

Figured dimensions shall take precedence over scale measurements and drawings. Unless otherwise specified the drawings and specification shall include everything reasonably for the proper and entire completion of works.

The Contractor shall verify any discrepancies between the Contract documents during the tender period. Under no circumstance shall variations be considered for the Contractor's failure to confirm any detail.

2.29 COMPLIANCE WITH STANDARDS AND CODES

All materials and workmanship shall comply with the requirements of such Standards, Codes and other related documents issued by Standards Australia and current at the date of invitation to tender. In the event of there being no relevant Australian Standard, Code or other related document at the date of invitation to tender, Standards and Codes of the British Standards Institution or the American Society for Testing and Materials shall apply

and in that order of precedence. The works must also comply with the TAMS Design Standards for Urban Infrastructure.

Playground Standards

All works within the play area is to comply with the following Australian Standards:

- AS/NZS 4422 1996 Playground Surfacing Specification, requirements/test methods
- AS 4685.1 Part 1 2004 General safety requirements and test methods
- AS 4685.2 Part 2 2004 Particular safety requirements and test methods for swings
- AS 4685.3 Part 3 2004 Particular safety requirements and test methods for slides
- AS 4685.4 Part 4 2004 Particular safety requirements and test methods for runways
- AS 4685.5 Part 5 2004 Particular safety requirements test methods for carousels
- AS 4685.6 Part 6 2004 Particular safety requirements/test methods rocking equipment

2.30 MATERIALS

All materials (unless otherwise specified) shall be new and the best of their respective kinds, and shall conform to the relevant standards, specifications and codes.

2.31 WORKMANSHIP

Workmanship shall be of a high standard, and shall be the best of its respective kind and conform to the best practices of the trade.

Where installations include manufactured products, the Contractor shall comply with manufacturer's applicable instructions and recommendations for installation.

All joints shall be neat, tight and snug fitting, and finished to a high standard of workmanship. All structures shall be plumb and true and as shown on the Drawings.

All construction work shall be left free of splinters, sharp edges and protrusions. Nuts and bolt ends, spikes, screws and other fixing devices shall not protrude. The Contractor shall take particular care to ensure that the undersides of decking, joists bearers, [and other situations where contact with the user's head or body is possible] are free of sharp corners, edges and protrusions. Ends of pipe shall be permanently plugged or capped. The exposed edges of all posts and timbers with which the user can come into contact shall be eased or chamfered (rounded) to remove sharp edges. The Contractor should note that this clause applies to every surface within the playground accessible to the user.

Trip hazards shall be eliminated and ground surfaces, paving and similar shall be finished smoothly without any protruding or sharp edges. Where different ground surfaces meet at the same level they shall be laid so that adjacent surfaces meet exactly flush with no trip hazard, unless instructed otherwise.

2.32 DEFECTS

Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or of any other cause, shall be removed and replaced at the Contractor's expense by work or materials of the required standard.

2.33 MALICIOUS UNLAWFUL DAMAGE

In the case of all items supplied and/or installed within the contract that are damaged or destroyed unlawfully by others, the following clauses shall apply to replacement, rectification, and responsibility for all associated costs.

7.1 Prior to Practical Completion:

Prior to the issuing of a Practical Completion Certificate, all damage is to be rectified by the Contractor and will include replacement of stolen or severely damaged material. The Contractor shall make allowance for these circumstances within their contract lump sum.

7.2 Following Practical Completion

Upon issue of a Practical Completion Certificate, the Contractor is not liable, only in the case of loss by malicious damage or vandalism. Assessment of the extent of damage and associated cost of reinstatement will be confirmed by the Superintendent and costs shall be borne by the Principal.

The above does not limit the Contractor's responsibility and liability for replacement of loss for any other cause whatsoever, including but not limited to where stock or materials have failed due to poor quality, inherent defect, incorrect installation or installation in unsuitable site conditions.

In all instances the Contractor will report such malicious damage to the Superintendent as soon as practical, note, and record all occurrences in their Log Book along with all costs and approved replacements.

The Contractor shall request a further inspection and written approval of the replacement immediately after its installation.

7.3 Defects Liability Period

Liability for all items as identified within this contract shall be limited to Defect Liability Period following the award of Practical Completion or that specified in the establishment and maintenance period, whichever is greater.

2.34 PRACTICAL COMPLETION/OPERATIONAL ACCEPTANCE

The Superintendent shall be notified immediately when all Landscapes Works are completed. The Contractor shall ensure that all works within the Contract, are completed prior to the issuing of a Practical Completion Certificate.

The works will not be placed onto Practical Completion until all play equipment, synthetic surfacing or any other product manuals and warranties have been issued by the Contractor to the Superintendent and received by the Client.

Practical Completion (PC) by the Superintendent and Operational Acceptance by PCL shall be awarded at the same time.

Manuals, warranties and compliance certificates are to be site-specific, noting the site, material and installation date.

2.35 FINAL COMPLETION

For the purposes of issuance of the Final Certificate, all works shall be completed and defects rectified. Retention monies and/or bonds shall be held until issue of Final Completion.

SECTION 3. SITE PREPARATION, DEMOLITION & EARTHWORKS

3.1 GENERAL

3.1.1 SCOPE

The Contractor is responsible for the following works and shall include, but shall not be limited to the following;

- On site building overheads and preliminaries as required inc. security fencing, portable toilet, container for secure storage etc
- Set out for approval
- Removal and stockpiling of top soil to required levels in areas other than proposed garden/lawn areas
- Dismantle existing play equipment structure.
- Retain Swings. Salvage Chain Bridge for relocation. Salvage Wavy Bridge inc. handrails and deliver to council depot. Pass on any other components to council depot that can be salvaged. Allowance removal of existing equipment and subsoil and cartage from site
- Cutting and filling for the construction of all levels in the design Construction of mound using on site fill -[Mounds: Lookout, Fairy Ring]
- Excavation for footings, paths, structures, posts, mulch and other areas where required and finished levels for garden bed areas following bulk earthworks. Establishing finished levels and for neatly matching to existing levels
- Achieving positive and effective drainage across the site. Allowance for stormwater drainage works including:
 - Design and Installation of an agricultural drainage system across the site linking into existing storm water ensure that all areas achieve a positive drainage (ensuring no localized pooling)
 - Supply and lay slotted agricultural drainage pipes to mulched area contractor to establish best route and system of connection to achieve a free drained site. Supply, lay and connect PVC drain pipe to agi .pipes and to dispersal points
- Environmental protection
- Tree protection including protective fencing of all trees and display of tree protection warning sign.
- Site restoration

3.1.2 INSPECTION

Give sufficient notice so that inspection may be made of the following:

- Enclosures or marking of existing trees for protection,
- Do not commence other works until tree protection has been inspected and trees.
- Prior to any demolition works commencing the Contractor is to confirm with the Superintendent all items and areas to be demolished.

3.2 TREE PROTECTION

3.2.1 Cross References

Refer also to the General Conditions and the Earthworks sections of this specification.

3.2.2 Protection

Do not remove or damage any tree.

Protect from damage the trees to be retained, including those beyond the site area, both above and below ground.

Tree protection zones are defined by the tree driplines and also shown on Dwg 1300-02-WD. Only the minimum access and work required to achieve the project should be conducted within the tree protection zones.

The following protective measures should be taken:

- The Contractor shall keep the area within the dripline free of construction material and debris.
- Do not place bulk materials or harmful materials under or near trees.
- Do not place spoil from excavations against tree trunks.
- Prevent any damage to tree bark.
- Do not attach stays, guys and the like to trees.

3.3 WORK NEAR TREES

3.3.1 General

Within the tree dripline or 3.0m from the tree trunk (whichever is the greater distance) the contractor shall seek approval from the landscape architect for

- cut and fill operations
- cutting or excavating roots

Prior to machine excavation, use hand excavation to locate roots in the vicinity of trees to be retained. Following approval by the landscape architect, any roots which need to be cut, shall be clean cut with a saw. Do not use for this purpose an axe or other machinery not designed for the clean removal of branches.

Do not compact the ground under trees. If compaction occurs, give notice and obtain instructions.

3.3.2 Excavation near trees

Excavation requires approval from the superintendent if near trees. The superintendent will only allow trenching where a route is outside the averaged extent of tree dripline, or 3.0m from the tree trunk, whichever is the greater number/distance, and the trench is shorter than 1m.

3.3.3 Protection of tree roots

Hand methods: Use hand methods to locate, expose and cleanly remove the roots on the line of excavation. If it is necessary to excavate close to the drip line edge, use hand methods such that root systems are preserved intact and undamaged.

Do not cut tree roots exceeding 50 mm diameter. Where it is necessary to cut tree roots, use means such that the cutting does not unduly disturb the remaining root system. Ensure a clean cut edge. Immediately after cutting, apply a bituminous fungicidal sealant to the cut surface to prevent the incursion of rot or disease.

3.3.4 Backfilling around trees

Backfill to excavations around tree roots with a mixture consisting of three parts by volume of topsoil and one part of well rotted compost with a neutral pH value, free from weed growth and harmful materials. Place the backfill layers, each of 300 mm maximum depth, compacted to a dry density similar to that of the original or surrounding soil. Do not backfill around tree trunks to a height greater than 300 mm above the original ground surface. Immediately after backfilling, thoroughly water the root zone surrounding the tree.

3.3.5 Warning sign

Display a sign in a prominent position at each entrance to the site, warning that trees are to be protected during the contract. Remove on completion.

3.4 EXISTING SERVICES

3.4.1 Marking

Before commencing earthworks, locate and mark existing underground services in the areas which will be affected by the groundwork operations including clearing, excavating and trenching.

3.4.2 Excavation

Do not excavate by machine within 1 m of existing underground services.

3.5 DEMOLITION

3.5.1 General

It is the responsibility of the Landscape Contractor to perform all other demolition required in order to carry out and complete the Works, whether or not such demolitions are shown on the drawings or specifically mentioned in this section or other sections of the specification.

The contractor is responsible for the removal of ALL elements required to successfully complete the proposed landscape works, including edging, footings, surfaces, furniture.

The demolition works shall include all removal of existing play equipment, surfaces, elements and footings, cutting away, matching to levels, services and any other incidental works necessary to complete the contracted works.

The Landscape Contractor shall provide all labour, equipment, safety equipment and precautions, plant and materials necessary for the appropriate protection and execution of the works.

3.5.2 Items to be relocated

Chain bridge is to be relocated by the contractor.

The Wavy Bridge is to be included in a future stage of the works.

Wavy Bridge and any other components that can be salvaged are to be carefully dismantled and delivered to the COPP depot.

3.5.3 Tree Removal

There are no trees to be removed.

3.5.4 Demolished materials

Care shall be taken to ensure that the items for re-use are carefully removed, and carefully stored and remain in serviceable condition. The Chain bridge is to be modified as per the details. Refer also to Play Equipment Section.

Any leftover materials shall become the responsibility of the Landscape Contractor to remove.

Unless otherwise specified or notified by the superintendent, all demolished or leftover materials shall become the property of the Contractor and shall be removed from site.

Where hazardous materials are involved the Contractor shall take the necessary precautions and adhere to the relevant Australian Standards and other rules and codes of practice for demolition and removal of a hazardous material and safe disposal of waste.

3.6 ENVIRONMENTAL PROTECTION

3.6.1 Erosion control

Plan and carry out the work so as to avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems.

Prevent wind-blown materials such as cement from harming trees and plants.

3.6.2 Temporary erosion control measures

Staging

Stage operations (e.g. clearing, stripping).

Restoration

Progressively restore disturbed areas.

Drains

Provide temporary drains and catch drains.

Dispersal

Divert and disperse concentrated flows to points where the water can pass through the site without damage. Use spreader banks or other structures to disperse concentrated run-off.

Silt traps

Construct and maintain silt traps to prevent discharge of scoured material to downstream areas.

Temporary grassing

Temporary grassing is required to site topsoil stockpiles.

Maintenance

After each rain inspect, clean, and repair if required, temporary erosion and sediment control works.

Removal

Remove temporary erosion control measures when they are no longer required.

3.7 EARTHWORKS

3.7.1 References

Refer to Engineer's Documentation.

3.7.2 General

It is the responsibility of the Contractor to perform any other earthworks, site preparation and drainage required in order to carry out and complete the Works, whether or not such works are shown on the drawings or specifically mentioned in this section or other sections of the specification.

During excavation, every care shall be taken to avoid damage to existing underground installations. Safety precautions regarding trenches, excavation, etc., shall be in accordance with Work Cover Australia requirements.

Existing material shall be excavated to the extent necessary to conform to the finished grades and cross sections indicated, and shall allow for the placement of imported topsoil where applicable.

The excavation shall be finished off with an even surface, and thoroughly consolidated until a firm and uniform subgrade has been obtained throughout the entire area. Depressions which develop during rolling, shall be filled with sound material and consolidated. Refer to filling below.

3.7.3 Grading and Trimming

The existing soil shall be graded and trimmed to the extent necessary to conform with the finished levels, grades and cross sections indicated, and shall allow for the placing of topsoil, paving and new structures.

3.7.4 Over -Excavation

Any over-excavation performed by the Contractor for any purpose or reason, except as may be directed by the Superintendent and whether or not due to the fault of the Contractor, shall be at the expense of the Contractor. All such over excavation shall be refilled as directed by the Superintendent and the cost of furnishing and placing this fill shall be at the expense of the Contractor.

3.7.5 Stabilisation

The Contractor shall effectively and properly stabilise all excavations to prevent any fall or run off the ground resulting from the excavation and to prevent settlement or damage to structures adjacent to the excavation.

3.7.6 Batters

All excavated slopes shall be evenly graded to smooth consistent batters at slopes and shapes indicated on the drawings. If grades of batters are not indicated on the drawings, batters shall be formed to the natural angle of repose of the material.

3.7.7 Spoil

Spoil from the excavation shall where possible be utilised on site where filling is required, if the material is suitable for this purpose. Any excess spoil from the site shall be disposed of off- site at the Contractor's expense.

3.7.8 Filling

Where filling is necessary, it shall be of approved sound material. Material excavated during earth works shall be used as filling if appropriate and any shortfall made up by importing fill at no extra cost. Material used as fill in mounding shall be approved as clean and free of debris and other contaminates.

It shall be installed in 150 mm layers, with each layer being firmly compacted.

Any fill brought onto the site shall be sound material, free of perishable material and uncontaminated as set out below and shall be subject to approval by the Superintendent.

3.7.9 Supply of uncontaminated fill

The Contractor shall supply the Superintendent with accurate information as to the source of any fill brought to this site as part of this contract. Fill shall be proven to be obtained from an uncontaminated site and shall be suitable for use in a children's play area.

Should any question arise regarding the possibility of contamination of the material, the Contractor shall be required at his own expense to supply the results of analysis

demonstrating suitability for use in a children's play area according to the criteria established by the Environment Protection Agency, Victoria.

3.7.10 Placement of fill

Before placing fill, remove all debris and compact the excavated ground to the required density. Place and compact backfilling in layers not exceeding 150mm. If required loosen the ground to a depth of 200mm and adjust the moisture content before compaction.

If fill is to be placed against a ground surface, which slopes more than 1:4, bench the ground surface to form a key for the filling. As each layer of fill is placed, cut the existing ground surface progressively to form a series of horizontal steps at least 1m in width. Re-compact the material thus excavated as part of the filling.

Place and compact the fill to the dimensions, levels, grades and cross sections as shown on Drawings, so that the top of the subgrade and the finished surface is always self draining.

3.7.11 Compaction

Protection

Protect the works from damage due to compaction operations.

Compaction Testing

Unless otherwise specified, the compacted density of the material when tested in accordance with the relevant requirements of AS 1289 (Methods of testing soils for engineering purposes), shall be not less than;

- for areas covered by pavements 95% Standard Maximum density
- for all other areas 90% Standard maximum dry density

The formation shall be tested in accordance with the applicable requirements of AS 1289, with the location of tests as nominated by the Superintendent. The Contractor shall provide all necessary equipment and labour, perform all necessary tests and pay all costs associated with testing.

Areas of formation which do not achieve the required density under test shall be cut out, refilled, re-compacted and re-tested as above until the required density is achieved.

3.7.12 Rock or bad ground

Notify the Superintendent immediately in the case of

- Rock in excess of 0.5 m³. This shall mean monolithic material which cannot be removed until broken up by mechanical equipment.

- Bad ground. This shall mean ground unsuitable for any reason including likelihood of subsidence, cavities, contamination, or ground which is very wet, soft or unstable.

3.8 DRAINAGE

3.8.1 Inspections

Arrange inspections as follows;

- Concealed work before covering
- Trenches and bedding layer, before installing pipework
- Pipework and connections to other drains, prior to covering

3.8.2 Standards

Works shall comply with AS 3500 National Plumbing and Drainage Code.

- Stormwater drain pipes shall be in the materials specified and conform to the following:
- Rigid plastic pipes conforming to AS 1254- Class HD
- Unplasticised PVC pipes conforming to AS 1260- class SH including slotted agricultural drain pipes

3.8.3 Execution

Supply and lay 90 mm P.V.C agricultural drain pipe as required. Lay the pipes at the base of a 200 mm wide earth trench with a minimum cover from the top of the pipe to the proposed soil level of 200 mm minimum. Unless otherwise noted, minimum fall of 1 in 100 mm.

Backfill the trench with 200 mm layer (above the top of the pipe) with 12 mm aggregated screenings. Back fill the remainder of the trench with approved topsoil, free of stones, rocks, clods or other deleterious material.

Rigid plastic stormwater pipes and fittings shall be solvent welded, and jointed with a distinctive colour solvent strictly in accordance with the manufacturer's recommendations

Minimum earth cover to drains shall be 300mm in non-trafficable areas and 450mm in trafficable areas

Drains shall be kept clear of paths and at least 600mm clear of walls wherever possible

Stormwater drains shall be laid to even falls of not less than 1 in 100

Bedding - unless otherwise directed on site all stormwater pipes shall be fully bedded - barrels and collars - on 75mm of fine crushed rock or approved fine granular material

Inspection openings complete with covers to be provided and laid at all bends and junctions and at 9000mm intervals along drains

Plastic pipes shall be backfilled to 100mm above pipe with materials as for pipe bedding.

All other backfill materials shall be free of hard material, rock or debris, evenly consolidated and mounded as specified.

Make good affected surfaces, paths, channels, services, ground surfaces, lawn, building works generally within and beyond the site boundaries where damaged or disturbed by the Works.

3.9 SITE RESTORATION

Where existing ground surfaces are not required to be varied as part of the works, restore them to the condition existing at the commencement of the contract.

SECTION 4. TIMBER WORK / CARPENTRY

4.1 SCOPE

This section includes but is not restricted to construction of the following:

- Construct Y-shaped timber bench
- Construct circular 'pacman' decks
- Construct 2 small decks to back of dragon wall. Deck over tunnel inc. metal vent recessed between timbers (refer to play equipment section)
- Construct linear stepped deck to back of dragon wall
- Install low timber arch using timber already salvaged from site
- Supply and install 3 toadstools including staining and treatment. Construct with timber salvaged from site.
- 100x25 ACQ Treated Pine Timber Edging
- Supply & install horizontal Cupressus Macrocarpa timber logs
- Coating to timber structures

4.2 APPROVALS

4.2.1 Samples & Approvals

- Timber
- Parts of salvaged logs to be used for the toadstools & arch

Seek approval of the specific sections of the salvaged logs from the depot, to be used for arch and toadstools.

Contractor to contact Zoe at Mary Jeavons Landscape Architects (ph: 93877337) for approval.

4.3 REFERENCED STANDARDS

4.3.1 General

The Contractor shall comply with the relevant sections of the following standard specifications as minimum requirements for work covered by this Specification.

AS 01	Glossary of terms used in timber standards
AS 02	Nomenclature of Australian timbers
AS 1148	Nomenclature of Commercial Timbers imported into Australia
AS 1684	SAA Timber Framing Code
AS 1720	SAA Timber Engineering Code
AS 1728	Types of timber surfaces
AS 2754	Adhesives for timber and timber products

Structural Timber

AS 1490	Visually stress graded radiata pine for structural purposes (metric units)
AS 2082	Visually stress-graded hardwood for structural purposes
AS 2272	Marine Plywood

Preservative Treated Timber

AS 1495	Preservative Treated Radiata Pine Cladding
AS 1604	Preservative Treatment for Sawn Timber, Veneer & Plywood
AS 1606 & AS 1607	Water-repellent treatment of timber & joinery

4.4 WORKMANSHIP

4.4.1 General

All work shall be accurately constructed to details, lines and levels. All joints shall fit neatly and closely. All work shall be securely and correctly fixed in position.

Exposed surfaces shall be scraped and sanded to remove machine and hammer marks and other blemishes.

All exposed edges of posts, decking, bearers and joists etc. must be bevelled or rounded off and splinters and sharp edges removed.

All posts shall be placed in the ground rigid, plumb and true and according to the drawings. Concrete footings shall finish below ground level as described in the Section 6 on Concrete footings under play equipment in this Specification.

Unless otherwise specified the Contractor is to use their own system of framing for the timberworks in accordance with the current Australian Standards.

4.4.2 Fixing and fasteners for timber work

Important Note

All decking, railing, infill members, cladding and similar, to be pre-drilled and screwed rather than nailed.

No nails to be used unless approved by the Superintendent.

Ensure screws do not protrude through to other side of timber.

All larger members shall be bolted or coach screwed together. Galvanised screws, and bolts with hex-drive recessed barrel nuts, or dome or countersunk heads, shall be used.

After installation, any projecting threads shall be cut off below the surface of the timber and the ends of bolts rounded so that no sharp edges remain. Cut bolt ends to be treated with a protective coating.

4.5 MATERIALS & INSTALLATION

4.5.1 Selected materials

- Horizontal Log Seats shall be round salvaged Cupressus macrocarpa logs (treated with 3 coats of penetrative oil).
- AA Grade Recycled Red Gum Railway Sleepers - for use in the steps abutting the chain bridge. No sleepers contaminated with chemicals or oils
- Low timber arch and stems of mushrooms to be constructed from tree salvaged from site earlier this year and currently stored at the Council depot.

All other timber for structures, decking and edging and unless otherwise specified, shall be Redried ACQ Treated Pine or Tanalised Ecowood. It is anticipated a six-week lead time will apply to supply of ACQ treated timber.

Suggested supplier for Cupressa macrocarpa:

Yarra Timber Salvage

Palmers Road
Laverton VIC 3028
Contact: Rob Horner

Mob: 0418 170 735 Fax: 9676 2036

Suggested supplier for ACQ treated pine:

Davids Timber
 29 Princes Hwy
 Dandenong South VIC 3175
 Phone: 9794 4777

4.5.2 Treated timber

Please note CCA treated timber will not be accepted within the project.

4.5.3 Quality

Timber shall be of the best quality of the species and grades specified.

Timber shall be straight, sound, well seasoned, free from defects including white ant, borer, sap, shakes, loose knots, warp, twist, decay, pith, holes, splits, fractures, bruises. Condemned timber shall be replaced.

Structural and seasoned timbers shall have a moisture content of not less than 10% and not more than 15%.

4.5.4 Sizings

For lengths up to 5m long and 200mm wide-plus or minus 3mm and in accordance with AS 1684 and the Victorian Timber framing manual.

'Ex' means the base size of timber prior to dressing.

4.5.5 Durability

Posts, retaining timbers, and other timber used underground or within contact with the ground shall be of durability class one. Treated timber for use underground or in contact with the ground shall be specifically treated for in ground use.

4.5.6 Decking

All decking to have a sawn finish to top surface, all edges are to be rounded/ eased/ chamfered prior to fixing. All timbers to be redried and no further shrinkage should be expected. Install timbers with 5mm spacing. Maintain gaps between members under 6mm - to prevent potential finger entrapments).

All decking members to be butt jointed after edges have been rounded (this allows for some shrinkage -

4.5.7 Finishing

All posts, rails and beams to be fine sawn, with edges eased (rounded) to remove sharp corners and ensure a splinter-free surface.

The exposed edges of steps and upper surfaces of wall capping, seat slats and other areas where there is a chance of users falling against edges, as well as the under-side of bearers under decks where children have access, shall be rounded off.

The Contractor should allow to arris edges and generally rough-sand all timber within reach of users on the playground.

4.6 RECYCLED TIMBER

4.6.1 'AA Grade' Recycled Ironbark or Redgum sleepers

All sleepers must be recycled timber.

Ironbark is the preferred recycled sleeper timber due to its quality, strength and appearance. Particular care is to be taken to ensure the sleepers are 'AA' Grade and are free from deterioration and any sharp and splintery surfaces and large vein pockets.

NOTE: where different suppliers use an alternative method of classification it shall be assumed that the best quality recycled sleeper is to be selected.

4.6.2 Recycled Logs

Source: Logs to be sourced from recycled timber suppliers.

Select durable timber species, class 1 hardwood.

Size: minimum diameter 400mm

Finish: ensure splinters are removed - retained bark is acceptable and desirable. Edges to be chamfered.

4.6.3 Finishing

All exposed edges of the recycled timbers shall be eased/ rounded and splinters removed. All sleepers and logs shall be finished with 3 coats of "Organoil Ecowood". Colour: Clear

4.6.4 Recycled timber suppliers

Eltham MGS Landscape Centre
Contact: Paul
34 Peel Street

Daisy's Garden Supplies P/L
14 Mt Dandenong Road

Eltham VIC 3095
Ph: (03) 9439 2909

Ringwood East VIC 3135
Ph: 9870 4322

Australian Wood Creations
15 Keppler Circuit
SEAFORD VIC 3198
Contact: Tony Blackburn
Ph: 9775 0174 Fax: 9775 0317

Yarra Timber Salvage
Palmers Road
Laverton VIC 3028
Contact: Rob Horner
Mob: 0418 170 735
Fax: 9676 2036

4.7 TIMBER EDGING

4.7.1 Materials & execution

Supply and install 100x25mm RTP ACQ timber edging.

Peg edging to 400mm timber stake at 1200mm intervals. Provide 2 No. screw fixings to pegs. Top of peg to finish min. 15mm below ground surface level.

Lap joint timber edge with 2 No. screw fixings. Ensure all edges overlap well, and that no burrs or sharp corners are exposed.

4.7.2 Scope

Timber edging should be used in accordance with the drawings.

As per details install two 100x25mm edges one above the other beside softfall mulch.

Important note: Should the radii nominated be too tight to achieve with timber, then Formboss steel edging should be used.

4.8 TIMBER TREATMENT

4.8.1 Option 1 - Organoil

All timber to be finished off with 'Organoil, Decking and Exterior Oil - Standard Colour'.

Apply 2 coats in accordance with the manufacturer's recommendations. Refer to webpage for nearest stockists. <http://www.organoil.com.au/0802%20DECKING%20OIL.doc>

Refer to manufacturer's spec. sheet.

4.8.2 Option 2 - Allplay Timber Coating

Alternatively apply 2 coats of "Allplay Timber Coating".

Supplied by

Allplay

56 Brunel Road

Seaford Vic 3198

T. 9786 8133

F. 9786 8601

E. sales@allplay.com.au

Apply in accordance with manufacturer's recommendations.

SECTION 5. ROCK

5.1 SCOPE

Supply and install:

- Supply & install Mansfield Mudstone stepping stones steps up to Fairy Ring
- Supply & install Mansfield Mudstone rocks to retain low terracing on mound
- Supply & install Mansfield Mudstone slabs to form 'scramble' to levels and setout shown
- Supply & install Mansfield Mudstone boulders to retain East edge of Mound (finished height 1200)

5.2 ROCK BOULDERS

5.2.1 Material

Material: Mansfield Mudstone

Supplier: Dick Forest

Phone: 0427 356 770

5.2.2 Samples

Contractor to supply photographs of the boulders for approval, prior to delivery to Melbourne.

5.2.3 Timing

Contractor is to allow for rock to be sourced to meet the dimensions specific to this project.

It is possible to obtain rock to accurate dimensions to construct the steps, retaining walls and scramble, however the contractor needs to allow time for this to be sourced.

The contractor is to allow for delivery of all rock from Mansfield.

5.2.4 Sizes

All sizes are shown in the drawings.

Contractor to allow for $\frac{1}{2}$ to a $\frac{1}{3}$ of rock to be set into the ground.

5.2.5 Appearance

Rocks to be natural forms and free of very sharp projections, crevices and sharp corners. Any sharp corners or edges are to be rounded by the contractor

5.2.6 Execution

Install boulders into cement stabilised sand.

Boulders are to be arranged so that they:

- effectively retain soil to finished levels
- are at least one third buried in the ground as per detail
- achieve a natural appearance in their placement - i.e. the 'natural' surfaces are exposed (i.e. do not expose surfaces which were previously buried)
- are completely stable and unable to be rocked or moved
- achieve the levels, step heights and layout nominated on the drawings

Note: the levels of all rocks have been carefully documented to meet the Australian Standards for Playspaces. AS4685. Therefore the rock work needs to be installed to meet these dimensions.

SECTION 6. CONCRETE

6.1 GENERAL

Refer to engineers documentation for all structural aspects including reinforcement and spacing of sawcut and construction joints.

6.1.1 Warranty

On completion of the work, provide a warranty to the Proprietor stating the work is secure against any defects, including delamination from substrate, 'blowing' 'grinning' and 'crazing' for the period of fifteen years from the date of practical completion.

6.1.2 Scope

The works include but are not limited to the supply and complete installation of concrete for:

- Footings for all structures including but not limited to (play equipment structure, seats, play equipment, rocks, posts, steps etc)
- Synthetic surface base course
- Concrete base to Castlemaine Slate paving
- Riverblend beige coloured concrete path (broom finish)
- Riverblend beige coloured concrete edge
- Riverblend beige coloured concrete steps
- Insitu Concrete Wall (dragon wall) inc. concrete tunnel,
- Render to concrete wall - Abilox Dark Brown (by artist)
- Miscellaneous - all other incidental or consequential work which is or may become necessary to complete the work

6.1.3 Sample

Contractor to provide a sample 1x1m section of concrete pavement for inspection by Superintendent prior to completing the rest of the pavement.

6.1.4 Colour

Wherever concrete colour is not specifically noted on the drawings, it should be coloured with Riverblend Beige 8.3% in grey cement, and broomed finish.

6.1.5 Quality Assurance

The supply and installation shall be in compliance with the drawings and this specification and be done to best industry practice by experienced tradesmen.

6.1.6 Standards

Comply with the requirements of the following SAA Standards and Codes; except where specifically varied.

AS 1379 - 1973 Ready Mixed Concrete

AS 3600 - 1988 Concrete Structures

AS 1509 - 1974 SAA Formwork Code

AS 1510 - 1974 Control of Concrete Surfaces - Part 1 1974 Formwork

AS 1082 - 1971 Glossary of Formwork Terms

AS 1302 - 1982 Steel Reinforcing Bars for Concrete

AS 1303 - 1984 Hard Drawn Steel Reinforcing Wire for Concrete

AS 1304 - 1984 Welded Wire Reinforcing Fabric for Concrete

AS 1315 - 1982 Portland Cement

AS 1527 - 1974 Two-Part Polysulphide-Based Sealing Compounds for the Building Industry

AS 1554SAA Structural Steel Welding Code Part 1 - 1985 Welding of Steel Structures

AS 2758 Aggregates and Rock for Engineering Purposes Part 1 1985 Concrete Aggregates

AS 1479 - 1973 Code of Practice for the Use of Chemical Admixtures in Concrete

AS 1478 - 1973 Chemical Admixtures for Use in Concrete

AS 1012 Methods of Testing Concrete Parts 1-19

AS 1141 Methods for Sampling and Testing Aggregates (Complete Set)

AS 3000SAA Wiring Rules (Concrete Embedments)

ASTM C309 Curing and Protection of Concrete

AS 3600 - 1988 Fabrication and Workmanship

6.1.7 Delivery, Storage and Handling

Store all materials to avoid deterioration, damage, theft and vandalism. Deliver wet concrete so that it is placed soon after arrival.

6.1.8 Project Conditions

Verify site dimensions on site. Protect materials on site from weather and theft.

6.2 CONCRETE

6.2.1 Coloured Concrete

General

Coloured concrete is to be 'Abilox' Riverblend Beige - 8.3% in grey cement.

Render by artist to be Abilox Dark Brown.

The 'Abilox' brand of fine colouring pigment powder shall be added to the transit mixer truck containing all of the pre-mixed concrete raw materials.

The total contents from one (1x25kg) sack of the pigment powder shall be added to every cubic metre of the non-set plastic pre-mixed concrete, which shall then be efficiently mixed in the stationary transit truck for 10 minutes at the fastest transit mixers barrel speed so that the pigment particles are uniformly dispersed.

The resultant 'Abilox' coloured plastic concrete shall then be placed, jointed and completely cured.

6.2.2 Finish

Unless otherwise noted insitu concrete paving should have a broomed finish.

6.2.3 Cement

Cement shall comply with AS 1315. Cement shall be one brand and shall be not more than three months old.

Cement delivered to the site shall be in branded and sealed bags stacked under protective covers to prevent deterioration, so stacked that each batch delivered may be identified.

Defective cement shall be removed from the site.

6.2.4 Aggregate

Dense aggregate shall comply with the requirements of AS 1465 and AS 1141.

Lightweight aggregate shall comply with the requirements of AS 1467.

Maximum size of coarse aggregate shall comply with AS 3600.

6.2.5 Water

Water shall comply with Clause 19.1.1.6 of AS 3600 and shall be clear of oil, acid, alkali and organic matter.

6.2.6 Admixtures

Admixtures shall not be used without the prior approval of the Superintendent in writing. Where used, they shall comply with Clause 19.1.1.7 of AS 3600.

6.2.7 Ready mixed

Concrete shall be grey ready-mixed except areas otherwise specified.

Supplied by an approved manufacturer and shall be mixed and delivered in accordance with the requirements of AS 1379.

6.2.8 Site mixed concrete

Will not be permitted unless the prior approval of the Engineer has been received.

6.2.9 Strength

All concrete shall have the required compressive strength at 28 days.

Strength: at 28 days as noted or scheduled on structural drawings for various locations.

Concrete not scheduled for compressive strength shall be 25 MPa concrete.

6.3 ENGINEERING

Refer to engineers documentation for all structural aspects, including jointing, installation, materials, reinforcing, execution etc.

6.4 TOPS OF FOOTINGS UNDER PLAY EQUIPMENT

Tops of concrete footings shall be no less than 450mm below the top of the mulch or no less than 200mm below the level of the mulch base (i.e. the ground level under the mulch) whichever is the greater.

Any footings of slides, which are not covered by the slide bedway, shall be 300mm below the playground sub-surface level (an additional 100mm deeper than other footings - this is to cater for the additional compacting and pounding of the surface at the base of the slides). This shall also be the treatment applied to the base of slide poles.

Depths of footings for play equipment will be according to the requirements of the manufacturer/supplier of the equipment, who shall take responsibility for the structural integrity of the equipment.

6.5 WALL

6.5.1 General

Ensure wall is constructed as per the drawings,

Consult with Artist James Cattell prior to pouring wall.

6.5.2 Nostril Hole

Nostril hole to be constructed to the precise size to allow for:

- the rendering to be overlaid
- the slide to fit into the nostril with a gap of 25-45mm to each side of the slide edges.

Contractor to confirm dimensions of slide with supplier **prior to constructing wall** to ensure that slide fits into nostril opening.

Refer also to play equipment section: CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING PROPOSED FIXING METHOD FOR SLIDE. DRAWINGS TO BE APPROVED BY LANDSCAPE ARCHITECT (Zoe Metherell at Mary Jeavons Landscape Architects ph: 93877337)

PRIOR TO PURCHASING SLIDE / CONSTRUCTING NOSTRIL OPENING.

SECTION 7. STONE PAVING & PEBBLES

7.1 SCOPE

Provide paving and surfaces including:

- Castlemaine slate/ random stone
- Pebble surface surrounding drink fountain

7.2 GENERAL

7.2.1 Samples & Approvals

Contractor to install a sample 1x1m section of pavement prior for inspection by the Superintendent. The sample may be incorporated into the finished work.

7.2.2 Edges

Edges will be required to retain surfaces. Refer to drawings for location and types of edges.

For concrete edges: refer to the Concrete section

For timber edges: refer to Timber work/ Carpentry. **Note: Where radii shown cannot be achieved in timber the contractor must allow for steel edges.**

For steel edges: Hardscape elements section

7.2.3 Setout

Obtain approval for setout prior to excavation for all surfaces. Adjust setout as instructed by Superintendent.

7.2.4 Finish

Levels must match exactly flush, without trip hazard, between different materials/surfaces. Surfaces must be designed to drain. Finish to be smooth and even with no areas that water can pool. Drainage must always be away from buildings and entrances.

Provide a slight crown to the centre of paths to facilitate a 1:50 maximum grade towards the outside edge.

7.2.5 Boulder steps

The stones are to be set so they are not angled to slip or trip on and do not wobble or move and provide a stable surface on which to step.

Install boulders into cement stabilised sand.

7.2.6 Completion

Any damaged adjacent surfaces shall be re-instated.

7.3 CASTLEMAINE SLATE

7.3.1 Sizing

The Castlemaine paving slate shall be a nominal depth of 15 to 30mm.

Minimum diameter: 200mm

Maximum diameter size: 500mm

7.3.2 Execution

The slate is to be laid on a 20mm mortar bed over a concrete slab. Refer to engineers documentation for concrete slab.

The finished surface of the Castlemaine Paving Slate shall be without any variation in surface levels, providing a smooth, continuous, level surface without trip hazards.

7.3.3 Timing

Note: Castlemaine slate can be difficult to obtain and the contractor should order in well enough in advance to supply stone in keeping with the construction timeline.

7.3.4 Possible Suppliers

Castlemaine Slate & Stone Quarries

Calder Hwy, Taradale

Tel: 03 5423 2238

Fax: 03 5423 2160

Australian Slate and Stone

256 Whitehorse Rd.
Nunawading VIC 3101
Tel: 03 9894 0222

7.4 PEBBLES

7.4.1 Materials

Yea River Pebbles 20-75mm in mortar bed around drink fountain

Yea River Pebbles 150mm in garden

No natural pebbles that are sourced from streams or rivers are to be used.

All pebbles used on this project are to be manufactured eg. tumbled from quarried stone. Prior to ordering, the contractor must submit evidence from the supplier, to the Superintendent that the pebbles are sourced in this way.

7.4.2 Approvals

The superintendent must approve the following stages of the creek bed construction before the contractor proceeds with further work:

- A true and accurate sample of the pebbles is to be approved by the Superintendent prior to commencement.
- Setout & construction of base course (contractor to demonstrate how the basin drains into the garden)

7.4.3 Suggested Pebble suppliers

Diamond Valley Garden Centre

170 Yan Yean Rd Plenty (Greensborough) Melbourne, Victoria

P. (03) 9432 5113

7.4.4 General fixing and installation

Pebbles must be fixed directly into a concrete mortar bed. They should be embedded into the mortar (as if constructing a mosaic pavement). The pebbles must not be able to be loosened.

It is the contractors responsibility to ensure that water will not pool on the pavement. Any potential issues with levels or setout should be raised with the superintendent prior to beginning construction.

Set out alignment and dimensions as shown on the drawings. Set out & base course to be approved by the Superintendent prior to proceeding. At this inspection the contractor must demonstrate to the superintendent that the base course will drain.

Pebbles are to be set in a 20mm mortar bed on a 75mm thick concrete base with ½ of the pebble set into the mortar bed. Lay mortar in small sections and fix stones.

Ensure that the pebbles do not pose a trip hazard or obstruct access by a wheelchair.

Minimise the gaps between pebbles so that the bedding concrete is not visible. Creek bed is to be finished with a gradient so as to fully drain when water is not running.

Completion

Remove debris and clean areas affected by the work. Clean down pebbles.

SECTION 8. OTHER SURFACES

8.1 SCOPE

Provide paving and surfaces including:

- Cement Stabilised 7mm Recycled Crushed brick on a compacted FCR (note: 20mm Envirocrete Class 3 may be substituted for FCR below crushed brick paths)
 - Fairy Ring
 - Terracing at side of mound
 - Main Path through space.
 - Around circular 'pacman' decks
 - Top of lookout mound
- 250 deep impact absorbing mulch
- 75mm impact absorbing wetpour synthetic surface including terraced concrete sub base on side of mound (double slide area & flying fox launch)
- 75mm impact absorbing wetpour synthetic surface including sub-base (basket swing area)

8.2 GENERAL

8.2.1 Edges

Edges will be required to retain surfaces. Refer to drawings for location and types of edges.

For concrete edges: refer to the Concrete section

For timber edges: refer to Timber work/ Carpentry. **Note: Where radii shown cannot be achieved in timber the contractor must allow for steel edges.**

For steel edges: Hardscape elements section

8.2.2 Setout

Obtain approval for setout prior to excavation for all surfaces. Adjust setout as instructed by Superintendent.

8.2.3 Finish

Levels must match exactly flush, without trip hazard, between different materials/surfaces. Surfaces must be designed to drain. Finish to be smooth and even with no areas that water can pool. Drainage must always be away from buildings and entrances.

Provide a slight crown to the centre of paths to facilitate a 1:50 maximum grade towards the outside edge.

8.2.4 Completion

Any damaged adjacent surfaces shall be re-instated.

8.3 CEMENT STABILISED COMPACTED RECYCLED CRUSHED BRICK

8.3.1 Materials schedule

Applied loads	Pedestrian
Material	7 minus, Crushed Brick (Boral-Delta Enviroblend)
Cement	Brighton-Lite (Off-white), mix at 5%
Finish	Compacted brushed smooth
Overall Paving thickness	150mm min.
Base Course:	Class 2 Fine Crushed Rock or 20mm Envirocrete Class 3, 3% cement added at the mill or on site
Bedding thickness	75mm

8.3.2 Sample

The Contractor shall supply a sample of the proposed material to the Superintendent for approval prior to purchase and delivery to the site.

8.3.3 Supplier

Boral - Delta

Contact: Will Bailey

473 Somerville Road
Sunshine, VIC 3020
Australia

Telephone: (03) 9315 2555

Facsimile: (03) 9315 1535

Phone: 9315 2555

Boral Account Holders - phone Sales 1300 650 564 for supply including delivery.

8.3.4 Installation

Lay the mix just damp but not wet, to finish 75 mm thick after compaction, with an even surface, flush with edgings and within the surface tolerance.

Base course to be 75mm class 2A fine crushed rock (FCR) compacted to 98% SMD on clean and compacted subgrade.

Compact using mechanical means to achieve a dry density ratio of 95% when tested to AS 1289.5.4.1 (standard compaction). Where spaces are tight, near trees or over structural soil compact by hand only.

8.4 IMPACT ABSORBING MULCH

8.4.1 General

Pine mulch surface to climbing and play equipment areas shall be installed as per Drawings.

Mulch must be 250mm depth after compaction.

Mulch shall be fine pine mulch (shredded pine wood) specifically produced for application to playgrounds and obtained from a reputable supplier and tested to comply with requirements for impact absorbing ground surfacing material, AS/NZS 4422 : 1996

A true and representative sample shall be provided to the Superintendent for approval prior to installation.

A copy of the test report shall also be supplied prior to ordering.

Shredded recycled tree prunings or shredded timber laminates are **not** acceptable and will be rejected.

8.4.2 Materials

Supply and install Bark King - Softplay®

Softfall mulch to be:

- certified (to AS/NZS 4422:1996)
- Particle range from 1mm to 10mm, (average 8mm) with a minimum of fines to assist in longevity when installed in playgrounds

8.4.3 Execution

Mulch shall be compacted during installation to a minimum depth of 250mm as outlined in AS/NZS 4422 : 1996.

The Contractor should acquaint themselves with the volume of mulch they will be required to purchase, in order to achieve the final compacted depth.

Base under mulch areas shall be graded positively to drainage points.

8.4.4 Borders and Edges

Refer to plan for edges. Where timber or steel edging is specified ensure it is installed double height eg. 2x100mm. Refer to edging sections of specification.

Mulch to grass is to be a formed banked earth edge.

8.5 SYNTHETIC IMPACT ABSORBING SURFACE

8.5.1 General

Synthetic impact absorbing surfacing materials are generally made from recycled tyre fibres such as SB Rubber, or other types of rubber or synthetic granules, bound together with a polyurethane binder to form a base shockpad of varying thicknesses. They are coated with a wear surface which is typically coloured, and approx. 15mm thick. The coloured layer has been specified to be EPDM rubber or similar approved.

8.5.2 Standards

The product must comply with the Australian/New Zealand Standard AS/NZS 4422:1996 and be laid to sufficient depth for the fall heights of the play equipment surrounding them.

The supplier will be required to produce a test report indicating that the product has been tested in accordance with this Standard for the fall heights specified on the drawings.

Warranties will be required for a minimum of five years.

8.5.3 Scope

Wet pour impact absorbing synthetic playground surfacing is specified on the Drawings. Areas:

- Below and around Arc Swing
- Embankment - around slide and flying fox

8.5.4 Materials

Applied loads: Pedestrian

Synthetic surface: Smooth trowel finish

Wear course: EPDM granules in accordance to manufacturer's recommendations

Colour mix: Beige 40%, Ochre 50% & Eggshell 10%

Depth of impact absorbing course: as directed by supplier for adjacent fall heights.

In all areas where no impact absorbing layer is required (eg. Beside embankment slide) a minimum 50mm layer should be installed. (The contractor should ensure that the depths of the synthetic layers are factored in and the required levels are achieved and no entrapment is created between the slide and synthetic.)

Base course - swing: Min 75mm, compacted fine crushed rock, stabilised with 3 to 5% cement stabilisation.

Base course - mound: Concrete over a FCR base - Refer to engineer's documentation.

8.5.5 Approvals and responsibility

Sample and supplier to be approved by the Landscape Architect prior to ordering.

Supply details to the Landscape Architect - Zoe Metherell at Mary Jeavons Landscape Architects 93877337.

The set out will need to be approved by the Landscape Architect at least one day prior to installation; at least three days notice of the approval time will be required.

8.5.6 Suppliers

Safepave rubber surfaces

Contact Shane McGrath

Mob: 0407094 254

Fax:03 9872 6355

Polyflex Softfall

William Loud (Aust) Pty Ltd

135 Market Street

SOUTH MELBOURNE VIC 3205

Phone: 03) 9699 4788 Fax: 03) 9696 1258

8.5.7 Execution

The installation of the impact absorbing synthetic surfacing shall be in accordance with the manufacturer's instructions.

It is the Contractor's responsibility to ensure that any posts or other permanent structures which are located within area covered by the rubber material are installed **prior** to pouring of the rubber. No cutting, excavation or patching afterwards will be accepted.

Below Slide

Take particular care to ensure that there are no entrapments between the Hags steel slide and the synthetic embankment.

8.5.8 Quality

The surface shall be laid so that it is free-draining, without contamination, or surface irregularities, pools or bumps unless specified. It shall not crumble, crack or fade, delaminate or separate from the base for the entire warranty period.

Where the synthetic surface interfaces with mulch or a sloping surface, the edge of the rubber/synthetic should be gently beveled/beached to minimise the risk of tripping and of falling. This is illustrated in the details.

No timber or other hard material or edging shall be allowed in a fall zone (refer to playground standards).

In all situations the synthetic surface shall meet flush with adjacent surrounding surfaces with no trip hazard.

Where the synthetic softfall is to be laid on a slope, the base must be concrete. Ensure that the levels drain to an approved storm water collection point. Ensure that no concrete is exposed or can become exposed through wear and tear or erosion of adjoining surfaces.

Ensure that the base preparation and retention prevents the possibility of the crushed rock eroding and the rubber surface becoming undermined, especially in high impact areas such as at the base of slides and slide poles.

8.5.9 Warranties & Certification

The supplier will be required to produce a test report indicating that the product has been tested in accordance with this Standard for the fall heights specified on the drawings.

The supplier is to provide Warranty for synthetic surface. Warranties will be required for a minimum of five years.

SECTION 9. METAL WORK

9.1 SCOPE OF WORK

- Formboss Galvanised steel edging
- Anchors for rock climbing holds
- Galvanised Steel Handrails to stairs
- Vents to deck and top of tunnel - refer play equipment section
- Miscellaneous fixtures and fittings

Note that all steelwork shall be hot dipped galvanized unless otherwise specified.

9.1.1 References

Refer to Play Equipment Section and Applied Finishes & Coatings sections.

9.2 GENERAL

The work shall be carried out in strict accordance with this Specification and in conjunction with the drawings and any other relevant plans and details which will form part of the Contract documents.

9.2.1 Quality Assurance

Fabrication shall be by an experienced company and installation shall be carried out under the direct supervision of a capable Foreman, experienced in the class of work under construction.

9.2.2 Standards

Conform to the latest, relevant editions of Australian Standards except where varied by this Specification.

9.2.3 Handling, Delivery to Site & Storage

Steelwork shall be handled and stored by methods and appliances that will not over-stress or deform the members.

Members shall be stored above the ground surface.

Pre-prime prior to delivery unless specified galvanised.

Members bent or buckled from handling or storing shall be liable to rejection.

9.3 MATERIALS, FITTINGS & FINISHES

9.3.1 General

All materials required to complete the works under this section shall be supplied in strict accordance with the Contract Documents and within the tolerances specified. Responsibility for the correctness of the supply of all materials shall rest entirely with the Contractor. Materials which do not comply with the Contract Documents shall be rejected.

9.3.2 Steel Supply

Unless otherwise shown on the drawings, all steel shall comply with AS 1204 Structural Steels - ordinary weldable grades, Grade 250. Other types and grades of steel shall not be used without specific approval.

9.3.3 Connections

General

Where end cleats, brackets and other connections are not specifically detailed on the drawings, they shall be of type and proportion to suit the location and forces shown thereon with gauge and edge distances in accordance with Australian standards.

Bolting General

Bolts in bearing shall be of such lengths that no threaded portion shall cross the interface of the parts joined. At least one washer shall be placed under the bolt head or nut, whichever is to be rotated. Taper washers shall be used where the part under the bolt head or nut is not perpendicular to the centre-line of the bolt.

Welding

Manual and semi-automatic welding shall be in accordance with Australian standards.

After welding the area shall be painted with a zinc rich paint.

Dome Headed or Recessed Fittings

Important note: The Contractor is to note the requirements of the playground standards regarding the need to provide bolts and screws which are either dome headed, and /or

have their nuts recessed or countersunk and do not protrude from the surrounding surface in any situation.

9.3.4 Finishes

Shop Cleaning and Painting

All steel work, except where noted otherwise on the drawings or where encased in concrete, shall be flame cleaned and then wire brushed to remove all loosened scale, rust and dust. While the steel is still warm and dry from the flame cleaning it shall be given one shop coat of Red Oxide Zinc Chromate.

Hot Dip Galvanising

Where scheduled or specified to be galvanised steel work may be chemically de-scaled and cleaned in accordance with current & relevant Australian Standards so that all rust, mill scale, oil grease and other foreign matter be removed leaving a clean surface of metal or a tightly adhering coating of zinc or iron phosphate. Steel shall then be immersed in a bath of molten zinc so that when withdrawn, the zinc coating solidifies to a dry film thickness of 100 micrometres. Allow a 48 hour curing period before transporting steelwork.

All transport and erection abrasions, site welds, etc., are to be reinstated by thoroughly wire brushing all affected areas to achieve a clean sound substrate and patch coating with an inorganic zinc film thickness of 100 microns.

All pipe and tubing shall be galvanised inside and outside.

Where hot dipped components need to be welded together on site, the welded area shall be cleaned and prepared, primed and painted with a zinc rich paint.

Any panels or sections of the structures which become distorted during the galvanizing process shall be rejected and will need to be replaced.

Schedule of Surface Treatment

All external exposed steel is to be hot dip galvanised and powder coated or painted as per paints and finishes schedule (see later section).

9.4 EXECUTION

9.4.1 Examination of site

Inspect site conditions both before fabrication and delivery of steel. Fabricator shall confirm with the Contractor on delivery, that all materials can be directly installed.

9.4.2 Erection

Adopt an erection procedure such that all members can be placed and fixed in position without distortion. During erection the steelwork shall be made safe, against the wind and all erection stresses and loading conditions, including those due to erection equipment. Allow for the cost of temporary erection bracing required and any professional requirements in connection with such bracing.

9.4.3 Adjustments

Following erection, adjust the installation as required by the Engineer or Superintendent. Complete the work as required.

9.4.4 Discrepancies

Discrepancies shall be reported immediately they are found and instruction obtained before continuing with the affected portion of the work.

9.4.5 Cleaning

Clean the installed steelwork and touch up paint with inorganic zinc silicate of matching colour.

9.4.6 Removing BURRS and Sharp Protrusions

All metalwork that can be reached by people using the shelter must have sharp points, edges or corners rounded off or ground smooth, weld-burrs ground off, and surfaces cleaned to avoid injury to users.

9.5 METALWORK

9.5.1 General

Handrails Powdercoat colour: Dulux Powdercoat Citi-Pearl #88471

9.6 ANCHORS FOR ROCK CLIMBING WALL

Supply and install zinc plated drop in anchors.
Product HKD-S 3/*" x40. Item Number 00246713

9.6.1 Supplier

Hilti Australia. phone:131 292

http://www.hilti.com.au/holau/modules/prcat/prca_product.jsp?OID=9222&CATE_OID=-9320

9.6.2 Installation

Once artistic rendering is completed pre-drill wall and install anchors. Ensure anchors are embedded into wall past the render. Do not crack or damage the artistic render during installation of anchors.

Anchors to be installed at 200 centres. Install anchors to the extent of the wall that is to be used for rock climbing.

Liase with James Kassey of 'Infinite Holds' who will supply and install zinc plated 3/8" bolts and holds.

Following installation of climbing holds the remaining anchor points must be filled with silicon or render. Co-ordinate with artist James Cattel regarding his preferred fill product.

9.7 FORMBOSS STEEL EDGING

9.7.1 Product

Formboss steel edging

100mm deep

Install as per manufacturer's instructions using components including 'smart connectors' and tapered stakes.

Instructions are found at <http://www.greenlines.com.au/diy.php>

9.7.2 Double height edging

Where steel edge is beside softfall mulch.

Install 2x100mm formboss edging, one above the

other and fixed to 400mm timber stakes.

Stakes to be at min. 1200mm spacing.

Predrill formboss and screw to stakes. Provide 2 No. screw fixings per peg, per formboss (ie 4 screws per stake).

Top of peg to finish min. 15mm below ground surface level.

9.7.3 Formboss Supplier

Greenlines Gardenware

Phone: 1300 307 542

Mobile: 0402 633 223

Fax: (03) 9018 4395

Address: Factory 3 No 43 Vinter Avenue
Croydon Victoria 3136 (By appointment only)

www.greenlines.com.au

9.7.4 Installation

Steel edges shall be laid straight to line and level with a maximum deviation over 3000mm of 3mm. Edge to be rolled to form smooth curves with an even radius.

The superintendent is to be notified when the shaped edges are ready for installation. The superintendent shall approve the quality and standard of the first length of edge to be laid. This shall be used as the benchmark for the standard and quality of the remainder.

Install to all edges where shown on the plan or where the radius is too tight for timber edging.

General: Set edgings flush with adjoining surfaces to define planting areas, and all edging's to be uniformly laid. Where two edge lengths butt joint, neatly weld to form a seamless join.

Peg tops 15 mm below the top of the edging.

SECTION 10. HARDSCAPE ELEMENTS

10.1 SCOPE

- Supply & install Furphy Foundry Metro picnic tables and benches.
- Install COPP drink tap inc. all connections to potable water, pit, fittings etc. (Note COPP to supply drink fountain)
- Semi-permanent bamboo & rope fencing around garden bed areas

10.2 FURNITURE

10.2.1 Table & benches - Picnic settings

Contractor to supply and install to concrete footings below stone pavement. Ensure pavement is not damaged during installation.

Wheelchair accessible table

Supply & install 2 tables

Model: Metro Table GOV 117.

Ends: Supply each table with one wheelchair accessible end.

Cast Aluminium– Mill Finish.

Supplier: Furphy Foundry Pty Ltd. Tel: 03 5831 2777

Timber: 50x30mm Recycled hardwood suitable for external use

Fixing: Bolt down attachment.

Height: 765mm

Length: 1.8m

Set out as per drawings.

Benches

Supply & install 2 benches with each table.

Model: Metro Bench GOV 116.

Ends: Cast Aluminium– Mill Finish.

Supplier: Furphy Foundry Pty Ltd. Tel: 03 5831 2777

Timber: 50x30mm Recycled hardwood suitable for external use

Fixing: Bolt down attachment.

Height: 440mm

Length: 1.8m

Set out as per drawings.

10.2.2 Drinking fountain

Supply:

COPP to supply drinking fountain.

Contractor to install fountain including pit, connections, pipes etc.

Installation:

Refer to manufacturer's specifications and details.

Registered plumber to install and connect unit and carry out all associated plumbing works. Plumbing works must be completed in accordance with Australian Standards. Fountain to be installed as per manufacturer's instructions.

10.3 BAMBOO AND ROPE PROTECTIVE FENCE

10.3.1 General

Supply and install bamboo and rope fences around garden beds.

10.3.2 Samples

Provide samples of:

- Rope
- Bamboo Poles

10.3.3 Materials

2400mm x 50mm Bamboo Poles

Sourced from hardware stores such as Bunnings.

Cut into 2x 1200mm lengths.

Drill nom. 12mm hole and thread with 10mm thick natural rope.

Knot rope to either side of post.

Embed post 500mm in ground.

Max. pole spacing 1500mm.

Place posts abutting back of garden edging. Ensure rope barrier aligns closely to edge of garden beds.

SECTION 11. PLAY EQUIPMENT

11.1 GENERAL

All components and structures to comply with Standards as mentioned in this document, and to be constructed according to industry best practice.

In particular the play space must comply with AS4685 -all parts.

11.1.1 Warranties

The Suppliers/Sub-contractors shall be fully responsible for the provision of all Warranties for their products, and for the provision of any detailed design and engineering computations as may be required to ensure that such products comply with all relevant Standards and industry practices, to the satisfaction of the Landscape Architect.

11.1.2 Work by others

Work by others includes:

- Artistic rendering of dragon features
- Supply and installation of ceramic horns, nails, teeth and eye.
- Supply and installation of rock climb grips

11.1.3 Co-ordination

Prior to commencement of works, the Contractor shall liaise with the play equipment suppliers, James Cattel and Infinite Holds regarding the Construction Drawings and in particular the means of connecting play equipment items and components to structures.

In particular the following co-ordination is required with:

- play equipment suppliers regarding fall zones, footings and installation
- toddler slide manufacturer to confirm size and fixing
- artist - James Cattel- liaise regarding formwork of dragon wall, extrusions, reinforcing, openings etc. James Cattel to attend on site to inspect formwork for wall prior to pouring. Also co-ordinate with James regarding installation of bolts for rock climb holds
- rock climb holds supplier - James Kasey of Infinite Holds. Liaise regarding installation of holds into anchors once rendering is completed.

11.2 SCOPE

The play equipment items and components are to be supplied and installed by the Contractor.

Supply and install play equipment as per equipment schedule below.

11.2.1 Schedule of play equipment

Unless approved equivalent products are allowed, the contractor must supply and install the specific product listed.

ITEM	SPECIFICATIONS	COLOURS	SUPPLIER/CONTACT
Plastic Toddler Slide (800h)	Allplay 800 high plastic slide or approved equivalent. Attached to dragon wall. <u>Refer notes below regarding shop drawings.</u>	Red Plastic	Allplay 56 Brunel Road Seaford Vic 3198 T. 9786 8133 F. 9786 8601 E. sales@allplay.com.au
Embankment Slide	Hags Double Steel Slide with platform. Product # 131123	Standard	Brian Morrison Omnitech P: + 613 9872 6322 F: + 613 9872 6355 M: 0410 498 675 E: brian@omnitech.com.au
30m Flying Fox - Aerial Runway	Lappset Aerial Runway Product # 160050-1. Install at 30m length.	Standard	Harri Makela Lappset Australia Pty Ltd PO Box 524 Templestowe Vic 3106 T: 0409 474 573 E: hmakela@optusnet.com.au
Swing frame	Adventure Playground Industries - Ultraplay Senior double swing frame with 2 adult seats.	Dulux Powdercoat Citi-Pearl #88471	Luke Kelsey Adventure Playground Industries PO Box 550, Somerton VIC 3062 T: (03) 9357 9449 or 1800 039

ITEM	SPECIFICATIONS	COLOURS	SUPPLIER/CONTACT
	<p>Powdercoated steel finish.</p> <p>This swing frame to be used as it matches existing frame.</p>		<p>449</p> <p>F: (03) 9357 8571</p> <p>E: luke.k@adplay.net.au</p>
Basket swing	<p>Kompan Arc swing with Birds Nest</p> <p>Product # SPMA40095</p>	Standard	<p>Mark Chatman</p> <p>Kompan Playscape Pty Ltd</p> <p>PO Box 683</p> <p>SUNBURY VIC 3429</p> <p>Email: mark.kompan@bigpond.com</p> <p>Ph/Fax: (03) 9744 5581</p> <p>Mobile: 0488 070 082</p>
Relocated chain bridge	<p>Relocate existing chain bridge onto new timber posts.</p> <p>Shorten bridge as required to fit new location.</p> <p>Repaint handrails with Resene Enamacryl Metallic. Waterborne Enamel</p> <p>Ensure installation meets AS4685</p>	<p>Resene 'Silver Aluminium'.</p> <p>Timber redried ACQ treated pine or tanalised ecowood deck and redgum sleeper retain/steps</p>	<p>Resene Australia</p> <p>PO Box 785, Ashmore City, Queensland 4214</p> <p>T. 1800 738 383</p> <p>E. advice@resene.com.au</p>
Existing swing frame	<p>Repaint & repair existing swing.</p> <p>Ensure swing meets AS4685</p> <p>Paint with Resene Enamacryl Metallic Waterborne Enamel</p>	Resene 'Silver Aluminium'.	
Concrete Eye Tunnel	<p>Install concrete tunnel into wall.</p> <p>Paint interior of tunnel.</p>	<p>1 coat White Knight "Ultra Pave - White" & 3 coats White Knight - "Glow Safe".</p>	<p>White Knight</p> <p>T. 131 686</p> <p>F. 1800 676 746</p> <p>http://www.whiteknightpaints.com</p>

ITEM	SPECIFICATIONS	COLOURS	SUPPLIER/CONTACT
	Provide vent into top of tunnel. Use Richardson Pacific Perforated Mesh No.1 Fancy. Refer detailed spec. below.		com.au
Anchors for rock climbing wall	Hilti Anchors: HKD-S 3/8" x40 Item # 00246713		Hilti Australia. phone:131 292 http://www.hilti.com.au/holau/modules/prcat/prca_product.jsp?OID=9222&CATE_OID=-9320

11.3 SLIDES

Ensure that slides have a fall zone in the runout area extending 2.0m beyond the end of the slide and 1.5m to each side of the outer edges of the slide.

11.3.1 Plastic slide

Contractor to confirm dimensions of slide with supplier prior to constructing wall to ensure that slide fits into nostril opening.

The creation of potential finger, toggle, head or neck entrapments adjacent to tops of slides is a common occurrence. The gaps between the slide edges and adjacent support posts, handrails or other surroundings shall be non-existent or between 25 to 45mm. That is, too large to be a potential finger trap and too small to be a potential neck entrapment.

Contractor to allow room for slide to be fixed onto 'sill' of opening inc. allowance for 25-45mm gap to each side of slide.

CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING PROPOSED FIXING METHOD FOR SLIDE.

DRAWINGS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASING SLIDE.

Supply drawings to Zoe Metherell at Mary Jeavons Landscape Architects. Ph 93877337. Allow min. 3 three business days for the drawings to be approved.

11.4 CHAINS

With regards to chains these shall have a maximum opening of 8.6mm in any one direction, except where connections are made (such as S-hooks) where the maximum opening shall be greater than 12mm or less than 8.6mm. The relocated chain bridge needs to be checked. Only re-use the chain if it meets this specification.

11.5 VENT INTO TOP OF 'EYE' TUNNEL AND DECK

11.5.1 Materials

Materials: Richardson Pacific perforated mesh. Pattern: "No. 1 Fancy"

Thickness 1.2mm

11.5.2 Vent into top of tunnel

Opening in tunnel: Create 200x250mm opening into top of tunnel. Ensure edge of opening is rounded and smooth with no protrusions into the tunnel space.

Fixing: Using a piece of mesh which is larger than the opening.

Curve/roll mesh to match radius of tunnel. Bolt and glue to outside of tunnel.

Finishing: Undercoat with metal primer and then Paint mesh to match interior of tunnel.

11.5.3 Vent into deck

Opening: Frame a 500mmx140mm opening into top of deck.

Construct 500mmx140mm frame using T-section steel, 25x25x3mm.
Weld perforated mesh into frame.

Undercoat with "Dulux quit rust metal primer" and 3 topcoats of Dulux Weathershieldx10 Gloss Acrylic.

Dulux Colour: Warm Port P03.B9

Screw fix frame to timber deck.

11.6 AERIAL RUNWAY / FLYING FOX

The minimum required fall zone to the side of a runway should be 2m, which is provided. The fall zone at the ends of the runways should extend at least 2m from the maximum

swinging position of the grip. The maximum swinging position being 45 degrees from the stop point.

The grip cable length cannot be finalised until installation but taking a worst-case scenario of 2.5m, the fall zone extent required from the stop position is 3.8m, which is provided.

The bottom of the seats should have a minimum ground clearance of 400mm. The

cable clearance from the top of the seat to the cable should be at least 2.1m. The FHOFF from the top of the seat should be less than 1.5m. These will all need to be checked after installation.

11.7 GENERAL EXECUTION

11.7.1 Installation

The Contractor is responsible for checking the dimensions of connection points for components on site, prior to fabrication. Should any discrepancy arise between the situation on site, and the Drawings, the contractor shall resolve this with the superintendent prior to fabrication/purchasing of components.

The Contractor is responsible for ensuring that installation and connections between items comply with the Playground Safety Standards specified in this document to the approval of the landscape architect. No claim shall be entered into due to a failure to accept this responsibility and the Contractor shall rectify any problems which arise at his/her own expense to the satisfaction of the landscape architect.

11.7.2 Heights

Heights of general landscape elements such as rocks, logs and low decks to be less than 500mm or an impact absorbing fall zone must be provided that conforms with Australian Standards.

11.7.3 Certification

The manufacturers supplying the formal play equipment should provide written certification that their equipment and the installation conforms to all Australian Standards.

11.7.4 Warranties

Contractor to provide written warranties for all play equipment installed.

SECTION 12. PAINTING AND APPLIED COATINGS

12.1 GENERAL

12.1.1 Scope

Supply all labour and materials and equipment necessary to complete painting and coatings. Includes:

- Substrate preparation
- Powder coating to steel components
- Painting
- Organ Oil - timber coating

12.2 MATERIALS

12.2.1 Non-Toxic Coatings and Pressure Treatment

No coating, paint or preservative used in the construction or maintenance of the playground shall have any toxic or skin- irritant effect on the user. Paints included in the First Schedule of the National Health and Medical Research Council's Uniform Paint Standard shall not be used.

Wood finishes shall not contain creosote, pentachlorophenol or chlorinated hydrocarbon pesticides.

Note: No CCA Timber to be used in this project.

For further information please also see note in Timber section.

12.2.2 Performance

Manufacture and grade of coatings

Paints for each paint system shall be from one manufacturer. Do not combine the products of different manufacturers. Where an anti-graffiti coating is specified, ensure that it is compatible with any other paint or coating specified.

Materials used in each area and finish shall be from the same production batch.

Where the manufacturer makes more than one grade of any coating product, use the highest grade. Do not use 'trade' grade products unless approved in writing.

Paint products shall be products approved by the Australian Paint Approvals Scheme (APAS) and shall be identified accordingly.

Ultra violet exposure

Paints and finishes shall be durable and resistant to deterioration under ultraviolet light.

12.2.3 Paints

Select and provide the appropriate exterior system and approved exterior paint products based on suitability for the application for the substrate and for the required finish, in accordance with the manufacturer's instructions. Manufacturers and premium grade products include

- Dulux premium grade exterior paints
- White Knight - Ultra Pave & Glowsafe
- Resene Enamacryl Metallic Waterborne Enamel

12.2.4 Powder coatings

Shall be by professional powder coaters and shall conform with all quality and performance requirements and current industry Standards.

12.3 EXECUTION

12.3.1 General

Paints shall be applied strictly in accordance with the manufacturer's instructions, including sealing and priming

Do not commence painting or coatings until dirty or dusty work is completed and avoid painting on windy days. Carry out clear finishes before adjacent colour painting. Cover and protect adjacent work.

12.3.2 Preparation

Prepare substrates according to manufacturer's instructions.

Remove fittings and refix after painting.

Repair damage to factory priming or galvanised metal, including cuts and welding, as required and before commencing site painting.

12.3.3 Application

Commence painting as soon as possible after substrate preparation. Each coat shall be uniform in thickness, gloss and colour without runs, sags, gaps or other imperfections.

For clear finishes ensure even application without brush marks and marked variations in thickness of application.

Clean spots and marks progressively. Touch up and repair work with paint from the same manufacturing batch.

12.4 APPLIED COLOURS AND FINISHES

12.4.1 Schedule of applied colours and finishes

MATERIAL	ITEM	DECORATIVE FINISH/ COLOUR	DURABILITY/ PROTECTION
Steel items	Handrails to staircase	Dulux Powdercoat: Citi-Pearl #88471	Galvanised prior to powder coating
Steel items	Senior Swing Frame	Dulux powder coating: Citi-Pearl #88471	Galvanised prior to powder coating
Steel items	Vent in timber seat	Undercoat "Dulux quit rust metal primer" 3 topcoats of Dulux Weathershieldx10 Gloss Acrylic. Dulux Colour: Warm Port P03.B9	Perforated mild steel and frame
Steel items	Vent in top of tunnel	Undercoat: White Knight Ultra Pave 3 Top coats: White Knight Glowsafe	Perforated mild steel
Steel items	Existing Swing Frame	Resene Enamacryl Metallic Waterborne Enamel Colour:Silver Aluminium	Existing
Steel items	Handrails to chain bridge (relocated existing)	Resene Enamacryl Metallic Waterborne Enamel Colour:Silver Aluminium	Existing
Concrete Item	Eye Tunnel	Undercoat: White Knight	

MATERIAL	ITEM	DECORATIVE FINISH/ COLOUR	DURABILITY/ PROTECTION
		Ultra Pave 3 Top coats: White Knight Glowsafe	
Timberwork	All decks and custom built timber elements	Organoil, Decking and Exterior Oil - Standard Colour'. 2 coats	Redried, ACQ treated pine or tanalised ecowood.

SECTION 13. SOFT LANDSCAPING

13.1 GENERAL

13.1.1 SCOPE

- Soil and garden bed preparation
- Planting trees, shrubs and groundcovers
- Mulching

13.1.2 Cross References

Refer also to Site Preparation, Demolition and Earthworks section.

13.1.3 Approvals

Contractor to provide a sample of the mulch for approval prior to ordering.

The Contractor must seek approval from the Superintendent at the following stages, prior to proceeding to the next stage of work:

- Cultivated subgrade
- If imported topsoil is required then a provide a sample and certification that the topsoil meets Australian Standards
- Setout of all advanced trees and shrubs prior to planting
- Sample setout of smaller plants

13.2 SOIL AND GARDEN BED PREPARATION

13.2.1 Scope

Garden beds are to be constructed in the locations as shown on the Drawings.

13.2.2 Garden Bed Construction

Prior to excavation, ascertain location of existing underground services. Notify the Superintendent should any problems with services arise.

Form sub grades to the levels required by the drawings and surrounding surfaces.

In proposed garden bed areas the Contractor is to form and smooth the subgrade where necessary to the levels nominated. Garden beds are to be cultivated to a depth of 150 mm, with subgrade adequately loosened. No compacted areas of subgrade are to remain, or depressions where water can pool under the topsoil. Damage to tree roots is to be avoided. Surfaces must drain positively to drains.

13.2.3 Topsoil

Place topsoil to depth indicated.

Topsoil shall be stockpiled site topsoil or if not available in significant quantities supplement with approved imported locally screened topsoil. Topsoil to meet current Australian Standard for landscaping soils.

13.2.4 Composted mulch - Soil Conditioner

The Contractor shall supply, spread and cultivate super fine-composted mulch/soil conditioner to all designated garden bed areas. The super fine-composted mulch/soil conditioner shall be firstly spread to a depth of 100mm then lightly cultivated into the existing garden beds.

The mulch shall be well composted and treated to ensure there is no growth inhibitor. It shall be free from clods of soil, rock, vermin, toxins and any other extraneous matter.

13.2.5 Fertiliser

Apply a slow release fertiliser to all plants at time of planting (Osmocote® or similar approved for type of plant). Fertilise Australian Native Plants with an approved Native fertiliser low in phosphorus.

13.3 MULCH

The Contractor shall supply and spread a 75mm layer of approved Euca-Mulch to all garden bed areas after cultivation.

The mulch shall be free from clods of soil, rock, vermin, toxins and any other extraneous matter.

The mulch shall be raked smooth to achieve an even and neat appearance and kept clear of stems of plants to avoid contracting collar rot.

13.4 PLANTING SCHEDULE

PLANTING SCHEDULE					
ID	Botanical Name	Common Name	Pot Size	Qty	Comments
Trees					
Af	<i>Angophora floribunda</i>	Rough Barked Apple	75 L	3	Min. 3.0m ht.
Ai	<i>Acacia implexa</i>	Lightwood	45 L	5	Min. 2.3m ht.
Av	<i>Allocasuarina verticillata</i>	Drooping Sheoak	45 L	1	Min. 2.3m ht.
Bi	<i>Banksia integrifolia</i>	Coast Banksia	40 L	2	Min. 2.0m ht.
Cf	<i>Corymbia ficifolia</i>	Red Flowering Gum	45 L	1	Min. 2.3m ht.
Shrubs					
Ac	<i>Atriplex cinerea</i>	Coast Saltbush	Tubestock	8	
Ap	<i>Allocasuarina paradoxa</i>	Green She-oak	140 mm	5	
Asu	<i>Acacia suaveolens</i>	Sweet Wattle	140 mm	1	
Ca	<i>Correa alba</i>	White Correa	140 mm	16	
En	<i>Einadia nutans</i>	Nodding Saltbush	Tubestock	13	
Go	<i>Goodenia ovata</i>	Hop Goodenia	140 mm	8	
L'ST'	<i>Leptospermum 'Shore Tuff'</i>	Coastal Tea Tree cultivar	140 mm	9	
Lb	<i>Leucophyta brownii</i>	Cushion Bush	140 mm	26	
Rc	<i>Rhagodia candolleana</i>	Seaberry Saltbush	Tubestock	14	
Ground Covers					
Mp	<i>Myoporum parvifolium</i>	Creeping Boobialla	140 mm	5	
Ti	<i>Tetragonia implexicoma</i>	Bower Spinach	Tubestock	10	
Et	<i>Enchylaena tomentosa</i>	Ruby Saltbush	Tubestock	3	
Grasses					
Fno	<i>Ficinia nodosa</i>	Knobby Club Rush	140 mm	5	
Tt	<i>Themeda triandra</i>	Kangaroo Grass	Tubestock	10	
Xm	<i>Xanthorrhoea minor</i>	Small Grass Tree	140 mm	5	
Climbers					
Hv	<i>Hardenbergia violacea</i>	Purple Coral Pea	140 mm	2	
Aquatic Plants					
Total				152	

13.5 PLANTING TREES, SHRUBS AND GROUNDCOVERS

13.5.1 Scope

- Advanced trees: supply, plant, stake, fertilise & water
- Shrubs - supply, plant, fertilise & water
- Tussocks / Groundcovers: supply, plant, fertilise & water as indicated on the plans.

13.5.2 Materials

All plant materials shall be subject to the approval of the Superintendent.

Plants shall be true to species, vigorous and healthy and the best of their respective kinds. They shall have a well developed root system and be free from disease pests, scars and dead wood. Pot bound stock shall be rejected.

Advanced trees shall have a vigorous central leader, an open branching framework, and well formed open 'v' limb crotches.

All trees, shrubs, grasses and ground covers shall be from containers as specified on the drawings. All pot sizes, calliper diameters and heights are minimum.

Tree set out to be approved by Superintendent prior to planting.

Care shall be taken to ensure that the roots are not exposed to the drying influences of sun, wind or frost.

13.5.3 Planting Procedure

Thoroughly soak plants on day before planting. Set out plant materials as per the Drawings for inspection by the Superintendent.

Dig hole sufficient for root ball. Notify the Superintendent if the soil conditions may be detrimental to growth of plants.

Dig in slow release fertiliser at base of hole.

The removal from the container and the positioning of the plant is to be done with minimum disturbance to the roots. Set plants plumb in the centre of planting hole, avoid damaging or teasing roots. All stock shall be set plumb and placed to ensure a normal relationship between the crown and soil surfaces. Backfill hole with excavated material.

Form a bowl around plant by moulding topsoil above finished grade. Ensure there is no soil or mulch built up around the trunk which will rot the trunk around plants and advanced trees.

13.5.4 Staking

3 No. Stakes are to be provided to each advanced tree. All other plants are to be staked only if plants require support.

Stakes to be 50x50x50mm durable hardwood, straight and free of knots or warping; pointed at one end.

Black polypropylene webbing 50mm wide to be used for tree ties.

13.5.5 Watering

All stock shall be thoroughly watered immediately after planting. The stock shall be kept moist at all times during the contract period.

13.5.6 Mulching

Garden beds shall be mulched as shown on the drawings and as specified in the section on Mulch.

13.5.7 Plant Replacement

Any stock which becomes damaged, dies or is found to be unhealthy during the contract period shall be replaced. All stock replacements shall be planted as specified, at the contractor's expense, and shall be kept moist at all times and free from disease.

Immediately all planting is completed the contractor's liability for plant replacement is limited to once only, in the case of loss by malicious damage or vandalism. The Contractor shall report any such malicious damage to the Superintendent who shall inspect the damage prior to replacement. Immediately after the replanting, notify Superintendent who will record any such replacement.

This clause does not limit the Contractor's responsibility for replacement if the loss is brought about by any other cause.

SECTION 14. GRASS

14.1 GENERAL

14.1.1 Scope

Supply and install grass sprigs to all areas of grass affected by the works. Where the play equipment was removed, completely remove all mulch and backfill with topsoil before installing grass.

14.1.2 Cross-references

Refer also to Earthworks & Drainage, Soft Landscaping & Maintenance sections of this specification.

14.2 SPRIGGING

14.2.1 Scope

Sprigging is required to all areas affected by the works. Including

- areas used for stockpiling, site sheds etc
- area where the old play equipment was located and all areas disturbed by excavation
- damaged areas of existing lawn are to be top dressed and sprigged.

Any uncertainty to the scope should be referred to the Superintendent.

14.2.2 Lawn

All grass sprigs shall be kikuyu from a reputable supplier.

Sprigging shall be conducted strictly according to the supplier's specification.

14.2.3 Supplier

HG Turf

P.O. Box 723 Moonee Ponds VIC 3039

T: +61 (0) 3 9370 6078

F: +61 (0) 3 9370 7438

E: info@hgturf.com.au

14.2.4 Preparation

The designated area shall be prepared as follows unless otherwise instructed by the supplier and approved by the Superintendent.

Grading and trimming

The Contractor shall remove weeds, mulch and plant material from existing site. The excavation shall be finished off with an even surface, and thoroughly consolidated until a uniform subgrade has been obtained throughout the entire area. Depressions, which develop during rolling, shall be filled with sound material and consolidated. All extraneous material shall be removed from the existing sub-soil. The existing soil shall be graded and trimmed to the extent necessary to conform to the finished levels, grades and cross sections indicated.

Soil must be graded to ensure positive drainage

Topsoil

Approved on-site topsoil shall be used. On-site topsoil must be free from rubble, clods of subsoil, stone and other extraneous material and its use subject to the approval of the Superintendent.

100mm minimum of topsoil (clay loam) shall be laid and raked smoothly and evenly without depressions prior to seeding. Spread evenly over the prepared surface a prepared mix of approved lawn starter fertilizer and trace elements in accordance with the manufacturer's recommendations. Apply and rake the fertilizer into the bed to a depth of 50mm at the time of sprigging.

14.2.5 Sprigging

Apply grass sprigs at 15%

Top dress sprigs with sand.

Roll immediately after sprigging with a roller weighing not more than 90kg/m of width.

14.2.6 Protection

Any grassed areas disturbed during construction outside the Extent of Works, shall be reinstated at no extra cost the Principal.

Protect the newly grassed areas against trespass and traffic until the grass is well established. Allow for erection of temporary fencing consisting of stakes securely fixed in ground with domed plastic caps and two strands of galvanised wire strained to tension where necessary. Temporary fencing. The extent of fencing should be the minimum necessary to protect the grass or as directed by the Superintendent.

Temporary fencing should consist of flags on strings rather than parawebbing.

No steel stakes/star pickets are to be used within the project. The contractor is to ensure the site is safe for use by the public.

14.2.7 Watering

Watering regime will be determined by water restrictions in force at the time of seeding.

Water sufficiently after sprigging to keep moist until established. During hot weather water min. twice a day. In milder weather water once a day.

Use recycled water to irrigate grass where required to achieve healthy grass cover. Water throughout maintenance period to keep grass in a healthy growing condition.

SECTION 15. MAINTENANCE

15.1 GENERAL

15.1.1 Scope

The maintenance period has been specified as 13 Weeks.

Maintain the soft landscape works for 13 weeks from Practical Completion (as defined in the contract) and present site at all times until then in a clean and tidy condition.

15.1.2 Records

Maintain a log book of all maintenance work and which materials have been used on the site. Make the records available upon request.

15.1.3 Grass/Lawn Maintenance

Adequate Watering must be provided to ensure successful establishment in the critical first weeks and to ensure a vigorous healthy sward of grass is achieved.

A management plan should be prepared & followed by the Contractor (as per Seasonal Requirements) for watering, post-fertilising weed eradication and mowing.

15.2 EXECUTION

Maintenance tasks include the following:

- Regular site visits to monitor and rectify defects in planting, turf and litter.
- Remove litter on a regular basis
- Regular mowing and trimming of edges to maintain a height of between 40 and 75mm.
- Removal of weeds
- Maintenance of mulch surfaces, including topping up of playground mulch to design levels
- Seasonal spraying to maintain plants pest free, according to manufacturer's instructions

- Watering to maintain healthy growth
- Fertilising of grass.
- Replacement of dead areas of grass/lawn.
- Pruning of trees and shrubs to maintain even dense foliage and removal of damaged material.
- Replacement at no cost of damaged, failed or stolen plants.
- Cleaning up of grounds and care of protective fences.
- Other works as necessary to maintain the works in the best possible condition.
- Urgent maintenance works as directed by the Superintendent.
- Provision of instruction as to the proper operation and maintenance of all aspects of the project, to ongoing maintenance contractor to ensure seamless hand over with no detriment of the quality of the landscape.

SECTION 16. APPENDICES – DRAWINGS

To be received as separate attachments:

Appendix 1 Overall layout plan 1300-01

Appendix 2 Existing conditions and demolition plan 1300-02

Appendix 3 Layout plan Play Space 1300-03

Appendix 4 Setout plan 1300-04

Appendix 5 Detail key plan – 05

Appendix 6 Planting plan 1300-06

Appendix 7 Rock Climbing Wall 1300-07

Appendix 8 Sections through rock climbing wall 1300-08

Appendix 9 Sections 1300-09

Appendix 10 Details 1300-10

Appendix 11 Details 1300-11

Appendix 12 Details 1300-12

Appendix 13 Details 1300-13

Appendix 14 Engineering Drawing S1

Appendix 15 Engineering Drawing S2

Appendix 16 Engineering Drawing S3