C3.2. SCOPE OF WORK

UPGRADE LEVEL 1 RIETVLEI GARDEN

Rand Water EMS requires a contractor to develop level 1 garden (towards IT) as per design to be provided by Rand Water.

The project includes construction of new flower bed of about 52 m².

Contractor must replace damaged black colour stone tiles over 18 m² area as well as white stone tiles over 9 m².
The contractor to supply and install below listed items. All material to be utilized need to be approved prior delivery and installation.

The aim of this tender is to source supplier for:

Construction and waterproofing of flower bed walls.
Supply and planting of plants.
Supply and install stone tilling
Supply planter boxes
Design detailed vertical wall and implement.
Supply of benches, tables & chairs
Supply and install water feature
Supply and deliver topsoil.
Supply and deliver compost
Supply and deliver mulch
Supply and planting plants for vertical wall
Irrigation installation

Rand Water reserve the rights to reduce some of activities to be implemented.

2.TECHNICAL SPECIFICATION

The garden should be designed as per the specification and design provided by Rand Water. The design of each garden must complement each other.

2.1 Construction of flower bed (planter)wall.

Flower bed to be constructed is equivalent to 52 m² and 1m height. Flower bed (planter) to be constructed using “Travertine” fbs or equal and approved face brick with 10mm square recessed & polished horizontal and vertical joints to match existing to be approved.
The strength of building mixture (sand and cement mortar) should be between 25 and 30 MPa
Installation of waterproofing methods for example waterproofing membrane and fascia boards (fibre cement boards) adjacent to the retaining walls will be required to prevent any damp to walls. Care must be taken when planting not to damage the waterproof lining within the planter. All fascia boards are to be minimum 10 mm thick and 300mm wide and they should cover the entire 52 m² flowerbed wall to ensure that no water leakage or damp caused by water seeping.

2.2 Supply and replace damage tiles

The contractor must replace damaged black stone tiles of approximately 18m² area as well as white stone tiles approximately 9 m² with tiles to match existing and the stone tiles need to be approved prior installation. Installation needs to be done according to civil SABS standards.

2.3 Filling up of flower bed with growing media need to be up to not less than 10cm from the top of the flower bed.

Mix 12 cubic meters of potting soil with 6 cubic meters of compost, however not limited to but sufficient to cover the entire area.
Mixing should be done outside the flower bed at the designated mixing area. After applying growth media inside the flower bed, water thoroughly and left it unplanted for a period of a week to allow compaction.
If the level of growth media drops down, more growth media needs to be added to the required level prior to planting.
Contractor must ensure the work environment(space) is kept barricaded for the safety of employees.

2.4 Planting of plants within constructed flower bed.

The following A-grade pre-approved pot plants should be supplied and planted by the appointed service provider as per Rand Water design. Rand Water will supply the design to the appointed contractor.
Taller plants (40 cm plastic pot provided with a hole underneath) should be placed into planting media whilst the smaller plants should be planted direct in the planting media.

2.5 Plants inside the pre-made planter boxes supplied.

Plants within planting boxes should not be removed from their containers however remain inside their containers. All containerized plants must be covered with coir to retain moisture and close the gaps between containers.

Item no:	Plant Description	Pots Size	Plant height	Quantity
	Natural pot plants			
1.	Spathiphyllum sensation (Peace lily)	30cm	30cm high	20
2.	Agloenema silver queen	14-15 cm	30cm high	50
3.	Schefflera arboricola	25-30 cm	30 cm high	
4.	Dracaena fragrans Massangeana	25-30 cm	1.5 m above the pot	10
5.	Dracaena marginata (Multi Stems-Three stems)	25-30 cm	1.5m above the pot	10
6.	Trachelia emetica	35 cm-40cm	1.5 m high	8
7.	Philodendron scandensis	14-15 cm	25-30 cm long	11
8.	Draceana tricolor-multi stem	25-30 cm	1 m high above the pot	8
9.	Ficus benjamina variegata	25-30 cm	1 m high above the pot	8
10.	Spathiphylum wallisii	14-15 cm	25-30 cm long	20
11.	Anthurium Saundersii (pink) flamingo	14-15 cm	25-30 cm long	25
12.	Scindupsus aurea -White & green	14-15 cm	25-30 cm long	18
13.	Anthurium saundersii (red)	14-15 cm	25-30 cm long	25
	Vertical wall Artificial plants			
14.	Chlorophyllum comosum variegatum.	14-15 cm	25-30 cm long	100
15.	Boston fern	14-15 cm	25-30 cm long	100
16.	Syngonium podophyllum	14-15 cm	25-30 cm long	100
17.	Philodendron scandensis	14-15 cm	35-40 cm long	50
18	Scindupsus aurea	14-15 cm	35 -40 cm long	100
	Vertical wall living plants			
19.	Chlorophyllum comosum (variegatum)	14-15 cm	25-30 cm long	50
20.	Boston fern	14-15 cm	25-30 cm long	50
21.	Syngonium podophyllum	14-15 cm	25-30 cm long	25
22.	Philodendron scandensis	14-15 cm	35-40 cm long	50
23.	Scindupsus aurea	14-15 cm	35 -40 cm long	50
24	Aglaonema silver queen	14-15 cm	25-30 cm long	50
25	Schefflera orboricola	14-15 cm	25-30 cm long	25
26.	Contingency provision (Once off if needed)			

ALL PLANTS MUST BE PRECONDITIONED FOR LOW LIGHT. PROOF OF PRECONDITIONING MUST BE SUPPLIED PRIOR TO THE SUPPLY OF PLANTS.

It is estimated that the following plant quantities will be required for the project:

3. PLANTS LIST

All planting should be done with sufficient spacing between them. This will be implemented according to the design agreed to as well as the planting details supplied by Rand Water.
Contractor to calculate and supply the number of plants to cover the entire vertical wall.

Over and above requested plants, Contractors are allowed to quote other recommended plants of their choice separately (however low light adapted plants are required).

4. MULCHING

Contractor to supply 3 cubes of bark chips. The entire flower beds are to be mulched with bark chips of approximately 40 to 60 mm in diameter after planting.

Contractor to supply and laying 8 bags of white Pebbles, bag size is 10 kg, and the pebbles size should be medium.
These pebbles need to be placed on top weed guard.

Contractor to supply 50 kg Coir fiber liner sufficient to cover all pot plants inside planters' boxes.

5. GARDEN FURNITURE

For the sample of furniture, contractor must refer to detailed plan provided.

a) Tables
Supply and install 6 round standard tables, indoor stainless steel, charcoal grey in colour, solid top table without pattern. Height of table should be approximately 1 Meter and 0.5. diameter with one leg (Refers to the detailed design plan)

b) Chairs
24 Chairs should be stainless steel, charcoal grey in colour, with back support, roundish seat of about 0.3 diameter and with legs of about 0.6.long.

c) Benches
8 x standard meranti benches with 3 stainless steel supporting legs, (provide support in the middle) without back support and not mounted to the wall i.e., free standing.
The bench should measure about 2.2m (Length) x 0.4m (Width)

d) 1 x U shape mounted wooden with stainless support underneath.
Measurement is 1.7 m (Length), x 2.3 (Length) m, x 0.4 m (Width) with meranti wooden seat, mounted on the wall.

e)1x wooden Table with stainless steel leg.
The measurement of Table should be 1 meter length x 0.8 wide, the leg should be 0.5 m, stainless steel.

f) 2x Rectangular bench mounted on the flower bed wall.
The measurement should be 2.2m (Length) x 0.4m (Width)

g) 1x Rectangular bench mounted on the pillar and flower bed wall
The measurement should be 2.2m (Length) x 0.4m (Width)

h) 1x Rectangular curving bench next to the entrance
Measurement should be 5mx 0.4 width, Meranti wood material with stainless steel support underneath.

I) Planter's box
Supply 8 rectangular fibre planters of about 2.2m Length x 0.5m, grey in colour, to be confirmed prior to delivery.

Details and samples of all products must be discussed and agreed to before purchase and installation.

6. WATER FEATURE

The glass structure should be approximately 3 meters high and 3m wide. The base should be 0.2 high, waterproofed.
The size of pump should be 0.55 kilowatt and be hidden inside the flower bed.

Water feature installation will include the supply of pumps, filters (if required) together with any other associated preparation and execution work. The area where water feature will be place should be well compacted and levelled thoroughly.

The thickness of glass should be approximately 200mm thick, SABS approved. The water feature should be installed perfectly, and it should not leak or impose sharp edges.

Appointed contractor to design Rand Water logo pattern, paste it at the center of vertical glass wall water feature.
The logo should be between 300-400 mm and EMS will provide Rand Water colour coding to the awarded contract.

6.1 Floating steppingstones

Contractor to build 0.3 (height) x 0.2 x0.2 (length x Breadth) mm small pillars under water using clay bricks, on top of pillars contractor to put steppingstone using cement and waterproof thoroughly so that it should not leak, or the contractor must cast rectangular concrete blocks and put steppingstone on top.

The size of steppingstone should be 0.4x0.4mm

Contractor to lay 5 floating steppingstone per side and the total number of steppingstones should be 10.

7. VERTICAL WALL.

Contractor to submit detailed vertical wall design and specification for approval by Rand Water.

The size of vertical wall is 5x4 m and should be mounted onto rails to the wall.

Install Plastic DPC (damp proof course) to the wall to prevent mold.

Install 35 x 905 trim railings. Refers to figure 1.

The contractor should be able to design Rand Water logo pattern on vertical wall.

7.1 Pots and Plant bags/ Grow bags

The black plastic pots size should be bigger than 140mm and they should come at any shape.

Plants to be planted in fabric plant bag to hold moisture.

7.2 Potting mixture

Soil potting mixture should be inside the bag to avoid soil spill in the floor.

7.3 Water tank

Water tank should be made of plastic material and the facial rest cover should be painted in charcoal grey colour

7.4 Lights for vertical wall plants

The contractor to supply and install LED downlights, distance of light from the wall to the plants should be 750mm. The shape of light should be roundish or squire.

Key components of vertical wall

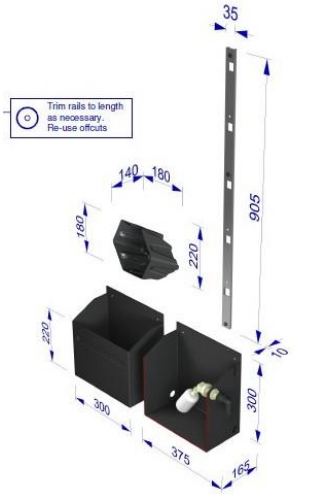


Fig 1.

7.5 Vertical wall - pump

DC40 Pump Specification
Brushless Pump Power Adapter
Model: DC40F-2460 Model: YW240150
Voltage: DC24V Input: 100-240V~50/60Hz 1.0A
Max Head: 6M Output: 24V = 1.5A
Max Flow: 960L/H
Power 28.8W

7.6 Vertical wall -Drip irrigation

LDPE Class 4 Irrigation Pipe
Low Density Polythylene Pipe (LDPE C4) is used for the drip irrigation system, with full flow and nylon insert fittings. When used with internal fittings the pipe should be warmed up before inserting the fitting to assist with swelling the pipe over the fitting.
This pipe is measured internally as opposed to HDPE which is measured to outer diameter.
LDPE C4 is UV resistant and resistant to most chemical fertilizers etc.
LDPE 15C4
Internal Diameter 15 mm
Average wall thickness 1.5 mm
Average Outer Diameter 16.5 mm
Pressure Range PN4 (4 bar pressure)

7.7 Fabric composition for vertical wall

Item	Description	
1.	Fibre Composition	Recycled Polyester black
2.	Treatment	Product Calandared on one side
3.	Application	Various

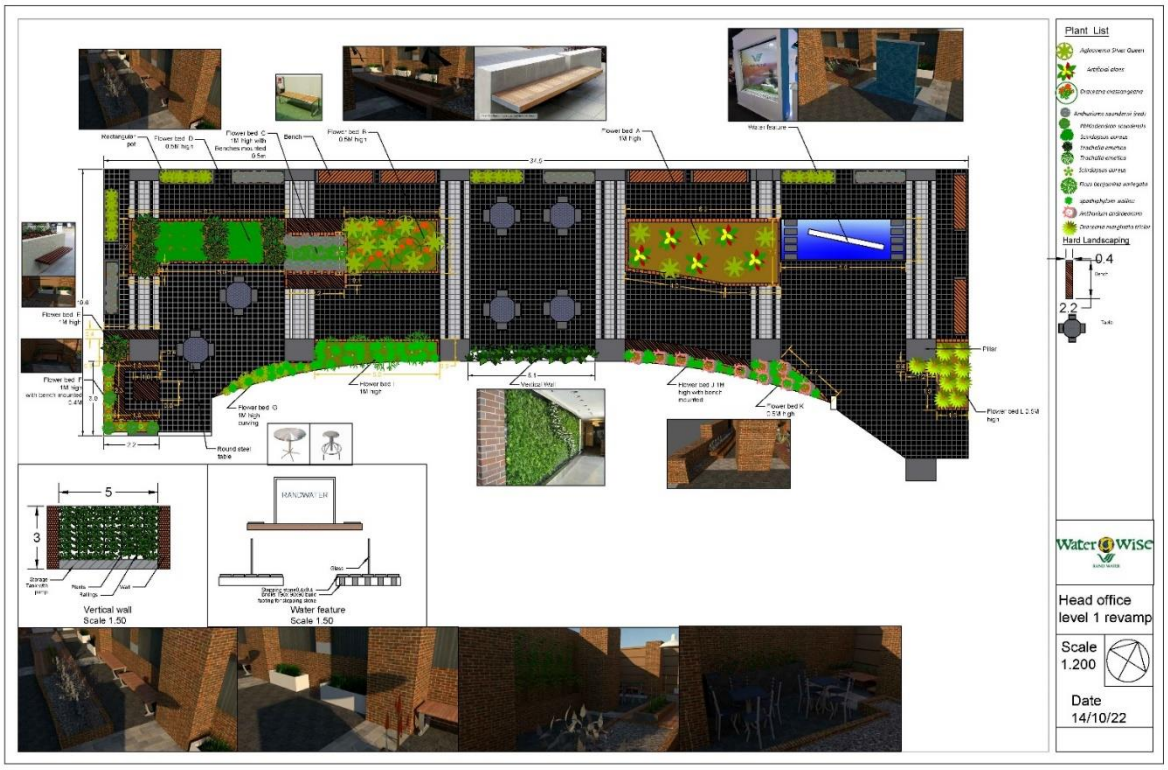
Quality of material

Item	Property	Test method	Unit	Value
1.	Mass per unit area	EN 29073-1	g/m2	108 – 132
2.	Thickness	ISO 5084	mm	1.9 – 2.5
3.	Tensile Strength	ISO 9073-3	N	>125 / 200
4.	MD/CMD			
5.	Elongation at break	ISO 9073-3	%	>60 / 60
6.	Width Tolerance	Tape	mm	1500 ± 3%
7.	Length Tolerance	Trumeter	m	250 ± 3%

7.8 Mini Float Valve

Example

8.DETAILED DESIGN



Detail design

1.1.3.6. Maintenance

Maintenance period of 3 months

The contractor is required to water all planted plants during the three months maintenance period. Any plant die back is to be replaced by the contractor.

1. AWARDING STRATEGY

The maximum number of suppliers to be awarded this RFQ is **01**.