

**SUMMARY BOQ - MKHAMBATHI NATURE RESERVE - COST FOR ELECTRICAL & MECHANICAL  
INSTALLATION**

<b>DESCRIPTION</b>	<b>AMOUNT</b>
Bill N° 1 - CABLES	
BILL N° 2 - DISTRIBUTION BOARDS AND SWITCHGEARS	
Bill N° 3 - LUMINAIRES	
BILL N° 4 - SWITCHES AND SOCKET OUTLETS	
BILL N° 5 - CONDUCTORS AND WIREWAYS	
BILL N° 6 - EARTHING AND LIGHTNING PROTECTION	
BILL N° 7 - MECHANICAL ITEMS	
BILL N° 8 - PROVISIONAL SUMS	
<b>SUB - TOTAL</b>	
PRELIMINARY AND GENERAL	
<b>SUB - TOTAL</b>	
ADD 15% VAT	
<b>TOTAL</b>	

**MKHAMBATHI NATURE RESERVE - COST FOR ELECTRICAL & MECHANICAL INSTALLATION**

Item	Description	Unit	Qty	Rate	Total
	<p><b>BILL N° 1 - CABLES</b></p> <p>NOTE: The Tenderer is advised to refer to the document "SPECIFICATION OF MATERIALS AND METHODS TO BE USED"</p> <p>Rates submitted below shall include for supply, delivery fixing materials and fixing unless otherwise specified</p> <p>This schedule of quantities shall be read in conjunction with the rest of the specification.</p>				
<b>1,1</b>	<p><b>CABLES</b></p> <p>1000/600 volt PVC/SWA/PVC copper cables. Rates to include for the supply, delivery and installation into cable sleeves, trenches and cable trays excluding excavations and backfilling, cable terminations and joints.</p> <p><b>CABLE TERMINATIONS</b></p> <p>For PVC/SWA/PVC shall include supply and fitting of the cable gland, neoprene shroud, making-off the cable, lugs, and fitting the gland to the board gland plate, switchgear and final connection of cable tails into board or terminals.</p> <p>Note : Should cables without ECC be utilized the tenderer will supply the additional external earth wire at no additional cost</p>				
1,1,1	<b>10mm<sup>2</sup> 3c PVC SWA PVC Cable</b>				
1,1,1,1	Supply	m	80		
1,1,1,2	Installation	m	80		
1,1,1,3	Terminate	ea	2		
1,1,2	<b>CABLE MARKER TAPE (320mm Wide)</b>				
1,1,2,1	Supply	m	80		
1,1,2,2	Installation	m	80		
1,1,3	<b>EXCAVATION AND BACKFILLING</b>				
	Excavate, backfill and compact in all materials including disposal of unsuitable/surplus material.				
1,1,3,1	Soft and pickable (all materials)	m	80		
1,1,3,2	Hard material (Provisional)	m	5		
1,1,3,3	Rock (Provisional)	m	5		
1,1,4	<b>75 mm Ø Sleeve</b>				
1,1,4,1	Supply	m	20		
1,1,4,2	Install	m	20		
	<b>PAGE TOTAL CARRIED FORWARD TO THE SUMMARY PAGE</b>				

2,1	<b>BILL N° 2 - DISTRIBUTION BOARDS AND SWITCHGEARS</b> Supply, Install, repair, trace circuits, label to the existing distribution York box to comply with SANS 10142 and 1765				
2,1,1	York Box-Refurbishment of the existing distribution york box, make neat with proper termination	Sum	1		
2,1,2	DB-CS(CURIO SHOP)				
2,1,2,1	Supply	N°	1		
2,1,2,2	Install	N°	1		
2,1,3	45A Double Pole Circuit Breaker				
2,1,3,1	Supply	N°	1		
2,1,3,2	Install	N°	1		
<b>PAGE TOTAL CARRIED FORWARD TO THE SUMMARY PAGE</b>					

	<b>BILL N° 3 - LUMINAIRES</b>				
3,1,1	Type A- MODERN CEILING LIGHT SUSPENDED FITTING 2 X 35W FLOURESCENT T5 TUBES				
3,1,1,1	Supply	N°	8		
3,1,1,2	Install	N°	8		
3,1,2	Type A2 - 1200 LONG, 2 x 18W, LED TUBES, SURFACE MOUNTED, OPEN CHANNEL LIGHT FITTING				
3,1,2,1	Supply	N°	2		
3,1,2,2	Install	N°	2		
3,1,3	Type A3 - LED TRACK LIGHT FITTING				
3,1,3,1	Supply	N°	5		
3,1,3,2	Install	N°	5		
3,1,4	Type U/D-UP AND DOWN FACING OUTDOOR WALL LIGHT STAINLESS STEEL				
3,1,4,1	Supply	N°	10		
3,1,4,2	Install	N°	10		
3,1,5	Type D -1 X 13W CFL, ALLUMINIUM REFLECTOR, FLUSH MOUNTED DOWNLIGHT FITTING				
3,1,5,1	Supply	N°	4		
3,1,5,2	Install	N°	4		
3,1,6	Type P - 3 x 13W METAL PENDANT WITH WHITE GLASS AND ADJUSTABLE CORDS				
3,1,6,1	Supply	N°	3		
3,1,6,2	Install	N°	3		
3,1,7	Type BL -29W LED BOLLARD LUMINAIRE				
3,1,7,1	Supply	N°	6		
3,1,7,2	Install	N°	6		
3,1,8	Type FL -100W LED SOLAR FLOODLIGHT FITTING				
3,1,8,1	Supply	N°	4		
3,1,8,2	Install	N°	4		
	<b>PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>				

<b>BILL N° 4 - SWITCHES AND SOCKET OUTLETS</b>					
4,1,1	16 Amp, 1 lever, 1 way, flush mounted switch complete with cover and galvanised box required				
4,1,	Supply	N°	6		
4,1,1,2	Installation	N°	6		
4,1,4	10A 250V-grade photocell light-control switch.				
4,1,4,1	Supply	N°	2		
4,1,4,2	Install	N°	2		
4,1,5	5A, 3 Pin Unswitched socket outlet fixed to and connected in round conduit box or on trunking. Box or trunking measured elsewhere				
4,1,5,1	Supply	no	15		
4,1,5,2	Install	no	15		
4,1,6	16A Single plug and New RSA + 2XUSB Ports complete with cover and galvanised box				
4,1,6,1	Supply	no	5		
4,1,6,2	Install	no	5		
4,1,6	16A Switched Socket Outlet in wall (double plug) complete with cover and galvanised box				
4,1,6,1	Supply	no	3		
4,1,6,2	Install	no	3		
4,1,9	Floor Mounted Pedastal Plug complete with 1 x Normal Plug, 1 x Dedicated Plug, 1 x Data Point, 1 x Tel Point				
4,1,9,1	Supply	no	1		
4,1,9,2	Install	no	1		
4,10	16A Three pin normal switched socket outlet in power skirting				
4,10,1	Supply	no	3		
4,10,2	Install	no	3		
4,11	16A Three pin dedicated switched socket outlets in power skirting				
4,11,1	Supply	no	3		
4,11,2	Install	no	3		
4,12	16A 2 pin Socket outlet in power skirting .				
4,12,1	Supply	no	3		
4,12,2	Install	no	3		
4,13	Power skirting cover plates with grid socket outlets for RJ45 telephone				
4,13,1	Supply	no	3		
4,13,2	Install	no	3		
4,14	Power skirting cover plates with grid socket outlets for RJ45 data				
4,14,1	Supply	no	3		
4,14,2	Install	no	3		
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<b>BILL Nº 5 - CONDUCTORS AND WIREWAYS</b>					
5,1	<b>CONDUCTORS (COPPER)</b>				
5,1,1	Supply				
5,1,1,1	1,5 mm² PVC insulated	m	200		
5,1,1,2	1,5 mm² copper earth wire	m	100		
5,1,1,3	2,5 mm² PVC insulated	m	100		
5,1,1,4	2,5 mm² copper earth wire	m	50		
5,1,1,5	4 mm² PVC insulated	m	100		
5,1,1,6	4 mm² copper earth wire	m	50		
5,1,1,7	1.6mm² galvanized draw wire, drawn into wireway.	m	600		
5,1,2	Installation				
5,1,2,1	1,5 mm² PVC insulated	m	200		
5,1,2,2	1,5 mm² copper earth wire	m	100		
5,1,2,3	2,5 mm² PVC insulated	m	100		
5,1,2,4	2,5 mm² copper earth wire	m	50		
5,1,2,5	4 mm² PVC insulated	m	100		
5,1,2,6	4 mm² copper earth wire	m	50		
5,1,2,7	1.6mm² galvanized draw wire, drawn into wireway.	m	600		
5,2	<b>CONDUIT</b>				
	PVC conduit including all accessories such as bends elbows and saddles. Making good of chasing by others				
5,2,1	Supply				
5,2,1,1	20 mm Ø PVC conduit	m	600		
5,2,1,2	25 mm Ø PVC conduit	m	300		
5,2,2	Installation				
5,2,2,1	20 mm Ø PVC conduit	m	600		
5,2,2,2	25 mm Ø PVC conduit	m	300		
5,2,3	Jupiter PVC801 Three channel skirting all inclusive (Colour - Grey)				
5,2,3,1	Supply	m	10		
5,2,3,2	Install	m	10		
5,2,4	P9000 Wiring duct (Trunking) manufactured with 5A unswitched and complete with all fixing components				
5,2,4,1	Supply	m	50		
5,2,4,2	Install	m	50		
5,2,5	300x300 Weatherproof box/IP65 Plastic Enclosure				
5,2,5,1	Supply	Nº	2		
5,2,5,2	Install	Nº	2		
5,2,6	Electrical Manhole Supply and Build either pre-cast or full wall manhole with heavy duty cover with the following minimum inside dimensions:-1200mm x 1200mm x 600m deep & 74kg heavy				
5,2,6.1	Supply	Nº	1		
5,2,6.2	Install	Nº	1		
5,2,7	Provision for Pole Holes	Sum	1		
<b>PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>					

	<b>BILL Nº 6 - EARTHING AND LIGHTNING PROTECTION</b>				
6,1	<b>CABLE BONDING</b>				
	<b>BONDING OF WATER MAINS</b>				
6,1,1	Bond the proposed water main to the adjacent down conductor. All water pipes, hand basins, sinks, baths, gutters and rain water pipes shall be bonded.	Sum	1		
6,2	<b>CABLE BONDING</b>				
6,2,2	All external earth wires and cable armouring from the incoming and outgoing cables will be properly crimped into cable lugs and bolted to their respective earth bars.	Sum	1		
6,3	<b>TESTING AND COMMISSIONING</b>				
6,3,1	Test and commission the complete electrical installation including the handing in of the test results (COC) to the Engineer.	Sum	1		
6,7	<b>LIGHTNING PROTECTION</b>				
	<b><u>Earthrods</u></b>				
	Earthrods should ideally be spaced approximately 15m intervals and 1500mm Copper Earthrods/spikes for Equipotential Bonding Links				
6,7,1	Supply	Nº	5		
6,7,1,1	Supply	Nº	5		
6,7,1,2	Install				
	Supply and Install Down Aluminium rod strictly in accordance with the relevant SANS & IEC Specifications				
6,7,2	<b>16mm<sup>2</sup> Aluminium Rods</b>				
6,7,2,1	Supply	m	16		
6,7,2,2	Install	m	16		
6,7,2,3	Terminate	Nº	8		
6,7,3	<b><u>Bare Stranded Copper Earth Wire</u></b>				
	Supply and install Bare Stranded Copper wires in trenches including termination for Equipotential Bonding strictly in accordance with the relevant SANS & IEC Specifications				
	<b>25mm<sup>2</sup> copper cable</b>				
6,7,3,1	Supply	m	75		
6,7,3,2	Install	m	75		
6,7,3,3	Terminate	Nº	8		
6,7,4	<b><u>Ring Earth Trenching</u></b>				
	layers (300mm), including bedding and installation of warning tape above soft hand pickable soil				
6,7,4,1	soil requiring pneumatics tools and aids	m	30		
6,7,4,2		m	5		
6,7,4	<b>TESTING</b>				
	Test the complete installation including the handing in of the test results (Certificate of Lightning Protection) to the Engineer.	Sum	1		
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	<b>BILL N° 7 - MECHANICAL ITEMS</b>				
7,1	<b>HOT WATER</b>				
7,1,1	10 Litre Under counter water heater				
7,1,2	Supply	N°	1		
7,1,3	Install	N°	1		
7,2	<b>FIRE FIGHTING</b>				
7,2,1	4,5kg Carbon Dioxide Fire Extinguishers				
7,2,2	Supply	N°	4		
7,2,3	Install	N°	4		
7,3	Fire Escape Signage comply with SANS	Sum	1		
7,4	<b>TESTING AND COMMISSIONING</b>				
7,4,1	Test and commission the complete Mechanical installation including the handing in of manuals.	Sum	1		
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	<b>BILL N° 8 - PROVISIONAL SUMS</b>				
8,1	<b>INTRUDER ALARM SYSTEM AND CAMERAS</b>				
8,1,1	Allowance for Alarm and Camera System	Sum	1	R 40 000,00	R40 000,00
8,1,2	Profit and Attendance	%	%		
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