

<b>Summary of M &amp; E- KEM Hospital Seva Niketan</b>				
<b>Sr No</b>	<b>Item Package Disription</b>	<b>Cost of Package</b>	<b>CSMC Cost</b>	<b>Remarks</b>
1	Electrical System / Water Pumps	3,71,36,933.96	52,23,883.1	
2	Fire Alarm and Fire Fighting System	1,21,62,385.00	12,57,974.3	
3	ELV- Tel/ Acc Con/ PA/ CCTV	54,23,195.20	14,58,278.0	
4	HVAC System	2,51,39,789.50	44,49,781.8	
5	Lift / Elevators	1,96,92,538.00	66,66,267.3	
	Total	9,95,54,841.66	1,90,56,184.49	
	<b>Grand Total M &amp; E</b>	<b>9,95,54,900.00</b>	<b>1,90,56,200.00</b>	
6	Supply co. Charges	49,24,000	Nil	BEST official Charges with Approval cost & Sub sttaion equipment charges

Schedule Of Quantities for Proposed Construction of Seva Niketan / Service Tower Building of KEM Hospital, Mumbai						
Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Rev-02 Amount (Rs)
						-
	<b>L</b>	<b>Distribution Board (Box only) (SP-ME-TS- 3)</b>				
	R2-ME-1-15	IP43&30 SPN, TPN,Vertical TPN Distribution board with metal door of various sizes on wall/ Column/ floor mounting, with detachable gland plate, terminal connectors and other required hardware & fasteners. DB shall be designed with provision for FP MCB/ Isolator/ RCCB / RCBO as incomer & SP / TP MCB as outgoing as per requirement. (Cost of the DBs will be without MCB, MCCB). DB shall be as per IS 8623- 1 & 3 / IEC 61439- 1 & 3.				
1	R2-ME-1-15-a	IP43 8 Way SPN DB (4 + 4Way)	No.	2,458.00	6	14,748.00
2	R2-ME-1-15-b	IP43 12 Way SPN DB (4 + 8Way)	No.	2,955.00	2	5,910.00
3	R2-ME-1-15-c	IP43 16 Way SPN DB (4 + 12Way)	No.	3,708.00	3	11,124.00
4	R2-ME-1-15-aj	IP 43 TPN Distribution Board with metal door (Box only) 8 Way ( 8 + 24 way)	No.	8,176.00	35	2,86,160.00
5	R2-ME-1-15-ak	IP 43 TPN Distribution Board with metal door (Box only) 12 Way ( 8 + 36 way)	No.	12,209.00	2	24,418.00
	<b>C.3</b>	<b>MCB</b>				
	R2-ME-1-17	Unit rate of 240V/415V, 'C' Curve, 10kA, Miniature circuit breaker suitable for DB mounting complete with connection, testing & commissioning etc. as required.				
5	R2-ME-1-17-b	10A SP MCB	No.	335.00	356	1,19,260.00
6	R2-ME-1-17-c	16A/20A SP MCB	No.	335.00	410	1,37,350.00
7	R2-ME-1-17-i	32A DP MCB	No.	995.00	11	10,945.00
8	R2-ME-1-17-w	63A 4P MCB	No.	3,161.00	37	1,16,957.00
	<b>P</b>	<b>MCBs in 16SWG sheet steel metal box (SP-ME-TS- 3)</b>				
	R2-ME-1-19	MCBs In 16 SWG CRCA sheet steel enclosure, powder coated, wall / column mounted with provision for support arrangement, 2 earthing terminal, Incoming & outgoing cable terminal etc. with required hardware & fasteners. All MCBs shall be rated for 10kA, 'C' curve type. Colour shade shall be RAL 7032 Smoke gray as per IS 5. IP 43 Enclosure.				
8	R2-ME-1-19-a	16/32 Amp. DP MCB	No.	2,974.00	2	5,948.00
9	R2-ME-1-19-c	63 Amp. TPN MCB	No.	5,143.00	2	10,286.00
	<b>O</b>	<b>MCCB (SP-ME-TS- 3)</b>				
	R2-ME-1-18	Unit rate of 415V, 10kA/16kA, Moulded case circuit breaker with Thermal magnetic overload suitable for DB mounting complete with connection, testing & commissioning etc. as required.				
10	R2-ME-1-18-a	100A TPN MCCB	No.	5,299.00	2	10,598.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
	<b>U</b>	<b>Earth Leakage circuit Breaker / Residual Current circuit Breaker (SP-ME-TS- 4)</b>				
	R2-ME-1-25	ELCBs In 16 SWG CRCA sheet steel enclosure, powder coated, wall / column mounted with provision for support arrangement, 2 earthing terminal, Incoming & outgoing cable terminal etc. Colour shade shall be RAL 7032 Smoke gray as per IS 5.				
		<b>with 100mA Sensitivity</b>				
11	R2-ME-1-25-e	25Amp. 4Pole	No.	5,844.00	1	5,844.00
12	R2-ME-1-25-f	40Amp. 4Pole	No.	5,917.00	1	5,917.00
13	R2-ME-1-25-g	63Amp. 4Pole	No.	6,707.00	15	1,00,605.00
14	PWD-NH-5-6-3	Providing, erecting & commissioning RCCB only of electro magnetic type with 30mA sensitivity and having capacity of 63 A. 2 pole complete as per specification No. SW- RCCB/RCCB	No.	3,252.00	111	3,60,972.00
		<b>CABLES, EXCAVATION, G.I. CABLE TRAYS &amp; ACCESSORIES, CABLE JOINTS, CABLE PROTECTION PIPE.</b>				
	<b>Y</b>	<b>Cables : Supply &amp; laying " XLPE cables" on walls or through existing trenches etc. (SP-ME-TS 6)</b>				
		LV Cables of following sizes to be laid buried in ground/ laid in cable trays in ready made trenches, cables shall be fitted on wall / ceiling by the means of saddle & spacers. Miscellaneous items such as cable dressing accessories like nylon tie, Aluminium clamps, GI cleats, cable tags etc. are included in the scope. Removal of empty drums, cartoons and making the site normal as instructed by Purchaser client is included in scope.				
		<b>1.1 kV grade stranded Al conductor, XLPE insulated,extruded PVC inner and FRLS outer sheathed,galvanised steel round or strip armoured cables</b>				
15	R2-ME-2-1-s	4C x 16 Sq.mm	Mtr.	194.00	900	1,74,600.00
16	R2-ME-2-1-t	4C x 25 Sq.mm	Mtr.	250.00	80	20,000.00
17	R2-ME-2-1-u	3.5C x 35 Sq.mm	Mtr.	292.00	110	32,120.00
18	R2-ME-2-1-v	3.5C x 50 Sq.mm	Mtr.	379.00	100	37,900.00
19	R2-ME-2-1-w	3.5C x 70 Sq.mm	Mtr.	505.00	50	25,250.00
20	R2-ME-2-1-y	3.5C x 120 Sq.mm	Mtr.	763.00	20	15,260.00
21	R2-ME-2-1-z	3.5C x 150 Sq.mm	Mtr.	903.00	300	2,70,900.00
22	R2-ME-2-1-aa	3.5C x 185 Sq.mm	Mtr.	1,127.00	210	2,36,670.00
23	R2-ME-2-1-ac	3.5C x 300 Sq.mm	Mtr.	1,739.00	200	3,47,800.00
		<b>1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLS, galvanised steel round or strip armoured cables (SP-ME-TS- 6)</b>				
24	R2-ME-2-3-i	2C x 4 Sq.mm	Mtr.	135.00	400	54,000.00
25	R2-ME-2-3-m	2C x 6 Sq.mm	Mtr.	187.00	130	24,310.00
26	R2-ME-2-3-q	2C x 10 Sq.mm	Mtr.	281.00	450	1,26,450.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
27	R2-ME-2-3-f	3C x 2.5 Sq.mm	Mtr.	131.00	200	26,200.00
28	R2-ME-2-3-j	3C x 4 Sq.mm	Mtr.	195.00	250	48,750.00
29	R2-ME-2-3-k	4C x 4 Sq.mm	Mtr.	242.00	970	2,34,740.00
30	R2-ME-2-3-o	4C x 6 Sq.mm	Mtr.	311.00	500	1,55,500.00
31	R2-ME-2-3-s	4C x 10 Sq.mm	Mtr.	556.00	1060	5,89,360.00
	<b>AE</b>	<b>Cable End Termination For Copper Cables : (SP-ME-TS- 6)</b>				
	<b>R2-ME-2-11</b>	Cable end terminations for LV, XLPE/PVC insulated,PVC sheathed, armoured/ unarmoured cables including supply and fixing of Double compression cable glands,stripping of cable insulation, supply and fixing of aluminium lugs for aluminium cables for all phases and crimping the same to the conductor for the following cables.Miscellaneous items like cable lugs, G.I nut - bolts and G.I washers , consumables and other hardware materials as required to make the installation complete, are in the scope. All G.I Nut, bolt and washers shall be HDGI with 80 micron.One set of termination includes gland, lugs for cable core &accessories.				
32	R2-ME-2-11-r	4C x 16 Sq.mm	set	305.00	38	11,590.00
33	R2-ME-2-11-s	4C x 25 Sq.mm	set	309.00	6	1,854.00
34	R2-ME-2-11-t	3.5C x 35 Sq.mm	set	275.00	4	1,100.00
35	R2-ME-2-11-u	3.5C x 50 Sq.mm	set	296.00	4	1,184.00
36	R2-ME-2-11-v	3.5C x 70 Sq.mm	set	330.00	2	660.00
37	R2-ME-2-11-x	3.5C x 120 Sq.mm	set	748.00	4	2,992.00
38	R2-ME-2-11-y	3.5C x 150 Sq.mm	set	894.00	6	5,364.00
39	R2-ME-2-11-z	3.5C x 185 Sq.mm	set	1,088.00	4	4,352.00
40	R2-ME-2-11-ab	3.5C x 300 Sq.mm	set	1,524.00	18	27,432.00
	<b>R2-ME-2-12</b>	Cable end terminations for LV, XLPE/PVC insulated, PVC sheathed, armoured/ unarmoured cables including supply and fixing of Double compression cable glands, stripping of cable insulation, supply and fixing of <b>tinned plated copper lugs for copper cables</b> for all phases and crimping the same to the conductor for the following cables. Miscellaneous items like cable lugs, G.I nut - bolts and G.I washers , consumables and other hardware materials as required to make the installation complete, are in the scope. All G.I Nut, bolt and washers shall be HDGI with 80 micron. One set of termination includes gland, lugs for cable core & accessories				
41	R2-ME-2-12-a	2C x 4 Sq.mm	set	108.00	8	864.00
42	R2-ME-2-12-c	2C x 6 Sq.mm	set	171.00	4	684.00
43	R2-ME-2-12-d	2C x 10 Sq.mm	set	174.00	8	1,392.00
44	R2-ME-2-12-g	3C x 2.5 Sq.mm	set	113.00	4	452.00
45	R2-ME-2-12-h	3C x 4 Sq.mm	set	172.00	8	1,376.00
46	R2-ME-2-12-q	4C x 4 Sq.mm	set	179.00	44	7,876.00
47	R2-ME-2-12-r	4C x 6 Sq.mm	set	186.00	12	2,232.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
48	R2-ME-2-12-s	4C x 10 Sq.mm	set	199.00	56	11,144.00
	<b>AB</b>	<b>Excavation (SP-ME-TS- 6)</b>				
49	R2-ME-2-8	Excavating the trenches and refilling, reinstatement of the same after the cable is laid in approved manner (750 mm deep, 600 mm wide), in all types of soils 1 Cu. Mtr. = 2.2 RMT.	Cu. Mtr.	307.00	50	15,350.00
50	R2-ME-2-9	Excavating the trenches and refilling the same after the cable is laid in approved manner (Size of trench: 750 mm deep, 600 mm wide) in concrete/ masonry / asphalt. 1 Cu. Mtr. = 2.2 RMT. And reinstatement.	Cu. Mtr.	500.00	50	25,000.00
	<b>AF</b>	<b>G.I. Cable tray with all other accessories : Perforated Type (SP-ME-TS- 7)</b>				
	R2-ME-2-13	Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be minimum 86 Micron.				
51	R2-ME-2-13-b	100 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	Rmtr.	1,197.00	104	1,24,488.00
52	R2-ME-2-13-c	150 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	Rmtr.	1,237.00	140	1,73,180.00
53	R2-ME-2-13-d	200 x 50mm (W x H) - (16 SWG - 1.6mm) without cover	Rmtr.	1,522.00	24	36,528.00
54	R2-ME-2-13-e	300 x 50mm (W x H) - (16 SWG - 1.6mm) without cover	Rmtr.	2,067.00	124	2,56,308.00
55	R2-ME-2-13-k	450 x 75mm (W x H) - (14SWG - 2mm) without cover	Rmtr.	3,533.00	252	8,90,316.00
56	R2-ME-2-13-l	600 x 75mm (W x H) - (14SWG - 2mm) without cover	Rmtr.	4,167.00	164	6,83,388.00
	<b>AH</b>	<b>G.I. Trunking / Duct / Raceway &amp; all other accessories (SP-ME-TS- 9)</b>				
	R2-ME-2-15	Readymade 2500mm standard length, prefabricated, GI trunking from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. 50 mm side flanges shall be provided. Galvanisation thickness shall be minimum 86 Micron. cost of trunking shall be included junction box of suitable size, and all other accessories required to complete the work.				
57	R2-ME-2-15-a	50 x 40mm (W x H) - (14 SWG - 2mm) with cover without partition	Rmtr.	334.00	50	16,700.00
58	R2-ME-2-15-c	100 x 40mm (W x H) - (14 SWG - 2mm) with cover without partition	Rmtr.	690.00	50	34,500.00
59	R2-ME-2-15-d	150 x 40mm (W x H) - (14 SWG - 2mm) with cover without partition	Rmtr.	906.00	100	90,600.00
	<b>AI</b>	<b>PVC Trunking with cover &amp; all other accessories (SP-ME-TS- 10)</b>				
	R2-ME-2-16	Following sizes PVC trunking with cover and all other accessories to complete the work like bend, partition, internal and external angles etc. cost of trunking shall be included base, cover, finishing accessories, junction boxes and mounting wiring accessories.				
60	R2-ME-2-16-a	50 x 50mm (W x H) - PVC Trunking with cover	Rmtr.	280.00	100	28,000.00
61	R2-ME-2-16-c	100 x 50mm (W x H) - PVC Trunking with cover	Rmtr.	1,090.00	60	65,400.00
	<b>AL</b>	<b>Providing &amp; laying Hume pipe across road or below the plinth beams and buried cable protection (SP-ME-TS- 06)</b>				
	R2-ME-2-19	Supply and laying of Heavy duty RCC Hume pipe for road crossing, below plinth beam of following size as diameter.				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
62	R2-ME-2-19-a	100 mm Dia.	Mtr.	544.00	20	10,880.00
63	R2-ME-2-19-b	150mm Dia.	Mtr.	611.00	30	18,330.00
64	R2-ME-2-19-d	300mm Dia.	Mtr.	1,113.00	40	44,520.00
		<b>MAINS &amp; SUBMAINS WIRING, POINT WIRING</b>				
65	RBH-18-PWD-1-8-1	Supplying and erecting modular type switch 6A / 10A ISI mark approved make duly erected on provided plate and box with wiring connections complete.	No.	89.00	265	23,585.00
66	RBH-18-PWD-1-8-7	Supplying and erecting modular type switch one way 16 / 20 A, ISI mark, approved make duly erected on provided plate and box with wiring connections complete with neon indicator.	No.	146.00	305	44,530.00
67	RBH-18-PWD-1-8-10	Supplying and erecting modular type 3 pin 6A multi socket with safety shutter ISI mark approved make duly erected on provided plate and box with wiring connections complete.	No.	116.00	287	33,292.00
68	RBH-18-PWD-1-8-11	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter ISI mark approved make duly erected on provided plate and box with wiring connections complete.	No.	179.00	312	55,848.00
	<b>AO</b>	<b>WIRING FOR SUBMAINS/ CIRCUIT WIRING (SP-ME-TS- 12)</b>				
	R2-ME-3-1	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FR PVC insulated copper conductor wire in surface/ recessed medium class PVC conduit as required				
69	R2-ME-3-1-b	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire in 20mm Conduit	Mtr	147.00	50,000	73,50,000.00
70	R2-ME-3-1-c	2 X 4 sq. mm + 1 X 4 sq. mm earth wire in 25mm Conduit	Mtr	213.00	8,000	17,04,000.00
71	R2-ME-3-1-d	2 X 6 sq. mm + 1 X 6 sq. mm earth wire in 25mm Conduit	Mtr	292.00	500	1,46,000.00
	<b>R2-ME-13</b>	<b>Point wiring by using PVC insulated copper conductors (alongwith same size of pvc insulated copper conductor for earthing &amp; 3 plate ceiling rose) : PVC conduit concealed with modular switches &amp; FR wires. (SP-ME-TS- 12)</b>				
72	R2-ME-3-13-d	Bell Point with Bell / Buzzer & 1 Bell Push Concealed Manner with Modular switches & FR wires	Each Pt.	1,291.00	12	15,492.00
73	R2-ME-3-13-e	Bell Point With Bell / Buzzer with 1 Bell Push & 1 Indicator Concealed Manner with Modular switches & FR wires	Each Pt.	1,299.00	4	5,196.00
	R2-ME-3-31	Point wiring by using FR insulated copper conductors (alongwith same size of FR insulated copper conductor for earthing & 3 plate ceiling rose) using <b>CONCEALED MANNER (WITH PVC CONDUIT PIPES, M.S. BOXES ETC.) POINTS</b>				
74	R2-ME-12-5-d	PVC box & cover plate with RJ-11 for Telephone access only	Nos	244.00	69	16,836.00
75	R2-ME-12-5-c	PVC box & cover plate with RJ-45 for LAN access only	Nos	317.00	85	26,945.00
		<b>LIGHT FIXTURES AND FANS</b>				
		<b>General indoor fittings (FG-IDF)</b>				
		<b>LED Outdoor Fittings (FG-ODF/LED)</b>				
76	RBH 18-PWD-2-9-4	Supplying and erecting LED flood light fitting 40W to 48W, having PF > 0.95, class IP65 or above. Housing of pressure die cast aluminium alloy and heat sink extruded aluminium as per specification no. FG-ODF/FLS2	No.	4,439.00	5	22,195.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
77	PWD-NH-2-9-12	Supplying and erecting LED Flood light fitting of 30-40W, including lamp, with PF > above Housing of pressure die cast alluminium alloy and heat sink extruded alluminium completeper specification No FG-ODF/FLS-2	No.	2,974.00	5	14,870.00
		<b>INDOOR LED FIXTURES:-</b>				
	<b>R2-ME-4-32</b>	<b>Downlighter/Wall mounted LED:-</b>				
78	R2-ME-4-32-a	5-8 W	No.	480.00	332	1,59,360.00
79	R2-ME-4-32-c	12 -13W	No.	698.00	178	1,24,244.00
80	R2-ME-4-32-d	13-18 W	No.	754.00	803	6,05,462.00
	<b>R2-ME-4-33</b>	<b>LED Square Recessed Downlighter</b>				
81	R2-ME-4-33-f	36 W (600X600)	No.	5,546.00	82	4,54,772.00
	<b>BD</b>	<b>T-5 Fixtures (SP-ME-TS-20)</b>				
	R2-ME-4-5	Light fixtures complete with: a) All fixing accessories, mounting Brackets etc. necessary for completeness of installation. b) Lamp of specified wattage c) Electronic ballast of suitable capacity as per specification				
82	R2-ME-4-5-a	1x28W, T-5 Fixtures, comprises of M.S.Powder coated with end cap. The fixtures complete with high efficiency electronic ballast and PF= 0.98 complete with bright reflector & T-5 lamp	No.	1,919.00	210	4,02,990.00
	R2-ME-4-21	Energy saver bulkhead luminaire, made of cast aluminum body pretreated and stove enameled paint with polycarbonate housing in various colours duly wired with ballast and all accessories mounted on a CRCA sheet steel tray,a high impact clear prismatic heat & UV resistant polycarbonate diffuser with protection class of at least IP 54 (SP-ME-TS-23)				
83	R2-ME-4-21-b	with 9/11W CFL lamp	No.	747.00	68	50,796.00
84	R2-ME-4-21-c	with 15/20W CFL lamp	No.	747.00	-	-
85	R2-ME-4-5-e	1x28W, T-5 Fixtures,surface mounted mirror optic fitting with bright aluminium reflector luminiare made of powder coated CRCA housing prewired with High efficiency Electronic ballast suitable for T 5 lamp and PF 0.98 with T-5 lamp.	No.	3,604.00	48	1,72,992.00
	<b>BI</b>	<b>FANS (SP-ME-TS-28)</b>				
86	R2-ME-4-12-d	Ceiling fan of 1200 mm sweep with <b>all accessories including Electronic Regulator</b> for completing installation as per specification.	No.	2,508.00	35	87,780.00
87	R2-ME-4-12-i	Exhaust fan of 305mm sweep, 900/1400RPM, with 750 CFM free air delivery, AC 230V/415V , 50 Hz, single phase / three phase complete with all necessary accessories for completing installation as per specification.	No.	3,209.00	120	3,85,080.00
88	R2-ME-4-15-b	S' type M.S. fan hook fabricated from suitable dia. M.S. rod for fixing ceiling fan by using pair of Anchor fastener.	No.	229.00	35	8,015.00
	<b>BN</b>	<b>FIXING OF CEILING FANS WITH EXTENDED 1/2" G.I./ M.S. PIPE WITH SHACKLE MOUNTING ETC. WITH PAINTING:</b>				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
	R2-ME-4-17	Fixing of Ceiling fans with MS down rod, painting etc as required for completing installation as per specification				
89	R2-ME-4-17-c	Above 1 mtr. to 1.5 Mtr.	No.	439.00	35	15,365.00
	R2-ME-4-11-d	Inverter of 5KVA ,single phase input and output with Tubular Battery(12X10) 200 AH Duration 4 Hrs. as per specification	Nos	3,04,146.00	1	3,04,146.00
90	R2-ME-12-14-d	3 Ph input & 3 Ph output 40 kVA fully microprocessor based true online double conversion UPS system with SMF batteries suitable for 1/2 hrs along with necessary battery racks & interconnections & UPS to battery bank cables.	Nos	7,64,634.00	1	7,64,634.00
		<b>Outdoor Lighting (SP-ME-TS- 19)</b>				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
		Light fixtures complete with: a) All fixing accessories, mounting Brackets etc. necessary for completeness of installation. b) Lamp of specified wattage c) Electronic ballast of suitable capacity as per specification				
91	R2-ME-4-1-c	Street light fixtures with 70 W HPSV lamp (Integral type).	Nos	7,371.00	15	1,10,565.00
92	R2-ME-10-3-e	Swan neck type bracket for fixing HPMV / HPSV lamp fixtures mounting on wall / shed etc. 0.5 to 1.2 Mtrs	Nos	798.00	15	11,970.00
93	R2-ME-10-4-b	Weather proof Cast Iron Junction box complete with 2way terminal or connector block and 6A SP MCB. Box size shall not be less than 6" x 5" (150 mm x 125 mm)	Nos	4,884.00	15	73,260.00
		<b>EARTHING &amp; LIGHTNING PROTECTION SYSTEM</b>				
	CS	<b>Earthing (SP-ME-TS-38)</b>				
94	R2-ME-7-1-c	Earthing station with 600 mm x 600 mm x 6 mm galvanised iron plate & 50 mm dia. G.I. pipe, 3000mm long GI pipe (Class B or better) earth pit as per IS 3043. The earth pit shall be provided with watering pipe (Class B) with wire messed funnel, 25x3 GI strip// 2X8SWG G.I. wire up to chamber (wire or strip size as per fault level), disconnecting links with 600 x 600 mm (clear) RCC chamber & heavy duty 3mm thick CI chequered plate cover with hinge & stainless steel bolts. Bentonite/ Charcol & Salt shall be provided for earth pits. Excavation, back filling, removal of excess soil is included in the scope	Nos	17,789.00	20	3,55,780.00
95	R2-ME-7-1-d	600 X 600 X 3.15 mm <b>Copper Plate</b> , 3000mm dip with suitable size cu strip earth pit as per IS 3043. The earth pit shall be provided with watering pipe (Class B) with wire messed funnel, 12 SWG cu wire upto chamber, disconnecting links with 600 x 600 mm (clear) RCC chamber & 3mm thick heavy duty CI chequered plate cover with hinge. Bentonite shall be provided for earth pits. Excavation, backfilling, removal of excess soil is included in the scope	Nos	23,434.00	10	2,34,340.00
	CU	<b>Test links (SP-ME-TS-38)</b>				
	R2-ME-7-3	Supply and installation of following size Test Links with required wiring and other accessories to complete the work.				
96	R2-ME-7-3-c	25 x 3 mm Cu (length : 300 mm)	Nos	234.00	10	2,340.00
97	R2-ME-7-3-e	50 x 6 mm GI (length : 300 mm)	Nos	86.00	20	1,720.00
	CV	<b>Earthing Continuity Conductors (SP-ME-TS-38)</b>				
	R2-ME-7-4	Supply & installation of Earth conductor of the following sizes to be cleated on wall / columns with nuts & bolts or laid in cable tray / buried in ground including cutting, drilling, tapping, jointing by welding, connecting to equipments, painting to welded portion by black bitumen paint and with all necessary GI hardware & accessories to complete the work				
98	R2-ME-7-4-a	25 x 3mm Tinned copper	Mtr	780.00	150	1,17,000.00
99	R2-ME-7-4-c	25 x 6mm Tinned copper	Mtr	1,568.00	300	4,70,400.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
100	R2-ME-7-4-d	50 x 6mm Tinned copper	Mtr	3,120.00	300	9,36,000.00
101	R2-ME-7-4-e	25 x 3mm GI	Mtr	49.00	200	9,800.00
102	R2-ME-7-4-f	25 x 6mm GI	Mtr	97.00	400	38,800.00
103	R2-ME-7-4-g	50 x 6mm GI	Mtr	195.00	300	58,500.00
104	R2-ME-7-4-k	Bare Copper Conductor size 8 SWG	Mtr	125.00	120	15,000.00
105	R2-ME-7-4-m	Bare G.I. Conductor size 8 SWG	Mtr	9.00	1,200	10,800.00
	MA-R2-ME-160	<b>D.G.SET WITH PANEL (SP-ME-TS-31)</b>				
106	R2-ME-6-17-p	400KVA	Nos.	3116978.00	1.00	31,16,978.00
	R2-ME-6-18	<b>SITC OF AUTOMATIC MAINS FAILURE PANEL SUITABLE TO DG SET</b>				
107	R2-ME-6-18-q	400KVA	Nos.	270495.00	1.00	2,70,495.00
		<b>11KV SUBSTATION WORK</b>				
108	RBH18-ELEC-FA-01	SITC OF 11KV VCB PANEL PANEL WITH 2 INCOMERS & 3 OUTGOING BRAKERS	Nos	2583468	1.00	25,83,468.48
109	CSR-PWD-10-2-22	PROVIDING PRINTED INSTRUCTION CHART IN ENGLISH & MARATHI AND DULY LAMINATED COMPLETE.	Nos	128.80	4.00	515.20
110	RBH18-PWD-10-2-31	S&F PVC SYNTHETIC ELASTOMER ELECTRICALLY M2 INSULATING MAT, CLASSB INSULATOR 2.5MM THK UPTO 3.3 KV	SQM	5236	15.00	78,540.00
111	CSR-PWD-10-2-23	PROVIDING PAIR OF DULY TESTED RUBBER HAND GLOVES	Nos	627.20	2.00	1,254.40
112	R2-ME-15-31-D	SUPPLYING STANDARD FIRST AID BOX	Nos	3392	2.00	6,784.00
113	RBH18-PWD-7-5-33	PROVIDE, ERECTING HEAT SHRINKABLE INDOOR TERMINATION KIT 11 KV (E) XLPE HT CABLE 3X240 TO 400SQ.MM.	Nos	15114	6.00	90,684.00
114	RBH18-PWD-7-3-12	SUPPLYING, ERECTING & TERMINATING 3 X 240 SQ MM 11 KV, XLPE(E) ARMoured CABLE	Mtr	2,027.00	100.00	2,02,700.00
115	RBH18-ELEC-FA-49	SITC AND CONNECTION OF FP INTERNALLY EARTHED AL. BUS DUCT 800 A FP + IE,35KA - SANDWICH TYPE.	Mtr	28,255.28	80.00	22,60,422.40
116	FAIR-1	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 630 kVA, indoor type, vaccum cast coil (VCC) dry type cast resin transformer	No.	12,28,240.00	2.00	24,56,480.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
		<b>PANELS</b>				
		Supplying, transporting to project site, installing and commissioning distribution wall mounting panel incorporating MCCB, MCBs, Surge protector, Isolator, indicating lamps, Copper busbars etc. as per the details as shown in the Respective Drawing & shall incorporate the following. Note:- Panel shall be IP 42 rating unless it is not specified in the SLD				
117	FAIR-2	<b>MAIN LT PANEL</b>	No.	7,34,055.00	1.00	7,34,055.00
		<b>Incoming:</b>				
		2 Nos 1000A TPN ACB(50kA), MDO Type with Microprocessor release,				
		Buscoupler - 1000A 4P, ACB (50kA), Manual Fixed type				
		<b>Busbar:</b>				
		1 Set 2000A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		2 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				
		<b>Outgoing:</b>				
		1 No. 630A TPN MCCB (36kA)				
		2 Nos. 400A TPN MCCB (36kA)				
		5 Nos. 250A TPN MCCB (36kA)				
		2 Nos. 200A TPN MCCB (36kA)				
		13 Nos. of 63A TPN MCB,10KA				
		10 Nos. of 32A TPN MCB,10KA				
118	FAIR-3	<b>COMMON EMG PANEL</b>	No.	2,64,630.00	1.00	2,64,630.00
		<b>Incoming:</b>				
		1 No. 400A TPN MCCB (36kA)				
		<b>Busbar:</b>				
		1 Set 500A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		1 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				
		<b>Outgoing:</b>				
		1 No. 320A TPN MCCB (36kA)				
		4 No. 100A TPN MCCB (36kA)				
		1 No.80A TPN MCCB (36kA)				
		8 no. of 63A TPN MCB,10KA				
		3 no. of 40A TPN MCB,10KA				
		1 no. of 25A TPN MCB,10KA				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
		5 no. of 25A SP MCB,10KA				
119	FAIR-4	<b>HVAC PANEL</b>	No.	70,099.00	1.00	70,099.00
		<b>Incoming:</b>				
		1 No. 250A TPN MCCB (25kA)				
		<b>Busbar:</b>				
		1 Set 320A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		1 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				
		<b>Outgoing:</b>				
		13 no. of 63A TPN MCB,10KA				
		1 no. of 40A TPN MCB,10KA				
		2 no. of 25A TPN MCB,10KA				
120	FAIR-5	<b>40KVA UPS PANEL</b>	No.	63,390.00	1.00	63,390.00
		<b>Incoming:</b>				
		1 No. 80A TPN MCCB (25kA)				
		<b>Busbar:</b>				
		1 Set 100A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		1 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				
		<b>Outgoing:</b>				
		2 no. of 32A TPN MCB,10KA				
		3 no. of 25A TPN MCB,10KA				
		2 no. of 63A SP MCB,10KA				
		8 no. of 25A SP MCB,10KA				
121	FAIR-6	<b>FLOOR PANEL-1</b>	No.	74,571.00	1.00	74,571.00
		<b>Incoming:</b>				
		1 No. 200A TPN MCCB (25kA)				
		<b>Busbar:</b>				
		1 Set 250A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		1 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
		<b>Outgoing:</b>				
		6 no. of 63A TPN MCB,10KA				
		1 no. of 40A TPN MCB,10KA				
		9 no. of 25A TPN MCB,10KA				
122	FAIR-7	<b>FLOOR PANEL-2</b>	No.	1,19,290.00	1.00	1,19,290.00
		<b>Incoming:</b>				
		1 No. 250A TPN MCCB (25kA)				
		<b>Busbar:</b>				
		1 Set 320A TPN 36kA AL busbar				
		R-Y-B LED indicating lamps with protective MCB- 1 set				
		1 Set - Digital Load Managers with RS 485 communication port with 3 suitable ratio CTs with Class-1 accuracy and MCB for protection.				
		<b>Outgoing:</b>				
		1 No.125A TPN MCCB (25kA)				
		15 no. of 63A TPN MCB,10KA				
		3 no. of 40A TPN MCB,10KA				
		8 no. of 25A TPN MCB,10KA				
	<b>B</b>	<b>CHANGEOVER SWITCHES (SP-ME-TS-3)</b>				
		Change Over Switch as per IEC 60947 Part 1 & 3 / IS 13947 part 1 & 3 to be enclosed in CRCA Sheet steel 18/20 SWG standard with powder coated, rust protected(if 16/18 SWG/1.62/1.21 mm Nost avilable) with PVC insulated cu wires for interconnection, bus bar, earthing terminal, and all other accessories to complete the work. Changeover switch shall be wall/column mounted. Enclosure shall be weather proof. Colour shade shall be as per IS 5. MS angle iron frame to mount the unit is included.IP for enclosure shall be IP43 for Indoor unit and IP 55 for Outdoor unit				
123	R2-ME-1-4-q	400 Amp. 415V FP Changeover Switch with CRCA sheet steel powder coated enclosure..( For FF panel)	No.	44,035.00	1	44,035.00
		<b>APFC Panel (SP-ME-TS- 2)</b>				
	R2-ME-1-29	APFC Panel				

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
124	R2-ME-1-29-a	Automatic Power Factor Corrector Panel (APFC) above 30KVAR only.(200 KVAr*2Nos)	Per KVAR	4,322.00	400	17,28,800.00
<b>TOTAL-2</b>						<b>3,58,50,779.48</b>
125	RSG18-ELEC-FA-07	SITC OF MAIN UTILITY PANEL: 01 NO. OF 500A, MCCB I/C & AND O/G FEEDERS AS SPECIFIED IN TS.	No	4,65,685.48	1.00	4,65,685.48
		SITC of Main Utility panel comprising of 500 amps, 25KA, TPN, MCCB with voltmeter & ammeter as incomer with 500 amps 4 pole (25 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 02 nos. of 250A, 25KA, TPN MCCB, 02 nos of 200A, 25KA, TPN MCCB, 01 nos. of 100A, 25KA, TPN MCCB as outgoing.				
126	R2-ME-1-27-b	415V Pump panel with 100A MCCB as incomer with phase indicator and ammeter & voltmeter with selector switches, 2Noss. Of 32A MCB with Star delta Starter, local push button station & contactor of required rating as outgoing.	Nos.	1,13,712.00	1.00	1,13,712.00
		<b>Water Pumps</b>				
127	R2-ME-6-5-p	Self priming pump sets: (Flushing) 7.5 H.P., 2 stage, single phase/ 3 ph motor, with head of (10 – 70 Mtr.) giving discharge upto 410 lpm. (80x65mm) Pump body: Cast Iron, Impeller: SS316, Shaft SS410	Nos	62824	2	1,25,648.00
128	R2-ME-6-5-s	Self priming pumpsets: (Domestic) 10 H.P., 2 stage, single phase/ 3 ph motor, with head of (10 – 90 Mtr.) giving discharge upto 410 lpm.(50x40mm) Pump body: Cast Iron, Shaft SS410, Impeller: Polypropylene	Nos	130050	2	2,60,100.00
129	R2-ME-6-19-a	Automatic pump control panel	Nos	43923	2	87,846.00
130	R2-ME-1-22-c	Automatic Star Delta Starter for 5 H.P to 15 H.P	Nos	8817	4	35,268.00
		<b>Total Of Water Pumps</b>				<b>7,05,045.48</b>
		<b>Valves and Pipes</b>				
131	R2-ME-6-7-g	65 mm dia nominal bore	Metre	960	75	72,000.00
132	R2-ME-6-7-h	80 mm dia nominal bore	Metre	1203	75	90,225.00
133	R2-ME-6-7-i	100 mm dia nominal bore	Metre	1723	200	3,44,600.00
134	R2-ME-6-8-i	100 mm dia nominal bore	Each	9493	6	56,958.00

Sr. No.	Item Code	Item Description	Unit	Rate(Rs)	Quantity	Amount (Rs)
135	R2-ME-15-6-a	80 mm dia	Each	3644	2	7,288.00
136	R2-ME-15-6-b	100 mm dia	Each	5019	2	10,038.00
		<b>Total of Valves and Pipes</b>				<b>5,81,109.00</b>
		<b>Grand Total of Electrical and Water Pumps</b>				<b>3,71,36,933.96</b>

**Project - KEM Hospital, Mumbai.**  
**Detailed Estimate of Fire Fighting Works - Service Tower Building**

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
<b>1.0</b>		<b>FIRE FIGHTING SYSTEM:</b>				
		<b>Fire Pumps &amp; Accessories</b>				
1.1	R2-ME-15-1-d	Supplying and installing, testing, perfect aligning and proper leveling and commissioning of fire service <b>main pump, of 2820 LPM (Litres/min.) at 88m</b> centrifugal type pump - (Main Hydrant + Main Sprinkler)	Each	3,59,878	2	7,19,756
1.2	R2-ME-15-2-c	Supplying installing, testing, commissioning of <b>Jockey Pump of 240 LPM at 88m head</b> (Jockey Hydrant + Jockey Sprinkler)	Each	1,18,085	2	2,36,170
1.3	R2-ME-15-3-b	Supplying installing, testing, commissioning of <b>Booster Pump</b> of 450 LPM at 88 m head	Each	77,462	1	77,462
1.4	R2-ME-15-4	Supplying and installing cast iron <b>foot valve ball type</b> /flap type with strainer for negative suction				
1.4.1	R2-ME-15-4-a	80 mm	Nos	4,831	1	4,831
1.4.2	R2-ME-15-4-b	100 mm	Nos	6,744	1	6,744
1.4.3	R2-ME-15-4-c	150 mm	Nos	11,113	2	22,226
1.5	R2-ME-15-7	Supplying and installing <b>double flange NRV</b>	Nos	9,076	2	18,152
	R2-ME-15-7-a	80 mm	Nos	12,335	1	12,335
	R2-ME-15-7-b	100 mm	Nos	20,349	2	40,698
	R2-ME-15-7-c	150 mm				
1.6	R2-ME-15-8	<b>Hydrant Valves</b>				
1.6.1	R2-ME-15-8-a	Supplying and installing gun metal single outlet hydrant valve fitted with necessary accessories	Nos	9,527	6	57,162
1.6.2	R2-ME-15-8-b	Supplying and installing gun metal Double outlet hydrant valve fitted with necessary accessories	Nos	19,457	36	7,00,452
1.6	R2-ME-15-9	<b>Sluice Valves</b>				
1.6.1	R2-ME-15-9-a	Supplying and installing cast iron double flange sluice valve 75/80 mm dia.as per Specification	Nos	8,547	2	17,094
1.6.2	R2-ME-15-9-b	Supplying and installing cast iron double flange sluice valve 100 mm dia.as per Specification	Nos	9,225	2	18,450
1.6.3	R2-ME-15-9-c	Supplying and installing cast iron double flange sluice valve 150 mm dia.as per Specification	Nos	14,719	6	88,314
1.7	R2-ME-15-10	<b>Gate Valves</b>				

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
1.7.1	R2-ME-15-10-a	Supplying and installing cast iron double flange sluice valve 75/80 mm dia. as per Specification	Nos	407	6	2,442
1.7.2	R2-ME-15-10-b	Supplying and installing cast iron double flange sluice valve 100 mm dia. as per Specification	Nos	543	4	2,172
1.7.3	R2-ME-15-10-c	Supplying and installing cast iron double flange sluice valve 150 mm dia. as per Specification	Nos	678	40	27,120
1.8	R2-ME-15-11	<b>Hose</b>				
1.8.1	R2-ME-15-11-a	Providing and fixing in position 2 lengths of <b>15 M long flexible canvas rubber lined hose reels 63 dia</b> with adapter, branch pipe and nozzle and storing them in metal cabinets with lockable glass shutters and fixing the metal cabinet at ground level in a location where it can be easily spotted including painting etc	Each	12,061	42	5,06,562
1.8.2	R2-ME-15-11-c	Supplying & erecting high pressure <b>poly propylene hose pipe 19 mm dia</b> with 30 mtrs rolls. complete as per specification	Each	4,748	34	1,61,432
1.9	R2-ME-15-12-b	Supplying Stainless Steel <b>branch Pipe 63 mm Ø</b> fitted with 20 mm dia detachable hexagonal nozzle as per specifications	Each	4,612	34	1,56,808
1.10	R2-ME-15-13-a	Supplying and installing <b>pressure gauge</b> of 100 mm Ø., 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc.	Each	3,483	6	20,898
1.11	R2-ME-15-14-b	Supplying and erecting one no. Brass <b>orifice plate</b> having 6 mm. thickness, 140 mm outer dia of 140 mm at every single outlet hydrant valve	Nos	2,182	4	8,728

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
1.12	R2-ME-2-8	Excavation for foundations, substructures, basements, tanks, sumps, walls, chambers, manholes, trenches, poles, pits & general building works in all types of soils, vegetable earth, soft murum, running sand, shingle, turf clay, loam, peat, ash, shale, slag, chalk, garbage, muddy/ marshy/ slushy soil, marine clay, reclaimed land etc. for depths/lifts upto 1.5M measured from the ground level, including dressing/ trimming the sides, leveling and ramming of bottoms, manual dewatering, removing rank vegetation, backfilling in layers not more than 200mm thickness, watering, consolidating, compacting to achieve not less than 97% Modified Proctor density conforming to relevant IS, stacking the selected material in measurable heaps for future use within owners space or disposing within an initial lead of 150m as directed, loading, unloading, leveling excluding shoring, strutting etc. complete as directed by Engineer-in-Charge.	Cum	307	10	3,070
		<b>Note:</b>				
		1) The rate includes the handling/supporting the existing utilities such as cables, drains, pipes, water mains etc.				
		2) It also includes the royalty and other taxes applicable if any.				
1.13	R2-ME-15-15	Providing and fixing in position G.I. Heavy grade ' <i>C</i> ' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping.				
1.13.1	R2-ME-15-15-a	150 mm	Rmt	2,701	600	16,20,600
1.13.2	R2-ME-15-15-b	100 mm	Rmt	1,836	40	73,440
1.13.3	R2-ME-15-15-c	80 mm	Rmt	1,322	250	3,30,500
1.14	R2-ME-15-17	Supplying & installing moulded HDP / <i>Fibre water tank</i> for -ve suction only, having capacity 1000 ltrs.fitted with necessary accessories complete as per specification.	Nos	18,992	1	18,992
1.15	R2-ME-15-18	Supplying and installing wall mounting swinging Hose reel drum fitted with 19 mm dia. 30m high pressure polypropylene (Polyhose) long fitted with necessary accessories complete as per specification.	Nos	11,531	34	3,92,054

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
1.16	R2-ME-15-19	Supplying and installing <i>fire brigade Header</i> of 150 mm Ø, for supplying water in fire tank as per specification	Nos	9,496	1	9,496
1.17	R2-ME-15-20	Supplying and installing fire brigade Header ( <i>Siamese Connection</i> ) of 150 mm Ø for supplying water to wet riser system as per specification	Nos	10,175	1	10,175
1.18	R2-ME-15-21	Supplying and installing <i>Air Vessel</i> of 300 mm Ø 1.5m in height M.S. tank installed inside pump house as per specification	Nos	19,671	3	59,013
1.19	R2-ME-15-22	Supplying and erecting 20/25mm Ø G.M. <i>air release cock</i> , with necessary G.I. coupling to be fitted on top of Air vessel or on wet riser as per specification	Nos	1,424	3	4,272
1.20	R2-ME-15-23	Supplying and installing <b>pressure switch</b> with 12/15 mm Ø isolation valve, G.I. nipple, elbow etc. in an approved manner as per specification	Nos	7,936	5	39,680
1.21	R2-ME-15-24-a	Supplying and erecting <i>M.S./CRCA cabinet</i> for housing single hydrant valve (size 400 x 400 x 400mm.) made from 16 SWG sheet and angle iron 25 mm. x 25 mm. x 4 mm. having front doors with viewing glass (8"x6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour	Nos	18,992	6	1,13,952
1.22	R2-ME-15-25	Providing coating of Bitumen Paint & <i>4mm thick Wrapping</i> as per IS 10221 for underground <b>150 mm Ring Main</b> of Fire Fighting System.	Rmt	543	200	1,08,600
1.23	R2-ME-15-26-a	Supplying and erecting 15 mm (½") dia. NBCM Body chrome finished quartzoid bulb sprinkler having 68° C fixed temperature rating with deflector disc of conventional construction and quality conforming to international standards and listed by LPC (formally FOC U.K.) U.L.F.M. of USA or approved and listed by Tariff Advisory Committee (TAC) OF India	Nos	372	606	2,25,432
1.24	R2-ME-15-26-b	Providing and fixing in position <i>sprinkler guards</i> to protect open sprinkler in basement from mechanical damage.	Nos	486	24	11,664

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
1.25	R2-ME-15-26-c	Supplying & erecting <i>vane type water flow detector</i> suitable for detecting flow of water in wet sprinkler pipe of main line or branch lines of 100 mm dia having following features 1) Visual Switch Activation 2) Rugged Switch Assembly 3) Heavy Duty Alluminium pipe Saddles 4) Durable Metal Encloser 5) Steel U Bolts For Secure Mounting 6) Two SPDT ( Single Pole Double Track ) Synchronised Switches 7) Serviceable Without Draining Pipes	Each	10,175	17	1,72,975
1.26	R2-ME-15-15	Providing and fixing in position G.I. Heavy grade ' <i>C</i> ' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping,				
1.26.1	R2-ME-15-15-d	65 mm	Rmt	1,077	809	8,71,293
1.26.2	R2-ME-15-15-e	50 mm	Rmt	863	30.00927	25,898
1.26.3	R2-ME-15-15-f	40 mm	Rmt	640	30	19,200
1.26.4	R2-ME-15-15-g	32 mm	Rmt	545	1250	6,81,250
1.26.5	R2-ME-15-15-h	25 mm	Rmt	479	850	4,07,150
1.27	R2-ME-15-30	<b>Fire Extinguisher</b>				
1.27.1	R2-ME-15-30-a	CO <sub>2</sub> Fire Extinguisher 4.5 kg	Nos	11,154	4	44,616
1.27.2	R2-ME-15-30-c	Supplying and erecting ABC powder type fire extinguisher as per IS : 13849 /15683 of 6 kg capacity with necessary clamp for erection on Wall.	Nos	2,035	17	34,595
1.27.3	R2-ME-15-30-c	Supplying and erecting D.C.P. type Fire Extinguisher 6 kg capacity cartridge type with Gun Metal cap 150 gram CO <sub>2</sub> gas cartridge, powder and brackets conforming to IS 2171- 1985/ IS 15683 and complete erected with necessary clamps made from 50x6 mm M.S. flat with nuts & bolts grouted in wall complete.	Nos	2,645	17	44,965
1.28		<b>Fire bucket, stand, hook and First Aid Box</b>				

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
1.28.1	R2-ME-15-31-a	Providing Round bottom FIRE Bucket of 9 Litres capacity as per IS : 2546 made out of 24 gauge G.I. sheet with extra handle at bottom duly painted white inside and red outside with FIRE Mark, on provided stand/ wall hook.	Each	814	4	3,256
1.28.2	R2-ME-15-31-b	Providing Floor mounting stand for keeping 4 Nos. of FIRE buckets 1500mm in length, 900mm in height frame made out of 30x30x4 mm angle iron with cross supports for legs, welded with 4 hooks and duly painted with one coat of red lead and two coats of silver Paint.	Each	4,748	1	4,748
1.28.3	R2-ME-15-31-d	Supplying standard first aid box with necessary antiseptic cream, medicine for use on wounds due burn, crepe bandage, gauge bandage, medicated ready to use bandage (Bandaid) adhesive tape for medicinal use, scissors, anti-septic solution etc. (All above contents shall be of standard makes)	Each	3,392	1	3,392
1.29	RBH18-FF-FA-17	Providing and fixing in position <b>150 mm installation control valve assembly with turbine type automatic alarm</b> to be connected with control valve, drain valve, test valve and piping as per manufacturer's specifications complete in all respects.	Nos	1,11,265	1	1,11,265
1.30	MAK-FAIR-FIRE-1	Supply, installing, testing and commissioning of fabricated from 16 SWG sheet steel clad floor mounting control panel with Powder coated P.O. red colour having suitable size for control of 1 no. Main Hydrant, 1 No. Main Sprinkler, 1 no. for Jockey Pumps & 1 no. for Booster Pump having suitable Aluminium Bus Bar, incoming MCCB, incoming voltmeter, Ammeter with selector switch and fuses. Auto-Star-Delta starter & DOL with hand reset overload cum single phase preventor type relay, OFF/AUTO/MANUAL selector switches, Ammeters to read current, overload relay in all 3 phases with selector switch, alarm with reset push button which will automatically reset for the next cycle.				
		INCOMER :				
		250 Amp.MCCB				
		OUTGOING :				
		100 Amp. MCCB - 2 Nos for Hyd.& Sprinkler.				
		32 Amp. MCCB - 03 Nos. for Jockey, for Booster and for Hydrant & Sprinkler pumps.				
		32 Amp. MCCB - 1 No. Spare.	Nos	2,86,000	1	2,86,000

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
		<b>TOTAL OF FIRE FIGHTING SYSTEM</b>				<b>86,37,551</b>

<b>Schedule Of Quantities for Proposed Construction of Seva Niketan / Service Tower Building of KEM Hospital, Mumbai</b>						
<b>BOQ for Fire Alarm System</b>						<b>Rev-01</b>
Sr. No.	Item Code	Item Description	Unit (Nos/Mtr)	Rate(Rs)	Quantity	Amount (Rs)
		<b>Fire Alarm System (SP-ME-TS-65)</b>				
	R2-ME-15-32	<b>Addressable Fire Alarm System</b>				
	R2-ME-15-32-a	Supply, Installation, testing & commissioning of addressable 2 loop main fire alarm electronic control panel, expendable up to 4 loop & having maximum 250 devices (any combination detectors plus devices) per loop & Audio/ Visual alarm complete as per IS: 2189 specification - modular type front operated with interlocking door arrangement totally enclosed dust and vermin proof for indoor type applications.	Nos	1,78,313.00	1	1,78,313.00
	R2-ME-15-32-b	Supply, Installation, testing & commissioning of expandable Loop card for main fire alarm electronic control panel, shall support 254 devices both detectors and modules and shall support both class 'A' & class 'B' wiring.	Nos	10,581.00	1	10,581.00
	R2-ME-15-32-c	Supply, Installation, testing & commissioning of 2Cx1.5 sq.mm armoured RED color copper FRLS cable with necessary saddles, screws, junction boxes, sleeves, elbows couplings etc. for Fire alarm System	Mtrs.	98.00	10000	9,80,000.00
	R2-ME-15-32-d	Supply, Installation, testing & commissioning of Intelligent Photoelectric Smoke Detector along with mounting box & termination glands.	Nos	2,123.00	470	9,97,810.00
	R2-ME-15-32-e	Supply, Installation, testing & commissioning of Intelligent Heat Detector along with mounting box & termination glands.	Nos	3,256.00	4	13,024.00
	R2-ME-15-32-f	Supply, Installation, testing & commissioning of Intelligent multi- criteria Detector along with mounting box & termination glands.	Nos	2,541.00	6	15,246.00

S.No.	Reference	Description	Unit	Rate	Qty.	Amount
	R2-ME-15-32-g	Supply, Installation, testing & commissioning of Strobe Lights along with mounting box & termination glands.	Nos	6,023.00	35	2,10,805.00
	R2-ME-15-32-h	Supply, Installation, testing & commissioning of Addressable Manual call point/ station with mounting back box	Nos	3,284.00	35	1,14,940.00
	R2-ME-15-32-i	Supply, Installation, testing & commissioning of Programmable Electronic Sounders (Hooters):	Nos	4,607.00	35	1,61,245.00
	R2-ME-15-32-j	Supply, Installation, testing & commissioning of remote response indicator	Nos	62.00	170	10,540.00
	R2-ME-15-32-k	Supply, Installation, testing & commissioning of Isolator Module along with mounting box & termination glands.	Nos	2,761.00	30	82,830.00
	R2-ME-15-32-l	Supply, Installation, testing & commissioning of Addressable control Relay module with required accessories along with junction box, glands and terminators ( For AC trip off, Access trip off, PA system, sprinkler flow switch, lift interface, sounder, fire fighter & telephone jack)	Nos	7,326.00	80	5,86,080.00
		<b>Fire Fighter's 2-way Talk Back System</b>				
	NH-FF-F29	S/I/T/C Of Addressable <b>Telephone Jacks with necessary Control Module</b> and required Accessories Including GI Junction Box And Glands. UL Listed.	Nos.	4,580.00	34	1,55,720.00
	NH-FF-F30	S/I/T/C Of <b>Portable FFT Handset</b> and required Accessories. UL Listed.	Nos.	7,700.00	1	7,700.00
		<b>Total of Fire alarm system</b>				<b>35,24,834.00</b>
		<b>Grand Total Fire Alarm and Fire Fighting System</b>				<b>1,21,62,385.00</b>

**Schedule Of Quantities for Proposed Construction of Seva Niketan / Service Tower Building of KEM Hospital, Mumbai**

**Rev-01**

Sr. No.	Item Code	Item Description	Unit (Nos/Mtr)	Rate(Rs)	Quantity	Amount (Rs)
		<b>Telephone System</b>				
	<b>R2-ME-12-1</b>	<b>SITC OF EPABX</b>				
	R2-ME-12-1-c	SITC of EPABX 4 x12 P&T	Nos	19,861.00	2	39,722.00
	R2-ME-12-1-h	SITC of additional 16 extn card	Nos	20,512.00	1	20,512.00
	R2-ME-12-1-k	SITC of push button telephone Instrumet	Nos	1,547.00	24	37,128.00
	<b>R2-ME-12-2</b>	<b>SITC OF TELEPHONE CABLES</b>				
	R2-ME-12-2-a	PVC Telephone Cable -2 pair	Mtr	25.00	3000	75,000.00
	R2-ME-12-2-c	PVC Telephone Cable -10pair	Mtr	73.00	100	7,300.00
	<b>R2-ME-12-3</b>	<b>SITC OF ARMOURED JELLY FILLED TELEPHONE CABLES</b>				
	R2-ME-12-3-c	Armoured Telephone Cable -50 pair	Mtr	337.00	150	50,550.00
	<b>R2-ME-12-4</b>	<b>SITC OF COMPUTERS CABLES</b>				
	R2-ME-12-4-b	Cat 6 Gigabyte	Mtr	32.00	3500	1,12,000.00
	<b>R2-ME-12-5</b>	<b>SITC OF COMPUTER ACCESSORIES</b>				
	R2-ME-12-5-a	<b>Switch BOX point for computers through Casing-Capping</b> Description of Item 8Modular SURFACE BOX - 1 No. 8Modular PLATE - 1 No. INDICATOR LAMP - 1 No. 15A SWITCH - 1 No. 6A 5 PIN SOCKET - 3 Nos. 2Modular SURFACE BOX - 1 Nos. 2M PLATE - 1Nos. RJ11 SOCKET - 1 Nos. RJ45 SOCKET - 1Nos.	Nos	1,462.00	5	7,310.00
	R2-ME-12-5-e	PVC box & cover plate for combined access of RJ-11 for Telephone & RJ-45 for LAN	Nos	391.00	30	11,730.00
	R2-ME-12-5-f	Aluminum channel 3/4" X 3/4", 16 SWG.	Rmt	114.00	50	5,700.00
	R2-ME-12-6-b	20 pair M.S. Junction Box for EPABX	Nos	1,221.00	2	2,442.00
	<b>R2-ME-12-7</b>	<b>SUPPLY &amp; LAYING OF CASING-CAPPING</b>				
	R2-ME-12-7-a	25 mm X 12 mm - Casing-Capping	Rmt	62.00	50	3,100.00

	R2-ME-12-7-b	20 mm X 12 mm - Casing-Capping	Rmt	55.00	10	550.00
	<b>R2-ME-12-8</b>	<b>SUPPLY &amp; LAYING OF PVC CONDUITS</b>				-
	R2-ME-12-8-a	25 mm.- Only PVC Conduits	Rmt	35.00	100	3,500.00
	<b>R2-ME-12-9</b>	<b>SITC OF COMPUTER NETWORKS ACCESSORIES</b>				-
	R2-ME-12-9-a	Router for ISDN	Nos	4,558.00	2	9,116.00
	R2-ME-12-9-j	16 Port Switch	Nos	3,581.00	3	10,743.00
	R2-ME-12-9-l	7 Feet Patch Chord	Nos	195.00	4	780.00
	R2-ME-12-9-m	3 Feet Patch Chord	Nos	163.00	160	26,080.00
	R2-ME-12-9-t	SITC of 24 Port CAT-6 UTP Jack panel with cable manager	Nos	5,209.00	7	36,463.00
<b>Telephone TOTAL</b>						<b>4,59,726.00</b>

<b>Schedule Of Quantities for Proposed Construction of Seva Niketan / Service Tower Building of KEM Hospital, Mumbai</b>						
Sr. No.	Item Code	Item Description	Unit (Nos/Mtr)	Rate(Rs)	Quantity	Amount (Rs)
	<b>R2-ME-12-10</b>	<b>SITC OF PUBLIC ADDRESS SYSTEM</b>				
	R2-ME-12-10-p	Supply and installation of 6W recessed ceiling mount speaker with VARIABLE VOLTAGE TAPPING OF 6/3 watt	Nos	1,180.00	150	1,77,000.00
	R2-ME-12-10-q	Supply and installation of 10W recessed ceiling mount speaker with VARIABLE VOLTAGE TAPPING OF 10/5 watt	Nos	1,726.00	2	3,452.00
	R2-ME-12-10-l	Wiring for speakers with 24/0.2 multi core twin twisted flexible copper.	Mtr	79.00	2111.42	1,66,802.20
	R2-ME-12-10-m	Supply & installation of PVC conduit for speaker wiring	Mtr	26.00	500	13,000.00
	R2-ME-12-10-v	Supply and installation of Booster amplifier 300W with all accessories.	Nos	21,790.00	3	65,370.00
	R2-ME-12-13-j	SITC of 4TB Storage (HDD)	Nos	17,623.00	3	52,869.00

R2-ME-12-13-m	Supply, Installation, Testing & Commissioning of IP Dome camera with 1/2.8" CMOS, Progressive Scan, HD 720P Horizontal Resolution, Dual H.264 streaming, 25 FPS, 2.8mm-10mm varifocal auto iris lens, 0.01 lux, Tamper detection, Wide dynamic Range, 3D Noise reduction, PoE & standard 12VDC/24VAC power input, Indoor surface mount enclosure, Mounted on True Ceiling / False ceiling as per site requirement (including required accessories), UL Listed Or Equivalent. Camera Shall be ONVIF compliant.	Nos	35,977.00	84	30,22,068.00
R2-ME-12-13-r	Design, Supply, testing, installation and commissioning of modular 64 channel 1080P NVR, Recording: 1920X1080P, 15 FPS, 30 days recording, 24 hours/day; Real time monitoring with 25 FPS. Hard disc : 8 SATA III Ports, Each 6TB, up to 48TB, 1 eSATA port, Disk array: Support RAID 0/1/5/6/10, Two no's of RJ -45 10/100/1000 Mbps self adaptive Ethernet interface, RS 232, RS 485, keyboard interfaces, VGA/HDMI compatible, 2nos front USB 2.0 & 1 no at rear USB 2.0 compatible & &16 TB hard disc and as per storage configuration contractor shall consider the separate hard discs.	Nos	1,46,871.00	3	4,40,613.00
R2-ME-12-13-t	Supply, Installation, Testing & commissioning of 42inches LED monitor, Full HD Resolution, Backlight LED, Brightness : 400 NITS min., Contrast : 1200 : 1 or better., Power supply : 230 ±10%, 50 Hz.	Nos	73,859.00	4	2,95,436.00
R2-ME-12-14	<b>UPS</b>				-

	R2-ME-12-14-a	Supply, Installation, testing, commissioning, performance demonstration of 2 KVA UPS true online with 1 phase input, 1 phase output with back up batteries for 2 Hours backup along with rack & connectors.	Nos	87,908.00	1	87,908.00
	R2-ME-12-15	<b>Access Control System :</b> Supply, Installation, Testing & Commissioning of following equipments for access control system.				-
	R2-ME-12-15-a	Supply, Installation, Testing & commissioning of Proximity card reader suitable for mounting on metal surface/metal frames/ wooden frames / wall or as required based on site conditions including all accessories.	Nos	10,744.00	20	2,14,880.00
	R2-ME-12-15-c	Supply, Installation, Testing & commissioning of Electromagnetic lock : Single leaf Door with feedback - 600 LBS	Nos	5,698.00	20	1,13,960.00
	R2-ME-12-15-d	Supply, Installation, Testing & commissioning of Exit switch: Heavy Duty SS Finish Push Button for Exit	Nos	1,312.00	20	26,240.00
	R2-ME-12-15-e	Supply, Installation, Testing & Commissioning of 2 Reader Access Control panel with required Power supply unit & Enclosure and Shall maintain a minimum of 25,000 access identity information and 1,00,000 transactions as minimum.	Nos	47,698.00	1	47,698.00
	R2-ME-12-15-f	Supply, Installation, Testing & commissioning of Time & Attendance software.	Nos	73,256.00	1	73,256.00
	R2-ME-12-15-g	Supply of 26-BIT proximity cards	Nos	326.00	300	97,800.00
	R2-ME-12-15-h	Supply, Installation, Testing & commissioning of Access control management software(Single User)	Nos	65,117.00	1	65,117.00
	<b>PA/ Access Control/ UPS TOTAL</b>					<b>49,63,469.20</b>
	<b>Grand Total Telephone/ PA/ Access Contol/ CCTV</b>					<b>54,23,195.20</b>

Project :SERVICE TOWER/OFFICE BUILDING AT KEM HOSPITAL						
Client Name :MCGM						
HVAC BOQ						
Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate Rs.	Amount Rs.
1.0		<b>AIR CONDITIONING WORKS:</b>				
1.1		<b>VRF OUTDOOR UNIT</b>				
	R2-ME-9-10	<p>Supply, Installation, Testing &amp; Commissioning of the <b>VRF Outdoor Units</b>- Outdoor units of the VRF system shall be compact air cooled type. All the compressors of the outdoor units must be hermetically sealed scroll type. Each module of outdoor unit must have at least 1 inverter compressor, suitable to operate at varying heat load proportional to indoor requirement. The outdoor units shall be suitable to operate within an ambient temperature range of – 5 Deg C to 43 Deg C, in cooling mode. The outdoor units must be suitable for up to 150 m refrigerant piping between outdoor unit &amp; the farthest indoor units, total piping of 300 m for all the indoor units. Allowable level difference between outdoor unit &amp; indoor units shall be 50 m in case of outdoor unit on top &amp; 40 m in case of outdoor unit at bottom. Allowable level difference between various indoor units connected to one out door unit shall be up to 15 m. Back up operation, in case of failure of one of the compressors of outdoor unit, for single module outdoor units or failure of one of the modules in case of multiple module outdoor units shall be possible. The VRF/VRV outdoor unit shall always be supplying at least 33% of back up operation, of the full load capacity. The outdoor unit shall employ system of equal run time for all the compressors, inverter or on / off type, within each outdoor unit – Single Module or Multi Module. Air cooled condenser shall have Axial Flow, upward throw fan, directly coupled to fan motors with minimum IP 55 protection. The outdoor unit condenser fan shall be able to develop external static pressure up to 7.5 mm of H2O. The outdoor unit should be with canopy at top to protect from heavy rain. Starter for the Outdoor Unit compressor shall be “Direct on Line” type. Inverter compressor of the unit shall start first &amp; at the minimum frequency, to reduce the inrush current during starting. Specification for starter panels furnished in below electrical section. Refrigerant control in the outdoor unit shall be through Electronic Expansion Valve. Complete refrigerant circuit, oil balancing/ equalizing circuit shall be factory assembled &amp; tested. Noise level of outdoor units shall not exceed 65 dB (A) at a distance of 1.5 m from the unit. I.Outdoor units shall be complete with following safety devices: a. High pressure switch b. Fan driver overload protector c. Over current relay d. Inverter Overload Protector e. Fusible Plug Short Circuit Protection Unit shall be supplied with : a. Installation manual</p>				

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
1.1.1	R2-ME-9-10-h	20 HP	Nos.	6	6,18,236	3709416
1.1.2	R2-ME-9-10-g	18 HP	Nos.	2	5,85,819	1171638
1.1.3	R2-ME-9-10-f	16 HP	Nos.	1	5,37,078	537078
1.1.4	R2-ME-9-10-d	12 HP	Nos.	4	3,59,188	1436752
1.2		<b>VRF INDOOR UNITS</b>				
1.2.1.1	FAIR-08	Supply,Installation, testing and commissioning of factory built Ceiling Suspended Treated Fresh Air units Double skin type with 43± 2 mm thick panels consisting of G.I casing of thickness 0.8 mm outside layer and 0.8 mm inside layer with zinc coating and polyurethane foam (PUF) insulation having density of 40 ± 2 kg/m3,complete with backward curved fan with IP-20 VFD, with 8 row cooling coils,with starter panel IP 55 rated, cooling coil with aluminium finned copper tubes. Filter section having 50 mm thick pre filters, MERV-13 fine filter, IE-2, TEFC motor suitable for 415 +10% volts,50 Hz, 3 phase AC supply,drain connections with stainless steel drain pan (18 Ga) with insulation, necessary vibration isolation arrangement to avoid any vibration alongwith etc. complete as per specifications and drawings. AHU coils shall be AHRI/Eurovent certified. All TFAs shall be provided with thermal break profile as specified. To be provided with AHU Controller / distribution kit, should be of suitable capacity for connecting multi VRF ODU to DX AHU as per desired load with a) built in auto restart function, c) with necessary electrical wiring & remote controller shall be provided. 2000 cfm, 12TR & 25 mm ESP	Nos.	1	154989	154989
1.2.2	R2-ME-9-11	Supply,Installation,Testing & Commissioning of <b>VRV Ceiling Suspended Ductable type</b> indoor units- The IDU shall include pre filter, fan section & DX coil section. The unit shall be equipped with an electronic expansion valve, which can communicate with the VRF controller in the condensing unit. The housing of unit shall be light weight & powder coated galvanized steel. The unit shall have high static fan for Ductable arrangement. The address of the indoor unit shall be set automatically in case of individual and group control. In case of centralized control, it shall be set by liquid crystal display remote controller. The fan shall be dual suction, aerodynamically designed turbo, multi blade type, statically & dynamically balanced to ensure low noise and vibration free operation of the system. The fan shall be direct driven type, mounted directly on motor shaft having supported from housing. The cooling coil shall be made out of seamless copper tubes and have continuous aluminum fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of airflow. The tubes shall be hydraulically/ mechanically expanded for minimum thermal contact resistance with fins. Unit shall have cleanable type. The filter shall be easily serviceable. Each unit shall be provided with microprocessor thermostat for cooling or cooling and heating. Each unit shall be with wired LCD type remote controller. The remote controller shall memorize the latest malfunction code for easy maintenance. The controller shall be able to change fan speed and angle of swing flap individually as per requirement. The unit shall be supplied with Wireless remote.				
1.2.2.1	R2-ME-9-11-d	2542 CFM / 4TR	Nos.	16	54,538	872608

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
1.2.2.2	R2-ME-9-11-c	2118 CFM / 3 TR	Nos.	4	45448	181792
1.2.2.3	R2-ME-9-11-a	688 CFM / 2 TR	Nos.	2	35969	71938
1.2.3	ME-9-13	Supply, Installation, Testing & Commissioning of <b>Ceiling Suspended Cassette</b> 4-way unit: The indoor units shall be ceiling mounted cassette type with multi flow. It shall have electronic expansion control valve which controls refrigerant flow rate in respond to load variations of the room, i.e. shall communicate with the VRF controller in the condensing unit. The fan shall be of the dual suction multi blade type statically and dynamically balanced to ensure low noise and vibration free operation. The cooling coil shall be made out of seamless copper tubes and have continuous aluminum fins. For ceiling mounted cassette unit, it shall include pre filter fan section and DX coil section. The housing of the unit shall be powder coated galvanized steel. The body shall be light in weight and shall be able to suspend in four corners. The unit shall have external attractive panel for supply and return air. The unit shall have four way supply air grille on sides and return air grille in the centre. Each unit shall be provided with a high lift drain pump. The Ceiling Mounted Cassette type Indoor Unit shall be with decorative panel, compact cooling coil, electronic expansion valve, Multi speed fan motors, dynamically balanced blowers, provision for Fresh Air Intake, drain pump, synthetic washable media filter including insulation and suitable for operation on single phase AC supply & remote control operation including Wireless Remote Control. The unit shall be supplied with Wireless remote.				
1.2.3.1	R2-ME-9-13-c	2 TR	Nos.	44	52979	2331076
1.2.3.2	R2-ME-9-13-d	2.5 TR	Nos.	8	54797	438376
1.3		<b>DX UNITS</b>				

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
1.3.1	R2-ME-9-2	<p>Supply , Installation, Testing and Commissioning for <b>Air cooled DX split unit</b> (Indoor and Outdoor Unit). The unit shall be suitable for air throw (minimum) 6 meter from Air-conditioning unit. Energy Performance Standards for Split Air Conditioners- Min. 2 Stars and above.</p> <p>The <b>outdoor unit</b> shall comprise of 1 Nos. of hermetically sealed type rotary compressor. Operation on refrigerant R-407c/ R-410A or environmental friendly latest refrigerant with suitable rated electric motor operating on 230 V ±10%, 50 hertz, single phase, A.C. supply and shall be equipped with over load protection. These shall be mounted on resilient mounting for quiet operation. The condenser shall be single circuits for compressor. The fan for cooling condenser shall be propeller type and driven by High Efficiency EFF-1, TEFC squirrel cage induction motor.</p> <p>The <b>Indoor unit</b> shall have sensor and timer, equipped with full function remote control. The fan / blower shall comprise of centrifugal type, driven by High Efficiency EFF-1, TEFC squirrel cage induction motor, to give smooth and undistributed flow of air, low noise level and high air movement. The fan speed shall have multi speed setting and auto-mode for cooling and better temperature control.</p> <p>The <b>cabinet</b> for the indoor unit (evaporator unit) and outdoor unit (condenser unit) shall be made out of galvanized steel sheet of heavy gauge (of at least 1.0 mm thick) and aluminium alloy sheet (of at least 1.2 mm thick) and shall be provided with stiffeners for robust construction</p> <p>The <b>refrigerant copper pipes</b> and fittings shall be of appropriate size and gauge. The refrigerant piping shall be laid from outdoor to indoor units. The thickness of copper tubing shall not be less than 0.80 mm. Refrigerant tubing shall be insulated by Class "O" closed cell nitrile rubber tubing.</p> <p>The unit shall be provided with suitable size <b>electrical wiring/cabling</b> of required length as per site requirements.</p> <p>Rate is inclusive of including MS stand and Bracket for indoor and outdoor unit.</p> <p>Note- Power point shall be provided within 1m from IDU cabling/ plug top etc shall be considered or required</p>				
1.3.1.1	R2-ME-9-2-b	1.5 TR Hi-WALL UNIT	Nos.	6	56486	338916
1.3.1.2	R2-ME-9-2-c	2 TR Hi-WALL UNIT	Nos.	1	62328	62328
		<b>TOTAL OF 1</b>				<b>11306907</b>
<b>2.0</b>		<b>FANS</b>				
2.1		<p>Providing, fixing, testing and commissioning <b>Inline Fans</b> of G.I. construction complete with <b>Axial</b> Inline fan. Motor with class 'F' insulation wired to a external mounted weather proofed terminal box. Motor speed shall not exceed 1450 rpm., canvass connection at inlet and outlet complete with electric panel with MCB and relays, with cabling and earthing with louvers bird screen at outlet. The fan shall be provided with special anti-corrosive/ epoxy coating like pure epoxy zinc rich primer, noise level of the fan shall not exceed 40 DB in the factory area, complete as specified, requirement and drawings.</p>				
2.1.1	FAIR-09	1650 cfm & 20 mm Static	Nos.	1	28570	28570

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
2.1.2	FAIR-10	1200 cfm & 20 mm Static	Nos.	2	27105	54210
2.1.3	FAIR-11	1120 cfm & 20 mm Static	Nos.	2	27105	54210
2.1.4	FAIR-12	890 cfm & 20 mm Static	Nos.	2	19780	39560
2.1.5	FAIR-13	400 cfm & 20 mm Static	Nos.	3	13773	41319
2.1.6	FAIR-14	250 cfm & 15 mm Static	Nos.	2	11135	22270
2.2		Supply, installation, testing and commissioning of <b>Vane Axial Fan for Pressurization</b> suitable for installing in Horizontal Position. The motor shall be suitable for 415 V + 10% volts three phase 50cycle, AC supply suitable for operating through VFD / DOL / SD Starter. The fan Speed shall be max 970 rpm and capacities based on static pressure. all supports & fixing arrangement & canvas connections at inlet & outlet shall be included. The Fan shall have low sound level exceeding not more than 65 dBA at three meter distance at both ends if required. To achieve specified DB level sound attenuators shall be provided at inlet / outlet. These fans shall be selected for Max. 10m/s outlet velocity & minimum 60% efficiency.				
2.2.1	FAIR-15	8000 cfm & 15 mm Static	Nos.	2	73257	146514
2.3	R2-ME-4-12-g	SITC of Exhaust Fan of 150 mm sweep 1400 RPM AC 230 volt 50 htz single phase complete with all nessessory accessories for completing installation as per specification.				
2.3.1	R2-ME-4-12-g	150 Dia, 50 cfm	Nos.	126	1757	221382
<b>TOTAL OF 2</b>						<b>608035</b>

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
<b>3.0</b>		<b>PIPING AND INSULATION</b>				
3.1	R2-ME-9-10-k	Supply, Installation, testing and commissioning of <b>18 G copper refrigerant pipe (gas &amp; liquid)</b> shall be out of hard / soft quality, pre-pressure tested, copper seamless pipe, of sizes as calculated to limit the pressure drop in the suction line and in the liquid line and hot gas line. work duly insulated with elastomeric nitrile rubber Class '0' moulded type tubular insulation between indoors to outdoor & outdoor to outdoor units and its thickness to be 13 mm for pipes upto 25 mm & 19 mm for pipes for 28mm & Above, for exposed piping insulation should be covered with Woven Glass Cloth 125 gsm finished in U/V Treated, pigmented Epoxy.thermal conductivity should not exceed K Value of 0.027-0.029 K Cal/Hr. M Deg C at 0-16 Deg C). High density PUF saddles having density not less than 80 kg/cum to be used for support with hanger and all external pipe with proper supports and fittings for VRF/split, MS pipe sleeve as per drawings shall be provided wherever the pipes are crossing the walls/floors and sealing the sleeves with glass wool in between & fire sealant compound at either end all as per Project Manager's requirements including cutting holes and chases in brick, R.C.C work and making good the same to original conditions complete in all respects, as specified Piping/cabing on Floor/Exposed should be covered with 18 G GI tray/ plastic tray.				
3.1.1		41.3 mm Dia	Rmt	300	3740	1122000
3.1.2		34.9 mm Dia	Rmt	10	3740	37400
3.1.3		28.6 mm Dia	Rmt	245	3740	916300
3.1.4		22.2 mm Dia	Rmt	210	3740	785400
3.1.5		19.1 mm Dia	Rmt	302	3740	1129480
3.1.6		15.9 mm Dia	Rmt	660	3740	2468400
3.1.7		12.7 mm Dia	Rmt	100	3740	374000
3.1.8		9.5 mm Dia	Rmt	517	3740	1933580
3.2		<b>DRAIN PIPING SECTION</b>				
	R2-ME-9-2-1	Providing and fixing Drain Piping with rigid UPVC Pipe with 6 mm Thick Nitrile rubber Insulation, as specified				
3.2.1	R2-ME-9-2-1	25 mm Dia	Rmt	340	273	92820
3.2.2	R2-ME-9-2-1	32 mm Dia	Rmt	235	273	64155
3.2.3	R2-ME-9-2-1	50 mm Dia	Rmt	160	273	43680
		<b>TOTAL OF 3</b>				<b>8967215</b>
<b>4.0</b>		<b>AIR DISTRIBUTION SYSTEM AND ACCESSORIES</b>				
4.1		<b>SHEET METAL WORK</b>				

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
	R2-ME-9-47	Supply, installation, balancing and commissioning of factory fabricated <b>GSS sheet metal rectangular ducting:</b> The duct shall be fabricated from 20/22/24 SWG galvanized iron sheet (G.I.S.) as per required size of the duct. The duct shall be fabricated & installed in best workman ship manner. All the joints shall be made leak proof by providing felt strips. Stiffeners of M.S. flats or angles duly painted with one coat of anticorrosive primer and two coats of synthetic enamel of approved quality shall be provided for longer length & longer cross section of duct. It shall be the responsibility of the contractor to ensure the rigidity of the ducting. The work include of Supplying, fabrication, installation, testing and commission of G.I. Sheet metal ducting with Zinc coated of minimum 160GSM. Complete with all standard Accessories, GI hardware, self Adhesive electrometric foam gasket, support etc as per SMACNA specifications. (Sheet Metal and Air conditioning Contractors National Association)				
4.1.1	R2-ME-9-48-c	Thickness 0.63 mm sheet (24G)	Sq.mtr	600	1740	1044000
4.1.2	R2-ME-9-48-b	Thickness 0.80 mm sheet (22G)	Sq.mtr	60	1919	115140
4.2		<b>Grilles / Diffuser &amp; Dampers.</b>				
4.2.1	R2-ME-9-30	Supply and Installation of lever operated <b>Volume Control Dampers:</b> The new volume control dampers /by pass dampers of suitable size shall be fabricated from 16 SWG galvanized steel sheet and shall provided on the place of removed dampers. These dampers shall be properly marked with colour code for <u>opening &amp; closing.</u>	Sq.Mtr	1.5	13261	19891.5
4.2.2	R2-ME-9-31	Supply and Installation of <b>Fresh Air Dampers:</b> The damper shall be provided with a galvanized sheet steel cover with cowl and bird screen. The damper shall be opposed blade louver type fabricated from 16 SWG galvanized sheet steel.	Sq.Mtr	1	15187	15187
4.2.3	R2-ME-9-32	Supply and installation of <b>supply/return linear air grilles 100 mm Wide</b> shall be of standard design rectangular in shape and of appropriate size, adjustable pattern and the bars shall hold the deflection, settings under all conditions of velocity and pressure to control the direction, quantity of flow of cool air. The entire grill shall be of aluminium and powder coated with epoxy paint of approved shade. The wooden frame duly painted to match the color of the surroundings shall be <u>provided if necessary.</u>	Sq.Mtr	4	17551	70204
4.2.4	R2-ME-9-32	Supply and installation of The <b>Supply &amp; Return air diffusers</b> shall be of standard design rectangular / circular in shape and of appropriate size, adjustable pattern and the bars shall hold the deflection, settings under all conditions of velocity and pressure to control the direction, quantity of flow of cool air. The entire grill shall be of aluminium and powder coated with epoxy paint of approved shade. The wooden frame duly painted to match the color of the surroundings shall be <u>provided if necessary.</u>	Sq.Mtr	11	17551	193061
4.3		<b>LOUVERS</b>				
4.3.1	SMHB-AC-F010	SITC of extruded aluminium <b>Fresh / Exhaust air louvers</b> with aerofoil blade VCD (non vision type) size - 305 mm x 305 mm, as per specification.	Nos	66	2706	178596

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
4.4		<b>INSULATION</b>				
4.4.1	R2-ME-9-49	Supply & Installation of <b>ducting acoustic insulation:</b> Initial portion of supply air duct up to plenum shall be acoustically treated from inside using fibreglass crown 300 x 25 mm. thick rigid boards or equivalent insulating material. The insulation shall be covered from all side using 24 gauge perforated Aluminum foil. The insulation shall be fixed to the duct using G.I. nut bolts and washers at a distance of not more than 8” by drilling the holes in the ducting. The bolts shall be fully tightened so as to avoid sagging of insulating material.	Sq.mtr	110	1284	141240
4.4.2	R2-ME-9-37	Supply & Installation of <b>Ducting thermal insulation:</b> The surface of supply air & return duct shall be insulated with EPDM based closed cell elastomeric thermal insulation flexible sheet & shall conform to relevant standard. Application Process - Clean the surface of duct to be insulated free from dust, grease and other materials. Choose the recommended thickness of EPDM (Ethylene Propylene Diane Monomer) sheet and cut it to match the size of the duct using sharp knife. Ensure that the cut is straight & do not stretch the sheets. Apply a thin coat of Neoprene based contact adhesive on EPDM sheet as well as the duct surface using a brush and leave it 5 to 30 minutes for drying. Remove any surplus adhesive with a suitable hydrocarbon solvent. Once the adhesive is dry but tacky to touch bring the EPDM sheet and the duct surface in contact and apply slight firm pressure to stick them well ensure that there are no air pockets in between and that all the joints match properly. Self Adhesive elastomeric gasket tape shall be used in duct flanges to prevent the Air leakages.				
4.4.2.1		19 mm thickness for supply duct.	Sq.mtr	628.0658824	1700	1067712
4.5		<b>Central remote controller</b>				
4.5.1	R2-ME-9-10-m	Supply, Installation, Testing and Commissioning of <b>Central remote controller:</b> Central control system controller shall be supplied as specified in the “Bill of Quantities”. The System supplied must integrate with the VRF / VRV system. The VRF / VRV system supplied must be provided with a control system, from the supplier of VRF / VRV equipments. The complete operation & monitoring of VRF / VRV air conditioning system shall be possible through the control system. Following functions shall be possible a. Controlling indoor units b. Zone control c. Malfunction code display d. All the functions available with wired remote controller e It should be possible to wire the remote to 1000m f. Remote start / stop of indoor units g. Mal function report. h. Colour LCD touch panel icon display i. Fault History up to 100 actions. j. Simple Interlock Function k. Fire Alarm System interface Required hardware shall be suitable for operation between -10 Deg C to 50 Dg C & humidity range, of 0% to 98%, without condensation.	Set.	1	103881	103881

Sr. No.	Item	Description	Unit	Total Quantity	SITC	
					Rate	Amount
					Rs.	Rs.
4.6	R2-ME-9-10-1	Supply, installation, testing and commissioning of <b>refnet joints</b> on refrigerant pipeline Refnets as specified of pipe sizes from 1/4 " to 2": The Distribution refrigeration pipe joints and headers shall be located in an appropriate orientation to enable correct distribution of refrigerant. The Distribution Joints should be factory insulated with pre-formed sections of EPDM / Equivalent. All the refrigerant joints shall be proprietary in nature from the main VRV/VRF supplier. It should have one inlet and two outlet connections, both for suction and liquid line of respective size of the refrigerant piping along with its insulation. The refrigerant joint should be designed and supplied by the supplier of VRF indoor and outdoor unit manufacturer.	nos	123	8440	1038120
		<b>TOTAL OF 4</b>				<b>3987032.5</b>
<b>5.0</b>		<b>ELECTRICAL WORK</b>				
5.1		<b>S&amp;I of Electrical cabling</b> between Indoor and out door unit.				
5.1.1	R2-ME-2-5-a	<b>VRF unit Transmission</b> Cable 3 core x 1.5 Sq mm .cable 1.1 kV grade stranded Cu conductor, PVC insulated, extruded PVC inner and outer sheathed, with Flexible Submersible flat cables	Rmt	4100	66	270600
		<b>TOTAL OF 5</b>				<b>270600</b>
		<b>Grand Total</b>				<b>2,51,39,790</b>

### Lift / Elevators for Seva Niketan- KEM Hospital

Sr No	Item No	Discription	Unit	QTY	Rate	Amount	Remark
		SITC OF 8 PASSENGER/544 Kg GEARLESS LIFT MR/MRL, COPO/ TOPO doors with frame having opening of 800 mm wide X 2000 mm high, Automatic Rescue Device, Audio- Visual, Overload indicator, Infra red curtain, 3VF drive, Emergency alarm, Fire alarm switch, overload warning indicator, suitable door safety as specified, suitable for physically challenged persons, complete in all respect as specified in technical specifications. The lift shall be provided with 3 year free defect liability period					
1	Fair 01	SITC of Passenger gearless lift for 8 Passenger/544 Kg, G+16 floor (17Stops/17 Landings)	Job	2	44,25,968.00	88,51,936.00	Pass Lift
		SITC OF 16 PASSENGER/1088 Kg GEARLESS LIFT MR/MRL, COPO/ TOPO doors with frame having opening of 1000 mm wide X 2000 mm high Automatic Rescue Device, Audio- Visual, Overload indicator, Infra red curtain, 3VF drive, Emergency alarm, Fire alarm switch, overload warning indicator, suitable door safety as specified, suitable for physically challenged persons, complete in all respect as specified in technical specifications. The lift shall be provided with 3 year free defect liability period.					
2	Fair 02	SITC of Passenger gearless lift for 16 Passenger/1088 Kg, G+16 floor (17Stops/17 Landings)	Job	2	5420301	10840602	Pass Lift
				<b>Grand Total</b>		<b>1,96,92,538.00</b>	