

PROPOSED DEVELOPMENT OF SOLAR POWERED BOREHOLE/PORTABLE WATER SCHEME(HYBRID)

AT

EMEREOKE 1

**COMMUNITY IN EASTERN OBOLO L.G.A
AKWA IBOM STATE**

BILLS OF QUANTITIES



CLIENT:

BOPANE HCDT
45 AHOADA ST.
RUMUIBEKWE HOUSING ESTATE
OFF ABA ROAD, PH
RIVERS STATE



KC: AK 18989

CONSULTANT

MBINTEX KONSULT
5 MBAJA AVE. OKOROMBOKHO
Eastern Obolo, Akwa Ibom state



PREPARED BY:
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NIGERIAN INSTITUTE OF QUANTITY SURVEYORS
The Professional Construction Cost Managers

BILL NO. 1: PRELIMINARIES				
COST CENTRE	COMPONENTS	TIME RELATED CHARGES	FIXED CHARGES	TOTAL CHARGES
	BILL NO.1 PRELIMINARIES Part A: Project Particulars Name of the Project: Proposed Development of Solar Powered Borehole/Portable Water Scheme(Hybrid) Nature of project: The project involves; Drilling of suitable Borehole, Service Building with perimeter Fence, Solar Power Installation, distillation/Treatment Plant and Water Rectification as well as commissioning and handover. Location of project: Duration of the Project: Client: Name of Contractor Drawings; Bills of Quantities: Form of Contract:			
		Emereoke 1		
		3 months		
		Bopane HCDT		
		Structural and Mechanical Services		
		In accordance with BESMM4R		
		The Nigerian Construction Industry		
		STANDARD FORM		

1.1B	Part B: Pricing Schedule			
1.1.1	EMPLOYER'S REQUIREMENT			
1.1.2.06	Control and Protection Multi-service gang- BOPANE Project Unit-12 Project Monitoring by other approved bodies Local Authority Approval/ Logistics Stakeholder/Community engagement Logistics	Wks Wks		1,100,000.00 500,000.00 1,200,000.00
1.1.2.10	Completion and Post- completion Requirements <i>Handover; Operational logistics after 6months</i>			
2			<i>Item</i>	<i>3,700,000.00</i>
1.1.2.07	Design, Approvals and permit			
	EMPLOYER'S REQUIREMENT TO COLLECTION			6,500,000.00
1.1.2	MAIN CONTRACTOR'S COST ITEM			
1.1.2.1	Management and Staff			
1.1.2.1.1	Project Specific Management and Staff		Item	
1.1.2.2	Site Establishment			
1.1.2.2.1	Site accommodation		Item	
1.1.2.2.2	Temporary works in connection with site establishment	2	Nr	
1.1.2.2.3	Furniture and Equipment		Item	
1.1.2.2.5	Consumables and services; Stationaries, Computer ink catridges,Courier charges, postage,tea, coffee, First aid consumables,stationeries etc.	Wks		

1.1.2.2.6	Bought- in services			
1.1.2.2.7	Sundries; Main contractor's signboards, safety and information notice boards, fire points, Employer's composite signboards.		Item	
1.1.2.03	Temporary Services			
1.1.2.3.1	Temporary Water Supply		Item	
1.1.2.3.2	Temporary gas Supply	Wks		
1.1.2.3.3	Temporary electricity Supply		Item	
1.1.2.04	Security of Site			
1.1.2.4.1	Security Staff; security guards and Watchmen for 6months	2	Nr	
1.1.2.4.3	Hoarding, Fences and Gate		M	
	PAGE 2 MAIN CONTRACTOR COST ITEM TO COLLECTION			

1.1.2.05	Safety and Environmental Protection			
1.1.2.05.1	Community Relation and Engagement		Item	
	Safety Programme; Notices and information to neighbours; Community relations Safety audits, Staff safety training, ,Personal Protective equipment (PPE) for workers and multi-service gang, Fire points, Temporary fire alarms, Fire estinguishers, Nurse, Traffic Marshals, etc.		Item	
1.1.2.5.1				
1.1.2.5.2	Barriers and safety scaffolding; guardrails and edge protection, temporary Staircase balustrades,etc.		Item	
1.1.2.06	Control and Protection			
1	Survey, Inspections and Monitoring		Item	
2	Setting Out		Item	
3	Samples		Item	
1.1.2.08	Temporary Works			
	Access Scaffolding, Type---; Bringing to site, erecting and initial safety checks and including desmantling and removing from			
1	site		Nr	
1.1.2.09	Site Records			
	Site Records; photography, Works			
1	Records.		Item	
1.1.2.10	Completion and Post- completion Requirements			
1	Testing and Commissioning plan		Item	
2	Handover		Item	
3	Post- completion Services	Wks		
	PAGE 3 TO COLLECTION			

1.1.2.11	Cleaning			
1	Site Tidy	Wks		
1.1.2.13	Sites Services			
1	Temporary Works		Item/Nr/M/ M2/M3	
2	Multi-service gang- Administrator	Contract Project Architect Project Quantity Surveyor Project Engineer	Wks	
1.1.2.15	Transportation/Haulage Allow a provisional sum for transortation materials.		Item	
	PAGE 4 TO COLLECTION			
	COLLECTION: PAGE 2 PAGE 3 PAGE 4			
	MAIN CONTRACTOR COST ITEM TO COLLECTION EMPLOYERS COST ITEM			
	PRELIMINARIES CARRIED TO MAIN SUMMARY			

PROPOSED PROVISION OF SOLAR POWERED BOREHOLE/ WATER SCHEME (HYBRID) WITH TREATMENT PLANT AND RECTICULATION FOR COMMUNITIES IN EASTERN OBOLO L.G.A CLUSTERS OF BOPANE HCDT, AKWA IBOM STATE.

BILL NO. 2-PROVISION OF BORE HOLE

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	WORK BY NOMINATED SUB CONTRACTOR				
	<u>Bore Hole Development (All provisional)</u>				
	Allow a provisional sum (Defined) for the conduct of geophysiical survey (field work, interpretation and report, specifying most suitable acquifer location) for location of borehole.		Item		
	Allow a provisional sum (Defined) for the provision and mobilization of rotary mud rig and related equipment to and from site.		Item		
2B.1.3.3.6	Drilling of Suitable Diameter borehole for free installation of 8" (200mm) to accommodate casing of 203mm; in holes of maximum depth 0-30m for zone one.	30	m		
	Ditto; 31-50m	15	m		
	Ditto; 51-75m	17	m		
	Supply and install 150mm (6") diameter x12pb PVC casing including screen and bottom pipe.	60	m		
	Allow a Provisional sum for Gravel packing of the Annulus and Grouting from 10m		Item		
	Provide for 8 -12hrs well compression and development	10	Hr		
2B.1.7.2.3	Allow a provisional sum for Bacteriological and chemical analysis of water sample.		Item		
	Sub Total				
	<u>Solar Pump/ Accessories</u>				
	Supply and install 2HP SQ flex GRUNDFOS submersible pump or approved equivalent complete with solar panel	1	nr		
	Provide for well head assembling as per Engineer details.	1	nr		
	Provide for 50mm UPVC risers pipes with couplin and safety rope	70	m		
	Supply and install Sensor kits	2	nr		
	Allow a provisional sum for the supply and installation of Control Panel, mounting of Solar Panels securely on the EWT Structure as well (DC cable panels and Sumo(4mm/6mm) and Surge Protector/Spike Arrestor.		Item		
	Sub Total2				
	TOTAL				

BILL NO. 3- CONSTRUCTION ELEVATED TANK STAND

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>Elevated Water Tank</u>				
	Foundation Stubb column;				
2E:1.3.2.7.4	Excavation and Earth Work:				
2E1.5	Excavate for foundation; material other than top soil, maximum depth 1-2m.	10	m ³		
	Excavation ancillaries				
2E1.5.2.2	Trimming of excavated surfaces; material other than topsoil, rock or artificial hard	10	m ³		
2E1.6	material.				
	Filling				
2E1.6.3.3	Non-selected excavated material other than topsoil or rock	10	m ³		
2E1.7	Filling ancillaries				
2E1.7.2.2	Material other than topsoil, rock or artificial hard material	12.5	m ²		
2F	IN SITU CONCRETE				
	Provision of concrete, designed Concrete:				
2F1.1	Cement to BS12 or BS146 20mm aggregate				
2F1.6.1	Placing of concrete, mass; Blinding	0.31	m ³		
2F1.7.4.4	Reinforced, Base, thickness exceeding 500mm	3	m ³		
2F1.7.4.3	Ditto; footings, thickness exceeding 300-500mm	0.41	m ³		
2G	Concrete Ancillaries				
2G1.1.1.4	Form work; fair finish, plain vertical; width 0.4-1.22m.	17.4	m ²		
2G1.5	Reinforcement				
	Plain round steel bars to BS 4449, Nominal size				
2G1.5.1.3	10mm	0.05	t		
2G1.5.1.4	Ditto; Nominal size 12mm	0.04	t		
2G1.5.1.5	Ditto; Nominal size 16mm	0.04	t		
	Sub Total				

	Structural Metal Work				
2N1.3	Fabrication of members for frames				
2N1.4.1	Lengths over 1.00 but not exceeding 9.00m; Weight ≥50kg/m, Columns;203x152x60kg/m.	1.62	t		
2N1.4.2	Ditto; Lengths over 1.00 but not exceeding 9.00m; Weight ≤25kg/m, Beams;152x89x16kg/m	0.014	t		
2N1.4.2	Ditto;Weight ≤25kg/m, Beams;127x76x13kg/m	0.117	t		
2N1.4.6	Bracing Lengths exceeding 1.00m; Angle Iron 75x75x5mm, bracing-92.16m; Weight ≤25kg/m	0.48	t		
2N1.4.6	Ditto; Lengths exceeding 1.00m; 75x75x6mm, bracing-27m	0.17	t		
2N1.4.6	Ditto; Lengths exceeding 1.00m; 40x40x6mm, bracing-27m Crossing bar and access ladder	0.22	t		
	4000x3250x13mm thick, weight102.05kg/m chekered plate as bottom to overheaad head tank.	1	nr		
	Fittings 450x450x16mm thick, weight125.6kg/m mild steel base plate	4	nr		
	Ditto; 13mm thick x102.05kg/m mild steel gupset plate	0.05	t		
2N1.4.8	Anchorage and holding down bolt assemblies; 75mm longx16mmDiameter mild steel bolts complete with nuts and washers.	16	nr		
2N1.6	Erection of members for frames				
2N1.7	Permanent erection on site	1	t		
2N1.8	Off Site surface treatment				
2N1.8.4	Wire brushing	142	m ²		
2N1.8.5	Metal spraying	142	m ²		
2N1.8.7	Painting with red oxide and aluminium paint	142	m ²		
	Sub Total				
	Overhead Tank				
	Provide 5000 litres capacity Gee pee tanks	6	nr		
	Allow a provisional sum for all pipe work and ancillaries to provide inlet, outlet, washout and connection to borehole.		Item		
	Sub Total				
	Elevated Water Tank to Collection:				

	<u>Recticulation:</u> Allow a provisional sum for the supply and installation of service outlets in front of the service Buildings Supply and install (PPR CT Pipes)- 32mm-50mm diameter, fittings and other accessories in foundation in trenches with necessary excavation and backfilling as required. Ditto; Service outlet points; (PPR CT Pipes) 32mm-50mm diameter in 100mm diameter, 1m high above ground level, filled hollow with weak concrete for stability, with 2 taps, stop cork and bulge fittings, including provision and placing concrete pavement 1.00mx1.00m to maintain fair finish, as may be required. Allow a provisional sum and cost to break through untarred access road for pipe mains and make good as required. <u>Recticulation to Collection:</u> GENERATING PLANT AND Allow a provisional sum for procurement and installation of 10KVA generating Plant. SOLAR POWER INSTALLATION Supply and install Solar Panel 600watt/24V mono crystalline Allow a provisional sum for DC cables, (DC cable panels(4mm/6mm) Fuse enclosure box and breakers- DC Supply and install appropriate Solar Array Supply and install appropriate appropriate Solar Lithium battery- 10kVA Allow a provisional sum for procurement of accessories and contingency SOLAR POWER INSTALLATION TO COLLECTION DISTILLATION SYSTEM/TREATMENT PLANT Supply and installation of Standard Water Treatment Plant; Acqualite/ Fertile treatment Plant Reversed Osmosis (RO) with all necessary accessories and fittings; to include Filtration Equipment, iron removal filter/catridge/bag filter, etc. Stainless steel Filtration plant 2 tonnes Reversed Osmosis (RO) equipment Fibre glass Filters Pumps (surface and pressure)- 2HP Dosing Pumps Allow a provisional sum for supply of consumables chemicals and installation materials-Plumbing pipes, fittings and Electrical materials	1700	m	Item	
		15	nr	Item	
		10	Nrs	Item	
		1	nr		
		1	Nr	Item	
		1	Nr		
	Distillation/Treatment Plant to collection:				

BILL NO.4-SERVICE BUILDING AND PERIMETER FENCE

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.5	SUBSTRUCTURE (ALL PROVISIONAL)				
1.5.4.1.1	EXCAVATING AND FILLING Site clearance; clearing site vegetation and other growth and dispose offsite 80m away Site Preparation	22	M ²		
1.5.5.2.1	Remove top soil, average 150mm depth, stored on site	22	M ²		
1.5.10.1.2	Retained excavated topsoil on site to temporary spoil heaps 80m distance Excavation and filling	3.3	M ³		
1.5.6.2.1	Excavation from strip level, foundation excavation not exceeding 2m deep strip foundation.	7.56	M ³		
1.5.6.2.1	Ditto; pits for column bases, over 1m but not exceeding 2m deep.	1.792	M ³		
1.5.8.1.1.1	Disposal, ground water, depth 150mm below strip level		Item		
1.5.8.1.1.1	Ditto; excavated material offsite 50m away	5.402	M ³		
1.5.11.1.1.1	Filling obtained from excavated material; final thickness of filling exceeding 500mm deep, 520mm thick backfill to trench excavaton and treated with antitermite.	3.95	M ³		
1.5.12.1.1.1	Imported filling with Laterite, blinding bed, over 50mm but not exceeding 500mm deep,150mm thick to ground floor, compacted in layers 150mm depth, with antitermite.	5.265	M ³		
1.5.12.1.1.1	Imported filling with hardcore, blinding bed, over100mm but not exceeding 500mm deep,120mm thick, level to falls, to ground floor.	1.755	M ³		
1.5.11.1.1.1	Filling obtained from excavated material not exceeding 500mm deep, 150mm thick to external perimeter of trench	0.46	M ³		
1.5.16.1.1.1	Damp proof mainbrane, not exceeding 500mm wide,500 guage, horizontal, polythene sheeting laying on blinding hardcore filling to receive concrete	20.5	M ²		
1.11	INSITU CONCRETE WORK				
1.11.2.1.2.2	Plain insitu concrete grade 20mm(1:4:8) /M7.5 aggregate, horizontal work ≤ 300mm thick, in blinding, poured on or against earth; Trench.	0.63	M ³		
	Ditto; Column base	0.098	M ³		
	<u>Reinforced Insitu Concrete (1:2:4-20mm aggregate M15)</u>				
1.11.2.1.2.1	Reinforced insitu concrete , grade 20mm aggregate, horizontal work ≤ 300mm thick,in column bases	0.294	M ³		
1.11.5.1.1.1	Ditto; vertical work ≤ 300mm thick,column in structures,reinforced =5%	0.18	M ³		
1.11.5.1.1.1	Ditto; Horizontal work ≤ 300mm thick, in Plinth beam in structures,reinforced =5%		M ³		
	Page 1 To collection:				

	Plain Insitu Concrete (1:3:6-20mm aggregate)				
1.11.2.1.2.1	Plain insitu concrete, grade 20mm aggregate, horizontal work ≤ 300mm thick, in trench, in structures, poured on or against blinding.	1.134	M ³		
1.11.2.1.2.1	Ditto; Horizontal work poured on or against hardcore.	3.075	M ³		
	Ditto, Horizontal work, ≤ 300mm thick in Step and ramp.	1	M ³		
	Formwork to insitu concrete				
1.11.14.1.1.	Plain formwork to Edges of horizontal work ≤ 500mm high, 150mm wide	20.5	M		
1.11.21.1.1.	Ditto; Sides of attached columns, regular, rectangular in shape.	4.8	M2		
	Reinforcement				
1.11.34.1.1.	High yield steel bars, 12mm diameter, straight bars 12m long; 96m in Columns.	0.03	T		
1.11.34.1.1.	High yield steel bars, 12mm diameter, straight bars 12m long; 144m in Columns base.	0.04	T		
1.11.33.1.1.	High yield bars, 8mm diameter links/ stirrups in Columns	0.006	T		
1.11.34.1.1.	High yield steel bars, 12mm diameter, straight bars 12m long; 288m in Plinth beam.		T		
1.11.33.1.1.	High yield bars, 10mm diameter links/ stirrups in Columns and Plinth beam		T		
1.11.37.2.2	Mesh, Weight, 2.22kg/m2, fabric reinforcement A142; minimum side and end laps; 150mm	20.5	M ²		
1.14	MASONRY				
	Brick/Block Walling in foundation				
1.14.1.2.2.1	Walls, overall thickness 150mm thick battered on both sides in Common /stretcher bond, cement mortar (1:3)	28	M ²		
1.11.1.1.3	Plain insitu concrete (1:10), mass concrete in filling voids.		M ³		
	Allow for a defined Provisional Sum to cover other works not measured in the Substructure.	1	Item		
	FINISHES				
1.28.7.2.1	Finish to Walls, Cement and Sand (1:4) rendering 12mm thick, exceeding 600mm wide Externally	6.2	M ²		
	Wall Tiles:				
1.28.7.2.1	Finish to Walls; 250mm x 400mm x 8mm Glazed Ceramic tiles laid on Walls, exceeding 600mm wide to approved pattern on cement and sand bed (measured separately); finished with straight butt joints and flush with pointing coloured cement grout .	6.2	M ²		
	Cement Backing; 5mm Cement Binder paste Protection	6.15	M ²		
	Protect all works in this section		sum		
	Page 2 to collection:				
	Collections:				
	Page 1....				
	Page 2....				
	SUBSTRUCTURE CARRIED TO SUMMARY				

	<u>SUPERSTRUCTURE</u>				
	<u>CONCRETE WORK: FRAMES AND WALLS</u>				
	<u>Ground Floor to Roof Level.(1:2:4)</u>				
1.11.5.1.1.1	Reinforced insitu concrete, grade 20mm aggregate (developing 21KN/sq.mm working strength at 28 days), Vertical work;columns, ≤ 300mm thick,in structures, reinforce=5%	0.27	M ³		
1.11.2.1.2.1	Ditto; horizontal work in Lintels and roof Beams.	0.338	M ³		
	<u>Concrete facia-Parapet wall at roof beam</u>				
	Concrete facia-Parapet wall- Architrave made of Cement and Sand mortar 1:4mix, filled hollow with concrete work as required.		m		
	<u>Form Work to Insitu Concrete:</u>				
1.11.21.1.0.	Plain formwork to sides of columns, 12 in numbers, regular, rectangular in shape.	7.2	M ²		
1.11.18.1.0.	Ditto; Sides and soffits of lintels, regular, rectangular in shape.	3.675	M ²		
1.11.18.1.0.	Ditto; to sides of roof beams, regular, rectangular in shape.	9.225	M ²		
	<u>Reinforcement in Superstructure.</u>				
	<u>High Yield Bars to BS 4449</u>				
1.11.34.1.1.	High yield steel bars,10-12mm diameter, straight bars 12m long; 168m in Columns	0.04	T		
1.11.33.1.1.	High yield bars, 8mm diameter links, stirrups in Columns.	0.024	T		
1.11.34.1.1.	High yield steel bars,10-12mm diameter, straight bars 12m long; 151.35m in Lintels	0.02	T		
1.11.34.1.1.	High yield steel bars,12mm diameter, straight bars 12m long; 57.6m in Beams.	0.073	T		
1.11.33.1.1.	High yield bars, 8mm diameter links, stirrups in Lintels and Beams.	0.015	T		
	<u>CONCRETE WORK: CARRIED TO SUMMARY</u>				
	<u>SUPERSTRUCTURE CONT'D.</u>				
	<u>Brick/Block Walling in Superstructure</u>				
	<u>EXTERNAL & INTERNAL WALL</u>				
1.14.1.2.2.1	Walls, overall thickness 150mm thick battered on both sides in Common /stretcher bond, cement mortar (1:3) externally	57.9	M ²		
	Ditto; Internally	22.68	M ²		
	<u>EXTERNAL AND INTERNAL WALLS: CARRIED TO SUMMARY</u>				-

	ROOF CONSTRUCTION				
1.16	CARPENTRY Sawn hardwood treated timber size: Structural Timbers, 50mm x 100mm Rafters and associated timbers fixed with 150mm size nails at 1200 centres and specially treated with solignum.				
1.16.1.1.1.1	Ditto; 50mm x 75mm purlins fixed at 600mm centres	27	M		
1.16.1.2.1.1	Ditto; 75mm x 100mm wall plates	18	M		
1.16.1.3.1.1	Ditto; Roof and floor joists 50mm x 100mm Tie beams	5	M		
1.16.1.4.1.1	Ditto; 50mm x 100mm Strutting, fixed at 1200mm centres	5	M		
1.16.1.5.1.1	Ditto; 50mm x 50mm Partition and wall members.	14	M		
1.16.1.7.1.1	Facia boards ≤ 600mm wide, 250mm finished width and 38mm thickness, vertical.	74	M		
1.16.1.7.1.1	Sundries 12mm diameter mild steel holding down bolt 45mm long with hexagonal nuts and washers including forming pockets in blockwork and grouting mortar, and boring 100mm hardwood.	22	M		
1.16.6.1.6.1	CARPENTRY WORK CARRIED TO COLLECTION	16	Nr		
1.17	SHEET ROOF COVERING 0.55mm gauge darked-Coloured Step tiles Longspan aluminium roofing sheet of high Quality, fixed with single lap covering 150mm end laps to sawn hardwood purlins (measured separately) at approximately 850mm centres with 80mm long drive screw nails with plastic caps and washers. Covering > 500mm wide, sloping at 30°				
1.17.1.2.1.1	underlays on purlins.	36	M ²		
1.17.4.1.3.7	Boundary work, at the ridge fixed with nails and special washers 600mm girth, Ridges sloping		M		
1.17.4.1.5.7	Ditto; Valleys sloping		M		
1.17.5.1.9.1	Flashings, Eaves 150mm girth lining to openings	25.4	M		
1.17.5.1.9.1	Ditto; facier 250mm girth lining to openings.	25.4	M		
1.17.1.2.1.1	Cladding and Covering: Covering > 500mm wide, horizontal underlays on purlins.	14	M ²		
	ROOF COVERING CARRIED TO SUMMARY COLLECTIONS: CARPENTRY SHEET ROOF COVERING				
	ROOF CONSTRUCTION TO SUMMARY				

1.23	WINDOWS, SCREENS AND LIGHTS				
	The following aluminium window tower or approved equivalent; complete all necessary iron mongery, assembled and fixed to;including cutting and pinning lugs to concrete or block work opening; surrounding and bedding frame in cement mortar(1:4). Supply and fix in place Aluminium framed glass projected window fully glazed with 5mm thick sheet glass size: 600mm x 600mm high.				
1.23.1.1.1	Ditto; Projected Window size: 1200mm x 1500mm high.	1	Nr		
1.23.1.1.1		2	Nr		
1.24	DOORS, SHUTTERS AND HATCHES				
	Supply and fix the following door of approved quality and design to suit size Virony doors or equivalent; size:750mm x 2100mm high.				
1.24.2.1.1.1	Ditto; 900mm x 2100mm high.	1	Nr		
1.24.2.1.1.1		2	Nr		
1.24.2.1.1.1	Approved Burglary Gate made of 50mmx50mm Angle iron size:1200mm x 2100mm high.	1	Nr		
1.26	METAL WORK;BURGLARY PROOF				
	Supply and fix the following mild steel burglary proof panels made of Wrought iron Sq pipe for window Protector design, fixed to concrete work/block work with lugs, including making good surfaces disturbed and painting with 2 gloss paint to suit window openings.				
1.26.2.1.1.1		3	Nr		
	WINDOWS, DOORS AND METAL WORK TO SUMMARY				
	<u>SUPERSTRUCTURE TO COLLECTIONS:</u>				
	Concrete work				
	Block work				
	Roof Construction and covering				
	Windows, door and metal work				
	SUPERSTRUCTURE CARRIED TO SUMMARY				
1.32	FURNITURE , FITTINGS AND EQUIPMENT				
	<u>HANDRAILS</u>				
	Fabricate and fix approved iron handrails at the entrance door/ verander.	4	M		
	FURNITURE , FITTINGS AND EQUIPMENT TO SUMMARY				

1.38	MECHANICAL SERVICES				
	<u>Sanitary Appliance and Fittings</u>				
1.32.2.1.4	Sensor Hand wash basin, 450mm x 350mm c/w bottle trap tap and accessories, 'Twyford' or approved equivalent.	1	Nr		
1.32.2.1.4	Automatic Flush,Vitreous China or Tyford Water Closet complete with accessories, 'Twyford' or approved equivalent.	1	Nr		
1.32.2.1.4	Vitreous China automatic urinal flush cistern with flush pipe C/w accessories, 'Twyford' or approved equivalent.		Nr		
1.32.2.1.4	Vitreous China toilet roll holder, 'Twyford' or approved equivalent.	1	Nr		
1.38.3.1.1	Pipe Work; Allow a provisional sum for all pipe work(PRP Pipes as specified in the Mechanical Engineering drawings) in connection with Plumbing work		Item		
	<u>Fixtures</u>				
	9kg multi- purpose dry powder fire extinguisher; waterloo or equivalent.	1	Nr		
1.38.2	<u>Terminal Equipment and Fittings: Fresh water distribution</u>				
	Allow for other pipework, fittings and consumables(pvc gum, thread tape, etc.)		Item		
	<u>Builders Work</u>				
	Allow a provisional sum for builder works in connection with Mechanical Services.		Item		
	MECHANICAL SERVICES TO SUMMARY				

1.39	ELECTRICAL SERVICES				
1.39.1.1.1.1	Primary Equipment: Supply and install the following High equipment, System, high level in plant room Type: 100A Busbar chamber (Mem) Electrical Control; 100A ELCB 100A 4-way TPN Distribution board 100A TP&N Knife Switch Cut out fuse box Neutral Link/Connector 300mm x 450mm board	1 1 1 1 1 1 1	Nr Nr Nr Nr Nr Nr Nr		
1.39.2.1.1.1	Terminal Equipment; Supply and install the following approved rated Lamps and other Fittings complete with accessories: Allow a provisional sum for the supply and installation of all terminal electrical equipment as would be directed by the Electrical Engineer incharge.		Item		
1.39.3	Cable Containment: 50mm diameter upvc cable duct-Kano or equal in blockwall chases, including cutting chases in block wall and making good.		Item		
1.39.4	Cable Containment Fittings: Allow a provisional sum for the supply and installation of Joint boxes, Connectors, bends,tees,sets,junctions, reducers, Fire barriers and the like.		Item		
1.39.5	Cables Allow a provisional sum for the supply and installation of cables of all sizes as would be required.		Item		
1.39.7	Final Circuits: Accessories for Electrical Wiring; Lighting switches, power outlet switched sockets MEM or other equal and approved quality including galvanized steel knockout box set in mortices on walls. 13A flush switch socket 13A Twin flush switch socket 15A switched socket outlet 1400mm sweep ceiling fan installed with control. Allow for consumables. Earthing and Lighting Protection: Supply and install Earthing system consistent with the drawing to achieve equal or less than 5 ohm resistivity.	2 2 2 1	Nr Nr Nr Nr Item		
	Electrical Service to Page collection.		Item		

	Low Voltage Installation Supply and install all low voltage installations; Cables and cable containment for CCTV, Television and Telephone/Intercom system etc complete with accessories.		Item		
1.41	Builders Work Cut away and make good, builders work disturbed after electrician complete execution of the following:				
1.41.1.1.1.1	Equipment and Control gear Allow for testing and commissioning. To collection: Collections: Page 6:... Page7:... ELECTRICAL SERVICES TO SUMMARY SERVICES TO COLLECTION: MECHANICAL SERVICES ELECTRICAL SERVICES SERVICES TO SUMMARY FLOOR, WALL, CEILING AND ROOF FINISHINGS Ground Floor : Floors Screeds, beds and toppings 40mm thick, exceeding 600mm wide, level and to falls only =50° from horizontal, backing and beddings 44mm thick in cement and sand mortar (1:5) laid on concrete bed (measured separately) to receive tiles.	5	Nr Item		
1.28.1.2.1.3	Cement Backing; 5mm Cement Binder paste Floor Tiles: Finish to Floors; 400mm x 400mm x 8mm Vitrified tiles laid on floor, exceeding 600mm wide to approved pattern on cement and sand bed (measured separately); finished with straight butt joints and flush with pointing coloured cement grout .	18	M ²		
1.28.2.2.1.7	Ditto; Skirting 100mm high. Cement Backing; 8mm Cement Binder paste Walls Finish to Walls; Cement and Sand (1:4) rendering 12mm thick, exceeding 600mm wide Externally and internally.	18 68.5 68.5	M ² M M		
1.28.7.2.1	Window and Door Skirting/Design Architrave Balustrade made of Cement and Sand mortar 1:4mix, include concrete work as required.	251.2 15	M ² m		

1.28.7.2.1	Wall Tiles: Finish to Walls; 250mm x 400mm x 8mm Glazed Ceramic tiles laid on Walls, exceeding 600mm wide to approved pattern on cement and sand bed (measured separately); finished with straight butt joints and flush with pointing coloured cement grout .	20	M ²		
	Cement Backing; 5mm Cement Binder paste	20	M ²		
1.28.9.2.1	Ceiling Finish to ceilings,Eternite Asbestos ceiling 1200mm x 1200mm wide nailed to ceiling joist.	18	M ²		
	FINISHINGS TO SUMMARY DECORATION; PAINTING Painting to general surfaces, exceeding 300mm girth,internal, patterned, one undercoat and two finishing coats of Peacock or other approved quality emulsion paint on wall Externally and internally.	251.2	M ²		
	PAINTING CARRIED TO SUMMARY				
	COLLECTION: FINISHINGS DECORATION; PAINTING				
	INTERNAL FINISHES TO SUMMARY				
1.34	DRAINAGE BELOW GROUND				
1.34.7.1	Foul Drain: Inspection Chamber Construction of inspection chambers, size 450mm x 450mm x 600mm using 150mm thick solid sandcrete block and covered with precast reinforced concrete slab size 450mm x 450mm x 50mm	2	Nr		
1:34.8.2.3	Soak Away Pit (S.A.P) Soak Away Pits; internal size: 2950mm x 2600mm x 3000mm deep using 150 mm thick solid sandcrete block wall built honey comb with reinforced concrete columns and plaster internally with the bottom/base casted with plain concrete grade 30 as well as covered with reinforced concrete slab as per Engineer details.	1	nr		
1:34.10.2.3	Septic Tank (S.T) Septic Tank; internal size: 3000mm x 2600mm x 3200mm deep using 150 mm thick solid sandcrete block wall with reinforced concrete columns/ cross beams and plaster internally with the bottom/base casted with plain concrete grade 30, as well as covered with reinforced concrete slab as per Engineer details.	1	nr		
1.34.16	Allow for all pipe work in connection with drainage		Item		
	DRAINAGE CARRIED TO SUMMARY				

MAIN SUMMARY					
	FACILITATING WORKS				
	SUBSTRUCTURE				
	SUPERSTRUCTURE				
	INTERNAL FINISHES				
	FITTINGS, FURNISHINGS AND EQUIPMENT				
	SERVICES				
	PREFABRICATED BUILDING AND BUILDING UNITS				
	WORK TO EXISTING BUILDING				
	DRAINAGE BELOW THE GROUND				
	TOTAL				

BILL NO.5- PERIMETER FENCE-34m

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.36.	PERIMETER FENCING				
	Fencing, Sandcrete blockwall 150mm thick battered on both sides in common/ stretcher bond,cement mortar (1:3), 1.5m high,supported with blockwall column post 2.8m centre to centre erected in a pit 0.6m depth below strip level, complete with rendering to wall- approach view.	5	M		
1.36.1.1.1.1	Ditto; sides and rear view.	26	M		
	Extra over for special supports, 300mmX450mmX2900mm, straining post, constructed with block wall with all necessary excavation in cluding coping.	10	Nr		
1.36.2.1.4.1	Independent gateposts,300mmX450mmX3000mm, straining post, constructed with reinforced concrete casted in a column base with all necessary excavation, reinforcement and form work in cluding coping.	2	Nr		
1.36.3.1.3.1	Gates, two leaf; Fabricate metal gate,4000mmX1800mm made of 1 inches square pipe iron fixed to gate posts.	1	Nr		
1.36.5.1.1	METAL WORK				
	Formwork for coping at Headwalls; using Architrave Balustrade made of Cement and Sand mortar 1:4mix, include concrete work as required.	31	m		
	Ditto; Piers	12	Nos.		
	Security on Fence: Provide and install Concertina Barb wire (whirl coil) on fence headwall with the nceassary Y shape Angle iron bracket buried in concrete on fence headwalls, as required.	31	m		
	PERIMETER FENCING SUB TOTAL				

1.29	<u>DECORATION;</u> <u>PAINTING</u> Painting to general surfaces, exceeding 300mm girth, internal, patterned, two finishing coats of Peacock or other approved quality emulsion paint on walls- approach view.		M ²		
1.29.1.2.1.1		15	M ²		
1.29.1.2.2.1	Ditto; sides and rear Ditto; ≤ 300mm girth.	78 31	M ² M		
	DECORATION TO SUMMARY				
	COLLECTION:				
	PERIMETER FENCING				
	DECORATION				
	CARRIED TO GENERAL SUMMARY				

	<u>GENERAL SUMMARY</u>				
	PRELIMINARIES				
	PROVISION OF BORE HOLE				
	ELEVATED WATER TANK				
	RECTICULATION				
	GENERATING PLANT				
	SOLAR POWER INSTALLATION				
	TREATMENT PLANT				
	SERVICE BUILDING				
	PERIMETER FENCE				
	TOTAL TENDER PRICE(EXCLUSIVE OF VAT)				
	ADD PROFIT AND OVERHEAD	20%			
	TOTAL2				
	ADD VAT				
	GRAND TOTAL				