

KZN BOTANICAL GARDENS - ELECTRICAL INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	<u>ELECTRICAL BILL OF QUANTITIES</u>				
	New Distribution Board				
	Distribution board complete with all MCBs, switchgear, accessories, sheet metal frames, sub-frames, busbars, terminals, wiring, conduit terminations, labelling, fixtures and fittings as specified, with all equipment fitted and equipped in factory all strictly as per schematic diagram.				
	<i>(Please note that the distribution board's shop drawing should be submitted to the Engineer for approval prior to manufacture).</i>				
	DB-H				
1	Supply	No.	1		
2	Install	No.	1		
	Existing Distribution Board (DB-K)				
	Add the following switchgear to the existing distribution board, DB-K, complete with all the accessories, busbars, terminals, wiring, labelling as specified.				
	60A DP Earth Leakage (CBI QF17A)				
3	Supply	No.	1		
4	Install	No.	1		
	40A TP, 5kA MCB (CBI)				
5	Supply	No.	1		
6	Install	No.	1		
	30A DP, 5kA MCB (CBI)				
7	Supply	No.	1		
8	Install	No.	1		
	Class II Surge Protection Device with indication, seperate individual modules (not combined)				
9	Supply	No.	1		
10.00	Install	No.	1		
	Low voltage cables				
	600/1 000V PVC/PVC/SWA/PVC multi-core copper cable installed in sleeves or trenches (sleeves measured elsewhere)				
	16mm² 4 Core , ECC				
11	Supply	m	40		
12	Install	m	40		
	10mm² 4 Core, ECC				
13	Supply	m	40		
14	Install	m	40		
	6mm² 2 Core, ECC				
15	Supply	m	80		
16	Install	m	80		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Low voltage cable terminations				
	Make off and terminate the LV cable, complete with glands and shrouds including connection of cable to equipment terminals				
	16mm² 4 Core , ECC				
17	Supply	No.	2		
18	Install	No.	2		
	10mm² 4 Core, ECC				
19	Supply	No.	2		
20	Install	No.	2		
	6mm² 2 Core, ECC				
21	Supply	No.	2		
22	Install	No.	2		
	Sleeves				
	Kabelflex high density (or equal and approved) polyethylene (HDPE) sleeve with double wall construction, corrugated outer wall and smooth inner wall finish inclusive of couplers, bends, etc				
	110mm diameter				
23	Supply	m	100		
24	Install	m	100		
	50mm diameter				
25	Supply	m	50		
26	Install	m	50		
	Draw wires				
	Draw wire drawn into sleeves and conduits including approximately 300mm slack in boxes, distribution board, etc.				
	1.6mm² Galvanised steel draw wire				
27	Supply	m	150		
28	Install	m	150		
	Excavations				
	All excavations, back filling and compaction must be done manually using local labour				
	Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification				
29	Pickable Soil	m³	100		
30	For Soft Rock	m³	2		
31	For Hard Rock	m³	1		
32	Bedding under and filling around cables comprising sifted sand	m³	15		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Cable Tape and Markers				
	PVC warning marking tape				
33	Supply	m	100		
34	Install	m	100		
	Concrete route markers				
35	Supply	No.	5		
36	Install	No.	5		
	PVC conduits				
	PVC conduit including bending, short lengths, draw boxes, cutting, bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
37	Supply	m	300		
38	Install	m	300		
	25mm				
39	Supply	m	120		
40	Install	m	120		
	PVC round boxes				
	Surface or flush mounted 60mm deep PVC conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
41	Supply	No.	50		
42	Install	No.	50		
	25mm				
43	Supply	No.	20		
44	Install	No.	20		
	Galvanised boxes				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
45	Supply	No.	6		
46	Install	No.	6		
	100 x 100 x 50mm				
47	Supply	No.	10		
48	Install	No.	10		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	PVC insulated conductors 600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc. 1.5 mm ²				
49	Supply	m	2000		
50	Install	m	2000		
	2.5 mm ²				
51	Supply	m	3000		
52	Install	m	3000		
	Insulated copper earth conductors Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc. 2.5 mm ²				
53	Supply	m	2500		
54	Install	m	2500		
	Socket outlets Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes, drilling, etc 16A, 230V, 3-pin single switched socket outlet, 2-pin slimline switched socket outlet, flush wall mounted				
55	Supply	No.	30		
56	Install	No.	30		
	Isolators Isolator complete with box, cover plate and accessories. 20A DP Single phase isolator, flush mounted				
57	Supply	No.	4		
58	Install	No.	4		
	20A DP Single phase isolator, surface mounted				
59	Supply	No.	2		
60	Install	No.	2		
	20A DP Single phase isolator, surface mounted, weatherproof, IP56				
61	Supply	No.	1		
62	Install	No.	1		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Light switches				
	Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals.				
	16A, 230V, 1 Lever 1 Way				
63	Supply	No.	8		
64	Install	No.	8		
	16A, 230V, 1 Lever 2 Way				
65	Supply	No.	6		
66	Install	No.	6		
	16A, 230V, 2 Lever 1 Way				
67	Supply	No.	4		
68	Install	No.	4		
	Photocell				
	Photocell installed in a suitably sized rectangular bulkhead luminaire housing with clear UV stabilised high impact acrylic lens and labelling as specified				
	16A, 230V, Photocell				
69	Supply	No.	2		
70	Install	No.	2		
	Occupancy Sensors				
	Ceiling/concrete slab mounted occupancy sensors for lighting control				
	10A, 250V, Passive 360° occupancy sensor				
71	Supply	No.	2		
72	Install	No.	2		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Light fittings SABS approved light fittings as per the specification, complete with lamps, machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings. <i>Please note that all ceiling mounted light fittings shall be delivered with 3m of 1,5mm² flexible cable with a 5 amp 3 pin plug top fitted.</i>				
	Type A1				
73	Supply	No.	30		
74	Install	No.	30		
	Type B1				
75	Supply	No.	12		
76	Install	No.	12		
	Type B2				
77	Supply	No.	7		
78	Install	No.	7		
	Type D1				
79	Supply	No.	18		
80	Install	No.	18		
	Type F2				
81	Supply	No.	1		
82	Install	No.	1		
	Type VP				
83	Supply	No.	1		
84	Install	No.	1		
	Type EXIT				
85	Supply	No.	4		
86	Install	No.	4		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
	Ceiling Fans				
	50W Ceiling Sweep Fan with 1200mm blades, as Xpelair NWAN48				
87	Supply	No.	6		
88	Install	No.	6		
	Single 5-speed fan controller suitable to operate a single fan, in flush mounted proprietary outlet box, as Alstom WAC controller				
89	Supply	No.	6		
90	Install	No.	6		
	Hot Water Dispensers				
	2,5L Hydroboil Hot Water Dispenser complete with isolating valve and stainless steel strainer.				
91	Supply	No.	1		
92	Install	No.	1		
	Hand Dryer				
	Stainless Steel Automatic Hand Dryer as 1400W Exellerator with a motor speed of 20,000rpm and air output temperature of 57 degrees Celsius, or equal and approved				
93	Supply	No.	1		
94	Install	No.	1		
CARRIED FORWARD					

Item	Description	Unit	Quantity	Rate	Amount
BROUGHT FORWARD					
95	Power Supply Restoration Provide the sum of R50 000.00 (Fifty Thousand Rands) for the restoration of the Power Supply, where necessary.	Sum	1		R 50 000.00
96	Earthing and Lightning Protection Allowance for Earthing and Lightning Protection system to be done by a specialist as may be required.	Sum	1		R 80 000.00
97	Telephone and Data Network Allowance for Telephone and Data Network system to be done by a specialist as may be required.	Sum	1		R 50 000.00
98	Intruder Alarm Allowance for Intruder Alarm Installations to be done by a specialist as may be required.	Sum	1		R 30 000.00
99	Access Control Allowance for Access Control Installations to be done by a specialist as may be required.	Sum	1		R 40 000.00
100	Testing and commissioning Testing and commissioning of the works covered within this bill.	Item	1		
101	Labelling Engraved labels on each switched socket outlet and light switch face plate, glued and screwed.	Item	1		
102	Cable marking with Gravoplast at either end below termination shroud	Item	1		
103	Documentation Provision of the As-built drawings for the works covered within this bill showing all cable routes, conduit routes, etc	Item	1		
104	Provision of the Operation and Maintenance manuals for the works covered within this bill including conducting User's training	Item	1		
105	Provision of the Certificates of Compliance upon completion for the works covered within this bill.	Item	1		
106	Guarantee 12 month equipment and installation guarantee on the works covered within this bill. The guarantee period commences on the day of successful handing over of the building to the Client.	Item	1		
TOTAL CARRIED FORWARD TO SUMMARY PAGE					