

Item No	Description	Unit	Quantity	Rate	Amount	
	<u>SECTION NO. 18</u>					
	<u>BILL NO. 1</u>					
	<u>PRELIMINARY AND GENERAL (P&G'S)</u>					
	<u>PRELIMINARY AND GENERAL (P&G'S)</u>					
1	Site Establishment Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
2	Design, engineering and shop drawing production Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
3	Manuals and As-Built Drawings Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
	Carried to Collection			R		
	Section No. 18					
	Mechanical Installation					
	Bill No. 1					
	Preliminary & General					

Item No	Description	Unit	Quantity	Rate	Amount	
4	Testing and Commissioning Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
5	One Year Guarantee Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
6	One Year "free" Maintenance Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
7	Contract management and supervision Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item			
Carried to Collection					R	
Section No. 18						
Mechanical Installation						
Bill No. 1						
Preliminary & General						

Item No	Description	Unit	Quantity	Rate	Amount
8	Contractor's Insurance Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item		
9	Bank Guarantee (Where applicable) Percentage of nett sub-contract value incl. profit and overheads. The above number is to be split as follows:		Item		
10	Other Specify		Item		
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 1 Preliminary & General				

Section No. 18 Bill No. 1 Preliminary & General <u>COLLECTION</u> Total Brought Forward from Page No.			Page No		Amount		
						1	
						2	
						3	
Carried Forward to Summary of Section No. 18						R	
Section No. 18 Mechanical Installation Bill No. 1 Preliminary & General							

Item No	Description	Unit	Quantity	Rate	Amount	
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 2</u></p> <p><u>PREAMBLES</u></p> <p><u>PREAMBLES</u> <u>Tenderers are to note that this BOQ is to be measured in accordance with the drawing NO. 000000 issued and recorded under the BOQ as such.</u></p> <p>The BOQ shall be read in conjunction with the specification as through forming part thereof.</p> <p>The work as detailed and specified forms a complete functional installation and has been measured and billed as such.</p> <p>These Bill of Quantities refers specifically to the "Quantum of Works "only. The tenderer shall refer to the specification and drawings as a whole, in order to identify the operation and technical requirements pertaining to the equipment/material and operation of the items listed in the BOQ and price accordingly. The BOQ also only refers to the major items of equipment and any such item not covered in the BOQ, however forming part of and required in terms of the operations of the system as specified/offered shall be allowed in the overall pricing of the BOQ in order to ensure total compliance with the system description and operation to be compliant with the relevant SANS standards as specified and indicated on the drawings.</p> <p>Descriptions shall be deemed to include all sundries necessary for the intended functioning of the measured item and prices shall allow accordingly.</p> <p>The tender must price each item in this bill individually, and must add items where he/she feels that it is deemed necessary for a completet installation.</p>					
	<p style="text-align: right;">Carried to Collection</p> <p>Section No. 18 Mechanical Installation Bill No. 2 Preambles</p>			R		

Item No	Description	Unit	Quantity	Rate	Amount	
	<p>Where inclusive items are measured and priced, the contractor must on request, supply full details of the components and prices making up the inclusive items. If the contractor fails to supply such prices and details within 14 days after having been requested, the tenderer shall be dis-qualified from the tender process.</p> <p>Where quantities have been omitted, the tenderer shall indicate the quantity price on, in accordance with the specific equipment configuration offered.</p> <p><u>SITE CLEANING</u></p> <p>The contractor shall be responsible for cleaning the areas in which they work, throughout the site - rubble, scrap, waste etc. resulting from the installation.</p>					
	Carried to Collection					
	Section No. 18					
	Mechanical Installation					
	Bill No. 2					
	Preambles					

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Item No	Description	Unit	Quantity	Rate	Amount
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 3</u></p> <p><u>FIRE HYDRANTS AND HOSE REELS</u></p> <p><u>WATER RETICULATION</u></p> <p>The works described here-under involves the piping from the counsil metre to the external fire booster assembly.</p> <p><u>BOOSTER VALVE ASSEMBLY</u></p> <p><u>Supply and Installation of Stainless Steel grade pipe and HDPE Piping where below ground level, to comply with relevant standards - ISO 2016 & SANS 10400 Part W. From the muncipal isolation valve to the Booster Valve Assembly. Prices to include all connections from the flange isolation valve and from the S/S to HDPE pipework.</u></p>				
1	Ø100mm - HDPE	m	10		
2	Municipal Connection (Allowance)			SUM	Assume in Place
	LEGEND ITEM - Refer to our Typical Fire Water Connection Detail 1. DRW no.00000				
	<u>5-6&7</u>				
3	Ø110mm STORTZ suction hydrant	No	1		
	<u>8</u>				
4	Valve Box/ Manhole	No	1		
	<u>9</u>				
5	Ø110mm Check Valve	No	1		
	<u>10-6-11&12</u>				
6	Ø110mm Twin Booster Connection	No	1		
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 3 Fire Hydrants and Hose Reels Water Reticulation				

Item No	Description	Unit	Quantity	Rate	Amount
	<p><u>Fire Hydrant Water Reticulation</u></p> <p><u>Supply and Installation of HDPE or Black Mild Steel Medium Grade Piping, to comply with relevant standards, parts 5 and 6 - ISO 2016 & SANS 10400-W.</u></p> <p><u>Pipework</u></p> <p><u>Underground</u></p> <p><u>All HDPE lines shall be installed at 1m (below Ground Level), Allow for trenching and backfilling of all underground pipe work,</u></p> <p><u>HDPE piping</u></p>				
7	Ø32mm	m	150		
	<u>Allowance for fittings</u>				
8	Ø32mm	ea.	30		
	<u>HDPE piping</u>				
9	Ø100mm	m	500		
	<u>Allowance for fittings</u>				
10	Ø100mm	ea.	50		
	<u>Above ground</u>				
	<u>All Copper lines to Hose Reels shall be installed above ground and fixed to wall or other structure,</u>				
	<u>Copper piping</u>				
11	Ø28mm	m	50		
	<u>Allowance for fittings</u>				
12	Ø28mm	ea.	40		
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 3 Fire Hydrants and Hose Reels Water Reticulation				

11.

Item No	Description	Unit	Quantity	Rate	Amount
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 4</u></p> <p><u>FIRE HYDRANTS, FIRE EXTINGUISHERS AND SIGNAGE</u></p> <p><u>Fire Hydrant Water Reticulation (Exterior)</u></p> <p><u>Supply and Installation of Black Mild Steel Medium Grade Piping, to comply with relevant standards, parts 5 and 6 - ISO 2016 & SANS 10400-W,</u></p> <p><u>Fire Hydrants</u></p> <p><u>The below installation to include for all fittings and brackets to fulfill a fully completed installation</u></p> <p><u>Ø110mm Fire Hydrant</u></p>				
1	Exterior	ea.	4		
	<p><u>Fire Hose Reels</u></p> <p><u>The below installation to include for all fittings and brackets to fulfill a fully completed installation</u></p>				
2	30m Fire Hose Reels With 28mm CU connection	ea.	12		
	<u>Fire Extinguishers</u>				
3	4,5kg DCP Portable Fire Extinguisher c/w backing board	ea.	28		
	<u>Fire Blanket</u>				
4	Fire Blanket (1,8 x 1,8) m	ea.	1		
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 4 Fire Hydrants, Fire Extinguishers and Signage				

Item No	Description	Unit	Quantity	Rate	Amount	
	<u>Fire Signage</u>					
	<u>Allow for fire hydrants, Fire Hose Reels, Extinguishers, Booster connection arrows etc. for the following:</u>					
5	SSS0045 - 600 x 600 SAB approved Chromadeck emergency assembly point sign	ea.	2			
6	SSS0010 - 190x380 sabs Safety Signage Extinguisher & Arrow Red-PHOTO - F13	ea.	5			
7	SSS0007 - 190 x 380 SABS fire blanket sign - Photo	ea.	1			
8	SSS00062 - 190 x 380 SABS fire hydrant booster - Photo	ea.	1			
9	SSS1010 - 190X380 Sabs Symbolic Safety Signage - Running Man- PHOTO	ea.	48			
10	SSS0031 - SABS Approved Fire Exit Signage - M072	ea.	3			
11	SSS0089 - 190X380 Sabs Symbolic Sfety Signage Hanging -Hydrant & Arrow - F15 - PHOTO	ea.	4			
12	SSS0008 - 190 x 570 SABS approved signage MO26 - PHOTO	ea.	12			
13	SSS0008 - 190 x 570 SABS approved signage MO26 - PHOTO	ea.	564			
14	OTHER ADDITIONAL BILL OF QUANITIES NOT LISTED ABOVE:- (TO BE FILLED IN BY TENDERER BELOW)		Item			
	Carried to Collection				R	
	Section No. 18 Mechanical Installation Bill No. 4 Fire Hydrants, Fire Extinguishers and Signage					

14.

Item No	Description	Unit	Quantity	Rate	Amount	
1	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 5</u></p> <p><u>TANKS AND PUMPS - FIRE WATER STORAGE</u></p> <p>Water Storage Tank and accessories</p> <p><u>Supply and Installation:- of a sectional water storage tank position indicated on drawing. (including, rigging, associated pipework and valves/fittings manifold and internal lining).</u></p> <p>Make:</p> <p>Videx Storage Tanks or Equal and Approved</p> <p>Tank Size:</p> <p>7,93m (L) x 6,10m (W) x 4,88m (H)</p> <p>Foundations:</p> <p>As specified by supplier</p> <p>Connections:</p> <p>1x Hydrant Connection</p> <p>Material:</p> <p>Galvanised Steel</p> <p>Estimated Capacity:</p> <p>150 Kilolitres</p> <p>Actual capacity of the storage tanks to be selected shall be in accordance of the Pump duty Qmax over a 90 minutes period.</p> <p>Accessories:</p> <p>Price to include all accessories to comply with SANS</p> <p>Carried to Collection</p> <p>Section No. 18 Mechanical Installation Bill No. 5 Tanks and Pumps - Fire Water Storage</p>	ea.	1			
				R		

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Item No	Description	Unit	Quantity	Rate	Amount
	Actual capacity of the storage tanks to be selected shall be in accordance of the Pump duty Qmax over a 90 minutes period.				
	Accessories:				
	Price to include all accessories to comply with SANS				
	In fill Bermaid Valve - 75mm diameter				
	Fixed Ladder Assembly				
	75mm Inlet side mount				
	100mm overflow				
	50mm Drain Sump side mount				
	75mm Geared Butterfly valve				
	Glycerine Gauge assembly				
	Steel Tower structure at 10 m elevation Tower Manufactured to SANS 10162				
	Steel Tower structure foundation designs				
	Bolts, Nuts and Washers				
	Hinged lockable manhole cover per compartment				
	Internal and external ladder per compartment				
	Air Vent per compartment				
	EPDM Rubber Gaskets				
	Butyl rubber mastic compoud for cleats				
	Landing platforms or walkways for Steel tower				
	Holding bolts				
	Capping strips				
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 6 Tanks and Pumps - Fresh Water Tank				

Item No	Description	Unit	Quantity	Rate	Amount
2	Fire Water Tank Sterilization	ea.	1		
3	Fire Water Piping Sterilization	ea.	1		
	<u>Provisions to be made for:</u>				
	Offloading and conveyance of materials				
	Scaffolding				
	Cranage				
	Tank tightness testing				
	Supplier may be equal and approved				
4	OTHER ADDITIONAL BILL OF QUANTITIES NOT LISTED ABOVE:- (TO BE FILLED IN BY TENDERER BELOW)		Item		
	Carried to Collection			R	
	Section No. 18 Mechanical Installation Bill No. 6 Tanks and Pumps - Fresh Water Tank				

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Item No	Description	Unit	Quantity	Rate	Amount	
	<u>SECTION NO. 18</u>					
	<u>BILL NO. 7</u>					
	<u>STANDARD RATES</u>					
	<u>STANDARD RATES</u>					
	<u>Mark-up on Unscheduled Materials</u>					
1	Capital items:					
	Cost plus %		Item		Rate only	
2	Regular materials:					
	Cost plus %		Item		Rate only	
3	Sub-contractors, crantage, etc.					
	Cost plus %		Item		Rate only	
	<u>Labour (Measured per hour)</u>					
4	Erector (Artisan+ 2 Labourers)	No			Rate only	
5	Fitter (Artisan+ 2 Labourers)	No			Rate only	
6	Electrician	No			Rate only	
7	Other (Specify)	No			Rate only	
	<u>Travelling (Measured per km)</u>					
	Rate per km					
8	From office / workshop to site	No			Rate only	
	Carried Forward to Summary of Section No. 18				R	
	Section No. 18					
	Mechanical Installation					
	Bill No. 7					
	Standard Rates					

Item No	Description	Unit	Quantity	Rate	Amount
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 8</u></p> <p><u>EXTRACTION</u></p> <p><u>Extraction Fan for Kitchen Canopy Mechanical Installation</u></p> <p><u>Detail Design: TBC by HVAC Specialist Vendor</u></p>				
1	Technical Specification		Item		
2	Layout Drawing indicating the kitchen canopy in plan view.		Item		
3	Sectional drawing indicating duct routing from canopy through to outside		Item		
4	Drawing indicating pertinent characteristics of kitchen canopy for supplier to prepare fabrication drawing.		Item		
5	Position of the power point required for the Fan.		Item		
	<p><u>Mechanical Work</u></p> <p>Note : Tenderers are required to study the Model Preables for Trades before pricing this Bill</p> <p><u>Heating, Ventilation and Air Conditioning</u></p> <p><u>Preambles:</u></p> <p>Prices are fully installed and tested and commissioned items, inclusive of all ancillary item required to requirements as set out in the works specification.</p>				
	Carried to Collection			R	
	<p>Section No. 18</p> <p>Mechanical Installation</p> <p>Bill No. 8</p> <p>Extraction</p>				

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<div>Section No. 18</div> <div>Bill No. 8</div> <div>Extraction</div> <div><u>COLLECTION</u></div> <div>Total Brought Forward from Page No.</div>					
<div>Section No. 18</div> <div>Mechanical Installation</div> <div>Bill No. 8</div> <div>Extraction</div>					

Item No	Description	Unit	Quantity	Rate	Amount
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 9</u></p> <p><u>LAB GAS</u></p> <p><u>Science LAB Gas Reticulation Mechanical Installation</u></p> <p><u>Detail Design</u></p> <p>Gas Reticulation system routing shall be per drawing DBSA-MBO-S1-ENG-MEC-DWG-005</p> <p>Requirements of Annex A of SANS 10251-1 shall be met; and also the requirements of SANS 10087-1 shall be met; with COC (certificate of Conformity) issued per Annex F of SANS-10087-1</p> <p><u>Mechanical Work</u></p> <p>Note : Tenderers are required to study the Model Preables for Trades before pricing this Bill</p> <p><u>Gas Reticulation system</u></p> <p><u>Preambles:</u></p> <p>Prices are fully installed and tested and commissioned items, inclusive of all ancillary item required to requirements as set out in the works specification.</p> <p><u>Notes:</u></p> <p>The Contractor is advised to visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings. No claim for a compensation event in respect of the nature and extent of the or interior or damaged materials will be entertained.</p> <p>The Contractor is advised that the site is an operational site and any connections / disconnections, etc. that may be necessary must be made as directed by the Construction Supervisor</p>				
	<p style="text-align: right;">Carried to Collection</p>			R	
	<p>Section No. 18</p> <p>Mechanical Installation</p> <p>Bill No. 9</p> <p>LAB GAS</p>				

Item No	Description	Unit	Quantity	Rate	Amount	
	<p>Special care shall be exercised during the progress of the work to ensure that any mechanical systems and other services which may be encountered are not interfered with and notice shall be given to the Construction Supervisor if any disconnection or alterations become necessary</p> <p>The Contractor is advised to take all dimensions affecting the existing buildings on site, as he will be held solely responsible for all new work being of the correct sizes</p> <p>The Contractor shall leave the works area clean, without rubbish, cuttings, clippings or any type of material remaining in the work area, upon handover</p> <p>All cost reflected within the bill of quantities shall be inclusive of all requirements within the scope of work</p> <p>The Contractor shall supply, Install and Commission the system</p> <p>Upon Completion COC (Certificate of Conformity) shall be issued by Vendor's Competent Person.</p> <p><u>Gas Reticulation</u></p>					
1	High Pressure Regulator	No	1			
2	4 kg Gas Regulator to Reduce Gas Pressure	No	1			
3	Pigtails	No	3			
4	Internal Shut-off Valves	No	1			
5	External Shut-off Valves	No	1			
6	18 m x 12/16 Gas Pex Piping & 25 Conduit	No	1			
7	8 x 12/16 T-Pieces	No	1			
8	15 x 12/16 T-Elbows	No	1			
9	15 x 20 mm Gas Pipe Holders	No	1			
10	19 m x 12/16 Gas Pex Piping & 25 Conduit	No	1			
	Carried to Collection				R	
	Section No. 18 Mechanical Installation Bill No. 9 LAB GAS					

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Item No	Description	Unit	Quantity	Rate	Amount	
	<p><u>SECTION NO. 18</u></p> <p><u>BILL NO. 10</u></p> <p><u>NUTRITION GAS</u></p> <p><u>Dining and Nutrition Center Gas Reticulation Mechanical Installation</u></p> <p><u>Detail Design</u></p> <p>Gas Reticulation system routing shall be per drawing DBSA-MBO-S1-ENG-MEC-DWG-004</p> <p>Requirements of Annex A of SANS 10251-1 shall be met; and also the requirements of SANS 10087-1 shall be met; with COC (certificate of Conformity) issued per Annex F of SANS-10087-1</p> <p><u>Mechanical Work</u></p> <p>Note : Tenderers are required to study the Model Preables for Trades before pricing this Bill</p> <p><u>Gas Reticulation system</u></p> <p><u>Preambles:</u></p> <p>Prices are fully installed and tested and commissioned items, inclusive of all ancillary item required to requirements as set out in the works specification.</p> <p><u>Notes:</u></p> <p>The Contractor is advised to visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings. No claim for a compensation event in respect of the nature and extent of the or interior or damaged materials will be entertained.</p> <p>The Contractor is advised that the site is an operational site and any connections / disconnections, etc. that may be necessary must be made as directed by the Construction Supervisor</p>					
	<p style="text-align: right;">Carried to Collection</p>					
	<p>Section No. 18</p> <p>Mechanical Installation</p> <p>Bill No. 10</p> <p>Nutrition Gas</p>					

Item No	Description	Unit	Quantity	Rate	Amount	
	<p>Special care shall be exercised during the progress of the work to ensure that any mechanical systems and other services which may be encountered are not interfered with and notice shall be given to the Construction Supervisor if any disconnection or alterations become necessary</p> <p>The Contractor is advised to take all dimensions affecting the existing buildings on site, as he will be held solely responsible for all new work being of the correct sizes</p> <p>The Contractor shall leave the works area clean, without rubbish, cuttings, clippings or any type of material remaining in the work area, upon handover</p> <p>All cost reflected within the bill of quantities shall be inclusive of all requirements within the scope of work</p> <p>The Contractor shall supply, Install and Commission the system</p> <p>Upon Completion COC (Certificate of Conformity) shall be issued by Vendor's Competent Person.</p> <p><u>Gas Reticulation</u></p>					
1	High Pressure Regulator	No	1			
2	4 kg Gas Regulator to Reduce Gas Pressure	No	1			
3	Pigtails	No	3			
4	Internal Shut-off Valves	No	1			
5	External Shut-off Valves	No	1			
6	18 m x 12/16 Gas Pex Piping & 25 Conduit	No	1			
7	8 x 12/16 T-Pieces	No	1			
8	15 x 12/16 T-Elbows	No	1			
9	15 x 20 mm Gas Pipe Holders	No	1			
10	19 m x 12/16 Gas Pex Piping & 25 Conduit	No	1			
	Carried to Collection				R	
	Section No. 18 Mechanical Installation Bill No. 10 Nutrition Gas					

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Bill No	<u>SECTION SUMMARY - Mechanical Installation</u>		Page No		Amount	
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6	Tanks and Pumps - Fresh Water Tank		22			
7	Standard Rates		23			
8	Extraction		27			
9	LAB GAS		31			
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	Carried to Building Works BOQ			R		
	Section No. 18 Mechanical Installation					