

**PROPOSED USHURU PENSION TOWERS FIRE ESCAPES  
ELECTRICAL INSTALLATIONS  
ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
<b>A</b>	<b>GENERAL ITEMS AND ATTENDANCE</b>				
A/1	Inspect proposed electrical layouts and existing electrical installations, existing electrical riser ducts, existing cable pathways and cabling and allow to alter, adjust, clear, extend cableways and cabling	Item	1		-
A/2	Allow for the preparation of all detailed working design drawings, fully coordinated with other services (Allow set of 12 A1 drawings).	Sets	3		-
A/2	Allow for the preparation of all detailed "As built" design drawings, fully coordinated with other services inclusive of delivery of soft copies to clients (Allow set of 12 A1 drawings).	Sets	3		-
A/3	Allow for TRAINING of Client's O & M Personnel on the operation and Maintenance of specialist electrical equipment supplied under this contract	Sum	1		-
A/4	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 including all PRELIMINARIES	Sum	1		-
A/5	Allow for the removal and handing over to the Client of existing Electrical installations during demolition works.	Sum	1		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
<b>A</b>	<b>SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>				-
<b>B</b>	<b>ELECTRICAL DISTRIBUTION</b>				
B/1	Allow for inspection of the existing sub-boards, expansion of the LV board, installation of additional busbars, extension panels, 2 Nos. 160A TP MCCBs outgoers as necessary to allow for connection of new 2No. DBs with matching MCCBs and the necessary accessories (Note that the expansion works should be done by a specialist switchboard manufacturer)	Sum	1		-
B/2	Supply and install complete all earthing requirements for the main switchboard under item B/1 including concrete inspection pits, rods, tapes etc. all as per the requirements of the technical specifications	Sum	2		-
B/3	Supply, install and connect 9 way SP/N surface mounted distribution boards for Raw power as Schneider or approved equivalent complete with 100A DP incomer and 9 Nos. 16A/10A/6A 10KA SP MCB units as per schematic wiring diagram	No	6		-
B/4	Allow for all Labeling all distribution boards, and sub- as per technical specifications	No.	6		-
B/5	Allow for the Bonding of the Consumer units under item above including concrete inspection pits, rods, tapes etc. all as per the requirements of the technical specifications	Sum	6		-
B/6	Supply, install and connect 10.0 mm <sup>2</sup> x 3 core PVC SWA PVC cable from the building distribution boards, Consumer Units above	m	320		-
B/7	Supply, install and connect 10.0 mm <sup>2</sup> PVC insulated single core earth cable for above power cable.	m	350		-
B/8	Terminations for above 10.0 mm <sup>2</sup> x 1 core PVC cable inclusive of glands and lugs	No.	6		-
B/9	100mm x 50mm x16 SWG galvanized sheet metal cable tray on support brackets raw bolted under side of floor slab/ installed in electrical riser ducts complete with bends and tees and any other accessories to complete the installations all installed to latter instructions on site.	m	260		-
B/10	Supply, install and connect 63 Amp TP/N isolator for Mechanical equipment power supply as specified and detailed on the drawings	No.	6		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
	<b>SUB TOTAL CARRIED FORWARD TO THE NEXT PAGE</b>				-
	<b>SUB TOTAL BROUGHT FORWARD FROM THE PREVIOUS PAGE</b>				-
B/11	Supply, install and connect 16.0 mm <sup>2</sup> x 4 core PVC SWA PVC cable from the building distribution boards, to Isolator above.	m	128		-
B/12	Supply, install and connect 20 Amp SP/N isolator for Mechanical equipment power supply as specified and detailed on the drawings	No.	3		-
B/13	Supply, install and connect 6.0 mm <sup>2</sup> x 3 core PVC SWA PVC cable from the building distribution boards, to Isolator above.	m	180		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
<b>B</b>	<b>SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>				-
<b>C</b>	<b>ELECTRICAL INSTALLATION</b>				
C/1	Supply only complete the following light fittings including bulbs and tubes, and fixings:  b) Type D - 1x13 watts, 135mm diameter, recessed TC-DEL lamp downlighter with integral high frequency control gear, halo attachment, specular anodised aluminium reflector as Thorn Chalice 135  b) Type LED - 65 watts, 600mm square light, warm white, medium beam finished in aluminium as Philips or equal approved.  c) Type EXIT: Ultra slim maintained LED exit sign with doubled sided sign blades as Thorn Voyager LED.	No.	50		-
C/2	Take delivery and install complete the following light fittings including bulbs and tubes, testing and commissioning  c) Type D d) Type LED - b) Type EXIT -	No. No. No.	50 50 15		 - - -
C/3	Supply, install and connect new lighting points/ extensions to existing points complete with 3x1.5 sq mm single core cables, .5 sq. mm 3 Core flex cables concealed in conduit/ installed within gypsum ceiling, complete with draw boxes, connectors, switch boxes and other necessary accessories.	No.	115		-
C/4	Supply, install and connect - concealed fixing lighting switches finished in satin steel as Hamilton "Linea-Duo" range complete with associated concealed conduits  (c) 1 gang intermediate switch (d) 2 gang 2 way	No. No.	25 10		 - -
C/5	Supply, install and connect - 13 Amp twin socket outlets points on wall/ trunking/ floor box complete with conduit, ring main wiring in 3x2.5 sq. mm SC PVC cables and all accessories necessary for flush mounting	No.	5		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
	<b>SUB TOTAL CARRIED FORWARD TO THE NEXT PAGE</b>				-
	<b>SUB TOTAL BROUGHT FORWARD FROM THE PREVIOUS PAGE</b>				-
C/6	Supply, install and connect 13 Amps twin socket outlets finished in satin steel as MK or equivalent approved for normal power.	No.	5		-
C/7	Supply, install and connect CCTV, PIR sensor, vibration sensor, security outlet point consisting of average 15 meters of 20 mm diameter concealed heavy gauge PVC conduit inclusive of conduit, couplers, draw boxes, switch boxes, draw wire and other necessary accessories and white blanking cover to security alarm specialists requirements. (Provisional).	No.	30		-
C/8	Supply and install 240V/ 50Hz PIR motion sensors with dual element infra red sensor, rated at 1000 watts, with 360° detection angle, adjustable delay time settings of upto 30 minutes and range of up to 8 meters (installed in areas agreed with engineer).	No.	30		-
C/9	Supply and install 20A four pole contactors in ventilated metal enclosures for above circuits.	No.	5		-
C/10	Allow for wiring to override backup switches in 3x1.5 sq mm PVC single core cables in concealed conduits.	No.	5		-
C/11	Supply and install override backup switches.	No.	5		-
C/12	Allow for load balancing, testing and commissioning of the entire electrical installation on this floor	Sum	1		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
<b>C</b>	<b>SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>				-
<b>D</b>	<b>FIRE DETECTION AND ALARM SYSTEM</b>				
D/1	Supply and install complete 2 loop analogue addressable fire detection and alarm system as Menvier DF6000 or equivalent by HF Fire but approved by engineer complete with printer and other necessary accessories, as per the specifications	No.	1		-
D/2	Supply and install input output interface unit as Menvier MIO230 or similar but approved with mains rated contacts	No.	1		-
D/3	Supply and install additional manual call points unit to match existing complete with conduit and termination for wiring as shown on the drawings and as per approved working drawings.	No.	30		-
D/4	Supply and install additional Smoke Detector / Sensors unit to match the existing complete with conduit and termination for wiring a shown on the drawings and as per approved working drawings.	No.	30		-
D/5	Supply and install additional Heat Detector / Sensors unit to match the existing complete with conduit and termination for wiring as shown on the drawings and as per approved working drawings.	No.	3		-
D/6	Supply & install 150 mm dia. electronic bell to match the existing complete with cable termination.	No.	30		-
D/7	Allow for fire rated multicore cabling to the new accessories inclusive of alterations to existing cabling to match new layouts and any other accessories necessary for the complete wiring, testing and commissioning of the entire fire detection and alarm installations	Sum	1		-
D/8	Supply and install 20 Amp DP, switches, flush with neon indicators for Fire Detection and Alarm System power supply	No.	1		-
D/9	Allow for programming by the specialist supplier of the entire Fire Detection and Alarm System	Sum	1		-
D/10	Allow for fire man switch installation complete with conduits, couplers, boxes, cabling and push buttons.	Sum	1		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
D/11	Allow for TRAINING of Client personnel on the fire detection and alarm system operations	Sum	1		-
D/12	Allow for testing and commissioning of the fire detection and alarm system	Sum	1		-
<b>D</b>	<b>SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE</b>				-
<b>H</b>	<b>LIGHTNING PROTECTION AND GROUNDING SYSTEM</b>				
H/1	Supply and install 25 mm x 3 mm copper tape conductor complete with saddles and clamps etc.	m	525		-
H/2	Supply and install 1000 mm long taper pointed air terminal complete with terminal base and all necessary accessories	No	12		-
H/3	Ditto but multiple terminal point	No	12		-
H/4	Ditto but ridge saddle	No	12		-
H/5	Supply and install screw down test clamps and all necessary accessories	No	15		-
H/6	Supply and install 20 mm x 1200 mm long copper earth rod complete with spike, driving stud, dowel and clamps	No	15		-
H/7	Supply and install copper earth plates and mats (area as necessary) complete to all earth termination pits all to meet the requirements of the technical specifications	No	20		-
H/8	Supply and install concrete inspection pit complete with water proof cover for earth test/ rod inspections.	No	15		-
H/9	Allow for bonding the entire roofing structure to the lightning protection and grounding system	Sum	1		-
H/10	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	No.	8		-
H/11	Allow for testing and commissioning for entire lightning protection and grounding system	Sum	1		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
	SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE				-



**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
<b>I</b>	<b>IP CCTV INSTALLATIONS</b>				
I/1	3 MPx Enviromental Dome, Varifocal Lens with IR, Full HD, Digital WDR, Edge recording upto 64GB, IP66 Rated, PAL, IR Dome, True D/N, H.264, 3D DNR Digital Noise Reduction, PSIA/ONVIF/CGI, minimum 15m IR, 2.8 to 12mm @ F1.2, PoE / 12VDC - TVD-1104	No	39		-
I/2	HD Network Video Recorder (NVR), 32 channel HD Network Video Recorder with minimum 8 TB internal storage, H.264 & MPEG-4 dual-streaming, 5 MPX resolution support, HD & Full HD real-time support, 160 Mbps for incoming streams, ezDDNS, HDMI, VGA and composite outputs - TVN-2132P-8T	No	1		-
I/3	Video Management Software for upto an unlimited number of clients connection, 75 Video Tiles using 3 Monitor views, Android & IOS phones & tablets support or equivalent approved	No	1		-
I/4	Remote CCTV System Monitoring Workstations complete with Surveillance System Software, OS and two (2) 24" HD Monitors	No	1		-
I/5	Cisco WS-C2960X-24PS-L Catalyst Network Switch PoE Managed Switch or equivalent approved	No	1		-
I/6	22U wall mounted rack cabinet - 900mm deep	No	1		-
I/7	Cabling, installation, termination, testing, commissioning & training	No	1		-
I/8	Allow for the integration of the CCTV system, to the access control system, intruder alarm system and fire alarm system for seamless operation.	No	1		-

**ELECTRICAL BILLS OF QUANTITIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE, KSHS.	AMOUNT, KSHS.
	SUB-TOTAL CARRIED FORWARD TO SUMMARY PAGE				-

PROPOSED USHURU PENSION TOWERS FIRE ESCAPES		
<u>SUMMARY OF COSTS FOR ELECTRICAL INSTALLATIONS</u>		
ITEM	DESCRIPTION	AMOUNT KSHS
	<u>SUMMARY PAGE FOR ELECTRICAL INSTALLATIONS</u>	
I	PRELIMINARIES	
A	GENERAL ITEMS AND ATTENDANCE	-
B	ELECTRICAL DISTRIBUTION	-
C	ELECTRICAL INSTALLATION	-
D	FIRE DETECTION AND ALARM SYSTEM	-
E	LIGHTNING PROTECTION AND GROUNDING SYSTEM	-
F	IP CCTV INSTALLATIONS	-
G	Sub total for Electrical Installations	-
I	SUB- TOTAL AMOUNT FOR ELECTRICAL INSTALLATIONS	-
	<u>PC SUMS AND CONTINGENCIES</u>	
J	CONTIGIENCY	500,000.00
	<u>COST ESTIMATE FOR THE RECOMMENDED RENOVATIONS</u>	
K	OVERHAULING OF FIRE DETECTION SYSTEM	1,056,000.00
L	REPAIRING OF FAULTY ELECTRICAL FITTINGS AND INSTALLATIONS	3,520,000.00
M	INSTALLATION OF A FIREMAN'S SWITCH	650,000.00
N	INSTALLATION OF EMERGENCY LIGHTING	2,856,400.00
O	SUB TOTAL OF ELECTRICAL INSTALLATIONS AND PC SUMS	
P	ADD 16% VAT	-
Q	ADD 0.03% OF THE SUBTOTAL FOR CAPACITY BUILDING LEVY (EXCLUSIVE OF VAT)	-
R	TOTAL AMOUNT FOR ELECTRICAL INSTALLATIONS CARRIED TO FORM OF TENDER INCLUSIVE OF ALL APPLICABLE TAXES)	-