

Bill of Quantity for the construction of four units of five classrooms prefabricated building

Stabilization Facility for Libya

1.0 General

1.1 The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications, Drawings and Employer's requirements and the Tenderer shall provide against the bill rates or in the prices for the full scope of the work covered by the Contract, no claim or variations shall be considered on account of the Tender's failure to comply with this provision.

1.2 The various documents collectively referred to herein as the Bill of Quantities shall jointly constitute the Bill of Quantities referred to in the Conditions of Contract and these preambles/statement of works are to be read in conjunction with item descriptions in the Bill of Quantities.

1.3 Lump Sum values shall not be inserted where unit rates are applicable and the Tenderer shall ensure that identical items occurring in separate bills are not priced at different rates, unless this is the deliberate intention.

1.4 The Tenderer shall check against the summaries that each copy of the Bill of Quantities is complete in the number of pages and in the reproduction of each page. The Tenderer's unit rates, prices and extensions shall be entered clearly by hand in black ink.

1.5 Unit rates, prices and extensions shall be given in the United state Dollar with cents taken to two decimal places or any other valid currency value taken to two decimal places.

1.6 The Bill of Quantities has generally been measured in accordance with the Principals of Measurement (International) for Works of Construction (June 1979), as published by the Royal Institution of Chartered Surveyors with amendments made to suit local practice and conditions. The Quantities inserted against items in the Bill of Quantities are estimated quantities for the Works for the purpose of Tender evaluation, and the Tenderer shall be deemed to have checked and verified such quantities in the compilation of his Tender Price prior to the submission of his Tender. Upon the award of the Contract, the priced Bill of Quantities shall be used solely for evaluating interim payments due to the Contractor, and as a schedule of rates for establishing the value of variations.

1.7 The Contractor shall not use the Bill of Quantities for the purpose of ordering materials or arranging Subcontractors. References to these activities shall be the Specifications and Drawings and instructions issued by the Engineer.

1.8 All items in the Bill of Quantities shall be deemed to have a monetary value, whether priced or unpriced. In the absence of a unit rate or price against any item, the cost shall be deemed to have been included elsewhere within the Contract Price and the work described to that item shall be executed by the Contractor without any additional payment.

1.9 The descriptions in the Bill of Quantities may be incomplete and the Tenderer is referred to the Drawings, Photographs

2.0 The contractor is not allowed to change any specification or part of the specification or do additional work or omit any of the item of the BOQ or part of the any BOQ item without return permission of the Engineering Specialist of UNDP

2.0 Format of Descriptions

2.1 In addition to common abbreviations the following have been adopted; POM (I), Principal of Measurement (International) for Works of construction dated June 1979 as published by the royal Institution of Charted Surveyors, London

mm- Millimeter	Pr-
Pair	
M-Linear Meter	No-
Number	
m² - Square Meter	Kg-
Kilograms	
m³ - Cubic Meter	

3.0 Rates

3.1 Rates and Prices shall be all inclusive, comprehensive and include the following:

- a) All obligations imposed by the Contract.
- b) Complying in every respect with the requirements and the considerations of the Specifications and Drawings.
- c) All considerations arising from the definitions incorporated in each Preamble section.
- d) Labor for fixing and all associated costs.
- e) Materials and goods and all associated costs
- f) Fitting and /or fixing materials and goods in any position, hoisting to any height.
- g) Use of Scaffolding, plant, equipment and tools.
- h) Any additional labors usually associated with measured items.
- i) All necessary protection of the Works, removing all casings and temporary covering and making good and clearing away upon completion.
- j) All applicable taxes, duties, charges, government levies, landing charges and transport.
- k) Overheads & profit.

4.0 Measurements

- a) All measurements are net and the rates shall include for all laps, waste, working space and trade or traditional allowances.
- b) The pricing of materials shall take account of the following:
- c) Pricing Preambles, Drawings and specifications shall apply reciprocally between the various sections of the Works, unless
- d) Materials shall be of the specified quality unless otherwise described.
- e) All materials shall be transported, handled, stored and fixed in accordance with the printed instruction or recommendations
- f) Protection of completed work, all casings and temporary coverings and making good and clearing away upon completion.
- g) Joint measurements of the actual work done, which was prepared by UNDP engineer and engineer of contractor is the only measurement will be considered for the payment

5.0 Discrepancies

5.1 Any discrepancy arising in terms of these Preambles and the items contained within the Bill of Quantities must be brought to the attention of the Engineer for his clarification prior to the submission of tender.

6.0 EARTH WORKS

- All quantities for excavation have been measured net with no allowance for increase in bulk or working space.
 - The Tenderer shall allow in this excavation rates for excavating in any material, including running sand and rock, commencing excavation at any depth, excavating below the normal water table, excavating around existing services and mains, supporting the vertical sides of excavations, working space and filling soft spots.
 - Rates and Prices to include,
- a) Excavating by whatever means are necessary including hand excavation in any kind of ground, except rock and boulder rock.
 - b) Trimming or grading ground to produce level surfaces or surfaces to falls or slopes.
 - c) Ramming and compacting sides and bottoms of excavations and supports to sides.
 - d) Keeping free from water including any dewatering as necessary.
 - e) Any hand excavation required around existing services or the like.

7. CONCRETE WORK

- The rates for all concrete work shall include for the following:
- a) Concrete test cubes and testing costs wherever required.
 - b) Mixing, hoisting and placing and compacting on the surfaces of any material or on formwork.
 - b) The forming any construction joints, including any required preparation for adjacent pours, together with expansion joints
 - d) Curing and protecting concrete surfaces from harmful weather conditions
 - e) All necessary keys to concrete surfaces to receive in-situ finishes.
 - f) all necessary shuttering

8. REINFORCEMENT

- The rates for bar reinforcement shall include for the following;
- a) Positioning and protecting starter bars, Straightening (If required) cutting to length and bending reinforcement to required
 - b) Cleaning and wire brushing.

- c) Provision of supports (excluding links and stirrups) steel binding wire and approved/proprietary distance pieces.

9.0 SHUTTERING

- The rates for Shuttering or molds as appropriate shall include for the followings;
 - a) All cutting and waste including raking curved or circular cutting and notching around pipes, ducting and fittings.
 - b) Setting up, strutting and supporting at any height above the structure subject to any limitations imposed by the engineer
 - c) Carefully coating with shutter oil ensuring that no shutter oil is applied to surfaces of reinforcement.
 - d) Rubbing down, filling and making good the surface of concrete after removal of shuttering.

10.0 MASONRY

- The rates for brick walls shall include the following:
 - a) Straight raking curved and circular rough or fair cutting, plumbing at angles, cutting and bonding at angles, openings and
 - b) All necessary keys for in-situ finishing.
 - c) All necessary wall ties, dowels, straps, sleeves. Channels and other like fixings built-in at junctions between brick work and insitu concrete including casting in, drilling, bolting and the like.
 - d) All necessary brick work reinforcement at junctions between brick work and walls construction joints or the like and openings.

11.0 WOODWORK

- The rates for wood work shall include for the following:
 - a) All joints in the running length including structural joints.
 - b) Cutting and fitting to steelwork, trimming around opening, notching, boring and sinking.
 - b) Wood work shall be fixed with non-corroding nails and screws and unless otherwise described all plugging and pelleting shall be deemed to be included.

12.0 FINISHES

- The rates for all work-in this section shall include for the followings:
 - a) Straight, racking, curved and circular cuttings or the like and all consequent wastages.
 - b) All setting out temporary rules, screeds, templates and supports.
 - c) Curing and cleaning off/down upon completion.
 - d) All labors and making good around pipes, ducting and fittings and the like

13.0 Technical Specification

- a) Each module shall be of the "hard wall" type. Windows and doors should be built into the wall panels
- b) The structural design and construction detailing shall meet the minimum requirements of the standards laid down in the applicable British Standard Specifications and Codes of Practice (BSS & CP) or other internationally recognized equivalents to meet the minimum requirements of this Statement of Requirement. The modules shall be safe when supported at four points below the floor, and safe for stacking two story (ground + one upper).

power outlets, internal electrical distribution network and lights, air conditioner as indicated in BOQ mode incorporated completely installed. The A/C unit shall have the ambient temperature range of -5 – to - +45 degree calculus. Modules should be in accordance with British Standard Specifications and Codes of Practice (BSS & CP) or other internationally recognized standard pertinent to

220/380 volts, 50 Hertz, internal domestic power supply. Light fittings shall be of the energy saving fluorescent type.

- d) These modules should be individually stable and capable of withstanding winds of up to 100 Kilometers per hour without the need for additional anchoring, tethering or strapping

e) All pipes and electrical and IT wiring should be of the surface mounted type but concealed within PVC ducts/channels.

- f) These modules should be suitable and safe for emplacement on consolidated/compacted soil or gravel base, four concrete blocks or concrete pads and shall include all components required for anchoring and securing the units to such surfaces.

g) The roof load capacity should be minimum 300 kg/sq. m. compliant with expected snow loads. The floor load capacity should be 300 kg/sq. m. All metal components of the building structure should be hot dipped galvanized to protect them from corrosion.

13.1 CONSTRUCTION

Concrete base: Units should be compatible for placement on to level compacted surfaces or to be installed on raised concrete pads such as concrete blocks at the four (4) corner points.

13.2 FLOOR

The modules should be supplied with the floors completely preassembled, i.e. fitted out and "built-up". The floors should be constructed of minimum 22 mm thick water resistant plywood fixed on to a metal joist framework and finished with "wall to wall" minimum 2.5 mm thick linoleum/vinyl carpet or tiles, solidly and evenly pressed and glued on to the under surface with all joints rendered water tight. The requisite vapor barrier sheeting and adequate insulation for the floors should be included. The bottom surface of the floors should be sealed including two (2) coats of anti-rust painting all complete

13.3 WALLS:

Walls should be of glued sandwich panels, the core being the insulation material. Thick finished with white paint or equivalent. The inner surface should be of white melamine faced boards (or another suitable material proposed) minimum total 8 mm thick, rendered water proof and washable (should other than hard melamine finished be proposed, details of the same should be included in the technical portion of the proposal submitted).

13.4 CEILING PANEL

Ceiling should be of 40 mm, 40 kg/sqm polyurethane sandwich panel or any other suitable material (details of the same should be included in the technical portion of the proposal submitted)

13.5 INSULATION:

The walls, floors, roof, and doors of the office modules shall be adequately insulated to achieve the average Heat Transfer Coefficient i.e. the U-value not exceeding 0.50 W/square meters per degree centigrade temperature difference. Proposers shall provide the calculations and/or details or certification of having met this requirement.

13.6 ANTI-RUST TREATMENT:

All steel components such as structural framework, joists, beams, spikes and/or fasteners should be hot dipped galvanized iron profiles (zinc coated by means of the wet, hot process), coated with anti-rust primer and then with oil based paint, minimum 100 microns. Certification of galvanization of all steel components must be provided by the supplier/manufacturer

13.7 ANTI-TERMITE TREATMENT

All timber and timber based components used in conjunction with the manufacture and fabrication of the subject office modules shall have been treated against termites, chemically or otherwise. The successful proposer considered for award of the contract shall provide certification of the above.

13.8 DOORS

Each office module should be provided with one (1) heavy duty, hinged, lockable, single shutter, UPVC external doors (opening inwards/outwards). The clear door opening size should be minimum 900 mm wide x 2100 mm high (wall opening). These doors should be provided with lock sets, including three (3) keys each and an internal bolting system

13.9 WINDOWS:

The office modules shall be provided with two (2) double glazed windows of size 1500 mm wide x 1200 mm high (wall opening), positioned as illustrated in the attached sketch. These windows shall be fitted into the longer wall panels. Windows should be double glazed, with two glazed shutters, one fixed (removable for repairs) and one sliding. The window frames and shutter frames shall be of durable, heavy duty synthetic material, UPVC or equivalent (proposers should state type of material being offered) or aluminum profiles, painted white. Fly screened shutters should be provided to the sliding side of the windows.

13.10 ELECTRICAL SYSTEM(S):

Electrical system shall be in accordance with IEE Regulation (Institution of Electrical Engineers, England) or European or an internationally accepted Standard. Equipment should comply with British/European Standard or an internationally accepted standard for 380 Volt electrical supply.

Power distribution: Three phases, 4 wire system with continuous earth is required. Main Distribution Board should be made of self-extinguishing PVC or metal construction with protection class of IP40. Incoming switch (Isolator) and bus bars should be of appropriate current ratings. For outgoing circuits automatic circuit breakers with minimum of 20 ampere capacity and short circuit and overload protection should be provided. Each module should be provided with the compatible main distribution board, to be installed or mounted indoors.

Wiring/Cabling: Wiring should be of PVC insulated copper wire of 2.5 square mm size, tested to 600 volt minimum. Separate circuits should be provided for lighting and socket outlets. Standard color coding should be followed. Cables should be PVC insulated, PVC sheathed, tested to 1000 volt minimum. Wiring/cabling should be in PVC ducts.

Lighting: Indoor lighting shall be provided by means of ceiling mounted 4 feet, 36 watt fluorescent single or twin lamps box type fittings. The quantity and positioning of the light fitting(s) should be adequate as to achieve 100 lumens of illumination at the floor level.

Socket Outlets: Two (2) 16 ampere, duplex power sockets shall be provided.

external connector for grounding, firmly secured or welded on to the foundation/base framework. The manufacturer/supplier, if requested, shall submit test certificates for earth continuity, based on the applicable Standard or Code of Practice, for the complete distribution system, including guarantee of grounding safety for electrical outlets.

13.11 TRANSPORTATION AND PACKAGING:

Each module should be equipped with crane lift bracket eyelets and the base of each office module should be provided with fork lift pockets, size approximated 100 mm x 350 mm spaced 2050 mm apart center to center, at the center of gravity point to facilitate lifting and transport operations. The upper corners of the "built-up" office modules should be capable of withstanding the lifting by crane. The office units should be capable of withstanding stacking; ground unit plus one (1) unit stacked one on top of the other during installation and transportation.

13.12 WARRANTY:

The modules and all components complete, including equipment supplied or installed with the subject ablation modules should bear a minimum ONE YEAR warranty against defects in material or workmanship from the date of delivery. Special conditions, if any, pertaining to the above warranty should be clearly stated.

1.13 Specification of the container

Item	details	specification
steel frame	corner fitting	standard container fitting
	base frame	3.0mm steel plate
	secondary frame	2.5mm steel plate
	stand column	2.5mm steel plate
	roof frame	2.5mm steel plate
	Forklift slot	3.0mm steel plate
	strength plate	6mm steel plate
panel	wall panel	50mmEPS sandwich panel
	wall panel	50mmEPS sandwich panel
	ceiling plate	50mmEPS sandwich panel
	surface plate	0.5mm color steel plate
base	base floor	1220*2440 plywood floor
	surface floor	porcelain tiles with 20mm cement mortar (1:2) on top of the strong timber with appropriate adhesive material and 1" chicken mess
door and window	door	aluminum sandwich panel door
	window	aluminum sliding window 0.9m*1.2m

compressive project	window cladding	aluminum
	roof insulation	75mm glass wool
	wall slot	0.8mm stainless blending
	corner line	50 aluminum slot,
	accessories	

14. MINIMUM REQUIRED EQUIPMENT

The bidder must provide supporting documents to prove that below mentioned essential equipment to be made available for the Contract for the each specific site/lot, which each bidder is applying for shall be:

- a. One Concrete mixture
- b. One concrete vibrator
- c. Two Dumping trucks
- d. One number of 10,000 liters water tank
- e. One Heavy container carrier
- f. One Crane to the capacity to handle completed container
- g. 10 kva generator to work continuously 8 hours

15. SITE HANDOVER

The construction will be within the boundary of Qurania school compound, which is at the coordination of N: 29° 35' 38.49 and E: 12° 46' 48.38

The actual construction location within the school compound will be decided at the site and handed over to the selected contractor

The contractor will not be provided any storage facilities at the site. The contractor have to establish the site office and security fence to protect the construction site. The contractor have to make sure that this activities will not disturbed the regular activities of school

16: Shop Drawings

Only general drawing is issued along with the bid document. Contractor have to submit the shop drawings for any other activities such as foot path, electrical layout, air conditions position, sealing fan positions and get prior approval from UNDP engineering specialist. The bidders have to quote the cost of the shop drawings within their quotation

17: Work Programme

All the bidders have to submit the proposed work programme for the period of six months