

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

DESCRIPTION	AMOUNT
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	
SUB - TOTAL	
PRELIMINARY AND GENERAL	
SUB - TOTAL	
ADD 15% VAT	
SUB - TOTAL	



DWESA NATURE RESERVE - COST FOR ELECTRICAL & MECHANICAL INSTALLATION

Item	Description	Unit	Qty	Rate	Total
	<p>BILL N° 1 - CABLES</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> <p>1,1 CABLES</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>CABLE TERMINATIONS</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	25mm² 3c PVC SWA PVC Cable				
1,1,1,1	Supply	m	800		
1,1,1,2	Installation	m	800		
1,1,1,3	Terminate	ea	2		
1.1.2	10mm² 3c PVC SWA PVC Cable				
1.1.2.1	Supply	m	150		
1.1.2.2	Installation	m	150		
1.1.2.3	Termination	ea	120		
1.1.2	4mm² 3c PVC SWA PVC Cable				
1.1.2.1	Supply	m	100		
1.1.2.2	Installation	m	100		
1.1.2.3	Termination	ea	8		
1,1,3	CABLE MARKER TAPE (320mm Wide)				
1,1,3,1	Supply	m	1050		
1,1,3,2	Installation	m	1050		
1,1,4	EXCAVATION AND BACKFILLING				
	Excavate, backfill and compact in all materials including disposal of unsuitable/surplus material.				
1,1,4,1	Soft and pickable (all materials)	m	930		
1,1,4,2	Hard material (Provisional)	m	100		
1,1,4,3	Rock (Provisional)	m	20		
1,1,5	75 mm Ø Sleeve				
1,1,5,1	Supply	m	930		
1,1,5,2	Install	m	930		
1.1.6	Privision for upgrde, tracing of the existing power cable	Sum	1	R 3 000,00	R3 000,00
	PAGE TOTAL CARRIED FORWARD TO THE SUMMARY PAGE				

2,1	BILL N° 2 - DISTRIBUTION BOARDS AND SWITCHGEARS				
	Supply, Install, repair, trace circuits, label to the existing distribution York box to comply with SANS 10142 and 1765				
2,1,1	DB-A(Chalets & Curio Shop)				
2,1,1,1	Supply	N°	6		
2,1,1,2	Install	N°	6		
2,1,2	DB-E(Education Center)				
2,1,2,1	Supply	N°	1		
2,1,2,2	Installation	N°	1		
2,1,3	Distribution Kiosk 2 & 3				
2,1,3,1	Supply	N°	2		
2,1,3,2	Installation	N°	2		
2,1,4	45A Double Pole Circuit Breaker				
2,1,4,1	Supply	N°	7		
2,1,4,2	Install	N°	7		
2,1,5	60A Double Pole Circuit Breaker				
2,1,5,1	Supply	N°	1		
2,1,5,2	Install	N°	1		
	PAGE TOTAL CARRIED FORWARD TO THE SUMMARY PAGE				

BILL N° 3 - LUMINAIRES					
3,1,1	Type A- LED TRACK LIGHT FITTING WITH TWO SPOT LIGHTS				
3,1,1,1	Supply	N°	16		
3,1,1,2	Install	N°	16		
3,1,2	Type A2- LED TRACK LIGHT FITTING WITH THREE SPOT LIGHTS				
3,1,2,1	Supply	N°	16		
3,1,2,2	Install	N°	16		
3.1.3	Type OP- 4ft, 2x18w LED OPEN CHANEL FLUORESCENT LIGHT FITTING				
3.1.3.1	Supply	N°	10		
3.1.3.2	Install	N°	10		
3,1,4	Type U/D-UP AND DOWN FACING OUTDOOR WALL LIGHT STAINLESS STEEL				
3,1,4,1	Supply	N°	24		
3,1,4,2	Install	N°	24		
3,1,5	Type D -1 X 13W CFL, ALLUMINIUM REFLECTOR, FLUSH MOUNTED DOWNLIGHT FITTING				
3,1,5,1	Supply	N°	20		
3,1,5,2	Install	N°	20		
3,1,6	Type BL -29W LED BOLLARD LUMINAIRE				
3,1,6,1	Supply	N°	12		
3,1,6,2	Install	N°	12		
3,1,7	Type P -50W LED POSTOP LIGHT FITTING				
3,1,7,1	Supply	N°	4		
3,1,7,2	Install	N°	4		
PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE					

BILL N° 4 - SWITCHES AND SOCKET OUTLETS					
4,1,1	16 Amp, 1 lever, 1 way, flush mounted switch complete with cover and galvanised box required (Grabtree black/silver in colour)				
4,1,1,1	Supply	N°	16		
4,1,1,2	Installation	N°	16		
4.2.1	16 Amp, 2 lever, 1 way, flush mounted switch complete with cover and galvanised box required (Grabtree black/silver in colour)				
4.2.1.1	Supply	N°	8		
4.2.1.2	Install	N°	8		
4,3,1	10A 250V-grade photocell light-control switch.				
4,3,1,1	Supply	N°	6		
4,3,1,2	Install	N°	6		
4,4,1	5A, 3 Pin Unswitched socket outlet fixed to and connected in round conduit box or on trunking. Box or trunking measured elsewhere				
4,4,1,1	Supply	N°	75		
4,4,1,2	Install	N°	75		
4,5,1	16A Switched Socket Outlet in wall (Single plug) complete with cover and galvanised box (Grabtree in black/silver in colour)				
4,5,1,1	Supply	N°	10		
4,5,1,2	Install	N°	10		
4,6,1	16A Switched Socket Outlet in wall (double plug) complete with cover and galvanised box (Grabtree in black/silver in colour)				
4,6,1,1	Supply	N°	16		
4,6,1,2	Install	N°	16		
4,7,1	Shaving Plug complete with galvanized box and covers (Grabtree in black/silver in colour)				
4,7,1,1	Supply	N°	4		
4,7,1,2	Install	N°	4		
4,10	Veti Sockect Sat Data 2x16Amps, 2 X Euro(TV SOCKETS)				
4,10,1	Supply	N°	5		
4,10,2	Install	N°	5		
4.11	Interactive Electronic Whiteboard- complete with projector and speaker				
4.11.1	Supply	N°	1		
4.11.2	Install	N°	1		
4.12	18.5" Slanted Touch Screen Digital Kiosk				
4.12.1	Supply	N°	1		
4.12.2	Install	N°	1		
PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE					

BILL Nº 5 - CONDUCTORS AND WIREWAYS					
5,1	CONDUCTORS (COPPER)				
5,1,1	Supply				
5,1,1,1	1,5 mm² PVC insulated	m	2000		
5,1,1,2	1.5 mm² copper earth wire	m	1000		
5,1,1,3	2,5 mm² PVC insulated	m	2000		
5,1,1,4	2.5 mm² copper earth wire	m	1000		
5,1,1,5	4 mm² PVC insulated	m	800		
5,1,1,6	4 mm² copper earth wire	m	400		
5,1,1,7	2,5 mm² Round/flat Twin and earth conductor	m	400		
5,1,1,8	1.6mm² galvanized draw wire, drawn into wireway.	m	7600		
5,1,2	Installation				
5,1,2,1	1,5 mm² PVC insulated	m	2000		
5,1,2,2	1.5 mm² copper earth wire	m	1000		
5,1,2,3	2,5 mm² PVC insulated	m	2000		
5,1,2,4	2.5 mm² copper earth wire	m	1000		
5,1,2,5	4 mm² PVC insulated	m	800		
5,1,2,6	4 mm² copper earth wire	m	400		
5,1,2,7	2,5 mm² Round/flat Twin and earth conductor	m	400		
5,1,2,8	1.6mm² galvanized draw wire, drawn into wireway.	m	7600		
5,2	CONDUIT				
	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	7600		
5,2,1,2	25 mm Ø PVC conduit	m	3800		
5,2,1,3	32 mm Ø Galvanized conduit/bosal	m	200		
5,2,2	Installation				
5,2,2,1	20 mm Ø PVC conduit	m	7600		
5,2,2,2	25 mm Ø PVC conduit	m	3800		
5,2,2,3	32 mm Ø Galvanized conduit/bosal	m	200		
5,2,3	16x16mm PVC Wiring duct (Trunking), complete with covers,end caps and slow bends				
5,2,3,1	Supply	m	200		
5,2,3,2	Install	m	200		
5,2,4	300x300 Weatherproof box/IP65 Plastic Enclosure				
5,2,4,1	Supply	Nº	8		
5,2,4,2	Install	Nº	8		
5,2,5	Postop Poles(7m pole, refer to spec)				
5,2,5.1	Supply	Nº	4		
5,2,5.2	Install	Nº	4		
5,2,6	Eletrical Manholes Supply and Build either pre-cast or full wall manhole with heavy duty cover with the following minimum inside dimesions:-1200mm x1200mm x 600mm deep & 74kg heavy				
5,2,6.1	Supply	Nº	6		
5,2,6.2	Install	Nº	6		
PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE					

	BILL N° 6 - EARTHING AND LIGHTNING PROTECTION				
6,1	CABLE BONDING				
	BONDING OF WATER MAINS				
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	CABLE BONDING				
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	TESTING AND COMMISSIONING				
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	LIGHTNING PROTECTION				
	Earthrods				
6,7,1	Earthrods should ideally be spaced approximately 15m intervals and 1500mm Copper Earthrods/spikes for Equipotential Bonding Links				
6,7,1,1	Supply	N°	16		
6,7,1,2	Install	N°	16		
	Supply and Install Down Aluminium rod strictly in accordance with the relevant SANS & IEC Specifications				
6,7,2	16mm² Aluminium Rods				
6,7,2,1	Supply	m	80		
6,7,2,2	Install	m	80		
6,7,2,3	Terminate	N°	40		
6,7,3	Bare Stranded Copper Earth Wire				
	Supply and install Bare Stranded Copper wires in trenches including termination for Equipotential Bonding strictly in accordance with the relevant SANS & IEC Specifications				
	25mm² copper cable				
6,7,3,1	Supply	m	160		
6,7,3,2	Install	m	160		
6,7,3,3	Terminate	N°	40		
6,7,4	Ring Earth Trenching				
6,7,4,1	layers (300mm), including bedding and installation of warning tape above soft hand pickable soil	m	300		
6,7,4,2	soil requiring pneumatics tools and aids	m	40		
6,7,4	TESTING				
	Test the complete installation including the handing in of the test results (Certificate of Lightning Protection) to the Engineer.	Sum	1		
PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE					

	BILL N° 7 - MECHANICAL ITEMS				
7,1	HOT WATER				
7,1,1	150/200 Litres Vaccum Tube Solar Geyser				
7,1,2	Supply	Nº	5		
7,1,3	Install	Nº	5		
7,2	FIRE FIGHTING				
7,2,1	4,5kg Carbon Dioxide Fire Extinguishers				
7,2,2	Supply	Nº	14		
7,2,3	Install	Nº	14		
7, 3	Fire Escape Signage comply with SANS	Sum	7		
7.4	KITCHEN GAS				
7.4.1	Elba Class or Similar Bult-in 4 Burner Gas Stove Complete with Cookerhood				
7.4.1.1	Supply	Nº	5		
7.4.1.2	Install	Nº	5		
7.4.2	19KG Gas Cyliders with a change-over regulator and refill				
7.4.2.1	Supply	Nº	10		
7.4.2.2	Install	Nº	10		
7,4.3	22mm class 2 copper, 15mm Class 2 Copper pipe				
7.4.3.1	Supply	m	45		
7.4.3.2	Install	m	45		
7.4.4	1 Manual ball Isolation LPG gas valve complete with sleeve pipes				
7.4.4.1	Supply	Nº	5		
7.4.4.2	Install	Nº	5		
7.4.5	Galvanized Lockable Gas Cage to fit 2x19kg LP Gas Cylinders				
7.4.5.1	Supply	Nº	5		
7.4.5.2	Install	Nº	5		
7, 5	Borehole Pump Complete with 2.2kw Single phase Motor to Dealiver 0.88l/sec at 133m Total Head.				
7,5,1	Supply	Nº	1		
7,5,2	Install	Nº	1		
7, 6	Provision to refurbish the existing solar panels for borehole and upgrade if necessary	Sum	1		
7, 7	TESTING AND COMMISSIONING				
7,7,1	Test and commission the complete Mechanical installation including the handing in of manuals.	Sum	1		
	PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE				
	BILL N° 8 - PROVISIONAL SUMS				
8.1	ACCESS CONTROL				
8.1.1	Allowance for Access Control System	Sum	1	R 30 000,00	R30 000,00
8.1.2	Profit and Attendance	%	%		
8.2	INTRUDER ALARM SYSTEM AND CAMERAS				
8.2.1	Allowance for Alarm and Cameras System	Sum	1	R 50 000,00	R50 000,00
8.2.2	Profit and Attence	%	%		
8.3	Provision to Demolish the Existing Electrical & Mechanical installation for Education Center	Sum	1	R 20 000,00	R20 000,00
	PAGE TOTAL CARRIED FORWARD TO SUMMARY PAGE				