

DBSA Campus
Generator Installation

BILL PREAMBLES & BILL OF QUANTITIES GENERAL NOTES

- 1 The Bills of Quantities form part of and must be read in conjunction with the Specification, which document contains the full description of the work to be done and material and equipment to be used and unless otherwise described in the Bills of Quantities, reference should be made to the Specification for the full meaning of descriptions of work to be done and materials and equipment to be used in this service.
- 2 The quantities given in the Bill for cables, cable markers, earth wire laid with cables, overhead conductors, overhead earth wires and excavations cannot be regarded as exact and are subject to measurement on site after completion of the service and adjustments will be made according to the unit rates given in the bill.
- In the event of discrepancies between the drawings, specifications and Bill of Quantities, the Engineer shall decide whether the work as executed shall be remeasured on site or whether re-measurement shall be effected from the working drawings only.
- NOTE:**
Checking of Cable Lengths
Notwithstanding the fact that the lengths of cables as given in the Bill of Quantities have been measured from scaled drawings, the contractor shall check such lengths on site before ordering the Any allowance for off-cuts shall be made in the unit rates. The final measurements shall be based on the nett route length of the cables cable as he / she will not be paid for excess cable after the completion of the service and overhead lines concerned.
- Checking of quantities for other materials**
Notwithstanding the fact that the quantities for light fittings, switches, socket outlets and isolators as given in the Bill of Quantities have been measured from site inspections, the contractor shall check such lengths/quantities on site before ordering as he / she will not be paid for excess quantities after the completion of the service. Any ambiguous or dubious wording or quantities must be cleared with the responsible Engineer before work is started. Wrong interpretation of the specification and / or drawings and Bill of Quantities, resulting in alterations and/or additional costs, is solely the responsible of the contractor.
- 3 Where alternative prices for the switchgear (where applicable) of different manufacture are quoted the lowest alternative price for switchgear as per the specification must be quoted against the relevant item in the Bill of Quantities. The remaining alternative prices must be furnished separately
- 4 The unit prices quoted in the Bill of Quantities must include all installation materials as are required for the complete installation in accordance with the specification.
- 5 All equipment, components and material shall be new, unused and best quality and shall comply with the relevant current specifications of the SABS, SANS and as stated in this document, wherever possible, be of South African manufacture.
- 6 No alteration, erasure or addition is to be made in the text of the Bill of Quantities. Should any alteration, erasure or addition be made, it will not be recognised but the original wording of the Bill of Quantities will be adhered to.
- 7 The Engineer will check the completed Bill of Quantities and reserves the right to adjust any individual price and to rectify any discrepancy whilst the total tender price as quoted remains unaltered.
- 8 Electrical materials associated with the building, for example conduit accessories and wiring accessories, will not be re-measurable and the tenderer must therefore allow for the supply of all necessary accessories of materials for the successful execution and completion of the installation.
- 9 The unit rate for each item in the Bill of Quantities shall include for all materials, labour, profit, transport, etc., everything necessary for the execution and complete installation of the work in accordance with the description of the works.
- 10 The Bills of Quantities shall not be used for ordering purposes. The contractor shall check the lengths of cables, overhead conductors, materials, light fitting quantities, switches, socket outlets and isolators on site before ordering any of these
Any allowance for off-cuts of cables shall be made in the unit rates.
- 11 The rates shall exclude Value-Added Tax (VAT) and the total carried over to the final summary.
- The contractor is required to label all distribution boards and panels, supply and install all danger warning signs, label all switches, socket outlets and isolators etc. and all costs shall be deemed to have been provided for and included in the unit rates and sum amounts tendered for the items scheduled in the Bill of Quantities and separate additional payment will not be made.
- 13 **Black ink shall be used for pricing the document, any other prices marked in other colours or pencil shall not be considered for the total price of the bill.**

Contractor's Name:	
Electrical Contractor's Registration Number at the Electrical Contracting Board of South Africa:	
Name of Registered Person / Firm at ECB:	

NB: Only contractors whose ECB Registration is for Three Phase installations will be considered.

CONTRACTOR TO SUBMIT ACCREDITATION PAPERS OF THE ELECTRICAL CONTRACTOR WITHIN FOURTEEN DAYS OF BEING APPOINTED

DBSA CAMPUS
GENERATOR INSTALLATION

ITEM	DESCRIPTION	UNIT	EST QTY	MATERIAL	LABOUR	TOTAL
	The supply, installation, testing, commissioning and a 52 week defects liability period in accordance with this bill of material, Local Supply Authority's by-laws & regulations, National Building Regulations, Regulations of Telkom, SANS 10142-1: 2003 (Code of Practice), Occupational Health and Safety Act, JBCC, Local Fire regulations and drawings.					
1	PRELIMINARY AND GENERAL					
1.1	<u>FIXED CHARGE ITEMS</u>					
1.1.1	SITE ESTABLISHMENT A: Allow for site establishment, storage of plant, materials and equipment including protection thereof.	Sum	1			
1.1.2	SITE ESTABLISHMENT B: Removal of all material, fixtures and reinstating area as it was before site establishment	Sum	1			
1.1.3	COMMISSIONING AND TESTING Supply all test equipment and labour for testing and commissioning of the final installation. Including the Factory Acceptance Test (FAT) to include Client Representative and Engineer	Sum	1			
1.1.4	GUARANTEES Allow for a guarantee period of 12 months against defect in equipment, material and workmanship, but wear and tear and normal against defect in equipment, material and maintenance excluded. MAINTENANCE	Sum	1			
1.1.5	Allow Maintance of Generators for a period of 60 months	Sum	1			
1.1.6	SASRIA Insurance to the value of R 10 000 000-00	Sum	1			
1.1.7	Public liability / 3rd party to the value of R 10 000 000-00.	Sum	1			
1.1.8	Sets of JBCC 2000 contract	each	3			
1.1.9	Allowance for Compliance with Construction Regulations, as detailed in Occupational Health & Safety Act (OHS), Act 85 of 1993, Submission of a (OHS) plan and all applicable documentation, to the client's satisfaction	each	1			
1.1.10	Allow for obtaining all necessary permits and giving of notices and co-operation with other Trades	Sum	1			
	AS BUILT DRAWINGS					
1.1.11	The marking - up of "As Built" drawings and submitting to the engineer at the end of the installation.	Sum	1			
1.2	<u>TIME RELATED ITEMS</u>					
1.2.1	STORAGE					

DBSA CAMPUS
GENERATOR INSTALLATION

1.2.2	Provide for storage of Plant, Equipment and Material on site including protection and insurance thereof	Mnth	12		
	SUPERVISION				
	Allow for qualified site supervision during the construction period				
	Project Manager - Registered as Pr CMP with SACPCMP or equivalent	Mnth	12		
	Electrical Engineer - Registered as Pr. Eng / Pr Tech Eng with ECSA	Mnth	12		
	Site Agent - Registered as Costruction Msnsgr with SACPCMP	Mnth	12		
	Qualified Artisan with a trade test certificate	Mnth	12		
	Safety Officer - Registered with SACPCMP	Mnth	12		
	TRANSPORT				
	Allow for Transportation and Rigging of Generators	Sum	2		
	Allow for transport cost during the construction period	Mnth	12		
1.2.4	OTHER TIME RELATED ITEMS				
	Specify and cost all other time related items not listed elsewhere as well as the period for which these items will be applicable Bond Costs	Sum			
	-	Sum	1		
	-	Sum	1		
	-	Sum	1		
	-	Sum	1		
	SUB-TOTAL TO BE CARRIED OVER TO SUMMARY PAGE				R -

DBSA CAMPUS
GENERATOR INSTALLATION

ITEM	DESCRIPTION	UNIT	EST QTY	MATERIAL	LABOUR	TOTAL
2	GENERATOR INSTALLATION					
2.1	Generator Installation					
2.1.1	Generator Set – 1250kVA (Prime Rated) with a set mounted circuit breaker complete with all accessories required to make the generator functional.	each	2			
2.1.2	Custom Weatherproof ISO HC Container: - Rated at 65dBA at 7m.	each	2			
2.1.3	2000A Automatic Mains Failure Panel - Panel including Changeover: - DSE7420 Controller - 2000A 3P ABB Motorised ACB's - Remote free standing indoor Panel	each	2			
2.1.4	4000A ACB's Bus Coupler	each	1			
2.1.5	Supply, deliver and install stainless steel 10000L diesel tank with automatic refuelling system, valves, solenoids, gauge, low and over full alarm system. The fuelling system shall consist of electrical pump set. The system shall be linked to the generator monitoring system. The day tank shall include new piping from the bulk diesel tank. Measurement to be taken on site by supplier.	each	1			
2.1.6	PC Interface and Software (Monitoring & Control)	Sum	1			
2.1.7	Control cables between generator/controller/change over panel	Sum	1			
2.1.8	Concrete foundation/Slab (including Bundt Wall) including soil and concrete cube tests for a 1250 kVA Generator (Canopy type). The bunt wall size should allow for 110% of the diesel tank including drain valve.	each	2			
2.1.9	2.0m high security Clear vu or simillar fencing with lockable Gate around the Generators, 15mx15m	each	1			
	SUB-TOTAL TO BE CARRIED OVER TO SUMMARY PAGE					R -

DBSA CAMPUS
GENERATOR INSTALLATION

ITEM	DESCRIPTION	UNIT	EST QTY	MATERIAL	LABOUR	TOTAL
3	CABLING INSTALLATION					
3.1	Cables: Rates to include for supply, delivery and installation, but excluding trenching, terminations, joints and cable supports for PVC/SWA 600/1000V copper cables laid in trenches, installed in sleeves, fixed on surface and laid on trays:					
3.1.1						
a	300mm² x 4-core PVC-SWA cable.	m	2870			
3.1.2	Cable Terminations: For PVC-SWA cables including armour glands, shrouds, lugs and connections:					
a	300mm² x 4-core copper.	each	30			
3.1.3	Cable joint including joining kid, labour and accessories					
a	300mm² x 4-core PVC-SWA cable.	each	40			
3.2	Earthing:					
3.2.1	Bare copper earth conductors installed with cables and drawn into conduits with PVC conductors as specified in the Specification, including terminations:					
a	150mm².	m	2870			
3.3	Excavation of cable including bedding, covering, backfilling and compaction					
3.3.1	Pickable Soil	m³	50			
3.3.2	Soft Rock	m³	25			
3.3.3	Hard Rock	m³	10			
3.4	Reconfiguration of the existing Generators at the Vulindlela Building: This includes - Re- Routing the 650kVA generator from the Main Bank to feed the Vulindlela Building and Welcome Center - Tracing and Re Routing of the Existing 150mm² x 4-core PVC-SWA cable	iten	1			
3.5	Reconfiguration of the existing L I Panel to accommodate the new installation: This includes - Changing the Panel Doors - To reflect the Emergency Power - Installing the New 4000A 3P ABB Motorised ACB's	Sum	1			
3.6	For the supply and installation of labels and a legend cards as per the standard and specification documents					
	Labelling of distribution boards - legend cards	Sum	1			
3.7	Certificate of compliance (COC)					
	For the testing, commissioning and submission of a COC document for each Distribution Board. as per the specification documents	ea	2			
	SUB-TOTAL TO BE CARRIED OVER TO SUMMARY PAGE					R -

DBSA CAMPUS
GENERATOR INSTALLATION

PROVISIONAL BILL OF QUANTITIES			
SUMMARY PAGE			
ITEM	DESCRIPTION:	TOTAL	
1	PRELIMINARY AND GENERAL	R	-
2	GENERATOR INSTALLATION	R	-
3	CABLE INSTALLATION	R	-
4	SUB TOTAL A	R	-
5	Contangencies @ 10% - This amount will be under the control of DBSA and may be deducted after approval only	R	-
6	SUB TOTAL A	R	-
7	ADD VAT @ 15%	R	-
8	TOTAL CARRIED TO FORM OF OFFER	R	-