

REPUBLIC OF MAURITIUS  
MINISTRY OF HEALTH & QUALITY OF LIFE  
GOVT. OF MAURITIUS

Dated: 20.02.2018

AMENDMENT No. – IV

Project Name: Tender for “Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and their maintenance during defect liability at Solferino, Vacoas, Mauritius”

Tender no: HSCC/Mauritius/Cancer/2018, dated: 17.01.2018.

This has reference to the subject works.

The AMENDMENT-IV, of revised “**BOQ Vol. V**” has been uploaded.

Bidders are requested to follow the Revised BOQ (Bill of Quantity) only. This shall be treated as a part of tender to be submitted online duly signed & stamp along with tender.

Further, the last date of online fill/upload the tender has been also extended as follows:

Last Date to fill/upload the tender through e-Tendering	: 27.02.2018 up to 15:00hrs
Date of opening of bids	: 27.02.2018 at 15:30 hrs

The validity of Bid Security shall be considered from the original date of submission of bids. i.e. 15.02.2018

All other terms & Conditions of the Tender shall remain unchanged.

Prospective bidders are advised to regularly scan through HSCC e-tender portal <http://www.tenderwizard.com/HSCC> and <http://www.hsccltd.co.in> as corrigendum/amendments etc., if any, will be notified on this portal only and separate advertisement will not be made for this.

(- Sd -)  
Chief General Manager (Projects),  
HSCC (India) Ltd.

MINISTRY OF HEALTH & QUALITY OF LIFE  
GOVT. OF MAURITIUS

Tender

For

CONSTRUCTION & RENOVATION OF CANCER HOSPITAL,  
AT SOLFERINO, VACOAS, MAURITIUS

VOLUME-V

Bill of Quantities(BOQ)

JANUARY 2018



HSCC (INDIA) LTD.  
(CONSULTANTS & ENGINEERS FOR MEGA HOSPITALS & LABORATORIES)  
E-6(A), sector-1, NOIDA(U.P) 201301 (India)

Phone : 0120-2542436-40

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PQ tender No. HSCC/Mauritius/Cancer/2018

Name of Bidder M/s :-		
Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.		
<b>Summary Cost in Rs.</b>		
S.No	DESCRIPTION	Amount in Mauritian Ruppees.
1	CIVIL WORK	0.00
2	PHE	0.00
3	FIRE FIGHTING	0.00
4	ELECTRICAL	0.00
5	HVAC	0.00
6	OT,CSSD, MGMS, LAUNDRY,KITCHEN ETC.	0.00
7	IT	0.00
8	Operation & Maintenance during 3 year	0.00
	<b>TOTAL</b>	0.00
	In words	

Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.

**ABSTRACT OF COST (CIVIL)**

<b>S.No</b>	<b>DESCRIPTION OF WORK</b>	<b>Amount (MUR)</b>
<b>NEW CANCER HOSPITAL</b>		
1	EARTHWORK	0.00
2	CONCRETE WORK AND RCC WORK	0.00
3	WALLS AND PARTITIONS	0.00
4	DOORS & WINDOWS	0.00
5	METAL WORK	0.00
6	FLOORING	0.00
7	CEILING & ROOFING	0.00
8	FINISHING	0.00
9	ROAD WORK & HORTICULTURE	0.00
<b>TOTAL (NEW CANCER HOSPITAL)</b>		<b>0.00</b>
<b>RENOVATION</b>		
1	EARTHWORK	0.00
2	CONCRETE WORK AND RCC WORK	0.00
3	WALLS AND PARTITIONS	0.00
4	DOORS & WINDOWS	0.00
5	METALWORK	0.00
6	FLOORING	0.00
7	CEILING & ROOFING	0.00
8	FINISHING	0.00
9	DISMANTLING	0.00
<b>TOTAL (RENOVATION)</b>		<b>0.00</b>
<b>GRAND TOTAL (NEW CANCER HOSPITAL + RENOVATION) - CIVIL</b>		<b>0.00</b>

**Name of Project :- Construction of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

**Bill of Quantities (Civil)**

Ref. No.	DESCRIPTION	QTY	UNIT	Rate in Figures (MUR)	Rate in Words (MUR)	Amount in Figures (MUR)
1	2	3	4	5	6	7.00
<b>1.00</b>	<b>Excavation and Earthworks</b>					
1.01	Excavation in any material including rock or hard material, as defined					
a)	Excavating, topsoil, to be preserved, depositing in temporary soil heaps average depth 150mm	3468.00	m <sup>3</sup>			0.00
b)	Excavating, starting from stripped level, for basement excavation (All kinds of soil/ rock)	22172.00	m <sup>3</sup>			0.00
c)	Excavation, starting from stripped level, pits to receive column bases/ lift pits (Assume 40% rocks)	625.00	m <sup>3</sup>			0.00
<b>1.02</b>	<b>Disposal</b>					
	Excavated Material					
a)	Removing surplus from site, including all lead and lift	15496.00	m <sup>3</sup>			0.00
<b>1.03</b>	<b>FILLING</b>					
a)	Excavated material arising from temporary spoil heaps;					
b)	Backfilling to excavations	5843.00	m <sup>3</sup>			0.00
b)	Hardcore filling consisting of hard stones n.e 100mm in size, depositing and compacting in layers using vibrating roller n.e 150 mm thick in					
i)	Filling to make up level under floors	1461.00	m <sup>3</sup>			0.00
<b>1.04</b>	<b>IMPORTED FILLING</b>					
a)	Clean dry, rock sand filling, spread, level, water and compact in layers n.e 150 mm thick with vibrating roller in					
i)	Filling to make up levels under floors	765.00	m <sup>3</sup>			0.00
<b>1.05</b>	<b>Surface treatments</b>					
a)	Leveling and compacting bottom of excavations with vibrating roller to receive concrete.	404.00	m <sup>2</sup>			0.00
b)	Leveling and compacting bottom of basement excavations with vibrating roller including any necessary trimming in any material	3468.00	m <sup>2</sup>			0.00
c)	0.23 mm thick polythene sheeting under floors; 150 mm laps both ways, laid on blinding to receive concrete (measured net - no allowance for laps)	2848.00	m <sup>2</sup>			0.00
d)	Grading surfaces or fill or exposed faces of reduced level excavations.	2040.00	m <sup>2</sup>			0.00
<b>1.06</b>	<b>Sundries in Excavation</b>					
a)	Saturate with an approved anti-termite treatment undertaken by an approved specialist (ten years guarantee to be given)					
i)	top of ground or filling under floors	2489.00	m <sup>2</sup>			0.00
ii)	perimeter of building (measured linear along bottom)	331.00	m			0.00
<b>1.07</b>	<b>SITE CLEARANCE</b>					
a)	Cut down mature trees in areas of new construction and fill areas, including grubbing up roots and removing from site, backfilling of resulting pits with selected imported materials					
i)	girth of trunk 1m above ground not exceeding 1000 mm	48.00	nr			0.00
ii)	girth of trunk 1m above ground 1000 mm- 1500mm	5.00	nr			0.00
iii)	clear site of all bushes, shrubs, vegetation, weeds, undergrowth, hedges, and the like including cutting down small trees, grubbing up roots and removing from sites	5304.00	m <sup>2</sup>			0.00
	<b>Total</b>					0.00
<b>2.00</b>	<b>CONCRETE WORK &amp; RCC WORK</b>					
<b>2.01</b>	Plain in-situ concrete designed mix Grade 15 N/mm <sup>2</sup> 20 mm aggregate, as described in					
a)	Mass filling to foundations / soft spot	565.00	m <sup>3</sup>			0.00
<b>2.02</b>	Reinforced in-situ concrete, designed mix grade 20 N/mm <sup>2</sup> ; 20mm aggregate, vibrated in					
a)	Cills, lintels and the likes	82.00	m <sup>3</sup>			0.00
<b>2.03</b>	Reinforced in-situ concrete, designed mix grade 25 N/mm <sup>2</sup> ; 20mm aggregate vibrated in					
a)	Foundations, cast against faces of excavations	2356.00	m <sup>3</sup>			0.00
<b>2.04</b>	Reinforced concrete work in-situ concrete, design mix Grade 30 N/mm <sup>2</sup> , 20mm aggregate vibrated as described in					
a)	suspended slabs	2856.00	m <sup>3</sup>			0.00
b)	suspended ramp slabs	2.00	m <sup>3</sup>			0.00
c)	landing	68.00	m <sup>3</sup>			0.00
d)	Columns	1143.00	m <sup>3</sup>			0.00
e)	Beams	1035.00	m <sup>3</sup>			0.00
f)	Plinth beams	217.00	m <sup>3</sup>			0.00
g)	Staircase	79.00	m <sup>3</sup>			0.00

	Reinforced in-situ concrete, designed mix Grade 35 N/mm <sup>2</sup> , 20mm aggregate with an approved water-proofing admixture and vibrated in				
h)	Walls	1442.00	m <sup>3</sup>		0.00
<b>2.05</b>	<b>REINFORCEMENT</b>				
a)	Reinforcement bars to BS 4449 :2005 hot rolled deformed high yield steel ( Rate to be quoted for all floor levels and all dia bars)	1322134.00	kg		0.00
<b>2.06</b>	<b>FORMWORK</b>				
	Formwork in fair face finish strutting at/from any level and including rebates or groove formers to				
a)	Soffits of slabs	12646.00	m <sup>2</sup>		0.00
b)	Soffits of landings	340.00	m <sup>2</sup>		0.00
c)	Sloping soffits of staircase	394.00	m <sup>2</sup>		0.00
d)	Sloping soffits of ramp slabs	10.00	m <sup>2</sup>		0.00
e)	Sides of walls	5125.00	m <sup>2</sup>		0.00
f)	Sides and soffit of beams	8959.00	m <sup>2</sup>		0.00
g)	Sides of columns	8235.00	m <sup>2</sup>		0.00
h)	Edges of staircase, extreme 250-500mm high	1244.00	m		0.00
i)	Sides of risers n.e 250 mm high	148.00	m		0.00
j)	Edges of slab n.e 250 mm high	173.00	m		0.00
k)	Formwork in sawn finish strutting at/from any level and including rebates or groove formers to				
l)	Sides of foundation	574.00	m <sup>2</sup>		0.00
<b>2.07</b>	<b>SUNDRIES TO CONCRETE WORKS</b>				
a)	<b>Designed Joints</b>				
i)	Design joints ; PVC dumb bell shaped water bars 230mm wide, heat welded joints including all ends, angle, intersections, curves and the like	11.00	m		0.00
<b>2.08</b>	<b>Expansion Joints</b>				
a)	Designed expansion joints between structural units; incorporating 25 mm thick Polystyrene sheets or similar approved infilled including any necessary formwork; n.e. 300 mm.	212.00	m		0.00
b)	Galvanised mild steel strip screwed to concrete or blockwall.				
i)	100 mm girth, bend-2	244.00	m		0.00
	<b>Total</b>				<b>0.00</b>
<b>3.00</b>	<b>WALLS AND PARTITIONS</b>				
<b>3.01</b>	<b>BLOCKWORK</b>				
a)	Hollow concrete blocks to BS EN 15037-2:2009, minimum average compressive strength 3.5 N/mm <sup>2</sup> in cement mortar (1:3) in				
i)	150 mm thick lining to concrete walls tied with and including approved plastic ties, 5 Nr per square metre, and including back joint	2576.00	m <sup>2</sup>		0.00
ii)	200 mm thick lining to concrete walls tied with and including approved plastic ties, 5 Nr per square meter, and including back joint	7940.00	m <sup>2</sup>		0.00
iii)	150 mm thick with voids filled with concrete Grade 20N/mm <sup>2</sup> with and including working around 1Nr 8 mm diameter high tensile reinforcement bar per hole	3095.00	m <sup>2</sup>		0.00
iv)	200 mm thick with voids filled with concrete Grade 20N/mm <sup>2</sup> with and including working around 1Nr 8 mm diameter high tensile reinforcement bar per hole	3331.00	m <sup>2</sup>		0.00
<b>3.02</b>	<b>DRYWALL PARTITIONING</b>				
a)	100mm thick drywall partition consisting of 50mm internal stud frameworks at 400mm centres with 2 layers of 12.5mm thick gypsum board on each face with joint to be skimmed from floor to soffit of false ceiling				
i)	Overall height 3300mm	500.00	m <sup>2</sup>		0.00
ii)	Supply and fix vinyl/wallpaper (PC Sum=MUR 3,000/m <sup>2</sup> ) to drywall partitioning	500.00	m <sup>2</sup>		0.00
	<b>Stone Wall</b>				
<b>3.03</b>	Stonewalling comprising selected natural volcanic fieldstones in random sizes, bedded and jointed in cement mortar (1:3), uncoursed and with non apparent joints ("joint bouchon") including all leveling, cutting, fair angles, labour, fair returns, reveals, arisses and the like, cleaning upon completion and protection				
	Wall fairfaced both sides with and including mass concrete Class 20 infill				
a)	400 mm thick	713.00	m <sup>2</sup>		0.00
b)	400 mm thick; curved on plan	23.00	m <sup>2</sup>		0.00
	<b>Total</b>				<b>0.00</b>
<b>4.00</b>	<b>DOORS &amp; WINDOWS</b>				
<b>4.01</b>	<b>ALUMINIUM OPENING</b>				

	The following aluminium opening shall be designed, supplied and installed to Contractor's design. All opening shall be in approved colour powder coated aluminium extruded sections with special reinforcement and suitable glass thickness to resist cyclonic windspeeds of over 280 km/hr including all necessary mullions transoms, beading, glazing beads. Perimeter of opening to be pointed with silicon mastic all round internally and externally. All joints to be made watertight with rubber gaskets etc. as specified by specialist. Windows to be fitted with all necessary ironmongery including approved handles, aluminium or stainless hinges and/or friction hinges to both side of openings, etc. Doors to be fitted with approved double mortice lock, push or kick-plates, stainless steel and/or aluminium hinges, pull handles etc. and fixing within concrete or blocwork reveals.				
a)	<b>DOORS</b>				
i)	Double leaf door in 2 nr side hung panels glazed with laminated clear glass, 8.38mm thick	186.00	m <sup>2</sup>		0.00
ii)	Single leaf door glazed with laminated clear glass, 8.38mm thick	45.00	m <sup>2</sup>		0.00
b)	<b>WINDOWS</b>				
i)	Window partly openable and partly fixed as per drawing with clear laminated glass, 8.38mm thick	912.00	m <sup>2</sup>		0.00
c)	Fixed glazing as per drawing with 10 mm solar VUE glass	440.00	m <sup>2</sup>		0.00
<b>4.02</b>	<b>UPVC OPENINGS</b>				
	The flowing white UPVC openings shall to designed, supplied and installed to Manufacture's Specifications. All openings shall be in approved rigid UPVC profiled sections with special reinforcement and suitable glass thickness to resist cyclonic wind speed of over 280 Km/hr; including all necessary mullions, transoms, beading and the like, UPVC to be resistant to ultra violet light and to withstand temperature. Perimeter of opening to be pointed with polyurethane sealants all round internally and externally. All joints to be made weather tight with rubber gaskets etc., as specified by specialist (resistance to ultraviolet light and water penetration to be guaranteed for ten years). Doors to be fitted with approved double mortice lock, push and /or lick plates, stainless steel and/or aluminum hinges, pull handle thresholds, etc and fixing within concrete or block work reveals. (Laminated glass thickness to be 8.38 mm thick).				
a)	<b>Window</b>				
i)	Window double leaf side hung glazed with clear laminated glass, 8.38 mm thick	50.00	m <sup>2</sup>		0.00
<b>4.03</b>	<b>TIMBER DOORS</b>				
a)	Semi solid core flush doors, in select red meranti and waterproof plywood facing both sides comprising 94x26mm (f-sizes) bottom, top and intermediate rails faced with 6mm thick MDF facing both sides; 38x12mm (f-size) lipping all round, including 100x150mm frame and ironmongery (1 1/2 pairs hinges - PC sum MUR 157/pr), lockset (PC sum MUR 1,260/unit), doorstop (PC sum MUR 105)				
i)	single leaf door 44 mm thick	136.00	m <sup>2</sup>		0.00
<b>4.04</b>	Solid core flush door in meranti timber comprising 94x20mm (f-sizes) top, bottom and intermediate rails infill with 20mm thick panels faced with 18mm thick water resistant MDF facing one side and 6mm thick MDF facing the other side; 44x15mm (f-sizes) all around including, 1 nr 6mm thick frosted laminated glass panel (m/s) fixed with 15x38mm (ex-sizes) beading including 100x150mm frame and ironmongery (1 1/2 pairs hinges - PC sum MUR 157/pr), lockset (PC sum MUR 1,260/unit), door stop (PC sum MUR 105)				
a)	Single leaf door overall 44 mm thick	461.00	m <sup>2</sup>		0.00
b)	Double leaf door 44 mm thick	133.00	m <sup>2</sup>		0.00
<b>4.05</b>	<b>ROLLER SHUTTER</b>				
a)	Aluminium roller shutter in approved reinforced powder coated aluminium shutter blades, white powder coated finish to BS EN 12206-1:2004; (60 microns minimum thickness, powder coating to be guranteed for 10 years). The roller shutter shall be designed to resist cyclonic wind speed of over 280 km/hr and shall be complete with runners, gears, guides, lugs, cleats, locking device, boxing or casings with detachable handle and mechanical rod to operate roller shutter manually; fixing in position to concrete / blockwork with and necessary rawl bolts etc all to manufacturer's recommendations. Motorised roller shutter to fit structural opening				
i)	overall size 3000x2550mm high	32.00	m <sup>2</sup>		0.00
<b>4.06</b>	<b>FIRE CHECK DOORS</b>				
a)	Solid fire rated timber door made up of sapele timber and 6mm thick sapele veneer plywood complete with frame. The door set shall be 1 hour fire proof with smoke seals. 1 hour fire rated door construction to approved norms, comprising 125x55mm (f-sizes) top,middle and bottom stiles; infill with 34x30mm lattice core sub frame to receive 6mm sapele veneer plywood facing both sides; including 225x60mm (f-sizes) sapele timber rebated frame to jambs and head; door and frames in semi matt varnish; including supply and fixing of 1.5 pair of 120mm high stainless steel matt finish butt hinges per leaf, lockset, lever handles, overhead door closer, kickplates, symbols and floor/wall mounted door stops.				
i)	Single/Double leaf door	108.00	m <sup>2</sup>		0.00
<b>4.07</b>	<b>BURGLAR BARS</b>				

a)	Burglar bars in 20mm mild steel bars fixed at 150mm horizontal centres housed at both ends into the wall and mild steel bulgar proof bars; to fit opening overall size 1500mmx1500mm	118.00	m <sup>2</sup>		0.00
<b>4.08</b>	<b>COLLAPSIBLE GRILLS</b>				
	Collapsible metal grills; white powder coated; complete with top and bottom rails and approved locking system				
b)	Overall size 4000x2450mm high	20.00	m <sup>2</sup>		0.00
	<b>Total</b>				0.00
<b>5.00</b>	<b>METALWORK</b>				
<b>5.01</b>	<b>Composite metal balustrades</b>				
	Composite item consisting of hot dipped galvanised after manufacture to BS EN ISO 1461:200 (minimum coating 610gms/m2) in solid/hollow sections including all welds, joints, ends, cuts, angles, intersections, bend and the like				
	Balustrade comprising 1Nr handrail in 38 mm diameter galvanised metal section; 2Nr rails in 32 mm diameter galvanised mild steel pipes and 5 Nr rails in 20 mm diameter galvanised mild steel rods welded and bolted to 20X 10 mm thick galvanised mild steel posts at 1100 mm centres; fixing of posts with 100X100X100 mm thick base plates rawl bolted to concrete.				
a)	Overall height 1000 mm	137.00	m		0.00
<b>5.02</b>	<b>Stainless steel handrails</b>				
	Stainless steel handrails Grade 316 in hollow sections ; including all stainless steel welding bolts , screws, ends, joints, cuts, angles, intersections, stopped ends and the like				
	Stainless steel handrail Grade 316 in hollow sections, polished finish comprising 38mm diameter pipe handrail with and including rounded capping ends fused to 12mm diameter X 120mm long tubular bend core rail at 70mm centres with ends fused to 70mm diameter X 6mm plate screwed to concrete with stainless steel screws				
a)	Horizontal/Raking	51.00	m		0.00
<b>5.03</b>	<b>STRUCTURAL STEEL</b>				
	Contractor designed connection in hot dipped galvanised after manufacture mild steel bolts, plates, straps, brackets, shoes and associated fixings				
i)	Truss, triangular in shape, comprising of sloping, vertical and bottom, members in 100X100 mm L section or other section as per requirement all bolted with brackets to concrete structure.	19319.00	Kg		0.00
<b>5.04</b>	<b>METAL ROOF COVERING</b>				
a)	0.75 mm thick prepainted both sides galvanised mild steel corrugated sheet coverings, side and end laps, to manufacture's written recommendations with and including waterproof adhesive joints fixing to steel purlins (m/s) with rustproof coach screws, Malakoff metal and plastic washers and caps to fixing devices, sealing end and side laps with waterproof adhesive strips suitable to withstand cyclonic winds of 280 Km/hr including all necessary labours, cutting, painting to ends, touching up protecting all to manufacture's specifications (10 years warranty to be given)				
	Coverings to				
i)	Sloping roofs ; in single lengths (measured nett)	50.00	m <sup>2</sup>		0.00
ii)	Extra for ridge capping in 0.75 mm thick pre-painted both sides plain galvanized mild steel sheet 400mm girth; with and including waterproof adhesive bands type "Aluma flash" or other equal approved and profile foam closers along both sides of cappings.	10.00	m		0.00
	<b>Total</b>				0.00
<b>6.00</b>	<b>FLOORING</b>				
<b>6.01</b>	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- FLOOR FINISHES</b>				
a)	Cement and sand (1:3) Screed With a smooth trowelled finish to 25mm thick to				
i)	floor/landings	1583.00	m <sup>2</sup>		0.00
b)	cement and sand(1:3) screed with a smooth trowelled finish to receive bamboo/timber/laminated/vinyl flooring 25mm thick to				
i)	floor/landings	8724.00	m <sup>2</sup>		0.00
<b>6.02</b>	<b>SUPPLY AND FIX the folowing ceramic tiles (prime cost MUR 800 PER m2 INCLUSIVE OF 10% wastage factor for ceramic tile and including cement mortar, adhesive and pointing materials)</b>				
	Ceramic floor tiles to pattern and surrounds fixed to cement and sand (m/s) bedding and jointing in cement mortar (1:3) and approved floor tile adhesive mixed and applied strictly in accordance with manufacturer's instructions and with all joints flush pointed with white Portland cement and including all labours and cleaning on completion to				
a)	floors/landings	624.00	m <sup>2</sup>		0.00
<b>6.03</b>	<b>SUPPLY AND FIX the following marble tiles(prime cost MUR3000 per m2 inclusive of 10% wastage factor for marble tile, and including cement mortar, adhesive and pointing materials)</b>				



a)	floors/landings	875.00	m <sup>2</sup>		0.00
b)	Staircase/treads/risers/strings/edges of landings,150-300mm high	745.00	m		0.00
6.04	Balau timber flooring with secret nailing with coppernails, plugging, countersunking and pelleting to 50x25mm (f-sizes) treated keruing bearer fixing with brass screws at 500mm centres beaded in cement and sand screed (m/s) including foaming grooves in existing floor to receive timber bearers properly levelled including all labours, cutting, fair ends, moulds, chamfers, rebates, splays, grooves and the like including filling in between bearers with an approved insulation materials				
a)	22mm thick x 90 mm wide (f-sizes) tongued and grooved boarding sanded and polished to receive final finish to floors	81.00	m <sup>2</sup>		0.00
6.05	Supply and lay the following 2.0mm medium duty homogeneous vinyl flooring complete with skirting fixed to prepare level cement and sand base with adhesive; with welded joints to				
a)	screeded floors	4183.00	m <sup>2</sup>		0.00
6.06	SUPPLY AND LAY the following 2.0mm heavy duty anti-static,anti-bacterial homogeneous vinyl flooring complete with skirting fixed to prepare level cement and sand base with adhesive,with welded joints to:				
a)	screeded floor	312.00	m <sup>2</sup>		0.00
6.07	Supply and Lay the following 3.3 mm heavy duty heterogeneous vinly flooring with a wear layer of 0.75 mm and honeycomb backing complete with skirting fixed to prepare level cement and sand base with welded joints to:				
a)	screeded floors	4978.00	m <sup>2</sup>		0.00
6.08	Scarify, clean prepare and primer and one 2mm coat of self-levelling epoxy paint				
a)	Floors/landings	1583.00	m <sup>2</sup>		0.00
6.09	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE-WALL FINISHES</b>				
a)	SUPPLY AND FIX the following marble (Prime cost MUR3000 per m2 inclusive of 10% wastage factor for the supply of marble and pointing materials)				
i)	Marble tiles to pattern and surrounds fixed to cement and sand bedding (m/s) and approved tile adhesive mixed and applied strictly in accordance with manufacture's instruction and with all joints flush pointed with white portland cement and including all labours and cleaning on completion to Walls/returns/reveals/recesses/attached & unattached columns	726.00	m <sup>2</sup>		0.00
6.10	SUPPLY AND FIX the following granite(Prime cost MUR4500 per m2 inclusive of 10% wastage factor for the supply of granite and including cement mortar,adhesive and pointing materials)				
a)	Granite tiles to pattern and surrounds fixed to cement and sand bedding (m/s) and approved tile adhesive mixed and applied strictly in accordance with manufacture instruction and with all joints flush pointed with white portland cement and including all labours and cleaning on completion to Walls/returns/reveals/recesses/attached & unattached columns	6005.00	m <sup>2</sup>		0.00
b)	Skirtings/bands n.e 150mm high	200.00	m		0.00
6.11	SUPPLY AND FIX the following Tiles of approved quality (Prime cost MUR500 per m2 inclusive of 10% wastage factor for the supply of slates and including cement mortar,adhesive and pointing materials)				
a)	Tiles fixed to cement and sand rendered backing (m/s) with cement mortar and an approved adhesive and with flush joints with waterproof grout or equal approved including all labours and cleaning on completion				
b)	Walls/returns/reveals/recesses/attached & unattached columns	2482.00	m <sup>2</sup>		0.00
	<b>Total</b>				0.00
7.00	<b>CEILING &amp; ROOFING</b>				
7.01	<b>ROOF WATERPROOFING</b>				
	Supply and lay an approved double layer bituminous waterproofing membrane on sealer coat and hot laid with melted oxidised bitumen by specialist all in accordance with manufacturer's specification (10 years guarantee to be given- measured nett)				
a)	Smooth trowelled screeded surfaced of flat roofs	2475.00	m <sup>2</sup>		0.00
	Over raft of basement	1355.00	m <sup>3</sup>		0.00
	For Walls of basement	2848.00	m <sup>4</sup>		0.00
7.02	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours.				

	Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	521.00	Sqm		0.00
<b>7.03</b>	Suspended ceilings in moisture resistant gypsum boards, fixing to and including contractor designed framework supports all to Architects approval				
a)	Depth of suspension n.e 250mm high				
i)	9.5mm thick gypsum boards, joints covered with wire scrim and taped, horizontal on suspended framework	3674.00	m <sup>2</sup>		0.00
ii)	ceilings mounted decorative light	735.00	nr		0.00
iii)	opening for recessed down lighters	370.00	nr		0.00
iv)	access panel overall size 600*600mm	735.00	nr		0.00
v)	air-conditioning diffuser	1200.00	nr		0.00
<b>7.04</b>	Suspended ceilings in pre-painted metal acoustical ceiling tiles laying in position on and including designed metal suspension system all to manufacture instruction and approvals				
i)	600*600*0.75mm thick pre-painted ceiling tiles including edge trims, fixing to framework to concrete soffits	74.00	m <sup>2</sup>		0.00
<b>7.05</b>	Suspended ceilings in mineral fibre boards, laying in position in metal suspension system system of main channel on wire or rod hangers all to manufacture instruction				
a)	Depth of suspension 500-1000mm overall size 600*600*15mm horizontal mineral fiber ceiling, fixing in pre-painted metal framework to concrete soffits	6407.00	m <sup>2</sup>		0.00
	<b>Total</b>				0.00
<b>8.00</b>	<b>FINISHING</b>				
<b>8.01</b>	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- WALL FINISHES</b>				
a	Cement and sand (1:3) backing coat with wood floated finish to receive ceramic tiles/natural stone (m/s)				
i)	wall/returns/reveals/attached & unattached column	40125.00	m <sup>2</sup>		0.00
<b>8.02</b>	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE-CEILING FINISHES</b>				
a)	Cement and sand (1:3) redering with smooth trowelled finish				
i)	13 mm thick ceiling/ attached & unattached beam/soffits of stair case	2040.00	m <sup>2</sup>		0.00
<b>8.03</b>	<b>DECORATION INTERNALLY</b>				
a)	Prepare and apply one sealer coat and three full coats anti-fungs paint BS colour to Fairface surfaces of				
i)	Walls/returns/reveals/recesses/attached & unattached columns	20042.00	m <sup>2</sup>		0.00
ii)	Ceilings/attached & unattached beams/soffits of staircase	1020.00	m <sup>2</sup>		0.00
iii)	Staircase/treads/risers/strings/edges of landings	1368.00	m <sup>2</sup>		0.00
<b>8.04</b>	Prepare and apply two sealer coat and three full coats anti-bacterial paint BS colour to Fairfaces surfaces of				
a)	Walls/returns/reveals/recesses/attached & unattached columns	20063.00	m <sup>2</sup>		0.00
b)	Ceilings/attached & unattached beams/soffits of staircase	1020.00	m <sup>2</sup>		0.00
<b>8.05</b>	Prepare and apply one coat pink wood primer, one coat undercoat and two full coats hard enamel paint BS colour on General surfaces of				
a)	Solid timber doors	1892.00	m <sup>2</sup>		0.00
<b>8.06</b>	<b>EXTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- WALL FINISHES</b>				
a)	Fine floated tyrolean rendering in two coats work comprising 10 mm backing coat of cement and sand (1:3) trowelled up and 8 mm thick finishing coat of cement and sand fine grain tyrolean applied by machine				
i)	18 mm thick to Wall/ return /reveals/recesses/ attached & unattached columns	3774.00	m <sup>2</sup>		0.00
b)	Supply and fix the following granite (Prime cost MUR 4500 per m2 inclusive of 10% wastage factor for the supply of granite and including cement mortar, adhesive and pointing materials)				
	Granite tiles to pattern and surrounds fixed to cement and sand bedding (m/s) and approved the adhesive mixed and applied strictly in accordance with manufacturer's instruction and with all joints flush pointed with white Portland cement and including all labours and clearing on completion to				

i)	Walls/ returns/ reveals/ recesses/ attached & unattached columns	2567.00	m <sup>2</sup>		0.00
c)	Supply and fix the following slate (Prime cost MUR 500 per m2 inclusive of 10% wastage factor for the supply of slate and including cement mortar, adhesive and pointing materials)				
	Slate tiles fixed to cement and sand rendered backing (m/s)with cement mortar and an approved adhesive and with flush joints with waterproof grout or equal approved including all labours and clearing on completion				
i)	Walls/ returns/ reveals/ recesses/ attached & unattached columns	200.00	m <sup>2</sup>		0.00
<b>8.07</b>	<b>DECORATION EXTERNALLY</b>				
a)	Prepare and apply one sealer coat and two full coats anti-fungus paint BS colour to Smooth rendered surface of				
i)	Walls/ returns/ reveals/ recesses/ attached & unattached columns	3774.00	m <sup>2</sup>		0.00
<b>8.08</b>	Prepare and apply one coat galvanized iron cleaner, one coat etch primer, one coat undercoat and two full coats hard gloss enamel paint; BS colour to				
i)	Roof members	1508.00	m <sup>2</sup>		0.00
	<b>Total</b>				<b>0.00</b>
<b>9.00</b>	<b>ROADWORK AND HORTICULTURE</b>				
<b>9.01</b>	<b>LANDSCAPING</b>				
	<b>Top soil</b>				
a)	Spoiling surfaces of ground or excavation; spreading; lightly compacting;; removing weeds, stone and large lumps 50mm and above from site; with excavated spoil from temporary soil heaps 100m distance; to a finished thickness of 150mm	2040.00	m <sup>2</sup>		0.00
b)	Import topsoil, wheeling, depositing, spreading, scarifying, compacting, trimming, grading to levels, falls or contours surfaces of deposited topsoil and existing subsoil under and leaving ready for landscaping				
i)	Spot turfed with approved grass on and including cultivating topsoil to filled areas	2040.00	m <sup>2</sup>		0.00
ii)	Grass sprigs planting; prepared surfaces of ground with local grass close turfing , free of weeds including watering , weeding, racking , rolling, cutting, settlement, re-seeding	2040.00	m <sup>2</sup>		0.00
<b>9.02</b>	Provide and plant on flat or sloping grounds specified hedges, trees and shrubs; excavating in any material including rock or hard material for holes, breaking up bottoms of excavation; carefully backfilling with; approved ground soil mix				
a)	cocos nucifera; 3m height	20.00	nr		0.00
b)	roystonia regia, 3m height	20.00	nr		0.00
c)	Latania loddigessi- 0.5-0.75m height	20.00	nr		0.00
d)	Delonix regia; 3m height	20.00	nr		0.00
e)	Plumeria rubra; 1.0m height	20.00	nr		0.00
<b>9.03</b>	<b>PAVING</b>				
a)	Levelling, grading to falls and compacting surfaces of filling or reduced level with a vibrating roller to receive paving (m/s)	510.00	m <sup>2</sup>		0.00
<b>9.04</b>	Precast tinted concrete paving slabs designed mix Concrete Grade 40N/mm2, 20mm aggregate vibrated, colour to approval, fairface formwork finish, including contractor designed galvanised reinforcement to BS4449:2005 galvanised to BS EN ISO 1461:2009; smooth trowelled top surface finish including all holes, mortices, chases, chamfers, rebates, handling and transport, hoisting and fixing in position				
a)	Overall size 600x600x100mm	510.00	m <sup>2</sup>		0.00
<b>9.05</b>	<b>ROADWAORK</b>				
	<b>Filling</b>				
a)	Granular sub-base 150mm thick, comprising upgraded crusher run 0-31.5mm, depositing, hand packing, watering and compacting in layers n.e 100mm thick with vibrating roller				
i)	as base course to roads	612.00	m <sup>3</sup>		0.00
<b>9.06</b>	<b>Paving</b>				
a)	Prepare surfaces of road base, apply Medium Curing 30 (MC-30) priming coat, apply and lay premixed asphaltic concrete paving, total thickness of 80mm in two coats, comprising 40mm base course with a tack coat applied on top and 40mm wearing course, spreading and levelling,				
a)	to road surface	204.00	m <sup>2</sup>		0.00
<b>9.07</b>	<b>Traffic Paint</b>				
a)	Prepare and apply two coats of an approved road marking thermoplastic paint on tarred surface				
j)	100mm wide lines	102.00	m		0.00
<b>9.08</b>	<b>Kerbs</b>				

	Precast concrete grade 30 N/mm2, 20mm aggregate, vibrated, fairface formwork finish, including contractor designed galvanised reinforcement to BS 4449:2005, galvanising to BS EN ISO 1461:2009; including all holes, motrices chases, chamfers, rebates etc				
a)	size 950 x 125x 254mm high	204.00	m		0.00
b)	size 950 x 125x 254mm high mainly in curved work	51.00	m		0.00
9.09	Providing the vehicle ( Car) in good running condition at any time for exclusive use of engineer during currency of contract.The number of vehicles and period shall be informed by the engineer as per requirement.The rate are inclusive of service of drivers, fuel, oil, lubrication, comsumables, maintenance etc all complete	18000.00	Km		0.00
	<b>Total</b>				0.00

**Name of Project :- Renovation of Existing Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

Bill of Quantities (Civil)						
Ref. No.	DESCRIPTION	QTY	UNIT	Rate in Figures (MUR)	Rate in Words (MUR)	Amount in Figures (MUR)
1	2	3	4	5	6	7.00
<b>1.00</b>	<b>Excavation and Earthworks</b>					
<b>1.01</b>	Excavation in any material including rock or hard material, as defined					
a)	Excavating, starting from stripped level to reduce levels (All kinds of soil/ rock)	50.00	m <sup>3</sup>			0.00
b)	Excavation, starting from stripped level, trenches to receive strip footing (Assume 40% rocks)	40.00	m <sup>3</sup>			0.00
c)	Excavation, starting from stripped level, pits to receive column bases/ lift pits (Assume 40% rocks)	30.00	m <sup>3</sup>			0.00
<b>1.02</b>	<b>Disposal</b>					
	Excavated/dismantled Material					
a)	Removing surplus from site, including all lead and lift	655.00	m <sup>3</sup>			0.00
<b>1.03</b>	<b>FILLING</b>					
a)	Excavated material arising from temporary spoil heaps;					
i)	Filling to make up levels under floors	30.00	m <sup>3</sup>			0.00
ii)	Backfilling to excavations	30.00	m <sup>3</sup>			0.00
b)	Hardcore filling consisting of hard stone n.e 150mm in size, depositing and compacting with ten ton roller in layers n.e 150 mm thick					
i)	To make up level to formation level	30.00	m <sup>3</sup>			0.00
<b>1.04</b>	<b>Surface treatments</b>					
a)	Leveling and compacting bottom of excavations with vibrating roller to receive concrete.	100.00	m <sup>2</sup>			0.00
b)	Leveling and blinding surfaces of filling with 50 mm layer rocksand , compacting with vibrating roller to receive concrete paving	50.00	m <sup>2</sup>			0.00
c)	0.23 mm thick polythene sheeting under floors; 150 mm laps both ways, laid on blinding to receive concrete (measured net -no allowance for laps)	50.00	m <sup>2</sup>			0.00
<b>1.05</b>	<b>Sundries in Excavation</b>					
a)	Saturate with an approved anti-termite treatment undertaken by an approved specialist (ten years guarantee to be given)					
i)	top of ground or filling under floors	100.00	m <sup>2</sup>			0.00
ii)	perimeter of building (measured linear along bottom)	100.00	m			0.00
	<b>Total</b>					0.00
<b>2.00</b>	<b>CONCRETE WORK &amp; RCC WORK</b>					
<b>2.01</b>	Plain in-situ concrete designed mix Grade 15 N/mm <sup>2</sup> 20 mm aggregate, as described in					
a)	Mass filling to foundations / soft spot	20.00	m <sup>3</sup>			0.00
<b>2.02</b>	Reinforced in-situ concreted, designed mix grade 25 N/mm <sup>2</sup> ; 20mm aggregate vibrated in					
a)	Foundations, cast against faces of excavations	27.00	m <sup>3</sup>			0.00
b)	Suspended slab	20.00	m <sup>3</sup>			0.00
c)	Column	2.00	m <sup>3</sup>			0.00
d)	Plinth beams	6.00	m <sup>3</sup>			0.00
<b>2.03</b>	Reinforced concrete work in-situ concrete, design mix Grade 30 N/mm <sup>2</sup> , 20mm aggregate vibrated as described in					
b)	suspended slabs	20.00	m <sup>3</sup>			0.00
c)	Columns	4.00	m <sup>3</sup>			0.00
d)	Beams	8.00	m <sup>3</sup>			0.00
<b>2.04</b>	<b>REINFORCEMENT</b>					
a)	Reinforcement bars to BS 4449 :2005 hot rolledPlain round mild steel ( Rate to be quoted for 6 mm dia bar)	20.00	kg			0.00
b)	Reinforcement bars to BS 4449 :2005 hot rolled deformed high yield steel ( Rate to be quoted for all floor levels and all dia bars)	10314.00	kg			0.00
<b>2.05</b>	<b>FORMWORK</b>					
a)	Formwork in sawn finish strutting at/from any level and including rebates or groove formers to					
i)	Soffits of slabs	200.00	m <sup>2</sup>			0.00
ii)	Sides of foundation	60.00	m <sup>2</sup>			0.00

iii)	Sides of walls	10.00	m <sup>2</sup>		0.00
iv)	Sides and soffit of beams	100.00	m <sup>2</sup>		0.00
v)	Sides and soffit of ground beams	80.00	m <sup>2</sup>		0.00
vi)	Sides of columns	66.00	m <sup>2</sup>		0.00
	<b>Total</b>				<b>0.00</b>
<b>3.00</b>	<b>WALLS AND PARTITIONS</b>				
<b>3.01</b>	<b>BLOCKWORK</b>				
a)	Hollow concrete blocks to BS EN 15037-2:2009, minimum average compressive strength 3.5 N/mm2 in cement mortar (1:3) in				
i)	100 mm thick	30.00	m <sup>2</sup>		0.00
b)	Hollow concrete blocks to BS EN 15037-2:2009, minimum average compressive strength 3.5 N/mm2 in cement mortar (1:3) in				
i)	150 mm thick	335.00	m <sup>2</sup>		0.00
ii)	200 mm thick	178.00	m <sup>2</sup>		0.00
iii)	Extra over for filling voids of 200mm thick block work with concrete grade 20 N/mm2 and reinforcing with one nr 8 mm diameter high tensile rod per hole				
	Sides of jambs of doors, windows and the like	30.00	m <sup>2</sup>		0.00
<b>3.02</b>	<b>DRYWALL PARTITIONING</b>				
a)	100mm thick drywall partition consisting of 50mm internal stud frameworks at 400mm centres with 2 layers of 12.5mm thick gypsum board on each face with joint to be skimmed from floor to soffit of false ceiling				
i)	Overall height 3300mm	50.00	m <sup>2</sup>		0.00
	<b>Total</b>				<b>0.00</b>
<b>4.00</b>	<b>DOORS &amp; WINDOWS</b>				
<b>4.01</b>	<b>ALUMINIUM OPENING</b>				
	The following aluminium opening shall be designed, supplied and installed to Contractor's design. All opening shall be in approved colour powder coated aluminium extruded sections with special reinforcement and suitable glass thickness to resist cyclonic windspeeds of over 280 km/hr including all necessary mullions transoms, beading, glazing beads. Perimeter of opening to be pointed with silicon mastic all round internally and externally. All joints to be made watertight with rubber gaskets etc. as specified by specialist. Windows to be fitted with all necessary ironmongery including approved handles, aluminium or stainless hinges and/or friction hinges to both side of openings, etc. Doors to be fitted with approved double mortice lock, push or kick-plates, stainless steel and/or aluminium hinges, pull handles etc. and fixing within concrete or blockwork reveals.				
a)	<b>DOORS</b>				
i)	Double leaf door in 2 nr side hung panels glazed with laminated clear glass, 8.38mm thick	21.00	m <sup>2</sup>		0.00
ii)	Single leaf door glazed with laminated clear glass, 8.38mm thick	11.00	m <sup>2</sup>		0.00
b)	<b>WINDOWS</b>				
i)	Window partly openable and partly fixed as per drawing with clear laminated glass, 8.38mm thick	50.00	m <sup>2</sup>		0.00
<b>4.02</b>	<b>TIMBER DOORS</b>				
a)	Semi solid core flush doors, in select red meranti and waterproof plywood facing both sides comprising 94x26mm (f-sizes) bottom, top and intermediate rails faced with 6mm thick MDF facing both sides; 38x12mm (f-size) lipping all round, including 100x150mm frame and ironmongery (1 1/2 pairs hinges - PC sum MUR 157/pr), lockset (PC sum MUR 1,260/unit), doorstop (PC sum MUR 105)				
i)	single leaf door 44 mm thick	57.00	m <sup>2</sup>		0.00
<b>4.03</b>	Solid core flush door in meranti timber comprising 94x20mm (f-sizes) top, bottom and intermediate rails infill with 20mm thick panels faced with 18mm thick water resistant MDF facing one side and 6mm thick MDF facing the other side; 44x15mm (f-sizes) all around including, 1 nr 6mm thick frosted laminated glass panel (m/s) fixed with 15x38mm (ex-sizes) beading including 100x150mm frame and ironmongery (1 1/2 pairs hinges - PC sum MUR 157/pr), lockset (PC sum MUR 1,260/unit), door stop (PC sum MUR 105)				
a)	Single leaf door overall 44 mm thick	45.00	m <sup>2</sup>		0.00
b)	Double leaf door 44 mm thick	28.00	m <sup>2</sup>		0.00
<b>4.04</b>	<b>FIRE CHECK DOORS</b>				
a)	Solid fire rated timber door made up of sapele timber and 6mm thick sapele veneer plywood complete with frame. The door set shall be 1 hour fire proof with smoke seals. 1 hour fire rated door construction to approved norms, comprising 125x55mm (f-sizes) top,middle and bottom stiles; infill with 34x30mm lattice core sub frame to receive 6mm sapele veneer plywood facing both sides; including 225x60mm (f-sizes) sapele timber rebated frame to jambs and head; door and frames in semi matt varnish; including supply and fixing of 1.5 pair of 120mm high stainless steel matt finish butt hinges per leaf, lockset, lever handles, overhead door closer, kickplates, symbols and floor/wall mounted door stops.				
i)	Single/Double leaf door	29.00	m <sup>2</sup>		0.00

	<b>REPAIRS TO EXISTING ALUMINIUM OPENINGS</b>				
<b>4.05</b>	Maintenance / repair of aluminium openings shall consist of survey , dismantling, replacing of damaged parts, sections, ironmongeries, fixtures and accessories with similar or equivalent approved ones to the satisfaction of the Project Architect. Include for filling of cracks, voids with approved filler / silicone compound to voids, repair/replacement of damaged glazing including of gaskets and refixing to existing location. Methodology for works shall be submitted for approval by Architect prior to commencement of works.				
a)	Aluminium window	100.00	m <sup>2</sup>		0.00
	<b>Repairs to existing doors</b>				
<b>4.06</b>	Strip-off paint from timber doors to expose surfaces, cut damaged parts, replace with new similar timber sections, polish, sand and knot, wrot where necessary. Apply CCA wood preservative and fire retardant. Include for filling of cracks, voids with approved filler to timber members, straightening of any warped timber surface or				
	planks, repair/replacement of damaged glazing including of putty and timber lipping and refixing to existing location. Methodology for works shall be submitted to and approved by Architect prior to commencement of works.				
	Service and maintain existing timber doors complete all ironmongery, accessories and fittings				
a)	Single/double leaf door	205.00	m <sup>2</sup>		0.00
<b>4.07</b>	<b>Frameless toughened clear glazed partition fixing within concrete tiled wall/ floor</b>				
	12mm thick frameless screen with polished edges toughened glass partition or equal approved fixing to concrete tiled wall/ floor with and including floor spring of sections, fittings and general assembly to be approved hinges, door handle, etc				
a)	overall size 1300 x 2100 mm high in 2nr equal panels,	1.00	nr		0.00
	<b>Total</b>				<b>0.00</b>
<b>5.00</b>	<b>METALWORK</b>				
<b>5.01</b>	<b>ROOF COVERING</b>				
	External work to concrete base				
	Cement and sand (1:3) screed, to a smooth trowelled finish to receive waterproofing membrane				
i)	25 m (average) thick laid to falls to sloping concrete roof	1500.00	m <sup>2</sup>		0.00
<b>5.02</b>	<b>STRUCTURAL STEEL</b>				
	Fabricated steelwork, framing, fabrication including bolts, nuts and washers for structural framing to structural framing connections, weldable steel, hot rolled sections, angles. Plates, flats, hollow sections welded fabrication and testing all hot dipped galvanized to BS EN ISO 1461:2009 (Minimum coating 610 gms/m <sup>2</sup> )				
a)					
i)	Beams/column/channels	2520.00	Kg		0.00
<b>5.03</b>	<b>METAL ROOF COVERING</b>				
a)	0.75 mm thick pre-painted both sides galvanized mild steel corrugated sheet coverings, side and end laps, to manufacture's written recommendations with and including waterproof adhesive joints fixing to steel purlins (m/s) with rustproof coach screws, Malakoff metal and plastic washers and caps to fixing devices, sealing end and side laps with waterproof adhesive strips suitable to withstand cyclonic winds of 280 Km/hr including all necessary labours, cutting, painting to ends, touching up protecting all to manufacture's specifications (10 years warranty to be given)				
	Coverings to				
i)	Sloping roofs ; in single lengths (measured nett)	50.00	m <sup>2</sup>		0.00
ii)	Extra for ridge capping in 0.75 mm thick pre-painted both sides plain galvanized mild steel sheet 400mm girth; with and including waterproof adhesive bands type "Aluma flash" or other equal approved and profile foam closers along both sides of cappings.	8.00	m		0.00
iii)	Extra for hip capping in 0.75mm thick pre-pained both sides plain galvanized mild steel sheet 400 mm girth with and including waterproof adhesive bonds type 'Aluma Falsh ' or other equal approved and profile foam closers along both sides of capping.	16.00	m		0.00
<b>5.04</b>	<b>METAL FLASHING</b>				
	1.0mm thick galvanized metal sheet covering to joints, screwed with brass screws through slotted holes to concrete at 300 centers, including plugging, dressing up and side of upstand and turned in edge of groove including pointing with silicone sealant and prepare and apply one coat primer coat, one undercoat and two full coats gloss paint to flashings				
i)	500 mm wide, bends-1	16.00	m		0.00
	<b>Total</b>				<b>0.00</b>
<b>6.00</b>	<b>FLOORING</b>				
<b>6.01</b>	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- FLOOR FINISHES</b>				
a)	Cement and sand(1:3) screed with a smooth trowelled finish to receive bamboo/timber/laminated/vinyl flooring 25mm thick to				
i)	floor/landings	499.00	m <sup>2</sup>		0.00

a)	Cement and sand (1:3) bedding with a smooth trowelled finish to receive ceramic /natural stone tiles (m/s) 25mm thick to				
i)	floor/landings	230.00	m <sup>2</sup>		0.00
ii)	Staircases/treads/risers/strings/edges of landings	20.00	m <sup>2</sup>		0.00
6.02	SUPPLY AND FIX the following ceramic tiles (prime cost MUR 800 PER m2 INCLUSIVE OF 10% wastage factor for ceramic tile and including cement mortar, adhesive and pointing materials)				
	Ceramic floor tiles to pattern and surrounds fixed to cement and sand (m/s) bedding and jointing in cement mortar (1:3) and approved floor tile adhesive mixed and applied strictly in accordance with manufacturer's instructions and with all joints flush pointed with white Portland cement and including all labours and cleaning on completion to				
a)	floors/landings	230.00	m <sup>2</sup>		0.00
b)	Staircases/treads/risers/strings/edges of landings 150-300mm high	20.00	m <sup>2</sup>		0.00
6.03	Supply and Lay the following 3.3 mm heavy duty heterogeneous vinyl flooring with a wear layer of 0.75 mm and honeycomb backing complete with skirting fixed to prepare level cement and sand base with welded joints to:				
a)	screeded floors	1355.00	m <sup>2</sup>		0.00
6.04	Supply and Lay the following sheet linoleum finish (marmoleum or equal approved ) (PC Sum=MUR 980/m2) fixed to prepare level cement and sand base with adhesive ; straight butt joints both ways to:	1355.00	m <sup>2</sup>		0.00
6.05	SUPPLY AND FIX the following marble tiles/Granite (prime cost MUR3000 per m2 inclusive of 10% wastage factor for marble tile, and including cement mortar, adhesive and pointing materials)				
a)	floors/landings	50.00	m <sup>2</sup>		0.00
	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE-WALL FINISHES</b>				
6.06	SUPPLY AND FIX the following ceramic tile/slates (Prime cost MUR500 per m2 inclusive of 10% wastage factor for the supply of slates and including cement mortar, adhesive and pointing materials)				
	Tiles fixed to cement and sand rendered backing (m/s) with cement mortar and an approved adhesive and with flush joints with waterproof grout or equal approved including all labours and cleaning on completion				
a)	Walls/returns/reveals/recesses/attached & unattached columns	1029.00	m <sup>2</sup>		0.00
	<b>Total</b>				<b>0.00</b>
7.00	<b>CEILING AND ROOFING</b>				
7.01	<b>ROOF WATERPROOFING</b>				
	Supply and lay an approved double layer bituminous waterproofing membrane on sealer coat and hot laid with melted oxidised bitumen by specialist all in accordance with manufacturer's specification (10 years guarantee to be given- measured nett)				
a)	Smooth trowelled screeded surfaced of flat roofs	1500.00	m <sup>2</sup>		0.00
	<b>Polycarbonate sheeting</b>				
7.02	Providing and fixing 10mm thick clear multi wall solar control polycarbonate sheets of approved quality and shade in desired shape in roofing including the cost of EPDM gaskets , sealing tape , aluminium profile and all necessary accessories complete as per architectural drawings and as directed by Engineer incharge. The item includes designing the complete system and supplying & getting approved from client and / or reputed institute . The detailed shop drawings including supplying structural design calculations based on relevant codal provisions and carrying out water penetration test as per standards followed in international.				
	The whole work is to be done through reputed and approved vendor having experience in polycarbonate work in Commercial/ Gov/ Corporate buildings as per architectural elevation drawings including filling of joints with silicon sealant and also with masonry/ RCC work, at all heights including double heights, straight or curved etc. complete in all respect. ( Surface Area shall be measured for the payment) ( M.S. Framing to be paid for separately )				
a)	For Dome Structure	76.00	m <sup>2</sup>		0.00
7.03	Suspended ceilings in moisture resistant gypsum boards, fixing to and including contractor designed framework supports all to Architects approval				
	Depth of suspension n.e 250mm high				
a)	9.5mm thick gypsum boards, joints covered with wire scrim and taped, horizontal on suspended framework	1177.00	m <sup>2</sup>		0.00
7.04	Suspended ceilings in pre-painted metal acoustical ceiling tiles laying in position on and including designed metal suspension system all to manufacture instruction and approvals				
	600*600*0.75mm thick pre-painted ceiling tiles including edge trims, fixing to framework to concrete soffits	589.00	m <sup>2</sup>		0.00
7.05	Suspended ceilings in mineral fibre boards, laying in position in metal suspension system system of main channel on wire or rod hangers all to manufacture instruction				
	Depth of suspension 500-1000mm				
a)	overall size 600*600*15mm horizontal mineral fiber ceiling, fixing in pre painted metal framework to concrete soffits	1177.00	m <sup>2</sup>		0.00
7.06	Suspended ceilings in "UPVC" strip tongued and grooved fixing to and including Contractor designed framework supports				



a)	Suspended ceilings	40.00	m <sup>2</sup>		0.00
7.07	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :				
	First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours.				
	Second layer of slurry of cement @ 0.242 kg/sqm mixed withwater proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	117.00	m <sup>2</sup>		0.00
	<b>Total</b>				0.00
8.00	<b>FINISHING</b>				
8.01	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- WALL FINISHES</b>				
a	Cement and sand (1:3) rendering, with a smooth trowelled finish 13 mm thick in two coat				
i)	wall/returns/reveals/recesses/attached & unattached columns	3748.00	m <sup>2</sup>		0.00
8.02	<b>INTERNAL WORK TO BLOCKWORK OR CONCRETE BASE-CEILING FINISHES</b>				
a)	Cement and sand (1:3) redering with smooth trowelled finish				
i)	13 mm thick ceiling/ attached & unattached beam/soffits of stair case	100.00	m <sup>2</sup>		0.00
8.03	<b>DECORATION INTERNALLY</b>				
a)	Prepare and apply one sealer coat and two full coats PVA emulsion paint on Fair face & smooth rendered surface of				
i)	Walls/returns/reveals/recesses/attached & unattached columns	4997.00	m <sup>2</sup>		0.00
ii)	Ceilings/attached & unattached beams/soffits of staircase	1471.00	m <sup>2</sup>		0.00
iii)	Staircase/treads/risers/strings/edges of landings	44.00	m <sup>2</sup>		0.00
b)	Prepare and apply one sealer coat and three full coats anti-fungus paint BS colour to Fairface surface of				
i)	Walls/returns/reveals/recesses/attached & unattached columns	4997.00	m <sup>2</sup>		0.00
c)	Prepare and apply one sealer coat and three full coats anti-fungus paint BS colour to Smooth rendered surface.				
i)	Ceilings/attached & unattached beams/soffits to staircase	1471.00	m <sup>2</sup>		0.00
8.04	Prepare and apply one sealer coat and two full coats VIP satin paint BS colour smooth rendered surface of				
i)	Wall/returns/ reveals/recesses/ attached & unattached column	2499.00	m <sup>2</sup>		0.00
8.05	Prepare and apply one coat pink wood primer,one coat undercoat and two full coats hard enamel paint BS colour on General surfaces of				
a)	Balustrades with handrails and closely spaced balustrade members (measured flat overall)	20.00	m <sup>2</sup>		0.00
8.06	Prepare and apply one sealer coat and three coats wood coating, natural finish BS Colour.				
a)	Timber door	1000.00	m <sup>2</sup>		0.00
8.07	<b>EXTERNAL WORK TO BLOCKWORK OR CONCRETE BASE- WALL FINISHES</b>				
a)	Fine floated tyrolean rendering in two coats work comprising 10 mm backing coat of cement and sand (1:3) trowelled up and 8 mm thick finishing coat of cement and sand fine grain tyrolean applied by machine				
i)	18 mm thick to Wall/ return /reveals/recesses/ attached & unattached columns	500.00	m <sup>2</sup>		0.00
8.08	<b>DECORATION EXTERNALLY</b>				
a)	Prepare and apply one sealer coat and two full coats anti-fungus paint BS colour to Smooth rendered surface of				
i)	Walls/ returns/ reveals/ recesses/ attached & unattached columns	2989.00	m <sup>2</sup>		0.00
	<b>Total</b>				0.00
9	<b>Dismantling</b>				
9.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
a)	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	5.00	cum		0.00
b)	Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix)	55.00	cum		0.00
9.02	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in - charge.	412.00	cum		0.00

9.03	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-charge.	110.00	sqm		0.00
9.04	Demolishing brick work manually by mechanical means including depositing of serviceable material with the client and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
a)	In cement mortar	255.00	cum		0.00
9.05	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and depositing with the client:				
a)	All sizes of doors	42.00	each		0.00
9.06	Dismantling steel work in single sections including dismemberin and depositing with the client:				
a)	Channels, angles, tees and flats	2.00	Qtl		0.00
9.07	Dismantling tile work in floors and roofs laid in cement mortar including depositing with the client:	505.00	sqm		0.00
9.08	Dismantling stone slab flooring laid in cement mortar including depositing of serviceable material with the client and disposal of unserviceable material within 50 metres lead.	555.00	sqm		0.00
9.09	Dismantling Linoleum/PVC in floors laid with adhesive including depositing with the client and unserviceable material including making good structures and finishes disturbed, cleaning and preparing surfaces to receive new finishes.	2493.00	sqm		0.00
9.10	Demolishing brick tile covering in terracing including depositing of serviceable material with the client and disposal of unserviceable material within 50 metres lead.	650.00	sqm		0.00
9.11	Demolishing mud phaska in terracing and disposal of material within 50 metres lead.	98.00	cum		0.00
9.12	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable surplus material and depositing of serviceable material with the client.	50.00	sqm		0.00
	<b>Total</b>				<b>0.00</b>

**Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

**ABSTRACT - PHE WORKS**

<b>S.No.</b>	<b>DESCRIPTION</b>	<b>AMOUNT in FIGURES (MUR)</b>
<b>NEW CANCER HOSPITAL</b>		
1	SANITARY FIXTURES	0.00
2	SOIL, WASTE AND VENT PIPES	0.00
3	WATER SUPPLY	0.00
4	SEWERAGE AND DRAINAGE	0.00
5	RAIN WATER PIPING	0.00
6	BOREWELL	0.00
7	RAIN WATER HARVESTING	0.00
8	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM	0.00
9	WATER TREATMENT PLANT	0.00
10	EFFLUENT TREATMENT PLANT	0.00
11	SEWAGE TREATMENT PLANT( including O&M)	0.00
12	Water Supply Panel	0.00
	<b>TOTAL (NEW CANCER HOSPITAL)</b>	<b>0.00</b>
<b>RENOVATION</b>		
1	SANITARY FIXTURES	0.00
2	SOIL, WASTE AND VENT PIPES	0.00
3	WATER SUPPLY	0.00
4	DISMANTLING WORK	0.00
	<b>TOTAL (RENOVATION)</b>	<b>0.00</b>
	<b>GRAND TOTAL (NEW CANCER HOSPITAL + RENOVATION) - PHE</b>	<b>0.00</b>

Name of Work : Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.- PHE BOQ						
Sl. No.	Description of Item	Unit	TOTAL QTY	Rate in figures (MUR)	Rate in words (MUR)	Amount in figure (MUR)
1	2	3	4	5	6	7.00
	Note: Based on the tender drawing the agency has to prepare the internal & external plumbing shop drawing and obtain the approval of the same before execution					
1.00	<b>SANITARY FIXTURES</b>					
1.01	<b>Copper pipes to BS EN 1057 PART 1; capillary joints in the running length;spacing clips at 1500 mm centres including all fittings, jointing complete.</b>					
	15 mm dia	m	1013.00			0.00
	20 mm dia	m	650.00			0.00
	25 mm dia	m	405.00			0.00
	32 mm dia	m	370.00			0.00
	40 mm dia	m	300.00			0.00
	50 mm dia	m	470.00			0.00
	65 mm dia	m	180.00			0.00
1.02	<b>Cast iron pipes to BS 4622(including Bend,Tee,Junction,Terminal guard, Clean ot plug, Jointing, clamps, and stays , holding supports, dash fastener, painting, cutting RCC holes etc in complete)</b>					
	100 mm dia	m	900.00			0.00
	150 mm dia	m	400.00			0.00
1.03	<b>Level Controlers</b>					
	Level Controlers RS Model	nr	5.00			0.00
1.04	<b>Insulation</b>					
	Armaflex class insulation sheet	sht	80.00			0.00
	DNE Insulation Glue	m	200.00			0.00
	Armaflex self Adhesive	m	200.00			0.00
	Armaflex class A Insulation tubing internal diameter 26 mm	m	16.00			0.00
	Armaflex class A insulation tubing internal	m	200.00			0.00
1.05	<b>Floor Traps</b>					
	Stainless Steel grade 304-300X300	nr	280.00			0.00
	Plastic-100X100	nr	70.00			0.00
1.06	<b>Wash Hand Basin</b>					
	Wash Hand Basin -semi pedestal in white vitrious china (PC sum=MUR 4070/UNIT) with chrome plated waste and PVC bottle trap	nr	64.00			0.00
1.07	Wash hand basin -drop in WHB in white vitrious china (PC sum=MUR 1600/UNIT) with chrome plated waste and PVC Bottel trap	nr	64.00			0.00
1.08	<b>Urinal</b>					
	Urinals - flate back urinal single bowl (PC sum=MUR 4600/unit) complete with flush valve, chrome plated waste and bottle trap	nr	18			0.00
	<b>Sewer Network</b>					
1.09	<b>Excavation and pipe laying</b>					
	Excavation for pipes any material other than top soil,rock or artificial hard material for, depth not exceeding 2.00 ,part return and compact and part cart away to spoil					
	Depth: 0.5 to 1m	cub.m	350			0.00
	Depth: 1m to 2m	cub.m	35			0.00
	Excavation for water pipes in rock,depth not exceeding 2.00 m, part return and compact and part cart away to spoil					
	Depth: 0.5 to 1m	cub..m	30			0.00
1.10	<b>Pipe Laying gravity sewer</b>					
	Supply, Lay and test the following					
	DN 200 uPVC pipe	m	300			0.00
	Supply, Lay and test the following					
	Supply and fix step irons	nr	15			0.00
	Supply and fix heavy duty manhole covers and frame clear opening 600mm.	nr	15			0.00

1.11	Providing and fixing Stainless Steel-304 <b>kitchen sink</b> with drain board 510x1040 mm bowl depth 200mm. With C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required.	Each	4		0.00
1.12	Providing and fixing white vitreous china <b>laboratory sink</b> approx. size Size 450x300x150 mm & drain board with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required.	Each	7		0.00
1.13	Providing and fixing <b>wall hung water closet</b> with seat cover of approved model and slim concealed flushing cistern of 5-9 litre capacity, body with floor mounted frame and installation kit with SS actuating panel with dual flush with fittings, including paper holder,polypropelene wc connector socket ,CP brass health faucet, towel rail,flexible unplastiscised pvc connection pipe of required length,cp brass bib cock and cp brass angle valve complete of approved make & model available in Mauritius as approved by Engineer-in-charge.	Each	79		0.00
1.14	<b>Rectangular shape mirror</b> more than 0.6 sq.m. area with teak wooden polish moulded frame	Sqm	173		0.00
1.15	Providing and fixing stainless steel <b>Grab Bar</b> 25 mm dia(minimum) of required length with PVC cleats, C.P. brass screws etc. complete.	Meter	11		0.00
1.16	providing & fixing <b>double robe hook</b> with all complete fittings as per approved make & model	Each	79		0.00
1.17	Providing and fixing white vitreous china oval shape wash basin with C.I brackets, 15mm C.P brass pillar taps, 32mm C.P brass waste, cp waste,bottle trap,liquid soap container,flexible uPVC connection pipe & cp brass angle valve etc. of approved make & model.painting, fittings and brackets, cutting and making good the walls wherever required,complete in al respect.				
	<b>under Counter oval shape wash basin</b> size 600x390mm approx. (centre tap hole) along with , single 15 mm CP brass pressmatic type pillar tap. as per approved make & model .	Each	94		0.00
1.18	Providing & fixing SS body solid state fully hygienic no touch <b>Hand Drier</b> of approved make rated for continuous repeat usage with solid state time delay LSF protection, with independent ambient light level & seasonal control temperatures including providing necessary C.I./M.S. brackets painted with two or three coats of enamel paint of approved shade over a coat of primer, wiring cables from drier to plug, plug tops etc. complete including cutting and making good the walls wherever required.	Each	7		0.00
1.19	Providing and fixing Hospital S S 304 -18 SWG(thickness 1.2 mm) <b>bed pan sink</b> with P trap, size 850W x 600Dx300Hmm + SPL with 10 litres PVC. flushing cistern , 32 mm dia flush pipe cpvc , C.I./M.S. bracket with painting with 3 coats of white paint complete with accessories, C.P. brass long body bib cock and health fucet fittings (CMP.METAL ) or equivalent approved make available in Mauritius as approved by Engineer-in-charge.	Each	5		0.00
1.20	Supply , installation, testing and commissioning of compact floor mounted pedestal base <b>surgical scrub sink</b> tailor made to suit the site available compatiabale with all the regular and standard plumbing system, with inbuilt geyser designed for use in operation theatre fabricated from thickness 1.6 mm 304 type stainless steel seamless 304 welded,polished to satain finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed (CMP.METAL ,MPS) or equivalent approved make available in Mauritius as approved by Engineer-in-charge.				
	Tailor made surgical scrub sink (2 bay) Approximate size 1.4 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	3		0.00
	<b>SUB TOTAL( SANITARY FIXTURES)</b>				<b>0.00</b>
<b>2.00</b>	<b>SOIL, WASTE AND VENT PIPES</b>				
2.01	Providing and fixing <b>Trap</b> of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:				
a)	100 mm inlet and 100 mm outlet cast iron epoxy coated inside & outside.	Each	310.00		0.00
2.02	<b>Cutting holes</b> in brick masonry walls/RCC Slab for following diameter sand cast iron pipes and making good the same with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement: 4 coarse sand):				
a)	100 mm diameter pipe	Each	150.00		0.00

2.03	Providing and fixing <b>M.S. holder bat clamp</b> of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.				
	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	Each	40		0.00
	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes or 150mm)	Each	220		0.00
	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	Each	15		0.00
2.04	Providing and fixing <b>GI pipes</b> complete with GI fittings and clamps, i/c cutting and making good the walls etc and making good the same for waste water disposal complete as per direction of engineer incharge.				
a)	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	Metre	71		0.00
b)	40 mm dia nominal bore (Sink,Urinal to floor trap)	Metre	22		0.00
c)	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	70		0.00
2.05	Providing and fixing <b>floor drain</b> & balcony drain made of 100 x 50 mm dia elbow / tee as applicable connected with 50 mm dia GI pipe painted with primer, in all complete including cutting and making good the walls and floor wherever required	Each	70		0.00
	<b>SUB TOTAL(SOIL, WASTE AND VENT PIPES)</b>				<b>0.00</b>
<b>3.00</b>	<b>WATER SUPPLY</b>				
3.01	Providing and fixing <b>Chlorinated Polyvinyl Chloride (CPVC) pipes</b> , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. INTERNAL WORK - EXPOSED ON WALL				
	<b>Internal work – Exposed on wall</b>				
	20 mm nominal outer dia Pipes(SDR-11)	Metre	360		0.00
	25 mm nominal outer dia Pipes(SDR-11)	Metre	240		0.00
	32 mm nominal outer dia Pipes(SDR-11)	Metre	120		0.00
	40 mm nominal outer dia Pipes(SDR-11)	Metre	80		0.00
	50 mm nominal outer dia Pipes(SDR-11)	Metre	600		0.00
	62.5 mm nominal outer dia Pipes(SDR-11)	Metre	96		0.00
	75 mm nominal outer dia Pipes(SDR-11)	Metre	40		0.00
3.02	Providing and fixing <b>Chlorinated Polyvinyl Chloride(CPVC) pipes</b> having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.				
	<b>Concealed work including cutting chases and making good the walls etc.</b>				
a	15 mm nominal outer dia pipes (SDR-11)	Metre	60		0.00
b	20 mm nominal outer dia pipes (SDR-11)	Metre	1290		0.00
c	25 mm nominal outer dia pipes (SDR-11)	Metre	488		0.00
d	32 mm nominal outer dia pipes (SDR-11)	Metre	165		0.00
3.03	Providing and fixing <b>Chlorinated Polyvinyl Chloride (CPVC) pipes</b> , having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
	<b>External Work</b>				
b)	25 mm nominal outer dia pipes (SDR-11)	Metre	15		0.00
c)	40 mm nominal outer dia pipes (SDR-11)	Metre	15		0.00
d)	50 mm nominal inner dia Pipes (SDR-11)	Metre	10		0.00
e)	62 mm nominal inner dia Pipes (SDR-11)	Metre	5		0.00
3.04	Providing and fixing <b>gun metal non-return valve</b> of approved quality (screwed end)				
a)	50 mm nominal bore				
a.i)	Horizontal	Each	2		0.00
b)	80 mm nominal bore				
b.i)	Horizontal	Each	2		0.00

3.05	Providing and fixing <b>C.I. sluice valves</b> (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately):				
a)	100 mm diameter				
a.i)	Class I	Each	2		0.00
3.06	Constructing masonry chamber 60x60x75 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design				
a)	With F.P.S. bricks	Each	4		0.00
3.07	Providing and placing on <b>terrace</b> (at all floor levels) polyethylene <b>water storage tank</b> ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank				
	Treated water Tank and Untreated water tank	per litre	50000		0.00
3.08	Providing and fixing <b>C.I. double acting air valve</b> of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc. if required will be paid separately):				
a)	50 mm dia	Each	1		0.00
3.09	Providing and fixing <b>divertor type shower mixer</b> with provision for shower & single tap complete in all respect. approved make and model.	Each	25		0.00
3.10	Providing & fixing <b>full way lever operated forged brass ball valve</b> of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.				
a)	15 mm dia	Each	4		0.00
b)	20 mm dia	Each	11		0.00
c)	25 mm dia	Each	16		0.00
d)	32 mm dia	Each	10		0.00
e)	40 mm dia	Each	10		0.00
f)	50 mm dia	Each	5		0.00
g)	65 mm dia	Each	3		0.00
h)	80 mm dia	Each	3		0.00
3.11	Providing and fixing motorized butter fly valve/rotary actuator (CI body, SS 316 disc. EPDM boot seat, EPDM boot seat, ss416 shaft,RPTEF bushing@PN16 rating) for filling of water tank complete with electrical water level control panel, including by pass connection for the same dia with manually operated butterfly valve and all piping and accessories complete in all respect- valve at domestic and flushing OHT Filling)				
a)	32 mm nominal bore	Each	2		0.00
b)	40 mm nominal bore	Each	2		0.00
c)	50 mm nominal bore	Each	2		0.00
3.12	Providing and fixing CP brass air valves with gunmetal isolation valve fixed on pipe lines				
a)	15 MM nominal bore air vent with 15 mm isolation valve	Each	5		0.00
b)	20 MM nominal bore air vent with 20 mm isolation valve	Each	5		0.00
3.13	Providing and fixing double seal type D.I. Manhole cover of 560 mm clear internal diameter of over all heavy duty with locking arrangement complete in all respects.	Each	6		0.00
3.14	Providing & fixing 9 mm thick <b>thermal insulation tubing</b> of elastomeric flexible material on hot water supply/return pipes having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc complete.				
a	15 mm to 25 mm diameter	Meter	150		0.00
3.15	Supplying, fixing, testing and commissioning of storage type <b>water heater (Geyser)</b> etc. with outer body of ABS, 2 MM Thick Mild Steel inner Tank with glass line coating,option of 1/2/3 KW electrically operated single phase 230V, including Glass Lined Double Heating Element,Digital Display, Multifunction Safety Device, ELCB, Anode Rod System, and Brackets for fixing on wall with connecting Wire & plug including flexible unplasticised pvc connection pipe & cp brass angle valve etc. of approved make and model.				

a)	25 Litre Capacity	Each	8		0.00
b)	35 litre capacity	Each	8		0.00
3.16	Providing & fixing <b>water storage cooler</b> of approved make and brand with SS body Complete in respects-230V Single Phase. (Voltas/Shriram/BLUE-STAR) minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs.	Each	2		0.00
3.17	Providing and fixing approved make & suitable model of R.O. plant (fully automatic operation) 600ltrs. Per hour flow rate having capacity to treat the raw water and average recovery not less than 35% . The operating voltage to 230 volt AC +/- 10% alongwith required capacity on line SS pump of approved make (3HP minimum) and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, storage tank (3.0 mm (minimum) thick S.S. 304 sheet) 1500 ltrs of suitable size and its supporting structure, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions: (IONEXCHANGE/ KENT/AQUAPROCESS,Pantair ) or other approved make and model available in Mauritius.				
	10 micron polypropylene sediment pre filter				
	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating				
	Required Nos. and size of reverse osmosis membrane with 0.0001 micron pore size energy saving poly amide type				
	UV lamp of minimum capacity 600LPH and minimum lamp wattage 15W				
	MS powder coated frame efficient of TDS removal more than 90%. Antiscalant dosing and acid dosing system for self flushing/cleaning.Pressure switches and gauges, pH correction dosing system, Digital TDS meter, Digital pH meter, electric panel and necessary instrumentation included Rotameter.MS structure and fibre glass sheet weather protection cover as per site condition.	Each	1		0.00
	<b>SUB TOTAL(Water Supply)</b>				<b>0.00</b>
<b>4.00</b>	<b>SEWARAGE &amp; DRAINAGE</b>				
4.01	Providing and fixing uPVC <b>square-mouth gully trap</b> complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg complete with civil work 150x100mm size P type	Each	17		0.00
4.02	Constructing brick masonry <b>circular type manhole</b> 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 40mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement all complete with all civil work including excavation.	Each	28		0.00
4.03	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement:4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:				
a)	With F.P.S. bricks	Each	17		0.00
4.04	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations@ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge	Each	410		0.00
4.05	Constructing brick masonry <b>open surface drain</b> including with edge protected with MS plate of 3 mm thick with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 fine sand) including earth excavation, 10cm thick bed concrete 1:5:10 (1 cement: 5 fine sand :10 graded stone aggregate 40mm nominal size) and 25mm thick cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 12.5 mm nominal size) for filling hunches including 12mm cement plaster 1:4 (1 cement:4 coarse sand) with a floating coat of neat cement inside the drain, its top and exposed side including disposal of surplus earth complete as per standard design.				
a)	300mm drain 450 mm average depth With F.P.S bricks	Metre	410		0.00
	<b>SUB TOTAL(SEWERAGE AND DRAINAGE)</b>				<b>0.00</b>
<b>5.00</b>	<b>RAIN WATER PIPING</b>				
	UPVC pipes to BS-213- PN 10;Solvent welded joints in the running length;standard clips at 1500mm centre including bend,Tee Jointing,Collar, Heel rest senetary bend, IMS holder bat clamp, inlet mouth of rain water, painting etc. complete in all respect.				
	100 mm dia	m	780		0.00
	150 mm dia	m	100		0.00
	<b>SUB TOTAL(Rain Water pipe &amp; fitting)</b>				<b>0.00</b>
<b>6.00</b>	<b>BOREWELL(1 No.)</b>				



6.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :Providing and laying cement concrete 1:2:4 mix (for sanitary sealing of well at top.)				
	"1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	Cum	1		0.00
6.02	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc				
	65 mm dia nominal bore	Metre	60		0.00
	80 mm dia nominal bore	Metre	100		0.00
6.03	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)				
	80 mm dia(horizontal)	Each	2		0.00
6.04	Providing and fixing gunmetal non return valve of approved make tested to a pressure of 21 kg/sqcm.				
	80 mm dia(horizontal)	Each	2		0.00
6.05	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in , including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge upto 90 metre depth below ground level.				
	All types of soil				
	400mm	Metre	180		0.00
	Rocky strata including Boulders				
	400 mm dia	Metre	20		0.00
6.06	Boring/drilling bore well of required dia for casing/ strainer pipe, , including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools,plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 metre & upto 150 metre depth below ground level.				
	All types of soil				
	400 mm dia	Metre	100		0.00
	Rocky strata including Boulders				
	400 mm dia	Metre	20		0.00
6.07	Gravel packing in tubewell construction, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	Cum	10		0.00
6.08	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended casing pipes of required dia, , of reputed & approved make available in Mauritius, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge				
	200 mm nominal size dia having minimum wall thickness 5.00 mm	Metre	100		0.00
6.09	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe of required dia, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge				
	200 mm nominal size dia	Metre	100		0.00
6.10	Development of tube well to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge..	Hour	100		0.00
6.11	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removables per requirement, all complete for borewell of:				
	200 mm dia	Each	1		0.00
6.12	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell including necessary bolts & nuts of required size complete.				
	200 mm clamp	Each	1		0.00
6.13	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell.				
	150 MM DIA	Each	1		0.00

6.14	<b>Submersible pumps</b>				
	Providing and installing submersible pump and electrical panel suitable for 200 mm dia casing of bore with SS impeller, high tensile SS shaft, copper wound squirrel cage wet type induction motor 2880 rpm, 415 V, 50 Hz, 3 phase A.C. supply, capacity 300-500 LPM at 80-120 m head along with a directly coupled submersible type squirrel cage electric induction 7.5 H.P.(minimum). motor suitable for operation on 400 V, 3 phase, 50 c.p.s. A.C. supply, water lubricated bearings and provided with pivoted segment type thrust bearings to withstand non-vertical lead with minimum wear and tear and duly fitted with device to take up the expansion of water with heating of motor, including supply, testing and commissioning of electrical panel from the same manufacturer, complete with all accessories in all respects. The contractor to obtain approval for model and make of pumpset & suitable Electrical panel after having yield report of fully developed tube well and submit actual bore strata chart.				
	including supplying laying and fixing water proof PVC insulated flat submersible cable 3x10 sqmm with end termination with its accessories. complete in all respect as required. 1 No. 3 Phase, fully automatic star-delta starter, type - II of 15 HP with thermal overload relay, contactor, Timer, Push Buttons and Auto-manual selector switch etc. complete as required.	Set	1		0.00
6.15	Carrying out Electrical logging of Borewell before lowering of pipe for analysing of water quality including Electrical logging report, calculation etc. including carry out hydrological survey report before boring & getting the approval based on Hydrogeological survey before start of the work. Also getting approval from local authority if any required.	Job	1		0.00
	<b>SUBTOTAL (BOREWELL)</b>				<b>0.00</b>
<b>7.00</b>	<b>RAIN WATER HARVESTING (2 Nos.)</b>				
7.01	Designing and Constructing of percolation pit cum perforated well 3000mm. dia upto 4000mm deep, 230 mm thick brick masonry work around upto 1.5 m deep with 75 class brick in cement mortar 1:4, 200 mm foundation concrete in 1:4:8 mix below brick work only, 150 mm thick precast removable RCC top slab with required steel reinforcement in cement concrete 1:2:4 mix, filled with coarse aggregate, SFRC covers, river pebbles of requisite size stone as shown in the drawing including centering and shuttering, as shown complete as per detailed drawings complete.	Each	2.0		0.00
7.02	Drilling ( with percussion or combination rig ) from ground level in all kind of soils including boulders (excluding rock ) diameter of bore 450mm.				
a)	0-50m	Metre	40.0		0.00
7.03	Extra for drilling in Ordinary Rock	Metre	2.0		0.00
7.04	Extra for drilling in Hard Rock	Metre	2.0		0.00
7.05	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing complete.	Metre	40.0		0.00
7.06	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to suit site condition.	Each	2.0		0.00
	<b>SUBTOTAL (RAIN WATER HARVESTING)</b>				<b>0.00</b>
<b>8.00</b>	<b>SOLAR WATER HEATING SYSTEM</b>				
	Supply, installation, testing and commissioning of solar water heating system, Thermosyphon type, all complete based on Flat plate collector system (Cu-Cu Type only) comprising of but not limited to the following:				
	Requisite number of Flat plate collectors of 2.30 sq. mtr. collector area. Collector absorber plate to be made of copper tubes & copper fins only				
	Hot water storage tank made of stainless steel 304- food grade quality minimum 3mm thick with 2 coats of 3M epoxy anti corrosive paint inside the tank with 100 mm Glass wool insulation and cladding with 24 SWG Aluminum sheet. One temperature measuring device and suitable inlet, outlet and drain connections on the storage tank to be provided. Suitable Electrical Heater backup to be provided inside the tank along with thermostat				
	Heat Exchanger - plate type external heat exchanger of SS316 plates (make Gea echo flex/Alfalavel/transter ) with MS Flanges for transfer of heat minimum 1000 K Calories/collector/hr with necessary pressure guage and temperature guage and isolation valve etc. complete . Suitable make up tank for the Heat Exchanger circuit shall also be provided				

	Primary Pumps between Collector and Heat Exchanger---Providiing of Recirculation Pumps (between Collectors and Heat Exchanger) with SS Impellers and Shaft for Temperature Application upto 90 Deg.C of Required Flow 100 Ltrs./Collector for Minimum Pressure drop of 2 Kg./Cm2 with Isolation Valves, NRVs and Stainer(1W+1S) Pumps.				
	Secondary Pump between Hot Water Tank and Heat Exchanger--Providiing of Recirculation Pumps (between Hot Water Tank and Heat Exchanger) with SS Impellers and Shaft for Temperature Application upto 90 Deg.C of Required Flow 100 Ltrs./Collector for Minimum Pressure drop of 2 Kg./Cm2 with Isolation Valves, NRVs and Stainer(1W+1S) Pumps.				
	Interconnecting system piping shall consist of B Class insulated GI/CPVC pipes covered with 50mm thick glasswool & clad with 26 SWG Aluminium Sheet. All Gate/Ball valves shall be of ISI make.				
	Electrical control panel, cabling from panel to pumps shall also be provided, Electrical panel:16 SWG sheet powder coated electrical panel for outdoor application IP-65, with Digital differential temperature controller for automatic ON/OFF at primary and secondary pumps (3ph) with necessary contractors, relays, control fuse, isolation switches. The cable beyond 100 m if required will be paid seperately in electrical head.				
	The solar collector shall be arranged on roof of building in such a way that shadow can be avoided and requisite number of MS support for collector/tanks of minimum 40x40x5 MS angle adequate for 150 Km/Hr wind speed.				
	Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors as per complete item as per technical specification of make BHEL/TATA/EMMVEE/INTER-SOLAR. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved makeThe shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge.(Electric heating element shall not be provided in the system as the solar hot water system will supply the hot water to the individual geyser).				
	Supply, Installation, Testing and commissioning of the system complete with necessary Temperature gauge, Temperature sensor, Thermostat with rubber gaskets, Electrical & Control wiring				
	<b>Compleat Solar System as above of Capcity 5000 Litre/day (With minimum 38 nos of Collect) of 2.30 Sqm area</b>	Each	2		0.00
	<b>SUBTOTAL(SOLAR WATER HEATING SYSTEM</b>				<b>0.00</b>
<b>9.00</b>	<b>WATER TREATMENT PLANT (for Domestic use)</b>				
9.01	Planning, Designing, Detailing, Manufacturing, Supplying, Erection, Testing and Commissioning of Water treatment plant for supply of treated water for use of domestic purpose comprising of filter and pumps. The plant is to be installed in pump room and Raw water supply is available in UGT including design and execution of all Civil, Structural, Electrical, Mechanical, Plumbing and processing, ancillary equipments & works etc required to complete the package, getting approval from HSCC/client etc.				
	The shop drawings & design of WTP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements. The work has to be carried through authorised vendor, dealer/representative of approved make.				
i)	Providing and fixing vertical on line SS raw water filter feed pumps with CI volute and SS impellar and with stainless steel shaft, mechanical seal and chrome steel shaft sleeve, connected to a TEFC induction motor suitable for 400/440 volts,1500 RPM, 3 phase 50 cycles A.C. supply having IP 55 protection enclosure. complete with base frame, vibration eliminating pads, nuts and bolts etc. with suction stainer ( Necessary RCC foundations as per requirement and as per instructions shall be provided by the agency )				
	<b>Raw water , filter feed pumps(only for domestic use).</b>				
	<b>Capacity : 215 LPM(Each)</b>				
	Head 65 m				
	Power : 7.5 HP or				
	<b>with 100% standby pumps(1W+1S) 2 Sets( 1 set of pump contains single pump)</b>				
ii)	Providing and fixing C.I. "Y" Type suction strainer with stainless steel perforated sheet screen, flangfd ends iner installed outside water tanks. (Make: Leader / Zoloto / Kartar or equivalent) 50/80 mm dia (min.) or required size and required number( 1 Set)				
iii)	Providing and fixing gun metal or bronze ball valves/butterfly valve/NRV/Rotameter, tested to 15.00 Kg / cm2, screwed end connections complete . (Make: approved make and model available in Mauritius )				
	80/50 mm NB (min.) or required size and number(1 Set)				
iv)	Filtration Plant : Vertical Downflow Multigrade Pressure Sand Filter in MS Welded construction fabricated in accordance with IS 2825 from minimum 6 mm thick M.S. plate on shell and minimum 8 mm thick M.S. plate on dished ends as per applicable IS standards. The filter shall have :				

	a) One no pressure tight manhole and at least one no. pressure tight side hole for maintenance purposes.				
	b) Initial charge of Filter Media.				
	c) Complete underdrain system and raw water distributor as per manufacturer's design.				
	d) M.S. heavy class fabricated - epoxy coated / post galvanised face piping comprising of connections with CI Butterfly Valves of required size for inlet, outlet, backwash inlet, backwash drain and rinse drain. Air release line with GM Ball Valve of required size.				
	e) Pressure gauges (100 mm dia bourdon type pressure gauge ) / Sampling points with SS isolation cocks at inlet and outlet.				
	f) All internal parts of the filtration plant shall be coated with two coats of food grade epoxy paint after thorough sand blasting. All external surfaces of the plant including piping shall be coated with two coats of red iron oxide / zinc chromate primer followed by two coats of high gloss enamel paint.				
	g) The filter shall be complete with all gaskets / fasteners of standard quality as required.				
	h) The filter shall be designed to give rated output at given raw water quality and flow rate without any operational problem and should not get any loss of performance as long as the operating pressure remains within the given range. Any additional provision is required to make the item complete, the same should be included herein. The work has to be carried through authorised vendor, dealer/representative of approved make. The filter water will be supplied to treated water tank through U.V. water steriliser (UV steriliser paid separately)				
	<b>Capacity - 215 LPM</b>				
	Filtration rate - 20,000 lph/sqm ( min.)				
	<b>Filter dia approx. 0.80 m (min.)</b>				
	Filter HOS Min. - 1600 mm (min.)				
	Working pressure : 3.0 Kg/sq cm.				
	Test pressure : 4.5 Kg/sq cm				
	No. Of Unit - <b>1 Set</b>				
	v) UV WATER STERILISERS(between filter &clear water tank)				
	High performance on line UV water sterilisers of capacity 350 lpm designed on at least 250 l/Sq. M. UV dosage, comprising of glass UV chamber in SS 316 housing, UV lamp and electrical circuit, wall mounted model / line mounted model. capacity 350 lpm. minimum lamp rating -150 watts - <b>1 Nos.</b>				
	vi) Providing and fixing G.I.pipes/CPVC pipes ( <b>Heavy class</b> ) with G.I./CPVC Fittings e.g., Tee, elbow reducers, unions, end cap etc., flanges & clamps, including supporting the pipes with G.I. supports, cutting and making good the walls etc. complete. For Suction & Delivery headers. <b>1set</b> 50 mm dia ( min.) ( Interconnection between units )/ Drain lines etc. as per plant room requirement. (All piping and fitting of required size inside the plant room included in the item)				
	vii) Painting G.I./CPVC pipes with two or more coats of synthetic enamel paint of approved quality and shade over a coat of approved priming coat as directed by the Project-in-charge (shade as per pipe colour code).				
	<b>Complete W.T.P as mentioned above including testing, training and trial run till commissioning of W.T.P. [Total of Sub Head WTP(i) to (viii)]</b>	LOT	1.00		0.00
9.02	Providing and fixing of Oxilyte (Mixed Oxidant ) Generation System , based on ECA technology, producing non toxic mixed oxidant solution 30 Ltrs/hr at 1000 ppm of Oxidant concentration with auto flushing system . The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720 L per day. The system should be supplied complete with appropriate dosing pumps, valves,piping,fittings,chemical dosing tank etc. complete in all respect( shope drawing model and technical data etc. are to be submitted for approval before purchase ). The system shall install to dose the oxlyte solution in the treated water transfer pumping main and synchronised with the operation of transfer pump	EACH	1.00		0.00
9.03	Supplying, assembly, erection, testing and commissioning of <b>level controllers</b> based on level switches and necessary auxillary circuits included in the electric panel ,including all accessories required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control panel to the level switches of required size,all interconnections as required . Note : The required transformers / associated equipment shall be designed keeping in view the actual distance of various tanks from the control panel, particularly the distance of Terrace water tank from panel. The most suitable route of sensor cable travel between the panel and the tank shall have to be worked out by the contractor according to site conditions and in consultation with engineer in charge. All cabling / switch installation should be done in an easy to maintain manner.				
	One way one tank level controller as under.	set	1.00		0.00
i)	To switch on the pump when the level of water in the UG raw water tank is low and to cut off the pump when the level in the underground raw water tank is high. ( Approx. control cable requirement -100 meters. )				
	Two way - Two tank level controller as under.	set	1.00		0.00
ii)	For Filter Feed Pumps for Domestic Water.( Operating between the raw water tank and the under ground treated water tank near the plant room. ( Approx. control cable requirement - 50 meters. )	set	1.00		0.00
iii)	For Feed Pumps for Softener. ( Operating between the Treated water tank and the under ground soft water tank near the plant room. ( Approx. control cable requirement - 50 meters. )	set	1.00		0.00
iv)	For Treated water supply Pumps( Operating between the under ground treated water tank near the plant room and the Terrace treated water tank . ( Approx. control cable requirement - 50 meters. )	set	1.00		0.00

v)	For Raw water supply Pumps( Operating between the under ground Raw water tank near the plant room and the Terrace Raw water tank .( Approx. control cable requirement - 50 meters. )	set	1.00		0.00
vi)	For soft water supply Pumps( Operating between the under ground soft water tank near the plant room and the Terrace soft water tank .( Approx. control cable requirement - 50 meters. )				
9.04	Supply, installing, testing and commissioning vertical fully floodable type <b>submersible drainage pump of non-corrosive material</b> in close coupled design single stage, suitable for handling minimum 20 mm dia solids for transferring waste water from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload production and single phase preventor.				
	Material of Construction (M.O.C): Corrosion Resistant in general : Casing — Cast Iron : Impeller — SS				
	: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life				
	Motor: — Dry Motor with built in over load protection Protection - IP68. Insulation Class - F				
	Duty of each pump 150 LPM against 18M head ( Basement)	each	6.00		0.00
9.05	Supply, installing, testing and commissioning vertical fully floodable type <b>submersible sewage pump of non-corrosive material with shredder/cutter</b> in close coupled design single stage, suitable for handling minimum 20 mm dia solids for transferring raw sewer from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload production and single phase preventor.Electical panel complete as per instruction of the Engineer in charge				
	Material of Construction (M.O.C): Corrosion Resistant in general : Casing — Cast Iron : Impeller — SS				
	: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life				
	Motor: — Dry Motor with built in over load protection Protection - IP68. Insulation Class - F				
	Duty of each pump 150 LPM against 18 M head ( Sewage pump)	each	2.00		0.00
ii)	Electical panel (for set of 2 nos.drain pump) with cable,etc complete as per instruction of the Engineer in charge	Set	4.0		0.00
9.06	<b>Softener</b>				
	Supply, installation & testing and commissioning of upflow cation ion exchange resin water Softener fabricated with Fibre reinforced Plastic (FRP) with frontal piping & valves, back wash system & strongly acidic cation resin with regeneration assembly comprising of power valve ejector,brine suction valve,tankl etc. with single lever operated multiport valve system with standard fittings like pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets, pump and Panel complete in all respect.				
	Flow rate = 5.0 cub. m/hour				
	Working pressure = 3.5 kg/Sq. cm.				
	Raw Hardness-700-1500 mg/l				
	Soft water quality-Commercial zero hardness(less than 5ppm)				
	Output per Regeneration-10 cum.(min.)				
	Online Softner feed pump(SS) of suitable size & capacity(2 Nos.)				
	<b>Complete Sofner as mentioned above including testing, training and trial run till comissioning of W.T.P. [Total of Sub Head Softner ]</b>	LOT	1.00		0.00

	<b>Total (Water treatment Plant,Pump and Equipment)</b>					<b>0.00</b>
<b>10.00</b>	<b>EFFLUENT TREATMENT PLANT(ETP)</b>					
	Providing and fixing packaged type Effluent treatment plant including design/shop drawing and obtain the approval from HSCC,erection,commissioning,construction of ETP including civil,mechanical,electrical,piping work complete in all respect on turnkey basis.The system should be fully automatic with level control,compact,odor free and shall consume low power. ETP will be placed near STP site of the building of suitable size for <b>30 KLD</b> required to treat the effluent of lab,laundry,kitchen and hospital facilities by using suitable technology complete in all respect including oil and grease trap/chemical reaction with suitable chemical dosing such as Fentons reagent or any other suitable for effluent/reaction tank SS316-3mm thick (required number & size)/mixer/settler/neutralisation chamber,dosing pump and agitator/Air Blower ,holding tank,including multigrade filter stand by motor pump,blower etc. pumps and piping,filter,sludge holding tank,filter press,testing kit,electrical panel,air blower,RCC Equilisation suit site condition. ide the cold room. 4. Handle, Hinges & Locks. 5. Micro					
	.Agency has to monitor the lab waste effluent for various parameter and quantity obtaining desired no. of test reports of raw/treated lab effluent The ETP work includes pumps,blower,raw and treated water tank PVC,electric Panel, electric wire inside the ETP area, 1 No. mixed oxident generation system based on ECA Technology of approved make 30 Ltrs/hr capacity. SS Agetor in reactor Tanks, Dosing pumps & tanks , ladder,working platform,painting,interconnecting pipe valve,foundation, support etc., complete in all respect( all pump shall be SS impler & adequate solid handling capacity, Mechanical Seal).					
	All the unit of ETP shall be SS-3mm/MS sheet min. 4/5 mm thickness with suitable structure support complete in all respect including min2-.3 layers approved epoxy / FRP or other approved corrosion resistant coating/protection of all parts.The ETP units shall be designed in such a way that the lab effluent doesnot effect the function of STP when treated lab effluent mixed in the domestic sewer line,treated effluent shall meet the SPCB norms and also obtain adequacy report and treated effluent test report for SPCB. Agency has to maintain and operate the ETP during defect liability period including cost of manpower,chemical etc except electricity cost.Work shall be carried out by specialised agency approved by HSCC ( excluding cost of civil work).					
	<b>Complete ETP as mentioned above including testing, training and trial run till comissioning of ETP .</b>	LOT	1.00			0.00
	<b>[Total of Sub Head ETP ]</b>					<b>0.00</b>
<b>11.00</b>	<b>SEWAGE TREATMENT PLANT</b>					
11.01	Planning,Designing,Detailing,Supplying, Erection,Testing and Commissioning of Package Sewage treatment plant based on MBBR (Moving bed Bio Reactor)/FAB technology of average flow rate of 135cu.m/day for sewer including provision of recirculation of treated sewage/effluent for the use of horticulture/flushing/A/c purposes including design and execution of all civil,structural,electrical,mechanical, plumbing and processing,ancillary equipments and works etc required to complete the package, getting approval from state pollution control board and other statutory bodies as well as from consultant (consultant) /Client including the cost of STP building for electrical room, treated sewage under ground storage tank etc.					
	All the water retaining structure shall be designed as water retaining structure as per provision of IS code and water proofing with fixed or any other approved chemical shall be carried out by approved agency with 10 year (minimum) garanty. All the unit shall be painted by epoxy or fixed with the white glazed tiles of approved make. The civil works of entire STP will be carried out by agency as per drawings prepared by STP E&M agency. The shop drawings & design of STP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements & meeting the following requirments The work has to be carried by approved make agency / through authorised vendor/dealer of approved make under overall supervision of main approved agency as per list of approve make .					
i)	The shop drawings & design of STP shall be prepared by the agency . As per site condition/available space most of the unit will be placed below ground under road/green area/ as per site condition and equipment and Panel room may be above the ground level as per approved drawings .The STP shall be comprising of the following units of required size as per detail process and hydraulic design.The structure design shall be carried as per provision of IS code.The agency has to get their structure drawing checked and approved by any govt. Engineering college approved by consultant (Set-1)					
ii)	RCC Suitable size mechanical <b>Bar Screen chamber</b> with minimum free board 300 mm and minimum size 1.5 mx1.0mx0.40 m SWD and additional manual suitable size SS Bar screen is installed at suitable angle at the inlet of raw sewage sump before pumping and mechanical system to collect and lifts/transport the screening material . The unit shall be designed for peak flow , and one no. SS slotted additional manual fine screen 2 mm thick after mechanical bar screen to be fixed in chamber itself. Inlet chamber of suitable size with SS manual operated spindle riser SS 304 gate shall also be provided before Bar Screen.					
a)	<b>Complete mechanical Bar Screen and SS slotted fine screen Electrical &amp; mechanical Works , screening material collection and lifting system upto Ground formation level (excluding civil works) (Set-1)</b>					
iv)	Supply, installing, testing and commissioning vertical fully floodable type <b>submersible drainage pump of non-corrosive material</b> in close coupled design single stage, suitable for handling 20 mm (approx.) dia solids for transferring raw sewer from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload production and single phase preventor.					

	Material of Construction (M.O.C): Corrosion Resistant in general : Casing — Cast Iron : Impeller — Ductile cast iron/SS					
	: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life					
	Motor: — Dry Motor with built in over load protection					
	Protection - IP68.					
	Insulation Class - F					
	RAW SEWAGE PUMP					
	Capacity -75 LPM (min.)					
	Head -12 m					
	Solid handling - 10-20mm					
a)	<b>RAW SEWAGE PUMP Electrical &amp; mechanical Works , excluding civil works (2 working+ 2 stand by) Total 4 Nos.</b>					
b)	<b>Drainage Sump Pump-250 LPM &amp; 10 M head (2 Nos.)</b>					
c)	<b>Sludge recirculation pump: 50 LPM &amp; 10 m Head(2 Nos.)</b>					
v)	RCC Equalisation tank with hydraulic retention time <b>Min.6 Hrs HRT</b> of STP designing Average flow with suitable Size free Board 500 mm,the effluent of equalisation tank is agitated with diffused air that is fed by an air blower, including pipe non-corrosive material and its complete system.					
a)	<b>Equalisation tank Electrical &amp; mechanical Works , excluding civil works (Set-1)</b>					
vi)	RCC Moving bed Bio Reactor ( <b>MBBR</b> ) with minimum <b>4hr.</b> retention time of STP designing Average flow rate for each reactor of suitable size with Air grid CPVC/SS -304 pipe material of construction or corrosion resistant material,Air diffusers (fine bubble), HDPE approved make Bio media for each aeration tank,with minimum water depth of 3.8 m					
a)	<b>Moving bed Bio Reactor - Electrical &amp; mechanical Works , excluding civil works -(4 nos.)</b>					
vii)	<b>ROTARY AIR BLOWERS</b> Providing and Installation of Rotary air blowers for air scouring, driver through v-belt or directly coupled through flaxble coupling. Motor shall be of suitable HP for 400-440 volts, ,1500RPM, 3 phase, alongwith air filter, non-return valve, safetyvalve, base plate and necessary air piping fittings, valves, flowmeters etc.					
	(Blower capacity - 100 cfm at 4000 mm wc(minimum) shall be provided as per detail design calculation. It is use for equalisation tank and MBBR reactor - <b>(2 working +2 stand by)</b> Blowers shall be fully automatic. with fine bubble Air diffusers (tubeler type, Rating -5 -6 cfm at normal working condition, MOC diaphragm- Neoprene/silicon ) - Complete including Electrical & mechanical Works , excluding civil works. <b>Make of diffuser - Rehau, Techpro , OTT, MM Aqua</b> <b>Make of Blowers- Kay, Everest , Usha , Swam or equivalent approved make available in Mauritius.</b>					
a)	<b>ROTARY AIR BLOWERS - Electrical &amp; mechanical Works , excluding civil works( 4 nos. Blower &amp;etc)</b>					
viii)	RCC secondary tube settler/Lamella Clarifier - maximum Hydraulic loading 1.5 cu.m/sq.m/hr respectively and with approved quality media with minimum water depth of 2.4 m.+ Free board & hopper bottom. The lamina clarifier media shall be of acardic plate min. 10 mm thick					
a)	<b>Tube settler - Electrical &amp; mechanical Works , excluding civil works (Set-2)</b>					
ix)	Providing and fixing of Oxilyte (Mixed Oxidant) Generation System, based on ECA Technology, producing non toxic mixed Oxidant Slution 30 ltrs/hr at 1000 ppm of Oxidant Concentration . The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720 litre per Day. The system should be supplied complete with appropriate dosing pumps , valves, piping, fittings, chemical dosing tank etc. complete in all respect. with auto flushing system					
a)	<b>Oxilyte (Mixed Oxidant) Generation System - Electrical &amp; mechanical Works , excluding civil works (Set-2)</b>					
x)	RCC supernatant tank/Filter feed tank minimum 30 cu.m capacity <b>(1 unit)</b> with following filter feed pumps -					
	<b>FILTER FEED PUMPSETS</b> Providing and installation horizontal single/multistage centrifugal monoblock pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled induction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eliminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ, A/c supply					
	Type of pump - Horizontal					
	Capacity -200 LPM (Mini.)					
	Head - 35 M					
	<b>(1working +1stand by) -2 set</b>					
a)	<b>Filter feed tank &amp; Pumps - Electrical &amp; mechanical Works , excluding civil works</b>					
xi)	<b>MULTI GRADE FILTER</b>					

	Providing and installation of mild steel pressure vessel ( as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of filter media graded sand and internals consisting of strainers fitted on plate for collection.				
	Dia of vessel -800 mm (minimum)&1.8 m height				
	Shell thickness -6mm (minimum.)				
	Filtration rate - 20,000 lph/sqm ( min.) &				
	Dish end thickness-8mm (minimum.)				
	Nozzie plate -10mm thick (minimum.)				
	Manhole - 450mm				
	Total capacity - 200 LPM each Filter, complete (mini.)				
a)	<b>MULTI GRADE FILTER - Electrical &amp; mechanical Works , excluding civil works-1 nos.</b>				
xii)	<b>ACTIVATED CARBON FILTER</b>				
	Providing and installation of mild steel pressure vessel ( as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of approved quality activated carbon media. Provision of backwash and recharging of activated carbon etc. complete				
	Depth of Activated carbon media- 1.0 m				
	Activated carbon type-(950 IV 4/8 mesh)				
	Dia of vessel -800mm (minimum)& 1.8m ht.				
	Shell thickness -6mm (minimum.)				
	Dish end thickness-8mm (minimum.)				
	Nozzie plate -10mm thick (minimum.)				
	Manhole -450mm				
	capacity -200 LPM,				
a)	<b>ACTIVATED CARBON FILTER - Electrical &amp; mechanical Works , excluding civil works-1 nos.</b>				
xiii)	<b>RCC 1 nos. Suitable size sludge sump of min. capacity 10 cu.m with min. free board 500 mm. The sludge of sludge sump is agitated with diffused air that is fed by an air blower (Common for MBBR tank), including pipe non-corrosive material and its complete system.</b>				
	<b>Cost of Screw type sludge feed pump set with CI body, SS screw and shaft coupled with to a totally enclosed fan cooled induction motor complete with CPVC / SS 304 pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz. A/c supply with control auto start float switch / level controller for automatic operation - Electrical &amp; mechanical Works , excluding civil works (1 No.)</b>				
	<b>SLUDGE FEED PUMP-(1 Nos)</b>				
	Capacity -35 LPM(minimum)				
	Head - 15 m				
a)	Type of pump - Screw type				
xiv)	<b>Cost of centrifuge including drive, feeding arrangement, withdrawn arrangement, MOC- All wetted part SS 304, etc complete with PE Dosing System (Each set consist of 1 No. 500 ltr capacity dosing tank with 2 nos positive displacement dosing pump of min. capacity 50 lpm, CPVC / SS 304 pipings, valves, fittings etc as required(One set)</b>				
	Capacity -50 LPM(minimum)				
	Type - Solid bowl				
	Make - Alfa, humboldt ,Penwalt				
xv)	<b>RCC 1 No. suitable size treated water tank of minimum 10 cu. M capacity with min.free board 500 mm(1 unit)</b>				
	<b>Treated Water Transfer Pump Sets</b>				
	Providing and installation horizontal single/multistage centrifugal monoblock pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled induction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eliminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ. A/c supply, complete with CPVC / SS 304 pipings, sluice valves, non return valves, fittings etc as required.				
	Type of pump - Horizontal single/multistage centrifugal, monoblock				
	Capacity -245 LPM				
	Head - 45 M				
	<b>Treated Water Transfer Pumps - Electrical &amp; mechanical Works , excluding civil works (A set means 1 Pump with allied work) total 2 nos.</b>				
	<b>RCC Treated water tank of minimum 25 cu.m capacity with min. free board 500 mm(1 unit)</b>				
xvi)	Providing and fixing Hydropneumatic filter press of 24 plates 1000 x 1000mm size, with suitable sludge pump(screw type) alongwith piping, fittings valve etc. complete in all respects.				
a)	<b>Filter press &amp; sludge pump(screw type) - Electrical &amp; mechanical Works , excluding civil works(Set-1)</b>				



xvii)	Providing and fixing dust and vermine proof cubical type motor control <b>panel centre</b> for the various pumps, blower etc. required. It is fabricated from 2mm thick CRCA sheet with stove enamelled finish and comprising of:Panel should have at least 20% spare feeders.				
a.	One incoming main MCCB of required capacity suitable rating				
b.	MCCB/MPCB, one for each motor				
c.	Fully automatic DOL/star delta starters suitable for different motors/pumps used in the ETP.Upto 7.5 HP DOL may be used and above star/delta starter used with push buttons one for each motor and on/off indicating neon lamps.				
d.	Single phasing preventors of appropriate rating for each motor.				
e	rotary type selector switch				
f	Panel type ampere meters, one for each motor shall be with rotary selector switch to monitor line currents.				
g	Panel type volt meters, on incoming main with rotary selecting switch to monitor voltage between phase to neutral and phase to phase.				
h	Neon phase indicating lamps and indicating lamp for each motor on incoming mains.				
i	Rotary switch for manual or auto operation for each pump				
j	Fully taped separate aluminium bus bar of required capacity for normal and emergency supply.				
k	The panel shall be pre-wired with coded wiring. All intercnntng wiring from incoming main to switchgear, meters and accessories within the switchboard panel shall have suitable copper ferrules (Complete 1 set)				
xviii)	<b>Electrical works</b> (including supply, installation and termination of cables of suitable size as per HP of all pumps with all structural supports, clamps and cable trays as per approved design/specifications,installation will be as per relevant Indian standard and CPWD specification alongwith control cable of suitable size).(1 lot). Axial exhaust Fan GI Sheet ducting for desire ventilation of Pump Room area as per approved Drawings. Any other electrical and mechanical item required to complete the work. <b>(Set-1)</b>				
xix)	Providing and fixing digital type flow meter and energy meter etc. complete in all respects. <b>(Set-1)</b>				
xx)	Providing and fixing lab. Equipments including digital type pH meter, COD kit, TDS kit, bicker, conical flask etc. complete in all respects. <b>(Set-1)</b>				
xxi)	<b>Rooms for Pumps &amp; control panel</b> (100 sq.m. ) (minimum size) - Electrical & mechanical Works , Ventillation fan & ducts with minimum air change 20 CFM and lighting etc.,excluding civil works <b>(Set-1)</b>				
	<b>Note:</b> The cost of chemical & manpower for trial run for period of two month from the date of handing over obtaining approval from Local Pollution Department including the cost of consumables complete as specification as directed .Obtain required no. of test report of treated/raw sewer during trial run. No additional payment shall be made on this account.				
	<b>Complete STP work as mentioned above</b>	Lot	1.00		0.00
	<b>Operation and maintance Cost (STP &amp; ETP)</b>				
i)	Testing charges of Raw and treated effluent for all the required parameter from approved lab (after defect and liability period)	Set	10.00		0.00
ii)	Providing chemical and consumables for satisfactory operation of STP etc. completed in all respect in all respect excluding cost of electricity and manpower and spare parts during defect liability period i.e. 1 year and also including the cost for providing the on plant training to the respective personnels for operation and maintenance of STP	Month	12.00		0.00
iii)	Providing (operator & one Helper) i.e. manpower to operate the STP in each shift. In case the additional manpower required for proper operation, the same will be considered as part of this item only.				
a)	Helper - 3 no./day(i.e one in each shift)	Month	12.00		0.00
b)	technical operator - 2 no./day	Month	12.00		0.00
c)	Supervisor (I No. Per day)	Month	12.00		0.00
iv)	AMC of all equipments, components and spares of STP after one year defect liability period.The consumables will be reimbursed by owner as per actual cost.	Year	1.00		0.00
	<b>Sub Total SEWAGE TREATMENT PLANT( including O&amp;M)</b>				<b>0.00</b>
<b>12.00</b>	<b>Water Supply Pump</b>				
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, powder coated, Free standing type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as technical specification & as required.				
	<b>Note :</b>				
	All MCCBs shall have Ics=Icu =100%				

<b>1.01</b>	<b>INCOMER :</b>				
	250 Amp 415 volts, 35 KA (Ics=Icu), FP MCCB microprocessor based, with O/L, S/C & inbuilt E/F protection release.				
	Phase indicating lamp (LED type) with 6A control SP MCB				
	"ON", "OFF" and "TRIP" LED indicating lamp and 6A control SP MCBs				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no. Digital voltmeter.				
	1 no Digital ammeter with one set of suitable C.T. s				
	<b>BUSBARS :</b>				
	400 Amp TPN busbars of copper				
	<b>OUTGOINGS :</b>				
	<b>i</b>				
	<b>2 Sets of following (Treated water transfer pump )</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no 3 Phase,DOL starter of 7.5 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	Digital ammeter with one set of suitable cast resin C.T' s				
	<b>ii</b>				
	<b>2 Sets of following (Raw water transfer pump )</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no 3 Phase,DOL starter of 5 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	Digital ammeter with one set of suitable cast resin C.T' s				
	<b>iii</b>				
	<b>2 Sets of following ( Filter Feed Pump )</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no 3 Phase,DOL starter of 7.5 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	Digital ammeter with one set of suitable cast resin C.T' s				
	<b>iv</b>				
	<b>2 Sets of following ( Drainage Pump)</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no 3 Phase,DOL starter of 2 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	Digital ammeter with one set of suitable cast resin C.T' s				
	<b>v</b>				
	<b>2 Sets of following (Tube Well Pump 20 HP)</b>				
	63 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	Digital ammeter with one set of suitable CT,s.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	<b>vi</b>				
	<b>2 Sets of following (Spare)</b>				
	63 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	Digital ammeter with selector switch with one set of suitable CT,s.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				

	Digital ammeter with one set of suitable CT,s.				
	<b>Water supply PUMP PANEL in pump room as above</b>	Set	1.00		0.00
	<b>Starter for Tubewell</b>				
	1 nos . 3 Phase, fully automatic star Delta starter of 20HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.	each	1.00		0.00
	<b>Sub total of Water Supply Pump</b>				0.00

Name of Work : Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.- PHE Renovation BOQ						
Sl. No.	Description of Item	Unit	TOTAL QTY	Rate in figure (MUR)	Rate in words (MUR)	Amount in figure (MUR)
1	2	3	4	5	6	7.00
	Note: Based on the tender drawing the agency has to prepare the internal & external plumbing shop drawing and obtain the approval of the same before execution					
<b>1.00</b>	<b>SANITARY FIXTURES</b>					
1.01	<b>Wash Hand Basin</b>					
	Wash Hand Basin -semi pedestal in white vitrious china (PC sum=MUR 4070/UNIT) with chrome plated waste and PVC bottle trap	nr	70.00			0.00
1.02	Wash hand basin -drop in WHB in white vitrious china (PC sum=MUR 1600/UNIT) with chrome plated waste and PVC Bottel trap	nr	70.00			0.00
1.03	<b>Urinal</b>					
	Urinals - flate back urinal single bowl (PC sum=MUR 4600/unit) complete with flush valve, chrome plated waste and bottle trap	nr	24			0.00
1.04	Providing and fixing Stainless Steel-304 <b>kitchen sink</b> with drain board 510x1040 mm bowl depth 200mm. With C.I brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:	Each	4			0.00
1.05	Providing and fixing white vitreous china <b>laboratory sink</b> approx. size Size 450x300x150 mm & drain board with C.I brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required	Each	7			0.00
1.06	Providing and fixing <b>wall hung water closet</b> with seat cover of approved model and slim concealed flushing cistern of 5-9 litre capacity, body with floor mounted frame and installation kit with SS actuating panel with dual flush with fittings, including paper holder, polypropelene wc connector socket ,CP brass health faucet, towel rail,flexible unplasticised pvc connection pipe of required length,cp brass bib cock and cp brass angle valve complete of approved make & model available in Mauritius as approved by Engineer-in-charge.	Each	57			0.00
1.07	<b>Rectangular shape mirror</b> more than 0.6 sq.m. area with teak wooden polish moulded frame	Sqm	85			0.00
1.08	Providing and fixing stainless steel <b>Grab Bar</b> 25 mm dia(minimum) of required length with PVC cleats, C.P. brass screws etc. complete.	Meter	10			0.00
1.09	providing & fixing <b>double robe hook</b> with all complete fittings as per approved make & model	Each	57			0.00
1.10	Providing and fixing white vitreous china oval shape wash basin with C.I brackets, 15mm C.P brass pillar taps, 32mm C.P brass waste, cp waste,bottle trap,liquid soap container,flexible uPVC connection pipe & cp brass angle valve etc. of approved make & model.painting, fittings and brackets, cutting and making good the walls wherever required complete in al respect.					
	<b>under Counter oval shape wash basin</b> size 600x390mm approx. (centre tap hole) along with , single 15 mm CP brass pressmatic type pillar tap. as per approved make & model .	Each	15			0.00
1.11	Providing & fixing SS body solid state fully hygienic no touch <b>Hand Drier</b> of approved make rated for continuous repeat usage with solid state time delay LSF protection, with independent ambient light level & seasonal control temperatures including providing necessary C.I./M.S. brackets painted with two or three coats of enamel paint of approved shade over a coat of primer, wiring cables from drier to plug, plug tops etc. complete including cutting and making good the walls wherever required.	Each	25			0.00
1.12	Providing and fixing Hospital S S 304 -18 SWG(thickness 1.2 mm) <b>bed pan sink</b> with P trap, size 850W x 600Dx300Hmm + SPL with 10 litres PVC. flushing cistern , 32 mm dia flush pipe cpvc , C.I./M.S. bracket with painting with 3 coats of white paint complete with accessories, C.P. brass long body bib cock and health fucet fittings (CMP.METAL ) or equivalent approved make available in Mauritius as approved by Engineer-in-charge.	Each	4			0.00
1.13	Supply , installation, testing and commissioning of compact floor mounted pedestal base <b>surgical scrub sink</b> tailor made to suit the site available compatible with all the regular and standard plumbing system, with inbuilt geyser designed for use in operation theatre fabricated from thickness 1.6 mm 304 type stainless steel seamless 304 welded,polished to satin finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed (CMP.METAL ,MPS) or equivalent approved make available in Mauritius as approved by Engineer-in-charge.					
	Tailor made surgical scrub sink (2 bay) Approximate size 1.4 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	1			0.00

1.14	<b>SLOP HOPPER</b> 1,2mm grade 304 SS slop hopper with 100mm integral boxed upstand back 390 diam. conical funnel 215 deep tapering to 110 diam outlet. 350 diam. integral flushing RIM with 250 long x 38 diam. vertical flush Pipe inlet. Hinged bucket grid of 10mm diam. SS rod at 80 centres two rubber buffers, Two 40 x 40 square stainless steel rear fixing brackets for bolting to wall. Top entry CP on brass flush valve. CP bibtaps on extension piece H&C. Elbow action trigger control handshower set.					
A	1500 x 550 x 1.2mm Grade 304 stainless steel plaster preparation sink.	NR	1.00			0.00
1.15	<b>Copper pipes to BS EN 1057 PART 1; capillary joints in the running length;spacing clips at 1500 mm centres including all fittings, jointing complete.</b>					
	15 mm dia	m	250.00			0.00
	20 mm dia	m	100.00			0.00
	25 mm dia	m	100.00			0.00
	32 mm dia	m	150.00			0.00
	40 mm dia	m	100.00			0.00
	50 mm dia	m	120.00			0.00
	65 mm dia	m	80.00			0.00
	<b>SUB TOTAL( SANITARY FIXTURES)</b>					<b>0.00</b>
2.00	<b>SOIL, WASTE AND VENT PIPES</b>					
2.01	<b>Cast iron pipes to BS 4622(including Bend,Tee,Junction,Terminal guard, Clean ot plug, Jointing, clamps, and stays , holding supports, dash fastener, painting, cutting RCC holes etc in complete)</b>					
	100 mm dia	m	600.00			0.00
	150 mm dia	m	350.00			0.00
2.02	<b>Floor Traps</b>					
	Stainless Steel grade 304-300X300	nr	120.00			0.00
	Plastic-100X100	nr	30.00			0.00
	<b>Sewer Network</b>					
2.03	<b>Excavation and pipe laying</b>					
	Excavation for pipes any material other than top soil,rock or artificial hard material for, depth not exceeding 2.00 ,part return and compact and part cart away to spoil					
	Depth: 0.5 to 1m	cub.m	200			0.00
	Depth: 1m to 2m	cub.m	20			0.00
2.04	Excavation for water pipes in rock,depth not exeeding 2.00 m, part return and compact and part cart away to spoil					
	Depth: 0.5 to 1m	cub..m	20			0.00
	Depth: 1m to 2m	cub.m	10			0.00
2.05	<b>Pipe Laying gravity sewer</b>					
	Supply, Lay and test the following					
	DN 200 uPVC pipe	m	100			0.00
	DN 160 uPVC pipe	m	100			0.00
	Y junction 200X160 mm PVC	nr	10			0.00
	Supply, Lay and test the following					
	Supply and fix step irons	nr	10			0.00
	Supply and fix heavy duty manhole covers and frame clear opening 600mm.	nr	10			0.00
2.06	<b>In General for all services</b> Allow for forming openings in blockwall, concrete beams, slabs etc. of varying thicknesses . Rate shall include for take delivery and fixing of PVC sleeves, filling of voids with concrete grade 30 or grout as specified, making good finishes with cement and sand rendering and painting as specified, all necessary co-ordination, special scaffoldings etc. All works shall be as per services contractor's requirement and to Architect's and Engineer's approval.					
A	Opening size n.e 50 x 50	NR	10.00			0.00
B	Opening size n.e 100 x 100	NR	20.00			0.00
C	Opening size n.e 150 x 150	NR	30.00			0.00
D	Opening size n.e 200 X 200	NR	10.00			0.00
E	Diameter n.e 50mm	NR	2.00			0.00
F	Diameter n.e -100mm	NR	2.00			0.00
2.07	Allow for coring of structural members n.e 250 thick for services sleeves of various diameters; include for sealing void with concrete or cement grout and making to structures and finishes disturbed					
	Diameter n.e 150mm	NR	10.00			0.00
	Diameter n.e 100mm	NR	80.00			0.00

	Diameter n.e 50mm	NR	20.00			0.00
2.08	Providing and fixing <b>Trap</b> of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:					
a)	100 mm inlet and 100 mm outlet cast iron epoxy coated inside & outside.	Each	90.00			0.00
2.09	Providing and fixing <b>M.S. holder bat clamp</b> of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.					
	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	Each	10			0.00
	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes or 150mm)	Each	50			0.00
	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	Each	5			0.00
2.10	Providing and fixing <b>GI pipes</b> complete with GI fittings and clamps, i/c cutting and making good the walls etc and making good the same for waste water disposal complete as per direction of engineer incharge.					
a)	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	Metre	102			0.00
b)	40 mm dia nominal bore (Sink,Urinal to floor trap)	Metre	42			0.00
c)	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	80			0.00
2.11	Providing and fixing <b>floor drain</b> & balcony drain made of 100 x 50 mm dia elbow / tee as applicable connected with 50 mm dia GI pipe painted with primer, in all complete including cutting and making good the walls and floor wherever required	Each	50			0.00
	<b>SUB TOTAL(SOIL, WASTE AND VENT PIPES)</b>					<b>0.00</b>
<b>3.00</b>	<b>WATER SUPPLY</b>					
3.01	<b>Level Controlers</b>					
	Level Controlers RS Model	nr	3.00			0.00
3.02	<b>Insulation</b>					
A	Armaflex class insulation sheet	sht	20.00			0.00
B	DNE Insulation Glue	m	40.00			0.00
C	Armaflex self Adhesive	m	40.00			0.00
D	Armaflex class A Insulation tubing internal diameter 26 mm	m	5.00			0.00
E	Armaflex class A insulation tubing internal	m	40.00			0.00
3.03	Providing and fixing <b>Chlorinated Polyvinyl Chloride (CPVC) pipes</b> , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. INTERNAL WORK - EXPOSED ON WALL					
	<b>Internal work – Exposed on wall</b>					
A	20 mm nominal outer dia Pipes(SDR-11)	Metre	150			0.00
B	25 mm nominal outer dia Pipes(SDR-11)	Metre	200			0.00
C	32 mm nominal outer dia Pipes(SDR-11)	Metre	200			0.00
D	40 mm nominal outer dia Pipes(SDR-11)	Metre	120			0.00
E	50 mm nominal outer dia Pipes(SDR-11)	Metre	120			0.00
F	62.5 mm nominal outer dia Pipes(SDR-11)	Metre	50			0.00
G	75 mm nominal outer dia Pipes(SDR-11)	Metre	100			0.00
3.04	Providing and fixing <b>Chlorinated Polyvenyl Chloride(CPVC)pipes</b> having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.0 m spacing.This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.					
	<b>Concealed work including cutting chases and making good the walls etc.</b>					
a	15 mm nominal outer dia pipes (SDR-11)	Metre	50			0.00
b	20 mm nominal outer dia pipes (SDR-11)	Metre	600			0.00
c	25 mm nominal outer dia pipes (SDR-11)	Metre	300			0.00
d	32 mm nominal outer dia pipes (SDR-11)	Metre	150			0.00

3.04	Providing and fixing <b>Chlorinated Polyvinyl Chloride (CPVC) pipes</b> , having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.					
	<b>External Work</b>					
b)	25 mm nominal outer dia pipes (SDR-11)	Metre	5			0.00
c)	40 mm nominal outer dia pipes (SDR-11)	Metre	5			0.00
d)	50 mm nominal inner dia Pipes (SDR-11)	Metre	10			0.00
e)	62 mm nominal inner dia Pipes (SDR-11)	Metre	5			0.00
3.05	Providing and fixing <b>gun metal non-return valve</b> of approved quality (screwed end)					
a)	50 mm nominal bore					
a.i)	Horizontal	Each	1			0.00
b)	80 mm nominal bore					
b.i)	Horizontal	Each	1			0.00
3.06	Providing and placing on <b>terrace</b> (at all floor levels) polyethylene <b>water storage tank</b> ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank					
	Treated water Tank and Untreated water tank	per litre	50000			0.00
3.07	Providing and fixing <b>divertor type shower mixer</b> with provision for shower & single tap complete in all respect. approved make and model.	Each	15			0.00
3.08	Providing & fixing <b>full way lever operated forged brass ball valve</b> of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.					
a)	15 mm dia	Each	2			0.00
b)	20 mm dia	Each	5			0.00
c)	25 mm dia	Each	10			0.00
d)	32 mm dia	Each	5			0.00
e)	40 mm dia	Each	5			0.00
f)	50 mm dia	Each	5			0.00
g)	65 mm dia	Each	2			0.00
h)	80 mm dia	Each	2			0.00
3.09	Providing and fixing CP brass air <b>valves</b> with gunmetal isolation valve fixed on pipe lines					
a)	15 MM nominal bore air vent with 15 mm isolation valve	Each	5			0.00
b)	20 MM nominal bore air vent with 20 mm isolation valve	Each	5			0.00
3.10	Providing and fixing <b>double seal type D.I. Manhole cover</b> of 560 mm clear internal diameter of over all heavy duty with locking arrangement complete in all respects.	Each	1			0.00
3.11	Supplying, fixing, testing and commissioning of storage type <b>water heater (Geysler)</b> etc. with outer body of ABS, 2 MM Thick Mild Steel inner Tank with glass line coating,option of 1/2/3 KW electrically operated single phase 230V, including Glass Lined Double Heating Element,Digital Display, Multifunction Safety Device, ELCB, Anode Rod System, and Brackets for fixing on wall with connecting Wire & plug including flexible unplasticised pvc connection pipe & cp brass angle valve etc. of approved make and model.					
a)	25 Litre Capacity	Each	16			0.00
b)	35 litre capacity	Each	4			0.00
3.12	Providing & fixing <b>water storage cooler</b> of approved make and brand with SS body Complete in respects-230V Single Phase. (Voltas/Shriram/BLUE-STAR)					
	minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs.	Each	2			0.00
3.13	Providing and fixing approved make & suitable model of R.O. plant (fully automatic operation) 600ltrs. Per hour flow rate having capacity to treat the raw water and average recovery not less than 35% . The operating voltage to 230 volt AC +/- 10% alongwith required capacity on line SS pump of approved make (3HP minimum) and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, storage tank (3.0 mm (minimum) thick S.S. 304 sheet) 1500 lts of suitable size and its supporting structure, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS,Pantair ) or other approved make and model available in Mauritius.					
	10 micron polypropylene sediment pre filter					

	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating				
	Required Nos. and size of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type				
	UV lamp of minimum capacity 600LPH and minimum lamp wattage 15W				
	MS powder coated frame efficient of TDS removal more than 90%. Antiscalant dosing and acid dosing system for self flushing/cleaning.Pressure switches and gauges, pH correction dosing system, Digital TDS meter, Digital pH meter, electric panel and necessary instrumentation included Rotameter.MS structure and fibre glass sheet weather protection cover as per site condition.	Each	1		0.00
	<b>SUB TOTAL(Water Supply)</b>				<b>0.00</b>
4.00	<b>DISMANTLING WORKS</b>				
4.01	Dismantling of following sanitary appliances inclusive of all associated builders works in connection including plugging and screwing to floor or wall and connection to water distribution and soil/waste outlets. Rate shall include for making good of all disturbed structures, finishes, etc including filling of voids with approved grout as specified to the approval of the Architect.				
4.02	WC Sets	each	57		0.00
4.03	Wash hand Basin	each	85		0.00
4.04	Floor trap	Nr	150		0.00
4.05	Urinal	Nr	24		0.00
4.06	CI pipes 75mm to 150mm	m	200.00		0.00
	PVC pipe 80mm to 160mm	m	200.00		0.00
	<b>Total</b>				<b>0.00</b>



**Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

**ABSTRACT OF COST - FF WORKS**

<b>S.No</b>	<b>DESCRIPTION OF WORK</b>	<b>AMOUNT IN FIGURES (MUR)</b>
<b>1</b>	<b>FIRE FIGHTING (New Cancer Hospital)</b>	<b>0.00</b>
<b>1</b>	<b>FIRE FIGHTING (Renovation)</b>	<b>0.00</b>
	<b>GRAND TOTAL (NEW CANCER HOSPITAL + RENOVATION) - FF</b>	<b>0.00</b>

Name of Work : Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.- Fire Fighting BOQ						
Item No	Description Of Item	Unit	TOTAL QTY	Rate in figures (MUR)	Rate in words (MUR)	Amount in figure (MUR)
1	2	3	4	5	6	7.00
	Note: Based on the tender drawing the agency has to prepare the internal & external fire fighting shop drawing and obtain the approval of the same before start of work.					
	<b>FIRE FIGHTING SYSTEM</b>					
1.01	<b>FIRE FIGHTING EXTINGUISHERS</b>					
	Dry Powder CO2, 4.5 Kg	Nr	9			0.00
	Dry Powder CO2, 2.5 kg	Nr	9			0.00
1.02	<b>HOSE REELS COMPLETE with NOZZLE</b>					
	Hose Reels complete with nozzle and 30 m x 20 mm Hose	Nr	13			0.00
1.03	<b>BLACK MILD STEEL PIPES., SCREWED AND SOCKETED JOINTS, GALVANIZED STEEL BRACKETS AT 200 MM CENTRES</b>					
a)	150 mm dia	Metre	702			0.00
b)	100 mm dia	Metre	605			0.00
c)	50 mm dia	Metre	644			0.00
d)	40 mm dia	Metre	596			0.00
e)	25 mm dia	Metre	1871			0.00
1.04	<b>SPRINKLER</b>					
	Fast response sprinkler, 1/2" brass	Nr	572			0.00
1.05	Providing and laying and testing of wrapping pipekot 4mm thick 500mm width tar based plymaric corrosion protection tape or equivalent suitable to MS pipe line including applying uniform coat of cold pipekot primer complete 1 m below the ground level, refilling in layers not exceeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respect as per (Under ground )					
a)	Pipekot wrapping over 150 mm dia MS/G.I. Pipe	Metre	600			0.00
b)	Pipekot wrapping over 100 mm dia MS/G.I. Pipe	Metre	100			0.00
1.06	Providing & fixing fire authority approved <b>Alluminium shutter</b> (size 1200 (L) x 2100 (H) mm ), The shutter size shall be as per approved drawing capable of accommodating fire hose reel, fire hydrant, hose pipe, fittings & accessories. The box shall have a single or double glazed front glass door (with 4 mm thick glass) with lock & key arrangement & shall be painted with Fire red complete in all respects. (For Internal Hydrant) (Excluding the cost of alluminium work which will be paid as per civil work items)	Each	13			0.00
1.07	Supplying and Fixing of <b>Fire Man's axe</b> with heavy insulated rubber as per standard conforming to BS Standard	Each	13			0.00
1.08	Providing and fixing 25mm dia. Gunmetal <b>Air Release valve</b> , single acting including the cost of 25mm gate valve, Pressure gauge, all pipes and fittings as per standard design complete in all respects.	Each	5			0.00
1.09	Providing and fixing <b>Hose Cabinet for External Hydrant</b> Stand post type of size (750 x 600 mm x 300 mm) fabricated from 2 mm thick SS sheet having openable glazed door shutter with 4mm thick glass suitable to accommodate hydrants, 2 Nos. canvas hose pipe bearing BS mark Under IS:639-992 type B ( not less then 30 Meter length) and branch pipe including necessary locking arrangements, painting inside and external part shall be natural polished in matt finish including SS 304 angle stand and PCC foundation 1:2:4 complete with locking arrangement and inbuilt key box.	Each	8			0.00
1.10	Supply, Installation, Testing and Commissioning <b>External Yard Hydrant Stand Post</b> comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, intantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to latest BS Standard, with ABS cap and chain etc.complete with all accessories as required	Each	8			0.00
1.11	Providing and fixing <b>Single headed hydrants</b> flanged inlet with 63 mm female instantaneous outlet of gunmetal/SS complete with male blank caps, chains conforming to latest BS Standard with stainless steel orifice plate (if required) to keep the pressure not more than 3.5 kg/sq.cm at any point.	Each	21			0.00

1.12	Providing and fixing <b>Gunmetal/SS branch pipe</b> with 20mm dia nozzle conforming to latest BS Standard. suitable for installation connections to hose coupling etc. as required.	Each	21		0.00
1.13	Providing 63mm dia 15 m long reinforced <b>Rubber lined hose pipe conforming</b> to latest BS Standard with gunmetal/SS male & female coupling wire wound with pipe as required.	Each	42		0.00
1.14	Supply, erection, testing & commissioning of <b>Exit Glow Sign Board</b> of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating, non radioactive on acrylic cover				
a)	Single sided luminescent exit glow sign board	Each	8		0.00
b)	Double sided luminescent exit glow sign board	Each	8		0.00
1.15	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type <b>Pressure Gauge</b> including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm <sup>2</sup>	Each	27		0.00
1.16	Providing and fixing <b>C.I. sluice valves (With cap)</b> of approved quality complete with bolts, nuts, rubber insertions etc. ( the tail pieces if required will be paid separately ) Class II				
a)	200 mm dia	Each	4		0.00
b)	150 mm dia	Each	10		0.00
c)	100mm dia	Each	4		0.00
1.17	Providing and fixing cast iron body and double flange gear simple operation type <b>Butterfly valve</b> conforming to latest BS Standard with SS304 disc and shaft NITNLE rubber replaceable seat of the following size complete with bolts, nuts, washers and rubber insertions as per specification.				
a)	250 mm dia(Gear operated)	Each	1		0.00
b)	200 mm dia	Each	4		0.00
c)	150 mm dia	Each	20		0.00
d)	100 mm dia	Each	6		0.00
e)	80 mm dia	Each	2		0.00
1.18	Providing and fixing C.I. double flanged horizontal/vertical type <b>check valve NRV</b> including nuts, bolts, rubber insertions as required conforming to latest BS Standard				
a)	200 mm dia	Each	1		0.00
b)	150 mm dia	Each	4		0.00
b)	100 mm dia	Each	4		0.00
c)	80 mm dia	Each	2		0.00
1.19	Providing and fixing of C.I. <b>'Y' type strainer</b> flanged with SS 304 perforated screen including nuts, bolts and rubber insertions etc				
a)	200mm dia	Each	2		0.00
b)	150 mm dia	Each	4		0.00
c)	100 mm dia	Each	2		0.00
d)	80 mm dia	Each	1		0.00
1.20	Providing and fixing of <b>Foot valve</b> complete with including M.S. flange nuts, bolts, washers, gaskets insertions etc.				
a)	100 mm dia	Each	2		0.00
b)	150 mm dia	Each	4		0.00
c)	200 mm dia	Each	2		0.00
1.21	Supplying, testing, installation & commissioning of <b>Pressure switches</b> for pumps including necessary wiring upto the control panel.	Each	6		0.00
1.22	Supplying and Fixing vane type <b>Waterflow switch</b> with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	Each	21		0.00
1.23	Providing & Fixing of gun metal <b>Two way fire brigade inlet</b> to riser with 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to latest BS Standard with blank cap and chain complete with nuts, bolts, flanges and complete in all respect along with 150 mm dia butterfly valve and 150 mm dia dual plate type NRV. Cost shall include a wall mounted box of M.S. construction (16 SWG) with glass door (4.0 mm thick) to house the above mentioned component.	Each	1		0.00

1.24	Providing and fixing stainless steel <b>Four way fire brigade inlet connection to UG fire tank</b> with 4 Nos. 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to Latest BS Standard with blank cap and chain including 150 mm dia butterfly valve (PN 16 rating) complete with nuts, bolts, flanges and complete in all respect. Cost shall include a wall mounted box of SS construction 2mm thick with glass door (4.0 mm thick) of adequate size (approx 0.6 m x 0.6 m x 0.45 m) to house the above mentioned component.	Each	1		0.00
1.25	Providing and fixing stainless steel <b>four way fire brigade inlet connection to main discharge header in fire pump room</b> with 4 Nos. 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to latest BS Standard with blank cap and chain including 150 mm dia butterfly valve and 150 mm dia wafer type non-return valve complete with nuts, bolts, flanges and complete in all respect. Cost shall include a wall mounted box of M.S. construction 2mm thick with glass door (4.0 mm thick) of adequate size (approx 0.6 m x 0.6 m x 0.45 m) to house the above mentioned component.	Each	1		0.00
1.26	Providing and fixing 150 mm dia gun metal <b>fire brigade suction hose coupling</b> of (SS draw off connection) with 150 mm dia M.S. 'C' Class suction pipe with 150 mm dia C.I. foot valve. Cost shall include a wall mounted box of SS. construction 2mm of adequate size with glass door (4.0 mm thick) to house the above mentioned component to be connected to static water tank.	Each	1		0.00
1.27	Providing and fixing Set of " <b>Siamese" quadruplet instantaneous</b> fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	Each	1		0.00
1.28	Providing and placing on <b>Terrace Polyethylene Water Storage Tank</b> latest BS Standard indicating the BIS license No with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	Ltrs.	20000		0.00
1.29	Providing, Fixing, Testing and Commissioning of <b>Sprinkler Installation Control Valve</b> of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200/150 mm dia, as required.	Each	2		0.00
1.30	Providing & fixing of latest BS Standard portable fire extinguisher, <b>carbondioxide type</b> flat base including valve, discharge hose of not less than 10 mm dia. 1 M long & complete in all respects including initial fill with CO2 gas conforming to IS:15222 filled to a filling ratio of not more than 0.667 and wall suspension bracket-				
a)	Capacity 4.5 Kg	Each	10		0.00
1.31	Providing & fixing of latest BS Standard <b>Mechanical foam type</b> fire extinguishers 50 kg consisting of welded M.S. trolley mounted cylindrical body, squeeze lever discharge valve fitted with pressure discharge hose, discharge nozzle, trolley etc. finished externally with red enamel paint and fixed to wall with brackets complete with internal charges - For DG Set, Substation area	Each	10		0.00
1.32	Providing and fixing 9 liters capacity fire extinguisher <b>Water type Gas pressure</b> conforming to latest BS Standard marking, fixed to wall.	Each	21		0.00
1.33	Supplying, Installation, Testing & Commissioning modular construction master control <b>annunciation panel</b> for sprinkler with provision for requider No. of Zone (30% additional spares), each sprinkler hydrant will have atleast 4 zone on each floor as approved by engineer. The panel shall have but not limited to the following arrangement				
a)	Indication of Zone sprinkler				
b)	Indication of zone fault				
c)	Fire/fault hooter				
d)	Alarm cancel for fire/fault				
e)	Battery for emergency back up of 4 Hrs.	Set	2		0.00
1.34	Providing and fixing <b>SS flexible sprinkler drop unbraided 20 mm NB</b> UL listed having a working pressure of 12 kg/sq.cm complete with GI nipple, sprinkler fixing adaptor and fixing clamps complete as per Manufacturer's catalogue and decorative 65 mm dia CP brass/SS flange for fixing sprinkler below false ceiling				
a)	20mm NBx700 mm long	Each	650		0.00
b)	20mm NBx1000 mm long	Each	350		0.00
c)	20mm NBx1200 mm long	Each	350		0.00
d)	20mm NBx1500 mm long	Each	100		0.00

1.35	Fabricating, Supplying, Installation, Testing and Commissioning <b>Air Vessel</b> of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	2 Metre high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	Each	1			0.00
b)	1.2 Metre high and 250 mm dia.	Each	3			0.00
1.36	Providing and fixing of 150mm dia <b>deluge valve</b> of cast iron body and brass/bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper alarm, pressure gauges, emergency releases, pressure switch cock valve complete with drain valve, ball valve, flanges, gasket etc.	Each	1			0.00
1.37	Providing and fixing heavy duty floating flange <b>EPDM rubber expansion joint</b> with unit control(tie rod & gusset plate) as per manufactures specifications of standard length complete with all accessories and a working pressure not less than 16 kg/sqcm including rubber gaskets, flanges, nuts, bolts & washers <u>complete as required</u>					
a)	65 mm dia	No.	2			0.00
b)	100 mm dia	No.	2			0.00
c)	150 mm dia	No.	2			0.00
d)	200mm dia	No.	1			0.00
1.38	Providing & fixing <b>Puddle Flanged</b> including 80 cm long MS piece welded / threaded with MS plates <u>450x450x6mm thick with both end screwed / flanged</u>					
a)	For 50 mm dia pipe	Each	2			0.00
b)	For 100 mm dia pipe	Each	2			0.00
c)	For 80 mm dia pipe	Each	2			0.00
d)	for 150 mm dia pipe	Each	4			0.00
e)	for 200 mm dia pipe	Each	2			0.00
1.39	Supplying, installing, testing and commissioning of <b>Electric Driven Fire Pump</b> suitable for automatic operation consisting of the following for Fire Fighting and its amendments) (For Hydrant system & Sprinkler system).					
a)	Fire pump <b>(A) Factory Assembled (factory fitted)</b> with stainless steel impeller, CI casing, SS shaft & mechanical seal shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(B) The Pump Set shall be Inspected at factory before dispatched and tested as design head the testing & inspected charges will <u>bound by agency</u>					
b)	Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should <u>conform to latest BS Standard</u>					
c)	Common bed plate fabricated from mild steel channel or cast iron type.					
d)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting <u>as required.</u>					
(i)	<b>Capacity 2280 LPM and Head 75 Metres</b>	Each	2			0.00
1.40	Supplying, installing, testing and commissioning of <b>Diesel Engine Driven Fire Pump</b> suitable for automatic operation consisting of the following (For Hydrant system & Sprinkler system).					
a)	Horizontal centrifugal type multi-stage, fire pump <b>(A) Factory Assembled (factory fitted)</b> with stainless steel impeller CI casing, SS shaft & mechanical seal complete of following capacity and Head so as to ensure a minimum pressure of 3.0 kg per sq.cm. at the highest & farthest outlet at the specified flow, complete with necessary strainer pressure gauge on the delivery side etc. including by pass arrangement for periodical testing of the working of the pump set as required. The pump shall be provided with mechanical seals. <b>(B)</b> The Pump Set shall be Inspected at factory before dispatched and tested as design head the testing & inspected charges will bound by agency)					

b)	Water cooled cold starting type multi cylinder 4 stroke diesel engine, developing suitable BHP at 1500 RPM for the above pump set with automatic starting mechanism, cooling system shall be with radial cool engine, maintenance free batteries, battery charge unit, flexible coupling with the pump, common bed plate for mounting diesel engine fuel day tank fuel piping and pump and vibration damping arrangement by cushy foot mounting as required complete in all respects.				
c)	The engine shall be capable to drive the pump at 150% rated discharge at 65% head and shall be suitable for 10% overload capacity for one hour in any period of 12 hrs. continuous run.				
d)	Common bed plate fabricated from mild steel channel or cast iron type.				
e)	Isolation Valve				
f)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.				
(i)	<b>Capacity 2280 LPM and Head 75 Metres</b>	Each	1		0.00
1.41	Supplying, installation, testing and periodic commissioning of <b>Electric Motor Driven Automatic Pressurization Pump</b> set consisting of the following (as per specification) (For Hydrant system & Sprinkler system).				
a)	Centrifugal pump of specified capacity capable of building up pressure lost in any leakage in the system against total head (mentioned as under) complete with C.I. casing stainless steel impeller ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required.				
b)	Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 5 HP,2900 RPM, for the above pump with flexible coupling as per specification and conforming to latest BS Standard and shall be TEFC type only.				
c)	Common bed plate fabricated from mild steel channel or cast iron type.				
d)	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.				
(i)	<b>180 LPM &amp; Head - 75 Metres</b>	Each	2		0.00
1.42	Supplying, installing, testing and commissioning of <b>Electric Motor Driven type Automatic Pressurisation, Pump set</b> suitable for automatic operation of <b>Terrace down comer</b> and consisting of the following (as per CPWD specifications Part V-1985) for fire fighting and its amendmendts).				
a	Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of <b>900 LPM</b> against a total head of <b>25 m</b> so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) (Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order)				
b	Squirrel cage AC induction motor suitable fot operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP,1500 RPM for the above pump with flexible coupling as per spwcfication and conforming to latest BS Standard and shall be TEFC type only				
c	Common base plate fabricated from mild steel channel ot castiron type				
d	1 No. 3 Phase, fully automatic DOL starter, type - II of 10 HP with thermal overload relay, contactor, Timer, Push Buttons and Auto-manual selector switch etc complete as required.				
e	Suitable cement concrete pump foundation with vibration damping arrangemmnt with cushy foot mounting as required and having provision of suitable weather protection cover.	Each	2		0.00
1.43	Providing and fixing exhaust, Diesel engine driven pump <b>exhaust M. S. pipe</b> class 'B' of suitable dia (100mm dia) for the engine including fitting like flanges, bends, reducers, etc. The pipe shall be provided with 12 mm thick supercera ceramic fibre rope, 21 gauge, necessary excavation, fixing of silencer connections at engine exhaust, necessary supports, back filling, cutting and making good, bird proof and weather proof flap complete in all respect as directed.	RM	50		0.00
<b>2.00</b>	<b>FIRE -FIGHTING PANEL</b>				
<b>2.01</b>	<b>FIRE -FIGHTING PANEL (In Pump Room)</b>				

	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, powder coated, free standing type, dust, damp and vermin proof, indoor type Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgear complete as required.				
	<b>Note :</b>				
	All MCCBs shall have Ics=Icu .				
	<b>INCOMER :</b>				
	400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.				
	Phase indicating lamp (LED type) with 6A control SP MCB				
	"ON", "OFF" and "TRIP" LED indicating lamp and 6A control SP MCBs				
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 No. 0 to 500 V Digital voltmeter.				
	Digital ammeter with one set Suitable C.Ts.				
	<b>BUSBARS :</b>				
	500 Amp TPN busbars of copper				
	<b>OUTGOINGS :</b>				
i	<b>1 Sets of following( Terrace Pump Hospital )</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 NOS. 3 Phase,star-delta starter of 10 HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP" .				
	1 no Digital ammeter with one set of suitable C.T. s				
ii	<b>2 Sets of following( main electric Driven pump )</b>				
	125 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 NOS. 3 Phase,star-delta starter of 75HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP" .				
	1 no Digital ammeter with one set of suitable C.T. s				
iii	<b>2 Sets of following ( jockey)</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 no 3 Phase,DOL starter of 5HP with thermal overload relay with inbuilt single phase preventor , contactor. Push Buttons and Switches etc complete as required.				
	LED indicating Lamps for "ON", "OFF" & "TRIP".				
	Digital ammeter with one set of suitable cast resin C.T' s				
iv	<b>2 Sets of following (Spare)</b>				
	32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.				
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	LED indicating Lamps for "ON", "OFF" & "TRIP" .				
v	<b>1 Set of following in a separate cubicle (Diesel engine auto starting kit)</b>				
	One no. Diesel engine auto starting kit with all necessary relay, controls, wiring etc to start 45 HP diesel engine when electrical driven fire pump fail to start including one no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter and its interconnection with control cables etc complete in ready to use condition				
	<b>Fire Fighting Pump Panel Hospital Block in Pump room as above</b>	Set	1.00		0.00

TOTAL					0.00
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Name of Work : Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.- Fire Fighting Renovation BOQ						
1	2	3	4	5	6	7
Item No	Description Of Item	Unit	TOTAL QTY	Rate in figures (MUR)	Rate in words (MUR)	Amount in words (MUR)
	Note: Based on the tender drawing the agency has to prepare the internal & external fire fighting shop drawing and obtain the approval of the same before start of work.					
	<b>FIRE FIGHTING SYSTEM</b>					
1.01	<b>FIRE FIGHTING EXTINGUISHERS</b>					
	Dry Powder CO2, 4.5 Kg	Nr	12			0.00
	Dry Powder CO2, 2.5 kg	Nr	12			0.00
1.02	<b>HOSE REELS COMPLETE with NOZZLE</b>					
	Hose Reels complete with nozzle and 30 m x 20 mm Hose	Nr	8			0.00
1.03	<b>BLACK MILD STEEL PIPES., SCREWED AND SOCKETED JOINTS, GALVANIZED STEEL BRACKETS AT 200 MM CENTRES</b>					
a)	150 mm dia	Metre	180			0.00
b)	100 mm dia	Metre	750			0.00
c)	50 mm dia	Metre	100			0.00
d)	40 mm dia	Metre	200			0.00
e)	25 mm dia	Metre	800			0.00
1.04	<b>SPRINKLER</b>					
	Fast response sprinkler, 1/2" brass	Nr	450			0.00
1.05	Providing and laying and testing of wrapping pipekot 4mm thick 500mm width tar based polymeric corrosion protection tape or equivalent suitable to MS pipe line including applying uniform coat of cold pipekot primer complete 1 m below the ground level, refilling in layers not exceeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respect as per <b>(Under ground )</b>					
a)	Pipekot wrapping over 150 mm dia MS/G.I. Pipe	Metre	50			0.00
b)	Pipekot wrapping over 100 mm dia MS/G.I. Pipe	Metre	50			0.00
1.06	Providing & fixing fire authority approved <b>Alluminium shutter</b> (size 1200 (L) x 2100 (H) mm ), The shutter size shall be as per approved drawing capable of accommodating fire hose reel, fire hydrant, hose pipe, fittings & accessories. The box shall have a single or double glazed front glass door (with 4 mm thick glass) with lock & key arrangement & shall be painted with Fire red complete in all respects. (For Internal Hydrant) (Excluding the cost of alluminium work which will be paid as per civil work items)	Each	8			0.00
1.07	Supplying and Fixing of <b>Fire Man's axe</b> with heavy insulated rubber as per standard conforming to BS Standard	Each	8			0.00
1.08	Providing and fixing 25mm dia. Gunmetal <b>Air Release valve</b> , single acting including the cost of 25mm gate valve, Pressure gauge, all pipes and fittings as per standard design complete in all respects.	Each	3			0.00
1.09	Providing and fixing <b>Hose Cabinet for External Hydrant</b> Stand post type of size (750 x 600 mm x 300 mm) fabricated from 2 mm thick SS sheet having openable glazed door shutter with 4mm thick glass suitable to accommodate hydrants, 2 Nos. canvas hose pipe bearing BS mark Under IS:639-992 type B ( not less then 30 Meter length) and branch pipe including necessary locking arrangements, painting inside and external part shall be natural polished in matt finish including SS 304 angle stand and PCC foundation 1:2:4 complete with locking arrangement and inbuilt key box.	Each	3			0.00

1.10	Supply, Installation, Testing and Commissioning <b>External Yard Hydrant Stand Post</b> comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to latest BS Standard, with ABS cap and chain etc. complete with all accessories as required.	Each	3		0.00
1.11	Providing and fixing <b>Single headed hydrants</b> flanged inlet with 63 mm female instantaneous outlet of gunmetal/SS complete with male blank caps, chains conforming to latest BS Standard with stainless steel orifice plate (if required) to keep the pressure not more than 3.5 kg/sq. cm at any point.	Each	11		0.00
1.12	Providing and fixing <b>Gunmetal/SS branch pipe</b> with 20mm dia nozzle conforming to latest BS Standard. suitable for installation connections to hose coupling etc. as required.	Each	11		0.00
1.13	Providing 63mm dia 15 m long reinforced <b>Rubber lined hose pipe conforming</b> to latest BS Standard with gunmetal/SS male & female coupling wire wound with pipe as required.	Each	22		0.00
1.14	Supply, erection, testing & commissioning of <b>Exit Glow Sign Board</b> of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating, non radioactive on acrylic cover				
a)	Single sided luminescent exit glow sign board	Each	8		0.00
b)	Double sided luminescent exit glow sign board	Each	8		0.00
1.15	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type <b>Pressure Gauge</b> including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm <sup>2</sup> .	Each	8		0.00
1.16	Providing and fixing <b>C.I. sluice valves (With cap)</b> of approved quality complete with bolts, nuts, rubber insertions etc. ( the tail pieces if required will be paid separately ) Class II				
a)	200 mm dia	Each	1		0.00
b)	150 mm dia	Each	1		0.00
c)	100mm dia	Each	1		0.00
1.17	Providing and fixing cast iron body and double flange gear simple operation type <b>Butterfly valve</b> conforming to latest BS Standard with S5304 disc and shaft NITNLE rubber replaceable seat of the following size complete with bolts, nuts, washers and rubber insertions as per specification				
a)	150 mm dia	Each	8		0.00
b)	80 mm dia	Each	3		0.00
1.18	Providing and fixing C.I. double flanged horizontal/vertical type <b>check valve NRV</b> including nuts, bolts, rubber insertions as required conforming to latest BS Standard				
a)	100 mm dia	Each	2		0.00
1.19	Providing and fixing of C.I. 'Y' type <b>strainer</b> flanged with SS 304 perforated screen including nuts, bolts and rubber insertions etc				
a)	150 mm dia	Each	2		0.00
1.20	Providing and fixing of <b>Foot valve</b> complete with including M.S. flange nuts, bolts, washers, gaskets insertions etc.				
a)	150 mm dia	Each	1		0.00
1.21	Supplying, testing, installation & commissioning of <b>Pressure switches</b> for pumps including necessary wiring upto the control panel.	Each	8		0.00
1.22	Supplying and Fixing vane type <b>Waterflow switch</b> with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	Each	8		0.00

1.23	Providing & Fixing of gun metal <b>Two way fire brigade inlet</b> to riser with 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to latest BS Standard with blank cap and chain complete with nuts, bolts, flanges and complete in all respect along with 150 mm dia butterfly valve and 150 mm dia dual plate type NRV. Cost shall include a wall mounted box of M.S. construction (16 SWG) with glass door (4.0 mm thick) to house the above mentioned component.	Each	1		0.00
1.24	Providing and fixing stainless steel <b>Four way fire brigade inlet connection to UG fire tank</b> with 4 Nos. 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to Latest BS Standard with blank cap and chain including 150 mm dia butterfly valve (PN 16 rating) complete with nuts, bolts, flanges and complete in all respect. Cost shall include a wall mounted box of SS construction 2mm thick with glass door (4.0 mm thick) of adequate size (approx 0.6 m x 0.6 m x 0.45 m) to house the above mentioned component.	Each	1		0.00
1.25	Providing and fixing stainless steel <b>four way fire brigade inlet connection to main discharge header in fire pump room</b> with 4 Nos. 63 mm dia instantaneous type inlet and 150 mm dia flanges outlet conforming to latest BS Standard with blank cap and chain including 150 mm dia butterfly valve and 150 mm dia wafer type non-return valve complete with nuts, bolts, flanges and complete in all respect. Cost shall include a wall mounted box of M.S. construction 2mm thick with glass door (4.0 mm thick) of adequate size (approx 0.6 m x 0.6 m x 0.45 m) to house the above mentioned component.	Each	1		0.00
1.26	Providing and placing on <b>Terrace Polyethylene Water Storage Tank</b> latest BS Standard indicating the BIS license No with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	Ltrs.	20000		0.00
1.27	Providing, Fixing, Testing and Commissioning of <b>Sprinkler Installation Control Valve</b> of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200/150 mm dia, as required.	Each	2		0.00
1.28	Providing & fixing of latest BS Standard portable fire extinguisher, <b>carbondioxide type</b> flat base including valve, discharge hose of not less than 10 mm dia. 1 M long & complete in all respects including initial fill with CO2 gas conforming to IS:15222 filled to a filling ratio of not more than 0.667 and wall suspension bracket-				
a)	Capacity 4.5 Kg	Each	8		0.00
1.29	Providing & fixing of latest BS Standard <b>Mechanical foam type</b> fire extinguishers 50 kg consisting of welded M.S. trolley mounted cylindrical body, squeeze lever discharge valve fitted with pressure discharge hose, discharge nozzle, trolley etc. finished externally with red enamel paint and fixed to wall with brackets complete with internal charges - For DG Set, Substation area.	Each	8		0.00
1.30	Providing and fixing 9 liters capacity fire extinguisher <b>Water type Gas pressure</b> conforming to latest BS Standard marking, fixed to wall.	Each	8		0.00
1.31	Supplying, Installation, Testing & Commissioning modular construction master control <b>annunciation panel</b> for sprinkler with provision for requirer No. of Zone (30% additional spares), each sprinkler hydrant will have atleast 4 zone on each floor as approved by engineer. The panel shall have but not limited to the following arrangement.				
a)	Indication of Zone sprinkler				
b)	Indication of zone fault				
c)	Fire/fault hooter				
d)	Alarm cancel for fire/fault				
e)	Battery for emergency back up of 4 Hrs.	Set	1		0.00
1.32	Providing and fixing <b>SS flexible sprinkler drop unbraided 20 mm NB</b> UL listed having a working pressure of 12 kg/sq.cm complete with GI nipple, sprinkler fixing adaptor and fixing clamps complete as per Manufacturer's catalogue and decorative 65 mm dia CP brass/SS flange for fixing sprinkler below false ceiling.				

a)	20mm NBx700 mm long	Each	200		0.00
b)	20mm NBx1000 mm long	Each	150		0.00
c)	20mm NBx1200 mm long	Each	100		0.00
d)	20mm NBx1500 mm long	Each	50		0.00
1.33	Fabricating, Supplying, Installation, Testing and Commissioning <b>Air Vessel</b> of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes				
a)	1.2 Metre high and 250 mm dia.	Each	3		0.00
1.34	Providing and fixing of 150mm dia <b>deluge valve</b> of cast iron body and brass/bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper alarm, pressure gauges, emergency releases, pressure switch cock valve complete with drain valve, ball valve, flanges, gasket etc	Each	2		0.00
1.35	Providing and fixing heavy duty floating flange <b>EPDM rubber expansion joint</b> with unit control(tie rod & gusset plate) as per manufactures specifications of standard length complete with all accessories and a working pressure not less than 16 kg/sqcm including rubber gaskets, flanges, nuts, bolts & washers complete as required.				
a)	150 mm dia	No.	2		0.00
e)	for 200 mm dia pipe	Each	2		0.00
1.36	Supplying, installing, testing and commissioning of <b>Electric Motor Driven type Automatic Pressurisation, Pump set</b> suitable for automatic operation of <b>Terrace down comer</b> and consisting of the following (as per CPWD specifications Part V-1985) for fire fighting and its amendments)				
a	Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of <b>900 LPM</b> against a total head of <b>25 m</b> so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) (Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order)				
b	Squirrel cage AC induction motor suitable for operation of 415 V, +/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP,1500 RPM for the above pump with flexible coupling as per specification and conforming to latest BS Standard and shall be TEFC type only				
c	Common base plate fabricated from mild steel channel of cast iron type				
d	1 No. 3 Phase, fully automatic DOL starter, type - II of 10 HP with thermal overload relay, contactor, Timer, Push Buttons and Auto-manual selector switch etc complete as required.				
e	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required and having provision of suitable weather protection cover.	Each	3		0.00
1.38	<b>Suppression System</b>				
(i)	S/F 10 LB capacity NOVEC 1230 DLP Assembly with Automatic valve, push in connector for tube, 5 LB NOVEC 1230 gas, mounting bracket, end of line adopter and low pressure switch for monitoring system activation of automatic linear pneumatic tube detection system complete etc. as reqd as one job make: Fire Trex /Seimens / UTCake: Fire Trace/Servo System/FireTEC	JOB	2.0		0.00
(ii)	S/F 2.5 LB capacity NOVEC 1230 DLP Assembly with Automatic valve, push in connector for tube, 2.5 LB NOVEC 1230 gas, mounting bracket, end of line adopter and low pressure switch for monitoring system activation of automatic linear pneumatic tube detection system, complete etc. as reqd as one job make: Fire Trex /Seimens / UTC	JOB	2.0		0.00
(iii)	S/F linear pneumatic heat detection tube and suppression system operated on 92-100 deg. Cent temp. With all necessary fittings and supports, fixing in the existing electrical panel board, complete etc as required at site . Make: FireTraco/Srevo System/Fire System/Fire TEC	MTR	24.0		0.00
(iv)	S/F audio visual alarm system for automatic linear fire trace tube detection system, complete etc as required at site	Each	2.0		0.00



**Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

<b>Summary of Cost - Electrical works</b>		
<b>S.No.</b>	<b>Description</b>	<b>Amount (In MUR ) Figure</b>
<b>New Cancer Hospital</b>		
1	SUBHEAD 1 : MEDIUM VOLTAGE (22 KV) SUB STATION.	0.00
2	SUB HEAD 2: MAIN LOW VOLTAGE PANEL	0.00
3	SUBHEAD 3: DG SET & ACCESSORIES	0.00
4	SUB HEAD 4: RISING MAINS	0.00
5	SUB HEAD 5: FLOOR LV PANELS	0.00
6	SUB HEAD 6: MCB DISTRIBUTION BOARDS.	0.00
7	SUBHEAD 7: UPS SYSTEM	0.00
8	SUB HEAD 8: WIRING	0.00
9	SUB HEAD 9: LIGHT FIXTURE AND FANS	0.00
10	SUB HEAD 10: TELEPHONE SYSTEM	0.00
11	SUBHEAD 11: CONDUITING FOR COMPUTER SYSTEM .	0.00
12	SUB HEAD 12: CONDUITING FOR TV OUTLETS	0.00
13	SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM	0.00
14	SUB HEAD 14: CCTV SURVEILLANCE SYSTEM	0.00
15	SUB HEAD 15: NURSE CALL SYSTEM	0.00
16	SUB HEAD 16: PUBLIC ADDRESS SYSTEM	0.00
17	SUB HEAD 17: LIFTS	0.00
18	SUB HEAD 18: LT CABLES	0.00
19	SUBHEAD 19: EARTHING	0.00
20	SUBHEAD 20 LIGHTNING PROTECTION	0.00
21	SUB HEAD 21: ACCESS CONTROL AND BOOM BARRIER SYSTEM	0.00
23	SUBHEAD 23: SURGE PROTECTION	0.00
24	SUBHEAD 24: INVERTER	0.00
26	SUB HEAD 26 BUILDING MANAGEMENT SYSTEM:	0.00
27	SUBHEAD 27: OUT DOOR LIGHTING	0.00
	<b>TOTAL FOR ALL ELECTRICAL WORKS CANCER HOSPITAL</b>	<b>0.00</b>

**Renovation**

1	SUB HEAD 1: FLOOR LV PANELS	0.00
2	SUB HEAD 2: MCB DISTRIBUTION BOARDS.	0.00
3	SUBHEAD 3: UPS SYSTEM	0.00
4	SUB HEAD 4: WIRING	0.00
5	SUB HEAD 5: LIGHT FIXTURE AND FANS	0.00
6	SUB HEAD 6: TELEPHONE SYSTEM	0.00
7	SUBHEAD 7: CONDUITING FOR COMPUTER SYSTEM .	0.00
8	SUB HEAD 8: CONDUITING FOR TV OUTLETS	0.00
9	SUBHEAD 9: ADDRESSABLE FIRE ALARM SYSTEM	0.00
10	SUB HEAD 10: CCTV SURVEILLANCE SYSTEM	0.00
11	SUB HEAD 11: NURSE CALL SYSTEM	0.00
12	SUB HEAD 12: PUBLIC ADDRESS SYSTEM	0.00

13	<b>SUB HEAD 13: LIFTS</b>	<b>0.00</b>
14	<b>SUB HEAD 14: LT CABLES</b>	<b>0.00</b>
15	<b>SUBHEAD 15: EARTHING</b>	<b>0.00</b>
16	<b>SUBHEAD 16:LIGHTNING PROTECTION</b>	<b>0.00</b>
17	<b>SUB HEAD 17: ACCESS CONTROL</b>	<b>0.00</b>
18	<b>SUBHEAD 18: SURGE PROTECTION</b>	<b>0.00</b>
19	<b>SUBHEAD 19: INVERTER</b>	<b>0.00</b>
	<b>GRAND TOTAL FOR ALL ELECTRICAL WORKS - RENOVATION</b>	<b>0.00</b>
	<b>GRAND TOTAL (NEW CANCER HOSPITAL + RENOVATION) - ELECTRICAL</b>	<b>0.00</b>

**BILL OF QUANTITIES OF ELECTRICAL WORKS FOR Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

S.No.	Description.	Unit	Quantity	RATE (in MUR)	Rate in words	Amount in Figures
	<b>SUBHEAD 1 : MEDIUM VOLTAGE (22 KV) SUB STATION.</b>					
	<b>MEDIUM VOLTAGE CUBICLES</b>					
1.01	Supply, erection, testing and commissioning of 5 panel IP-55, 630A, 22 kV, 3 Phase, 50 Hz., metal clad, dead front, Short Circuit Current 1cc (rms,1s) 16 kA & Short Circuit Current 1cc (peak) 40kA rupturing capacity SF6 Incoming & Outgoings as per the detailed specifications and drawings including connections etc. including door interlocking and expandable as required.					
	<b>a) INCOMER:</b>					
	<b>i) 2 No. VCB Panel having following</b>					
	1 No. 630A, 22kV, 3 Phase, 50Hz., metal clad, dead front, Short Circuit Current 1cc (rms,1s) 16kA & Short Circuit Current 1cc (peak) 40kA rupturing capacity. Fully Draw out type.SF6.					
	1 set of 22kV/110V -110 V Potential Transformers with HRC fuses for metering & protection or as Per BS Standards					
	1 Set of Phase indicating lamps with HRC fuses.					
	1 No. Digital voltmeter.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY.					
	Push button for ON, OFF & TRIP circuit healthy.					
	1 set of suitable rating Current Transformer for metering and protection.					
	1 No. digital Ammeter with selector switch to select R, Y or B phase current.					
	1 Set of Microcontroller based numerical relay having 4 element relay (3O/C+1E/F). Relay should have display of phase current and trip history.					
	Digital frequency meter, Digital Tri vector meter.					
	1 Set of undervoltage relay and Overvoltage relay.					
	Trip circuit supervision relay, Auxiliary relays with shunt trip coil (WTI & Door open trip).					
	1 No. Master Trip relay.					
	1 No. Digital Power factor meter.					
	8 window annunciator.					
	1 no. Phase reversal Relay.					
	<b>b) BUSBARS:</b>					
	22kV,Short Circuit Current 1cc (rms,1s) 16kA & Short Circuit Current 1cc (peak) 40kA, 630 Amps Three Phase busbars of copper.					
	<b>c) OUTGOINGS:</b>					
	<b>i) 2 No. VCB each having the following:</b>					
	1 No. 630A, 22kV, 3 Phase, 50Hz., metal clad, dead front, Short Circuit Current 1cc (rms,1s) 16kA & Short Circuit Current 1cc (peak) 40kA rupturing capacity. Fully Drawout type. SF6.					
	1 set of 22kV/110V-110 V Potential Transformers with HRC fuses for metering & protection.					
	1 Set of Phase indicating lamps with HRC fuses.					
	1 No. Digital voltmeter.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY.					
	Push button for ON, OFF,TRIP&TRIP circuit healthy.					
	1 No. Digital ammeter with selector switch and one set of C.T Suitable rating for measurement & protection.					
	1 Set of Microcontroller based numerical relay having 4 element relay (3O/C+1E/F). Relay should have display of phase current and trip history.					
	Digital frequency meter,Digital Tri vector meter.					
	1 Set of undervoltage relay and Overvoltage relay.					
	Trip circuit supervision relay,Auxiliary relays with shunt trip coil.					
	8 window annunciator.					
	1 No. Master Trip relay.					
	1 No. Digital Power factor meter.					
	<b>d) BUS COUPLER:</b>					
	<b>i) 1 No. VCB having following:</b>					
	1 No. 630 A, 22kV, 3 Phase, 50 Hz, metal clad, dead front, Short Circuit Current 1cc (rms,1s) 16kA & Short Circuit Current 1cc (peak) 40kA rupturing capacity. Fully Drawout type. SF6.					
	1 Set of Phase indicating lamps with HRC fuses.					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
	Push button for ON and OFF.					
	<b>MEDIUM VOLTAGE CUBICLES AS MENTIONED ABOVE</b>	Set	1			0.00
	<b>POWER TRANSFORMER</b>					



1.02	(a)	Supply, installation, testing and commissioning of 2500 KVA, 22kV/415V, 3 Phase, 4 wire, 50 Hz., ON-AN Transformer, Dyn11 Vector group, copper bound Class A insulation with outdoor duty type, On load tap changer on HV Side range -5%, 0, +5% in the steps of 2.5% per step, type transformer with RTCC+AVR inclusive of all control cable. Cable box connection including cable adapter box at primary and secondary end (LT side) shall be connected through busduct/ cable, complete with all accessories including first filling of oil, double float buchholz relay protection, high winding temperature, oil temperature sensors and gauges etc. as per BS EN 60076 ammended upto date, interconnection of control cables and accessories etc complete including Foundation .		Each	2		0.00
		<b>BATTERY CHARGER PANEL</b>					
1.03		Supply, erection, testing and commissioning of battery charger panel with 24 Volts DC continuous out put for control supply of Medium Voltage Cubicles complete with battery, control cabling etc. as required. Capacity of battery charger panel should be suitable for above mentioned Medium Voltage Cubicles.					
		2 numbers battery of minimum 180 AH ampere hour capacity.					
		Boost and Trickle charger suitable for above items.					
		1 No. AC Voltmeter (0-500Volt).					
		1 No. DC Voltmeter.					
		1 No. DC Ammeter.					
		1 set of AC and DC indicating lamps.					
		1 No. DC Battery charging position indicator.					
		DC distribution board suitable for above application to incoming & outgoing MCBs include tripping, closing and indication etc.					
		Control cabling between DC Distribution panel to the Medium Voltage Cubicles of the Substation with suitable core 1.5 sqmm copper cable.		Each	1		0.00
1.04		<b>BUS DUCT</b>					
		Supply, Installation, testing and commissioning of <b>following rating</b> 3 Phase, 4 Wire, sandwich construction Aluminium Bus Duct having 65kA short ckt for one Second with temperature rise of 55Deg. above ambient of 40deg. In extruded aluminium/ sheet steel housing suitable for operation on 415V, 50Hz AC supply with 50% neutral complete with all accessories bends, flange ends with adaptor box, Tinned copper laminated flexibles for all the panels , flexible joints, earth bus (minimum 2 runs of suitable rating aluminum strips), plug in point at required positions, expansion joints, transposition joint, end covers, ceiling/wall/ floor mounted support structure of painted/ powder coated with required hardware for installation, supporting arrangements, etc. Indoor type busduct shall be IP55 & Outdoor Busduct shall be IP65 protected . Outdoor /indoor duty type complete as per technical specifications and as requirement. <b>Note-</b> for outdoor installtion canopy will be mounted on bus duct for protection. Canopy Fabricated out of 1.2mm GI/CRCA powder painted					
	A)	<b>OUTDOOR TYPE BUSDUCT (IP65) with Canaopy Fabricated out of 1.2mm GI / CRCA Powder Painted.</b>					
	i	4000 Amp	Meter		40		0.00
	B)	<b>INDOOR TYPE BUSDUCT (IP54)</b>					
	i	4000 Amp	Meter		20		0.00
	ii	1600 Amp	Meter		30		0.00
1.05		<b>EARTHING</b>					
		For Medium Voltage Equipment					
1.05.1							
	a)	Earthing stations interlinked using bare copper cable 185mm <sup>2</sup>	Lot		2		0.00
	b)	Terminate both at an earth bar in the MV cubicles using PVC insulated copper wire 185 mm <sup>2</sup> routed within underground PVC sleeves	Lot		2		0.00
		For Transformer Neutrals					
1.05.2							
	a)	Separate earthing station for Transformer No.1 and 2	Lot		2		0.00
	b)	Terminate at each transformer using PVC insulated copper wire 185 mm <sup>2</sup> routed within underground PVC sleeves	Lot		2		0.00
		For Transformer Casings					
1.05.3							
	a)	Common earthing station for Transformer No.1 and 2	Lot		1		0.00
	b)	Terminate independently at both casings using PVC insulated copper wire 185 mm <sup>2</sup> routed within underground PVC sleeves	Lot		2		0.00
		<b>M.V Connection Cables</b>					
1.06		Supply & laying of 3 Core, 185 sq mm copper 22 kV cable with all termination kits complete with all accessories including lugs suitable, earthing and control cable between outgoing Circuit Breaker cubicle and transformers as per BS standard and complete as required.	Mtrs.		100		0.00

1.07		ASSOCIATED WORKS				
	i	Wall mounted solid paxoline 20mm board complete with fixation accessories for fixation of CEB MV meter	LOT	1		0.00
	ii)	Following 24KV safety equipment				
	a	Insulating mat (on both CEB & Client MV sides)	No.	2		0.00
	b	Fire-extinguishers, Type/Capacity: CO2/6 kg to BS 5306-4	No.	2		0.00
	c	Pressure type puddle flanged sleeves and masking plates for all pipes/sleeves penetrations (entry/exit of CEB incoming & outgoing MV cables) through external walls below ground level. Seal all flange openings with expansive foam and Sikaflex compound after installation of cables. Dia 250mm	No.	4		0.00
	d	Provide for all safety signs & instructions, warning & hazard notices/labels (to BS 5499-5) as per requirements of the installations.	LOT	1		0.00
1.08		SAFETY EQUIPMENT				
		Supply and deliver the following 24KV safety equipment to Client :				
	a	Statutory Display Kit	No.	1		0.00
	b	One pair of insulating gloves with box	No.	1		0.00
	c	Portable emergency lamp.	No.	1		0.00
	d	Rescue rod	No.	1		0.00
	e	Testing rod with LED indicator	No.	1		0.00
1.09		Fabrication and Installing following size Hot Dipped Perforated Galvanised Cabletrays/Cable ladders as per BS729 including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.				
		Include for openings in floors & walls for passage of cable trays				
	a	Cabletrays 300mm Wide	Metre	1500		0.00
	b	Cabletrays 200mm Wide	Metre	1500		0.00
	c	Cableladders 400mm Wide	Metre	1000		0.00
		<b>TOTAL SUB HEAD 1: MEDIUM VOLTAGE (22 KV) SUB STATION AS MENTIONED ABOVE</b>				<b>0.00</b>
2.00		<b>SUB HEAD 2: MAIN LOW VOLTAGE PANEL</b>				
2.01		<b>MAIN LOW VOLTAGE PANEL</b>				
		Supply, installation, testing and commissioning of LV Panel, IEC-61439 cubicle type IP-55, totally enclosed, free standing type, dust ,damp and vermin proof panel , powder coated, made up of CRCA sheet, complete with copper busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid copper strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.				
		<b>Note :</b>				
	i	Automatic Change over of DG on LT Panel at the time of power failure and visa versa.				
	ii	All ACBs shall have spare contacts				
	iii	All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS of suitable Rating is also in the scope of Supply				
	iv	Intelligent Panel Meter: Flush mounting, 96 x 96 mm size class 1 accuracy and LCD display. Panel meter should be suitable for true RMS reading. Meter should measure line and phase voltage, current of all 3 phases and neutral, HZ, PF, KW, KWH, KVAR, KVARH, KVA, KVAH, Voltage and current including one set of CT and Meter shall have RS 485 port for BMS connectivity or any other port for connection to BMS. Meter should be EM/ EMC compliant.				
	v	All ACBs shall have 65 KA for 1 second.				
	vi	All ACBs should have Icw =Ics=Icu=100%				
	vii	All MCCBs shall have Ics=Icu=100%				
	a)	<b>INCOMER:</b>				
	i)	<b>2 No. ACB Panels each having following:</b>				
		4000 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit , instantaneous & Earth Fault trip including under voltage release and lockable trip push button .ACB should have Icw=Ics=Icu=65KA for 1 sec.				
		Indicating lamps (LED Type) with 6A protection MCBS to indicate OPEN, CLOSE, TRIP for ACB.				
		Push button to Close the ACB.				
		Phase indicating lamps (LED type) with 6A control SP MCBS.				
		Intelligent Panel Meter as mentioned above with one set of CTs				
		One set of dual core dual ratio CT of 4000/2000/5/5A for capacitor panel.				
	b)	<b>BUSBARS:</b>				
		4000 Amps TPN busbars of copper with temperture rise of 40 degree celsius over and above ambient temperture of 45 degree Celsius 65kA for 1 sec.				
	c)	<b>BUS COUPLER:</b>				

	<b>i) 1 No. ACB Panels each having following:</b>					
	4000 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit , Instantaneous & Earth Fault trip including and lockable trip push button. The ACB should have Icw=Ics=65 KA for 1 sec.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to CLOSE the ACB.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>d) OUTGOING:</b>					
	<b>i) 6 Nos. ACB Panels each having following:</b>					
	1600 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous , Earth fault trip and lockable trip push button.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to CLOSE the ACB.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>ii) 1 Nos. ACB Panels each having following:</b>					
	1250 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous , Earth fault trip and lockable trip push button.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to CLOSE the ACB.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>ii) 2 Nos. ACB Panels each having following:</b>					
	800 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous , Earth fault trip and lockable trip push button.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to CLOSE the ACB.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>iv) 6 Nos. MCCB feeder as per following details/ specifications:</b>					
	630 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>v) 7 Nos. MCCB feeder as per following details/ specifications:</b>					
	400 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>vi) 5 Nos. MCCB feeder as per following details/ specifications:</b>					
	250 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>vii) 10 Nos. MCCB feeder as per following details/ specifications:</b>					
	160 Amp, 415 volts,65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>viii) 2 Nos. MCCB feeder as per following details/ specifications:</b>					
	100 Amp, 415 volts,65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					

	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>Main LV Panel as mentioned above.</b>	<b>Set</b>	<b>1</b>			0.00
<b>2.01</b>	<b>EMERGENCY LOW VOLTAGE PANEL</b>					
	Supply, installation, testing and commissioning of LV Panel, IEC-61439 cubicle type IP-55, totally enclosed, free standing type, dust, damp and vermin proof panel, powder coated, made up of CRCA sheet, complete with copper busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid copper strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.					
	<b>Note :</b>					
	<b>i</b> Automatic Change over of DG on LT Panel at the time of power failure and visa versa.					
	<b>ii</b> All ACBs shall have spare contacts					
	<b>iii</b> All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS of suitable Rating is also in the scope of Supply					
	<b>iv</b> Intelligent Panel Meter: Flush mounting, 96 x 96 mm size class 1 accuracy and LCD display. Panel meter should be suitable for true RMS reading. Meter should measure line and phase voltage, current of all 3 phases and neutral, HZ, PF, KW, KWH, KVAR, KVARH, KVA, KVAH, Voltage and current including one set of CT and Meter shall have RS 485 port for BMS connectivity or any other port for connection to BMS. Meter should be EMI/ EMC compliant.					
	<b>v</b> All ACBs shall have 65 KA for 1 second.					
	<b>vi</b> All ACBs should have Icw =Ics=Icu=100%					
	<b>vii</b> All MCCBs shall have Ics=Icu=100%					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. ACB Panels each having following:</b>					
	1600 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics=Icu=50KA for 1 sec.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to Close the ACB.					
	Phase indicating lamps (LED type) with 6A control SP MCBs.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>b) BUSBARS:</b>					
	1600 Amps TPN busbars of copper with temperture rise of 40 degree celsius over and above ambient temperture of 45 degree Celsius 50kA for 1 sec.					
	<b>d) OUTGOING:</b>					
	<b>i) 1 Nos. ACB Panels each having following:</b>					
	1250 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 50 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous, Earth fault trip and lockable trip push button.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
	Push button to CLOSE the ACB.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>ii) 2 Nos. MCCB feeder as per following details/ specifications:</b>					
	630 Amp, 415 volts, 50 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>iii) 3 Nos. MCCB feeder as per following details/ specifications:</b>					
	400 Amp, 415 volts, 50 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					
	<b>vi) 4 Nos. MCCB feeder as per following details/ specifications:</b>					
	250 Amp, 415 volts, 50 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.					
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
	Intelligent Panel Meter as mentioned above with one set of CTs					

	v)	<b>1 Nos. MCCB feeder as per following details/ specifications:</b> 160 Amp, 415 volts, 50 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection. Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP. Intelligent Panel Meter as mentioned above with one set of CTs						
		<b>Emergency LV Panel as mentioned above.</b>	Set	1				0.00
2.03		<b>CAPACITOR PANEL (1000 KVAR at 415V)</b>						
		Supply, installation, testing and commissioning of LV panel, IEC-61439 cubicle type IP-55, totally enclosed free standing type, powder coated, dust, damp and vermin proof Capacitor Panel complete with busbars, MV danger notice plate, ammeter, ammeter selector switch, indicating lamps, CTs, heavy duty, MPP resin filled, type Capacitors suitable for non linear loads upto 15% with Copper wound 14% D-tuned filters with linearity should not be less than 143%, total operating losses of capacitor shall not more than 0.5 W/ KVAR, Contactors suitable for capacitor switching or Capacitor duty switching contactor with current limiting contactor circuit to suppress switching inrush current interconnections with suitable capacity aluminium leads/ solid aluminium strips, rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical Specifications as required.						
	a)	<b>INCOMER:</b> 1600 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, TP, Air Circuit Breaker with microprocessor based overload, short circuit & instantaneous Earth fault trip including lockable trip push button.  Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP. Phase indicating lamps (LED type) with 6A control SP MCBs. Day & Night mode selector Switch. 14 steps Intelligent microprocessor based Automatic Power factor Correction relay having measurement sensitivity of 1% or better. Extension of incoming busbars for connection of multicore armoured aluminium cables. ON/ OFF delay timers for switching capacitor circuit.						
	b)	<b>METERING:</b> 1 set of Digital Amp. Meter, Digital Power factor meter and Digital voltmeter.						
	c)	<b>BUSBARS:</b> 1600 Amps TP busbars of copper with temperature rise of 40 degree celsius over and above Ambient temperature of 45 degree celsius.						
	d)	<b>OUTGOINGS:</b>						
	i)	<b>7 Nos. 100KVAR at 415V Delta connected step as per following details/ specification:</b> 200 Amps, 415 volts, 50 KA TP MCCB with Thermal Magnetic release having variable current settings. Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. 470 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current and suitable for 100KVAR step. Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP. 100 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15%, & total operating losses not more than 0.5 W per KVAR. 415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step. This 50KVAR further connect parallel (2x50KVAR) to make physically 100KVAR steps for effective heat dissipation.						
	ii)	<b>6 Nos. 50Kvar at 415V Delta connected step as per following details/ specification:</b> 100 Amps, 415 volts, and having O/L, S/C & inbuilt E/F protection. TP MCCB with Thermal Magnetic release having variable current settings. Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. 470 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current and suitable for 50KVAR step. Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP. 50 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15% & total operating losses not more than 0.5 W per KVAR. 415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step.						
		<b>CAPACITOR PANEL AS MENTIONED ABOVE</b>	Set	2				0.00
		<b>TOTAL SUB HEAD 2: MAIN LV PANEL AS MENTIONED ABOVE</b>						0.00
3.00		<b>SUBHEAD 3: DG SET &amp; ACCESSORIES</b>						
		<b>DG SET OF 1010 KVA</b>						

	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 1010 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 power factor suitable for 50 Hz, 3 phase system , suitable bhp, Water cooled Radiator type diesel engine- alternator set mounted on common base frame, return fuel cooler, battery & battery charger, Anti Vibration mounting pads, Engine alternator safeties, electronic governor including all accessories, their wiring and control cable between DG set and panel etc. Is also in the scope of supply, including its connections etc. complete as per technical specification. DG set should be PLC/PC compatible. This includes the				
	- Supplying and fixing of suitable sizes Heavy class MS pipe for DG exhaust complete with bends, elbow, flanges etc including silencer and catalytic convertor exhaust pipe chimney as per CPCB norms for exhaust of DG sets.				
	- Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 24 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.				
	- Supply, installation, testing and commissioning of suitable size fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves & filters etc. as required.				
	- Fabrication of supports for exhaust pipe, fuel pipe or for any other purpose out of suitable M.S. structural steel including supplying and applying of enamel paint of approved shade after one coat of steel primer of reputed company.				
	- Supplying and fixing of suitable capacity cable adapter box for alternator.				
	- Providing and fixing oil tank of 990 litres capacity complete with suitable M.S. fabricated MS stand oil level indicator gauge tank and stand duly painted complete with float switches etc. as required.				
	- Factory assembled Sound proof Canopy as per pollution control board requirement to achieve noise level desired during night condition, with base frame, doors, inspection window, fresh air supply fans etc				
	- Any other item required for completion of system above (D.G. set).				
	<b>A. AMF PANEL</b>				
	Supply, installation, testing and commissioning of AMF Components Panel for above 1010 KVA DG Set cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14/ 16SWG CRCA sheet, (load bearing members 14 SWG and doors 16 SWG) ,complete with aluminum busbars, M.V. danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, powder coated. AMF panel should be capable of change over Main power and DG supply automatically at the time of power failure and vice versa.				
	DG should start automatically and will have automatic change over at LT panel through AMF panel.				
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB				
	Push button to CLOSE the ACB.				
	1 set of suitable set of CT for measurement and protection.				
	R, Y & B Phase indicating lamps (LED type) with 6A control 5P MCBs				
	1 set of Digital multi function meter with LCD display and measurement of parameters like voltages, currents, p.f, frequency, active and reactive power and energies etc				
	<b>B. AMF panel should have following protection and AMF components for above mentioned DG set.</b>				
	- Auto/manual/test/off selector switch				
	- 2 Nos. under voltage relay, 2 nos. reverse power relay and 2 nos. under voltage relay.				
	- 3 sets of current transformers 15 P 10 accuracy for protection and 15 VA class -1 for metering				
	- Energy analyzer unit to indicate current voltage frequency power factor and KWH				
	- Indicating lamps for load on mains and load on set.				
	- Fuse for instruments.				
	- Battery charger, complete with transformer/rectifier, DC voltmeter and ammeter, selector switch for trickle, off and boost the current adjustment.				
	- Main supply failure monitor.				
	- Restoration timer.				
	- Control unit with three impulse automatic engine start / stop and failure to start lockout.				
	- Impulse counter with locking and reset facility.				
	- On/Off/ Control circuit switch with indicator.				
	- Audio/ Video annunciation for :				
	a) High winding temperature.				
	b) Low lubricating oil pressure				
	c) Engine over speed				
	d) Engine fails to start				
	e) Full load/ maximum load warning.				
	<b>C. ENCLOSURE :</b>				
	Fabrication, PVC Sleeving, Control/Power Wiring and necessary electrical/ mechanical interlocking etc any other item required for proper functioning of the system complete as required.				
	<b>DG SET WITH AMF PANEL AS MENTIONED ABOVE</b>	Set	1		0.00
	<b>TOTAL SUBHEAD 3: DG SETS AS MENTIONED ABOVE</b>				0.00
<b>4.00</b>	<b>SUB HEAD 4: RISING MAINS</b>				
	<b>RISING MAINS</b>				

4.01		Supply, installation, testing and commissioning of plug in type, indoor sandwich type with high conductivity Aluminium Conductor, 415 Volts, 3 phase, 4 wire, vertical Aluminium Rising main Class B or better in following sizes including bends, flexible, provision of the tap offs as per requirement, Adoptor boxes for cable connection if required are inclusive, 2 nos of aluminium earthing strips 50 x 6 mm through out the length of the rising mains, end cover, including all types of support and necessary hardware for installation of the rising main etc. complete as per specifications and as required. (Exact lengths to be measured at site).					
	i)	1600 A, 415 volts	Metre	42			0.00
	ii)	630 A , 415 Volts	Metre	21			0.00
4.02		Supply, fixing, testing and commissioning of Direct End Feed Unit of following ratings, wall mounted, dust, damp and vermin proof complete with MV danger notice plate, interconnections with suitable capacity aluminium strips/ bars, connection of incoming cables with thimbles, powder coat painted and having following incoming switchgears for rising main complete as required.					
	i)	<b>1 No. ACB Panels each having following</b> 1600A 415V, 4P 65 kA EDO ACB with Microprocessor based release having Overload , Short circuit and Earth fault Protection. ON /OFF/TRIP indications with MCB. 1 No. digital voltmeter with selector switch. 1 No Digital ammeter with selector switch and 1600/5A C.Ts	Set	2			0.00
	ii)	<b>1 No. MCCB Panels each having following</b> 1 no. 630 Amps, 415 volts four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection . Separate fault indication for O/L, S/C. & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 630 Amp digital ammeter with selector switch with 630/5A C.T.'s.	Set	1			0.00
4.03		Supply, fixing, testing and commissioning of distribution tap off box of following Capacity on the existing rising mains complete with Four Pole, Moulded Case Circuit Breaker, interconnection, earthing etc. complete as required.					
	i	63 Amps with MCCB 50 KA	Nos	2			0.00
	i	125 Amps with MCCB 50 KA	Nos	1			0.00
	i	100 Amps with MCCB 50 KA	Nos	9			0.00
	i	200 Amps with MCCB 50 KA	Nos	1			0.00
	ii	250 Amps with MCCB 50 KA	Nos	5			0.00
	iii	400 Amps with MCCB 50 KA	Nos	8			0.00
		<b>TOTAL SUB HEAD 4: RISING MAINS as mentioned above</b>					<b>0.00</b>
		<b>SUB HEAD 5: FLOOR LV PANELS</b>					
5.00		<b>FLOOR PANELS</b> Supply, installation, testing and commissioning of following Floor L.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.					
		NOTE					
	i	All MCCBs shall have Ics=Icu.					
	ii	MCB Should be connected through terminal Strip of suitable rating					
5.01		<b>FLOOR LV PANEL BASEMENT , GROUND</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 No. MCCB Panels each having following</b> 250A 4P AUTO TRANSFER SWITCH (ATS) 250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter Digital ammeter switch with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	10 no. 63 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.					
	ii)	6 no. 40 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.					
		<b>FLOOR LV PANEL BASEMENT, Ground as mentioned above</b>	Set	2			0.00

5.02		<b>FLOOR LV PANEL ( FIRST , SECOND , THIRD &amp; FOURTH FLOOR))</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 No. MCCB Panels each having following</b>					
		400A 4P AUTO TRANSFER SWITCH (ATS)					
		400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter.					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b>					
		500 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	15 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	ii)	9 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
		<b>FLOOR LV PANEL( FIRST , SECOND , THIRD &amp; FOURTH FLOOR)) as mentioned above</b>	Set	4			0.00
5.03		<b>LIFT Panel</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					
		250 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter .					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b>					
		400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>13 Nos. MCCB as per following details/ specifications:</b>					
		63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module.					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		ON, OFF, TRIP indication (LED Type).					
		Digital Ampere Metre of suitable range with suitable set of CT's.					
	ii)	4 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
		<b>Lift Panel as mentioned above</b>	Set	1			0.00
5.04		<b>Computer Panel (Ground Floor)</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					
		160 amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter.					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b>					
		400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	ii)	<b>7 Nos. MCCB as per following details/ specifications:</b>					
		63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module.					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		ON, OFF, TRIP indication (LED Type).					
		Digital Ampere Metre of suitable range with suitable set of CT's.					



	ii)	6 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.					
		<b>Computer Panel (Ground Floor) as mentioned above</b>	Set	1			0.00
5.05		<b>Sub Computer Panel (Basement, First, Second, Third, Fourth Floor)</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 300 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	ii)	6 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.					
		<b>Sub Computer Panel, as mentioned above</b>	Set	5			0.00
5.06		<b>Inverter Panel</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 100 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 300 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	ii)	12 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.					
		<b>Inverter Panel as mentioned above</b>	Set	1			0.00
5.07	A	<b>UPS INPUT PANEL (30 KVA)</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 No. MCCB Panels each having following</b> 200 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 200 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
	ii)	<b>2 Nos. MCCB as per following details/ specifications:</b> 100 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
		<b>UPS INPUT PANEL as mentioned above</b>	Set	1			0.00

5.08	B	UPS OUTGOING Panel					
	a)	<b>INCOMER:</b>					
	i)	<b>2 No. MCCB Panels each having following</b>					
		100 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b>					
		400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					
		200 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		ON, OFF, TRIP Indication (LED Type).					
		Digital Ampere Metre of suitable range with suitable set of CT's.					
		<b>UPS OUTGOING Panel as mentioned above</b>	Set	1			0.00
5.09		ICU , PRE POST OT Panel (30 KVA )					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					
		200A 4P AUTO TRANSFER SWITCH (ATS)					
		200 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter.					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>accessories</b>					
		400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	10 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
		<b>Load Panel as mentioned above</b>	Set	1			0.00
5.10	A	UPS INPUT PANEL (60 KVA )					
	a)	<b>INCOMER:</b>					
	i)	<b>1 No. MCCB Panels each having following</b>					
		320 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
		Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter.					
		Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b>					
		400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b>					
		320 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		ON, OFF, TRIP indication (LED Type).					
		Digital Ampere Metre of suitable range with suitable set of CT's.					
	ii)	<b>2 Nos. MCCB as per following details/ specifications:</b>					
		160 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module.					

		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type).					
		Digital Ampere Metre of suitable range with suitable set of CT's.					
		<b>UPS INPUT PANEL as mentioned above</b>	Set	1			0.00
5.11	B	<b>UPS OUTGOING Panel</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>2 No. MCCB Panels each having following</b> 160 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 320 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
		<b>UPS OUTGOING Panel as mentioned above</b>	Set	1			0.00
5.12		<b>OT Panel (60 KVA )</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 320A 4P AUTO TRANSFER SWITCH (ATS) 320 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	b)	<b>accessories</b> 400 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	10 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker. <b>Load Panel as mentioned above</b>	Set	1			0.00
5.13		<b>FLOOR EQUIPMENT BASEMENT -PART B</b>					
	a)	<b>INCOMER:</b>					
	i)	<b>1 No. MCCB Panels each having following</b> 630 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	b)	<b>BUSBARS:</b> 800 Amp TPN copper busbars					
	c)	<b>OUTGOING:</b>					
	i)	<b>2 Nos. MCCB as per following details/ specifications:</b> 400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					

	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>ii) 1 Nos. MCCB as per following details/ specifications:</b>					
	250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>iii) 1 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>FLOOR EQUIPMENT BASEMENT -PART B as mentioned above</b>	Set	1			0.00
5.14	<b>FLOOR EQUIPMENT BASEMENT -PART C</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. MCCB Panels each having following</b>					
	800 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	800 Amp TPN copper busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 1 Nos. MCCB as per following details/ specifications:</b>					
	630 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>i) 2 Nos. MCCB as per following details/ specifications:</b>					
	400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>ii) 2 Nos. MCCB as per following details/ specifications:</b>					
	250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>iii) 1 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>FLOOR EQUIPMENT BASEMENT -PART C as mentioned above</b>	Set	1			0.00
5.15	<b>FLOOR EQUIPMENT Ground -PART B</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. MCCB Panels each having following</b>					

	630 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).				
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.				
	<b>b) BUSBARS:</b>				
	800 Amp TPN copper busbars				
	<b>c) OUTGOING:</b>				
	<b>i) 2 Nos. MCCB as per following details/ specifications:</b>				
	400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
	<b>ii) 1 Nos. MCCB as per following details/ specifications:</b>				
	250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
	<b>iii) 2 Nos. MCCB as per following details/ specifications:</b>				
	160 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
	<b>iii) 1 Nos. MCCB as per following details/ specifications:</b>				
	100 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
	<b>FLOOR EQUIPMENT GROUND -PART C as mentioned above</b>	Set	1		0.00
	<b>TOTAL SUB HEAD 5: FLOOR LV PANEL AS MENTIONED ABOVE</b>				0.00
	<b>SUB HEAD 6: MCB DISTRIBUTION BOARDS.</b>				
<b>6.00</b>	<b>MCB DISTRIBUTION BOARD</b>				
<b>6.01</b>	Supplying & fixing following way, three pole and neutral, supply distribution with (PPI) Per Phase Isolation Horizontal DB with CRCA sheet steel, Powder coated, provision to mount 2P RCCB in each phase as subincomers equipped with colour coded wires, MCB distribution board, 415 volts, on recess/surface complete, terminal blocks, tinned copper busbar, neutral link, earth bar, Glazed Door, Door earthing, Insulated neutral bar, Cable Ties, Blank Plate & Ckt. identification levels, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, as per technical specifications and as required. (but without MCB & RCCB),				
	<b>i</b> 4+2 way (8+6+12), Double door	Each	32		0.00
	<b>ii</b> 6+2 way (8+6+18), Double door	Each	5		0.00
	<b>iii</b> 8+2 way (8+6+24), Double door	Each	50		0.00
<b>6.02</b>	Supplying & fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required. (but without MCB & RCCB),				
	<b>i</b> 8 way Double door	Each	4		0.00
	<b>ii</b> 12 way Double door	Each	20		0.00
<b>6.03</b>	Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.				
	<b>i</b> Single pole	Each	1946		0.00
	<b>ii</b> Triple pole & neutral	Each	10		0.00

6.04	Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB), in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
i	25 Amps	Each	32			0.00
ii	32 Amps	Each	10			0.00
iii	40 Amps	Each	5			0.00
iv	63 Amps	Each	40			0.00
6.05	Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
i	25 Amps	Each	10			0.00
ii	32 Amps	Each	10			0.00
iii	40 Amps	Each	5			0.00
iv	63 Amps	Each	10			0.00
6.06	Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
i	32 amps	Each	4			0.00
ii	40 amp	Each	20			0.00
6.07	Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
i	25-32 amps	Each	118			0.00
ii	40-63 amp	Each	170			0.00
6.08	Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	200			0.00
	<b>TOTAL SUB HEAD 6: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE</b>					<b>0.00</b>
7.00	<b>SUBHEAD 7: UPS SYSTEM</b>					
7.01	<b>UPS 30 KVA. (ICU .PRE &amp; POST OT)</b>					
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 30 KVA at 0.8 power factor at out put. with over all efficiency of minimum 96% True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 380V;400V;415V , +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:-					
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module					
	(b) IGBT Rectifier input for achieving THDi<5% and Input power factor of greater than 0.99					
	(c) 100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer					
	(d) 100% rated Inbuilt static switch					
	(f) 100% rated Inbuilt Maintenance Bypass					
	(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics					
	(i) RS 485 port for BMS connectivity					
	(j) Supplying and installing Built-in suitable air-circulating fan .					
	Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm.					
	(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.					
	(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required					
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- -Short Circuit - Overload - Over temprature - Bypassing of particular load if reqd.					
	<b>UPS 30 KVA AS MENTIONED ABOVE.</b>	Set	1			0.00
7.02	<b>UPS 60 KVA. (OTs)</b>					
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 60 KVA at 0.8 power factor at out put. with over all efficiency of minimum 96% True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 380V;400V;415V , +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:-					
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module					

		(b) IGBT Rectifier input for achieving THDI<5% and Input power factor of greater than 0.99				
		(c) 100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer				
		(d) 100% rated inbuilt static switch				
		(f) 100% rated inbuilt Maintenance Bypass				
		(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics				
		(i) RS 485 port for BMS connectivity				
		(j) Supplying and installing Built-in suitable air-circulating fan .				
		Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm.				
		(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.				
		(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required				
		(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of load like:- -Short Circuit - Overload - Over temperature - Bypassing of particular load if reqd.				
		<b>UPS 60 KVA AS MENTIONED ABOVE.</b>	Set	1		0.00
		<b>TOTAL SUBHEAD 7: UPS SYSTEMS</b>				<b>0.00</b>
		<b>SUB HEAD 8: WIRING</b>				
<b>8.00</b>		<b>WIRING</b>				
<b>8.01</b>	i	Wiring for light point/fanpoint/ exhaust fan point/call bell point with 3CX1.5 sq.mm .Cu/PVC/LSF cable in turogliss conduit (including supplying & laying of turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories) including the following and complete as required.				
	ii	Supplying and Fixing Modular type switches as per BS EN-60669 (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing on the board etc.				
	iii	Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points				
	iv	Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.				
		<b>Note :</b>				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		<b>Point wiring as mentioned above</b>	Point	2400		0.00
<b>8.02</b>	i	Wiring for twin control light points with 3CX1.5 sq.mm .Cu/PVC/LSF cable in turogliss conduit (including supplying & laying of turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories) including the following and complete as required.				
	ii	Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.				
		<b>Note :</b>				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		<b>Wiring for twin control light points as mentioned above</b>	Point	100		0.00
<b>8.03</b>		Wiring for circuit wiring with following size of LSF insulated copper conductor single core copper conductor cable as per BS6004 PVCor LSF insulated in recessed turogliss conduit (including supply of turogliss conduit specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories & laying of recessed conduit) as required.				
	i	3X1.5 Sqmm copper conductor cable	Metre	3750		0.00
	ii	3X2.5 Sqmm copper conductor cable	Metre	8050		0.00
	iii	3X4 Sqmm copper conductor cable	Metre	19680		0.00
<b>8.04</b>		Supplying and fixing suitable Modular GI box on surface or in recess including providing and fixing 5 amps 1 Gang .switched socket outlet base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-FN-60669 ,sockets-BS-546.	Each	210		0.00
<b>8.05</b>		Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 15 A 1 gang switched socket outlet with base plate, modular cover plate, connections, etc. and all civil works complete as required. As per BS standard :Switches-BS-FN-60669 ,sockets-BS-546.	Each	560		0.00
<b>8.06</b>		Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing 5 amps 3 gang switched socket outlet , suitable base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546 ( For computer Points)	Each	180		0.00

8.07	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 5 amps 2 gang switched socket outlet & 15amp 2 gang switched socket outlet , base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546 (For Comb-1/Red Point)	Each	214		0.00
8.08	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 5 amps 2 gang switched socket outlet and, & 15amp 1 gang switched socket outlet, base plate, modular cover plate, connections etc. and all civil works 'complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546 (For Comb-2/Consultant point)	Each	210		0.00
8.09	Supplying and fixing suitable Modular metal box surface or in recess including providing and fixing 5amps. 2 gang switched socket outlet a base plate, modular cover plate, connections etc. and all civil works 'complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546 ( COMBO POINT-3/ TV Point )	Each	40		0.00
8.11	Supply and fixing following 20/32 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20/32 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	20		0.00
8.12	Supplying, providing & fixing cordless musical bell with batteries etc of approved make complete as required.	Each	10		0.00
8.13	Supply and fixing following FP MCCB, 415 volts, 35 KA (Isc), Four Pole with thermal magnetic release having variable current setting (0.8 to 1.0 In) with Extended rotary operating mechanism including door interlocking with defeat feature and padlock facility in a sheet steel enclosure IP55 on surface complete with all accessories including , connections, testing and commissioning etc. as required.				
	i 63 Amp	Each	2		0.00
	ii 63 Amp MCCB with 63 Amp RCCB	Each	9		0.00
	iii 125 Amp	Each	2		0.00
	iv 250 Amp	Each	2		0.00
	v 320Amp	Each	6		0.00
8.14	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	100		0.00
8.15	Supply, Installation, Testing & Commissioning of Standalone Ceiling Mounted Motion PIR sensor 360 degree.	Nos.	70		0.00
8.16	Supply, Installation, Testing & Commissioning of Standalone Wall Mounted Motion PIR sensor 90 degree.	Nos.	30		0.00
8.17	Supplying and fixing of Panel for Automation with Incoming Protection MCB 3P & Surge Arrestor and Outgoing MCB protection.	Nos.	7		0.00
	<b>TOTAL SUBHEAD 8: WIRING AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUB HEAD 9: LIGHT FIXTURE AND FANS</b>				
9.00	<b>LIGHT FIXTURES AND FANS</b>				
9.01	Supply of following Commerical LED light fixture with high efficiency with Driver , tubes/lamps, reflector, diffuser, body/housing holder etc. complete with all fixing accessories as required.				
	ii 20 W LED batten including Mounting Accessories, with minimum system lumen 2100 (Philips BN108C LED 20S PSU CDI WH or approved equivalent from list of Makes (136b/ 136bw)	Each	186		0.00
	iii 40 W LED LED batten including Mounting Accessories, with minimum system lumen 4200 or (Philips BN108C LED 40S PSU CDI WH or approved equivalent from list of Makes) (236b/ 236bw)	Each	65		0.00
	iv LED Recessed flush mounted light fixture 1200X300mm type as per requirement with minimum system lumen 3000 glare free (Philips RC380B G2 LED-355-6500 L120W30 PSU OD WH or approved equivalent from list of Makes) (RMSO3, ICU)	Each	616		0.00
	v LED recessed flush mounted light fixture suitable for 600X600 grid false ceiling per requirement with minimum system lumen 3000 glare free (Philips RC380B G2 LED-355-6500 L120W30 PSU OD WH or approved equivalent from list of Makes) (RMSO3, ICU)	Each	665		0.00
	v LED recessed flush mounted light fixture suitable for 600X600 with DALI Dimmable grid false ceiling per requirement with minimum system lumen 3000 glare free (Philips RC380B G2 LED-355-6500 L120W30 PSD OD WH or approved equivalent from list of Makes) from list of Makes (RMSO3, ICU)	Each	40		0.00
	vii LED Surface mounted light fixture with minimum system lumen 3000 glare free (Philips SP824P LED 29S-5000 GR OD or approved equivalent from list of Makes) (236SM01)	Each	20		0.00
	ix 10 W LED Bulk Head light fixture (Philips WT202 W LED 6S CW PSU S1 PC or approved equivalent from list of Makes) (BH)	Each	56		0.00
	x 14 W LED Mirror top with diffuser in 2ft varian from list of Makes (wtoilet)	Each	95		0.00
	xii 15 W LED Surface mounted round down light fixture (Philips DN170C LED 10S-6500 PSU WH or approved equivalent from list of Makes) (DL1)	Each	190		0.00
	xiii 15 W LED Recessed flush mounted round down light fixture (Philips DN194B LED 15S -6500 PSU WH or Crompton LCDP-18-CDI/TL/WW or approved equivalent from list of Makes) (DI0)	Each	52		0.00
	xv 5 W LED Surface /Recessed flush mounted light fixture to be used as night lamp Ceiling mounted (NLCM)	Each	30		0.00



		1X50 LED Recess mounted down light fixture (Crompton Greaves Prakhar LCDNR-50-CDL/WW or approved equivalent)	Each	20			0.00
9.02		Supply of following ceiling fans complete with ball bearing, motor, 3 blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply with IP54 protection and Class F insulation complete as required.					
	i	1400 mm Sweep	Each	10			0.00
	ii	1200 mm Sweep	Each	394			0.00
	iii	900mm Sweep	Each	10			0.00
9.03		Supply of 1380 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	10			0.00
9.04		Supply of 1250 RPM, 250 mm (Crompton Greaves Brisk Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	10			0.00
9.05		Supply of 400 mm sweep, 16" wall mounted fan complete with ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	10			0.00
9.06		Installation, testing and commissioning of wall bracket /ceiling fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connections etc. as required.	Each	2035			0.00
9.07		Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator (Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	414			0.00
9.09		Installation, testing and commissioning of exhaust fan up to 400 mm sweep in the opening, including making the hole to suit the size of the above fan including, fixing of louvers/ shutters with frame making good the damages etc. as required.	Each	20			0.00
9.10		Installation, testing and commissioning of wall mounted fan up to 400 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	10			0.00
9.11		Supply, installation, testing and Commissioning of LED Type Aviation light Philips XGP400 1xLED-K2/RD240V or approved equivalent including its wiring.	Each	2			0.00
		<b>TOTAL SUBHEAD 9: LIGHT FIXTURE &amp; FANS AS MENTIONED ABOVE</b>					<b>0.00</b>
		<b>SUB HEAD 10: TELEPHONE SYSTEM</b>					
10.00		<b>TELEPHONE SYSTEM</b>					
10.01		Supplying drawing, connecting and testing of 0.5mm dia annealed copper conductor PVC insulated PVC sheathed telephone wire/cables in Existing conduit or a racks as required.					
	i	2 pair Telephone cable. (0.5 mm)	Meter	3750			0.00
10.02		Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories					
	i	25 mm	Metre	2250			0.00
10.03		Supply, fixing, connecting and testing of telephone modular sockets modular plate anodised MS box and blanking plate in surface / recessed including connection etc as required. As per BS EN 60669					
	i	Telephone socket outlet (RJ-11 telephone Jack Single with Shutter)	Each	140			0.00
	ii	Telephone socket outlet (RJ- 11 telephone Jack double with Shutter)	Each	10			0.00
10.04		Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.					
	i	200 pair	Each	1			0.00
	ii	50 Pair	Each	2			0.00
	iv	20 Pair	Each	12			0.00
	iv	10 Pair	Each	5			0.00
10.05		Supplying and drawing of following pairs 0.5mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels including termination of cables at both sides in Krone Tag Block etc. complete as required.					
	i	50 Pair	Metre	100			0.00
	ii	20 Pair	Metre	200			0.00
	iii	10 Pair	Metre	100			0.00

10.06		Supplying and drawing of following pairs 0.5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. including termination of cables in both sides at krone tag block complete as required.					
	i	200 pair	Metre	100			0.00
10.07		<b>DIGITAL EPABX SYSTEM (COMMUNICATION SERVER)</b>					
	A	Supply, installation, testing & commissioning of 32 bit microprocessor based, fully digital, 100% non blocking, PCM-TDM, true ISDN & PRI Line and IP ready digital EPABX with distributed architecture for power supply cards, as per specifications with following configuration: IP PBX 256 Extensions Expandable upto 400 extensions Analog extension -248 Configured For- Analog P&T Lines- 16 (Expandable upto 12 Lines) ISDN PRI Line (30 Channels)- 2 nos with CLIP Facility 8 Extension Digital Card : 1no <b>SUBSCRIBER INTERFACE:</b> Voice Mail system Consisting of Voice mail Boxes for all Users , Auto attended system with greeting messages PC for Attending voice mail system Redundant Lan Port and Wan Port-2 Redundant Power Supply Full Software Licences & Support In-built Music on Hold Remote maintenance. Ethernet port for LAN connectivity and System Management Support for Voice over IP (VoIP) Day/Night service 32 party conference Facility Speed Dial Support for Wi-Fi based wireless extensions. System Documentation on CD-ROM Digital r Console with DSS phone-2no. should support IP Telephony and should be able to intergrate other EPBAX System on IP Paging/integration with PA system including 3KVA UPS with 4hr battery backup.					
		<b>DIGITAL EPABX SYSTEM AS MENTIONED ABOVE</b>	Set	1			0.00
10.08		Supply, installation, testing and commissioning of Main Distribution frame Excanger side - 300 pair Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			0.00
10.09		Supply, installation, testing and commissioning of Field Side Distribution frame Excanger side -300pair Krone type for above system with IPM (protection Magazine) including mounting frame, etc/ Complete as required as per specifications.	Set	1			0.00
10.10	A.	Supply ,Installation ,Testing and commissioning of Digital Phone having following features Console Phone Display with 4096 Key-based navigation Hands free operation Best in Class loudspeaker for speakerphone operation; also includes microphones Jack for headset expansion Compatible with PC applications Bluetooth connectivity for the ultimate in integration Downloadable admin softwar Eight Personalized Ring Patterns. Either desk or wall mountable.					
		<b>DIGITAL PHONES AS MENTIONED ABOVE</b>	Set	5			0.00
	B	Supply of Analog phones having following features(Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSCC/Client. FSK/DTMF Compatible Caller-Id 16 Digit LCD single Display 30 Incoming Memory 5 Outgoing Memory Real Time Clock with Year, Date and Month display Conversation Time Display (Approx.) 6 Step LCD Contrast Adjustable					

	36 Digits Redial Memory					
	Auto Filter Local Area Code up to 5-digit					
	Real time & Date in Idle Mode					
	Analog phones as mentioned above	Set	140			0.00
	<b>TOTAL SUBHEAD 10: TELEPHONE SYSTEM AS MENTIONED ABOVE</b>					<b>0.00</b>
	<b>SUBHEAD 11: CONDUITING FOR COMPUTER SYSTEM .</b>					
<b>11.00</b>	<b>CONDUITING FOR COMPUTER SYSTEM .</b>					
<b>11.01</b>	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories.					
i	25 mm dia	Metre	3200			0.00
<b>11.02</b>	Supplying and fixing of RJ-45 computer socket on modular plate in recess flush mounted with GI box complete as required.	Each	160			0.00
	<b>TOTAL SUBHEAD: 11 CONDUITING FOR COMPUTER SYSTEM AS MENTIONED ABOVE</b>					<b>0.00</b>
	<b>SUB HEAD 12: CONDUITING FOR TV OUTLETS</b>					
<b>12.00</b>	<b>CONDUITING FOR TV OUTLETS</b>					
<b>12.01</b>	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories					
i	25 mm dia	Metre	1000			0.00
<b>12.02</b>	Supplying and fixing 2 module modular metal box in recess flush mounted with clear acrylic cover with modular cover plate including fixing 1 no. coaxial TV outlet connection and all accessories complete as required	Each	40			0.00
<b>12.03</b>	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed conduit as required.	Metre	1200			0.00
	<b>TOTAL SUB HEAD 12: CONDUITING FOR TV OUTLETS AS MENTIONED ABOVE</b>					<b>0.00</b>
	<b>SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM</b>					
<b>13.00</b>	<b>ADDRESSABLE FIRE ALARM SYSTEM - UL + LPCB (approved )</b>					
<b>13.01</b>	Supply, installation, testing and commissioning of microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer port etc complete as per technical specifications and as per the requirement of Local Fire Authority and as required.					
i	6 Loop	Nos.	1			0.00
<b>13.02</b>	Supply, installation, testing and commissioning of Automatic Analog addressable Photo - Thermal multicriteria detector with mounting Base, alarm LED. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved)	Nos.	320			0.00
<b>13.03</b>	Supply, installation, testing and commissioning of Automatic Analog addressable Photoelectric smoke detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	260			0.00
<b>13.04</b>	Supply, installation, testing and commissioning of Automatic Analog addressable Fixed Temperature cum rate of Rise type Heat detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved)	Nos.	45			0.00
<b>13.05</b>	Supply, installation, testing and commissioning of Automatic Analog addressable Duct Detector with Duct Housing and Duct probe tubes complete with Photoelectric Smoke Detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	20			0.00
<b>13.06</b>	Supply, installation, testing and commissioning of Automatic Addressable control module for AHU & Stair Pressurization fan, The Module shall have automatic Electronic addressing feature & each of these shall be equipped with fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	10			0.00

13.07	Supply, installation, testing and commissioning of Automatic Addressable Monitor module for Flow Switch Monitoring etc. The Module shall have automatic Electronic/ dip switch addressing feature, complete with the Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	10		0.00
13.08	Supply, installation, testing and commissioning of Dual LED Response Indicator for indicating the activation of the Remotely located Detector.	Nos.	207		0.00
13.09	Supply, installation, testing and commissioning of Addressable Manual call Station. The Call Point shall have automatic Electronic/ dip Switch addressing feature, complete with the Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	18		0.00
13.10	Supply, installation, testing and commissioning of Addressable electronic Sounder. The Sounder shall have automatic Electronic/ dip switch addressing feature, complete with the Mounting Box and the hardware etc. as required. The Sounders shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	18		0.00
13.11	Supply, installation, testing and commissioning of Addressable electronic Sounder with Optical Beacon. The unit shall have automatic Electronic addressing/ dip switch feature, complete with the Mounting Box and the hardware etc. as required. The unit shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	6		0.00
13.12	Supply testing and commissioning of isolator module as per specifications.	Set	32		0.00
13.16	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories	Meter	2800		0.00
	i 25 mm dia				
13.17	Supply and drawing of 2C x 1.5 Sq.mm. Sheathed anneled flexible copper Conductor FRLS cable in existing Conduit, Complete with termination and testing as per requirement.	Meter	2500		0.00
13.18	Supply and drawing of 4C x 1.5 Sq.mm. anneled flexible copper Conductor, Copper braided shielding and overall Sheathed FRLS cable in existing Conduit, Complete with termination and testing as per requirement.	Meter	200		0.00
<b>TOTAL SUB HEAD 13: ADDRESSABLE FIRE ALARM SYSTEM as mentioned above</b>					<b>0.00</b>
<b>SUB HEAD 14: CCTV SURVEILLANCE SYSTEM</b>					
<b>14.00 CCTV SURVEILLANCE SYSTEM</b>					
14.01	Supply, Installation, Testing and Commissioning of Day/ night fixed dome camera with a discreet, dust and IK rated vandal-resistant indoor casing. Varifocal 2.8-10 mm P-Iris lens, remote focus and zoom. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. WDR more than 70dB. Video motion detection and active tampering alarm. Memory card slot for optional local video storage. Power over Ethernet. Includes mounting bracket for wall/ ceiling or junction boxes.	Nos.	52		0.00
14.02	Supply, Installation, Testing and Commissioning of Ultra-compact, indoor fixed mini dome camera with dust and vandal-resistant casing for easy mounting on wall or ceiling. Fixed lens 2.8mm. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. MicroSD/ microSDHC memory card slot for optional local video storage. Video motion detection and active tampering alarm. Comes with a 2 m (6.6 ft.) network cable and is powered using Power over Ethernet.	Nos.	10		0.00
14.03	Supply, Installation, Testing and Commissioning of Intel Xeon Processor E5-2609 v3, 1.90 GHz, 15MB Cache, Memory: 8GB (2 x 4GB), storage: 16TB usable after RAID, HDD speed of 7200 rpm, 64MB Cache, SATA 6Gb/s interface, RAID 5 Hotpluggable, RAID controller: PERC H730, 1GB NV, Graphics Matrox 200 eR, recording Shall support recording up to 64 video channels with a total recording rate up to 256 Mbit per second, software Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, playback upto 64x or frame by frame upto 25 cameras synchronized playback, power supply Dual, Hot-plug, Redundant Power Supply, 495 W, AXIS S1048, connector 4 x USB 2.0, 2 x VGA, Serial port (DB9), 4 x Ethernet (RJ45), 2 x Power inlet complete as required.	Nos.	1		0.00
14.04	Supply, Installation, Testing and Commissioning of Client system with processor Intel i5-4570S 2.90 GHz, memory 4 GB DDR3-SDRAM PC3-12800 (800 MHz) - [DDR3-1600] storage 500 GB, 7200 rpm HDD with 64 MB cache and SATA 6Gb/s interface, graphics AMD Radeon R5 A240 1 GB DDR3 with DVD-RW.NETWORK CARD Integrated Intel i217LM Ethernet LAN 10/100/ 1000 Mbit Live VIDEO stream Minimum Support for resolutions upto 5 Mpixel upto 15 fps or 3MP upto 20 fps or 2MP upto 25 fps, client software Compatible for all cameras, encoders, PTZ Cameras, Thermal Cameras, 6 x USB 2.0, 4 x USB 3.0, 3 x Display Port, 1 x VGA, 1 x Dual link DVI-I, AXIS S 9001, Network connector, Line-in/ out connectors, Computer mouse and keyboard connectors with two display monitor output with Mouse, Keyboard USB Type complete as required.	Nos.	1		0.00

14.05		<b>CCTV COLOR MONITOR</b>				
		Supply, installation, testing & commissioning of 32" Flat LED Color Monitors.	Nos.	2		0.00
14.06		<b>ETHERNET SWITCHES</b>				
	i	Supply, installation, testing & commissioning of PoE Layer II Managed Ethernet switch: 16 port RJ45 10 base 100 T with 2 Fibre Ports.	Nos.	7		0.00
	ii	Supply, installation & testing of Layer III Managed Ethernet switch: 24 port RJ45 10 base 1000T with 2-Fibre Ports	Nos.	1		0.00
14.07		<b>19 INCH RACK MOUNT</b>				
	i	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 42 U with 4 cooling fans on top and bottom at control room.	Nos.	1		0.00
	ii	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 6 U for Layer 2 switches on field.	Nos.	7		0.00
	iii	Any other network equipment like Patch Chords, Patch Panels, Jack Panels, Splicing and LIU required for successful operation.	Lot	1		0.00
14.08		Supply, laying & testing of Cat 5/ 6 UTP cable with all termination crimping etc.	Metre	1400		0.00
14.09		Supply, laying & testing of 2 x 1.5 sqmm Power Cable for powering all the SWITCHES .	Metre	200		0.00
14.10		Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
	i	25 mm dia	Metre	1500		0.00
14.11		Supply, installation, testing and commissioning of 2 kVA UPS with batteries 30minutes backup etc. complete in ready to use condition	SET	1		0.00
		<b>TOTAL SUB HEAD 14: CCTV SURVEILLANCE SYSTEM as mentioned above</b>				<b>0.00</b>
		<b>SUB HEAD 15: NURSE CALL SYSTEM</b>				
15.00		<b>NURSE CALL SYSTEM</b>				
		Nurse call system shall have products certified/ approval by VDE 0834/ UL				
15.01		Supply ,Installation ,Testing and commissioning of VDE 0834 certified/ approved System Switch: The system switch forms a decentralised communications node for exchanging data between the connected system devices and the rest of the communications system, consisting of : - 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX), galvanically isolated conforming to <b>EN 60950 and VDE 0834</b> ; - 7 x RJ45 sockets, each for a 100Mb IP system port (IEEE802.3 100BaseTX) for connecting all IP capable system modules; - 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX) for connecting communications, staff and ward terminals as well as control panel PCs or for <b>redundant Connection</b> . - Control LEDs for indicating the current operating state; - 2 x RJ45 sockets for connection of the external data bus; - All IP system modules are supplied with power using Power over LAN technology;	Nos.	9		0.00
15.02		Supply ,Installation ,Testing and commissioning of Nurse Station Terminal having following features : Nurse Terminal shall comprises of 6.5" TFT, Touch screen colour graphic display for displaying all details , a smash proof glass panel (to protect the sensitive display from unnecessary contact during cleaning and other processes) , touch screen function keys for operating the system, Querying receiver for speaking discretely, Microphone and loudspeaker for hands-free speech (incl. volume control), automatic changeover between hands-free and discrete speaking , 2.8m connection cable with an RJ45 connection plug, which is protected, from disconnection. The terminal shall display date and time, indication of all presence, all set remindeds, indication of all calls. All call indications follow the priority and must display the exact location of the calls.	Nos.	9		0.00
15.03		Supply ,Installation ,Testing and commissioning of Patient Handset - ( For Non Speech Wards/ Rooms) having following features Consisting of a plastic case in antimicrobial finish having - Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit, - Membrane keypad in antimicrobial finish with integrated LEDS for operation, consisting of: - 1 call key, - 2 lighting control keys - 2.80 metre connection cable with auto-disconnecting RJ45 connector plug.	Nos.	160		0.00

15.04	Supply ,Installation ,Testing and commissioning of Connection module/ Bed Head Unit for Patient Terminal (For Non Speech Wards/ Rooms) having following features Connection module for patient handset shall consist of: - 1 x RJ45 socket marked in colour and with measures to ensure that the push button is correctly connected, including auto disconnect mechanism, - 1 membrane keypad with: - 1 call button (red with nurse symbol) including a finder/reassurance light, - 1 presence key/ cancel button (green) including a control LED.	Nos.	160			0.00
15.04	Supply ,Installation ,Testing and commissioning of Patient Handset with connection module - With Speech - ( For Single bed rooms) having following features For operation by patients from their beds to carry out the functions listed below, with the following characteristics: - Nurse call with possibility for communications, - Service call with possibility for communications, - Additional calls via service call key (optional) with possibility for communications, - <b>Integrated IP telephone end device (H.323 or SIP protocol stack)</b> - Controlling two independent lighting circuits, - Controlling electronically driven shutters or other environmental applications, - Automatic volume switching when using the PAT in the cradle, - Plastic case and membrane keypad in fungicidal material, - Splash resistant case, consisting of: - Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit, - Loudspeaker, microphone, headphones socket, - A fully-graphical display with a resolution of 128 x 64 pixels, - 2.80 m connection cable with a RJ45 plug which is protected against disconnection	Nos.	4			0.00
15.05	Supply ,Installation ,Testing and commissioning of Room Terminal:( For Single bedded rooms) having following features Supply of Room Terminal with integrated functional components and operating membrane keypad with symbols, consisting of: - Electronic buzzer for acoustic call forwarding - Membrane keypad for operation, comprising of: - Call button (red) with integrated finder and reassurance light - Doctor call button (blue) with integrated finder and reassurance light, - Presence button (green) with control LED, - Presence button (blue) with control LED,	Nos.	4			0.00
15.05	Supply ,Installation ,Testing and commissioning of Pull cord type call button: WC area - ( For Single bedded rooms) having following features Pull cord for WC shall consist of: - integrated finder lights or reassurance light - micro switch with a 2 metre pull cord and a luminous grip with a nurse call symbol, Pull cord characteristics: max. force at break: 120N (ca. 12 kg): for hygiene reasons it must also be possible to change the pull cord very easily using a snap hook; Moisture Resistant	Nos.	4			0.00
15.06	Supply ,Installation ,Testing and commissioning of Lamp Module having following features For optical indication of calls, presences and reminders in the relevant colours and suit-able for fitting on to an installation case, consisting of: - 4 light chambers with light reflectors for homogeneous illumination, - 1 light chamber fitted with 3 ultra bright red LEDs, - 1 light chamber fitted with 3 ultra bright white LEDs, - 1 light chamber fitted with 3 ultra bright green LEDs, - 1 light chamber fitted with 3 ultra bright blue LEDs, - Every light chamber conforms to the light strength - the LED life expectancy is approximately 100,000 operating hours,	Nos.	16			0.00
i	<b>Supply of Installation ,Testing and commissioning of Management center - Nurse Call Server</b> Management Centre Server for Nurse Call System for uploading the firmware and the system configuration, for operating interfaces to foreign systems, for logging of all system events and as a central location for system configuration and remote maintenance as per VDE 0834 - Intel Xeon 3220 2,4GHz or similar - 2 GB RAM, 1 x 160GB HDD - 1 x DVD harddrive, 2 x Gbit LAN Ethernet RJ45 - 1 x serial connection RS232 and 2 x USBV2.0 - 1 x PCI or 1 x PCIe socket, support for SUSE Linux enterprise Server from V10.1	Nos	1			0.00
ii	<b>Supply ,Installation ,Testing and commissioning of Server Switch</b> Uplink connections: 4 x 1Gb uplink ports, RJ45 (GBIC capable, possibility for LWL) Connections downlink: 24 x 1Gb downlink ports, RJ45	Nos	1			0.00
iii	<b>Supply ,Installation ,Testing and commissioning of Backbone Switch : We can use client existing layer 2/ layer 3 switches as well. Need port equal to SW19-210</b>					

		Floor Switch: Uplink connections: 2 x 1Gb uplink ports, RJ45 (GBIC capable, possibility for LWL) Connections downlink: 24 x 100Mb downlink ports, RJ45 Switch must have all the Layer 2 and Layer 3 function which is mentioned in the tender Document	Nos	5		0.00
	v	<b>Supply, Installation, Testing and Commissioning of Software- Event Database Software</b> Software pack installed on the system server for automatically logging all events in the entire communications system, such as, e.g., calls, presence markings, call acknowledgements, reminders	Nos	1		0.00
		<b>Supply, Installation, Testing and commissioning of Software - Integration with Internet Server</b> This interface is used for data transfer between the multimedia terminals or patient laptops, the system's own application server and the Internet Proxy Server or an Internet gateway to the ISP that are both located on site. For security reasons bandwidth restrictions are imposed for this service by use of the QoS configuration of all switches	Nos	1		0.00
15.07		Supply, laying & testing of 8 core CAT6 UTP cable	Mtrs	2400		0.00
15.08		Supply, laying & testing of 2C x 1.5 Sq. mm FRLS armoured power cable	Mtrs	800		0.00
15.09		Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
	i	25 mm	Mtrs	2200		0.00
		<b>TOTAL SUB HEAD 15: NURSE CALL SYSTEM AS MENTIONED ABOVE</b>				<b>0.00</b>
		<b>SUB HEAD 16: PUBLIC ADDRESS SYSTEM</b>				
16.00		<b>PUBLIC ADDRESS SYSTEM</b>				
16.01		Supply, Installation, Testing and Commissioning of Analog based PA Controller capable of handling 8 zones, Digital audio controller complying to IEC EN 60849 with built-in high and low pass filters and parametric equalizer. With in built 500 W digital amplifier and 8 Outputs Led Indication of each zone independent output control button and volume control. Network input, BGM input, local emergency Mic input, can work with One Extra stand by amplifier, when the inbuilt amplifier come out faulty the standby amplifier takes over automatically. Support 24 V DC input interface. Being integration with EDVX.	Set	1		0.00
16.02		<b>Supply, Installation, Testing and Commissioning of Power Amplifier</b> Power Amplifier SCPA500/ 70V, 100 V & 4-16 ohm, 2 channel power amplifier - Inrush restraint and softstart - Integrated electronic protection against thermal overload and short circuit. - Temperature controlled fans, airflow from front to rear. - Method of control: Class D - Power output of amplifier: 1 x 500W sin. /100V - Output range: 50 Hz – 22kHz; 0/-0,5 dB - Signal to noise ratio (not valuated): > 105 dB - Channel separation: > 75 dB - THD (total harmonic distortion): < 0.08% - Input level at max. output voltage: 0 dBu - The amplifier has to be switched into Stand-by Mode in case of power loss by the control centre.	Set	2		0.00
16.03		<b>Supply, Installation, Testing and Commissioning of CALL STATION 8 ZONE</b> - call station with electret microphone (cardioid-characteristics) on flexible 300 mm swan neck complete with wideband loudspeaker for monitoring, pre-listen and intercom operation for the networked PA system. - Permanent inaudible supervision of the microphone and its capsule in accordance to EN 60849. - 16 free programmable and label able keys.	Set	1		0.00
16.04		Supply, Installation, Testing & Commissioning of 6 W, transformer tapping 100 volt line multitap, driver impedance 8 ohm, SPL @ 1m, 1 Watt. (Ceiling speaker)	Each	105		0.00
16.05		Supply, Installation, Testing and Commissioning of Wall mountable type column type Speaker 6 watt, SPL 90 dB, Freq response 200-15000 Hz, rated input voltage 100 Volts & rated impedance 1667 Ohms.	Each	10		0.00
16.06		Supply, Installation, Testing & Commissioning of Music source CD/ MP3 Player 1 U table top and rack mount clearly visible LCD display, micro computer and touch button operation complete as required.	Each	1		0.00
16.08		Supply and drawing of 2 x 1.5 sqmm ATC Copper conductor cable/ wire in existing PVC Conduit, Complete with termination and testing as per requirement.	Metre	1500		0.00
16.09		Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
	i	25 mm dia	Metre	1400		0.00

16.10	Supply, installation, testing and commissioning of 19" Equipment Rack with power coated finish with front lockable Door with MS Framed translucent Acrylic material, 2 Nos of fans for heat exhaust, Top & Bottom entry knock outs, back side lockable Door, inbuilt MCB, Power Points, raceways and partitions, one no. sliding Tray etc. complete as required.	Each	1			0.00
	<b>TOTAL SUB HEAD 16: PUBLIC ADDRESS SYSTEM as mentioned above</b>					<b>0.00</b>
	<b>SUB HEAD 17: LIFTS</b>					
17.00	<b>LIFTS</b>					
17.01	Design, manufacture, supply, installation, testing and commissioning of following 20 passenger cum hospital (1360 kg) lift, serving different floors in the lift shaft including machine room at the top. The lift should be as per detailed specification / drawing enclosed as required and as under:					
	- Speed : 1 MPS					
	- Travel: As per architectural drawing.					
	- Controller: A.C. variable voltage & variable frequency					
	- Automatic rescue device complete with dry maintenance free batteries as required.					
	- Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant.					
	- 415 V, 3 phase, 50 Hz, 4 wire system					
	- Type of doors: a) Car : Power operated, Telescopic opening,, horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift landing doors shall have a fire resistance of one hour.					
	- All push buttons will have Brail also.					
	- Car Enclosure : Scratch proof stainless steel finish.					
	- A hand rail guide not less than 600 mm long at 900 mm above floor level .					
	- Mirror of suitable size to be fixed inside the lift car.					
	- Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.					
	- Telephone with minimum two connections one at operator's room and other at guard/ security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car.					
	- Toe guard, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided.					
i	Floors : - B+G+4, ( 6 stops & 6 openings)	Each	5			0.00
17.02	Supply, Fixing, Testing and Commissioning of Dumb Waiter of Capacity 100kgs. Complete as required. Fabrication in M.S finish					
	- Speed : 0.5 MPS					
	Floors : G+4 (2 stops & 2 openings) (at Ground & Fourth Floor)	Each	2			0.00
	<b>Dumb Waiter as mentioned above</b>					
	<b>TOTAL SUB HEAD 17: LIFTS AS MENTIONED ABOVE</b>					<b>0.00</b>
	<b>SUB HEAD 18: LT CABLES</b>					
18.00	<b>LT CABLES</b>					
18.01	Supply and laying cable of Include for (i) all cable glands,lugs, cable identification tags, etc. (ii) all underground/ underfloor yellow/orange PVC sleeves, in-situ conduits/sleeves, warning tape, cable trays, etc.(iii) all pressure type puddle flanged sleeves and masking plates for all pipes/sleeves penetrations through external walls below ground level including sealing with expansive foam and sikaflex compound after passage/installation of cables (v) all proprietary terminations for the following multicore copper conductor PVC armoured XLPE cable as per as per BS 6467, IEC 60503.					
i	1 Core 300 Sqmm. AWA/PVC	Metre	800			0.00
ii	1 Core 240 Sqmm. AWA/PVC	Metre	500			0.00
iii	1 Core 150 Sqmm. AWA/PVC	Metre	500			0.00
iii	5 Core 300 Sqmm. SWA/PVC	Metre	200			0.00
iii	5 Core 240 Sqmm. SWA/PVC	Metre	400			0.00
iii	5 Core 185 Sqmm. SWA/PVC	Metre	1900			0.00
iii	5 Core 150 Sqmm. SWA/PVC	Metre	800			0.00
iii	5 Core 120 Sqmm. SWA/PVC	Metre	500			0.00
iv	5 Core 95Sqmm. SWA/PVC	Metre	500			0.00
iv	5 Core 70 Sqmm. SWA/PVC	Metre	200			0.00
v	5 Core 35 Sqmm. SWA/PVC	Metre	200			0.00
vi	5 Core 25 Sqmm. SWA/PVC	Metre	1200			0.00
vii	5 Core 16 Sqmm. SWA/PVC	Metre	1300			0.00
viii	5 Core 10 Sqmm. SWA/PVC	Metre	800			0.00
ix	5 Core 6 Sqmm. SWA/PVC	Metre	1000			0.00
x	5 Core 4 Sqmm. SWA/PVC	Metre	1000			0.00
	<b>TOTAL SUBHEAD 18: LT CABLES AS MENTIONED ABOVE</b>					<b>0.00</b>
	<b>SUBHEAD 19: EARTHING</b>					
19.00	<b>EARTHING</b>					



19.01	Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number,copper bonded steel electrode of minimum <b>25 mm dia.</b> (as per IE C62561-2 ) With a minimum coating thickness of 250 microns and length of 3 meters, 22 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	10		0.00
19.02	Supply and installation of one number earth pit with advance maintenance free Earthing System consisting of one Number, Copper bonded steel electrode of minimum <b>19 mm dia</b> (as per IE C62561-2 ) With a minimum. coating thickness of 250 microns and length of 3 meters. 22 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	16		0.00
19.03	Supply and installation of one number earth pit with of advance maintenance free Earthing System consisting of one Number Copper bonded steel electrode of minimum <b>13 mm dia.</b> (as per IE C62561-2 ) With a minimum. coating thickness of 250 microns and length of 3 meters. 22 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	36		0.00
19.04	Supply and installation of one number earth pit with of maintenance free earthing system consisting of 1250 mm long copper bonded steel electrode of minimum <b>13 mm dia.</b> tested as per IEC 62561-2.Minimum copper coating thickness on Rod is 100 microns. 5 kg/Electrode of earth enhancing compound tested as per IEC 62561-7 fill the 75-100mm augered hole surrounding to the electrode.It consist the following Item opper Alloy clamp suitable Poly PropyleneHeavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	8		0.00
19.05	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	300		0.00
19.06	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	1000		0.00
19.07	Supplying and laying 50mmX6mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	200		0.00
19.08	Providing and fixing 50mmX6mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200		0.00
19.09	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200		0.00
19.10	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
19.11	Supplying and laying 50mmX6mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
19.12	Providing and fixing 50mmX6mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200		0.00
19.13	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I.pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required	Metre	300		0.00
19.14	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	400		0.00
19.15	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	300		0.00
19.16	Supply and laying copper Cable 185sqmm	Meter	400		0.00
19.17	Providing & Fixing of all coonection and joint using Cadwelplus	Nos	50		0.00
	<b>TOTAL SUBHEAD 19: EARTHING AS MENTIONED ABOVE</b>				<b>0.00</b>
20.00	<b>SUBHEAD 20 LIGHTNING PROTECTION</b>				

	i	<b>LIGHTNING PROTECTION SYSTEM:SI60</b> Supply of SI60I Advance External Lightning Wide Area Protection System based on Early Streamer Emission(ESE) Technology. The advanced lightning protection system shall have a protection radius of 79m at level 1 while used with 5M mast. The ESE shall be mounted at least 2 m clear to the highest flat surface on roof top . The early streamer shall be stainless steel of grade 304 and no external power source shall be required for operation of system. Device confirming and tested to latest NFC17-102-2011 standards.	Sets				0.00
	ii	<b>MAST: 5M</b> GI Mast along with 2 mtr FRP mast shall be such to give overall height of 5M including ESE terminal with Base Plate welded together, 7M Guy Kit with accessories for providing support to withstand wind speed. There shall be clamp to hold down conductor along the mast.	Sets				0.00
	iii	<b>DOWN CONDUCTOR:</b> Supply of the 70 sq. mm insulated single core flexible copper cable as down Conductor with fixing accessories	RM				0.00
	iv	<b>LIGHTNING PROTECTION SYSTEM EARTH:</b> Supply and installation of the Earthing system which shall cater for the Lightning Protection System earthing and shall be maintenance free. Earth Enhancing Compounds shall be used to treat the soil for lowering the effective ground impedance. Maintenance free earth pits made of ground enhancing material (GEM) 4 bags of 11.3 Kg each and copper bonded ground rods - 4 nos of size 3 meter length and 17.2mm dia connected with 25x2 Cu strip with polyplastic earth pit cover.	Sets				0.00
	v	<b>LIGHTNING EVENT COUNTER:</b> Supply of Lightning Event Counter (Model: LEC-IV) for counting the number of lightning strikes without any power supply. The Counter should be mounted on the Down Conductor and the triggering impulse should be < 2 KA for 8/20µs. The Lightning Event Counter should be robust, non-resettable mechanical counter with IP65 rated enclosure suitable for external application. (optional)	Each				0.00
		<b>TOTAL SUBHEAD 20: LIGHTNING PROTECTION AS MENTIONED ABOVE</b>					<b>0.00</b>
		<b>SUB HEAD 21: ACCESS CONTROL AND BOOM BARRIER SYSTEM</b>					
		<b>21.00 ACCESS CONTROL SYSTEM</b>					
	21.01	Supply, Installation, Testing and Commissioning of Micro processor based access control system engineered with 32 bit CPU to cater to the multiple Readers and Multiple locations, Expandable, Networkable TCP/IP protocol compatible distributed Intelligence, Supporting Two Readers, and having flash memory, can be expandable card data base upto 55000 cards and transaction buffer of 45000 transaction, 128 access level, 127 time zone Levels, 8 supervised inputs and 4 Nos of relay outputs for easy and reliable interface with the 3rd party systems. Complete with Digital Power supply etc as required.	Nos.				0.00
	21.02	Supply, Installation, Testing and Commissioning of Single - User Software Platform pioneer in integrating Video, access control and Intrusion detection Systems. The Software is capable of managing the users from multiple locations. Real time event/ alarm Monitoring. Schedule Guard Tour feature	No.				0.00
	21.03	Supply, Installation, Testing and Commissioning of PC with DVD Drive and 1 TB HDD, 22" LED Monitor and required Keyboard, Adapter for Ethernet networking, compatible with TCP/IP network protocols with a minimum bandwidth of 100Mbps along with Microsoft's latest Windows software OS complete in all respects as per specifications.	No.				0.00
	i	4 Gigabyte of RAM memory					
	ii	1 TB Gigabytes of hard disk space					
	iii	DVD Combo Drive					
	iv	22" LCD colour monitor					
	v	Optical Mouse with 2 Mouse Pads					
	vi	Multimedia Keyboard					
	vii	10/ 100/ 1000 MBPS PCI LAN onboard card.					
	21.04	Supply, Installation, Testing and Commissioning of long Range Proximity Reader suitable for external/ Internal environment with Mounting Stain less steel stand complete as required.	Nos.				0.00
	21.05	Supply, Installation, Testing and Commissioning of Normal Range Proximity Reader suitable for Internal environment complete as required.	Nos.				0.00
	21.06	Supply, Installation, Testing and Commissioning of HID 34-bit Proximity Access Card. Standard HID proximity card with slot hole punch on the short side for badge clips (BC-1).	No.				0.00
	21.07	Supply, Installation, Testing and Commissioning of Single Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.				0.00
	21.08	Supply, Installation, Testing and Commissioning of Double Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.				0.00
	21.09	Supply, Installation, Testing and Commissioning of egress switch with Metal Plate complete as required.	Nos.				0.00

21.10	Supply, Laying, Testing and Commissioning of multistand copper conductor PVC sheathed & shielded Cable 8C x 0.5 somm diameter complete as required.	Metre	200		0.00
21.11	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories	Metre	400		0.00
	i 25mm				
21.12	Supply, Installation, Testing and Commissioning of 2 x 1.5 sq. mm diameter, copper conductor PVC insulated cable complete in existing Conduit as required..	Metre	250		0.00
21.13	Supply of Connectors, interfaces, Mounting hardware, Cords, Jacks, Plugs, tags, identifiers, fixtures, clamps, screws, nut - bolts etc as required for the installation and commissioning.	Set	1		0.00
	<b>BOOM BARRIER SYSTEM</b>				
21.14	Supply, Installation, Testing and Commissioning of High Speed Microprocessor based with activation system comprising Hydraulic pump unit, Plunger pistons, balancing by compression spring , internal stops adjustable for open or close beam positions. the barrier for continuous use for vehicular span of up to 7 mtrs, includes Boom with controller & accessories. 100% duty cycle. with complete as required.	Nos.	2		0.00
21.15	Supply, Installation, Testing and Commissioning of Twin Channel Exit Push putton for open close with green and red Buttons.	Nos.	2		0.00
21.21	Supply, Installation, Testing and Commissioning of Photocell based safety device to avoid closing of the barrier when a Vehicle is crossing the barrier.	Set	2		0.00
21.17	Supply, Installation, Testing and Commissioning of 3 x 1.5 sq. mm diameter, copper conductor PVC cable in existing Conduit complete as required..	Metre	150		0.00
21.18	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories	Metre	200		0.00
	i 25 mm dia				
21.19	Supply of Connectors, interfaces, Mounting hardware, Cords, Jacks, Plugs, tags, identifiers, fixtures, clamps, screws, nut - bolts etc. as required for the installation and commissioning.	Set	1		0.00
	<b>TOTAL SUBHEAD 21: ACCESS CONTROL AND BOOM BARRIER SYSTEM as mentioned above</b>				<b>0.00</b>
	<b>SUBHEAD 23: SURGE PROTECTION</b>				
	<b>Surge Proection</b>				
23.01	Supply and installation of wall Mounted Shunt Surge Protection Device Erico Model TDX-100N-277 480TT or equivalent as per approved make list	no	2		0.00
23.02	Supply and installation of Rail Mounted Surge reduction filter Device Erico or equivalent as per approved make list				
	i SFR 2 P 20 amp eric Model TDF20 (20A/240)	no	2		0.00
	ii SFR 2P 32 amp 2p or	no	4		0.00
	ii SFR 63 amp 2p	no	8		0.00
23.03	Supply and installation of wall Mounted Surge reduction filter Device Erico or equivalent as per approved make list				
	ii SRF 4P 32 amp	no	8		0.00
	iii SRF 4P 63 amp	no	8		0.00
22.04	Supply and installation of Surge Protection Device SRF equivalent to medel SRF with I <sub>max</sub> =130KA,8/20 μs from Complete with in built incoming isolator & outine Circuit breaker	no	8		0.00
	<b>TOTAL SUB HEAD 23: Surge Protection as mentioned above</b>				<b>0.00</b>
	<b>SUBHEAD 24: INVERTER</b>				
24.00	Supply, installation, testing and commissioning of 2 kVA inverter with batteries 30minutes backup etc. complete in ready to use condition. Make Sukam, Microtek & Luminous	SET	1		0.00
	<b>TOTAL SUB HEAD 24: INVERTER AS MENTIONED ABOVE</b>				<b>0.00</b>
26.00	<b>SUB HEAD 26 BUILDING MANAGEMENT SYSTEM:</b>				
	<b>BUILDING MANAGEMENT SYSTEM:</b>				
	A) Supply, installation, testing, commissioning & handing over of the following :				

1.0	<b>BMS Computer System:</b> server grade Pentium I5 Core with 3GHz minimum CPU speed, minimum of 2 GB RAM, 512 KB cache, 52X32X52X DVD/CD-RW Drive & 260GB HDD, optical Mouse, 106 keys keyboard, 10/100 Mbps Ethernet card ,USB connection & internal modem, 42" colour graphics TFT monitor & Original Windows7 loaded.	Set	1		0.00
2.0	<b>BMS System Software :</b> Web Based Graphical Software meeting the requirements in the Given I/O Summary & technical specifications including configuration and facility to create / provide the graphic mapping for all I/O Summary points, animate the Graphics, Navigation between pages, display of logs, changing the time zones, popup alarms, configurable password protection for Building Mgmt System as per Specifications. Software shall be able to communicate with Bacnet, Modbus devices simultaneously, with unlimited user license capacity. This includes the programming / commissioning software also. BMS software shall support SQL database. This software shall be capable of sending EMAIL/SMS alerts to predefined numbers. <b>Energy Management suit</b> for integrating the energy meters as mentioed in IO summary. The EMS shall be capable of generaign various trends, graphs and producing at least 10 reports.	Lot	1		0.00
3.0	<b>Soft Integrators:</b> for integration of various third subsystems. These integrators shall support the open protocols like Modbus, BACNet, and others. They should have all required RS485, RS232, Ethernet ports inbuilt. Each subsystem shall have its dedicated set of soft integrators and multiple subsystems of same kind only shall be looped in single soft integrator. Integrator quantity shall be decided based on the number of equipments and number of points for each equipment as mentioed in IO summary.				
a	For AHU VFD (Modbus- MS/TP)	Set	1		0.00
b	For lifts and Escalators (Modbus- MS/TP)	Set	1		0.00
c	For Energy Meters (Modbus- MS/TP)	Set	1		0.00
d	For UPS (Modbus- MS/TP)	Set	1		0.00
e	For Fire Alarm Panel (BACNet/Modbus as required in site)	Set	1		0.00
5.0	UL listed, BTL certified web based, IP enabled DDC Controllers with inbuilt webserver, with I/O module, to meet the IO summary listed. The controllers shall be minimum 32 bit microprocessor based standalone working on TCP/IP on Bacnet IP with integral web browser, calender fundtion complete with day, month, week, year etc, real time clock & 1 second scan time. The DDC's shall be capable of peer to peer communication without help of communication controller / router / system interface controller / PC. These DDCs shall have required LAN ports to communicate with other DDCs and the software on BACNet-IP only. The DDCs shall be supplied with locable mounting cabinets duly powder coated connector strip, internal wiring and space to house controller & relays, connector strip step down transformer, MCB, internal wiring and other accessories as required. (Contractor shall confirm his I/O provision w.r.t requirement on basis of data point). If DDCs work on 24V supply then the power supply unit (SMPS) must be UL listed. Each DDC shall have 25% spares from the IO summary.				
a	DDC for Chiller plant as per IO summary with 25% spares	Set	1		0.00
b	DDC for AHU as per IO summary with spares as mentioed in IO summary (Max 4 AHUs in one DDC)	Set	6		0.00
d	DDCs for FANs as mentioed in IO summary with 25% spares	Lot	1		0.00
e	DDCs for Fire Fighting as mentioed in IO summary with 25% spares	Lot	1		0.00
f	DDCs for Water Supply as mentioed in IO summary with 25% spares	Lot	1		0.00
g	DDCs for HT panel as mentioed in IO summary with 25% spares	Lot	1		0.00
h	DDCs for LT panel as mentioed in IO summary with 25% spares	Lot	1		0.00
<b>B) Field Devices</b>					
<b>Supply, installation, testing, commissioning of necessary input sensor transmitters/transducers comprising the following:</b>					
1.0	Immersion Temp Sensor for CHW line with brass thermowell. Measuring range: -30 to 110 Deg C, Accuracy: +/- 1.3 Deg C	Nos.	12		0.00
2.0	Outside Temp & Humidity Sensor with radiation shield. Measuring Range: Temp:-30 to 50 Deg C & RH 0-100%, Accuracy: +/- 1 Degc +/- 3%	Nos.	1		0.00
3.0	Water Differential pressure switch. Trigger Range:150-1000mbar with 1A (resistive) @ 240V AC contact rating	Nos.	14		0.00
4.0	Water Pressure Sensor . Accuracy:+/-0.3% FSL	Nos.	3		0.00
5.0	Duct type temperature sensor Measuring range: -30 to 110 Deg C, Accuracy: +/- 1.3 Deg C	Nos.	2		0.00
6.0	Duct mounted Temp & Humidity Sensor with radiation shield. Measuring Range: Temp:-30 to 50 Deg C & RH 0-100%, Accuracy: +/- 1 Degc +/- 3%	Nos.	22		0.00
7.0	Air static pressure Sensor in AHU ducts	Nos.	1		0.00
8.0	CO2 sensor Duct mount type Measuring range: 0 to 2000 ppm	Nos.	22		0.00
9.0	Wall mounted Ambient CO2 sensor		1		0.00
10.0	Differential pressure switch for filters & Blowers	Nos.	91		0.00
11.0	Level Switches (Hi/Low)	Nos.	4		0.00
12.0	Flame proof level transmitter	Nos.	2		0.00
13.0	BTU meters (200Nb)	Nos.	1		0.00
<b>Total 'B'</b>					
<b>C) Conduiting , Wiring and cabling</b>					
1.0	<b>Supply, installation, testing and commissioning of following cables:</b>				
1.1	2 Core 1.0 Sqmm, unarmoured ATC conductor multistranded, shielded cable.	RM	10800		0.00
1.2	3 Core 1.5 Sqmm, unarmoured ATC conductor multistranded, cable for Powering DDC , Actuators.	RM	1000		0.00

1.3	Cat-6 networking cable	RM	2500		0.00
1.4	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
a)	25 mm dia	RM	15000		0.00
	<b>TOTAL SUB HEAD 26: BUILDING MANAGEMENT SYSTEM: as mentioned above</b>				<b>0.00</b>
	<b>SUBHEAD 27: OUT DOOR LIGHTING</b>				
<b>27.00</b>	<b>OUT DOOR LIGHTING</b>				
<b>27.01</b>	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :				
i	9.0 Mtrs. high swaged steel tubular pole with arm length around 1.5 Metre, the construction of the pole shall be with base plate 450 x 450 x 6 mm complete as per requirement with two coats of spray paints of approved shade.				
ii	90 watts LED street light fixture in die cast aluminum body with 90 watts LED lamp complete with control gear, cover etc. similar to Compton Greeves s LSTN-90-CDL-A or approved equivalent including its wiring with 2X2.5 sq.mm. PVC insulated, FRLS copper conductor and 1.5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required.				
iii	Suitable size 32 A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 6A DP MCB complete as required - 1 Set				
iv	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry				
v	Providing foundation including excavation, shuttering, alignment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.				
vi	The above installations shall be completed as CPWD specifications and as required				
a.	Steel Tubular Poles (9M) Single Arm as mentioned above	Set	34		0.00
b.	Steel Tubular Poles (9M) same as above but for Double Arm as mentioned above	Set	6		0.00
<b>27.02</b>	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :				
i	4m high (3.3m above ground) 80mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6 mm and provision for mounting junction box etc. - 1 set.				
ii	1 x 40 LED Post top lantern with 40W LED lamp (Crompton Greeves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box .				
iii	Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.				
iv	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry				
v	Providing 400 x 400 x 1000 mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom				
	Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	14		0.00
<b>27.03</b>	Supply, installation, testing and commissioning of Post top lantern 1 x 40 Watts LED Post top lantern with 40 Watt LED lamp (Crompton Greeves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box.	set	2		0.00
<b>27.04</b>	Supply, installation, testing and commissioning of bollard lamps 1 x 10 Watts LED Light Fixture (Crompton Greeves LBS1-10-CDI (LIARA) or equivalent) with control box - 1 set.	Each	20		0.00
	<b>ROAD LIGHTING PANEL</b>				
<b>27.05</b>	Supply, installation, testing and commissioning of following outdoor type with canopy, IP-65 protected MV cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, MV danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required				
<b>A</b>	<b>INCOMER:</b>				
	100 Amps,415 volts, TP+NL, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings.				
	R, Y & B phase indicating lamp (LED type) with 2A control SP MCB.				
	ON, OFF, TRIP indication (LED Type)				
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	1 Set of timer switch & 100A TP contactor with neutral link (for street lights control) .				
<b>B</b>	<b>BUSBARS:</b>				
	300 Amp TPN Copper busbars				
<b>C</b>	<b>OUTGOING:</b>				
i	20 Nos. 16 Amp 415 volts, DP MCB				
	<b>ROAD LIGHTING PANEL AS MENTIONED ABOVE</b>	Set	4		0.00
<b>27.07</b>	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	300		0.00
	<b>TOTAL SUB HEAD 27: OUTDOOR LIGHTING AS MENTIONED ABOVE</b>				<b>0.00</b>

BILL OF QUANTITIES OF ELECTRICAL WORKS FOR RENNOVATION WORK FOR EXISTING BUILDING AT CANCER CENTER HOSPITAL , MAURITIUS						
S.No.	Description.	Unit	Quantity	RATE (in MUR)	Rate in words (MUR)	Amount in Figures
	<b>SUB HEAD 1: FLOOR LV PANELS</b>					
<b>1.00</b>	<b>FLOOR PANELS</b>					
	Supply, installation, testing and commissioning of following Floor L.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.					
	NOTE					
	i All MCCBs shall have Ies=Icu.					
	ii MCB Should be connected through terminal Strip of suitable rating					
<b>1.01</b>	<b>FLOOR LV GROUND FLOOR</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. MCCB Panels each having following</b>					
	400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter					
	Digital ammeter switch with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	630 Amp TPN copper busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 1 Nos. MCCB as per following details/ specifications:</b>					
	200 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>ii) 1 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>iii) 1 Nos. MCCB as per following details/ specifications:</b>					
	100 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>iv) 1 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	<b>v) 10 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.</b>					
	<b>vi) 6 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.</b>					
	<b>FLOOR LV PANEL GROUND FLOOR as mentioned above</b>	Set	1			0.00
<b>1.02</b>	<b>FLOOR LV PANEL FIRST FLOOR</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 No. MCCB Panels each having following</b>					
	200 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter.					
	Digital ammeter with one set Suitable C.Ts.					
	<b>b) BUSBARS:</b>					
	400 Amp TPN copper busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.</b>					
	<b>j) 6 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.</b>					
	<b>FLOOR LV PANEL (FIRST FLOOR) as mentioned above</b>	Set	1			0.00

1.03	<b>FLOOR LV PANEL SECOND FLOOR</b>					
	a) <b>INCOMER:</b>					
	i) <b>1 No. MCCB Panels each having following</b>					
	100 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter.					
	Digital ammeter with one set Suitable C.Ts.					
	b) <b>BUSBARS:</b>					
	400 Amp TPN copper busbars					
	c) <b>OUTGOING:</b>					
	i) 6 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	ii) 4 no. 40 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					
	<b>FLOOR LV PANEL ( FIRST FLOOR) as mentioned above</b>	Set	1			0.00
1.04	<b>FLOOR LV GROUND FLOOR (EMERGENCY )</b>					
	a) <b>INCOMER:</b>					
	i) <b>1 No. MCCB Panels each having following</b>					
	250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter					
	Digital ammeter switch with one set Suitable C.Ts.					
	b) <b>BUSBARS:</b>					
	630 Amp TPN copper busbars					
	c) <b>OUTGOING:</b>					
	i) <b>1 Nos. MCCB as per following details/ specifications:</b>					
	160 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	ii) <b>4 Nos. MCCB as per following details/ specifications:</b>					
	100 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	iii) <b>2 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	vi) 6 no. 40 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.					
	<b>FLOOR LV PANEL GROUND FLOOR EMERGENCY as mentioned above</b>	Set	1			0.00
1.05	<b>LIFT Panel</b>					
	a) <b>INCOMER:</b>					
	i) <b>1 Nos. MCCB as per following details/ specifications:</b>					
	100 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter .					
	Digital ammeter with one set Suitable C.Ts.					
	b) <b>BUSBARS:</b>					
	400 Amp TPN copper busbars					
	c) <b>OUTGOING:</b>					
	i) <b>2 Nos. MCCB as per following details/ specifications:</b>					
	63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of CT's.					
	ii) 2 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.					

		<b>Lift Panel as mentioned above</b>	Set	1		0.00
<b>1.06</b>		<b>Sub Computer Panel Basement, First, Second , Third, Fourth &amp; Fifth</b>				
	a)	<b>INCOMER:</b>				
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.				
	b)	<b>BUSBARS:</b> 300 Amp TPN copper busbars				
	c)	<b>OUTGOING:</b>				
	ii)	8 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker. <b>Sub Computer Panel , as mentioned above</b>	Set	1		0.00
<b>1.07</b>		<b>Inverter Panel</b>				
	a)	<b>INCOMER:</b>				
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 100 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.				
	b)	<b>BUSBARS:</b> 300 Amp TPN copper busbars				
	c)	<b>OUTGOING:</b>				
	ii)	12 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker. <b>Inverter Panel as mentioned above</b>	Set	1		0.00
<b>1.08</b>	A	<b>UPS INPUT PANEL (20 KVA )</b>				
	a)	<b>INCOMER:</b>				
	i)	<b>1 No. MCCB Panels each having following</b> 100 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter. Digital ammeter with one set Suitable C.Ts.				
	b)	<b>BUSBARS:</b> 400 Amp TPN copper busbars				
	c)	<b>OUTGOING:</b>				
	i)	<b>1 Nos. MCCB as per following details/ specifications:</b> 100 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
	ii)	<b>2 Nos. MCCB as per following details/ specifications:</b> 63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release and E/ F Module. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's.				
		<b>UPS INPUT PANEL as mentioned above</b>	Set	1		0.00
<b>1.09</b>	B	<b>UPS OUTGOING Panel</b>				
	a)	<b>INCOMER:</b>				
	i)	<b>2 No. MCCB Panels each having following</b> 63 Amp ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter Digital ammeter with one set Suitable C.Ts.				



	<b>b) BUSBARS:</b>					
	400 Amp TPN copper busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 1 Nos. MCCB as per following details/ specifications:</b>					
	100 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	ON, OFF, TRIP indication (LED Type).					
	Digital Ampere Metre of suitable range with suitable set of C.T's.					
	<b>UPS OUTGOING Panel as mentioned above</b>	Set	1			0.00
<b>1.10</b>	<b>ICU , PRE POST OT Panel (20 KVA )</b>					
	<b>a) INCOMER:</b>					
	<b>i) 1 Nos. MCCB as per following details/ specifications:</b>					
	100A 4P AUTO TRANSFER SWITCH (ATS)					
	100 Amp .35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.					
	Phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).					
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 0 to 500 V Digital voltmeter.					
	Digital ammeter with one set Suitable C.Ts.					
	<b>b) accessories</b>					
	400 Amp TPN copper busbars					
	<b>c) OUTGOING:</b>					
	<b>i) 6 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.</b>					
	<b>Load Panel as mentioned above</b>	Set	1			0.00
	<b>TOTAL SUB HEAD 1: FLOOR LV PANEL AS MENTIONED ABOVE</b>					0.00
	<b>SUB HEAD 2: MCB DISTRIBUTION BOARDS.</b>					
<b>2.00</b>	<b>MCB DISTRIBUTION BOARD</b>					
<b>2.01</b>	Supplying & fixing following way, three pole and neutral, supply distribution with (PPI) Per Phase Isolation Horizontal DB with CRCA sheet steel, Powder coated, provision to mount 2P RCCB in each phase as subincomers equipped with colour coded wires, MCB distribution board, 415 volts, on recess/surface complete, terminal blocks, tinned copper busbar, neutral link, earth bar, Glazed Door, Door earthing, Insulated neutral bar, Cable Ties, Blank Plate & Ckt. identification levels, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, as per technical specifications and as required. (but without MCB & RCCB),					
	<b>i</b> 4 +2 way (8+6+12), Double door	Each	11			0.00
	<b>ii</b> 6 +2 way (8+6+18), Double door	Each	2			0.00
	<b>iii</b> 8+2 way (8+6+24), Double door	Each	20			0.00
<b>2.02</b>	Supplying & fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required. (but without MCB & RCCB).					
	<b>i</b> 8 way Double door	Each	2			0.00
	<b>ii</b> 12 way Double door	Each	10			0.00
<b>2.03</b>	Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.					
	<b>i</b> Single pole	Each	784			0.00
	<b>ii</b> Triple pole & neutral	Each	10			0.00
<b>2.04</b>	Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB), in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	<b>i</b> 25 Amps	Each	11			0.00
	<b>ii</b> 32 Amps	Each	2			0.00
	<b>iii</b> 40 Amps	Each	1			0.00
	<b>iv</b> 63 Amps	Each	18			0.00
<b>2.05</b>	Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.					
	<b>i</b> 25 Amps	Each	2			0.00
	<b>ii</b> 32 Amps	Each	2			0.00
	<b>iii</b> 40 Amps	Each	1			0.00
	<b>iv</b> 63 Amps	Each	4			0.00
<b>2.06</b>	Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
	<b>i</b> 32 amps	Each	2			0.00
	<b>ii</b> 40 amp	Each	10			0.00

2.07		Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.				
	i	25-32 amps	Each	35		0.00
	ii	40-63 amp	Each	70		0.00
2.08		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	50		0.00
		<b>TOTAL SUB HEAD 2: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE</b>				<b>0.00</b>
3.00		<b>SUBHEAD 3: UPS SYSTEM</b>				
3.01		<b>UPS 20 KVA. (OT)</b>				
		Supply, Installation, Testing and Commissioning of micro processor based 2 x 20 KVA at 0.8 power factor at out put. with over all efficiency of minimum 96% True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 380V/400V/415V . +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:-				
		(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module				
		(b) IGBT Rectifier input for achieving THDI<5% and Input power factor of greater than 0.99				
		(c) 100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer				
		(d) 100% rated Inbuilt static switch				
		(f) 100% rated Inbuilt Maintenance Bypass				
		(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics				
		(i) RS 485 port for BMS connectivity				
		(j) Supplying and installing Built-in suitable air-circulating fan.				
		Input phase reversal protection to be provided as standard. UPS should shift on battery and provide alarm.				
		(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.				
		(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required				
		(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- -Short Circuit - Overload - Over temprature - Bypassing of particular load if need				
		<b>UPS 20 KVA AS MENTIONED ABOVE.</b>	Set	1		0.00
		<b>TOTAL SUBHEAD 3: UPS SYSTEMS</b>				<b>0.00</b>
		<b>SUB HEAD 4: WIRING</b>				
4.00		<b>WIRING</b>				
4.01	i	Wiring for light point/fanpoint/ exhaust fan point/call bell point with 3CX1.5 sq.mm Cu/PVC/LSF cable in turogliss conduit (Including supplying & laying of turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories) including the following and complete as required				
	ii	Supplying and Fixing Modular type switches as per BS EN-60669 (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing on the board etc.				
	iii	Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points				
	iv	Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.				
		<b>Note :</b>				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		<b>Point wiring as mentioned above</b>	Point	200		0.00
4.02	i	Wiring for twin control light points with 3CX1.5 sq.mm Cu/PVC/LSF cable in turogliss conduit (Including supplying & laying of turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories) including the following and complete as required.				
	ii	Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.				
		<b>Note :</b>				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		<b>Wiring for twin control light points as mentioned above</b>	Point	50		0.00
4.03		Wiring for circuit wiring with following size of LSF insulated copper conductor single core copper conductor cable as per BS6004 PVC or LSF insulated in recessed turogliss conduit (including supply of turogliss conduit specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories.& laying of recessed conduit) as required.				
	i	3X1.5 Sqmm copper conductor cable	Metre	1200		0.00
	ii	3X2.5 Sqmm copper conductor cable	Metre	1125		0.00
	iii	3X4 Sqmm copper conductor cable	Metre	5400		0.00
4.03		Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 3CX1.5 sq.mmCu/PVC/LSF cable in existing conduit as required.	Point	500		0.00
4.04		Rewiring for twin control light points with with 3CX1.5 sq.mmCu/PVC/LSF cable in existing conduit as required.	Point	10		0.00
4.05		Wiring for circuit wiring with following size of LSF insulated copper conductor single core copper conductor cable as per BS6004 as required.				
	i	3X1.5 Sqmm copper conductor cable	Metre	1500		0.00

	ii	3X2.5 Sqmm copper conductor cable	Metre	1275		0.00
	iii	3X4 Smm copper conductor cable	Metre	400		0.00
4.06		Supplying and fixing suitable Modular GI box on surface or in recess including providing and fixing 5 amps 1 Gang . switched socket outlet base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546	Each	20		0.00
4.07		Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 15 A 1 gang switched socket outlet with base plate, modular cover plate, connections, etc. and all civil works complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546	Each	100		0.00
4.08		Supplying and fixing following modular 5 amps 1 Gang . switched socket outlet on existing modular GI box with modular base plate, modular cover plate, & including connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546	Each	80		0.00
4.09		Supplying and fixing 15 A 1 gang switched socket outlet on existing on existing modular GI with base plate, modular cover plate, connections, etc. and all civil works complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546	Each	200		0.00
4.10		Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing 5 amps 3 gang switched socket outlet , suitable base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546 ( For computer Points)	Each	50		0.00
4.11		Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 5 amps 2 gang switched socket outlet & 15amp 2 gang switched socket outlet , base plate, modular cover plate, connections etc. and all civil works 'complete as required. As per BS standard :Switches-BS-EN-60669, sockets-BS-546 (For Comb-1/ Bed Point)	Each	125		0.00
4.12		Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 5 amps 2 gang switched socket outlet and, & 15amp 1 gang switched socket outlet, base plate, modular cover plate, connections etc. and all civil works 'complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546 (For Comb-2/Consultant point)	Each	45		0.00
4.13		Supplying and fixing suitable Modular metal box surface or in recess including providing and fixing 5amps. 2 gang switched socket outlet a base plate, modular cover plate, connections etc. and all civil works 'complete as required.As per BS standard :Switches-BS-EN-60669, sockets-BS-546 ( COMBO POINT-3/ TV Point )	Each	60		0.00
4.14		Supply and fixing following 20/32 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20/32 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	5		0.00
4.15		Supplying, providing & fixing cordless musical bell with batteries etc of approved make complete as required.	Each	10		0.00
4.16		Supply and fixing following FP MCCB, 415 volts, 35 KA (Isc), Four Pole with thermal magnetic release having variable current setting (0.8 to 1.0 In) with Extended rotary operating mechanism including door interlocking with defeat feature and padlock facility in a sheet steel enclosure IP55 on surface complete with all accessories including , connections, testing and commissioning etc. as required.	Each	1		0.00
	i	63 Amp	Each	2		0.00
	ii	63 Amp MCCB with 63 Amp RCCB	Each	1		0.00
	iii	125 Amp	Each	2		0.00
	iv	250 Amp	Each	1		0.00
	v	320Amp	Each			0.00
4.17		Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	100		0.00
4.16		Supply, Installation, Testing & Commissioning of Standalone Ceiling Mounted Motion PIR sensor 360 degree.	Nos.	20		0.00
4.18		Supply, Installation, Testing & Commissioning of Standalone Wall Mounted Motion PIR sensor 90 degree.	Nos.	20		0.00
4.19		Supplying and fixing of Panel for Automation with Incoming Protection MCB 3P & Surge Arrestor and Outgoing MCB protection.	Nos.	2		0.00
		<b>TOTAL SUBHEAD 4: WIRING AS MENTIONED ABOVE</b>				<b>0.00</b>
		<b>SUB HEAD 5: LIGHT FIXTURE AND FANS</b>				
5.00		<b>LIGHT FIXTURES AND FANS</b>				
5.01		Supply of following Commercial LED light fixture with high efficiency with Driver , tubes/lamps, reflector, diffuser, body/housing holder etc. complete with all fixing accessories as required.				
	ii	20 W LED batten including Mounting Accessories, with minimum system lumen 2100 (Philips BN108C LED 20S PSU CDI, WH or approved equivalent from list of Makes)(136h/ 136hw)	Each	80		0.00
	iii	40 W LED LED batten including Mounting Accessories, with minimum system lumen 4200 or (Philips BN108C LED 40S PSU CDI, WH or approved equivalent from list of Makes) (236h/ 236hw)	Each	10		0.00
	iv	LED Recessed flush mounted light fixture 1200X300mm type as per requirement with minimum system lumen 3000 glare free ,(Philips RC380B G2 LED-35S-6500 L120W30 PSU OD WH or approved equivalent from list of Makes)(RMSQ3, ICU)	Each	180		0.00
	v	LED recessed flush mounted light fixture suitable for 600X600 grid false ceiling per requirement with minimum system lumen 3000 glare free (Philips RC380B G2 LED-35S-6500 L120W30 PSU OD WH or approved equivalent from list of Makes)(RMSQ3, ICU)	Each	180		0.00
	vii	LED Surface mounted light fixture with minimum system lumen 3000 glare free (Philips SP824P LED 29S-5000 GR OD or approved equivalent from list of Makes) (236SM01)	Each	50		0.00

	ix	10 W LED Bulk Head light fixture (Philips WT202 W LED 6S CW PSU S1 PC or approved equivalent from list of Makes)(BH)	Each	4		0.00
	x	14 W LED Mirror top with diffuser in 2ft varian from list of Makes(wtoilet)	Each	20		0.00
	xii	15 W LED Surface mounted round down light fixture (Philips DN170C LED 10S-6500 PSU WH or approved equivalent from list of Makes)(DL1)	Each	110		0.00
	xiii	15 W LED Recessed flush mounted round down light fixture (Philips DN194B LED 15S -6500 PSU WH or Crompton LCDD-18-CDL/TL/WW or approved equivalent from list of Makes)(DL0)	Each	24		0.00
	xv	5 W LED Surface /Recessed flush mounted light fixture to be used as night lamp Ceiling mounted (NLCM)	Each	40		0.00
		1X50 LED Recess mounted down light fixture (Crompton Greaves Prakhar LCDNR-50-CDL/WW or approved equivalent )	Each	6		0.00
		1 x 10 W wall Bracket (Philips LED-1 x 10 W 45617/17 Vase or approved equivalent from list of Makes)(WB)		40		0.00
5.02		Supply of following ceiling fans complete with ball bearing, motor, 3 blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply with IP54 protection and Class F insulation complete as required				
	i	1400 mm Sweep	Each	10		0.00
	ii	1200 mm Sweep	Each	160		0.00
	iii	900mm Sweep	Each	10		0.00
5.03		Supply of 1380 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	10		0.00
5.03		Supply of 1250 RPM, 250 mm (Crompton Greaves Brisk Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	50		0.00
5.04		Supply of 400 mm sweep, 16" wall mounted fan complete with ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	5		0.00
5.05		Installation, testing and commissioning of wall bracket /ceiling fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connections etc. as required.	Each	744		0.00
5.06		Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator (Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	180		0.00
5.07		Installation, testing and commissioning of exhaust fan up to 400 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required.	Each	60		0.00
5.08		Installation, testing and commissioning of wall mounted fan up to 400 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	5		0.00
5.09		Supply, installation, testing and Commissioning of LED Type Aviation light Philips XGP400 1xLED-K2/RD240V or approved equivalent including its wiring.	Each	2		0.00
		<b>TOTAL SUBHEAD 5: LIGHT FIXTURE &amp; FANS AS MENTIONED ABOVE</b>				<b>0.00</b>
		<b>SUB HEAD 6: TELEPHONE SYSTEM</b>				
6.00		<b>TELEPHONE SYSTEM</b>				
6.01		Supplying drawing, connecting and testing of 0.5mm dia annealed copper conductor PVC insulated PVC sheathed telephone Wire/cables in Existing conduit or a racks as required.				
	i	2 pair Telephone cable, (0.5 mm)	Meter	1875		0.00
6.02		Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
	i	25 mm	Metre	1125		0.00
6.03		Supply, fixing, connecting and testing of telephone modular sockets modular plate anodised MS box and blanking plate in surface / recessed including connection etc as required. As per BS EN 60669				
	i	Telephone socket outlet (RJ-11 telephone Jack Single with Shutter)	Each	65		0.00
	ii	Telephone socket outlet (RJ- 11 telephone Jack double with Shutter)	Each	10		0.00
6.04		Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.				
	i	100 pair	Each	1		0.00
	iv	20 Pair	Each	3		0.00
	iv	10 Pair	Each	3		0.00
6.05		Supplying and drawing of following pairs 0.5mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels including termination of cables at both sides in Krone Tag Block etc. complete as required.				
	ii	20 Pair	Metre	200		0.00
	iii	10 Pair	Metre	100		0.00
6.06		Supplying and drawing of following pairs 0.5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. including termination of cables in both sides at krone tag block complete as required.				
	i	100 pair	Metre	100		0.00

6.08	Supply of Analog phones Without display having following features : Pulse or tone Dailing 3 repertory Keys, 10 Speed Dailing Number, Last Number redial , Manual Pause, Adjustable volume etc (Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSCC/Client.	Metre	50		0.00
	<b>TOTAL SUBHEAD 6: TELEPHONE SYSTEM AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUBHEAD 7: CONDUITING FOR COMPUTER SYSTEM .</b>				
7.00	<b>CONDUITING FOR COMPUTER SYSTEM .</b>				
7.01	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire prongating conduit as per NF EN 5067-2 and accessories.				
i	25 mm dia	Metre	1000		0.00
7.02	Supplying and fixing of RJ-45 computer socket on modular plate in recess flush mounted with GI box complete as required.	Each	50		0.00
	<b>TOTAL SUBHEAD: 7 CONDUITING FOR COMPUTER SYSTEM AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUB HEAD 8: CONDUITING FOR TV OUTLETS</b>				
8.00	<b>CONDUITING FOR TV OUTLETS</b>				
8.01	Supply and fixing of followingturogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire prongating conduit as per NF EN 5067-2 and accessories				
i	25 mm dia	Metre	1500		0.00
8.02	Supplying and fixing 2 module modular metal box in recess flush mounted with clear acrylic cover with modular cover plate including fixing 1 no. coaxial TV outlet connection and all accessories complete as required	Each	60		0.00
8.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed conduit as required.	Metre	1800		0.00
	<b>TOTAL SUB HEAD 8. CONDUITING FOR TV OUTLETS AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUBHEAD 9: ADDRESSABLE FIRE ALARM SYSTEM</b>				
9.00	<b>ADDRESSABLE FIRE ALARM SYSTEM - UL + LPCB (approved )</b>				
9.01	Supply, installation, testing and commissioning of microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer port etc complete as per technical specifications and as per the requirement of Local Fire Authority and as required.				
i	3 Loop	Nos.	1		0.00
9.02	Supply, installation, testing and commissioning of Automatic Analog addressable Photo - Thermal multicriteria detector with mounting Base, alarm LED. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved)	Nos.	120		0.00
9.03	Supply, installation, testing and commissioning of Automatic Analog addressable Photoelectric smoke detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	120		0.00
9.04	Supply, installation, testing and commissioning of Automatic Analog addressable Fixed Temperature cum rate of Rise type Heat detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	4		0.00
9.05	Supply, installation, testing and commissioning of Automatic Analog addressable Duct Detector with Duct Housing and Duct probe tubes complete with Photoelectric Smoke Detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	6		0.00
9.06	Supply, installation, testing and commissioning of Automatic Addressable control module for AHU & Stair Pressurization fan. The Module shall have automatic Electronic addressing feature & each of these shall be equipped with fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	4		0.00
9.07	Supply, installation, testing and commissioning of Automatic Addressable Monitor module for Flow Switch Monitoring etc. The Module shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	4		0.00
9.08	Supply, installation, testing and commissioning of Dual LED Response indicator for indicating the activation of the Remotely located Detector.	Nos.	95		0.00
9.09	Supply, installation, testing and commissioning of Addressable Manual call Station. The Call Point shall have automatic Electronic/ dip Swich addressing feature, complete with the Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	6		0.00
9.10	Supply, installation, testing and commissioning of Addressable electronic Sounder. The Sounder shall have automatic Electronic/ dip switch addressing feature ,complete with the Mounting Box and the hardware etc. as required. The Sounders shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	6		0.00

9.11	Supply, installation, testing and commissioning of Addressable electronic Sounder with Optical Beacon. The unit shall have automatic Electronic addressing/ dip switch feature, complete with the Mounting Box and the hardware etc. as required. The unit shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	3		0.00
9.12	Supply testing and commissioning of isolator module as per specifications.	Set	12		0.00
9.13	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire proragating conduit as per NF EN 5067-2 and accessories				
i	25 mm dia	Meter	1000		0.00
9.14	Supply and drawing of 2C x 1.5 Sq.mm. Sheathed anneled flexible copper Conductor FRLS cable in existing Conduit, Complete with termination and testing as per requirement.	Meter	1200		0.00
9.15	Supply and drawing of 4C x 1.5 Sq.mm. anneled flexible copper Conductor, Copper braided shielding and overall Sheathed FRLS cable in existing Conduit, Complete with termination and testing as per requirement.	Meter	200		0.00
<b>TOTAL SUB HEAD 9: ADDRESSABLE FIRE ALARM SYSTEM as mentioned above</b>					<b>0.00</b>
<b>SUB HEAD 10: CCTV SURVEILLANCE SYSTEM</b>					
<b>CCTV SURVEILLANCE SYSTEM</b>					
10.01	Supply, Installation, Testing and Commissioning of Day/ night fixed dome camera with a discreet, dust and IK rated vandal-resistant indoor casing. Varifocal 2.8-10 mm P-Iris lens, remote focus and zoom. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. WDR more than 70dB. Video motion detection and active tampering alarm. Memory card slot for optional local video storage. Power over Ethernet. Includes mounting bracket for wall/ ceiling or junction boxes.	Nos.	12		0.00
10.02	Supply, Installation, Testing and Commissioning of Ultra-compact, indoor fixed mini dome camera with dust and vandal-resistant casing for easy mounting on wall or ceiling. Fixed lens 2.8mm. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. MicroSD/ microSDHC memory card slot for optional local video storage. Video motion detection and active tampering alarm. Comes with a 2 m (6.6 ft.) network cable and is powered using Power over Ethernet.	Nos.	2		0.00
10.03	Supply, Installation, Testing and Commissioning of Intel Xeon Processor E5-2609 v3, 1.90 GHz, 15MB Cache, Memory: 8GB (2 x 4GB), storage: 16TB usable after RAID. HDD speed of 7200 rpm, 64MB Cache, SATA 6Gb/s interface, RAID 5 Hotpluggable, RAID controller: PERC H730, 1GB NV. Graphics Matrox 200 eR, recording Shall support recording up to 64 video channels with a total recording rate up to 256 Mbit per second, software Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, playback upto 64x or frame by frame upto 25 cameras synchronized playback, power supply Dual, Hot-plug, Redundant Power Supply, 495 W, AXIS S1048, connector 4 x USB 2.0, 2 x VGA, Serial port (DB9), 4 x Ethernet (RJ45), 2 x Power inlet complete as required.	Nos.	1		0.00
10.04	Supply, Installation, Testing and Commissioning of Client system with processor Intel i5-4570S 2.90 GHz, memory 4 GB DDR3-SDRAM PC3-12800 (800 MHz) - [DDR3-1600] storage 500 GB, 7200 rpm HDD with 64 MB cache and SATA 6Gb/s interface, graphics AMD Radeon R5 A240 1 GB DDR3 with DVD-RW, NETWORK CARD Integrated Intel I217LM Ethernet LAN 10/ 100/ 1000 Mbit Live VIDEO stream Minimum Support for resolutions upto 5 Mpixel upto 15 fps or 3MP upto 20 fps or 2MP upto 25 fps, client software Compatible for all cameras, encoders, PTZ Cameras, Thermal Cameras, 6 x USB 2.0, 4 x USB 3.0, 3 x Display Port, 1 x VGA, 1 x Dual link DVI-I, AXIS S 9001, Network connector, Line-in/ out connectors, Computer mouse and keyboard connectors with two display monitor output. with Mouse, Keyboard USB Type complete as required	Nos.	1		0.00
10.05	<b>CCTV COLOR MONITOR</b>				
	Supply, installation, testing & commissioning of 32" Flat LED Color Monitors.	Nos.	1		0.00
10.06	<b>ETHERNET SWITCHES</b>				
i	Supply, installation, testing & commissioning of PoE Layer II Managed Ethernet switch: 16 port RJ45 10 base 100 T with 2 Fibre Ports.	Nos.	3		0.00
ii	Supply, installation & testing of Layer III Managed Ethernet switch: 24 port RJ45 10 base 1000T with 2-Fibre Ports	Nos.	1		0.00
10.07	<b>19 INCH RACK MOUNT</b>				
i	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 42 U with 4 cooling fans on top and bottom at control room.	Nos.	1		0.00
ii	Supply, installation, testing & commissioning of 19 inch rack mount console unit - 6 U for Layer 2 switches on field.	Nos.	3		0.00
iii	Any other network equipment like Patch Chords, Patch Panels, Jack Panels, Splicing and LIU required for successful operation.	Lot	1		0.00
10.08	Supply, laying & testing of Cat 5/ 6 UTP cable with all termination crimping etc.	Metre	400		0.00
10.09	Supply, laying & testing of 2 x 1.5 sqmm Power Cable for powering all the SWITCHES .	Metre	200		0.00

10.10	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire pronaagating conduit as per NF EN 5067-2 and accessories					
	i 25 mm dia	Metre	500			0.00
10.11	Supply, installation, testing and commissioning of 2 kVA UPS with batteries 30minutes backup etc. complete in ready to use condition	SET	1			0.00
	<b>TOTAL SUB HEAD 10: CCTV SURVEILLANCE SYSTEM as mentioned above</b>					<b>0.00</b>
	<b>SUB HEAD 11: NURSE CALL SYSTEM</b>					
	<b>NURSE CALL SYSTEM</b>					
11.00	Nurse call system shall have products certified/ approval by VDE 0834/ UL					
11.01	Supply ,Installation ,Testing and commissioning of VDE 0834 certified/ approved System Switch: The system switch forms a decentralised communications node for exchanging data between the connected system devices and the rest of the communications system, consisting of : - 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX), galvanically isolated conforming to EN 60950 and VDE 0834; - 7 x RJ45 sockets, each for a 100Mb IP system port (IEEE802.3 100BaseTX) for connecting all IP capable system modules; - 1 x RJ45 socket, 100Mb IP Port (IEEE802.3 100BaseTX) for connecting communications, staff and ward terminals as well as control panel PCs or for <b>redundant Connection</b> . - Control LEDs for indicating the current operating state; - 2 x RJ45 sockets for connection of the external data bus; - All IP system modules are supplied with power using Power over LAN technology;	Nos.	3			0.00
11.02	Supply ,Installation ,Testing and commissioning of Nurse Station Terminal having following features : Nurse Terminal shall comprises of 6.5" TFT, Touch screen colour graphic display for displaying all details , a smash proof glass panel (to protect the sensitive display from unnecessary contact during cleaning and other processes) , touch screen function keys for operating the system, Querying receiver for speaking discretely, Microphone and loudspeaker for hands-free speech (incl. volume control), automatic changeover between hands-free and discrete speaking , 2.8m connection cable with an RJ45 connection plug, which is protected, from disconnection. The terminal shall display date and time, indication of all presence, all set reminders, indication of all calls. All call indications follow the priority and must display the exact location of the calls	Nos.	3			0.00
11.03	Supply ,Installation ,Testing and commissioning of Patient Handset - ( For Non Speech Wards/ Rooms) having following features Consisting of a plastic case in antimicrobial finish having - Call button with nurse symbol with integrated finder and reassurance light on the top end of the unit, - Membrane keypad in antimicrobial finish with integrated LEDS for operation, consisting of: - 1 call key, - 2 lighting control keys - 2.80 metre connection cable with auto-disconnecting RJ45 connector plug. <del>To shall be supplied with cradel for holding patient terminals</del>	Nos.	10			0.00
11.04	Supply ,Installation ,Testing and commissioning of Connection module/ Bed Head Unit for Patient Terminal (For Non Speech Wards/ Rooms) having following features Connection module for patient handset shall consist of - 1 x RJ45 socket marked in colour and with measures to ensure that the push button is correctly connected, including auto disconnect mechanism, - 1 membrane keypad with: - 1 call button (red with nurse symbol) including a finder/reassurance light, - 1 <del>presence key/ cancel button (green) including a control LED.</del>	Nos.	8			0.00
11.04	Supply ,Installation ,Testing and commissioning of Patient Handset with connection module - With Speech - ( For Single bed rooms)having following features For operation by patients from their beds to carry out the functions listed below, with the following characteristics: - Nurse call with possibility for communications, - Service call with possibility for communications, - Additional calls via service call key (optional) with possibility for communications, - <b>Integrated IP telephone end device (H.323 or SIP protocol stack)</b> - Controlling two independent lighting circuits, - Controlling electronically driven shutters or other environmental applications, - Automatic volume switching when using the PAT in the cradle, - Plastic case and membrane keypad in fungicidal material, - Splash resistant case, consisting of: - Call button with nurse symbol with integrated fi nder and reassurance light on the top end of the unit, - Loudspeaker, microphone, headphones socket, - A fully-graphical display with a resolution of 128 x 64 pixels, - 2.80 m connection cable with a RJ45 plug which is protected against disconnection	Nos.	8			0.00
11.05	Supply ,Installation ,Testing and commissioning of Room Terminal:( For Single bedded rooms) having following features					

	Supply of Room Terminal with integrated functional components and operating membrane keypad with symbols; consisting of: - Electronic buzzer for acoustic call forwarding - Membrane keypad for operation, comprising of: - Call button (red) with integrated finder and reassurance light - Doctor call button (blue) with integrated finder and reassurance light, - Presence button (green) with control LED, - Presence button (blue) with control LED,	Nos.	36		0.00
11.05	Supply, Installation, Testing and commissioning of Pull cord type call button: WC area - ( For Single bedded rooms) having following features Pull cord for WC shall consist of - integrated finder lights or reassurance light - micro switch with a 2 metre pull cord and a luminous grip with a nurse call symbol, Pull cord characteristics: max. force at break: 120N (ca. 12 kg): for hygiene reasons it must also be possible to change the pull cord very easily using a snap hook; - Moisture Protected	Nos.	36		0.00
11.06	Supply, Installation, Testing and commissioning of Lamp Module having following features For optical indication of calls, presences and reminders in the relevant colours and suit-able for fitting on to an installation case, consisting of: - 4 light chambers with light reflectors for homogeneous illumination, - 1 light chamber fitted with 3 ultra bright red LEDs, - 1 light chamber fitted with 3 ultra bright white LEDs, - 1 light chamber fitted with 3 ultra bright green LEDs, - 1 light chamber fitted with 3 ultra bright blue LEDs, - Every light chamber conforms to the light strength - the LED life expectancy is approximately 100,000 operating hours,	Nos.	40		0.00
	<b>i Supply of Installation, Testing and commissioning of Management center - Nurse Call Server</b> Management Centre Server for Nurse Call System for uploading the firmware and the system configuration, for operating interfaces to foreign systems, for logging of all system events and as a central location for system configuration and remote maintenance as per VDE 0834 - Intel Xeon 3220 2,4GHz or similar - 2 GB RAM, 1 x 160GB HDD - 1 x DVD harddrive, 2 x Gbit LAN Ethernet RJ45 - 1 x serial connection RS232 and 2 x USBV2.0 - 1 x PCI or 1 x PIC socket support for SUSSE Linux enterprise Server from V10.1	Nos	1		0.00
	<b>ii Supply, Installation, Testing and commissioning of Server Switch</b> Uplink connections: 4 x 1Gb uplink ports, RJ45 (GBIC capable, possibility for LWL) Connections downlink: 24 x 1Gb downlink ports, RJ45	Nos	1		0.00
	<b>iii Supply, Installation, Testing and commissioning of Backbone Switch : We can use client existing layer 2/ layer 3 switches as well. Need port equal to SW19-210</b> Floor Switch: Uplink connections: 2 x 1Gb uplink ports, RJ45 (GBIC capable, possibility for LWL) Connections downlink: 24 x 100Mb downlink ports, RJ45 Switch must have all the Layer 2 and Layer 3 function which is mentioned in the tender Document	Nos	3		0.00
	<b>v Supply, Installation, Testing and commissioning of Software- Event Database Software</b> Software pack installed on the system server for automatically logging all events in the entire communications system, such as, e.g., calls, presence markings, call acknowledgements, reminders.	Nos	1		0.00
	<b>Supply, Installation, Testing and commissioning of Software - Integration with Internet Server</b> This interface is used for data transfer between the multimedia terminals or patient laptops, the system's own application server and the Internet Proxy Server or an Internet gateway to the ISP that are both located on site. For security reasons bandwidth restrictions are imposed for this service by use of the QoS configuration of all switches.	Nos	1		0.00
11.07	Supply, laying & testing of 8 core CAT6 UTP cable	Mtrs	1000		0.00
11.08	Supply, laying & testing of 2C x 1.5 Sq. mm FRLS armoured power cable	Mtrs	800		0.00
11.09	Supply and fixing of following: - 25 mm non-fire propagating conduit as per NF-EN 5067-2 and accessories	Mtrs	1200		0.00
	<b>TOTAL SUB HEAD 11: NURSE CALL SYSTEM AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUB HEAD 12: PUBLIC ADDRESS SYSTEM</b>				
12.00	<b>PUBLIC ADDRESS SYSTEM</b>				
12.01	Supply, Installation, Testing and Commissioning of Analog based PA Controller capable of handling 8 zones, Digital audio controller complying to IEC EN 60849 with built-in high and low pass filters and parametric equalizer. With in built 500 W digital amplifier and 8 Outputs Led Indication of each zone independent output control button and volume control. Network input, BGM input, local emergency Mic input, can work with One Extra stand by amplifier, when the inbuilt amplifier come out faulty the standby amplifier takes over automatically. Support 24 V DC input interface. Paging integration with EPABX	Set	1		0.00
12.02	<b>Supply, Installation, Testing and Commissioning of Power Amplifier</b> Power Amplifier SCPA500/ 70V, 100 V & 4-16 ohm, 2 channel power amplifier  - Inrush restraint and softstart - Integrated electronic protection against thermal overload and short circuit.				



	- Temperature controlled fans, airflow from front to rear.				
	- Method of control: Class D				
	- Power output of amplifier: 1 x 500W sin./100V				
	- Output range: 50 Hz – 22KHz; 0/-0.5 dB				
	- Signal to noise ratio (not valuated): > 105 dB				
	- Channel separation: > 75 dB				
	- THD (total harmonic distortion): < 0.08%				
	- Input level at max. output voltage: 0 dBu				
	- The amplifier has to be switched into Stand-by Mode in case of power loss by the control centre.				
	<b>POWER AMPLIFIER as mentioned above</b>	Set	1		0.00
<b>12.03</b>	<b>Supply, Installation, Testing and Commissioning of CALL STATION 8 ZONE</b>				
	- call station with electret microphone (cardioid-characteristics) on flexible 300 mm swan neck complete with wideband loudspeaker for monitoring, pre-listen and intercom operation for the networked PA system.				
	- Permanent inaudible supervision of the microphone and its capsule in accordance to EN 60849.				
	- 16 free programmable and label able keys.				
	<b>DIGITAL CALL STATION 8 ZONE as mentioned above</b>	Set	1		0.00
<b>12.04</b>	Supply, Installation, Testing & Commissioning of 6 W, transformer tapping 100 volt line multtap, driver impedance 8 ohm, SPL @ 1m, 1 Watt.(Ceiling speaker)	Each	40		0.00
<b>12.05</b>	Supply, Installation, Testing and Commissioning of Wall mountable type column type Speaker 6 watt, SPL 90 dB, Freq response 200-15000 Hz, rated input voltage 100 Volts & rated impedance 1667 Ohms.	Each	10		0.00
<b>12.06</b>	Supply, Installation, Testing & Commissioning of Music source CD/ MP3 Player 1 U table top and rack mount clearly visible LCD display, micro computer and touch button operation complete as required.	Each	1		0.00
<b>12.08</b>	Supply and drawing of 2 x 1.5 sqmm ATC Copper conductor cable/ wire in existing PVC Conduit, Complete with termination and testing as per requirement.	Metre	500		0.00
<b>12.09</b>	Supply and fixing of followingturogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories				
	i 25 mm dia	Metre	600		0.00
<b>12.10</b>	Supply, installation, testing and commissioning of 19" Equipment Rack with power coated finish with front lockable Door with MS Framed translucent Acrylic material, 2 Nos of fans for heat exhaust, Top & Bottom entry knock outs, back side lockable Door, inbuilt MCB, Power Points, raceways and partitions, one no. sliding Tray etc. complete as required	Each	1		0.00
	<b>TOTAL SUB HEAD 12: PUBLIC ADDRESS SYSTEM as mentioned above</b>				<b>0.00</b>
	<b>SUB HEAD 13: LIFTS</b>				
<b>13.00</b>	<b>LIFTS</b>				
<b>13.01</b>	Design, manufacture, supply, installation, testing and commissioning of following 20 <b>passenger cum hospital (1380 kg) lift</b> , serving different floors in the lift shaft including machine room at the top. The lift should be as per detailed specification/ drawing enclosed as required and as under:				
	- Speed : 1 MPS				
	- Travel: As per architectural drawing.				
	- Controller: A.C. variable voltage & variable frequency				
	- Automatic rescue device complete with dry maintenance free batteries as required.				
	- Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant.				
	- 415 V, 3 phase, 50 Hz, 4 wire system				
	- Type of doors: a) Car : Power operated, Telescopic opening,, horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift landing doors shall have a fire resistance of one hour.				
	- All push buttons will have Brail also.				
	- Car Enclosure : Scratch proof stainless steel finish.				
	- A hand rail guide not less than 600 mm long at 900 mm above floor level .				
	- Mirror of suitable size to be fixed inside the lift car.				
	- Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.				
	- Telephone with minimum two connections one at operator's room and other at guard/ security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car.				
	- Toe guard, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided.				
	i Floors :- G+2, ( 3 stops & 3 openings)	Each	2		0.00
	<b>TOTAL SUB HEAD 13: LIFTS AS MENTIONED ABOVE</b>				<b>0.00</b>
	<b>SUB HEAD 14: LT CABLES</b>				
<b>14.00</b>	<b>LT CABLES</b>				
<b>14.01</b>	Supply and laying cable of Include for (i) all cable glands,lugs, cable identification tags, etc. (ii) all underground/ underfloor yellow/orange PVC sleeves, in-situ conduits/sleeves, warning tape, cable trays, etc.(iii) all pressure type puddle flanged sleeves and masking plates for all pipes/sleeves penetrations through external walls below ground level incuding sealing with expansive foam and sikaflex compound after passage/installation of cables (v) all proprietary terminations for the following multicore copper conductor PVC armoured XLPE cable as per as per BS 5467 /IEC 60502				
	ii 1 Core 240 Sqmm. AWA/PVC	Metre	100		0.00
	iii 1 Core 150 Sqmm. AWA/PVC	Metre	100		0.00
	iii 5 Core 300 Sqmm. SWA/PVC	Metre	100		0.00
	iii 5 Core 240 Sqmm. SWA/PVC	Metre	100		0.00
	iii 5 Core 185 Sqmm. SWA/PVC	Metre	200		0.00

	iii	5 Core 150 Sqmm. SWA/PVC	Metre	200		0.00
	iii	5 Core 120 Sqmm. SWA/PVC	Metre	200		0.00
	iv	5 Core 95Sqmm. SWA/PVC	Metre	400		0.00
	iv	5 Core 70 Sqmm. SWA/PVC	Metre	200		0.00
	v	5 Core 35 Sqmm. SWA/PVC	Metre	300		0.00
	vi	5 Core 25 Sqmm. SWA/PVC	Metre	400		0.00
	vii	5 Core 16 Sqmm. SWA/PVC	Metre	500		0.00
	viii	5 Core 10 Sqmm. SWA/PVC	Metre	800		0.00
	ix	5 Core 6 Sqmm. SWA/PVC	Metre	500		0.00
	x	5 Core 4 Sqmm. SWA/PVC	Metre	500		0.00
		<b>TOTAL SUBHEAD 14: LT CABLES AS MENTIONED ABOVE</b>				<b>0.00</b>
		<b>SUBHEAD 15: EARTHING</b>				
15.00		<b>EARTHING</b>				
15.01		Supply and installation of one number earth pit with of advance maintenance free Earthing System consisting of one Number Copper bonded steel electrode of minimum <b>13 mm dia.</b> (as per IE C62561-2 ) With a minimum. coating thickness of 250 microns and length of 3 meters. 22 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	4		0.00
15.02		Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
15.03		Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200		0.00
15.05		Supplying and laying 50mmX6mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
15.06		Providing and fixing 50mmX6mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	50		0.00
15.07		Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	50		0.00
15.08		Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
15.09		Supplying and laying 50mmX6mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100		0.00
15.10		Providing and fixing 50mmX6mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	100		0.00
15.11		Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I.pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required	Metre	150		0.00
15.12		Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	200		0.00
15.15		Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	100		0.00
15.14		Supply and laying copper Cable 185sqmm	Meter	200		0.00
15.15		Providing & Fixing of all connection and joint using Cadwelplus	Nos	50		0.00
15.16	d	Provide for all safety signs & instructions, warning & hazard notices/labels (to BS 5499-5) as per requirements of the installations.	LOT	1		0.00
15.17		<b>SAFETY EQUIPMENT</b>				
		Supply and deliver the following 24KV safety equipment to Client :				
	a	Statutory Display Kit	No.	1		0.00
	b	One pair of insulating gloves with box	No.	1		0.00
	c	Portable emergency lamp.	No.	1		0.00
	d	Rescue rod	No.	1		0.00
	e	Testing rod with neon indicator	No.	1		0.00
15.18		Fabrication and Installing following size Hot Dipped Perforated Galvanised Cabletrays/Cable ladders as per BS729 cluding Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.				
		Include for openings in floors & walls for passage of cable trays				
	a	Cabletrays 300mm Wide	Metre	500		0.00
	b	Cabletrays 200mm Wide	Metre	800		0.00
	c	Cableladders 400mm Wide	Metre	400		0.00
		<b>TOTAL SUBHEAD 15: EARTHING AS MENTIONED ABOVE</b>				<b>0.00</b>
16.00		<b>SUBHEAD 16:LIGHTNING PROTECTION</b>				

	<b>i</b>	<b>LIGHTNING PROTECTION SYSTEM:Si60</b> Supply of Si60i Advance External Lightning Wide Area Protection System based on Early Streamer Emission(ESE) Technology. The advanced lightning protection system shall have a protection radius of 79m at level 1 while used with 5M mast. The ESE shall be mounted at least 2 m clear to the highest flat surface on roof top. The early streamer shall be stainless steel of grade 304 and no external power source shall be required for operation of system. Device confirm and tested to latest NEC17-102-2011 standards.	Sets	1		0.00	
	<b>ii</b>	<b>MAST: 5M</b> GI Mast along with 2 mtr FRP mast shall be such to give overall height of 5M including ESE terminal with Base Plate welded together, 7M Guy Kit with accessories for providing support to withstand wind speed. There shall be clamp to hold down conductor along the mast.	Sets	1		0.00	
	<b>iii</b>	<b>DOWN CONDUCTOR:</b> Supply of the 70 sq. mm insulated single core flexible copper cable as down Conductor with fixing accessories	RM	200		0.00	
	<b>iv</b>	<b>LIGHTNING PROTECTION SYSTEM EARTH:</b> Supply and installation of the Earthing system which shall cater for the Lightning Protection System earthing and shall be maintenance free. Earth Enhancing Compounds shall be used to treat the soil for lowering the effective ground impedance. Maintenance free earth pits made of ground enhancing material (GEM) 4 bags of 11.3 Kg each and copper bonded ground rods - 4 nos of size 3 meter length and 17.2mm dia connected with 25x2 Cu strain with nonplastic earth pit cover.	Sets	1		0.00	
	<b>v</b>	<b>LIGHTNING EVENT COUNTER:</b> Supply of Lightning Event Counter (Model: LEC-IV) for counting the number of lightning strikes without any power supply. The Counter should be mounted on the Down Conductor and the triggering impulse should be < 2 KA for 8/20µs. The Lightning Event Counter should be robust, non-resettable mechanical counter with IP65 rated enclosure suitable for external application. (optional)	Each	1		0.00	
	<b>TOTAL SUBHEAD 16: LIGHTNING PROTECTION AS MENTIONED ABOVE</b>						<b>0.00</b>
	<b>SUB HEAD 17: ACCESS CONTROL</b>						
<b>17.00</b>	<b>ACCESS CONTROL SYSTEM</b>						
<b>17.01</b>		Supply, Installation, Testing and Commissioning of Micro processor based access control system engineered with 32 bit CPU to cater to the multiple Readers and Multiple locations, Expandable, Networkable TCP/IP protocol compatible distributed Intelligence, Supporting Two Readers, and having flash memory, can be expandable card data base upto 55000 cards and transaction buffer of 45000 transaction, 128 access level, 127 time zone Levels, 8 supervised inputs and 4 Nos of relay outputs for easy and reliable interface with the 3rd party systems. Complete with Digital Power supply etc as required.	Nos.	1		0.00	
<b>17.02</b>		Supply, Installation, Testing and Commissioning of Single - User Software Platform pioneer in integrating Video, access control and Intrusion detection Systems. The Software is capable of managing the users from multiple locations, Real time event/ alarm Monitoring, Schedule Guard Tour feature	No.	1		0.00	
<b>17.03</b>		Supply, Installation, Testing and Commissioning of PC with DVD Drive and 1 TB HDD, 22" LED Monitor and required Keyboard, Adapter for Ethernet networking, compatible with TCP/IP network protocols with a minimum bandwidth of 100Mbps along with Microsoft's latest Windows software OS complete in all respects as per specifications.	No.	1		0.00	
	<b>i</b>	4 Gigabyte of RAM memory					
	<b>ii</b>	1 TB Gigabytes of hard disk space					
	<b>iii</b>	DVD Combo Drive					
	<b>iv</b>	22" LCD colour monitor					
	<b>v</b>	Optical Mouse with 2 Mouse Pads					
	<b>vi</b>	Multimedia Keyboard					
	<b>vii</b>	10/ 100/ 1000 MBPS PCI LAN onboard card.					
<b>17.04</b>		Supply, Installation, Testing and Commissioning of long Range Proximity Reader suitable for external/ Internal environment with Mounting Stain less steel stand complete as required.	Nos.	2		0.00	
<b>17.05</b>		Supply, Installation, Testing and Commissioning of Normal Range Proximity Reader suitable for Internal environment complete as required.	Nos.	2		0.00	
<b>17.06</b>		Supply, Installation, Testing and Commissioning of HID 34-bit Proximity Access Card. Standard HID proximity card with slot hole punch on the short side for badge clips (BC-1).	No.	100		0.00	
<b>17.07</b>		Supply, Installation, Testing and Commissioning of Single Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.	4		0.00	
<b>17.08</b>		Supply, Installation, Testing and Commissioning of Double Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.	2		0.00	
<b>17.09</b>		Supply, Installation, Testing and Commissioning of egress switch with Metal Plate complete as required.	Nos.	2		0.00	
<b>17.10</b>		Supply, Laying, Testing and Commissioning of multistand copper conductor PVC sheathed & shielded Cable 8C x 0.5 sqmm diameter complete as required.	Metre	100		0.00	
<b>17.11</b>	<b>i</b>	Supply and fixing of following turogliss conduit and be specially manufactured for the purpose as per EN 61386 and on surface non-fire propagating conduit as per NF EN 5067-2 and accessories 25mm	Metre	200		0.00	
<b>17.12</b>		Supply, Installation, Testing and Commissioning of 2 x 1.5 sq. mm diameter, copper conductor PVC insulated cable complete in existing Conduit as required.	Metre	150		0.00	

17.13	Supply of Connectors, interfaces, Mounting hardware, Cords, Jacks, Plugs, tags, identifiers, fixtures, clamps, screws, nut-bolts etc as required for the installation and commissioning.	Set	1		0.00
	<b>TOTAL SUBHEAD 17: ACCESS CONTROL as mentioned above</b>				<b>0.00</b>
	<b>SUBHEAD 18: SURGE PROTECTION</b>				
	<b>Surge Protection</b>				
18.01	Supply and installation of wall Mounted Shunt Surge Protection Device Erico Model TDX-100N-277 480TT or equivalent as per approved make list	no	2		0.00
18.02	Supply and installation of Rail Mounted Surge reduction filter Device Erico or equivalent as per approved make list				
	i SFR 2 P 20 amp eric Model TDF20 (20A/240)	no	2		0.00
	ii SFR 2P 32 amp 2p or	no	4		0.00
	ii SFR 63 amp 2p	no	2		0.00
18.03	Supply and installation of wall Mounted Surge reduction filter Device Erico or equivalent as per approved make list				
	ii SRF 4P 32 amp	no	4		0.00
	iii SRF 4P 63 amp	no	4		0.00
18.04	Supply and installation of Surge Protection Device SRF equivalent to medel SRF with I <sub>max</sub> =130KA,8/20 μs from Complete with in built incoming isolator & outing Circuit breaker	no	2		0.00
	<b>TOTAL SUB HEAD 18: Surge Protection as mentioned above</b>				<b>0.00</b>
	<b>SUBHEAD 19: INVERTER</b>				
19.00	Supply, installation, testing and commissioning of 2 kVA inverter with batteries 30minutes backup etc. complete in ready to use condition. Make Sukam, Microtek & Luminous	SET	1		0.00
	<b>TOTAL SUB HEAD 19: INVERTER AS MENTIONED ABOVE</b>				<b>0.00</b>

**Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

**SUMMARY SHEET FOR HVAC WORKS**

<b>SECTION</b>	<b>DESCRIPTION OF WORK</b>	<b>AMOUNT (MUR)</b>
<b>A</b>	<b>EQUIPMENTS</b>	<b>0.00</b>
<b>B</b>	<b>PIPING</b>	<b>0.00</b>
<b>C</b>	<b>AIR DISTRIBUTION</b>	<b>0.00</b>
<b>D</b>	<b>ELECTRICAL</b>	<b>0.00</b>
	<b>TOTAL FOR CANCER HOSPITAL</b>	<b>0.00</b>
<b>E</b>	<b>COST FOR RENOVATION WORKS</b>	<b>0.00</b>
	<b>TOTAL FOR HVAC WORKS</b>	<b>0.00</b>

BILL OF QUANTITIES (B.O.Q.) OF HVAC WORKS FOR "CANCER HOSPITAL, MAURITIUS"						
Item No. 1	Description 2	Total Qty 3	Unit 4	Rate in MUR. ( in Figure) 5	Rate in MUR (in words) 6	Amount (MUR) 7
The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required to fulfill the intent and purpose as laid down in the						
A)	<b>EQUIPMENTS</b>					
1.0	<b>WATER CHILLING UNITS. (AHRI/Eurovent Certified)</b>					
1.1	Supply, installation, testing & commissioning of 700 KW (actual) capacity air cooled water chilling units as specified and shown in equipment schedule complete as per specifications with-					
	a. Screw Compressors with motor.					
	b. Drive package.					
	c. Mounting frames for all components					
	d. Air cooled condenser with accessories. The condenser shall be coated as per manufacturer standard for use in saline air.					
	e. Chiller with accessories.					
	f. Refrigerant piping, fittings, accessories and valves etc.					
	g. Insulation of chiller and suction line.					
	h. First charge of refrigerant and oil.					
	i. Base frame with Vibration isolators.					
	j. Bellows in suction and discharge line for vibration isolation of suitable capacity.					
	k. Automatic capacity control arrangement.					
	l. Lot Safety controls, flow switches, pressure gauge, thermometer etc. as per specifications.					
	m. Suitable capacity motor with necessary insulation, starter panel complete with all necessary switchgears and control complete as required.					
	n. Necessary water drain & air purge valves wherever required.					
	o. Necessary lubrication device as per specifications complete.					
	p. Microprocessor based control panel complete with accessories as per specifications and BMS compatible BACNET / Modbus Protocol.					
	q. COP as per ASHRAE 90.1( Latest).					
	Chilled Water Leaving temp. 44 deg. F					
	Chilled Water Entering temp. 54 deg. F					
	Chiller fouling factor = 0.0005 (FPS units)					
	Ambient Temperature = 35 deg. C					
	AHRI/ Eurovent certified.					
	<b>Complete water chilling machine as above. (2W+1S)</b>	3	Nos			0.00
2.0	<b>WATER CIRCULATION PUMPS</b>					
2.1	<b>Primary Chilled Water Pumps</b>					
	Supply, installation, testing and commissioning of split casing end suction type centrifugal chilled water pump sets factory assembled and tested for rated efficiency mounted on a common base frame etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
	a. Pump with IP 55 TEFC induction motor with class F insulation, IE-3.					
	b. Channel base with vibration isolators, coupling, coupling guard etc.					
	c. Cladded insulation and anti corrosive coating inside and outside casing etc. of chilled water pump.					
	d. 2 Nos.- 150 mm dia dial type pressure gauge					
	e. Pumps shall be suitable for operation on 400+/- 10% Volts/ 3ph / 50 Hz/AC power supply.					
	f. Bellows in suction and discharge line for vibration isolation of suitable capacity.					
	The pump characteristic shall be as follows:					
2.1.1	Water flow rate= 480 USGPM Head = 18 Metre WC					
	<b>Primary chilled water pumps as described above. (2W+1S)</b>	3	Nos			0.00
2.2	<b>Secondary Pumps &amp; Variable Speed Pumping System</b>					
	Supply, installation, testing and commissioning of split casing type centrifugal chilled water recirculation pumps mounted on a common base etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
	a. Pump with IP 55 TEFC induction motor with class F insulation, IE-3 .					
	b. Channel base with vibration isolators, coupling, coupling guard etc.					

	c. Cladded insulation and anti corrosive coating inside and outside casing etc. of chilled water pump.				
	d. 2 Nos.- 150 mm dia dial type pressure gauge				
	e. Pumps shall be suitable for operation on 400+/- 10% Volts/ 3ph / 50 Hz/AC power supply.				
	f. The price will include control software and networking hardware and software for integration and compatibility with BMS (BACNET Protocol).				
	g. All pumps to be provided with separate VFD's (variable frequency drives). Separate control panel. Panel should also consist of cooling fan.				
	h. Electronic Differential Pressure Transmitters and separate PLC s for each sets..				
	i. The cost will include making necessary flanged suction and delivery headers in Heavy-Class MS.				
	j. Complete set system to be mounted on a common MS base frame and shall follow following duty.				
	k. Bellows in suction and discharge line for vibration isolation of suitable capacity.				
	The pump characteristic shall be as follows:				
2.2.1	480 USGPM				
	Head = 22 Metre WC				
	<b>Secondary chilled water pumps as described above (2W+1S)</b>	3	Nos		0.00
<b>3.0</b>	<b>AIR HANDLING UNITS (AHRI/ Eurovent Certified)</b>				
<b>3.1</b>	Supply, installation, testing and commissioning of sectional construction draw through type Air Handling Units (double skin type) as specified & shown in schedule of equipment complete with the following :-				
	a. Fan Section and canvas connection, Mixing Box, Thermal break profile. (double skin type)				
	b. Centrifugal blower plug type.				
	c. Coil section with cooling coil, heating coils as per specifications, minimum 2 bend PVC eliminators.				
	d. Pre filters with filter section in all AHUs.				
	e. Fine and hepa filters with filter section wherever specifically specified .				
	f. Drain pan, drain connection.				
	g. Squirrel cage induction IP 55 TEFC , Insulation class 'F', Duty S1 , IE-3 drive motor, drive arrangement, guard etc.				
	h. Necessary vibration isolators & supporting arrangement.				
	i. Fresh air intake arrangement, necessary water drain & air purge valves wherever required etc.				
	j. Canvass connections, necessary foundations, 2 nos pressure gauge, 2 nos thermometer etc				
	k. Controls for AHUs comprising of a set of PN-16 rating <b>2 Way pressure independent dynamic balancing cum control valve of required size fitted with modulating actuators</b> having manual override facility on each AHU alongwith wiring for interconnections with 1.5 sq. mm Cu Conductor multicore armoured complete as required. The actuator shall have required shut off capability of minimum 4 bar rating. The acuator shall be compatible with BMS.The valve actuator shall be capable of accepting 2-10 volt DC, 4-20 mA electric signal and shall provide similar transduced feedback output signal to control system.				
	l. Pre Filter : 90% down to 10 micron (EU-4 / MERV-7), Fine filter : 99% down to 3 micron (EU-8/ MERV-14), HEPA filter 99.97% down to 0.3 micron (EU-13/ MERV-17).				
3.1.1	AH-BF-01 - 12500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.2	AH-BF-2 5500 cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter )	1	Nos.		0.00
3.1.3	AH-GF-01 - 5500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.4	AH-GF-02 - 9000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.5	AH-FF-01-7000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.6	AH-FF-02-5500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.7	AH-FF-03-7500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.8	AH-2F-01 - 6500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.9	AH-2F-02 - 7500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.10	AH-2F-03 - 5500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.11	AH-3F-01 - 8000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.12	AH-3F-02 - 7500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.13	AH-3F-03 - 5500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.14	AH-4F-01 - 7000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.15	AH-4F-02- 12000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
3.1.16	AH-4F-03- 3000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.		0.00
<b>3.2</b>	<b>OT AHUs (AHRI/ Eurovent Certified)</b>				

	Supply, installation, testing and commissioning of sheet metal sectionalised construction draw thru type in double skin construction. Each Air Handling Units shall be with pre filter section with prefilters, mixing chamber, minimum 2 bend GSS/PVC eliminators, chilled water cooling coil of copper tube & Al fins construction, Oil duct heater of 3KW capacity with wall mounted electric panel, supply and return fans with vfd starter mounted on AHU, motor efficiency class IE-3 suitable for 400+/- 10% V, 50 Hz 3 Phase AC supply suitably designed for variable frequency drive, backward curved centrifugal direct driven plug fans for supply and return air, fine filters section, suitable pan type humidifier with humidifier section, suitable vibration isolation arrangement. Coil size shall be selected for a maximum face velocity of 500 FPM and static pressure shall be 135 mm WG. The air moving capacities shall be as detailed below. These units shall be in accordance with drawings and specifications. (The heaters shall be controlled through electro magnetic type contractors and safety thermostats / geysers as specified complete with wiring for interconnections with 1.5 sq. mm. copper conductor multi core armoured cable. The oil tank shall be 2mm thick ss 304L, pipe 19 mm dia of ss304 L) (All these AHUs shall be with thermal break profile and all its fans shall be AMCA/ equivalent certified)					
3.2.1	AH-5F OT1,OT2,OT3,OT4 - 3000cfm/ 6RD Cooling Coil/135 mm static (with pre & fine filter) (Hepa filters shall be supplied and installed at terminals by OT Vendor, the cost of these HEPA filters not to include in AHU cost)	4	Nos.			0.00
3.3	<b>CEILING SUSPENDED UNITS (AHRI/ Eurovent Certified)</b> Supply, installation, testing and commissioning of draw through type Air Handling Units (double skin type) of ceiling suspended type as specified & shown in schedule of equipment complete with the following :-					
	a. Fan Section and canvas connection, Thermal break profile. (double skin type)					
	b. Centrifugal blower direct driven.					
	c. Coil as per specifications.					
	d. Pre filters as required					
	e. Drain pan, drain connection.					
	f. Squirrel cage induction drive motor IP 55, TEFC, Insulation class 'F', duty S1, IE-3 drive arrangement, guard etc.					
	g. Necessary vibration isolators & supporting arrangement.					
	h. Fresh air intake arrangement, necessary water drain & air purge valves wherever required etc.					
	i. Canvas connections, suspension arrangement, 2 nos pressure gauge, 2 nos thermometer etc					
	j. Controls for AHUs comprising of a set of PN-16 rating 2 Way pressure independent dynamic balancing cum control valve of required size fitted with modulating actuators having manual override facility on each AHU along with wiring for interconnections with 1.5 sq. mm Cu Conductor multicore armoured complete as required. The actuator shall have required shut off capability of minimum 4 bar rating. The actuator shall be compatible with BMS. The valve actuator shall be capable of accepting 2-10 volt DC, 4-20 mA electric signal and shall provide similar transduced feedback output signal to control system.					
	k. Pre Filter : 90% down to 10 micron (EU-4 / MERV-7), Fine filter : 99% down to 3 micron (EU-8/ MERV-14), HEPA filter 99.97% down to 0.3 micron (EU-13/ MERV-17).					
3.3.1	CS-BF-01(CSSD) - 1000cfm/ 4RD Cooling Coil / 65 mm static (with pre & fine filter)	1	Nos.			0.00
3.3.2	CS-GF-01 - 2000cfm/ 4RD Cooling Coil / 65 mm static (with pre & fine filter)	1	Nos.			0.00
3.3.3	CS-FF-01 - 3000cfm/ 4RD Cooling Coil / 65 mm static (with pre & fine filter)	1	Nos.			0.00
3.3.4	CS-4F-01 - 4000cfm/ 4RD Cooling Coil / 65 mm static (with pre & fine filter)	1	Nos.			0.00
4.0	<b>Inline Fans/ Ventilation fans</b>					
4.1	Supply, installation, testing and commissioning of <b>Inline Fans</b> (with acoustic lining and low noise) with anti vibration mounting as shown in drawings and as per equipment schedule. Each fan shall be complete with centrifugal blowers. Fan motor shall be suitable for single phase AC supply. Item shall be complete with starter & cabling. <b>Inline Fans</b>					
4.1.1	Duty: Toilet Exhaust Air Quantity :500 CFM Static Pressure :20 mm wg	10	Nos.			0.00
4.1.2	Duty: Toilet/ Dirty corridor Exhaust Air Quantity :600 CFM Static Pressure :20 mm wg	6	Nos.			0.00
4.1.3	Duty: Toilet/ Dirty corridor Exhaust Air Quantity :800 CFM Static Pressure :20 mm wg	2	Nos.			0.00



4.1.4	Duty: Toilet/ Dirty corridor Exhaust Air Quantity :900 CFM Static Pressure :20 mm wg	6	Nos.		0.00
<b>4.2</b>	<b>Centrifugal Fans (SISW)</b> Supply, installation, testing and commissioning of <b>SISW CENTRIFUGAL FANS</b> for ventilation system. Each fan shall be complete with TEFC type IP 55 motor with class F insulation, belt drive, pulley mounted on motor & fan shaft, belt guard, motor mount, casing and vibration isolators as per specifications and shop drawings. All expose fan shall be covered with G/S housing as per approved shop drawings to protect fan and motors from weather. Casing to be epoxy painted for protection from saline air. Fan motor shall be suitable for 3 Phase, 400+/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers. Fan shall be epoxy painted to resist saline air.				
	Duty: Laundry ventilation (exhaust)				
4.2.1	Air Quantity : 6000 CFM Static Pressure : 30 mm wg	1	Nos.		0.00
	Duty: Kitchen ventilation (exhaust)				
4.2.2	Air Quantity : 6500 CFM Static Pressure : 60 mm wg	1	Nos.		0.00
<b>4.3</b>	<b>Dry Scrubber for Kitchen</b> Supply, instalation, testing and commisioning of Electroststic Precipitation based Dry Type Scrubber Unit complete with hanging arrangements, supports , hangers etc as per specification and drawings.				
4.3.1	Dry type scrubber, capacity 6500 CFM, suitable for 200 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	1	No.		0.00
	<b>Ventilation Fans</b>				
<b>4.4</b>	<b>Tube Axial Flow Fans</b> Supply, installation,testing and commisioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven. Fan motor shall be suitable for 3 Phase, 400+/- 10% V, 50Hz AC supply with IP 55 protection, class 'F' insulation and IE-3 class. Fan shall be complete with gravity louvers, vibration isolators. Fan shall be epoxy painted to resist saline air.				
	Floor / Services ventilation (Fresh Air Supply)				
4.4.1	Air Quantity : 3000 CFM, 25 mm st. pr.	5	Nos.		0.00
4.4.2	Air Quantity : 4500 CFM, 25 mm st. pr.	4	Nos.		0.00
4.4.3	Air Quantity : 5000 CFM, 25 mm st. pr.	2	Nos.		0.00
4.4.4	Air Quantity : 5500 CFM, 25 mm st. pr.	4	Nos.		0.00
4.4.5	Air Quantity : 7000 CFM, 25 mm st. pr.	3	Nos.		0.00
4.4.6	Air Quantity : 8000 CFM, 25 mm st. pr.	1	Nos.		0.00
4.4.7	Air Quantity : 8500 CFM, 25 mm st. pr.	2	Nos.		0.00
4.4.8	Air Quantity : 13500 CFM, 25 mm st. pr.	1	Nos.		0.00
4.4.9	Duty: Lift Lobby pressurisation Air Quantity : 11500 CFM Static Pressure : 25 mm wg	1	Nos		0.00
4.4.10	Duty: Lift well pressurisation Air Quantity : 7500 CFM Static Pressure : 25 mm wg	9	Nos		0.00
<b>4.5</b>	<b>Tube Axial Fans (Fire rated)</b>				

	Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 400+/- 10% V, 50Hz AC supply with IP 55 protection, class H insulation and IE-3 class. Fan shall be complete with vibration isolators, gravity louvers. <b>Fan shall be 400 deg C, 2hrs fire rated. Fan shall be epoxy painted to resist saline air.</b>				
4.5.1	Air Quantity : 4500 CFM, 25 mm st. pr.	4	Nos.		0.00
4.5.2	Air Quantity : 5000 CFM, 25 mm st. pr.	1	Nos.		0.00
4.5.3	Air Quantity : 5500 CFM, 25 mm st. pr.	4	Nos.		0.00
4.5.4	Air Quantity : 7000 CFM, 25 mm st. pr.	3	Nos.		0.00
4.5.5	Air Quantity : 8000 CFM, 25 mm st. pr.	2	Nos.		0.00
4.5.6	Air Quantity : 8500 CFM, 25 mm st. pr.	2	Nos.		0.00
4.5.7	Air Quantity : 13500 CFM, 25 mm st. pr.	1	Nos.		0.00
<b>5.0</b>	<b>MONSOON REHEAT ARRANGEMENT FOR OTs AND ICUs</b>				
	Supply, installation, testing & commissioning of monsoon reheating arrangements fixed in ducts/ plenums complete with strip heaters, fixing frame work, insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats/ humidistats through electro magnetic type contactors and safety thermostats/ geysers as specified complete with wiring for interconnections with 1.5 sq.mm copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc.				
5.1	3Kw (1.5 KW x 2 banks)	6	Sets		0.00
<b>6.0</b>	<b>EXPANSION TANK</b>				
	Supply, installation, testing and commissioning of pressurised closed type Expansion tank with air separator and dosing pumps (1w+1s) etc. The expansion tank shall be complete with all necessary valves, vent connection. The tank shall be epoxy painted to resist saline air. Quoted price shall include of 75 mm thick 32 kg/m <sup>3</sup> density TF quality Expanded polystyrene insulation and clad with 24 gauge aluminum sheet for chilled water tank . Tank shall be equipped with 15 mm dia vent, 450 mm dia manhole with cover, 40 mm dia make up with overflow connection (ball valve should be provided at the make up line), 50 mm dia drain and over flow with necessary valves and 50 mm dia insulated pipe connection to nearest chilled water return line. All outdoor accessories shall be epoxy coated to resist saline air.				
6.1	1000 ltrs.	1	No.		0.00
	<i>Subtotal of A</i>				0.00
<b>B)</b>	<b>PIPING</b>				
<b>7.0</b>	<b>INSULATED CHILLED WATER PIPING</b>				
	<b>MS PIPING</b>				
7.1	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with following closed cell elastometric nitrile rubber of class 'O' insulation applied by adhesive conforming to standard specifications and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing felt strip at joints and repairing of damage to building etc. as per specifications and as required complete in all respect. Note:-The Pipes of sizes 150mm & below shall be M.S. heavy class and pipes size above 150mm shall be welded black steel pipe heavy class , from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.				
7.1.1	250 mm dia (32 mm insulation)	40	RM		0.00
7.1.2	200 mm dia (32 mm insulation)	150	RM		0.00
7.1.3	150 mm dia (32 mm insulation)	80	RM		0.00
7.1.4	125 mm dia (32 mm insulation)	100	RM		0.00
7.1.5	100 mm dia (32 mm insulation)	140	RM		0.00
7.1.6	80 mm dia (32 mm insulation)	200	RM		0.00
7.1.7	65 mm dia (32 mm insulation)	150	RM		0.00

7.1.8	50 mm dia (32 mm insulation)	100	RM		0.00
7.1.9	40 mm dia (32 mm insulation)	100	RM		0.00
7.1.10	32 mm dia (32 mm insulation)	40	RM		0.00
7.1.11	25 mm dia (32 mm insulation)	30	RM		0.00
7.1.12	20 mm dia (32 mm insulation)	30	RM		0.00
<b>8.0 INSULATED VALVES &amp; STRAINERS</b>					
Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.					
8.1	<b>Butterfly valves (Manual) :</b> below mentioned valves sizes PN-16 of Gun Metal to BS 1010				
8.1.1	200 mm dia.	2	Nos		0.00
8.1.2	150 mm dia.	18	Nos		0.00
8.1.3	125 mm dia.	4	Nos		0.00
8.1.4	100 mm dia.	4	Nos		0.00
8.1.5	80 mm dia.	20	Nos		0.00
8.1.6	65 mm dia	20	Nos		0.00
8.1.7	50 mm dia.	14	Nos		0.00
8.1.8	40 mm dia.	6	Nos		0.00
8.1.9	32 mm dia	8	Nos		0.00
8.2	<b>Balancing valves with built in measuring facility</b> with gun metal & PN 16 pressure rating for chilled / hot water circulation as specified.				
8.2.1	150 mm dia.	9	Nos		0.00
8.2.2	100 mm dia.	2	Nos		0.00
8.2.3	80 mm dia.	10	Nos		0.00
8.2.4	65 mm dia.	10	Nos		0.00
8.2.5	50 mm dia.	7	Nos		0.00
8.2.6	40 mm dia.	3	Nos		0.00
8.2.7	32 mm dia.	4	Nos		0.00
8.3	<b>Non return/Check valves :</b> of PN 16 pressure rating for chilled / hot water circulation including insulation as specified.				
8.3.1	150 mm dia.	6	Nos		0.00
8.4	<b>Y- strainers</b> of gun metal with micromesh basket for chilled / hot water circulation including insulation as specified.				
8.4.1	150 mm dia.	6	Nos		0.00
8.4.2	100 mm dia.	2	Nos		0.00
8.4.3	80 mm dia.	10	Nos		0.00
8.4.4	65 mm dia	10	Nos		0.00
8.4.5	50 mm dia	7	Nos		0.00
8.4.6	40 mm dia	3	Nos		0.00
8.4.7	32 mm dia	4	Nos		0.00
8.5	Providing and fixing in position the following <b>Gate Valves</b> duly insulated as per specifications:				
8.5.1	50 mm dia Valves	2	Nos.		0.00
8.5.2	40 mm dia Valves	2	Nos.		0.00
8.5.3	32 mm dia Valves	2	Nos.		0.00
8.6	<b>Auto Air Vent Valves</b>				
8.6.1	15 mm dia	12	Nos.		0.00
8.6.2	20 mm dia	10	Nos.		0.00
8.6.3	25 mm dia	10	Nos.		0.00
8.7	<b>Ball Valve with strainer</b>				

8.7.1	25 mm	6	Nos.		0.00
8.7.2	20 mm	6	Nos.		0.00
8.8	<b>Ball valve without strainer</b>				
8.8.1	32 mm	5	Nos.		0.00
8.8.2	20 mm	5	Nos.		0.00
8.9	Supply, installation, testing and commissioning cooling-heating thermostats :-				
8.9.1	For AHUs	25	Nos.		0.00
8.10	<b>DRAIN PIPING</b>				
	Supply, laying/fixing, testing and commissioning of uPVC non pressure pipes with necessary clamps, supports, anti vibration mountings, hangers and solvent welded fittings such as bends, tees, reducers etc. duly insulated with 9 mm thick closed cell elastomeric insulation and finally applying 0.63 mm aluminium cladding as per specifications for condensate drain from air handling units and chillers etc.				
8.10.1	50 mm dia	130	RM		0.00
8.10.2	40 mm dia	50	RM		0.00
8.10.3	32 mm dia	40	RM		0.00
8.10.4	25 mm dia	40	RM		0.00
	<b>Subtotal of B</b>				0.00
C)	<b>AIR DISTRIBUTION</b>				
9.0	<b>G/S DUCTING</b>				
9.1	Supply, installation, balancing and commissioning of G/S duct work to SMACNA and ASHRAE norms complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.				
9.1.1	Thickness 1.25 mm sheet	600	Sqm.		0.00
9.1.2	Thickness 1.00 mm sheet	700	Sqm.		0.00
9.1.3	Thickness 0.80 mm sheet	3500	Sqm.		0.00
9.1.4	Thickness 0.63 mm sheet	6000	Sqm.		0.00
10.0	<b>SS DUCTING</b>				
10.1	Stainless Steel 304 sheets, to SMACNA and ASHRAE norms c/w all bends, tees, branch-outs, splitters, spigots, (Material meeting BS 476 Part 6 and part 7 norms)				
10.1.1	Thickness 1.25 mm sheet	60	Sqm.		0.00
11.0	<b>ALUMINIUM DUCTING</b>				
11.1	Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications.				
11.1.1	Thickness 0.80 mm sheet	350	Sqm.		0.00
11.1.2	Thickness 1.00 mm sheet	500	Sqm.		0.00
12.0	<b>FIRE DAMPERS</b>				
	Supplying, Fixing,testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications				
12.1	Fire/smoke Damper	30	Sqm		0.00
12.2	Actuator	45	sets		0.00
13.0	<b>VOLUME CONTROL DAMPERS</b>				
13.1	Supply, installation, testing and commissioning of G/S volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc. as per specifications.	40	Sqm.		0.00
14.0	<b>CEILING DIFFUSERS</b>				
14.1	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	60	Sqm.		0.00

14.2	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	60	Sqm.		0.00
14.3	Supplying, fixing, testing, commissioning of swirl diffusers made of pressed aluminium sheet complete with collar and duly powder coated finish.	60	Sqm.		0.00
<b>15.0</b>	<b>GRILLES</b>				
	Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.				
15.1	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications.	45	Sqm.		0.00
15.2	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required.	50	Sqm.		0.00
<b>16.0</b>	<b>Ceiling Extract Grille</b>				
	Egg - crate aluminium ceiling extract grille with back damper, 600x600 dimension	10	Nos.		0.00
<b>17.0</b>	<b>LINEAR GRILLES</b>				
	Supply, installation, testing and balancing of air linear grilles of powder coated aluminium construction suitable for installation in walls/false ceiling, boxing etc. as per specifications and drawings.	100	Sqm.		0.00
<b>18.0</b>	<b>GRILLE DAMPERS</b>				
	Supply, installation and balancing of aluminium construction volume control dampers for linear grills.	50	Sqm.		0.00
<b>19.0</b>	<b>LAMINAR FLOW DIFFUSERS</b>				
	Providing & fixing of 18swg aluminium powder coated non-respiratory 100% air tight laminar flow diffusers. LFDs shall have 50% perforation. The perforated front face is openable hinge type complete with key operated opposed blade dampers from front.				
19.1	Size: 1200 x 600	44	Nos.		0.00
<b>20.0</b>	<b>FRESH AIR GRILLES with bird screen</b>				
	Supply, installation, testing, commissioning and balancing of fresh air opening comprising of powder coated extruded aluminium louvers with bird screen, projection with frame and volume control damper with lever mounting arrangement etc. as per specifications and drawings.	25	Sqm.		0.00
<b>21.0</b>	<b>DUCT INSULATION</b>				
21.1	Supplying and fixing of following thickness duly laminated aluminium foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.				
21.1.1	25 mm	10000	Sqm.		0.00
21.1.2	25mm (UV Protection with GC)	250	Sqm.		0.00
<b>22.0</b>	<b>ACOUSTIC</b>				
22.1	<b>DUCT ACOUSTIC LINING</b>				
	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m <sup>3</sup> , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	100	Sqm.		0.00
	<b>Note:-</b> No lining inside supply / return duct or plenum shall be done if the airside system is equipped with fine, hepa filters.				
	<b>Subtotal of C</b>				0.00
<b>D)</b>	<b>ELECTRICAL</b>				
<b>23.0</b>	<b>MAIN HVAC PANEL</b>				

	Supply, installation, testing and commissioning of A/C Panel, Type Tested Assembly (TTA), as per IEC 61439 cubicle type IP-55, totally enclosed, free standing type, dust, damp and vermin proof panel, powder coated, made up of CRCA sheet, complete with aluminum busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.				
	Note :				
i	All ACBs shall have spare contacts				
ii	All ACBs should have Icw =Ics=Icu=50 KA for 1 sec				
iii	All MCCBs shall have Ics=Icu=100%				
iv	Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door for all outgoing having microprocessor based MCCB				
v	All indication Lamps will be LED Type .				
vi	All starters of this panel shall be provided with digital ampere meter with suitable CTs, thermal overload relay, inbuilt/separate single phase preventer, contactors, timers, spare NO-NC contacts, push buttons, ON, OFF, TRIP indication (LED Type) and potential free contacts and relay for interlocking to FDA etc. complete as required.				
vii	100 VA transformer 220v/24v AC for control wiring with 10 no.s 6A SP MCB 10 KA in all AHU panel is also in the scope of supply				
<b>23.1</b>	<b>Main/ Emergency Air-conditioning MCC in plant room</b>				
<b>A</b>	<b>INCOMER</b>				
i	<b>2 No. ACB Panels each having following:</b>				
	1250A , 400 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button.				
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.				
	Push button to Close the ACB.				
	1 Digital multifunction meter with suitable CTs.				
<b>B</b>	<b>BUSBARS</b>				
	1250 Amps TPN busbars of Copper with temperture rise of 40 degree celsius over and above ambient temperture of 45 degree celsius.				
<b>C</b>	<b>Bus Coupler</b>				
i	<b>1 No. ACB Panels each having following:</b>				
	1250A, 400 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.				
	Push button to CLOSE the ACB.				
	1 Set of Digital Ammeter with ASS and CTs.				
<b>D</b>	<b>OUTGOING</b>				
i	<b>3 Nos. MCCB feeder as per following details/ specifications: For Water Chilling Machines</b>				
	800 Amp, 400 volts, 50 KA, Four Pole, MCCB with Microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
ii	<b>3 Nos. MCCB feeder as per following details/ specifications:</b>				
	63 Amp 400 volts, 50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	3 Phase, fully automatic Star Delta Starter for 25 HP primary chilled water pumps.				
iii	<b>2 Nos. MCCB feeder as per following details/ specifications:</b>				
	125 Amp 400 volts, 50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	3 Phase, fully automatic Star Delta Starter for 25 HP Secondary chilled water pumps.				

iv	<b>3 Nos. MCCB feeder as per following details/ specifications:</b>				
	100 Amp 400 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
v	<b>7 Nos. MCCB feeder as per following details/ specifications:</b>				
	63 Amp 400 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
vi	<b>4 Nos. MCCB feeder as per following details/ specifications:</b>				
	32 Amp 400 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Main HVAC panel Complete as above</b>	1	Each		0.00
<b>23.2</b>	<b>AHU Distribution Panels</b>				
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.				
	<b>NOTE</b>				
i	All MCCBs shall have $I_{cs}=I_{cu}=100\%$				
ii	100 VA transformer 220v/24v AC for control wiring with 10 no.s 6A SP MCB 10 KA in all AHU panel is also in the scope of supply				
iii	All starters shall be provided with digital ampere meter with suitable CTs, thermal overload relay, inbuilt/separate single phase preventer, contactors, Timers, spare NO-NC contacts, Push Buttons ON, OFF, TRIP indication (LED Type) and potential free Contact & relays for interlocking to FDA etc. complete as required.				
iv	All indication Lamps will be LED Type.				
v	All MCCBs shall have extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
23.2.1	<b>AHP- BF-01</b>				
	<b>INCOMER :</b>				
	1 nos. 125 Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 400 V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	6 set - 32 A, 400 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 5/7.5 HP fan motor as required.				
ii	7 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	1	Panel		0.00
23.2.2	<b>AHP- GF-01</b>				

	<b>INCOMER :</b>				
	1 nos. 100Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 400 V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	2 set - 32 A, 400 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 7.5 HP fan motor as required.				
ii	10 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	2	Panel		0.00
23.2.3	<b>AHP- FF-01</b>				
	<b>INCOMER :</b>				
	1 nos. 100 Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 415V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	3 set - 32 A, 400 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 5 HP AHU motor as required.				
ii	3 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	2	Panel		0.00
23.2.4	<b>AHP- 2F, 3F</b>				
	<b>INCOMER :</b>				
	1 nos. 100 Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 400V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	3 set - 32 A, 400 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 5/7.5 HP Ventilation fan motor as required.				
ii	3 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	4	Panel		0.00
23.2.5	<b>AHP-4F-01</b>				
	<b>INCOMER :</b>				



	1 nos. 100 Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 400 V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	2 set - 32 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 12.5 HP AHU motor as required.				
ii	3 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1- 3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	1	Panel		0.00
23.2.6	<b>AHP- TER-1</b>				
	<b>INCOMER :</b>				
	1 nos. 200 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 415V , 50 Hz.				
	<b>OUTGOINGS :</b>				
i	2 set - 63 A, 400 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 7.5 HP fan motor as required.				
ii	6 set - 32 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
iii	2 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1- 3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	1	Panel		0.00
23.2.7	<b>AHP- TER-02</b>				
	<b>INCOMER :</b>				
	1 nos. 100 Amp 400 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.				
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.				
	1 No. 0 to 500 V Digital voltmeter with selector switch.				
	Digital ammeter with selector switch with one set Suitable C.Ts.				
	<b>Bus Bar</b>				
	300 A TPN Copper bus bar 400V , 50 Hz.				
	<b>OUTGOINGS :</b>				
ii	9 set - 16 A, 400 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.				
	3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.				
	<b>Complete panel as above</b>	1	Panel		0.00
23.3	<b>AHU/FAN STARTER PANELS</b>				
	S/I/T/C of following cubical type dead front sheet metal wall mounted panel sleeve type aluminium bus bar including of anchoring into wall, power copper conductor armoured cabling, control wiring, copper earthing, termination from electrical panel to motor from each panel shall be provided by HVAC contractor for internal wiring and earthing of AHU motor as required from panel shall be included.				

	<b>The panel shall include following accessories and starter are as-</b>				
	a) Suitable size TPN MCCB for incoming power supply.				
	b) Terminal block for distribution.				
	c) Single-phase preventer.				
	d) Phase indicating light with toggle switch, indication lights for 'ON/' 'OFF' status and ON delay timer.				
	e) Auto manual restart arrangement of AHU/ Exhauster motor with selector switch.				
	f) Digital 96 mm x 96 mm voltmeter and ammeter of suitable range.				
	g) Time delay relay for automatic restart of AHU motor.				
	h) 220/24 volts transformer for control devices.				
	i) 24 volts wiring to the 2/3 way valve and thermostats.				
	j) wiring for micro switch smoke sensor and solenoid valve, and for stopping the fan when smoke / fire occurred through smoke sensor.				
	k) Control wiring.				
	with following starter and VFD-				
	1. Suitable size starter with VFD complete with change over arrangement and in built fan for panel cooling.				
<b>23.3.1</b>	<b>AHU/FAN STARTER PANEL</b>				
	1 No. 63 Amps MCCB 25 KA for 10 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, digital ammeter with ASS and CTs for AHU/Fan motor as required.	2	Nos.		0.00
<b>23.3.2</b>	<b>AHU/FAN STARTER PANEL</b>				
	1 No. 32 Amps MCCB 25 KA for 7.5 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, digital ammeter with ASS and CTs for AHU/Fan motor as required.	10	Nos.		0.00
<b>23.3.3</b>	<b>AHU/FAN STARTER PANEL</b>				
	1 No. 32 Amps MCCB 10 KA for 5 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, digital ammeter with ASS and CTs for AHU/Fan motor as required.	9	Nos.		0.00
<b>23.3.4</b>	<b>AHU/FAN STARTER PANEL</b>				
	1 No. 16 Amps MCCB 25 KA for 3 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, digital ammeter with ASS and CTs for AHU motor as required.	10	Nos.		0.00
<b>23.3.5</b>	<b>AHU/FAN STARTER PANEL</b>				
	1 No. 16 Amps MCCB 10 KA for 0.5 - 2 HP Motor with suitable Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, digital ammeter with ASS and CTs for AHU/Fan motor as required.	13	Nos.		0.00
<b>24.0</b>	<b>CABLING</b>				
<b>24.1</b>	<b>LT CABLES</b>				
	Supply and laying cable of Include for (i) all cable glands, lugs, cable identification tags, etc. (ii) all underground/ underfloor yellow/orange PVC sleeves, in-situ conduits/sleeves, warning tape, cable trays, etc. (iii) all pressure type puddle flanged sleeves and masking plates for all pipes/sleeves penetrations through external walls below ground level including sealing with expansive foam and sikaflex compound after passage/installation of cables (v) all proprietary terminations for the following multicore copper conductor PVC armoured XLPE cable as per as per BS 5467 /IEC 60502				
24.1.1	5 Core 25 Sqmm.	400	Metre		0.00
24.1.2	5 Core 35 Sqmm.	50	Metre		0.00
24.1.3	5 Core 50 Sqmm.	300	Metre		0.00
24.1.4	5 Core 95 Sqmm.	100	Metre		0.00
24.1.5	5 Core 185 Sqmm.	300	Metre		0.00
24.1.6	5 Core 240 Sqmm.	300	Metre		0.00
24.1.7	5 Core 300 Sqmm.	80	Metre		0.00
24.1.8	5 Core 16 Sq mm	300	Metre		0.00

24.1.9	5 Core 10 Sq mm	350	Metre		0.00
24.1.10	5 Core 6 Sq mm	400	Metre		0.00
24.1.11	5 Core 4 Sqmm.	400	Metre		0.00
<b>25.0</b>	<b>CABLE TRAYS</b>				
25.1	Fabrication and Installing following size Hot Dipped Perforated Galvanised Cabletrays/Cable ladders as per BS729 cluding Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.				
25.1.1	300 mm width	200	Mtr		0.00
25.1.2	200 mm width	100	Mtr		0.00
25.1.3	150 mm width	300	Mtr		0.00
25.1.4	100 mm width	300	Mtr		0.00
<b>26.0</b>	<b>EARTHING</b>				
26.1	Supply and installation of one number earth pit with advance maintainance free Earthing System consisting of one Number,copper bonded steel electrode of minimum <b>25 mm dia.</b> (as per IE C62561-2 ) With a minimum coating thickness of 250 microns and length of 3 meters, 22 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required.	4	Set		0.00
26.2	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.				
26.2.1	25mmx 5mm	500	Mtr		0.00
<b>27.0</b>	<b>CONTROL CABLING</b>				
	Supply, laying, effecting proper connections, testing & commissioning of 1.5 sq.mm. PVC insulated copper multicore cables (as per relevent BS Standards) from AHU's and AC equipments to central control console.				
27.1	10 core cable	100	Mtr		0.00
27.2	8 core cable	1000	Mtr		0.00
27.3	6 core cable	150	Mtr		0.00
27.4	3 core cable	100	Mtr		0.00
27.5	2 core cable	500	Mtr		0.00
<b>28.0</b>	<b>CONTROL CONSOLE /DESK</b>				
	Supplying, installation, testing & commissioning of floor mounted desk type control console cum indicating panel IP-55 in the A.C. plant room containing various indications and controls for the complete air-conditioning system comprising chilling units, chilled/ Hot/ condenser fans, Ex. blower, Fans etc , Hot water generator with test push button facility. The panel shall be fabricated from minimum 1.6mm thick M.S. powder coated sheet of approved design. The air-conditioning module of the central control cum indicating panel shall contain the following accessories. Status indication (ON, OFF & fault) of each compressor for each chilling machine, hot water boiler etc. Push buttons and indicating lamps for remote start & stop and status indication for every nos of the water circulating pumps. Ex blower, Fans etc. Hooter and flashing lamp to indicate operation of any safety/ shut down with necessary contactors, accept, reset and test push buttons. Complete wiring with copper conductor PVC insulated multicore 2.5 sq.mm stranded cable (excluding supply of cable, tray, clamps etc) from various equipments in the A.C. plant room, AHU's Terrace plant room etc to the control console panel as required.				
	<b>Complete Panel As above for Following blocks</b>				
	<b>For Plant room</b>	1	Panel		0.00
	<b>Subtotal of D</b>				0.00
(E)	<b>RENOVATION / ALTERATIONS WORKS</b>				

<b>29.0</b>	<b>VRV SYSTEMS (Variable Refrigerant volume)</b>				
<b>29.1</b>	<b>Outdoor Units-Heat Pump (R410A) (Heating &amp; Cooling both)</b>				
	Supply Installation Testing and Commissioning of AIR COOLED and ALL INVERTER BASED VARIABLE REFRIGERANT VOLUME MODULAR TYPE AIR CONDITIONING SYSTEM with R410A suitable for 400 ± 10% , 50 ± 3% Hz. The unit shall consist of indoor units and external condensing units and other accessories as listed below complete in all respects as under:				
	<b>Outdoor Units-Heat Pump (R410A) (Heating &amp; Cooling both) - EER as per ASHRAE 90.1-2010 or Equivalent.</b>				
29.1.1	18 HP Heat Pump type	1	Nos		0.00
29.1.2	12 HP Heat Pump type	7	Nos		0.00
29.1.3	10 HP Heat Pump type	5	No.		0.00
29.1.4	8 HP Heat Pump type	1	No.		0.00
<b>29.2</b>	<b>Indoor Units</b>				
29.2.1	Hi wall Type -3.5 KW	69	Nos.		0.00
29.2.2	Hi wall Type -5.3 KW	11	Nos.		0.00
29.2.3	Hi wall Type -7 KW	15	Nos.		0.00
<b>29.4</b>	<b>Remote Controller</b>				
29.4.1	Cordless Remotes	95	Nos.		0.00
<b>29.5</b>	<b>Central Remote Controller</b>	3	Nos		0.00
	<b>Important Note for VRV system:</b>				
	All compressors shall be with inverter technology. VRF system shall be with heating / cooling mode.				
	The indoor unit shall be with drain pump kit.				
	Ductable Indoor Units shall be complete with its electrical control panel having switches & starters.(BMS Compatible)				
	The VRV controller should communicate all the parameters to BMS an Modbus (Bacnet).				
	The cost must include transportation to site & lifting upto terrace floor in knocked down condition.				
	Installation including necessary anti-vibrations pads etc.				
<b>29.6</b>	<b>Refrigerant Piping</b>				
	Supply, Installation, commissioning of Interconnecting refrigerant pipe work (including refrigerant joints) with (25mm/25 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per specifications, all piping inside the room shall be properly supported with MS hanger & clamps. Exposed refrigerant copper piping shall be with uv coating				
29.6.1	34.9 mm O.D. (insulation : 19 mm)	120	RM		0.00
29.6.2	28.6 mm O.D. (insulation : 19 mm)	350	RM		0.00
29.6.3	22.2 mm O.D. (insulation : 13 mm)	170	RM		0.00
29.6.4	19.1 mm O.D. (insulation : 13 mm)	150	RM		0.00
29.6.5	15.9 mm O.D. (insulation : 13 mm)	260	RM		0.00
29.6.6	12.7 mm O.D. (insulation : 13 mm)	200	RM		0.00
29.6.7	9.5 mm O.D. (insulation : 13 mm)	250	RM		0.00
29.6.8	6.4 mm O.D. (insulation : 13 mm)	200	RM		0.00
<b>29.7</b>	<b>Drain Piping</b>				
	Supply,installation,testing and commissioning of rigid uPVC piping complete with fittings, supports as per specifications and duly insulated with 6 mm thick closed cell nitrile rubber. Density of uPVC pipe shall not be less than 10 kg / m <sup>3</sup> .				
29.7.1	40 mm dia	80	RM		0.00
29.7.2	32 mm dia	130	RM		0.00
29.7.3	25 mm dia	200	RM		0.00
29.8	Supply, installation, testing and commissioning of G.I. tray for exposed refrigerant copper piping at terrace to be covered with self threaded screw.	250	RM		0.00
<b>29.9</b>	<b>Control &amp; Transmission Wiring</b>				
	Supply,installation,testing and commissioning of control cum transmission wiring of 2 core x 1.5 sqmm copper in suitable PVC conduits between indoor and out door unit.	900	RM		0.00
<b>29.10</b>	<b>Weather Proof Isolators For outdoor Units</b>				
	Weather proof Isolator box with 100 mA 4P RCBO of suitable ratings near the outdoor units for isolations.	10	Nos.		0.00

<b>29.11</b>	<b>SPLIT AC UNITS</b>				
	Split units comprising indoor & outdoor units complete with piping & insulation to pipes cabling ,power cabling, drain piping, mounting arrangements with suitable rating stabilizer. The refrigerant shall be used of green gas.				
29.11.1	12000 BTU	4	Nos.		0.00
29.11.2	18000 BTU	4	Nos.		0.00
	<i>Subtotal of E</i>				0.00
	<b>TOTAL FOR HVAC WORKS</b>				<b>0.00</b>

Name of Project :- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.

**Summary Cost in Rs. Special Services**

<b>S. No.</b>	<b>DESCRIPTION</b>	<b>Amount in Mauritian Rupees.</b>
A.	For Cancer Hospital	
1	MODULAR OT	0.00
2	MINOR OT	0.00
3	CSSD	0.00
4	CENTRAL MEDICAL GAS MANIFOLD SYSTEM*	0.00
5	LAUNDRY	0.00
6	KITCHEN	0.00
7	PNEUMATIC TUBE SYSTEM	0.00
	<b>Total</b>	<b>0.00</b>
2	Renovation Work	<b>0.00</b>
	<b>TOTAL</b>	<b>0.00</b>

**BOQ**

**Package- Supply, installation, testing and commissioning of MODULAR OT on turnkey basis along with equipment including DLP**

<b>BOQ Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate in Fig in MUR</b>	<b>Rate in Words in MUR</b>	<b>Amount in MUR</b>
1.0	<b>WALL &amp; CEILING SYSTEM (SMS)</b> Complete with all accessories as per technical specification Area	SQM	740			0.00
2.0	<b>CEILING FILTRATION SYSTEM / LAMINAR AIR FLOW SYSTEM (AIR MANAGEMENT SYSTEM)</b> Complete with all accessories as per technical specification	Nos	4			0.00
3.0	<b>OPERATION THEATRE FLOORING (ANTISTATIC CONDUCTIVE TILES )</b> Complete with all accessories as per technical specification	SQM	300			0.00
4.0	<b>DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) Size-2100 x 1800 mm</b> Complete with all accessories as per technical specification	Nos	4			0.00
5.0	<b>PRESSURE RELIEF DAMPERS</b> Complete with all accessories as per technical specification	Nos	4			0.00
6.0	<b>INTERNAL DUCTING</b> Complete with all accessories as per technical specification	lot	4			0.00
7.0	<b>PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES</b> Complete with all accessories as per technical specification	Nos	40			0.00
8.0	<b>SURGEON CONTROL PANEL (Imported)</b> Complete with all accessories as per technical specification	Nos	4			0.00
9.0	<b>ADJUSTABLE MOVABLE BOOM ARM SYSTEMS</b>					
a	<b>SURGEON PENDANT (Imported)</b> Complete with all accessories as per technical specification	Nos	4			0.00
b	<b>ANESTHETIST PENDANT (Imported)</b> Complete with all accessories as per technical specification	Nos	4			0.00
10.0	<b>X-RAY FILM VIEWER</b> Complete with all accessories as per technical specification	Nos	4			0.00
11.0	<b>WRITING BOARD (LIST BOARD)</b> Complete with all accessories as per technical specification	Nos	4			0.00
12.0	<b>STORAGE UNIT</b> Complete with all accessories as per technical specification	Nos	4			0.00
13.0	<b>DISTRIBUTION BOARD ELECTRICAL WIRING, CONDUITING WITH FIXTURES INSIDE THE OPERATION THEATRE</b> Complete with all accessories as per technical specification	Lot	4			0.00
14.0	<b>SCRUB STATION</b> Complete with all accessories as per technical specification	Nos	4			0.00
15.0	<b>MEDICAL GAS LINE INSTALLATION</b> Complete with all accessories as per technical specification	Lot	4			0.00
16.0	<b>VIEW WINDOW</b> Complete with all accessories as per technical specification	Nos	4			0.00
17.0	<b>EXHAUST CABINET</b> Complete with all accessories as per technical specification	Nos	4			0.00
18.0	<b>SURGICAL OT LIGHT (LED) WITH CAMERA AND MONITOR (Imported)</b> Complete with all accessories as per technical specification	Nos.	4			0.00
					<b>TOTAL MUR</b>	<b>0.00</b>

BOQ						
Construction of MINOR OT						
BOQ Item No. 1	Description 2	Unit 3	Qty 4	Unit Rate (In Figure) MUR 5	Unit Rate in Words in MUR 6	Amount in MUR 7
1.0	CEILING SYSTEM Complete with all accessories as per technical specification	SQM	45			0.00
2.0	CEILING FILTRATION SYSTEM / LAMINAR AIR FLOW SYSTEM Complete with all accessories as per technical specification	Nos	1			0.00
3.0	CORNER COVING Complete with all accessories as per technical specification	MTR	70			0.00
4.0	WALL PAINTING Epoxy painting Complete with all accessories as per technical specification	SQM	80			0.00
5.0	DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) Size-2100 x 1800 mm Complete with all accessories as per technical specification	Nos	1			0.00
6.0	DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) Size-2100 x 1000 mm Complete with all accessories as per technical specification	Nos	1			0.00
7.0	PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES Complete with all accessories as per technical specification	Nos	10			0.00
8.0	DISTRIBUTION BOARD ELECTRICAL WIRING, CONDUITING WITH FIXTURES INSIDE THE OPERATION THEATRE Complete with all accessories as per technical specification	Lot	1			0.00
9.0	OPERATION THEATRE FLOORING (ANTISTATIC CONDUCTIVE ROLL ) Complete with all accessories as per technical specification	SQM	50			0.00
10.0	VIEW WINDOW Complete with all accessories as per technical specification	Nos.	1			0.00
11.0	INTERNAL DUCTING Complete with all accessories as per technical specification	Lot	1			0.00
12.0	MEDICAL GAS PIPELINE INSTALLATION Complete with all accessories as per technical specification	Lot	1			0.00
13	SCRUB STATION (2-BAY) Complete with all accessories as per technical specification	Nos	1			0.00
14	SURGICAL OT LIGHT (Dual dome LED) Complete with all accessories as per technical specification	Nos	1			0.00
<b>TOTAL MUR</b>						<b>0.00</b>



BOQ								
Package - Supply, installation, Testing and commissioning of CSSD EQUIPMENTS including defect liability period								
BOQ Item No.	Description	2	Unit 3	Qty 4	Unit Rate in MUR ( in Figure) 5	Unit Rate in MUR (in Words)	6	Amount (MUR.) (In Figure)
1.0	HORIZONTAL DOUBLE DOOR AUTOCLAVE WITH CARRIAGE AND TROLLEY, cap. 550-600 L Complete with all accessories as per detail technical specification.		Nos	3				0.00
2.0	RAPID STERILIZER (FLASH AUTOCLAVE) 18-25 L Complete with all accessories as per detail technical specification.		Nos	3				0.00
3.0	DOOR WASHER DISINFECTOR CAPACITY-250-275 L. Complete with all accessories as per detail technical specification.		Nos	1				0.00
4.0	ETO Complete with all accessories as per detail technical specification.		Nos	1				0.00
5.0	ULTRASONIC CLEANER CAPACITY-30L Complete with all accessories as per detail technical specification.		Nos	1				0.00
6.0	HEAT SEALING MACHINE Complete with all accessories as per detail technical specification.		Nos	1				0.00
7.0	DRYING CABINET 275 L Complete with all accessories as per detail technical specification.		Nos	1				0.00
8.0	SPRAY GUN RINSER Complete with all accessories as per detail technical specification.		Nos	1				0.00
9.0	WASH STATIONS WITH 2 SINKS FOR DIRTY AREA Size Approx. (L x W x H) : 2000x750x850 mm Complete with all accessories as per detail technical specification.		Nos	1				0.00
10.0	CONTROL & PACKING TABLE WITH TWO SHELVES FOR CLEAN AREA Complete with all accessories as per detail technical specification.		Nos	2				0.00
11.0	LINEN FOLD TABLE FOR CLEAN AREA a. Size (LxWxH) : 2000x1400x900 mm approximately. Complete with all accessories as per detail technical specification.		Nos	1				0.00
12.0	WIRE STORAGE SHELF MODULE FOR DIRTY/DISINFECTION AREA/CLEAN/STERILE AREA Complete with all accessories as per detail technical specification		Nos	3				0.00
13.0	PASS BOX Complete with all accessories as per detail technical specification.		Nos	3				0.00
14.0	CLOSED TRANSPORT TROLLEY FROM STERILE STORE TO OT Size : 1400x750x1260 mm(LxWxH) (External) approximately Complete with all accessories as per detail technical specification.		Nos	4				0.00
15.0	Table Trolley with 2 shelves 530x1080x800 H Complete with all accessories as per detail technical specification		Nos	2				0.00
16.0	MODULAR STERILIZING BASKETS BIG Complete with all accessories as per detail technical specification.		Nos	15				0.00
17.0	MODULAR STERILIZING BASKETS MEDIUM Complete with all accessories as per detail technical specification.		Nos	15				0.00
18.0	BASKET RACK suitable to accomodate Baskets Complete with all accessories as per detail technical specification.		Nos	2				0.00
19.0	STORAGE RACK 5 SHELVES 1830X535X1830 Complete with all accessories as per detail technical specification.		Nos	6				0.00
20.0	CHANGE LOCKER -4 COMPARTMENTS Complete with all accessories as per detail technical specification.		Nos	2				0.00
							<b>TOTAL MUR</b>	0.00

**BOQ OF MEDICAL GAS MANIFOLD SYSTEM FOR ENT HOSPITAL MAURITIUS**

**-Plan, Design, Supply, installation, testing and commissioning on turnkey basis**

BOQ ITEM NO.	Description of items	QTY	Unit	Rate in MUR	Rate in MUR in Words	Amount in MUR
1	Oxygen generation System- Supply installation, testing commissioning of Oxygen Concentrator Module, Touch screen, alarm facility, Oxygen Analyzer, Oxygen Surge Tank, Compressed air system, Refrigerated dryer, Filtration system, Air Receiver, High Pressure Booster as per specifications	1	Nos			0.00
i	Oxygen Concentrator Module - Fully Automated system Microprocessor based Oxygen Concentrator Module, Duplex System with PSA technology complete with all accessories as per technical specification	1	Nos			0.00
ii	Touch Screen 6" to 7" screen complete with all accessories as per technical specification	1	Nos			0.00
ii	Oxygen Monitor for Oxygen generators includes Alarm Function complete with all accessories as per technical specification	1	Nos			0.00
iv	Oxygen Analyzer with digital display complete with all accessories as per technical specification	1	Nos			0.00
v	External Audio-Visual Alarm- Visual alarm is active whenever an alarm is present in the system. Audio will turn on when an alarm appears but can be turned off from control panel.	1	Nos			0.00
vi	1" hose (Generator and other outlet connections)	4	Nos			0.00
1.1	Oxygen Surge Tank The Oxygen concentrator should be supplied with Oxygen Surge Tank having capacity of 750 litres complete with all accessories as per technical specification	1	Nos			0.00
1.2	Medical Upgrade Kit Coal Tower 90, 0.01 micron Filter, Carbon Filter, Bacteria/ Sterile Filter complete with all accessories as per technical specification	1	Nos			0.00
1.3	Compressed air system consisting of Screw type Compressor complete with all accessories as per technical specification (1 Working + 1 Standby)	1	Nos			0.00
a	Refrigerated Air Dryer of flowrate 550cum/hr complete with all accessories as per technical specification	1	Nos			0.00
b	Filtration system for the compressed Air Feed air quality of the oxygen concentrator should be conforming to ISO8573 class 4 and is of filtration grade of 0.01 Micron complete with all accessories as per technical specification	1	Nos			0.00
1.4	Air Receiver The system should be provided with an Air Receiver having the capacity of 3000 litres and should be designed in such a way to sustain pressure of 7-11 bar. The air receiver should be fitted with 2 Nos. auto drain-out moisture complete with all accessories as per technical specification	1	Nos			0.00
1.5	High Pressure Booster (HPB) The high pressure booster oxygen compressor for refilling the various type of Oxygen cylinder complete with all accessories as per technical specification	1	Nos			0.00
1.6	Digitally Controlled Fully Automatic Servo Voltage Stabilizer The Voltage Stabiliser of 40 KVA capacity should work on minimum input voltage of 340V with output voltage of 440±5%. The Voltage stabilizer should be 3 phase, oil cooled, 50 hz complete with all accessories as required as per specifications	1	Nos			0.00
2.1	Fully Automatic Oxygen Control System : Supply, Installation testing and commissioning of Fully Automatic Oxygen Control System. complete with all accessories as required as per specifications	1	Nos			0.00
2.2	Oxygen Manifold (2x16) : Supply, Installation, testing and commissioning of (2x16 size) class D cylinder Oxygen Supply System. complete with all accessories as required as per specifications	1	Nos			0.00

2.3	Emergency Oxygen Supply System : Supply, Installation, testing and commissioning of (2x5 size) class D cylinder Emergency Oxygen Supply System. complete with all accessories as required as per specifications	1	Nos			0.00
2.4	Oxygen Flow meter with Humidifier Bottle: Supply, installation, testing and commissioning of oxygen flow meter with humidifier bottle 0-15Litres. complete with all accessories as required as per specifications	382	Nos			0.00
3.1	Fully Automatic Manifold Control Panel for Nitrous Oxide: Supply, installation testing and commission of fully automatic control panel for Nitrous Oxide. complete with all accessories as required as per specifications	1	Nos			0.00
3.2	Nitrous Oxide Manifold System, (2x3 size): Supply, installation, testing and commissioning of (2x3 size) Nitrous Oxide Manifold system . complete with all accessories as required as per specifications	1	Nos			0.00
3.3	Emergency Nitrous Oxide Manifold System, 2x1 size: Supply, installation, testing and commissioning of (2x1 size) cylinder Emergency Nitrous Oxide supply System . complete with all accessories as required as per specifications	1	Nos			0.00
4.0	Medical Air Plant (Package Unit ) including electrical control panel: Supply, Installation, testing and commissioning medical air plant having a minimum capacity of 2800 LPM with necessary standby as per relevant standard and complete with all accessories as required as per specifications	1	Nos			0.00
5.0	Medical Vacuum Plant (Package unit): Supply, Installation, testing and commissioning of Rotary Vane type medical vacuum plant having a minimum system capacity of 6230 PM with necessary standby as per relevant standard and complete with all accessories as required as per specifications	1	Nos			0.00
5.6	Ward Vacuum Unit: Supply, installation, testing and commissioning of Ward Vacuum Unit complete with all accessories as required as per specifications .	366	Nos			0.00
5.7	Theater Vacuum Unit for Operation Theaters: Supply, installation, testing and commissioning of Theater Vacuum Unit complete with all accessories as required as per specifications	18	Nos			0.00
6.0	Duplex AGSS System: Supply installation and commissioning of Duplex AGSS system. complete with all accessories as required as per specifications	1	Nos			0.00
7.0	Copper Pipes complete with all accessories as required as per specifications					
i	76.1 mm OD X 1.2mm thick	70	mtr			0.00
ii	54mm OD X 1.2mm thick	210	mtr			0.00
iii	42mm OD X 1.2mm thick	170	mtr			0.00
iv	35mm OD X 1.2mm thick	550	mtr			0.00
v	28mm OD X 1 mm thick	850	mtr			0.00
vi	22mm OD X 1 mm thick	2000	mtr			0.00
vii	15mm OD X 1 mm thick	1900	mtr			0.00
viii	12mm OD X 1 mm thick	1100	mtr			0.00
8.0	Gas Outlet Points/ Terminal Units with probe: Supply,Installation, testing and commissioning of Gas outlet points for Oxygen, Nitrous Oxide, Medical Air 4 Bar , Vacuum, CO2 and AGSS complete with all accessories as required as per specifications .					
i	Oxygen outlet with probe (MOT outlets are in the MOT Package)	216	Nos			0.00
ii	Nitrous Oxide outlet with probe (MOT outlets are in the MOT Package)	4	Nos			0.00
iii	Medical Air 4 outlet with probe (MOT outlets are in the MOT Package)	38	Nos			0.00
iv	Vacuum outlet with probe (MOT outlets are in the MOT Package)	216	Nos			0.00
v	Medical Air 7 outlet with probe (MOT outlets are in the MOT Package)	0	Nos			0.00
vi	AGSS outlet with probe (MOT outlets are in the MOT Package)	3	Nos			0.00
9.0	AREA VALVE BOX : Supply,Installation, testing and commissioning of Area Valve Boxes. complete with all accessories as required as per specifications					
	Valve Box - 2 Gas Service with NIST Connection	16	Nos			0.00
	Valve Box - 3 Gas Service with NIST Connection	11	Nos			0.00
	Valve Box - 6 Gas Service with NIST Connection	6	Nos			0.00



BOQ Laundry							
Package - Supply, installation & commissioning of LAUNDRY EQUIPMENTS and Defect Liability Period							
BOQ Item No.	Description	2	Unit 3	Qty 4	Unit Rate In MUR (in Figure) 5	Unit Rate in MUR (in Words) 6	Amount (MUR.) (In Figure) 7
1.0	Supply, Installation, Testing and Commissioning of Slucing cum Washer Extractor 30 Kg Details of technical data are as per technical specification.		Nos	1			0.00
2.0	Supply, Installation, Testing and Commissioning of WASHER EXTRACTOR 60 Kg Details of technical data are as per technical specification.		Nos	2			0.00
3.0	Supply, Installation, Testing and Commissioning of DRYING TUMBLER 30 Kg Details of technical data are as per technical specification.		Nos	3			0.00
4.0	Supply, Installation, Testing and Commissioning of FLAT BED PRESS, Size- 1500mm x 750mm. Details of technical data are as per technical specification.		Nos	2			0.00
5.0	Supply, Installation, Testing and Commissioning of AUXILIARY STEAM GENERATOR 8 Kg/hr Details of technical data are as per technical specification.		Nos	1			0.00
6.0	Supply, Installation, Testing and Commissioning of VACUUM FINISHING TABLE with Electric steam iron, Size- 1300mm x 800 mm. Details of technical data are as per technical specification.		Nos	2			0.00
7.0	Air Compressor of 3hp. Details of technical data are as per technical specification.		Nos	2			0.00
8.0	Supply, Installation, Testing and Commissioning of WASH ROOM TROLLEY 100 Kg capacity. Details of technical data are as per technical specification.		Nos	4			0.00
9.0	Supply, Installation, Testing and Commissioning of DRY LINEN COLLECTION ROOM TROLLEY Capacity 3- container. Details of technical data are as per technical specification.		Nos	4			0.00
10.0	Supply, Installation, Testing and Commissioning of DRY LINEN TRANSPORTATION TROLLEY -100 Kg Details of technical data are as per technical specification.		Nos	7			0.00
11.0	Supply, Installation, Testing and Commissioning of MOBILE FOLDING TABLE with Stainless table top. Details of technical data are as per technical specification.		Nos	3			0.00
12.0	Supply, Installation, Testing and Commissioning of STORAGE RACKS. Details of technical data are as per technical specification.		Nos	10			0.00
13.0	Supply, Installation, Testing and Commissioning of FRESH LINEN TRANSPORTATION TROLLEY-100 Kg. Details of technical data are as per technical specification.		Nos	6			0.00
14.0	Supply, Installation, Testing and Commissioning of LAUNDRY SCRUB STATION WITH TWO SINKS. Details of technical data are as per technical specification.		Nos	1			0.00
15.0	Supply, Installation, Testing and Commissioning of MENDING MACHINE Details of technical data are as per technical specification.		Nos	1			0.00
						TOTAL MUR	0.00

BOQ For Kitchen						
Supply, Installation, testing and Commissioning of Kitchen equipment with Defect Liability Period						
BOQ ITEM NO.	Specifications 2	Size/Unit 3	Qty. 4	Rate in MUR 5	Rate in words in MUR 6	Amount in MUR 7
<b>CENTRAL KITCHEN</b>						
1	<b>Preparation Table with OHS and 1u/s-</b> Top of 16 swg S.S-304 sheet on M.S Angle frame work duly rust proof painted on structure made on SS square/tubular legs with adjustable bullet feet for uneven floors. Also fitted with a under shelf. The top is fitted with stud welded bolts with the frame for sturdy and stronger grip.	2000x600x850	1			0.00
2	<b>Single Burner Stock Pot-</b> Top of 16 swg. S.S-304 Sheet on M.S Angle frame work duly rust proof painted on SS Tubular/ Square legs with adjustable bullet feet for uneven floors. Fitted with United/Sarna make heavy duty burner with pilot lamps with individual control valves and heavy duty cast iron pan support complete with accessories as per specification.	750x750x600	4			0.00
3	<b>Side Table-</b> Same as sl.ni.1	1500x600x600	2			0.00
4	<b>Exhaust hood-</b> Entire exhaust is made of 20 swg.S.S-304 Sheet with S.S-304 baffle filters. Fitted with grease collection tray and hung/fixed with metal fasteners complete with accessories as per specification.	2000x2000x600	1			0.00
5	<b>Boiler (Tilting)</b> - Double walled glass wool Insulated all S.S-304 Sheet body. The outer Most is of 18swg S.S-304 Sheet body. Fitted with heavy duty high pressure burner with pilot lamp & individual control valves. Fitted with water inlet & water outlet valve & strainer at the bottom level of the boiler also fitted with a Top opening lid with insulated handle. The entire boiler is mounted on heavy duty tubular legs. Also fitted with a heavy duty tilting gear to extract the boiled food complete with accessories as per specification.	80ltr.	2			0.00
6	<b>Brazing Pan (Tilting)</b> - Double walled mineral wool insulated all S.S-304sheet body on heavy duty tubular legs with adjustable bullet feet. Fitted with heavy duty burner with pilot lamp with individual control needle valve. Fitted with tilting gear to extract contents after cooking & water inlet valve. Also fitted with top opening lid with insulated handle complete with accessories as per specification.	80 ltr.	1			0.00
7	<b>Exhaust Hood</b> - Entire exhaust is made of 20 swg.S.S-304 Sheet with S.S-304 baffle filters. Fitted with grease collection tray and hung/fixed with metal fasteners complete with accessories as per specification.	4000x1200x600	1			0.00
8	<b>Masala Trolley</b> -The entire trolley is made on SS sheet body to keep inserts for preparation on tubular legs on 4 nos castor wheels-2 with breaks and 2 normal. Also fitted with a bottom shelf/cross brazings. Size-800 x 500 x 900	800x500x900	1			0.00
9	<b>Chapatti Plate cum puffer-</b> Structure made of mild steel angle frame duly rust proof painted . Top of 12 mm mild steel, front Panel and under shelf 18swg S.S-304sheet, vertical legs of S.S-304 round pipe of 16swg. 1.5" diameter with nylon adjustable feet. Complete with CI perforated grill for puffing of chapattis, heavy duty high pressure RV burner pilot, individual control valves Indian Oil corporation approved complete with accessories as per specification.	1500x600x850	2			0.00
10	<b>Chapatti Rolling Table</b> - Top made of 16swg S.S-304 sheet on MS Angle frame work with rust proof painted on S.S-304 square pipe 25x25mm/Tubular legs frame work and under shelf made of 18swg S.S-304 sheet. Vertical legs of S.S-304 round pipe of 16 swg. 1.5" dia with nylon adjustable feet complete with accessories as per specification.	1200x600x850	2			0.00
11	<b>Chapatti collection Trolley-</b> Structure made of MS angle, duly rust proof painted Body completely constructed of S.S-304 sheet. Sunken top of 16 swg.S.S. Sheet on S.S tubular legs on heavy duty wheels 2 with breaks & 2 normal complete with accessories as per specification.	750x600x850	2			0.00
12	<b>Exhaust hood-</b> Entire exhaust is made of 20 swg.S.S-304 Sheet with S.S-304 baffle filters. Fitted with grease collection tray and hung with metal fasteners complete with accessories as per specification.	1800x1500x600	1			0.00
13	<b>Side Table</b> -Same as sl.ni.1.	1200x600x850	2			0.00
14	<b>Dough Kneader-</b> Body completely constructed of heavy duty cast iron with gear box mounted on the top the mixing bowl of S.S-304 sheet 14 swg with S.S-304 arm to mix the dough and is operated electrically with heavy duty motor of 1 hp. Motor shall be S1 type of IS : 325 standard (Latest version) and of Kirloskar/NGEF/Siemens/ABB/GEC/ Crompton Greaves make complete with accessories as per specification.	25 kg.	2			0.00
15	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its basecomplete with accessories as per specification. Make-Cambro/Nilkamal/Sintex/Supreme	Capacity-100 ltrs,	1			0.00
<b>PREPARATION AREA</b>						
1	<b>Preparation Table with OHS and 1u/s-</b> Top of 16 swg S.S-304 sheet on M.S Angle frame work duly rust proof painted on structure made on SS square/tubular legs with adjustable bullet feet for uneven floors. Also fitted with a under shelf. The top is fitted with stud welded bolts with the frame for sturdy and stronger grip.	1800x600x850+150	1			0.00
2	<b>SS stand for Chopping blocks with boards-</b> All S.S-304 sheet body to hold poly carbonate chopping boards-4Nos.complete with accessories as per specification.	600x600x850	4			0.00

3	<b>Potato Peeler-</b> The heavy duty peeling drum is made of 18 swg. SS sheet on three nos tiny legs with adjustable bullet feet and a rotating disc of SS sheet being connected with heavy duty motor of S1 type of IS:325 standard, single/three phase . Also pasted with emery granules inside the drum and on rotating disc to peel and fitted with water inlet valve and aluminum casting/SS sheet our pour to extract peeled potatoes complete with accessories as per specification. Make- <u>Robatroun/Sigma/Haudin</u>	10 kg.	1		0.00	
4	<b>SS Single Bowl Sink unit (Vegetable washing)-</b> Top of 16 sg. SS sheet on S.S. Angle frame work on S.S square legs with adjustable bullet feet for uneven floors. Also fitted with a large sink on RHS. Also fitted with a back splash and under shelf. The top is fitted with stud welded bolts with the frame for sturdy and stronger grip. The bowl size 500x500x250	1500 x 650 x 850 + 150 spl.	2		0.00	
5	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its base complete with accessories as per specification. <u>Make-Cambro/Nilkmal/Sintex/Supreme</u>	Capacity-100 ltrs,	1		0.00	
<b>DIETARY AREA</b>						
1	<b>Work table with sink-</b> Top of 16 swg S.S-304 sheet on SS frame work on Structure made of S.S-304 square/Tubular pipe. Sink made of 14 swg S.S-304 on LHS/RHS and under shelf made of 18 swg S.S-304 sheet. Vertical legs of S.S-304 round pipe of 16 swg, 1.5" dia with nylon adjustable feet. The top is fitted with stud welded bolts with the frame for sturdy and stronger grip.	1500x600x850 +150	1		0.00	
2	<b>Coffee/Tea Machine Dispenser-</b> Double walled glass wool insulated all S.S-304 Sheet body. Fitted with 3.0 kw heating element with auto temp. controller & indicating lamp, water level indicator, Gun metal faucet one for water and another for milk complete with accessories as per specification..	250 cups/hr	1		0.00	
3	<b>Micro oven-</b> Convectional, Complete with accessories as per specification. <u>IFB/Equivalent</u>	30 ltrs.	1		0.00	
4	<b>Conveyor Toaster-</b> Capacity 750 nos per hour. Power consumption should not be more then Arr 2.8 kwatt,220 volts, stainless steel table top model, should be based on belt speed inplace of heating temperature for toasting colour. stainless steel element. with variable speed. Should be able to work both sides either front or rear. stainless steel .supplied with all accessories & attachments. crumb tray /discharge tray should be provided. continous toasting with thermostatic setting.High quality components &accurate timer control.Unit size should eb arr. 455x355x415mm Complete with accessories as per specification. Make ; <u>LINCAT (CT -10) /HATCO (TQ-800)/HPA/CROMO</u>	750 Slices/hr	2		0.00	
5	<b>Egg boiler-</b> Double walled mineral wool insulated all SS Sheet body on SS legs with adjustable bullet feet. Fitted with 3.0 kw immersion type heating element with auto temperature controller and indicating lamps. Also fitted with a top opening lid with insulated handle and two insulated handles on either side to carry. Also fitted with water inlet, outlet valves & water level indicator complete with accessories as per specification.	120 pcs egg/cycle	1		0.00	
6	<b>Milk boiler-</b> Triple walled mineral wool insulated all SS sheet body on SS legs with adjustable bullet feet. The outer most wall and the secdn wall is mineral wool insulated and the other wall water proof and fitted with water inlet, outlet, over flow valves and water level indicator. Also fitted with 3.0 kw immersion type heating element with auto temperature controller and indicating lamps and a heavy duty gun metal faucet. A top opening lid with insulated handle is fitted . Also fitted with two nos, insulated handles on either sides to carry complete with accessories as per specification.	100 Ltrs.	2		0.00	
7	<b>Two Burner with Oven-</b> Top of 16 swg. SS Sheet on M.S Angle frame work on SS Square legs with adjustable bullet feet for uneven floors. Fitted with United/Sarna make heavy duty burner with pilot lamps with individual control valves and heavy duty cast iron pan support. Also fitted with an electrically operated oven beneath. Size-950 x 950 x 850 + 150 Spl.	950 x 950 x 850 + 150 Spl.	1		0.00	
8	<b>Exhaust hood-</b> Complete frame work 20/22swg. Complete joints are air tight insulated weather proof mechanically painted on the Upper surface. S.S-304 filters complete with accessories as per specification.	5400x1200x600	1		0.00	
9	<b>Juicer-</b> Compact design- fits almost anywhere,under counters or worktables.		2		0.00	
10	<b>Hand wash Unit-</b> Splash as per Layout (Rear & against side wall) Front & free side marine edge. 350mm dia.x200mm High Die Pressed Sink complete with 38mm dia. C.P. Drain Waste Out let. 16 gauge S.S-304 wall brackets. Secured to top with Acorn nuts & Bolts & Bracket secured to wall with anchor fasteners. Rear & Both sides 20 gauge S.S-304. One Deck mounted Jackson Swivel type water mixer water faucet. Unit mounted 865mm AFF Size- 600x600x450.	600x600x450	1		0.00	
11	<b>Chinese Cooking Range</b> Size-1120X760x850+450	1120X760x850+450	1		0.00	
12	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its base complete with accessories as per specification.	Capacity-100 ltrs,	1		0.00	
<b>POT WASH</b>						
1	<b>Pot Rack-4shelves-</b> The heavy duty 4 tiers rack are made of S.S-304 square pipe (38mm & 25mm) and duly welded with 4 nos. uprights on nylon adjustable feet for uneven floor complete with accessories as per specification.	1200X600X1650	2		0.00	
2	<b>Two Sink Pot Wash-</b> The structure made of SS: 304 square pipe 25 x 25 mm Angle frame work duly rust proof painted. Top & sink made of 14 swg and under shelf made of 18 swg SS: 304. Vertical legs of SS: 304 round pipe of 16 swg. 1.5inch dia. With nylon adjustable feet. Sink Size- 600x600x450	1500x600x850+150	1		0.00	
3	<b>Pot wash Sink-</b> To be constructed with Brick and Cement (Masonry Work) finished with tiles	2000x1500x600	1		0.00	
4	<b>Hot water Geysers-</b> Horizontal	100 Ltrs.	1		0.00	

5	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its base complete with accessories as per specification.Make-Cambro/Nilkmal/Sintex/Supreme	Capacity-100 ltrs,	1		0.00
<b>DISH WASH</b>					
1	<b>Dish Washer-</b> Single Tank Rack conveyor type. 6 to 8 plates per rack, Cycle time 1.5 minutes.The position of Dish Washer i.e RHS/LHS depends on loading and unloading table (As per layout drawing) Make-Winter Halter/ Electrlux/Hobart with Drier	At least 155 Rack/hr	1		0.00
2	<b>Soiled Dish Landing Table with glass Rack with Garbage chute-</b> The marine edged top made of 16 swg SS: 304 sheet on MS Angle frame work, duly rust proof painted & stud welded for stronger grip and cross bracing of 18 swg SS: 304 sheet. Vertical legs with nylon adjustable feet. A Garbage chute is provided on LHS & a glass is fitted on the D.L.T.	1500X800X850 +600	2		0.00
3	<b>Clean Dish Table-</b> Top 16 swg S.S-304 sheet on MS Angle frame work duly rust proof painted & stud welded on SS. Tubular/square legs with adjustable bullet feet. Also fitted with SS slide out beneath to hold the plate/glass racks of 500 x 500 mm	900x800x850+150	2		0.00
4	<b>Hot water Geyser-</b> Horizontal	60 Ltrs.	1		0.00
5	<b>Dish Storage Rack 5 tiers-</b> All shelves are made of 18 swg SS: 304 on 4 nos round/square legs with adjustable bullet feet. All the shelves are having 'C' Channel through to accommodate maximum load bearing ability	900x450x1800	6		0.00
6	<b>Dish Wash Basket Trolley-</b> Top 16 swg S.S-304 sheet on MS Angle frame work duly rust proof painted on tin castor wheels. Fitted with a push cart type handle.	600x600x200	2		0.00
7	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its base complete with accessories as per specification.Make-Cambro/Nilkmal/Sintex/Supreme	Capacity-100 ltrs,	1		0.00
<b>SET-UP AREA</b>					
1	<b>SS Rack on Castors-</b> All five shelves are made of 18 swg. SS sheet on 4 nos round / square legs with adjustable bullet feet. All the shelves are having "C" channel through to accommodate maximum load bearing ability. Size- 1300 x 450 x 1800	1300 x 450 x 1800	2		0.00
2	<b>Hot Bain Marie on Castors-</b> Double walled mineral wool insulated all S.S. Sheet body is fitted with an immersion type heating element of 3.0 KW with auto temp. controller & indicating lamps on heavy duty castor wheels. Integral with top & suitable to accommodate Six (6) 300mm high GN 1/1 PANS GN 1/1 food pans with lid to be supplied #16 SWG S/S sheet tank integral with work top of water counter Fully coved corner insulated with 50 mm thick tightly packed glass wool on the exterior and base of internal tank & sheathed with 20 SWG s/s sheet on exterior Bottom of tank sloped to left side with 40mm dia brass waste w/angle valve # 18 SWG s/s perforated false bottom with all sides turned down 40mm in 12 mm two (2) nos 3.0 KW electric heating elements clamped 25mm off the bottem complete with thermostat, on 0 off switch, red light and controls.	2250x675x850	2		0.00
3	<b>Hot Food Service Trolley-</b> Double walled insulated with glass wool. Inner side made of 18swg & outer side made of 20 swg as Stainless steel 304 sheet with 4 no heavy duty Castor wheels (4"/6" dia) with 2 wheels locking arrangement and push cart type handle constructed from ss pipe. Trolley has Immersion type 3Kw heating elements with auto temp. controller & indicating lamp with temp. Indicator to keep 5 Nos big round containers of 10 ltrs. capacity each and 2 more small containers of suitable capacities all with lids to keep food hot vegetable/soup/card etc. and one rectangular for container for to keep chapattis. Also fitted with one middle and bottom shelves with lockable door. Rubber cushion to be fitted at the corners to prevent damage during transportation complete with accessories as per specification..	1200x600x900	8		0.00
4	<b>Platform Trolley-</b> The entire trolley is made of 16 swg. S.S. Sheet on M.S. Angle frame work, duly Rust proof painted on heavy duty castor wheels. The top to be stud welded with the frame for stronger grip. Also fitted with a push cart type handle & rubber cushion in front to avoid the damage during movement.	900x600x250	4		0.00
5	<b>Garbage Cart-</b> Moulded Plastic container with 2 Nos-Big castor wheel. Garbage cart should be set to keep vertically upright on its base complete with accessories as per specification.Make-Cambro/Nilkmal/Sintex/Supreme	Capacity-100 ltrs,	1		0.00
<b>STORE</b>					
1	<b>Weighing Scale Electronic (Digital)</b> - Electronic weighing scales of standard make to weigh upto 300 kg. The certificate from Weights & Measures Dept. is to be attached with the machine, duly certifying the serial no. complete with accessories as per specification. Make- Atco/Sanchit	300kg	1		0.00
2	<b>Storage Rack with 5 tiers</b> - All shelves are made of 18swg S.S-304 sheet on 4 nos round/square legs with adjustable bullet feet. All the shelves are having "C" channel through to accommodate maximum load bearing ability complete with accessories as per specification.	900 x 450 x1800	4		0.00
3	<b>Four Door Freezer</b> 1410 lts ,18 deg C to -22 deg C, External and internal door and side panels in 304 AISI stainless steel. External back and top panel in galvanized steel. High-density expanded polyurethane insulating foam, 70mm in thickness 4 half doors with lock and microswitch to switch off the fan when the door is opened. Built-in refrigeration unit; Cooling capacity 1800 (watt) ventilated operating mode; digital control; automatic defrost and evaporation of defrost water; external digital temperature display. Complete as required with all accessories as per technical specification	1410 Ltrs,	1		0.00



4	<b>Water Cooler with RO system</b> - Structure made of mild steel angle frame duly rust proof painted. Body completely constructed of S.S-304 sheet double walled insulated with puf, Inner tank of 22 swg and outer of 20 swg S.S-304 sheet food grade. The water cooler is mounted on four S.S-304 tubular legs with S.S-304 bullet adjustable feet. Complete with compressor and condenser unit of Emerson/ Techumshah/Copeland/Danfoss make with automatic temperature controller and temp. Indicator complete with accessories as per specification. Make-Bluestar/Celfrost/Cibwal	250 ltr.	1		0.00
5	<b>Onian/ Potato Bin</b> - The entire bin is made of S.S. wire meshed body on heavy duty castor wheels. Fitted with top opening lid and the inclined bottom to have a lockable door to extract.	900x600x750	2		0.00
6	<b>Cereal/Atta/Maida Bin</b> - The entire bin made of 18 swg S.S-304 sheet on tiny caster wheels & with top opening lid.	900x600x750	2		0.00
7	<b>Cold Room</b> - Room size- 4500X3000X2100 Temperature 0 to 4 degree centigrade Insulation: Panels 60mm thick PU at 40-42kg density,PCGI exposed exterior 0.5mm thick sheet,PCGI exposed exterior 0.5mm thick sheet, PCGI interior 0.5mm thick sheet, floor interior and exterior of 0.5mm thick PCGI exposed sheet, Ceiling exterior PCGI, interior PCGI Sheet 0.5mm.Vertical, Panels Joint with Cam lock coupling in Tongue & Groove arrangement. Thickness of PUF Panels (for Wall, Ceiling & Floor)- 60mm.Wall & Ceiling panels Finish- Internal: SS 304 External: PCGI Galvanized Ironic Sheet. Flooring- Kota stone by client. Density of Panels-40kg/cub.m No. of Doors- One for Main Room Type. of Doors- Over Lapped or Flash Type Door Size-900mm x 1950mm. Accessories Included in the scope of Supply-1. Door Alarm 2. Lock Defeat mechanism 3. Light Inside the cold room. 4. Handle, Hinges & Locks. 5. Microprocessor based digital control. Panels. 6. Panel Accessories & necessary Hardware. Technical Feature of PUF Panels, Doors, & Accessories: Individual Panel is manufactured with closed cell Rigid Polyurethane foam, injected at high pressure, which secures the bond with facing material to form a single piece construction. RPUF insulation is CFC free and has Zero ODP- Ozone Depleting potential. Core density of 40kg / Cu.M Panel finish is designed to resist many chemicals including most common cleaning agents. The panels have fire rating to BS.467 part 7, clause 1. Wall, floor & ceiling panels joined with Tongue and groove mechanism with cam lock system. The compressor and condenser unit of Emerson/ Techumshah/Copeland/Danfoss make with Automatic temperature controller and temp. Indicator complete with accessories as per specification. Make- Bluestar/Celfrost/Mothersonzonetti	4500X3000X2100	1		0.00
8	<b>Storage Rack 5 tiers</b> - All shelves are made of 18 swg SS: 304 on 4 nos round/square legs with adjustable bullet feet. All the shelves are having 'C' Channel through to accommodate maximum load bearing ability complete with accessories as per specification.	900x450x1800	6		0.00
9	<b>Storage Rack 4tiers</b> - All shelves are made of 18 swg SS: 304 on 4 nos round/square legs with adjustable bullet feet. All the shelves are having 'C' Channel through to accommodate maximum load bearing ability complete with accessories as per specification.	800x450x1200	2		0.00
10	<b>Insect killer</b> - Twin tube. Make- Mitwaz/Pestokill	Branded.	6		0.00
11	<b>Air curtain</b> -1 entry point Make-Mitwaz	Length as per drgz.	2		0.00
<b>LPG BANK</b>					
1	<b>LPG Bank- 10 +10</b> (One set working another set standby) LPG Cylinder Bank of 14.2 Kg each LPG cylinder with :Class 'C' seamless steel pipe conforming to IS:1239 (Latest version) with Pressure Gauges (0-15 PSIG & 0-5PSIG, dial type) Complete with accessories as required as per specification.	1 Lot	1		0.00
<b>TOTAL MUR</b>					<b>0.00</b>

BOQ FOR PNEUMATIC TUBE SYSTEM FOR NEW CANCER HOSPITAL MAURITIUS						
BOQ Item No.	Item Description	Qty	Unit	Rate in MUR	Rate in words in MUR	Amount in MUR
1	Supply, Installation, Testing and Commissioning of Control & Software System. As per technical specification	1	No.			0.00
2	Supply, Installation, Testing and Commissioning of Blower with VFD. As per technical specification	2	Nos.			0.00
3	Supply, Installation, Testing and Commissioning of NW 160 mm front load station with RFID Reader Card. As per technical specification	20	No.			0.00
4	Supply, Installation, Testing and Commissioning of 160mm auto-unload station complete as per technical specification	1	No.			0.00
5	Supply, Installation, Testing and Commissioning of Diverter 160 mm, 3-Way, Air Tight, Microprocessor Controlled, With Touch Free Position and Tube Switches, Steel Housing. Provided with Optical Sensors.	5	Nos.			0.00
6	Supply, Installation, Testing and Commissioning of Tubing material suitable for 160 mm system for the above items including the following (running metre):- 1.160mm dia UPVC tube grey complete with slide bend 2.Air tube 3.Transparent tube 4.Bends 5.Endpiece 6.Sleeve 7.Composite system cable 8.Mounting tools <del>As per technical specification</del>	300	Mtrs			0.00
7	Supplying, installation, testing & commissioning of Carrier 160 mm, with 2 programmable RFID tag for easy return of empty carrier. Inload size: 300x115. As per technical specification	20	Nos.			0.00
8	Supplying, installation, testing & commissioning of Carrier 160 mm with 2 programmable RFID tag for easy return of empty carrier. Inload size: 400x115. As per technical specification	20	Nos.			0.00
9	Supplying, installation, testing & commissioning of Carrier 160 mm automatic opening on both ends, including 2 x code-tags. As per technical specification	10	Nos.			0.00
10	Misc. Installation Accessories sourced from India, including: Pipe Clamps, Srew Bolts, Cable Clips, Hose Clamps & Baskets, Cushions and Racks for Stations	1	Job			0.00
11	Installation of PTS and other charges	1	Job			0.00
<b>TOTAL MUR</b>						<b>0.00</b>

RENOVATION WORK of MINOR OT						
BOQ Item No. 1	Description 2	Unit 3	Qty 4	Unit Rate (In Figure) MUR 5	Unit Rate in Words in MUR 6	Amount in MUR 7
1.0	CEILING SYSTEM Complete with all accessories as per technical specification	SQM	45			0.00
2.0	CEILING FILTRATION SYSTEM / LAMINAR AIR FLOW SYSTEM Complete with all accessories as per technical specification	Nos	1			0.00
3.0	CORNER COVING Complete with all accessories as per technical specification	MTR	70			0.00
4.0	WALL PAINTING Epoxy painting Complete with all accessories as per technical specification	SQM	80			0.00
5.0	DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) Size-2100 x 1800 mm Complete with all accessories as per technical specification	Nos	1			0.00
6.0	DOORS AND FRAMES (AUTOMATICALLY HERMETICALLY SEALED SLIDING DOOR) Size-2100 x 1000 mm Complete with all accessories as per technical specification	Nos	1			0.00
7.0	PERIPHERAL LIGHT CUM CLEAN ROOM LUMINARIES Complete with all accessories as per technical specification	Nos	10			0.00
8.0	DISTRIBUTION BOARD ELECTRICAL WIRING, CONDUITING WITH FIXTURES INSIDE THE OPERATION THEATRE Complete with all accessories as per technical specification	Lot	1			0.00
9.0	OPERATION THEATRE FLOORING (ANTISTATIC CONDUCTIVE ROLL ) Complete with all accessories as per technical specification	SQM	50			0.00
10.0	VIEW WINDOW Complete with all accessories as per technical specification	Nos.	1			0.00
11.0	INTERNAL DUCTING Complete with all accessories as per technical specification	Lot	1			0.00
12.0	MEDICAL GAS PIPELINE INSTALLATION Complete with all accessories as per technical specification	Lot	1			0.00
13	SCRUB STATION (2-BAY) Complete with all accessories as per technical specification	Nos	1			0.00
14	SURGICAL OT LIGHT (Dual dome LED) Complete with all accessories as per technical specification	Nos	1			0.00
					TOTAL MUR	0.00

**Summary Sheet for Bill of Quantity (BOQ) for developmen of IT Infrastructure for NEW Cancer hospital at  
MAURITIUS**

<b>Sr. No.</b>	<b>Item Description</b>	<b>Amount (In Mauritian Rupee.)</b>
1	HMIS	0.00
2	Server Hardware (servers & storage) for HMIS & PACS	0.00
3	PACS with related Hardware & Software	0.00
4	Computer Desktops, Printers, Tablets, UPS & other Software	0.00
5	Computer Network Infrastructure (LAN & Wi- Fi)	0.00
6	Advanced Queue & Pharmacy Management System	0.00
7	Telemedicine	0.00
	<b>Total</b>	<b>0.00</b>

**Bill of Quantity (BOQ) for implementation of Hospital Management and Information System(HMIS), Picture Archival and Communication System (PACS), Local Area Network (LAN) & Wi-Fi System and Queue Management System (QMS) for NEW Cancer Hospital at Mauritius**

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Mauritian Rupee)	Rate in Words (Mauritian Rupee)	Amount
1	2	3	4	5	6	7
<b>Hospital Management and Information System(HMIS)</b>		<b>0</b>				
1.00	Supply, Customization, Installation, Testing, Implementation, Integration, Training and Maintenance of <b>Hospital Management and Information System</b> as per the Scope of work, Deliverables of the project, Functional and Technical requirements, Terms and Conditions mentioned in the tender document and as per the requirement and complete in all respect and satisfaction of the engineer. (*The SI Vendor is required to provide detailed, item-wise Bill of Material with break-up of costs as an Appendix-P1 along with the Price Bid. *Also, an un-priced, detailed, item-wise Bill of Material shall also be provided as an Appendix-T1 along with the Technical Bid. * SI should also give the cost of the person month along with Price Bid. *)	Lumpsum	-	0.00		0.00
2.00	<b>HMIS Integration charges</b> for interfacing of Cancer Hospital HMIS with third party HMIS to be made available in the latter stage as per the Scope of work, Deliverables of the project, Functional and Technical requirements, Terms and Conditions mentioned in the tender document and as per the requirement and complete in all respect and satisfaction of the engineer.	1.00	Lot			0.00
3.00	Charges for migration of patient & other hospital data from at least last one year prior to commissioning of the Cancer Hospital into the HMIS, PACS, QMS & Telemedicine applications per the Scope of work, Deliverables of the project, Functional and Technical requirements, Terms and Conditions mentioned in the tender document and as per the requirement and complete in all respect and satisfaction of the engineer.	1.00	Lot			0.00
4.00	Annual charges for providing One no. Data entry operator/Helpdesk support person for data entry work for HMIS, helpdesk support etc. Person should have Graduate with 1-5 years experience in the relevant area (Total of 2 Data Entry Operators).	1.00	Lot			0.00
<b>Subtotal HMIS</b>						<b>0.00</b>
<b>Server Hardware and System Software including common storage &amp; NAS for HMIS &amp; PACS</b>						
5.0	Supply, Installation, Configuring, Testing & Commissioning of (1). <b>SAN Storage (Minimum 64 TB capacity or higher) for HMIS &amp; PACS</b> (2) <b>All the servers (cluster mode) for HMIS</b> (3) <b>Rack mounted NAS (32TB capacity) for backup of HMIS &amp; PACS</b> separately and TAPE Drive & Backup software All the above mentioned should be with latest technology, associated hardware, OS, Database, software, network devices, Network load balancer-2 nos., switches, cables with all the accessories etc. as per the requirement & complete in all respect and satisfaction of the engineer and have 3 years OEM warranty. All the servers except database server will be Active-Active cluster mode with latest configuration and technology as per the functional and technical requirements and completeness of the system ( with minimum 3 years onsite comprehensive operation & maintenance support) . Database server will be configured as Active-Passive Mode. (Make-As per approved make)  (*The SI Vendor is required to provide detailed, item-wise Bill of Material with break-up of costs as an Appendix-P2 along with the Price Bid.)	As per the requirement	-	0.00		0.00
<b>Subtotal (Server Hardware and System Software including common storage &amp; NAS for HMIS &amp; PACS)</b>						<b>0.00</b>
<b>Radiology Information System and Picture Archival and Communication System (RIS-PACS)</b>						
6.0	Supply, Customization, Installation, Testing, Implementation, Integration with HMIS (HL7 interface), Training and Maintenance of <b>RIS-PACS solution including 3D advance post processing workstation software</b> as per the Scope of work, Deliverables of the project, Functional and Technical requirements, Hardware and System requirements, Terms and Conditions mentioned in the tender document and as per the requirement and complete in all respect and satisfaction of the engineer (with 3 years onsite comprehensive operation & maintenance support)	As per the requirement	-			0.00

	<b>PACS Workstation</b>				
7.0	Supply, Installation, Configuring, Testing, Commissioning of <b>Radiology workstation for PACS including CT/MRI/X RAYS</b> (Quad core Intel 64 bit Processor or higher, 16 GB RAM or higher, Windows OS, 6MP Medical Grade Color Diagnostic display for softcopy reporting and 2MP clinical review medical grade display for RIS with graphic card to support three displays, including necessary hardware and software, all the accessories etc. and 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	2	No		0.00
8.0	Supply, Installation, Configuring, Testing, Commissioning of <b>PET-CT Workstations for PACS</b> (Quad core Intel 64 bit Processor or higher, 16 GB RAM or higher, Windows OS, 4MP Medical Grade Color Diagnostic display for softcopy reporting and 2MP clinical review medical grade display for RIS with graphic card to support three displays, including necessary hardware and software, all the accessories etc. and 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	2	No		0.00
9.0	Supply, Installation, Configuring, Testing, Commissioning of <b>Ultrasound Workstations for PACS</b> (Quad core Intel 64 bit Processor or higher, 16 GB RAM or higher, Windows OS, Dual 2 MP Clinical Grade Color monitor with graphic card (BARCO or equivalent make), including necessary hardware and software, all the accessories etc. and 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	1	No		0.00
	<b>Server, Software &amp; Accessories for Speech Recognition</b>				
10.0	Supply, Installation, Configuring, Testing, Commissioning of latest <b>Speech Recognition Application (5 licenses) and associated hardware, software, Network device, all the accessories and equipment etc. Technical specification should be latest and match the requirements of selected PACS and HMIS vendor.</b> It should have 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer	1	No		0.00
	<b>Film Digitizer with Software</b>				
11.0	Supply, Installation, Testing, Implementation, Integration with PACS, Training and Maintenance of Film Digitizer along with workstation, accessories, software and 3 years onsite comprehensive operation & maintenance support	1	No		0.00
	<b>Robotic CD/DVD Writers</b>				
12.0	Supply, Installation, Testing, Implementation, Integration with PACS, Training and Maintenance of dual-drive disc publisher in a black painted steel cabinet for desktop or rack mount use. Includes two built-in DVD±R/CD-R recorders and integrated high-speed 4800 dpi inkjet printing, individual CMYK ink cartridges, design software, power cord, high-speed USB 2.0 cable and instructions. 100-disc kiosk kit is included and 3 years onsite comprehensive operation & maintenance support	1	No		0.00
<b>Subtotal (PACS)</b>					<b>0.00</b>
<b>Computer Desktops, Printers, Tablets, UPS &amp; other Software etc.</b>					
13.0	Supply, Installation, Configuring, Testing, Commissioning of <b>latest Antivirus Server (in cluser mode)</b> for all the desktops (approx. 200 nos. ) and all Servers (HMIS & PACS) with associated hardware, OS, software, all the accessories and equipment etc. Technical specification should be latest and match the requirements. It should have 3 years OEM warranty for server hardware (Make- As per approved make) and 3 years subscriptions for the Antivirus Software (Make- As per approved make) as per the requirement & complete in all respect and satisfaction of the engineer.	1	No		0.00
14.00	Supply, Installation, Testing, Commissioning of <b>latest Desktop Computer</b> (i5 Based) with all the accessories and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	75	No.		0.00
15.00	Supply, Installation, Testing, Commissioning of <b>latest Desktop Computer</b> (i7 Based) with all the accessories and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	25	No.		0.00

16.00	Supply and Installation of <b>latest Microsoft Office 2013 Professional License</b> for desktops as per the requirement & complete in all respect and satisfaction of the engineer	35	No.		0.00
17.00	Supply, Installation, Testing, Commissioning of <b>latest Stylish Tablet</b> with all the accessories and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make -As per approved make)	20	No.		0.00
18.00	Supply, Installation, Testing, Commissioning of <b>Latest Stylish Light weight Notebook PC (i7 based)</b> as per technical specifications mentioned with all the accessories and 3 years maintenance support through 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer	5	No		0.00
19.00	Supply, Installation, Testing, Commissioning of <b>latest Bar code printer for Lab, Pharmacy and other places with all the accessories etc.</b> and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer	20	No		0.00
20.00	Supply, Installation, Testing, Commissioning of <b>latest Bar code reader for Lab, Pharmacy and other places with all the accessories etc.</b> and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer	20	No		0.00
21.00	Supply of chip based/magnetic Smart Card with at least 4K memory capable to capture patient demographic data including web cam picture & able to be read by the reader complete as per specifications as required and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer .	500	No.		0.00
22.00	Supply, Installation, testing of smart card reader/writer complete as per specifications as required complete in all respect and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer	2	No.		0.00
23.00	Supply, installation, testing & commissioning of Biometric Readers complete as per specifications as required and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer.	2	No.		0.00
24.00	Supply, testing of SDK for integrating Smart Cards with existing system and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer.	1	No.		0.00
25.00	Supply, installation, testing & commissioning of Wrist Bands (same reader/writer for smart card should be used) complete as per specifications as required and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer.	50	No.		0.00
26.00	Supply, installation, testing & commissioning of RFID Stationed unit antenna (for Wrist Bands) complete as per specifications as required and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer.	1	No.		0.00
27.00	Supply, Installation, testing & commissioning of SDK for integrating Wrist bands with existing system and 3 years OEM onsite warranty & as per the requirement & complete in all respect and satisfaction of the engineer	1	No.		0.00
28.00	Supply, Installation, testing & commissioning of Stylush Pen/Digital Bluetooth Pen with software utility with existing system and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer	2	No.		0.00
29.00	Supply, Installation, testing & commissioning of SDK for integrating Stylush pen/Digital Bluetooth Pen with existing system and 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer	1	No.		0.00
	<b>Printers</b>				
30.00	Supply, Installation, Testing, Commissioning of <b>latest Black and White LaserJet Printer with all the accessories etc.</b> and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	10.00	No.		0.00
31.00	Supply, Installation, Testing, Commissioning of <b>Original OEM Cartridge for the above printer</b> with all accessories etc. and as per the requirement & complete in all respect and satisfaction of the engineer	10.00	No.		0.00

32.00	Supply, Installation, Testing, Commissioning of latest <b>LaserJet Multifunction (Print, Scan, Copy, Fax, Wireless) Printer with all the accessories etc. and as per technical specifications 3 years OEM warranty</b> as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	4.00	No.			0.00
33.00	Supply, Installation, Testing, Commissioning of <b>Original OEM Cartridge for the above printer</b> with all accessories etc. and as per the requirement & complete in all respect and satisfaction of the engineer	4.00	No.			0.00
34.00	Supply, Installation, Testing, Commissioning of latest <b>LaserJet Multifunction (Print, Scan, Copy, Wireless) Printer with all the accessories</b> etc. and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	4.00	No.			0.00
35.00	Supply, Installation, Testing, Commissioning of <b>Original OEM Cartridge for the above printer</b> with all accessories etc. and as per the requirement & complete in all respect and satisfaction of the engineer	4.00	No.			0.00
36.00	Supply, Installation, Testing, Commissioning of latest <b>Color LaserJet Printer with all the accessories</b> etc. and as per technical specifications 3 years OEM warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	2.00	No.			0.00
37.00	Supply, Installation, Testing, Commissioning of <b>Original OEM Cartridge for the above printer (Complete set of colours)</b> with all accessories etc. and as per the requirement & complete in all respect and satisfaction of the engineer	2.00	No.			0.00
38.00	Supply, Installation, Testing, Commissioning of latest <b>Flatbed Document Management Scanners with all the accessories</b> etc. and as per technical specifications 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer (Make - As per approved make)	2.00	No.			0.00
	<b>UPS(Make - As per approved make)</b>					
	<b>120 KVA UPS</b>					
39.00	Supply, installation , testing and commissioning of 120 KVA UPS as mentioned above with all the accessories etc. and as per technical specifications 3 years OEM onsite warranty as per the requirement & complete in all respect and satisfaction of the engineer. For other guidelines refer to the electrical specifications. UPS(Make - As per approved make)	1.00	No.			0.00
<b>SUBTOTAL</b>						<b>0.00</b>
<b>Computer Network Infrastructure (LAN &amp; Wi- Fi)</b>						
40.0	<b>Core Switch (Make - As per approved make)</b>					
40.1	Supply, installation, testing and commissioning of <b>Core Switch</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2	No			0.00
40.2	Supply, installation, testing and commissioning of <b>24X7 support with advance replacement and 3 years OEM warranty for the core switch</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2	No			0.00
40.3	Supply, installation, testing and commissioning of <b>1000BASE-TX SFP Copper, RJ-45 Connector</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2	No			0.00
40.4	Supply, installation, testing and commissioning of <b>10G BASE-LR, SFP+ OPTICAL (LC) for upto 10 Km SMF Module for the core switch</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer	2	No			0.00
40.5	Supply, installation, testing and commissioning of <b>10 G BASE-SR, SFP+ optic, MMF, (for upto 300mtr.) LC Connector optical monitoring capable for core switch</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer	40	No			0.00
41.0	<b>Access Switch (Make - As per approved make)</b>					
41.1	Supply, installation, testing and commissioning of <b>48-port Access Switch with 3 years OEM warranty and support</b> as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12	No			0.00
41.2	Supply, installation, testing and commissioning of <b>24-port Access Switch with 3 years OEM warranty and support</b> as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4	No			0.00



41.3	Supply, installation, testing and commissioning of <b>24-port POE switch with 3 years OEM warranty and support</b> as per the technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	10			0.00
41.4	Supply, installation, testing and commissioning of <b>10 G Stack cable 1 mtr.</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	No		0.00
42.0	<b>Wireless Solution (Make - As per approved make)</b>				
42.1	Supply, installation, testing and commissioning of <b>Wireless Access Point with Power over Ethernet Adapter (10/100/1000 Mbps), Wall mounting device, Universal horizontal ceiling etc. and three years subscription and 3 years OEM warranty</b> as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	120	No		0.00
42.2	Supply, installation, testing and commissioning of <b>Wireless Access Controller for above mentioned Wireless Access Points with three years subscription, supports, licenses and upgrades 3 years OEM warranty</b> as per the technical specification and as per requirement & complete in all respect and as directed to the satisfaction of engineer	1	No		0.00
	<b>Network Management Solution (Make - As per approved make)</b>				
43.0	Supply, installation, testing and commissioning of <b>IP management SW license for up to 200 devices; required for initial purchase of IP only management; minimum of three years support is required and 24x7 support for the software</b> as per requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No		0.00
	<b>Firewall (Make - As per approved make)</b>				
44.0	Supply, installation, testing and commissioning of <b>Appliance based Firewall with internal/external IPS/IDS with 3 years subscription includes Anti Malware, Anti Spam, Web and Application Filter, Intrusion Prevention System and 24 x 7 Support for around 300 users or more</b> as per technical specification mentioned as per the requirement & complete in all respect and as directed to the satisfaction of engineer	1	No		0.00
<b>Passive Devices</b>					
45.0	<b>U/FTP Components (Make - As per approved make)</b>				
45.1	Supply, laying, testing and commissioning of <b>Cat 6A, U/FTP Cable</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	64000	Meter		0.00
45.2	Supply, installation, testing and commissioning of <b>Wall Plate 1 Port - White</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	300	No		0.00
45.3	Supply, installation, testing and commissioning of <b>Wall Plate 2 Port - White</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	300	No		0.00
45.4	Supply, installation, testing and commissioning of <b>Power Cat6A DataGate Jack, Shuttered BLUE</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	No		0.00
45.5	Supply, installation, testing and commissioning of <b>Power Cat6A DataGate Jack, Shuttered Yellow</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	No		0.00
45.6	Supply, installation, testing and commissioning of <b>Cat 6A Patch Cord S/FTP 1 mtrs</b> as per the technical specificaton mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	No		0.00
45.7	Supply, installation, testing and commissioning of <b>Cat 6A Patch Cord S/FTP 2 mtrs as per the technical specificaton mentioned and</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer	800	No		0.00
45.8	Supply, installation, testing and commissioning of <b>GANG Box, 1 Port/2 Port, White as per the technical specificaton mentioned and</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	800	No		0.00
45.9	Supply, installation, testing and commissioning of <b>24 Port Unloaded Patch Panel CAT-6A as per the technical specificaton mentioned and</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	22	No		0.00
45.10	<b>Pentascanning</b> Charges per node as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	800	No		0.00
46.0	<b>Opital Fiber Cable Components (Make - As per approved make)</b>				

46.1	Supply, installation, testing and commissioning of <b>24 port MM SC LIU Fibre Panel- Unloaded</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	6	No		0.00
46.2	Supply, installation, testing and commissioning of <b>12 port MM SC LIU Fibre Panel- Unloaded</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	9	No		0.00
46.3	Supply, installation, testing and commissioning of <b>24 port SM SC LIU Fibre Panel- Unloaded</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1			0.00
46.4	Supply, laying, testing and Commissioning of <b>SC Pigtail, SM, 9/125, 900 micron, 2 mtrs.</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12	No		0.00
46.5	Supply, laying, testing and Commissioning of <b>SC Pigtail, MM, 50/125, 900 micron, 2 mtrs.</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	168	No		0.00
46.6	Supply, installation, testing and commissioning of <b>SC-LC, Multimode, 3 Mtrs Patchcord</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	28	No		0.00
46.7	Supply, installation, testing and commissioning of <b>SC-LC, Singlemode, 3 Mtrs Patchcord</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	No		0.00
46.8	Supply, laying, testing and commissioning of <b>6 core SM OS1 cable</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	200	Meter		0.00
46.9	Supply, laying, testing and commissioning of <b>6 core MM OM3 cable</b> as per the technical specification mentioned and as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2000	Meter		0.00
46.10	<b>OLTS (Optical Loss Test Sets) charges per core</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	180	No		0.00
47.0	<b>Equipment Racks and other accessories</b>				
47.1	Supply, installation, testing and Commissioning of <b>19" Rack 12 U Wall Mount Rack with all standard accessories</b> that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8	No		0.00
47.2	Supply, installation, testing and Commissioning of <b>19" Rack 15U Wall Mount Rack with all standard accessories</b> that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	5	No		0.00
47.3	Supply, installation, testing and Commissioning of <b>19" Rack 42U Floor Mount Rack with all standard accessories</b> that include Cable Manager, Power Bar with sockets etc. as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1	No		0.00
47.4	Supply, laying, testing and Commissioning of <b>PVC Batten/pipes as per actual 1"</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	32000	Meter		0.00
47.5	Supply, installation, testing and commissioning of <b>latest Server Hardware as per the technical specification mentioned (Make - As per approved make) as per the technical specification mentioned and</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	No		0.00
47.6	Supply, installation, testing and commissioning of <b>latest Server Operating System - Microsoft Windows 2012 Server or higher with media etc. as standard for the above Server</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	2	No		0.00
47.7	Supply, excavation up to 3 feet, laying, testing and commissioning of <b>40mm HDPE Pipe (Standard ISI mark)</b> as per the requirement & complete in all respect and as directed to the satisfaction of engineer.(Including civil related works for the laying of conduit & cabling etc. as per the industrial standards and as per the scope of work mentioned in the tender document).	200	Meter		0.00
	<b>FOC Connectivity</b>				
47.8	Providing & fixing of <b>Hume Pipe (Standard ISI mark)</b> as per the requirement including all fittings e.g. elbows, tees, reducers, couplers & connectors etc with trenching, refilling and testing of joints complete as per direction of Engineer-In-Charge.	100	Meter		0.00

47.9	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete 100 mm dia. R.C.C. pipe as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	100	Meter		0.00
47.10	Excavating trenches of required width for pipes, cables, etc, including excavation of sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soils, and then returning the soil as required in layers not exceeding 20 cm in depth, including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m: Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	100	Meter		0.00
<b>Sub-Total (LAN &amp; Wi-Fi System)</b>					<b>0.00</b>
<b>Queue Management System (QMS)</b>					
48.1	Supply, installation of Main QMS Back end Server Software - Administrator Module - QMS Web Reporting Module - QMS Web Dashboards - QMS Web Analysis - QMS DB Server Module - SMS Module - System integration module - Web Appointment Module - Feedback system module - Digital signage module as per specifications complete as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1.00	Set		0.00
48.2	Supply, installation of Department HUB as per technical specification as per the requirement & complete in all respect and as directed to the satisfaction of engineer	5.00	Set		0.00
48.3	Supply, installation of Browser based calling terminal 01 x user license for registration counter as per technical specification as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	8.00	Set		0.00
48.4	Supply, installation of Browser based calling terminal 01 x user license for Dr. Room as per technical specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30.00	Set		0.00
48.5	Supply, installation of Thermal token Printer with 05 Push Buttons with Pedestal /Wall mount stand - Bar Code print as per specifications complete as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	5.00	Set		0.00
48.6	Supply, installation of Thermal token Printer with touch screen 8" with Pedestal /Wall mount stand Bar Code print as per specifications complete as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4.00	Set		0.00
48.7	Supply, installation of Full Size Self Appointment Kiosk - 01 x user license 17" Touch screen LCD panel - Bar Code Reader - Pedestal Stand - thermal Ticket Printer - patient feedback option Inbuilt processor complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	5.00	Set		0.00
48.8	Supply, installation of Server PC (QMS Application, Database, Appointment & Backup server ) Processor: Quad Core Xeon Processor Hard Drive: 2 x 1TB SATA II, RAID1 complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	4.00	Set		0.00
48.9	Supply, installation of 50" LED TV - VGA/HDMI Port - Wall Mounting/ ceiling mounting Bracket complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	10.00	Nos.		0.00
48.10	Supply, installation of 40" LED TV - VGA/HDMI Port - Wall Mounting/ ceiling mounting Bracket complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	12.00	Set		0.00
48.11	Supply, installation of Queue number LED Display with ceiling mounting - Counter status - Display Messages complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30.00	Set		0.00
48.12	Supply, installation of VGA Spilliter( Port) with adapter - Voice Module (Hindi, English & Punjabi language) complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1.00	Set		0.00
48.13	Supply, installation of Hardware keypadd terminal complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	30.00	Nos.		0.00
48.14	Supply of Thermal Ticket rolls width 60mm, 2000 tickets without refill and 120 meter roll length as per specification as per the requirement & complete in all respect and as directed to the satisfaction of engineer	500.00	Roll		0.00

48.15	Testing and commissioning for Software & Hardware: -Hardware, software Installation with complete conducting, VGA/HDMI cabling with Audio option - System Deployment complete as per specifications as per the requirement & complete in all respect and as directed to the satisfaction of engineer.	1.00	Lot			0.00
48.16	Provision of Training to System Administrators & End Users.	1.00	Lot			0.00
48.17	Operation & Maintenance Support-ACMC for 2nd & 3rd Years for complete QMS solution.	1.00	Lot			0.00
<b>SUBTOTAL - QMS</b>						<b>0.00</b>
<b>TELEMEDICINE</b>						
49.00	Supply, Customization, Installation, Testing, Implementation, Integration, Training and Maintenance of <b>Telemedicine</b> as per the Scope of work, Deliverables of the project, Functional and Technical requirements, Terms and Conditions mentioned in the tender document and as per the requirement and complete in all respect and satisfaction of the engineer. (*The SI Vendor is required to provide detailed, item-wise Bill of Material with break-up of costs as an Appendix-P3 along with the Price Bid. * SI should also give the cost of the person month along with Price Bid. *)	1.00	Lot	0.00		0.00
<b>SUBTOTAL- Telemedicine</b>						<b>0.00</b>

Cost wise breakup for Server hardware & System Software and storage etc. for HMIS and PACS (Item mentioned in Sr. No. 1 in BOQ )						Appendix-P1
Sr. no.	Item Description	Unit	Quantity	Rate in figure	Rate in words	Amount
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
11						0.00
12						0.00
13						0.00
14						0.00
15						0.00
16						0.00
17						0.00
18						0.00
19						0.00
20						0.00
Total Amount (In Rs.)						0.00

Cost wise breakup for Server hardware & System Software and storage etc. for HMIS and PACS (Item mentioned in Sr. No. 5 in BOQ )						Appendix-P2
Sr. no.	Item Description	Unit	Quantity	Rate in figure	Rate in words	Amount
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
11						0.00
12						0.00
13						0.00
14						0.00
15						0.00
16						0.00
17						0.00
18						0.00
19						0.00
20						0.00
<b>Total Amount (In Rs.)</b>						0.00

**Cost wise breakup for TeleMedicine (Item mentioned in Sr. No. 49 in BOQ )**

**Appendix-P3**

Sr. no.	Item Description	Unit	Quantity	Rate in figure	Rate in words	Amount
1						0.00
2						0.00
3						0.00
4						0.00
5						0.00
6						0.00
7						0.00
8						0.00
9						0.00
10						0.00
11						0.00
12						0.00
13						0.00
14						0.00
15						0.00
16						0.00
17						0.00
18						0.00
19						0.00
20						0.00
<b>Total Amount (In Rs.)</b>						0.00

**Project Name:- Construction & Renovation of Cancer Hospital Including Internal & External Electrical, HVAC, PHE, Fire Fighting, OT, IT & Developments Works etc. and Their Maintenance During Defect Liability at Solferino, Vacoas, Mauritius.**

**Revised Bill of Quantity for Optional item for Part B – Comprehensive operation and Maintenance for Three years.**

S. No.	Description	Total Qty	Unit	Rate in Figures (Rs.)	Rate in Words (Rs.)	Amount in Figures (Rs.)
1.00	Comprehensive operation and Maintenance for three years including during defect liability period (The quoted rates shall become a part of financial bid shall be considered for evaluation of financial bids of the bidder). The employer reserves the right for placement of order for this maintenance work. However the quoted rates by the bidders shall remain binding on the bidder. The BOQ items shall be read in conjunction with a technical specification, GCC, SCC and their quoted rates shall deem to include all works/requirements in the technical specification, GCC, SCC and BOQ etc. The quoted amount of Comprehensive operation and Maintenance for three year including during defect liability period should not include the amount/liabilities/ provisions already covered in respect of BOQ items/Specifications of respective heads of the work including during defect liability period.					
1.01	Providing comprehensive operation and maintenance for three year during defect liability period only charges of whole work executed under all different head of the main contract including equipments supplied and services including all specialized services executed for this projects from the date of hand over/ completion of work whichever is later for a period of 03 years. The Comprehensive maintenance charges of whole work including equipments supplied shall include all the spare parts, consumables (excluding the cost of diesel required for running of DG sets), manpower, periodical changes of lubricants etc. including replacement/repair to keep the building in usable condition with least disturbance of the occupants					
a	Comprehensive Maintenance during 1st Year during defect liability period	1	Job			0.00
b	Comprehensive Maintenance during 2nd Year	1	Job			0.00
c	Comprehensive Maintenance during 3rd Year	1	Job			0.00
<b>Total</b>						<b>0.00</b>