Lebanon Emergency Assistance Project (LEAP)

Rehabilitation of Governmental Hospitals

Tebnine, Nabatieh, Hasbaya and Marjayoun – South Lebanon

Name of Project:	Lebanon Emergency Assistance Project (LEAP)
Contract Title:	Rehabilitation of Governmental Hospitals – Tebnine, Nabatieh, Hasbaya and Marjayoun, South Lebanon
Loan No.:	9841 - LB
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Tender Documents

BILL OF QUANTITIES

Tebnine Governmental Hospital
Nabatieh Governmental Hospital
Hasbaya Governmental Hospital
Marjayoun Governmental Hospital

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Part 1

Preamble and Bill № 1: General Requirements

Applicable to All Hospitals

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Description

Preamble

Bill № 1: General Requirements

Preamble

Item	Description

1 INTRODUCTION

1.01 The rules contained in this Preamble apply equally to both proposed and executed works.

1.02 The Bills of Quantities are to be read and construed in association with the Specification and this Preamble. Information which is given in the Specification is identified by cross references included in the descriptions of work in the Bill of Quantities.

1.03 Where work cannot be fully described or where the quantity of work required cannot be accurately determined, it is given as an item or a Provisional Sum.

1.04 Unless the term meter, used in this Preamble, is proceeded by the words square or cubic it is deemed to be linear.

1.05 The rates inserted by the Tenderer in the Bill of Quantities shall be in words and figures. In the case of discrepancy between the two, the rates written in words shall govern.

1.06 This Preamble and Bill № 1: General Requirements apply to the Bills of Quantities of all four hospitals (Tebnine, Nabatieh, Hasbaya and Marjayoun), which together form the Bill of Quantities of the Contract.

1.07 Where an item is found to have already been carried out by the Employer, the hospital or any other party, the Project Manager will issue a Variation omitting it; the omission shall be valued from the priced Bill of Quantities and the Contract Price will be reduced accordingly, with no entitlement to loss of profit or to extension of time. Dated pre-condition photographic records shall be prepared jointly at the Site Handing Over of each hospital, before works begin.

1.08 The Contractor will be paid only for works actually executed by the Contractor and certified by the Project Manager. The Project Manager shall not certify the value of any item not executed by the Contractor, including any item dealt with as an omission.

1.09 The items in the Bill of Quantities do not necessarily contain a full description of the required Works; the Contractor shall allow in his unit rates for all obligations, liabilities and services stipulated in the relevant sections of all Contract Documents to provide and maintain a complete construction and installation of each item.

Item	Description

1.10 Before pricing, the Tenderer shall visit the four hospital sites and shall satisfy himself as to the meaning and the estimated quantity of each item in the Bill of Quantities. The rates inserted by the Tenderer shall be deemed to cover all costs, expenses, risks, liabilities, obligations and services described in the Contract Documents, including working within operating hospitals, phasing of the Works, infection prevention and control measures, sundry labours, overhead and profit.

1.11 The Contractor shall allow in his rates for protecting all Works and the existing finishes, equipment and services of the hospitals against damage by whatever method deemed necessary and approved. Any work damaged during the Works shall be replaced or made good at the Contractor's expense and to the Employer's satisfaction before the Works are handed over.

2 <u>QUANTITIES</u>

2.01 Quantities set out in the Bills of Quantities are the estimated quantities and they shall not be taken as the actual and correct quantities for ordering and purchasing of

2.02 Works shall be measured net as fixed in position in accordance with the rules contained in this preamble or except where otherwise stated in a measurement rule applicable to the work.

2.03 Dimensions used in calculating quantities are taken to the nearest integer (0.5 and over is regarded as 1 and less than 0.5 is disregarded).

2.04 Quantities measured in tonnes are given to two places of decimals. Quantities measured in other units of mass are given to the nearest whole unit except that any quantity less than one unit is given as one unit.

2.05 Unless otherwise stated, where minimum deductions for voids are dealt with in this Preamble they refer only to openings which are within the boundaries of measured areas. Openings which are at the boundaries of measured areas are always deducted irrespective of size.

Item	Description

3 DESCRIPTIONS

3.01 Headings to groups of items in the Bill of Quantities are to be read as part of the descriptions of the items to which the headings apply.

3.02 Dimensions are stated in descriptions generally in the sequence, length, width, height. Where ambiguity could arise, the dimensions are identified.

3.03 Dimensions given in descriptions are in millimeters unless otherwise indicated.

3.04 Unless otherwise specifically stated in the Bill of Quantities or herein, the following are deemed to be included in all work:

- labor and all costs in construction therewith,
- materials, products, goods and all costs in connection therewith,
- Contractor's equipment, including but not limited to construction plant, scaffolding, tools, vehicles and the like and all costs in connection therewith,
- assembling, fitting and fixing materials, products and goods in position,
- any method of fixing, fixing to any nature of base or background including preparation and providing fixing materials,
- breaking down for transport and installation and subsequent reassembly of composite items manufactured
- waste of materials,
- square, raking and curved cutting,
- work at any location or height,
- work in small, isolated quantities,
- protection of all work,

Item	Description

- protection of all existing structures, utilities, site improvements, trees and vegetation, features, pavements and other facilities on and adjacent to the site, which are to remain upon completion of the work,
- all other enabling tasks associated and subsidiary components and items of work which are indicated or reasonably inferred from the Specification and necessary to perform and complete the work described,
- establishment and overhead charges and profit.

3.05 Except where items are included in the Bill of Quantities and are priced separately by the Contractor therein, provision of the following are deemed to be included with

- site administration and security,
- insurances,
- bonds and guarantees,
- water for the Works,
- lighting and power for the Works,
- temporary accommodation for the use of the Contractor and the Engineer,
- temporary telephones and the cost of calls for the use of the Contractor and the Engineer,
- temporary roads, hard standings, crossings and the like,
- temporary fencing, hoardings, screens, fans, footways, guardrails, gantries and the like,
- giving notices and making applications, including the payment of fees and charges in connection therewith,
- safety, health and welfare of workpeople,
- compliance with traffic regulations
- maintenance of public and private roads, services and adjoining property,

Item	Description

- control of noise and pollution, prevention of fire and compliance with all other statutory and general obligations,
- removing rubbish, protective casings and coverings, and cleaning the Works on completion,
- drying the Works,
- testing and commissioning of service installations including the provision of fuel,
- samples of materials and testing of materials including providing equipment for testing,
- design, co- ordination, installation and as- built record drawings and the like,
- preparation and submittal of reports, records, certificates, notices, proposals, designs, details, calculations and other information and data required by the Specification,
- allow in unit rates for all other requirements, services, provisions, liabilities and obligations contained in the General Requirements and Conditions of Contract.
- Maintaining, adapting, clearing away and making good are deemed to be included with the items for temporary works.
- Payment of any customs and other import duties, harbor and port dues, wharf age, landing, pilotage and any other charges or dues including demurrage charges on any Goods or other things required for or in connection with the Works entering or leaving the country.

Item	Description

4 SYMBOLS, ABBREVIATIONS & DEFINITIONS

4.01 The following symbols and abbreviations are used in this Preamble and in the Bills of Quantities:

Lump Sum ….	LS
Linear Meter ….	m
Square Meter ….	m^2
Cubic Meter ….	m^3
Centimeter ….	cm
Millimeter ….	mm
Number ….	№
Kilogramme ….	kg
Tonne ….	T
Percentage ….	%
Nominal Diameter ….	Φ
Quantity ….	Qty
Drawing ….	Drg / Dwg
Mega Pascal ….	MPa

4.02 The following definitions apply to all work:

- 'horizontal' means level or sloping work not exceeding 15º from the horizontal
- 'sloping' means sloping work exceeding 15º but not exceeding 80º to the horizontal,
- 'vertical' means work exceeding 80º from the horizontal,
- 'curved' means curved in any direction or in more than one direction and to any radius or radii and includes curved work to domes, vaults and the like.

4.03 The term 'extra over' means that work so described involves extra cost over the basic work in which it occurs. No deduction of the quantity of basic work is made for the extra over work.

Item	Description

5 MECHANICAL ENGINEERING SERVICES PREAMBLE

5.01 Mechanical equipment has been measured in complete items unless otherwise stated in the specification and bill item. The rates for all items shall include for supplying all materials, fixing, terminating and connecting all accessories and components for a complete and functional

5.02 The Contractor shall consult the relevant sections of the specification when query or doubt arise.

5.03 The Contractor shall consult with, and employ specialist sub-contractors for specific items of work as identified in the specification. All costs associated with such works shall be included in the tender. Specialist sub-contractors will be of recognized expertise, acceptable to the engineer.

5.04 All items of mechanical plant shall be connected to the control and power systems by wiring out from the mechanical control centers. All wiring shall be carried out by competent and qualified electricians under the mechanical scope of works.

5.05 Rates/prices entered against the items shall include for all costs in connection with the following:

a. Connection items of plant and equipment as necessary to the control and power systems.

b. Provision of starter's, protective devices, automatic change over/load shedding facilities, remote & local isolation/emergency shut off as appropriate, control functions and alarms to achieve the intent outlined in the Control Section of the Specification. All motors to be of the 'Low Energy' type as specified.

c. Off loading, storing, connecting up, protecting as necessary, testing, flushing, cleaning, charging, balancing, commissioning and testing individual items of plant as well as complete systems installations all as specified & directed by Engineer.

d. Supports, brackets and fixings of every description required to complete the works.

e. Cutting or forming all holes, mortises, chases and the like in the structure to facilitate the various works and making good in all trades as necessary;

f. Coordination with other associated trades, designers and specialists, at the time preparing shop drawings and during the works progress.

g. Cost of the items in the BOQ includes all works, materials and labors of all items mentioned above.

Item	Description

6 ELECTRICAL ENGINEERING SERVICES PREAMBLE

6.01 Rates for all items of equipment and materials shall be inclusive of all labor, electric power during installation and testing oxygen, acetylene, water, transport, rigging, temporary works, stores, offices, instruments insurance, customs, duties, overhead, profit certificates, samples, tests, supply of all information and data, supply of catalogues, charts, curves, submittals, certified drawings and all other information and services called for in the specification, all fully connected up and good working order. Rates shall also include for:

a. All builders work in connection with fixing of supports brackets, clips as required

b. Cutting or forming all openings, mortises, chases, etc., in floors, walls and ceiling required for the installation and making good after

c. Construction of manholes, handholes and the like

d. Fitting of access doors in walls and ceilings.

e. Supplying and fixing supports, brackets and clips as required.

f. Cutting away and making good after all trades for frames, sleeves, cables, cable trays, chases for conduits and fixing of electrical boxes, conduits, accessories.

g. Excavating and back filling trenches for cables, pipes and providing and laying precast concrete protective tiles.

h. Repair, repaint and generally make good and leave in perfect condition all the work executed by him under the

I. All other work in connection with the installation that is not measured separately.

j. Electrical equipment is enumerated unless otherwise stated and the rates shall include for supplying all materials labor, plant, fixing, terminating and connecting accessories, etc.

k. Feeder cables are measured in linear meters from the boards to equipment, or from the distribution board to sub-main, etc. Rates shall include for the supply of materials, laying, terminating, trenching, cable trays, ducting, etc.

Item	Description
l.	Lighting points are enumerated and the rates shall include all necessary wires, conduits, boxes and accessories, etc., required to provide power from the LP boards switch panels and switches are measured separately.
m.	Lighting fittings are enumerated and the rates shall include the supply, installation and connections.
n.	Disconnecting/Isolating switches are enumerated and the rates shall include all necessary wires, conduits, boxes etc. If the switches are fed by cables, then the cables are measured separately.
o.	Lighting switches, sockets, fan/coil unit spur boxes, fused spurs for fans, kitchen, laundry equipment outlets, toilet fans points are enumerated and the rates for each shall include all wiring, conduits, accessories etc.
p.	Earthing systems to include for all materials, labor, fixing, terminating, earth pits, rods, conductors, excavations.
q.	Main distribution board, sub-mains, lighting and power panels, panel boards, etc., are enumerated items and rates shall include all the board installed completely as specified. (cables are measured separately)
r.	End of session bell system is one item. Bells and bell push button, are enumerated and include all conducting, wiring, controls, and all necessary accessories.
s.	Lightning protection system, roof conductors, tie conductors down conductors are measured in linear meters completely installed.
t.	Earth pits are enumerated. The cost shall include all materials, wiring, fixing, supports, etc., and bolting copper conductors to rebars to have a complete working system.
u.	The rates for automatic transfer switches include the switches completely installed with all ancillary equipment, control, modules to have a complete working system.
v.	Cost of the items in the BOQ includes all works, materials and labors of all items mentioned above.

End of Preamble

Bill № 1: General Requirements

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
	Notes				
	These General Requirements are applicable to the whole of the Works at the four hospitals. If the Tenderer wishes to price any of the items contained herein, then each such item, clause, or sub-clause must be individually priced. The Tenderer shall not enter lump sums covering more than one or all items, clauses and sub-clauses. The General Requirements items shall be priced by the Contractor and shall not be considered included in the rates for Works items elsewhere in the Bills of Quantities, as these Works items may be subject to omissions as described in the Preamble and in the Conditions of Contract.				
1	**Preliminaries**				
1.01	Insurance Provide the following insurances from an approved insurance company, all as detailed in the Conditions of Contract. - Professional Indemnity Insurance. - Contractor's All Risk Insurance. - Plant and Equipment Insurance. - Workmen Compensation Insurance. - Third Party Insurance. *Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1.02	Programme of Works Prepare and submit to the Engineer for approval a detailed Programme for the construction at each of the four hospitals, showing the proposed order, phasing and method to execute the Works, the dates upon which the various elements, trades, sections and items of Works will be started and completed, and the cash flow estimate, complete including monthly forty-five day program, all necessary revisions and updates, monitoring, all supporting data, computer analysis schedules, and all other related works, all to Engineer's satisfaction. *Lump Sum in Words:*	LS	1		
1.03	Mobilization and Demobilization Mobilization to the four hospital sites and demobilization on completion of the Works, including site offices, stores and welfare facilities for the Contractor's personnel at each hospital, in locations agreed with the hospital administration, and removal of all temporary facilities and reinstatement of the areas on completion. *Lump Sum in Words:*	LS	1		
1.04	Water for the Works Provide until handing over, clean and uncontaminated Water for the Works and suitable for all purposes, complete including coordination with all relevant authorities, transportation to site, pipework, pumps, connections and storage facilities where necessary. Water shall not be drawn from the hospital supply without the written approval of the hospital administration. *Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1.05	Electrical Power for the Works Provide all necessary adequate Electrical Power Supply required for the Works until handing over using silent generated power, complete including all necessary connections, fuel, maintenance, and if main power is available, allow for all necessary coordination and connections with relevant local authorities, and for all charges and fees incurred during the total duration of the Contract. The Contractor shall not connect to the hospital electrical supply or emergency generators without the written approval of the hospital administration.	LS	1		
	Lump Sum in Words:				
1.06	Protection Fence with Access Provide, maintain and remove upon completion of works, a protection fence around the external work areas, material storage and debris collection areas at each hospital and where needed, with necessary access, keeping the hospital entrances, ambulance routes and emergency exits open at all times, to the satisfaction of the Engineer, and in accordance with the Conditions of Contract and relevant authorities' regulations.	LS	1		
	Lump Sum in Words:				
1.07	Directional and Safety Site Signage Provide, maintain and remove upon completion of works, directional and safety signage around the Works at each hospital and where needed, in Arabic and English, complete all as specified, shown on approved shop drawings, to the satisfaction of the Engineer, and in accordance with the Conditions of Contract and relevant authorities' regulations.	LS	1		
	Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1.08	Safety Procedures and Protection Provide all necessary safety procedures and protection on site to all facets of work, to staff workmen, to hospital staff, patients and visitors, and to third party, in accordance with the Conditions of Contract, CDR Safety, Health and Environmental Regulations, the Occupational Health and Safety (OHS) Management Plan, and all other local Authorities Standards and Regulations.	LS	1		
	Lump Sum in Words:				
1.09	Daily Cleaning during Construction Execute daily cleaning to keep the work, site and adjacent hospital areas free from accumulations of waste material, rubbish and windblown debris, resulting from construction operations, complete including removing from the site periodically and disposing off at legal approved disposal areas away from the site, in full coordination with the Employer and the hospital administration.	LS	1		
	Lump Sum in Words:				
1.10	Coordination with Hospital Administration, MoPH and Other Authorities Coordinate work with the administration of each hospital, the Ministry of Public Health (MoPH) and other applicable Authorities, including the scheduling of works in or near clinical areas, shutdowns of services and access to the work areas, and abide by their regulations.	LS	1		
	Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1.11	Hospital Operations Continuity and Infection Prevention and Control Prepare, implement and maintain the Hospital Operations Continuity and Infection Prevention and Control Plan approved by the Engineer and the hospital administration, complete including phasing of the Works, dust-tight temporary partitions separating work areas from occupied areas, negative-pressure enclosures with HEPA-filtered extraction where works adjoin clinical areas, protection of air-handling systems, sticky mats, covered transport of debris through agreed routes and at agreed times, out-of-hours working where required, and temporary arrangements to maintain medical services, utilities and emergency access while areas or systems are out of service.	LS	1		
	Lump Sum in Words:				
1.12	Environmental and Social Management Implement the Environmental and Social Management Plan (ESMP) Checklist, the Contractor's ESMP and the approved Management Strategies and Implementation Plans for the four hospitals, complete including provision of the Environmental, Occupational Health and Safety and Social staff, the Code of Conduct and the GBV/SEA awareness training of the Contractor's personnel, the workers' grievance mechanism, personal protective equipment, management of hazardous materials and wastes including asbestos-containing materials and lead, environmental and OHS monitoring, and monthly ES reporting, all as specified.	LS	1		
	Lump Sum in Words:				
1.13	As-Built Drawings, Operation and Maintenance Manuals and Training Prepare and submit as-built drawings, operation and maintenance manuals, warranties and testing and commissioning records for all works and installations at each hospital, and train the hospital technical staff in the operation and maintenance of the installed systems, all as specified and to the Engineer's satisfaction.	LS	1		
	Lump Sum in Words:				
	Page Total Carried to Collection				

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2	**Additional Items**				
	The Contractor shall list and describe below any Additional Items that he considers to be of value and for which he wishes to include in his Tender, and shall include details of quantities and rates accordingly.				
2.01	*Lump Sum in Words:*	LS	1		
2.02	*Lump Sum in Words:*	LS	1		
2.03	*Lump Sum in Words:*	LS	1		
2.04	*Lump Sum in Words:*	LS	1		
2.05	*Lump Sum in Words:*	LS	1		

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Collection

Page №		Amount (US $)
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1.6	.....	.....
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Part 2

Tebnine Governmental Hospital

Bills of Quantities

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Description

Preamble and Bill № 1: General Requirements – refer to separate document applicable to all hospitals

Bill № 2: Civil and Architectural Works

Bill № 3: Mechanical Engineering Services

Bill № 4: Electrical Engineering Services

General Summary

Bill № 2: Civil and Architectural Works

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**SITE PREPARATION AND DEMOLITION**				
1.1	**Demolishing and Removal of Debris**				
1.1.1	The works include all types of demolition and the removal of debris and damaged elements such but not limited to, the following: - Existing plastering and concrete items such as foundations, columns, slabs, etc. - Damaged Tiling and Tiling to be replaced (floors and - Toilet and Kitchen fixtures and pipes installation of all - Counter tops, bases and sinks - Water tanks of different types - Hollow concrete block walls or concrete walls of all sizes - Demolition of the existing ramps / Stairs and the execution of the given plans and specifications - Including the necessary equipment for the removal of debris and all resulting materials - etc. *Rate or Lump Sum in Words:*	m3	80		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2	**EXCAVATION & BACKFILLING WORKS**				
2.1	**Excavation for Walls Footings**				
2.1.1	Excavate to any depth in any type of material to reach the required level, INCLUDING for breaking out any existing walls, paving, footings, underground walls, obstructions, utilities and the like; supporting sides of excavations; shoring, strutting, supporting and protecting existing structures adjacent; dewatering; trimming, compacting and testing; backfilling and filling to final design elevations; removal of surplus excavated material from site. Work to include: - Labour and equipment. - Repair any damages (pavements, slab on grade, roads, passages, etc…). - All needed items and as per the Engineer instructions.				
	- etc. *Rate or Lump Sum in Words:*	m3	70		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2.2	**Backfilling**				
2.2.1	Supply, placement, and compaction of suitable backfill material, including selected fill and granular fill, free of debris, organic material, and large rocks. The work encompasses backfilling using well graded base coarse with fine materials composition not greater than 1.5% (CBR > 80%) of excavated areas around foundations, trenches, retaining walls, under slab on grade, and other structures. - Preparation of the backfill area, removal of excess material and ensuring a clean and stable surface for backfilling. - Placement of backfill in uniform layers, not exceeding 200 mm. - Compact each layer to maximum dry density as required (99%). - Conduct field density tests Work to include: - Labor and equipment: - Transportation - All needed items as per drawings, technical specifications and the Engineer instructions.				
	- etc. *Rate or Lump Sum in Words:*	m3	50		
3	**CONCRETE** All cement to be ordinary Portland cement and all shuttering should be plywood to ensure acceptable fairfaced concrete faces: - Use vibrations during casting concrete - Cost of concrete to include materials, labors, steel reinforcement and casting - Contractor should submit shop drawings as per the contract drawings				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
3.1	**Blinding**				
3.1.1	Supply, Cast and Vibrate Concrete for Blinding under footings with a cylindrical compressive strength "f'c= 20MPa" *Rate or Lump Sum in Words:*	m3	11		
3.2	**Reinforced Concrete** Supply, cast and vibrate concrete for all structural elements with a cylindrical compressive strength "F'c=35Mpa", cost to includes: - Surface Preparation - Formwork - Steel reinforcement - Watering and Curing the concrete - Labors - Cores in existing slab and beams (for method statement refer to drawings) - Sawcut in existing slab. - Drilling, cleaning, epoxy resine and steel dowels - All needed work as per Specifications and the Engineer instructions				
3.2.1	Partition Walls Footings (300mm thick) *Rate or Lump Sum in Words:*	m3	12		
3.2.2	Partition Walls (250mm thick) *Rate or Lump Sum in Words:*	m3	45		
3.2.2	Partition Walls (200mm thick) *Rate or Lump Sum in Words:*	m3	30		
3.2.3	Slab on Grade (150mm thick) *Rate or Lump Sum in Words:*	m3	8		
3.2.2	Concrete Pads for Equipment (150mm thick) *Rate or Lump Sum in Words:*	m3	2		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4	**MASONRY**				
4.1	**Hollow or Solid Concrete Blocks and Claustra** Supply and install concrete blocks as per drawings Work to include: - All places as per the drawings, and the Engineer - Materials - Cement mortar and the use of extruded nets and reinforcement by means of metal gates and the placement of angles of galvanized steel iron of concrete columns thickness of 4 mm every 60 cm - Labors and all items needed and instructions by the Engineer				
4.1.4	15 cm hollow concrete blocks *Rate or Lump Sum in Words:*	m²	170		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.2	**Rehabilitate and Clean masonry walls showing deep crack** The repair method requires the replacement of some stone masonry that has been damaged by the crack. It will include the use of horizontal reinforcement. Remove cracked stones in a “toothed” pattern to the extent that a sound repair is possible. Clean the crack if it continues to extend into the mass masonry and grout with non shrink mortar. Key new stone in stone masonry perpendicular to the wall surface in addition to the “toothed” and stepped pattern parallel to the wall surface. With larger more extensive cracks remove additional stones in a stepped pattern on both sides and the top of crack and restore by installing new stones. With smaller repairs lesser amounts of stones will have to be removed. Place horizontal reinforcement every 5th course. Mechanical ties to secure geogrid may be required. The horizontal reinforcement shall bridge over the crack and extend the length of new stone masonry. Replicate the coursing pattern of the existing exposed surface. Place new stones that are not exposed in an alternating stretcher-header bonding pattern to wall surface or top of wall. Construct the new stone masonry in complete horizontal courses where possible. Do not construct more than 5 courses before allowing masonry to dry. Lay subsequent stone courses on fresh wet mortar. Apply mortar at head joints as well as bed joints and finish one-half the width of the mortar joint below the surface of the stones.				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.2.1	Rehabilitate Natural Stone Facades Rehabilitate works on natural stone facades work should be by replacing the damaged stone and not filling with mortar. Work to include: - Determine location of damaged stone walls and location of dampness. Broken or damaged pieces to be replaced, then cleaning & leveling; without affecting the adjacent undamaged areas - Treat the dampness and the causes - Repair the stone by renewing the damaged and replace it with new ones with same stone and apply one layer of water proofing transparent paint - Clear the place and infill in between the coarse (Lining) - All works as instructed by the Engineer *Rate or Lump Sum in Words:*	m²	200		
5	**METAL WORKS**				
5.1	**Provide New Steel Work (Door & Windows)**				
5.1.2	Provide new burglar proof protection *Rate or Lump Sum in Words:*	m2	12		
5.2	**Rehabilitate and Maintain the Existing Steel Work (Burglar Proof Protection + Opening)** Rehabilitate the existing steel windows or doors as per specifications and drawings and the Engineer instruction Work to include: - Remove all damaged members and replace by new ones - Rub completely to secure all parts and use putty to make faces smooth - Apply two layers of anti rust paint - Apply putty - Apply three layers of epoxy external paint - All needed items as per the Engineer instructions				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.2.1	Rehabilitate existing steel doors *Rate or Lump Sum in Words:*	m2	3		
5.2.2	Rehabilitate existing steel gates (6x2m) *Rate or Lump Sum in Words:*	№	1		
5.2.3	Rehabilitate existing steel prefabricated portacabins *Rate or Lump Sum in Words:*	m2	54		
5.2.3.1	Supply & install new steel prefabricated portacabins for guard house *Rate or Lump Sum in Words:*	№	1		
5.2.3.2	Rehabilitate steel prefabricated portacabins for electrical room related to O2 generator *Rate or Lump Sum in Words:*	№	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.3	**Structural Steel Elements for Installation of Lead Panels on Ceilings (and Walls if necessary)**				
5.3.1	Supply and install painted steel structure elements (UPN 60 @ 300mm or others as required) of yield strength 275 MPa (S275), for PET/CT units area including but not limited to columns, beams, bracings, base plates, anchor bolts, connection plates, stiffeners, and all accessories. Work to include: - Materials - Labors - Fixation - Welding - Sand blast and Paint (primer, intermidiate and final coat) - All needed items as per the Engineer instructions **The contractor should submit a full design package, including calculation notes, full details, and shop drawings for all types of metal fabrications, for approval prior to the commencement of works on site.**	Tons	7		
	Rate or Lump Sum in Words:				
5.4	**Rehabilitate Existing Brick Tile Roofing**				
5.4.1	Rehabilitate & Replace as needed existing brick tile roofing system with all necessary works and accessories (clean convert roof, apply PU isolation paint as specified, install hollow steel grid for fixation), and all needed items as per engineer instruction	m²	350		
	Rate or Lump Sum in Words:				
5.6	**Steel Stair** Provide Galvanized Steel Stair with related platform as per drawings. Contractor to submit complete shop drawings with related calculation for approval.				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.6.1	Rehabilitate Steel Stair Rehabilitate existing steel stair and remove damaged members and replace by new works to include: - Materials similar to the existing - Remove existing paint & clean deeply as per SSPC code and ISO 8501 - Apply epoxy paint as per specification - All needed items as per Engineer instructions for 2 floors *Rate or Lump Sum in Words:*	LS	1		
5.8	**Replace and/or Rehabilitate Exhaust pipe for generator icluding connections**				
5.8.1	Replace and/or Rehabilitate black steel pipe same size including 5cm insulation by adding /removing steel supports necessary as per site conditions and existing form. Work includes all necessary equipment, labor, materials, accessories, etc. Contractor to submit shop drawings prior to commencement and as per engineer approval. *Rate or Lump Sum in Words:*	LS	1		
7	**THERMAL AND MOISTURE PROTECTION**				
7.0	**Preliminaries**				
7.0.1	Provide a performance bond equivalent to 50% of the cost of chapter 7 of this part of the BOQ, and to be refunded for a period of five years from the date of final handing over. *Rate or Lump Sum in Words:*	Item	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
7.0.2	Dismantle and remove all existing materials on roof: Tiles, Membranes, existing water tanks, Mechanical Pumps and Systems, Electrical Systems, skirting, etc.; and all equipment as per engineer instructions The unwanted/ unused materials should be cart away from the site The remaining items should be reinstalled in a proper way as per engineering instructions *Rate or Lump Sum in Words:*	LS	1		
7.1	**Roof Waterproofing**				
7.1.1	Works should be applied and done by experts with previous experience in similar works. Works to include: - DEEP cleaning of all surfaces and carting away of dust & debris - Concrete pad for water tanks as indicated - Sand cement screed layer to Provide proper slopes minimum 0.75% - Expansion joint sealant to be done respecting back rod, un-bonding tape, adequate thickness of sealant, type & finish of sealant (fire rated) & design drawings especially on roof & planters. - Provide tackle coat (Proper) - Provide 4mm thick, SBS layer from an approved manufacturer - Provide protection for all pipe works and drains - Provide heat insulation layers of 35 KG/m³ where required - Provide Geotextile layers - Provide all aluminum flashing with mastic - Provide finishing material as required - All as specified and approved shop drawings *Rate or Lump Sum in Words:*	m²	1,100		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8	**DOOR AND WINDOWS**				
8.1	**Wooden Doors and Windows** Supply and install all timber work with all related items The joinery works should be of the first class type and as per specifications and drawings Work to include: - Material and labors - All accessories to be heavy duty (Hinged, Lock, Glass vision, as required, etc.) - The frame for any width (Steel, Wood, etc.) - Paint as follows: - Anti rust layers - Putty + one layer of undercoat - Three layers of epoxy paint - Apply and fix 6mm wired clear glass - View Permitting glass opening where needed - remove the existing timber panels - repair the edges - The Contractor should submit shop drawings - All needed items as the Engineer instructions				
8.1.1	**Timber Doors** Supply and install flush timber door as per drawings with laminated plastic facing and the door should have 10cm width frame between the plywood and fill with timber beads by tongue and groove each 5cm, and the door edges should behead wood and fixed by tongue and groove frames should be as specified, with fixed glass panel vision window, and similar to existing, and to the Engineer's instructions - Works included, all accessories and fittings, pre-painting and finishing paint sides of doors and box frames. - All works should be done as per the Engineer instructions				
8.1.1.2	Provide new single leaf wooden door 1.5hrs Fire Rated *Rate or Lump Sum in Words:*	m2	71		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.1.3	Provide new timber doors with double swing opening F/R and related accessories	№	5		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.2	**Wood doors and Steel frames for PET/CT Units** Pressed metalic steel profile door frames as specified and detailed comprising of painted steel door frame fabricated in 2 mm thick steel sheets with a frame width to cover completely the related door jambs' opening, powder coating paint finish and cement sand (1:3) mortar poured as backing to all frame jambs and top and all other related works, fabricated, supplied and installed completely to suit individual door dimensions stated and various wall thicknesses indicated; INCLUDING fixing accessories, supports, anchors, grout filling, fasteners and fixings; protective coatings and sealants ; and all other related ancillaries as indicated or required to the consent of the engineer and to his approval. Wood door leaf, 44 mm thick, fabricated in plywood with laminated finish (Formica Finish) on both sides and reinforced with solid wood for lock and handle, and edge leaf frame/door lipping in solid Frake wood with lacquer paint finish, detailed and scheduled, installed complete; INCLUDING preservative treatment, all ironmongery for door hardware sets (mid rail. door closer, door lock with cylinder or electric door strike / magnetic lock, kick plate for double leaf doors on patient path and as requested by engineer); glass vision panels, and aluminum louvres; linings, architraves, edges, marble saddles or thresholds, trim and accessories; intemescent strip; prefinishing or finish painting; and all other related ancillaries as indicated or required.	m2	11		
	Rate or Lump Sum in Words:				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.3	**Fire rated timber doors** Fire rated timber doors 2hrs complete with hardware set Supply and install internal fire-resisting timber doorsets, 120 minutes (classified E120 or EI120 as required), complete with leaves, frames (steel or timber as shown), architraves, glazing where indicated, intumescent & smoke seals, ironmongery/hardware and finishes; doorsets shall be tested to BS EN 1634-1 and classified to EN 13501-2; smoke control to BS EN 1634-3, class Sa (ambient) [or S200 if specified], with ambient leakage ≤ 3 m³/h·m at 25 Pa and a sealed threshold; essential hardware—hinges EN 1935 (Grade 13), closer EN 1154, lock/latch EN 12209, cylinder EN 1303, keeps, seals, drop seal, viewer, door stops—must be exactly as listed on the doorset's primary test evidence/third-party certificate; minimum 3 hinges per leaf (or as per tested configuration); construction, glazing aperture/beads, frame backfilling and finishes strictly per the classified configuration; install to BS 8214 and supply tamper-proof certification labels and O&M documentation. *Rate or Lump Sum in Words:*	m2	5		
8.1.4	**Aluminum Louvers** Aluminum Louvers *Rate or Lump Sum in Words:*	m2	2		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)

8.1.5 **New Wood doors and Steel frames with lead lining**

To PET CT Unit: Pressed metalic steel profile door frames with continuous lead lining 2 mm as specified and detailed comprising of painted steel door frame fabricated in 2 mm thick steel sheets with a frame width to cover completely the related door jambs' opening, powder coating paint finish and cement sand (1:3) mortar poured as backing to all frame jambs and top and all other related works, fabricated, supplied and installed completely to suit individual door dimensions stated and various wall thicknesses indicated; INCLUDING fixing accessories, supports, anchors, grout filling, fasteners and fixings; protective coatings and sealants ; and all other related ancillaries as indicated or required to the consent of the engineer and to his approval.

Wood door leaf, 44 mm thick, fabricated in plywood with laminated finish (Formica Finish) on both sides, with continuous lead lining 2 mm and reinforced with solid wood for lock and handle, and edge leaf frame/door lipping in solid Frake wood with lacquer paint finish, detailed and scheduled, installed complete; INCLUDING preservative treatment, all ironmongery for door hardware sets (mid rail, door closer, asymmetry door lock with cylinders or electric door strike/ magnetic lock, kick plate for double leaf doors on patient path and as requested by engineer); glass vision panels, and aluminum louvres; linings, architraves, edges, marble saddles or thresholds, trim and accessories; intemescent strip; prefinishing or finish painting; and all other related ancillaries as indicated or required.

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Rate or Lump Sum in Words: .....

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)

8.1.6 **New Wood doors and Steel frames with lead lining**

Doors to PET CT doors
Pressed metalic steel profile door frames with continuous lead lining 4 mm as specified and detailed comprising of painted steel door frame fabricated in 2 mm thick steel sheets with a frame width to cover completely the related door jambs' opening, powder coating paint finish and cement sand (1:3) mortar poured as backing to all frame jambs and top and all other related works, fabricated, supplied and installed completely to suit individual door dimensions stated and various wall thicknesses indicated; INCLUDING fixing accessories, supports, anchors, grout filling, fasteners and fixings; protective coatings and sealants ; and all other related ancillaries as indicated or required to the consent of the engineer and to his approval.

Wood door leaf, 44 mm thick, fabricated in plywood with laminated finish (Formica Finish) on both sides, with continuous lead lining 4 mm and reinforced with solid wood for lock and handle, and edge leaf frame/door lipping in solid Frake wood with lacquer paint finish, detailed and scheduled, installed complete; INCLUDING preservative treatment, all ironmongery for door hardware sets (mid rail, door closer, asymmetry door lock with cylinders or electric door strike/ magnetic lock, kick plate for double leaf doors on patient path and as requested by engineer); glass vision panels, and aluminum louvres; linings, architraves, edges, marble saddles or thresholds, trim and accessories; intemescent strip; prefinishing or finish painting; and all other related ancillaries as indicated or required.

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Rate or Lump Sum in Words: .....

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.7	**New Wood doors and Steel frames with lead lining 15mm** To Pet CT doors Pressed metalic steel profile door frames with continuous lead lining 15 mm as specified and detailed comprising of painted steel door frame fabricated in 2 mm thick steel sheets with a frame width to cover completely the related door jambs' opening, powder coating paint finish and cement sand (1:3) mortar poured as backing to all frame jambs and top and all other related works, fabricated, supplied and installed completely to suit individual door dimensions stated and various wall thicknesses indicated; INCLUDING fixing accessories, supports, anchors, grout filling, fasteners and fixings; protective coatings and sealants ; and all other related ancillaries as indicated or required to the consent of the engineer and to his approval. Wood door leaf, 44 mm thick, fabricated in plywood with laminated finish (Formica Finish) on both sides, with continuous lead lining 10 mm and reinforced with solid wood for lock and handle, and edge leaf frame/door lipping in solid Frake wood with lacquer paint finish, detailed and scheduled, installed complete; INCLUDING preservative treatment, all ironmongery for door hardware sets (mid rail, door closer, asymmetry door lock with cylinders or electric door strike/ magnetic lock, kick plate for double leaf doors on patient path and as requested by engineer); glass vision panels, and aluminum louvres; linings, architraves, edges, marble saddles or thresholds, trim and accessories; intemescent strip; prefinishing or finish painting; and all other related ancillaries as indicated or required.		8		

Rate or Lump Sum in Words: .....

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)

8.1.8 **Rehabilitate the Existing Timber Doors**

As stated in the Preambles of Item 8.1

In addition, rehabilitate the existing timber doors:

The minimum amount of existing timber should be removed to allow an effective repair to be formed.

Cut out deteriorated area of timber in sloping splice to give optimum area of surface to be glued & fixed.

Well-seasoned timber to be used in forming a repair with the line and density of grain (number of growth rings) of new timber matching the existing as closely as possible.

For all joinery work, timber with shakes, fissures, warping, heartwood, sapwood or numerous/large knots should be avoided for use in repair.
Always work new material to the line of the existing and avoid unnecessary trimming of original timber.
Repairs should follow any existing deformations in the line of the wood element (e.g. door or window).

Avoid mixing timber species between new and existing in a repair as joint between the two is likely to fail from different rates of expansion and contraction during dry & damp conditions. Where possible, spliced repairs to be designed to ensure moisture is towards the outer face of timber and that moisture does not lay on the repair joint.

The length of the splice is governed by section of timber and the nature of component being repaired and it should be designed to ensure an effective bond between new and existing sections of timber.
Where wood element are to be dismantled as part of the repair process, always mark and record the constituent parts before dismantling. similarly, number of glass panes/quarries before removal.

If applicable carefully soften putty or remove wood trim and then remove glass.
Use glue, to connect a new outer section of bottom rail to the existing sound timber. Drill and insert new wooden pins or fix using brass screws from inside.

Casements or sashes are often in sound condition but the joints have become loose due to the break down of glue and loose wedges.

The wedges will often be easily removable and will probably be unsuitable for re-use. It may be for the joints to be pulled together successfully.

Attach door frame and shims to perimeter opening to accommodate construction tolerances & all irregularities.

Align door plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work. Install operating hardware.

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.8.1	Rehabilitate and paint existing single leaf timber doors with related accessories				
	Handles	№	25		
	Locks	№	25		
	Paint	m2	150		
	Rate or Lump Sum in Words:				
8.2	**Aluminum Doors and Windows**				
	Fabricate, supply and install aluminum works as manufactured by SIDEM 2000 first choice with all necessary accessories as per the drawings and the Engineer instructions, cost to include all doors and windows:				
	- Reveals hard stone 3cm thick, all around for external opening - Apply EPDM around door and windows where necessary - Single glass 6 mm - Double glass 6-12-6 mm (Outer Glass should be - Hinges and locks - Joint Filler - Mosquito Screen - Mesh - All items needed as per the Engineer instructions - All as specified and base on an approved shop drawings after exact dimensions				
8.2.1	**New Aluminum Panels (Double Glass)**				
	Supply and install the fabricated aluminum panels with double glass (6 - 12 - 6 mm) (Outer Glass should be Tempered)				
8.2.1.1	Provide new aluminum double glazed window & door	m2	65		
	Rate or Lump Sum in Words:				
8.2.1.2	Provide new aluminum mosquito net	m2	200		
	Rate or Lump Sum in Words:				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.2.1.3	Provide new aluminum double fixed glazed partition at GF entry *Rate or Lump Sum in Words:*	m2	30		
8.2.1.4	Provide new glass cover 12mm securit at GF entry *Rate or Lump Sum in Words:*	m2	20		
8.2.3	**Rehabilitation Existing Glazed Aluminum main sliding door** Replacing Broken Glass. Fixing Hardware Issues: Check the functionality of latches, hinges, **motor** and other hardware. If any parts are broken, replace them with new ones to ensure the door operates smoothly. Rectify general electrical connection and safety sensors.				
8.2.3.1	Rehabilitate existing automatic sliding main entrance door *Rate or Lump Sum in Words:*	№	1		
9	**FINISHES**				
9.1	**Cement Plaster** Supply and install sand cement plaster on concrete and block wall surfaces as specified The plaster layer should be own a base rough layer The plaster works should be on level points and each point should be at 1.5 m from the second only Work to include: - Materials and accessories (galvanized, wire mesh, cover beds, etc.) - Labors - All addition watering - All tools - Plaster thickness more than 2 cm - All needed items as per drawings and the Engineer instructions				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.1.2	**Repair of Existing Plaster (Internal - External) (Cracks, etc.)**				
9.1.2.1	Rehabilitate and repair cracked and damaged plaster indoor and outdoor Work to include: - Determine the location and remove all loose items around the area - Remove the cracked plaster layer - Remove the pulled out layers - Clean the places with suitable materials - Fill all cracks after widening by (No Suggestions) or approved equal. - Remove loose and other deteriorated materials prior to the new repair. Take special care not to damage the adjacent original materials. Prepare mortar joints for installation of lateral reinforcement where it is required. Use thin steel bars to clean joints to maximum depth possible. Remove loose mortar. Mix mortar with minimal amount of water (potable) prior to use. All separation cracks between perpendicular walls shall be filled grout to reduce additional movement from wind loads and thermal expansion-contraction. - Clear debris from crack by probing, brushing, and blowing. - Force non-shrink mortar mixture into crack as deep as possible with hands, wood and metal probes. Use as dry a mix as possible. Use stone bats to fill larger crack voids. Ensure mortar is forced into smaller/deeper cracks. Mortar grout will be fluid in order to flow into crack. Either grout bags or gravity flow shall be used depending on the conditions. Fil Protect repairs from rapid drying by misting, shading, protecting from dry wind cracks in a series of applications rather than one large application. Final application shall not be flush with the surface, but shall be one half the width of the crack below the surface. Remove all tool marks with brush. - Apply the finish rough plaster layer - Install galvanized steel mesh 20 cm width at least - Apply the second smooth plaster layer ***Rehabilitate deteriorated east wall of the drugs store***	LS	1		
	Rate or Lump Sum in Words:				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
	.....				
9.1.2.1	New Plastering Works *Rate or Lump Sum in Words:*	m2	250		
9.2	**<u>Tiling Works</u>** Supply and install all tiling items for floors, with the Work to include all materials and labors and the Contractor should use all necessary rods and levels as per the Engineer instructions Price to include: - Sand below tiles - Materials, tiles, mortars - Labors - Rubbing - Filling between tiles - Filling the skirting - Remove unsuitable items - Cleaning the places - All needed items as per the Engineer instructions				
9.2.1	**<u>New Full Mass Colored Ceramic for Floors</u>** Ceramic tiles and tilework as specified and detailed, installed complete; Including for substrate preparation, cement: sand screeds or plaster backing coats; setting, jointing and grouting; tile trim and accessories; sealants; and all other related ancillaries as indicated or required				
9.2.1.1	Supply and install anti skid colored full mass ceramic tiles *Rate or Lump Sum in Words:*	m²	9		
9.2.1.2	Marble Threshold for Toilets in PET/CT Unit *Rate or Lump Sum in Words:*	m	3		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.2.2	**New Glazed Colored Ceramic for Walls**				
9.2.2.1	Supply and install full mass colored ceramic tiles for walls *Rate or Lump Sum in Words:*	m^2	52		
9.2.4	**Repair existing broken floor tiles and skirting (all types) and reinstall by new, similar to existing for all rooms and corridors**				
9.2.4.1	Rehabilitate and repair all damaged and broken tiles, and skirting for any type (marble - ceramic - mosaic - Cement). Remove broken or damaged pieces to be replaced without affecting the adjacent undamaged areas Work to include: - Remove all debris as specified - All materials and labors - Difference tiles (shapes thickness, dimension, pattern) as needed. - Cutting and repair - Grouting - Polish and rubbing - All needed items as per Engineer comments and complete to Engineer approval. *Rate or Lump Sum in Words:*	m2	100		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.2.9	**Colored PVC for Surgery, CCU, LCU, Radiology, PET/CT** Supply and install first class safe and antibacterial colored P.V.C. flooring for indoors at least 6mm thick (Design shape and colors of vinyl flooring should be approved by engineer prior to installation) Work to include: - Shop drawing for design, shape and colors of vinyl flooring should be submitted for each classroom separately for engineer approval - Laminate existing finish flooring after removing vinyl by special concrete material level - Make good and smooth the flooring - Apply self leveling special materials(if needed) to assume Vinyl best finishing - Remove all the existing skirting - Treat the place of the existing skirting - Place the special glue as specified - Place the flooring and screw the skirting P.V.C. profile Labors and materials, screw, etc. All needed items as per the Engineer instructions and approval. Note: Work should be executed by experts and should be executed in presence and approval of supervision engineer and as per required specifications for materials and executions. *Rate or Lump Sum in Words:*	m²	810		
9.2.10	**Terrazo Tiles** Terrazo Tiles Leveled and cleaned to receive PVC Flooring in PET/CT Unit *Rate or Lump Sum in Words:*	m2	160		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.3	**Suspended Ceilings**				
	The suspended ceiling, work to include:				
	- All panels				
	- All heavy duty hangers and accessories as specified				
	- Rails (hidden type)				
	- Special metal heavy duty suspension systems				
	- All needed heavy duty accessories and items to complete the works				
	- Works to be indicated on drawings and as per the specifications				
	- Works should be coordinated between the starting and the end of the floor panels and also should be coordinated with the electromechanical units in the ceiling				
	- All works should be as instructed by the Engineer				
9.3.1	**Metal Sheet Strips Suspended Ceilings:**				
9.3.1.1	Supply and install aluminum strip suspended ceiling at the location indicated on drawings and as per specs				
	Works to include:				
	- Materials (Aluminum sheet thickness not less than 0.8 mm)				
	- Labors				
	- Accessories				
	- Angles				
	- Special Heavy duty metal suspension system				
	- Complete shop drawings should be submitted for approval				
	- All needed items as per the Engineer instructions	m²	1,000		
	Rate or Lump Sum in Words:				
9.3.1.2	60 x 60 cm PVC Suspended Ceiling	m²	350		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.3.2	**New Gypsum Suspended Ceiling (Panel, Tiles):**				
9.3.1.1	Supply and install gypsum board tiles suspended ceiling (60 x 60 cm or panel board with paint) moisture resistant anti bacterial Work to include: - Remove the existing gypsum board tiles and move them to outside - Labors - Materials - Accessories - Angles between walls and ceilings - Special Heavy duty metal suspension system - All needed items as per the Engineer instructions and approval at surgery section *Rate or Lump Sum in Words:*	m²	170		
9.3.2	**PVC Panels Suspended Ceiling**				
9.3.2.1	Supply and Install PVC Suspended Ceiling *Rate or Lump Sum in Words:*	m2	10		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.5	**Painting**				
9.5.1	**Wall and Ceilings Paint Works** Wall paint include preparation of the base surfaces to receive the paints and apply the specified layers of putty and paint from the best quality as per specifications The base surfaces should be clean and smooth and free from any pulled out old paints before starting application of the specified primer/undercoat. Apply 2 layers of putty then after smoothening, then 3 layers of the approved paint materials. All works and items should be as per manufacturer recommendation, compatible with each other and as per the Engineer instructions and approval, ***All paint types must be lead-free and Low VOC (Volatile Organic Compounds)***				
9.5.1.2	Super Rubber Paint for old walls and ceilings *Rate or Lump Sum in Words:*	m²	4,000		
9.5.1.5	Antibacterial paint *Rate or Lump Sum in Words:*	m	1,736		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.5.2	**Outside Walls Paint (Old and New Walls and Ceilings)**				
9.5.2.1	Paint for external old and new walls, smooth touch Work to include: - Removal of any paint or obstacle - Rehabilitate the surfaces and make them goods - Polyurethane where needed for cracks - Apply one coat of undercoat - Apply 2 coats of external paint or rolled textured paint - Apply one layer of external transparent paint (acrylic styrene copolymer elastic water proof) - All needed scaffolding and materials for the best execution of the works - All works and items should be as per manufacturer and the Engineer instructions and approval. *Rate or Lump Sum in Words:*	m²	800		
9.5.4	**Maplexine, Monocouche or Santex Works**				
9.5.4.1	Finishing works to include: - Remove all existing paint & clean deeply - Apply Base Coat as per manufactured required - Use materials as requested in specifications - Final insulation transparent coat (Water proofing) - All works and items should be as per manufacturer and the Engineer instructions and approval, - All needed scaffolding and materials for the best execution of the works ***NB:*** *Refurbishing of Maplexine, Monocouche or Santex Works not allowed* *Rate or Lump Sum in Words:*	m²	450		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
10.3.2	**Lavatory Countertop**				
10.3.2.1	Supply and install complete counter for lavatories in toilets where shown on drawings to be of 12mm resin layer as per drawings and the work to include: - All fixing elements - All stainless steel hangers - All necessary heavy duty accessories - Counter edge of 30cm length - All needed items and as instructed by the Engineer *Rate or Lump Sum in Words:*	m	1		
10.5	**Internal Curtains** Supply and install internal rolling type tissue and polyester collapsible type curtain as per specifications and at the location as shown on drawings Works to include: - Materials - Labors - Heavy Duty Accessories - All needed works as per the Engineer instructions and approval				
10.5.1	On External Opening *Rate or Lump Sum in Words:*	m²	800		

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
10.6	**60 x 40cm signs indicating the hospital**				
10.6.1	Supply and install Aluminum & PVC Guide Signage in specific places (Visually impaired), high pressure laminate-HPL 1.2 cm thick movable inside a stainless steel rail 316 fixed on walls, letters to be vinyl printed with engravement for special need purposeas indicated in, works to include: - Materials - Profession Labor - Fixing shall be fixed as per manufacturer and engineer instructions Colors and shape to be as per engineer instruction *Rate or Lump Sum in Words:*	Pcs	4		
11	**FURNISHINGS**				
11.1	**HOSPITAL FURNITURE** Supply and install the following hospital furniture complete including all necessary fixing and accessories, all as specified, shown on the drawings and to the satisfaction of the Engineer.				
11.1.1	**Furniture**				
11.1.1.1	Hospital electrical bed	№			
	ICU Electric Bed	№	13		
	Electric Beds three function	№	37		
	Rate or Lump Sum in Words:				
11.1.1.2	Sofa bed for visitor	№	50		
	Rate or Lump Sum in Words:				
11.1.1.3	Standard office chairs.	№	40		
	Rate or Lump Sum in Words:				

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Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
11.1.1.4	Visitor chairs. *Rate or Lump Sum in Words:*	№	50		
12	**LEAD SHIELDING FOR PET CT** The contractor shall verify exact sizes and quantities and dimensions through a site survey Ensure continuous shielding at joints, corners, frames and penetrations. (overlap 5 cm between sheets and 3X3 cm to cover screws or bolts) - screws or bolts to be radio-opaque Include necessary supports, fixings, finishes and making good of affected surfaces. Complete a radiation-protection survey after installation and rectify any shielding deficiencies before acceptance. Unit rates to include overlap and fixing accessories				
12.1	Supply and Install Lead lining 2mm in layers as required to achieve thicknesses of 2, 4, 8, 10 amd 16mm - Wall Mounted to PET CT Scan, PET Injection, and other Rooms as required by PET/CT equipment Supplier including fixing accessories *Rate or Lump Sum in Words:*	m2	570		
12.2	Supply and Install Lead lining 12x2mm - Ceiling Mounted to Pet CT Scan and Injections Rooms to cover all ceiling area as required by PET/CT equipment Supplier including fixing accessories *Rate or Lump Sum in Words:*	m2	25		
12.3	Supply and Install Lead lining 9x2mm - Ceiling Mounted to Internal Corridors and Toilets to cover all ceiling area as required by PET/CT equipment Supplier including fixing accessories *Rate or Lump Sum in Words:*	m2	40		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
12.4	Supply and Install Lead lining 11x2mm - Ceiling Mounted to PET Hot Lab Room to cover all ceiling area as required by PET/CT equipment Supplier including fixing accessories *Rate or Lump Sum in Words:*	m2	10		
12.5	Contamination monitoring box with 3.6 cm lead shielding *Rate or Lump Sum in Words:*	Item	1		
12.6	Lead Shield Glass 100 x 80 cm to PET CT room *Rate or Lump Sum in Words:*	Item	1		
12.7	Precast Gypsum board cladding: Supply and install gypsum board precast cladding as per the drawings and specifications, the walls should be composed of one layer of gypsum board 12mm thick over lead linning. From 1.2m above FFL to ceiling without perforating the lead lining. Fixation to be on substructure mounted in slab and ceiling Work to include: - Materials - Labors - Stainless steel hollow sections for fixation with all necessary stainless steel angles and elements - All needed items and as instructed by the Engineer *Rate or Lump Sum in Words:*	m2	235		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
12.8	Precast Cement board cladding: Supply and install cement board precast cladding as per the drawings and specifications, the walls should be composed of one layer of cement board 12mm thick over lead linning. From FFL to 1.2 m without perforating the lead lining. Fixation to be on substructure mounted in slab and ceiling Work to include: - Materials - Labors - Stainless steel hollow sections for fixation with all necessary stainless steel angles and elements - All needed items and as instructed by the Engineer				
		m2	107		
	Rate or Lump Sum in Words:				
	.....				

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Total Carried to General Summary	.....	.....

Bill № 3: Mechanical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**GENERAL TECHNICAL REQUIREMENTS**				
1.1	**General Mechanical Requirements**				
1.1.1	Revise all Mechanical drawings and make sure that they can be executed properly. *Rate or Lump Sum in Words:*	Item	1		
1.1.2	Prepare the shop drawings for all mechanical works and obtain approval from the Engineer before the start of executing any work. *Rate or Lump Sum in Words:*	Item	1		
1.2	**Rehabilitation Works General Requirements**				
	Provide all necessary rehabilitation works and make all Mechanical systems in good condition complete including maintenance, cleaning, relocation works, replacing damaged items and equipment, removing and carting away resulting materials and equipment, testing and commissioning, and all other related works to ensure all Mechanical systems are properly working and functional.				
1.2.1	Maintenance and rehabilitation of existing plumbing works, including sanitary fixtures, floor drains, roof drains, manholes, pumps, WC tanks, adding where applicable all necessary valves, flush valves, etc., and all other necessary works.				
	Repair & maintenance of sanitary/plumbing 4" roof RW outlets	lm	60		
	Repair & maintenance of sanitary/plumbing of toilets in surgery & female	Item	25		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1.2.2	Maintenance and rehabilitation of existing HVAC & fire fighting systems, including all necessary piping, duct works, pumps and controls, fans, mechanical works inside shafts, air conditioning units, etc.				
	Replace HVAC units 12000BTU	Item	10		
	Replace HVAC units 18000BTU	Item	10		
	Replace HVAC units 24000BTU	Item	15		
	Supply & install new fans	Item	38		
	Supply & install new 5 Tons A/C compressor for	Item	1		
	Supply & install new 40 Tons A/C chiller	Item	1		
	Supply & install new A/C FSU	Item	10		
	Supply & install new A/C AHU	Item	5		
	Repair Negative Pressure machine – and Ducts	Item	2		
	Repair chiller unit on the roof	Item	1		
	Repair RO system at the laboratory	Item	1		
	Repair & maintenance of the boilers	Item	2		
	Rate or Lump Sum in Words:				
	.....				
2	**PLUMBING SYSTEM**				
2.1	**Drainage System inside the PET/CT Units** Supply, install, and test the drainage (UPVC) pipes inside the building to outside. Pipes to be measured in Linear Meter with all related accessories, floor drains, fittings, vent hangers, roof vent caps, and all necessary accessories as per standard installation details and as per the Engineer instructions. The diameter of the pipes are as follows:				
		lm	25		
	Rate or Lump Sum in Words:				
	.....				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2.2	**Condensate Drain Pipes for the PET/CT Units** Supply, install and test condensate drain pipes, PPVC, including 13mm insulation with an external weather-proof tape, price is per meter sum of each type of installed pipe works. Cost to include all accessories, connections, reducers, condensate trap at each unit, pipe supports and all necessary accessories and fittings. The Contractor should submit shop drawings for approval by the Engineer. Works should be based on standard installation details to the approval of the engineer. *Rate or Lump Sum in Words:*	lm	44		
2.3	**Sanitary Fixtures for the PET/CT Units**				
2.3.1	**Lavatories** Supply and install semi pedestal, wash basin, 55x37cm, and fixed at 85cm high from the floor finish. Cost to include all necessary connections, P trap, taps, mixers, and all necessary accessories and fixations. *Rate or Lump Sum in Words:*	No.	2		
2.3.2	**WC: wall hung** Price to include cover, cistern should be 8cm, hidden from the back, Flushing Hose work to include all needed accessories and fittings. 40cm height from FFL. *Rate or Lump Sum in Words:*	No.	2		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2.3.3	**Mixers** 1/2" Single Lever High-Sp. Chrome for lavatories with all connections and any other related works as instructed by the Engineer. *Rate or Lump Sum in Words:*	No.	4		
2.3.4	**Sluice/Safety Shower** Supply, installation, testing, and commissioning of a combined emergency safety shower and eyewash station. The unit shall be fwall-mounted, constructed from stainless steel, and fitted with high-visibility components. The safety shower shall deliver a minimum flow rate of 75.7 liters per minute (20 GPM) at a minimum of 30 PSI, with a quick-activation pull rod for full body drenching. The eyewash station shall provide a flow rate of at least 1.5 liters per minute (0.4 GPM) per nozzle, activated by a push handle or foot pedal, equipped with twin aerated spray heads and a built-in bowl for splash control. *Rate or Lump Sum in Words:*	No.	1		
2.3.5	**Cold & Hot Water Piping Inside PET CT Unit** Supply, install and test water supply system inside the building, pipes shall be PPR (PN16) Class 2: 70°C (Application for hot water supply) and the price is per meter sum of each type of installed pipe works. Cost to include all accessories, connections, reducers, isolating valves, water hammer arrestor, insulation for hot water pipes, connection to existing networks and accessories so that all piping can receive ideal standard fixtures or approved equal. The Contractor should submit shop drawings for approval by the Engineer. Works should be based on standard installation details to the approval of the engineer. *Rate or Lump Sum in Words:*	lm	100		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
3	**HVAC SYSTEMS FOR PET/CT UNITS**				
3.1	**Duct Work** Galvanized G90 steel sheet ducting gauge 22 or 24 depending on the duct size, complete with all fittings, split dampers, accessories, flexible connections, access panels, hangers and supports, Fiber Glass Insulation, Sound Liners, Volume Control Dampers, Air Outlets and Filters and accessories. The work to be complete with all required fittings to the approval of the engineer. *Rate or Lump Sum in Words:*	Kg	1,600		
3.2	**Non-Magnetic Flexible Ducts diam. 10"** Supply, installation, and testing of non-magnetic flexible duct suitable for MRI room applications. The duct shall be constructed from fire-resistant, non-metallic, and non-magnetic materials to ensure MRI compatibility. It shall be reinforced with non-metallic spirals (plastic or fiberglass) for structural integrity and shall be anti-static and low EMF interference compliant. The duct shall be internally insulated as required to prevent condensation and maintain thermal efficiency. *Rate or Lump Sum in Words:*	lm	38		
3.3	**Air Conditioning Unit (Inverter Type)** DX air conditioning unit, inverter type, including all necessary accessories, fixing and connections, supports, anti-vibration, wiring and connection, copper pipes, testing and commissioning. The Contractor should submit shop drawings for approval by the Engineer. Works should be based on standard installation details to the approval of the engineer.				
3.3.1	Ducted Type - AC-IU-Type 1 (18,000 Btu/hr.), OU Type 1 (18,000 Btu/hr.) - Ceiling Mounted *Rate or Lump Sum in Words:*		1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
3.3.2	Ducted Type - AC-IU-Type 1 (24,000 Btu/hr.), OU Type 1 (24,000 Btu/hr.) - Ceiling Mounted *Rate or Lump Sum in Words:*		2		
3.3.3	Ducted Type - AC-IU-Type 1 (48,000 Btu/hr.), OU Type 1 (48,000 Btu/hr.) - Ceiling Mounted *Rate or Lump Sum in Words:*		1		
3.4	**Fans** Supply, install and connect ventilation fans including all necessary accessories and connections. Fan shall be of high quality material and good manufacturing brand. Contractor shall submit complete shop drawing for the approval of engineer.		6		
3.5	**Medical Gas Sytem (Oxygen, Vacuum, Compressed Air)** Supply and install complete Medical Gas system needed with all copper pipes, fittings, valves, mixers, traps, hangers, fasteners and clips. Cost to include all related connections and accessories as per Engineer instructions.	Item	1		

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	Total Carried to General Summary	.....

Bill № 4: Electrical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**BASIC ELECTRICAL REQUIREMENTS**				
	The Contractor should revise all the drawings and compare them with the site conditions and redo all the design works with the necessary calculations for all the electrical installations and works. Moreover, the Contractor should submit shop drawings and as-built drawings for the maintenance use in the future.				
	The contractor should provide all the necessary maintenance works for all Electrical systems related to the KG hospital to ensure its proper works.				
	At the end of the project, the contractor should submit complete As-Built Drawings for all executed works with exact dimensions & sizes for easy maintenance work in the future.				
2	**ELECTRICAL DISTRIBUTION**				
2.1	Supply, install and connect secondary distribution boards for PET/CT Units as required by PET/CT equipment suppluer, including cabinets, 4P and DPN circuit breakers, busbars, connectors, switch-disconnectors, spares and spaces including all truncking and wires, ground conductors and accessories from DB's to branches circuit breakers as shown and specified on drawings. All the panel boards components shall be labeled and identified with a durable fixed identification with label support sheet mounted in a type written circuit directory. Work to include supply and Install for Breaker in Hospital Main Distribution Board	Item	1		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2.2	Wires, Cables, Feeders and Related Accessories for PET/CT Units Supply, install and connect cables, XLPE insulated, and copper conductors, complete including accessories, connectors, lugs, supports, cable trays, clamps. (Cable sizes and lengths to be determined by PET/CT Supplier) *Rate or Lump Sum in Words:*	Item	1		
2.3	Lighting Points for PET/CT Units Supply, install, connect and test lighting fixtures complete including points, conduits, accessories and supports, junction, derivation and outlet boxes, conductors, connectors, and all the accessories, required to provide power to each lighting fitting from Panel board including the earth wire. The fixtures shall be of Led type. NOTE: Conduits exposed above false ceiling shall be rigid PVC type heavy gauge and in technical rooms shall be EMT type. *Rate or Lump Sum in Words:*	No.	40		
2.4	Electrical Outlets Points (Ceiling Mounted) for PET/CT Units Supply, install and test the electrical outlet for equipment (fans, Pumps, gates. etc.), with all the necessary protection including cabling/conduit works back to respective panelboards, with all related accessories as shown on drawings and as specified. The contractor should submit shop drawings for approval by the engineer. Works should be based on standard installation details, drawings, and specifications to the approval of the engineer. *Rate or Lump Sum in Words:*	No.	3		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
2.5	Wiring Devices (Switches, Sockets and Isolating Switches) Supply, install and connect the wiring devices, complete including cabling/conduit/trunking works back to receptive panel boards, accessories. NOTE : Conduits exposed above false ceiling shall be PVC rigid type and in mechanical room shall be EMT type.	No.	50		
	Rate or Lump Sum in Words:				
3	**GENERAL LIGHTING INSTALLATIONS**				
3.1	**Lighting Fixtures** Supply, install and test the lighting fixtures complete with all the necessary wires conduits, boxes and accessories required to provide power to each lighting fitting from LP including the earth wire as per the drawings, specifications and Engineer instructions. The Contractor should submit samples of each lighting fixture for approval.				
3.1.1	Spots, surface-mount for interior, 40W, 4000K, 4700Lm. Polycarbonate, light grey, with stabilized polycarbonate cover, cos φ ≥ 0.9	№	94		
3.1.2	TYPE A2 / A3: 600x600 mm LED Panel 3600lm, 33W, 4000K, 80CRI surface-mount/recessed, die-cast aluminum, IP20	№	60		
	Rate or Lump Sum in Words:				
4	**FIRE ALARM SYSTEM** Supply and install all necessary fittings, wires conduits, boxes, plates, relays, bell modules, EOL resistors and accessories as described and as shown on drawings and all necessary connection to the management stations as intended to the satisfaction of the engineer.				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.1	Addressable fire alarm control panel (FACP) including but not limited to: 8 loop Battery 24 VDC 2 RS 422 communications ports 1 RS 232 communication port JBUS standard protocol for remote monitoring 4 programmable inputs 40 programmable relay included *Rate or Lump Sum in Words:*	№	1		
4.2	Fire Alarm Repeat Panel *Rate or Lump Sum in Words:*	№	1		
4.3	Smoke Detector *Rate or Lump Sum in Words:*	№	1		
4.4	Heat Detector *Rate or Lump Sum in Words:*	№	1		
4.5	Combined Heat-Smoke detector *Rate or Lump Sum in Words:*	№	40		
4.6	Break Glass *Rate or Lump Sum in Words:*	№	3		
4.7	Fire Bell *Rate or Lump Sum in Words:*	№	1		
4.8	Fire Bell with Strobe light *Rate or Lump Sum in Words:*	№	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.9	Fire Alarm System for PET/CT Units including 10 Smoke Detectors, Maual Pull Station and Wall mounted fire alarm Strobe light *Rate or Lump Sum in Words:*	№	1		
7	**CCTV SYSTEM**				
	Supply, install, connect and test CCTV system complete with conduits installations from the location of the NVR through the different CCTV camera outlets, including the pull or draw boxes and derivation boxes, the junction and outlet boxes, 19" Rack, and all necessary connections to the management station as shown on drawings as per Tender Specifications and the like to the satisfaction of the supervision engineer.				
7.1	All necessary connections from different location to the proposed NVR location *Rate or Lump Sum in Words:*	LS	1		
7.2	New CCTV Cameras *Rate or Lump Sum in Words:*	№	50		
7.3	New satellite system for TV at roof including all accessories and network *Rate or Lump Sum in Words:*	Item	1		
7.4	CCTV System for PET/CT Units including 6 CCTV Cameras, One NVR and one Monitor *Rate or Lump Sum in Words:*	Item	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8	**SOLAR SYSTEM**				
8.1	Supply, install, connect and test the solar lighting system for all Electrical Loads (excluding Lifts, Pumps and AC Units) in perfect operating conditions, including but not - **Photovoltaic multi-crystalline solar panels as shown on the drawings.** - Hybrid Inverter - All cables, wires, conduits and all necessary accessories - Aluminum PV mountings - The Contractor shall ensure complete solar system which should function as the main Power Supply - The Contractor should submit detailed shop drawings and materials for approval. - For all blocks of the hospital - Lithium Batteries for (Off-Grid Solar Types) - All necessary elevated structures on roof and other areas which are needed to install the required solar panel (Sheds, Parking, etc.) areas				
	New Panels	Pcs	284		
	Rate or Lump Sum in Words:				
9	**NURSE CALL SYSTEM**				
	Rehabilitate, connect and test Nurse Call System for the hospital including conduits, wires and all accessories, as per Engineer instructions.				
9.1	Sound Bell (Each Floor Should have one bell minimum) *Rate or Lump Sum in Words:*	№	3		
9.2	Bell Push Button (Main Supervisor) *Rate or Lump Sum in Words:*	№	3		
9.3	Timer, Relays and all necessary equipment for all blocks of the hospitals *Rate or Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
10	**TELECOM & DATA**				
10.1	Supply, install and connect RJ45 Data and Telecom Outlets for PET/CT Units including all switches, Patch Panels, mounting racks, conduits, conduit fittings, boxes, labeling, fixing, trunking, accessories and wiring (Cat 6A) with the corresponding connection to the patch panels and data cable from Hospital Network	Item	1		
	Rate or Lump Sum in Words:				
11	**SECURITY & ACCESS CONTROL SYSTEM**				
11.1	Supply, install and connect fully functional and operational IP interfaced Access control system for PET/CT Units including interphones, door locks, push buttons, card readers, On/Off Button, Emergency Off Buttonn, as required by PET/CT equipment Supplier, all conduits, conduit fittings, boxes, fixing, accessories and wiring as well as testing. Note: Every Door module includes data outlet as well as the connection between the data outlet and IDF including all necessary wiring, accessories, conduiting, connection fixation, etc....	Item	1		
	Rate or Lump Sum in Words:				
12	**Generator**				
12.1	Supply, install, connect and test new generator 150KVA for all Electrical Loads in perfect operating conditions, including but not limited to: - Inverter - All cables, wires, conduits and all necessary accessories - Sound insulating chamber - The Contractor should submit detailed shop drawings and materials for approval.	Pcs	1		
	Rate or Lump Sum in Words:				

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General Summary

General Summary

Description	Amount (US $)
Bill № 1: General Requirements (in separate document) ……	
Bill № 2: Civil and Architectural Works ……	
Bill № 3: Mechanical Engineering Services ……	
Bill № 4: Electrical Engineering Services ……	
* Total Amount of Bill of Quantities ……	
* Discount by Tenderer (_____ %) ……	
* Total Amount of Tender (VAT Not Applicable)	

* Total Amount of Tender in Words:

Part 3

Nabatieh Governmental Hospital

Bills of Quantities

Table of Contents

Description

Preamble and Bill № 1: General Requirements – refer to separate document applicable to all hospitals

Bill № 2: Civil and Architectural Works

Bill № 3: Mechanical Engineering Services

Bill № 4: Electrical Engineering Services

General Summary

Bill № 2: Civil and Architectural Works

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**SITE PREPARATION AND DEMOLITION**				
1.1	**Demolishing and Removal of Debris**				
1.1.1	The works include all types of demolition and the removal of debris and damaged elements such but not limited to, the following: - Existing plastering and concrete items such as foundations, columns, slabs, etc. - Damaged Tiling (floors and walls) - Toilet fixtures and pipes installation of all sizes - Counter tops, bases and sinks - Water tanks of different types - Hollow concrete block walls or concrete walls of all sizes - Demolition of the existing ramps / Stairs and the execution of the given plans and specifications - Including the necessary equipment for the removal of debris and all resulting materials - etc. *Rate or Lump Sum in Words:*	m3	1		
2.4	**hospital Fences with Related Gates**				
2.4.2	Redo Fence around generators area (Strengthening & Rehabilitation) Work to include - Execute the RC supports as per drawings - Execute the Masonry blocks between reinforced concrete columns, 20cm thick, 1m height - Finishing works (plastering, paints, etc.) - supply & install steel protection 1m height (paint with epoxy as specified) *Rate or Lump Sum in Words:*	m	100		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.2	**Rehabilitate and Maintain the Existing Steel Work (Burglar Proof Protection + Opening)** Rehabilitate the existing steel windows or doors as per specifications and drawings and the Engineer instruction Work to include: - Remove all damaged members and replace by new ones - Rub completely to secure all parts and use putty to make faces smooth - Apply two layers of anti rust paint - Apply putty - Apply three layers of epoxy external paint - All needed items as per the Engineer instructions				
5.2.1	Rehabilitate existing steel doors *Replace broken glass* *Rate or Lump Sum in Words:*	m2	2		
7	**THERMAL AND MOISTURE PROTECTION**				
7.0	**Preliminaries**				
7.0.1	Provide a performance bond equivalent to 50% of the cost of chapter 7 of this part of the BOQ, and to be refunded for a period of five years from the date of final handing over. *Rate or Lump Sum in Words:*	Item	1		
7.0.2	Dismantle and remove all existing materials on roof: Tiles, Membranes, existing water tanks, Mechanical Pumps and Systems, Electrical Systems, skirting, etc.; and all equipment as per engineer instructions The unwanted/ unused materials should be cart away from the site The remaining items should be reinstalled in a proper way as per engineering instructions *Rate or Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
7.1	**Roof Waterproofing**				
7.1.1	Works should be applied and done by experts with previous experience in similar works. Works to include: - DEEP cleaning of all surfaces and carting away of dust & debris - Concrete pad for water tanks as indicated - Sand cement screed layer to Provide proper slopes minimum 0.75% - Expansion joint sealant to be done respecting back rod, un-bonding tape, adequate thickness of sealant, type & finish of sealant (fire rated) & design drawings especially on roof & planters. - Provide tackle coat (Proper) - Provide 4mm thick, SBS layer from an approved manufacturer - Provide protection for all pipe works and drains - Provide heat insulation layers of 35 KG/m³ where required - Provide Geotextile layers - Provide all aluminum flashing with mastic - Provide finishing material as required - All as specified and approved shop drawings *Rate or Lump Sum in Words:*	m²	550		
7.1.2	Rectify the water proofing membranes around the drainage outlets - DEEP cleaning of all surfaces and carting away of dust & debris - Provide tackle coat (Proper) - Provide 4mm thick, SBS layer from an approved manufacturer - Provide protection for all pipe works and drains - Provide Geotextile layers - Provide finishing material as required - All as specified and approved shop drawings *Rate or Lump Sum in Words:*	Pcs	50		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.1.1	**Internal and External Plaster Works**				
9.1.1.1	Supply and apply one layer of sand cement plaster over a rough textured layer of plaster Price included all accessories, material, scaffolding and labor, etc. *Rate or Lump Sum in Words:*	m²	250		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.1.2	**Repair of Existing Plaster (Internal - External) (Cracks, etc.)**				
9.1.2.1	Rehabilitate and repair cracked and damaged plaster indoor and outdoor Work to include: - Determine the location and remove all loose items around the area - Remove the cracked plaster layer - Remove the pulled out layers - Clean the places with suitable materials - Fill all cracks after widening by (No Suggestions) or approved equal. - Remove loose and other deteriorated materials prior to the new repair. Take special care not to damage the adjacent original materials. Prepare mortar joints for installation of lateral reinforcement where it is required. Use thin steel bars to clean joints to maximum depth possible. Remove loose mortar. Mix mortar with minimal amount of water (potable) prior to use. All separation cracks between perpendicular walls shall be filled grout to reduce additional movement from wind loads and thermal expansion-contraction. - Clear debris from crack by probing, brushing, and blowing. - Force non-shrink mortar mixture into crack as deep as possible with hands, wood and metal probes. Use as dry a mix as possible. Use stone bats to fill larger crack voids. Ensure mortar is forced into smaller/deeper cracks. Mortar grout will be fluid in order to flow into crack. Either grout bags or gravity flow shall be used depending on the conditions. Fil Protect repairs from rapid drying by misting, shading, protecting from dry wind cracks in a series of applications rather than one large application. Final application shall not be flush with the surface, but shall be one half the width of the crack below the surface. Remove all tool marks with brush. - Apply the finish rough plaster layer - Install galvanized steel mesh 20 cm width at least - Apply the second smooth plaster layer ***Rehabilitate deteriorated east wall of the drugs store*** *Rate or Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
	.....				
9.2	**<u>Tiling Works</u>** Supply and install all tiling items for floors, with the Work to include all materials and labors and the Contractor should use all necessary rods and levels as per the Engineer instructions Price to include: - Sand below tiles - Materials, tiles, mortars - Labors - Rubbing - Filling between tiles - Filling the skirting - Remove unsuitable items - Cleaning the places - All needed items as per the Engineer instructions				
9.2.4	**<u>Repair existing broken floor tiles and skirting (all types) and reinstall by new, similar to existing for all rooms and corridors</u>**				
8.2.4.1	Rehabilitate and repair all damaged and broken tiles, and skirting for any type (marble - ceramic - mosaic - Cement). Remove broken or damaged pieces to be replaced without affecting the adjacent undamaged areas Work to include: - Remove all debris as specified - All materials and labors - Difference tiles (shapes thickness, dimension, pattern) as needed. - Cutting and repair - Grouting - Polish and rubbing - All needed items as per Engineer comments and complete to Engineer approval. *Rate or Lump Sum in Words:*	m2	20		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.3	**Suspended Ceilings** The suspended ceiling, work to include: - All panels - All heavy duty hangers and accessories as specified - Rails (hidden type) - Special metal heavy duty suspension systems - All needed heavy duty accessories and items to complete the works - Works to be indicated on drawings and as per the specifications - Works should be coordinated between the starting and the end of the floor panels and also should be coordinated with the electromechanical units in the ceiling - All works should be as instructed by the Engineer				
9.3.1	**Metal Sheet Strips Suspended Ceilings:**				
9.3.1.2	60 x 60 cm metal Suspended Ceiling *Rate or Lump Sum in Words:*	m²	250		
9.5	**Painting**				
9.5.1	**Wall and Ceilings Paint Works** Wall paint include preparation of the base surfaces to receive the paints and apply the specified layers of putty and paint from the best quality as per specifications and as indicated in drawings The base surfaces should be clean and smooth and free from any pulled out old paints before starting application of the specified primer/undercoat. Apply 2 layers of putty then after smoothening, then 3 layers of the approved paint materials. All works and items should be as per manufacturer recommendation, compatible with each other and as per the Engineer instructions and approval, ***All paint types must be lead-free and Low VOC (Volatile Organic Compounds)***				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.5.1.2	Super Rubber Paint for old walls and ceilings *Rate or Lump Sum in Words:*	m²	1,500		
9.5.2	**Outside Walls Paint (Old and New Walls and Ceilings)**				
9.5.2.1	Paint for external old and new walls, smooth touch Work to include: - Removal of any paint or obstacle - Rehabilitate the surfaces and make them goods - Polyurethane where needed for cracks - Apply one coat of undercoat - Apply 2 coats of external paint or rolled textured paint - Apply one layer of external transparent paint (acrylic styrene copolymer elastic water proof) - All needed scaffolding and materials for the best execution of the works - All works and items should be as per manufacturer and the Engineer instructions and approval. *Rate or Lump Sum in Words:*	m²	500		
11	**FURNISHINGS**				
11.1	**HOSPITAL FURNITURE** Supply and install the following hospital furniture complete including all necessary fixing and accessories, all as specified, shown on the drawings and to the satisfaction of the Engineer.				
11.1.1	**Furniture**				
11.1.1.4	Visitor waiting chairs. *Rate or Lump Sum in Words:*	№	30		

Page Total Carried to Collection

Collection

Page №		Amount (US $)
2.1	……	……
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	Total Carried to General Summary ……	……

Bill № 3: Mechanical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**GENERAL TECHNICAL REQUIREMENTS**				
1.2	**Rehabilitation Works General Requirements**				
	Provide all necessary rehabilitation works and make all Mechanical systems in good condition complete including maintenance, cleaning, relocation works, replacing damaged items and equipment, removing and carting away resulting materials and equipment, testing and commissioning, and all other related works to ensure all Mechanical systems are properly working and functional.				
1.2.1	Maintenance and rehabilitation of existing plumbing works, including sanitary fixtures, floor drains, roof drains, manholes, pumps, WC tanks, adding where applicable all necessary valves, flush valves, etc., and all other necessary works.				
	Water fire pump 15Kw	Item	1		
	Rate or Lump Sum in Words:				
1.2.2	Maintenance and rehabilitation of existing HVAC & fire fighting systems, including all necessary piping, duct works, pumps and controls, fans, mechanical works inside shafts, air conditioning units, etc.				
	Pipes insulation at roof including cleaning old remains and rubbing rust'	Lm	300		
	Ducts insulation at roof including cleaning old remains	Lm	200		
	800 liters Boiler	Item	1		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Collection

Page №	Amount (US $)
3.1 ……	……
Total Carried to General Summary ……	……

Bill № 4: Electrical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**BASIC ELECTRICAL REQUIREMENTS**				
	The Contractor should revise all the drawings and compare them with the site conditions and redo all the design works with the necessary calculations for all the electrical installations and works. Moreover, the Contractor should submit shop drawings and as-built drawings for the maintenance use in the future. The contractor should provide all the necessary maintenance works for all Electrical systems related to the KG hospital to ensure its proper works. At the end of the project, the contractor should submit complete As-Built Drawings for all executed works with exact dimensions & sizes for easy maintenance work in the future.				
2	**PANELBOARDS**				
2.1	Supply, install or rehabilitate the existing panel board if possible including enclosures, busbars, protective devices, MCB & MCCB breakers according to IEC-60947-2 as per the site conditions and Engineer instructions.				
2.1.1	MDB : Electrical MAIN panel boards at GF *Rate or Lump Sum in Words:*	№	1		
9	**NEW TELEPHONE SWITCHBOARD**				
	Supply & install new telephone System for the hospital including conduits, wires and all accessories, as per Engineer instructions.				
9.1	New telephone switchboard for 50 users *Rate or Lump Sum in Words:*	№	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
11	**GENERATORS**				
11.1	Supply, install, connect and test new generator for all Electrical Loads in perfect operating conditions, including but not limited to: - Inverter - All cables, wires, conduits and all necessary accessories - Sound insulating chamber - The Contractor should submit detailed shop drawings and materials for approval.				
	350 KVA	Pcs	1		
	650 KVA	Pcs	1		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

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	Total Carried to General Summary ……	

General Summary

General Summary

Description	Amount (US $)
Bill № 1: General Requirements (in separate document) ……	.....
Bill № 2: Civil and Architectural Works ……	.....
Bill № 3: Mechanical Engineering Services ……	.....
Bill № 4: Electrical Engineering Services ……	.....
* Total Amount of Bill of Quantities ……	.....
* Discount by Tenderer (_____ %) ……	.....
* Total Amount of Tender (VAT Not Applicable) …	.....

* Total Amount of Tender in Words:

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Part 4

Hasbaya Governmental Hospital

Bills of Quantities

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Description

Preamble and Bill № 1: General Requirements – refer to separate document applicable to all hospitals

Bill № 2: Civil and Architectural Works

Bill № 3: Mechanical Engineering Services

Bill № 4: Electrical Engineering Services

General Summary

Bill № 2: Civil and Architectural Works

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**SITE PREPARATION AND DEMOLITION**				
1.1	**Demolishing and Removal of Debris**				
1.1.1	The works include all types of demolition and the removal of debris and damaged elements such but not limited to, the following: - Existing plastering and concrete items such as foundations, columns, slabs, etc. - Damaged Tiling (floors and walls) - Toilet fixtures and pipes installation of all sizes - Counter tops, bases and sinks - Water tanks of different types - Hollow concrete block walls or concrete walls of all sizes - Demolition of the existing ramps / Stairs and the execution of the given plans and specifications - Including the necessary equipment for the removal of debris and all resulting materials - etc. *Rate or Lump Sum in Words:*	m3	20		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
7.1	**Roof Waterproofing**				
7.1.1	Works should be applied and done by experts with previous experience in similar works. Works to include: - DEEP cleaning of all surfaces and carting away of dust & debris - Concrete pad for water tanks as indicated - Sand cement screed layer to Provide proper slopes minimum 0.75% - Expansion joint sealant to be done respecting back rod, un-bonding tape, adequate thickness of sealant, type & finish of sealant (fire rated) & design drawings especially on roof & planters. - Provide tackle coat (Proper) - Provide 4mm thick, SBS layer from an approved manufacturer - Provide protection for all pipe works and drains - Provide heat insulation layers of 35 KG/m³ where required - Provide Geotextile layers - Provide all aluminum flashing with mastic - Provide finishing material as required - All as specified and approved shop drawings				
	Main entrance of the hospital	m²	25		
	Kitchen cover slab	m²	120		
	Rate or Lump Sum in Words:				
	.....				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)

8.1.3 **Rehabilitate the Existing Timber Doors**

As stated in the Preambles of Item 8.1

In addition, rehabilitate the existing timber doors:

The minimum amount of existing timber should be removed to allow an effective repair to be formed.

Cut out deteriorated area of timber in sloping splice to give optimum area of surface to be glued & fixed.

Well-seasoned timber to be used in forming a repair with the line and density of grain (number of growth rings) of new timber matching the existing as closely as possible.

For all joinery work, timber with shakes, fissures, warping, heartwood, sapwood or numerous/large knots should be avoided for use in repair.
Always work new material to the line of the existing and avoid unnecessary trimming of original timber.
Repairs should follow any existing deformations in the line of the wood element (e.g. door or window).

Avoid mixing timber species between new and existing in a repair as joint between the two is likely to fail from different rates of expansion and contraction during dry & damp conditions. Where possible, spliced repairs to be designed to ensure moisture is towards the outer face of timber and that moisture does not lay on the repair joint.

The length of the splice is governed by section of timber and the nature of component being repaired and it should be designed to ensure an effective bond between new and existing sections of timber.
Where wood element are to be dismantled as part of the repair process, always mark and record the constituent parts before dismantling. similarly, number of glass panes/quarries before removal.

If applicable carefully soften putty or remove wood trim and then remove glass.
Use glue, to connect a new outer section of bottom rail to the existing sound timber. Drill and insert new wooden pins or fix using brass screws from inside.

Casements or sashes are often in sound condition but the joints have become loose due to the break down of glue and loose wedges.

The wedges will often be easily removable and will probably be unsuitable for re-use. It may be for the joints to be pulled together successfully.

Attach door frame and shims to perimeter opening to accommodate construction tolerances & all irregularities.

Align door plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work. Install operating hardware.

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.3.1.1	Rehabilitate and paint existing single leaf timber doors with related accessories				
	Paint	m2	150		
	Rate or Lump Sum in Words:				
8.2.1	**New Aluminum Panels (Double Glass)**				
	Supply and install the fabricated aluminum panels with double glass (6 - 12 - 6 mm) (Outer Glass should be Tempered)				
8.2.1.1	Provide new aluminum double glazed window & door for Lab	m2	3		
	Rate or Lump Sum in Words:				
8.2.1.4	Provide new glass cover 12mm securit at Lab & radiology entry DESK	m2	3		
	Rate or Lump Sum in Words:				
8.2.3	**Rehabilitation Existing Glazed Aluminum main sliding door**				
	Replacing Broken Glass. Fixing Hardware Issues: Check the functionality of latches, hinges, **motor** and other hardware. If any parts are broken, replace them with new ones to ensure the door operates smoothly. Rectify general electrical connection and safety sensors.				
8.2.3.1	Rehabilitate existing automatic sliding main entrance doors of the hospital + at Emergency & upper level & radiology & ventilation glass of staircase.				
		m2	50		
	Handles	№	50		
	Glass for Emergency entrance	№	6		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.2.3.2	Repair sealant and insulate around Aluminum doors & windows	LS	1		
	Rate or Lump Sum in Words:				
9.2.4	**Repair existing broken floor tiles and skirting (all types) and reinstall by new, similar to existing for all rooms and corridors**				
8.2.4.1	Rehabilitate and repair all damaged and broken tiles, and skirting for any type (marble - ceramic - mosaic - Cement). Remove broken or damaged pieces to be replaced without affecting the adjacent undamaged areas				
	Work to include: - Remove all debris as specified - All materials and labors - Difference tiles (shapes thickness, dimension, pattern) as needed. - Cutting and repair - Grouting - Polish and rubbing - All needed items as per Engineer comments and complete to Engineer approval.				
	Main entrance floor (Natural stone)	m2	6		
	Ceramic flooring	m2	100		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.3	**<u>Suspended Ceilings</u>** The suspended ceiling, work to include: - All panels - All heavy duty hangers and accessories as specified - Rails (hidden type) - Special metal heavy duty suspension systems - All needed heavy duty accessories and items to complete the works - Works to be indicated on drawings and as per the specifications - Works should be coordinated between the starting and the end of the floor panels and also should be coordinated with the electromechanical units in the ceiling - All works should be as instructed by the Engineer				
9.3.1.2	60 x 60 cm Suspended Ceiling *Rate or Lump Sum in Words:*	m²	200		

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	Total Carried to General Summary ……	……

Bill № 3: Mechanical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**GENERAL TECHNICAL REQUIREMENTS**				
1.2	**Rehabilitation Works General Requirements**				
	Provide all necessary rehabilitation works and make all Mechanical systems in good condition complete including maintenance, cleaning, relocation works, replacing damaged items and equipment, removing and carting away resulting materials and equipment, testing and commissioning, and all other related works to ensure all Mechanical systems are properly working and functional.				
1.2.1	Maintenance and rehabilitation of existing plumbing works, including sanitary fixtures, floor drains, roof drains, manholes, pumps, WC tanks, adding where applicable all necessary valves, flush valves, etc., and all other necessary works.				
	Maintain circulator pumps for the boilers	№	4		
	Rate or Lump Sum in Words:				
1.2.2	Maintenance and rehabilitation of existing HVAC, Ventilation & fire fighting systems, including all necessary piping, duct works, pumps and controls, fans, mechanical works inside shafts, air conditioning units, etc.				
	Maintenance of ventilation system	LS	1		
	Maintenance of HVAC system at surgery room including filters	LS	1		
	Rate or Lump Sum in Words:				
4	**FIRE PROTECTION**				
4.1	**Fire Extinguisher**				
	Maintaine fire extinguisher as detailed and specified.				
4.1.1	Replace and/or maontain the recessed hose reels for fire fighting	№	9		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.1.2	Maintenanace of central automatic fire fighting system *Rate or Lump Sum in Words:*	LS	1		
5.6	**Taps on Lavatories** Supply and install self close taps to be fixed in the lavatory body as manufactured by Grohe with all required works and drain accessories including trap, to be connected to the new water supply and drain and as instructed by the Engineer				
5.6.1	Self Close Taps *Rate or Lump Sum in Words:*	№	20		
5.6.1	Sprayer *Rate or Lump Sum in Words:*	№	25		

Page Total Carried to Collection

Collection

Page №		Amount (US $)
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3.2	……	……
	Total Carried to General Summary ……	……

Bill № 4: Electrical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**BASIC ELECTRICAL REQUIREMENTS**				
	The Contractor should revise all the drawings and compare them with the site conditions and redo all the design works with the necessary calculations for all the electrical installations and works. Moreover, the Contractor should submit shop drawings and as-built drawings for the maintenance use in the future. The contractor should provide all the necessary maintenance works for all Electrical systems related to the KG hospital to ensure its proper works. At the end of the project, the contractor should submit complete As-Built Drawings for all executed works with exact dimensions & sizes for easy maintenance work in the future.				
1.1	**Fixing and Repairing**				
	Check & repair all the existing cables, wires, socket outlets, lighting fixtures, lighting switches, electric fans, and protect all exposed wiring as per the site conditions, and to the satisfaction of the Engineer. All as per the drawings, specifications and Engineer instructions				
1.1.1	Lighting fixtures: Ceiling Lamps	Pcs	50		
	Ceiling transformer	Pcs	50		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

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Page №		Amount (US $)
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General Summary

General Summary

Description	Amount (US $)
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Bill № 4: Electrical Engineering Services ……	
* Total Amount of Bill of Quantities ……	
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* Total Amount of Tender in Words:

Part 5

Marjayoun Governmental Hospital

Bills of Quantities

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Description

Preamble and Bill № 1: General Requirements – refer to separate document applicable to all hospitals

Bill № 2: Civil and Architectural Works

Bill № 3: Mechanical Engineering Services

Bill № 4: Electrical Engineering Services

General Summary

Bill № 2: Civil and Architectural Works

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**SITE PREPARATION AND DEMOLITION**				
1.1	**Demolishing and Removal of Debris**				
1.1.1	The works include all types of demolition and the removal of debris and damaged elements such but not limited to, the following: - Existing plastering and concrete items such as foundations, columns, slabs, etc. - Damaged Tiling (floors and walls) - Toilet fixtures and pipes installation of all sizes - Counter tops, bases and sinks - Water tanks of different types - Hollow concrete block walls or concrete walls of all sizes - Demolition of the existing ramps / Stairs and the execution of the given plans and specifications - Including the necessary equipment for the removal of debris and all resulting materials - etc. *Rate or Lump Sum in Words:*	m3	20		
2.4.2	Redo Fence (Including Strengthening & Rehabilitation) Work to include - Execute the RC supports as per drawings - Execute the Masonry blocks between reinforced concrete columns, 20cm thick, 1m height - Finishing works (plastering, paints, etc.) - supply & install steel protection 1m height (paint with epoxy as specified) *Rate or Lump Sum in Words:*	m	230		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5	**METAL WORKS**				
5.1	**Provide New Steel Work (Door & Windows)**				
5.1.1	Provide new steel door & window with related accessories & glass at the boiler room *Rate or Lump Sum in Words:*	№	6		
5.1.2	Provide new burglar proof protection *Rate or Lump Sum in Words:*	m2	1		
5.2	**Rehabilitate and Maintain the Existing Steel Work (Burglar Proof Protection + Opening)** Rehabilitate the existing steel windows or doors as per specifications and drawings and the Engineer instruction Work to include: - Remove all damaged members and replace by new ones - Rub completely to secure all parts and use putty to make faces smooth - Apply two layers of anti rust paint - Apply putty - Apply three layers of epoxy external paint - All needed items as per the Engineer instructions				
5.2.1	Rehabilitate & paint existing fuel tanks *Rate or Lump Sum in Words:*	№	3		
5.2.2	Provide new steel gates from the generators side *Rate or Lump Sum in Words:*	m2	12		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.3	**Rehabilitate Existing Steel Shed Works** Rehabilitate the existing steel elements of the existing shed and the work to include: - Remove existing cover (Asbestos, TOT, etc.) and to be dismantled and carted away to outside the site. - Brick tiles to be disassembled and removed and stored in appropriate location as per engineer's instruction and to checked for reused if needed - Clean, rub and repaint all steel structure and do the necessary reinforcement - Damaged steel structure to be replaced with new steel structure similar to existing. - Support and add new beams similar to existing. - Remove existing paint & clean deeply as per SSPC code and ISO 8501 - Apply base and epoxy as specified - Supply the roof covers as per drawings - Install the galvanized steel gutter (No Welded) and all Steel pipe works - Corrugated Metal sheet flashing between walls and shed roof with mastic - All needed items as per the Engineer instructions				
5.3.1	Rehabilitate and strength steel sheds and replace existing sheet above Emergency entrance *Rate or Lump Sum in Words:*	m²	120		
5.6	**Steel Stair** Provide Galvanized Steel Stair with related platform as per drawings. Contractor to submit complete shop drawings with related calculation for approval.				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.6.1	Rehabilitate Steel Stair Rehabilitate existing steel stair and remove damaged members and replace by new works to include: - Materials similar to the existing - Remove existing paint & clean deeply as per SSPC code and ISO 8501 - Apply epoxy paint as per specification - All needed items as per Engineer instructions at roof level *Rate or Lump Sum in Words:*	No	1		
5.8	**Replace and/or Rehabilitate Exhaust pipe for generator icluding connections**				
5.8.1	Replace and/or Rehabilitate black steel pipe same size including 5cm insulation by adding /removing steel supports necessary as per site conditions and existing form. Work includes all necessary equipment, labor, materials, accessories, etc. Contractor to submit shop drawings prior to commencement and as per engineer approval. *Rate or Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
7.1	**Roof Waterproofing**				
7.1.1	Works should be applied and done by experts with previous experience in similar works. Works to include: - DEEP cleaning of all surfaces and carting away of dust & debris - Concrete pad for water tanks as indicated - Sand cement screed layer to Provide proper slopes minimum 0.75% - Expansion joint sealant to be done respecting back rod, un-bonding tape, adequate thickness of sealant, type & finish of sealant (fire rated) & design drawings especially on roof & planters. - Provide tackle coat (Proper) - Provide 4mm thick, SBS layer from an approved manufacturer - Provide protection for all pipe works and drains - Provide heat insulation layers of 35 KG/m³ where required - Provide Geotextile layers - Provide all aluminum flashing with mastic - Provide finishing material as required - All as specified and approved shop drawings Roof of the hospital	m²	1,500		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)

8.1.3 **Rehabilitate the Existing Timber Doors**

As stated in the Preambles of Item 8.1

In addition, rehabilitate the existing timber doors:

The minimum amount of existing timber should be removed to allow an effective repair to be formed.

Cut out deteriorated area of timber in sloping splice to give optimum area of surface to be glued & fixed.

Well-seasoned timber to be used in forming a repair with the line and density of grain (number of growth rings) of new timber matching the existing as closely as possible.

For all joinery work, timber with shakes, fissures, warping, heartwood, sapwood or numerous/large knots should be avoided for use in repair.
Always work new material to the line of the existing and avoid unnecessary trimming of original timber.
Repairs should follow any existing deformations in the line of the wood element (e.g. door or window).

Avoid mixing timber species between new and existing in a repair as joint between the two is likely to fail from different rates of expansion and contraction during dry & damp conditions. Where possible, spliced repairs to be designed to ensure moisture is towards the outer face of timber and that moisture does not lay on the repair joint.

The length of the splice is governed by section of timber and the nature of component being repaired and it should be designed to ensure an effective bond between new and existing sections of timber.
Where wood element are to be dismantled as part of the repair process, always mark and record the constituent parts before dismantling. similarly, number of glass panes/quarries before removal.

If applicable carefully soften putty or remove wood trim and then remove glass.
Use glue, to connect a new outer section of bottom rail to the existing sound timber. Drill and insert new wooden pins or fix using brass screws from inside.

Casements or sashes are often in sound condition but the joints have become loose due to the break down of glue and loose wedges.

The wedges will often be easily removable and will probably be unsuitable for re-use. It may be for the joints to be pulled together successfully.

Attach door frame and shims to perimeter opening to accommodate construction tolerances & all irregularities.

Align door plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work. Install operating hardware.

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
8.1.3.1.1	Rehabilitate and paint existing single leaf timber doors with related accessories				
	Paint	m2	45		
	Repair	№	10		
	Rate or Lump Sum in Words:				
	.....				
8.2	**Aluminum Doors and Windows**				
	Fabricate, supply and install aluminum works as manufactured by SIDEM 2000 first choice with all necessary accessories as per the drawings and the Engineer instructions, cost to include all doors and windows: - Reveals hard stone 3cm thick, all around for external opening - Apply EPDM around door and windows where necessary - Single glass 6 mm - Double glass 6-12-6 mm (Outer Glass should be - Hinges and locks - Joint Filler - Mosquito Screen - Mesh - All items needed as per the Engineer instructions - All as specified and base on an approved shop drawings after exact dimensions				
8.2.1	**New Aluminum Panels (Double Glass)**				
	Supply and install the fabricated aluminum panels with double glass (6 - 12 - 6 mm) (Outer Glass should be Tempered)				
8.2.1.1	Provide new aluminum double glazed door for main entrance & kidneys & Emergency entrance	m2	22		
	Rate or Lump Sum in Words:				
	.....				
9	**FINISHES**				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.1.2	**Repair of Existing Plaster (Internal - External) (Cracks, etc.)**				
9.1.2.1	Rehabilitate and repair cracked and damaged plaster indoor and outdoor Work to include: - Determine the location and remove all loose items around the area - Remove the cracked plaster layer - Remove the pulled out layers - Clean the places with suitable materials - Fill all cracks after widening by (No Suggestions) or approved equal. - Remove loose and other deteriorated materials prior to the new repair. Take special care not to damage the adjacent original materials. Prepare mortar joints for installation of lateral reinforcement where it is required. Use thin steel bars to clean joints to maximum depth possible. Remove loose mortar. Mix mortar with minimal amount of water (potable) prior to use. All separation cracks between perpendicular walls shall be filled grout to reduce additional movement from wind loads and thermal expansion-contraction. - Clear debris from crack by probing, brushing, and blowing. - Force non-shrink mortar mixture into crack as deep as possible with hands, wood and metal probes. Use as dry a mix as possible. Use stone bats to fill larger crack voids. Ensure mortar is forced into smaller/deeper cracks. Mortar grout will be fluid in order to flow into crack. Either grout bags or gravity flow shall be used depending on the conditions. Fil Protect repairs from rapid drying by misting, shading, protecting from dry wind cracks in a series of applications rather than one large application. Final application shall not be flush with the surface, but shall be one half the width of the crack below the surface. Remove all tool marks with brush. - Apply the finish rough plaster layer - Install galvanized steel mesh 20 cm width at least				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
	- Apply the second smooth plaster layer	m2	30		
	Rate or Lump Sum in Words:				
9.2	**Tiling Works**				
	Supply and install all tiling items for floors, with the Work to include all materials and labors and the Contractor should use all necessary rods and levels as per the Engineer instructions Price to include: - Sand below tiles - Materials, tiles, mortars - Labors - Rubbing - Filling between tiles - Filling the skirting - Remove unsuitable items - Cleaning the places - All needed items as per the Engineer instructions				
9.2.1	**New Full Mass Colored Ceramic for Floors**				
	Ceramic tiles and tilework as specified and detailed, installed complete; Including for substrate preparation, cement: sand screeds or plaster backing coats; setting, jointing and grouting; tile trim and accessories; sealants; and all other related ancillaries as indicated or required				
9.2.1.1	Supply and install anti skid colored full mass ceramic tiles for floor toilets	m²	24		
	Rate or Lump Sum in Words:				
9.2.2	**New Glazed Colored Ceramic for Walls**				
9.2.2.1	Supply and install glazed colored ceramic for walls of toilets & surgery room	m²	300		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.2.5	**Rehabilitate Existing Stair Treads and Riser** Remove the broken treads and risers, install and supply new ones similar to the existing with the needed side bases, width as per site dimension with skirting and tiles for The work to be as per the Engineer instructions				
9.2.5.1	Existing Mosaic Stair the price including Skirting tiles & Landing *Rate or Lump Sum in Words:*	m	5		
9.2.10	**Laminate Vinyl Tiles**				
9.2.10.1	Provide Laminate Vinyl Tiles similar to existing. The removal of existing vinyl tiles, rolls, proper levelling, surfacing of the existing concrete by casting a special layer of new concrete to ensure proper installation of the new vinyl layer as specified and as per standards. Price to include skirting *Rate or Lump Sum in Words:*	m²	150		
9.3	**Suspended Ceilings** The suspended ceiling, work to include: - All panels - All heavy duty hangers and accessories as specified - Rails (hidden type) - Special metal heavy duty suspension systems - All needed heavy duty accessories and items to complete the works - Works to be indicated on drawings and as per the specifications - Works should be coordinated between the starting and the end of the floor panels and also should be coordinated with the electromechanical units in the ceiling - All works should be as instructed by the Engineer				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.3.1	**Metal Sheet Strips Suspended Ceilings:**				
9.3.1.1	Supply and install aluminum strip suspended ceiling at the location indicated on drawings and as per specs Works to include: - Materials (Aluminum sheet thickness not less than 0.8 mm) - Labors - Accessories - Angles - Special Heavy duty metal suspension system - Complete shop drawings should be submitted for approval - All needed items as per the Engineer instructions FOR TOILETS *Rate or Lump Sum in Words:*	m²	110		
9.3.1.2	60 x 60 cm Suspended Ceiling *Rate or Lump Sum in Words:*	m²	500		
9.5	**Painting**				
9.5.1	**Wall and Ceilings Paint Works** Wall paint include preparation of the base surfaces to receive the paints and apply the specified layers of putty and paint from the best quality as per specifications and as indicated in drawings The base surfaces should be clean and smooth and free from any pulled out old paints before starting application of the specified primer/undercoat. Apply 2 layers of putty then after smoothening, then 3 layers of the approved paint materials. All works and items should be as per manufacturer recommendation, compatible with each other and as per the Engineer instructions and approval, ***All paint types must be lead-free and Low VOC (Volatile Organic Compounds)***				

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
9.5.1.2	Super Rubber Paint for old walls and ceilings *Rate or Lump Sum in Words:*	m²	1,000		
9.5.2	**Outside Walls Paint (Old and New Walls and Ceilings)**				
9.5.2.1	Paint for external old and new walls, smooth touch Work to include: - Removal of any paint or obstacle - Rehabilitate the surfaces and make them goods - Polyurethane where needed for cracks - Apply one coat of undercoat - Apply 2 coats of external paint or rolled textured paint - Apply one layer of external transparent paint (acrylic styrene copolymer elastic water proof) - All needed scaffolding and materials for the best execution of the works - All works and items should be as per manufacturer and the Engineer instructions and approval.	m²	2,000		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Collection

Page №		Amount (US $)
2.1	.....	.....
2.2	.....	.....
2.3	.....	.....
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2.10	.....	.....
2.11	.....	.....
2.12	.....	.....
Total Carried to General Summary	.....	.....

Bill № 3: Mechanical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
1	**GENERAL TECHNICAL REQUIREMENTS**				
1.2.2	Maintenance and rehabilitation of existing HVAC, Ventilation & fire fighting systems, including all necessary piping, duct works, pumps and controls, fans, mechanical works inside shafts, air conditioning units, etc.				
	Split A/C unit 36000 BTU (Heat & Cool) at Surgery & Emergency	№	4		
	Split A/C unit 24000 BTU	№	2		
	Split A/C unit 12000 BTU	№	8		
	Boiler	№	1		
	Rate or Lump Sum in Words:				
2	**SANITARY, WASTE & RAIN WATER PIPE WORK INSTALLATION**				
2.1	**Drainage System**				
	Supply, install and test the storm water drainage from (UPVC) pipes inside the building to outside and the pipes to be measured in Linear Meter with all related accessories, cleanout, elbows, vent hangers, and all necessary accessories as per standard installation details				
2.1.2	Ø 75 mm / UPVC	m	25		
	Rate or Lump Sum in Words:				
4	**FIRE PROTECTION**				
4.1	**Complete fire system**				
	Supply and install one complete fire protection system including full design and feasability study & comparison	№	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5	**SANITARY FIXTURES**				
5.2	**W.C. For Non Kids** Supply and install W.C. for non kids, Flush valve with cover as manufactured by Ideal Standard Item No. E876801 also the hose, or approved equal and to be 40 cm from floor finish with timber cover. The work to include the installation, liking, cleaning with all necessary connection, angle valves and necessary accessories similar to the K.G.W.C. Each W.C. should be equipped with a Flushing Hose (Grohe or Ideal standard or approved equal)				
5.2.1	EWC-01 (Wall Hang - 52 x 36 cm) *Rate or Lump Sum in Words:*	№	10		
5.4	**Lavatories for Non Kids** Supply and install semi pedestal wash basin similar to Ideal Standard No. 742001 or approved equal and fixed at 82 cm high from the floor finish. Cost to include all necessary connections, angle valves, traps and necessary accessories as specified.				
5.4.1	LAV-01 (semi-pedestal with mixers 55 x 45 cm) *Rate or Lump Sum in Words:*	№	10		
5.6	**Taps on Lavatories** Supply and install self close taps to be fixed in the lavatory body as manufactured by Grohe with all required works and drain accessories including trap, to be connected to the new water supply and drain and as instructed by the Engineer				
5.6.1	Self Close Taps *Rate or Lump Sum in Words:*	№	10		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
5.6.1	Sprayer *Rate or Lump Sum in Words:*	№	20		
5.9	**<u>Taps for Lab Sinks</u>** Supply and install taps to be fixed in Lab type Grohe with all required works and drain accessories including trap and to be connected to the new water supply and drain and as instructed by the Engineer				
5.9.1	Taps for Lab Sinks *Rate or Lump Sum in Words:*	№	10		

Page Total Carried to Collection

Collection

Page №		Amount (US $)
3.1	……	……
3.2	……	……
3.3	……	……
	Total Carried to General Summary ……	……

Bill № 4: Electrical Engineering Services

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4	**FIRE ALARM SYSTEM** Supply and install all necessary fittings, wires conduits, boxes, plates, relays, bell modules, EOL resistors and accessories as described and as shown on drawings and all necessary connection to the management stations as intended to the satisfaction of the engineer.				
4.1	Addressable fire alarm control panel (FACP) including but not limited to: 8 loop Battery 24 VDC 2 RS 422 communications ports 1 RS 232 communication port JBUS standard protocol for remote monitoring 4 programmable inputs 40 programmable relay included *Rate or Lump Sum in Words:*	№	1		
4.2	Fire Alarm Repeat Panel *Rate or Lump Sum in Words:*	№	1		
4.3	Smoke Detector *Rate or Lump Sum in Words:*	№	16		
4.4	Heat Detector *Rate or Lump Sum in Words:*	№	5		
4.5	Combined Heat-Smoke detector *Rate or Lump Sum in Words:*	№	2		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
4.6	Break Glass *Rate or Lump Sum in Words:*	№	4		
4.7	Fire Bell *Rate or Lump Sum in Words:*	№	4		
4.8	Fire Bell with Strobe light *Rate or Lump Sum in Words:*	№	1		
9	**BELL SYSTEM** Supply, connect and test Bell System for the hospital including conduits, wires and all accessories, as per Engineer instructions.				
9.1	Sound Bell (Each Floor Should have one bell minimum) *Rate or Lump Sum in Words:*	№	5		
9.2	Bell Push Button (Main Supervisor) *Rate or Lump Sum in Words:*	№	2		
9.3	Timer, Relays and all necessary equipment for all blocks of the hospital *Rate or Lump Sum in Words:*	LS	1		

Page Total Carried to Collection

Item	Description	Unit	Estimated Quantity	Unit Rate (US $)	Amount (US $)
11	**GENERATORS**				
11.1	Supply, install, connect and test new generator for all Electrical Loads in perfect operating conditions, including but not limited to: - Inverter - All cables, wires, conduits and all necessary accessories - Sound insulating chamber - The Contractor should submit detailed shop drawings and materials for approval.				
	350 KVA	Pcs	1		
	500 KVA	Pcs	1		
	Rate or Lump Sum in Words:				

Page Total Carried to Collection

Collection

Page №		Amount (US $)
4.1	……	……
4.2	……	……
4.3	……	……
	Total Carried to General Summary ……	……

General Summary

General Summary

Description	Amount (US $)
Bill № 1: General Requirements (in separate document) ……	
Bill № 2: Civil and Architectural Works ……	
Bill № 3: Mechanical Engineering Services ……	
Bill № 4: Electrical Engineering Services ……	
* Total Amount of Bill of Quantities ……	
* Discount by Tenderer (_____ %) ……	
* Total Amount of Tender (VAT Not Applicable) …	

* Total Amount of Tender in Words:

Part 6

Grand Summary

All Hospitals

Grand Summary

Grand Summary

Description	Amount (US $)
Bill № 1: General Requirements (All Hospitals)	
Tebnine Governmental Hospital	
Bill № 2: Civil and Architectural Works	
Bill № 3: Mechanical Engineering Services	
Bill № 4: Electrical Engineering Services	
Sub-total Tebnine Governmental Hospital	
Nabatieh Governmental Hospital	
Bill № 2: Civil and Architectural Works	
Bill № 3: Mechanical Engineering Services	
Bill № 4: Electrical Engineering Services	
Sub-total Nabatieh Governmental Hospital	
Hasbaya Governmental Hospital	
Bill № 2: Civil and Architectural Works	
Bill № 3: Mechanical Engineering Services	
Bill № 4: Electrical Engineering Services	
Sub-total Hasbaya Governmental Hospital	
Marjayoun Governmental Hospital	
Bill № 2: Civil and Architectural Works	
Bill № 3: Mechanical Engineering Services	
Bill № 4: Electrical Engineering Services	
Sub-total Marjayoun Governmental Hospital	
* Total Amount of Bill of Quantities ……	
* Discount by Tenderer (_____ %) ……	
* Total Amount of Tender (VAT Not Applicable) ……	

* Total Amount of Tender in Words: