

REPUBLIC OF LEBANON

Ministry of Public Health

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Supply and Installation of Medical Equipment, Furniture
and related Civil and Electromechanical Works
for CT Scanner, Standby Generator and ICU Unit
to Al Jabal Hospital – Kornayel

VOLUME 3 – BILL OF QUANTITIES CIVIL AND ELECTROMECHANICAL WORKS

- ICU AT FIRST FLOOR PLAN
- CT-SCAN AT GROUND FLOOR
- GENERATORS ROOM

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SEPTEMBER, 2025

ICU AT FIRST FLOOR

**DIVISION 1
GENERAL REQUIREMENTS**

General notes

- A These General Items are applicable to the whole of the works. The value of these general items Clause or Sub-Clause shall be deemed to be included in the rates for measured items elsewhere in the Bills of Quantities.

Description Generally

- A The description included in the Bills of Quantities to describe the workmanship and materials necessary for each item are not necessarily complete. The Tenderer is referred to the Specifications, Conditions of Contract and other documents and the Drawing for further information concerning the works and no claim or variation will be considered on account of his failure to acquaint himself with such information.

Measurements Generally

- A All quantities contained within the Bills of Quantities are intended to give a reasonable indication of the works shown on the Drawings.
- B All work shall be remeasured on site.
- C Unless otherwise stated, all work has been measured net as fixed in its place with no allowance made for laps or waste.
- D Generally, in setting down dimensions in the Bills, the sequence is length-width-height. All measurements have been taken up or down to the nearest meter (or other units), and where exactly half meter (or other units) measurements result, these have been taken up.
- E The Contractor shall ensure all services as:
Water supply, Electricity, drainage, stair, lift and other services needed during the work

**DIVISION 1
GENERAL REQUIREMENTS**

Pricing generally

- A The Tenderer shall satisfy himself as to the meaning of every item in the Bills of Quantities and the rates and prices inserted by him will be deemed to cover all his obligations under the contract and all matters and things necessary for the proper construction, completion and maintenance of the works (including, but not by way of limitation), for all temporary work required (including any that may be required by subcontractors, whether nominated or otherwise)

The price shall include for all materials and labour and for the provision and use of all plant-whether mechanical or non - mechanical - required for the expeditious carrying out of the works in their proper sequence-for shifting, altering and adapting such temporary work and plant as may be required during the progress of the works and removing at completion and making good any surfaces disturbed; and shall include any obligation in all respect with the Conditions of Contract, the specifications, general clause and requirement in Division 1 or any other document. For the Guarantees and bonds required and shall include for Field office and sheds, Electrical power, water use of protection of site, insurance and labour and materials, as specified here in after, and shall include the costs of preparing a tender; and the final account; and for all other establishment charges and on costs of whatever nature. No claim for additional payment will be allowed for any error or misunderstanding by the Tenderer in these respects.

- B The Tenderer shall be required by the Engineer to produce a detailed breakdown of all his rates prior to the signing of the Contract. The Contractor shall liaise on this matter with the Engineer
- C The Tenderer should price all items he considers have a value. If any items are not priced by the Contractor they will be deemed to be of no value or that their value has been spread throughout the rates of the other items

**DIVISION 1
GENERAL REQUIREMENTS**

Field office and sheds

- A The Contractor shall provide on site adequate full equipped office as specified, weatherproof sheds and storage for the materials intended for the works. The Contractor shall remove the same on completion of the works

Electrical Power

- A The Contractor shall provide a generator or shall arrange for an electrical power for the works suitable for all purposes until required by the Engineer and shall pay all charges and running and maintenance costs in connection.

Water

- A The Contractor shall arrange for an adequate supply of water for the works suitable for all purposes until required by the Engineer and shall pay all charges in connection.

Use and Protection of Site

- A The Contractor shall provide constantly available labour, transport and materials to maintain as directed by the Engineer's Representative the cleanliness and tidiness of the Site and to attend to the protection and temporary covering and

barricading pits and other hazards to safety .

Labour and Materials

- A The Contractor shall provide such labour and materials as the Engineer may require to assist him in carrying tests and checks on materials and workmanship and setting out and measurements of the works

Insurance

- A The Contractor shall provide and maintain with an approved Insurance Company, Contractor's All Risk Insurance, Third Party Insurance, Workmen's Compensation Insurance, as required in the Conditions of Contract all in accordance with the latest applicable laws and labour regulations of the Lebanese Government, and update the same if new laws, regulations or amendments were introduced by the Lebanese government until handling over.

N.B.

Unit to

m³ : Cubic meter

m² : Square meter

m : Linear meter

No : Number

U : Unit

L.S. : Lump Sum

**DIVISION 1
GENERAL REQUIREMENTS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
A	Mobilization and demobilization, will be paid in monthly payments Per Unit Rate in letters :	Item	1		
B	Insurances Per Unit Rate in letters :	Item	1		
C	The Execution of the work should not affect the operation of the Hospital. The Contractor shall provide an entrance for the site separate from the Hospital entrance, for his staff, equipment and materials. (will be paid in monthly payments) Per Unit Rate in letters :	Item	1		
Temporary Facilities & Services for the Engineer					
A	The Contractor shall provide prefabricated or demountable offices. All as specified in Particular Requirement of the specifications Volume 2 Division 1 and directed by the Engineer. "Pay for all". Per Unit Rate in letters :	Item	1		
B	The Contractor shall provide all the services needed to carry out all the works like water supply, electrical power supply and lighting and all telephone local charges. All as specified in General Requirement specially items 3 and 23 and as directed by the Engineer. Will be paid in monthly payments. Per Unit Rate in letters :	Item	1		
C	As Built drawings for all trades Per Unit Rate in letters :	Item	1		
D	Shops drawings for all trades Per Unit Rate in letters :	Item	1		
All the above mentioned items shall be provided by the Contractor, any missing or not completed works will be deducted from the prices subject to the Engineer appreciation					

To Collection USD _____

Item	Description	Unit	Qty	Unit Rate	Amount USD
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USD included

**DIVISION 2
SITE WORK**

Item	Description	Unit	Qty	Unit Rate	Amount USD
A	Existing floor finish shall be removed and all debris , rubbish and the like resulting from demolition shall be removed to location approved by the Engineer , including cleaning & preparing the areas to receive the new finishes. (ICU)				
	Per Square Meter in letters :	m ²	265		
B	Existing plastered block wall and doors shall be removed which ever the thickness and removing the debris , rubbish , Wood doors , aluminium doors & windows and any materials resulting from demolition to location approved by the Engineer , including cleaning & preparing the areas to receive the new finishes. (ICU)				
	Per Square Meter in letters :	m ²	470		
C	Existing false ceiling to be removed including suspension system and all materials resulting from demolition shall be removed to a location approved by the Engineer , including cleaning & preparing the areas to receive the new finishes. (ICU)				
	Per Square Meter in letters :	m ²	265		
D	All existing internal wall areas shall be brushed and cleaned & prepared to receive the new finishes, as shown on drawing & to the approved of the Engineer. (ICU)				
	Per Square Meter in letters :	m ²	275		

To Collection USD _____

DIVISION 2
SITE WORK

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
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DIVISION 2 - SITE WORK

Carried to Summary

USD

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Preambles					
A	The quantities stated in the Bill of Quantities are estimated and are not intended to limit the amount of work to be performed under the Contract.				
B	The Bill of Quantities is to be read and construed in conjunction with the specifications.				
C	The general and detailed requirements of the Specifications are not repeated in the descriptions of the items in the Bill of Quantities, except for the purposes of identification.				
D	All materials listed in the Bill of Quantities shall be of the respective kinds described in the Contract and in accordance with the Specifications and subject to the prior approval of the Engineer				
E	The rates and prices inserted in the Bill of Quantities are to include for the full cost of the work as described in, or reasonably inferable from the Specifications and other Contract Documents				
F	If any item in the Bill of Quantities is not priced, the cost thereof shall be deemed to be included in the prices of other items				
G	Without restricting the generality of the foregoing, the rates and prices inserted in the Bill of Quantities shall be deemed to cover :				
	<ul style="list-style-type: none"> - Labour and all costs in connection therewith - Plant and all costs in connection therewith - Materials and consumable supplies - Transport - On-Site and off-site supervision - Overhead charges and profit - Fees for permits excluded taxes 				
H	Items denoted as provisional in the Bill of Quantities will be carried out only as instructed by the Engineer and may be omitted if the Engineer so decides.				

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Concrete Works					
A	Concrete has been measured net, no deduction has been made for :				
1	Volume of concrete displaced by embedded steel				
2	Voids not exceeding 0.10m ² in concrete measured superficially				
3	Voids not exceeding 0.05m ³ in concrete measured cube				
B	Rates for plain concrete slab and screed shall include for :				
1	Vibrating and packing				
2	Curing and sprinkling				
3	Grading, tamping, trowling and floating				
4	Formwork and metal ties				
5	Reinforcement and tying wire, spacers, rolling margin, cutting and bending, waste, hooks and the like.				
6	include treatment and cleaning of existing reinforcement and needed epoxy material for complete the works as shown on dwgs.				
C	Beds and screeds				
	Beds and screeds shall be measured by square meter of placing concrete				

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Reinforced in-situ concrete (03300)

Vibrated reinforced concrete class "B3" with ordinary Portland cement including reinforcement and clean sawn Formwork :

In Elevations

Lintels

- A Concrete lintels size as shown on the drawings including reinforcement (B3). (ICU)

Per Cubic Meter in letters :
..... m³ 1.00

Beds and screeds (03500)

Cement and sand screed (1:3) , all as specified including slop (0.5 %) as shown on Drwg A - 06

- A 100 mm thick to ICU Areas

Per Square Meter in letters :
..... m² 206

To Collection USD

DIVISION 3
CONCRETE WORKS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
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DIVISION 3 - CONCRETE WORKS

Carried to Summary

USD _____

**DIVISION 4
MASONRY**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A Rates for blocks shall include for :
- 1 Work of all classifications in any location, in conformity with the seismic regulations (PS92)
 - 2 Rough and fair cutting
 - 3 Cutting or leaving holes, chases, grooves, mortices and sinkings including all making good
 - 4 Bedding and pointing plates and frames, and building in door and window frames and the like
 - 5 Cutting and pinning or building in ends of lintols, steps, timbers, rails, brackets, steel sections and the like including all making good
 - 6 Raking out joints or hacking surfaces
- B All blocks has been measured net including mortar. No deduction has been made for voids not exceeding 0.10m²

DIVISION 4
MASONRY

Item	Description	Unit	Qty	Unit Rate	Amount USD
Concrete unit masonry (04220)					
Precast concrete hollow blocks, bedded and jointed in cement and sand mortar (1:3), all as specified and as shown on the drawings . (ICU)					
A	100mm thick walls Per Square Meter in letters :	m ²	310		
B	150mm thick walls Per Square Meter in letters :	m ²	17		
C	200mm thick walls Per Square Meter in letters :	m ²	8		

To Collection USD _____

DIVISION 4
MASONRY

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
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DIVISION 4 - MASONRY

Carried to Summary

USD

DIVISION 6
WOOD & PLASTIC

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A Rates for wood shall included for :
- 1 Wrot faces on all timber, unless otherwise stated
 - 2 Any length or cross-section
 - 3 All kinds of joints, all cutting and waste
 - 4 Raking, curved or circular work and labours
 - 5 Notching, morticing, boring, sinking, forming angles and rounded edges, scribing and all other sundry items of the like nature required
 - 6 Plugging to concrete or block work including all making good

**DIVISION 6
WOOD & PLASTIC**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Wood Cabinets

Supply and fix wood counters consist of 20 mm thick top resin (artificial marble), 20mm MDF Melamine laminate face, 20mm thick back sheet and bottoms including 20mm thick separated units, including supports, fixing and all necessary accessories (bolts, hinges, lockers, handles, etc.) as shown on drawing A -12 . (ICU)

- A Size 1200 mm and 600mm deep , 900 mm high and 900 mm high for upper part .
Type 2

Per Unit Rate in letters :

..... No 3

- B Size 1700 mm and 600mm deep , 900 mm high and 900 mm high for upper part .
Type 2

..... No 1

- C Size 5000mm and 700mm deep and 800 mm high top & face of resin. Type 1

Per Unit Rate in letters :

..... No 1

- D Size 4200 mm and 600mm deep and 800 mm high top & face of resin. Type 3

Per Unit Rate in letters :

..... No 1

Corner Guard

Supply and fix corner guard 50 * 50 mm & 2100 high , consist of continuous shock cushion , 2 mm thick textured high impact vinyl snap - on cover 6 mm radius , continuous Aluminium retainer , and galvanized steel corner 50 * 50 mm including fixing and all necessary accessories , as shown on drawing A - 12, dets, 1 & 2 . (ICU)

- A Per Unit Rate in letters :

..... No 6

To collection USD

DIVISION 6
WOOD & PLASTIC

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Wood walls protection guard

Supply and fix wood walls protection guard
290 mm high ,at 900 mm from floor finish,
consist of MDF Laminated wood 16 mm
thick , Hardwood beech , Stainless steel
bolts, including fixing and all necessary
accessories , as shown on drawing A -12,
det. 3 (ICU)

A	Per Linear meter in letters :	lm	42
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To collection USD _____

DIVISION 6
WOOD & PLASTIC

Item	Description	Unit	Qty	Unit Rate	Amount USD
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DIVISION 6 - WOOD AND PLASTIC

Carried to Summary

USD

DIVISION 7
THERMAL & MOISTURE PROTECTION

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A Rates for waterproofing shall include for :
- 1 Cleaning down and preparing surfaces
 - 2 Any width or area
 - 3 Fair and rounded edges, drips, arrises and angle fillets
 - 4 Cutting to line overlapping, turning into grooves and pointing
 - 5 Laying to slopes, falls or cross falls
 - 6 Working into outlets, channels, gullies and the like
 - 7 Cutting trimming, making holes and forming openings, etc,... including working around pipes and openings and making good
 - 8 Mastic pointing and protection of the whole work under this section
 - 9 Additional reinforcing materials at all internal angles, outlets, channels, gullies over expansion joint and the like
 - 10 Additional reinforcing materials needed at all external angle

DIVISION 7
THERMAL & MOISTURE PROTECTION

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Waterproofing to wet area (07500)

- A Apply waterproofing system as specified
To wet area (Toilets, etc) (ICU
Per Square Meter in letters :

..... m² 40

To Collection USD _____

DIVISION 7
THERMAL & MOISTURE PROTECTION

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
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DIVISION 7 - THERMAL & MOISTURE PROTECTION

Carried to Summary

USD

**DIVISION 8
DOORS & WINDOWS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A Rates for ironmongery shall include for :
 - 1 Screws and fixing accessories
 - 2 Temporarily fixing and refixing ironmongery
- B All sizes given are finished sizes
- C All aluminum windows, doors, frames, etc., shall be factory assembled and reinforced according to drawings, complete with ironmongery hinges, glazing gaskets, glazing and anchors and all aluminum elements shall be protected from adjoining structures as specified
- D Where windows have no structural member to which they may be secured the provision for rigidity of such windows shall be provided
- E All external windows and doors to be weatherproof
- F All dimensions of doors and windows must be re-adapted to fit the existing conditions of the Site
- G Easing and adjusting doors and protection generally
- H Any pattern, size and area of glazing
- J Circular cutting and square cutting and rounded edge
- K Glazing to wood, metal or aluminum
- L Neoprene, air lock
- M Bedding edges and labours to edges including rounding edges of all panes to prevent damage to gaskets
- N Grinding and drilling holes
- P Protection from damage and replacing any damaged unit
- Q Irregular shaped panes are measured as the smallest rectangular area from which such shape can be obtained

**DIVISION 8
DOORS & WINDOWS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Aluminum doors & windows (08120 & 08520)					
Bronze anodized aluminum door and window units complete, including tempered double glazing (6-12-6)mm , Sidem 2000 or single glazing 6 mm, frames, sub-frames, angles, channels, glazing , EPDM strips, mastic pointing, ironmongery, aluminum cover joint, fixing accessories, all as specified and as shown on the drawings A-09. (ICU					
A	Type ALD1 overall dimension 3680 * 3500 mm comprising double glazing Per Unit Rate in letters :	No	1		
B	Type ALD2 overall dimension 3550 × 3500 mm, comprising double glazing . Per Unit Rate in letters :	No	2		
C	Type ALD3 overall dimension 1500 × 3500 mm, comprising double glazing . Per Unit Rate in letters :	No	1		
D	Type ALD4 overall dimension 2355 × 3500 mm, comprising double glazing . Per Unit Rate in letters :	No	1		
E	Type ALD5 overall dimension 4160 × 3500 mm, comprising double glazing . Per Unit Rate in letters :	No	1		
F	Type ALD6 overall dimension 1450 × 3500 mm, comprising double glazing . Per Unit Rate in letters :	No	2		

To Collection USD

**DIVISION 8
DOORS & WINDOWS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Windows

Bronze anodized aluminum door and window units complete, including tempered double glazing (6-12-6)mm , Sidem 2000 or single glazing 6 mm, frames, sub-frames, angles, channels, glazing , EPDM strips, mastic pointing, ironmongery, aluminum cover joint, fixing accessories, all as specified and as shown on the drawings A-09 . (ICU

A	Type ALW1 overall dimension (1200 × 1200) mm comprising double tempered glazing (6-12-6) mm thick Per Unit Rate in letters :	No	2		
B	Type ALW2 overall dimension (3600 × 3500) mm comprising double tempered glazing (6-12-6) mm thick Per Unit Rate in letters :	No	1		
C	Type ALW3 overall dimension (1450 × 1200) mm comprising double tempered glazing (6-12-6) mm thick Per Unit Rate in letters :	No	2		
D	Type ALW4 overall dimension (3950 × 3500) mm comprising double tempered glazing (6-12-6) mm thick Per Unit Rate in letters :	No	2		
E	Type ALW5 overall dimension (3900 × 3500) mm comprising double tempered glazing (6-12-6) mm thick Per Unit Rate in letters :	No	1		

To Collection USD

**DIVISION 8
DOORS & WINDOWS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Wood doors (08210)					
Wood doors comprising 45mm thick MDF door leaf, laminated melamine on both sides as shown on drawing, including hard wood, lipping, timber stiffener, accessories, galvanized steel frame and subframe and stainless steel sheet 1.5mm thick anchors fixing accessories and fixing ironmongery , all needed painting all as specified and shown on drawing A-10 and to the approval of the Engineer. (ICU)					
A	Type TD1 - TD1A overall dimension 900 x 2200mm Per Unit Rate in letters :	No	11		
B	Type TD2-2a overall dimension 1000 x 2200mm Per Unit Rate in letters :	No	4		
C	Type TD-3a overall dimension 1000 x 2200mm , with card reader from out side and push to open device from inside . Per Unit Rate in letters :	No	1		
D	Type TD4 overall dimension 1600 x 2200mm including viewing panels with electrical door lock & motorized opening and card reader . Per Unit Rate in letters :	No	1		
Ironmongery					
As shown on dwg A-10					
A	8 line bored Knob lock set (Toilets)	No	14		
B	10 line Lever handle including lockset Per Unit Rate in letters :	No	2		
C	Door closer Per Unit Rate in letters :	No	1		
To Collection				USD	

DIVISION 8
DOORS & WINDOWS

Item	Description	Unit	Qty	Unit Rate	Amount USD
D	Door holder .				
	Per Unit Rate in letters :	No	1		
				
E	Hinges .				
	Per Unit Rate in letters :	No	53		
				

N.B.

All locks, lever handle hinges, door stop shall
be stainless steel materials first choice

To Collection USD _____

DIVISION 8
DOORS & WINDOWS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 8 - DOORS AND WINDOWS

Carried to Summary

USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A All finishings have been measured as the net area in contact with the base. No deduction has been made for voids not exceeding 0.25m²
- B Rates for in-situ finishings shall include
- 1 Application to and preparation of any surface including guide screeds
 - 2 Wire mesh at junctions between differing materials around opening for pipes ducts, etc. and angle and stop beads
 - 3 Any width or area any location and any height
 - 4 Finish to surfaces, to falls, crossfalls and slopes including making good after all trades
 - 5 Working into channels, around edges, chamfered edges, sharp arrises rounded angles, coved angles and the like
 - 6 Admixtures, samples
- C Rates for tile and slab finishings shall include for :
- 1 Application to and preparation of any surfaces
 - 2 Sand bed to any thickness to floor tiling as shown on the drawings
 - 3 Grouting pointing and polishing
 - 4 Finish to surfaces, to falls, crossfalls, and slops, including making good after all trades
 - 5 Fair, rebated, rounded, chamfered, splayed, bevelled and moulded edges, grooves, flutes and the like
 - 6 Square, raking and circular cutting
 - 7 Cutting and fitting into any opening or recessed
 - 8 Admixtures, samples
- D Rates for stone shall include for :
- 1 Templates and patterns
 - 2 All joints including joggle joints sunk joints rebated and the like
 - 3 All dressing
 - 4 Work in any location
 - 5 Square ends, square reveals, square external angle of walls and the like

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
6	Splayed ends, battered ends, battered external and internal angle of walls and the like				
7	Wall ties, anchors, metal cramps and dowels lead plugs and the like if existing				
8	Rough and fair cutting				
9	Grooves, throats, rebates, margins, flutes, sinkings chamfered angles, founded angles and the like				
10	Stops and mitres				
11	Grooves for turned in flashings, nibs of skirtings and the like				
12	Horizontal raking and vertical chases				
13	Holes for pipes, tubes, bars, conduits, ducts and the like				
14	Polishing				
E	Rates for painting and floor coatings shall include for :				
1	Preparation of paint and preparation of surfaces to be painted				
2	Any area or width in any location				
3	Work in multicolors				
4	Cutting in edges and rubbing down between coats				
5	Attendance, protection and making good after all trades				
6	Curved work				

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Portland cement plaster (09220)

Cement and sand plastering, all as specified (internally) where shown on drawings and finishing schedule . (ICU)

A	20mm thick in two coats to walls. Per Square Meter in letters :	m ²	675		
B	Scratched coat to glazed walls cladding (Toilet + DU) 10 mm thick Per Square Meter in letters :	m ²	114		

Ceramic wall tiles (09310)

Glazed ceramic wall tiles including cement and sand mortar backing, grouted with a neat white or coloured cement and additive, all as specified and as shown on the drawings . (ICU)

A	To walls 300 × 300mm and 7mm thick Per Square Meter in letters :	m ²	114		
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To Collection

USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Fully vitrified ceramic floor tiles (09312)

Fully vitrified ceramic floor tiles, bedded and jointed in cement and sand mortar, including grouting with a neat white or coloured cement and additive, all as specified and as shown on the drawings (Finishes schedule). (ICU)

- A To floor non slip tiles 300 x 300cm and 7mm thick , including skirting.

Per Square Meter in letters :

..... m² 44

Marble Threshold (09616)

Polished marble threshold bedded and jointed in cement and sand mortar including polishing and grouting with a neat white or coloured cement and additive all as specified. (ICU)

- A To threshold 30mm thick (CARRARA) where instructed by the Engineer

Per Linear Meter in letters :

..... lm 10

To Collection

USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Suspended ceilings (ICU)

- A Acoustical Vinyl antibacterial tiles as existing
False ceiling sizes 600 × 600 to the approval of
the Engineer complete including suspension
system and all fixing accessories as specified
and shown on the drawing .

Per Square meter in letters :

..... m² 220

- B Suspended false ceiling consist of metal strip
100mm wide to the approval of the Engineer
complete including suspension system and all
fixing accessories as specified and shown on
the drawing

Per Square meter in letters :

..... m² 29

Vinyl (ICU)

- A Supply and fix Vinyl roll as per manufacturer's
instruction including all needed accessories
including skirting

Per Square meter in letters :

..... m² 237

Internal Paint (09900)

Prepare, prime and apply one coat undercoat,
three coat of putty and three finishing coats of
Antibacterial oil paint ; all as specified . (ICU)

- A To plastered walls and ceiling

Per Square Meter in letters :

..... m² 725

Cleaning coat

- A Prepare and apply only one primer (seller) coat
to areas over False ceiling as cleaning coat to
the approved of the Engineer . (ICU)

Per Square Meter in letters :

..... m² 245

To Collection

USD

DIVISION 9
FINISHES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 9 - FINISHES

Carried to Summary

USD

DIVISION 10
IDENTIFYING SIGNS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

Rates for signs shall include :

- A Materials and workmanship
- B Submitting sample and system of fixing for approval
- C Transporting hoisting, assembling, welding and fixing
- D All cuttings
- E Fixing
- F Painting
- G Electrical works and the like
- H Completion and cleaning

**DIVISION 10
IDENTIFYING SIGNS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Signs (10400) (ICU)					
	As shown on drawing				
A	Type SG-01 Per Unit rate in letters :	No	1		
B	Type SG-02 Per Unit rate in letters :	No	1		
C	Type SG-03 Per Unit rate in letters :	No	1		
D	Type SG-4 Per Unit rate in letters :	No	1		
E	Type SG-5 Per Unit rate in letters :	No	1		
F	Type SG-6 Per Unit rate in letters :	No	1		
G	Type SG-7 Per Unit rate in letters :	No	1		
H	Type SG-8 Per Unit rate in letters :	No	1		
I	Type SG-9 Per Unit rate in letters :	No	1		
J	Type SG-10 Per Unit rate in letters :	No	1		
K	Type SG-11 Per Unit rate in letters :	No	1		
L	Type SG-12 Per Unit rate in letters :	No	1		

To Collection USD _____

DIVISION 10
IDENTIFYING SIGNS

Item	Description	Unit	Qty	Unit Rate	Amount USD
M	Type SG-13 Per Unit rate in letters :	No	2		
N	Type SG-14 Per Unit rate in letters :	No	1		
O	Type SG-15 Per Unit rate in letters :	No	1		
P	Type SG-16 Per Unit rate in letters :	No	1		
Q	Type SG-17 Per Unit rate in letters :	No	1		
R	Type SG-18 Per Unit rate in letters :	No	2		
S	Type SG-19 Per Unit rate in letters :	No	1		
T	Type SG-20 Per Unit rate in letters :	No	1		

To Collection USD _____

DIVISION 10
IDENTIFYING SIGNS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 10 - IDENTIFYING SIGNS

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DIVISION 15
MECHANICAL SERVICES

Item	Description
Preambles	
	Plumbing
	The rates for plumbing works shall include but not limited to:
A	All labour, tools, plant, machinery, equipment and transport
B	All materials whether temporary or permanent
C	Painting of all pipes in conventional colors
D	Cleaning
E	All testing of materials and testing of the complete systems after installation
F	Coordination with other trades
G	One year guarantee and regular and preventive maintenance including all spare parts and expenses
H	All overhead expenses and profit
J	All incidentals and accessories whether indicated, mentioned or not but necessary for the proper completion of the work and in accordance with the Drawings, Specifications and Contract Documents
K	Manuals and Technical notes
L	Labeling and identification plates for appliances and pipelines
M	Making good all work disturbed including patching up, chasing, etc....
N	Assembling and jointing including jointing materials
P	Fixing, including nails, bolts, nuts holes, screws, plugs and the like
Q	Cutting and pinning including all making good as required
R	Forming or cutting holes, chases, channels, etc.. in reinforced concrete structures and blockwork in power tools only and properly plumb and aligned

**DIVISION 15
MECHANICAL SERVICES**

Item	Description
A	Closing of all shafts and openings between floors after installation of services.
B	Excavation, bedding and backfilling for pipes and services
C	Flashing and waterproofing of pipes through outside walls, pipes and pipe sleeves crossing walls and slabs, and pipes run underground
D	Manual and automatic air vents at high points and drain valves at low points of piping systems
E	Jointing, saddles, clamps, unions, flanges, dielectric unions, coupling, brackets, hangers and supports, providing steel pipe sleeves with plates
F	Bends, elbows, tees, junctions, branches, cleanouts, plugs and the like
G	All builders work in connection with plumbing works
H	Certificates, samples, tests, supply of all information and services called for in the Specification, for items of equipment to be fully connected up and set in good working order
J	Preparation of plans or diagrams as fitted, as-built and shop drawings The rates for pipework shall include for:
K	Bends, fittings, cleanouts type CO, junctions, flanges, connections, clamps, etc..
L	Pipe hangers and supports
M	The remeasured length shall be the mean length measured over bends fittings accessories unless otherwise noted to be enumerated

DIVISION 15
MECHANICAL SERVICES

Item	Description
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The rates for equipment shall include for:

- A Certificates, samples, tests, commissioning, balancing, supply of all information and services called for in the Specification, for items of equipment to be fully connected up and set in good working order
- B Flexible connections, valves, thermometers, gauges and all items necessary accessories as per Specifications and as shown on Drawings
- C Supports, hangers, vibration isolators, anchoring devices, reinforced concrete bases, etc...
- D Sound attenuation
- E Electrical connections to the nearest disconnecting switch including all clamps, fixing accessories

The rates for insulation shall include for:

- F Insulation of valves, pipe fittings, and all pipe accessories
- G Insulation of hot equipment

HVAC

Refer to Drawings and Specifications for complete equipment characteristics, description and Specifications

The rates for HVAC works shall include but not be limited to:

- H All labour, tools, plant, machinery, equipment and transport
- J Protection of all HVAC work
- K One year guarantee and preventive and regular maintenance including all spare parts and expenses

DIVISION 15
MECHANICAL SERVICES

Item	Description
A	All overhead expenses and profit
B	All incidentals and accessories whether indicated, mentioned or not but necessary for the proper completion of the work and in accordance with the Drawings, Specifications and Contract Documents
C	Manuals and Technical Notes
D	Fixing, including nails, bolts, nuts holes, screws, plugs and the like
E	Cutting and pinning including all making good as required
F	Closing of all shafts and openings between floors after installation of services
G	Cleaning
H	Coordination with other trades
J	1/2" Aluminium Wire Mesh
K	Connection to plumbing works as necessary
L	Builders work in connection with HVAC works
M	Preparation of plans or diagrams as fitted, as-built and shop drawings
	The rates for ductwork shall include for :
N	The weight of the duct shall be measured by multiplying the perimeter of the duct by the length and the weight / m ² excluding all laps, waste, clippings, hangers. Extra over shall not be paid to fittings, bends, junction, dampers, etc....
P	Painting of all duct as specified and where required
Q	Painted wood frames for all grilles, transfer grilles if required
R	Access doors
S	Flexible connections

**DIVISION 15
MECHANICAL SERVICES**

Item	Description
	The rates for pipework shall include for:
A	Bends, fittings, junctions, flanges, connections, clamps, etc...
B	Pipe hangers and supports
C	The remeasured length shall be the mean length measured over bends fittings accessories unless otherwise noted to be enumerated
D	Certificates, samples, tests, commissioning, supply of all information and services called for in the Specification, for items of equipment to be fully connected up and set in good working order
E	Electrical connections to the nearest disconnecting switch including all clamps, fixing accessories

DIVISION 15
MECHANICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
1.	DRAINAGE SYSTEM				
1.1	Drainage Pipes Completely supply and install pipes for the drainage system including flexibles, elbows, tees, reducers, sleeves, supports, ceiling clean outs, hangers excavation and backfilling, cleaning, flushing, related civil works, and all necessary accessories as specified and shown on drawings.				
A	<u>UPVC Non Pressure Pipes embedded under tiles and in walls</u>				
	Diameter:				
1.1.1	2" Per Meter in letters :	m	22		
1.1.2	3" Per Meter in letters :	m	3		
1.1.3	4" Per Meter in letters :	m	11		
B	<u>UPVC Non Pressure Pipes, exposed ceiling mounted</u>				
	Diameter:				
1.1.4	2" Per Meter in letters :	m	75		
1.1.5	4" Per Meter in letters :	m	38		
1.2	Drainage facilities (15420) Completely supply and install the following drainage facilities with all accessories as specified and shown on the drawings				
1.2.3	Floor Clean Out, diameter 4" Per Unit rate in letters :	U	4		
1.2.3	Clean Out, diameter 4" Per Unit rate in letters :	U	4		
1.2.3	Clean Out, diameter 2" Per Unit rate in letters :	U	1		
1.2.4	Floor Drain, diameter 2" Per Unit rate in letters :	U	10		
		To Collection			USD

**DIVISION 15
MECHANICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
1.3	Sanitary Fixtures (15440) Completely supply and install the following Sanitary fixtures with traps, flexibles ,angle valves and all accessories as specified and shown on drawings:				
1.3.1	Water closet Flush tank Per Unit rate in letters :	U	4		
1.3.2	Lavatory Per Unit rate in letters :	U	7		
1.3.3	Single bowl sink Per Unit rate in letters :	U	3		
1.3.4	Janitor service sink Per Unit rate in letters :	U	1		
1.3.5	Shower Head Per Unit rate in letters :	U	1		
1.4	Sanitary Accessories Completely supply and install the following Sanitary accessories with all necessary fittings as specified:				
1.4.1	Toilet Paper Dispenser Per Unit rate in letters :	U	4		
1.4.2	Towel Paper dispenser Per Unit rate in letters :	U	9		
1.4.3	Liquid Soap dispenser Per Unit rate in letters :	U	9		
1.4.4	Mirror 50x60 cm Per Unit rate in letters :	U	7		
1.4.5	Shelf 50 cm Per Unit rate in letters :	U	7		
1.5	Mixers and Faucets Completely supply and install the following mixers and faucets with all necessary accessories as specified and shown on drawings				
1.5.1	Lavatory mixer Per Unit rate in letters :	U	10		
1.5.2	Service Sink mixer Per Unit rate in letters :	U	1		
1.5.3	Shower Head Mixer Per Unit rate in letters :	U	1		
				To Collection	USD

**DIVISION 15
MECHANICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
2.	WATER SUPPLY SYSTEM				
2.1	Galvanised steel pipes for Cold and hot Water				
	Completely supply and install Galvanised steel pipes for domestic cold and hot water supply system , exposed on ceiling and shafts , including flexibles, elbows, tees, unions, reducers, sleeves, supports, hangers, water hammer arresters, and all necessary accessories as specified and shown on drawings				
	Diameter :				
2.1.1	1/2"				
	Per Meter in letters :				
	.....	m	170		
2.1.2	3/4"				
	Per Meter in letters :				
	.....	m	50		
2.1.3	1"				
	Per Meter in letters :				
	.....	m	16		
2.1.4	1 1/4"				
	Per Meter in letters :				
	.....	m	6		
2.2	Domestic Hot Water Pipes Insulation (15260)				
	Completely supply and install insulation for Domestic Exposed Hot Water Pipes with all accessories as specified.				
	Diameter:				
2.2.1	1/2"				
	Per Meter in letters :				
	.....	m	107		
2.2.2	3/4"				
	Per Meter in letters :				
	.....	m	27		
2.2.3	1"				
	Per Meter in letters :				
	.....	m	4		
2.3	Polypropylene pipes for Cold Water				
	Completely supply and install polypropylene pipes for domestic cold water supply system , embedded in walls and under tiles,within toilets, including flexibles, elbows, tees, unions, reducers, sleeves, supports, hangers, water hammer arresters, and all necessary accessories as specified and shown on drawings				
	Diameter :				
2.3.1	DN 20				
	Per Meter in letters :				
	.....	m	38		
		To Collection			USD

**DIVISION 15
MECHANICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
2.4	Polypropylene pipes for Hot Water Completely supply and install polypropylene pipes for domestic hot water supply system embedded in walls and under tiles, including flexibles, elbows, tees, unions, reducers, sleeves, supports, hangers, water hammer arresters, and all necessary accessories as specified and shown on drawings				
	Diameter :				
2.4.1	DN 20				
	Per Meter in letters :				
	.....	m	27		
2.5	Valves (15100) Supply and install following valves as specified and shown on the drawings				
	Gate valve diameter				
2.5.1	1/2"				
	Per Unit rate in letters :				
	.....	U	21		
2.5.2	3/4"				
	Per Unit rate in letters :				
	.....	U	2		
2.5.3	1"				
	Per Unit rate in letters :				
	.....	U	2		
2.5.4	1 1/4"				
	Per Unit rate in letters :				
	.....	U	1		
2.5.5	Regulating valve diameter 1/2"				
	Per Unit rate in letters :				
	.....	U	3		
3.	AIR CONDITIONING SYSTEM				
3.1	Packaged units Completely supply and install outdoor packaged Air handling units, including fan, filter, Dx cooling coil, electric heater, thermostat, actuator, valves, air vent, thermometer, temperature sensor, connection to condensate drain piping, connection to electrical disconnecting switch provided by the electrical works, provisions for BMS points as shown on the BMS schedule for mechanical equipment, connection to BMS panel provided by the electrical works, supports, anchors, hangers, and all necessary accessories, as specified and shown on drawings				
3.1.1	PU-01 (ICU AND ISOLATION) : Capacity 22 KW Cooling, 3750 m ³ /h, 18 KW electric heater Per Unit rate in letters :				
	.....	U	1		

To Collection USD

DIVISION 15
MECHANICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
3.1.2	PU-02 (FOR THE REMAINING AREAS) : Capacity 21 KW Cooling, 3650 m3/h, 13.5 KW electric heater Per Unit rate in letters :	U	1		
3.2	In-Line Axial Fans Completely supply and install outdoor inline axial fans, connection to electrical disconnecting switch provided by the electrical works, provisions for BMS points as shown on the BMS schedule for mechanical equipment, connection to BMS panel provided by the electrical works, supports, anchors, hangers, and all necessary accessories, as specified and shown on drawings				
3.2.1	EAF01- 1400 m3/h-250Pa For isolation Per Unit rate in letters :	U	1		
3.2.2	EAF02- 1080 m3/h-300Pa For remaining areas Per Unit rate in letters :	U	1		
3.3	Galvanised Steel Duct Conduit Completely supply and install Galvanised Steel duct conduit including hangers, supports, anchors, volume dampers on each branch, access and cleaning doors, flexible ducts connection to HVAC equipment, internal lining, sound attenuators and all necessary accessories as specified and shown on drawings				
3.3.1	Air Conditioning Supply and return ducts Per KG in letters :	kg	1,550		
3.3.2	Exhaust ducts Per KG in letters :	kg	255		
3.4	Duct Insulation Completely supply and install insulation for duct conduits with all necessary accessories as specified and shown on the drawings				
3.4.1	Per Meter Square in letters :	m ²	290		
3.4.2	Additional jacketing for exposed ducts Per Meter Square in letters :	m ²	107		
		To Collection			USD

**DIVISION 15
MECHANICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
3.5	Grilles and Diffusers Completely supply and install the following grilles and diffusers including wall frame, related civil works, gaskets, dampers, and all necessary accessories, as specified and shown on drawings				
a	Ceiling diffuser <u>Supply</u>				
3.5.1	15 x 15 Per Unit rate in letters :	U	2		
3.5.2	22.5 x 22.5 Per Unit rate in letters :	U	7		
3.5.3	30 x 30 Per Unit rate in letters :	U	8		
	<u>Return</u>				
3.5.4	22.5 x 22.5 Per Unit rate in letters :	U	12		
	<u>exhaust</u>				
3.5.5	15 x 15 Per Unit rate in letters :	U	10		
3.5.6	22.5 x 22.5 Per Unit rate in letters :	U	1		
3.5.7	30 x 30 Per Unit rate in letters :	U	1		
4.	MEDICAL GASES SYSTEM				
4.1	Copper Pipes Completely supply and install Copper Pipes with all accessories and equipment as specified and shown on the drawings Diameter:				
4.1.1	15mm Per meter in letters :	m	160		
4.2	Area Service Module with alarm Completely supply and install Area Service Module with alarm and all accessories and equipment as specified and shown on the Drawings Area Service Module:				
4.2.1	for 3 gases Per Unit Rate in letters :	U	1		
				To Collection	USD

**DIVISION 15
MECHANICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
4.3.	Ball Valve				
	Completely supply and install Ball Valve with all accessories and equipment as specified and shown on the Drawings				
	Diameter:				
4.3.1	15mm				
	Per Unit Rate in letters :				
	.....	U	3		
4.4	Medical Gas Outlet (11700)				
	Completely supply and install Medical Gas Outlet with all accessories and equipment as specified and shown on the Drawings				
4.4.1	In bed head unit				
	Per Unit Rate in letters :				
	.....	U	15		
4.5	Vertical Bed Head Unit				
	Completely supply and install Vertical Bed Head Unit with 3 Medical Gas outlets, 11 electrical outletst and all accessories and equipment as specified and shown on the Drawings				
4.5.1	In vertical bed head unit				
	Per Unit Rate in letters :				
	.....		5		
5.	FIRE FIGHTING SYSTEM				
5.1	Black steel Pipes				
	Completely supply and install black steel seamless schedule 40 piping for fire fighting system, with mechanical grooved couplings, including couplins, grooved fittings, flanges, unions, drain valves, gate valves, and all necessary accessories as specified and shown on drawings				
5.1.1	1 ½ "				
	Per Meter in letters :				
	.....	m	11		
5.2	Fire Hose Cabinet				
	Completely supply and install fire hose cabinet including 1" hose reel, 20m long, spray nozzle, 6 kg dry powder extinguisher, CO2 extinguisher, with two hinges locked separate doors, lock shield type isolating valves, and all necessary accessories, as specified and shown on drawings.				
5.2.1	Per Unit Rate in letters :				
	.....	U	1		
		To Collection USD			

DIVISION 15
MECHANICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
5.3	Portable fire extinguisher Completely supply and install portable fire extinguisher with all necessary accessories as specified and shown on drawings.				
5.3.1	6 kgs dry powder extinguisher Per Unit Rate in letters :	U	2		
5.3.2	6 liters CO ₂ extinguisher Per Unit Rate in letters :	U	2		

To Collection USD _____

DIVISION 15
MECHANICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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DIVISION 15 - MECHANICAL SERVICES

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**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>Preambles</p> <p>GENERAL RULES FOR ELECTRICAL WORK</p> <p>All services must be carefully coordinated to provide a complete working installation. Works, materials, equipment or services not specifically mentioned in these clauses but mentioned or indicated on drawings must be included as part of the contract.</p> <p>All electrical work shall be carried out in a neat, workmanlike and efficient manner, in accordance with the requirements of these Specifications, and so that their true meaning and intent are fulfilled.</p> <p>The Engineer's Drawings issued with the Specifications indicate the approximate location of all electrical apparatus. The exact and final location shall be subject to the prior approval of the Engineer.</p> <p>The scope of work covers the supply to the site and installation of the electrical material and equipment as described under this Section and/or shown on the Drawings including all other associated works. Work shall include site testing after completion of installation.</p> <p>All work shall be carried out to the satisfaction of the Engineer. Any work refused by the Engineer shall be removed, rebuilt and replaced by the Contractor at no cost in a satisfactory manner. All work distributed, injured or destroyed in the course of removal of the said work shall be made good at the Contractor's own expense.</p> <p>If anything necessary to the proper installation or operation of the electrical system is omitted from the Drawings and specifications, or if indicated incorrectly, the Contractor shall immediately call the attention of the Engineer to this omission or inaccuracy. Should the Contractor fail to do so, he shall be held responsible and shall make good at his own expense such errors or any damages caused by such omissions.</p> <p>Samples of parts, fittings and fixtures shall be submitted to the Engineer by the Contractor for approval before beginning the work.</p>

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>Detailed catalogue cuts for all fixtures or if so required by the Engineer shall be submitted before orders for the fixtures are placed.</p> <p>The completed systems shall be thoroughly tested before putting in into operation. Tests shall be carried out by the Contractor under the supervision of the Engineer. Any modifications or repairs necessary upon completion of the tests shall be made good at the Contractor's expense. The electrical Contractor shall provide all testing equipment and materials. All electrical equipment shall be clean and adjusted on site before application of power.</p> <p>The Contractor shall revise his drawings accurately to record the work as constructed and shall submit as build drawings to the Engineer at the completion of the work and prior to final hand over.</p> <p>Specification for electrical work is detailed in the general specification. Here under some specific cases that will apply in addition to the general specification. If contradiction appears between the two cases, the contractor should ask for written decision upon which one to use.</p> <p>Electrical work generally is deemed to include:</p> <p>A Supply, installation, testing, commissioning, put-ting into satisfactory operation and handing over complete systems,</p> <p>B Provision of maintenance and operation manuals and spare parts lists and submitting required number of copies,</p> <p>C Co-ordination with other trades including minor approved modifications and additions to ensure compatibility,</p> <p>D Minor items and accessories required for normal operation and maintenance,</p> <p>E Marking the positions of and cutting or forming holes, mortices, chases and the like in any sur-face and making good all work disturbed,</p> <p>F Assembling and jointing together component parts of composite units and providing any necessary jointing materials,</p> <p>G Patterns, moulds, templates and the like,</p>

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
H	Priming or painting off site and proprietary finishes or surface treatments applied as part of the manufacturing process,
J	Corrosion protective treatments and coatings to fixings, hangers and supporting materials,
K	Sleeves through walls, ceilings and floors including cover plates,
L	Fire sealants, and fire barriers,
M	Brackets and supports,
N	Temporary works and removing and making good after,
P	Loose keys, tools and spares and the like, except where required to be given separately,
Q	Plates, labels and tags for the identification of plant, equipment, cables, switches and the like,
R	As built drawings and shop drawings
S	Temporarily operating each installation, including attendants, special insurance and providing power supply,
T	Cutting and pinning ends of supports for equipment, ancillaries, fittings and the like,
U	Painting on site including colour coding,
V	Builder's work in connection, except where re-quired to be measured separately,
W	Preparing and submitting operation and maintenance manuals.
X	Training Employer's personnel in operation and maintenance of systems.

FEEDERS

- A Wires and cables are given in meters.
Wires and cables are deemed to include:
- B Conduits and fittings, draw wires and the like (except where conduit work is required to be measured separately),
- C Cable connectors and cable joints (where permitted) including joint boxes, sealing boxes, shrouds and the like and materials and heat for making the joints,

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
D	Allowance in cable length for cables entering fittings and accessories, equipment or control gear,
E	necessary components and accessories for fixing cables on walls, ceilings and on cable trays/ladders.
BRANCH CIRCUITS	
A	Each kind of conduit is given separately (except where required to be included with other items), stating the type, size and method of installation.
B	Each kind of trunking, cable tray, cable ladder and the like is given separately (except where required to be included with other items), stating the type and dimensions.
C	Conduits, trunking, cable trays, cable ladders and the like are given in meters.
D	Cable trays, cable ladders and the like are deemed to include: mounting fittings, including cutting and jointing there to, jointing between sections, bends, tees, etc., components for earth continuity, adapters and connections between trunking and items of equipment or control gear requiring the use of flanges and/or the forming of apertures, pin racks for supporting cable, supports including fixing.
EARTHING SYSTEM	
A	Earthing system is given as an item.
B	Work is deemed to include a complete system to meet the specification required.
LIGHTING INSTALLATION:	
Work is deemed to include:	
A	Lighting Fixture complete with lamps and accessories.
B	Outlets,

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
C	Wires including protective earthing conductors, conduits and fittings from outlet back to upstream outlet or to final branch circuit panelboard,
D	Fixing and supporting material.
E	All LED lights will be equipped with electronic driver.

WIRING DEVICES & MISCELLANEOUS EQUIPMENT

Wiring devices including socket outlets, electrical outlets, switches, disconnecting switches and the like are enumerated.

Wiring devices are deemed to include:

- A outlets,
- B Wires including protective earthing conductors, conduits, and fittings from outlet back to upstream outlet or controlled circuit (for switches etc.) or to final branch circuit panelboard,
- C Fixing and supporting material.
- D The connection to AC units must include the interconnection between the condensing unit, the blower, the fresh air and the thermostat. It will include as well the feeders from the SDBs as shown on the drawings

LIGHTNING PROTECTION SYSTEM

Lightning protection system is given as an item.

Work is deemed to include:

- A The surge arrestors unit price will include the bus bars, the box and the connection.

PANELBOARDS

ATS board shall be metallic construction, it shall be multi-cubicle, floor mounted, free standing, rectangular with 1000V rated insulation voltage and 600V rated operational voltage, with fixed or draw-out switchgear, manually or manually and electrically operated, as shown on the drawings, with matching vertical sections to form a continuous integral and rigid structure and have a plane front face.

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>It shall have class of protection IP55 and be primed with rust inhibiting primer and finished with thermal polymerized polyester epoxy powder coating, gray color (RAL 7703 or ANSI 61) to approval, with adequate lifting means and base-frames and capable of being moved into position and directly bolted to floor without additional sills.</p> <p>Secondary distribution boards will be flush or surface mounted equipped with earth and neutral connectors rated to their nominal current, and have a plane front face. All panel boards shall be keyed. Main breaker of the board must be placed alone on one row at the top of the panel. A minimum of 30% space must be provided in each board.</p> <p>All circuit breakers in secondary distribution boards should have a breaking capacity as indicated on drawings with a minimum of 6 KA. The three pole circuit breakers must be designed such as the tripping of one pole will involve all the others.</p> <p>All final branch circuit breakers are DPNN as indicated on the drawing. Residual current circuit breaker are 4 poles. While breakers in ATS & totalizing panel shall be all moulded case.</p> <p>The poles must be equipped with an arc extinguisher. It is prohibited to supply a circuit breaker with a wire taken from another one near to him. All connections must be through the bus-bars.</p> <p>Work is deemed to include:</p> <ul style="list-style-type: none"> A Supply and installation of ATS totalizing panel and, distribution panelboards. B All civil works required for the installation. C All fixing and support structures required for installation of wall or floor mounted panelboards. D Termination of incoming and outgoing cables including glands and other accessories, etc. E The unit price will include all connections, wiring, connection to the earthing system and accessories, metering instruments, painting, transport, fixing, labeling and every thing deemed necessary to the proper function of the panel.

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
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CONDUITS AND WIREWAYS

All cables shall be insulated XLPE as indicated on the drawings.

rooms must be placed into EMT tubes with all accessories such as junction and pulling boxes of the same type.

All outdoor cables direct buried in the ground must be armored, PVC insulated of the series 1000 V. These cables must be placed between two sand's layers of 15 cm each at 40 cm under the surface. A plastic grid's layer must be placed 10 cm above the cables to indicate there presence.

When crossing other utilities such as sanitary pipes, isolation must separate them. Special care must be taken near the electrical and mechanical shafts to prevent crossing as much as possible.

The cable section will not be reduced in any case and will respect the value given in the distribution board.

It is forbidden to use the same neutral or ground line for different circuits. Each circuit will have its independent neutral and ground emerging directly from the distribution panel as shown on the drawings.

Work is deemed to include:

- A Conduits.
- B Cable Trays.
- C Mounting fitting, fixing, etc....
- D Cutting and jointing, bending, etc....
- E Junction boxes, expansion joints connectors, etc....
- F Components for earth continuity.

ANALOG ADDRESSABLE FIRE ALARM SYSTEM

Work is deemed to include:

- A Supply and installation of an analog addressable fire alarm control panel.
- B Automatic and manual detectors

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
C	Input/output modules.
D	Fire alarm bells.
E	Door holders.
F	Strobe lights
G	Complete wiring system including outlets, conduits, fixing, accessories, etc...
TELEPHONE AND DATA DISTRIBUTION SYSTEM	
Work comprises supply and installation of a complete telephone and data distribution network including, but not limited to, the following:	
A	Indoor data/telephone cables, conduits, raceways and accessories.
B	Mounting with necessary fixing materials and supports.
C	Cable termination with all necessary cable termination accessories.
D	Termination of conduits with all necessary conduit fittings, etc....
E	Telephone and Data outlets
F	Telephone sets
G	Power supply equipment
H	Anxillary equipment
I	Data switch and telephone distribution frame
J	Computer network conduits will be twisted unshielded 4 pairs category 6 (UTP 4P) manufactured by AT&T, Alcatel, Simon or approved equal, linking each point individually to the patch panel. These cables shall conform to ANSI/TIA/EIA-568-A Commercial Building Telecommunications Cabling Standard and ISO/IEC 11801 (International) Generic Cabling for Customer Premises standard (latest amendment and including all applicable addenda).

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
K	Distribution frames will be Verro or Rittal or approved equal to meet the requirements of the general specification. MDF and network cabinets will be complete with sufficient category 6 RJ45 4 pairs patch panel to accomodate all outlets. In addition, the patch panel in the network cabinets should accomodate additional ports for telephone cable while the MDF will accomodate IDC modules for main telephone feeder and outgoing feeder to network cabinets. The main telephone feeder should be protected with lightning protection.

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
1	PANELBOARDS				
1.1	Distribution boards				
	Supply, install and connect the sub distribution boards as specified and shown on drawings. Sub distribution boards shall be IP42 with bottom entry and terminal blocks for all circuits. The panel should be complete with breakers, bus-bars, labeling, contactors, dry contact on main circuit breaker to allow future connection to BMS(alarm tripped), control elements... as specified or shown on panels detail.				
1.1.1	LSP-L01-ICU				
	Per Unit Rate in letters :	U	1		
1.1.2	USP-L01-ICU				
	Per Unit Rate in letters :	U	1		
1.1.3	PP-ROOF-ICU				
	Per Unit Rate in letters :	U	1		
1.1.4	Connection to existing SMDB-L01-H with MCB 4x32A				
	Per Unit Rate in letters :	U	1		
1.1.5	Connection to existing USMDB-L01-H with MCB 4x40A				
	Per Unit Rate in letters :	U	1		
1.1.6	Connection to existing MCC with MCCB 4x160A				
	Per Unit Rate in letters :	U	1		
2.	WIRES, CABLES & FEEDERS:				
2.1	Power Cables				
	Supply, install connect and test multi core copper cables from the series 0.6/1KV, XLPE insulated and PVC sheathed including connections, raceways, cable trays, fixing materials, supports, glands, terminations and all necessary accessories as specified and shown on drawings.				
2.1.1	4x16 mm ² (including connection to the existing panelbord USMDB-L01-H)				
	Per Linear meter in letters :	m	75		
2.1.2	4x10 mm ² (including connection to the existing panelbord SMDB-L01-H)				
	Per Linear meter in letters :	m	69		
		To Collection		USD	

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
2.2	Earth Cables				
	Supply, install, connect and test single core copper cables PVC insulated for earth cables including connections, fixing materials, supports, glands, terminations and all necessary accessories as specified and shown on drawings.				
2.2.1	1x16 mm ² Per Linear meter in letters :	m	75		
2.2.2	1x10 mm ² Per Linear meter in letters :	m	69		
3.	LIGHTING FIXTURES:				
	Supply, install, connect and test lighting fixtures including lamps, drivers, supports, outlets, boxes, conduits, trunking, wires and connections to power source, control cables, covers, fittings and all accessories, as specified and shown on drawings.				
3.1	Recessed Led lighting fixture 3600lumens, 41W microlens optic polycarbonate, 600x600mm. IP43, 220V 50HZ Type RC1 Per Unit Rate in letters :	U	32		
3.2	Same as previous but with intelligent battery pack with 3 hours autonomy. Per Unit Rate in letters :	U	5		
3.3	Wall mounted emergency light, 5W Led, 220V, 50Hz non maintained adressable type capable of communicating with central control unit Type E Per Unit Rate in letters :	U	19		

To Collection

USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
3.4	Wall mounted above mirror Led lighting fixture 1100lumens, 12W, opal polycarbonate diffuser, 600mm IP44, 220V 50HZ Type E1				
	Per Unit Rate in letters :	U	5		
3.5	Recessed Led lighting fixture 3900lumens, 30W, 100x1500mm, 220V 50HZ Type RC2				
	Per Unit Rate in letters :	U	5		
3.6	Recessed Led lighting fixture 1950lumens, 15W , 100x600mm. , 220V 50HZ Type RC3				
	Per Unit Rate in letters :	U	9		
3.7	Recessed Led lighting fixture 4900lumens, 39W , 100x1500mm. , 220V 50HZ Type RC4				
	Per Unit Rate in letters :	U	2		
3.8	Fixed recessed Led lighting fixture,mat thermplastic material reflector, 2100 lumens, 18W , round shape, 220V 50HZ Type D1				
	Per Unit Rate in letters :	U	10		
3.9	Same as previous but with intelligent battery pack with 3 hours autonomy. Type D1E				
	Per Unit Rate in letters :	U	3		
3.10	Fixed recessed Led lighting fixture,mat thermplastic material reflector, 950 lumens, 9W , round shape, 220V 50HZ Type D2				
	Per Unit Rate in letters :	U	1		
3.11	Exit light fixed on wall or suspended from ceiling single side with label, 220V, 50HZ, 5 W Led, 3 hours autonomy maintained addressable type capable of communicating with central control unit.				
	Per Unit Rate in letters :	U	2		

To Collection USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
4.	WIRING DEVICES				
	Supply, install, connect and test wiring devices including boxes, conduits, wiring in raceways back to panel boards or to other device as shown on drawings and connections to power source, covers, fittings and all accessories as specified and shown on drawings.				
4.1	Switches				
4.1.1	One way switch				
	Per Unit Rate in letters :				
	.....	U	24		
4.1.2	Two way switch				
	Per Unit Rate in letters :				
	.....	U	2		
4.2	Sockets				
4.2.1	10/16A,2P+E, socket outlet.				
	Per Unit Rate in letters :				
	.....	U	36		
4.2.2	10/16A,2P+E, duplex socket outlet.				
	Per Unit Rate in letters :				
	.....	U	6		
4.2.3	Single phase switched socket, 13A, 220V, for patient motorized bed				
	Per Unit Rate in letters :				
	.....	U	5		
4.2.4	Single phase socket, 16A, 220V, with shutters, fed from UPS				
	Per Unit Rate in letters :				
	.....	U	41		
4.2.5	Single phase duplex socket, 16A, 220V, with shutters, fed from UPS				
	Per Unit Rate in letters :				
	.....	U	6		
4.2.6	Single phase socket, 16A, 220V, with shutters, weather proof				
	Per Unit Rate in letters :				
	.....	U	7		

To Collection USD

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
4.3	Electrical outlets				
4.3.1	Electrical outlet box (3x2.5mm2) for power of access control unit Per Unit Rate in letters :	U	2		
4.3.2	Electrical outlet for hand dryer Per Unit Rate in letters :	U	2		
4.4	Disconnecting Switches				
4.4.1	16A, 2P, weatherproof disconnecting switch, IP65, with metallic enclosure and fixing supports for exhaust fan, including cables, raceways and all accessories for outdoor installation Per Unit Rate in letters :	U	2		
4.4.2	63A, 4P, weatherproof disconnecting switch, IP65, with metallic enclosure and fixing supports for packaged unit, including cables, raceways and all accessories for outdoor installation Per Unit Rate in letters :	U	2		
4.4.3	25A, 2P, weatherproof disconnecting switch, IP65, including cables, conduits and all accessories, for bed pan washer Per Unit Rate in letters :	U	1		

To Collection USD _____

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
5.	TELEPHONE & DATA SYSTEMS				
	Supply, install, connect and test data and telephone and data systems as specified and shown on drawings complete with all the necessary accessories to accommodate all the data and telephone points as specified and shown on drawings.				
5.1	Outlets				
5.1.1	RJ45 CAT6 Data outlet Per Unit Rate in letters :	U	2		
5.1.2	RJ45 CAT6 Double data outlet Per Unit Rate in letters :	U	7		
5.1.3	RJ11 TELEPHONE OUTLET outlet Per Unit Rate in letters :	U	7		
5.2	Data switch and distribution frame				
5.2.1	Switch RJ45 16 port including fiber optic cable to existing data cabinet Per Unit Rate in letters :	U	1		
5.2.2	Distribution frame including multipairs cable to existing floor MDF Per Unit Rate in letters :	U	1		
5.3	Telephone set				
5.3.1	Digital telephone set as existing Per Unit Rate in letters :	U	7		
6.	TELEVISION SYSTEM				
6.1	TV outlet including connection to TV splitter with RG6 TV cable. Per Unit Rate in letters :	U	2		
7.	CCTV SYSTEM				
	Supply, installation, testing and commissioning for CCTV system including wires, conduits, boxes, supports, termination, software as well as all necessary accessories to accomplish the work as specified or shown on drawings				
7.1	CCTV camera for indoor application Per Unit Rate in letters :	U	7		
7.2	CCTV switch, 32" monitor and network video recorder for ICU department Per Unit Rate in letters :	U	1		
				To Collection	USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
8.	FIRE DETECTION:				
8.1	Analogue addressable optical smoke detector				
	Per Unit Rate in letters :	U	21		
8.2	Analogue addressable heat detector.				
	Per Unit Rate in letters :	U	1		
8.3	Addressable manual station.				
	Per Unit Rate in letters :	U	3		
8.4	Addressable strobe light				
	Per Unit Rate in letters :	U	3		
9.	BED HEAD UNIT				
	Completely supply and install bed head units including wiring, conduits, boxes, reading lighting, ambient lighting, 8 UPS power sockets, push button for reading lighting, switch for ambient lighting, 2 data outlets, nurse call devices, provision for medical outlets (provided under mechanical works), and all necessary accessories as specified and shown on the drawings.				
9.1	For ICU bed patient room				
	Per Unit Rate in letters :	U	5		

To Collection

USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
10. NURSE CALL SYSTEM	Completely supply and install nurse call				
10.1	Nurse Call System (1st floor) - ICU department)				
	Per Unit Rate in letters :	Item	1		
11. MASTER CLOCK SYSTEM					
11.1	Completely supply and install clocks , including wiring, conduits, connection to master clock system with all necessary accessories, as specified and shown on drawings. Clock				
	Per Unit Rate in letters :	U	2		
				
12 ACCESS CONTROL SYSTEM					
	Completely supply and install access control system including access control unit,proximity card reader,magnetic door lock with built in door contact,electrical door lock,open close push button,door holders and all necessary electrical control and data cables,conduits,and all necessary accessories as specified and shown on drawings				
12..1	Access control for ICU department- First floor				
	Per Item in letters :	Item	1		
				

To Collection

USD

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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DIVISION 16 - ELECTRICAL SERVICES

USD _____
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Carried to Summary

ICU AT FIRST FLOOR

Summary

USD

Division 1	General Requirements
Division 2	Site Work
Division 3	Concrete Work
Division 4	Masonry
Division 6	Wood and Plastics
Division 7	Thermal and Moisture Protection
Division 8	Doors and Windows
Division 9	Finishes
Division 10	Signs
Division 15	Mechanical Services
Division 16	Electrical Services

Total Summary

USD

CT SCAN AT GROUND FLOOR

**DIVISION 2
SITE WORK**

Item	Description	Unit	Qty	Unit Rate	Amount USD
A	Existing floor finish shall be removed and all debris , rubbish and the like resulting from demolition shall be removed to location approved by the Engineer , including cleaning & preparing the areas to receive the new finishes. (CT-SCAN) Per Square Meter in letters :	m ²	37		
B	Existing false ceiling to be removed including suspension system and all materials resulting from demolition shall be removed to a location approved by the Engineer . including cleaning & preparing the areas to receive the new finishes. (CT-SCAN) Per Square Meter in letters :	m ²	37		
C	Existing doors of CT- SCAN room , shall be removed , than brushed , cleaned , painted primer coat , mastic if needed following by three coats of oil paint , damaged ironmongery shall be replaced , and reinstalled all to the approved by the Engineer. (CT - SCAN)				
1	1600 * 2200 mm Per number in letters :	no	1		
2	950 * 2200 mm Per number in letters :	no	1		

To Collection USD _____

DIVISION 2
SITE WORK

Item	Description	Unit	Qty	Unit Rate	Amount USD
D	All existing internal wall areas shall be brushed and cleaned & prepared to receive the new finishes, as shown on drawing & to the approved of the Engineer . (CT - SCAN) Per Square Meter in letters :	m ²	140		

To Collection USD _____

DIVISION 2
SITE WORK

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 2 - SITE WORK

Carried to Summary

USD

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Preambles					
A	The quantities stated in the Bill of Quantities are estimated and are not intended to limit the amount of work to be performed under the Contract.				
B	The Bill of Quantities is to be read and construed in conjunction with the specifications.				
C	The general and detailed requirements of the Specifications are not repeated in the descriptions of the items in the Bill of Quantities, except for the purposes of identification.				
D	All materials listed in the Bill of Quantities shall be of the respective kinds described in the Contract and in accordance with the Specifications and subject to the prior approval of the Engineer				
E	The rates and prices inserted in the Bill of Quantities are to include for the full cost of the work as described in, or reasonably inferable from the Specifications and other Contract Documents				
F	If any item in the Bill of Quantities is not priced, the cost thereof shall be deemed to be included in the prices of other items				
G	Without restricting the generality of the foregoing, the rates and prices inserted in the Bill of Quantities shall be deemed to cover : <ul style="list-style-type: none"> - Labour and all costs in connection therewith - Plant and all costs in connection therewith - Materials and consumable supplies - Transport - On-Site and off-site supervision - Overhead charges and profit - Fees for permits excluded taxes 				
H	Items denoted as provisional in the Bill of Quantities will be carried out only as instructed by the Engineer and may be omitted if the Engineer so decides.				

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Concrete Works					
A	Concrete has been measured net, no deduction has been made for :				
1	Volume of concrete displaced by embedded steel				
2	Voids not exceeding 0.10m ² in concrete measured superficially				
3	Voids not exceeding 0.05m ³ in concrete measured cube				
B	Rates for plain concrete slab and screed shall include for :				
1	Vibrating and packing				
2	Curing and sprinkling				
3	Grading, tamping, trowling and floating				
4	Formwork and metal ties				
5	Reinforcement and tying wire, spacers, rolling margin, cutting and bending, waste, hooks and the like.				
6	include treatment and cleaning of existing reinforcement and needed epoxy material for complete the works as shown on dwgs.				
C	Beds and screeds				
	Beds and screeds shall be measured by square meter of placing concrete				

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Reinforced in-situ concrete (03300)					
Vibrated reinforced concrete class "B3" with ordinary Portland cement including reinforcement and clean sawn Formwork :					
In Elevations					
Lintels					
A	Concrete lintels size as shown on the drawings including reinforcement (B3) . To (CT SCAN)				
	Per Cubic Meter in letters :				
	.....	m ³	0.25		
Beds and screeds (03500)					
Cement and sand screed (1:3), all as specified including slop (0.5 %)as shown on Drwg A - 14					
A	100 mm thick to CT SCAN AREA.				
	Per Square Meter in letters :				
	.....	m ²	32		

To Collection USD _____

DIVISION 3
CONCRETE WORKS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
Page No. 3/3

DIVISION 3 - CONCRETE WORKS

Carried to Summary

USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A All finishings have been measured as the net area in contact with the base. No deduction has been made for voids not exceeding 0.25m²
- B Rates for in-situ finishings shall include
- 1 Application to and preparation of any surface including guide screeds
 - 2 Wire mesh at junctions between differing materials around opening for pipes ducts, etc. and angle and stop beads
 - 3 Any width or area any location and any height
 - 4 Finish to surfaces, to falls, crossfalls and slopes including making good after all trades
 - 5 Working into channels, around edges, chamfered edges, sharp arrises rounded angles, coved angles and the like
 - 6 Admixtures, samples
- C Rates for tile and slab finishings shall include for :
- 1 Application to and preparation of any surfaces
 - 2 Sand bed to any thickness to floor tiling as shown on the drawings
 - 3 Grouting pointing and polishing
 - 4 Finish to surfaces, to falls, crossfalls, and slops, including making good after all trades
 - 5 Fair, rebated, rounded, chamfered, splayed, bevelled and moulded edges, grooves, flutes and the like
 - 6 Square, raking and circular cutting
 - 7 Cutting and fitting into any opening or recessed
 - 8 Admixtures, samples
- D Rates for stone shall include for :
- 1 Templets and patterns
 - 2 All joints including joggle joints sunk joints rebated and the like
 - 3 All dressing
 - 4 Work in any location
 - 5 Square ends, square reveals, square external angle of walls and the like

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
6	Splayed ends, battered ends, battered external and internal angle of walls and the like				
7	Wall ties, anchors, metal cramps and dowels lead plugs and the like if existing				
8	Rough and fair cutting				
9	Grooves, throats, rebates, margins, flutes, sinkings chamfered angles, founded angles and the like				
10	Stops and mitres				
11	Grooves for turned in flashings, nibs of skirtings and the like				
12	Horizontal raking and vertical chases				
13	Holes for pipes, tubes, bars, conduits, ducts and the like				
14	Polishing				
E	Rates for painting and floor coatings shall include for :				
1	Preparation of paint and preparation of surfaces to be painted				
2	Any area or width in any location				
3	Work in multicolors				
4	Cutting in edges and rubbing down between coats				
5	Attendance, protection and making good after all trades				
6	Curved work				

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Portland cement plaster (09220)					
	Cement and sand plastering, all as specified (internally) where shown on drawings and finishing schedule (To CT - SCAN)				
A	Scratched coat to glazed walls cladding (Toilet + DU) 10 mm thick				
	Per Square Meter in letters :				
	.....	m ²	35		
Ceramic wall tiles (09310)					
	Glazed ceramic wall tiles including cement and sand mortar backing, grouted with a neat white or coloured cement and additive, all as specified and as shown on the drawings (To CT - SCAN)				
A	To walls 300 × 300mm and 7mm thick				
	Per Square Meter in letters :				
	.....	m ²	35		

To Collection USD _____

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Fully vitrified ceramic floor tiles (09312)

Fully vitrified ceramic floor tiles, bedded and jointed in cement and sand mortar, including grouting with a neat white or coloured cement and additive, all as specified and as shown on the drawings (Finishes schedule) (To CT - SCAN)

- A To floor non slip tiles 300 x 300cm and 7mm thick , including skirting.
Per Square Meter in letters :

..... m² 7

Marble Threshold (09616)

Polished marble threshold bedded and jointed in cement and sand mortar including polishing and grouting with a neat white or coloured cement and additive all as specified. (To CT - SCAN)

- A To threshold 30mm thick (CARRARA) where instructed by the Engineer
Per Linear Meter in letters :

..... lm 1

Suspended ceilings

- A Acoustical Vinyl antibacterial tiles as existing
False ceiling sizes 600 × 600 to the approval of the Engineer complete including suspension system and all fixing accessories as specified and shown on the drawing (To CT - SCAN)

Per Square meter in letters :

..... m² 31

To Collection USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
B	Suspended false ceiling consist of metal strip 100mm wide to the approval of the Engineer complete including suspension system and all fixing accessories as specified and shown on the drawing (To CT - SCAN)				
	Per Square meter in letters :	m ²	6		
	Vinyl				
A	Supply and fix Vinyl roll as per manufacturer's instruction including all needed accessories including skirting (To CT - SCAN)				
	Per Square meter in letters :	m ²	32		
	Internal Paint (09900)				
	Prepare, prime and apply one coat undercoat, three coat of putty and three finishing coats of Antibacterial oil paint ; all as specified . (CT-SCAN)				
A	To plastered walls and ceiling				
	Per Square Meter in letters :	m ²	100		
	Cleaning coat				
A	Prepare and apply only one primer (seller) coat to areas over False ceiling as cleaning coat to the approved of the Engineer . (CT- SCAN)				
	Per Square Meter in letters :	m ²	37		

To Collection USD

DIVISION 9
FINISHES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
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DIVISION 9 - FINISHES

Carried to Summary

USD

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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1. EXISTING EQUIPMENT RELOCATION

Completely connect the existing feeder and electrical equipment of the existing CT scanner (provided for the Contractor inside the new CT scanner room) including breakers, switches and all accessories to the new CT scanner. The existing cabling shall be rerouted into a covered heavy duty channel embedded in the floor. All works tested and accepted to the full satisfaction of the Electrical Engineer.

Per Item Rate in letters

Item 1

To Collection USD _____

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 16 - ELECTRICAL SERVICES

USD

Carried to Summary

CT SCAN AT GROUND FLOOR

Summary

USD

Division 2	Site Work
Division 3	Concrete Work
Division 9	Finishes
Division 16	Electrical Services

Total Summary

USD

GENERATORS ROOM

**DIVISION 2
SITE WORK**

Item	Description	Unit	Qty	Unit Rate	Amount USD
A	Existing areas of external walls shall be brushed and cleaned & prepared to receive the new finishes, including repaired damage plaster all to be approved by the Engineer. (Generators Room) Per Square Meter in letters :	m ²	100		
B	Existing floor finish shall be cleaned & preparing the areas to receive the new finishes, as shown on drawing & the Approval of the Engineer. (Generators Room) Per Square Meter in letters :	m ²	108		
C	All existing internal wall areas shall be brushed and cleaned & prepared to receive the new finishes, as shown on drawing & to the approved of the Engineer. (Generators Room) Per Square Meter in letters :	m ²	310		
D	Existing ceiling areas shall be brushed and cleaned & prepared to receive the new finishes, as shown on drawing and to the approved of the Engineer. (Generators Room) Per Square Meter in letters :	m ²	110		

To Collection USD _____

**DIVISION 2
SITE WORK**

Item	Description	Unit	Qty	Unit Rate	Amount USD
E	All existing doors , louvers, buffles of Generators room shall be removed , than brushed , cleaned , painted primer coat , mastic if needed following by three coats of oil paint , damaged ironmongery shall be replaced , and reinstalled all to the approved by the Engineer. .(GENERATORS ROOM)				
a	2000 mm wide Per number in letters :	no	5		
b	1000 mm wide Per number in letters :	no	2		
c	Louvers approx . 2000 mm wide & 2000 high Per number in letters :	no	2		
d	Louver approx. 2000 mm wide & 1000 mm high Per number in letters :	no	1		
e	Buffle approx. 1800 mm wide & 1500 mm high Per number in letters :	no	2		

To Collection USD _____

DIVISION 2
SITE WORK

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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DIVISION 2 - SITE WORK

Carried to Summary

USD

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Preambles					
A	The quantities stated in the Bill of Quantities are estimated and are not intended to limit the amount of work to be performed under the Contract.				
B	The Bill of Quantities is to be read and construed in conjunction with the specifications.				
C	The general and detailed requirements of the Specifications are not repeated in the descriptions of the items in the Bill of Quantities, except for the purposes of identification.				
D	All materials listed in the Bill of Quantities shall be of the respective kinds described in the Contract and in accordance with the Specifications and subject to the prior approval of the Engineer				
E	The rates and prices inserted in the Bill of Quantities are to include for the full cost of the work as described in, or reasonably inferable from the Specifications and other Contract Documents				
F	If any item in the Bill of Quantities is not priced, the cost thereof shall be deemed to be included in the prices of other items				
G	Without restricting the generality of the foregoing, the rates and prices inserted in the Bill of Quantities shall be deemed to cover : <ul style="list-style-type: none"> - Labour and all costs in connection therewith - Plant and all costs in connection therewith - Materials and consumable supplies - Transport - On-Site and off-site supervision - Overhead charges and profit - Fees for permits excluded taxes 				
H	Items denoted as provisional in the Bill of Quantities will be carried out only as instructed by the Engineer and may be omitted if the Engineer so decides.				

DIVISION 3
CONCRETE WORKS

Item	Description	Unit	Qty	Unit Rate	Amount USD
Concrete Works					
A	Concrete has been measured net, no deduction has been made for :				
1	Volume of concrete displaced by embedded steel				
2	Voids not exceeding 0.10m ² in concrete measured superficially				
3	Voids not exceeding 0.05m ³ in concrete measured cube				
B	Rates for plain concrete slab and screed shall include for :				
1	Vibrating and packing				
2	Curing and sprinkling				
3	Grading, tamping, trowling and floating				
4	Formwork and metal ties				
5	Reinforcement and tying wire, spacers, rolling margin, cutting and bending, waste, hooks and the like.				
6	include treatment and cleaning of existing reinforcement and needed epoxy material for complete the works as shown on dwgs.				
C	Beds and screeds				
	Beds and screeds shall be measured by square meter of placing concrete				

**DIVISION 3
CONCRETE WORKS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
Reinforced in-situ concrete (03300)					
Vibrated reinforced concrete class "B3" with ordinary Portland cement including reinforcement and clean sawn Formwork :					
In Elevations, (GENERATORS ROOM)					
A	Concrete Pad for Generators room , and parapet, including reinforcement and formwork as per Drawing A -16 Per Cubic Meter in letters :	m ³	6		
Lintels					
B	Concrete lintels size as shown on the drawings including reinforcement (B3) . To ICU , CT SCAN , GENERATORS ROOM. Per Cubic Meter in letters :	m ³	0.25		
Beds and screeds (03500)					
Cement and sand screed (1:3) , all as specified including slop (0.5 %)as shown on Drwg A - 16.					
A	100 mm thick to Generators room , to be laid as shown on drwg and detail A -16 Per Square Meter in letters :	m ²	98		

To Collection USD _____

DIVISION 3
CONCRETE WORKS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
Page No. 3/3

DIVISION 3 - CONCRETE WORKS

Carried to Summary

USD

**DIVISION 8
DOORS & WINDOWS**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A Rates for ironmongery shall include for :
 - 1 Screws and fixing accessories
 - 2 Temporarily fixing and refixing ironmongery
- B All sizes given are finished sizes
- C All aluminum windows, doors, frames, etc., shall be factory assembled and reinforced according to drawings, complete with ironmongery hinges, glazing gaskets, glazing and anchors and all aluminum elements shall be protected from adjoining structures as specified
- D Where windows have no structural member to which they may be secured the provision for rigidity of such windows shall be provided
- E All external windows and doors to be weatherproof
- F All dimensions of doors and windows must be re-adapted to fit the existing conditions of the Site
- G Easing and adjusting doors and protection generally
- H Any pattern, size and area of glazing
- J Circular cutting and square cutting and rounded edge
- K Glazing to wood, metal or aluminum
- L Neoprene, air lock
- M Bedding edges and labours to edges including rounding edges of all panes to prevent damage to gaskets
- N Grinding and drilling holes
- P Protection from damage and replacing any damaged unit
- Q Irregular shaped panes are measured as the smallest rectangular area from which such shape can be obtained

DIVISION 8
DOORS & WINDOWS

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Fire Rated Steel doors (08110)

Fire rated steel door prepainted units comprising galvanised steel sheet on both sides, frame, support frame fireproof mineral wool insulation fireproof intumescent rubber and all necessary fixing accessories; Including Hardware and ironmongery and all painting (as per ironmongery schedule) (Handle Hinges, etc) all as specified and as shown on the drawing A-03

A FSD-1a Overall dimension 2000 x 2200mm

Per Unit Rate in letters :

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No 1

DIVISION 8 - DOORS AND WINDOWS

Carried to Summary

USD

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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Preambles

- A All finishings have been measured as the net area in contact with the base. No deduction has been made for voids not exceeding 0.25m²
- B Rates for in-situ finishings shall include
- 1 Application to and preparation of any surface including guide screeds
 - 2 Wire mesh at junctions between differing materials around opening for pipes ducts, etc. and angle and stop beads
 - 3 Any width or area any location and any height
 - 4 Finish to surfaces, to falls, crossfalls and slopes including making good after all trades
 - 5 Working into channels, around edges, chamfered edges, sharp arrises rounded angles, coved angles and the like
 - 6 Admixtures, samples
- C Rates for tile and slab finishings shall include for :
- 1 Application to and preparation of any surfaces
 - 2 Sand bed to any thickness to floor tiling as shown on the drawings
 - 3 Grouting pointing and polishing
 - 4 Finish to surfaces, to falls, crossfalls, and slops, including making good after all trades
 - 5 Fair, rebated, rounded, chamfered, splayed, bevelled and moulded edges, grooves, flutes and the like
 - 6 Square, raking and circular cutting
 - 7 Cutting and fitting into any opening or recessed
 - 8 Admixtures, samples
- D Rates for stone shall include for :
- 1 Templets and patterns
 - 2 All joints including joggle joints sunk joints rebated and the like
 - 3 All dressing
 - 4 Work in any location
 - 5 Square ends, square reveals, square external angle of walls and the like

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
6	Splayed ends, battered ends, battered external and internal angle of walls and the like				
7	Wall ties, anchors, metal cramps and dowels lead plugs and the like if existing				
8	Rough and fair cutting				
9	Grooves, throats, rebates, margins, flutes, sinkings chamfered angles, founded angles and the like				
10	Stops and mitres				
11	Grooves for turned in flashings, nibs of skirtings and the like				
12	Horizontal raking and vertical chases				
13	Holes for pipes, tubes, bars, conduits, ducts and the like				
14	Polishing				
E	Rates for painting and floor coatings shall include for :				
1	Preparation of paint and preparation of surfaces to be painted				
2	Any area or width in any location				
3	Work in multicolors				
4	Cutting in edges and rubbing down between coats				
5	Attendance, protection and making good after all trades				
6	Curved work				

**DIVISION 9
FINISHES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
External paint (09800)					
A	Prepare prime and paint in one undercoat and two finishing coat of waterproof external paint approved by the Engineer on existing external plastered or concrete surfaces as specified and as shown on drawing including cleaning and Treatment with mastic, where needed. (Generators room.)				
	Per Square Meter in letters :				
	.....	m ²	200		
Internal Paint (09900)					
	Prepare, prime and apply one coat undercoat, three coat of putty and three finishing coats of oil paint ; all as specified (Generators room)				
A	To plastered walls and ceiling				
	Per Square Meter in letters :				
	.....	m ²	440		
	Prepare, prime and apply first coat at the rate of 5m ² /litre than second finishing coat of epoxy paint at the rate of 4m ² /litre; all as specified. (Generators room)				
B	To Floors				
	Per Square Meter in letters :				
	.....	m ²	122		

To Collection

USD

DIVISION 9
FINISHES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION
Page No. 9/3

DIVISION 9 - FINISHES

Carried to Summary

USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>Preambles</p> <p>GENERAL RULES FOR ELECTRICAL WORK</p> <p>All services must be carefully coordinated to provide a complete working installation. Works, materials, equipment or services not specifically mentioned in these clauses but mentioned or indicated on drawings must be included as part of the contract.</p> <p>All electrical work shall be carried out in a neat, workmanlike and efficient manner, in accordance with the requirements of these Specifications, and so that their true meaning and intent are fulfilled.</p> <p>The Engineer's Drawings issued with the Specifications indicate the approximate location of all electrical apparatus. The exact and final location shall be subject to the prior approval of the Engineer.</p> <p>The scope of work covers the supply to the site and installation of the electrical material and equipment as described under this Section and/or shown on the Drawings including all other associated works. Work shall include site testing after completion of installation.</p> <p>All work shall be carried out to the satisfaction of the Engineer. Any work refused by the Engineer shall be removed, rebuilt and replaced by the Contractor at no cost in a satisfactory manner. All work distributed, injured or destroyed in the course of removal of the said work shall be made good at the Contractor's own expense.</p> <p>If anything necessary to the proper installation or operation of the electrical system is omitted from the Drawings and specifications, or if indicated incorrectly, the Contractor shall immediately call the attention of the Engineer to this omission or inaccuracy. Should the Contractor fail to do so, he shall be held responsible and shall make good at his own expense such errors or any damages caused by such omissions.</p> <p>Samples of parts, fittings and fixtures shall be submitted to the Engineer by the Contractor for approval before beginning the work.</p>

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>Detailed catalogue cuts for all fixtures or if so required by the Engineer shall be submitted before orders for the fixtures are placed.</p> <p>The completed systems shall be thoroughly tested before putting in into operation. Tests shall be carried out by the Contractor under the supervision of the Engineer. Any modifications or repairs necessary upon completion of the tests shall be made good at the Contractor's expense. The electrical Contractor shall provide all testing equipment and materials. All electrical equipment shall be clean and adjusted on site before application of power.</p> <p>The Contractor shall revise his drawings accurately to record the work as constructed and shall submit as build drawings to the Engineer at the completion of the work and prior to final hand over.</p> <p>Specification for electrical work is detailed in the general specification. Here under some specific cases that will apply in addition to the general specification. If contradiction appears between the two cases, the contractor should ask for written decision upon which one to use.</p> <p>Electrical work generally is deemed to include:</p> <p>A Supply, installation, testing, commissioning, put-ting into satisfactory operation and handing over complete systems,</p> <p>B Provision of maintenance and operation manuals and spare parts lists and submitting required number of copies,</p> <p>C Co-ordination with other trades including minor approved modifications and additions to ensure compatibility,</p> <p>D Minor items and accessories required for normal operation and maintenance,</p> <p>E Marking the positions of and cutting or forming holes, mortices, chases and the like in any sur-face and making good all work disturbed,</p> <p>F Assembling and jointing together component parts of composite units and providing any necessary jointing materials,</p> <p>G Patterns, moulds, templates and the like,</p>

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
H	Priming or painting off site and proprietary finishes or surface treatments applied as part of the manufacturing process,
J	Corrosion protective treatments and coatings to fixings, hangers and supporting materials,
K	Sleeves through walls, ceilings and floors including cover plates,
L	Fire sealants, and fire barriers,
M	Brackets and supports,
N	Temporary works and removing and making good after,
P	Loose keys, tools and spares and the like, except where required to be given separately,
Q	Plates, labels and tags for the identification of plant, equipment, cables, switches and the like,
R	As built drawings and shop drawings
S	Temporarily operating each installation, including attendants, special insurance and providing power supply,
T	Cutting and pinning ends of supports for equipment, ancillaries, fittings and the like,
U	Painting on site including colour coding,
V	Builder's work in connection, except where required to be measured separately,
W	Preparing and submitting operation and maintenance manuals.
X	Training Employer's personnel in operation and maintenance of systems.

FEEDERS

- A Wires and cables are given in meters.
Wires and cables are deemed to include:
- B Conduits and fittings, draw wires and the like (except where conduit work is required to be measured separately),
- C Cable connectors and cable joints (where permitted) including joint boxes, sealing boxes, shrouds and the like and materials and heat for making the joints,

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
D	Allowance in cable length for cables entering fittings and accessories, equipment or control gear,
E	necessary components and accessories for fixing cables on walls, ceilings and on cable trays/ladders.
BRANCH CIRCUITS	
A	Each kind of conduit is given separately (except where required to be included with other items), stating the type, size and method of installation.
B	Each kind of trunking, cable tray, cable ladder and the like is given separately (except where required to be included with other items), stating the type and dimensions.
C	Conduits, trunking, cable trays, cable ladders and the like are given in meters.
D	Cable trays, cable ladders and the like are deemed to include: mounting fittings, including cutting and jointing there to, jointing between sections, bends, tees, etc., components for earth continuity, adapters and connections between trunking and items of equipment or control gear requiring the use of flanges and/or the forming of apertures, pin racks for supporting cable, supports including fixing.
EARTHING SYSTEM	
A	Earthing system is given as an item.
B	Work is deemed to include a complete system to meet the specification required.
LIGHTING INSTALLATION:	
Work is deemed to include:	
A	Lighting Fixture complete with lamps and accessories.
B	Outlets,

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
C	Wires including protective earthing conductors, conduits and fittings from outlet back to upstream outlet or to final branch circuit panelboard,
D	Fixing and supporting material.
E	All LED lights will be equipped with electronic driver.

WIRING DEVICES & MISCELLANEOUS EQUIPMENT

Wiring devices including socket outlets, electrical outlets, switches, disconnecting switches and the like are enumerated.

Wiring devices are deemed to include:

- A outlets,
- B Wires including protective earthing conductors, conduits, and fittings from outlet back to upstream outlet or controlled circuit (for switches etc.) or to final branch circuit panelboard,
- C Fixing and supporting material.
- D The connection to AC units must include the interconnection between the condensing unit, the blower, the fresh air and the thermostat. It will include as well the feeders from the SDBs as shown on the drawings

LIGHTNING PROTECTION SYSTEM

Lightning protection system is given as an item.

Work is deemed to include:

- A The surge arrestors unit price will include the bus bars, the box and the connection.

PANELBOARDS

ATS board shall be metallic construction, it shall be multi-cubicle, floor mounted, free standing, rectangular with 1000V rated insulation voltage and 600V rated operational voltage, with fixed or draw-out switchgear, manually or manually and electrically operated, as shown on the drawings, with matching vertical sections to form a continuous integral and rigid structure and have a plane front face.

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
	<p>It shall have class of protection IP55 and be primed with rust inhibiting primer and finished with thermal polymerized polyester epoxy powder coating, gray color (RAL 7703 or ANSI 61) to approval, with adequate lifting means and base-frames and capable of being moved into position and directly bolted to floor without additional sills.</p> <p>Secondary distribution boards will be flush or surface mounted equipped with earth and neutral connectors rated to their nominal current, and have a plane front face. All panel boards shall be keyed. Main breaker of the board must be placed alone on one row at the top of the panel. A minimum of 30% space must be provided in each board. All circuit breakers in secondary distribution boards should have a breaking capacity as indicated on drawings with a minimum of 6 KA. The three pole circuit breakers must be designed such as the tripping of one pole will involve all the others.</p> <p>All final branch circuit breakers are DPNN as indicated on the drawing. Residual current circuit breaker are 4 poles. While breakers in ATS & totalizing panel shall be all moulded case.</p> <p>The poles must be equipped with an arc extinguisher. it is prohibited to supply a circuit breaker with a wire taken from an another one near to him. all connections must be through the bus-bars.</p> <p>Work is deemed to include:</p> <ul style="list-style-type: none"> A Supply and installation of ATS totalizing panel and, distribution panelboards. B All civil works required for the installation. C All fixing and support structures required for installation of wall or floor mounted panelboards. D Termination of incoming and outgoing cables including glands and other accessories, etc. E The unit price will include all connections, wiring, connection to the earthing system and accessories, metering instruments, painting, transport, fixing, labeling and every thing deemed necessary to the proper function of the panel.

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
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CONDUITS AND WIREWAYS

All cables shall be insulated XLPE as indicated on the drawings.

All exposed cables in false ceiling or technical rooms must be placed into EMT tubes with all accessories such as junction and pulling boxes of the same type.

All outdoor cables direct buried in the ground must be armored, PVC insulated of the series 1000 V. These cables must be placed between two sand's layers of 15 cm each at 40 cm under the surface. A plastic grid's layer must be placed 10 cm above the cables to indicate there presence.

When crossing other utilities such as sanitary pipes, isolation must separate them. Special care must be taken near the electrical and mechanical shafts to prevent crossing as much as possible.

The cable section will not be reduced in any case and will respect the value given in the distribution board.

It is forbidden to use the same neutral or ground line for different circuits. Each circuit will have its independent neutral and ground emerging directly from the distribution panel as shown on the drawings.

Work is deemed to include:

- A Conduits.
- B Cable Trays.
- C Mounting fitting, fixing, etc...
- D Cutting and jointing, bending, etc....
- E Junction boxes, expansion joints connectors, etc....
- F Components for earth continuity.

ANALOG ADDRESSABLE FIRE ALARM SYSTEM

Work is deemed to include:

- A Supply and installation of an analog addressable fire alarm control panel.

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
B	Automatic and manual detectors
C	Input/output modules.
D	Fire alarm bells.
E	Door holders.
F	Strobe lights
G	Complete wiring system including outlets, conduits, fixing, accessories, etc...

**TELEPHONE AND DATA DISTRIBUTION
SYSTEM**

Work comprises supply and installation of a complete telephone and data distribution network including, but not limited to, the following:

- A Indoor data/telephone cables, conduits, raceways and accessories.
- B Mounting with necessary fixing materials and supports.
- C Cable termination with all necessary cable termination accessories.
- D Termination of conduits with all necessary conduit fittings, etc....
- E Telephone and Data outlets
- F Telephone sets
- G Power supply equipment
- H Anxillary equipment
- I Data switch and telephone distribution frame
- J Computer network conduits will be twisted unshielded 4 pairs category 6 (UTP 4P) manufactured by AT&T, Alcatel, Simon or approved equal, linking each point individually to the patch panel. These cables shall conform to ANSI/TIA/EIA-568-A Commercial Building Telecommunications Cabling Standard and ISO/IEC 11801 (International) Generic Cabling for Customer Premises standard (latest amendment and including all applicable addenda).

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description
K	Distribution frames will be Verro or Rittal or approved equal to meet the requirements of the general specification. MDF and network cabinets will be complete with sufficient category 6 RJ45 4 pairs patch panel to accomodate all outlets. In addition, the patch panel in the network cabinets should accomodate additional ports for telephone cable while the MDF will accomodate IDC modules for main telephone feeder and outgoing feeder to network cabinets. The main telephone feeder should be protected with lightning protection.

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
1.	EXISTING GENERATORS REMOVAL				
	Completely remove and recupperate existing operating generators including all related cables , panels and accessories				
1.1	Existing generator 250 KVA Per Item Rate in letters (Negative price Fixed):	Item	1		
1.2	Existing generator 200 KVA Per Item Rate in letters (Negative price Fixed):	Item	1		
1.3	Existing generator 150 KVA Per Item Rate in letters (Negative price Fixed):	Item	1		
2.	EXISTING GENERATOR ROOM REHABILITATION				
	Completely rehabilitate the existing generator room in order to use it for the installation of the synchronization and totalizing panels and the 3 new generators .Electrical works include supply and installation of 13 lighting fixtures for industrial installation, 4 one phase industrial sockets, 1 three phase industrial socket, 3 switches with connection to existing distribution board which shall be rearranged and provided with adequate 2x16A circuit breaker for lighting, 2x20A for sockets and 4x25A for three phase sockets, including incoming cable 4x6mm ² , 4x32A ATS and 4x32A circuit breaker with connection to EDL and totalizing panel, 2 data outlets, 2 heat detectors, 1 manual fire alarm station, 1 siren with strobe light, surge protection for incoming power and low current cables, as specified or shown on drawings. Per Item Rate in letters :	Item	1		
3.	EXISTING OPERATING LOAD SHARING SYSTEM REMOVAL				
	Completely remove and recupperate the esixting load sharing system located in the electrical including panels, breakers, ATS, conduits and cables and all existing equipment and accessories, all for the good fonctionning of the new system. Per Item Rate in letters	Item	1		
		To Collection		USD	

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
4.	DIESEL GENERATOR				
	Completely supply and install DIESEL GENERATOR, 3 Phase, 50Hz, installed complete with diesel engine mounting frame, soundproof enclosure canopy, radiators cooling system, control and measuring instruments, electronic governor, lubrication equipment filters, water heating system, automatic emergency supply equipment, starting equipment fuel supply, one daily reservoir for diesel engine with the corresponding manual and automatic filling equipments, filling motor pump unit, float switch, manual fuel filling unit, exhaust system and silencer flexible and rigid connections, isolated foundation, vibration dampers, switchboard for the control and protection, battery and battery charger, spare parts, tools and instructions and automatic starting including all conduits, boxes, cables, wires, control cables, provision of interface for connection to future BMS (BACnet) to allow reading of general alarm, voltage, amperage, consumption, RPM, battery charger level alarm, oil pressure alarm, oil temperature alarm, coolant temperature alarm, status on-off, main breaker tripped alarm, junctions and connections and whatever else not enumerated but which is necessary for the completion and the perfect functioning of every part of the installation, as				
4.1	Generator 250 KVA Per Unit Rate in letters :	U	2		
4.2	Generator 150 KVA Per Unit Rate in letters :	U	1		
5.	RE-ARRANGEMENT OF EXISTING CABLES				
	Completely re-arrange all existing cables feeding the hospital in order to eliminate the non used cables and to reconnect all cables feeding the whole hospital sectors to the new system. Works to include cables, if additional cables are required, cable trays and all necessary accessories to complete the works up to the satisfaction of the Engineer. Contractor shall take all necessary measures and provide all necessary provisional equipments and accessories, in order to avoid any power interruption to the hospital. The whole works to be done in full coordination with the hospital technical team Per Item in letters :				
		Item	1		
		To Collection		USD	

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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6. SYNCHRONISATION AND TOTALIZING PANELBOARD

Supply, install and connect a totalizing and synchronization panelboard between the three new generators, form 3A minimum as specified and shown on drawings.

In addition provide:

- The incoming device must be on a separate row from the outgoing devices.
- The incoming device must be on a separate row from the outgoing devices.
- Provide provision of interface for connection to future BMS through PLC including all breakers status on/off, alarm tripped, and outgoing feeders voltage and amperage.
- Partitioning of upstream and downstream connections on the incoming device.
- Provide upstream terminal shields on outgoing devices.
- Panel materials should be with a glazed lockable door
- Conduits shall enter the panel through individual liquid and dust type glands
- The breakers should be MCCBs
- Installation must be complete with all needed and proper accessories as described and shown on the drawings.
- Provide terminal blocks for all cables
- Provide an empty row under terminal blocks row.

Totalizing Panel

Per Unit Rate in letters :

.....

U 1

Synchronizing Panel

Per Unit Rate in letters :

.....

U 1

To Collection USD

**DIVISION 16
ELECTRICAL SERVICES**

Item	Description	Unit	Qty	Unit Rate	Amount USD
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7. ATS PANEL

Supply, install and connect ATS panelboard between the generators and EDL, PLC based including all relays, form 3A minimum as specified, tested and accepted to the full satisfaction of the Electrical Engineer

In addition provide:

- The incoming device must be on a separate row from the outgoing devices.
- Provision of interface for connection to future BMS through PLC including all breakers status on/off, alarm tripped, and outgoing feeders voltage and amperage.
- Partitioning of upstream and downstream connections on the incoming device.
- Provide upstream terminal shields on outgoing devices.
- Panel materials should be with a glazed lockable door
- Conduits shall enter the panel through individual liquid and dust type glands
- The breakers should be MCCBs
- Installation must be complete with all needed and proper accessories as described and shown on the drawings.
- Provide terminal blocks for all cables
- Provide an empty row under terminal blocks row.
- Panels shall be sized for 30% extra space

Per Unit Rate in letters :

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U 1

To Collection USD

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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8. POWER CABLES

Supply, install connect and test multi core copper cables from the series 0.6/1KV, XLPE insulated and PVC sheathed to connect the generators, the totalizing panel and from the totalizing panel to the ATS including galvanized steel cable trays, heavy duty floor mounted covered galvanized steel channels, earth cables, connections, fixing materials, supports, glands, terminations and all necessary accessories as specified.

Per Item Rate in letters :

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Item 1

9 EARTHING SYSTEM :

Supply, install, connect and test, complete earthing system for the generators and the generators room, including the main earth conductor of different sizes as specified, the clamps, the connection cables and tubes, the excavations, the back fillings, the sheet steel box, the inspection housing and all the necessary accessories to provide a complete system as specified.

Generators earthing system

Per Item Rate in letters :

Item 1

10. REMOTE MONITORING PANEL

Supply, install, connect and test, complete monitoring panel located in the electrical room for the generators, batteries, EDL and fuel tank, including relays, indicator lamps allowing to give visual outputs and display the status on/off, manual/auto, online and general alarm for each of the generators and EDL. In addition, allowing to display the batteries status/alarm and the fuel tanks level high/low with all the necessary contacts and accessories that shall be provided on the ATS, totalizing panel, generators, batteries and fuel tanks for a complete system as specified.

Per Item Rate in letters :

Item 1

To Collection USD

DIVISION 16
ELECTRICAL SERVICES

Item	Description	Unit	Qty	Unit Rate	Amount USD
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COLLECTION

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- Page No. 6/12
- Page No. 6/13
- Page No. 6/14

DIVISION 16 - ELECTRICAL SERVICES

USD

Carried to Summary

GENERATORS ROOM

Summary

USD

Division 2	Site Work
Division 3	Concrete Work
Division 8	Doors and Windows
Division 9	Finishes
Division 15	Mechanical Services
Division 16	Electrical Services

Total Summary

USD

AL JABAL MEDICAL EQUIPMENT
FURNITURE AND RELATED CIVIL
AND ELECTROMECHANICAL WORKS

Grand Total Summary

USD

Medical Equipment and Furniture

Civil and Electromechanical Works

- ICU AT FIRST FLOOR PLAN
- CT-SCAN AT GROUND FLOOR
- GENERATORS ROOM

Grand Total Summary

USD