



UNITED NATIONS DEVELOPMENT PROGRAMME

ITB 2016-159

Lot 23
WBS 1110

Bill of Quantities

Programme Title: Right to Education in the Gaza Strip

Project name: Extension and Rehabilitation Works For The Governmental Schools

PAL10- 00094739- LOT 23
Reconstruction Works of AL Shijaia School



UNITED NATIONS DEVELOPMENT PROGRAMME

ITB 2016-159

AL Shijaia School Main Buildings

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
	<p>General Notes:</p> <p>1- Complete detailed shop drawings should be delivered to the Engineer to take his approval prior the commencement of work. Samples of all materials shall also be delivered to the Engineer to take his approval,</p> <p>2-Contractor shall take into consideration that all – direct and indirect Works and their relevant expenses required for proper implementation of the project including temporary facilities, fencing, securing utilities (water, wastewater, telephone and electricity systems) as well as making access to project implementation location away from the one in use by the students and teachers such that the school is running safely without disturbance. The contractor will be accountable for all necessary equipment, materials and activities to assure the safety of people within the school buildings and vicinity, where an approved safety plan will be prerequisite to initiating activities along with installing all required components and materials necessary for safety of workers, project team as well as people at school. All relevant costs are deemed to be included in the unit price in addition to the required re-instatement Works needed to bring the original facilities to its original status before addition of temporary Works.</p> <p>3-The contractor will expect that more than one contractor will be carrying out Works in the school at the same time, the Contractor is presumed to make all necessary coordination and facilitate accessibility to and other work-related issues</p> <p>4-All Works and installations listed here below should be carried out, tested and commissioned by specialized responsible skilled labours in full coordination with MoEHE , all in accordance with drawings, specifications and relevant standards, and the instruction of the Engineer. The Engineer has the right to reject any component of the work not complying with the specifications and the terms of the contract.</p>				

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
A. New Building					
Bill No (1A)					
1.Excavation & Earth Works					
	<p>Contractor shall take into consideration that all – direct and indirect Works and expenses required for the completion of the coming items are included in the unit price. Measurement is engineering measurement.</p> <p>All Works must be according to drawings, specification and engineer instructions. Rates shall include :</p> <ol style="list-style-type: none"> 1. Shoring the sides of excavation and preserving the adjacent buildings as well as existing infrastructure utilities (sewage, water, telecommunication and electricity Works). In case of damages that may incur, all relevant necessary repairs will be the contractor responsibility to cover its relevant costs. 2. Cleaning the site and removing all debris, surplus unwanted materials and rubbles to approved dump site. 3. Backfilling in layers not more than 25cm thick for each layer and compaction to 98% of MDD. 4. All required Tests by an accredited laboratory. 5. The cadastral survey and leveling of existing status at grids not exceeding 5 m in both directions. 6.Leveling and backfilling from imported sand dune in case excavated materials are not approved for backfilling and up to the level of the top of external ground beams levels and to the formation level of apron and surrounding landscaping. 7. Laying out the buildings coordinates to be carried out by professional surveyor using total station device. 8.Approval of Bench mark and leveling network before excavation works. 				
1.1	Demolish and remove safely the existing canteen, the boundary walls, existing damaged buildings,dismantel existing steel shed and deliver to MOEHE, cut and remove safely part of the existing building to apply new design and playgrounds in the site and in the adjacent school, as per the engineer's instructions. The price shall include dismantling of polypeed sheets ,aluminum windows, steel protection, doors, canteen marble benches, interlock tiles... etc. ,and transport and deliver to M.O.E.H.E .and removing all defected materials inside and outside school buildings including but not limited to defected parts of boundary walls, tiles , plaster , steel, foundations, ground beams, concrete debris, solid waste.... etc. to approved dump sites, as per the engineer's instructions. The price also include preservation of existing utilities and dismantle and supply and fix of any utilities if needed in the demolition areas.	L.S	1		
1.2	Excavation from natural ground level in any type of soil to required designed level. The Works including: (three load plate tests are required to verify the result), The compaction of the soil surfaces to get (98% MDD). The excavated unwanted material should be removed out from the site to the approved places. The excavated selected material should be properly stored in the vicinity of site for reuse in backfilling. All to be executed as per specifications, drawings and the engineer's instructions.	M ³	400		
1.3	Supply, fill & compact Kurkar material with (CBR> 30) under the main building foundations (the mentioned soil improvement area) in two layers 20cm thick each layer (MDD 98%), to comply with the design bearing capacity of not less than (18 Kg/cm2). The work must be carried out according to the specifications, design drawings & the engineer's instructions (three load plate tests are required to verify the result)	M ³	200		
1.4	Backfilling with selected materials from excavation around foundations & any other element up to ground slab level in layers not more than 25cm thick for each layer with compaction to 98% of MDD. The Works including compacting the design soil surfaces to get (98% MDD).	M ³	200		
1.5	Supply, fill by using approved material (sand dune) between ground beams & inside the building up to the required levels, which shall be spread in layers not exceeding 25cm each one & compacted (98%) to reach up the required levels (under floor slab), according to the specifications & the engineer's instructions.	M ³	200		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (2A)					
2. Concrete Works.					
	<p>Rates of Concrete Works shall include:-</p> <p>1. All form Works and shuttering (new lumber for shuttering painted by special oil (fuel or burnt oil is not accepted) in any form, shape and size . Making chamfered and curved edges, allowing for and making grooves and sleeves and using Tie Rods (Batant) for concrete walls ; removal of forms and cleaning of all exposed tie wires and rods. Steel forms must be used in shuttering the external decorations.</p> <p>2. Supplying, Casting, vibrating and curing as per specifications.</p> <p>3. Approved additives and admixtures.</p> <p>4. Developing new Concrete Job Mix Designs, Sampling , testing and providing test results certificates, storing and saving of samples.</p> <p>5. Painting of exposed surfaces of underground reinforced concrete elements with two coats of hot bituminous paint (75/25) after primer layer , the strokes of each layer to be opposite to each other.</p> <p>6. Preliminary installations for Electrical, plumbing and floor drainage in floor slabs including final floor slab.</p> <p>7. Compaction and testing under the foundation, ground beams, ground slabs and Apron. the compaction should not be less than 98% of MDD.</p> <p>8. All Works according to specifications , drawings and supervisor engineer instructions</p> <p>9. Supply, fabricate and fix reinforcement steel (fy= 410 N/mm2) for all the structural elements according to drawings and engineer's instructions for any grade, size and length as detailed in the drawings, storing on site including cutting, bending and fixing in position and providing all tying wires, spacers, shop drawings, testing and bar bending schedules .All Works according to specifications , drawings and supervisor engineer</p> <p>10. In rehabilitation Works, supply fabricate and fix steel dowels to the existing concrete using special materials. In case of lapping with existing steel reinforcement, rates will include cleaning rust and treatment with</p> <p>11. In case after excavation the new columns locations and relevant footings coincide with the existing ones, the contractor will make modification to adapt implementation to the existing conditions and deemed to include in his rates relevant costs accordingly.</p> <p>12-All rehabilitation Works will include the necessary extra steel reinforcement and concrete to be applied in layers if necessary in addition to the necessary special materials and accessories.</p> <p>13- Shop drawing include structural sheet calculation for wooden supports (form work) of shuttering for roof level over 4.5 m height must be submitted by the contractor to be approved by UNDP Engineer</p>				
2.1	Supply and cast ready mix plain concrete B (200) kg/cm2 for Blinding beds 5 cm thick including polythene sheets as per specifications and drawings.	M3	20		
2.2	Supply and cast ready mix reinforced concrete B(250) kg/cm2 for the ground slab 10cm thick with steel mesh 8mm diameter every 20cm including polythene sheets below concrete slab and compacting the soil beneath the slab to 98% of MDD.as per specifications and drawings.	M2	350		
2.3	Ditto but 10cm thick entrance ramps and platform.	M2	40		
2.4	Supply and cast ready mix reinforced concrete B (300) kg/cm2 for foundations (isolated, strip footing, strap & inverted T sec.) as per specifications and drawings.	M3	160		
2.5	Ditto but B (250) for ground beams including ground beam for the platform.	M3	40		
2.6	Ditto but for canopies.	M3	32		
2.7	Supply and cast ready mix reinforced concrete B (300) kg/cm2 for stairs including flights, landings, steps, drop, inverted beams and hand rail wall including entrance stairs.	M3	20		
2.8	Ditto , but B (250) for wall parapet in corridors under steel balustrade in the ground floor, ramp side walls, roof expansion joints walls & ground beams under solid block . Item include fixation and other necessary materials and workmanship	M3	15		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
2.9	Ditto but for sills, lintels, coping, concrete wall (hunches for doors), gas room elements .etc.	M3	45		
2.10	Supply and cast ready mix concrete (B150) for stub columns at the roof.	M3	5		
2.11	Ditto but plain concrete B200 under water tank and pumps 20 cm thick.	M3	4		
2.12	Supply and cast ready mix reinforced concrete B (300) kg/cm2 for columns and columns necks as per specifications and drawings.	M3	90		
2.13	Supply and cast ready mix reinforced concrete B (250) kg/cm2 smooth surface for playground by mechanical trawling machine including surrounding Beams ,foundations, polythene sheets, expansion joints(cut after casting by mechanical saw), 25cm base coarse(in two layers), mastic compressible materials, leveling of subgrade and compaction of each layer of base coarse and subgrade and finish the surface with colored approved materials, the price also includes marking works with approved thermoplastic paint as per specifications and drawings	M2	400		
2.14	Ditto but for Multi Purpose Hall playground.	M2	460		
2.15	Supply and cast ready mix concrete B (300) kg/cm2 for suspended slab20cm thick, including the reinforced steel, decorative arches in last slab, corridor concrete parapet under steel balustrade for the typical slab, concrete hollow block 40*25*14 cm all drop and inverted beams everywhere in the slab and all other materials as per specifications and drawings.(surface treated with mechanical steel troweled finish for each floor)	M2	1450		
2.16	Supply and cast ready mix concrete B (300) kg/cm2 for suspended slab 30cm thick, including the reinforced steel, decorative arches in last slab, corridor concrete parapet under steel balustrade for the typical slab, concrete hollow block 40*25*22 cm all drop and inverted beams everywhere in the slab and all other materials as per specifications and drawings.(surface treated with mechanical steel troweled finish for each floor)	M2	150		
2.17	Supply and cast ready mix concrete B (250) kg/cm2 for Apron (surface treated with mechanical steel troweled finish) the price include polythene sheets. Reinforcement Ø 8mm / 15 cm in both way and reinforced edge beam as well as expansion joints. The price including levelling, 15cm thick compacted base coarse to 100% of MDD and making of expansion joints including its approved filling materials (sika flex or equivalent) according to drawing and specification.	M2	80		
2.18	Supply and cast ready mix concrete B (300) kg/cm2 for Decorative Frames on the main entrance and above bridges , including the reinforced steel , and all other materials required as per specifications and drawings.	M3	15		
2.19	Supply and construct interlock tiles (B400) 8cm thick including 20 cm base coarse layer (80% C.B.R). The price includes supply and install compacted 20cm of base course layer to 100% compaction ratio, watering, and testing, leveling of subgrade, compaction of subgrade (98%), removal of any obstacles, trees, concrete debris, dismantle old and defected interlock tiles and deliver to MOEHE , the price also includes 5 cm sand . Levels, colors and shapes all determined according to drawings, specifications and the supervisor Engineer's instructions.	M2	750		
2.20	Supply and cast colored concrete seat B (250) kg/cm2 , including the reinforced steel, and terrazzo layer on top 5 cm thick , and all other materials required as per specifications and drawings.	NO	15		
2.21	Supply and cast ready mix reinforced concrete B (250) kg/cm2 for and pumps room 10cm thick, including the reinforced steel 8cm /20 cm in each direction , Corrugated sheets , steel profiles and all other materials required as per specifications and drawings.	M2	100		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (3A)					
3. Building Works					
	The price include: 1- supplying hollow or solid cement block from good and approved factory in perfect dimension and build it in good manner with a compressive strength 35 kg/cm ² for hollow block and 60 kg/cm ² for solid block. This item will include cement mortars, galvanized steel ties, reinforced concrete infill (B250) between columns & block walls (10-20 cm wide) with 1Ø8mm/40cm horizontally and 2Ø10mm vertically according to drawings, pipes encasement, false columns 20x20 cm/4.0m among the parapet wall with 4Ø12mm and bituminous paper between block work and drop beams and testing as well as all requirements needed to finish the works according to the drawings, specification and to the supervision engineer instructions. _ 2- the price should includes demolish and dismantle existing terrazzo ceramic tiles, plaster, steel protection or balustrade, unrequired existing walls,....etc., cleaning and remove all debris to approved dump site.				
3.1	Supply and build hollow cement blocks 40x20x20cm	M2	1700		
3.2	.Ditto but 40x20x 15 cm thick	M2	650		
3.3	.Ditto but 40x20x 10 cm thick	M2	100		
3.4	,Supply and build solid cement block 40x20x20 cm, under ground beams and external boundary for building including painting the buried parts with .one coat of primer and two coats of hot bitumen (75/25) after primer layer	M2	380		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (4A)					
4. Carpentry Works					
	The items include supplying carpentry Works from good wood grade “A” including frame cover mould, architrave, sanding sealer, prime coats , at least two coats of oil paint or varnish, 15cm Aluminum kick plate 1mm thick from both sides , hard ware, locke type Wally switch or equivalent and brass hinges 10cm height, door stopper and all other fitting according to specification and drawing.				
4.1	Supply and fix framed fibber bulletin board (cork sheet 2 mm thick) size 1.2 x 1.00 m from Kalboard (BC129) or equivalent. Price includes aluminum frame 5 x 1.5 cm silver painted, Plywood veneer 5 mm thick on the back, and all necessary fixings, fittings, accessories.	NO	15		
4.2	Supply and install wall mounted magnetic green chalk board Lina series, 25 mm profile kALBOARD MG 3612/M size 120x360 cm) with silver anodized elegant aluminum frame (19x25mm thick) and four strong rounded plastic (upvc) corners fixed internally with screws to the wall, and also with silver anodized aluminum try fixed by sliding through the profile which used for chalks, markers and duster and has UPVC edges for safety. The writing surface coated of steel polyester fixed by using automatic gluing machines to 11mm thick MDF wood covered automatically by aluminum foils. Price to include all related Works as per drawings, specification and Engineer’s Instructions.	NO	15		
4.3	Supply and fix 120x20mm soft wood coat hook rail smoothed , plugged and screwed to wall at 30cm center to center including priming and varnish painting with Galvanized steel coat hook 3mm thick, screwed to rail at 20cm center to center as per specifications and drawings and to be .approved by the engineer	Mr	60		
4.4	Supply and fix soft wood poster hanging rails size 50mm x 20mm with round edges, smooth surface , apply two coats of sanding sealer, sand lightly and apply two coats of varnish, one coat of Lucker paint. drill and fix to concrete or block walls using expansion steel bolts as per specification and drawings..	Mr	105		
4.5	Supply and install protection wood (plywood 17 mm thickness covered with beech veneer with rounded edges from hard wood zan 2*1.7cm) with over all size 15x1.7cm for classes wall rubbing rail.	Mr	325		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (5A)					
5.Aluminum & Metal Works					
	<p>NOTES :</p> <p>*All Aluminum profile, sections and accessories shall be best quality and free from manufacturing defects and shall be completed with proper manner and accordance with the specifications.</p> <p>*All Aluminum profile sections shall be (khalel or equivalent) " 4500" - "7000" - " and thickness not less than 1.5mm according to items</p> <p>1- Color of aluminum according to site.</p> <p>2-All accessories, wheels, rails, hinges, handles, locks, brushes, rubber EPDM, and angles must be the original of profile, 6mm thick 80% grey glazing sheets.</p> <p>3- Dimensions shown on the detailed drawings are the architectural dimensions of the doors or windows' leaves, not including frames.</p> <p>4- Windows dimensions more than 1m square includes internal aluminum partitions.</p> <p>5-Price includes scaffolding where needed</p> <p>6-Steel work should be properly treated and prepared, painted with two coats of hummer paint, one primer (polyzinc) and one undercoat. The price shall include removing the damaged aluminum and steel Works and handing to the MoEHE</p> <p>7- The price includes Master key for all doors of the school.</p>				
5.1	Supply and fix colored aluminum window section 7000 type W1. , overall size70 x 235cm, complete with double frame, white color, four sliding leaves ,clear glass 4mm thick, ironmongery and hardware. and as per specification and drawing.	No	14		
5.2	Ditto but, Type W3 overall size120 x232cm	No	32		
5.3	Ditto but, Type W2 overall size70 x220cm	No	15		
5.4	Ditto but, Type W4 overall size120 x220cm	No	14		
5.5	Ditto but, Type W6 overall size100 x100cm	No	1		
5.6	Ditto but, Type W7 overall size150 x300cm	No	15		
5.7	Supply and fix colored aluminum window Type W5(section 4500) overall size 60 x 80cm	No	4		
5.8	Supply and fix colored aluminum window section4500 type W2. , overall size150 x60cm, complete with frame, white color, hinged ,clear glass 4mm thick, ironmongery and hardware. and as per specification and drawing.	No	14		
5.9	Supply and fix steel protection for windows over all size W1 (ground floor) 70 x 235 cm .the prices including mild steel frame size 40 x 8mm thick, vertical steel plate size 20mm wide x 8mm thick fixed every 12cm (clear distance), decorative circles 20x2mm, all by welding to the frame. Fixed on walls by steel angle ties and plates, painting with one coat of primer, undercoat and at least two coats of hummer paint, all according to drawing, specification and engineer instructions.	.No	2		
5.10	Ditto but, Type W2 overall size70 x220cm	No	2		
5.11	Ditto but, Type W3 overall size120 x232cm	No	7		
5.12	Ditto but, Type W4 overall size120 x220cm	No	3		
5.13	Ditto but, Type W6 overall size100 x100cm	No	1		
5.14	Supply and fix steel protection for windows over all size W1 for 2nd and 3rd floor)46 x 235 cm .the prices including mild steel frame size 40 x 8mm thick, vertical steel plate size 20mm wide x 8mm thick fixed every 12cm (clear distance), decorative circles 20x2mm, all by welding to the frame. Fixed on walls by steel angle ties and plates, painting with one coat of primer, undercoat and at least two coats of hummer paint, all according to drawing, specification and engineer instructions.	No	12		
5.15	Ditto but, Type W2 overall size50 x220cm	No	13		
5.16	Ditto but, Type W3 overall size80 x232cm	No	25		
5.17	Ditto but, Type W4 overall size80 x220cm	No	11		
5.18	Ditto but, Type W7 overall size90 x300cm	No	15		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
5.19	Supply and install colored phenolic toilets partitions (H.P.L high Pressure laminate made of 16 mm solid phenolic) panels including doors and all required accessories according to drawings and specifications.	M2	75		
5.20	Supply and fix mild steel balustrade 40cm high for the staircase handrail comprising of M.S. hollow section tubes 40 x 20 x 2 mm verticals spacing 10 cm clear distance, and welded 60x40x2 mm top and bottom rails fixed to columns and bottom parapet using expansion bolts, rates includes M.S. end angles, painting with one primer, under coats and minimum two coats of hummer paint, (the color to be approved By the Engineer and as drawings and specifications).	Mr	35		
5.21	Supply and fix galvanized steel balustrade for corridors 65 cm high fixed to inverted concrete beams by steel plate and bolts , the Works include one primer coat, one under coat and minimum two coats of colored hummer paint in addition to all Accessories needed to finish the work according to specifications, drawings and the engineer's instructions.	Mr	140		
5.22	Supply and fix galvanized steel balustrade for stair case pipe Ø 1.5” 2mm thick fixed to walls by steel plate and 4 bolts every 1m and 10cm space between wall and the pipe, the Works include one primer coat, one under coat and minimum two coats of colored hummer paint in addition to all Accessories needed to finish the work according to specifications, drawings and the engineer's instructions.	Mr	35		
5.23	Supply, and fix Mul-T-Lock (D1) with overall size 110x220cm Single leafe with powder coated paint & metal frame . Door lock type 235 & Mul-T-Lock serrated cylinder. The price include rock wool inside door for fire resistance and all accessories and related works all according to drawings, specifications and engineer instructions	NO	24		
5.24	Ditto but for D2 overall size 110x220cm	NO	3		
5.25	Ditto type D3, D11 size of 90*220	NO	5		
5.26	Supply, fix Aluminum single door section P1001 single leaves door type D5, for admin. Toilets overall size 80 x 220 x 4.5cm the price includes 4mm thick fiber board , 6mm Reinforced glass and high quality European switch, iron mongeries and all required accessories to complete the work according to specifications and engineer's instructions.	No	4		
5.27	Supply and fix flush galvanized steel double external sliding door D10 (1170 x300 cm), new double sheets (2-mm thick), complete with frame 3mm thick, ironmongery, hardware, the price includes upper and lower galvanized steel rails, rubber steel wells and one primer coat, one under coat and minimum two coats of colored hummer paint, with hard ware locked type Wally switch or equivalent and all requirement as latches, locks...etc. as specified in the drawings and specifications for ground floor	NO	1		
5.28	Ditto type D8 but size 300x450 cm	No	2		
5.29	Ditto type D9 but size 300x300 cm	No	2		
5.30	Supply and fix flush galvanized steel double external door D7 (200 x220), new double sheets (2-mm thick), complete with frame 3mm thick, ironmongery, hardware and one primer coat, one under coat and minimum two coats of colored hummer paint, with hard ware locked type Wally switch or equivalent and all requirement as latches, locks...etc. as specified in the drawings and specifications for ground floor.	NO	4		
5.31	Ditto type D6 but single leaf size 220x110 cm	No	2		
5.32	supply and install double colored corrugated sheets for MPH roof filled with extruded foam thermal insulation, the upper layer of corrugated sheets is 0.5 mm thickness and the lower layer is 0.4 mm thickness and 5 cm foam thickness. The price includes supply and install required steel structural elements Main beams I beam NO 45 (IBM)(450X170X24/16.2 mm) , burliness steel profile 80*40*3 mm each 75 cm center to center , galvanized steel triangles 80*50*3mm, fixation anchors Bolts 24mm diameter and 50cm length, Double foundation steel plates 40*40*25mm, galvanized steel Gutter 2mm thickness, G.S rings, welding, special bolts and galvanized steel sheets to prevent any water leakage, scaffolding, water leakage test of the roof , workmanship, painting with one coat of primer, undercoat and at least two coats of hummer paint, and including and all accessories and materials to complete the work according to drawings, specification and engineer's instructions	M2	470		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (6A)					
6. Finishing Works					
	A- Plaster Works				
	<p>All Works must be according to drawings, specification and engineer instructions. Rates shall include :</p> <p>1-Supply of all needed materials, including galvanized angles for the corners, windows and external decoration as well as the use of galvanized wire mesh between concrete and block work.</p> <p>2-Preparation Works by covering all conduits of electricity, water supplies , etc., with a galvanized wire mesh at least 20cm width coated by mortar (1:1) cement : sand and the work includes removal of wires and nails and cleaning of surfaces to be ready for plastering.</p> <p>3- Contractor shall take into consideration that all – direct and indirect Works and expenses required for the completion of the coming items are included in the unit price.</p> <p>4-Trimming of concrete chippings, removing the wires and etc. and cleaning of existing surfaces to be ready for plastering.</p> <p>5- Checking out all of the preliminary installation in ceilings and walls such as Electrical, water supply and waste water pipes and repairing the damages if any.</p> <p>6- Curing with water for at least three days for each coat.</p> <p>This should be done prior to commencement of plastering and after obtaining a written approval from the supervision engineer.</p>				
	B- Tiles Works				
	<p>All Works must be according to drawings, specification and engineer instructions. Rates shall include :</p> <p>1. Samples for approval and all the required tests.</p> <p>2. Cleaning, mechanical polishing and pointing using grout.</p> <p>3.Insulation Works under ceramic floor tiles for all wet areas and kitchens using primer coat, two hot bitumen coats (75/25)</p> <p>4. Plastic angle beads for ceramic wall tiles at the corners and top and sides of ceramic edges.</p> <p>5. Local marble must be Grade (A) free cracks and clay flaws.</p> <p>6. Measuring the stockpiled quantities of tiles and obtaining the engineer approval prior to shipment to the site.</p> <p>7.Transporting and carefully handling the stored quantities to the site.</p>				
	C- Painting Work				
	<p>Rates for painting and decorating work shall include for:</p> <p>1. Preparation of surface including puttying, sealing and priming,</p> <p>2. Any area or width,</p> <p>3. Any location,</p> <p>4. Work in multi colors,</p> <p>5. Cutting in edges,</p> <p>6. Any taping and covering to protect areas and others.</p> <p>All the painting materials should be approved and tested by approved local laboratory</p>				
6.1	Supply and make internal plastering 13 mm thick for ceiling ,walls and soffits. The work includes rough primer nail rendering to form a key with (mix 1:1) cement sand, second layer 13mm: Base-Coat "Rendering" with (1:3:0.25) cement: sand : lime and third layer: Finishing Coat with (1:1:1) cement: sand : lime . Works include all materials needed to finish the Works according to specifications , drawings and supervisor engineer's instructions	M2	4500		
6.2	Supply and make smooth external plastering 20mm thick for external facades at three faces : the first is 5mm thick mortar (mix 1: 2) cement: sand, the second is the rough nail rendering (mix 1:1) cement: sand, the third is the undercoat 13mm (mix 1: 3 :0.25) cement:sand:lime; and all this is according to specifications , drawings and supervisor engineer's instructions	M2	1750		
6.3	Supply & execute the external finishes ECOS (colored solvent based grained coating) in accordance with the manufacturer's requirements, specifications, drawings and the engineer's instructions.	M2	1750		
6.4	Supply and make granulate coating finish for ramps, external stairs and corridors with different size and color where require, the price includes all metal decorations, stainless steel separator and all required materials to complete the work according to specifications , drawings and supervisor engineer's instructions.	M2	100		
6.5	Supply and install terrazzo floor tiles (grade A) size 25cmx25cmx2.5cm with Basalt stone laid on 2.5cm mortar bed and 5 cm thick sand bed and terrazzo skirting 25cmx 7cmx1cm including all materials and testing as per specifications and drawings.	M2	1300		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
6.6	Supply, install and fix 200x200mm wall glazed ceramic tiles, of European type, including cement mortar bed, cleaning, pointing and polishing .	M2	400		
6.7	Supply, install and fix 200x200mm Floor non slip ceramic tiles, of European type, including cement mortar bed, cleaning, pointing and polishing .	M2	110		
6.8	Supply and cast terrazzo edge beam 26cm wide x 6cm thick of the same kind and color of the floor tiles including smoothing the surfaces, expansion joints and edges (for corridors and thresholds.) as per specifications and drawings.	.Mr	140		
6.9	Ditto but for stair case handrail coping size 15cmx4cm.	Mr	50		
6.10	Supply and install local marble (grade A) size 26 cm wide x 3cm thick for windows sills laid on 2 cm thick mortar bed including polishing and grooving as approved by engineer and as specification and drawings..	Mr	200		
6.11	Supply and install local marble (grade A) size 50 cm wide x 3cm thick for windows sills laid on 2 cm thick mortar bed including polishing and grooving as approved by engineer and as specification and drawings..	Mr	50		
6.12	Supply and install high quality Granite 180x70x2cm thick (Tiger) for top cover of students preparing bench. The price includes granite Rozabita grade A for two direction supporting, floor, mid separators, marble necessary to close around and bottom of sink, and shelves, skirting and all accessories, fitting and making holes for sinks and water and gas supply as per specification and drawings and to be approved by the representative engineer.	No	9		
6.13	Ditto but for teacher bench 250x80x2cm including aluminum doors (kitchen doors) and including marble back	No	1		
6.14	Ditto but for Kitchen and canteen.	MR	6		
6.15	Supply and lay terrazzo bazelet stair threads size 35 cm wide x 4cm thick chamfered once , rebated once and laid on 2cm thick mortar bed same color and kind of the floor tiles and the price including terrazzo bazelet stair risers size 12.4cm high x2cm thick and skirting 20cm high x2cm thick on the both sides as specification and drawing.	Mr	200		
6.16	Supply and make internal oil painting for walls . The work includes fines the wall surface by using the following coats: 1-tow coats of banderol, 3 coats of with mortar one coat of undercoat and 3 coats of oil colored paint . Works include all materials needed to finish the Works according to specifications , drawings and supervisor engineer's instructions	M2	2000		
6.17	Supply and Paint one-primer and minimum two coats of Poliside for internal walls, ceiling and drop beams . Works include all materials needed to finish the Works according to specifications , drawings and supervisor engineer's instructions	M2	2500		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (7 A)					
7. Roofing Works					
	<p>(1) Rates for foam concrete/ cement and mortar work shall include for:</p> <ol style="list-style-type: none"> 1. Supply and storage of cement. 2. Supply and storage of aggregates and water, 3. Mixing, 4. Hacking concrete, applying cement slurry or raking out joints of block work to form key, 5. Application to any surface, 6. Finish to surface, 7. Finish to falls and cross falls, 8. Forming bays including joints, 9. Finish to edges, 10. Making good around steel sections, pipes, tubes, bars, brackets, outlets, and the like, 11. Ends, intersections, ramps, and the like, on fillets, <p>(2) Rates for waterproofing shall include for:</p> <ol style="list-style-type: none"> 1. Preparation of surface, 2. Any area or width, 3. Cutting in edges. 4. Over laps, priming and treatment at the corners and floor drains. 5. Testing for the roof with water 6. Dressing over parapets and stub columns including forming groove to receive edge of plasticized bitumen membrane and sealing with elastic sealer. <p>(3) Rates for roof sheets shall include for:</p> <ol style="list-style-type: none"> 1. Side and end laps, Fittings including bolts, hook bolts, screws and washers, 2. Sheets of any width or length. <p>7- the price should includes demolish and dismantle existing terrazzo ceramic tiles, plaster, steel protection or balustrade, unrequired existing</p>				
7.1	Supply and cast foam concrete with fine aggregates for roof screeding of average thickness 8 cm as shown in drawing. The item will include making the angle fillet 5x5cm around the boundary of the parapet and around opening in roof if exists.	M2	350		
7.2	Supply and lay one layer of plasticized bitumen roofing membrane with chipping 4 mm thick, including priming concrete surface prior to laying, dressing into rain water outlets to form water proofing seal and cover the angle fillets. The rate include verticals parts skirting as per specification and drawings. Note: Measurement will be for the horizontal projection	M2	350		
7.3	Supply and Execute expansion joint on the roof as detailed in drawings including, polystyrene sheets 2cm and 5cm thick, mastic sealant as per specification and drawings. Note: The concrete work not included	.Mr	40		
7.4	Supply and Execute expansion joint in the corridor floor as detailed in drawings, including polystyrene sheets 2cm and 5cm thick, mastic sealant, aluminum angles 40x65x3mm the work includes dismantle existing protection steel, demolish safely corridor concrete and block walls and any required work as in specification and drawings.	.Mr	48		
7.5	Supply and Execute expansion joints and cover for columns and corridor soffits as detailed in drawings including polystyrene sheets 2cm and 5cm thick, mastic sealant and aluminum strip size 100 x 3mm screwed to walls or soffits from one side as per specification and drawings.	Mr.	60		
Total					

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (8A)					
8. Mechanical Works					
	<p>(1)In general rates for Mechanical works shall include for: 1. Developing shop and as built drawings</p> <p>2. Cutting and forming all chases, recesses, holes, and the like,</p> <p>3. Pipe sleeves,</p> <p>4. Building of concrete and/or brick ducts in floors, walls ...etc.,</p> <p>5. Excavation, forming of trenches for services, concreting, bedding and back filling and ramming after laying,</p> <p>6. Fixing brackets, clips, holder bats, hangers, and the like,</p> <p>7. Temporary and final fixing,</p> <p>8. Nails, screws, bolts, nuts, washers, holes, plugs, sleeves and the like,</p> <p>9. Building in or cutting and pinning,</p> <p>10. Testing and drawings,</p> <p>11. Painting of pipes,</p> <p>12. All work of other trades in connection with Mechanical work including all making good.</p> <p>(2) All Plumbing works include the required units and its accessories as described in the items and the rates include:</p> <p>1- All the plumbing units should be from the best quality and has trade mark.</p> <p>2- Submitting shop drawing for water supply and waste water networks for approval prior to commencement of the work.</p> <p>3-Submitting samples for all required material with catalogue indicating its specifications.</p> <p>4-All required tests , pressure for water net work , hydraulic test for sewage lines</p> <p>5- Cleaning and disinfecting all water pipes.</p> <p>6- Insulation of all galvanized water pipes and wrapping it with bitumen's sheets and protect pipes located under tiles with cement mortar. In addition to the insulation materials against heat loss for hot water pipes.</p> <p>7-Supply, install, connect to fixtures and distribution boxes, and test as shown on drawings and as per specifications for hot water & cold water PE-X pipes 16mm outer diameter and 2.2mm thick wall with flexible polyethylene corrugated conduit of 25mm outer diameter and 20mm inside diameter, with all connections, and fittings.</p> <p>8-All plumbing works (wash basin, kitchen sink, gully traps,etc...) include the connection to the nearest trap, WC to the nearest vertical sewage header in the typical floors and WC in the GF to the nearest manhole and include all accessories including PVC S and caps for all the ends of pipes at parapet.</p> <p>9- All external inspection elbows should covered by galvanized steel plate with thick 2mm .</p> <p>(3) Rates for manholes and pits shall include excavation, concrete, benching, plastering, backfilling and cover as per Drawings and Specifications,</p> <p>(4) Rates for sanitary fittings, isolated taps and gullies shall also include all pipe work in connection therewith and connections thereto including connection to the nearest manhole or gully and to the cold water storage tank.</p> <p>(5) Rates for pipe work including pipe work in frames to shading sheds shall include for:</p> <p>1. Joints in the running length,</p> <p>2. Nipples, connections, sockets, ferrules, couplings, back nuts, unions, and the like,</p> <p>3. Bends, elbows, tees, reducers, access doors, cleaning eyes, blank caps, stop valves, and the like,</p> <p>4. Welded joints and connections including grinding,</p> <p>5. Lagging and wrapping,</p> <p>6. Excavation, bedding and backfilling.</p> <p>7. Warning tape for underground pipes (magnetic for water pipes, normal for sewage and drainage pipes).</p> <p>8. the unit price of all Items shall includes dismantle the existing interlock tiles, concrete slabs, cut , fill, compaction and reinstatement of the work to the original conditions.</p>				

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (8A)					
Sewage water works					
	The work includes connection of the sewer line to the existing manholes. The holes of the manholes have to be done using core machine. All manholes have to be coated by two external bitumen coating, and to be internal coated with approved materials for insulation.				
8.1	Supply and install B300 concrete manhole of internal diameter 60 cm ,and (50-100) cm depth according to the required level, 10cm thick plain concrete for walls and base, slab, with cast iron cover with frame 50cm opening, 8 ton bearing capacity, including excavation, backfilling with kurkar in layers 20 cm thick each and compaction 98% MDD, 200 Kg/cm2 plain concrete for benching, hunching , making good according to drawing, and the instructions.	No	14		
8.2	Ditto but Ø 80cm, depth (100-160cm) .and 15cm thick concrete for walls and base, with 25 ton cast iron cover.	No.	1		
8.3	Ditto but Ø 100cm, depth (160-220cm) ,and 20cm thick concrete for walls and base with cast iron cover with frame 50cm opening, 25 ton bearing capacity, with cast iron steps.	No.	1		
8.4	Supply and install Floor Trap Gully (F.T.G) Ø 4", 2.5mm thick ,complete with concrete protection, heavy duty brass grating and 4" & 2" PVC drainage pipe to the nearest manhole or next vertical pipes, Stainless steel Covers and including heavy duty S trap where needed as per specifications , drawings and supervisor engineer instructions.	No.	32		
8.5	Ditto but Floor Trap (F.T) Ø 4", Including Stainless steel Covers, piping , with all connections and fittings.	No.	5		
8.6	Ditto but Floor Clean Out Ø 4", Including Stainless steel Covers, piping , with all connections and fittings.	No.	6		
8.7	Supply and install UPVC pipe Ø 8" (SN8) with sockets. The work includes excavating of trenches (depth up to 2.0m), bedding, compacted backfilling with clean sand, connecting to the manholes, fittings , all connections and hydraulic test according to the specifications and drawings.	Lm	340		
8.8	Ditto but UPVC pipe Ø 6" .	Lm	40		
8.9	Ditto but UPVC pipe Ø 4" .	Lm	40		
Drainage (Rain Water) Works:-					
8.10	Drill 80cm diameter borehole through cohesive and non-cohesive material up to 5 meter below the clay layer in the Kurkar layer as shown in the drawings and as directed by the engineer. Price shall include all needed accessories required to perform the work. Minimum depth of 12m from natural level.	Lm	100		
8.11	Supply and lay non-woven geotextile membrane according to specifications to protect the inner surface of the 80 cm diameter borehole.	Lm	100		
8.12	Ditto but for surface areas, and manholes premiter	m2	30		
8.13	Supply and fill in boreholes solid , clean washed, and free from dust gravel of at least 2" size.	m ³	48		
8.14	Ditto but ¾ " aggregates	m ³	1		
8.15	Ditto but ¼ " aggregates	m ³	1		
8.16	Supply and install pre-cast circular reinforced concrete manhole (Ø 600 mm) B300 complete with 40 cm cast iron cover (8 tons capacity), frame, rings, and special joint required to fix the sewer pipes to the manhole. The item also includes B300 benching, shuttering, inside cast iron steps each step 30 cm maximum and safety measures, excavation in all soil to any depth, plain concrete 5 cm thick below the manhole, two external hot bitumen coating, and backfilling in layers 25 cm maximum using suitable material with watering, compaction according to specification, drawing, and the engineer instructions..	No	16		
8.17	Ditto but Ø 800 mm and 25 ton bearing capacity,	No.	1		
8.18	Ditto but Ø 1000 mm and 25 ton bearing capacity, 20 cm wall ,roof and foundation thickness.	No.	1		
8.19	Ditto but Ø 1500 mm and 25 ton bearing capacity, roof and foundation thickness. The price include 30 cm clean sand in Manhole, and stainless steel grill size 25* 25 cm for outlet.	No.	5		
8.20	Supply and install 110x300cm (3 inlets) combined storm-water drainage gully complete with four 80x40cm cast iron screens 25 tons bearing capacity. The item also includes casting B300 concrete for walls, footing and benching as per drawings, shuttering, excavation in any type of soil to any depth, plain concrete, two external hot bitumen coating, and backfilling in layers 25 cm maximum using suitable material (Kurkar) with watering, and compaction. Final location of gullies should be shown on shop drawings based on field survey and approval of the engineer.	unit	2		
8.21	Supply and install 8" uPVC Tee with 600 mm long pipe, as directed by engineer.	No.	3		
8.22	Supply and install 8" uPVC "S" trap as indicated in the drawings.	No.	3		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
8.23	Supply and install Roof Trap drain Ø 4", Including Stainless steel Covers,Ø 4" pipes, vent. pipes, cap for ventilation pipes and connected to out site manhole, with all connections and fittings.	No.	10		
8.24	Supply and install Gully trap dia. 6" to 6" with dia. 60cm M.H (Cast iron cover 8ton type). Manhole with frame and cover. The price includes external hot bitumen painting (two Layers on one prime layer), excavation, construction plastering proper benching backfilling. This Gully trap for connection storm water outlets with sewage manhole and all required as per drawings specifications and Engineer satisfaction.	No	2		
Domestic Water Works:-					
8.25	Supply and install water meter Ø2" Type ABB or equivalent with check valves, gate valves, dressers, water meter cabinets, to connect with new pipe with municipality main pipe. The price shall include subscription from municipality, and all necessary fittings and accessories jointing, valves, non-return valves and connection to both feeder galvanized steel pipes and 20mm MDPE pipes including galvanized steel box with locks for protection and all required fittings and accessories as per specifications , drawings and supervisor engineer instructions. according to specifications and supervision engineer requests .	L.S	1		
8.26	Supply and install water pumps set (Type Flagyt or equivalent) with automatic control and control panel and electrical cable .Including concrete base 4mx3m x0.2 m ,electrical floats for water tanks (60% for domestic water and 40% for fire fighting) with all connections and fittings. Capacity : 12 m ³ / hr. Head : 30m Number of pumps : 2 Including gate valves, dressers, check valves, inlet, outlet pipes, suitable pressure tank and all connections, fittings, according to drawings, specifications, and supervision engineer requests .	L.S	1		
8.27	Supply and install galvanized steel pipe Ø 2" , (Schedule -40). Including fixing , excavation for trench, backfilling, welding. Compaction, UPVC pipe Ø 4" for sleeves, insulation, valves , fittings and all connections.	Lm	150		
8.28	Ditto but galvanized steel pipe Ø 1.5"	Lm	170		
8.29	Ditto but galvanized steel pipe Ø 1"	Lm	180		
8.30	Ditto but galvanized steel pipe Ø 3/4"	Lm	60		
8.31	Supply and install Collector Box for (CB-G1) (hot and cold water distribution system completed with all necessary Rozabita granite boxes 80*50 cm(two leaves aluminum door and lock) ,with Italian made connections, fittings ,main valves, valves for each line, the price includes supply, install, connect to fixtures and distribution boxes, and test as shown on drawings and as per specifications for hot water & cold water PE-X pipes 16mm outer diameter and 2.2mm thick wall with flexible polyethylene corrugated conduit of 25mm outer diameter and 20mm inside diameter, with all connections, collectors , records , and as required by drawings , specification and Engineer satisfaction .	No.	1		
8.32	Ditto but Collector Box (80x50x12 cm) for (CB-G2)	No.	1		
8.33	Ditto but Collector Box (80x50x12cm) for (CB-G3)	No.	1		
8.34	Ditto but Collector Box (80x50x12 cm) for (CB-G4) .	No.	1		
8.35	Ditto but 20 mm diameter PE pipes with UPVC pipe Ø 4" for sleeves, fittings and all connections.	L.M	50		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
8.36	Supply and fix water storage plastic tank 2 m3 capacity , (3 layers -class A)with locks for cover, with approved type not less than 32 kg weight, complete with lockable cover,1 inch diam. automatic float valve, overflow pipe (1”diam) and drip tray, and ventilation pipe, with all connections for rising main and distribution pipe work and stop valves 1” with all accessories as specification and drawings, including painting tanks with white oil paint .	No.	8		
Finishing Works:-					
8.37	Supply and fix white glazed fire clay hand wash basin size 52cm x45cm (Vitra type - grade A) or equivalent, complete with all water supply pipes 16mm (Golany) to the nearest distribution box (DB), waste fitting, trap, plug and chain, chromium water mixer (Hamat ,jack, wall mounted type or equivalent), glazed fire clay soap holder, and the drainage line 2” to the nearest floor trap.	.No	8		
8.38	Ditto but for handicapped Washing basin, with stainless steel supports 1.25 " fixed to walls, with all connections, and fittings.	No.	2		
8.39	6mm mirrors including sealant and fixing accessories mirror, size 600 X 400 mm	No.	10		
8.40	Supply and fix white glazed fireclay European W.C. suite (Vitra type - grade A), or equivalent complete with heavy duty cover , 9 liter plastic double action flushing cistern, and fixed chromium plated tap 1/2” Tibesa type or equivalent, including all water supply pipes 16mm(Golany) to the nearest dist. box (DB), flushing hose sprayer, glazed fire clay paper holder, angle valves, UPVC drainage pipe connecting to the nearest manhole or sewage header as per specifications , cap for ventilation pipes sprayer hose , all valves , toilet paper holders white color vitreous china with all connections, and fittings according to drawings and supervisor engineer instructions.,	No.	6		
8.41	Ditto but for handicapped , with stainless steel supports 1.25 " fixed to walls with all connections, and fittings .	No.	2		
8.42	Supply and install Stainless Steel Sink (50X60)cm, single bowl, drainer easy cleaning ,Including all connections pipes, vent pipes, cap for ventilation pipes and connected to out site manhole, with cold and hot water mixer (Jack Hamat type or equivalent), soap holders white color vitreous china (15cmx15cm), with all connections, and fittings .	No.	1		
8.43	Ditto but with long neck tap for cold water.	No.	2		
8.44	Supply, install test and commission First Class (70x70cm) internal Vitrous China shower with trims taps, traps, brackets, stays, shower arms, hot and cold water shower mixer, shower tray, including all connections with pipes works complete as shown on drawings and as per specifications and engineering instructions..	No.	4		
8.45	Supply and install white glazed fireclay sink of 600x400 x250 mm, Italian made or approved equivalent (Grade/A) for Science Lab. Including all connections pipes, vent pipes, cap for ventilation pipes, and connected to out site manhole ,with long neck tap for cold water, with all connections, and fittings .	No.	10		
8.46	Supply and install 3/4" water chrome tap, for flushing and R.O water .	No.	12		
8.47	Supply and install Electrical Heater (Ariston type) or approved equivalent. Capacity =50 L., Including thermostat with all connection and fittings.	No.	3		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
RO. Desalination plant 5 m3/day - T.D.S (2000-5000) PPM					
8.48	<p>Supply and Install Skid Mounted 5m3/hour Brackish Water RO Desalination Plant ,the packaging frame (Skid) shall be made of Galvanized steel coated with one polyzinc layer and three layers, required to support all component that are integrated on the RO system unit (thickness not less than 2mm).(See attached relevant clauses of attached specifications)It is the contractor full responsibility to check and inspect the proposed site as identified here below and to quote for all works, repairs, installations, and its associates with all material requirements. The contractor shall arrange for all required equipment, tools, and utilities (water, electricity, and tanks...etc.) to carry out the job in accordance with relevant clauses of standards and code of practices .The contractor should submit detailed and complete shop drawing and equipment specifications for engineer approval</p> <p>The contractor shall arrange for all required safety measures, signs, and protections around the sites. The contractor should make valid insurance document to cover all site equipment and labors.</p> <p>Supply and install modular ,factory assembled, tested , piped and wired 5m3/hour skid mounted brackish water desalination plant for max TDS salinity of raw water 4000PPM producing water with salinity not more than 100ppm and PH 7 -8 all in accordance with detailed process schematic diagram .The plant should be comprising but not limited to, raw water tank FEED pump(All pumps should be made of KSB,Grundfos or sulzer), fully controlled Multimedia filtration made of rubber lined steel vessels and externally epoxy painted with automatic backwashing and air blowers ,FRP cartridge filtration vessel,antiscalent and acid HCL 33% dosing system each of 500 liters PP tank with level controls Dosing pumps :Prominent &HACH instrumentation , two stage FRP,PN20 high pressure vessels and 91No. ,4" diameter RO membranes 99.7% salt rejection, VFD controlled high pressure pump , lime stone filter ,product water tank ,</p> <p>Product water booster pump, stainless steel grade 316 high pressure piping, PN16 CPVC piping for low pressure side, pipes, valves, gauges, electromechanical Siemens digital flow meters for raw product and brine water flows, Digital EC, PH and Turbidity meters for both raw and product water monitoring, PLC controlled electrical power and control switch board. The prices should include for all civil structures and concrete including all associated electromechanical installations . Membranes: Tory,Hydraunitics ,Filmetic types and High pressure Vessels : Bell ,Codeline.</p> <p>Carbon Filter 44"x8" filled with suitable carbon and Automatic control valve 1" (See attached relevant clauses of attached specifications)</p> <p>Multimedia Filter 44"x8" filled with suitable carbon and Automatic control valve 1" (See attached relevant clauses of attached specifications)</p> <p>SS316 Primary Pump (All pumps should be made of KSB,Grundfos or sulzer), .(See attached relevant clauses of attached specifications)</p> <p>Caustic soda dosing system and sodium hypochlorite dosing system, 1" Electrical valve .(See attached relevant clauses of attached specifications)</p> <p>Glycerin Stainless steel pressure gauge.(See attached relevant clauses of attached specifications)</p> <p>High pressure switch.(See attached relevant clauses of attached specifications)</p> <p>Low pressure switch.(See attached relevant clauses of attached specifications)</p> <p>20" BB,5 micron Sediment Cartridges with its BB house</p> <p>Flow meter on reject and Permeate.(See attached relevant clauses of attached specifications)</p> <p>16 bar PVC piping for all low pressure application for raw water and permeate water headers with all fittings and accessories.</p> <p>Carbon Filter 44"x8" filled with suitable Crushed limestone and Automatic control valve 1" (See attached relevant clauses of attached specifications)</p> <p>Stainless steel grade 316 piping for high pressure application on membrane feed and membrane reject with all associated fittings and accessories.</p> <p>the price includes Supplying of all consumable materials such as chemical materials, 20" BB Sediment cartridge for Two years starting from the project handover.</p>	No.	1		
8.49	2 M3 ,PE raw water tank coated with supercrylic and to be supplied with 1" mechanical float switch and electrical float switch connected with the control panel	No.	1		
8.50	2 M3, S.S 316L Permeate water tank(Thickness :2 mm),supplied with electrical float switch connected with the control panel	No.	1		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
8.51	Stainless steel water dispensing unit, made of stainless steel sheet grade 316L with 2mm thick, sink dimension (2.00x0.4x0.6)m with cover and galvanized steel columns for sink and locker(header), the unit shall be supplied four stainless steel 20 mm taps. The work includes connecting the unit with the nearest manhole, and connecting the unit to the water source, and all it needs from connections, valves, accessories, excavation, backfilling..etc..	Unit	1		
8.52	Supply, install, test and commission and disinfect water supply system from POLYPROPYLENE pipes Ø50MM (20 Bar) complete with all fittings (valves, elbows, tees, couplings etc..), fixing on walls or underground, supports and all necessary works as shown on drawings and as per specifications and engineering instructions	Lm	70		
13. Water Well Works					
	General <input type="checkbox"/> All works and installations listed here below should be carried out, tested and commissioned by specialized responsible contractor, all in accordance with drawings, specifications and relevant ISO and British standards, and the instruction of the Supervisor Engineer. <input type="checkbox"/> The contractor should provide for all discrepancies and arrange for all mechanical and electrical materials, fittings and accessories that may require completing the installations properly, and any necessary works to install the equipment's properly as specified, shown on the Drawings and directed by the Supervisor Engineer. <input type="checkbox"/> The contractor should carry out and arrange for (7 – 9) soil samples, and (4– 6) water samples. At certified laboratory approved by the Engineer. The contractor should Submit X,Y,Z Coordinates, Singled be a certified office approved by the engineer. <input type="checkbox"/> The prices should include for the subscription fees for well drilling Certificate from PWA, around (1100\$). <input type="checkbox"/> The works of pipes, valves and fittings shall include cutting of existing pipes, dismantling existing valves, flow meters, fittings ... etc. The works include all needed fittings such as bolts, nuts, gaskets ...etc. All dismantled and/or replaced items should be delivered to MCWU according to the instruction of the Supervisor Engineer. <input type="checkbox"/> Wherever, the pipes and fittings installed above the ground (none buried), the pipes and fittings shall be coated with three layers of epoxy. The pipes and fittings underground (buried) shall be coated with epoxy primer and two layers of extruded polyethylene coating. Interior surfaces of all steel pipe and fittings shall be lined with cement mortal lining, factory made. <input type="checkbox"/> The price shall include execute thrust blocks for elbows, tees...etc. The contractor should provide and include in the bid prices for all discrepancies including all mechanical and electrical materials, fittings and accessories that may be required to complete the installations properly. The contractor should carry out and arrange for analyses of soil samples at the end of drilling. And submit soile analyses report to the engineer, and (5 –6) water samples to be analyzed by certified and licensed Laboratory approved by the engineer . The Engineer has the right to reject any component of the work not complying with the specifications and the requirement of the contract. Contractor shall coordinate with all related entities for the implementation of desalination plant and water well. All associated fees and expenses related to authorizing and licensing shall be considered in his prices.				
8.53	Drilling and digging Borehole passing through any type of soil with diameter of min. 12 inches size. The item includes lowering, welding and extraction up and remove all the materials to places as instructed by engineer.	LM	68		
8.54	Supply and install 8" uPVC pipe from the top of the screen to the top of well. The item includes lowering, and fixing.	LM	49		
8.55	Supply, weld and install a double Stainless steel screen Grade 316, 8" diameter 5mm thick. The total free area will be 10% minimum.	LM	12		
8.56	Supply; weld and install Stainless steel pipe Grade 304, 8" diameter 5mm thick at the end of the filter according to screen design and Engineer instructions.	LM	2		
8.57	Supply and weld of stainless Steel bottom plate of thickness 5 mm minimum, 8" diameter	No.	1		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
8.58	Supply and lower graded quartz (1.5-2.5) mm.	Ton	4		
8.59	Well flushing, Cleaning and Pumping test and carryout the required measurements including detailed bacteriological and chemical analysis tests from certified laboratory approved by the engineer in charge including detailed hydrological report. The item includes transferring, assembly, dismantling of the contractors' pumping equipment. The contractor shall arrange and coordinate with municipality and others for location and method of damping the extracted water during well flushing and pumping test.	Hr	25		
8.60	Supply and install complete sodium hypochlorite dosing system comprising of solenoid, prominent type,CNPA or equivalent approved type dosing 0.8L/H 21 at 10bar), 500 liter polyethylene white tanl prominent type, with built in factory made automatic stainless steel mixer. The tank should be accommodated within reinforced concrete box having 500 liters volume capacity. The works and installations should include for all associated fittings and accessories required to accommodate and connect the desired system.	unit	1		
8.61	Supply, installation and operation of electrical submersible pump, European made ,Flygt,KSB,Grodfos or Lowara type or approved equivalent. The operating point of the pump is (15) M3/hr at a total dynamic head (TDH) of 85m at minimum 80% pump efficiency. Price shall include the supply and installation of (Stainless steel wire, chain, rings and 2" Barrel Nipple all of SS316, sch40) to fasten, lift and install the pump, and all needed accessories to complete the work according to drawings, specifications and engineer instructions.	unit	1		
8.62	Supply and install MDPE minimum 2" Diameter pressure 10 bar, for the submersible pump's drainage outlet. The price includes all the required materials, workmanship, equipment's, include all required fittings (flanges, elbows, bends, reducers and all fittings needed, all works should be carried out according to drawings, specifications and engineer instructions.	LM	52		
8.63	Supply and install Galvanized steel 2" Diameter pressure 16 bar, as manifold. The price includes all the required materials, workmanship, equipment's, include all required fittings (flanges, elbows, bends, reducers, pressure gauges, 2" magnetic water flow meter, strainer, gate valves, check valve, air release valve,1 meter stainless steel 316 pipe for chlorine injection, and all fittings needed, all works should be carried out according to drawings, specifications and engineer instructions.	L.S	1		
8.64	Supply and install concrete manhole of internal diameter 100 cm ,and (100) cm depth according to the required level, 20 cm thick concrete for walls , slab with cast iron cover with frame 60cm opening,25 ton bearing capacity, including excavation, backfilling, hunching and making good according to specification, drawing, and the engineer instructions.	unit	1		
8.65	Supply, install, test and commission an electrical control panel which is made of IP-54 galvanized steel thickness 2 mm painted with electrostatic paint of dimensions 40 * 60 cm. The panel includes Contactors, Overload protection, Voltmeter, Ameter, HID signal, protection device RSTP, timer, relays, signal lamps, push buttons, switches, circuit breakers and all the necessary wires and protection needed to complete the work type Moeller or equivalent.	unit	1		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Fire System :					
	Supply, install, test and commission a complete fire fighting system strictly in according to Civil Defense and the specification and as indicated on the drawing including the necessary identification plates etc. and all builders work.				
8.67	Supply and install Fire pumps set with automatic control panel which includes circuit breakers, RST relay, overload protection, timers, relays, contactors and all protection devices needed , electrical floats for water tanks (60% for Number of pumps : 3 1- Jockey Pump (1 duty) Capacity : 5m ³ / hr. Head : 55m 2-Main Fire Fighting Pumps (2 pumps) (1 duty+ 1 stand by) Each one Capacity : 20m ³ / hr. Each one Head : 55m Including gate valves, dressers, check valves, inlet, outlet pipes, suitable pressure tank and all connections,perssure switches, fittings, according to drawings, specifications, and supervision engineer requests .	L.S	1		
8.68	Supply and install galvanized steel pipe Ø 2" , (Schedule -40). Including fixing , excavation for trench, backfilling, compaction, UPVC pipe Ø 4" for sleeves, fittings , connections, insulation, valves and all other accessories required.	Lm	140		
8.69	Ditto but pipe Ø 1.5".	Lm	50		
8.70	Supply & install complete stainless steel hose Reel cabinets , thickness 1 mm and dimension (80x80x25)cm, wall mounted with rubber hose (12bar) pressure, 30m length, Ø25mm, angle globe valveØ 1.25", Jet nozzle with all necessary pipes, connections and fittings	No.	4		
8.71	Supply and install Dry powder type portable fire extinguisher (3 kg).	No.	5		
8.72	Supply and install CO2 powder type portable fire extinguisher (3 kg).	No.	6		
Ventilation And Air-conditioning System					
8.73	Supply and install wall mounted extract fan (EX-F1) of 3000 m3/hr. at static pressure 60 pascal , Ø 18". Including all electrical wires ,control panel with all connections and fittings	No	4		
8.74	Supply and install wall mounted extract fan (EX-F2) of 650 m3/hr. at static pressure 30 pascal, Ø 8". Including all electrical wires, control panel with all connections and fittings	No	2		
8.75	Ditto but for Fan (EX-F3), Q =250 m3/hr. ,Ø 6".	No	9		
Gas System					
8.76	Supply and install Gas supply system for laboratory, the system including all required brass pipe, fitting, valves, distribution box, Burners(type Tatali) on each lab table .etc., and pipe should be pressure tested and guaranteed against chemical attack and approved by representative engineer and the civil defense. the price also includes connection to the gas room including installation and angle valves, fittings, flexible and complex valve Global Valves and orderly, gauge pressure (16bar , R&R or equivalent) and 2x12kg gas cylinder and all gas pipes, connection and accessories needed to complete the gas network and connect the gas to the benches.to gas valves (SG-1 Sagir or equivalent), and all what it takes to be linked to the gas network the contractor shall submit work shop drawing to be approved by the representative Engineer	Unit	1		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Elevators works :					
8.77	<p>Supply , install and test electrically operated completely Brand Name elevator , the price includes all required lighting works for the shaft,Subdistribution panel board to be placed at machinaryroom and Electrical cable according to drawing) ,Elevator's Control Panel, providing test certification from the Palestinian Specifications and Standards Institute.</p> <p>specifications must be approved by supervision mechanical and electrical engineers</p> <p>The elevator shall be with the following:(Type : Otis ,Kone or equivalent) ,The elevator machine should be gearless.</p> <p>- Load: 1150 kg .</p> <p>- Passengers:12</p> <p>- Speed : 1m/s</p> <p>- Travel distance: 12 m</p> <p>- Floors served: 3 floors- (Ground, First , Second & Third floors), Main floor:0 floor</p> <p>- Shaft size: 170 cm width 260 cm length</p> <p>- Mode of operation :Full collective</p> <p>- Doors : Automatic (power operated) with VVVF system, three panels.</p> <p>90cm Hair stainless steel (316 L)</p> <p>- Car : Hair line stainless steel.(316 L)</p> <p>- Ceiling : Recessed roof with fluorescent lighting.</p> <p>- Floor : Granit.</p> <p>- Motor drive: A computerized Ac-variable voltage, variable frequency (vvvf) system.</p> <p>- Motor data: Gearless , above the ceiling, single speed Ac-3phase induction motor 380V, 50Hz, compromise the vvvf drive.</p> <p>- Operating panel board (OPB): mounted at side of the car entrance, contains: -one micro push button for each floor served -Emergency call button -Door open button -Door close button -Digital display position indicator -Inter phone on alarm buzzer system - Fan button - Over load indication, signal -Full load indication signal</p> <p>Buffers : Spring type</p> <p>all works should be according the drawings, specifications, manufacture instructions and engineer instructions.</p>	L.s	1		

Item No.	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Fuel System :					
8.78	Supply & Install Under-Ground Fuel tank (black steel 6 mm) including painting with fiber glass , excavation and backfilling , concrete base , supports , pipes, valves ,fuel filters , vent pipe, float valve, drain valve, with automatic control, switches, level controls, cables, connections, fittings, supports , with all necessary equipment's. according to drawings, specifications, and supervision engineer requests .Capacity : 5000 Liter.	L.S	1		
8.79	Supply & Install Fuel pumps no:2 . Including valves , check valves strainers control panel electrical cable with automatic control, switches, level controls, connections, fittings, supports , with all necessary equipment's. according to drawings, specifications, and supervision engineer requests. Each One Capacity: 3m3/ hr. , Head : 15 m	L.S	1		
8.80	Supply and install Black steel pipe (schedule -40) Ø1" with all valves .Including excavation for trench, backfilling, all connections and fittings according to specifications and supervision engineer requests .	L.m	15		
8.81	Ditto but pipe Ø3/4"	L.m	15		
Irrigation System :					
8.82	Supply and install Manhole Ø 60cm with cast iron cover (8 Ton), depth (60 - 80) cm, for water pipe including excavation, backfilling and all connections, valves Ø1.5" and Ø1 " , fittings, according to specifications and supervision engineer requests .	No.	3		
8.83	Supply, install, test and commission and disinfect water supply system from PE pipes Ø40MM (10 Bar) complete with all fittings (valves, elbows, tees, couplings etc..), Including excavation for trench, backfilling, compaction, supports and all necessary works as shown on drawings and as per specifications and engineering instructions	Lm	50		
8.84	Ditto but pipe Ø 32MM.	Lm	100		
8.85	Ditto but pipe Ø25MM.	Lm	200		
8.86	Ditto but pipe Ø20MM.with with drippers.	Lm	250		
8.87	Supply, install and fix faucet Ø3/4", length (50)cm, with all connections and fittings, according to specifications, and supervision engineer requests .	No.	4		
Total					

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
Bill No (9A)					
9. Electrical Works					
	<p>General:</p> <p>supply and erecting of the electrical works as per drawings, specifications, and engineer's instructions. The price of the following items includes, all necessary junction boxes, wires, conduits, clamps, bolts, connectors and connecting all cables to suit</p> <p>All installation shall be in accordance with :</p> <p>* The drawings , specifications and instructions and demands of the engineer.</p> <p>*the unite price shall includes, demolish and reinstatement to original status for any existing services, walls including but not limited to concret and block works, terrazo, ceramic and interlock tiels, plaster and painting works, etc.....</p> <p>* The contractor is fully responsible for all foundation works (conduits, PVC pipes, Boxes, wires and cables) with all accessories, which are required to complete the PV Solar System for the school that will be installed in the future.</p> <p>The prices will be deemed to include for the full cost as described in all Documents.</p> <p>All the following items shall be executed according to the drawings, specifications and as directed by the Engineer with APPROVED QUALITY AND TYPE, the rates shall include all electrical testing and commissioning .</p>				
A-	LIGHTING FITTINGS :				
1-	Supply and install surface mounted lighting fixture 2X20 W , with 4000 lumen, exit window 140 degree, and life time 40000 hours LED T8 tubes of length 1200 mm. Type-Philips or equivalent European made.	No.	143		
2-	Supply and install surface mounted lighting fixture 1X20 W , with 2000 lumen, exit window 140 degree, and life time 40000 hours LED T8 tube of length 1200 mm. Type-Philips or equivalent European made.	No.	3		
3-	Supply and install surface mounted lighting fixture 1X16 W , 1600 lumen, with assymetric reflector for the classrooms blackboards, exit window 140 degree, and life time 40000 hours LED T8 tubes of length 1200 mm. Type-Philips or equivalent European made.	No.	25		
4-	Supply and install surface mounted Globe With Polycarbonate 2x10W , LED lamps. Type-Philips or equivalent European made.	No.	50		
5-	Supply and install surface mounted Globe With Polycarbonate 15W , water proof type, LED lamp. Type-Philips or equivalent.	No.	20		
6-	Supply and install IP-66 flood LED light fitting of 12000 lumen and 104 W power with IP-65 junction boxes. Type-Philips or equivalent European made.	No.	3		
7-	8W EXIT sign light fitting suspended mounted with 1.5 hours back up charger. Type must be high quality brand-name.	No.	2		
8-	Supply and install IP-54, class II, 1x15W wall mounted laminar, with cast aluminium body, metal protection with ceiling gasket. The unit includes 15watt LED lamp. Type-Eleita or equivalent European made.	No.	2		
9-	Supply and install IP-64, 60W low bay LED of aluminum alloy body, 5400 lumen and 2500 color temperature. Type-Philips or equivalent European made.	No.	12		
10-	Supply and install IP-54 surface mounted lighting fixture 2X20 W , with 4000 lumen, exit window 140 degree, and life time 40000 hours LED T8 tubes of length 1200 mm. Type-Philips or equivalent European made.	No.	25		
B-	SWITCHES AND SOCKETS :				
1-	Supply, install and connect single pole switch including conduit and wires under plastering. Type Gewiss-Chourus.	No.	15		
2-	Ditto as (1), but with IP-55 water tight plate.	No.	5		
3-	Ditto as (1), but two ways switch.	No.	10		
4-	Ditto as (1), but double pole switch.	No.	20		
5-	Ditto as (4), but with IP-55 water tight plate.	No.	10		
6-	Ditto as (1), but triple pole switch.	No.	5		
7-	Supply and install N.O. single pole illuminable push button with 220V miniature signal lamp for stairs light. switching.	No.	20		
8-	Ditto as (1), but with IP-55 water tight plate with switch for water pump,20A,one gang, one way switch with lamp	No.	2		
9-	Supply and install single phase, 3-pin, flush mounting, 220V-16A socket outlet with safety shutters. Type Gewiss-Chourus.	No.	60		
10-	Ditto as (9), but with IP-55 water tight.	No.	10		
11-	Ditto as (9), but double sockets.	No.	10		
12-	Ditto as (10), but laboratories' table mounted including 3x2.5mm2 cable with PVC duct.	No.	10		
13-	Ditto as (9), but different color for solar (UPS) socket.	No.	36		
14-	Supply and install 20A-220V Airconditioner Socket outlet, 20A ONE gang one way switch with 220V miniature signal lamp. Type Gewiss-Chourus.	No.	2		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
15-	Supply, install and connect replacement single pole one way switch include the testing of Continuity of wires and pipes. Type Gewiss-Chourus.	No	30		
16-	Supply, install and connect replacement single socket outlet include the testing of Continuity of wires and pipes. Type Gewiss-Chourus.	No	30		
C-	<u>DATA & TEL SYSTEMS:</u>				
1-	Supply and install telephone outlet with 6 wires twisted pair cable, the price include all accessories needed. Type Gewiss-Chourus.	No.	3		
2-	Ditto as (1), but telephone cables collection box including connection terminals, cables marking and all needed accessories. Type Gewiss-Chourus.	No.	3		
3-	Ditto as (1), but RJ-45 data socket, this includes data cable GIGA FTP, CAT5e, 4 pairs (Teldor type) to be installed inside 0.75 inch dim. PVC conduit and three gangs junction box. Type Gewiss-Chourus.	No.	20		
4-	Ditto as (1), but RJ-45 data socket, this includes data cable GIGA FTP, CAT5e, 4 pairs (Teldor type) to be installed inside 0.75 inch dim. PVC conduit and three gangs junction box with USB male end for smart board. Type Gewiss-Chourus.	No.	10		
5-	RS-232 serial port , this includes data cable GIGA FTP, CAT5e, 4 pairs. Type Gewiss-Chourus.	No.	5		
6-	Supply & install of black thick armored telephone cable (4 pairs) from telephone junction box to paltel board.	Mr.	100		
7-	Supply, install & fix galvanized steel 8U network rack cabinet type Link Basic comprising:- - One 24-ports CAT-6 Patch panels, type 3M or Western wire. - Front glass door with key. -Two side doors. -Top fan 4". -Power splitter with 6 females socket outlet with switch and 20A circuit breaker - One shelf. - APC UPS-Smart-620. - Switch Cisco Type (SG102-24) Compact 24 Port Gigabit Switch with 2 Combo Mini-GBIC Ports. - Document sheet for the patch panel & Switch should be stick in the rack glass door. - 50 x patch cable 50cm cat 6 UTP original. -CAT5e, FTP cable from the main rack in ground floor to the new other rack. And all accessories needed.	Set	1		
D-	<u>AUDIO SYSTEM:</u>				
1-	Supply and install 220V large electrical school bell of 10" diameter including wiring, conduits, push buttons and all needed accessories. Type E-Fetaya.	No.	2		
2-	Supply and install school broadcasting system including multi-input and output amplifier, two external use loud speakers, stand with fixed and mobile microphones, two cassettes tape recorder with CD player, 2 audio inlets and 2 outlets, wiring and conduits and all needed accessories as per drawings. Type Copa-1200 or approved equivalent.	Set	1		
E-	<u>EARTHING SYSTEM:</u>				
1-	Supply, install and test earthing system Faraday Cage way including 30x4mm flat galvanized steel tape, testing points, tap-off, equipotential bus bars, 80cm diam. manholes, u-bolted clamps, bare copper conductor and digging of set of three 19mm diam. copper electrodes, 70mm copper wire with copper lugs bolted to the tape ends & covered entirely with PVC shrink-on tube in expansion joints positions, according to specifications and drawings. The earthing resistance should not exceed 2 ohms.	L.S.	1		
F-	<u>CEILING & EXTRACT FANS:</u>				
1-	Supply and fix 56" diameter ceiling mounted fan. Rate shall be deemed to include all conduits, electric wires, switch and any fittings required for the full and proper operation of the fan, in accordance with the instructions and full approval of the Director of Works, Type-CHMC or equivalent.	No.	8		
2-	Supply and fix 6" diameter 250m3/hr wall mounted extract fan; with louver, Type-Venta or equivalent.	No.	15		
3-	Supply and fix 8" diameter 650m3/hr wall mounted extract fan; with galvanized steel protection louver, Type-Venta or equivalent.	No.	5		
G-	<u>Main Distribution Board MDB, Delivery Switch Board</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include 160A hard copper bus-bars for three phases, neutral and separate earth bus bar, isolating fiber glass barrier, document holder, labeling, connection terminals, cable marshalling box, and any required accessories. Type Moeller or approved equivalent.	L.S	1		
2-	L.T.L 3x63A fuseable circuit breaker. Type Moeller or approved equivalent.	No.	1		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
3-	M.C.C.B 4x63A. Type Moeller NZMB1-4-A63 or approved equivalent.	No.	4		
3-	M.C.C.B 3x63A. Type Moeller NZMB1-A63 or approved equivalent.	No.	2		
4-	M.C.C.B 3x25A. Type Moeller NZMB1-A25or approved equivalent.	No.	1		
5-	Miniature circuit breaker 3x32A with S.C.C. 15KA. Type must be high quality & brand name.	No.	2		
6-	Miniature circuit breaker 3x25A with S.C.C. 15KA. Type must be high quality & brand name.	No.	4		
7-	Miniature circuit breaker 2x25/20A with S.C.C. 10KA. Type must be high quality & brand name.	No.	16		
8-	LTL-3X6A fuses with base.	No.	3		
9-	63/5A current transformers. Type Legrand or approved equivalent.	No.	9		
10-	Digital Bidirectional energy meter 3 PH intended for residential users and commercial users for revenue measuring of active power in three-phase systems. Type Iskra or approved equivalent.	No.	1		
11-	Supply and install 10KVAR P.F improvement capacitor including 3X32A. Type ELECTRONICON or approved equivalent.	No.	1		
12-	Supply and erect colored indication lamps 3 nos. , with 3-ph. push button. Type Moeller or approved equivalent.	No.	2		
13-	Digital multi-meter, 0-1000A Ameter, 0-500V Voltmeter, 47-53Hz Frequency meter, Kwatt meter, Kvar meter and P.F meter. Satec or Telematic Type.	No.	1		
14-	AC3-380V four poles contactor DIL-M150. Type Moeller or approved equivalent.	No.	1		
15-	Digital energy meter 3 PH intended for residential or commercial users for revenue measuring of active power in three-phase systems. Type Socomec, Dexin or approved equivalent.	No.	2		
16-	Surge protection device of 100KA short circuit capacity to secure the over all system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories. Type Moeller or equivalent.	No.	2		
17-	3-PH Mains/Gen. Automatic Change Over switch(ATS), motorized type, made of Two 100A, 400V, (N1-4-100), with electrical and mechanical inter-lock, with its control and all needed accessories. Type Moeller or approved equivalent.	Set	1		
18-	M.C.C.B 3x100A. Type Moeller NZMH1-A100 or approved equivalent.	No.	1		
19-	Supplying and erecting phase failure, loss of phase, under voltage and phase sequence relay with all necessary control and accessories. Type Foxtam or approved equivalent.	No.	1		
I-	<u>Sub-Distribution Board :</u>				
I-1	<u>SDB0 Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	6		
5-	Ditto as (2), but step relay.	No.	1		
6-	Ditto as (2), but 2x16A.	No.	17		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
I-2	<u>SDB1 Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	6		
5-	Ditto as (2), but 2x16A.	No.	8		
6-	Ditto as (2), but step relay.	No.	1		
I-3	<u>SDB2 Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	6		
5-	Ditto as (2), but 2x16A.	No.	4		
6-	Ditto as (2), but step relay.	No.	1		
I-4	<u>SDB3 Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	6		
5-	Ditto as (2), but 2x16A.	No.	5		
6-	Ditto as (2), but step relay.	No.	1		
I-5	<u>SDB4 Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	2		
5-	Ditto as (2), but 2x16A.	No.	2		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
I-6	<u>DBS Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	2		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	3		
5-	Ditto as (2), but 2x16A.	No.	10		
I-7	<u>DBM Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include metallic partition to separate essential loads and non-essential loads, hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 3x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	11		
3-	Ditto as (2), but RCD 4x40, 0.03A.	No.	2		
4-	Ditto as (2), but 2x10A.	No.	6		
5-	Ditto as (2), but 2x16A.	No.	8		
6-	Ditto as (2), but step relay.	No.	2		
I-8	<u>DBCA Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	Miniature circuit breaker 2x32A with S.C.C. 10KA. Type Moeller or equivalent.	No.	1		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	1		
4-	Ditto as (2), but 2x16A.	No.	3		
5-	Ditto as (2), but 2x10A.	No.	2		
6-	Supply and install 1X40A KWH meter. Type ISKRA or approved equivalent.	No.	1		
I-9	<u>DB GENERATOR Board :</u>				
1-	Supply and erect framework of switchboard made of PVC plastic 24 way. The panel should include hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type HAGGER or equivalent.	Set	1		
2-	Miniature circuit breaker 2x25A with S.C.C. 10KA. Type Moeller or equivalent.	No.	1		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	1		
4-	Ditto as (2), but 2x16A.	No.	2		
5-	Ditto as (2), but 2x10A.	No.	2		
I-10	<u>WCP Board :</u>				
1-	Metal electrostatic painted overall size 60X80X25 cm type is Moeller, Comprising of: 2X25 A C.B, 2X40/0.03 A ELCB, One 1x16A, One 1x10A C.B, One PKZM 25 overload switch, 220/24 V Transformer, contactor DIL00- M2.2 KW, Emergency stop, Timer 45 sec., Signal lights with push button and all needed accessories. Type Moeller or equivalent.	Set	1		
I-11	<u>DBV Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		
2-	NZMB1-A25.	No.	1		
3-	NZMB1-M25.	No.	1		
4-	Ditto as (2), but RCD 2x40, 0.03A.	No.	1		
5-	Ditto as (2), but 2x16A.	No.	2		
6-	Ditto as (2), but 2x10A.	No.	4		
I-12	<u>LDB Board :</u>				
1-	Supply and erect framework of switchboard made of 2mm thick steel sheets, painted with anti-static insulation material, lockable type with key barrel for one lock. The panel should include hard copper bus-bars for three phases, neutral and separate earth bus bar, labeling, wires marking, document holder, connection terminals and any required accessories. Type Moeller or equivalent.	Set	1		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
2-	Miniature circuit breaker 2x20A with S.C.C. 10KA. Type Moeller or equivalent.	No.	1		
3-	Ditto as (2), but RCD 2x40, 0.03A.	No.	1		
4	Ditto as (2), but 2x16A.	No.	2		
J-	Conduits, Ducts and Manholes :				
	Supply, laying under ground PVC piping system for the under ground electrical network as per drawing . The work , excavation, laying pipes, warning tapes , backfilling, and all required work to complete the job as follow:				
1-	Supplying and erecting 10-12 meter long wooden pole, including imbedding 1m of lower part in ground after paint with minimum two coats of bitumen, warning labels, 3-meter length galvanised steel cover for cable, stainless steel stress wires to erect it and to hang cable and all needed accessories.	No.	1		
2-	Supplying and erecting 80cm manhole for cable route including 8ton iron cover and steel frame.	No.	2		
3-	Supplying and erecting 60cm manhole for cable route including 8ton iron cover and steel frame.	No.	11		
4-	Supplying and erecting 4"pipe (HDPE) at 100cm depth including excavation, backfilling and a warning tape.	Mr.	300		
5-	Supplying and erecting 3"pipe (LDPE) at 100cm depth or inside walls including excavation, backfilling, plastering and a warning tape.	Mr.	40		
6-	Supplying and erecting 2"pipe (LDPE) at 100cm depth or inside walls including excavation, backfilling, plastering and a warning tape.	Mr.	60		
7-	Supplying and erecting 1.25"pipe (LDPE) at 100cm depth or inside walls including excavation, backfilling, plastering and a warning tape.	Mr.	200		
8-	Supplying and erecting 4x6 cm PVC Duct, Type is IBOCO.	Mr.	30		
9-	Supplying and erecting 6x12 cm PVC Duct, Type is IBOCO.	Mr.	30		
L-	CABLES:				
	Supply, laying and termination of XLPE CU cable, including laying cables, termination,labeling cable lugs, cable glands with all required electrical and civil works to connect cable terminals from source to destination. According to drawings, specifications , demands of the supervising engineer and D.O.W. as follow:.				
10-	3x25+16mm ² N2XY copper cable.	Mr.	60		
11-	5x16mm ² N2XY copper cable.	Mr.	70		
11-	5x10mm ² N2XY copper cable.	Mr.	120		
12-	5x6mm ² N2XY copper cable.	Mr.	100		
13-	5x4mm ² N2XY copper cable.	Mr.	120		
14-	3x6mm ² N2XY copper cable.	Mr.	100		
15-	3x4mm ² N2XY copper cable.	Mr.	200		
16-	5x2.5mm ² N2XY copper cable.	Mr.	250		
17-	3x2.5mm ² N2XY copper cable.	Mr.	50		
K-	ELECTRICAL GENERATOR				
1-	<p>Supplying, installing, testing and commissioning sound attenuated stand-by heavy duty industrial diesel generator rated 65KVA\52KW, 3-phase, 400V, 50Hz, 1500r.p.m.</p> <p>the item shall include automatic start and stop, exhaust system, control system, protection and digital control panel, sensors for heat, speed, under voltage, over voltage, oil pressure, phase sequence and phase failure, measuring instruments, air duct, built in fuel tank, alternator, diesel engine, exciter, batteries, Electronic Battery charger, automatic charger4-pole convenient rating molded case circuit breaker, sound attenuated enclosure (original) as recommended by the manufacturer, Rock wool sheets for isolation exhaust.</p> <p>All fittings and fixing materials and control needed to complete the job are included in the price. The price shall include also the supply and install of the generator steel shed, concrete pad and foundation, excavation for foundation and all works associated as shown in the Drawings and described in the Specifications and as directed by the Engineer.</p> <p>The overall unit with its all accessories and parts of Type F.G.Wilson-UK, OR OLYMPIAN or approved equivalent</p> <p>(PROVISIONAL)</p>	No.	1		

Item NO	Description	Unit	Quantity	Unit Rate US \$	Total Amount US \$
O-	Electricity Subscription:				
1-	New 3X63A electricity subscription, this work includes: GEDCO's subscription fees, contribution fees and other documentations. (PROVISIONAL)	Item	1		
P-	Fire extinguisher:				
5-	6KG, Halon Gas, manual Cylinder Extinguisher, ceiling mounted, with all accessories needed.	No.	2		
6-	6KG, Halon Gas, automatic Cylinder Extinguisher, ceiling mounted, with all accessories needed.	No.	2		
Total					

Summary of New Building

DESCRIPTION	Total Amount \$
1. Excavation & Earth Works.	
2. Concrete Works.	
3. Building Works	
4. Carpentry Works	
5. Metal Works	
6. Finishing Works	
7-Roofing Works	
7. Mechanical Works	
10. Electrical Works	
Sub total (\$)	



UNITED NATIONS DEVELOPMENT PROGRAMME

ITB 2016-159

AL Shijaia School Boundary Wall

B. Boundary Wall Works					
Bill No (1B)					
Item No.	Description	Unit	Quantity	Unit Rate US \$ (Numbers)	Total Amount US \$
	<p>Notes:</p> <p>-Compressive strength for solid block not less than 60kg/cm2.</p> <p>-Painting all the steel elements with one coat primer, under coat, 2 coats of oil paint</p> <p>* Rates of Concrete Works shall include:-</p> <p>1. All form works and shuttering (new lumber for shuttering painted by special oil) in any form, shape and size . Making chamfered and curved edges, allowing for and making grooves and sleeves and using Tie Rods (Batant) for concrete walls ; removal of forms and cleaning of all exposed tie wires and rods. Steel forms must be used in shuttering the external decorations.</p> <p>2. Fuel or burned oil is not accepted to be used for painting the lumber before use the form.</p> <p>3. Supplying, Casting, vibrating and curing as per specifications.</p> <p>4. Approved additives and admixtures.</p> <p>5. Incurred costs on New Concrete Job Mix Designs, Sampling , testing and providing test results certificates, storing and saving of samples.</p> <p>6. Painting of exposed surfaces of underground reinforced concrete elements with two coats of hot bituminous paint (75/25) after primer layer , the strokes of each layer to be opposite to each other.</p> <p>7.The excavation &backfilling with imported clean sand.</p> <p>8. Compaction and testing under the foundation, ground beams, and ground slabs, the compaction should not be less than 98% of MDD.</p> <p>9. All works according to specifications , drawings and supervisor engineer instructions</p> <p>10.Supply, fabricate and fix reinforcement steel (fy= 410 N/mm2) for all the structural elements according to drawings and engineer's instructions for any grade, size and length as detailed in the drawings, storing on site including cutting, bending and fixing in position and providing all tying wires, spacers, shop drawings, testing and bar bending schedules .All works according to specifications , drawings and supervisor engineer instructions</p> <p>The unit price includes expansion joints each 12 m.r (polystyrene sheets 2cm thickness, filling by rubbing material "Sikaflex" and cover with colored aluminum sheets 10cm wide and 3mm thickness)</p> <p>* Compressive strength for solid block not less than 60kg/cm2.</p> <p>* Painting all the steel elements with one coat primer, under coat, 2 coats of oil paint</p>				

Item No.	Description	Unit	Quantity	Unit Rate US \$ (Numbers)	Total Amount US \$
1.1	Excavation in sandy soil or any other soils including backfilling with selected or imported sand material around foundations & any other element up to ground slab level in layers not more than 25cm thick for each layer with compaction to 98% of MDD. The works including compacting the design soil surfaces to get (98% MDD), The price also includes transportation of the disapproved excavated material to approved dump area according to supervision engineer's instructions.	M3	50		
1.2	Supply and cast plain concrete B200 kg/cm2 for blinding beds 5cm thick including polythene sheet as per specifications and drawings.	M3	3		
1.3	Supply and cast ready mix reinforced concrete B250 kg/cm2 for foundations (Strap footing, and gnd. beam) as per specifications and drawings for boundary walls.	M3	15		
1.4	Ditto, but for top beams, columns and column necks.	M3	5		
1.5	Supply and built solid cement blocks type A 40x20x15cm for boundary walls as per specifications and drawings.	M2	200		
1.6	Supply and fix polystyrene sheets 18mm thick and applying mastic sealant 2cm depth and aluminum strip at the both sides for boundary wall expansion joint at foundation and the super structure as per specifications and drawings.	LM	30		
1.7	Supply and make smooth external plastering 20mm thick for boundary walls at three faces : the first is the rough nail rendering (mix 1:1) cement: sand, the second is 5mm thick mortar (mix 1: 2) cement: sand, the third is the undercoat 13mm (mix 1: 3 :0.25) cement:sand:lime; and all this is according to specifications , drawings and supervisor engineer's instructions	M2	400		
1.8	Supply & execute the external finishes ECOS (colored solvent based grained coating) in accordance with the manufacturer's requirements, specifications, drawings and the engineer's instructions.	M2	400		
1.9	Supply and make external plastering 15mm thick and colored Tyrolean finish coats for walls and colored external painting finish for soffits and columns according to drawings, specifications and under supervision.	M2	200		
Total					

<u>BILL NO (B) SUMMARY</u>	
DESCRIPTION	Total Amount \$
1. Boundary wall works	
Sub total (\$)	

OVERALL SUMMARY

NO.	Description	Total price (\$)
A	New Buildings	
B	Boundary Wall Works	
Total		

Total in numbers:

Total in letters:

Name of the contractor:

Authorized signature:

Signature and Sealing:.....

Title:

Telephone:.....

Fax:

Mobile: