



Operations & Maintenance Manual  
Landscape

For

John Palmer Public School  
85 The Ponds Blvd, The Ponds 2769  
The Ponds NSW 2769

Prepared for  
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## 1.0 DOCUMENT REVISION

Paper copies are only valid on the day that they are issued. Contact the document control manager if you are in any doubt about the accuracy of the document.

### Revision History

Document	Revision No.	Revision Date	Revision Description	Author
Landscape O&M	1	25.10.23	Issue	David Black

### Approvals

This document requires the following approvals

Name	Company	Signature	Date
David Black	Stone Will Landscaping Pty Ltd		25.10.23

### Distribution

This document has been distributed to

Name	Title	Date
Peter Gorla	Cadet	25.10.23

## **2.0 CONSULTANTS**

All landscape works were completed in accordance with the landscape plans, written specification, revisions, addendums and/or site instructions issued by the project manager. Plans and specifications were prepared by;

**Landscape Architect**  
**PTW Architects**  
**Level 11, 88 Phillip Street**  
**Sydney NSW 2000 Australia**  
**T: +61 2 9232 5877**

**Irrigation Design**  
**Stone Will Landscaping**  
6/19 Boden Road, Seven Hills NSW, 2174  
[accounts@stonewill.com.au](mailto:accounts@stonewill.com.au)  
Phone 02 9862 8448

### **3.0 SCOPE OF WORK**

The scope of works consisted of both hard and soft landscape finishes, including but not limited to the following items;

- Paving and Edging
- Timber edge 100mm x 38mm
- Stone Set Permeable Paving
- Rubber Softfall
- Rubber Softfall on a Roadbase base.
- Sandstone Seating Area
- 1000mm x 500mm x 500mm Grade A Logs
- Planter Boxes – White GRC 120x60x60cm
  
- Softscapes
  - Mass Planting and mulching to garden beds.
  
- Irrigation
  - Automatic Irrigation System to Garden Beds and Turf Areas

#### **4.0 SUB-CONTRACTOR DETAILS**

Rubber Softfall

Gloo Loop

PO Box 512 Cherrybrook NSW 2126

Spencer Wallace – 0450 525 118

## 5.0 SUPPLIER DETAILS

### **Landscape Materials Supplier: Resources NSW**

16 Victoria St  
Gerringong, NSW, 2534  
Phone: 0428 570 448  
[admin@resourcesnsw.com.au](mailto:admin@resourcesnsw.com.au)

### **Plant Supplier: Andreasens Nursery**

1543 Elizabeth Dr, Kemps Creek NSW 2178  
Kemps Creek  
Phone: 02 9826 1911  
[matthewb@andreasengreen.com.au](mailto:matthewb@andreasengreen.com.au)

### **Plant Supplier: Alpine Nursery**

1099 Old Northern Road, Dural NSW 2158  
Dural NSW 2158  
Phone: 02 9651 0900  
[sharonovertan@alpinenurseries.com.au](mailto:sharonovertan@alpinenurseries.com.au)

### **Irrigation Parts Supplier: Reece**

10 Grex Ave,  
Minchinbury NSW 2770  
Phone: 1 300 885 364  
[Jamie.wood@reece.com.au](mailto:Jamie.wood@reece.com.au)

### **Paver Supplier: Stone Set**

111 Stanhope Rd,  
Theresa Park NSW 2570  
Phone: 02 4651 0999  
[melissa@downesnursery.com.au](mailto:melissa@downesnursery.com.au)

### **Timber Supplier: All Stakes**

19-21 Charles Street, St Marys  
St Marys NSW 2760  
Phone: 1300 130 123  
[sales@allstakesupply.com.au](mailto:sales@allstakesupply.com.au)

### **Sandstone Supplier: Gosford Quarries**

111 Stanhope Rd,  
Theresa Park NSW 2570  
Phone: 02 4651 0999  
[melissa@downesnursery.com.au](mailto:melissa@downesnursery.com.au)

**Materials Supplier: Australian Native Landscapes**

317 Mona Vale Road,  
Terry Hills 2084  
Phone: 02 9450 1444  
[jack@anlscape.com.au](mailto:jack@anlscape.com.au)

**Bike Racks Supplier: Cora Bike Rack**

Level 8, 805/220 Collins Street,  
Melbourne Victoria, 3000  
Phone: 1800 249 878  
[quotes@cora.com.au](mailto:quotes@cora.com.au)

**Turf Supplier: A View Turf**

Ebenezer Wharf Road, Wilberforce 2756  
Wilberforce NSW 2756  
Phone: 1800 351 275  
[turfinfo@aviewturf.com.au](mailto:turfinfo@aviewturf.com.au)

**Sandstone Supplier: Kellyville Landscape Supplies**

735 Windsor Road, Box Hill  
Box Hill NSW 2765  
Phone: 02 9627 5775  
[sales@kls-sandstone.com.au](mailto:sales@kls-sandstone.com.au)

**Plant Supplier: Kenthurst Nursery**

151A Kenthurst Road, Kenthurst 2156  
Kenthurst NSW 2156  
Phone: 02 9654 1410  
[sean@kenthurstnursery.com.au](mailto:sean@kenthurstnursery.com.au)

**Pot Supplier: Pots Wholesale Direct**

Phone: 1300 139 173  
[sales@potswholesaledirect.com.au](mailto:sales@potswholesaledirect.com.au)

**Materials Supplier: Nepean Landscape Supplies**

22 Coombes Dr, Penrith 2750  
Penrith NSW 2750  
Phone: 1300 997 187  
[mark@nepeanlbs.com.au](mailto:mark@nepeanlbs.com.au)



## **6.0 LANDSCAPE STRUCTURAL MAINTENANCE PROCEDURES**

Nil Installed

## 7.0 LANDSCAPE MAINTENANCE PLAN

### WARRANTY AND MAINTENANCE

**Stone Will Pty Ltd** will maintain the works as per plan for a period of 52 weeks from practical completion of Stage 1. All **Stone Will Pty Ltd** staff will be in uniform and all vehicles will be marked with our logo and name.

### FREQUENCY OF VISITS

The visits will be on a fortnightly basis. This will be boosted in Summer as required. Initial maintenance will be more intensive to ensure successful growth of both turf and plants.

### MOWING

Lawns will be mowed as required to maintain a dense swathe of grass. The turf should not be cut too short as it provides additional stress on the turf. The turf will be cut using high quality equipment that is maintained in excellent condition.

### WATERING

All areas will be watered as required to maintain healthy growth of turf and plants. If an irrigation system is installed **Stone Will Pty Ltd** will monitor the quantity of water being delivered and adjust the system as required.

### FERTILISING OF TURF AND GARDEN

**Stone Will Pty Ltd** will fertilise on an as required basis. **Stone Will Pty Ltd** has a program of fertilising and generally this will be prior to the growing season using a slow release fertiliser on both garden and lawn areas.

### PRUNING

Pruning will be completed as required and generally completed to improve plant shape, create a denser hedging of plants, and train a plant to grow a certain way or increase flower quantity or quality.

### HERBICIDE AND PESTICIDE USE

**Stone Will Pty Ltd** limits the use of pesticides and herbicides as much as practical. The most commonly used chemical is Glyphosate a non systemic herbicide that kills on contact with the plant leaf; it is a non residual herbicide.

Any pesticides used will be used in a safe and effective manner to minimise any overspray or drift of spray. **Stone Will Pty Ltd** will only use Pesticide spraying when it is necessary to combat a specific pest or disease.

### GUYING AND STAKING

Plants are healthier and are generally a better shape if they are not staked. Movement of the trunk at ground level strengthens it and makes it thicken.

Stakes can cause damage in windy conditions through trunk or branch damage. Stakes also force growth upwards at the expense of trunk strength.

Stakes will be used where plants require support only, and will be for the minimum amount of time required.

## **TOPDRESSING**

Topdressing will be completed once per year if needed and will be 10mm topdressing only. The top dress material will be washed river sand or a 90:10 sand /soil mix. The predominately sand topdressing materials allow faster regrowth and are an ideal medium for the healthy growth of turf.

NOTE: **Stone Will Pty Ltd** also offers a professional ongoing landscape management / maintenance service and would be pleased to discuss the specific maintenance requirements of this project.

## 8.0 LANDSCAPE IRRIGATION SYSTEM

### OVERVIEW

#### Irrigation System

##### Scope of works:

Supply & installation of automatic irrigation system including: - All nominated gardens, mass planted areas & Planters

##### Garden planter irrigation:

Will consist of techline drip-tube, spaced at 350mm-450mm. All pipe pressure compensated.

##### Turf irrigation:

N/A

##### Laterals:

Laterals to the gardens shall be 25mm Ldpe pipe.

##### Main Pipework:

The main feeding the irrigation system shall be 32mm HDPE pipe through the main garden areas

##### Valves:

All automatic control valves for the irrigation system shall be 25mm Rainbird solenoid valves and shall be situated throughout the area in green lid valve boxes to which all valve boxes will be locked down. All manual control valves shall be Poly ball valves.

All garden valves shall be fitted with a 25mm rain bird pressure reducer.

##### Controller:

1 x Rainbird ESP-MES controller unit.

#### Valve Boxes

Large rectangular valve boxes with lockable boxes.

#### Access Pipes and Drillings

All core holes by others. Stonewill Landscaping Irrigation will not be responsible for any water proofing after pipe has been installed through core holes.

Water points and GPO's to be provided by others.

As built drawings and manuals to be provided on completion of Irrigation works

### OPERATING INSTRUCTIONS

The system has been adjusted and will continue to be adjusted throughout the maintenance period by **Stone Will Pty Ltd** to suit site and weather conditions.

After this period, it is advisable to use an experienced horticulturist to continue the monitoring of the system to ensure adequate precipitation to plants and turf areas.

The landscape will continually require varying degrees of precipitation and must be monitored to ensure the healthy and sustained growth of plants.

### MAINTENANCE OF SYSTEM

It is a fact that the irrigation system will need repairs as valves, heads and pipes do wear and break. Vandalism can also be an occasional problem.

It is advisable that every 6 months the system is run and checked to ensure all valves open and close correctly, all sprinklers are working and closing and that there is no damage to

any parts or components that would be causing the system to run incorrectly or waste water. It is required by law that the backflow prevention device is tested on a regular basis.

#### **EMERGENCY SHUT OFF**

Gate valve is located at various positions over the site. Refer to As-built for valve locations.

#### **WARRANTIES**

The irrigation system is covered by a 12month parts and labour warranty on the system installed by **Stone Will Pty Ltd Solutions** will replace any part of the system that fails in this period. (The warranty will not cover any work or damage caused by unauthorized persons, nor any damage caused by lightning strikes or power surges).

The WM controller and parts are covered by a 2-year warranty. Valves are covered by a 12month warranty.

## **Design Specification**

### **Irrigation System**

#### **Scope of works:**

Supply & installation of automatic irrigation system including: - All nominated gardens, mass planted areas, Planters & Turf areas

#### **Garden planter irrigation:**

Will consist of Toro Dripeze drip-tube, spaced at 350mm-450mm. All pipe pressure compensated.

#### **Laterals:**

Laterals to the gardens shall be 25mm Mdpe pipe.

#### **Main Pipework:**

The main feeding the irrigation system shall be 40mm Mdpe pipe.

#### **Valves:**

All automatic control valves for the irrigation system shall be 25mm Hunter PGM solenoid valves and shall be situated throughout the area in heavy duty valve boxes. All manual control valves shall be Poly ball valves.

All garden valves shall be fitted with a 25mm Disc filter & pressure reducer.

#### **Controller:**

1 x WM Smartline Controller.

#### **Valve Boxes**

Large rectangular valve boxes with lockable boxes.

#### **Backflow Device**

Water board approved.

This is to be installed by the Builder/Plumber

#### **Access Pipes and Drillings**

All core holes by others. Stone Will, will not be responsible for any water proofing after pipe as been installed through core holes.

Water points and GPO's to be provided by others.

As built drawings and manuals to be provided on completion of Irrigation works

#### **Warranty:**

The irrigation system is covered by a 12-month warranty against faulty materials & workmanship.

## **Operation Procedures**

The operation procedures are to be read in conjunction with the irrigation controller operation manual.

The irrigation system consists of drip irrigation for the garden areas. All irrigation zones are operated from the central controllers on a cyclical program.

### **Operating Specifications**

- Transformer input: 120/230 VAC
- Maximum AC current draw: 120 VAC, 2A/230 VAC, 1 A
- Transformer output: 24 VAC, 4 A
- Station outputs: 0.56 A
- 2 P/MV outputs (24 VAC): 0.325 A each
- Simultaneous program operation: Up to 6 automatic programs
- Sensor inputs: 4 Clik, 1 Solar Sync, and 1 Flow sensor
- Approvals: Wall Mounts IP44, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

### **Rain override**

The irrigation controller shall be fitted with a rain sensor. The rain sensor shall be set for 10mm of rain & shall suspend the operation of the irrigation controller upon registering 10mm of rain.

Dependent of the weather conditions following rain, the irrigation controller operation can be suspended up to 4 days.

### **Manual Valve operation:**

Each irrigation solenoid valve shall be fitted with:

- An isolation ball valve to suspend the valve operation
- Manual bleed screw to allow for manual operation of the valve on location for watering in or spot watering purposes.

### **System shutdown.**

In the event of system failure or mainline damage each irrigation supply shall be fitted with a manual isolation valve.

## **Maintenance Procedures**

The operation procedures are to be read in conjunction with the irrigation component specifications;

### **Quarterly**

- Adjust irrigation program to suit seasonal requirements
- Run each irrigation valve through the controller & check system for breakage/ vandalism.

### **Annually**

- Open & check field filter screens for debris
- Open drain valves to dripline & flush for 5 minutes Replace backup battery in irrigation controllers Clean internal of solenoid valves
- Clean internal filter of popup sprinklers

### **Periodic Maintenance**

- Valves may stick open or closed due to a build up of silt or debris within the valve, maintenance procedure includes;
- Isolate system valve via ball valve
- Open bonnet of valve
- Wipe diaphragm & check for ruptures
- Clean valve orifices
- Remove solenoid & clean
- Flush opened valve to remove debris within valve
- Re assemble valve



## Trouble shooting

Fault	Cause	Action
Valve will not open program	Lost controller program	Replace controller battery & replace
	Broken wiring to valves	Re-repair or replace wiring
	Solenoid coil jammed with debris	Clean or replace solenoid
	Valve ports clogged with debris	Clean solenoid valve
	Flow control is screwed down	Open flow control
	Manual isolation valve is closed	Open isolation valve
Valve will not close	Solenoid coil latched open, reset	Run valve manually & turn off to
	Valve diaphragm damaged	Replace parts as required
	Solenoid coil jammed with debris	Clean or replace solenoid
Controller will not Operate	Power loss to controller Rain sensor activated & run controller	Check power supply to controller Release rain sensor bonnet
No water Flow	Power failure to pump	Check pump power supply
	No flow activated	Reset pump panel

## **9.0 CERTIFICATES & WARRANTIES**

To be supplied on completion of project.

## 10.0 AS-BUILT DRAWINGS