

REPUBLIC OF KENYA



KISII COUNTY GOVERNMENT



ARAB BANK FOR ECONOMIC
DEVELOPMENT IN AFRICA



SAUDI FUND FOR
DEVELOPMENT



**MINISTRY OF HEALTH
TENDER DOCUMENT FOR
PROPOSED CANCER CENTRE AT
THE KISII TEACHING AND REFERRAL HOSPITAL**

ELECTRICAL INSTALLATIONS

**FORM OF TENDER
BILLS OF QUANTITIES**

REF: No. MOH/NCCP/ICB/001/2021-2022

Volume II (1 of 3) (b) of VI

CLOSING DATE: WEDNESDAY, 24TH NOVEMBER 2021 AT 11.00 A.M. LOCAL TIME

SCHON ASSOCIATES



**NARCO ENGINEERING
CONSULTANTS**



**PROPOSED CANCER CENTRE AT
THE KISII TEACHING AND REFERRAL HOSPITAL**

ELECTRICAL INSTALLATIONS

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SECTION 1

Signature Page Form of Tender

**PROPOSED CANCER CENTRE AT
THE KISII TEACHING AND REFERRAL HOSPITAL**

BILLS OF QUANTITIES

FOR

ELECTRICAL INSTALLATIONS

Preamble

Supplied as part of the Main Tender for The Electrical Installations at Proposed Kisii Teaching and Referral Hospital – Cancer Centre.

ISSUED BY:

The Principal Secretary,
Ministry of Health,
P.O. Box 30016-00100,
Nairobi

PREPARED BY:

Schon & Associates
P.O. Box 38601-00100
Nairobi

The Tender for the above-mentioned works dated this _____ day of _____ 2021 by the undersigned parties refers to the Bills of Quantities consisting of the pages numbered on contents page.

.....

SUB-CONTRACTOR

Date2021

.....

MAIN CONTRACTOR

Date 2021

SIGNATURE PAGE

FORM OF TENDER

To: The Principal Secretary,
Ministry of Health,
P.O. Box 30016-00100,
Nairobi

Sirs,

Proposed Cancer Centre at The Kisii Teaching and Referral Hospital- Electrical Installations

1.01 I/We (Names) under and subject to the Conditions of Tendering annexed hereto, hereby tender and offer to execute and perform the works and provisions and supply all labour and materials and everything of every kind respectively named, shown, described and alluded to in, or to be inferred from the Kenya Association of Building and Civil Engineering Contractors (K.A.B.C.E.C.) Form of Sub-Contract Agreement, the General Conditions of Sub-Contract, Specification and Bills of Quantities and Drawings to be executed and supplied on the part of the Sub-Contractor, for the Works above described for the Sum of:-

United States Dollar
(in words)

.....
.....

USD.....(in figures)

1.02 I/We agree to phase the sub-contract work in accordance with the building programme to be agreed with the main Contractor at the time of letting the Main and Sub-Contracts.

1.03 I/We further agree to be bound by and submit to the said General Conditions of Sub-Contract and priced Specification and Bills of Quantities which shall form a basis for valuation of interim Certificates and any extra or omitted work which may from time to time be ordered by the Architect.

2.01 Whereas it is understood that you reserve to yourself the right to accept or to refuse this tender whether it be lower or higher than any other tender, or of the same amount, the undersigned agree(s) that this tender shall remain valid and shall not be withdrawn within ninety (120) days from the final date for the submission of Tenders stipulated in the Conditions of Tendering.

3.01 And further, the undersigned agree(s), in the event of your acceptance of this tender, to execute the formal Sub-Contract Agreement within seven (7) days from posting, or delivery if by hand, of notification of acceptance.

Signature of Tenderers:

Name of Tenderer:

Address:

Date:

Signature of Witness:

Name of Witness:

Address:

Date:

NOTE: Tenderers are **NOT** required to attach the Surety Undertaking, duly signed by the Surety, to this Form of Tender. However, a performance bond will be executed on being successful before contract signature.

SECTION 2

General

Pricing of Items in the Bill of Quantities

Bill of Quantities

2 **BILLS OF QUANTITIES**

2.1 **General Directions**

(a) The Bills of Quantities are to be read in conjunction with the Conditions of Contract, the Technical Specification, the Data Schedules and the Drawings for details of the description, quality, tests and strengths of materials to be used and the workmanship, conditions, obligations, liabilities described in the Conditions of Contract, the Specification, the Data Schedules and the Bills of Quantities including all overhead charges and profit and carrying out of the Works shall be deemed to be spread over and included in the prices and sums in this Bill of Quantities.

(b) Each item which the Tenderer proposes to supply shall be priced by Tenderer with the exception of the item for which Provisional Sums have been allowed. The Tenderer shall insert in the appropriate column against each item allocated in United States Dollar (USD.) as required by him and payments shall be made according to this allocation in the event of a contract.

If the Tenderer omits to price any item in the Bills of Quantities then the cost of such items will be held to be spread over and included in the prices given for other items of work.

(c) The Total of Tender for the electrical services shall be carried to the Main Summary section 6.

The Total of Tender for the electrical services shall include for the design, manufacture, inspection and testing, packing for shipment, insurance, customs, duties, delivery to site, unloading, and all other charges, complete erection, testing, setting to work, finishing, painting, maintenance for a period of Twelve calendar months and the instruction period all to the satisfaction of the Engineer, of the items of Plant described or implied within the Specification and shown on the Drawings.

(d) Provisional Sums may be expended in part, in whole or totally deleted from the Contract. The Tenderer shall take this into consideration when pricing the tender as no claims for loss of profit, etc will not be entertained.

It shall be deemed that the contractor has included for all requirements contained within the Specification, Drawings, Data Schedules and Bills of Quantities.

(e) For information and to assist the contractor in pricing the Bills of Quantities and the Schedule of Rates, the following Scope of Contract have been included, these details having formed part of the Main Tender Documents.

(f) Irrespective of the requirements contained within the East African Standard method of Measurement it shall be deemed that the contractor has included all requirements contained within the Specification, Drawings, Schedules and Bills of Quantities.

2.0 Particular Instructions for Pricing of Items in the Bills of Quantities

1. Cables

- (a) Cables shall be measured, the net length between termination points and the rates entered shall be deemed to include for all snaking, tails and the like.
- (b) The rates entered shall include as necessary, for all trenching, sanding, tiling, backfilling, consolidation, lugs, compound, insulating and identifying tails/wiring, earth bonds, route markers, supports, fixings, cable tray and any necessary drilling and packing to boards, panels and the like, all as required to complete the cable/wiring installation to meet the requirements of the Specification and details included on the drawings. The trenching rates shall be for excavation in any material to depth of 1000mm.

2. Switchgear, Distribution Boards and Equipment

The rates entered shall include for all switchgear, distribution boards and similar items necessary for the complete operation of the plant as specified and indicated on the Drawings, together with circuit breakers, isolating switches, switch fuses, cable gland plates, clamps, conduit adaptors, internal wiring and interconnections, supports for cable tails, earthing, labels and the like and as necessary for the complete installation.

3. Conduit, Trunking and Tray

Conduit, trunking and tray shall be provided as specified and indicated on the Drawings and shall be measured over all fittings and cable runs as necessary. The rates entered shall be deemed to include for all fittings, fixings, supports, brackets, hangers, earthing strips, accessories and the like as necessary to meet fully the requirements of the installation.

4. Earthing

The rates entered for all the equipment, lighting, fittings, switches, socket outlets and the like shall include for an insulated earth wire as required and described in the specification together with all other services as necessary including sinks, taps, etc.

5. General

It shall be the responsibility of the Tenderer to ensure that his prices include for all items necessary to complete the installation whether or not the items have been specifically identified within the Bills of Quantities. The Tenderer's prices shall include for all nuts, bolts, washers, fixings, supports and the like as necessary.

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
A	GENERAL ITEMS AND CONTINGENCY				
A/1	Allow for contingent works, the quantities of which are not detailed, to be executed if and when instructed by the Engineer. (PROVISIONAL SUM)	P.C. Sum	1	Main BQ	
A/2	Allow for TRAINNING of Client O & M Personnel on the operation and Maintenance of specialist electrical equipment supplied under this contract	Sum	1		
A/3	Allow for providing all attendance necessary to the Bio-medical equipment specialist during installation of the Equipment and associated switchgear.	Sum	1		
A/4	Allow for the preparation of all working drawings as specified (Minimum No. of drawings per set - 50 No)	Set	3		
A/5	Allow for the preparation of all "As Built" drawings after testing and commissioning as specified; (Minimum No. of drawings required - 50 No.) Drawings to include: (a) Hard copy prints - 4 sets of each. (b) AutoCAD on CD – 4 No.	Set	4		
A/6	Allow for supply of spare parts as detailed in the data schedules and the specifications.	Sum	1		
A/7	Allow for supply of special tools as detailed in the data schedules and in the specifications	Sum	1		
A/8	The Tenderer is to describe hereunder inserting any relevant clause number, any other works, obligations or items that may be referred to in the Conditions of Contract, Specification, Drawings or Data Schedule in respect of the works for which he desires to enter a separate charge(this charge is to be entered in the Amount column). If no charge is entered hereunder, rates and amounts elsewhere in the schedule of prices shall be deemed to cover all expenses for such works, obligations or items.	Sum	1		
Total carried forward to Main Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
B	INCOMING UTILITY POWER SUPPLIES				
B/1	Allow a P.C. Sum of KShs.20,000,000.00 for the capital contribution towards Kenya Power Co. Ltd.'s supply line, H.T. switchgear, metering panel and connection charges.	P.C. Sum	1	20,000,000	20,000,000
B/2	Allow for providing attendance as may be necessary to Kenya Power connecting up of their incoming underground cables to MV Switchgear including liaison works such as filing necessary applications, submission of forms to the authorities, depositing the fees/ other amounts as required to get the premises / installations, inspected and approved and all other formalities required till the electrical connection is obtained..	Sum	1		
B/3	Any other items to complete the installations in this section.	Sum	1		
Total carried forward to Main Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
C	MEDIUM VOLTAGE (MV) RETICULATION				
	<u>Medium Voltage switchgear</u>				
C/1	MV switchgear shall be installed on prepared foundations including all supports, fixings and inter panel connections where relevant. Including main and multi-core cabling and heat shrink cable termination. Supply, install, test and commission 11 KV MV switchgear consisting of 1 No. incoming and 2 No. outgoing 630 Amps 26 kA for 1 sec. Vacuum circuit breaker as per the drawings & specifications. Feeders include ammeter with selector switch, VIP relays, current transformers; incomers include 3 phase VT, voltmeter and phase selector switch; IDMT overcurrent and earth fault relays/CTs. The contractor shall engage for these works a Specialist firm that shall offer the client after sales technical maintenance Support	No.	1		
	<u>Sted-Down Distribution Transformer</u>				
C/2	Supply, store, install, test & commission 1250 kVA capacity 11/0.433, KV, Z= 5 %, 50Hz, 3ph, DYN-11 step down, dry type cast resin indoor transformers (ONAN) in ventilated steel enclosure suitable for an attitude of 1700m including winding temperature indicator with 2 N/O contacts, Copper wound complete with LT and HT cable termination boxes, lifting lugs, mounting skids, provisions for wheels, undrilled gland plates to air-filled cable boxes, off load tapping facility and including positioning in transformer room as per approved layout and detailed specifications - As ABB, Schneider Electric or approved equivalent make.	No.	1		
	<u>11 KV HT cables</u>				
C/3	Supply, lay, install and test 11 KV grade XLPE Copper conductor armoured cables laid over MS supports in existing trenches, 3 C x 95 sq.mm 11 KV Copper XLPE cable between MV switchgear and transformers including terminations, all necessary accessories and ancillary works and materials required for complete installation as specified and as indicated on the drawings.	m.	30		
C/4	Supplying and making cable end terminations for the above 11 KV HT cable, XLPE Copper conductor armoured cable including termination kit, complete heat shrinkable sleeves, Lugs etc.	No.	2		
	<u>Earthing for for Sub-station Equipment</u>				
C/5	Supply and install 25 mm x 3 mm thick Copper tapes including all necessary fixing accessories and effecting connections.	m.	25		
Sub-total carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
Brought forward from previous page					
C/6	EARTH MAT: Supply, install, test and commission copper earthing matt constructed of 25mm x 3mm copper tape measuring 1000mm x 1000mm with tapes at 150mm intervals laid 800mm deep in ground, Earth inspection concrete pit 1000 x 1000 mm with concrete base, CI chequered plate manhole cover with frame and bitumastic paint and with Marconite fill, excavation and reinstatement of soil.	No.	2		
C/7	EARTH BAR: Supply, install, test and commission 90mm x 90mm x 400mm long station earth bar mounted on polymer insulators and base; including connections installed within transformer room	No.	1		
C/8	Supply and install a 70mm copper earth conductor with the MV cable.	m	25		
C/9	Supply and fixing in position the approved 'As Built' single line diagram framed in 1000 x 800 mm size glass frame in the sub station.	No.	1		
C/10	Supply and install an approved tool cabinet for housing tools, operating handels, spare fuses, 1 pair 11 KV rubber hand gloves of approved make and earthing equipment..	No.	1		
C/11	Earthing and bonding to the Supply Authority requirements and the Specification	Sum	1		
C/12	Test and commission the MV installation	Sum	1		
Total Carried forward to the Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
D	LOW VOLTAGE (LV) RETICULATION				
	<u>Automatic Voltage Stabilizer & By-pass Panel</u>				
D/1	Supply, install, test and commission 1250 kVA, 50 Hz, 3 phase dry type static voltage stabilizer having voltage Input range of -20/+20%, frequency range as 45Hz-60 Hz, Output voltage variation as +/-1% Permissible over load 110% for 10 minutes at every 8 Hrs of operation, complete with inbuilt smart LED network analyzer compatible with BMS, under voltage / over voltage releases all in accordance with General technical specification	No.	1		
D/2	Voltage stabiliser maintenance bypass panel IP-44 free standing fully front access fabricated in 16SWG steel sheet and frames finished consisting of 3 Nos. 2500 amp 4P ACB's of 65 kA (lcs) breaking capacity circuit breaker each (switch disconnectors) mechanically interlocked, 3 Phase IN and Out indication lamps, Load manager with Communication portControl module for communicating various parameters such as input/output voltage, AVR status ON/OFF/Trip. Temperature of the Unit etc	No.	1		
	<u>Low Voltage Boards</u>				
	<u>Fabricate, assemble, supply, install, test and commission the following Switchboards, Sub Distribution Boards and Final Distribution Boards suitable for 415 V, 3 phase, 50 Hz, 4 wire power supply system. The boards shall be complete with all circuit breakers, switches, surge protective devices, digital multimeters, relays, electrical and mechanical interlocks, auxiliary equipment, instruments, accessories, coordination with other trades to provide a complete installation and fully operational system as shown on the drawings and as specified to the satisfaction of the engineer.</u>				
	<u>The switchboards shall be fabricated out of 2 mm thick powder coated steel sheet metal in cubical formation, compartmentalized in form-4, type-2 Construction, floor mounted, free standing and shall be dust and vermin proof. 3 mm thick cable gland plate, shall be provided both at the top and the bottom of the panel.</u>				
	<u>Final distribution Boards shall be fabricated out of 1.6 mm thick powder coated steel sheet metal and suitable for either surface mounted or wall recessed installation</u>				
	<u>Refer to the schematic drawings, distribution boards schedules and the technical specifications for details</u>				
	<u>Main low voltage switchboard</u>				
D/3	Free-standing main switchboard (Fully Type-Tested Assemblies – TTA form 4 type 2), modular, metal clad, manufactured in 3 mm galvanised mild steel sheet and finished in cream (or appropriate colour) powder coating as shown on the schematic as Schneider, ABB or approved equivalent complete with the following:-	Item	1		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
<u>Section 1</u>					
(a)	Incoming Air Circuit Breakers				
	Manually operated fully drawout type air circuit breaker with built in microprocessor based release unit for protection and measurement as per specification and with following accessories :				
	Breaker ON / OFF / TRIP indicating lights with control MCB's.				
	Under voltage release				
	24 V DC Shunt trip coil				
	Under voltage relay with timer				
	Over voltage relay with timer				
	Load Manager				
	Breaker control switch				
	0-2500/ 5 amps CT digital ammeter with 2500/ 5 amps, Class1 CT's.				
	0-500 Volt digital voltmeter with selector switch through VT's,				
	Class 1 – Type B surge protective device (Lines to Neutral) & (Neutral to Earth) suitable for 3 phases for utility incomer.				
i	2500 amps 4 pole (65 kA) Incoming Air Circuit Breaker `A' (For Generator supply - 1)				
ii	2500 amps 4 pole (65 kA) Incoming Air Circuit Breaker `B' (For Transformer -1 supply through Voltage stablizer 1)				
<u>Bus Bars</u>					
	3000 amps 4 pole (65 kA) copper bus bars with colour coded heat shrinkable insulating sleeves				
<u>Power Factor correction</u>					
	The section to have a 300 KVAR's automatic Power Factor Correction Capacitor Bank. The bank to be made from low-loss bio-degradable capacitive unit and to include the necessary fuse bases and fuses for each capacitor protection, Step automatic control regulator, contactors, controls and indicator lamps, digital read-out screen, comprising the following steps:-				
	i) 3 x 50 KVAR's 415 V,50Hz, 3-Phase				
	ii) 2 x 40 KVAR's 415 V,50Hz, 3-Phase				
	iii) 2 x 20 KVAR's 415 V,50Hz, 3-Phase				
	iv) 2 x 10 KVAR's 415 V,50Hz, 3-Phase				
	v) 2 x 5 KVAR's 415 V,50Hz, 3-Phase				
<u>Outgoing</u>					
	1000 amps 4 pole MCCB				
	630 amps 4 pole MCCB				
	400 amps 4 pole MCCB				
	300 amps 4 pole MCCB				
	2 X 250 amps 4 pole MCCB				
	1 X 125 amps 4 pole Spare MCCB				
	2 X 100 amps 4 pole Spare MCCB				
	4 X 63 amps 4 pole Spare MCCB				
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	<u>Bus Coupler : Breaker `C`</u>				
	2500 amps, 4 pole, 65kA manually operated fully drawout type air circuit breaker with ON / OFF / TRIP indicating lamps with control MCB's, shunt trip, breaker control switch etc.				
<u>Section 2</u>					
(a)	Incoming Air Circuit Breakers				
	Manually operated fully drawout type air circuit breaker with built in microprocessor based release unit for protection and measurement as per specification and with following accessories :				
	Breaker ON / OFF / TRIP indicating lights with control MCB's.				
	Under voltage release				
	24 V DC Shunt trip coil				
	Under voltage relay with timer				
	Over voltage relay with timer				
	Load Manager				
	Breaker control switch				
	0-2500/ 5 amps CT digital ammeter with 2500/ 5 amps, Class I CT's.				
	0-500 Volt digital voltmeter with selector switch through VT's, Class 1 – Type B surge protective device (Lines to Neutral) & (Neutral to Earth) suitable for 3 phases for utility incomer.				
i	2500 amps 4 pole (65 kA) Incoming Air Circuit Breaker `A` (For Generator supply - 1)				
ii	2500 amps 4 pole (65 kA) Incoming Air Circuit Breaker `B` (For Transformer -1 supply through Voltage stablizer 1)				
	<u>Bus Bars</u>				
	3000 amps 4 pole (65 kA) copper bus bars with colour coded heat shrinkable insulating sleeves				
	<u>Power Factor correction</u>				
	The section to have a 300 KVAR's automatic Power Factor Correction Capacitor Bank. The bank to be made from low-loss bio-degradable capacitive unit and to include the necessary fuse bases and fuses for each capacitor protection, Step automatic control regulator, contactors, controls and indicator lamps, digital read-out screen, comprising the following steps:-				
	i) 3 x 50 KVAR's 415 V,50Hz, 3-Phase				
	ii) 2 x 40 KVAR's 415 V,50Hz, 3-Phase				
	iii) 2 x 20 KVAR's 415 V,50Hz, 3-Phase				
	iv) 2 x 10 KVAR's 415 V,50Hz, 3-Phase				
	v) 2 x 5 KVAR's 415 V,50Hz, 3-Phase				
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	Outgoing				
	800 amps 4 pole MCCB				
	400 amps 4 pole MCCB				
	250 amps 4 pole MCCB				
	200 amps 4 pole MCCB				
	160 amps 4 pole MCCB				
	125 amps 4 pole MCCB				
	4 X 100 amps 4 pole MCCB				
	4 X 63 amps 4 pole MCCB				
	Notes :				
	CT's shall be provided for APFCR				
	Generator and transformer supply ACBs shall be electrically/mechanically interlocked as per schematic diagram.				
	All MCCB's shall be suitable for 50 kA (Icu=Ics) breaking capacity.				
	All ACB's shall be suitable for 65 kA(Icu=Ics=Icw for 1 sec.)				
	All outgoing MCCB's feeders shall be provided with built-in microprocessor release unit with earth fault protection and time delay.				
	6mm perspex viewing window				
	Heavy duty rubber lining for all the perspex viewing windows				
	415V three-phase surge diverter as Furse ESP 415, wired as shown, complete with enclosure with viewing window.				
D/4	Carry out comprehensive labelling of all the bus bars. CT chambers, circuit breakers etc. of item No. C/3 above, indicating the areas served, outgoing cable sizes etc.	Item	1		
D/5	Carry out earthing in copper earth mats with rods and earth continuity conductors for the above switchboard with necessary soil treatment methods to achieve impedance not exceeding 1.0 ohms.	item	1		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
	brought forward from previous page				
	<u>MAINS LV CABLES</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation all in accordance with the specification and drawings to the satisfaction of the Engineer. All single core cables have to be installed in trefoil arrangement. All electrical cables on cable trays, ladders and in shafts have to be spaced by atleast one diameter of the biggest size. Allow for the laying, supporting and termination of the LV cables from transformers to main switchgear.				
	<u>SINGLE CORE</u>				
	Single core, (0.6/1KV) grade, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 laid in trench/duct including marker tape (Trench and duct measured elsewhere)				
D/6	[3x(4x1Cx630mm ²)+1x(1Cx630mm ²)],CU,XLPE/SWA/PVC (rate for parallel runs per meter)	m.	70		
D/7	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	26		
D/8	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	26		
	<u>Rising Mains Busbar BD-EQ</u>				
	Supply, install, connect test and commission compact Low impedance rising mains copper busbar trunking; including: insulated supports, earth continuity, bar couplers; fixings and connections/jointing to equipment; fixing and mounting accessories; end feed units; end cap units, including any other fittings required for a complete system. All in accordance with schematic drawings, load schedules, and technical specifications. As Siemens, Schneider, ABB or equivalent and approved make.				
D/9	1000A TPN+E Copper Busbar, 50kA for Equipment Branch	m	30		
	Sub-Total Carried forward to next page				

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	<u>Tap-Off Units</u>				
	Supply, Install, Test, Connect and commission the following Tap-Off units, each complete with all accessories and components, all in strict compliance with ratings indicated in the schematic drawings, load schedules and technical specifications .				
D/10	400A TPN MCCB 36kA	No.	1		
D/11	160A TPN MCCB 36kA	No.	2		
D/12	100A TPN MCCB 36kA	No.	2		
D/13	63A TPN MCCB 36kA	No.	1		
	<u>Multicore Cable (0.6/1KV) to Item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/14	3x(4C x 240mm ²)Cu/XLPE/SWA/PVC + 1x(1C x 240mm ²) Cu/PVC G/Y ECC	m.	90		
D/15	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	6		
D/16	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	25		
	<u>Rising Mains Busbar BD-N</u>				
D/17	630A TPN+E Copper Busbar, 36kA for Normal Branch	m	23		
	<u>Tap-Off Units</u>				
	Supply, Install, Test, Connect and commission the following Tap-Off units, each complete with all accessories and components, all in strict compliance with ratings indicated in the schematic drawings, load schedules and technical specifications .				
D/18	100A TP MCCB 36kA	No.	18		
D/19	63A TP MCCB 36kA	No.	2		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	<u>Multicore Cable (0.6/1KV) to Item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/20	2x(4C x 150mm ²)Cu/XLPE/SWA/PVC + 1x(1C x 150mm ²) Cu/PVC G/Y ECC	m.	85		
D/21	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	4		
D/22	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	18		
	<u>Rising Mains Busbar- BD-E</u>				
D/23	400A TPN+E Copper Busbar, 36kA for Critical (UPS) Branch	m	25		
	<u>Tap-Off Units</u>				
	Supply, Install, Test, Connect and commission the following Tap-Off units, each complete with all accessories and components, all in strict compliance with ratings indicated in the schematic drawings, load schedules and technical specifications .				
D/24	100A TP MCCB 36kA	No.	1		
D/25	63A TP MCCB 36kA	No.	8		
	<u>Multicore Cable (0.6/1KV) to Item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/23	1x(4C x 185mm ²)Cu/XLPE/SWA/PVC + 1x(1C x 95mm ²) Cu/PVC G/Y ECC	m.	85		
D/24	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
Sub-Total Carried forward to next page					

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D/25	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>Sub-distribution boards</u>					
	Supply, Install, Connect, Test and commission the following Sub-boards, Free-standing/ Wall mounted (Type-Tested Assemblies – TTA form 3 type 2), modular, metal clad, manufactured in 3 mm galvanised mild steel sheet and powder coated complete with all necessary fittings and accessories including the following:				
	(a) Set of neon phase presence indicator lamps				
	(b) All incoming MCCBs to have electronics trip unit, under voltage release and adjustable over current settings and having a short-circuit breaking capacity of 36kA at 415Vac, 50Hz.				
	(c) Digital multimeter with CTs and fuse protection capable of measuring voltage in the range 0 – 500V, 3- phase, current in the range 0-1000A, 3-phase, and all power system parameters (KW, KVA, KWHr, KVARs, Frequency, P.F., harmonics and all the parameters).				
	(d) Carry out comprehensive labelling of all the bus bars, circuit breakers etc. indicating the areas served, outgoing cable sizes etc.				
	The make to be as Schneider Electric, ABB Switchgear or approved equivalent for the following boards:-				
D/26	<u>Main L.V. Sub-Board for Imaging Equipment 'SDB-IMG'</u>	No.	1		
	Incoming				
	1 X 800 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit and mechanical and electrical interlock.				
	Bus Bars:				
	1000 amps TPN 50 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	1 X 250 amps MCCB TPN; 3 X 200 amps MCCB TPN; 2 x 160 amps MCCB TPN; 2 x 32 amps MCCB TPN; Spare MCCB TPN: 1 x 100 amps, 2 x 63 amps, 1 x 40 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore Cable (0.6/1KV) to Item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
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D/27	2x(4C x 240 mm ²)Cu/XLPE/SWA/PVC + 1x(1C x 240 mm ²) Cu/PVC G/Y ECC	m.	100		
D/28	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	4		
D/29	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	18		
D/30	<u>LINAC L.V. Sub-Board 'SDB-LINAC'</u>	No.	1		
Incoming					
	1 X 400 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
Bus Bars:					
	500 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
Outgoing:					
	2 X 100 amps MCCB TPN; 2 x 80 amps MCCB TPN; 2 x 63 amps MCCB TPN; 2 x 40 amps MCCB TPN; Spare MCCB TPN: 2 x 63 amps, 3 x 32 amps; Type 2 ESP 415 electronic surge Protective device.				
<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>					
Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation					
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/31	1x(4C x 185mm ²)Cu/XLPE/SWA/PVC + 1x(1C x95 mm ²) Cu/PVC G/Y ECC	m.	60		
D/32	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/33	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/34	Medical Gases Plant L.V. Sub-Board 'SDB-GAS'	No.	1		
	Incoming				
	1 X 300 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	400 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	2 X 125 amps MCCB TPN; 2 x 63 amps MCCB TPN; 5 x 40 amps MCCB TPN; 2 x 32 amps MCCB TPN; Spare 2 x 32 amps; Type 2 ESP 415 electronic surge Protective device.				
	Multicore cable (0.6/1KV) from 'MLVB' to item above				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/35	1x(4C x 120mm ²) Cu/XLPE/SWA/PVC + 1x(1C x70 mm ²) Cu/PVC G/Y ECC	m.	50		
D/36	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/37	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/38	OR & ICU L.V. Sub-Board 'SDB-OR'	No.	1		
	Incoming				
	1 X 200 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	250 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	12 x 63 amps MCCB TPN; Spare 3 x 63 amps; Type 2 ESP 415 electronic surge Protective device.				
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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	<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/39	1x(4C x 95mm ²)Cu/XLPE/SWA/PVC + 1x(1C x50 mm ²) Cu/PVC G/Y ECC	m.	55		
D/40	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/41	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/42	<u>HVAC L.V. Sub-Board 'SDB-MV'</u>	No.	1		
	Incoming				
	1 X 160 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	200 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	5 X 40 amps MCCB TPN; 2 x 32 amps MCCB TPN; Spare 2 x 40 amps; 3 x 32 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/43	1x(4C x 50mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	70		
D/44	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
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D/45	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/46	<u>CSSD L.V. Sub-Board 'SDB-CSSD'</u>	No.	1		
	Incoming				
	1 X 160 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	200 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	4 X 63 amps MCCB TPN; 3 x 32 amps MCCB TPN; Spare 2 x 40 amps; 3 x 32 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/47	1x(4C x 50mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	45		
D/48	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/49	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/50	<u>FIRE PUMP L.V. Sub-Board 'SDB-FIRE'</u>	No.	1		
	Incoming				
	1 X 160 amps MCCB Adjustable – 36 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	200 amps TPN 36 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	2 X 100 amps MCCB TPN; 1 x 32 amps MCCB TPN; Spare 1 x 40 amps; 1 x 32 amps; Type 2 ESP 415 electronic surge Protective device.				
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	<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/51	1x(4C x 50mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	50		
D/52	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/53	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/54	<u>Boiler Plant L.V. Sub-Board 'SDB-BP'</u>	No.	1		
	Incoming				
	1 X 100 amps MCCB Adjustable – 26 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	125 amps TPN 26 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	1 X 32 amps MCCB TPN; 13 x 20 amps MCCB TPN; Spare MCCB TPN: 1 x 40 amps, 1 x 32amps, 3 x 20 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/55	1x(4C x 25mm ²)Cu/XLPE/SWA/PVC + 1x(1C x16 mm ²) Cu/PVC G/Y ECC	m.	65		
D/56	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
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D/57	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/58	<u>Waste Water Treatment Plant & Water Pumps</u> <u>L.V. Sub-Board 'SDB-PUMP'</u>	No.	1		
	Incoming				
	1 X 125 amps MCCB Adjustable – 26 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	160 amps TPN 26 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	1 X 63amps MCCB TPN; 4 x 32 amps MCCB TPN; 2 x20 amps MCCB TPN; 6x 16 amps MCCB TPN; Spare MCCB TPN: 1 x 40 amps, 2 x 32amps, 2 x 20 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/57	1x(4C x 35mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	50		
D/58	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/59	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/60	<u>Airconditioning Plant L.V. Sub-Board 'SDB-AHU'</u>	No.	1		
	Incoming				
	1 X 100 amps MCCB Adjustable – 26 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	125 amps TPN 26 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	1 X 40amps MCCB TPN; 2 x 32 amps MCCB TPN; 4 x 16 amps MCCB TPN; Spare MCCB TPN: 1 x 63 amps, 2 x 32amps, 2 x 20 amps; Type 2 ESP 415 electronic surge Protective device.				
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	<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/61	1x(4C x 25mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	50		
D/62	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/63	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
D/64	<u>Airconditioning Plant L.V. Sub-Board 'SDB-VRV'</u>	No.	1		
	Incoming				
	1 X 100 amps MCCB Adjustable – 26 kA fault rated; fitted with electronic trip unit.				
	Bus Bars:				
	125 amps TPN 26 kA copper busbars with fully-rated neutral and colour coded heat shrinkable insulating sleeves.				
	Outgoing:				
	2 X 32amps MCCB TPN; 6 x 20 amps MCCB TPN; Spare MCCB TPN: 2 x 32 amps, 2 x 20amps, 1 x 16 amps; Type 2 ESP 415 electronic surge Protective device.				
	<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above</u>				
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/65	1x(4C x 25mm ²)Cu/XLPE/SWA/PVC + 1x(1C x25 mm ²) Cu/PVC G/Y ECC	m.	50		
D/66	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
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D/67	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>Final Distribution Boards</u>					
Supply, install, test and commission the following final distribution boards (DB's) fabricated out of 1.6 mm thick steel sheet metal, powder coated with approved shade and partitions to segregate phases, approved lockable covers, recessed in wall or surface mounted of the following description:					
<u>DB-LIFT- (Fourth Floor)</u>					
D/68	4 way TPN DB, 1 Nos. 100 amps TPN RCCB of 30 mA leakage current with 3 nos. 63A D curve TPN MCB as outgoing and 1 no. 100A 4 pole MCB and 1 no. withdrawable type surge arrester of 415V maximum discharge current of 10 kA at 8/20 micro seconds with operation indicator as incomer, separate neutral link for each phase.	No.	1		
<u>Multicore cable (0.6/1KV) from 'BD-EQ' to item above.</u>					
	Supply, install, connect and test 1x(4C x 25mm2) Cu XLPE/SWA/PVC + 1x(1C x 16 mm2) Cu/PVC G/Y ECC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	35		
D/69	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/70	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>Physical Medicine (DB-PHY)</u>					
D/71	12 way TPN DB, 10 Nos. 16/20 amps SP MCB's per phase with 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no. 100 amps 4 pole MCB as incomer with separate neutral link for each phase.	No.	1		
<u>Multicore cable (0.6/1KV) from MLVB' to item above.</u>					
	Supply, install, connect and test 1x(4C x 25mm2) Cu XLPE/SWA/PVC + 1x(1C x 16 mm2) Cu/PVC G/Y ECC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	150		
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D/72	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/73	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
Type X (DB for UPS)					
D/74	12way TPN DB, 9 Nos. 40 amps DP RCCB of 30 mA leakage current with 36 nos. 16/20A D curve SP MCB as outgoing and 1 no. 63A 4 pole MCB and 1 no. withdrawable type surge arrester of 415V maximum discharge current of 10 kA at 8/20 micro seconds with operation indicator as incomer, separate neutral link for each phase.	No.	1		
<u>Multicore cable (0.6/1KV) from MLVB' to item above</u>					
	Supply, install, connect and test 1x(4C x 16 mm ²) Cu XLPE/SWA/PVC + 1x(1C x 16 mm ²) Cu/PVC G/Y ECC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	200		
D/75	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/76	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>Ground Floor Final Distribution Boards</u>					
<u>DB-GAL</u>					
D/77	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		-
D/78	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	15		
	(b) Blanking plates for unused spare ways	No.	5		
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	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above.</u>				
	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/79	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/80	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-GAP</u>					
D/81	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/82	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	7		
	(b) 32 amp SP&N 10kA MCB	No.	17		
	(c) 32 amp TP&N 10kA MCB	No.	1		
	(d) Blanking plates for unused spare ways	No.	5		
	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above.</u>				
D/84	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/85	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/86	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
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	<u>DB-GAE</u>				
D/87	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/88	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	18		
	(b) Blanking plates for unused spare ways	No.	6		
	<u>Multicore cable (0.6/1KV) from 'BD-E' to item above.</u>				
D/89	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/90	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/91	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>CU-LSG</u>				
D/92	Supply, install, connect-up complete 18 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/93	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(b) 10 amp SP&N 10kA MCB	No.	15		
	(d) Blanking plates for unused spare ways	No.	3		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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	<u>Multicore cable (0.6/1KV) from 'DB-LS' to item above</u>				
D/94	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	20		
D/95	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/96	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>DB-GBL</u>				
D/97	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/98	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	21		
	(b) Blanking plates for unused spare ways	No.	3		
	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/99	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/100	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-GBP</u>				
D/101	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/102	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	6		
	(b) 32 amp SP&N 10kA MCB	No.	19		
	(d) Blanking plates for unused spare ways	No.	11		
	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/103	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/104	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-GBE</u>				
D/105	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/106	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	18		
	(b) 32 amp TP&N 10kA MCB	No.	1		
	(c) Blanking plates for unused spare ways	No.	5		
	<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>				
D/107	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/108	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/109	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>First Floor Final Distribution Boards</u>					
<u>DB-1AL</u>					
D/110	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/111	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	18		
	(b) Blanking plates for unused spare ways	No.	6		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/112	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/113	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-1AP</u>					
D/114	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/115	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	11		
	(b) 32 amp SP&N 10kA MCB	No.	12		
	(c) 63 amp SP&N 10kA MCB	No.	3		
	(d) Blanking plates for unused spare ways	No.	10		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/116	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/117	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/118	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-1AE</u>					
D/119	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/120	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	15		
	(b) 63 amp SP&N 10kA MCB	No.	3		
	(c) Blanking plates for unused spare ways	No.	6		
<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>					
D/121	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/122	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/123	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>CU-W1</u>					
D/124	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/125	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(b) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(d) Blanking plates for unused spare ways	No.	1		
<u>Multicore cable (0.6/1KV) from 'DB-1AP' to item above</u>					
D/126	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	20		
D/127	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/128	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
<u>CU-W2</u>					
D/129	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/130	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(c) Blanking plates for unused spare ways	No.	1		
<u>Multicore cable (0.6/1KV) from 'DB-1AP' to item above</u>					
D/131	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	25		
D/132	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/133	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
D/134	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/135	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(c) Blanking plates for unused spare ways	No.	1		
<u>Multicore cable (0.6/1KV) from 'DB-1AP' to item above</u>					
D/136	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	25		
D/137	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/138	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>CU-LS1</u>				
D/139	Supply, install, connect-up complete 18 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/140	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	14		
	(b) Blanking plates for unused spare ways	No.	4		
	<u>Multicore cable (0.6/1KV) from 'DB-LS' to item above</u>				
D/141	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	20		
D/142	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/143	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>DB-1BL</u>				
D/144	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/145	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	18		
	(b) Blanking plates for unused spare ways	No.	6		
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	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
D/146	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/147	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/148	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-1BP</u>				
D/149	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/150	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	3		
	(b) 32 amp SP&N 10kA MCB	No.	19		
	(c) Blanking plates for unused spare ways	No.	11		
	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
D/151	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/152	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/153	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-1BE</u>				
D/154	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/155	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	3		
	(b) 32 amp SP&N 10kA MCB	No.	16		
	(c) 32 amp TP&N 10kA MCB	No.	1		
	(d) Blanking plates for unused spare ways	No.	2		
<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>					
D/156	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/157	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/158	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>Second Floor Final Distribution Boards</u>					
<u>DB-2AL</u>					
D/159	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/160	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	18		
	(b) Blanking plates for unused spare ways	No.	6		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/161	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/162	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/163	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-2AP</u>					
D/164	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/165	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	11		
	(b) 32 amp SP&N 10kA MCB	No.	12		
	(c) 63 amp SP&N 10kA MCB	No.	3		
	(d) Blanking plates for unused spare ways	No.	10		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/166	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/167	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/168	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-2AE</u>					
D/169	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/170	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	15		
	(b) 63 amp SP&N 10kA MCB	No.	3		
	(c) Blanking plates for unused spare ways	No.	6		
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	<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>				
D/171	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	40		
D/172	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/173	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>CU-W4</u>				
D/174	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(c) Blanking plates for unused spare ways	No.	1		
	<u>Multicore cable (0.6/1KV) from 'DB-2AP' to item above</u>				
D/175	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	20		
D/176	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/177	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
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	<u>CU-W5</u>				
D/178	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/179	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(c) Blanking plates for unused spare ways	No.	1		
<u>Multicore cable (0.6/1KV) from 'DB-2AP' to item above</u>					
D/180	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	25		
D/181	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/182	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>CU-W6</u>				
D/183	Supply, install, connect-up complete 12 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/184	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	1		
	(b) 32 amp SP&N 10kA MCB	No.	10		
	(c) Blanking plates for unused spare ways	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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	<u>Multicore cable (0.6/1KV) from 'DB-2AP' to item above.</u>				
D/185	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	25		
D/186	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/187	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>CU-LS2</u>				
D/188	Supply, install, connect-up complete 18 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/189	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	16		
	(b) Blanking plates for unused spare ways	No.	2		
	<u>Multicore cable (0.6/1KV) from 'DB-LS' to item above.</u>				
D/190	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	25		
D/191	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/192	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
	<u>DB-2BL</u>				
D/193	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/194	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	24		
	(b) Blanking plates for unused spare ways	No.	12		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/195	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/196	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/197	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-2BP</u>					
D/198	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/199	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	7		
	(b) 32 amp SP&N 10kA MCB	No.	17		
	(c) Blanking plates for unused spare ways	No.	12		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/200	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/201	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
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D/202	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-2BE</u>				
D/203	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/204	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	16		
	(b) Blanking plates for unused spare ways	No.	8		
	<u>Multicore cable (0.6/1KV) from 'BD-E' to item above.</u>				
D/205	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/206	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/207	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>Third Floor Final Distribution Boards</u>				
	<u>DB-3BL</u>				
D/208	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/209	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	26		
	(b) Blanking plates for unused spare ways	No.	10		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
D/210	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	55		
D/211	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/212	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-3BP1</u>				
D/213	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/214	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	6		
	(b) 32 amp SP&N 10kA MCB	No.	15		
	(c) Blanking plates for unused spare ways	No.	15		
	<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>				
D/215	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/216	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/217	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
	<u>DB-3BP2</u>				
D/218	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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D/219	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	4		
	(b) 32 amp SP&N 10kA MCB	No.	12		
	(c) Blanking plates for unused spare ways	No.	8		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/220	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	65		
D/221	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/222	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-3BE</u>					
D/223	Supply, install, connect-up complete 6 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/224	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	12		
	(b) Blanking plates for unused spare ways	No.	6		
<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>					
D/225	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/226	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/227	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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	<u>Medical IT Isolation Panel - OR and ICU</u>				
D/228	Supply, install, Test and Commission of 10kVA Single Phase Isolation panel comprising both the IT and TNS Earthing system complete with Isolation Transformer for IT Medical wiring system; 63A SPN Automatic Static Transfer Switch (Make before Break), earth reference bars, Local Isolation Monitor, CTs, Relays, RCBOs, Spareways housed in IP54 cabinet and complete with local and remote alarm panels as specified and schematic diagram	No.	9		
	<u>Incoming:</u> SPN Switch Isolator 63A				
	<u>TNS System:</u> 63 amp 240 volt SP&N; earth and neutral bars; outgoing 6 x 16A SP&N RCBO 30mA				
	<u>IT System:</u> 63 amp 240 volt SP&N bars; outgoing 12 x 16A SP&N MCB; 3 x 20 A SP&N MCB, 2 x 32 A SP&N MCB				
	<u>Multicore cable (0.6/1KV) from 'DB-OR' to item above</u>				
D/229	Supply, install, connect and test 10 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	300		
D/230	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	14		
D/231	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	42		
	<u>CU-LS3</u>				
D/232	Supply, install, connect-up complete 18 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/233	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	14		
	(b) Blanking plates for unused spare ways	No.	4		
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	<u>Multicore cable (0.6/1KV) from 'DB-LS' to item above</u>				
D/234	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	35		
D/235	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/236	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
<u>Fourth Floor Final Distribution Boards</u>					
<u>DB-4BL</u>					
D/237	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/238	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	21		
	(b) Blanking plates for unused spare ways	No.	3		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/239	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	55		
D/240	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/241	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-4BP</u>					
D/242	Supply, install, connect-up complete 12 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
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D/243	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 20 amp SP&N 10kA MCB	No.	4		
	(b) 32 amp SP&N 10kA MCB	No.	17		
	(c) Blanking plates for unused spare ways	No.	15		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/244	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/245	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/246	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-4BK</u>					
D/247	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 4 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/248	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	6		
	(b) 20 amp SP&N 10kA MCB	No.	5		
	(c) 32 amp SP&N 10kA MCB	No.	9		
	(d) Blanking plates for unused spare ways	No.	4		
<u>Multicore cable (0.6/1KV) from 'BD-N' to item above</u>					
D/249	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	65		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/250	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/251	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>DB-4BE</u>					
D/252	Supply, install, connect-up complete 8 way TP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/253	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 32 amp SP&N 10kA MCB	No.	18		
	(b) 63 amp TP&N 10kA MCB	No.	1		
	(c) Blanking plates for unused spare ways	No.	6		
<u>Multicore cable (0.6/1KV) from 'BD-E' to item above</u>					
D/254	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	50		
D/255	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/256	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	10		
<u>CU-LS4</u>					
D/257	Supply, install, connect-up complete 18 way SP/N MCB Distribution board for normal power supply, IP 32 protection enclosure; removable earth link with separate neutral bars for each phase. and DIN rail; 3 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no.100 amp integral isolator incomer	No.	1		
D/258	Supply, install, connect-up the following Miniature circuit breakers (MCBs) for above distribution board; BS EN 60 898; DIN rail mounting; including connecting to circuit				
	(a) 10 amp SP&N 10kA MCB	No.	14		
	(b) Blanking plates for unused spare ways	No.	4		
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	Multicore cable (0.6/1KV) from 'DB-LS' to item above				
D/259	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	35		
D/260	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	2		
D/261	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	6		
CU-W1E- CU-W6E					
D/262	18 way SPN CU, Outgoing MCBs: 14 Nos.32 amps SP MCB's with 1 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no. 63 amps SPN MCB as incomer.	No.	6		
	Multicore cable (0.6/1KV) from 'DB-LS' to item above				
D/263	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	200		
D/264	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	12		
D/265	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	36		
DB-Plant room					
D/266	6way TPN DB, Outgoing MCBs: 3 Nos. 10 amps SP MCB's, 3 Nos.32 amps SP MCB's; with 2 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no. 63 amps 4 pole MCB as incomer with separate neutral link for each phase.	No.	3		
DB-Gate House					
D/267	6way TPN DB, Outgoing MCBs: 3 Nos. 10 amps SP MCB's, 3 Nos.32 amps SP MCB's; with 2 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no. 63 amps 4 pole MCB as incomer with separate neutral link for each phase.	No.	1		
D/268	12way TPN DB, 9 Nos. 40 amps DP RCCB of 30 mA leakage current with 36 nos. 16/20A D curve SP MCB as outgoing and 1 no. 63A 4 pole MCB and 1 no. withdrawable type surge arrester of 415V maximum discharge current of 10 kA at 8/20 micro seconds with operation indicator as incomer, separate neutral link for each phase.	No.	1		
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	<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>				
D/269	Supply, install, connect and test 16 mm ² 5C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	250		
D/270	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	12		
D/271	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	36		
<u>CU-Common Areas</u>					
D/272	18 way SPN CU, Outgoing MCBs: 14 Nos.32 amps SP MCB's with 1 Nos. 63 amps DP RCCB's of 30 mA leakage current and 1 no. 63 amps SPN MCB as incomer.	No.	2		
	<u>Multicore cable (0.6/1KV) from 'MLVB' to item above</u>				
D/273	Supply, install, connect and test 16 mm ² 3C Cu XLPE/SWA/PVC 600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder (cable tray, ladder and duct measured elsewhere)	m.	100		
D/274	Supply and install cable brass compression glands complete with nut and shrouds for the above cable	No.	12		
D/275	Supply and install cable lugs for the above cable complete with hydraulic crimping	No.	36		
<u>ISOLATORS</u>					
	Supply, install, connect and test isolator switches including all necessary accessories and ancillary works and materials required for complete installation as specified and as indicated on the drawings for the following items:				
D/276	250 Amps 3 phase Isolators IP 54 Splashproof type	No.	1		
D/277	200 Amps 3 phase Isolators IP 54 Splashproof type	No.	4		
D/278	160 Amps 3 phase Isolators IP 54 Splashproof type	No.	2		
D/279	125 Amps 3 phase Isolators IP 54 Splashproof type	No.	2		
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D/280	100 Amps 3 phase Isolators IP 54 Splashproof type	No.	4		
D/281	80 Amps 3 phase Isolators IP 54 Splashproof type	No.	2		
D/282	63 Amps 3 phase Isolators IP 54 Splashproof type	No.	9		
D/283	40 Amps 3 phase Isolators IP 54 Splashproof type	No.	5		
D/284	32 Amps 3 phase Isolators IP 54 Splashproof type	No.	16		
D/285	20 Amps 3 phase Isolators IP 54 Splashproof type	No.	22		
D/286	20 Amps 1 phase SPN Isolators IP 54 Splashproof type	No.	30		
<u>LV Cables to the isolators above</u>					
	Supply, install, connect and test the following cables including termination, glands, fixing materials, accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system all in accordance with the specification and drawings and to the satisfaction of the Engineer.				
	600/1000 volt grade, multicore, armoured, XLPE insulated, PVC sheathed, copper stranded conductors to BS 5467 installed on cable tray, ladder or laid in duct including marker tape (cable tray, ladder and duct measured elsewhere)				
D/287	4C x 95mm ² Cu/XLPE/SWA/PVC + 1C x 50mm ² Cu/PVC G/Y ECC	m.	80		
D/288	4C x 70mm ² Cu/XLPE/SWA/PVC + 1C x 35mm ² Cu/PVC G/Y ECC	m.	50		
D/289	4C x 50mm ² Cu/XLPE/SWA/PVC + 1C x 25mm ² Cu/PVC G/Y ECC	m.	130		
D/290	4C x 35mm ² Cu/XLPE/SWA/PVC + 1C x 25mm ² Cu/PVC G/Y ECC	m.	50		
D/291	4C x 25mm ² Cu/XLPE/SWA/PVC + 1C x 16mm ² Cu/PVC G/Y ECC	m.	180		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/292	5C x 16mm ² Cu/XLPE/SWA/PVC	m.	380		
D/293	5C x 10mm ² Cu/XLPE/SWA/PVC	m.	150		
D/294	5C x 6mm ² Cu/XLPE/SWA/PVC	m.	350		
D/295	5C x 4mm ² Cu/XLPE/SWA/PVC	m.	825		
D/296	3C x 16mm ² Cu/XLPE/SWA/PVC	m.	30		
D/297	3C x 10mm ² Cu/XLPE/SWA/PVC	m.	110		
D/298	3C x 6mm ² Cu/XLPE/SWA/PVC	m.	30		
D/299	3C x 4mm ² Cu/XLPE/SWA/PVC	m.	300		
<u>Cable Ladder, Cable Tray, Wire Baskets</u>					
<p>Supply, install & connect the following heavy duty galvanized steel ladder rack/ tray/ wire basket suspended on hangers below slab soffit, roof structure, or fixed to wall (inclusive of bends, tee pieces, cross overs, distribution board connections, end caps, splicers, factory made supports, hanging brackets, fixings, earthcontinuity straps etc) coordination with all other trades and all other incidentals required to provide a complete installation, as shown on the drawings and as specified up to the satisfaction of the engineer.</p>					
<u>Cable Ladder</u>					
D/300	600mm wide ladder	m.	100		
D/301	450mm wide ladder	m.	100		
<u>Perforated type factory fabricated GI cable trays</u>					
D/302	600 x 75 mm cable tray	m.	25		
D/303	600 x 50 mm cable tray	m.	60		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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D/304	450 x 50 mm cable tray	m.	620		
D/305	300 x 50 mm cable tray	m.	25		
D/306	250 x 50 mm cable tray	m.	300		
D/307	150 x 50 mm cable tray	m.	450		
D/308	100 x 50 mm cable tray	m.	50		
<u>Cable Basket zinc plated</u>					
D/309	600 x 50 mm Cable Basket	m.	50		
D/310	450 x 50 mm Cable Basket	m.	1000		
D/311	200 x 50 mm Cable Basket	m.	250		
<u>Cable Trunking</u>					
	Supply, install & connect the following heavy duty PVC skirting modular trunking; white 3 compartments (inclusive of SNAP ON trunking 45mm cover, cutting and jointing trunking to fittings and backplates for fixing to walls etc) coordination with all other trades and all other incidentals required to provide a complete installation, as shown on the drawings and as specified up to the satisfaction of the engineer.				
D/312	250 x 50 mm Cable Trunking	m.	500		
<u>Adaptable Boxes</u>					
	Supply, install & connect the following heavy duty Sheet steel adaptable boxes, knockout sides, fixed to backgrounds; including supports and fixings (cutting and connecting conduit to boxes is included) coordination with all other trades and all other incidentals required to provide a complete installation, as shown on the drawings and as specified up to the satisfaction of the engineer.				
D/313	200 × 200 × 75mm	No.	50		
D/314	150 × 150 × 75mm	No.	50		
D/315	100 × 100 × 50mm	No.	50		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
E	<u>UNINTERRUPTIBLE POWER SUPPLY (UPS)</u>				
	<u>Supply, Install, Connect, Test and commission the following complete UPS System with sealed lead acid batteries including, DC circuit breakers, temperature sensors for batteries, cabinet ventilation fans, external bypass..etc. coordination with all other trades and all other incidentals required to provide a fully operational system as shown on the drawings and as specified up to the satisfaction of the Engineer.</u>				
E/1	Uninterruptible Power Supply (UPS) System complete with maintenance-free batteries sealed lead acid batteries (10 years Warranty) including items mentioned in the technical specifications and drawings. UPS System to support sensitive hospital Equipment shall include modular UPS; 1 No. 120 kVA, 415/ 50 Hz, 3 phase input & 3 phase output, true online, double conversion UPS, with IGBT RECTIFIER & INVERTER, External central by-pass panel and batteries, 15-minute autonomy battery storage, cabinet/Rack to house all items with suitable ventilators.	No.	1		
E/2	Uninterruptible Power Supply (UPS) System complete with maintenance-free batteries sealed lead acid batteries (10 years Warranty) including items mentioned in the technical specifications and drawings. UPS System to support sensitive hospital Equipment shall include modular UPS; 1 No. 120 kVA, 415/ 50 Hz, 3 phase input & 3 phase output, true online, double conversion UPS, with IGBT RECTIFIER & INVERTER, External central by-pass panel and batteries, 30-minute autonomy battery storage, cabinet/Rack to house all items with suitable ventilators.	No.	1		
E/3	Uninterruptible Power Supply (UPS) System complete with maintenance-free batteries sealed lead acid batteries (10 years Warranty) including items mentioned in the technical specifications and drawings. UPS System to support sensitive hospital Equipment shall include modular UPS; 1 No. 120 kVA, 415/ 50 Hz, 3 phase input & 3 phase output, true online, double conversion UPS, with IGBT RECTIFIER & INVERTER, External central by-pass panel and batteries, 30-minute autonomy battery storage, cabinet/Rack to house all items with suitable ventilators.	No.	1		
E/4	Allow for a PC SUM of Ksh 500,000 for additoanl cabling to the above UPS	P.C. SUM	1	500,000	500,000
E/5	Allow for Testing & Commissiong of the Uninterruptible Power Supply (UPS) System as per specifications and manufacturer's recommendations up to the satisfaction of the engineer.	Sum	1		
E/6	Allow for any other item not detailed but required for the satisfactory operation and completion of the Uninterruptible Power Supply (UPS) installations. Specify	Sum	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
F	DIESEL GENERATOR POWER BACK UP & RETICULATION				
F/1	Supply, install, test and commission diesel generator set 800kVA (prime/standby power) with sound attenuated canopy, cranking battery and battery charger, auto start capability, parallelizing equipment, measuring and protection panel, auxiliary equipment, connection testing and commissioning for delivery in full and normal operation. The equipment will be "ready for BMS connection through Modbus Protocol".	No.	1		
F/2	Take delivery, insure, install, test and commission above sound attenuated 800 kVA, 415V 50Hz prime rated diesel engine generator set	No.	1		
F/3	Supply diesel generator set 800kVA (prime/standby power) with sound attenuated canopy, cranking battery and battery charger, auto start capability, parallelizing equipment, measuring and protection panel, auxiliary equipment, connection testing and commissioning for delivery in full and normal operation. The equipment will be "ready for BMS connection through Modbus Protocol"..	No.		Not in this scope	
F/4	Take delivery, insure, install, test and commission above sound attenuated 400 kVA, 415V 50Hz prime rated diesel engine generator set	No.		Not in this scope	
F/5	Supply & Installation of Diesel Generators' Synchronization panel for parallel operation, for two (2) diesel generator set with two (2) incoming Air Circuit Breakers 4 poles, motorized 1x2500A & 1x630A, one (2) outgoing 4pole Air Circuit breaker motorized 1x2500A, all equipment protection and control, according to design drawings, equipment for parallel operation, synchronsization of generators, control equipment, the required synchronsization software etc, connection testing and commissioning for delivery in full and normal operation. The equipment will be "ready for BMS connection through Modbus Protocol"..	No.	1	Not in this scope	
F/6	Supply, install, test & commission Bulk Diesel Storage Tank 15000L capacity (6 mm thick shell & 8 mm thick dished shell) as per BS Code and approved for construction as per shop drawings duly approved by the Engineer and suitable for under ground installation including all required accessories, with pressure operated level indication system and with following: Inlet and outlet connections, Vent pipe, Dip pipe assembly with calibration chart, 600 mm dia manhole with cover, Lifting lugs, Mild Steel ladder and Providing Anti corrosive Pypcoat (AW4) treatment.	No.	1		
F/7	Supply, install, test & commission electrical driven fuel transfer pumps suitable for pumping of diesel fuel from under ground tank to Genset and feeding the overflow back to under ground tank complete with following : flame proof motor of suitable HP for the pump(s), flame proof ON/ OFF push button station, coupling and coupling guard for direct coupling of pump and motor, pressure gauge with valve on the delivery side etc	No.	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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F/8	Supply, install, test and commission of 1000 litres secondary Buffer fuel storage tank for collecting ,storing fuel at height near diesel generator in order to feed the genset day tanks through gravity. Fabricated from 4 mm thick MS plates.Tank shall include 450 mm ID manhole cover, flanged connection for inlet, outlet, drain outlet, overflow drain outlet, vent and probe provision for level controller to return automatically diesel to over flow tank. Tank shall be mounted on suitably high structure support (painted with 2 coats of red oxide primer and there after 2 coats of approved paint shade).	No.	1		
F/9	Allow for diesel fuel for testing and commissioning	No.	110		
F/10	Supply, install, test and commission mild steel class 'C' (heavy duty) pipe & fittings like tees, elbows, junctions, unions, bends, plugs etc. RCC pipe sleeves of larger diameter to be provided wherever the pipes are crossing the wall / slab and sleeves as per Consultant's requirement, including clamps hangers, nuts, bolts etc for pipe supports from wall / ceiling including cutting and making hole in wall / slab and making good the same, non return valves, solenoid valves including a coat of Synthetic enamel paint over two coats of primer complete as required and excavation of required depth and back filling where required	Item	1		
F/11	Supply, install, test and commission oil flow meter for pipe line. The flow meter shall have communication port with communication protocol for integration with BMS.	No	1		
F/12	Supply, install, test and commission Mild steel class-B exhaust pipe and all fixing accessories and hardwares. The exhaust pipes shall be insulated with 75 mm thick mineral wool (density 150 kg/m3) insulation wrapped in chicken mesh and clad with 26 gauge aluminium sheet including all MS epoxy painted support structural as required	Item	1		
F/13	Supply, install, test and commission Radiator extract system ducting, piping, insulation, jackets complete with support structure and fixings.	Item	1		
F/14	Supply, install, test and commission Residential type environmentally friendly silencers with support structure and fixings	Item	1		
F/15	Supply, install, test and commission, Control cabling including terminations from the generator set mounted control panels to the main LV sub-board installed in the generator room.	Item	1		
F/16	Supply, install, test and commission 6mm2 PVC SWA PVC 12 core copper cable between the LV switchboard and the generator control panels and the synchronizing panel.	Item	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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F/17	Supply and install 8 x500mm ² XLPE/SWA/PVC single core CU. cable +1x500mm ² XLPE/SWA/PVC single core cables laid in cable trench/ tray between Main switch boards and generator to engineer's details.(rate for parallel run per meter)	LM	18		
F/18	Supply and install brass compression glands for the above cables	No.	1		
F/19	Supply and install cable lugs for the above cables	No.	1		
F/20	Supply, install, connect, test and commission 400 x 90 x 6 mm Copper Earth Bar mounted on insulators and having 6 nos. holes for terminating single core 70 Sq.mm flexible cable with the entire assembly enclosed in 1.6 mm thick MS enclosure of approved make, design & painted with approved paint shade.	No.	1		
F/21	Supply, install, connect, test and commission 150 sq.mm single core cable Green & Yellow colour 1100 volts grade PVC insulated sheathed copper conductor unarmoured cable including copper thimbles, fixing hardware as required.	L.m	30		
F/22	Supply, install, connect, test and commission 25 x 3 mm bare copper tapes / wires including all necessary fixing accessories and effecting connections as per specifications.	L.m	20		
F/23	Supply, install, connect, test and commission concrete inspection pit comprising copper earthing matt 1000mm x 1000mm constructed of 25mm x 3mm copper tape measuring with tapes at 150mm intervals, including Earth inspection concrete pit masonry chamber 1000 x 1000 mm with concrete base C I heavy duty / chequered plate manhole cover with frame painted with bitumastic paint and packing with mixture of charcoal and common salt around earth matt including digging of pit upto permanent moisture level and as per soil condition but not less than 1 meters and back filling as required to achieve an earth resistance of 1 ohms	No.	1		
F/24	Allow for training of two members of the Client's staff to be fully conversant with all aspects of system operation, management and programming.	Item	1		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
G	MAIN HOSPITAL- LIGHTING AND SMALL POWER				
G1	GROUND FLOOR - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
G1/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 1.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	601		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
G1/2	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	150		
b	Type A2	No.	80		
c	Type A3	No.	10		
d	Type B	No.	20		
e	Type B1	No.	20		
f	Type EXIT	No.	60		
g	Type D1	No.	90		
h	Type D2	No.	100		
i	Type K	No.	15		
j	Type L	No.	20		
k	Type M	No.	18		
l	Type N	No.	18		
m	Type D3	No.	25		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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<u>INSTALLATION OF LIGHTING FIXTURES</u>					
G1/3	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	150		
b	Type A2	No.	80		
c	Type A3	No.	10		
d	Type B	No.	20		
e	Type B1	No.	20		
f	Type EXIT	No.	60		
g	Type D1	No.	90		
h	Type D2	No.	100		
i	Type K	No.	15		
j	Type L	No.	20		
k	Type M	No.	18		
l	Type N	No.	18		
l	Type D3	No.	25		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
G1/4	Supply, deliver, Install, terminate, test and commission the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	80		
b	10 amp, 2 gang, 1 way switch	No.	5		
c	10 amp, 3 gang, 1 way switch	No.	5		
d	10 amp, 1 gang, 2 way switch	No.	15		
e	10 amp, 2 gang, 2 way switch	No.	10		
f	10 amp, 3 gang, 2 way switch	No.	5		
g	10 amp, one gang, 2 way Intermeidate switch	No.	13		
h	1 gang, 1 way; Dimmer switche; rotary action	No.	8		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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G1/5	Supply, install, test and commission Integrated sensor having combination of infra-red receiver, movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	60		
SOCKET OUTLETS					
G1/6	Supply, install, connect, test and commission sockets outlets white moulded coverplate; BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	50		
b	Ditto as item above; but weather proof type.	No.	10		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	20		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	10		
e	13A Twin switched socket outlet.	No.	230		
f	Ditto as item above; but weather proof type.	No.	20		
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	110		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	10		
CONNECTION/ CONTROL UNITS					
G1/7	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	8		
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	8		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	10		
d	45A DP Switch; switched with neon indicator.	No.	4		
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	4		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	5		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	5		
h	Spur outlet for Medical Gas Alarm Panel.	No.	2		
i	Spur outlet for BMS Central Equipment	No.	2		
j	Spur outlet for Main Fire Alarm Control Panel.	No.	2		
k	Spur outlet for Master Nurse Call Control Panel.	No.	2		
l	Spur outlet for urinal sensor installed above false ceiling.	No.	8		
4	WIRING OF ELECTRICAL OUTLETS				
G1/8	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embedded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	90		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	370		
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	8		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	8		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	10		
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	4		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	4		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	5		
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	5		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	16		
5	OUTLET POINTS WITH DRAW WIRES				
G1/9	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	300		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	10		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	70		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	30		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	70		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	130		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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6	ADAPTABLE BOXES				
G1/10	Supply and install Sheet steel adaptable boxes; with knockout sides; fixed to backgrounds; including supports and fixings for the following:				
a	Square galvanized 300 × 300 × 100mm	No.	20		
b	Square galvanized 200× 200 × 75mm	No.	20		
c	Square galvanized 150 × 150 × 75mm	No.	20		
G1/11	Supply and fixing of embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits of following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good or surface mounted including all fixing hardware.				
G1/12	Ditto as Item above but 32 mm dia heavy duty PVC	LM	200		
G1/13	Ditto as Item above but 38 mm dia heavy duty PVC	LM	200		
G1/14	Ditto as Item above but 50 mm dia heavy duty PVC	LM	100		
G1/15	Heavy gauge, mild Steel Conduit; surface fixed on saddles to backgrounds, with standard pattern boxes and fittings including all fixings and supports (forming holes, conduit entry, draw wires etc. and components for earth continuity included)				
a	Ditto as Item above but 25 mm dia MS 16 gauge	LM	100		
b	Ditto as Item above but 32 mm dia MS 16 gauge	LM	100		
Total Carried forward to Collection page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
G2/1	FIRST FLOOR - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
G2/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 1.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	550		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
G2/2	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	130		
b	Type A2	No.	70		
c	Type W	No.	25		
d	Type B	No.	20		
e	Type B1	No.	32		
f	Type EXIT	No.	37		
g	Type D1	No.	62		
h	Type D2	No.	102		
i	Type K	No.	9		
j	Type L	No.	15		
k	Type M	No.	23		
l	Type N	No.	25		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
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<u>INSTALLATION OF LIGHTING FIXTURES</u>					
G2/3	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	130		
b	Type A2	No.	70		
c	Type A3	No.	25		
d	Type B	No.	20		
e	Type B1	No.	32		
f	Type EXIT	No.	37		
g	Type D1	No.	62		
h	Type D2	No.	102		
i	Type K	No.	9		
j	Type L	No.	15		
k	Type M	No.	23		
l	Type N	No.	25		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
G2/4	Supply, deliver, Install, terminate, test and commissio the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	75		
b	10 amp, 2 gang, 1 way switch	No.	12		
c	10 amp, 3 gang, 1 way switch	No.	3		
d	10 amp, 1 gang, 2 way switch	No.	10		
e	10 amp, 2 gang, 2 way switch	No.	25		
f	10 amp, 3 gang, 2 way switch	No.	3		
g	10 amp, one gang, 2 way Intermeidate switch	No.	17		
h	1 gang, 1 way; Dimmer switche; rotary action	No.	7		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
G2/5	Supply, install, test and commission Integrated sensor having combination of infra-red receiver, movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	45		
SOCKET OUTLETS					
G2/6	Supply, install, connect, test and commission sockets outlets white moulded coverplate; BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	95		
b	Ditto as item above; but weather proof type.	No.	5		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	15		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	15		
e	13A Twin switched socket outlet.	No.	175		
f	Ditto as item above; but weather proof type.	No.	5		
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	183		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	5		
CONNECTION/ CONTROL UNITS					
G2/7	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	11		
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	9		
c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	5		
d	40A DP Switch; switched with neon indicator.	No.	3		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	3		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	5		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	5		
h	Spur outlet for Medical Gas Alarm Panel.	No.	3		
i	Spur outlet for BMS Central Equipment	No.	5		
j	Spur outlet for Main Fire Alarm Control Panel.	No.	2		
k	Spur outlet for Master Nurse Call Control Panel.	No.	2		
l	Spur outlet for urinal sensor installed above false ceiling.	No.	9		
4	WIRING OF ELECTRICAL OUTLETS				
G2/8	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	130		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	368		
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	11		
d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	9		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	5		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	5		
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	5		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	21		
5	OUTLET POINTS WITH DRAW WIRES				
G2/9	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	250		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	15		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	65		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	55		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	74		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	85		
ADAPTABLE BOXES					
G2/10	Supply and install Sheet steel adaptable boxes; with knockout sides; fixed to backgrounds; including supports and fixings for the following:				
a	Square galvanized 300 × 300 × 100mm	No.	15		
b	Square galvanized 200× 200 × 75mm	No.	15		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
	brought forward from previous page				
c	Square galvanized 150 × 150 × 75mm	No.	25		
G2/11	Supply and fixing of embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits of following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good or surface mounted including all fixing hardware.				
G2/12	Ditto as Item above but 32 mm dia heavy duty PVC	LM	300		
G2/13	Ditto as Item above but 38 mm dia heavy duty PVC	LM	500		
G2/14	Ditto as Item above but 50 mm dia heavy duty PVC	LM	300		
G2/15	Heavy gauge, mild Steel Conduit; surface fixed on saddles to backgrounds, with standard pattern boxes and fittings including all fixings and supports (forming holes, conduit entry, draw wires etc. and components for earth continuity included)				
a	Ditto as Item above but 25 mm dia MS 16 gauge	LM	250		
b	Ditto as Item above but 32 mm dia MS 16 gauge	LM	250		
Total Carried forward to Collection page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
G3	SECOND FLOOR - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
G3/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 1.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	623		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
G3/2	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	135		
b	Type A2	No.	66		
c	Type W	No.	21		
d	Type B	No.	52		
e	Type B1	No.	12		
f	Type EXIT	No.	53		
g	Type D1	No.	102		
h	Type D2	No.	110		
i	Type K	No.	12		
j	Type L	No.	15		
k	Type M	No.	13		
l	Type N	No.	32		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
<u>INSTALLATION OF LIGHTING FIXTURES</u>					
G3/2	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	135		
b	Type A2	No.	66		
c	Type A3	No.	21		
d	Type B	No.	52		
e	Type B1	No.	12		
f	Type EXIT	No.	53		
g	Type D1	No.	102		
h	Type D2	No.	110		
i	Type K	No.	12		
j	Type L	No.	15		
k	Type M	No.	13		
l	Type N	No.	32		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
G3/3	Supply the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	102		
b	10 amp, 2 gang, 1 way switch	No.	17		
c	10 amp, 3 gang, 1 way switch	No.	3		
d	10 amp, 1 gang, 2 way switch	No.	33		
e	10 amp, 2 gang, 2 way switch	No.	13		
f	10 amp, 3 gang, 2 way switch	No.	3		
g	10 amp, one gang, 2 way Intermeidate switch	No.	15		
h	1 gang, 1 way; Dimmer switche; rotary action	No.	3		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
G3/4	Supply, install, test and commission Integrated sensor having combination of infra-red receiver, movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	56		
SOCKET OUTLETS					
G3/5	Supply, install, connect, test and commission sockets outlets white moulded coverplate; BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	103		
b	Ditto as item above; but weather proof type.	No.	12		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	13		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	6		
e	13A Twin switched socket outlet.	No.	176		
f	Ditto as item above; but weather proof type.	No.	12		
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	238		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	5		
CONNECTION/ CONTROL UNITS					
G3/6	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	14		
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	14		
c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	6		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
d	40A DP Switch; switched with neon indicator.	No.	3		
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	3		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	3		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	3		
h	Spur outlet for Medical Gas Alarm Panel.	No.	2		
i	Spur outlet for BMS Central Equipment	No.	2		
k	Spur outlet for Master Nurse Call Control Panel.	No.	2		
l	Spur outlet for urinal sensor installed above false ceiling.	No.	2		
4	WIRING OF ELECTRICAL OUTLETS				
G3/7	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embedded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	134		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	431		
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	14		
d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	14		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	6		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	3		
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	3		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	8		
OUTLET POINTS WITH DRAW WIRES					
G3/8	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	265		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	15		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	42		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	70		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	92		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	80		
ADAPTABLE BOXES					
G3/9	Supply and install Sheet steel adaptable boxes; with knockout sides; fixed to backgrounds; including supports and fixings for the following:				
a	Square galvanized 300 × 300 × 100mm	No.	25		
b	Square galvanized 200× 200 × 75mm	No.	20		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
c	Square galvanized 150 × 150 × 75mm	No.	20		
G3/10	Supply and fixing of embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits of following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good or surface mounted including all fixing hardware.				
G3/11	Ditto as Item above but 32 mm dia heavy duty PVC	LM	500		
G3/12	Ditto as Item above but 38 mm dia heavy duty PVC	LM	300		
G3/13	Ditto as Item above but 50 mm dia heavy duty PVC	LM	300		
G3/14	Heavy gauge, mild Steel Conduit; surface fixed on saddles to backgrounds, with standard pattern boxes and fittings including all fixings and supports (forming holes, conduit entry, draw wires etc. and components for earth continuity included)				
a	Ditto as Item above but 25 mm dia MS 16 gauge	LM	250		
b	Ditto as Item above but 32 mm dia MS 16 gauge	LM	250		
Total Carried forward to Collection page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
G4	THIRD FLOOR - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
G4/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 2.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	503		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
G4/2	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	115		
b	Type A2	No.	23		
c	Type A3	No.	40		
d	Type W	No.	10		
e	Type B	No.	33		
f	Type B1	No.	12		
g	Type EXIT	No.	44		
h	Type D1	No.	105		
i	Type D2	No.	62		
j	Type K	No.	9		
k	Type L	No.	13		
l	Type M	No.	15		
m	Type N	No.	22		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
<u>INSTALLATION OF LIGHTING FIXTURES</u>					
G4/3	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	115		
b	Type A2	No.	23		
c	Type A3	No.	40		
d	Type W	No.	10		
e	Type B	No.	33		
f	Type B1	No.	12		
g	Type EXIT	No.	44		
h	Type D1	No.	105		
i	Type D2	No.	62		
j	Type K	No.	9		
k	Type L	No.	13		
l	Type M	No.	15		
m	Type N	No.	22		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
G4/4	Supply, deliver, Install, terminate, test and commission the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	64		
b	10 amp, 2 gang, 1 way switch	No.	12		
c	10 amp, 3 gang, 1 way switch	No.	3		
d	10 amp, 1 gang, 2 way switch	No.	36		
e	10 amp, 2 gang, 2 way switch	No.	7		
f	10 amp, 3 gang, 2 way switch	No.	2		
g	10 amp, one gang, 2 way Intermeidate switch	No.	7		
h	1 gang, 1 way; Dimmer switches; rotary action	No.	8		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
G4/5	Supply, install, test and commission Integrated sensor having combination of infra-red receiver, movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	35		
SOCKET OUTLETS					
G4/6	Supply, install, connect, test and commission sockets outlets white moulded coverplate; BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	77		
b	Ditto as item above; but weather proof type.	No.	5		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	7		
c	13A Single unswitched socket outlet; non standard; coloured blue-UPS; medical grade.	No.	12		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	5		
e	13A Twin switched socket outlet.	No.	102		
f	Ditto as item above; but weather proof type.	No.	5		
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	176		
h	13A Twin unswitched socket outlet; non standard; coloured blue - UPS; medical grade.	No.	60		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	13		
CONNECTION/ CONTROL UNITS					
G4/7	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	8		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	8		
c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	6		
d	40A DP Switch; switched with neon indicator.	No.	3		
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	3		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	3		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	3		
h	Spur outlet for Medical Gas Alarm Panel.	No.	2		
i	Spur outlet for BMS Central Equipment	No.	2		
j	Spur outlet for Main Fire Alarm Control Panel.	No.			
k	Spur outlet for Master Nurse Call Control Panel.	No.	2		
l	Spur outlet for urinal sensor installed above false ceiling.	No.	8		
4	WIRING OF ELECTRICAL OUTLETS				
G4/8	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	106		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	343		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	8		
d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	8		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	6		
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	3		
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	3		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	14		
OUTLET POINTS WITH DRAW WIRES					
G4/9	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	245		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	9		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	32		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	36		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	55		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	75		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
ADAPTABLE BOXES					
G4/10	Supply and install Sheet steel adaptable boxes; with knockout sides; fixed to backgrounds; including supports and fixings for the following:				
a	Square galvanized 300 × 300 × 100mm	No.	20		
b	Square galvanized 200× 200 × 75mm	No.	15		
c	Square galvanized 150 × 150 × 75mm	No.	15		
G4/11	Supply and fixing of embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits of following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good or surface mounted including all fixing hardware.				
G4/12	Ditto as Item above but 32 mm dia heavy duty PVC	LM	300		
G4/13	Ditto as Item above but 38 mm dia heavy duty PVC	LM	200		
G4/14	Ditto as Item above but 50 mm dia heavy duty PVC	LM	200		
G4/15	Heavy gauge, mild Steel Conduit; surface fixed on saddles to backgrounds, with standard pattern boxes and fittings including all fixings and supports (forming holes, conduit entry, draw wires etc. and components for earth continuity included)				
a	Ditto as Item above but 25 mm dia MS 16 gauge	LM	200		
b	Ditto as Item above but 32 mm dia MS 16 gauge	LM	200		
Total Carried forward to Collection page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
G5	FOURTH FLOOR - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
G5/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 1.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	447		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
G5/2	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	120		
b	Type A2	No.	35		
c	Type A4	No.	15		
d	Type B	No.	39		
e	Type B1	No.	15		
f	Type EXIT	No.	35		
g	Type D1	No.	93		
h	Type D2	No.	42		
i	Type K	No.	9		
j	Type L	No.	14		
k	Type M	No.	12		
l	Type N	No.	18		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
<u>INSTALLATION OF LIGHTING FIXTURES</u>					
G5/3	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	120		
b	Type A2	No.	35		
c	Type A3	No.	15		
d	Type B	No.	39		
e	Type B1	No.	15		
f	Type EXIT	No.	35		
g	Type D1	No.	93		
h	Type D2	No.	42		
i	Type K	No.	9		
j	Type L	No.	14		
k	Type M	No.	12		
l	Type N	No.	18		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
G5/4	Supply, deliver, Install, terminate, test and commission the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	56		
b	10 amp, 2 gang, 1 way switch	No.	3		
c	10 amp, 3 gang, 1 way switch	No.	3		
d	10 amp, 1 gang, 2 way switch	No.	11		
e	10 amp, 2 gang, 2 way switch	No.	15		
f	10 amp, 3 gang, 2 way switch	No.	4		
g	10 amp, one gang, 2 way Intermeidate switch	No.	6		
h	1 gang, 1 way; Dimmer switche; rotary action	No.	2		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
G5/5	Supply, install, test and commission Integrated sensor having combination of infra-red receiver, movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	32		
SOCKET OUTLETS					
G5/6	Supply, install, connect, test and commission sockets outlets white moulded coverplate; BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	77		
b	Ditto as item above; but weather proof type.	No.	5		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	10		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	5		
e	13A Twin switched socket outlet.	No.	102		
f	Ditto as item above; but weather proof type.	No.	10		
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	75		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	5		
CONNECTION/ CONTROL UNITS					
G5/7	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	5		
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	5		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	5		
d	40A DP Switch; switched with neon indicator.	No.	3		
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	2		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	6		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	6		
h	Spur outlet for Medical Gas Alarm Panel.	No.			
i	Spur outlet for BMS Central Equipment	No.			
j	Spur outlet for Main Fire Alarm Control Panel.	No.	1		
k	Spur outlet for Master Nurse Call Control Panel.	No.			
l	Spur outlet for urinal sensor installed above false ceiling.	No.	5		
4	WIRING OF ELECTRICAL OUTLETS				
G5/8	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embedded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	97		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	192		
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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	5		
d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	5		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	5		
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	3		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	2		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	6		
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	6		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	6		
OUTLET POINTS WITH DRAW WIRES					
G5/9	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	166		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	5		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	26		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	50		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	55		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	10		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
H	CHEMOTHERAPY AND AUXILIARY BUILDINGS - LIGHTING AND SMALL POWER				
	<u>LIGHTING POINT WIRING</u>				
H/1	Supply, install, test and commission wiring lighting outlet points connected to the distribution boards with 3 x 1.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings up to the satisfaction of the Engineer	No.	433		
	<u>SUPPLY OF INDOOR LIGHTING FIXTURES</u>				
H/4	Supply the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect. (All LED lighting fixtures to have a minimum of 5 years warranty):				
a	Type A1	No.	72		
b	Type A2	No.	35		
c	Type A4	No.	15		
d	Type B	No.	165		
e	Type B1	No.	20		
f	Type EXIT	No.	20		
g	Type D1	No.	31		
h	Type D2	No.	20		
i	Type K	No.	25		
j	Type L	No.	20		
k	Type M	No.	5		
l	Type N	No.	5		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
<u>INSTALLATION OF LIGHTING FIXTURES</u>					
H/5	Deliver, store, connect, test and commission the following lighting fixtures including all lamps, control gear, mounting brackets, all necessary accessories, coordination with all other trades and all other incidentals required to provide a complete installation and a fully operational system as specified and as indicated in the drawings and lighting fixtures schedule, up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	Type A1	No.	72		
b	Type A2	No.	35		
c	Type A3	No.	15		
d	Type B	No.	165		
e	Type B1	No.	20		
f	Type EXIT	No.	20		
g	Type D1	No.	31		
h	Type D2	No.	20		
i	Type K	No.	25		
j	Type L	No.	20		
k	Type M	No.	5		
l	Type N	No.	5		
<u>WIRING DEVICES AND ACCESSORIES</u>					
<u>LIGHTING ACCESSORIES</u>					
H/6	Supply the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent				
	Plate switches; 10 amp flush mounted, white plastic fronted; fitted brass earth terminal				
a	10 amp, 1 gang, 1 way switch	No.	30		
b	10 amp, 2 gang, 1 way switch	No.	13		
c	10 amp, 3 gang, 1 way switch	No.	2		
d	10 amp, 1 gang, 2 way switch	No.	5		
e	10 amp, 2 gang, 2 way switch	No.	5		
f	10 amp, 3 gang, 2 way switch	No.	4		
g	10 amp, one gang, 2 way Intermeidate switch	No.	18		
h	1 gang, 1 way; Dimmer switche; rotary action	No.	2		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
H/7	Take, deliver, Install, terminate, test and commission the following lighting accessories including all necessary fittings, all in accordance with the specifications and drawings up to the satisfaction/ approval of the Engineer, Client and Architect.				
a	10 amp, 1 gang, 1 way switch	No.	30		
b	10 amp, 2 gang, 1 way switch	No.	13		
c	10 amp, 3 gang, 1 way switch	No.	2		
d	10 amp, 1 gang, 2 way switch	No.	5		
e	10 amp, 2 gang, 2 way switch	No.	5		
f	10 amp, 3 gang, 2 way switch	No.	4		
g	10 amp, one gang, 2 way Intermediate switch	No.	18		
h	10 amp,1 gang, 1 way; Dimmer switch; rotary action	No.	2		
H/8	Supply, install, test and commission Integrated sensor having combination of infra-red receiver,movement detector for remote or automatic detection having independent on/off for individual sensing component etc as required as per drawing and specifications.	No.	15		
SOCKET OUTLETS					
H/9	Supply, install, connect, test and commission sockets outlets white moulded coverplate;BS 1363; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	13A Single switched socket outlet	No.	30		
b	Ditto as item above; but weather proof type.	No.	3		
c	13A Single switched socket outlet; non standard; coloured red-UPS.	No.	5		
d	13A Single socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	15		
e	13A Twin switched socket outlet.	No.	86		
f	Ditto as item above; but weather proof type.	No.	10		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
g	13A Twin switched socket outlet; non standard; coloured red - UPS.	No.	55		
h	13A Twin socket outlet: switched; 13 amp metal clad; BS 1363; galvanized steel box and coverplate.	No.	3		
<u>CONNECTION/ CONTROL UNITS</u>					
H/10	Supply, install, connect, test and commission connection units, spur outlets white moulded coverplate; flush fitted including plugs, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as MK(UK), Clipsal/ Schneider, Legrand, Panasonic MEM, Crabtree or approved equivalent for the following items:				
a	Hand dryer: 20A DP Switch; switched with neon indicator.	No.	4		
b	Toilet extract: 20A DP Switch; switched with neon indicator.	No.	4		
c	Split Unit: 20A DP Switch; switched with neon indicator.	No.	2		
d	40A DP Switch; switched with neon indicator.	No.	2		
e	Cooker control unit: BS 4177; 45A DP main switch with single 13A switched socket outlet;	No.	1		
f	32 A (3P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	1		
g	16 A (1P + N + E) Switched Industrial sockets/plugs flush mounted; Watertight; 240 volts, 50Hz; IP 67 complete with connector/ plug	No.	1		
h	Spur outlet for Medical Gas Alarm Panel.	No.			
i	Spur outlet for BMS Central Equipment	No.			
j	Spur outlet for Main Fire Alarm Control Panel.	No.	1		
k	Spur outlet for Master Nurse Call Control Panel.	No.			
l	Spur outlet for urinal sensor installed above false ceiling.	No.	4		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	ISOLATORS				
H/11	Supply, install, connect, test and commission isolators fixed to backgrounds; IP54; including all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings as KATKO or approved equivalent for the following items:				
a	20A, SPN isolator	No.	2		
b	32A, SPN isolator	No.	2		
c	32A, TPN isolator	No.	2		
4	WIRING OF ELECTRICAL OUTLETS				
H/12	Supply, install, connect, test and commission electrical outlets wiring connected with PVC insulated copper conductor 1100 volts grade stranded to lighting or power distribution board, drawn in embedded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits, including providing and fixing of HG conduits, conduit fittings, boxes, back boxes, wiring, earthing, cable trunking, terminations, all necessary accessories, ancillary works and materials required for a complete installation of all wiring devices (maximum eight no.of sockets shall be connected on one circuit), as specified and as indicated on the drawings for the following items:				
a	Ring circuit wiring for 13A Single socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	53		
b	Ring circuit wiring for 13A Twin socket outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	154		
c	Radial circuit wiring for Hand dryer: 20A DP Switch outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	4		
d	Radial circuit wiring for Toilet extract: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	4		
e	Radial circuit wiring for Split Unit: 20A DP Switch outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	2		
f	Radial circuit wiring for 40A DP Switch outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	2		
g	Radial circuit wiring for Cooker control unit: 45 amp DP outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	1		
h	Radial circuit wiring for 32 A (3P + N + E) Switched Industrial sockets/plugs outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	1		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
i	Radial circuit wiring for 16 A (1P + N + E) Switched Industrial sockets/plugs outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	1		
j	Spur circuit wiring for Spur outlet point, wired in 3x2.5 mm ² PVC insulated copper cable	No.	5		
k	Radial circuit wiring for 16 A SPN Isolator outlet point, wired in 3x4 mm ² PVC insulated copper cable	No.	2		
l	Radial circuit wiring for 32 A SPN Isolator outlet point, wired in 3x6 mm ² PVC insulated copper cable	No.	2		
m	Radial circuit wiring for 32 A TPN Isolator outlet point, wired in 5x6 mm ² PVC insulated copper cable	No.	2		
OUTLET POINTS WITH DRAW WIRES					
H/13	Supply, install, connect, test and commission outlet points complete with an average of 20 meters of 25 mm diameter concealed PVC heavy duty conduit inclusive of: couplers, draw boxes, bends, junction boxes, outlet boxes with cover plates of approved make and design and any other necessary accessories required for a complete installation to the specialist's requirements complete with blanking cover as may be required (for Extra Low Voltage Systems) as specified and indicated on the drawings for the following:				
a	Data/ Telephone Outlet complete with Conduit only & Draw wire.	No	115		
b	TV/FM/SAT outlet point Conduit only & Draw wire.	No	5		
c	Security outlet point (CCTV) Conduit only & Draw wire.	No	20		
d	Security outlet point (Access Control) Conduit only & Draw wire.	No	15		
e	Speaker/ public address outlet point Conduit only & Draw wire.	No	35		
f	Nurse Call System outlet point Conduit only & Draw wire.	No	55		
ADAPTABLE BOXES					
H/14	Supply and install Sheet steel adaptable boxes; with knockout sides; fixed to backgrounds; including supports and fixings for the following:				
a	Square galvanized 300 × 300 × 100mm	No.	5		
Sub-Total Carried forward to next page					

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Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
b	Square galvanized 200× 200 × 75mm	No.	5		
c	Square galvanized 150 × 150 × 75mm	No.	5		
H/15	Supply and fixing of embeded 25mm dia. heavy duty PVC conduit as per BS Codes or surface mounted 25 mm dia 16 gauge MS conduits of following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab, cutting chasis and making good or surface mounted including all fixing hardware.				
H/16	Ditto as Item above but 32 mm dia heavy duty PVC	LM	50		
H/17	Ditto as Item above but 38 mm dia heavy duty PVC	LM	50		
H/18	Ditto as Item above but 50 mm dia heavy duty PVC	LM	50		
H/19	Heavy gauge, mild Steel Conduit; surface fixed on saddles to backgrounds, with standard pattern boxes and fittings including all fixings and supports (forming holes, conduit entry, draw wires etc. and components for earth continuity included)				
a	Ditto as Item above but 25 mm dia MS 16 gauge	LM	50		
b	Ditto as Item above but 32 mm dia MS 16 gauge	LM	50		
Total Carried forward to the Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
I	EXTERIOR / LANDSCAPE LIGHTING				
I/1	Supply, install, test and commission (Type P1) LED pole top amenity luminaire manufactured from die-cast aluminium polyester powder coated RAL9006 silver with high impact UV stabilised polycarbonate cover providing asymmetric distribution, IP66, LED light engine providing 100,000 hour life, 4000K, CRI 70+. Supplied finished with 6m flying lead Control gear and LED circuit boards replaceable for future maintenance complete with 5 m high stepped tubular galvanised steel columns to BS EN 40-2:2004 with hot dip galvanised fixing accessories powder coated RAL9006 silver including concrete base, base plate, excavation and back filling as required as Thornlux JUNO C or approved equivalent	No.	32		
I/2	Supply, install, test and commission (Type P2) LED Post top LED lantern centrally mounted luminaire with 360° light distribution manufactured from die-cast aluminium polyester powder coated RAL9006 silver with high impact UV stabilised clear polycarbonate cover rated IP66 and IK10 providing asymmetric distribution, LED light engine providing 100,000 hour life, 4000K, CRI 70+. Supplied finished with 6m flying lead Control gear and LED circuit boards 1x30W/4300lm, 3 m high stepped tubular galvanised steel columns, to BS EN 40-2:2004 with hot dip galvanised fixing accessories, powder coated RAL9006 silver including concrete base, base plate, excavation and back filling as required as Thornlux JUNO A or approved equivalent	No.	9		
I/3	Supply and install (Type P3) Bollard light H=1000 mm, 20W, 240V, IP65 warm white, symmetrical optic, 4000K/2300lm complete with all fixing accessories including concrete base, base plate, excavation and back filling as required as Philips OptiSpace or approved equivalent	No.	25		
	Supply, install, test and commission the following lighting fixtures complete with all fixing accessories including pole, foundation of pole, base plate, excavation and back filling as required.				
I/4	Type U: Round, walk-over recessed in-ground weather proof IP67 paving light with LED lamp, 10W, cool white 4000K, with transparent glass enclosure	No.	15		
I/5	Type S1: Rectangular wall recessed LED light, 3W, 230 V, 50Hz, cool white 4000K, IP 66 IK06 (Inside recessing box, adequate for outdoor use)	No.	16		
I/6	Type H: Surface mounted external up/down wall lights with replaceable LED lamps	No.	10		
I/7	Type K1: Wall mounted weather-proof bulkhead fittings equipped with replaceable LED lamps	No.	20		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
	brought forward from previous page				
	Supply, install, connect, test and commission outdoor lighting outlet points including excavation, back filling, heavy gauge PVC conduits, conduit fittings, termination, water tight connection boxes, cabling, earthing, all necessary accessories, ancillary works and materials required for complete installation as specified and as indicated on the drawings for the following items:				
I/8	Outlet points for external lighting fixtures Type P1 wired in cable size 3 Core 6mm ² , copper, PVC/SWA/PVC drawn in 38mm heavy gauge PVC conduits buried in ground.	LM.	400		
I/9	Outlet points for external lighting fixtures Type P2 wired in cable size 3 Core 6mm ² , copper, PVC/SWA/PVC drawn in 38 mm heavy gauge PVC conduits buried in ground.	LM.	200		
I/10	Outlet points for external lighting fixtures Type P3 wired in cable size 3 Core 4mm ² , copper, PVC/SWA/PVC drawn in 32 mm heavy gauge PVC conduits buried in ground.	LM.	350		
I/11	Outlet points for external lighting fixtures Type U wired in cable size 3 Core 2.5 mm ² , copper, PVC/SWA/PVC drawn in 25 mm heavy gauge PVC conduits buried in ground.	LM.	200		
I/12	Lighting outlet points connected to the distribution boards with 3 x 2.5 sq.mm PVC insulated copper conductor 1000 volts grade, drawn in 25mm dia. heavy duty PVC conduit embeded in concrete as per BS Codes including providing all the necessary cover plates, supports, boxes, connectors, accessories, earthing, coordination with all other trades and all other incidentals required to provide a complete installation	No.	46		
I/13	Providing, installation, testing and commissioning of 200 x 150 x 125 mm polycarbonate weather proof (IP-55) junction box recessed in wall or surface mounted as required for housing of 1 no. 10 amps SPN MCB's suitable size of terminal blocks complete. Suitable length of GI pipe upto junction box shall also be provided for laying of cables.	No.	3		
I/14	Supply and install, 8 ways plinth mounted three phase weather proof feeder pillar "FP", complete with 100A TP MCCB isolator, 3x40A TP, 12x20A SP MCCBs, all as specified and detailed on the drawings.	No.	1		
I/15	Supply and install 8 ways plinth mounted three phase weather proof feeder pillar "FP", complete with 40A TP MCCB isolator, 1x30A TP, 1x20A TP, 15x20A SP MCCBs, all as specified and detailed on the drawings.	No.	2		
I/16	Label above feeder pillars inclusive of identifying and labeling all cables and circuit breakers to the engineer's approval.	No.	3		
	Sub-Total Carried forward to next page				

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
I/17	Supply, install and connect 25.0 sq. mm x 5 core XLPE SWA PVC s cables enclosed in concealed HG PVC conduit from main board	LM	50		
I/18	Cable lugs and glands for above cable.	No.	1		
I/19	Supply, install and connect 16.0 sq. mm x 5 core XLPE SWA PVC s cables enclosed in concealed HG PVC conduit from main board	LM	280		
I/20	Cable lugs and glands for above cable.	No.	1		
I/21	Supply and lay for the above cable, 'DANGER HATARI TILES', 100mm sand bed, 100mm in trench including reinstatement of surface all to engineer/architect approval	LM	400		
I/22	Supply, install and connect complete photo cell lighting control system complete with contactor, over ride/bypass switch and all other accessories and fixings	No.	4		
I/23	Supply and install cabling for photo cell control system	No.	4		
I/24	Supply, install and connect complete time switch lighting control system complete with contactor all other accessories and fixings.	No.	4		
I/25	Supply and install cabling for above time switch control system	No.	4		
Total Carried forward to the Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
 Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
J	<u>LIGHTNING PROTECTION AND EARTHING SYSTEM</u>				
	<u>LIGHTNING PROTECTION SYSTEMS</u>				
	<u>(EARLY STREAMER EMISSION AIR TERMINALS)</u>				
	Supply, install, connect, test and commission the following complete building lightning protection system in accordance with BS 7430, BS EN 50164 and BS EN 62305 Parts 1, 2, 3 and 4.				
J/1	Early Streamer Emission (ESE) air terminals certified, with remote testing & autodiagnostic features.	No.	2		
J/2	Galvanized steel mast 6 metres high roof mounted complete with the corresponding adapting piece, anchorage	No.	2		
J/3	Supply and Install advanced digital flash lightning strikes counter with flash counter, recording, date, hour and peak current of lightning discharge	No.	2		
J/4	25mm x 3mm PVC covered copper tape for use as down conductor (colour to match building exterior wall) e.g. Furse TC125 with DC clips for the above e.g. Furse CP210	L.m	100		
J/5	1C 70mm ² bare copper conductors for use as a down conductors complete with matching lugs	L.m	100		
J/6	Test clamp as Furse CN105	No.	2		
J/7	Concrete inspection pit comprising 5 hole copper bar, 2 no. 1.2m long, 12.7mm dia copper bond earth rod coupling, driving head and cable to rod clamp to achieve an earth resistance of 0.5 ohms e.g. Furse PT006+RB105+CG170+ST100+ CR105, including Earth inspection concrete pit masonry chamber 600 x 600 mm with concrete base C I heavy duty / chequered plate manhole cover with frame painted with bitumastic paint and packing with mixture of charcoal and common salt around plate electrode including digging of pit upto permanent moisture level and as per soil condition but not less than 1 meters and back filling as required.	No.	2		
J/8	3/4", 1200mm copper plated earth rods	No.	6		
J/9	Allow for bonding to exposed metalwork on roof top	Sum	1		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
	EARTHING INSTALLATION (FOR BUILDING, POWER DISTRIBUTION SYSTEMS, UPS SYSTEM, MEDICAL IT & ICT)				
J/10	Supply, install, connect, test and commission 400 x 90 x 6 mm Copper Earth Bar mounted on insulators and having 6 nos. holes for terminating single core 70 Sq.mm flexible cable with the entire assembly enclosed in 1.6 mm thick MS enclosure of approved make, design & painted with approved paint shade.	No.	6		
J/11	Supply, install, connect, test and commission 95 sq.mm single core cable Green & Yellow colour 1100 volts grade PVC insulated sheathed copper conductor unarmoured cable including copper thimbles, fixing hardware as required.	L.m	100		
J/12	Supply, install, connect, test and commission 70 sq.mm single core cable Green & Yellow colour 1100 volts grade PVC insulated sheathed copper conductor unarmoured cable including copper thimbles, fixing hardware as required.	L.m	100		
J/13	Supply, install, connect, test and commission 25 x 3 mm bare copper tapes / wires including all necessary fixing accessories and effecting connections as per specifications.	L.m	100		
J/14	Supply, install, connect, test and commission concrete inspection pit comprising copper earthing matt 1000mm x 1000mm constructed of 25mm x 3mm copper tape measuring with tapes at 150mm intervals, including Earth inspection concrete pit masonry chamber 1000 x 1000 mm with concrete base C I heavy duty / chequered plate manhole cover with frame painted with bitumastic paint and packing with mixture of charcoal and common salt around earth matt including digging of pit upto permanent moisture level and as per soil condition but not less than 1 meters and back filling as required to achieve an earth resistance of 1 ohms	No.	6		
J/15	Allow for bonding to building reinforcement & metallic structure	Sum	1		
J/17	Allow for bonding to exposed /external metallic structure & mechanical equipments	Sum	1		
J/18	Allow for the supply, install, test and commission appropriate transient over voltage protection equipment on all power switchboards, telephone, data and structured cables entering or leaving the building, in order to protect equipment connected to power distribution system against transient over voltages coming into the building from outside all as per the requirements of the technical specifications	Sum	1		
Total Carried forward to the Summary Page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
K	<u>FIRE DETECTION AND ALARM SYSTEM</u>				
1	FIRE ALARM CONTROL PANEL				
K/1	Supply, install, connect, programme, test and commission 6 Loops Analogue Addressable Fire Detection and Control Panel (FACP) complete with addressable loop cards, manual control switches with status LEDs, relays, fire man microphone, automatic voice dialer, power supplies, master fire fighter telephone hand set & selector, software interface with BMS system, color graphic station & printer, back up battery and battery charger, fire resistant cabling and all necessary accessories & ancillary works and materials required for complete and fully operational installation as specified and as indicated on the drawings.	No.	1		
2	FIRE ALARM REPEATER PANELS				
K/2	Supply, install, connect, programme, test and commission Analogue Addressable fire Repeater panel complete with associated accessories and all necessary accessories & ancillary works and materials required for complete and fully operational installation as specified and as indicated on the drawings.	No.	2		
3	FIRE DETECTION AND ALARM DEVICES AND CABLING				
K/3	Supply, install, connect, programme, test and commission addressable optical smoke detector complete with detector base, enhanced fire resistant (LSZH) cabling with a cross section of 2x1.5 sq.mm connected to Fire Detection Panel, 25mm diameter heavy duty PVC conduit, back boxes and all necessary accessories, ancillary works and materials required for complete and fully operational installation as specified and shown on the contract drawings as follows:				
a	Ground Floor	No.	138		
b	First Floor	No.	103		
c	Second Floor	No.	112		
d	Third Floor	No.	92		
e	Fouth Floor	No.	83		
f	External Buildings	No.	25		
K/4	Supply, install, connect, programme, test and commission addressable heat detectors complete with detector base, enhanced fire resistant (LSZH) cabling with a cross section of 2x1.5 sq.mm connected to Fire Detection Panel, 25mm diameter heavy duty PVC conduit, back boxes and all necessary accessories, ancillary works and materials required for complete and fully operational installation as specified and shown on the contract drawings as follows:				
a	Ground Floor	No.	5		
b	First Floor	No.	3		
c	Second Floor	No.	3		
Sub-Total Carried forward to next page					

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL
Bill of Quantities for Electrical Installations

Item	Description	Unit	Qty	Rate (USD)	Amount (USD)
brought forward from previous page					
d	Third Floor	No.	3		
e	Fouth Floor	No.	10		
f	External Buildings	No.	12		
K/5	Supply, install, connect, programme, test and commission addressable manual call point complete with detector base, enhanced fire resistant (LSZH) cabling with a cross section of 2x1.5 sq.mm connected to Fire Detection Panel, 25mm diameter heavy duty PVC conduit, back boxes and all necessary accessories, ancillary works and materials required for complete and fully operational installation as specified and shown on the contract drawings as follows:				
a	Ground Floor	No.	15		
b	First Floor	No.	15		
c	Second Floor	No.	20		
d	Third Floor	No.	13		
e	Fouth Floor	No.	13		
f	External Buildings	No.	9		
K/6	Supply, install, connect, programme, test and commission addressable fire alarm sounder with strobe complete with detector base, enhanced fire resistant (LSZH) cabling with a cross section of 2x1.5 sq.mm connected to Fire Detection Panel, 25mm diameter heavy duty PVC conduit, back boxes and all necessary accessories, ancillary works and materials required for complete and fully operational installation as specified and shown on the contract drawings as follows:				
a	Ground Floor	No.	15		
b	First Floor	No.	15		
c	Second Floor	No.	20		
d	Third Floor	No.	13		
e	Fouth Floor	No.	13		
f	External Buildings	No.	9		
K/9	Supply, install, connect, programme, test and commission Addressable intelligent monitor modules for water flow, tamper switches and zone contro valves connected with enhanced fire resistant cable with a cross section of 2x1.5 sq.mm to Fire Detection Panel, drawn in PVC heavy duty type conduit as specified and shown on the contract drawings	No.	5		
Sub-Total Carried forward to next page					

SECTION 3

Electrical Installations

Main Summary

PROPOSED CANCER CENTRE AT THE KISII TEACHING AND REFERRAL HOSPITAL

ELECTRICAL INSTALLATIONS TENDER SUMMARY PAGE		
ITEM	DESCRIPTION	AMOUNT (USD)
i	PRELIMINARIES	
A	GENERAL ITEMS AND CONTINGENCY	
B	INCOMING UTILITY POWER SUPPLIES	
C	MEDIUM VOLTAGE (MV) RETICULATION	
D	LOW VOLTAGE (LV) RETICULATION	
E	UNINTERRUPTIBLE POWER SUPPLY (UPS)	
F	DIESEL GENERATOR POWER BACK UP & RETICULATION	
G	MAIN HOSPITAL- LIGHTING AND SMALL POWER	
H	CHEMOTHERAPY AND AUXILIARY BUILDINGS - LIGHTING AND SMALL POWER	
I	EXTERIOR / LANDSCAPE LIGHTING	
J	LIGHTNING PROTECTION AND EARTHING SYSTEM	
K	FIRE DETECTION AND ALARM SYSTEM	
L	INCOMING FIBRE OPTIC CABLE	
TOTAL CARRIED FORWARD TO THE FORM OF TENDER FOR ELECTRICAL INSTALLATIONS		