

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

KIRSTENBOSCH NATIONAL BOTANICAL GARDENS: GARDEN OFFICE STANDBY POWER

SCHEDULE OF QUANTITIES

General Conditions of Contract for Works of Civil Engineering Construction (GCC 2015: 3rd Edition)

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
SANS 1200 A	1.00	<u>PRELIMINARY AND GENERAL CHARGES</u>				
	1.01	Preliminary and General Charges Scheduled fixed preliminary and general charges to cover all charges during the contract related to risks, head-office cost, site overheads, supervision, scaffolding, financing costs, general expenses and quality control.	-	-	sum	
	1.02	Occupational Health and Safety Compliance with the Occupational Health and Safety Act and Regulations	-	-	sum	
	1.03	Guarantees Provision for 12 month written guarantee on the complete installation and all related installed components	No	1		
		<u>GENERATOR: 160kVA</u>				
	2.00	<u>CIVIL WORKS</u>				
	2.01.00	Generator Plinth				
	2.01.1	Excavate 100mm deep 2.5m x 5.0m area in pickable soil, level and compact (final dimensions to be confirmed with generator size).	m ³	1.25		
	2.01.2	Excavate 400mm deep 2.5m x 5.0m area in hard rock, level and compact (final dimensions to be confirmed with generator size).	m ³	5		
	2.01.3	Import G5 material for 2 layers of 150mm x 2.5m x 5m	m ³	3.75		
	2.01.4	Import C4 (2.5%) material for a layer of 200mm x 2.5m x 5m	m ³	2.5		
	2.01.5	Cast 25MPa Concrete (400mm x 2.5m x 5.0m) with chamfer all sides (25mm x 25mm) and cable entries (110mm PVC sleeves) and with 60kg steel per 1m ³ concrete.	m ³	5		
PS						
		Carried forward				

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
		Brought forward				
	2.02.00	Excavations for Sleeves, Cables and Markers				
	2.02.01	Excavate 600mm wide and 800mm deep in hard rock. Install sleeves and selected backfill and compact. Compaction will be done in layers of 100mm, and provision must be made for supply and installation of cable warning tape to be laid 200mm above the highest sleeve.	m ³	2.4		
	2.02.02	Supply and install cable markers: Concrete cable markers fixed flush to the NGL with 25MPa concrete. The marker will be a galvanized steel plate fixed with casted bolts and engraved indicating direction by means of arrows and the words "LV CABLE"	no	1		
	2.03.00	Sleeves				
		Supply and install the following PVC Sleeves including short lengths and jointing, laid in trench (trenching and backfilling measured elsewhere). PVC fittings with "safe lock" seal ring joints.				
	2.03.01	110mm Diameter PVC sleeve	m	20		
	2.03.02	110mm Diameter Flexible PVC sleeve	m	3		
	2.04	Palisade Fence				
		Industrial Fully Galvanised Steel Palisade Fence - 1.8m high - with pedestrian access gate, and posts founded in concrete	m	20		
	3.00	<u>STANDBY GENERATOR & CHANGE-OVER</u>				
		<u>Notes:</u> 1) All panels will be manufactured from 2mm 3CR12 stainless steel. 2) Normal power will be coloured (power coated) orange and emergency panels, signal red. 3) The fault level are 30kA. 4) The fault level, guarantee period, emergency number while under guarantee, fed from and size of cables as well as all statutory labelling will be installed on front of the panels with engraved Masonite (black on white).				
	3.01	Standby Generator				
		Supply and install an 160kVA , 400V, 3 Phase Standby generator with a output voltage of 400V at 50Hz. The generator will be supplied with a built-in double bund fuel tank installed below machine housing with an adequate capacity of 500L (integrated fuel tank). The unit will be installed in a lockable weather- and sound proof canopy with a maximum noise of 80 dB @15m. The generator main load breaker will be 4-Pole 300A and situated in the canopy. The change over panel with the interconnecting cables/bus bars will be installed as part of the generator installation and house the following breakers (make provision for a 15kA fault level) and contactors and breakers including 350A N/C and 350A N/O Change-over Contactors	-	-	sum	
		Carried forward				

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
		Brought forward				
	3.02	<u>CABLES</u> Supply and install the following stranded bare copper conductor as earth cables with terminations (inclusive of 8 terminations):				
	3.02.01	70mm ² (2 in parallel)	m	24		
	3.02.02	Supply and install the following 4-core PVC/PVC/SWA/PVC600/1000V manufactured to SANS 1507-3 with terminations (inclusive of 8 terminations): 70mm ² 4-Core (2 in parallel)	m	24		
	3.03	<u>EARTHING</u>				
	3.03.01	Supply and install the following earth mat at the generator with the following specifications: The earth mat will be installed 1m below the NGL (include excavations in hard rock in this price). The earth mat will be 1.2m x 1.2m and constructed with 70mm ² stranded bare copper conductor with all joints cad-welded. The mat will be in blocks of 400mm x 400mm (grid). Two separate 70mm ² stranded copper earth cables will be connected (cad-welded) to the mat with a separation of at least 800mm and brought to the surface through a PVC sleeve to enter the generator plinth from below. No sections of the earth mat will therefore protrude to be seen from the outside. The tails will be connected to the steel frame of the generator and to all the earth continuity conductors. The fuel tank will also be connected to the earth bar and all connections will be underground of at least 1 meter. Two x 50kg bentonite bags will be worked in around the soil directly covering the mat.	-	-	sum	
	4.00	<u>DISTRIBUTION KIOSK</u>				
	4.01	Supply and install new breakers inside distribution kiosk with the following: 300A 4-Pole Breaker	no	1		
	4.02	Supply and Install new 2-door kiosk on pre-cast concrete plinth including excavations, move of existing breakers, and re-connect of existing cables to different buildings	no	1		
	4.04	Supply and Install Ammeters and Voltmeters: Ammeters with CT's for 160kVA full load with selector switch (R, W, B Phases)	no	3		
	4.05	Voltmeter with selector switch (R-N, W-N, B-N, R-W, W-B, B-R) for each bus bar	no	1		
		Carried forward				

PAYMENT REFERS TO	ITEM NO	DESCRIPTION	UNIT	QUAN- TITY	RATE	AMOUNT
		Brought forward				
PS 23	5.00	<u>CABLES AND BUS BARS</u>				
	5.01	Supply and install cable:				
	5.01.01	70mm² flexible un-armoured cable including 4 terminations	m	6		
	5.01.02	50mm² 4-core Cable	m	10		
	5.01.03	50mm² BCC	m	10		
	5.01.04	Terminations: 50mm² 4-core Cable	m	4		
	5.01.05	Terminations: 50mm² BCC	m	4		
		<u>MAINTENANCE: 24 MONTHS</u>				
	6.00	<u>DIESEL FUEL</u>				
	6.01	Supply diesel fuel 50ppm to test generator	litre	100		
PS 21	6.02	Supply diesel fuel 50ppm to fill tank	litre	500		
	7.00	<u>GENERATOR SERVICE (250 HOURS)</u>				
	7.01	160kVA Generator - Perform checks, cleaning, tests, and periodical maintenance as required and stipulated by the manufacturer including all consumables, material, filters, gaskets, oil, transport and labour (all inclusive).	no	4		
PS 22	8.00	<u>BREAKDOWN CALL-OUT</u>				
	8.01	Emergency Breakdown (12 Hours) response time	No	18		
	8.02	Allow the sum of R 34,000.00 for breakdown parts/components not covered by the initial 12-month warranty or not included as part of service item 8.01 above	-	PC	sum	34,000.00
	8.03	Charge required by Contractor on item 8.02 above	%	34,000	%	
PS 22	9.00	<u>PAYMENT REDUCTIONS</u>				
	9.01	Payment reductions shall be applied per hour (or part thereof) that a generator is not working - calculated from the moment a breakdown has been logged <i>and</i> the contractor notified, and measured until the generator-power supply to the building is restored. Downtime per hour or part thereof (exceeding 36 hours)	hour	-	- R 500.00	Rate only
SUBTOTAL						
VALUE ADDED TAX (VAT) @ 15%						
TOTAL CARRIED TO BID FORM (TOTAL BID PRICE)						