



United Nations Development
Programme/Programme of
Assistance to the Palestinian People



حملة خادم الحرمين الشريفين لإغاثة الشعب الفلسطيني بغزة

**Construction 100 Housing Units To Re Housing the
Affected Palestinian families in Gaza Strip**

Project No.: PAL 10-00070416

Bill of Quantities for Package 06

Residential Buildings A5 & A6



Center for Engineering & Planning (CEP)

Gaza, Gaza Strip

Jamal Abed Nasser St., Gaza, Palestine

Tel: +972 8 2827173

Fax: +972 8 2846445

E-mail: cepgaza@gmail.com

January 2013

PREAMBLE TO BILL OF QUANTITIES (BOQ)

1. GENERAL

- ◆ The nature of this contract is measured unit price contract and the Bill of Quantities (BOQ) shall reflect this fact.
- ◆ BOQ shall be read and construed in conjunction with other Contract Documents.
- ◆ General directions and description of work and material given in the Technical Specification are not necessarily repeated in the Bill of Quantities. The Technical Specification forms an integral part of the Bill of Quantities.
- ◆ The Tenderer is obliged to check the number of the pages of the Bill of Quantities and should any be found missing or duplicated or the figures or writing indistinct, the Tenderer must notify the Employer/Engineer at once and have the matter rectified before the Tender is submitted. No liability whatsoever will be accepted in respect of any claim for errors in the Tenderer's offer resulting from failure to comply with the a fore-going.
- ◆ The Tenderer is deemed to have visited the site and fully acquainted himself as to the location of each work to be carried out and to all conditions which may affect the performance of the works, including but not limited to:
 - Access to each of the roads in which the pipes will be installed.
 - Access for the plant, equipment and materials.
 - Surface conditions.
 - Restrictions applicable to working in GAZA Strip area.
 - All safety regulations and employer site safety procedures.
 - All Palestinian regulations.
- ◆ The Tenderer is also deemed to have surveyed the actual condition of the roads and made his own assessment of the type and extent of the works prior to submitting his offer.
- ◆ The Price should include providing all Mandatory spare parts needed for all Electro-Mechanical equipments used in the project as specified by the manufactures.

2. QUANTITIES

Notwithstanding that practical care was exercised in preparing the BOQ, but all quantities given herein shall be deemed to be estimated quantities of the work to be done but they are not to be taken as actual and correct quantities of the work to be executed and they are not to absolve the contractor of his obligations under the Contract. They are not to be taken as guarantee that the actual quantities increase or decrease, and any claim whatsoever submitted for cost or extra expenses incurred from such increase or decrease will not be accepted by Employer/Engineer except where else stipulated in the Contract.

3. MATERIALS

All materials used are to be of the best new available and subject to the Employer/Engineer approval, and of durable nature, guaranteed, not liable to any base exchange and manufactured according to applicable BS, ASTM or DIN Standards. Execution also is subject to approval of Employer/Engineer and shall be the best available common practice in engineering codes at the time of execution.

Items that contain materials or products of special make with names of manufacturers are to be taken as samples of what will be required. Subject to the Employer/Engineer approval, the Contractor may, at his discretion, offer similar products of other make if the equivalent quality of the specified materials is guaranteed. In this case, the Contractor shall submit a description and/or drawings showing all technical conditions, characteristics, make, type and address of Manufacturer, etc., of the materials offered as alternatives.

4. PRICES AND CURRENCY

The prices given, by the Contract, hereunder in the BOQ shall be in United States Dollars and shall not be exchangeable with other foreign currencies. Furthermore inflation and escalation or changes whatsoever shall not be subject of claim later on.

The Unit Prices entered against the various items in the following Bill of Quantities include all operations for execution, completion and maintenance of the various items of the works finished completely in every respect till the final acceptance as specified or described in the Tender Documents, with or without modifications, either by way of additions or deductions, or alterations as may be offered in writing during the progress of the works, and include, without being limited to, all matters and things particularly referred to in the Tender Documents.

The Unit Price shall cover all costs of every kind whatsoever including, without being limited to, all charges for additional site installations, relocation, supervision, labor, transportation and supply of materials; the provision, maintenance, use and efficient repair of all plant, equipment and appliance of every kind, the construction and maintenance of all temporary works, the performance of all services and the fulfillment of all obligations and responsibilities herein defined.

The Tenderer shall be deemed to have fully considered all the conditions, obligations, and requirements of the Tender Documents before entering the respective unit price against the various items of the Bill of Quantities.

The Unit Prices given hereunder the BOQ shall also include erection, installation, fixing, and re-fixing of all elements. These prices shall also include taxes, visa for labor, gate passes, accommodations for the Contractor's staff and labors, all required insurance and work permits, guarantees, bonds etc. and all requirements necessary to have the work maintained until its final handing over.

The Unit Prices given hereunder in the Bill of Quantities for this work shall also include overheads, risks, profit etc. and all other financial matters to have all these civil works completed.

The works, materials or activities listed in the following shall always be considered as auxiliary works to be included in the Unit Prices bid for any item in the Bill of Quantities:

- ◆ Any measurement for execution and payment of the works, including the provision of measuring instruments, gauges, setting out marks, marking paint and relevant tools, labor, etc., the maintenance and preservation of gauges and setting-out marks during the execution of the works.
- ◆ Provision of small tackle tools or any other equipment required for the execution of the works.
- ◆ Supply of consumable for the Contractor's equipment.
- ◆ Removal of all contamination (refuse, debris, building rubbish and the like) arising from or in connection with the Contractor's work.
- ◆ Protection of the executed works and of the items made available for execution of the works from damage, fire, inclement weather, vandalism and theft etc., to the time of final acceptance.
- ◆ Transportation of all materials and structural components from the storage places on site to the points of use and return transportation, if required.
- ◆ Submitting and transporting any samples required.
- ◆ Carrying out tests on materials and works, etc., that is required by the Engineer.
- ◆ Fuel and lubricants for operation of Contractor's equipment.
- ◆ All safety precautions and measures for safeguarding labor as well as securing surrounding areas.
- ◆ Lighting of the work site.

5. RIGHTS OF EMPLOYER

The following rights are reserved to the Employer:

- ◆ To omit individual items mentioned in the Schedule of Prices if not required in the opinion of the Employer and/or to replace them should it be more advantageous to execute them in another way.
- ◆ To order execution of alternative or provisional items as if they were main items.
- ◆ To order execution of additional works as well as alternatives of works, always in conformity with the conditions outlined in the Contract.

Any order and/or delivery of material or equipment by the Contractor for performance of the works may only be based on instructions and/or approved execution drawings by the Employer/Engineer.

All equipment and materials for installation and finishing works to be incorporated in this contract shall prior to ordering and/or delivery by the Contractor, be approved by the Employer/Engineer both in respect of quality and type as well as of quantity.

6. SITE ACCESS AND STORAGE

The Tenderer shall visit the site and ascertain the location of required access onto the site and the location of allowance for complying with the requirements and for the reinstatement to original condition of all roads and areas used or disturbed by the Contractor to the satisfaction of the Engineer.

7. SITE INSTALLATION

All costs of labor, works, provisions, materials and equipment for Site Installations required by the Contractor and stipulated in the Tender Documents shall be included in the various unit prices of the Bill of Quantities. No extra payment will be allowed by the Employer for any of these activities

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B1 - EARTH WORKS <u>* Notes:</u> - Prices for Excavation item shall include the removal of any buried structure not to be part of the proposed construction, including transport of excavated, surplus material and buried structure (not to be part of the proposed construction) to a location approved by the engineer or his representative outside the site, workmanship and any where else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative. - Quantities of Excavation shall be measured according to the elements' dimensions mentioned in the drawings - The Price for excavation includes demolishing and removal any of existing structures. Debris material shall be disposed off to approve site as directed by the Engineer or his representative. - Back-filling item should be in layers (25cm max. each & compaction test 98%). Prices shall includes supply, wetted, compacted, transporting, tested and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative. - Suitable Clean sand or kurkar soil material should be used for back-filling in layers (25cm max. each & compaction test 98%), selected from the approval excavated soil or imported. Prices shall includes supply, wetted, compacted, transporting, tested and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.				
1.1	Excavation of any soil type according to the elements' dimensions mentioned in the drawings with all required works	M3	2200		
1.2	Backfill at areas as shown on the drawing by using approved excavated material with all required works. This item includes the backfilling to maintain the required levels of the building as shown in the drawings, specifications and directed by the Engineer, using suitable material (25cm max. each & compaction test 98%) according to Eng. instructions and specifications.	M3	950		
1.3	Ditto but using imported and approved Clean Sand Material.	M3	200		
TOTAL OF BILL B1 (EARTH WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B2 - CONCRETE WORKS <u>* Notes:</u> - Prices for all concrete items shall include shuttering, steel reinforcement, testing for steel reinforcement and concrete, supply and placing of concrete, Mix Design, vibrating, curing, striking, polyethylene sheet (for any concrete contact with the soil), painting for hot bitumen (one coat of primer & min. 2-coats of hot bitumen) underground concrete for external surfaces, workmanship, all ducts, sleeves, opening areas and the concrete surface shall be finished with mechanical steel trowel and the price shall include steel trowelling with smooth face (fair face) and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative. - The Price for any concrete contact with soil includes laid polythene sheet 200 micron				
	<u>* CONCRETE (B - 200) :</u> 2.1 Supply and cast Plain concrete B 200 below foundations , supports, anchor blocks, benching, slopes or likes with all required works	M3	50		
	2.2 Supply and cast light weight concrete (foam concrete B-200) on the roof slab Thickness of 3-10 cm to the direction of the drainage The price shall include supply, workmanship and making good with all required works	M2	600		
	<u>* CONCRETE (B - 250) :</u> 2.3 Ditto but for ground slab (10cm - under tiles or without tiles) including reinforcement (1T8mm @ 20cm in both directions), leveling, compaction of sub-grade with all required works	M2	470		
	2.4 Ditto but for sills, lintels, coping, posts, parapets, arches, decoration, concrete wall for electrical trenches, external steps of stairs , edge beam for interlocking tiles and other likes works with all required works	M3	110		
	<u>* CONCRETE (B - 300) :</u> 2.5 Ditto for Foundations with all required works	M3	195		
	2.6 Ditto for Reinforced concrete stair, landing and drop beams of stair with all required works	M3	30		
	2.7 Ditto but for ground beams with all required works	M3	29		
	2.8 Ditto but for Ribed Slabs 25cm thick. Price includes concrete, reinforcement, hollow Blocks (40x25x17), drop beams, drainage, electrical, air conditioning, mechanical ducts & workmanship with all required works	M2	2170		
	2.9 Ditto but for Solid Slabs 20cm thick. Price includes concrete, reinforcement, drop beams, drainage, electrical, air conditioning, mechanical ducts & workmanship with all	M2	630		
	<u>* CONCRETE (B - 350) :</u>				
	2.10 Ditto for Basement, elevator, stair Walls with all required	M3	200		
	2.11 Ditto for Neck columns and columns with all required works	M3	104		
TOTAL OF BILL B2 (CONCRETE WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B3 - BLOCK, PLASTERING & PAINTING WORKS <u>* Notes:</u> - Prices of block works shall include supply of hollow concrete blocks from good and approved factory in perfect dimension and build it in good manner, cement sand mortar (1:3), concrete fillet (B250) between columns & block walls (15cm wide), compressive strength 35kg/cm2, works shall includes all materials, testing, scaffolds, placing of approval blocks, workmanship, all ducts , sleeves, opening areas, fiber board, protection concrete (B-200) around sleeves and pipes (for electrical, sanitary & mechanical), tools and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative. - Prices of plastering works shall include supply of all materials, galvanized angles (for exposed edges), galvanized mesh (between block wall and concrete), mixing, scaffolds, curing, workmanship & tools and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative. - Prices of painting works for walls & ceilings (European Type of good quality) shall include supply of all materials, scaffolds, workmanship & tools and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.				
3.1	Concrete hollow blocks for walls (40x20x20)cm with all required works	M2	700		
3.2	Ditto but for (40x20x15)cm with all required works	M2	2700		
3.3	Ditto but for (40x20x10)cm with all required works	M2	2100		
3.4	Internal Plastering two faces for internal walls, partitions, edge beams, columns, soffits and ceilings min. thick 15mm with all required works	M2	8300		
3.5	External Plastering two faces for external walls (elevations) min. thick 20mm with all required works	M2	2440		
3.6	Marmarina finish for elevations, edges and anywhere else with color painting and all required works.	M2	2440		
3.7	Internal Painting for internal walls one undercoat primer and min. 2-coats of supercryle paint with all required works	M2	5800		
3.8	Internal Painting for ceiling one undercoat primer and min. 2-coats of polyseed paint with all required works	M2	2500		
TOTAL OF BILL B3 (BLOCK, PLASTERING & PAINTING WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B4 - TILING, MARBLE & FLOORING WORKS <u>* Notes:</u> <i>- Prices of Tiles & Marble works shall include supply of all materials, testing, mortar, 5cm sand under tiles or marble or back the tiles or marble (wall), skirting, workmanship, opening areas and all materials & tools and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.</i> <i>- Black Basalt mixed with white marble chips, size 4mm, shall be used in the precast terrazzo tiles, free from cracks, holes and pits, homogeneous in the approval color</i> <i>- Only European Type of good quality imported glazed ceramic tiles (floor & walls) shall be used</i> <i>- Only Grade A for local marble shall be used, free from cracks, holes and pits, homogeneous in the approval color</i>				
4.1	Terrazzo tiles floor size 25x25x2.5cm., Terrazzo skirting of same kind and color of the floor tiles size 25x7x1cm thick with all required works	M2	2100		
4.2	Non-slipping white ceramic floor tiles size 20x20x0.8 cm. with all required works	M2	360		
4.3	Glazed white wall ceramic size 20x20x0.6 cm. with all required works	M2	1500		
4.4	Local marble (Grade A) 3cm thick for window sills and doors with all required works	M2	170		
4.5	Granite marble (rozabita-3cm thick) for staircase risers and tread and external steps with all required works	M2	210		
4.6	Local marble (Black Granite - Tiger) 3cm thick for the kitchen for cupboards 60 wide & 100cm height and length around 4.2m, the works including the top surface with round edges, vertical dividers and internal horizontal shelves, back of cupboards, floor skirting 10cm high (local marble - yatta type or equivalent) and making the needed opening for basins, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative	UNIT	17		
TOTAL OF BILL B4 (TILING, MARBLE & FLOORING WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B5 - METAL & WOODEN WORKS * Notes: <i>- All the following items shall be completed according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.</i> <i>- Price of Galvanized Steel works include supplying, workmanship, oil painting (base coat & min. 2-coats of oil painting), fixation (all galvanized steel frames should be filled with the fine aggregate rich mortar concrete), hinges, , handles and all necessary parts needed to complete the works.</i> <i>- Price of doors or windows or other metal works (if needed), the works includes supplying, workmanship, fixation for lock type is Wally or European type of good quality complete and all necessary parts needed to complete the works.</i> <i>- Price of colored Anodized Aluminum windows or doors (type secection 7000 or 4500 Grade A) includes supplying, workmanship, fixation (frames should be filled with the fine aggregate rich mortar concrete), hinges, glass 4mm, lock type (for door) is approval European type of good quality, handles and all necessary parts needed to complete the works</i> <i>- Price of Wood works include supplying, workmanship, oil painting (base coat & min. 2-coats of oil painting), fixation (wooden frames should be filled with the fine aggregate rich mortar concrete), hinges, , handles and all necessary parts needed to complete the works.</i>				
	* <u>Wooden Doors:</u>				
5.1	Supply and install wooden door D9- 1.40 x 2.20 two leaves (Sliding). The scope of works includes joineries, accessories, switch wally type or approval European type of good quality, door stops, painting, all and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.	NO	16		
5.2	Ditto but for D3 - 1.20 x 2.20 two leaves with all required works	NO	16		
5.3	Ditto but for D4 - 1.0 x 2.20 one leave with all required works	NO	0		
5.4	Ditto but for D5 - 0.90 x 2.20 one leave with all required works	NO	64		
5.5	Ditto but for D6 - 0.80 x 2.20 one leave with all required works	NO	32		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
* <u>Aluminum Windows:</u>					
5.6	Supply and install powder coated colored Aluminum profile window W1 - 2.00x1.00, complete with three sliding leaves complete, glazing, 4 mm glass, insect screen leave, silicone sealant, ironmonger and hardware, all and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.	NO	16		
5.7	Ditto but for W2 - 1.60x1.00 with two sliding leave complete with all required works	NO	32		
5.8	Ditto but for W3 - 1.40x1.00 with two sliding leave complete with all required works	NO	64		
5.9	Ditto but for W4 - 1.20x1.00 with two sliding leave complete with all required works	NO	16		
5.10	Ditto but for W5 - 0.60x0.60 louver window with 6mm wire glass and steel protection with all required works	NO	32		
5.11	Ditto but , for W6 - 0.60x1.90 fixed , movable with all required works	NO	16		
5.12	Ditto but for W7 - 0.40x1.42 fixed , movable with all required works	NO	4		
5.13	Ditto but for W8 - 1.60x0.40 with two sliding leave complete with all required works	NO	8		
5.14	Ditto but for W9 - 1.40x0.40 with two sliding leave complete with all required works	NO	14		
5.15	Ditto but for W10 - 1.20x0.60 with two sliding leave complete with all required works	NO	6		
* <u>Metal Works:</u>					
5.16	Supply and install Galvanized Steel Door D1 - 1.60x2.20 two leave with all required works	NO	2		
5.17	Ditto but for D2 - 1.60x2.30 two leaves with all required	NO	4		
5.18	Ditto but for D6a - 0.90x2.20 one leave with all required works	NO	4		
5.19	Ditto but for D7 - 1.0x2.20 one leave with all required works	NO	4		
5.2	Ditto but for D8 - 0.90x2.20 one leave with all required works	NO	4		
5.21	Ditto but for D9 - 0.90x2.20 one leave with all required works	NO	0		
5.22	Supply and install Steel door (single sheet) for cabinet in the stair case DC1 - 0.50x1.40, with all required works	NO	24		
5.23	Supply and install Galvanized Steel Louver Window W11 - 1.20x1.00 two leave with all required works	NO	6		
5.24	Supply and install Galvanized Steel Grill for window protection with all required works	M2	340		
5.25	Supply and install Galvanized Steel Ladder with all required works	MR	8		
5.26	Supply and install Galvanized Steel Handrail for stair landing with all required works	MR	70		
5.27	Ditto but for Balcony	MR	50		
TOTAL OF BILL B5 - (METAL & WOODEN WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B6 - INSULATION WORKS <u>* Notes:</u> <i>- All the following items shall be completed according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.</i> 6.1 Supply and install granular top surface 4mm thick bituminous sheet for roof water proofing. The price shall include supplying, installing, workmanship, prime coat, overlapping and water testing for the roof after completing the works and making good with all required works	M2	620		
TOTAL OF BILL B6 (INSULATION WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B7 - HVAC WORKS <u>* Notes:</u> - The Contractor shall when pricing this Bill take into consideration, include and allow for costs or expenses of all requirements stipulated in the section entitled "General and Preambles" preceding this Bill. - The exact lengths of the required pipes, the exact number of the required valves and the exact quantities of concrete will be determined during the implementation of the Works. - Price should include all excavation, backfilling, supporting of trenches and all associated works.				
	B7.1 - PLUMBING WORKS				
7.1.1	Supply and install white vitreous china hanged wash basin "Vitra Type" or equal product size 40x56cm complete with all necessary fittings, towel rail 45cm, china soap holder, mirror and china shelves, support (hamat) type water mixer or equivalent, chrome traps, tap and drainage to the nearest manhole, rate to include water pipes from tank to the unit.	NO	52		
7.1.2	Supply and install white vitreous china western type toilet "Vitra Type" or equal with flush cistern of 2 gal. capacity, seat mounted, and hard seat covers, rate to include waste pipes and drainage to the nearest manhole and all associated water pipes, china paper holder, all other required fittings as required.	NO	36		
7.1.3	dito , bath tube size 160x70 cm of ceramic claded, white color,rate to include waste pipes and drainage to the nearest manhole and all associated water pipes, china paper holder, all other required fittings as required.	NO	16		
7.1.4	Supply and install UPVC floor Drain size 20x20cm, rate to include double cover chrome plated one grated and other is solid with all accessories, fittings and connecting to the nearest manhole.	NO	72		
7.1.5	Supply and install 1" dia. Galvanized steel water supply pipe from main supply feeder (roof tanks) to each solar system then to the each apartment (hot and cold water pipe) , the works including all fittings, bends, test, valves needed, installation and all required works to complete the job.	Unit	17		
7.1.6	Supply and install Solar System with 2 unit mirrors. The works including tanks, electric heater (120 liters) with thermostate, steel base, piping system from feeder to tank and from tanks to water distribution boards and all accessories, fittings and all required works to complte the job	UNIT	16		
7.1.7	Supply and install plastic water storage tank 2.5 M ³ capacity complete with lockable cover, float valve 1/2" dia., cleaning opening with plug 3/4" dia., overflow pipe 3/4" dia., steel base, 5 cm thick painted hard wood under the tanks, and the connection with the feeding and distribution lines,from basement to roof tanks, all according to Drawings,	NO	24		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
7.1.8	Supply and install water Box complete with polethene pipe with $\Phi 16$ mm, gates, fittings, allaccessories, marble frame, two leaves of aluminum door and all needed works to complete the job as shown in drawing and specification and engineer insructor.	NO	34		
7.1.9	Supply and install one bowel stainless steel kitchen sink 50x85 cm complete with chrome plated hot and cold water mixer, workmanship and all necessary fixing, accessories, waste pipes and drainage to the nearest manhole with all required works.	NO	18		
7.1.10	Supply and install Electrical hot water tank capacity 80 litter to be installed at the kitchen in main building with thermostat, steel base, electrical works wires, socket and all accessories, fittings, piping and all required works to complete the job.	UNIT	16		
7.1.11	Supply and install 3" galvanized steel pipe drainage pipes for roof of main building including all necessary bends and connections and making good with all required works	MR	150		
7.1.12	Supply and install UPVC Pipes 4" Dia. for venelation pipe including cap ventelation, fixation, concrete casing for pipes and all needed work to complete the job.	MR	90		
7.1.13	Supply and instal TWO Pressure booster pump from ground tanks to the roof tanks with capacity of 10m3/hr at 25m head , complete with electrical control panel , cables, electrical float, switches, all materials, accessories, protection galvanized steel box, fittings & workmanship and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.	UNIT	2		
7.1.14	Supply and install 1.5" galvanized steel pipe from the ground tanks to the roof tanks including all necessary bends and connections and making good with all required works	MR	60		
7.1.15	Supply and install 2" water meter (ARAD) or approved equivalent with all the needed materials to complete the works as per municipality requirement and according to instruction of engineer or his representative	LUMP SUM	2		
7.1.16	Ditto but for 1" water meter with all required works	UNIT	16		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
7.1.17	Supply and install circular drop manhole of 100 cm diameter reinforced concrete class B300 sewage manholes as per specifications and drawings complete with 25 cm reinforced concrete base, 25cm reinforced concrete slab, cast iron cover (25 tons capacity and 60cm opening), frame, rings, internal coating, benching, cast iron steps and special joint required to fix the pipe to the manhole. The item also includes excavation, supporting the trench sides and backfilling using clean sand with watering, and compaction after approval of the engineer and <u>the item includes all pipe, bends, fittings, concrete for drop manhole</u> . The work also includes coating the inside walls and slab with two coats of Nitocoat ET 550 from FOSROC or equivalent and the external surfaces with two coats of hot bitumen. Pipe opening at manhole base shall be factory made without drilling manhole walls at site. Locations are as shown on in drawings and Depth of excavation Up to 4.0m (from the design level).	UNIT	2		
7.1.18	Supply and install pre-cast circular manhole of 80cm diameter reinforced concrete class B300 sewage manholes as per specifications and drawings complete with 15 cm reinforced concrete base, 25cm reinforced concrete slab, plain concrete, cast iron cover (25 tons capacity and 60cm opening), frame, rings, internal coating, benching, cast iron steps and special joint required to fix the pipe to the manhole. The item also includes excavation, supporting the trench sides and backfilling using clean sand with watering and compaction (compaction layers at max. thicknes of layer is 25cm). The work also includes coating the inside walls and slab with two coats of special sewer epoxy and the external surfaces with two coats of hot bitumen. Pipe opening at manhole base shall be factory made without drilling manhole walls at site. Locations are as shown on in drawings and Depth up to any depth as specified.	UNIT	14		
7.1.19	Supply and install DN160-mm diameter gravity Rigid PVC-U sewer pipes SN8 and lay in all kinds of soil including excavation to the required depth, supporting the trench sides, bedding with clean sand, backfilling and compaction (compaction layers at max. thicknes of layer is 25cm). Unwanted soil to be removed outside the site. The price includes all necessary works, supplying and installing warning tape with copper wires, gaskets, connection to manholes and others to complete the work as specified in the specification, drawings and to the satisfaction of the Engineer. Excavation up to any depth as specified.	MR	74		
7.1.20	Ditto but for DN110-mm diameter SN8 with all required works	MR	20		
TOTAL OF BILL B7.1 (PLUMBING WORKS) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
7.2.1	B7.2 - FIRE FITTING SYSTEM Supply and install Complete Hose Reel cabinets (80x80x25)cm, wall mounted with rubber hose (15bar) pressure, 25m length, f25mm, angle globule valve 1.5", Jet nozzle with all necessary pipes, connections and fittings and anywhere else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer or his representative.	NO	2		
TOTAL OF BILL B7.2 (FIRE FITTING SYSTEM) - US\$					

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
	B8 - ELECTRICAL WORKS The items in general shall also include conduits, connection boxes, controls, wires, connectors, clamps, bolts, and connecting the cables to switchboards and common electric network are included in the unit price. • Contractor shall submit shop drawings for all electrical works to be approved by the Engineer before executing the work. • As-built drawings shall be submitted after handing over the work. • All the electrical works shall be executed according to Standards, drawings, specifications and supervisor engineer instructions, also with coordination to GEDCO				
8.1	Lightings Fittings				
8.1.1	Supply, install, connect and test fluorescent lighting fixture 2x36w complete with lighting tubes 36, chock, condensers, starters rigid PVC conduits, J.bboxes, fixing screws (Galv.) and wiring. (Type is GA'ASH No. 50540 or equivalent)	No.	120		
8.1.2	Ditto, as (1) but 1X36 W (Type is GA'ASH No. 50530 or equivalent)	No.	100		
8.1.3	Supply, install, connect and test lighting fixture with 26W compact fluorescent lamp, wires, conduits, j. boxes and fixing screws for ceiling mounted. (Type is GA'ASH No. 552100 or equivalent)	No.	186		
8.1.4	Ditto but for wall mounting	No.	20		
8.1.5	Supply, install, connect and test incandescent night lighting fixture with 10W lamp, wires, conduits, j. boxes and fixing screws for ceiling mounted.	No.	52		
8.1.6	Supply, install, connect and test lighting outlet for chandelier complete with wires, conduits, j. boxes .	No.	32		
8.1.7	Supply, install, connect and test 6" Extractor fan with movable louvers, 250cfm, complete with PVC conduits, J.bboxes, wiring, and all necessary accessories. (Type is VENTA or equivalent).	No.	60		
8.1.8	Supply, install, connect and test electrical door bell	No.	20		
8.2	Switches and Sockets				
8.2.1	Supply, install connect and test single pole one way switch, 220v, 13A, complete with PVC conduits, J.bboxes, wiring,cover and all necessary accessories. (Type is GEWISS or equivalent).	No.	88		
8.2.2	Ditto, but water proof.	No.	10		
8.2.3	Ditto, but one way, two pole switch.(Type is GEWISS or equivalent).	No.	88		
8.2.4	Ditto, but water proof.	No.	10		
8.2.5	Ditto, but two way, one pole switch.(Type is GEWISS or equivalent).	No.	100		
8.2.6	Ditto, but push button with illuminated lamp .(Type is GEWISS or equivalent)..	No.	50		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
8.2.7	supply, install connect and, testing single socket outlet 16A, 220v, 2p+E for flush or surface mounting, complete with PVC conduits, J.bboxes, wiring, and all necessary accessories. (Type is GEWISS or equivalent)	No.	460		
8.2.8	Ditto, but water proof type.	No.	80		
8.2.9	supply, install connect and, testing three phase socket outlet 3x16A, 380v, for flush or surface mounting, complete with PVC conduits, J.bboxes, wiring, and all necessary accessories. (Type is GEWISS or equivalent)	No.	6		
8.2.10	supply, install connect and, testing switched socket outlet 230V, 20A, with pilot lamp, flush type for water heaters and a/c units.(Type is GEWISS or equivalent)	No.	48		
8.3	Telephone,TV and Intercom systems				
8.3.1	Supply, install and commissioning Telephone socket outlets, 6pin as specified & shown on drawings including rigid pvc conduits, pull & J.bboxes, telephone cables not less than 2px0.5	No.	90		
8.3.2	Supply, install and commissioning TV socket outlets, as specified & shown on drawings including rigid pvc conduits, pull & J.bboxes, coaxial cables ..	No.	90		
8.3.3	Supply, install and commissioning complete intercom system for 8 flats including indoor units, outdoor unit , power supply an door lock .(Type is Farfisa or equivalent)	LS	2		
8.3.4	Supply, install and commissioning Telephone and TV , intercom Junction Box	No.	20		
8.4	Grounding system				
8.4.1	Supply, install and commission complete grounding system including all required galvanized 35x3 mm steel sheet,cables, earthing pits according to drawings, specification and engineers instructions.	L.S.	2		
8.5	Main Distributin Board (MDB)				
8.5.1	Supply, install and commission main distribution panel board (MDB) as specified and as shown on drawings, factory assembled wired and tested in accordance with international standards, including 2mm Galv.steel frame with anti static paint, including busbars, neutral bus bar and earthing terminal and all necessary civil works for foundations , cable trenches and handing over clean, tested and in operating conditions. (Type is MOELLER or equivalent).	Set	2		
8.5.2	LTL fuse with base 35/6A	No.	4		
8.5.3	Three signal lamps R.S.T with 25 Resistance 220V .	Set	4		
8.5.4	Current transformer 3x(160/5A)	Set	4		
8.5.5	Kwh meter 1 phase 80A	No.	16		
8.5.6	Kwh meter 3 phase 3x80A	No.	2		
8.5.7	KVAR meter, 3 phase 3x5A	No.	2		
8.5.8	Ammeter 0-200A	No.	4		
8.5.9	Voltmeter 0-500V with 7 positions selector switch	Set	4		
8.5.10	Molded case circuit breaker with over load protection MCCB 3x160 A. (Type is MOELLER NZMN1-160A or equivalent).	No.	2		
8.5.11	Molded case circuit breaker with over load protection MCCB 3x63 A. (Type is MOELLER NZMN1-63A or equivalent).	No.	4		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
8.5.12	Miniature Circuit Breaker MCB 3X40A, Isc=6KA. (Type is Hager or equivalent).	No.	4		
8.5.13	Miniature Circuit Breaker MCB 3X16A, Isc=6KA. (Type is Hager or equivalent).	No.	6		
8.5.14	Miniature Circuit Breaker MCB 2X40A, Isc=6KA. (Type is Hager or equivalent).	No.	16		
8.5.15	Miniature Circuit Breaker MCB 1X16A, Isc=6KA. (Type is Hager or equivalent).	No.	12		
8.5.16	Miniature Circuit Breaker MCB 1X6A, Isc=6KA. (Type is Hager or equivalent). (contractor(DILL 00M 4KW, selector switch	No.	2		
8.5.17	Stair case timer 16A (Type is PSK or equivalent).	No.	2		
8.5.18	contractor(DILL 00M 4KW)	No.	2		
8.5.19	Supply and install power factor unit 10 KVAR with all required works as GEDCO specification and engineer instructions	No.	2		
8.6	Sub-Distribution Boards (DB-B)				
8.6.1	Supply, install sub-distribution board consists of lockable board frames as per specifications including 2m Galv. steel sheets with anti-static paint, bus bars for incoming cables, neutral and earthing terminal with all necessary accessories and material to hand over clean and tested ad in operating conditions. (Type is MOELLER or equivalent).	No.	2		
8.6.2	Miniature Circuit Breaker MCB 3X40A, Isc=6KA. (Type is Hager or equivalent).	No.	2		
8.6.3	Miniature Circuit Breaker MCB 3X32A, Isc=6KA. (Type is Hager or equivalent).	No.	2		
8.6.4	Miniature Circuit Breaker MCB 3X25A, Isc=6KA. (Type is Hager or equivalent).	No.	2		
8.6.5	Miniature Circuit Breaker MCB 3X16A, Isc=6KA.(Type is Hager or equivalent).	No.	4		
8.6.6	Ditto but MCB 1X16A, Isc=6KA. (Type is Hager or equivalent).	No.	20		
8.6.7	Ditto but MCB 1X10A, Isc=6KA. (Type is Hager or equivalent).	No.	14		
8.6.8	Ditto but residual current circuit breaker 4X40/0.03A. (Type is Hager or equivalent).	No.	2		
8.7	Sub-Distribution Board (DB-G1) Typical Flat Panel				
8.7.1	Supply, install sub-distribution board consists of plastic board frame as per specifications including , bus bars for incoming cables, neutral and earthing terminal with all necessary accessories and material to hand over clean and tested ad in operating conditions. (Type is MOELLER or equivalent).	No.	16		
8.7.2	Miniature Circuit Breaker MCB 1X32A, Isc=6KA. (Type is Hager or equivalent).	No.	16		
8.7.3	Ditto but MCB 1X16A, Isc=6KA. (Type is Hager or equivalent).	No.	128		
8.7.4	Ditto but MCB 1X10A, Isc=6KA. (Type is Hager or equivalent).	No.	176		
8.7.5	Ditto but residual current circuit breaker 2X40/0.03A. (Type is Hager or equivalent).	No.	16		

ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
8.1	Cables and conduits				
8.10.1	Supply, laying under ground PVC piping system for the under ground electrical network as per drawings . The work includes manholes, excavation, laying pipes, warning tapes , backfilling ,new junction manhol and all required cable joints and cable extensions for the existing building cables .	L.S	2		
8.10.2	Supply, laying and termination of XLPE cable , (3X70+35)mm2	L.M	200		
8.10.3	Ditto, but XLPE 3X10mm2	L.M	350		
8.10.4	Ditto, but XLPE 5X10mm2	L.M	40		
8.10.5	Ditto, but XLPE 5X6mm2	L.M	60		
TOTAL OF BILL B8 (ELECTRICAL WORKS) - US\$					

Summary Bill of Quantities for Package 06 Residential Buildings A5 & A6		
BILL NO.	DESCRIPTION	Amount (US\$)
BILL 1	EARTH WORKS	
BILL 2	CONCRETE WORKS	
BILL 3	BLOCK, PLASTERING & PAINTING WORKS	
BILL 4	TILING, MARBLE & FLOORING WORKS	
BILL 5	METAL & WOODEN WORKS	
BILL 6	INSULATION WORKS	
BILL7.1	PLUMBING WORKS	
BILL7.2	FIRE FITTING SYSTEM	
BILL8	ELECTRICAL WORKS	
TOTAL		

Total in numbers

Total in letters

Name of the contractor

Authorized signature

Signature and Sealing.....

Title

Telephone.....

Fax

Mobile