



ITB-PAL-0000126395

**Construction of New School and Rehabilitation of the Existing
Kindergarten in the Low Primary Co-ed School - Dirat Village - Hebron**

Bill of Quantities

Electronic copy of the BOQ shall be submitted along with the signed hard copy thereof. In case of any discrepancy between the soft and the hard copies, the hard copy shall prevail.

Jan-21

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Excavation and Demolition Works					
1	Excavation for foundation, trenches. Etc. shall be the actual dimensions shown on Drawings including blinding area, and to be measured from Natural Ground Level or Reduced Level (which is lower), i.e. 1. From Reduced Level when R. L. is lower than N. G. L. 2. From N. G. L. when N. G. L. is lower than the Reduced Level 3. Reduced level to be below the base coarse layer or/and polystyrene board or/and polyethylene sheets or/and underground agricultural soil or/and finish level, natural level behind external walls.				
2	Allowance for working space is not applicable, unless it is clearly specified in the Special Conditions.				
3	Excavation for foundation of retaining walls is to be measured from Lower Reduced level, or from lower Natural Ground level (as stated in Item 1 above.)				
4	Price to include removal of site obstacles, rocks, trees and all debris from site, including any necessary rerouting of infrastructure works, such as piping, conduits, etc. Price also to include maintaining all trees that are not obstructing the buildings, boundary walls, courts and roads.				
5	Each layer of back filling shall be tested separately, on the contractor's expense, prior to applying the next layer				
6	Co-ordination with all local authorities to facilitate the works, removal of obstacles or for diversion of roads, services, etc. is the contractor's responsibility and are deemed to be included in his rates.				
7	Excavated soil shall be classified and retained, to back fill with suitable fill material and to place agricultural soil as where needed as shown in the drawings and as instructed by the Engineer. The extra and unsuitable soil shall be removed, on the contractor's expense with no extra cost.				
8	Prior to commencement of site leveling or any excavation, the Contractor shall obtain Engineer's written approval on the contour grid of 5m x5m map, checked jointly by the contractor and the Engineer, the excavation profiles and sections showing all levels and dimensions, and the calculations of excavation quantities.				
9	Excavation shall be in Cubic Volume, the net measurements of the excavated elements as shown in the drawings, no allowance shall be made for increase in bulk after excavation.				
10	Hard Core beds shall be of not less than 15 cm. thick. And measured in Meter Square, (the net measurement of the finished surface). No extra rate shall be paid for Leveling, ramming and filling of voids under the hard core.				
11	Rate of Excavation shall include: - · Excavation to any depth, in any shape, in any type of soil, below water table level and keeping excavation free of water. · Leveling, ramming, trimming and grading excavation bottoms. · Planking and strutting. · Cost of lab. Tests of works and materials. Demolition works include preparation of the existing building and site to receive new works. Rates for demolition works shall include but are not limited to items shown on drawings, and include demolition, removal, disassembly, and relocation. The Price includes the removal of all excess debris and demolished / excavated materials from site to a location as approved and directed by the local authorities.				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
	<p>All such works are to be according to an approved method plan to guarantee the safety of the existing structure and all building elements, including the erection of temporary scaffolding works, using precision cutting equipment, and the non-use of heavy duty demolition equipment. It is the contractor's responsibility to preserve and keep intact safely all elements that are not to be demolished.</p> <p>Contractor to visit and access the actual conditions and amount of work required and include a statement to that effect along with this bill.</p> <p>Demolition works to be priced in conjunction with the design drawings, demolition plans and site visits.</p> <p>Demolition works include but are not limited to the items shown on the demolition plans and the following:</p> <p>1- Tiles and skirting.</p> <p>2- Plaster.</p> <p>3- Walls: concrete, concrete blocks.</p> <p>4- Insulation materials.</p> <p>5- Coping, thresholds, sills.</p> <p>6- Concrete screeds, slab on grade required for footing retrofitting works, and where</p> <p>7- Parapets.</p> <p>8- Rubble, including all kinds of fill up to existing concrete elements to be retrofitted</p> <p>9- Fill under tiles.</p> <p>10- Wood elements: cabinets, doors, frames, protection bars, etc...</p> <p>11- Aluminum: windows, doors, and shutters.</p> <p>12- Metal elements: doors, stairs railings, window steel protection, grab bars and any other items of use to the University..</p> <p>13- False ceiling: metal, gypsum, and acoustic and metal tiles</p> <p>14- Plumbing: sanitary pipes, fixtures, and HVAC equipment systems and pipes</p> <p>15- Electrical: lighting, fixtures, switches, outlets, control panels, cables, conduits, wires, hangers, trays, etc...</p>				
1.01	<p>Supply, Erect and Fix Steel and Tarp fencing prior to the start of any works, 2 meters high, all around the perimeter of the new construction for Safety and Protection of school children and staff for the duration of the entire construction Period.</p> <p>Protection Boundary Fence to be of Steel angles, 10x5cm 5mm thick steel at 2m spacing, hammered into the ground and strengthened with concrete piling for extra rigidity. Steel angles to be 3m long to allow a minimum of 50cm penetration into the ground and 2m above ground. "X" bracing of steel angles 5x5cm 3mm thick steel to be welded to Main steel angles. Price to include the supply and tightly fix a 2m high galvanized steel wire mesh fence of Ø4mm. Of standard 5x15cm spacing attached to the outer side of the steel angles. Price to also include durable nylon tarp preferably Green Color, to be attached attached and secured to the steel wire mesh fence to cover the entire fence height to keep dust and debris away from proper school</p> <p>Contractor to also secure plastic labels with clearly legible writing in arabic and symbols stating "منطقة عمل، خطر الاقتراب". every 5m of fence length.</p>	M.S.	50		
1.02	<p>Site Leveling to reduced level (Excavation and/or make up of levels for all Site including External Works). Cut in any kind of soil, concrete, or asphalt; to the required Levels (Levels below Basecourse layer under Ground Slab). Price to include back filling with excavated suitable soil, or imported approved materials if needed, removal of extra soil, debris, and organic materials to the approved sites specified by authorities. Back filling material shall be applied on layers, 200 mm thick, watered and compacted to min 95% according to modified AASHTO Density Test T-80. Price also includes preparation of agricultural areas according to the levels in the general site layout plan. Price to include removal of any construction elements not needed in the site or filling cavities and wells with suitable materials.</p>	L.S.	1.0		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
1.03	Excavation for foundations; in any kind of soil to the dimensions and levels shown in the drawings. Price to include back filling with excavated soil if suitable or imported approved materials up to polystyrene filler boards, removal of extra and unsuitable soil. Back filling is not necessary to be in layers and compacted.	M.C	220.0		
1.04	Supply and Well Compact Base Coarse, average 20 cm. Thick, for under ground slab 10cm thick. Price includes leveling, watering, compacting to 98%, leveling and compacting of ground (sub-base) under base coarse to min 95% according to Field Density Test.				
	a. 20 Thick under slab on grade (Ground slab)	M.S.	380.0		
	Demolition rates include all safety equipment, hard hats, gloves and steel toe shoes for all individuals working in demolition. Water piping to suppress dust. Contractor to provide a safety plan and location of safe passages around construction areas.				
	Contractor to provide the Engineer with a specific method statement including detailed drawings, documented photographs, and time plan for demolition works. Contractor to verify each element as a non structural and non bearing wall/element before any demolition works.				
	It is understood that demolition works will often encounter unforeseen elements. Contractor to bring such findings to the attention of Supervision at the earnest. Contractor to get Supervision's approval for demolition method and equipment prior to any demolition works, as well as an accurate time frame for the said demolition works.				
1.05	Demolition and removal of all items as described on the "Site Demolition Plan - A03" and as specified above. Demolition shall not be limited to items listed below. Any unforeseen elements in the way of new construction should be brought to the attention of Supervising Engineer. In addition and any electrical / plumbing/ services in external works as well, including poles, cables, etc... a. Existing parts of Side walk adjacent to new Construction b. Removal of Concrete Wall adjacent to new Construction c. Removal Drinking Fountain, d. Existing Canteen Room e. Existing Canopy next to Canteen Room.	Job	1.0		
	TOTAL CARRIED TO SUMMARY.				\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
CONCRETE WORKS.					
	<p>Preamble</p> <p>Rates of Concrete Works shall include:-</p> <p>1- Import and storage of cement and aggregate in a covered and dry space.</p> <p>2- All form works and shuttering in any form, shape and size. Making chamfered and curved edges, allowing for and making grooves and sleeves and the like; removal of forms and cleaning of all exposed tie wires and rods; making good the harmed surfaces and edges and all surface finishing.</p> <p>3- Installation and erection of safe scaffolding with sufficient work area.</p> <p>4- Contractor to provide a lab tested concrete mix for every item in this BOQ.</p> <p>5- Proper concrete face finish such as fair face finish and mechanical troweling as required and as directed by the engineer.</p> <p>6- Supplying, Casting, vibrating and curing as per specifications.</p> <p>7- Approved additives and admixtures.</p> <p>8- Incurred costs on Concrete Mix Designs, Sample taking, testing and providing test results certificates, storing and saving of samples, and preparation of bar bending schedules and workshops.</p> <p>9- Supplying reinforcement of 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. Prices for reinforced concrete elements shall include reinforcement</p> <p>10- Tying wire should be bent inwards for columns and beams to prevent honey combing in concrete.</p> <p>11- Steel bars used for alignment and fixing of reinforcement works, and extra steel added to assure proper detailing and safety.</p> <p>12- All wooden form work for any structural element and slabs shall be made with all new wood parts.</p> <p>13- Prices for ribbed slabs shall include reinforcement and hollow blocks and no separate item for blocks will be provided.</p> <p>14- Painting of exposed surfaces of underground reinforced concrete elements with two coats of hot bituminous paint or special cold bitumen (75/25), the strokes of each layer to be opposite to each other (for the buried parts).</p> <p>15- Steel bars used for alignment and fixing of reinforcement works, and extra steel added to assure proper detailing and safety.</p> <p>16- The minimum cement contents for concrete should be:</p> <p>a-B200 __ 250kg/m3</p> <p>b-B250 __ 300kg/m3</p> <p>c-B300 __ 350kg/m3</p> <p>17- Testing specimens for concrete quality control during construction shall be cubes of size 15x15x15 cm.</p> <p>Measurement of Concrete elements shall be the net dimensions as detailed in the drawings. All recesses openings and voids shall be deducted.</p> <p>Measurement shall be only for the seen surfaces of elements. Overlapping and measuring items twice under separate headings shall not be allowed.</p> <p>Slabs are measured from the center to center for external stone walls, form the external to</p> <p>Sloping screeds shall be measured in planer area with no adjustment for the slope.</p> <p>Supply and Cast Reinforced Concrete, Unit Price for all Reinforced Concrete items listed here shall include the costs of imports and storage of rust free reinforcing bars , workmanship, shaping and forming of bars and stirrups, formwork, and concrete casting. Price to also include water hydration to all concrete elements for 5 consecutive days from casting . Columns to be wrapped with Gunny Sack Fabric (خيش) to keep columns moisturized as long as possible</p>				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
2.01	Blinding Concrete B200 under foundations, footings & tie beams. Thickness should be 10cm or according to drawings. Price to include area cleanup, form work, leveling, survey markings for column centers.	M.S	260		
2.02	Supply and Cast Reinforced Concrete Grade 'B 300'				
	For Foundations and Wall Footings.	M.C	74		
2.03	Supply and Cast Reinforced Concrete Grade 'B 300'				
a	Tie Beams.	M.C	24		
b	Reinforced Walls Starters, (Shear walls) below Ground Slab Level and any wall behind fill levels. Price includes two layers layers nitto proof 30 insulation	M.C	8		
c	Column Necks, Columns below Ground Slab Level including the columns and recess in these walls. Price includes two layers layers nitto proof 30 insulation	M.C	4		
2.04	Supply and Cast Reinforced Concrete Grade 'B 300' for suspended solid Slab on Hard Core. Including surface leveling, finishing, polyethylene sheets 500 micron, 2cm polystrene filler boards, construction joints and steel reinforcement overlapped to tie beams, and all related works. (measured for projected area)				
	15cm thick solid slab.	M.S	375		
2.05	Supply and Cast Reinforced Concrete Grade B300 with a minimum cement content of 350 Kg. per cubic meter for:				
	a) Stairs, landings, flights and steps including upstands and where required.	M.C	18		
	b) Columns. Price to include form work, steel reinforcement spacers, etc. all according to specifications and above preambles . Column Extensions on Final (Last) roof Slab to be bent into slab.	M.C	36		
	c) Ditto as above, but for Reinforced Walls.	M.C	66		
2.06	Supply and Cast Reinforced Concrete Grade 'B 300' for the following:				
a	Center Window Jambs. (false columns separate windows)	M.C	3		
2.07	Supply and Cast Reinforced Concrete Grade 'B 300'				
	for 20 cm thick suspended Solid slabs. Price to include projected beams, other beams and projections, and drop beams not attached to the slabs. Supply, lay and arrange 4 Ø14mm/m2 steel supports (Seats) over the entire slab area , to be bent to support appropriate spacing between top and bottom reinforcement as required by the engineer and at all ends, edges, openings, services location etc as per drawings.	M.S	57		
2.08	Supply and Cast Reinforced Concrete Grade 'B 300'				
	for 20 cm thick suspended ribbed slabs. Price to include projected beams, other beams and projections including sun breakers, and drop beams not attached to the slabs. Supply, lay and arrange hollow concrete blocks 'Grade 35' for ribbed slabs and isolated hollow concrete blocks as per details, using closed end blocks. Price to also include form work, steel reinforcement, ribs reinforcement including closed rib ties, dropped beams as required by the plans and the engineer's instructions	M.S	1010		
	TOTAL CARRIED TO SUMMARY.				\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
HOLLOW BLOCK WORKS					
	Preamble				
3.0	<p>All works of this bill shall be of Concrete Blocks Grade 35 of high quality standards and as per specifications.</p> <p>Block works shall be measured in meter square. The net measurement of the complete elevations, excluding all openings and voids more than 0.1 M. S. in area. No allowance for thickness used other than those shown in the drawings.</p> <p>Rates of Concrete Block Partitions works include:-</p> <p>Vertical and horizontal joints.</p> <p>Cement and mortar,</p> <p>Galvanized angles butter fly ties (at joints and between walls in cavity walls.</p> <p>Concrete filling at all ends including reinforcing steel to cavities at quoins and door and window openings, reveals, sills for windows and the like.</p> <p>R.C. Door Walls and jambs for doors AND others as per detailed drawings</p> <p>Lintels and bond beams to the full length of the wall, min 20 cm. High and in the Window and door jambs of min. 20 cm width and in same wall thickness to full height of window and door.</p> <p>10cm thick solid concrete slab above class rooms entrance, with concrete B300 & reinforcement as Shown on drawings.</p> <p>And all needed to complete job as per drawings and specifications.</p>				
3.0	Supply and Build Concrete Block Walls, 'Grade 35' of any size blocks. Price for all block work shall include for a 20cm reinforced concrete door and window jamb, as well as a reinforced concrete lintel above all openings.				
a	Hollow Concrete Block Walls and Partitions (10 Ten) cm. Thick.	M.S	106		
b	Hollow Concrete Block Walls and Partitions (20 Twenty) cm. Thick.	M.S	388		
c	Ditto as above, but for Parapet Walls (20 Twenty) cm. Thick.	M.S	78		
d	Hollow Concrete Block Construction for Building's Exteral Walls of (20+05+10cm) Double Wall Block and Insulation, Total Wall thickness 35cm. The price to include 3cm (minimumThickness) Spray Polyurethane Foam (Density: 28-35 kg/m3) for thermal insulation applied to the 20cm Block.	M.S	388		
e	Ditto as above, but one layer 10cm Thick Hollow Concrete Block for cladding to reinforced Concrete walls, Columns and other block Walls. The price to include 3cm (minimumThickness) Spray Polyurethane Foam (Density: 28-35 kg/m3) for thermal insulation applied Reinforced Walls.	M.S	403		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
PLASTER WORKS					
	PREAMBLE. PLASTERING to all areas shall be measured net, including openings, which are less than 0.25 Meter Sq. The price shall include for running rules , all narrow widths, for taking out joints on block walls or backing concrete face for key, for making good to frames around pipes and other fittings , plastering to jambs and reveals of openings, side of columns; all of which shall be measured as plastering . Plastering shall not be commenced until the background has been suitably prepared. Blockwork joints shall be deeply raked out, efflorescence brushed off and all dust and foreign matter removed The Contractor shall form vertical guide screeds 10 cm wide. The spacing shall not exceed 1.50 meters. The screeds shall be plumb and in the same plane with each other. The sides of the screed shall be left rough to bond with plaster, the surface Price shall also include Expanded metal lath, angle beads at all appeared corners for the entire height, and plaster stops at opening edges, expansion joints, sills, labor, curing, erecting and dismantling of scaffoldings, additives, pigments and all incidentals required as specified and / or detailed on the Drawings.				
4.00	Two Coats of Cement and Sand Plaster over one slurry coat to walls and ceilings and where required.				
4.01	Internal Plaster				
a	Internal drop beams (sides and bottom).	M.S.	324		
b	Wall plaster	M.S.	2887		
4.02	Ditto, but for External plastering. Price include Waterproofing additive (W 290) with the second and last face and painting with standard approved color Waterproofing supercryn for roof parapet				
	a. Roof Parapet	M.S.	95		
	c. External walls (Three coats), material to include white cement and Italian quartz.	M.S.	881		
4.03	Supply and apply Acoustic Plaster to classrooms, labs, corridor and staircase Cielings, composed of retarded gypsum, perlite & selected aggregate and special additives, application thickness 20mm (should not be painted) for Internal ceiling without drop beams as per the Technical Data: 1. Aggregate size: 3.5mm max. 2. External columns and window separators. 3. Wet density (Kg/m3): 1100 approx 4. Application thickness: 5-20mm. 5. Sound absorption at 10mm thickness: 0.5 @4KHz. 6 . Compressive strength @ 28 days (ASTM C349) \geq for ceiling = 1.9N/mm2 & for wall = 3N/mm2 7. Flexural strength @ 28 days (ASTM C348) \geq 0.5N/mm2 8. Bond strength @ 28 days (EN1015) \geq 0.45N/mm2. 9. Price to include surface preparation (sound, clean free from lose material, grease, dirt curing compound, etc.). 10. Note: prior to acoustic plaster application the surfaces should be wet with clean water and allowed to dry.	M.S	865		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
TILING WORKS					
5.0	<p>PREAMBLE.</p> <p>1. All tiling works shall be measured net in square meters or linear meters as shown in the BOQ.</p> <p>2. Openings and voids that are tiled on all four sides and exceed 0.25 m2 are to be deducted.</p> <p>3. Marble and stone works for steps and treads of stairs shall be measured in linear meter. The tread, the riser, flight skirting and water stop shall all be measured as a single unit in linear meter.</p> <p>4. Parapet coping shall be measured in square meter.</p> <p>5. Rate shall include preparation of surfaces under tiles including one coat plaster, Finish to falls and cross falls, special tile pieces for edges and the like, tile surface finishing, Plastic spacers. Pointing and cleaning and all incidentals as per specifications.</p> <p>5. Tiles to be first choice and free from all defects, Grade "A" approved by Palestine Standards Institution. Price includes (in addition to the cost of tiles), the small size aggregate with cement sand fill ratio 3 kg/m2, pointing with ready mix mortar type Mapei, Vitra, or equivalent color as directed by the engineer, and cleaning of site, all as per drawings and specifications. Engineer shall approve size and color of tiles. Price also include quality audit by the contractor of every tile to ensure that all tiles are identical in size, color and pattern and free from any warping or curving.</p> <p>6. Terrazzo tiles mix shall not exceed 1:3.</p> <p>7. Price for all items listed below must include the costs of supply, construct, import and, lay and spread an approved bedding under tiles, white cement tiles mortar, approved tiles type, color and quality, tiles laying by professional and experienced master tiles installers working in groups of more than one and in sufficient numbers at any time to get the works done on a timely manner, spacers, and all cutting and leveling tools, including flat bottom spacers (leveling spacers) to ensure each laid tile's corners perfectly leveled with the adjacent tile. Price to also include all and any type of skirting, to be matching in color, texture and lined perfectly with the floor tiles patterns. Skirting must be professionally cut with corner at 45° angles, and specially ordered (factory made) end and corner pieces.</p>				
5.01	<p>Supply, Install and finish Pre-cast pre-polished Terrazzo Tiles size 30x30x3 cm in any color as per drawings and color scheme, with Italian marble chipping # 6. Price to include Pre-cast Terrazzo skirting size 30x10x1.5 cm with same marble chipping, bedding and jointing in cement and sand mortar, pointing with white cement, required adasiyah fill, and on site grinding where required, polishing and cleaning. Mortar topping shall be from italic quarts. And the thickness of the top layer shall not be less than 1cm.</p> <p>Note: The contractor shall follow the Low Vision details for colored tiles locations.</p>	M.S.	762		
5.02	<p>Supply and Install dark colored Glazed Turkish Ceramic Wall Tiles 20x20x0.6 cm to create contrast with sanitary fittings to wall and floor tiles for Low Vision, First choice and free from all defects Grade "A". (Approved by Palestine Standards Institution). Price to include colored round aluminum edges. All works shall be in accordance with drawings and specifications.</p>	M.S	288		
5.03	<p>Supply and Install Light colored Non Slip Turkish Ceramic Floor Tiles 20x20x0.8 cm to create contrast with sanitary fittings to wall and floor tiles for Low Vision, First choice and free from all defects Grade "A". (Approved by Palestine Standards Institution). Price to include colored round aluminum edges. All works shall be in accordance with drawings and specifications.</p>	M.S	83		
5.04	<p>Supply and Install Local Marble Sills, Thresholds, coping for parapets and wherever needed (3 cm. thick).Set in cement mortar bedding. Price to include grouting, polishing of face and seen edges.Set in cement mortar bedding. Price to include grouting, polishing of face and seen edges. Price also includes fixing the coping for roof parapet, corridor parapet, skylight parapet, site walls, building entrance stair parapet, ramp parapet, internal stair parapet, and the like with Jampo screw not less than 12cm.</p>				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
a	External & Internal windowsills. (see D01A/CD01)	M.S	46		
b	Ditto, but for Doors thresholds. (see D06/CD05)	M.S	4		
c	Internal staircase parapet coping. (See D03/CD02)	M.S	1		
d	Roof parapet coping. (see D01C/CD01)	M.S	25		
5.05	Supply and Install Polished Local Marble Tiles size 30x30x2 cm, for stair landings. Price to include stair landing skirting size 30x10x2 cm, bedding cement mortar, grouting, and on site polishing. All as per Drawings and Specifications. Also, the Price to include providing 60cm width of dark textured marble at the beginning of stair flight for low vision as per details.	M.S	92		
5.06	Ditto as above but for Steps and Treads of Stairs. Treads of 3 cm thick and Risers of 2 cm. thick. Price shall include supplying and installing local marble for stair flight skirting in parallel setting to the nosing line at an average height of 18.45 cm. and 20 mm. thickness, and local marble water stop (5cm wide X 3cm thick X length as wide as the tread of the stair minus riser thickness) fixed at the end of treads. Also, the price to include filling under tiles with cement and sand 1: 6 ratio, bedding in cement mortar, grouting, pointing, polishing of face and all related works. Price to include creating grooves for low vision as per details for all steps at the stair step edge, price to include also 60cm width for the length shown in details of local marble with grooves front of the stair flight for low vision. Note: The measurement for each stair will be from the adjacent wall to the external edge of the water stop of that stair.				
	for internal stairs	M.R	195		
	TOTAL CARRIED TO SUMMARY.				\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Carpentry and Wood Works					
1-	PREAMBLE. Sizes of carpentry works given in the Bills of Quantities are finished sizes and shall be as per Drawings. Sizes of doors and other items mentioned in the Bills of Quantities shall allow for tolerance to suit the structural openings shown in the Drawings.				
a	Wooden doors and pair of doors shall be measured in number for each structural opening, unless stated otherwise in the Bills of Quantities.				
b	Writing boards shall be measured in number or in squared meters as mentioned in the Bills of Quantities.				
c	Wall protection wooden rubbing rails shall be measured in linear meter.				
d	Cloth hangers and hanger wooden base shall be measured in number or in linear meter as stated in the Bills of Quantities.				
2-	Rates for carpentry and joinery work shall include :				
a	Shop and coordinated drawings.				
b	Frames, architrave, chalk holders and other holders and kick plates.				
c	Allowance for plastering and tiling and the like.				
d	Cutting and fitting around obstructions, Bedding and painting.				
e	Grounds, blocking and backings.				
f	Plugging concrete, block work, and stone work, and making well.				
g	Ironmongery including cylinders, cylindrical locks with master key for all the doors, handles, stoppers, screws, temporary fixing, re-fixing, oiling and adjusting.				
h	Providing three keys for each lock including tagging.				
f	Providing and fixing wall mounted wooden keys cabinet, (70x70x10) cm. varnish finished with all ironmongery including cylindrical lock				
g	Providing and fixing Room Title Plate, aluminum (30*10) cm.				
k	Steel legs, brackets, bearers and other supports including painting.				
l	Glass and glazing including cutting to size and putty.				
m	Fly screening including cutting to size.				
n	Preparing surfaces to receive finishes.				
o	Painting, varnishing, polishing, oiling, and the like, to any area or width in any location including work in multicolor and cutting in edges and putty.				
6.0	Supply and Professionally fabricated wood works, using best quality timber, age dried and free from knots, warping and any other blemish.				
6.01	Supply and Fix Wooden Doors 4.5 cm Thick single or double sashes. With (Frame). (4.5*3.5) cm hardwood (Zan) edging and (3.5*9.5) cm soft wood stile. Edge strip banding of width 4.5 mm. Formica over veneer on both sides, color for frames and Architrave as directed by engineer. Door paneling to be flax boards 3.5 cm., frames of hardwood (Swedish) 4.5cm thickness or galvanized steel sheet frame of 1.5mm thick for corridor doors (as per drawings), width according to the wall thickness' and Allowance of 4 - 6 cm. thickness for plastering and tiling purposes, immersed in wood preservative before erection then embedded completely in sand - cement mortar and completely anchored as per specification. Architrave of Hardwood (Swedish)(4*1.2)cm, price to include ironmongery, kick plates of aluminum 20cm height from one side for main bath room & kitchen doors, U shaped 10cm height from both sides at the bottom for internal doors kick plates and at the bottom door stoppers, transparent fiber glass 6mm thick for both upper vision panel & for vision panel inside door leaf, gaskets cylindrical Lock (Approved by Palestine Standards Institution), and painting in three coats of oil paint in addition to primer coat. Price includes also aluminum louvers of 50x60cm in the bottom for store doors under staircase. All as per Detailed Drawings, specification.				
a	Structural opening size (100x252) cm. Door Type WD1 with fixed Glass Top and Side Panels.	No.	11		
b	Structural opening size (90x210) cm. Door Type WD2 with Ventilation Grill for store.	No.	2		
c	Structural opening size (100x252cm. Door Type WD3	No.	3		
d	Structural opening size (80x210) cm. Door Type WD4 with Ventilation Grill	No.	12		
e	Structural opening size (90x2.52) cm. Door Type WD5	No.	2		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
6.02	Supply & Install Bottom Wooden Kitchen Cabinet. Cabinet's Top shall be with granite 30mm thick with polished surface and seen edges. Cabinet Sides, Elevations, Partitions, Shelves and Drawers front-side shall be of 17-mm. thick panel wood, laminated internally with 0.5 mm. Thick Formica sheet, and with 0.8mm thick Formica sheet externally. The whole cabinet shall be framed with Hardwood (Zan) bands size (60*40) mm screwed to steel frame and covered with 0.8mm thick Formica sheet. Rear sides of cabinets and drawer's bottom shall be of 6 mm, thick Veneer covered internally with 0.5mm thick Formica sheet. Price to include cabinet terrazzo flooring (30 * 30 * 3) cm., and terrazzo skirting (30 * 10 * 1.5) cm., mortar & fill, ironmongery, handles and all the accessories as per drawings and Specifications. <small>SIZE: Height (90) cm. Width (60) cm.</small>				
a	Canteen benches	M.R	2.5		
b	Canteen service bench without sink. 40 cm width	M.R	6		
c	Ditto as above, but for Preparation room benches using anti-acids Granite.	M.R	4		
6.03	Apply and Install wall mounted factory-made magnetic green chalk board (size not less than 120x350 cm) with the following min-specifications; silver anodized elegant aluminum frame (19*25mm thick) and four strong rounded plastic (pvc) corners, and also with 5cm silver anodized aluminum try fixed through the profile which used for chalks, markers and duster and has pvc edges for safety. The writing surface coated with steel ceramic fixed by using automatic gluing machines to 11mm thick MDF wood covered automatically by aluminum foils. Price shall include two R.C. lintels (20x15 cm) to fix the board on. Reinforced with 4 Φ12 & stirrup Φ 8 @20cm. Around the perimeter of the board.	No.	6		
6.04	Ditto, but white marker board in:				
a	Science lab. (120x316 cm)	No.	1		
b	Library lab. (120x316 cm)	No.	1		
c	teacher room (120x316 cm)	No.	1		
d	Technology lab (120x316 cm)	No.	1		
6.05	Supply and Install (at the rear wall of rooms) Cloth Hangers of 20cm width and 25 mm thick, Swedish wood. (Lacquer two coats in addition to primer coat). Price to include metal hangers of approved quality and to be fixed to the base properly @ 30 cm. Intervals as per detailed drawings. For				
a	Classrooms and labs.	M.R	30		
6.06	Supply and fix Wooden Protection Rail. 20*2.0 cm. of hardwood (Swedish) on height of 60 cm above finished floor level. Price to include fixing as per details and painting with one prime coat and two coats of lacquer paint. For				
a	Classrooms, teacher room and labs.	M.R	235		
6.07	Supply and install pin wood board, as shown on drawings.				
1-	size 120cm x 75cm. For Classrooms, Labs, Library and Teacher room.	No.	10		
2-	size 240cm x 120cm. For Classrooms, science lab, teacher room	No.	16		
6.08	Providing and fixing room title plate (for both the new addition and the existing School facility) with Arabic and braille letters, aluminum 30x10 cm	No.	8		
6.09	Supply and Fix Lab. benches Consisting of (30x30x3) mm. steel tubes for horizontal and vertical partitions as a whole frame painted with three oil coats as per specifications. Shelves, sashes and partitions 17mm. thick of plywood covered on both sides and seen edges with (0.5 mm and .08mm.) thick Formica sheets internally and externally respectively. Worktop will be of Granite 3cm thick over the porcelain sink part, and for the other worktop part (without sink). Price to include cabinet terrazzo flooring (30x 30x3) cm., and terrazzo skirting (30x10x1.5) cm., mortar & fill, ironmongery, handles, two coats of lacquer paint over one primer coat and all the accessories as per drawings and Specifications.				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
a	Demonstration bench size (250x75x90) cm, B1	No.	1		
b	Student Science bench size (200x90x90) cm, B2, including block, plastering, porcelain tiles, painting, ...etc.	No.	4		
6.10	Supply and Fix Technology Lab Benches, shelves, sashes, and partitions 17 mm thick of plywood covered on both sides and seen edges with (0.50 mm and 0.8 mm) thick Formica sheets internally and externally respectively, and all the accessories as per drawings and specifications. Price to include all electrical connections and sockets required as per drawings and details.				
	a. Supply and apply interactive Projector (Ultra-short through) and all electrical connections required with this specification: Brightness 3200 ANSI lumens Native display resolution WXGA 1280 *800 Lamp 6000 Working hours ,190 W Speakers 16W Image Contrast 10000:1 Aspect Ratio 16:10 (WXGA) Input/ Output USB 2.0 Type B, HDMI in, Stereo mini jack audio in, VGA out, Ethernet interface (10 Base-T/100 Base-TX), USB2.0 Type A, Stereo mini jack audio out, VGA in(2x), Microphone input, Support USB Wireless LAN Accessories /cables 2 interactive pen, wall mounted, remote control, video cable and D-sub 15 pin cable (minimum 1.8 mm), CD manual, power and HDMI and USB cable with PVC trunk (up to 10 meters),converter to MINI HDMI. Interactive software shall Multi touch up to 4 Support the following interactive pens. Windows 7, 8.1,10 Multi screen Auto calibration Support Arabic language Have class lesson examples Other incidental services Installation and activation 4 Hours training session for teachers Warranty 3 years for the device and 1 year for	No.	1		
	b. Teacher bench size (200x70x80 cm). See D04/TECH04	No.	1		
	c. Student bench size (120x72x127 cm). Shown in Detail D05/TECH04.	M.R.	15		
	d. Student bench size (160x160x80 cm). Shown in Detail D02/TECH02.	No.	2		
	e. Shelves size (195x40x235) cm, See D04/TECH04.	No.	1		
6.11	Supply and install student seat consisting of (40x20x3mm) steel tube for horizontal and vertical framing painted with hammer finish over one coat primer fixed on the floor tile by metal angel of (30*30*3mm) three number (200*9*3)cm hard wood (Swedish) fixed horizontal on the tope of the steel framing by screw with rondela (200*20*2)cm thick hard wood rail screw to the wall behind the seat at 60 cm at 48 cm high from F.F.L steel ring Basket of dia/20/30cm of 3mm thick welded to the seat and painted with hammer finish over one coat primer (duco) as pre specification. And for wood will be painted with wood stain color (water base) then apply one coat sanding sealer then two coat of top clear lacquer all as per specification.	No.	9		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
METAL WORKS.					
	PREAMBLE.				
1-	Steel & Aluminum works shall be measured in number, Meter run, lump sum, and meter square for structural opening (as mentioned in each related item). Sizes of doors and other items mentioned in the Bills of Quantities shall allow for tolerance to suit the structural openings shown in the Drawings. Rates for metalwork shall include for:				
a	Preparing shop drawings,				
b	Drilling, counter sinking, screwing, bolting and riveting.				
c	Lugs, plugs, holdfasts and the like.				
d	Gaskets, sashes, double weather strips External and Internal Mastic Polyurethane Sealant filling around frames				
e	Fixed Rubber used for connection of frames in Any Corners, Also in four sides of architrave.				
f	Ironmongery including cylinders, cylindrical locks (wally or equivalent), stoppers, handles, temporarily fixing, re-fixing, oiling and adjusting. Fixed Rubber used for connection of frames in Any Corners, Also in four sides of architrave. Ironmongery including cylinders, cylindrical locks (wally or equivalent), stoppers, handles, temporarily fixing, re-fixing, oiling and adjusting. Providing three keys for each lock and padlock including tagging and a master key for all doors.				
g	Providing three keys for each lock and padlock including tagging and a master key for all doors.				
h	Hardware including cramps, dowels and the like.				
i	Glass and glazing to be 6.38mm thick laminated glass (3+0.38+3mm) for double glass, and 6mm thick laminated glass for single glass, with color as directed by the engineer, including cutting to size, putty and rubber with "U " shape. Preparing surfaces for painting one coat of primer before fixing				
j	Preparing surfaces for painting one coat of primer before fixing.				
k	Sealing and Painting to any area or width in any location including work in multicolor and cutting in edges.				
l	All other accessories and incidentals required to execute the work.				
m	Rates shall include also providing, mounting and fixing in place "School Title" of metal Prominent letters (black hammer paint), of 50 cm height. The contractor to provide shop drawing for the letter shape, size, and distribution within the supposed space shown in elevation.				
7.0	Supply and Professionally fabricated Steel and Aluminum works, Actual complete samples for each items mentioned here must be supplied prior to approval.				
7.01	Supply, fix and operate sliding Aluminum Windows Extrusion Section 7700 and 4400 or equal, with protective electrostatic applied polyester powder paint of 70-80 microns. In color of bronze. Price to include 6.38mm thick laminated glass (3+0.38+3mm) for double glass, and 6mm thick laminated glass for single glass. Mosquito screen, three path for sliding windows, float glazing and all other accessories and fittings to complete works as per drawings and specifications.				
l	Three paths aluminum external windows with wired mesh. (Double glass).				
a	Window type W-1. (100x160cm)	No.	14		
b	Window type W-2. (190x160cm)	No.	18		
c	Window type W-3. (60x100cm)	No.	8		
d	Window type W-4. (80x160cm)	No.	4		
e	Window type W-5. (100x169cm)	No.	6		
f	Window type W-7. (100x160cm)	No.	4		
2	Ditto as above, Two paths aluminum internal windows without wired mesh. (Single glass).				
a	Window type W-6. (210x100cm)	No.	18		
7.02	Supply and Install Protection Steel Grills. Price to include fixation, accessories, welding, grinding & smoothening. Price also to include hummer painting three coats in addition to two primer coats for				
a	For Windows (W1, W2, W4, W7)	M.S	89		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
7.03	Supply and Fix Balustrades of SeamlessStainless Steel, cylindrical, and solid profiles, as per Detailed Drawing. Price includes Fixing complete, oil paint three coats in addition to primer coat.				
a	Stairs Handrails of Ø1.5" hollow steel pipe with 3mm steel thickness for Verticals and hand rail top bars. Vertical bars to have an average spacing of 120cm. Vertical Bars to be supported by 4 solid steel pipes Ø3/4" at 17 cm spacing and running at a slant of the same angle as the stairs. All pipes shall be welded, de-burred and sanded for a (hands) smooth finish.. Price to include Fixing complete, oil paint three coats in addition to primer coat. (Seen Height 100 cm.)	M.R	50		
b	Grab bars for staircase of 1.5" Diam. seamless steel pipes, parallel and fixed to walls. (Seen Height 100 cm.)	M.R	50		
7.04	Supply and Fix Factory-made Steel Doors as per drawings, specification. Price to include 2mm thick galvanized steel frame (as per details), fixing completely, ironmongery, cylinders, cylindrical locks handles (Approved by Palestine Standards Institution). transparent fiber glass 6mm thick for both upper vision panel & for vision panel inside door leaf, gaskets, oil Paint in three coats in addition to two primer coats.				
a	structural opening size (100 x 255)cm steel door type MD1 with Transparent Fiberglass top Panel	No.	3		
b	structural opening size (100 x 210)cm steel door type MD2 with top mounted Auto close hydraulic Jack and push bar handle.	No.	2		
c	structural opening size (200 x 252)cm Two Leaf steel door type MD4 with top mounted Auto close hydraulic Jack. Door to be Certified for 1 Hour Fire Rating.	No.	6		
d	structural opening size (320 x 247)cm steel double door type MD5 with Transparent Fiberglass and two fixed Transparent Fiberglass	No.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
PAINT WORKS.					
	PREAMBLE.				
1-	Painting and decorating to walls, ceilings and the like shall be measured net in meter square. Painting to other works shall be included in the related items. Color as specified by engineer.				
2-	Painting to other works shall be included in the related items. Color as specified by engineer.				
3-	Paints shall be supplied to site in sealed container, as approved by the Engineer, and site mixing shall not be permitted				
4-	The Contractor rates shall include for supply of all materials, workmanship, samples, primers, surface preparation, protection of painted surfaces, application to all heights as required of works, repair of all damaged surface at the contractor's expenses, and all other requirements as stated in the Specifications.				
5-	All paint types should be approved and having a supervision certificate from the PSI.				
8.1	Supply and paint high quality emulsion paint, for walls as per indicated in finishing tables, on one priming coat and two finishing coats, using two coats of complete putty, as per satisfaction of the supervisor engineer.	M.S	1727		
8.20	Ditto, but glossy oil paint.	M.S	1083		
8.30	Supply and paint three coats polycide paint for ceilings, drop beams (sides and bottom), internal walls above ceramic wall tiles in toilets, and internal walls above oil paint in kitchen of high quality (Approved by Palestine Standards Institution).	M.S	401		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Insulation and Water ProofingWORKS.					
	<p>PREAMBLE.</p> <p>All finishes shall be measured superficially net unless other wise stated clearly.</p> <p>All finishes, include triangular shaped fillets except cement and sand lining to gutters, shall be measured on the slab surface only, parapets and column stubs to be included in the price and not to be measured.</p> <p>Cement and sand lining to gutters shall be measured in linear meter, unless other wise stated clearly.</p> <p>Rates for cement and sand work shall include for :</p> <p>Hacking concrete, applying cement slurry or raking out joints of block work to form key.</p> <p>Application to any surface.</p> <p>Finish to surface, to falls, cross-falls and currents.</p> <p>Forming bays including joints. Finish to edges and arises.</p> <p>Making good around steel sections, pipes, tubes, bars, brackets, outlets, and the like.</p> <p>Measurement for concrete screed and waterproofing membrane shall be for horizontal projection of roof area as calculated on roof plan between plastered surfaces of parapets and walls only. Corner chamfers and vertical waterproofing shall not be measured. Expansion joint waterproofing shall not be measured, and is included in expansion joint unit prices.</p> <p>Rates for waterproofing and roof sheeting shall include for</p> <p>Preparation of surface, cutting in edges. Overlaps priming and treatment at the corners and floor drains.</p> <p>Dressing over parapets and stub columns including forming groove to receive edge of plasticised bitumen membrane and sealing with elastic sealer</p> <p>Side and end laps, Fittings including bolts, hook bolts, screws and washers,</p> <p>Sheets of any width or length.</p>				
9.01	Supply and cast plain concrete B200 (Special mix) for screed to roof with 1% slope, cast to falls not less than 3cm thickness in the drain point, rate to include lining and hunching 10x10 cm with (45°) to the edge of roof screed and parapet, rate also include smooth surface finish to receive bitumen and all requirements as per specifications, drawings.	M.S.	358		
9.02	Supply and apply membrane of bitumen rolls (4mm) thick. Density 180g per M.S. of reinforced polyester sheets) covered with layer of crushed white stone with overlaps of not less than 10 cm. price to include primer coat, and all sheets flashing (10cm Aluminum profile, backing rod,) & all fixation required to complete the work. For roof of main building and roof of staircase; the bitumen rolls should cover minimum 15 cm of the parapets above screed level. Measurements will be in square meter for the NET surface area.	M.S.	358		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
ELECTRICAL WORKS.					
	PREAMBLE.				
1-	The Electrical BOQ shall be read in conjunction with parts of the electrical technical specifications general and particular and the Electrical Drawings except where otherwise indicated.				
2-	The unit price for all items in Electrical BOQ shall include for supplying, installation, testing, and commissioning, unless otherwise specifically mentioned				
3-	All Civil and Finishing Works related to the concerned item shall be included in the unit price, unless otherwise mentioned.				
4-	The Contractor shall submit detailed shop drawings for all electrical drawing to take approval from the Engineer.				
5-	The Contractor shall submit detailed ANY MISSING drawings, new drawings, VO.dwg, AS BUILT, for all electrical drawing to take approval from the Engineer				
6-	The contractor shall co-Ordinate with local power authorities and gets their approval for electrical works.				
7-	The contractor shall be responsible to execute & commission the electrical works complying with the local power authorities regulations.				
8-	The fire alarm system shall comply with requirements of NFPA 72.				
9-	The contractor shall be responsible to obtain any approvals for any type of drawings before executing the works (electrical power supplier, telecom company, civil defenceetc) , that must be for all type of work (civil, mechanical, electrical, arch.) and the electrical works complying with the IEEE & local power authorities regulations				
10-	The price of ELECTRICAL WORKS shall include of any civil works need (holes, digging, baton, plastering, tiling, paintingetc) to finish the job according to engineers approval , with no change order costs.				
11-	The price of security systems (Surveillance, fire alarm) includes all software and interfaces, licences.				
12-	Electrical works shall be conformed all applicable codes and standards including but not limited to:				
13-	National electric code NFPA70, NFPA72, NFPA 76, NFPA101, NFPA110				
14-	Telecommunications Infrastructure standard for Data Center TIA-942				
15-	ANSI/TIA/EIA-607, ANSI/TIA/EIA-569				
16-	All cable, equipments, shall be labeled according to ANSI/TIA/EIA-606-A				
16-	All data cable, terminations, shall be labeled according to ANSI/TIA/EIA-606-A				
16-	All data cable, terminations, shall be tested for FLUK TEST , the report must be submitted to the engineer with PASS & ALL PARAMETERS, otherwise the work must be redone to pass the FLUK TEST .				
17-	The contractor shall be responsible to make all type of tests needed to finish the job as (but				
18-	All Supplied Materials Should be European Made (factory assembled) Grade A and Free From Defects, Having Supervisor Certificate From Palestinian Standard Institution (PSI). Price to include submittal and obtaining approval of shop drawings, detailed and as-built drawings for all works as well as coordinating the same with the other services , activities and furniture . Price to include, also, submittal of catalogues and manufacturer instruction. Fixtures and appliances shall be measured in number. Supply and feeder Cables, cable conduits and cable trays shall not be measured but included in DB's prices Manholes, handholds and the like shall be measured in number. All Systems and devices shall be in lump sum including installation, testing and commissioning. Rates of fixtures and appliances shall include installation, wiring , switches and conduit works.				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.1	KWHM				
	Supply, Install and Connect KWHM DB. Price to include metal panel board oven painted 2mm thickness, molded case Main circuit breakers MCCB with minimum breaking capacity of 25 K.A, miniature circuit breaker bus bars, Indication lamps, space for KWH meter and low voltage side 25cm & all accessories as per drawings and specifications. Price also to include main earth busbar, UPVC conduits 2Ø4" and the main feeder "cables as required" from KWHM DB to MDB as drawings and specifications with all necessary civil works.	No.	1		
10.2	MAIN DISTRIBUTION BOARD				
	Supply, Install and Connect Main Distribution Board. (MDB). In Ground Floor. Price to include metal panel board oven painted 2mm thickness, all cables required to connect MDB with all DB's molded case Main circuit breakers MCCB with minimum breaking capacity of 25 K.A, miniature circuit breaker MCB with minimum breaking capacity of 10 K.A., bus bars, volts & amps- Measuring instruments, and low voltage side 20cm and low voltage side 25cm. Also to include main earth bus bar as drawings and specifications with all necessary circle works. and power factor DB(15KVAR). THE PRICE INCLUDES THE A.T.S OF THE FIRE PUMPS AND THE ATS OF THE GENERATOR.	No.	1		
10.3	DISTRIBUTION BOARDS				
	Supply, install, test and commission the following distribution boards inclusive of all circuit breakers for outgoing and incoming cables, 2mm thick, ral painted bus bars and their coupling units, casing spaces for cables, cable clamps/terminals, cable shoes, protection equipment, signal lamps, 30cm LV section, 30% spare, as required to form a complete unit. All complete as specified and as shown on drawings.				
10.3.1	DBG	No.	1		
10.3.2	DB1	No.	1		
10.3.3	DB2	No.	1		
10.3.4	DB-LAB	No.	1		
10.3.5	DBC-LAB	No.	1		
10.3.6	DB- Canteen (PVC) including 1 phase KWHM.	No.	1		
10.3.7	DB (Switch panel with push buttons matching the number of step relays in DB with led indication lamps) to control all lighting in the school	No.	1		
10.4	FEEDERS				
	Supply, install and connect the following 600/1000V XLPE copper power cables, including all necessary cable ties, cable glands, cable cleats, cable tray, cable ladder, earth continuity conductor, labeling and other necessary accessories complete as specified and as shown on the drawings:				
10.4.1	5x16 mm2	MR.	120		
10.4.2	5x6 mm2	MR.	30		
10.4.3	3x10 mm2	MR.	25		
10.4.4	3x6 mm2	MR.	90		
10.4.5	5x4 mm2 E90 fire rated cable	MR.	30		
10.5	EXTERNAL WORKS				
10.5.1	Supply, installing, connecting, and testing 80x80x80 cm electrical manholes including heavy-duty cast iron 8 Ton, cover according to drawings and specifications	No.	3		
10.5.2	As item above but 60x60x60cm Telecommunication Manhole	No.	2		
	Supply, install underground pipes for main electrical feeders and main Tel. line include excavations 80cm depth, sand, warning tape, backfilling and to complete the work as instruction of engineer and as drawings and SDECO Specifications				
10.5.3	Ø4" PVC	MR.	100		
10.5.4	Ø2" PVC	MR.	60		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.6	WIRING DEVICES & ACCESSORIES				
	Supply, install, test, number and commission the following power socket outlet including cables 3x2.5mm2, conduits, boxes, socket outlets, and all connections between the appropriate distribution board and the terminal point, complete as specified				
10.6.1	3 pin Single-Phase 16 Amp sockets.	No.	30		
10.6.2	Ditto for heat, but red color	No.	20		
10.6.3	Ditto, but waterproof (IP65) with isolating switch were required	No.	13		
10.6.4	Duplex socket outlet	No.	17		
10.6.5	Ceiling mounted draw box for projector including isolating switch and simplex socket outlet.	No.	2		
10.6.6	Single phase outlet with double pole switch with signal lamps for Exhaust Fans (WP) including cable 3*2.5 and all accessories and connections to be controlled by isolating switches in a space.	No.	11		
10.6.7	double pole switch with signal lamps for heater including the cable 3*2.5 and all accessories	No.	2		
10.6.8	simplex water proof socket with surface mounted box and cables 3x2.5mm2 including galvanized trunks to be installed on LAB's earthed tables.	No.	18		
10.6.9	Emergency switch connected to LAB's distribution boards, including any size of contactor needed and all accessories.	No.	2		
10.70	TELECOMMUNICATION ND DATA SYSTEMS:				
	Supply, install, test, labeling and connect the following RJ45, CAT6A outlets including device boxes (flush or surface mounted), cover plates, wiring S/FTP CAT7A and conduit to the corresponding Data Cabinet, complete as specified and as shown on the drawings:				
10.7.1	Single data socket outlet	No.	32		
10.7.2	Supply, install, test, and commission 19" server 20U rack cabinet (DC) with 1KVA one line UPS for CCTV, 60cm depth, 60 cm width, including fans, all needed internal cables, cable ties, cable management trays (horizontal and vertical), 6 outlet surged power strip, two fans, shelves connections and all accessories needed to complete the work as specified and as shown on drawings	No.	1		
10.7.3	Ads item above but 10 U cabinet	No.	1		
	Supply and install 220V large electrical school bell 220V including wiring, conduits, push buttons(two for each bell), including 3*2.5 cables, buttons....etc, and all needed accessories.				
10.7.4	60W Indoor 6" electrical bell	No.	3		
10.7.5	60W Outdoor 8" electrical bell water proof IP65	No.	1		
10.7.6	Bell Push Button	No.	1		
10.7.7	1 1/4" conduit for projector connected to PT box included all accessories	No.	2		
10.7.8	Supply, install, test, and commission 24 port patch panel for data points including	No.	3		
10.7.9	Supply and install air patch panels including all accessories needed to complete the work as	No.	3		
10.7.10	Infrastructure of camera point as shown in drawings including conduits, boxes and S/FTP	No.	14		
10.80	GROUNDING AND BONDING SYSTEMS				
10.8.1	Supply, install, test and commission a complete loop earthing system for all DBs, including main earthing wire (loop) - 1*16mm - from main busbar up to the electrical shaft (continuos) , copper bars @ each level of the building, clamps, conduits with earthing wire from the sub-main bars to each DB @ FLOORS connection complete as specified and as shown on the drawings.	LS.	1		
10.8.2	Supply, install, test and commission a complete ring grounding system for mechanical plants and all metallic masses, pipes, falls ceiling, ducts,..... etc., including all conductors, copper bars, clamps, conduits fixing etc., the contractor must use two busbar@ each floor(if needed) with main 16mm earthing wire and 10mm wire for final connection complete as specified and as shown on the drawings.	LS.	1		
10.8.3	Supply, install, test and commission 30x30mm galvanized steel strip welded to building foundation reinforcement and connected to the equipotential busbar, including all required materials, boxes, testing terminals, equipotential busbar and all required accessories, complete as specified and as shown on the drawings and according to SDECO regulations..	LS.	1		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.90	SOUND SYSTEM				
	Supply, install, numbering, connect, and commission a sound system, including sound cables, shielded conduits from each loudspeaker to amplifier, boxes, draw boxes, as shown on drawings, consisting of the following				
10.9.1	360W RMS Amplifier system, dual channel, six zone with "All Call", rack including amplifier with built-in FM tuner - DVD and recorder with pre-recorded tones (piano) and daily / weekly go off bill time unit, tuner and flash port with minimum of 5 microphone inlets and with program timer. Note that every component above must be from the same brand. Price includes metal rack cabinet 14U two parts, one fixed on the wall and another double sided movable with aluminum and glass door including fans and 6 outlet Surged power strip.	LS.	1		
10.9.2	Microphone with on/off switch, (plug-in), with telescopic stand and 10 m long power cord.	No.	1		
10.9.3	6-zone call station with all calls Table top microphone goose neck type and extension 10 meter cord with pressing on/off push button.	No.	1		
10.9.4	zone selector switch panel same manufacturer with toggle switches matching the number of speakers with led indication lamps	No.	1		
10.9.5	6-9W wall mounted speaker with metal grill and evacuation compliant	No.	14		
10.9.6	100W Outdoor IP65 Music Horn with two way speaker function	No.	2		
10.9.7	Microphone socket points. Price includes PVC conduits, special cable up to microphone amplifier outlet.	No.	3		
10.9.8	Two wireless microphone (50 m) .with one receiver with all needed cables and sockets to be located forward the playground	LS.	1		
10.10	LIGHTING SYSTEM				
	Supply, install, test and commission a complete lighting point(internal,external,emergency,exit.....etc) including all conductors, cables(normal or FR), conduits, switches, step relays, push buttons (type Legrand Mosaic Cross decorative plates range modular components and self-supporting plates or equal approved), boxes, ceiling rose, flexible connection and all other accessories, from appropriate distribution board to lighting point, as specified and detailed on drawings.	No.	196		
10.11	LIGHTING FIXTURES				
	Supply, Install, test, fix and commission the following lighting fixture, with all supports, lamps, switches connections, suspensions, clamps, switchgears, internal conductors and/or cables, and all other accessories necessary to provide a complete fitting with all terminals, in accordance with the specifications and engineer instructions				
10.11.1	Type A	No.	56		
10.11.2	Type B	No.	43		
10.11.3	Type B with Battery	No.	19		
10.11.4	Type C	No.	7		
10.11.5	Type D	No.	4		
10.11.6	Type F	No.	10		
10.11.7	Type Exit	No.	11		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.12	FIRE ALARM SYSTEM				
	Supply, install, connect, test, operate and commission the following fire alarm system equipment, inclusive of all accessories, cables, boxes in accordance with the requirements of the specifications, civil defense and as shown on drawings. The price includes connect the FACP with the existing one in the existing building.				
10.12.1	Fire alarm control panel addressable 1 loop including back-up Batteries & Charger, auto-dailer.	No.	1		
10.12.2	Supply, install, test and commission an fire alarm points, smoke, heat, pull station, sirens,.....etc, including all conduits fixing, boxes, and high quality cables. connection with fire alarm and evacuation systems or any requirements of civil defense, According to specification and drawings..	No.	50		
10.12.3	Supply, install, test and commission an addressable fire alarm photo-optical smoke detector. According to specification and drawings..	No.	28		
10.12.4	Supply, install, test and commission an addressable fire alarm heat detector. According to specification and drawings..	No.	3		
10.12.5	Supply, install, test and commission a flush mounted addressable fire alarm manual pull station (double action) According to specifications and drawings	No.	8		
10.12.6	Supply, install, test and commission a fire alarm addressable electronic sounder with flasher. According to specifications and drawings.	No.	4		
10.12.7	Supply, install, test and commission a fire alarm addressable electronic External sounder with flasher. According to specifications and drawings.	No.	3		
10.12.8	Supply, install, test and commission line isolators to complete the system, according to drawings, specifications and Engineer's approval.	No.	4		
10.12.9	Supply, install, test & commission complete 5 KG FM200 clean agent fire extinguisher cylinder UL approved for MDB (inside). The price includes SCH40 galvanized steel pipes network with all valves and fittings, shuttle valve, pressure gauge switch, solenoid valve, safety valve, flexible hose, discharge nozzle, smoke detectors, heat detectors, release modules, release control panel, cabling, wiring and all accessories needed for installation and commissioning the system. Note: The contractor should submit UL flow calculation report including design and shop drawing, from the original manufacturer, for the system, in addition to all needed samples such as detectors, and nozzle, to be checked and studied prior to supplying and installing the system	Ls.	1		
10.13	SURVEILLANCE SYSTEM				
	Supply, Install, numbering and connect a complete digital monitoring system\ according to plans specifications, engineer's instructions.				
10.13.1	Rack mounted Network Video Recorder: NVR stands alone in the teachers room with number of channel matching the number of all cameras+15% (displayed by 43" led HD monitor), connect to the main switch by cat6A cable, displaying/speed & recording 8000FPS (PAL), 2 SATA (4TB) HDD, support HDMI,VGA, support by mouse, can be used for any type of cameras, include USB ports, DVD burner, 10w power , 12v , support all browsers , android and apple, and the price also includes all the accessories to complete the job (cable cat6A grey color)	No.	1		
10.13.2	Type A: Day/Night Dome HD camera Indoor Rotatable image resolution 2048/1536 color /monochrome weather proof & vandal proof color IR camera wall & ceiling mounted, with IR up to 30 meters Ultra Vision CCD, & low illumination: 0.1 lux @ F1.21 (0 lux with IR), auto switch, horizontal resolution :3MP TVL. IP66.	No.	10		
10.13.3	Type B: Ditto item above but outside camera water proof IP66 wall mounted extruded aluminum body with a polycarbonate, scratch resistant window and zooming support & horizontal resolution :3MP TVL 4 LED ARRAY	No.	4		
10.14	Electricity Connection The contractor shall price the following as a provisional item and to be as part of tender documents and will be paid according to Municipality – electrical department, authority bill plus 4% as management and overhead prices. Price to include all payments to the Electric Company. The contractor shall feed the building with electrical power, according to the drawings, specifications, and site location, engineer approval and according to the Palestinian Electrical Authority instructions. The price shall include pipes, ducts, manholes, poles, skirting, cables, civil works and all accessories to be completed working job including connecting costs and fees to the electrical authority.	Ls.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
MECHANICAL WORKS.					
	<p>PREAMBLE.</p> <p>The Bills of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, Appendices and Drawings. The documents are to be taken as mutually explanatory and inter-related to one another.</p> <p>Unless otherwise mentioned, all quantities of works shall be measured "Net" in accordance to the drawings or/as ordered by the engineer, and generally, according to method of payment mentioned in the tender documents.</p> <p>The Unit Price and the rates inserted in the Bills of Quantities respectively shall be comprehensive and shall include for complying in all respects with the requirements of the Technical Specifications, drawings and all other related tender documents. This shall cover all the obligations under the contract and all matters deemed necessary for the proper construction, completion and remedy of defects in the works. No claims for additional payment will be allowed for any error, misunderstanding or failure to acquaint with all necessary information of the work.</p> <p>The unit prices inserted in the Bill of Quantity shall be of fixed rates. The contractor shall not be entitled for new rates should the quantities be altered during the construction and execution of the works.</p> <p>In the Bills of Quantities, a unit price or rate shall be inserted against its respective item with quantities only. The value of any item left unpriced shall be deemed to be included in the total cost of the BOQ.</p> <p>All measurements of the executed works called for in the Contract shall be based on the unit price stated in the Bills of Quantities and made according to the specifications. Any work done by the Contractor, but not called for in the Contract or not requested in writing by the Engineer, shall not be included in the measurement.</p> <p>The unit rate of the materials and equipment shall be based on the Specification, all components as required and specified under each item concerned in the Specifications, Technical Data and Notes on Contract Drawings, and all other Contract documents.</p> <p>The Bills of quantities are classified under headings and sections with the same reference numbers and titles as the specifications.</p> <p>Each section referred to in the Bills of quantities shall be read in conjunction with the respective section and with all other related sections of specifications.</p> <p>The Bills of Quantities, Specifications, Schedule of Equipment and Drawings and all other Contract documents are complementary to each other.</p> <p>It is the responsibility of the Contractor to check the locations and quantities of the materials and equipment to be executed in accordance with the contract drawings.</p> <p>Any discrepancy between the Drawings and Specifications and Bill of Quantities shall be brought to the notice of the engineer in writing for his decision as to which is the correct interpretation before the commencement of the work. In General, Drawings shall take preference over those stated in the Specifications.</p> <p>In the case of discrepancy in quantities of works performed by the contractor and those shown on the drawings, and should such discrepancy be acceptable to the employer, then the quantities agreed by the Engineer shall be taken into account in the measurement of quantities.</p> <p>The contract is a Re measured Contract. The Contractor shall be responsible for all the works deemed necessary to complete the scope of work. For this purpose the Bill of Quantities shall be used for guidance only and all works shall be carried out as shown on drawings, and covered in the Specifications. All materials quantities shall be re measured on site after execution, and payment be made in accordance to the executed works.</p>				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
	<p style="text-align: center;">General Provisions of Mechanical Works</p> <p>Bill Of Quantities are not intended to be used by the contractor for the ordering of materials.</p> <p>Method Of Measurement</p> <p>The Unit Rate shall include the following: (The following requirements are complementary to the mentioned items in the B.O.Q.),</p> <p>A. General</p> <ol style="list-style-type: none"> 1. Supply of materials and equipment. 2. Off loading and handling to place of installation. 3. Installation of materials and equipment. 4. All civil and builders work , whether temporary or permanent, as required for the complete installation, including :- <ol style="list-style-type: none"> a. Excavation, bedding backfilling, riggings, hoisting, water proofing, cleaning, protection and painting. b. Concrete plinths, bases and supports. c. Chasing through walls and slabs, cutting and pinning for passage of all pipes conduits ducts, pipe sleeves, and equipment. d. Closing of all shafts and openings between floors and slabs after installation of services e. Repatching, fixing of pipe and duct hangers and supports to structure, f. All frames for air outlets and louvers and wall mounted fans, g. Flashing and waterproofing of all pipe, pipe sleeves, ducts crossing walls and slabs. 5. Testing & Commissioning: - <ol style="list-style-type: none"> a. All testing, balancing, adjusting, commissioning and handling to client complete operational equipment. b. All testing, balancing, adjusting, commissioning and handling to client complete operational systems. c. All testing materials. 6. Painting, cleaning, proper protection of all equipment, plants, pipes, ducts, insulations, electrical installations and structures. 7. Disinfections, flushing and water treatment. 8. All labor, materials, tools, instruments, electric power supply fuel and water required for installation, testing, balancing, adjusting, disinfections, flushing, operation and commissioning. 9. Coordination with other trades 10. Thermal insulation for all equipment, valves, trimming and accessories. 11. System identifications, tags, labels, nameplates, and charts. 12. Shop-drawings and record drawings. 13. Flexibility (expansion) analyses for all piping systems. 14. Spare parts and components for ideal running of all services and equipment. 15. Spare parts information and tools. 16. Operation and maintenance manuals. 17. Samples as required by the Engineer. 18. Inspection, testing and rejection of all materials and workmanship. 19. Maintenance of all items supplied by contractor as per contract conditions . 20. Warranty and manufacturer guarantee for a period as specified, but not less than one year. 21. Coordination with other contractors, and specialty suppliers such as kitchen and laundry, Fixed furniture and finishing contractors... etc 22. Liaising with the structural contractors and providing all necessary details and information for all related systems, such as vibration control, structural openings plinth and equipment loads, kinetic floating slabs, etc... 23. Liaising with local authorities and official departments, such as Civil Defense Department, water authority, Electrical Authorities, municipality, etc... As to obtain and grant all necessary approvals for the shop drawings, materials and equipment. 				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.1	European Toilet:				
11.1.1	Supply and install Complete White Vitreous Western type Toilet (Class A and approved by Palestine Standards Institution) . with 9 liter flush reservoir,Including all connections pipes and connected to out site manhole or risers ,sprayer hose , all valves , toilet paper holders white color vitreous china with all connections, and fittings .	NO	12		
11.1.2	Ditto, but for handicapped toilet, including all necessary, fittings and accessories movable handle and fixed handle as shown on drawings and in Specifications.	NO	1		
11.2	Wash Basin				
11.2.1	Supply and Install White Vitreous China Wash Basin (Class A and approved by Palestine Standards Institution), size (55 * 40) cm. Complete with all fittings, valves, waste pipes to nearest floor trap, taps or mixer (Class A and approved by Palestine Standards Institution), connection to water distribution, traps, and any other necessary parts as Specification and as directed by Eng. Price includes supplying and installing 40x60cm mirror.	NO	9		
11.2.2	Ditto, but for handicapped toilet (sliding type), Including all necessary fittings and accessories as shown on drawings and in specifications. Price includes supplying and installing 40x60cm mirror, gear tap .	NO	1		
11.3	Kitchen Sink (for Preparation Room):				
11.3.1	Supply and Install White Sink Stainless Steel (20 cm. Deep), single bowl, 55X35cm basin sink for Preparation Room. (Class A and approved by Palestine Standards Institution). Complete with all necessary valves, Goose neck taps (Class A and approved by Palestine Standards Institution), connection to water distribution, fittings, anti chemical waste pipes to the nearest floor trap, and any other necessary parts and accessories to complete works per specifications and as directed by Engineer.	NO.	1		
11.3.2	Ditto but single bowl sink for canteen, Size (55x35cm).	NO.	1		
11.4	Lab Sink				
	Supply and Install single bowl anti acid Lab. White Sink (20 cm. Deep), of approximate size (60x40cm). (Class A and approved by Palestine Standards Institution). Acid proof tope installed in laboratory. Complete with all necessary valves , (Class A and approved by Palestine Standards Institution)., connection to water distribution, fittings, anti chemical waste pipes to the nearest trap, and any other necessary parts and accessories to complete works per specifications and as directed by Engineer. a- for lab benches	NO.	5		
11.5	Eye Wash Basin :				
	Supply and Install Stainless Steel Eye Wash Basin (Factory Assemble and approved by Palestine Standards Institution), in science lab, Structure Touch. Complete with all fittings, valves, waste pipes to nearest floor trap, suitable for installing on wall, convenience and prompt through the pusher, connection to water distribution , two shower outlet made of brass and PP Rubber cap to prevent from dust made of silica gel, and any other necessary parts as Specification and as directed by Eng.	NO.	1		
11.6	Floor Trap				
	Supply and Install 4" PVC Floor Trap. "With Quality approval Tag" Price to include siphon to be fixed in reinforced concrete, (15*15) cm double chrome plated cover one grated and one-closed, waste pipes to the nearest manhole and all other fittings needed to comply with specifications and as directed by Engineer.	NO.	12		
11.7	Ditto, but 4"/2" FD	NO.	12		
11.8	Ditto, but for roof rain water (20*20)	NO.	5		
11.9	Clean Out				
	Supply and Install (Clean Out), of Drainage Network. "With Quality approval Tags" In size and location shown in the drawings and where necessary, including (15*15)cm chrome plated screwed in cove and all needed to complete work as specification and directed by Engineer.	NO.	14		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.1	Drainage Pipes				
11.10.1	Supply and install UPVC pipes , for soil, waste, vent sewage system and manhole network system , including casting into concrete or block work, jointing, fittings, ceiling supports and hangers. Rate shall include jointing, penetration in walls and slabs, connection to existing sewage network, in addition to fixing to concrete or block work,, as follows:				
11.10.	2" UPVC internal diameter	MR	35		
11.10.	4" UPVC (SN4) internal diameter	MR	140		
11.10.	6" UPVC (SN8)internal diameter	MR	90		
11.10.	Supply and install 3" galvanized steel pipes for rain water riser, jointing, fittings,	MR	50		
11.1	Manholes :				
	Supply and install and commissioning of reinforced precast concrete Manholes of 15cm thickness for walls and 20cm for bottom slab, with depths as shown on drawing, with all necessary fittings, excavation, back filling as specified to the required depth complete with heavy duty cast iron covers of weight bearing load not less than 8 ton for side walk and 12.5 ton all other manholes, with steel rim, fine coarse benching and plastering, cast iron steps for manholes of depth more than 1.0 m, house traps (of suitable size) with cleanouts on branch pipes including connections to upvc pipes & to septic tank, all as shown in drawings, and approval of supervisor engineer, and as follows:				
11.11.1	Manhole of 60 cm internal diam.	MR	4		
11.11.2	Manhole of 80 cm internal diam.	MR	7		
11.11.3	Manhole of 100 cm internal diam.	MR	1		
11.12	Galvanized Steel (SCH40) Pipes				
	Supply and install SCH40 galvanized steel pipes (Seamed class B type) for cold and hot water system. The price includes pipes connection from existing water meter to water tanks and hot water cylinder as well,, with all accessories and fittings needed for installation, i.e. elbows, tees, valves....etc of approved quality. The price should also include galvanized supports, hangers and connections to water collectors, in	L.S.	1		
11.13	Water Collectors				
	Supply and install copper collectors, for domestic cold and hot water system, with all necessary fittings, nipples, nuts, unions, quick shut off valves (of the same type as collector) on main and on each eye of collector, brass fittings adapter, automatic vents, fasteners ..etc of approved quality. Rate includes metallic steel cupboard (of good quality) with double doors. The price should also supplying and installing 16mm plastic pipes, with its 25mm plastic conduits with 5cm thick concrete layer to fixture units outlets, copper elbows recessed in walls and all civil works needed, all according to plans and engineer's instructions and as follows:				
11.13.1	Water Collectors: size 3/4" with 1 Openings for cold water and size 3/4" with 1 Openings for hot water.	NO.	1		
11.13.2	Water Collectors: size 2x1" with 17 Openings for cold water and size 3/4" with 4 Openings for hot water.	NO.	1		
11.13.3	Water Collectors: size 2x1 1/4" with 20 Openings for cold water and size 1" with 6 Openings for hot water.	NO.	1		
11.13.4	Water Collectors: size 1" with 7 Openings for cold water.	NO.	2		
11.14	Hot water Cylinder				
11.14.1	Supply and install hot water storage cylinder of 40 Liters capacity (2.0kW electric power), of approved quality. The price includes (20mm) pex pipes from and to collector, all accessories needed to complete the job, fixing the cylinder on wall, with all related necessary fittings, i.e. air vent, valves, pressure relief valve, check valve,.... all according to drawings and engineer's instructions.	NO.	1		
11.14.2	Ditto, 60 Liters capacity	NO.	2		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.15	Domestic Water Tanks:				
	Supply and install water plastic tanks (heavy duty) of 1500 liters capacity, for fire fighting and domestic cold water systems (white painted from manufacture). The price include painted steel base, stop valves, floating valve for tank, connection with municipality and main supply pipes through galvanized steel pipes. The price should also include water collector, galvanized hangers and supports of suitable type and size, and all other fittings needed to complete the job.	NO.	20		
11.16	Electrical water cooler				
	Supply and install electrical water cooler of capacity 40 L/h with drinking chrome plated fountain of approved quality with hermetic type compressor complete with all required fixing connection, water supply and 2" drainage to the nearest floor trap. as shown in drawings, specifications and approval of supervisor engineer.	NO.	3		
11.17	Fire Pipes:				
	Supply, install, test and commission seamless galvanized steel pipes schedule 40 to ASTM A53, primed and painted red, and fixed in accordance with the NFPA standards, including fixing supports to concrete, block work or metalwork, fittings, valves, automatic vents & all required accessories, complete as specified and as shown on drawing.	L.S.	1		
11.18	Fire Extinguisher				
11.18.1	3 Kg fire extinguisher as below specifications:- <ul style="list-style-type: none"> • Gas fire extinguisher, type (Halotron) HCFC. • Environment friendly. • Quick and easy to use, even for non professional. • Suitable for extinguishing all types of fires solid, liquid and electrical fires. • Fire rating 5a/21b • Gas life time minimum 5 years. • Manufactured according country slandered meets Palestinian standard instituted requirement. • Manufactured in compliance with ISO 9001:2000 quality management system. • Supplied with special nozzle for effective use. • Pressure gauge included for visual inspection and wall mounted. • Metal cylinder base. • Gross weight 3.0kg. Height: 40cm, Width : 14.5cm	NO.	7		
11.18.2	Supply and install Portable Fire Extinguisher of 3kg Dry Powder for kitchen .	NO.	1		
11.18.3	Supply and install Portable Fire Extinguisher of 2kg CO2 .	NO.	4		
11.19	Fire Cabinet:				
	Supply and install 80*100*30 cm steel fire hose reel cabinet of 2mm thick. The cabinet should includes 2*15m hose, 2" nozzle, hose reel of 1" diameter *25mm rubber hose with nozzle, 6kg ABC fire extinguishers, 1" ball valve, 2" ball valve, and landing valve, approved sticker (FIRE CABINET in Arabic and English) from outside. Oven Red Color Cabinet. All according to drawings and specifications.	NO.	3		
11.20	Siamese Connection:				
	Supply and install 2X4" Coupling Siamese Connection for use of civil defense, of approved type. The price includes all accessories and fittings needed to connect to fire fighting pipe, all according to civil defense requirements and approval of supervisor engineer.	NO.	1		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.21	Firefighting Pumps:				
	Supply, install and commission pressure pump set ,for firefighting system. The set is composed of two pumps (one is stand-by), control panel and 100 liters pressure tank. The price includes all fittings needed for installation, i.e. stop valves, non-return valves, flexible joints, steel base, anti-vibration isolators, pressure switches, electric floating valve installed inside water tank, headers at both suction and discharge ports, and connections to pumps, in addition to electrical and control cables and connections to MDB. The contractor should receive approval from local civil defence on drawings and hydraulic calculations as there are included in the price of this item. The specifications of the pumps are as follows:				
	Firefighting pumps 45m head & 6L/s flow rate (One Duty, One Standby)	SET	1		
11.22	Benson				
2.0	Supply and install Benson burner with gas cylinder (type can recharge it) 190 gm weight for science labs price include fitting need to connection Benson with gas cylinder all related works as per drawings and specification. and according to NFPA recommendation.	NO.	6		
11.23	Gas Distribution Network				
	Supply, install, and commissioning of copper pipes for gas distribution network of Ø8mm from gas cylinders location for canteen. The price includes two gas cylinders (full) 12kg each inside suitable lockable box, with all necessary fittings as elbow, valves, gas regulator , the price includes supports, hangers, Shut-Off gas valve above the benches, fittings , support protection painting of exposed pipes , insulation , gas cylinders manifold to different supply points valves, ½" Gas Copper collector box, gas detector all necessary digging. The pipe should lie inside 25mm PVC pipe. All mentioned are according to NEPA recommendations.	L.S.	1		
11.25	Wall Mounted Fan				
11.25.1	Supply, install and commission ducted Wall type Exhaust Fans of approved manufacture, of 50 l/s, 0.1" inch static pressure complete with self – act automatic shutter, galvanized steel mesh at end of pipe . Price includes making necessary holes in walls and fixing, electrical connections, sockets, cables and switches with indicator lamp. All is according to drawings, specifications and approval of supervisor engineer	NO.	5		
11.25.2	Ditto, but 90 l/s @ 0.1" wg pressure	NO.	2		
11.25.3	Ditto, but 150 l/s @ 0.1" wg pressure	NO.	3		
11.25.4	Ditto, but 200 l/s @ 0.1" wg pressure	NO.	3		
11.25.5	Wall Mounted Fan				
11.29	Split Unit:				
	Supply, install, and commission wall mounted heat pump split units, of inverter compressor type, using R410 Refrigerant, with low temperature and auto restart kits. The price includes all accessories and fittings needed for installation and commissioning, i.e. insulated copper pipes, connection of drain pipe to the nearest floor trape, hangers and supports, high performance washable filter, remote control, galvanized steel base for outdoor unit and all electrical wiring and control cable, in addition to connection to MDB. Rate shall also include openings in walls through sleeves of good quality, and refilling works.				
11.29.1	9.5 kW Cooling Capacity & 500 L/s Air Flow	NO.	2		
11.30	Drinking Fountain				
	Supply and install outside drinking fountain as shown on drawings, rate includes, sink 3.85X1.65m on block stands. The work should be finished and completed to the highest standard. Rate include excavation, B200 R. concrete (all steel reinforcement required), stone works, plastering, glazing tiles, local marble coping, planters and metal cover with all fittings, 5 unit high quality (Class A and approved by Palestine Standards Institution) chrome plated taps of 1/2" of approved kind, rates also include p.v.c. Drain pipe outlet as per drawings.	NO.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
EXTERNAL WORKS.					
	PREAMBLE.				
1	Measurement, rates and specification of all external works shall comply with the works stated in previous sections.				
2	Curbstone shall be measured in linear meter.				
3	Asphalt works shall be in net square meter.				
4	Basecourse works shall be in net square meter for each layer.				
5	Play yards fixtures and things shall be measured in number whereas painting of play yard shall be as lump sum.				
6	Rates of Curbstone works shall include: -				
a	Excavation in all kinds of soils including rocks, concrete and asphalt,				
b	Supply and cast of blinding concrete as per Specifications,				
c	Struts,				
d	Laying curbstones including mortar,				
e	Backfilling, leveling, watering and compacting,				
f	Pointing and grouting,				
g	Lowering curbs at entrances and ramps and where requested by the Engineer.				
7	Rates of asphalt and basecourse works shall include: -				
a	Leveling, watering and compacting of sub grade.				
b	Spreading, leveling, watering and compacting the base course to receive asphalt, Supply and apply asphalt concrete, spreading by using Finisher, Compacting				
c	Trimming, cutting and making good around edges, openings, corners and trenches.				
d	And all required sampling and testing.				
12.01	Excavation for foundations; in any kind of soil or existing area setting to the dimensions and levels shown in the drawings. Price to include back filling with excavated soil if suitable or imported approved materials up to bottom of basecourse, removal of extra and unsuitable soil. Back filling shall be on layers of 200 mm thick with watering and compacting to min 95% to comply with modified AASHTO F.D.T. (T-80)				
	a. For retaining and Boundary walls, ramps and where needed	M.C	170		
12.02	Supply and Well Compact One Layer of Base Coarse of 20cm each under Ground Slabs and Ramp. Price includes leveling, watering, compacting to 100% for each layer according to Field Density Test.	M.S	165		
12.03	Supply and Cast Plain Concrete Blinding Grade B200 under foundations and footings. Thickness should be 10cm or according to drawings. Price to include area cleanup, form work, leveling, survey markings for Retaining walls centers.	M.C	82		
12.03	Supply and Cast Reinforced Concrete Grade B300. With a minimum cement content of 350 Kg. per cubic meter for Concrete Walls. Price to include reinforcement bars, form work and concrete casting, in addition to cleaning of all concrete surfaces from all unwanted metal, form work wood and extra concrete spillage if any, in preperation for plastering works.				
	a) Foundations and Wall Footings	M.C	26		
	b) Reinforced Walls	M.C	30		
12.04	Supply and Cast Reinforced Concrete Grade B 300 for students ramp. Price to include manual trowel surface finish, polyethylene sheets 500 micron, construction joints and steel reinforcement overlapped to tie beams, and tie beam at start of ramp, and all related works. (measured for projected area).	M.S	20		
12.05	Supply Materials and Apply External Walls plaster, Price to include waterproofing additive such as (Sica Latex, Nitobond SPR 201, or equivalent). Price to also include the supply & Spray Paint with external quality paint such as Flex or equivalent water proof paint in color as directed by the engineer.	M.S.	125		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
12.06	Supply and Install Interlock Block Pavement tiles: First choice and free from all defect grade "A". (Approved by Palestine Standards Institution). Price to include 4cm sand filling (Grade B-100), pointing with dry fine sand and cleaning on site. Color and pattern to engineer's approval. Price includes edge units embedded in mortar and point, compaction of the mono block with plate compactor with specified tonnage capacity. Price also includes pavement for all ramps, slopes, etc...				
	Block pavement tiles size 10x20x7 cm.	M.S.	191		
12.07	Supply, build Local Marble (3 cm thick) Parapet coping for walls and where needed as shown on details.	M.S	12		
12.08	Supply and Fix Galvanized Steel ladder (Stairs) to service new staircase roof (Height 3.5m). Ladder to be made of two main supports of U140x60 supported by 120x40x4mm profile secured to Reinforced staircase wall, in addition to profile steel 100x40x15(3mm thick steel) for steps every 15cm welded to U supports using 6mm fillet weld and E70xx Electrodes for welding. Price to include base plates anchor bolts (Hilti grade 8.8 14cm long) in addition to two coats epoxy paint, 2" steel railing as detailed in Sheet MW06 of the book of details	No.	2		
12.09	Supply and paint at least two coats paint to existing Entrance Gate. Price to include a thorough cleanup and sanding of all metal parts, removing all rust areas, rust proofing areas of sanded out rust, and two coats of paint. Color to be decided by the Engineer.	M.S	5		
12.10	Drinking Fountain: Supply and install outside drinking fountain as shown on drawings, rate includes, sink 4.5x.55m on 4 block stand, the work should be finished and completed to the highest standard. Rate include B200 concrete, plastering, glazing tiles and metal cover with all fittings, 8 unit pressure chrome plated taps of approved kind, rates also include install and connect galvanized pipe to main cold water line 2" p.v.c. Drain pipe outlet to green area.	No.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

Bills of Quantities Summary Sheet		
Item	Description	Total
		US\$
Bill No. 1	Demolition Works.	
Bill No. 2	Concrete Works.	
Bill No. 3	Hollow Concrete Block Partitions	
Bill No. 4	Plastering Works	
Bill No. 5	Tiling Works	
Bill No. 6	Carpentry and Wood Works	
Bill No. 7	Metal Works	
Bill No. 8	Paint Works	
Bill No. 9	Water Proofing	
Bill No. 10	Electrical Works	
Bill No. 11	Mechanical Works	
Bill No. 12	External Works	
Grand Total		
Percentage % discount or addition		
Net Grand Total		
Note: All Prices to Exclude VAT The sum of : Contractor: ----- Signature: ----- Date: -----		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Demolition Works					
	<p>Demolition works include preparation of the existing building and site to receive new works. Rates for demolition works shall include but are not limited to items shown on drawings, and include demolition, removal, disassembly, and relocation. The Price includes the removal of all excess debris and demolished / excavated materials from site to a location as approved and directed by the local authorities. All such works are to be according to an approved method plan to guarantee the safety of the existing structure and all building elements, including the erection of temporary scaffolding works, using precision cutting equipment, and the non-use of heavy duty demolition equipment. It is the contractor's responsibility to preserve and keep intact safely all elements that are not to be demolished. Contractor to visit and access the actual conditions and amount of work required and include a statement to that effect along with this bill.</p> <p>Demolition works to be priced in conjunction with the design drawings, demolition plans and site visits.</p> <p>Demolition works include but are not limited to the items shown on the demolition plans and the following:</p> <ol style="list-style-type: none"> 1- Tiles and skirting. 2- Plaster. 3- Walls: concrete, concrete blocks. 4- Insulation materials. 5- Coping, thresholds, sills. 6- Concrete screeds, slab on grade required for footing retrofitting works, and where required. 7- Parapets. 8- Rubble, including all kinds of fill up to existing concrete elements to be retrofitted or natural rock. 9- Fill under tiles. 10- Wood elements: cabinets, doors, frames, protection bars, etc... 11- Aluminum: windows, doors, and shutters. 12- Metal elements: doors, stairs railings, window steel protection, grab bars and any other items of use to the University.. 13- False ceiling: metal, gypsum, and acoustic and metal tiles. 14- Plumbing: sanitary pipes, fixtures, and HVAC equipment systems and pipes. 15- Electrical: lighting, fixtures, switches, outlets, control panels, cables, conduits, wires, hangers, trays, etc... 				
	<p>Demolition rates include all safety equipment, hard hats, gloves and steel toe shoes for all individuals working in demolition. Water piping to suppress dust. Contractor to provide a safety plan and location of safe passages around construction areas.</p> <p>Contractor to provide the Engineer with a specific method statement including detailed drawings, documented photographs, and time plan for demolition works. Contractor to verify each element as a non structural and non bearing wall/element before any demolition works.</p> <p>It is understood that demolition works will often encounter unforeseen elements. Contractor to bring such findings to the attention of Supervision at the earliest. Contractor to get Supervision's approval for demolition method and equipment prior to any demolition works, as well as an accurate time frame for the said demolition works.</p>				
1.01	Demolition and removal of all items as described on the "Site Demolition Plan - A03" and as specified above. Demolition shall not be limited to items listed below. Any unforeseen elements in the way of new construction should be brought to the attention of Supervising Engineer. In addition and any electrical / plumbing/ services in external works as well, including poles, cables, etc...	Job	1.0		
a	Removal of the top 4 layers of 20cm Block Wall of the Existing Building (All block layers above the door and window lintels) and where needed as the drawings shows				
1.02	Supply Well Compact Base Course, average 20 cm. thick, for under ground slab 10cm thick. Price includes leveling, watering, and compaction of basecourse layer to 98%. Price also includes, leveling up to bottom of basecourse and compaction to min 95% according to Field Density				
	a. 20cm Thick basecourse under slab on grade	M.S.	77.0		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
CONCRETE WORKS					
1.0	<p>Preamble</p> <p>Rates of Concrete Works shall include:-</p> <p>1- Import and storage of cement and aggregate in a covered and dry space.</p> <p>2- All form works and shuttering in any form, shape and size. Making chamfered and curved edges, allowing for and making grooves and sleeves and the like; removal of forms and cleaning of all exposed tie wires and rods; making good the harmed surfaces and edges and all surface finishing.</p> <p>3- Installation and erection of safe scaffolding with sufficient work area.</p> <p>4- Concractor to provide a lab tested concrete mix for every item in this BOQ.</p> <p>5- Proper concrete face finish such as fair face finish and mechanical troweling as required and as directed by the engineer.</p> <p>6- Supplying, Casting, vibrating and curing as per specifications.</p> <p>7- Approved additives and admixtures.</p> <p>8- Incurred costs on Concrete Mix Designs, Sample taking, testing and providing test results certificates, storing and saving of samples, and preparation of bar bending schedules and workshops.</p> <p>9- Supplying reinforcement of 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. Prices for reinforced concrete elements shall include reinforcement.</p> <p>10- Tying wire should be bent inwards for columns and beams to prevent honey combing in concrete.</p> <p>11- Steel bars used for alignment and fixing of reinforcement works, and extra steel added to assure proper detailing and safety.</p> <p>12- All wooden form work for any structural element and slabs shall be made with all new wood parts.</p> <p>13- Prices for ribbed slabs shall include reinforcement and hollow blocks and no separate item for blocks will be provided.</p> <p>14- Painting of exposed surfaces of underground reinforced concrete elements with two coats of hot bituminous paint or special cold bitumen (75/25), the strokes of each layer to be opposite to each other (for the buried parts).</p> <p>15- Steel bars used for alignment and fixing of reinforcement works, and extra steel added to assure proper detailing and safety.</p> <p>16- The minimum cement contents for concrete should be:</p> <p>a-B200 _ 250kg/m3</p> <p>b-B250 _ 300kg/m3</p> <p>c-B300 _ 350kg/m3</p> <p>17- Testing specimens for concrete quality control during construction shall be cubes of size 15x15x15 cm.</p> <p>Measurement of Concrete elements shall be the net dimensions as detailed in the drawings. All recesses openings and voids shall be deducted.</p> <p>Measurement shall be only for the seen surfaces of elements. Overlapping and measuring items twice under separate headings shall not be allowed.</p> <p>Slabs are measured from the center to center for external stone walls, from the external to external face of the outer drop beams for stone caldding walls. The columns necks shall be measured from the top level of the foundation or footing to the bottom level of the tie beam. (All beams, drop beams, projection including fair face sun breakers, planters and any part casted together with the slab will be included in the price of the slab). Columns are to be measured from the top level of the slab to the bottom level of the beam or dropped beam.</p> <p>Sloping screeds shall be measured in planer area with no adjustment for the slope.</p> <p>Supply and Cast Reinforced Concrete , Unit Price for all Reinforced Concrete items listed here shall include the costs of imports and storage of rust free reinforcing bars , workmanship, shaping and forming of bars and stirrups , formwork, and concrete casting . Price to also include water hydrtation to all concrete elements for 5 consecutive days from casting. Columns to be wraped with Gunny Sack Fabric (خيش) to keep columns moisturized as long as possible.</p>				
2.01	Supply and Cast Reinforced Concrete Grade 'B 250'. For Slab on Hard Core. (10) cm. thick Solid with steel reinforcement (1Φ12mm@20) in both direction. Including surface leveling, finishing, polyethylene sheets 500 micron, polystyrene filler boards 2cm, construction joints and steel reinforcement overlapped to tie beams, and all related works. (measured for projected area).	M.S	77		
TOTAL CARRIED TO SUMMARY.				\$	-

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
HOLLOW BLOCK WORKS					
1.0	<p>All works of this bill shall be of Hollow Concrete Block Walls.</p> <p>Concrete block minimum compressive strength to be not less than 35 Kg/m²</p> <p>Block works shall be measured in meter square. The net measurement of the complete elevations, excluding all openings and voids more than 0.1 M. S. in area. No allowance for thickness used other than those shown in the drawings.</p> <p>Rates of Concrete Block Partitions works include:-</p> <p>Vertical and horizontal joints.</p> <p>Cement and mortar,</p> <p>Galvanized angles butter fly ties (at joints and between walls in cavity walls.</p> <p>Concrete filling at all ends including reinforcing steel to cavities at quoins and door and window openings, reveals, sills for windows and the like.</p> <p>R.C. Door Walls and jambs for doors AND others as per detailed drawings</p> <p>Lintels and bond beams to the full length of the wall, min 20 cm. High and in the same wall thickness of reinforced concrete grade B-200 with due reinforcement steel, on top of doors and windows or as specified per drawings.</p> <p>Window jambs of min. 20 cm width and in same wall thickness to full height of window.</p> <p>10cm thick solid concrete slab above class rooms entrance, with concrete B300 & reinforcement as Shown on drawings.</p> <p>And all needed to complete job as per drawings and specifications.</p>				
3.01	Supply and Build Concrete Block Walls, 'Grade 35' of any size blocks.				
	Price for all block work shall include for a 10cm reinforced concrete door and window jamb, as well as a reinforced concrete lintel above all openings.				
a	Hollow Concrete Block Walls and Partitions (10 Ten) cm. Thick.	M.S	21		
b	Ditto as above, but for Parapet Walls (20 Twenty) cm. Thick.	M.S	17		
c	Hollow Concrete Block Construction for Building's External Walls, one layer 10cm Thick Hollow Concrete Block for cladding to reinforced Concrete walls, Columns and other block Walls. The price to include 5cm (minimumThickness) Spray Polyurethane Foam for thermal insulation applied Reinforced and other block Walls	M.S	78		
d	Hollow Concrete Block Construction for Building's External Walls of (20+05+10cm) Double Wall Block and Insulation, Total Wall thickness 35cm. The price to include 3cm (minimumThickness) Spray Polyurethane Foam (Density: 28-35 kg/m ³) for thermal insulation applied to the 20cm Block	M.S	37		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
PLASTER WORKS					
	<p>PREAMBLE.</p> <p>PLASTERING to all areas shall be measured net, including openings, which are less than 0.25 Meter Sq.</p> <p>The price shall include for running rules , all narrow widths, for taking out joints on block walls or backing concrete face for key, for Plastering shall not be commenced until the background has been suitably prepared. Blockwork joints shall be deeply raked out, efflorescence brushed off and all dust and foreign matter removed</p> <p>The Contractor shall form vertical guide screeds 10 cm wide. The spacing shall not exceed 1.50 meters. The screeds shall be plumb and in the same plane with each other. The sides of the screed shall be left rough to bond with plaster, the surface shall be smooth. The finished surface shall be true to shape and angle and even in all directions, with straight arises free from cracks and trowel marks and to the entire satisfaction of the Engineer</p> <p>Price shall also include Expanded metal lath, angle beads at all appeared corners for the entire height, and plaster stops at opening edges, expansion joints, sills, labor, curing, erecting and dismantling of scaffoldings, additives, pigments and all incidentals required as specified and / or detailed on the Drawings.</p>				
4.00	Two Coats of Cement and Sand Plaster over one slurry coat to walls and ceilings and where required including metal Lath, angle beads, plaster stops and all required as per Specifications and Drawings.				
4.01	Internal Plaster				
	Ceilings including drop beams	M.S.	78		
4.02	Ditto, but Wall plaster	M.S.	216		
4.03	Ditto, but for External plastering. Price include Waterproofing additive (W 290) with the second and last face and painting with standard approved color Waterproofing supercrl for roof parapet	M.S.	17		
4.04	External Plaster				
	External walls (three coats), material to include white cement and Italian quartz. Price to include painting with two faces of standard approved color supercrl.	M.S.	145		
TOTAL CARRIED TO SUMMARY.				\$	-

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
TILING WORKS					
5.0	<p>PREAMBLE.</p> <p>1. All tiling works shall be measured net in square meters or linear meters as shown in the BOQ.</p> <p>2. Openings and voids that are tiled on all four sides and exceed 0.25 m2 are to be deducted.</p> <p>3. Marble works for steps and treads of stairs shall include the tread, the riser, flight skirting and water stop shall all be measured as a single unit in linear meter.</p> <p>4. Rate shall include preparation of surfaces under tiles including one coat plaster, Finish to falls and cross falls, special tile pieces for edges and the like, tile surface finishing, Plastic spacers. Pointing and cleaning and all incidentals as per specifications.</p> <p>5. Tiles to be first choice and free from all defects, Grade "A" approved by Palestine Standards Institution. Price includes (in addition to the cost of tiles), the small size aggregate with cement sand fill ratio 3 kg/m2, pointing with ready mix mortar type Mapei, Vitra, or equivalent color as directed by the engineer, and cleaning of site, all as per drawings and specifications. Engineer shall approve size and color of tiles. Price also include quality audit by the contractor of every tile to ensure that all tiles are identical in size, color and pattern and free from any warping or curving.</p> <p>6. Terrazzo tiles mix shall not exceed 1:3.</p> <p>7. Price for all items listed below must include the costs of supply, construct, import and, lay and spread an approved bedding under tiles, white cement tiles mortar, approved tiles type, color and quality, tiles laying by professional and experienced master tiles installers working in groups of more than one and in sufficient numbers at any time to get the works done on a timely manner, spacers, and all cutting and leveling tools, including flat bottom spacers (leveling spacers) to ensure each laid tile's corners perfectly leveled with the adjacent tile. Price to also include all and any type of skirting, to be matching in color, texture and lined perfectly with the floor tiles patterns. Skirting must be professionally cut with corner at 45° angles, and specially ordered (factory made) end and corner pieces.</p>				
5.01	Supply, Install and finish Pre-cast pre-polished Terrazzo Tiles size 30x30x3 cm in any color as per drawings and color scheme, with Italian marble chipping # 6. Price to include Pre-cast Terrazzo skirting size 30x10x1.5 cm with same marble chipping, bedding and jointing in cement and sand mortar, pointing with white cement, required adasiyah fill, and on site grinding where required, polishing and cleaning.	M.S.	70		
5.02	Supply and Install dark colored Glazed Ceramic Wall Tiles 20x20x0.6 cm to create contrast with sanitary fittings to wall and floor tiles for Low Vision, First choice and free from all defects Grade "A". (Approved by Palestine Standards Institution). Price to include colored round aluminum edges. All works shall be in accordance with drawings and specifications.	M.S	6		
5.03	Supply and Install Light colored Non Slip Ceramic Floor Tiles 20x20x0.8 cm to create contrast with sanitary fittings to wall and floor tiles for Low Vision, First choice and free from all defects Grade "A". (Approved by Palestine Standards Institution). Price to include colored round aluminum edges. All works shall be in accordance with drawings and specifications.	M.S	7		
5.4	Supply and Install Local Marble Sills, Thresholds, coping for parapets and wherever needed (3 cm. thick).Set in cement mortar bedding. Price to include grouting, polishing of face and seen edges.Set in cement mortar bedding. Price to include grouting, polishing of face and seen edges. Price also includes fixing the coping for roof parapet, corridor parapet, skylight parapet, site walls, building entrance stair parapet, ramp parapet, internal stair parapet, and the like with Jampo screw not less than 12cm.				
	External & Internal windowsills .	M.S	4		
5.50	Ditto, but for Doors thresholds	M.S	2		
5.06	Supply, build Local Marble coping for roof and where needed as shown on details.	M.S	11		
5.07	Supply and apply Composite PVC flooring layer for existing Kinder Garten. Minimum thickness 8mm, of seamless (1.5m wide Rolls). PVC to be comprised of 3 mm Top Layer of dense PVC wearing layer with colored Polyurethane finish. Bottom 5 mm layer to be Dense rubber. PVC flooring to be set over Terrazzo Tiles, using expxy and special primer. Seams to be Hot Welded using special PVC welding rod of the same finish color.	M.S	64		
TOTAL CARRIED TO SUMMARY.				\$	-

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Carpentry and Wood Works					
	PREAMBLE.				
1-	Sizes of carpentry works given in the Bills of Quantities are finished sizes and shall be as per Drawings.				
	Sizes of doors and other items mentioned in the Bills of Quantities shall allow for tolerance to suit the structural openings shown in the Drawings.				
a	Wooden doors and pair of doors shall be measured in number for each structural opening, unless stated otherwise in the Bills of Quantities.				
b	Writing boards shall be measured in number or in squared meters as mentioned in the Bills of Quantities.				
c	Wall protection wooden rubbing rails shall be measured in linear meter.				
d	Cloth hangers and hanger wooden base shall be measured in number or in linear meter as stated in the Bills of Quantities.				
2-	Rates for carpentry and joinery work shall include :				
a	Shop and coordinated drawings.				
b	Frames, architrave, chalk holders and other holders and kick plates.				
c	Allowance for plastering and tiling and the like.				
d	Cutting and fitting around obstructions, Bedding and painting.				
e	Grounds, blocking and backings.				
f	Plugging concrete, block work, and stone work, and making well.				
g	Ironmongery including cylinders, cylindrical locks with master key for all the doors, handles, stoppers, screws, temporary fixing, re-fixing, oiling and adjusting.				
h	Providing three keys for each lock including tagging.				
f	Providing and fixing wall mounted wooden keys cabinet, (70x70x10) cm. varnish finished with all ironmongery including cylindrical lock.				
g	Providing and fixing Room Title Plat, aluminum (30*20) cm. mounted on wooden plate (35x25) with varnish finish for all rooms.				
k	Steel legs, brackets, bearers and other supports including painting.				
l	Glass and glazing including cutting to size and putty.				
m	Fly screening including cutting to size.				
n	Preparing surfaces to receive finishes.				
o	Painting, varnishing, polishing, oiling, and the like, to any area or width in any location including work in multicolor and cutting in edges and putty.				
6.0	Supply and Professionally fabricated wood works, using best quality timber, age dried and free from knots, warping and any other blemish.				
6.01	Supply and Fix Wooden Doors 4.5 cm Thick single or double sashes. With (Frame). (4.5*3.5) cm hardwood (Zan) edging and (3.5*9.5) cm soft wood stile. Edge strip banding of width 4.5 mm. Formica over veneer on both sides, color for frames and Architrave as directed by engineer. Door paneling to be soft wood 4.5*3.5 cm. each 4 cm., frames of hardwood (Swedish) 4.5cm thickness or galvanized steel sheet frame of 1.5mm thick for corridor doors (as per drawings), width according to the wall thickness' and Allowance of 4 - 6 cm. thickness for plastering and tiling purposes, immersed in wood preservative before erection then embedded completely in sand - cement mortar and completely anchored as per specification. Architrave of Hardwood (Swedish)(4*1.2)cm, price to include ironmongery, kick plates of aluminum 20cm height from one side for main bath room & kitchen doors, U shaped 10cm height from both sides at the bottom for internal doors kick plates and at the bottom door stoppers, transparent fiber glass 6mm thick for both upper vision panel & for vision panel inside door leaf, gaskets cylindrical Lock (Approved by Palestine Standards Institution), and painting in three coats of oil paint in addition to primer coat. Price includes also aluminum louvers of 50x60cm in the bottom for store doors under staircase. All as per Detailed Drawings, specification.				
a	Structural opening size (90x210) cm. Door Type WD3	No.	1		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
6.02	Supply & Install Bottom Wooden Kitchen Cabinet. Cabinet's Top shall be with granite 30mm thick with polished surface and seen edges. Cabinet Sides, Elevations, Partitions, Shelves and Drawers front-side shall be of 17-mm. thick panel wood, laminated internally with 0.5 mm. Thick Formica sheet, and with 0.8mm thick Formica sheet externally. The whole cabinet shall be framed with Hardwood (Zan) bands size (60*40) mm screwed to steel frame and covered with 0.8mm thick Formica sheet. Rear sides of cabinets and drawer's bottom shall be of 6 mm, thick Veneer covered internally with 0.5mm thick Formica sheet. Price to include cabinet terrazzo flooring (30 * 30 * 3) cm., and terrazzo skirting (30 * 10 * 1.5) cm., mortar & fill, ironmongery, handles, two coats of lacquer paint over one primer coat and all the accessories as per drawings and Specifications. SIZE: Height (90) cm. Width (60) cm.				
a	For Kitchen	M.R	3		
6.03	Apply and Install wall mounted factory-made magnetic white chalk board (size not less than 120x350 cm) with the following min-specifications; silver anodized elegant aluminum frame (19*25mm thick) and four strong rounded plastic (pvc) corners, and also with 5cm silver anodized aluminum try fixed through the profile which used for chalks, markers and duster and has pvc edges for safety. The writing surface coated with steel ceramic fixed by using automatic gluing machines to 11mm thick MDF wood covered automatically by aluminum foils. Price shall include two R.C. lintels (20x15 cm) to fix the board on. Reinforced with 4 Φ12 & stirrup Φ 8 @20cm. Around the perimeter of the board.	No.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
METAL WORKS.					
	PREAMBLE.				
1-	Steel & Aluminum works shall be measured in number, Meter run, lump sum, and meter square for structural opening (as mentioned in each related item). Sizes of doors and other items mentioned in the Bills of Quantities shall allow for tolerance to suit the structural openings shown in the Drawings. Rates for metalwork shall include for:				
a	Preparing shop drawings,				
b	Drilling, counter sinking, screwing, bolting and riveting.				
c	Lugs, plugs, holdfasts and the like.				
d	Gaskets, sashes, double weather strips External and Internal Mastic Polyurethane Sealant filling around frames.				
e	Fixed Rubber used for connection of frames in Any Corners, Also in four sides of architrave.				
f	Ironmongery including cylinders, cylindrical locks (wally or equivalent), stoppers, handles, temporarily fixing, re-fixing, oiling and adjusting. Fixed Rubber used for connection of frames in Any Corners, Also in four sides of architrave. Ironmongery including cylinders, cylindrical locks (wally or equivalent), stoppers, handles, temporarily fixing, re-fixing, oiling and adjusting. Providing three keys for each lock and padlock including tagging and a master key for all doors.				
g	Providing three keys for each lock and padlock including tagging and a master key for all doors.				
h	Hardware including cramps, dowels and the like.				
i	Glass and glazing to be 6.38mm thick laminated glass (3+0.38+3mm) for double glass, and 6mm thick laminated glass for single glass, with color as directed by the engineer, including cutting to size, putty and rubber with "U" shape.				
j	Preparing surfaces for painting one coat of primer before fixing.				
k	Sealing and Painting to any area or width in any location including work in multicolor and cutting in edges.				
l	All other accessories and incidentals required to execute the work.				
m	Rates shall include also providing, mounting and fixing in place "School Title" of metal Prominent letters (black hammer paint), of 50 cm height. The contractor to provide shop drawing for the letter shape, size, and distribution within the supposed space shown in elevation.				
7.0	Supply and Professionally fabricated Steel and Aluminum works, Actual complete samples for each items mentioned here must be supplied prior to approval..				
7.01	Supply, fix and operate sliding Aluminum Windows Extrusion Section 7700 and 4400 or equal, with protective electrostatic applied polyester powder paint of 70-80 microns. In color of bronze. Price to include 6.38mm thick laminated glass (3+0.38+3mm) for double glass, and 6mm thick laminated glass for single glass. Mosquito screen, three path for sliding windows, float glazing and all other accessories and fittings to complete works as per drawings and specifications.				
a	Window type W-8. (160x105cm)	No.	5		
b	Window type W-9. (150x105cm)	No.	2		
7.0	Supply and Install Protection Steel Grills. Price to include fixation, accessories, welding, grinding & smoothening. Price also to include hummer painting three coats in addition to two primer coats for windows & corridor external opening in the ground floor.				
a	For Windows.	M.S	11		
7.03	Supply and Fix Factory-made Steel Doors as per drawings, specification. Price to include 2mm thick galvanized steel frame (as per details), fixing completely, ironmongery, cylinders, cylindrical locks handles (Approved by Palestine Standards Institution). transparent fiber glass 6mm thick for both upper vision panel & for vision panel inside door leaf, gaskets, oil Paint in three coats in addition to two primer coats.				
a	structural opening size (135 x 258)cm steel door type MD3 with decorative Top Glass and Metal Panels.	No.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
PAINT WORKS.					
	PREAMBLE.				
1-	Painting and decorating to walls, ceilings and the like shall be measured net in meter square. Painting to other works shall be included in the related items. Color as specified by engineer.				
2-	Painting to other works shall be included in the related items. Color as specified by engineer.				
3-	Paints shall be supplied to site in sealed container, as approved by the Engineer, and site mixing shall not be permitted.				
4-	The Contractor rates shall include for supply of all materials, workmanship, samples, primers, surface preparation, protection of painted surfaces, application to all heights as required of works, repair of all damaged surface at the contractor's expenses, and all other requirements as stated in the Specifications.				
5-	All paint types should be approved and having a supervision certificate from the PSI.				
8.0	Supply and paint high quality emulsion paint, for walls and internal drop beams (sides and bottom) as per indicated in finishing tables, on one priming coat and two finishing coats, using two coats of complete putty, as per satisfaction of the	M.S	106		
8.02	Ditto, but glossy oil paint.	M.S	100		
8.03	Supply and paint three coats polycide paint for ceilings, drop beams (sides and bottom), internal walls above ceramic wall tiles in toilets, and internal walls above oil paint in kitchen of high quality (Approved by Palestine Standards Institution).	M.S	82		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
Insulation and Water ProofingWORKS.					
	<p>Preamble.</p> <p>All finishes shall be measured superficially net unless other wise stated clearly.</p> <p>All finishes, include triangular shaped fillets except cement and sand lining to gutters, shall be measured on the slab surface only, parapets and column stubs to be included in the price and not to be measured.</p> <p>Cement and sand lining to gutters shall be measured in linear meter, unless other wise stated clearly.</p> <p>Rates for cement and sand work shall include for :</p> <p>Hacking concrete, applying cement slurry or raking out joints of block work to form key. Application to any surface.</p> <p>Finish to surface, to falls, cross-falls and currents.</p> <p>Forming bays including joints. Finish to edges and arises.</p> <p>Making good around steel sections, pipes, tubes, bars, brackets, outlets, and the like.</p> <p>Measurement for concrete screed and waterproofing membrane shall be for horizontal projection of roof area as calculated on roof plan between plastered surfaces of parapets and walls only. Corner chamfers and vertical waterproofing shall not be measured. Expansion joint waterproofing shall not be measured, and is included in expansion joint unit prices</p> <p>Rates for waterproofing and roof sheeting shall include for</p> <p>Preparation of surface, cutting in edges. Overlaps priming and treatment at the corners and floor drains.</p> <p>Dressing over parapets and stub columns including forming groove to receive edge of plasticised bitumen membrane and sealing with elastic sealer.</p> <p>Side and end laps, Fittings including bolts, hook bolts, screws and washers, Sheets of any width or length.</p>				
9.01	Supply and cast in place lightweight concrete for screeds to roofs and where needed with 1% slope, cast to falls not less than 3cm thickness in the drain point, rate to include lining and hunching 10x10 cm with (45°) to the edge of roof screed and parapet,rate to also include mechanical troweling for smooth surface finish to receive bitumen and all requirements as per specifications, drawings and Engineer's instructions	M.S.	84		
9.02	Supply and apply membrane of bitumen rolls)4mm(thick. Density 180g per M.S. of reinforced polyester sheets) covered with layer of crushed white stone with overlaps of not less than 10 cm. price to include primer coat, and all sheets flashing (10cm Aluminum profile, backing rod,) & all fixation required to complete the work. For roof of main building and roof of staircase; the bitumen rolls should cover minimum 15 cm of the parapets above screed level. Measurements will be in square meter for the NET surface area	M.S.	84		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
ELECTRICAL WORKS.					
	PREAMBLE.				
1-	The Electrical BOQ shall be read in conjunction with parts of the electrical technical specifications general and particular and the Electrical Drawings except where otherwise indicated.				
2-	The unit price for all items in Electrical BOQ shall include for supplying, installation, testing, and commissioning, unless otherwise specifically mentioned.				
3-	All Civil and Finishing Works related to the concerned item shall be included in the unit price, unless otherwise mentioned.				
4-	The Contractor shall submit detailed shop drawings for all electrical drawing to take approval from the Engineer.				
5-	The Contractor shall submit detailed ANY MISSING drawings, new drawings, VO.dwg, AS BUILT, for all electrical drawing to take approval from the Engineer.				
6-	The contractor shall co-Ordinate with local power authorities and gets their approval for electrical works.				
7-	The contractor shall be responsible to execute & commission the electrical works complying with the local power authorities regulations.				
8-	The fire alarm system shall comply with requirements of NFPA 72.				
9-	The contractor shall be responsible to obtain any approvals for any type of drawings before executing the works (electrical power supplier, telecom company, civil defenceetc) , that must be for all type of work (civil, mechanical, electrical, arch.) and the electrical works complying with the IEEE & local power authorities regulations.				
10-	The price of ELECTRICAL WORKS shall include of any civil works need (holes, digging, baton, plastering, tiling, paintingetc) to finish the job according to engineers approval , with no change order costs.				
11-	The price of security systems (Surveillance, fire alarm) includes all software and interfaces, licences.				
12-	Electrical works shall be conformed all applicable codes and standards including but not limited to:				
13-	National electric code NFPA70, NFPA72, NFPA 76, NFPA101, NFPA110				
14-	Telecommunications Infrastructure standard for Data Center TIA-942				
15-	ANSI/TIA/EIA-607, ANSI/TIA/EIA-569				
16-	All cable, equipments, shall be labeled according to ANSI/TIA/EIA-606-A				
16-	All data cable, terminations, shall be labeled according to ANSI/TIA/EIA-606-A				
16-	All data cable, terminations, shall be tested for FLUK TEST , the report must be submitted to the engineer with PASS & ALL PARAMETERS, otherwise the work must be redone to pass the FLUK TEST .				
17-	The contractor shall be responsible to make all type of tests needed to finish the job as (but				
18-	All Supplied Materials Should be European Made (factory assembled) Grade A and Free From Defects, Having Supervisor Certificate From Palestinian Standard Institution (PSI). Price to include submittal and obtaining approval of shop drawings, detailed and as-built drawings for all works as well as coordinating the same with the other services , activities and furniture . Price to include, also, submittal of catalogues and manufacturer instruction. Fixtures and appliances shall be measured in number. Supply and feeder Cables, cable conduits and cable trays shall not be measured but included in DB's prices Manholes, handholds and the like shall be measured in number. All Systems and devices shall be in lump sum including installation, testing and commissioning. Rates of fixtures and appliances shall include installation, wiring , switches and conduit works.				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.1	DISTRIBUTION BOARDS				
	Supply, install, test and commission the following distribution boards inclusive of all circuit breakers for outgoing and incoming cables, 2mm thick, galvanized painted bus bars and their coupling units, casing spaces for cables, cable clamps/terminals, cable shoes, protection equipment, signal lamps, 30cm LV section, 30% spare, as required to form a complete unit. <u>All complete as specified and as shown on drawings.</u>				
10.1.1	DB-KG	No.	1		
10.2	FEEDERS				
	Supply, install and connect the following 600/1000V XLPE copper power cables, including all necessary cable ties, cable glands, cable cleats, cable tray, cable ladder, earth continuity conductor, labeling and other necessary accessories <u>complete as specified and as shown on the drawings:</u>				
10.2.1	3x6 mm ²	MR.	40		
10.3	WIRING DEVICES & ACCESSORIES				
	Supply, install, test, number and commission the following power socket outlet including cables 3x2.5mm ² , conduits, boxes, socket outlets, and all connections between the appropriate distribution board and the terminal point, complete as <u>specified</u>				
10.3.1	3 pin Single-Phase 16 Amp sockets.	No.	5		
10.3.2	Ditto for heat, but red color	No.	2		
10.3.3	Ditto, but waterproof (IP65) with isolating switch were required	No.	3		
10.3.4	Duplex socket outlet	No.	1		
10.3.5	Single phase outlet with double pole switch with signal lamps for Exhaust Fans (WP) including cable 3*2.5 and all accessories and connections to be controlled by <u>isolating switches in a space.</u>	No.	1		
10.3.6	double pole switch with signal lamps for heater including the cable 3*2.5 and all accessories	No.	1		
10.4	TELECOMMUNICATION AND DATA SYSTEMS:				
	Supply, install, test, labeling and connect the following RJ45, CAT6A outlets including device boxes (flush or surface mounted), cover plates, wiring S/FTP CAT7A and conduit to the corresponding Data Cabinet, complete as specified and <u>as shown on the drawings:</u>				
10.4.1	Single data socket outlet	No.	1		
10.4.2	Infrastructure of camera point as shown in drawings including conduits, boxes and S/FTP Cat6A cable with data socket termination connecting to data cabinet <u>location in teacher room</u>	No.	3		
10.5	SOUND SYSTEM				
	Supply, install, numbering, connect, and commission a sound system, including sound cables, shielded conduits from each loudspeaker to amplifier, boxes, draw <u>boxes, as shown on drawings, consisting of the following:</u>				
10.5.1	6-9W wall mounted speaker with metal grill and evacuation compliant	No.	1		
10.6	LIGHTING SYSTEM				
	Supply, install, test and commission a complete lighting point (internal, external, emergency, exit, etc.) including all conductors, cables (normal or FR), conduits, switches, step relays, push buttons (type Legrand Mosaic Cross decorative plates range modular components and self-supporting plates or equal approved), boxes, ceiling rose, flexible connection and all other accessories, from appropriate distribution board to lighting point, as specified and detailed on drawings.	No.	13		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
10.7	LIGHTING FIXTURES				
	Supply, Install, test, fix and commission the following lighting fixture, with all supports, lamps, switches connections, suspensions, clamps, switchgears, internal conductors and/or cables, and all other accessories necessary to provide a complete fitting with all terminals, in accordance with the specifications and engineer instructions				
10.7.1	Type A	No.	10		
10.7.2	Type D	No.	2		
10.7.3	Type Exit	No.	1		
10.80	FIRE ALARM SYSTEM				
	Supply, install, connect, test, operate and commission the following fire alarm				
10.8.1	Supply, install, test and commission an fire alarm points, smoke, heat.pull	No.	6		
10.8.2	Supply, install, test and commission an addressable fire alarm photo-optical smoke detector. According to specification and drawings..	No.	3		
10.8.3	Supply, install, test and commission an addressable fire alarm heat detector.According to specification and drawings..	No.	1		
10.8.4	Supply, install, test and commission a flush mounted addressable fire alarm manual pull	No.	1		
10.8.5	Supply, install, test and commission a fire alarm addressable electronic sounder with flasher. According to specifications and drawings.	No.	1		
10.9	SURVEILLANCE SYSTEM				
	Supply, Install, numbering and connect a complete digital monitoring system\ according to plans specifications, engineer's instructions.				
10.9.1	Type A: Day/Night Dome HD camera Indoor Rotatable image resolution 2048/1536 color /monochrome weather proof & vandal proof color IR camera wall & ceiling mounted, with IR up to30 meters Ultra Vision CCD, & low illumination: 0.1 lux @ F1.21(0 lux with IR), auto switch, horizontal resolution :3MP TVL. IP66.	No.	2		
10.9.2	Type B: Ditto item above but outside camera water proof IP66 wall mounted extruded	No.	1		
10.10	Supply, install, test and commission a complete ring grounding system for DB and mechanical plants and all metallic masses.pipes,falls ceiling,ducts,..... etc., including all conductors, copper bars, clamps, conduits fixing etc.,the contractor must use two busbar@ each floor(if needed) with main 16mm earthing wire and 10mm wire for final connection complete as specified and as shown on the drawings.	LS.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
MECHANICAL WORKS.					
	<p>PREAMBLE.</p> <p>The Bills of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, Appendices and Drawings. The documents are to be taken as mutually explanatory and inter-related to one another.</p> <p>Unless otherwise mentioned, all quantities of works shall be measured "Net" in accordance to the drawings or/as ordered by the engineer, and generally, according to method of payment mentioned in the tender documents.</p> <p>The Unit Price and the rates inserted in the Bills of Quantities respectively shall be comprehensive and shall include for complying in all respects with the requirements of the Technical Specifications, drawings and all other related tender documents. This shall cover all the obligations under the contract and all matters deemed necessary for the proper construction, completion and remedy of defects in the works. No claims for additional payment will be allowed for any error, misunderstanding or failure to acquaint with all necessary information of the work.</p> <p>The unit prices inserted in the Bill of Quantity shall be of fixed rates. The contractor shall not be entitled for new rates should the quantities be altered during the construction and execution of the works.</p> <p>In the Bills of Quantities, a unit price or rate shall be inserted against its respective item with quantities only. The value of any item left unpriced shall be deemed to be included in the total cost of the BOQ.</p> <p>All measurements of the executed works called for in the Contract shall be based on the unit price stated in the Bills of Quantities and made according to the specifications. Any work done by the Contractor, but not called for in the Contract or not requested in writing by the Engineer, shall not be included in the measurement.</p> <p>The unit rate of the materials and equipment shall be based on the Specification, all components as required and specified under each item concerned in the Specifications, Technical Data and Notes on Contract Drawings, and all other Contract documents</p> <p>The Bills of quantities are classified under headings and sections with the same reference numbers and titles as the specifications.</p> <p>Each section referred to in the Bills of quantities shall be read in conjunction with the respective section and with all other related sections of specifications.</p> <p>The Bills of Quantities, Specifications, Schedule of Equipment and Drawings and all other Contract documents are complementary to each other.</p> <p>It is the responsibility of the Contractor to check the locations and quantities of the materials and equipment to be executed in accordance with the contract drawings.</p> <p>Any discrepancy between the Drawings and Specifications and Bill of Quantities shall be brought to the notice of the engineer in writing for his decision as to which is the correct interpretation before the commencement of the work. In General, Drawings shall take preference over those stated in the Specifications.</p> <p>In the case of discrepancy in quantities of works performed by the contractor and those shown on the drawings, and should such discrepancy be acceptable to the employer, then the quantities agreed by the Engineer shall be taken into account in the measurement of quantities.</p> <p>The contract is a Re measured Contract. The Contractor shall be responsible for all the works deemed necessary to complete the scope of work . For this purpose the Bill of Quantities shall be used for guidance only and all works shall be carried out as shown on drawings, and covered in the Specifications. All materials quantities shall be re measured on site after execution, and payment be made be made in accordance to the executed works.</p>				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
	<p style="text-align: center;">General Provisions of Mechanical Works</p> <p>Bill Of Quantities are not intended to be used by the contractor for the ordering of materials.</p> <p>Method Of Measurement The Unit Rate shall include the following: (The following requirements are complementary to the mentioned items in the B.O.Q.),</p> <p>A. General</p> <ol style="list-style-type: none"> 1. Supply of materials and equipment. 2. Off loading and handling to place of installation. 3. Installation of materials and equipment. 4. All civil and builders work , whether temporary or permanent, as required for the complete installation, including :- <ol style="list-style-type: none"> a. Excavation, bedding backfilling, riggings, hoisting, water proofing, cleaning, protection and painting. b. Concrete plinths, bases and supports. c. Chasing through walls and slabs, cutting and pinning for passage of all pipes conduits ducts, pipe sleeves, and equipment. d. Closing of all shafts and openings between floors and slabs after installation of services e. Repatching, fixing of pipe and duct hangers and supports to structure, f. All frames for air outlets and louvers and wall mounted fans, g. Flashing and waterproofing of all nine. nine sleeves. ducts crossing walls and slabs. 5. Testing & Commissioning: - <ol style="list-style-type: none"> a. All testing, balancing, adjusting, commissioning and handling to client complete operational equipment. b. All testing, balancing, adjusting, commissioning and handling to client complete operational systems. c. All testing materials. 6. Painting, cleaning, proper protection of all equipment, plants, pipes, ducts, insulations, electrical installations and structures. 7. Disinfections, flushing and water treatment. 8. All labor, materials, tools, instruments, electric power supply fuel and water required for installation, testing, balancing, adjusting, disinfections, flushing, operation and commissioning. 9. Coordination with other trades 10. Thermal insulation for all equipment, valves, trimming and accessories. 11. System identifications, tags, labels, nameplates, and charts. 12. Shop-drawings and record drawings. 13. Flexibility (expansion) analyses for all piping systems. 14. Spare parts and components for ideal running of all services and equipment. 15. Spare parts information and tools. 16. Operation and maintenance manuals. 17. Samples as required by the Engineer. 18. Inspection, testing and rejection of all materials and workmanship. 19. Maintenance of all items supplied by contractor as per contract conditions . 20. Warranty and manufacturer guarantee for a period as specified, but not less than one year. 21. Coordination with other contractors, and specialty suppliers such as kitchen and laundry, Fixed furniture and finishing contractors... etc 22. Liaising with the structural contractors and providing all necessary details and information for all related systems, such as vibration control, structural openings plinth and equipment loads, kinetic floating slabs, etc... 23. Liaising with local authorities and official departments, such as Civil Defense Department, water authority, Electrical Authorities, municipality, etc... As to obtain and grant all necessary approvals for the shop drawings, materials and equipment. 				

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.1	Kitchen Sink:				
	Supply and Install White Sink Stainless Steel (20 cm. Deep), single bowl, 60X40cm basin sink for kitchen. (Class A and approved by Palestine Standards Institution). Complete with all necessary valves, Goose neck taps (Class A and approved by Palestine Standards Institution), connection to water distribution, fittings, waste pipes to the nearest floor trap, and any other necessary parts and accessories to complete works per specifications and as directed by Engineer.	NO.	1		
11.2	Floor Trap				
	Supply and Install 4" PVC Floor Trap. "With Quality approval Tag" Price to include siphon to be fixed in reinforced concrete, (15*15) cm double chrome plated cover one grated and one-closed, waste pipes to the nearest manhole and all other fittings needed to comply with specifications and as directed by Engineer.	NO.	1		
11.3	Clean Out				
2.04	Supply and Install (Clean Out), of Drainage Network. "With Quality approval Tags" In size and location shown in the drawings and where necessary, including (15*15)cm chrome plated screwed in cove and all needed to complete work as specification and directed by Engineer.	NO.	1		
11.4	UPVC Drainage Pipes				
	Supply and install UPVC pipes , for soil, waste, vent sewage system and manhole network system , including casting into concrete or block work, jointing, fittings, ceiling supports and hangers. Rate shall include jointing, penetration in walls and slabs, connection to existing sewage network, in addition to fixing to concrete or block work,, as follows:				
11.4.1	4" UPVC (SN4) internal diameter	MR	10		
11.4.2	6" UPVC (SN8) internal diameter	MR	7		
11.5	Manholes :				
	Supply and install and commissioning of reinforced precast concrete Manholes of 15cm thickness for walls and 20cm for bottom slab, with depths as shown on drawing, with all necessary fittings, excavation, back filling as specified to the required depth complete with heavy duty cast iron covers of weight bearing load not less than 8 Tons, with steel rim, fine coarse benching and plastering, cast iron steps for manholes of depth more than 1.0 m, house traps (of suitable size) with cleanouts on branch pipes including connections to upvc pipes & to septic tank, all as shown in drawings, and approval of supervisor engineer, and as follows:				
11.5.1	Manhole of 60 cm internal diam.	NO.	1		
11.6	Galvanized Steel (SCH40) Pipes				
	Supply and install SCH40 galvanized steel pipes (Seamed class B type) for cold and hot water system. The price includes pipes connection to existing water tanks and hot water cylinder as well,, with all accessories and fittings needed for installation, i.e. elbows, tees, valves....etc of approved quality. The price should also include galvanized supports, hangers and connections to water collectors, in addition to excavation and back filling (where needed) , complete as specified and as shown on drawing:				
11.6.1	Ø3/4"	MR	25		
11.7	Water Collectors				
	Supply and install copper collectors, for domestic cold and hot water system, with all necessary fittings, nipples, nuts, unions, quick shut off valves (of the same type as collector) on main and on each eye of collector, brass fittings adapter, automatic vents, fasteners ..etc of approved quality. Rate includes metallic steel cupboard (of good quality) with double doors. The price should also supplying and installing 16mm plastic pipes, with its 25mm plastic conduits with 5cm thick concrete layer to fixture units outlets, copper elbows recessed in walls and all civil works needed, all according to plans and engineer's instructions and as follows:				
11.7.1	Water Collectors: size 3/4" with 1 Openings for cold water and size 3/4" with 1 Openings for hot water.	NO.	1		

ITEM No.	DESCRIPTION	UNIT	QTY.	RATE (\$)	AMOUNT (\$)
11.8	Hot water Cylinder				
	Supply and install hot water storage cylinder of 40 Liters capacity (2.0kW electric power), of approved quality. The price includes (20mm) pex pipes from and to collector, all accessories needed to complete the job, fixing the cylinder on wall, with all related necessary fittings, i.e. air vent, valves, pressure relief valve, check valve,.... all according to drawings and engineer's instructions.	NO.	1		
11.9	Fire Extinguisher				
11.9.1	3 Kg fire extinguisher as below specifications:- <ul style="list-style-type: none"> • Gas fire extinguisher, type (Halotron) HCFC. • Environment friendly. • Quick and easy to use, even for non professional. • Suitable for extinguishing all types of fires solid, liquid and electrical fires. • Fire rating 5a/21b • Gas life time minimum 5 years. • Manufactured according country slandered meets Palestinian standard instituted requirement. • Manufactured in compliance with ISO 9001:2000 quality management system. • Supplied with special nozzle for effective use. • Pressure gauge included for visual inspection and wall mounted. • Metal cylinder base. • Gross weight 3.0kg. Height: 40cm, Width : 14.5cm	NO.	1		
11.9.2	Supply and install Portable Fire Extinguisher of 3kg Dry Powder for kitchen .	NO.	1		
11.1	Gas Distribution Network				
	Supply, install, and commissioning of copper pipes for gas distribution network of Ø8mm from gas cylinders location for kitchen. The price includes two gas cylinders (full) 12kg each inside suitable lockable box, with all necessary fittings as elbow, valves, gas regulator , the price includes supports, hangers, Shut-Off gas valve above the benche, fittings , support protection painting of exposed pipes , insulation , gas cylinders manifold to different supply points valves, ½" Gas Copper collector box, gas detector all necessary digging. The pipe should lie inside 25mm PVC pipe. All mentioned are according to NFPA recommendations.	L.S.	1		
11.1	Wall Mounted Fan				
	Supply, install and commission ducted Wall type Exhaust Fans of approved manufacture, of 50 l/s, 0.1" inch static pressure complete with self – act automatic shutter, galvanized steel mesh at end of pipe . Price includes making necessary holes in walls and fixing, electrical connections, sockets, cables and switches with indicator lamp. All is according to drawings, specifications and approval of supervisor engineer.	NO.	1		
TOTAL CARRIED TO SUMMARY.					\$ -

Bills of Quantities Summary Sheet		
Item	Description	Total US\$
Bill No. 1	Demolition Works	
Bill No. 2	Concrete Works	
Bill No. 3	Hollow Concrete Block Partitions	
Bill No. 4	Plastering Works	
Bill No. 5	Tiling Works	
Bill No. 6	Carpentry and Wood Works	
Bill No. 7	Metal Works	
Bill No. 8	Paint Works	
Bill No. 9	Water Proofing	
Bill No. 10	Electrical Works	
Bill No. 11	Mechanical Works	
Grand Total		
Percentage % discount or addition		
Net Grand Total		
<p>Note: All Prices to Exclude VAT</p> <p>The sum of :</p> <p style="margin-left: 100px;">Contractor: -----</p> <p style="margin-left: 100px;">Signature: -----</p> <p style="margin-left: 100px;">Date: -----</p>		

Hebron

Bills of Quantities Summary Sheet		
Item	Description	Total
		US\$
1	Construction of Two Additional Floors	
2	Rehabilitation of Existing Kindergarten	
Grand Total		
Percentage % discount or addition		
Net Grand Total		
Note: All Prices to Exclude VAT		
The sum of :		
Contractor: -----		
Signature: -----		
Date: -----		