

# **UNITED NATION DEVELOPMENT PROGRAMME**

**Bill of Quantities**

**For**

**The Construction of Renewable Centre for the Installation of  
Cookstove Testing Laboratory Equipment**

**Government Technical Institute (GTI)  
Kissy Dockyard  
Freetown**

Construction of the Renewable Energy Center and Installation  
of Cookstove Testing Laboratory equipment

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
1.00	<b>PRELIMINARIES</b>				
1.10	Mobilization	lump Sum	1		
1.11	Safety precautionary measures	lump Sum	1		
1.12	Site photograph	lump Sum	1		
1.13	Demobilization	lump Sum	1		
	TOTAL PRILIMINARIED CARRIED TO SUMMARY				

Construction of the Renewable Energy Center and installation  
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Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
2.00	<b>SUBSTRUCTURE</b>				
2.10	<u>Site Clearance</u>				
2.11	Clear site of all debris in the existing splace provide to build the structure	lump Sum	1		
2.20	<u>Excavation</u>				
2.21	Excavate surface to remove top soil, starting at ground level and maximum depth not exceeding 450mm and deposite in spoil on site	m <sup>2</sup>	97		
2.22	Excavate trenches to receive strip foundation not exceeding 1.0 m in depth and deposite on site for re-use	m <sup>3</sup>	35		
2.23	Excavation for column and column bases with dimensions 600mm x 600mm and maximum depth not exceeding 1000mm	m <sup>3</sup>	6		
2.30	<u>Filling</u>				
2.31	Filling to on the side of foundation blockwork of selected excavated material deposited and compacted in layers	m <sup>3</sup>	14		
2.32	Ditto to make up levels below ground floor slab of selected excavated material	m <sup>3</sup>	12		
2.33	Ditto; imported excavated material off site	m <sup>3</sup>	26		
2.34	Ditto imported hardcore materials of laterite ballstones , 200mm thick	m <sup>3</sup>	18		
2.35	Sand blinding average 50mm thick on hardcore filling	m <sup>2</sup>	96		
	<b>SUBSTRUCTURE Balance B/D</b>				

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<b>Item No</b>	<b>Description</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Rate (Le)</b>	<b>Amount (Le)</b>
	SUBSTRUCTURE balance B/F				
	SUBSTRUCTURE Works continues				
2.40	<b>Concrete Work in Foundation</b>				
2.41	Plain in-situ concrete mix (1:4:8-19mm aggregate) as blinding to column bases	m <sup>3</sup>	0.85		
2.42	Plain in-situ concrete mix (1:3:6 -19mm aggregate) in foundations poured against faces of excavation (strip foundation)	m <sup>3</sup>	8		
2.43	Ditto: in 150mm thick ground floor slab and steps	m <sup>3</sup>	15		
2.44	Reinforced in-situ in column bases and columns in foundations including reinforcement and formwork (1:2:4;mix )	m <sup>3</sup>	2.5		
2.50	<b>Formwork</b>				
2.51	To edges of concrete floor slab, 150mm high.	m	40		
2.60	<b>Damp proof membrane</b>				
2.61	"Waterproof black plastic horizontal damp-proof membrane laid over sand blind hardcore with 600mm laps at all joint	m <sup>2</sup>	96		
2.70	<b>Blockwork in Foundation</b>				
2.71	150mm thick solid sandcrete block bedded and jointed in cement motar (1:6) in foundation	m <sup>2</sup>	65		
2.72	12mm thick cement and sand (1:6) rendering in foundation	m <sup>2</sup>	65		
2.73	Prepare and apply two coats of waterproof paint on rendered walls in foundation	m <sup>2</sup>	51		
	<b>SUBSTRUCTURE CARRIED TO SUMMARY</b>				

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
3.00	<b>CONCRETE WORKS</b>				
3.10	Reinforced in-situ concrete mix (1:2:4-19mm aggre) in rectangular columns including reinforcement and formwork	m <sup>3</sup>	2.00		
3.11	Ditto in beams and lintels	m <sup>3</sup>	4.3		
	<b>CONCRETE WORKS CARRIED TO SUMMARY</b>				
4.00	<b>BLOCKWORK</b>				
4.10	Precast sandcrete (1:6) solid blocks bedded and jointed in cement mortar (1:6) in 150mm thick walls	m <sup>2</sup>	165		
	<b>BLOCKWORK CARRIED TO SUMMARY</b>				
5.00	<b>ROOFING</b>				
5.10	Corrugated long span coloured aluzinc 5mm thick complete with all fixing accessories	m <sup>2</sup>	140		
5.11	Corrugated long span aluzinc ridge covering	m	30		
	<b>ROOFING CARRIED TO SUMMARY</b>				

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
6.00	<b>WOODWORK</b>				
	Sawn hardwood timber treated with colored approve wood preservative, in				
6.10	50 x 150mm Ridge/Hip board	m	60		
6.11	50 x 100mm Wall plates	m	70		
6.12	50 x 100mm rafters	m	245		
6.13	50mm x 100mm King posts	m	15		
6.14	50mm x 75mm Struts and braces	m	90		
6.15	50 x 75mm purlins	m	215		
6.16	50mm x 75mm Ceiling noggings	m	95		
	Wrought hardwood timber, treated with clear approved wood preservative in				
6.17	25 x 225mm (finished) fascia/verge board	m	45		
6.18	12mm x 38mm wide cover strips	m	350		
	<b>DOORS</b>				
6.19	750mm wide x 2050mm high semi solid core plywood				
6.20	faced flush door lipped all round with hardwood for all toilet doors	No	3		
6.21	Timber panel door with dimensions 750mm wide x 2050mm high	No	3		
6.22	Double leaves timber pannel door with dimensions 1500mm x 2050 mm high	No	0		
	<b>Door frame</b>				
6.23	44mm thick x150mm wide wrought hardwood rebated frame fixed into wall with built -in lugs	m	40		
	<b>Ironmongery</b>				
6.24	100 mm brass butt hinges screwed to timber frame and doors	pair	6		
6.25	3-lever mortice door lock:( EU quality) with accessories	No	4		
6.26	Bathroom lockset of approved quality & locking accessories	No	3		
6.27	150mm brass flush bolts to back of doors	No	4		
	<b>WOODWORK CARRIED TO SUMMARY</b>				

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
7.00	<b>METAL WORK</b>				
	<b>Door</b>				
7.1	1500mm wide x 2100 mm high solid heavy duty steel double-leaves flushed door complete with 4- turns lock and accessories for the main entrance	No	1		
7.11	750mm wide x 2100 mm high solid heavy duty single stell flushed door complete with 4- turns lock and accessories for the two side doors	No	3		
	<b>Aluminium Windows</b>				
	Aluminium sliding windows in bronzed anodised frame and tinted glazing complete with mosquito screen (glazing included) overall sizes, double tracks- double sliding leaves				
7.12	1800mm x 1500mm	No	3		
7.13	750mm x 900mm	No	1		
7.14	600mm x 600mm	No	3		
	<b>Guard Bars</b>				
	Steel Guard bars constructed with 50mm x 25mm RHS as Horizontal & vertical members fabricated to Supervising Engineering's Design				
7.15	1800mm x 150mm	No	3		
7.16	750mm x 900mm	No	1		
7.17	600mm x 600mm	No	3		
	<b>METAL WORKS CARRIED TO SUMMARY</b>				

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
8.00	<b>PLUMBING INSTALLATION</b>				
	Plumbing and cold water installations in UPVC pipes and fittings including joints and support in the running length to the following				
8.10	W C	No	3		
8.11	Wash hand basin	No	3		
8.12	Cold water storage tank	No	1		
	<b>Appliance by Approved manufacturer</b>				
8.13	Vitreous China W.C suit complete with 9litre flushing cistern with float ball valve flexible connector ring seat and cover	No	3		
8.14	425m x 535m vitreous china wash hand basin complete with fixing brackets, 1Nr 12m pillar, tap plug, chain and stay with waste outlet	No	3		
8.15	5000 litre cold water storage tank	No	1		
8.16	150 x 150mm chromium plated soap holder plugged and screwed to blockwall	No	3		
8.17	Toilet roll holder plugged and screwed to wall	No	3		
8.18	Towel rail; chromium plated, 600mm end brackets, , plugged and screwed to blockwork	No	3		
8.19	Stainless Floor drain, Toilet	No	3		
	<b>PLUMBING INSTALLATION CARRIED TO SUMMARY</b>				



Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
9.00	<b><u>ELECTRICAL INSTALLATION</u></b> Supply and install electrical <u>first fix</u> for the following general in concealed plastic conduit, fitting including chasing, casting building in conduits and sleeves through floors walls and ceiling, plugged for fixing conduits and fitting M K boxes ceiling light points				
9.1	wall light points	No	8		
9.11	10 Amp light switch points	No	10		
9.12	switched socket outlet points	No	15		
9.13	13 Amp double	No	15		
	Supply and erect 1.5mm <sup>2</sup> PVC insulated cables and PVC sheathed cables in concealed 20mm diameter PVC conduit in circuit wiring complete with all boxes and filling from distribution board to				
9.14	ceiling light points	No	15		
9.15	wall light points	No	8		
9.16	10 Amp light switch points	No	10		
	Supply and erect 2.5mm <sup>2</sup> PVC insulated cables and PVC sheathed cables in concealed 20mm diameter PVC conduit in ring main circuit wiring complete with all boxes and fittings from distribution board to switched socket outlet points				
9.17	13 Amp double	No	15		
	<b><u>Fittings and Accessories</u></b>				
9.18	13 Amp double switch socket outlet	No	10		
	10 Amp switches				
9.19	1 gang 1 way	No	4		
9.2	2 gang 1 way	No	3		
9.21	2 gang 2 way	No	2		
9.22	1 x 36w (1200) corrosion resistant florescent fitting thorn	No	10		
	Electrical installation Balance B/D				

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Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
	<b>Electrical installation Balance B/F</b>				
9.23	Ditto but 1 x 18w (600)	No	2		
9.24	First light toilet downlight IP 66 water proof rating fittings complete with low energy bulbs	No	4		
	Supply and install the following boards, approved light fittings mains switch gear fuse etc and including 25mm <sup>2</sup> diameter concealed PVC conduits and wiring Proteus TYPE B or similar approved 415/240 C 50 HZ, 100				
9.25	Amp 8-way TP & N distribution board	No	1		
9.26	63 Amp change over switch	No	1		
9.27	Supply and install power distribution cables from EDSA to prepaid meter with 4C x 25 mm diameter aluminium conductor	m	30		
9.28	Supply and install distribution cable from prepaid meter to change-over switch with 4Cx 16mm diameter cables	m	10		
9.29	Supply and install distribution cable from change-over switch to distribution board with 4Cx 16mm diameter cables	m	10		
	<b>EARTHING, LIGHTING AND PROTECTION SYSTEM</b>				
9.3	Allow a sum for installing all earthing, lighting and protection system complete with all earth pits, copper conductor cables including all excavations and earth works	item	1		
	<b>ELECTRICAL INSTALLATION CARRIED TO SUMMARY</b>				

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
10.00	<b>FLOOR, WALL AND CEILING FINISHINGS</b>				
10.10	12mm thick cement and sand (1:4) rendering on walls (internally and Externally)	m <sup>2</sup>	330		
10.11	Ditto revealing	m <sup>2</sup>	100		
	<u>Floor bed</u>				
10.12	31mm thick cement and sand (1:3) screeded bed laid level on concrete floor to receive ceramic floor tiles	m <sup>2</sup>	98		
	<u>Tile Finishings</u>				
10.13	Non slip Porcelain floor tiles butt jointed straight on the the sides 450mm x 450 x 10mm thick laid level on cement and sand bedding	m <sup>2</sup>	102		
10.14	6mm thick glazed wall tiles fixed vertically on rendered backing to walls in toilets	m <sup>2</sup>	45		
10.15	100mm wide ceramic skirting fixed vertically to walls	m	68		
10.16	3/4mm Ceiling hard board nailed to and including first grade treated timber battens with clout nails in grids of 600 x 1200mm complete with cover strips and matching covings	m <sup>2</sup>	96		
10.17	50mm x 50mm treated hardwood noggins to receive 600mm x 600mm hardboard ceilings	m	50		
	<b>FLOOR, WALLS, AND CEILING FINISHINGS CARRIED TO SUMMARY</b>				

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Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
11.00	<b>PAINTING AND DECORATING</b>				
11.10	Prepare and apply one coat sealer and two coats emulsion paint on rendered walls (Internally and Externally)	m <sup>2</sup>	330		
11.11	Ditto to soffit of hardboard ceiling	m <sup>2</sup>	98		
11.12	Prepare and apply one undercoat and two coats gloss paint on wood and metal doors and windows	m <sup>2</sup>	40		
11.13	Ditto on frames not exceeding 300m grith	m <sup>2</sup>	15		
	Ditto but on fascia board	m <sup>2</sup>	12		
	<b>PAINTING AND DECORATING CARRIED TO SUMMARY</b>				

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Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
12.00	<b>EXTERNAL WORKS</b> <b>Aprons/Surface Water Drain</b>				
12.1	Excavate surface to remove top soil starting at ground level and maximum depth not exceeding 750mm and deposit excavated materials in spoil heaps on site	m <sup>3</sup>	30		
12.11	150mm thick laterite hardcore material laid to slight falls to receive concrete aprons	m <sup>3</sup>	6.7		
12.12	75mm thick plain in-situ concrete mix (1:3:6 -37mm aggregate) in aprons complete with formwork to edges	m <sup>3</sup>	4.0		
12.13	Clean existing U-shaped drains, repair the floor of the drain and sides with concrete as directed by the , the Engineer and cover the drain under the building with reinforced concrete slabs (1:2:4 mix) before building the floor slab of the proposed building on top of it	lump Sum	1		
	<b>Soil Drainage</b>				
12.14	Septic Tank with size as showing on the drawings with manholes and all associated pipe works	lump Sum	1		
12.15	Soakaway with dimension 3m diameter and 2 m deep filled with laterite ballstones and covered with lean concrete	lump Sum	1		
	<b>Water Supply to the Building</b>				
12.16	Provide a lump sum for the construction of 2400 mm x 2400 mm by 3000mm high water tower for the 5,000 liters milla tank	lump Sum	1		
12.17	Provide lump sum for high pressure water pipes and fittings as required to supply water to the 5000 litres milla tank provided for onwards distribution of water into the buildings	lump Sum	1		
12.18	Install 5,000 liters tank on the waqter being built.	lump Sum	1		
	<b>EXTERNAL WORKS CARRIED TO SUMMARY</b>				

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Item No	Description	Amount (Le)
SUMMARY		
1.00	PRELIMINARIES	
2.00	SUBSTRUCTURE	
3.00	CONCRETE WORKS	
4.00	BLOCK WORK	
5.00	ROOF WORK	
6.00	WOODWORK	
7.00	MRTAL WORK	
8.00	PLUMBING INSTALLATION	
9.00	ELECTRICAL INSTALLATION	
10.00	FLOOR , WALLS, AND CEILING FINISHINGS	
11.00	PAINTING	
12.00	EXTERNAL WORKS	
13.00	COST of WORKS	
14.00	CONTINGENCY 5%	
15.00	TOTAL COST OF PROJECT	

In Words:.....

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