

LOT 1: Construction of Three Classrooms and Renovation of WASH Facilities at Baranan School in Sulaymaniya
General notes:

1. All the work items should be done according to IRAQI General Technical Specifications (IGTS) that complies with ACI-Code 1995 applied according to the instructions of the supervisor Engineer.
2. All materials must be NEW and should be tested according to Construction Works Specification by NCCL (1981 edition), and (ASTM) specifications.
4. The contractor shall provide samples for all materials to be used in the project before using them in order to get approval from the supervisor Engineer.
5. The contractor must check the designs for accuracy and adequacy. Otherwise, the Employer takes no risk of the contractor's failure to accomplish the work.
6. The contractor shall provide all required manpower, transportation, equipment, tools, machinery ...etc. Unless otherwise stated below.
7. In case of any difference between BOQ, designs, and/or drawings, the instruction of the supervisor Engineer will govern.
8. After all works are finished, the site must be cleaned of all debris, and unwanted materials must be removed to anywhere defined by the municipality.

#	Item Description	Unit	Quantity
A	Earth Work:		
A1	Site Preparation and Cutting: Remove debris, concrete, and sewerage system, grade, level the area to the appropriate level clearance not less than 35 cm deep, and install markers. The works should be done according to section (200) of I.G.T.S. Any depth of cutting or Removing of Debris required for all the area must be according to drawings and instructions of the site engineer, cleaning the site and transporting resulting materials (Debris) to an appropriate location outside municipalities border and approved by the site engineer.	M ²	320
A2	Excavation works for the foundation (Classrooms & Walkways): Excavation in all types of soils (even rock layers, asphalt, or existing foundation concretes) is included, and the price includes compaction of the excavation base by using a compactor according to the requirements of section 300 of I.G.T.S. and the instruction of the site engineer.	M ³	60
A3	Backfilling works: Supplying materials and filling with approved screened sub-base materials type B maximum size is 2" up to the DPC level for the building and where required within the area inside or outside of the fence such as aprons, walkways, garden, etc., with compaction (according to the specification) in layers 25 cm thickness, the compaction for garage and play yard must be not less than 90% MDD according to the instructions of the manufacturer and site engineer with all necessary works for the final two layers.	M ³	80
B	<p>CONCRETE WORKS: Including supply of materials (steel reinforcement, connection steel wires, cement, aggregate, water, sand, plastic cover for fixing the steel reinforcement in the proper level, bolts, nuts, washers, G. I. pipes, cutter machines, binder machine, etc.), and all necessary works, according to the section (600) of I.G.T.S, drawings, and instructions of the site engineer.</p> <p>Note:</p> <ol style="list-style-type: none"> 1- Use new plywood for all wooden form support, with Adjustable Steel Scaffolding Props and Formwork Jack Support. 2- Fy = 276 Mpa for 10mm,12mm steel bars. FY=414Mpa for 16mm,20mm, and 25mm steel bars. 3. Allowable bearing capacity of soil = 100 KN / m2 (assumed). 5. The reinforcement details should be according to the ACI detailing manual 2004. 6. New Plywood or standard formworks must be used for all structural parts. 		
B1	Lean Concrete for Classrooms & Walkways: Supply materials and formworks for casting plain concrete 1:2:4 210 kg/cm2 with 10cm thickness for the floor and beneath the foundation footing after laying two layers of thick nylon. (The nylon should also cover the sides of excavation walls and extend on land 50cm to both sides of the excavation).	M ²	220
B2	Raft Foundation for (Classrooms and Walkways): Provide all materials and formworks for cast reinforced concrete (centralised ready mix C 25) using sulfate-resistant cement for the raft foundations with dimensions of 30 cm thickness (double steel bars networks 12mm@20cm c/c top and bottom two directions) according to attached drawings, smoothing the surface by helicopter with a handheld vibrator. DPC work shall be started within five days of concrete curing.	M ³	60

B3	Reinforced concrete for (Slab, Beams, Tie Beam, lintel, parapets, etc.): Supplying materials and casting reinforced concrete (1:2:4) for slab, beams, tie beams, parapets, columns, lintel, etc., according to the details for different sections using concrete compressive strength (f _{cu} =25 MPa) for 28 days, the price includes supply and fix 3cm XPS blue board (extruded polystyrene sheets) under the slab concrete above the wooden formwork for thermal insulation, smoothing the surface by helicopter with a handheld vibrator, according to specifications and instructions of the site engineer.	M ³	50
B4	Floor concrete: Supply materials, equipment, and skilled labourers for casting reinforced concrete 12cm thickness with a layer of 6mm thickness BRC (15x15)cm for the walkway and play yard area with a Compressive strength of 28 days 210 kg/cm ² (1:2:4) above 10 cm thick compacted crush gravel. The work includes excavation, grading and levelling, smoothing the surface by helicopter with a handheld vibrator or using a vibratory screed of the foundation and walkway according to the details for the ground floor, using square steel pipes for levelling and formworks in stages.	M ²	110
C	Masonry works: Including provision of material, pointing, curing with all necessary work according to section (500) of I.G.T.S & instructions of Supervisor Engineer. The cost includes (40) cm reinforcement steel bars (12) mm. min. (10) cm fixed after drilling in columns, and (30) cm in wall the height between two bars (50) cm for all intersections between wall and column to support walls. All works are to be executed according to the Drawings and specifications of the site Engineer, making an expansion joint every (6m) with a thickness of 25mm and using 25mm thickness compressed Polystyrene sheets.		
C1	Solid Concrete Blocks (15x20x40) cm Works: Supplying materials and constructing walkway walls and the first layer of room walls with solid concrete blocks (15x20x40) cm and cement sand mortar (1:3) under DPC according to specifications and the site engineer's instructions, with all necessary work.	M ³	10
C2	Clay Bricks works(Above DPC): Supplying materials and construction of walls with load-bearing clay bricks (20 X 20 X 40 cm) (INTERLOCKING TYPE) weight not less than (14Kg), with cement mortar(1: 3) for above D.P.C level the price includes filling joints vertically by cement and sand 1:3 and fixing the space with concrete columns by G.I. metal holdfast 30cm long 4mm thick at every alternative course fixed to concrete columns with two nos. shot fired cramps.	M ³	45
D	ELECTRICAL INSTALLATIONS: Supply material, installation, and operation test of Electric items below flush mounting by using 1*1.5mm ² , 1*2.5mm ² , and 1*4mm ² single core wires installed inside heavy duty PVC (20mm&25mm dia. 1.8mm thickness conduits, circular junction box, square GI box 1mm, adapter, couplings with all accessories) the work also includes switch and all requirement to implement the work entirely. (Note: lighting, fan, and exhaust fan installed by 2*1*2.5mm ² wires, while 13, 15 sockets installed by 3*1*2.5mm ² in 20mm conduits, and 20A switch installed by 3*1*4mm ² wires in 25mm conduits).		
D1	Supply materials, install, connect, and test electrical LED lights (60x60cm) (50-80)watt with all annexed parts using (2x1.5)mm ² wires inside false ceiling (daylight type) with switch on/off all (2-3) lamps controlled by one switch. All required work is according to instructions from the supervisor engineer.	No.	24
D2	Supply, install, and test lighting points LED 20Watt (outdoor) IP 65 with all required wiring (single wires 1.5mm ² with a suitable cable tray or cable conduit) and a light switch plug. The price includes installing photocells.	No.	12
D3	Supply, install, and test socket 13 Amp. using (wires 3x2.5mm ²).The work should be done according to the instruction of the supervisor engineer.).	No.	11
D4	Supply, install, and test industrial Exhaust Fan size(8") mounted to the walls inside a frame. The price includes supplying and installing anti-brake wire mesh, painting from outside, and a control switch.	No.	4
D5	Supply, install, and test the Ceiling fan (Panasonic or Toshiba or equivalent) with a regulator, switch, and all accessories.	No.	3
D6	Supply, install, and test 32 Amp (Grid) switch with indicator lamp for boilers&split.	No.	4
D7	Supply, install, and test split points using copper cable 4x6mm ² inside PVC pipe with electric switch 45 Amp, with using mini 32x3 Amp +10Amp with box, also install 3/4" PVC pipe inside the wall for the water drain, and 3"PVC pipe inside the slab.	Unit	3
D8	Supply and install and test Sub distribution board (6mbc/1ph), (400V/50Hz) equipped (6 miniature circuit breakers) (10-16-20-32)Amps no (6), with main MCCB 150A according to the drawings.	No.	1
D9	Supply, install, and test copper cable 4 X 10mm ² to connect the distribution boards with the main board, inside 2.5" diameter PVC pipes in the ground + installing above cable tray with all required and necessary works (such as hidden maintenance holes) above dimension (40 X 40)cm.	M.L.	50

D10	Supply material, install, test and do earthing protection system for electric devices by using three copper rods 1.50m with dia 16mm inside three ground holes 80cm dia and 50cm deep and connecting the rod with the mainboard by cable 1 X 16mm ² and distributed to (FDB) by 1 X 16mm ² finally by 1 X 2.5mm ² for sockets, the price includes concreting manhole 40*40cm with covering it and adding 5 Kg (humidity materials).	L.S.	1
D11	Supply, install, and test Stainless steel Drinking water cooler min 100 litres, four taps Compressor capacity ¾ hp. The price includes the connection with the water source using water pipes of OD 25 mm, PN 16 with all fittings and accessories, excavation (required depth), and backfilling 10cm of clean soil with all necessary works. Also, the electrical connection using wire (3*2.5mm ²).	No.	2
D12	Supply, install, and test Stand split AC unit (36,000 BTU) (INVERTER TECHNOLOGY and ampere control); the work also includes installing a 32 Amp Residual current circuit breaker with Overcurrent Protection- RCBO and connecting it with the electrical source using (2X4)mm ² cable with all accessories. The price also includes filling the hole with foam and adequate cover, fixing a 3" pipe with the slab concrete, and making a parapet around the pipe. The price includes installing drain PPR pipe, fixing the outdoor unit, and making an appropriate steel stand.	No.	1
D13	Supply, install, and test a 200-litre production storage capacity electrical water heater with a 2000-watt thermostat. The tank plate is galvanised and 3mm thick. The work also includes all wiring, 4x3mm ² and a 30 Amp electric switch, plumbing works, pipes, fittings, and fixtures, which are complete.	No.	1
E	FINISHING: Including provision of all necessary materials, work, and curing. The works should be done according to sections 10 & 14 of I.G.T.S., drawings and instructions of the site engineer with all necessary works, and use SBR at a rate of 200gr per m ² , the ratio of SBR to water(3-1).		
E1	Cement plastering: Providing materials, staff, and plastering with cement sand mortar 1:3, three layers (cement splatter dash using cement sand mortar 1:1, kafmal, saf) 20mm thick min for the building from external walls and sanitation roof. The final layer should be smooth, using straight aluminium edges for plastering guides. Using SBR at a rate of 200gr per m ² , the price includes fixing steel wire mesh for the needed area, washing and cleaning the walls before plastering, and curing the plastering area for three days.	M ²	475
E2	Gypsum plastering inside the rooms: Supplying materials and plastering with gypsum in 2 layers with a minimum thickness of 25mm using straight aluminum edges for plastering guides, each 80 cm for walls and roofs, corridors, and entrance hall, and the area indicated in the drawings. The price includes washing and cleaning, laying cement splatter dash using cement sand mortar 1:1, fixing steel wire mesh for the edges between walls, and using one layer of cement plastering to cover the wire mesh.	M ²	300

E3	Porcelain Tiles: Supply materials and paving mat Porcelain Floor Tiles (60x60 cm) or (60x120 cm),14mm thickness for classroom Non-slip, Acid-resistant, Low water-absorption 0.5% with all necessary works on a layer of cement sand mortar 1:3 mix ratio, also using cement mortar and sealing the joints with white cement & lime grout and SPR color if required mixture), making 1.0 cm expansion joint each 25m2 filling with flexible epoxy. The price includes cleaning the porcelain after the end of the work. All required works should be done according to the supervisor engineer's instructions.	M ²	165
E4	Skirting: Supply materials and skirting using porcelain Type (approved type & colour) with a 15cm height according to the site engineer's instructions for indicated places according to the drawing. (Note: Both outer surfaces of the skirting and gypsum plastering should be coincident vertically.)	M.L.	75
E5	Acrylic Internal Paint: Provide materials and Paint with Acrylic painting, painting, and color approved by the site engineer, three layers for the rooms, corridors, and areas indicated in the drawings (inside the building) or indicated by the site engineer. The work should be done according to the site engineer's specifications, drawings, and instructions. Note: the paint must comply with the international specification organization ISO 901.	M ²	300
E6	External Painting(Silicone): Provide materials and Paint for External painting. Weather proof. The site engineer approved the painting and color, and three layers were used for the areas indicated in the drawings (for exterior walls). The work should be done according to the site engineer's specifications, illustrations, and instructions. Note: the paint must comply with the international specification organization ISO 901.	M ²	400
E7	Oil painting 120 cm: Provide materials and Painting 120 cm Height with Oil painting and color approved by the site engineer) three layers for the areas indicated in the drawings (for walls).	M ²	90
E8	Gypsum False Ceiling: Provide materials and fix gypsum false ceiling 60*60cm. The price includes hanging beams (Skka 38 mm height) every 120cm by screw, rod steel fisher, rod 3mm, connecting the beams by Skka 120cm,60cm long (32mm height), and all necessary works.	M ²	165
E9	MDF wooden panels: Provide and install MDF wooden panels (approved sample)to protect the walls with 18mm thickness and 20 cm width for classrooms; the price includes fixing the wall by using screw bolts each 30cm and covering the top using the same colour stickers. All work should be carried out according to specifications, drawings, and instructions from the supervisor engineer.	M.L.	80
E10	Sign board: Supply and install PVC polyjam transparent sign board (0.9mX0.5m), with (10mm) thickness; the price includes printing the school's name, DoE and UNHCR logos with the foundation year in detail.	Unit	1
E11	Curtain: Provide materials, & install stand curtain (Zebra Type) approved materials with all accessors.	M ²	25
F	Doors & Windows: Provide all necessary materials and install doors according to sections 11, 12, and 13 of I.G.T.S, details, and instructions of the site engineer with all the required works; the site engineer should approve prior samples.		
F1	Stainless Steel Modern Doors (Qasah): Provide and install stainless steel doors size(2.50x1.0)m (Qasah not less than 60mm thickness of the door leaf), modern design for the rooms double-faced of sheet plate thickness 1.25mm with dimension(2.50x1.0)m, above 6mm glass window, including special switch, gate lock, three reinforced hinges, door stopper, rubber, polycarbonate, particular guard bar, air bay seal, door viewer to see outside, Anti-rust steel thermal paint glossy colour,termit proof, moisture and weatherproof, steel frames 6*22cm, high secured with two locking points, with all necessary works according to the details and instructions of the site engineer.	No.	3
F2	Steel Guard Bars: Provide and install metal guard bars windows, with primer and two layers of oil paint, using square corrugated bar 12 x 12 mm welded inside an angle frame 1.25"*1.25"*3mm, fixed by screw and fisher to the wall.	M ²	20
F3	Aluminum Windows: Supply material and install aluminium windows for classrooms and admin rooms by removing the old windows using a wide section 7cm profile width with a 2mm profile thickness plate, a Double glass pan (4mm+6mm) thickness, ordinary or mushajar, rubber, handle, flywire mesh for opening Areas, cleaning the glasses by machine before composing.	M ²	36

F4	Aluminum Doors Works: Supply material and install Aluminum doors with a double plate of 2 mm thickness for sanitation units. The price includes removing the old doors and treating the frames. The doors include a double glass pan of 6mm thickness, ordinary or mushajar, rubber, handle, switch mortice lock, and door stopper with all the required accessories. All work should be carried out according to specifications, drawings, and instructions from the supervisor engineer.	M ²	24
F5	Windows Marble Frame: Provide materials and cover the windows frame (four sides) and staircase with marble 2cm thick with a width of 30cm; the price includes spinning off the outer and inner edges of the marble and using adhesive FLEX type for fixing. The work should be done according to the site engineer's specifications, drawings, and instructions.	M.L.	80
F6	Steel ladder: Materials are provided, and the steel ladder is fixed using square pipe 2.5" for the edge and 2"(thickness 1.5 mm) for the interior. The price includes bracing, painting with one-layer primer, and three-layer oil paint. All work should be done according to the supervisor engineer's specifications, drawings, and instructions.	L.s	1
F7	Drain water Pipe: Provide materials and fix galvanised steel pipes 3" diameter For rainwater vertical draining from the roof with all fittings and accessories, according to the drawings and instructions of the site engineer.	M.L.	18

G Renovation of Sanitation Units:			
G1	PVC pipes (6)" diameter: Supply and install (6")dia. PVC pipes, 5.7 mm wall thickness with all necessary materials and fittings, according to section 1500 of I.G.T.S and the instructions of the site engineer with all the required work. The price includes casting concrete type C (1:2:4) around the pipes 15cm thick for all pipelines.	M.L.	30
G2	Taps 1/2": Provide materials and install chrome taps size 1/2" for the required places according to the site engineer's instructions.	No.	12
G3	Floor drain (PVC) 4"dia.: Provision of materials and erection of a 4" dia. Floor drain. The work includes excavations, crushed stone, and lean concrete with a thickness of 20cm, and connection to the receiving manholes by PVC pipe 4" dia, with drain Turkish nickel covers, with all necessary work.	No.	2
G4	Concrete block Manholes: Supply materials and construction manholes of different depths with internal dimensions using solid concrete blocks size 15X20X40 cm for walls. The price includes excavation, supply and laying of crushed stone with proper compaction, laying of plain concrete, block walls, plastering both sides (inner & outer), covering the internal side of the manholes by a mix of 1:2 water, SBR, and Aheen or GRP covers due to drawings with frame, according to the details shown in the drawings.		
G4.1	40x40cm and cover 40x40cm	No.	2
G4.2	60x60 cm and cover 60x60cm	No.	2
H Superstructure Truss Shade: The work is allocated for the backyard area, walkway, and water storage tanks.			
H1	<p>The Superstructure Shade consists of:</p> <p>1-Columns: Install square steel hollow section pipes with dimensions of (100x100x3.0)mm. Fix the pipes to the ground by cutting and excavating (50x50x60) cm and filling it with concrete. The columns should be 4m in height, and the distance between columns should be 4m long. After installation, the pipes should be painted with anti-rust paint and two layers of oil paint. The work also includes concreting, welding, washer usage, nut and bolt installation, and steel base plates with dimensions of 25x25cm and a 4mm thickness for the columns and welding steel plates for the tops of all columns.</p> <p>2-Truss Roof structure: The roof structure should be a truss beam structure (Howe Design) made with double-sided hollow sections (80x40x2)mm steel and 50cm-30cm (start to end slope) height steel pipes (80x40x2)mm each 60cm, with diagonal pipes added between (Howe truss design). Purlin steel pipe is (80x40x2)mm and should be added every 0.90m to fix the corrugate sheet on top of it. The structure will be painted with a layer of anti-rust paint and two layers of oily paint.</p> <p>3-Roofing: The roofing consists of a steel structure and corrugated steel sheets in a trapezoidal shape (gauge 18), fixed on the purlins with screws, including all necessary work according to the specifications and instructions of the site engineer.</p> <p>4-Drain Channel: installing drainage channel from galvanised channel plate 1mm thick. 20x20 cm & PVC 3" to be fixed</p>	M ²	175