

<b>MUNICIPAL CORPORATION OF GREATER MUMBAI</b>		
<b>PROPOSED BMC GENERAL HOSPITAL &amp; STAFF QUARTERS</b>		
<b>SUMMARY CSMC</b>		
<b>SR.NO.</b>	<b>DESCRIPTION</b>	<b>AMOUNT</b>
<b>D</b>	<b>M &amp; E CSMC BOQ</b>	
<b>1</b>	<b>CSMC ELECTRICAL SYSTEMS</b>	<b>11,35,91,686.00</b>
<b>1.1</b>	<b>HOSPITAL</b>	<b>9,93,32,036.00</b>
a	CSMC ELECTRICAL SYSTEMS	4,83,70,388.00
b	CSMC ELEVATORS	1,54,13,589.00
c	CSMC AUDIO VISUAL	1,80,05,351.00
d	CSMC VISUAL PROJECTION	1,70,37,094.00
e	CSMC STAGE LIGHTING	5,05,614.00
<b>1.2</b>	<b>RESIDENTIAL</b>	<b>1,42,59,650.00</b>
a	CSMC ELECTRICAL SYSTEMS	48,45,866.00
b	CSMC ELEVATOR	94,13,784.00
<b>2</b>	<b>CSMC ELV</b>	<b>3,19,57,867.00</b>
<b>3</b>	<b>CSMC FIRE FIGHTING WORKS</b>	<b>79,19,454.00</b>
3.1	CSMC HOSPITAL F.F.	71,80,013.00
3.2	CSMC RESIDENTIAL F.F.	7,39,441.00
<b>4</b>	<b>CSMC HVAC</b>	<b>4,18,61,335.00</b>
<b>5</b>	<b>CSMC BUILDING MANAGEMENT SYSTEM (BMS)</b>	<b>78,38,340.00</b>
<b>6</b>	<b>CSMC MODULAR OT WORKS</b>	<b>3,35,26,259.00</b>
<b>7</b>	<b>CSMC MGPS</b>	<b>2,70,01,833.00</b>
<b>8</b>	<b>CSMC NURSE CALL SYSTEM</b>	<b>27,23,162.00</b>
<b>9</b>	<b>CSMC PNEUMATIC TUBE TRANSPORT SYSTEM</b>	<b>1,69,92,843.00</b>
<b>10</b>	<b>CSMC PHE PUMPS</b>	<b>33,50,713.00</b>
<b>11</b>	<b>CSMC RO</b>	<b>9,95,033.00</b>
<b>12</b>	<b>Technical staff hiring during CSMC Rs.</b>	<b>2,04,22,325.00</b>
	<b>TOTAL OF M &amp; E CSMC</b>	<b>30,81,80,850.00</b>

MUNICIPAL CORPORATION OF GREATER MUMBAI

PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

**CSMC SUMMARY- ELECTRICAL (ELEVATOR,AV,VISUAL PROJECTION & STAGE LIFHTING)**

SR.NO	DESCRIPTION	AMOUNT
1	HOSPITAL ELECTRICAL C.S.M.C (2-6YR)	4,83,70,388.00
2	HOSPITAL ELEVATOR C.S.M.C (4-8YR)	1,54,13,589.00
3	HOSPITAL AV C.S.M.C (2-6YR)	1,80,05,351.00
4	HOSPITAL VISUAL PROJECTION C.S.M.C (2-6YR)	1,70,37,094.00
5	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	5,05,614.00
6	RESIDENTIAL ELECTRICAL C.S.M.C (2-6YR)	48,45,866.00
7	RESIDENTIAL ELEVATOR C.S.M.C (4-8YR)	94,13,784.00
<b>TOTAL</b>		<b>11,35,91,686.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELECTRICAL WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF ELECTRICAL C.S.M.C.</b>							<b>14,22,65,839.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Electrical work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	71,13,291.95	Year	71,13,292.00
2	Fair Item	Year: 3rd (6% of csmc estimate)	1	Year	85,35,950.34	Year	85,35,951.00
3	Fair Item	Year: 4th (7% of csmc estimate)	1	Year	99,58,608.73	Year	99,58,609.00
4	Fair Item	Year: 5th (8% of csmc estimate)	1	Year	1,13,81,267.12	Year	1,13,81,268.00
5	L STAGE LIGHTING C.S.M.C.	Year: 6th (8% of csmc estimate)	1	Year	1,13,81,267.12	Year	1,13,81,268.00
<b>TOTAL</b>							<b>4,83,70,388.00</b>
<b>TOTAL, SAY RS.:</b>							<b>4,83,70,388.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**  
**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**  
**BILL OF QUANTITIES HT & LT ELECTRICAL WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	BAH-ELEC-FA-01	Supply, Installation testing and Commissioning of IP55 category 22 KV VCB panel with 2 incomers & 4 outgoing breakers as per specifications & SLD of the panel. ALL breakers shall be with A/V/KWH meters and necessary power pack shall be provided ALL incomers & outgoing cables shall be top entry in panel. Scope includes manufacturing, transportation, loading, unloading, shifting to final location, checking of foundation level. interconnection between accessories mounted on HT VCB with mounting of loose accessories supplied by vendor.	1.00	Set	32,85,000.00	32,85,000.00
		EQUIPMENT DETAILS : INCOMING <b>2 NOS</b> OF 22kV, 800A, 25kA/1SEC, AND OUTGOING <b>4 NOS</b> OF 22kV, 800A, 25kA/1SEC, INDOOR, VCB, ICOG PANEL No. OF POLES : 3(Three). RATED VOLTAGE : 22kV RATED CURRENT : 800A TEST CONFIRMING TO : IEC:62271-200 / IEC:60694 / IEC:60298				
2	BAH-ELEC-FA-02	Supply, Installation testing and Commissioning of Indoor type Dry type CRT Transformer with Enclosure having 22 KV/0.415 KV voltage levels low loss type with rating of 1600 KVA with OLTC & RTCC Taps on Primary Winding for+ 10% to – 10% in steps of 2.5%, Primary Voltage Variation On Load Tap Changer, No. of switch positions : 9, IS – 11171 – 1985 & IS: 2026 -2011 With Latest standard and Energy efficiency Level, Losses At 50% Loading : 6320 W (Max.), At 100% Loading : 16800 W (Max.) Scope includes Supply transportation, loading, unloading, shifting to final location, checking of foundation level, welding of stoppers on foundation channels, including all labour and materials. Inteconnection between accssories mounted on the transformer & marshalling box along with mounting of loose accessories supplied by	3.00	Nos	58,35,000.00	1,75,05,000.00
3	R2-ME-15-30-e	Supplying and erecting D.C.P. type Fire Extinguisher 6 kg capacity cartridge type with Gun Metal cap 150 gram CO2 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.	40.00	Nos	2,645.00	1,05,800.00
4	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	Fluorescent emergency light fitting with 1 No. 1 feet (30cms.) single tube 9 / 11 W with M.F. SLA rechargeable battery with 3 hrs of back up..	60.00	Nos	1,332.00	79,920.00
5	R2-ME-15-29-a	SITC of Auto glow signage for Emergency Fire Exit	100.00	Nos	814.00	81,400.00
6	R2-ME-15-29-b	SITC of Auto glow signage for Staircase direction	96.00	Nos	814.00	78,144.00
7	R2-ME-15-29-c	SITC of Auto glow signage for Do not use lift in case of Fire etc.	100.00	Nos	1,085.00	1,08,500.00
		Supply, Unloading at site, shifting to final location, assembling, leveling, grouting, erecting, testing and commissioning of following panels as per drawings. Any sort of fabrication work required for erection of panel at site shall be done by the contractor. The contractor shall also check for all the loose joints and continuity of the panel. Any physical or technical defects envisaged by the contractor shall be informed to client as soon as panels are opened As per SLD				
8	BAH-ELEC-FA-04	SITC of LT KIOSK-2 (S/S) As per SLD	3.00	Nos	53,26,850.00	1,59,80,550.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		LT KIOSK-2 (S/S) including 2500A, 50kA TPN EDO ACB with multi function meter with RS485 port and Modbus protocol. With 3200 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars.Also including 2000 Amps, 4 pole Automatic power transfer switch for MLTP, 3 Nos. of 1250 amps, TPN,50KA, EDO ACB, as outgoing				
9	BAH-ELEC-FA-05	SITC of MAIN LT PANEL As per SLD	1.00	Nos	76,50,000.00	76,50,000.00
		MAIN LT PANEL Panel comprising of 03 nos. of 2000 amps, TPN, EDO TYPE ACB incomer with 2000 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars alongwith 02 nos. of 2000 amps, 4 pole ACB (EDO TYPE) Buscoupler. Panel shall have 03 no. of 1600A, 50KA, TPN EDO Type ACB, 02 no. of 1250A, 50KA, TPN EDO Type ACB, 02 no. of 800A, 50KA, TPN EDO Type ACB, 04 nos of 630A, 35KA, TPN MCCB, 06 nos of 500A, 35KA, TPN MCCB, 06 nos of 400A, 35KA, TPN MCCB , 05 nos of 250A, 35KA, TPN MCCB, 01 nos of 160A, 35KA, TPN MCCB, 01 nos of 100A, 35KA, TPN MCCB as outgoing. All incoming & outgoing feeders shall be provided Meter with ammeter, voltmeter & with communication cable and ready RS485 port and Modbus				
10	BAH-ELEC-FA-06	SITC of APFCR PANEL-700 KVAR - 1 & 2 As per SLD	3.00	Nos	14,56,000.00	43,68,000.00
		APFCR PANEL-700 KVAR - 1 & 2 Panel comprising 1250 amps, 50KA, TP, EDO type ACB as incomer including 1250 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars and 300 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 02 nos of 125A, 25KA, TPN MCCB with 02 nos of 50KVAR fixed capacitors, 06 no. 125A, 25KA, TPN MCCB with 06 no. of 50KVAR capacitor , 04 no. 63A, 25KA, TPN MCCB with 04 no. of 25KVAR capacitor, 02 no. 40A, 25KA, TPN MCCB with 02 no. of 15KVAR capacitor and 02 no. 32A, 10KA, TPN MCCB with 02 no. of 10KVAR capacitor bank. Panel shall have 16stage APFC relay as specified				
11	BAH-ELEC-FA-07	SITC of EMERGENCY PANEL As per SLD	1.00	Nos	32,90,000.00	32,90,000.00
		EMERGENCY Panel comprising 1600 Amps, 4 pole, 50KA, ATS suitable 50 kA/1sec. system fault level as per specification.ASCO 7000 series and 1600 amps, TPN, 50KA, EDO type ACB as incomer with voltmeter & ammeter and with 1600 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 01 no. of 1250A, 50KA, TPN, MDO type ACB with shunt trip command from FAS panel ,02 nos of 630A, 35KA, TPN MCCB, 02 nos of 160A, 35KA, TPN MCCB 01 nos of 125A, 35KA, TPN MCCB, 02 nos of 100A, 35KA, TPN MCCB 01 nos of 80A, 35KA, TPN MCCB, 01 nos of 63 A, 35KA, TPN MCCB, 01 nos of 40A, 35KA, TPN MCCB and 01 no. of 32A, 35KA, TPN MCCB as outgoing. Feeders as specified in SLD shall provided Meter with ammeter, voltmeter & with communication cable and ready RS485 port and Modbus protocol				
12	BAH-ELEC-FA-09	SITC of Medical EQUIPMENT PANEL As per SLD	1.00	Nos	12,50,000.00	12,50,000.00
		Medical EQUIPMENT Panel comprising 02 nos. of electrically interlocked 1250 amps, 50KA, TPN, EDO type ACB as incomer including Meter with ammeter, voltmeter including 1250 amps 4 pole (50 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 05 nos of 250A, 25KA, FP MCCB and 07 nos of 63A, 25KA, FP MCCB as outgoing. All outgoing feeders shall be provided Meter with ammeter, voltmeter & with communication cable and ready RS485 port and Modbus protocol				
13	BAH-ELEC-FA-10	SITC of UPS PANEL 1 As per SLD	1.00	Nos	10,45,000.00	10,45,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		UPS Panel-1 comprising of 03 nos. of 500 amps, 35KA, FP MCCB with surge protection devise as mentioned as incomer with 1600 amps TP+2N (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 03 nos. of 630A, 35KA, TPN MCCB, 01 no of 400A, 35KA, FP MCCB , 03 no of 250A, 35KA, FP MCCB and 01 nos. of 63A 35KA FP MCCB as outgoing				
14	BAH-ELEC-FA-13	SITC of OT PANEL-1 As per SLD	1.00	Nos	14,70,000.00	14,70,000.00
		OT Panel-1 comprising 320 Amps, 4 pole, 35KA, ATS suitable 25 kA/1sec. system fault level as per specification.ASCO 7000 series and 320A, 35KA, TPN MCCB with voltmeter & ammeter as incomer with 320 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 13 nos. of 80 amps, DP MCB with Surge protection device per feeder as specified and 2 nos. of 80 amps, DP MCB as outgoing.				
15	BAH-ELEC-FA-14	SITC of OT PANEL-2 As per SLD	1.00	Nos	7,18,489.00	7,18,489.00
		OT Panel-2 comprising 100 Amps, 4 pole, 35KA, ATS suitable 25 kA/1sec. system fault level as per specification.ASCO 7000 series and 100A, 35KA, TPN MCCB with voltmeter & ammeter as incomer with 100 amps 4 pole (25 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 6 nos. of 80 amps, DP MCB with Surge protection device per feeder as specified and 2 nos. of 80 amps, DP MCB as outgoing.				
16	BAH-ELEC-FA-15	SITC of CSSD PANEL As per SLD	1.00	Nos	2,50,000.00	2,50,000.00
		CSSD Panel comprising 400 amps, 25KA, TPN, MCCB as incomer including Meter with ammeter, voltmeter & with communication cable and ready RS485 port and Modbus protocol including 400 amps 4 pole (25 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 09 nos of 63A, 10KA, TPN MCB, 01 no. of 40A, 10KA, TPN MCB, 04no. of 32A, 10KA, TPN MCB, 01 no. of 25A, 10KA, TPN MCB as outgoing.				
17	BAH-ELEC-FA-19	SITC of KITCHEN PANEL As per SLD	1.00	Nos	2,30,000.00	2,30,000.00
		PANTREY PANEL Panel comprising of 400 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 400 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 10 nos. of 40A, TPN MCB as outgoing.				
18	BAH-ELEC-FA-21	SITC of LIGHTING & POWER PANEL As per SLD	2.00	Nos	3,50,000.00	7,00,000.00
		NON DG PANEL 3rd QUADRANT Panel comprising of 400 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 400 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 02 nos. of 250A, TP MCCB, 11 nos of 80A, TPN MCB, 03 no. of 63A, TPN MCCB, as outgoing.				
19	BAH-ELEC-FA-26	SITC of LIFT PANEL As per SLD	2.00	Nos	2,10,000.00	4,20,000.00
		LIFT Panel comprising of 320 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 320 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 04 nos of 100A TPN MCB, 01 no. of 63A, TPN MCB, 01 no. of 40A, TPN MCB, 05 no. of 32A, TPN MCB, 03 no. of 20A, TPN MCB as outgoing.				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		Supply, Installation, testing and connection of 3P4W+50%E internally earthed Al. Bus duct as per rating given below with all necessary fabrication of supports and other accessories works complete as per specification. All joints / tees / bends / phase change over boxes/ Flange End/Horizontal Bend/Vertical Bend/Plug-in Point/ Vertical Spring Hanger/Fix hanger/ End Cover/ Horizontal Fixing Clips/Tinned Copper Braided Flexibles -360mm (with Hardware - Nuts and Bolts) etc are deemed to be included in the Rmt supply. - Sandwich type - IP 55 unless otherwise specified in item. Minimum fault level of Bus duct shall be as per panel but bot less then 35 kA. Arrangement for tapping earth as per requirement & approved shop drawings.All necessary supports & work for installation of busduct shall be included in quoted cost.All joint in horizontal ran shall have ip65 protection.Type test Certificates are from ERDA (ASTA Accredited) lab as per IEC 61439 Part 1 and 6 Temperature rise design as per Latest IEC 61439 Part 1 and 6				
20	MTAR-EL-14	2500 amps 50KA SC for 1 sec	150.00	Mtr	68,970.00	1,03,45,500.00
21	BAH-ELEC-FA-29	SITC of 415V/690V/1000V Sandwich construction Busbar trunking system with Multilayer Class-F insulation and; Conductors : Aluminium <b>Rating : 630A</b> Configuration : 3P4W+50%E IP Rating : IP54 Enclosure : GI 1.6mm thickness Impulse Withstand Voltage : 8kV Paint Shade : RAL7032 Epoxy Powder Coating Straight Run Feeder IP55	120.00	Mtr	48,393.00	58,07,160.00
22	BAH-ELEC-FA-30	SITC of 415V/690V/1000V Sandwich construction Busbar trunking system with Multilayer Class-F insulation and; Conductors : Aluminium <b>Rating : 400A</b> Configuration : 3P4W+50%E IP Rating : IP54 Enclosure : GI 1.6mm thickness Impulse Withstand Voltage : 8kV Paint Shade : RAL7032 Epoxy Powder Coating Straight Run Feeder IP55	60.00	Mtr	38,742.00	23,24,520.00
23	BAH-ELEC-FA-32	SITC of Feed units in following ratings for above Rising main. 1 Nos. 630A, 415V, Ics=35kA, 4P MCCB with a set of CT's., Multi Function meter (V, A, kWh, KVAh, KW, KVA, KVAR, PF, Hz.) with Phase Indicating Lamps with MCB. End feed Panel with switchgear ( Suitable for MCCB ) - Al Busbar Arrangement , Complete with Aluminium busbar or Cu Flexible with provision for rotary handle mechanism with bottom Cable entry and top Busduct outgoing provision	3.00	Nos	1,45,000.00	4,35,000.00
24	BAH-ELEC-FA-33	SITC of Feed units in following ratings for above Rising main. 1 Nos. 400A, 415V, Ics=35kA, 4P MCCB with a set of CT's., Multi Function meter (V, A, kWh, KVAh, KW, KVA, KVAR, PF, Hz.) with Phase Indicating Lamps with MCB. End feed Panel with switchgear ( Suitable for MCCB ) - Al Busbar Arrangement , Complete with Aluminium busbar or Cu Flexible with provision for rotary handle mechanism with bottom Cable entry and top Busduct outgoing provision	2.00	Nos	1,10,976.00	2,21,952.00
25	BAH-ELEC-FA-34	SITC of Feed units in following ratings for above Rising main. 1 Nos. 250A, 415V, Ics=35kA, 4P MCCB with a set of CT's., Multi Function meter (V, A, kWh, KVAh, KW, KVA, KVAR, PF, Hz.) with Phase Indicating Lamps with MCB. End feed Panel with switchgear ( Suitable for MCCB ) - Al Busbar Arrangement , Complete with Aluminium busbar or Cu Flexible with provision for rotary handle mechanism with bottom Cable entry and top Busduct outgoing provision	5.00	Nos	1,01,061.00	5,05,305.00
		SITC of tap off boxes with MCCBs. All MCCBs shall be with thermal magnetic adjustable releases for O/L and S/C. The MCCBs shall have Ics = 100% Icu. All tap of boxes shall support the cable sizes given in SLD along with tender.				
26	BAH-ELEC-FA-35	160/200 A,FP,25KA.	2.00	Nos	21,793.00	43,586.00
27	BAH-ELEC-FA-36	125 A,FP,25KA.	3.00	Nos	14,800.00	44,400.00





SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
41	KSS-EL-138	Supply of 59.590 KWp Grid Connected Roof-top Solar Photovoltaic System based on heterojunction technology solar PV module as per the scope defined in the tender specifications.(185 Panel of 325W each).Complete as required .	1.00	Set	59,44,103.00	59,44,103.00
		Installation, Commissioning & Testing of 59.590 KWp Grid Connected Rooftop Solar Photovoltaic System based on HIT solar PV module - including all expenses (to be borne by bidder) e.g. Air Fare, Local Transport, accommodation etc. with Designing, Supplying, Fabricating and installation of MS fabricated structure / support complete with welding, grouting and painting etc.complete with all necessary hardware and as per the instruction of the Engineer in charge / Architect /Consultant. Complete as required .				
42	BAH-ELEC-RA-71	Supplying , erecting, testing & commissioning SF 6 Insulated 22kV,630A, 16kA/3sec, 4 way outdoor, extensible motorised SCADA compatible RMU as per electric supply company specification consisting of 2 nos. feeder with load break switch and 2 nos. feederwith VCB as per specification no. SW-HTS / RMU SCADA (2LBS +2V/CB)	1.00	Nos	10,58,893.00	10,58,893.00
43	BAH-ELEC-RA-72	Supplying, erecting, testing, commissioning 22 KV HT metering cubical (compact type) approved by MSEDCL/licensee fabricated with 2mm.(14 SWG) M.S. sheets with supporting angle and channel, painted with powder coating / epoxy paint of required shade copper bus bar size 25x6 mm electronic security lock and heavy duty mechanical lock, with counter meter for measuring no of times the opening of doors, top side cover ( CT,PT cover) interlock with meter doors, epoxy coated 3 nos CT having required ratio between 50/5 A to 100/5 A, VA10, class 0.2S, 22000/V3/110/V3 VA 50, class 0.2 epoxy terminal block suitable for provided trivector meter, and provision for incoming and outgoing cables etc. complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation	1.00	Nos	2,01,228.00	2,01,228.00
<b>TOTAL AMOUNT HT &amp; LT ELECTRICAL WORKS (In Rs.)</b>						<b>14,22,65,838.68</b>
<b>Say</b>						<b>14,22,65,839.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELEVATOR WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF ELEVATOR C.S.M.C.</b>							<b>4,53,34,076.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Elevator work per annum for period of next five years after expiry of free guarantee period of 3 year inclusive of all spares and consumables. Year: 4th (5% of csmc estimate)	1	Year	22,66,703.80	Year	22,66,704.00
2	Fair Item	Year: 5th (6% of csmc estimate)	1	Year	27,20,044.56	Year	27,20,045.00
3	Fair Item	Year: 6th (7% of csmc estimate)	1	Year	31,73,385.32	Year	31,73,386.00
4	Fair Item	Year: 7th (8% of csmc estimate)	1	Year	36,26,726.08	Year	36,26,727.00
5	L STAGE LIGHTING C.S.M.C.	Year: 8th (8% of csmc estimate)	1	Year	36,26,726.08	Year	36,26,727.00
<b>TOTAL</b>							<b>1,54,13,589.00</b>
<b>TOTAL, SAY RS.:</b>							<b>1,54,13,589.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES ELEVATOR WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
	Fair Item	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> <li>· Rated capacity :- 18 Passenger/1224Kg</li> <li>· Floors :- G+7 floor (8 Stops/8 Landings)</li> <li>· Travel :- 21 to 29.4 mtrs</li> <li>· Location of Lift Machine:- MR</li> <li>· Rated speed :- 1.5mps VS</li> <li>· Car/Landing door clear opening of 1100 mm wide x 2000 mm high</li> <li>· Clear Car size of .....mm wide x .....mm deep x 2250mm high</li> <li>· Lift shaft available having clear size of .....mm wide x .....mm deep, .....mm Pit depth, .....mm Overhead.</li> <li>· Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent Test laboratory).</li> <li>· Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation &amp; SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge.</li> <li>· COP with SS face plate having metallic push buttons with Braille code &amp; luminous indicator around button with FPI, scrolling UP/DN LED indicator &amp; with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi &amp; English with intercom system with telephone instrument in Lift car, LMR &amp; FCC/ground floor.</li> <li>· LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code &amp; luminous indicator around button with CPI, Lift car arrival &amp; next travel direction audio-visual indication at all landings.</li> <li>· Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections</li> </ul>	4.00	Per Unit	₹ 29,10,914	₹ 1,16,43,656

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
	Fair Item	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	16.00	Floors	₹ 1,67,645	₹ 26,82,320
1	Fair Item	<p>SITC of Electric Traction Passenger cum Stretcher/Hospital Lift with</p> <ul style="list-style-type: none"> <li>· Rated capacity :- 20 Passenger/1360Kg</li> <li>· Floors :- G+7 floor (8 Stops/8 Landings)</li> <li>· Travel :- 21 to 29.4 mtrs</li> <li>· Location of Lift Machine:- MR/MRL</li> <li>· Rated speed :- 1.5mps VS</li> <li>· Car/Landing door clear opening of 1100/1200 mm wide x 2000 mm high</li> <li>· Clear Car size of .....mm wide x .....mm deep x 2250mm high</li> <li>· Lift shaft available having clear size of .....mm wide x .....mm deep, .....mm Pit depth, .....mm Overhead.</li> <li>· Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory).</li> <li>· Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation &amp; SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge.</li> <li>· COP with SS face plate having metallic push buttons with Braille code &amp; luminous indicator around button with FPI, scrolling UP/DN LED indicator &amp; with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi &amp; English with intercom system with telephone instrument in Lift car, LMR &amp; FCC/ground floor.</li> <li>· LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code &amp; luminous indicator around button with CPI, Lift car arrival &amp; next travel direction audio-visual indication at all landings.</li> </ul>	6.00	Per Unit	₹ 30,95,696	₹ 1,85,74,176

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
2	Fair Item	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	24.00	Floors	₹ 1,67,645	₹ 40,23,480
3	Fair Item	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> <li>· Rated capacity :- 16 Passenger/1088Kg</li> <li>· Floors :- G+7 floor (8 Stops/8 Landings)</li> <li>· Travel :- 21 to 29.4 mtrs</li> <li>· Location of Lift Machine:- MR/MRL</li> <li>· Rated speed :- 1.5mps VS</li> <li>· Car/Landing door clear opening of 1000mm wide x 2000 mm high</li> <li>· Clear Car size of .....mm wide x .....mm deep x 2250mm high</li> <li>· Lift shaft available having clear size of .....mm wide x .....mm deep, .....mm Pit depth, .....mm Overhead.</li> <li>· Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory).</li> <li>· Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation &amp; SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge.</li> <li>· COP with SS face plate having metallic push buttons with Braille code &amp; luminous indicator around button with FPI, scrolling UP/DN LED indicator &amp; with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi &amp; English with intercom system with telephone instrument in Lift car, LMR &amp; FCC/ground floor.</li> <li>· LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code &amp; luminous indicator around button with CPI, Lift car arrival &amp; next travel direction audio-visual indication at all landings.</li> <li>· Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary Protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor</li> </ul>	2.00	Nos	₹ 27,83,302	₹ 55,66,604

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
4	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	16.00	Floors	₹ 1,67,645	₹ 26,82,320
		For additional 2MP Camera along with necessary accessories at Home Landing, add as given.	12.00	Floors	₹ 13,460	₹ 1,61,520
<b>TOTAL AMOUNT ELEVATORS (In Rs)</b>						<b>₹ 4,53,34,076</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR AUDIO SYSTEM WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF AUDIO SYSTEM C.S.M.C.</b>							<b>5,29,56,909.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Audio System work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	26,47,845.45	Year	26,47,846.00
2	Fair Item	Year: 3rd (6% of csmc estimate)	1	Year	31,77,414.54	Year	31,77,415.00
3	Fair Item	Year: 4th (7% of csmc estimate)	1	Year	37,06,983.63	Year	37,06,984.00
4	Fair Item	Year: 5th (8% of csmc estimate)	1	Year	42,36,552.72	Year	42,36,553.00
5	L STAGE LIGHTING C.S.M.C.	Year: 6th (8% of csmc estimate)	1	Year	42,36,552.72	Year	42,36,553.00
<b>TOTAL</b>							<b>1,80,05,351.00</b>
<b>TOTAL, SAY RS.:</b>							<b>1,80,05,351.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**  
**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES AUDIO SYSTEM WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	HBTMC/AUDIO/FA-6	Supply, Installation, Testing & Commissioning of Class D Dual zone amplifier with output power of upto 2x120W or better @ 70/100V. frequency response of 55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz); THD <0.3% at rated power. Channel Separation ≤ -60 dBV (below rated power, 1 kHz), Dynamic range > 88 dB.	5	Nos	₹ 2,11,925	₹ 10,59,625
2	HBTMC/AUDIO/FA-7	Supply, Installation, Testing & Commissioning of Amplifier: Class D Zone amplifier with power as 1 X 90 W @ 70/100V; frequency response of 60Hz to 20kHz; THD <1%; 1 unbalanced AUX input, 1 balanced page input, 1 balanced mic/line input, 2 unbalanced line; Dynamic range is of 88 dB; built in loudspaker EQ.	1	Nos	₹ 1,12,908	₹ 1,12,908
3	HBTMC/AUDIO/FA-8	Supply, Installation, Testing & Commissioning of Class D 1/2 RU 2 Channel ENERGY STAR amplifier / Stereo operation 60 watts into 8 Ω & 4 Ω, Bridged operation 200 watts into 8Ω & 4Ω, and 250 watts into 70v and 100v / 100-240 VAC Operation	20	Nos	₹ 1,17,346	₹ 23,46,920
4	HBTMC/AUDIO/FA-9	Supply, Installation, Testing & Commissioning of Class D 1/2 RU 2 Channel ENERGY STAR amplifier / Stereo Operation 200 watts into 8 Ω & 4 Ω, Bridged operation 400 watts into 8Ω & 4Ω, and 350 watts into 70v and 100v / 100-240 VAC Operation	5	Nos	₹ 1,17,344	₹ 5,86,720
5	HBTMC/AUDIO/FA-10	Supply, Installation, testing and commissioning of 2000W Amplifier using FAST channel combining technology. 4 channels, 500 watts/ch at 8Ω, 700 watts/ch at 4Ω,625 watts/ch at 2Ω, with XLR and NL4 connectors.	1	Nos	₹ 2,49,241	₹ 2,49,241
6	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	Supply, Testing , Installation and commissioning of 4 channel Power amplifiers for PA, Monitors and Other speakers; Installation specific four channel amplifier Maximum output power 4 x 1600 W into 4 Ω 5 freely assignable GPIOs (General Purpose Input Output) + General fault Sampling rate96 kHz/27 Bit ADC/24 Bit DAC Integrated DSP incorporates comprehensive loudspeaker management, switchable filtering functions as well as user definable equalization and delay capabilities.	5	Nos	₹ 15,68,454	₹ 78,42,270
7	HBTMC/AUDIO/FA-1	Supply, Installation, Testing & Commissioning of Ceiling mount speaker with frequency respose of 95Hz - 17kHz; nominal dispersion of 140 degree conical; Power handling 16W @ 8 Ohms, Transformer tapping (70/100V) : 1W, 2W, 4W, 8W, 16W), sensitivity 84 db SPL; and Max SPL of 96 db or better SPL with powder coated steel grille.	50	Nos	₹ 26,399	₹ 13,19,950
8	HBTMC/AUDIO/FA-2	Supply, Installation, Testing & Commissioning of Ceiling Speakers; Effective frequency range1 70 – 16 kHz or better Rated noise power / voltage2 16 watts / 11.3 volts (rms) Broad-band sensitivity3 89 dB SPL Coverage angle (-6 dB) 140° (500 Hz - 5 kHz) Maximum continuous SPL4 101 dB or better ; Maximum peak SPL4 107 dB Rated impedance 8 ohms Transformer taps 70 V: 16, 8, 4, 2, 1 watts and 8 ohm bypass 100V: 16, 8, 4, 2, watts and 8 ohm bypass	300	Nos	₹ 20,116	₹ 60,34,800



9	HBTMC/AUDIO/FA-3	Supply, Installation, testing and commissioning of Stackable Wall Mount multi driver (8 or better) full range Column Array loudspeaker with free field frequency range (-10dB) of 60Hz to 16kHz; RMS continuous power handling of 150W better; Nominal dispersion of 120 H X 20 V; full range Sensitivity of 87 Db SPL; Max SPL of 109 dB SPL (115dB peak); Nominal Impedance of 8 ohms; Rugged enclosure with powder coated steel grille. Optional 70/100V OEM transformer module with tap settings of 100/50W shall be available.	10	Nos	₹ 4,19,286	₹ 41,92,860
10	HBTMC/AUDIO/FA-5	Supply, Testing , Installation and commissioning of Compact LineArray Speaker with 2 x 6.5"/1.4" drivers monitors with Frequency response (-5 dB standard) 55 Hz - 20 kHz and 15" driver with ferrite magnet coaxial 1.4" exit compression driver passive crossover network Dispersion 75° (h x v) SPLmax 131 dB 5 years warranty including all parts.	10	Nos	₹ 7,85,476	₹ 78,54,760
11	HBTMC/AUDIO/FA-12	Supply, Testing , Installation and commissioning of Point Source Speaker with 2 x 8"/1.4" specific four channel amplifier Maximum output power 4 x 1600 W into 4 Ω 5 freely assignable GPIOs (General Purpose Input Output) + General fault Sampling rate 96 kHz/27 Bit ADC/24 Bit DAC Integrated DSP incorporates comprehensive loudspeaker management, switchable filtering functions as well as user definable equalization and delay capabilities.	1	Nos	₹ 9,66,548	₹ 9,66,548
12	HBTMC/AUDIO/FA-14	Supply, Testing , Installation and commissioning of Stage monitor with 15" & 1.4" ;Installation and commissioning of monitors with Frequency response (-5 dB standard) 55 Hz - 20 kHz and 15" driver with ferrite magnet coaxial 1.4" exit compression driver passive crossover network Dispersion 75° (h x v) SPLmax 131 dB 5 years warranty including all parts.	5	Nos	₹ 6,49,361	₹ 32,46,805
13	BTMC-AUDIO-3	S/I/T/C of Speakers :Power capacity:50w(HF),120W(MF),200(LF). Frequency Responce: 63hz -20khz , Crossover: passive crossover, Impedance : 4 Ohm, cabinet Material: russian brich Plywood, horn material:russian brich Plywood, Weight:19.0kg	10	Nos	₹ 79,995	₹ 7,99,950
14	HBTMC/AUDIO/FA-13	Supply, Testing , Installation and commissioning of Flyable Cardioid Subwoofer with 18" driver Directional pattern: Cardioid Frequency response 20 Hz - 20 kHz Effective frequency range, ±2 dB, Near field 2-3 cm (0.8 - 1.2 in) 100 Hz - 20 kHz (4 - 6 dB soft boost at 15 kHz) Distortion, THD < 1% - CORE134 dB SPL RMS, 137 dB SPL peak Dynamic range - CORE Typ. 111 dB With suitable adaptor for Wireless bodypack	2	Nos	₹ 13,57,412	₹ 27,14,824
15	HBTMC/AUDIO/FA-16	Supply, Installation, Testing & Commissioning of Ceiling microphone array with patented automatic speaker position detection and dynamic beamforming for best speech intelligibility Analog and digital (Dante™) audio outputs for easy connectivity to video and audio conference systems Configuration and monitoring via Sennheiser's unique Control Cockpit software Open API for media and camera control applications 802.1X network configuration via SSH Several installation options via suspension kit, flushmount or surface bracket Certified for Microsoft Teams Rooms when deployed with Microsoft-certified DSPs	2	Nos	₹ 9,04,374	₹ 18,08,748

16	HBTMC/AUDIO/FA-17	SITC of wireless headworn microphone of Modulation wideband FM Frequency ranges 548-572 MHz, 766-790 MHz Switching bandwidth up to 24 MHz Frequencies 8 frequency banks, each with up to 10 factory-preset channels Signal-to-noise ratio $\geq 103$ dBA THD $\leq 0.9\%$ Transmitter sychronization 2.4 GHz, Receiver principle double superheterodyne Diversity principle antenna switching diversity via internal Antennas Sensitivity (at peak deviation) $< 3 \mu\text{V}$ at 52 dB(A)rms S/N, AF frequency response 50 to 16,000 Hz ( $-3$ dB) Audio adjustment range 45 dB, adjustable in 5-dB steps. Transmitter RF output power 10 mW AF frequency response Line: 50-16,000 Hz Mic: 50-16,000 Hz Adjustment range of transmitter sensitivity 0 to $-30$ dB, adjustable in 10 dB steps Transducer principle condenser, pre-polarized Sensitivity 20 mV/Pa Pick-up pattern CARDIOID.OEM should have authorized service centre	25	Nos	₹ 60,708	₹ 15,17,700
17	HBTMC/AUDIO/FA-18	Supply, Installation, Testing & Commissioning of wireless hand held microphone of Modulation wideband FM Frequency ranges : 548-572 MHz, 766-790 MHz Switching bandwidth. up to 24 MHz Frequencies adjustable in 25-kHz steps 8 frequency banks, each with up to 12 factory-preset channels, Signal-to-noise ratio $\geq 103$ dBA THD $\leq 0.9\%$ Transmitter sychronization 2.4 GHz, Receiver principle - double superheterodyne, Diversity principle True Diversity Sensitivity (at peak deviation) $< 3 \mu\text{V}$ at 52 dB(A)rms S/N AF frequency response 50 to 16,000 Hz ( $-3$ dB) Audio adjustment range 40 dB, adjustable in 5- dB steps Squelch adjustable from 3 dB $\mu\text{V}$ to 28 dB $\mu\text{V}$ Line/Mic level .20 dB, switchable RF output power 10 mW, AF frequency response 80- 16,000 Hz Microphone type dynamic, Pick-up pattern cardioid Input sensitivity (caspsule) 1.5 mV/Pa, SKM 865: 1.8 mV/Pa Adjustment	2	Nos	₹ 79,391	₹ 1,58,782
18	HBTMC/AUDIO/FA-19	Supply, Installation, Testing & Commissioning of wireless handheld microphone of Modulation wideband FM Frequency ranges 548-572 MHz, 766-790 MHz Switching bandwidth up to 24 MHz Frequencies 8 frequency banks, each with up to 10 factory-preset channels Signal-to- noise ratio $\geq 103$ dBA THD $\leq 0.9\%$ Transmitter sychronization 2.4 GHz, Receiver principle double superheterodyne Diversity principle antenna switching diversity via internal antennas Sensitivity (at peak deviation) $< 3 \mu\text{V}$ at 52 dB(A)rms S/N AF frequency response 50 to 16,000 Hz ( $-3$ dB) Audio adjustment range 45 dB, adjustable in 5-dB steps Microphone RF output power 10 mW AF frequency response 80-16,000 Hz Microphone type dynamic Pick-up pattern cardioid Input sensitivity (caspsule) 1.5 mV / Pa Adjustment range of transmitter sensitivity 0 to $-30$ dB, adjustable in 10 dB steps.OEM should have authorized service	60	Nos	₹ 45,477	₹ 27,28,620
19	HBTMC/AUDIO/FA-20	Supply, Installation, Testing & Commissioning of wireless headworn microphone of Modulation wideband FM Frequency ranges A: 548-572 MHz, GB: 606-630 MHzB: 614-638 MHz, C: 766-790 MHzD: 794-806 MHz,E: 821-832 MHz, 863-865 MHzK: 925-937.5 MHz Switching bandwidth up to 24 MHzFrequencies 8 frequency banks, each with up to 12 factory-preset channels Signal-to-noise ratio $\geq 103$ dBA THD $\leq 0.9\%$ Transmitter sychronization 2.4 GHz, Low Power OQPSK (only active during synchronization) Receiver principle double superheterodyne Diversity principle True Diversity Sensitivity (at peak deviation) $< 3 \mu\text{V}$ at 52 dB(A)rms S/N AF frequency response 50 to 16,000 Hz ( $-3$ dB) Max. AF output voltage (at peak deviation, 1 kHz AF) 1/4" (6.3 mm) jack socket (unbalanced): +6 dBu, XLR socket (balanced): +12 dBu Audio adjustment range 40 dB, adjustable in 5-dB steps Squelch adjustable	1	Nos	₹ 88,491	₹ 88,491

20	HBTMC/AUDIO/FA-21	SITC of pre-polarized condenser gooseneck microphone with an overall length of minimum 450 mm and with XLR3M-type connector at its base, which shall offer radio frequency interference (RFI) shielding against intermodulation from wireless equipment or devices, cardioid microphone capsule with uniform 120° angle of acceptance (-3dB) or better, frequency response of 50 Hz to 20,000 Hz or better and sound input levels handling capability of minimum 130 dBspl, nominal equivalent noise level of 26 Dba or better and output shall be low impedance balanced (<100 ohms) with current consumption shall be 3 mA or better. table stand for connecting and operating XLR gooseneck microphones shall be rugged and unobtrusive with XLR-3F microphone input and an XLR-3M microphone output operating on 48 V phantom power and current consumption of 3.7 mA or better.	50	Nos	₹ 1,00,961	₹ 50,48,050
21	HBTMC/AUDIO/FA-22	SITC of wireless hand held microphone with cardioid polarity pattern, true diversity receiver, Frequency range: 470 - 516 MHz , 516 - 558 MHz, 734 - 776 MHz, THD, total harmonic distortion ≤ 0.9 % ; Signal-to-noise ratio ≥ 110 dBA; Switching bandwidth up to 42 MHz; Nominal deviation ±24 kHz ;Modulation Wideband FM ;Current consumption 300 mA ;Adjacent channel rejection Typically ≥ 65 dB; Intermodulation attenuation Typically ≥ 65 dB; Receiving frequency Max. 1680 receiving frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels; RF sensitivity< 2.5 µV for 52 dBA eff S/N; OEM should have authorized service centre in India	2	Nos	₹ 1,19,457	₹ 2,38,914
22	HBTMC/AUDIO/FA-23	Supply, Testing , Installation and commissioning of Directional Headset Microphone; Directional pattern: Cardioid Frequency response20 Hz - 20 kHz Effective frequency range, ±2 dB, Near field 2-3 cm (0.8 - 1.2 in)100 Hz - 20 kHz (4 - 6 dB soft boost at 15 kHz) Distortion, THD < 1% - CORE134 dB SPL RMS, 137 dB SPL peak Dynamic range - CORETyp. 111 dB With suitable adaptor for Wireless bodypack	2	Nos	₹ 1,80,173	₹ 3,60,346
23	HBTMC/AUDIO/FA-24	Supply, Installation, Testing & Commissioning of dynamic super- cardioid vocal microphone with with ON/OFF switch and with frequency response of 40 Hz – 16,000 Hz and sensitivity of 1.8 mV/Pa at 1 kHz, nominal impedance of 50 Ohm and min. terminating impedance of 1 k Ohm.OEM should have authorized service centre in India	4	Nos	₹ 18,908	₹ 75,632
24	HBTMC/AUDIO/FA-25	Supply, Installation, Testing & Commissioning of Premium 12-Input 2-Bus Mixer with XENYX Mic Preamps and British Eqs. 4 microphone & 4 Music/Multimedia Inputs	30	Nos	₹ 32,532	₹ 9,75,960
25	HBTMC/AUDIO/FA-26	Supply, Installation, Testing & Commissioning of Premium 24-Input 4/2-Bus Mixer with XENYX Mic Preamps & Compressors, Klark Teknik Multi-FX Processor, Wireless Option and USB/Audio Interface	1	Nos	₹ 86,048	₹ 86,048
26	HBTMC/AUDIO/FA-27	Supply, Testing , Installation and commissioning of Analog Mixer Type: Analog Channels: 24 Computer Connectivity: 1 x USB (Device, iPod, iPhone) Faders: 28 Inputs - Mic Preamps: 16 x XLR Inputs - Line: 24 x TRS (16 x Mono, 4 x Stereo) Inputs - Other: 4 x Stereo (RCA) Outputs - Main: 2 x XLR, 2 x TRS; 1 x XLR (Mono) Outputs - Other:4 x TRS (Monitor, Matrix), 4 x TRS (Bus)	1	Nos	₹ 2,80,691	₹ 2,80,691
27	BTMC-AUDIO-13	S/I/T/C of DVD player	4	Nos	₹ 7,288	₹ 29,152
28	HBTMC/AUDIO/FA-28	Supply, Testing , Installation and commissioning of Flying Bar	2	Nos.	₹ 96,155	₹ 1,92,310
29	HBTMC/AUDIO/FA-32	Supply, Installation, Testing & Commissioning of Audio De- embedder	1	Nos.	₹ 39,284	₹ 39,284
<b>TOTAL AMOUNT AUDIO SYSTEM WORKS (In Rs)</b>						<b>₹ 5,29,56,909</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR VISUAL PROJECTION WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF VISUAL PROJECTION C.S.M.C.</b>							<b>5,01,09,096.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Visual Projection work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	25,05,454.80	Year	25,05,455.00
2	Fair Item	Year: 3rd (6% of csmc estimate)	1	Year	30,06,545.76	Year	30,06,546.00
3	Fair Item	Year: 4th (7% of csmc estimate)	1	Year	35,07,636.72	Year	35,07,637.00
4	Fair Item	Year: 5th (8% of csmc estimate)	1	Year	40,08,727.68	Year	40,08,728.00
5	L STAGE LIGHTING C.S.M.C.	Year: 6th (8% of csmc estimate)	1	Year	40,08,727.68	Year	40,08,728.00
<b>TOTAL</b>							<b>1,70,37,094.00</b>
<b>TOTAL, SAY RS.:</b>							<b>1,70,37,094.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES VISUAL PROJECTION WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	HBTMC/VIS/FA-21	Supply, Installation, Testing & Commissioning of Video Extender ; Extends HDMI signals over a single Cat 5e/6/6a cable, HDMI (3D, Deep color, 4K); HDCP 2.2 compliant, Superior video quality – up to 4K@35m (Cat 5e/6) / 40m, HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology, Plug-and-play, Rack-mountable.	50	Nos	₹ 67,457	₹ 33,72,850
2	HBTMC/VIS/FA-22	Supply, Installation, Testing & Commissioning of Extends HDMI or VGA signals over a single Cat 5e/6/6a, Superior video quality: • HDMI: 4K at distance up to 100 m via a Cat 6a, VGA: 1600 x 1200 and 1920 x 1200 up to 100 m via a Cat 6a, HDMI 1.4 (3D, Deep color, 4K); HDCP 2.2 compliant, Supports HDBaseT Long Reach Mode – up to 150 m via a single Cat 5e/6 cable at resolutions up to 1080p, Designed to mount in a two-gang junction box, compatible with US type, Built-in PoH (Power over HDBaseT) function – receives power supply from the HDBaseT output port on the connected device, Supports Auto Switch – allows automatically switch to a newly plugged-in source, Functions as a switch or a converter, A Switch: Connects two sources (HDMI or VGA), A Converter: Applies receivers with different interface (DVI, DisplayPort, or HDMI), Supports RS-232 channel transmission or command mode for source switch control, Should include with Compatible HDBaseT Receivers, Plug-and-play, LED indication of sources and device status.	5	Nos	₹ 1,58,325	₹ 7,91,625
3	HBTMC/VIS/FA-24	Supply, Installation, testing and commissioning of HDBaseT Connectivity – extends an HDMI connection up to 100m via a single Cat 5e/6/6a, Supports HDBaseT Long Reach Mode – up to 150 m via a single Cat 5e/6 cable at resolutions up to 1080p, HDMI (3D, Deep Color, 4K), HDCP 2.2 compatible, Supports resolutions of up to Ultra HD 4kx2k and 1080p Full HD, Consumer Electronic Control (CEC) allows interconnected HDMI devices to communicate and respond to a single remote control, Supports wide screen format, Plug and play – no software required Built- in 8KV/ 15 KV ESD protection. Rack Mountable.	6	Nos	₹ 90,011	₹ 5,40,066
4	HBTMC/VIS/FA-44	HDMI HDBaseT-Lite Transmitter with EU Wall Plate (4K@40m) (HDBaseT Class B) Extends HDMI signals with superior video quality over a single Cat 5e/6/6a or ATEN 2L-2910 Cat 6 cable 4K up to 40 m; 1080p up to 70 m; HDMI 1.4 (3D, Deep color, 4K); HDCP 2.2 compliant; Designed to mount in a one-gang junction box; Supports RS-232 channel transmission	3	Nos	₹ 1,06,917	₹ 3,20,751
5	HBTMC/VIS/FA-45	Supply, Installation, Testing & Commissioning of HDMI HDBaseT- Lite (4K@40m) (HDBaseT Class B); Extends HDMI signals over a single Cat 5e/6/6a cable, HDMI (3D, Deep color, 4K); HDCP 2.2 compliant, Superior video quality – up to 4K@35m (Cat 5e/6) / 40m, HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology, Plug- and-play, Rack-mountable.	3	Nos	₹ 67,457	₹ 2,02,371

6	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	Supply, Installation, Testing & Commissioning of Video Extender ; Extends HDMI signals over a single Cat 5e/6/6a cable, HDMI (3D, Deep color, 4K); HDCP 2.2 compliant, Superior video quality – up to 4K@35m (Cat 5e/6) / 40m, HDBaseT Anti-jamming – resists signal interference during high-quality video transmission using HDBaseT technology, Plug-and-play, Rack-mountable.	50	Nos	₹ 67,457	₹ 33,72,850
7	HBTMC/VIS/FA-20	Supply, Installation, Testing & Commissioning of Video Switcher ; Allows up to four HDMI A/V sources to be connected to two HDMI displays, HDCP 1.4 compatible, HDMI (3D, Audio Return Channel and Deep Color), Supports Dolby True HD and DTS HD Master Audio, Audio Return Channel (ARC) function – connect an HDMI cable to the ARC port to send audio from your source device to your audio/video receiver, OSD for system configuration setting and information display, Instant switching between HDMI input sources via front panel pushbuttons or through the RS-232 serial control port, Feature EDID Expert technology to set up different configurations via different EDID mode, Allows users to view the HDMI input source port /device for easy selection, Supports superior video quality – HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080); up to WUXGA (1920 x 1200), Built-in bi-directional RS-232 serial control port for high-end system control *, Extra audio from HDMI input signal that supports both optical and coaxial digiron, with necessary false ceiling with adequate LED lights, blower/f	22	Nos	₹ 2,02,371	₹ 44,52,162
8	HBTMC/VIS/FA-19	Supply, Installation, testing and commissioning of 8X8 4K HDMI Martrix Switch Connects any of 8 HDMI sources to any of 8 HDMI displays, Supports 4K resolutions up to UHD (3840 x 2160) and DCI (4096 x 2160) with refresh rates of 30 Hz (4:4:4) and 60 Hz (4:2:0), EDID Expert™ – selects optimum EDID settings for smooth power-up, high-quality display and use of the best video resolution across different screens, Multiple Control Methods – system management via front-panel pushbuttons, IR remote, RS-232 control, and Ethernet connections (Web GUI), Supports Dolby True HD and DTS HD Master audio, Signaling rates up to 3.4 Gbits for flawless 4K output, HDMI (3D, Deep Color, 4K) and HDCP 2.2 compatible, Consumer Electronics Control (CEC) allows interconnected HDMI devices to communicate and respond to a single remote control, ESD protection for HDMI, Firmware upgradeable, Rack Mountable (1U design)	1	Nos	₹ 7,98,328	₹ 7,98,328
9	BTMC-VISUAL-6	S/I/T/C of HDMI Distribution Amplifiers	2	Nos	₹ 50,820	₹ 1,01,640
10	HBTMC/VIS/FA-24	Supply, Installation, testing and commissioning of HDBaseT Connectivity – extends an HDMI connection up to 100m via a single Cat 5e/6/6a, Supports HDBaseT Long Reach Mode – up to 150 m via a single Cat 5e/6 cable at resolutions up to 1080p, HDMI (3D, Deep Color, 4K), HDCP 2.2 compatible, Supports resolutions of up to Ultra HD 4kx2k and 1080p Full HD, Consumer Electronic Control (CEC) allows interconnected HDMI devices to communicate and respond to a single remote control, Supports wide screen format, Plug and play – no software required Built- in 8KV/ 15 KV ESD protection. Rack Mountable.	8	Nos	₹ 90,011	₹ 7,20,088
11	BTMC-VISUAL-12	S/I/T/C of Fiber Optic Receiver for HDMI, Audio, and RS-232 HDMI over Fiber optic source from OT	4	Nos	₹ 1,81,500	₹ 7,26,000

12	HBTMC/VISL/FA-4	Supply, Installation, Testing & Commissioning of 9,000 lm(center), Business Projector Projection System 3LCD Technology LCD Panel 1.03 inch with C2 Fine Color Light Output 9,000 Lumen- 6,300 Lumen (economy) In accordance with ISO 21118:2013 White Light Output 9,000 Lumen - 6,300 Lumen (economy) In accordance with ISO 21118:2013 Portrait Colour Light Output 9,000 lm Portrait White Light Output 9,000 lm Resolution WUXGA, 1920 x 1200, 16:10 High Definition 4K enhancement Aspect Ratio 16:10 Contrast Ratio 2,500,000 : 1 Native Contrast 2,000 : 1 Light source Laser Laser Light source 20,000 hours Durability High, 30,000 hours Durability Eco Keystone Correction Manual vertical: ± 45 °, Manual horizontal ± 30 ° Colour Reproduction Upto 1.07 billion colours Throw Ratio 1.57 - 2.56:1 Zoom Motorized, Factor: 1 - 1.6 Projection Lens Zoom Ratio 1.57 - 2.56 : 1 Lens Optical Lens Shift Motorized - Vertical ± 60 %, horizontal ± 18 % Lens position memory 10 positions Screen Size 60 inches - 500 inches	1	Nos	₹ 26,81,898	₹ 26,81,898
13	HBTMC/VIS/FA-1	Supply, Installation, Testing & Commissioning of Projector ; 3,500 lumens and HD-ready WXGA resolution, Projection System 3LCD Technology LCD Panel 0.59 inch with D9 Color Light Output 3,500 Lumen- 2,900 Lumen (economy) In accordance with ISO 21118:2013 White Light Output 3,500 Lumen - 2,900 Lumen (economy) In accordance with ISO 21118:2013 Resolution WXGA, 1280 x 800, 16:10 High Definition HD ready Aspect Ratio 16:10 Contrast Ratio 14,000 : 1 Light source Lamp Lamp 250 W, 5,000 h durability, 10,000 h durability (economy mode), 9,000 h durability (economy mode) Keystone Correction Manual vertical: ± 3 °, Manual horizontal ± 3 ° Colour Video Processing 10 Bits 2D Vertical Refresh Rate 100 Hz - 120 Hz Colour Reproduction Upto 1.07 billion colours Throw Ratio 0.28 - 0.37:1 Zoom Digital, Factor: 1 - 1.35 Lens Optical Screen Size 60 inches - 100 inches Projection Distance Wide 0.4 m ( 60 inch screen) Projection Distance Tele 0.6 m ( 100 inch screen) Projection Lens F Number 1.6 Projection Lens Focal	4	Nos	₹ 3,10,917	₹ 12,43,668
14	HBTMC/VIS/FA-2	Supply, Installation, Testing & Commissioning of Projector; 3LCD Technology, RGB liquid crystal shutter LCD Panel 0.61 inch with C2 Fine; Color Light Output 4,000 Lumen- 2,400 Lumen (economy) White Light Output 4,000 Lumen - 2,400 Lumen (economy) In accordance with ISO 21118:2013 Resolution Full HD 1080p, 1920 x 1080, 16:9 High Definition Full HD Aspect Ratio 16:9 Contrast Ratio 16,000 : 1 Light source Lamp Lamp UHE, 230 W, 6,500 h durability, 17,000 h durability (economy mode) Keystone Correction Auto vertical: ± 30 °, Manual horizontal ± 30 ° Colour Video Processing 10 Bits 2D Vertical Refresh Rate 100 Hz - 120 Hz Colour Reproduction Upto 1.07 billion colours	12	Nos	₹ 2,44,701	₹ 29,36,412
15	HBTMC/VIS/FA-3	Supply, Installation, Testing & Commissioning of Projection system ; 6,000-lumen brightness, Full HD WUXGA resolution, and a range of great features including HDBaseT and HDMI connectivity, screen-mirroring and lens shift. Projection System 3LCD Technology, RGB liquid crystal shutter LCD Panel 0.67 inch with D10 Resolution WUXGA, 1920 x 1200, 16:10 High Definition Full HD Aspect Ratio 16:10 Contrast Ratio 2,500,000 : 1 Light source Laser Laser Light source 20,000 hours Durability High, 30,000 hours Durability Eco Keystone Correction Manual vertical: ± 30 °, Manual horizontal ± 30° Colour Reproduction Upto 1.07 billion colours	6	Nos	₹ 6,17,817	₹ 37,06,902
16	HBTMC/VIS/FA-11	Supply, Installation, Testing & Commissioning of High Gain Fabric , Matte Finish 250-300" D Motorized Projector Screen	3	Nos	₹ 4,43,093	₹ 13,29,279
17	HBTMC/VIS/FA-9	Supply, Installation, Testing & Commissioning of High Gain Fabric , Matte Finish 150" D Motorized Projector Screen	12	Nos	₹ 1,48,357	₹ 17,80,284

18	HBTMC/VIS/FA-10	Supply, Installation, Testing & Commissioning of High Gain Fabric , Matte Finish 200" D Motorized Projector Screen	4	Nos	₹ 2,96,714	₹ 11,86,856
19	HBTMC/VIS/FA-5	Supply, Installation, Testing & Commissioning of Document Camera;Supply, Installation, Testing & Commissioning of Document Camera ; Pixels: 2MP (1920 x 1080 pixels) or better Camera Sensor: 1/2.7 inch CMOS Sensor ; Resolution: Up to Full HD (1080p) Zoom: 10x Digital Zoom, 12x Optical Zoom Weight: Approx 3.0kg	5	Nos	₹ 1,13,147	₹ 5,65,735
20	HBTMC/VIS/FA-6	Supply, Installation, Testing & Commissioning of Document Camera; Pixels: 2MP (1920 x 1080 pixels) Camera Sensor: 1/2.7 inch CMOS Sensor Resolution: Up to Full HD (1080p) Zoom: 8x Digital Zoom Weight: Approx 1.0kg	4	Nos	₹ 97,765	₹ 3,91,060
21	HBTMC/VIS/FA-46	Supplying, erecting, testing, commissioning of Fiber Optic Transmitter for HDMI, Audio, and RS-232 Fiber optic HDMI Extender	1	Nos	₹ 3,85,661	₹ 3,85,661
22	HBTMC/VIS/FA-47	Supplying, erecting, testing, commissioning of Configurable Eight Output Fiber Optic Distribution Amplifier	1	Nos	₹ 11,59,203	₹ 11,59,203
23	HBTMC/VIS/FA-46	Supplying, erecting, testing, commissioning of Fiber Optic Transmitter for HDMI, Audio, and RS-232 Fiber optic HDMI Extender	1	Nos	₹ 3,85,661	₹ 3,85,661
24	HBTMC/VIS/FA-47	Supplying, erecting, testing, commissioning of Configurable Eight Output Fiber Optic Distribution Amplifier	1	Nos	₹ 11,59,203	₹ 11,59,203
25	HBTMC/VIS/FA-47	Supplying, erecting, testing, commissioning of Configurable Eight Output Fiber Optic Distribution Amplifier	1	Nos	₹ 11,59,203	₹ 11,59,203
26	HBTMC/VIS/FA-32	Supply, Installation, Testing & Commissioning of Connectors XLR (External Line Return) with all accessories.	1	Nos	₹ 1,03,849	₹ 1,03,849
27	HBTMC/VIS/FA-33	Supply, Installation, Testing & Commissioning of AV RCA connectors.	1	Nos	₹ 1,08,795	₹ 1,08,795
28	HBTMC/VIS/FA-1	Supply, Installation, Testing & Commissioning of Projector ; 3,500 lumens and HD-ready WXGA resolution, Projection System 3LCD Technology LCD Panel 0.59 inch with D9 Color Light Output 3,500 Lumen- 2,900 Lumen (economy) In accordance with ISO 21118:2013 White Light Output 3,500 Lumen - 2,900 Lumen (economy) In accordance with ISO 21118:2013 Resolution WXGA, 1280 x 800, 16:10 High Definition HD ready Aspect Ratio 16:10 Contrast Ratio 14,000 : 1 Light source Lamp Lamp 250 W, 5,000 h durability, 10,000 h durability (economy mode), 9,000 h durability (economy mode) Keystone Correction Manual vertical: ± 3 °, Manual horizontal ± 3 ° Colour Video Processing 10 Bits 2D Vertical Refresh Rate 100 Hz - 120 Hz Colour Reproduction Upto 1.07 billion colours Throw Ratio 0.28 - 0.37:1 Zoom Digital, Factor: 1 - 1.35 Lens Optical Screen Size 60 inches - 100 inches Projection Distance Wide 0.4 m ( 60 inch screen) Projection Distance Tele 0.6 m ( 100 inch screen) Projection Lens F Number 1.6 Projection Lens Focal	4	Nos	₹ 3,10,917	₹ 12,43,668
29	HBTMC/VIS/FA-2	Supply, Installation, Testing & Commissioning of Projector; 3LCD Technology, RGB liquid crystal shutter LCD Panel 0.61 inch with C2 Fine; Color Light Output 4,000 Lumen- 2,400 Lumen (economy) White Light Output 4,000 Lumen - 2,400 Lumen (economy) In accordance with ISO 21118:2013 Resolution Full HD 1080p, 1920 x 1080, 16:9 High Definition Full HD Aspect Ratio 16:9 Contrast Ratio 16,000 : 1 Light source Lamp Lamp UHE, 230 W, 6,500 h durability, 17,000 h durability (economy mode) Keystone Correction Auto vertical: ± 30 °, Manual horizontal ± 30 ° Colour Video Processing 10 Bits 2D Vertical Refresh Rate 100 Hz - 120 Hz Colour Reproduction Upto 1.07 billion colours	18	Nos	₹ 2,44,701	₹ 44,04,618



30	HBTMC/VIS/FA-3	Supply, Installation, Testing & Commissioning of Projection system ; 6,000-lumen brightness, Full HD WUXGA resolution, and a range of great features including HDBaseT and HDMI connectivity, screen-mirroring and lens shift. Projection System 3LCD Technology, RGB liquid crystal shutter LCD Panel 0.67 inch with D10 Resolution WUXGA, 1920 x 1200, 16:10 High Definition Full HD Aspect Ratio 16:10 Contrast Ratio 2,500,000 : 1 Light source Laser Laser Light source 20,000 hours Durability High, 30,000 hours Durability Eco Keystone Correction Manual vertical: ± 30 °, Manual horizontal ± 30° Colour Reproduction Upto 1.07 billion colours	6	Nos	₹ 6,17,817	₹ 37,06,902
31	HBTMC/VIS/FA-9	Supply, Installation, Testing & Commissioning of High Gain Fabric , Matte Finish 150" D Motorized Projector Screen	18	Nos	₹ 1,48,357	₹ 26,70,426
32	HBTMC/VIS/FA-10	Supply, Installation, Testing & Commissioning of High Gain Fabric , Matte Finish 200" D Motorized Projector Screen	4	Nos	₹ 2,96,714	₹ 11,86,856
33	HBTMC/VIS/FA-20	Supply, Installation, Testing & Commissioning of Video Switcher ; Allows up to four HDMI A/V sources to be connected to two HDMI displays, HDCP 1.4 compatible, HDMI (3D, Audio Return Channel and Deep Color), Supports Dolby True HD and DTS HD Master Audio, Audio Return Channel (ARC) function – connect an HDMI cable to the ARC port to send audio from your source device to your audio/video receiver, OSD for system configuration setting and information display, Instant switching between HDMI input sources via front panel pushbuttons or through the RS-232 serial control port, Feature EDID Expert technology to set up different configurations via different EDID mode, Allows users to view the HDMI input source port /device for easy selection, Supports superior video quality – HDTV resolutions of 480p, 720p, 1080i, 1080p (1920x1080); up to WUXGA (1920 x 1200), Built-in bi-directional RS-232 serial control port for high-end system control *, Extra audio from HDMI input signal that supports both optical and coaxial digiron, with necessary false ceiling with adequate LED lights, blower/f	6	Nos	₹ 2,02,371	₹ 12,14,226
<b>TOTAL AMOUNT VISUAL PROJECTION WORKS (In Rs)</b>						<b>₹ 5,01,09,096</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072**

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR STAGE LIGHTING WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF STAGE LIGHTING C.S.M.C.</b>							<b>14,87,094.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Stage Lighting work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	74,354.70	Year	74,355.00
2	Fair Item	Year: 3rd (6% of csmc estimate)	1	Year	89,225.64	Year	89,226.00
3	Fair Item	Year: 4th (7% of csmc estimate)	1	Year	1,04,096.58	Year	1,04,097.00
4	Fair Item	Year: 5th (8% of csmc estimate)	1	Year	1,18,967.52	Year	1,18,968.00
5	L STAGE LIGHTING C.S.M.C.	Year: 6th (8% of csmc estimate)	1	Year	1,18,967.52	Year	1,18,968.00
<b>TOTAL</b>							<b>5,05,614.00</b>
<b>TOTAL, SAY RS.:</b>							<b>5,05,614.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**  
**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES STAGE LIGHTING WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	HBTMC/SL/FA-05	Supply, Installation, Testing & Commissioning of Dimmer : Dimmer pack for Profile spot	1	Nos	₹ 41,402	₹ 41,402
2	HBTMC/SL/FA-02	Supply, Installation, Testing & Commissioning of Light controller : 1024 dmx control, 2 opto isolated interface run 10 scenes, control 96 intelligent light small Avo light type controller	1	Nos	₹ 1,69,918	₹ 1,69,918
3	HBTMC/SL/FA-04	Supply, Installation, Testing & Commissioning of Profile 575 : 700 watts 26 degree	3	Nos	₹ 58,849	₹ 1,76,547
4	HBTMC/SL/FA-01	Supply, Installation, Testing & Commissioning of Warm light : 3x54 watts LED white PAR	24	Nos	₹ 38,445	₹ 9,22,680
5	HBTMC/SL/FA-04	Supply, Installation, Testing & Commissioning of Profile 575 : 700 watts 26 degree	3	Nos	₹ 58,849	₹ 1,76,547
	<b>HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)</b>	<b>TOTAL AMOUNT STAGE LIGHTING WORKS (In Rs)</b>				<b>₹ 14,87,094</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELECTRICAL WORK -- RESIDENTIAL BUILDING</b>							
<b>ESTIMATE OF ELECTRICAL C.S.M.C.</b>							<b>1,42,52,538.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Electrical work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	7,12,626.90	Year	7,12,627.00
2	Fair Item	Year: 3rd (6% of csmc estimate)	1	Year	8,55,152.28	Year	8,55,153.00
3	Fair Item	Year: 4th (7% of csmc estimate)	1	Year	9,97,677.66	Year	9,97,678.00
4	Fair Item	Year: 5th (8% of csmc estimate)	1	Year	11,40,203.04	Year	11,40,204.00
5	L STAGE LIGHTING C.S.M.C.	Year: 6th (8% of csmc estimate)	1	Year	11,40,203.04	Year	11,40,204.00
<b>TOTAL</b>							<b>48,45,866.00</b>
<b>TOTAL, SAY RS.:</b>							<b>48,45,866.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**  
**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**BILL OF QUANTITIES HT & LT ELECTRICAL WORKS - RESIDENTIAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	R2-ME-15-30-e	Supplying and erecting D.C.P. type Fire Extinguisher 6 kg capacity cartridge type with Gun Metal cap 150 gram CO2 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.	20.00	Nos	₹ 2,645.00	₹ 52,900
2	R2-ME-5-15-a	Fluorescent emergency light fitting with 1 No. 1 feet (30cms.) single tube 9 / 11 W with M.F. SLA rechargeable battery with 3 hrs of back up.	40.00	Nos	₹ 1,332.00	₹ 53,280
3	R2-ME-15-29-a	SITC of Auto glow signage for Emergency Fire Exit	60.00	Nos	₹ 814.00	₹ 48,840
4	R2-ME-15-29-b	SITC of Auto glow signage for Staircase direction	60.00	Nos	₹ 814.00	₹ 48,840
5	HOSPITAL STAGE LIGHTING C.S.M.C (2-6YR)	SITC of Auto glow signage for Do not use lift in case of Fire etc.	60.00	Nos	₹ 1,085.00	₹ 65,100
6	BAH-ELEC-FA-21	SITC of LIGHTING & POWER PANEL As per SLD	1.00	Nos	₹ 3,50,000.00	₹ 3,50,000
		NON DG PANEL 3rd QUADRANT Panel comprising of 400 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 400 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 02 nos. of 250A, TP MCCB, 11 nos of 80A, TPN MCB, 03 no. of 63A, TPN MCCB, as outgoing.				
7	BAH-ELEC-FA-26	SITC of LIFT PANEL As per SLD	1.00	Nos	₹ 2,10,000.00	₹ 2,10,000
		LIFT Panel comprising of 320 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 320 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 04 nos of 100A TPN MCB, 01 no. of 63A, TPN MCB, 01 no. of 40A, TPN MCB, 05 no. of 32A, TPN MCB, 03 no. of 20A, TPN MCB as outgoing.				
8	BAH-ELEC-FA-28	SITC of MAIN STAFF QUARTER BUILDING As per SLD	1.00	Nos	₹ 7,50,000.00	₹ 7,50,000
		MAIN STAFF QUARTER BUILDING Panel comprising of 400 amps, 35KA, TPN, MCCB with voltmeter & ammeter as incomer with 400 amps 4 pole (35 KA for 1 sec.) , 415V, 50Hz, AC, AL bus bars. Panel shall have 41 nos. of 40A, DP MCB, With KWH meter Including Indication Lamps as outgoing.				
9	RBH18-ELEC-FA-28	Supplying,erecting & making 500A FP MCCB,35KA+TVSS BOX with 1.6 mm thick CRCA sheet steel enclosure of approved make design.	1.00	Nos	₹ 1,32,559.00	₹ 1,32,559
10	RBH18-ELEC-FA-29	Supplying,erecting & making 250A FP MCCB,35KA+TVSS BOX with 1.6 mm thick CRCA sheet steel enclosure of approved make design.	1.00	Nos	₹ 1,06,403.32	₹ 1,06,403
11	RBH18-ELEC-FA-31	Supplying,erecting & making 100A FP MCCB,25KA+TVSS BOX with 1.6 mm thick CRCA sheet steel enclosure of approved make design.	1.00	Nos	₹ 71,518.64	₹ 71,519



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
19	BAH-ELEC-FA-59	Supply, Installation testing and commissioning of 6 digit lightning strike counter.	1.00	Nos	₹ 7,300.00	₹ 7,300
20	R2-ME-4-11-f	Inverter of 10KVA, single phase input and output with Tubular Battery(12X10) 200 AH Duration 4 Hrs.	1.00	Nos	₹ 3,50,137.00	₹ 3,50,137
<b>DG SET</b>						
21	R2-ME-6-17-o	250kVA DG Set	1.00	Nos	₹ 19,04,666.00	₹ 19,04,666
22	R2-ME-6-18-p	250kVA	1.00	Nos	₹ 2,07,560.00	₹ 2,07,560
<b>TOTAL AMOUNT HT &amp; LT ELECTRICAL WORKS (In Rs.)</b>						<b>₹ 1,42,52,537.52</b>

Say

1,42,52,538.00

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELEVATOR WORK -- RESIDENTIAL BUILDING</b>							
<b>ESTIMATE OF ELEVATOR C.S.M.C.</b>							<b>2,76,87,588.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	Fair Item	Comprehensive service and maintenance contract of Elevator work per annum for period of next five years after expiry of free guarantee period of 3 year inclusive of all spares and consumables. Year:4th (5% of csmc estimate)	1	Year	13,84,379.40	Year	13,84,380.00
2	Fair Item	Year: 5th(6% of csmc estimate)	1	Year	16,61,255.28	Year	16,61,256.00
3	Fair Item	Year: 6th (7% of csmc estimate)	1	Year	19,38,131.16	Year	19,38,132.00
4	Fair Item	Year: 7th (8% of csmc estimate)	1	Year	22,15,007.04	Year	22,15,008.00
5	L STAGE LIGHTING C.S.M.C.	Year: 8th (8% of csmc estimate)	1	Year	22,15,007.04	Year	22,15,008.00
<b>TOTAL</b>							<b>94,13,784.00</b>
<b>TOTAL, SAY RS.:</b>							<b>94,13,784.00</b>



**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES ELEVATOR WORKS - RESIDENTIAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	Fair Item	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> <li>· Rated capacity :- 16 Passenger/1088Kg</li> <li>· Floors :- G+7 floor (8 Stops/8 Landings)</li> <li>· Travel :- 21 to 29.4 mtrs</li> <li>· Location of Lift Machine:- MR/MRL</li> <li>· Rated speed :- 1.5mps VS</li> <li>· Car/Landing door clear opening of 1000mm wide x 2000 mm high</li> <li>· Clear Car size of .....mm wide x .....mm deep x 2250mm high</li> <li>· Lift shaft available having clear size of .....mm wide x .....mm deep,.....mm Pit depth, .....mm Overhead.</li> <li>· Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory).</li> <li>· Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation &amp; SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge.</li> <li>· COP with SS face plate having metallic push buttons with Braille code &amp; luminous indicator around button with FPI, scrolling UP/DN LED indicator &amp; with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi &amp; English with intercom system with telephone instrument in Lift car, LMR &amp; FCC/ground floor.</li> <li>· LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code &amp; luminous indicator around button with CPI, Lift car arrival &amp; next travel direction audio-visual indication at all landings.</li> <li>· Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary Protections</li> </ul>	6.00	Nos	₹ 27,83,302	1,66,99,812.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
2	Fair Item	For Lift having 900mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	72.00	Floors	₹ 1,52,608	1,09,87,776.00
<b>TOTAL AMOUNT ELEVATORS (In Rs)</b>						<b>2,76,87,588.00</b>

PITAL STAGE LIGHTING C.S.M.C (2-6YR)

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072**

**CSMC SUMMARY - ELV SYSTEM HOSPITAL+ RESIDENTIAL BUILDING**

<b>Sr. No.</b>	<b>Description</b>	<b>Amount</b>
<b>1</b>	<b>HOSPITAL ELV CSMC</b>	<b>₹ 2,86,73,298</b>
<b>2</b>	<b>RESIDENTIAL ELV CSMC</b>	<b>₹ 32,84,569</b>
	<b>TOTAL</b>	<b>₹ 3,19,57,867.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELV WORK -- HOSPITAL BUILDING</b>							
<b>ESTIMATE OF ELV C.S.M.C.</b>							<b>8,43,33,230.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of ELV WORK per annum for period of next five years after expiry of free guarantee period of 2 year inclusive of all spares and consumables. Year: 3rd (5% of csmc estimate)	1	Year	42,16,661.50	Year	42,16,661.50
2	FAIR ITEM	Year: 4th (6% of csmc estimate)	1	Year	50,59,993.80	Year	50,59,993.80
3	FAIR ITEM	Year: 5th (7% of csmc estimate)	1	Year	59,03,326.10	Year	59,03,326.10
4	FAIR ITEM	Year: 6th (8% of csmc estimate)	1	Year	67,46,658.40	Year	67,46,658.40
5	FAIR ITEM	Year: 7th (8% of csmc estimate)	1	Year	67,46,658.40	Year	67,46,658.40
<b>TOTAL</b>							<b>2,86,73,298.20</b>
<b>TOTAL, SAY RS.:</b>							<b>2,86,73,298.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS  
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072**

**BILL OF QUANTITIES - ELV SYSTEM HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
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**BILL OF QUANTITIES FIRE ALAM SYSTEM**

1	BAH-FAS-FA-01	S/I/T/C of Microprocessor based networkable addressable type fire alarm control panel with display. The panel should be equipped with 8 installed loops each loop having a capacity of connecting a minimum of 125 addressable detectors and 125 addressable modules or a mix of up to 250 detectors and devices in any combination in any single loop, the panel shall be networkable, with each loop having a capacity of connecting a minimum of 125 addressable detectors and 125 addressable modules or a mix of up to 250 detectors and devices in any combination in any single loop, operating at 240 volts AC power supply, and equipped with automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working. The panel shall be supplied with all accessories, control modules and power supplies in the required quantities as per site requirements for all types of field devices to make the system fully operational. The panel shall be UL / VDS/ EN Approved. Interconnecting of multiple panels shall be possible via hardware interfaces and software. A copper supporting interface shall be supplied by default. 10 Loop Fire Alarm Panel. including fire fighting telephone compartment	1.00	Nos	₹ 10,97,400	₹ 10,97,400
2	BAH-FAS-FA-02	S/I/T/C of UL Listed Fire Command Station including Graphical User Interface Software. The GUI based main network software shall be capable of graphically representing each node being monitored with floor plans and icons depicting the actual locations of the various systems; and / or sensors' locations. The GUI software shall be located in control room and shall monitor all the blocks panel connected with each other. The Graphic workstation (Core i7, 8GB RAM, 1 TB HDD and 4GB Graphics Card) shall act as an independent node communicating on the peer to peer true peer to peer network and shall not be dependent on the Fire Panel CPU for operation (failure of any CPU shall not result in failure of Graphic Workstation). Graphical workstation will be with 42" professional display.	1.00	Nos	₹ 9,50,000	₹ 9,50,000
3	BAH-FAS-FA-03	S/I/T/C of Network / RS-485 Card for Networking of multiple panels /Repeater panels.	4.00	Nos	₹ 34,256	₹ 1,37,024
4	BAH-FAS-FA-04	S/I/T/C of UL Listed and FM Approved Network Repeater Panel with 600 character LCD shall display and all events / detectors, devices status of complete systems in the network.	3.00	Nos	₹ 2,34,570	₹ 7,03,710
5	BAH-FAS-FA-08	S/I/T/C of UL Listed Addressable Beam Detector (transmitter & receiver) housing, and all other accessories, complete with Cable lugs at Ends, cable compression glands, cable tags and Ferruling. Conventional beam detector with monitor modules are not acceptable.	2.00	Nos	₹ 42,358	₹ 84,716
6	BAH-FAS-FA-09	S/I/T/C of Power Supply with built in battery charger, 24 VDC, 2A (excluding Battery)	4.00	Nos	₹ 5,862	₹ 23,448
7	BAH-FAS-FA-10	S/I/T/C of UL Listed and FM Approved Addressable type isolator modules for isolating shorted, dewired and loose circuits between two successive fault isolators with automatic resetting arrangement.	120.00	Nos	₹ 3,155	₹ 3,78,600
8	BAH-FAS-FA-12	S/I/T/C of UL Listed and FM Approved integrated sounder+strobe with 110 cd, inclusive of control modules with Built in isolator ( if not having quote Separate Isolator module of equal Qty.) The strobes shall be capable of being synchronized for better evacuation.	64.00	Nos	₹ 11,248	₹ 7,19,872
9	BAH-FAS-FA-16	S/I/T/C of UL Listed Fire Fighters Telephone Receiver as per all requirements of contracts works.	5.00	Nos	₹ 10,992	₹ 54,960

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
10	BAH-FAS-FA-17	S/I/T/C of of EN Listed / VDS Approved Single Channel Advanced dual Wavelength optical detection (Blue & Infra-red) based Aspiration Detection Unit with area coverage of 8600 Sq. Feet with sensitivity ranging from 0.05 - 20% obs/m along with programmable Purge functionality The front panel display includes an easy to read smoke density and airflow level bar graph alarm fault status and dust indicator Detector ambient shall be 20 to 60 C along with 4 relay output.	2.00	Nos	₹ 3,85,125	₹ 7,70,250
11	BAH-FAS-FA-18	S/I/T/C of Flush Capillary Sampling Point (Union and adaptor, 1.5m Capillary Tube & Sampling Point)	60.00	Nos	₹ 1,346	₹ 80,760
12	BAH-FAS-FA-21	S/I/T/C of Conventional Sounder Cum strobe low profile 95 db	10.00	Nos	₹ 3,500	₹ 35,000
<b>TOTAL AMOUNT FIRE ALARM SYSTEM (In Rs.)</b>						<b>₹ 50,35,740</b>

**BILL OF QUANTITIES PUBLIC ADDRESS SYSTEM**

13	BAH-PAS-FA-24	S/I/T/C of Network Controller for Public Address System consisting of Central Digital Signal Processor module, 2 x 16-character LCD Display, 8 <b>zone</b> Supervised Control Inputs and 4 Audio Inputs, Web server and Ethernet Interface for Configuration and Diagnostics & Logging functions, Digital message storage capable of storing at least up to last 200 faults messages, RS232 Interface for logging, OFC Network Interface capability and PC Interface and an optional interface for Fire Alarm signal. It will support essential capabilities such as - pre-programmed emergency messages, background music & configurable multiple zones as per EN60849 or equivalent internationally accepted standards as per tender specifications. Important availability features will include loudspeaker line monitoring and loudspeaker monitoring without requiring any additional cabling for every loudspeaker installed. (For Indoor Speaker with considering of Room)	5.00	Nos	₹ 3,88,902	₹ 19,44,510
14	BAH-PAS-FA-25	S/I/T/C of Class D Power Amplifier - 500 watts for the amplification of audio signals for speakers. The amplifier shall support only 2 zones each of 250 watts. It shall be possible to select output voltages of 100 V, 70 V or 50 V, The power amplifier will have a 2 x 16-character display for status display and must be usable free-standing (tabletop) or in a 19" rack mounting arrangement.	12.00	Nos	₹ 2,21,309	₹ 26,55,708
15	BAH-PAS-FA-26	S/I/T/C of digital paging microphone capable of supporting upto 6 zones, inclusive of provision to announce over background music and a press-to-talk key, It should have an Analog-to-digital audio conversion circuit within the call station and a digital signal processor, which can be used for audio processing.	1.00	Nos	₹ 99,980	₹ 99,980
16	BAH-PAS-FA-30	S/I/T/C of Horn type Loud Speakers(20 watt water proof), covering wide range of frequencies in outdoor harsh environments. Effective frequency range: (70 Hz to 16500 Hz).	4.00	Nos	₹ 13,718	₹ 54,872
17	BAH-PAS-FA-31	S/I/T/C of External background music source & accessories- DVD/Tuner/MP3	1.00	Nos	₹ 8,688	₹ 8,688
18	BAH-PAS-FA-33	S/I/T/C of Web based Software Application for System Configuration, Management & Diagnostics Including Latest version Server Deskstop and required Accessories	1.00	Nos	₹ 2,25,000	₹ 2,25,000
<b>TOTAL AMOUNT PUBLIC ADDRESS SYSTEM (In RS)</b>						<b>₹ 49,88,758</b>

**BILL OF QUANTITIES CCTV SYSTEM**

19	BAH-CCTV-FA-37	S/I/T/C of 4MP IP IR Dome Cameras, 1/3 CMOS sensor, Motorized Vari Focal 2.8 to 12 mm lens at frame rates 20fps or better, H.264 High Profile/JPEG, True Day/Night, ONVIF profile S compliant, Power on Ethernet (PoE) based.	57.00	Nos	₹ 45,000	₹ 25,65,000
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SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
20	BAH-CCTV-FA-38	S/I/T/C of 4MP IP IR Bullet Camera 1/3 CMOS sensor, Motorized Vari Focal 2.8 to 12 mm lens at frame rates 20-30 fps or better, H.264 High Profile/JPEG, True Day/Night, ONVIF profile S compliant, Power on Ethernet (PoE) based, IK10 Vandal Proof and IP 66 Ingrass Protection Level	4.00	Nos	₹ 55,000	₹ 2,20,000
21	BAH-CCTV-FA-39	S/I/T/C of 2MP IP IR Cameras, Outdoor PTZ, 1/1.9 CMOS sensor with 30x optical zoom or better, minimum resolution 2MP (1920X1080) or better, high speed dome, 350 degrees full rotation, complete with IK10/Equivalent rated vandal resistant weatherproof housing IP66, PoE+ Input Voltage or optional AC/DC supply, supporting True Day/Night operation, ONVIF Profile S compliant, supporting H.264 High Profile feature with pole mounted stand as per technical specification etc. as required.	4.00	Nos	₹ 2,25,000	₹ 9,00,000
22	BAH-CCTV-FA-41	S/I/T/C of Server(s) required for the VMS - Industry standard Intel based platform, rack mounted, redundancy architecture for critical hardware components, licensed Microsoft Server Operating system and requisite user licenses, licensed application suites, Quad Core Intel® Xeon® 5150 processors, 2.66 GHz with Latest Generation, 4 MB Cache, 1333 MHz FSB or better, 8 GB of RAM, 2 x 500 GB of SSDs, minimum 4 additional hard disk drive bays for expansion, 1360 * 768 video resolution, 2 * 10/100/1000 Ethernet Network Interface Card, RAID support built-in and pre-installed DVD-R/W Drive and Appropriate Licensed Operating Systems. as per the technical specifications. (For 300 Cameras or Upgradable )	1.00	Nos	₹ 9,34,570	₹ 9,34,570
23	BAH-CCTV-FA-42	S/I/T/C of Client PC - Industry standard Intel based platform computer system. Intel Core i7 2600 @ 3.4 GHz with Latest Generation, 8 GB of RAM DDR4 ,1 TB SSD for OS and VMS applications, NVidia GTX 570 or DirectX VA 2.0 compatible card with 1 GB of RAM , 1600 x 1200 or higher screen resolution, 1000Mbps Ethernet Network Interface Card ,16x DVD+/- RW Drive alongwith appropriate licenced Operating Systemwith Antivirus, licenced applications suites from OEM and application licences as per the technical specifications.	1.00	Nos	₹ 2,06,677	₹ 2,06,677
24	BAH-CCTV-FA-43	S/I/T/C of Network RAID 0 TO 10 WITH TCP/IP/E-SATA SSD Storage required with a capacity to store the content for up to 300 cameras for 24Hrs x30days at 25-30 fps and 1080p. It should be scalable (should have sufficient expansion bays for HDDs) . Vendor shall submit bandwidth and storage calculator for the proposed camera models as per technical specification etc. as required.	1.00	Nos	₹ 27,43,500	₹ 27,43,500
<b>TOTAL AMOUNT CCTV SYSTEM (In RS)</b>						<b>₹ 75,69,747</b>

**BILL OF QUANTITIES ACCESS CONTROL SYSTEM**

25	BAH-ACS-FA-48	S/I/T/C of Application Server Platform with no user restriction; 1000 Users license of Time Attendance cum Access Control which can be expandable as per customer requirement, support 25000 users.	1.00	Nos	₹ 1,15,794	₹ 1,15,794
26	BAH-ACS-FA-49	S/I/T/C of 1000 User Access Control License. Comprehensive Access Control Management. Perpetual Cost for Time, User & Zone Based Access Control, Access Zones, Access Modes & Access Levels. Advanced Access Control features like 2-Person Rule, First-in User Rule, Anti-pass Back, Guard Tour, Duress Detection & More. Various Reports Generation.	1.00	Nos	₹ 34,570	₹ 34,570
27	BAH-ACS-FA-50	S/I/T/C of 1000 User Time Attendance License. Should support multiple shift, different report like monthly, daily, etc.	1.00	Nos	₹ 59,120	₹ 59,120
28	BAH-ACS-FA-51	S/I/T/C of Access Control Panel for Multiple Door Controllers, Ethernet, RS-485,USB, Aux Input & Output Port, Shall work as Standalone / Network Mode.	1.00	Nos	₹ 11,448	₹ 11,448

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
29	BAH-ACS-FA-52	S/I/T/C of Fingerprint and EM Proximity Card Based Door Controller, IP65 Rating, 50,000 Events and 9,600 Fingerprint Template Storage, Built-in PoE, Built-in Door Lock / Door Sense / Exit Reader / Exit Switch Ports, RS-485 and Ethernet Interfaces. Tri-color LED & Buzzer.	40.00	Nos	₹ 23,777	₹ 9,51,080
30	BAH-ACS-FA-54	S/I/T/C of EM Magnetic Lock 600 LBS with Door Sense, Mounting Clamp.	40.00	Nos	₹ 3,841	₹ 1,53,640
31	BAH-ACS-FA-56	S/I/T/C of Access Control Solution : Supply, Installation, Testing & Commissioning of Access Control Access System Monitoring Hardware Central Work Station Server with i5 10th Gen. Intel processor with minimum 1TB SSD, 8 GB RAM, 21" LED Monitor, DVD Writer, two serial and one parallel ports, multimedia speakers, infrared mouse; Work station shall be preloaded with requisite MS Windows Licensed software with Antivirus compatible with the Access Control platform	1.00	Nos	₹ 1,15,227	₹ 1,15,227
<b>TOTAL AMOUNT ACCESS CONTROL SYSTEM (In RS)</b>						<b>₹ 14,40,879</b>

<b>BILL OF QUANTITIES DATA VOICE NETWORKING SYSTEM</b>						
		<b>Note :- Cat6 UTP Cable for Data, Voice, Access Point &amp; CCTV &amp; BMS from each workstation / field location to the Network Distribution</b>				
32	BAH-DVNET-FA-158	S/I/T/C of UTP CAT6 Gigabit Loaded Patch Panel of 24 ports for Data, Voice, Access Control & CCTV & DVNET	122	Nos	₹ 4,800	₹ 5,85,600
33	BAH-DVNET-FA-163	S/I/T/C of 19" Rack Mounted LIU for optical splicing/termination of 12 core single mode fiber optic cable as per design specifications. It shall be complete with adaptor panels, adaptors, splice trays and Pigtails for using LC type termination. Masking/blanking/dustcover for unused/unmounted adaptor ports, inclusive of all mechanical accessories.	16	Nos	₹ 8,963	₹ 1,43,408
34	BAH-DVNET-FA-165	S/I/T/C of Splicing / Termination of Fiber Optic Fiber Cable Cores using Fusion splicing with pre-terminated LC pigtails, dressing and proper fixing into rolosplice trays.	192	Nos	₹ 366	₹ 70,272
35	BAH-DVNET-FA-169	Supply Installation Commissioning and Testing of Fully Unified Communication EPABX System , Complete Converge with Voice, Data & Video, 01 PRI Card 08 Digital, 08 Trunks/ Co Lines, 64 Channel VOIP/SIP GATEWAY, 650 Analogue extensions,10 IP Extension, 50 IP Soft Client for PC and Mobile, Digital Console Rack Mountable Kit In Built Features: Auto Attendend(Voice Response System) Audio Conference Least Call Routing.	2	Nos	₹ 20,75,000	₹ 41,50,000
36	BAH-DVNET-FA-171	S/I/T/C of IP Phone with 4 line Display with 32 Expansion Key.	20	Nos	₹ 25,564	₹ 5,11,280
37	BAH-DVNET-FA-172	S/I/T/C of User Call Control Application for all users/extensions.	2	SET	₹ 1,66,648	₹ 3,33,296
38	BAH-DVNET-FA-173	S/I/T/C of push button type telephone instrument having speaker phone Caller ID & hands free dialling system & 30 memories with display system (a) Single line	1,278	Nos	₹ 750	₹ 9,58,500
39	BAH-DVNET-FA-176	S/I/T/C of Unified Messaging, integration of e-mail system, fax and voice messaging for 50 User.	1	Nos	₹ 1,00,860	₹ 1,00,860
40	BAH-DVNET-FA-177	S/I/T/C of Redundant CPU / Processor Card for EPBX System	1	Nos	₹ 62,500	₹ 62,500
41	BAH-DVNET-FA-178	S/I/T/C of Redundant Power Supply Card for EPBX System	1	Nos	₹ 82,340	₹ 82,340



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
42	BAH-DVNET-FA-179	S/I/T/C of Switch: 16 SFP+ Port, Stackable L3 Core Managed Enterprise Switch with Redundant and Hot-Swappable Power Supply. 16GB or Higher Flash Memory; 16GB or Higher DRAM, 480Gbps or Higher switching capacity; 360 Gbps or higher Stacking Bandwidth; The switch should support StackPower Technology or Similar, 4K VLAN ID; 360 Mpps or higher forwarding rate; The switch should support various routing protocols like Static / RIP V1 & V2 / RIPng / EIGRP / OSPF. The switch should support standard protocols: IEEE 802.1D STP, IEEE 802.1p CoS Prioritization; IEEE 802.1ab (LLDP); IEEE 802.3 10Base-T; IEEE802.3U 100Base-Tx, IEEE 802.3ab 1000Base-T; IEEE 802.3ae 10GbE, IEEE 802.3z 1000 Base-X; IEEE 802.3x Full Duplex Mode; SNMP v1, V2c and V3; UL, EN; IEC; EMC; CE, FCC, RoHS. The Switch should be supplied with required Stack Modules, Stack Cables etc. Detailed specifications as per specification sheet.	2	Nos	₹ 17,56,230	₹ 35,12,460

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
43	BAH-DVNET-FA-180	S/I/T/C of Distribution Enterprise Network Switch: 24 x 10/100/1000 Mbps, Managed Switch. Virtual Stack Capability; 2GB or Higher DRAM and 4GB or higher Flash, 128Gbps or Higher switching bandwidth; 1024 VLAN ID; 190 Mpps or higher forwarding rate; The switch should support Digital Network Architecture and SD Access. The switch should support routing protocols like static routing, RIPv1, RIPv2, OSPF, EIGRP, IS-ISv4, IPv6 Routing etc from day one. Safety Standards like UL; EN; IEC;EMC; RoHS. Detailed specifications as per Specification Sheet.	1	Nos	₹ 10,42,479	₹ 10,42,479
44	BAH-DVNET-FA-181	S/I/T/C of Access PoE Network Switch: 24 Port10/100/1000 Base-T PoE with 2 Port 10G SFP+ L2 Managed Enterprise Switch. PoE budget 370W or higher, FlexStack-Plus Capability; 4MB or Higher DRAM,128Gbps full duplex or Higher switching bandwidth; 4K VLAN ID; 95 Mpps or higher forwarding rate; The switch should support standard proocol: IEEE 802.1D STP, IEEE 802.1p CoS Prioritization; 1000Base-T; IEEE 802.3z 1000 Base-X; IEEE 802.3x Full Duplex on 10/100/1000 Base-T Ports; SNMP v1, V2c and V3; Safety Standards like UL; EN; IEC;EMC; RoHS. Detailed specifications as per Specification Sheet.	60	Nos	₹ 2,75,000	₹ 1,65,00,000
45	BAH-DVNET-FA-182	S/I/T/C of Access Network Switch: 24 Port10/100/1000 Base-T PoE with 2 Port 10G SFP+ L2 Managed Enterprise Switch. PoE budget 370W or higher, FlexStack-Plus Capability; 4MB or Higher DRAM,128Gbps full duplex or Higher switching bandwidth; 4K VLAN ID; 95 Mpps or higher forwarding rate; The switch should support standard proocol: IEEE 802.1D STP, IEEE 802.1p CoS Prioritization; 1000Base-T; IEEE 802.3z 1000 Base-X; IEEE 802.3x Full Duplex on 10/100/1000 Base-T Ports; SNMP v1, V2c and V3; Safety Standards like UL; EN; IEC;EMC; RoHS. Detailed specifications as per Specification Sheet.	65	Nos	₹ 2,49,000	₹ 1,61,85,000
46	BAH-DVNET-FA-183	S/I/T/C of 10G Base SFP+ singlemode Transceiver for L2/L3 switch, Single mode, LC termination supporting distance upto 2000 Mtrs SFP+ Module should be same make of Switch.	47	Nos	₹ 49,804	₹ 23,40,788
47	BAH-DVNET-FA-184	S/I/T/C of Wi-Fi access point with 3x3 MIMO, 2 Spatial Streams as per IEEE 802.11a/b/g/n/ac, should support throughput of 300Mbps on 802.11a/b/g/n and upto 1.2 Gbps on 802.11ac and PoE as per IEEE 802.3a/f.	65	Nos	₹ 48,760	₹ 31,69,400
48	BAH-DVNET-FA-185	S/I/T/C of Wireless Controller System, including Hardware Based Controller, capable of supporting min. 150 access points from Day one, inclusive of licence cost for 150 access points. Controller should have minimum 2 * 1Gbic or 10 Gbic Port;capable of intrusion prevention system, application visibility control and should support High Availability. Should expandable upto 1000 Access Points.	1	Nos	₹ 24,56,000	₹ 24,56,000
49	BAH-DVNET-FA-187	S/I/T/C of Network Unified Threat Management (Firewall with Active – Active HA)	1	Nos	₹ 42,50,000	₹ 42,50,000
50	BAH-DVNET-FA-191	S/I/T/C of Server Room Security consists of Sensors like Water Leakage, Temperature, Humidity, Smoke etc with alarm through Message and Mail Alerts to minimum of three persons.	1	Nos	₹ 4,25,243	₹ 4,25,243
<b>TOTAL AMOUNT DATA, VOICE NETWORKING SYSTEM (Rs)</b>						<b>₹ 5,68,79,426</b>

**BILL OF QUANTITIES PASSIVE SECURITY SYSTEM**

51	BAH-PSS-FA-60	S/I/T/C of Walk-Through Metal Detector, panel version, complete with dual-beam photocells transit counter, four multi zones display bars programmable as pacing lights , localization zones with left and right indication, Random Alarm capability, low voltage DC power, Chip-Card programming, RS-232 communication, anti-tamper on/off switch and as specified in tender specs	4.00	Nos	₹ 4,50,000	₹ 18,00,000
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SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
52	BAH-PSS-FA-61	S/I/T/C of Digital Hand Held Metal Detector (HHMD), indoor and outdoor use, very long battery life, fully programmable through USB interface, fully programmable optical alarm signaling (continuous or proportional), fully programmable acoustical alarm signaling (continuous or proportional), alarm vibration, complete with: - docking station and external power supply adapter,- 2 rechargeable batteries AA NiMH 1.2V 2500mAh	4.00	Nos	₹ 35,000	₹ 1,40,000
53	BAH-PSS-FA-62	S/I/T/C of X-ray Baggage Scanner with minimum tunnel dimensions of 1000mm X 650 mm, input-output rollers & frame, Stabilizer with isolation transformer and a 19" CRT monitor & operation key board in a console cabinet with lockable housing. The system should be networkable type supplied with combined test piece as specified in tender specifications etc required for complete functionality of the system	2.00	Nos	₹ 23,69,340	₹ 47,38,680
54	BAH-PSS-FA-63	S/I/T/C of Network Supervisory workstation along with all necessary softwares including image management software and TIP with monitoring of images as specified in the tender specifications	2.00	Nos	₹ 1,25,000	₹ 2,50,000
55	BAH-PSS-FA-64	S/I/T/C of Ladies Frisking Booth, Highly durable & Sturdy design with all the material as required (Size - 1200 MM X 900 MM)	2.00	Nos	₹ 45,000	₹ 90,000
56	BAH-PSS-FA-65	S/I/T/C of Boom Barrier: Automatic Traffic Motorised Vehicle Barrier complete with Control Unit and integrated Two channel Loop Detector along with photocell and Boom of 6 Meters length with 1.3 Sec Opening/ Closing time and with Maximum Power Consumption of 95 Watts, Base frame: Powder-coated stainless steel, Housing design: Powder-coated aluminium, Protection class: IP54, Specified number of cycles: 10 Million	2.00	Nos	₹ 3,90,000	₹ 7,80,000
57	BAH-PSS-FA-66	S/I/T/C of Boom Barrier: Automatic Traffic Motorised Vehicle Barrier complete with Control Unit and integrated Two channel Loop Detector along with photocell and Boom of 4 Meters length with 1.3 Sec Opening/ Closing time and with Maximum Power Consumption of 95 Watts, Base frame: Powder-coated stainless steel, Housing design: Powder-coated aluminium, Protection class: IP54, Specified number of cycles: 10 Million	2.00	Nos	₹ 3,10,000	₹ 6,20,000
<b>TOTAL AMOUNT PASSIVE SECURITY SYSTEM (In RS)</b>						<b>₹ 84,18,680</b>
<b>TOTAL AMOUNT ELV SYSTEM FOR HOSPITAL BUILDING (In RS)</b>						<b>₹ 8,43,33,230</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072

<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR ELV WORK -- RESIDENTIAL BUILDING</b>							
<b>ESTIMATE OF ELV C.S.M.C.</b>							<b>96,60,496.00</b>
<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of ELV WORK per annum for period of next five years after expiry of free guarantee period of 2 year inclusive of all spares and consumables. Year: 3rd (5% of csmc estimate)	1	Year	4,83,024.80	Year	4,83,024.80
2	FAIR ITEM	Year: 4th (6% of csmc estimate)	1	Year	5,79,629.76	Year	5,79,629.76
3	FAIR ITEM	Year: 5th (7% of csmc estimate)	1	Year	6,76,234.72	Year	6,76,234.72
4	FAIR ITEM	Year: 6th (8% of csmc estimate)	1	Year	7,72,839.68	Year	7,72,839.68
5	FAIR ITEM	Year: 7th (8% of csmc estimate)	1	Year	7,72,839.68	Year	7,72,839.68
<b>TOTAL</b>							<b>32,84,568.64</b>
<b>TOTAL, SAY RS.:</b>							<b>32,84,569.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS  
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla - 400072**

**BILL OF QUANTITIES - ELV SYSTEM RESIDNETIAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
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**BILL OF QUANTITIES - FIRE ALARM SYSTEM**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
	R2-ME-15-32	<b>Addressable Fire Alarm System (Residential Building)</b>				
1	R2-ME-15-32-a	Supply, Installation, testing & commissioning of addressable 2 loop main fire alarm electronic control panel, expendable upto 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.	1.00	Nos	₹ 1,78,313	₹ 1,78,313
2	BAH-FAS-FA-10	S/I/T/C of UL Listed and FM Approved Addressable type isolator modules for isolating shorted, dewired and loose circuits between two successive fault isolators with automatic resetting arrangement.	10.00	Nos	₹ 3,155	₹ 31,550
3	BAH-FAS-FA-13	S/I/T/C of UL Listed and FM Approved Addressable Monitor Module with Built in isolator for hardware integration with 3rd party devices.	55.00	Nos	₹ 5,179	₹ 2,84,845
4	BAH-FAS-FA-14	S/I/T/C of UL Listed and FM Approved Addressable Control Module with Built in isolator for hardware integration with 3rd party devices.	70.00	Nos	₹ 5,179	₹ 3,62,530
5	BAH-FAS-FA-16	S/I/T/C of UL Listed Fire Fighters Telephone Receiver as per all requirements of contracts works.	2.00	Nos	₹ 10,992	₹ 21,984
<b>TOTAL AMOUNT FIRE ALARM SYSTEM (In Rs.)</b>						<b>₹ 8,79,222</b>

**BILL OF QUANTITIES PUBLIC ADDRESS SYSTEM**

6	BAH-PAS-FA-24	S/I/T/C of Network Controller for Public Address System consisting of Central Digital Signal Processor module, 2 x 16-character LCD Display, 8 <b>zone</b> Supervised Control Inputs and 4 Audio Inputs, Web server and Ethernet Interface for Configuration and Diagnostics & Logging functions, Digital message storage capable of storing at least up to last 200 faults messages, RS232 Interface for logging, OFC Network Inteface capability and PC Interface and an optional interface for Fire Alarm signal. It will support essential capabilities such as - pre-programmed emergency messages, background music & configurable multiple zones as per EN60849 or equivalent internationally accepted standards as per tender specifications. Important availability features will include loudspeaker line monitoring and loudspeaker monitoring without requiring any additional cabling for every loudspeaker installed. (For Indoor Speaker with considering of Room)	1.00	Nos	₹ 3,88,902	₹ 3,88,902
7	BAH-PAS-FA-25	S/I/T/C of Class D Power Amplifier - 500 watts for the amplification of audio signals for speakers. The amplifier shall support only 2 zones each of 250 watts. It shall be possible to select output voltages of 100 V, 70 V or 50 V, The power amplifier will have a 2 x 16-character display for status display and must be usable free-standing (tabletop) or in a 19" rack mounting arrangement.	3.00	Nos	₹ 2,21,309	₹ 6,63,927
8	BAH-PAS-FA-26	S/I/T/C of digital paging microphone capable of supporting upto 6 zones, inclusive of provision to announce over background music and a press-to-talk key, It should have an Analog-to-digital audio conversion circuit within the call station and a digital signal processor, which can be used for audio processing.	1.00	Nos	₹ 99,980	₹ 99,980

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
9	BAH-PAS-FA-30	S/I/T/C of Horn type Loud Speakers(20 watt water proof), covering wide range of frequencies in outdoor harsh environments. Effective frequency range: (70 Hz to 16500 Hz).	1.00	Nos	₹ 13,718	₹ 13,718
10	BAH-PAS-FA-32	S/I/T/C of Network cables assembly and any applicable interfaces/cards/supervision modules for main controller, amplifier & paging microphone and any other devices as applicable.	1.00	SET	₹ 45,000	₹ 45,000
<b>TOTAL AMOUNT PUBLIC ADDRESS SYSTEM (In RS)</b>						<b>₹ 12,11,527</b>

**BILL OF QUANTITIES CCTV SYSTEM**

11	BAH-CCTV-FA-37	S/I/T/C of 4MP IP IR Dome Cameras, 1/3 CMOS sensor, Motorized Vari Focal 2.8 to 12 mm lens at frame rates 20fps or better, H.264 High Profile/JPEG, True Day/Night, ONVIF profile S compliant, Power on Ethernet (PoE) based.	57.00	Nos	₹ 45,000	₹ 25,65,000
12	BAH-CCTV-FA-38	S/I/T/C of 4MP IP IR Bullet Camera 1/3 CMOS sensor, Motorized Vari Focal 2.8 to 12 mm lens at frame rates 20-30 fps or better, H.264 High Profile/JPEG, True Day/Night, ONVIF profile S compliant, Power on Ethernet (PoE) based, IK10 Vandal Proof and IP 66 Ingress Protection Level	4.00	Nos	₹ 55,000	₹ 2,20,000
13	BAH-CCTV-FA-39	S/I/T/C of 2MP IP IR Cameras, Outdoor PTZ, 1/1.9 CMOS sensor with 30x optical zoom or better, minimum resolution 2MP (1920X1080) or better, high speed dome, 350 degrees full rotation, complete with IK10/Equivalent rated vandal resistant weatherproof housing IP66, PoE+ Input Voltage or optional AC/DC supply, supporting True Day/Night operation, ONVIF Profile S compliant, supporting H.264 High Profile feature with pole mounted stand as per technical specification etc. as required.	4.00	Nos	₹ 2,25,000	₹ 9,00,000
14	BAH-CCTV-FA-41	S/I/T/C of Server(s) required for the VMS - Industry standard Intel based platform, rack mounted, redundancy architecture for critical hardware components, licensed Microsoft Server Operating system and requisite user licenses, licensed application suites, Quad Core Intel® Xeon® 5150 processors, 2.66 GHz with Latest Generation, 4 MB Cache, 1333 MHz FSB or better, 8 GB of RAM, 2 x 500 GB of SSDs, minimum 4 additional hard disk drive bays for expansion, 1360 * 768 video resolution, 2 * 10/100/1000 Ethernet Network Interface Card, RAID support built-in and pre-installed DVD-R/W Drive and Appropriate Licensed Operating Systems. as per the technical specifications. (For 300 Cameras or Upgradable )	1.00	Nos	₹ 9,34,570	₹ 9,34,570
15	BAH-CCTV-FA-42	S/I/T/C of Client PC - Industry standard Intel based platform computer system. Intel Core i7 2600 @ 3.4 GHz with Latest Generation, 8 GB of RAM DDR4 ,1 TB SSD for OS and VMS applications, NVidia GTX 570 or DirectX VA 2.0 compatible card with 1 GB of RAM , 1600 x 1200 or higher screen resolution, 1000Mbps Ethernet Network Interface Card ,16x DVD+/- RW Drive alongwith appropriate licenced Operating Systemwith Antivirus, licenced applications suites from OEM and application licences as per the technical specifications.	1.00	Nos	₹ 2,06,677	₹ 2,06,677
16	BAH-CCTV-FA-43	S/I/T/C of Network RAID 0 TO 10 WITH TCP/IP/E-SATA SSD Storage required with a capacity to store the content for up to 300 cameras for 24Hrs x30days at 25-30 fps and 1080p. It should be scalable (should have sufficient expansion bays for HDDs) . Vendor shall submit bandwidth and storage calculator for the proposed camera models as per technical specification etc. as required.	1.00	Nos	₹ 27,43,500	₹ 27,43,500
<b>TOTAL AMOUNT CCTV SYSTEM (In RS)</b>						<b>₹ 75,69,747</b>
<b>TOTAL AMOUNT ELV SYSTEM FOR RESIDNETIAL BUILDING (In RS)</b>						<b>₹ 96,60,496</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS  
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072

**COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR FIRE FIGHTING WORK****ESTIMATE OF FIRE FIGHTING WORK C.S.M.C. - HOSPITAL BUILDING****Rs. 2,11,17,683**

SR. NO.	ITEM CODE	DESCRIPTION OF WORKS	QTY.		RATE	UNIT	AMOUNT OF C.S.M.C. PER ANNUM IN RS.
1	FAIR ITEM	Comprehensive service and maintenance contract of FIRE FIGHTING WORK per annum for period of next five years after expiry of free guarantee period of 2 years inclusive of all spares and consumables. Year: 3rd (5% of total cost)	1	Year	1055884.15	Year	Rs. 10,55,884
2	FAIR ITEM	Year: 4th (6% of total cost)	1	Year	1267060.98	Year	Rs. 12,67,061
3	FAIR ITEM	Year: 5th (7% of total cost)	1	Year	1478237.81	Year	Rs. 14,78,238
4	FAIR ITEM	Year: 6th (8% of total cost)	1	Year	1689414.64	Year	Rs. 16,89,415
5	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	1689414.64	Year	Rs. 16,89,415
<b>SECTION –II A TOTAL</b>							<b>Rs. 71,80,012</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 71,80,013.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS  
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072

**COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR FIRE FIGHTING WORK****ESTIMATE OF FIRE FIGHTING WORK C.S.M.C. - RESIDENTIAL BUILDING****Rs. 21,74,826**

<b>SR. NO.</b>	<b>ITEM CODE</b>	<b>DESCRIPTION OF WORKS</b>	<b>QTY.</b>		<b>RATE</b>	<b>UNIT</b>	<b>AMOUNT OF C.S.M.C. PER ANNUM IN RS.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of FIRE FIGHTING WORK per annum for period of next five years after expiry of free guarantee period of 2 years inclusive of all spares and consumables. Year: 3rd (5% of total cost)	1	Year	108741.30	Year	Rs. 1,08,741
2	FAIR ITEM	Year: 4th (6% of total cost)	1	Year	130489.56	Year	Rs. 1,30,490
3	FAIR ITEM	Year: 5th (7% of total cost)	1	Year	152237.82	Year	Rs. 1,52,238
4	FAIR ITEM	Year: 6th (8% of total cost)	1	Year	173986.08	Year	Rs. 1,73,986
5	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	173986.08	Year	Rs. 1,73,986
<b>SECTION –II A TOTAL</b>							<b>Rs. 7,39,440.84</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 7,39,441</b>



**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES C.S.M.C - FIRE FIGHTING WORK (HOSPITAL BUILDING)**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	R2-ME-15-26-a	Supplying and erecting 15 mm (½") dia. NBCM Body chrome finished quartzoid bulb <b>sprinkler having 68° C</b> 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 <b>Pendent type</b>	4600.00	Nos	372.00	17,11,200.00
2	RBH18-FF-FA-13	Providing and fixing 15mm gunmetal sprinkler head with quartzoid bulb and set to operate at specified temperature pendent/ upright/ side wallas per the location indicated on the drawings. sprinklers 68 degree C FOC/UL/FM approved complete with socket nipple, adaptoret. Sprinkler shall be pendant type. Temperature of operation 68 deg.C A. <b>Side wall type</b> in brass chrome finish	100.00	Nos	952.00	95,200.00
3	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 <b>Upright type</b>	4800.00	Nos	372.00	17,85,600.00
4	RBH18-FF-FA-14	Supplying & fixing Sprinkler heads quartzoid bulb type pendent type sprinklers (straight throw) 93 Deg. C Temperature. (for Kitchen)	20.00	Nos	536.00	10,720.00
5	RBH18-FF-FA-15	Supplying & fixing Sprinkler heads quartzoid bulb type pendent type sprinklers (Upright throw) 93 Deg. C Temperature. (for Kitchen)	20.00	Nos	631.00	12,620.00
6	BAH-FF-FA-06	Providing, installation, testing & commissioning of adjustable <b>rosette plate for 15mm</b> dia in white finish UL Listed or FM approved complete as required.	4600.00	Nos	207.00	9,52,200.00
7	RBH18-FF-FA- 22	Providing & fixing of Stainless steel corrugated <b>flexible pipe (hose)</b> for dropping sprinklers below false ceiling, pipe shall be 16 bar pressure rating and 1000 mm long 25 mm dia with union / reducer collar, clamps etc. as required.	4500.00	Nos	1899.00	85,45,500.00
8	RBH18-FF-FA-25	<b>Mechanical Foam Trolley</b> (AFFF) Cap:50 Ltrs. Fire engine Mounted on solidrubber wheel Trolley, with brass.MT Discharge hose pipe, Nozzeland Foam (AFFF) Refills with CO2 type Fire Extinguishers fitted In outer body Complete as per: 1204/13386 (ISI)	1.00	Nos	148750.00	1,48,750.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
9	R2-ME-15-30-d	Supplying and erecting <b>ABC powder type</b> fire extinguisher as per IS : 13849 /15683 of 9 kg capacity with necessary clamp for erection on Wall.	80.00	Nos	4002.00	3,20,160.00
10	R2-ME-15-30-e	Supplying and erecting <b>D.C.P. type Fire Extinguisher 6 kg</b> capacity cartridge type with Gun Metal cap 150 gram CO2 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.	80.00	Nos	2645.00	2,11,600.00
11	BAH-FF-FA-07	Supplying & erecting Carbon Dioxide (CO 2 ) fire extinguisher of 4.5 kg. capacity cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S.flat with nut & bolts grouted in wall complete.	40.00	Nos	10096.00	4,03,840.00
12	KSS-EL-115	FIRE SUPPRESSION SYSTEM (FOR SERVER ROOM) Supply and fixing of <b>Novec 1230</b> , CCOE Approved 40.0 Ltrs. Cylinder working at 34.5 bar pressure with Valve Assembly and arrangement for Supervisory Switch connection for monitoring cylinder pressure, a pressure gauge with a safety burst disc and safety cap. Complete as required .	3.00	Nos	114992.00	3,44,976.00
13	KSS-EL-116	Supply and fixing of <b>Novec 1230</b> manufactured by 3M, with Zero Ozone Depelition Potential and Very Low Global Warming Potential of 1 with 20 Years Blue Sky Warantee against any regulatory Bans and Restrictions. Complete as required .	120.00	KG	3700.00	4,44,000.00
14	KSS-EL-117	Supply and fixing of <b>Master Cylinder Kit complete</b> comprises of Electric Control Head operated electrically from the detection and control system or locally with a manual actuator, complete with cylinder supervisory switch. Complete as required .	3.00	Nos	46233.00	1,38,699.00
15	KSS-EL-118	Supply and fixing of Manual Actuator Assembly complete with liver to activate the system manually. Complete as required .	1.00	Nos	14010.00	14,010.00
16	KSS-EL-119	Supply and fixing of Wire Braided Flexible Rubber Hose with Elbow and connectors complete assembly to Connect Novec 1230 Cylinder Assembly Discharge outlet with Discharge Pipe or Discharge Manifold. Complete as required .	1.00	Nos	5836.00	5,836.00
17	KSS-EL-120	Supply and fixing of Warning Signs and Plates for Inside Room and Outside Room application. Complete as required .	1.00	Nos	1400.00	1,400.00
18	KSS-EL-121	Supply and fixing of Discharge Nozzles to Discharge Novec 1230 Gas in the Hazard Area as hydraulic calculation and flow rate required in 180 Deg/360 Deg Discharge Pattern. Complete as required .	3.00	Nos	15723.00	47,169.00
19	KSS-EL-122	Supply and fixing of Cylinder Bracket for 40 ltr.	1.00	Nos	1635.00	1,635.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
20	RBH18-FF-FA- 29	<b>FIRE PUMPS</b> Supplying, Fixing, testing & commissioning <b>Diesel engine driven horizontal</b> multistage single outlet centrifugal pump set capable of delivering 2850 LPM at 100 M head, having cast iron casing, bronze impellers, EN-8 shaft with bronze shaft sleeves directly coupled to Engine, 1450 RPM, complete on MS channel base plate with coupling guard, Day tank, Battery starting kit, etc. complete (Diesel driven Pump) 100mm gi pipe upto terrace with aluminium cladding	1.00	Nos	971397.00	9,71,397.00
21	RBH18-FF-FA- 30	Supplying, Fixing, testing & commissioning horizontal multistage Single outlet centrifugal pump set (Split Casing) capable of delivering 2850 LPM at 100 M head for having cast iron casing, bronze impellers, EN-8 shaft with bronze shaft sleeves directly coupled to 125 HP, 1450 RPM, TEFC squirrel cage induction motor having class 'F' insulation complete on MS channel base plate with coupling guard ( <b>Main Fire Hydrant Pump ,Main Sprinkler &amp; Drencher</b> )	3.00	Nos	651168.00	19,53,504.00
22	RBH18-FF-FA- 31	Supplying, Fixing testing & commissioning multistage horizontal centrifugal pump set capable of delivering 200 LPM at 100 M head due to all causes with TEFC squirrel cage induction motor of 2900 RPM, foundation bolts, etc. complete 25 HP ( <b>joceky pumps- Main Fire Hydrant Pump ,Main Sprinkler &amp; Drencher</b> )	3.00	Nos	65117.00	1,95,351.00
23	RBH18-FF-FA- 32	Supplying, Fixing testing & commissioning <b>Terrace Fire Booster pump,</b> horizontal centrifugal pump set capable of delivering 900 LPM at 35 M head due to all causes with TEFC squirrel cage induction motor of 2900 RPM, foundation bolts, etc. complete 10 HP	1.00	Nos	102816.00	1,02,816.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
24	BAH-FF-FA-01	<p>Fabrication, supply, Insallation testing &amp; commissioning of Fire Electrical control panel of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for main fire pump, pressurisation pump &amp; diesel pump set complete as per CPWD specification with following in coming and Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 42 as required :</p> <p>Incomings  1 Nos 630A, 50kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Ammeter (0-630 A) with selector swtich &amp; CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 800Amps</p> <p>Outgoings  ( Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps)</p> <p>2 nos Main Fire( Hydrent, Sprinkler Pump)  250 A, 36kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.</p>	1.00	Nos	1875000.00	18,75,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<p>2 Nos Jockey Pump 125 A, 25kA TPN MCCB, Ics=100% Icu, with Suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.</p> <p>3 Nos Booster Pump 63 A, 15 kA TPN MCCB, Ics=100% Icu, with Suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.</p> <p>Diesel Engine Control Control for diesel engine comprising - Automatic/Manual selector switch &amp; 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0- 20 A DC Ammeter All standard relays and accessories for automatic operation of diesel engine System Controller</p>				
25	BAH-FF-FA-02	<p>Fabrication, supply, Installation testing &amp; commissioning of <b>Fire Power &amp; Control Booster Electrical control panel with Remote Start Stop Button</b> 11 Nos of Terminals of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for main fire pump, pressurisation pump &amp; diesel pump set complete as per CPWD specification with following in coming and Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 54 With Canopy as required :</p> <p>Incomings 1 Nos 63A, 15kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Ammeter (0-630 A) with selector switch &amp; CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 100 Amps</p>	1.00	Nos	192500.00	1,92,500.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<p><b>Outgoings</b></p> <p>( Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps)</p> <p><b>2 nos Booster Pump</b></p> <p>40 A, 15kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 15 hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.</p>				
26	BAH-FF-FA-03	Supplying, installing, testing and commissioning push button station complete as per EIC & specification Electric spring return enclosed push button NO,NC, polycarbonate Red/Green I/O IP66	18.00	Nos	12500.00	2,25,000.00
27	R2-ME-15-27-a	<p><b>FIRE SEALANT SYSTEM</b></p> <p>Supplying and erecting Fire resistant Mortar (20 kg) with fire resistance class S90 as per National Electrical Code (NEC) SP30-2011 suitable to seal the openings with all kinds of cables, pipes and cable support system in steel and aluminium and plastic profiles (Except hollow core conductors). The residual openings shall be closed with filler, as per specification</p>	200.00	Sq.ft	2035.00	4,07,000.00
<b>TOTAL AMOUNT FIRE FIGHTING SYSTEM (In Rs)</b>						<b>₹ 2,11,17,683.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES C.S.M.C - FIRE FIGHTING WORK (RESIDENTIAL BUILDING)**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
1	R2-ME-15-26-a	Supplying and erecting 15 mm (1/2") dia. NBCM Body chrome finished quartzoid bulb <b>sprinkler having 68° C</b> 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 <b>Pendent type</b>	300.00	Nos	372.00	1,11,600.00
2	RBH18-FF-FA-13	Providing and fixing 15mm gunmetal sprinkler head with quartzoid bulb and set to operate at specified temperature pendent/ upright/ side wall as per the location indicated on the drawings. sprinklers 68 degree C FOC/UL/FM approved complete with socket nipple, adaptor etc. Sprinkler shall be pendant type. Temperature of operation 68 deg.C A. <b>Side wall type</b> in brass chrome finish	440.00	Nos	952.00	4,18,880.00
3	R2-ME-15-26-a	Supplying and erecting 15 mm (1/2") 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 <b>Upright type</b>	40.00	Nos	372.00	14,880.00
4	RBH18-FF-FA- 22	Providing & fixing of Stainless steel corrugated <b>flexible pipe (hose)</b> for dropping sprinklers below false ceiling, pipe shall be 16 bar pressure rating and 1000 mm long 25 mm dia with union / reducer collar, clamps etc. as required.	150.00	Nos	1899.00	2,84,850.00
5	RBH18-FF-FA-25	<b>Mechanical Foam Trolley</b> (AFFF) Cap:50 Ltrs. Fire engine Mounted on solid rubber wheel Trolley, with brass.MT Discharge hose pipe, Nozzeland Foam (AFFF) Refills with CO2 type Fire Extinguishers fitted In outer body Complete as per: 1204/13386 (ISI)	1.00	Nos	148750.00	1,48,750.00
6	R2-ME-15-30-d	Supplying and erecting <b>ABC powder type</b> fire extinguisher as per IS : 13849 /15683 of 9 kg capacity with necessary clamp for erection on Wall.	60.00	Nos	4002.00	2,40,120.00
7	R2-ME-15-30-e	Supplying and erecting <b>D.C.P. type Fire Extinguisher 6 kg</b> capacity cartridge type with Gun Metal cap 150 gram CO2 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.	30.00	Nos	2645.00	79,350.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
8	BAH-FF-FA-07	Supplying & erecting Carbon Dioxide (CO 2 ) fire extinguisher of 4.5 kg. capacity cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S.flat with nut & bolts grouted in wall complete.	30.00	Nos	10096.00	3,02,880.00
9	RBH18-FF-FA- 32	Supplying, Fixing testing & commissioning <b>Terrace Fire Booster pump</b> , horizontal centrifugal pump set capable of delivering 900 LPM at 35 M head due to all causes with TEFC squirrel cage induction motor of 2900 RPM, foundation bolts, etc. complete 10 HP	1.00	Nos	102816.00	1,02,816.00
10	BAH-FF-FA-02	Fabrication, supply, Insallation testing & commissioning of <b>Fire Power &amp; Control Booster Electrical control panel with Remote Start Stop Button</b> 11 Nos of Terminals of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for main fire pump, pressurisation pump & diesel pump set complete as per CPWD specification with following in coming and Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 54 With Canopy as required : Incomings 1 Nos 63A, 15kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Ammeter (0-630 A) with selector swtich & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 100 Amps	1.00	Nos	192500.00	1,92,500.00
		<b>Outgoings</b> ( Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps) <b>2 nos Booster Pump</b> 40 A, 15kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 15 hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation.				
11	BAH-FF-FA-03	Supplying, installing, testing and commissioning push button station complete as per EIC & specification Electric spring return enclosed push button NO,NC, polycarbonate Red/Green I/O IP66	19.00	Nos	12500.00	2,37,500.00



<b>MUNICIPAL CORPORATION OF GREATER MUMBAI</b>							
PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072							
<b><u>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR HVAC SYSTEM WORK</u></b>							
<b>ESTIMATE OF HVAC SYSTEM WORK C.S.M.C.</b>							<b>Rs. 12,31,21,571</b>
<b>SR. NO.</b>	<b>ITEM CODE</b>	<b>DESCRIPTION OF WORKS</b>	<b>QTY.</b>		<b>RATE</b>	<b>UNIT</b>	<b>AMOUNT OF C.S.M.C. PER ANNUM IN RS.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of HVAC WORK per annum for period of next five years after expiry of free guarantee period of 2 years inclusive of all spares and consumables. Year: 3rd (5% of total cost)	1	Year	6156078.56	Year	Rs. 61,56,079
2	FAIR ITEM	Year: 4th (6% of total cost)	1	Year	7387294.27	Year	Rs. 73,87,294
3	FAIR ITEM	Year: 5th (7% of total cost)	1	Year	8618509.98	Year	Rs. 86,18,510
4	FAIR ITEM	Year: 6th (8% of total cost)	1	Year	9849725.70	Year	Rs. 98,49,726
5	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	9849725.70	Year	Rs. 98,49,726
<b>SECTION –II A TOTAL</b>							<b>Rs. 4,18,61,334.21</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 4,18,61,335</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES C.S.M.C - HVAC WORKS**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<b>Water Cooled Type Oil Free Centrifugal Chiller Package with Magnetic Levitation Motor including Chiller Plant Manager and Building control Unit for Integration with External BMS &amp; One Chiller Factory Testing Visit.</b>				
1		Supply, installation, testing & commissioning of AHRI / EUROVENT certified imported Water-cooled oil free centrifugal chiller Units,complete with oil free centrifugal compressor with magnetic bearings, Falling Film type Evaporator, water cooled condenser, Control panel etc. The chiller shall be charged with R134a Refrigerant. Evaporator and condenser vessel shall be designed, tested and stamped for ASME section VIII. The drive motor suitable for 415V +/- 5%, 3 phase, 50 cycles/sec. The chiller should be insulated as per manufacturers standard. The chiller shall have unit mounted microprocessor based Variable frequency starter. Chiller should be supplied with a unit mounted UPS (Uninterruptible Power Supply) to prevent damage to the bearings by supplying electric energy stably without time to change the motor to the generator in case of power failure. Micro-processor based controls with alpha-numeric display in English for all operating parameters such as chilled water inlet, chilled water outlet,operating pressures etc. Flange / Grooved connection shall be part of the Chiller Package. Compressor shall be able to unload up to 25% of the total load. Chiller should be inline with the Technical specification.Chiller with multiple compressors will be preferred.				
	MTA-AC-1	<b>Ref. Capacity - 270 TR (Actual) (2W+1St.By.)</b>	3.00	Nos.	1,11,55,375.00	3,34,66,125.00
		Chilled Water Inlet Temp - 13.3°C				
		Chilled Water Outlet Temp - 6.7°C				
		Cooling Water Inlet Temp - 32.0°C				
		Cooling Water Outlet Temp - 37.5°C				
		Chiller Fouling Factor - 0.000044 m <sup>2</sup> °C/W				
		Condenser Fouling Factor - 0.000088 m <sup>2</sup> °C/W				
		Minimum COP at AHRI Relief ≥ 6.5				
		Minimum IPLV at AHRI Relief ≥ 9.5				
		Sound Pressure Level @ 3m - 75 db(A)				
		Refrigerant - HFC				
		Max pressure drop on chiller : 3.0m (Max)				
		Max pressure drop on condenser : 4.0m (Max)				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
2	MTA-AC-13	Cooling Tower Multicell Type (CTI Certified) As Per Specification with following operating parameters : (2W+1St.By.) Wet Bulb Temp. - 27.2° C Entering Water Temp. - 32.0° C Leaving Water Temp. - 37.5° C Total Flow Rate - 1620 GPM (2W+1S)	3.00	Nos.	20,82,567.00	62,47,701.00
3	MTA-AC-8	<b>Primary Water Pumps with the following parameters :</b> Supply, Installation, Testing and Commissioning of Back Pull Out, Primary Centrifugal pump sets with Cast Iron casing & bronze Impeller & Shaft seals with TEFC motor suitable for 3 Phase, 415 V + 10 %, 50 c/s, AC Power supply, Necessary Cabling & Earthing Strip, mounted on common base frame etc. The pump shall be duly insulated, as per specifications.(2W+1St.By.) NOTE:- VENDOR TO VERIFY PUMP HEAD AS PER ACTUAL SITE CONDITION & SHOP DRAWINGS AND SUBMIT PUMP DATA SHEET FOR CONSULTANT'S APPROVAL PRIOR TO PURCHASE	3.00	Nos.	1,40,896.00	4,22,688.00
		Technical Data :				
		Water Quantity - 594 GPM				
		Static Head - 16 meters				
		Speed - 1450 RPM				
		Impeller - Bronze				
		<b>Secondary Chilled Water Pump set (Variable speed- VFD) Zone 1 &amp; zone 2</b> Supply, Installation, Testing and Commissioning of Back Pull Out, Secondary Centrifugal pump sets with Cast Iron casing & bronze Impeller & Shaft seals with TEFC motor suitable for 3 Phase, 415 V + 10 %,50 c/s, AC Power supply mounted on common base frame etc. The pump shall be duly insulated, Micro-processor based variable frequency drive for chilled water secondary pumps, indicated above,comprising of sensors, transmitters, logic controllers suitably interfaced with motor, variable frequency drive, all accessories, control wiring, downloaded programmable software. The system shall be complete in all respect and suitable for following ratings: as per specification. NOTE:- VENDOR TO VERIFY PUMP HEAD AAS PER ACTUAL SITE CONDITION & SHOP DRAWINGS AND SUBMIT PUMP DATA SHEET FOR CONSULTANT'S APPROVAL PRIOR TO PURCHASE.				
4	MTA-AC-9	SYSTEM - 1 (Basement to Fourth Floor) (2W+1St.By.) Technical Data :	3.00	Nos	3,29,891.00	9,89,673.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		Water Quantity - 390 GPM				
		Static Head - 26 meters (Zone-1 )				
		Speed - 1450 RPM				
		Impeller - Bronze				
5	FAIR ITEM	Flow rate:- Zone-2 = 270-USGPM (6th to 10th Floor)	3.00	Nos	3,14,560.00	9,43,680.00
		Head:- Zone-2 = 34-Mtr				
		Efficiency (min):- 75%				
6	MTA-AC-12	<b>Cooling Water Pumps with the following parameters :</b> Supply, Installation, Testing and Commissioning of Back Pull Out, Cooling Water Centrifugal pump sets with Cast Iron casing & bronze Impeller & Shaft seals with TEFC motor suitable for 3 Phase, 415 V + 10 %, 50 c/s, AC Power supply, Necessary Cabling & Earthing Strip, mounted on common base frame etc. The pump shall be duly insulated, as per specifications. (2W+1St.By.) NOTE:- VENDOR TO VERIFY PUMP HEAD AS PER ACTUAL SITE CONDITION & SHOP DRAWINGS AND SUBMIT PUMP DATA SHEET FOR CONSULTANT'S APPROVAL PRIOR TO PURCHASE	3.00	Nos.	2,20,828.00	6,62,484.00
		Technical Data :				
		Water Quantity - 810 GPM				
		Static Head - 24 meters				
		Speed - 1450 RPM				
		Impeller - Bronze				
7	BAH-HVAC-FA-09	<b>SITC of Automatic condenser Tube Cleaning system</b> of suitable size including Touch Screen Graphical , injection/collection pump if required, actuator based valves and complete with all accessories .Sponge ball shall be injected continuously in condenser tubes with the help of automatic flapper operation and ball recirculation pump, initiated from the control panel; it would continue to be in operation unless & until stopped by operator from control panel. The actuator based valves shall give signals to PLC of their functioning and all process of injection and collection should be shown on the PLC while in operation. This system combine for all chillers.(3w+1std by) refer specification.	1.00	Nos.	28,00,000.00	28,00,000.00
8	MTA-AC-6	<b>Chiller Plant Manager to control Chillers, Primary Pumps, Cooling Water Pumps, Cooling Towers &amp; Isolation Valves</b>	1.00	Nos.	9,97,500.00	9,97,500.00
9	MTA-AC-5	Hardware & software required for integration of chiller microprocessor with BMS system	1.00	Job	24,399.00	24,399.00
		<b>AIR HANDLING UNITS (SOR Items)</b>				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
10	BAH-HVAC-FA-50	SITC of Chilled Water Ceiling Suspended Air Handling unit 8.00 TR/ 2600 CFM / 65MM ST.PR. / 10µ & 20µ COMBINATION FILTER / 3µ FILTER SUITABLE VFD RATING WITH AUTO BYPASS STARTER PANEL WITH 30% HARMONIC FILTER with thermal break profile and internal coving, double skin panels minimum 43±2 mm thick fabricated out pre-plasticized 22 swg GSS on outer side and plain 22 swg Galvanized sheet on inner side with PUF insulation density not less than 40 kg/m3 sandwiched between inner and outer sheet with internal 15mm acoustic insulation. The AHU shall comprise of Fresh Air Module with EU-4 filter and volume control damper, Mixing Chamber, EU-3 & EU-4 filter section with filters, Chilled Water Coil Section with min. 4/6/8 Row Chilled water coil, Metallic Moisture Eliminator Removable , Sliding Type Arrangement with access door, and SS drain pan, complete with Direct drive Plug type backward curve fan section with VFD with stater Panel (VFD to be supplied by AHU manufacturer) by High Energy Efficient (IE3) motor and assembly. EU-7 filter section with filters, Heating Coil with 4 Coil, Provision Space for Stand By Coil for OT AHU . AHU Dampers to be of Extruded Aluminum Low Leakage Aerofoil Volume Control Dampers with extended shaft suitable for Manual & Motorised operation & Necessary cabling & earthing strip. Limit switches for AHU doors, inspection lamps with fire proof Double Canvass connection (Fungal and Lint free). Junction box with contactor strip to be provided on the outer panel with positive isolation for electrical shock for heater connection.Fan static pressure shall be minimum 50 mm or higher if required to overcome actual pressure drop. Cooling coil to be selected as per minimum 500 FPM and 4/6/8 Row or as required to achieve required coil leaving conditions. Limit Switch, Lamp, Fire Damper etc control wiring to be given at one location on AHU.For detailed constructional feature, please refer Technical Annexure.The vendor shall comply with EN 1886-2007 for Casing Air Leakage (L2), Filter Bypass Leakage, Mechanical strength, Thermal Transmittance & Thermal BridgingSpecification to be read following sequence-GTH-AHU capacity & St. pressure in mm of water	1.00	Nos.	2,99,000.00	2,99,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
11	BAH-HVAC-FA-45	SITC of Chilled Water Ceiling Suspended Air Handling unit 5.00 TR / 1600 CFM / 40MM ST.PR. / 10μ & 20μ COMBINATION FILTER / SUITABLE VFD RATING WITH AUTO BYPASS STARTER PANEL WITH 30% HARMONIC FILTER with thermal break profile and internal coving, double skin panels minimum 43±2 mm thick fabricated out pre-plasticized 22 swg GSS on outer side and plain 22 swg Galvanized sheet on inner side with PUF insulation density not less than 40 kg/m3 sandwiched between inner and outer sheet with internal 15mm acoustic insulation. The AHU shall comprise of Fresh Air Module with EU-4 filter and volume control damper, Mixing Chamber, EU-3 & EU-4 filter section with filters, Chilled Water Coil Section with min. 4/6/8 Row Chilled water coil, Metallic Moisture Eliminator Removable , Sliding Type Arrangement with access door, and SS drain pan, complete with Direct drive Plug type backward curve fan section with VFD with stater Panel (VFD to be supplied by AHU manufacturer) by High Energy Efficient (IE3) motor and assembly. EU-7 filter section with filters, Heating Coil with 4 Coil, Provision Space for Stand By Coil for OT AHU . AHU Dampers to be of Extruded Aluminum Low Leakage Aerofoil Volume Control Dampers with extended shaft suitable for Manual & Motorised operation & Necessary cabling & earthing strip. Limit switches for AHU doors, inspection lamps with fire proof Double Canvass connection (Fungal and Lint free). Junction box with contactor strip to be provided on the outer panel with positive isolation for electrical shock for heater connection.Fan static pressure shall be minimum 50 mm or higher if required to overcome actual pressure drop. Cooling coil to be selected as per minimum 500 FPM and 4/6/8 Row or as required to achieve required coil leaving conditions. Limit Switch, Lamp, Fire Damper etc control wiring to be given at one location on AHU.For detailed constructional feature, please refer Technical Annexure.The vendor shall comply with EN 1886-2007 for Casing Air Leakage (L2), Filter Bypass Leakage, Mechanical strength, Thermal Transmittance & Thermal BridgingSpecification to be read following sequence-GTH-AHU capacity & St. pressure in mm of water coloum.	1.00	Nos.	1,84,000.00	1,84,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
12	BAH-HVAC-FA-47	SITC of Chilled Water Ceiling Suspended Air Handling unit 6.00 TR / 1800 CFM / CONSULTANT,ICTC /UTILITY / CSU / 65MM ST.PR. / 10µ & 20µ COMBINATION FILTER / 3µ FILTER SUITABLE VFD RATING WITH AUTO BYPASS STARTER PANEL WITH 30% HARMONIC FILTER with thermal break profile and internal coving, double skin panels minimum 43±2 mm thick fabricated out pre-plasticized 22 swg GSS on outer side and plain 22 swg Galvanized sheet on inner side with PUF insulation density not less than 40 kg/m3 sandwiched between inner and outer sheet with internal 15mm acoustic insulation. The AHU shall comprise of Fresh Air Module with EU-4 filter and volume control damper, Mixing Chamber, EU-3 & EU-4 filter section with filters, Chilled Water Coil Section with min. 4/6/8 Row Chilled water coil, Metallic Moisture Eliminator Removable , Sliding Type Arrangement with access door, and SS drain pan, complete with Direct drive Plug type backward curve fan section with VFD with stater Panel (VFD to be supplied by AHU manufacturer) by High Energy Efficient (IE3) motor and assembly. EU-7 filter section with filters, Heating Coil with 4 Coil, Provision Space for Stand By Coil for OT AHU . AHU Dampers to be of Extruded Aluminum Low Leakage Aerofoil Volume Control Dampers with extended shaft suitable for Manual & Motorised operation & Necessary cabling & earthing strip. Limit switches for AHU doors, inspection lamps with fire proof Double Canvass connection (Fungal and Lint free). Junction box with contactor strip to be provided on the outer panel with positive isolation for electrical shock for heater connection.Fan static pressure shall be minimum 50 mm or higher if required to overcome actual pressure drop. Cooling coil to be selected as per minimum 500 FPM and 4/6/8 Row or as required to achieve required coil leaving conditions. Limit Switch, Lamp, Fire Damper etc control wiring to be given at one location on AHU.For detailed constructional feature, please refer Technical Annexure.The vendor shall comply with EN 1886-2007 for Casing Air Leakage (L2), Filter Bypass Leakage, Mechanical strength, Thermal Transmittance & Thermal BridgingSpecification to be read following sequence- GTH-AHU capacity & St. pressure in mm of water colour.	2.00	Nos.	2,07,000.00	4,14,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
13	BAH-HVAC-FA-33	SITC of Chilled Water Double Skin Floor Mounted 24.50 TR / 9000 CFM / PAEDI. SURGERY WARD / FMAHU / 65MM ST.PR. / 10μ & 20μ COMBINATION FILTER / 3μ FILTER / UVGI LAMP / SUITABLE VFD RATING WITH AUTO BYPASS STARTER PANEL WITH 30% HARMONIC FILTER with thermal break profile and internal coving, double skin panels minimum 43±2 mm thick fabricated out pre-plasticized 22 swg GSS on outer side and plain 22 swg Galvanized sheet on inner side with PUF insulation density not less than 40 kg/m3 sandwiched between inner and outer sheet. The AHU shall comprise of Fresh Air Module with EU-4 filter and volume control damper, Mixing Chamber, EU-3 & EU-4 filter section with filters, Chilled Water Coil Section with min. 4/6/8 Row Chilled water coil, Metallic Moisture Eliminator Removable , Sliding Type Arrangement with access door, and SS drain pan, complete with Direct drive Plug type backward curve fan section with VFD with stater Panel (VFD to be supplied by AHU manufacturer) by High Energy Efficient (IE3) motor and assembly. EU-7 filter section with filters, Heating Coil with 4 Coil, Provision Space for Stand By Coil for OT AHU, AHU Dampers to be of Extruded Aluminum Low Leakage Aerofoil Volume Control Dampers with extended shaft suitable for Manual & Motorised operation & Necessary cabling & earthing strip. Limit switches for AHU doors, inspection lamps with fire proof Double Canvass connection (Fungal and Lint free). Junction box with contactor strip to be provided on the outer panel with positive isolation for electrical shock for heater connection.Fan static pressure shall be minimum 50 mm or higher if required to overcome actual pressure drop. Cooling coil to be selected as per minimum 500 FPM and 4/6/8 Row or as required to achieve required coil leaving conditions. Limit Switch, Lamp, Fire Damper etc control wiring to be given at one location on AHU.For detailed constructional feature, please refer Technical Annexure.The vendor shall comply with EN 1886-2007 for Casing Air Leakage (L2), Filter Bypass Leakage, Mechanical strength, Thermal Transmittance & Thermal BridgingSpecification to be read following sequence-GTH-AHU capacity & St. pressure in mm of water coloum.	1.00	Nos.	12,60,000.00	12,60,000.00
		<b>AIR HANDLING UNITS (FAIR Items)</b>				



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<p>Supply, installation, testing and commissioning of Sectionalised, <b>Chilled Water Double Skin Air Handling Units with Thermal break profile &amp; UVGI compatible</b> constructed of extruded aluminum hollow sections framework, preplasticised GS Sheets of 22G (outside) / 22G (inside) with 40 mm thick injected PUF / 40 kg/cu.m + 5% density, consisting of fan section with Plug type Centrifugal Plenum Fan , &amp; High Eff (IE-3) TEFC IP 55 motor , vibration isolators. Coil Section with 6R/4R/8R Coil, insulated sandwich type drain tray of SS (inside) / GI (outside). Internal surface shall be smooth and shall be cleanable without any projection.</p> <p>Fan outlet velocity not to exceed 1800 fpm. Coil face velocity not to exceed 500 fpm. AHU Coil shall be designed for 52 F ADP.The fan shall have low sound level exceeding not more than 40DBA at 3 metre distance. AHU's shall be with 4-Pole Motor &amp; Accoustically Insulated with 25 mm Thick open cell Nitrile rubber. All AHU's are of UVGI Lights compatible.Fan &amp; Motor - AHU's are to be equipped with High Efficiency Plug Fans motor, energy optimized for operation without spiral housing for high efficiency and favourable acoustic behaviour. Fan &amp; Controller are of same Make &amp; Controller shall be with BMS Compatible with panel. UVGI specs shall be followed as per detailed TDS.</p>				
		<p>The fan shall run in variable speed depend on the cooling load and humidity requirement, energy efficient, low noise and shall be complete with Frequency inverter, motor controller and Voltage controller. Direct-drive single-inlet centrifugal fans with backward-curved high-performance centrifugal impellers with rotation diffuser, mounted on external rotor motor with integrated control electronics. The fans shall be Modbus RTU compatible for communication with BMS (Building Management System). The fan in totality shall be of most efficient type so that the power consumption and noise level is minimal. The plug fan should take the input from various control devices like Thermostat, pressure sensors etc so as to Modulate the Fan speed from minimum to maximum. The minimum efficiency class of the motor shall be IE3. Motor shall be of 4/6 pole. AHU shall be provided with test ports with plugs to facilitate testing &amp; measuring of air quality before &amp; after coil &amp; after fan section. All OTs Units shall have the Stanby Coil for emergency.</p>				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<p>Filter - Each unit shall be provided with a factory assembled filter section containing Pre filter of MERV-10 &amp; Fine filter of MERV-14 washable synthetic type air filters having GI frame. Filter media and frame shall be rust proof and corrosion resistant. The filter shall have minimum &gt;95% efficiency with &lt;1.0 microns &amp; minimum &gt;98% efficiency with &lt;1.0 microns 0- as per ASHRAE-52.2-1999 Arrestance. Filter bypass rating shall ensure F6 &amp; F9 standard of EN 1886 European standard. Eurovent certified computerized selection for AHU shall be with filter selection. Unit shall be floor/ceiling mounted as per requirement with sandwich type insulated SS drain tray, door limit switches, RA mixing box (wherever required), prefilter section with filters 95% down 10.0 micron &amp; Fine filter 97% down 1.0 micron - 0-, coil section coil connected to CHW type distributor, fan section with backward curved fans. AHU shall have a UV light fitted across the coil section. AHU with mounted on floor shall have vibration isolators. Unit shall be with factory fitted inlet/outlet aluminium aerofoil dampers. Price shall include all accessories required for healthy working. FA opening shall have filter and insect screen. The cost shall include BMS Compatible Starter &amp; Control panel of 2mm thick CRCA sheet with OLP, SPP, ON/OFF push buttons with ON indications, A-M switch for remote operation, A-M Switch for switching to bypass starting instead of VFD starting, 3nos. NO-NC (non polarized) contacts for tripping on signal from fire dampers / fire alarm panel, remote status feedback. The AHU Panel shall be provisioned to house the AHU VFD and a standalone Controller (Thermostat) &amp; shall have a bypass to be included in cost.</p> <p><b>All the OTs &amp; ICUs AHUs have the spacing fro the Heatpipe arrangements as a part of AHU assembly and the Contractor shall design the unit with the coordination of required supplier.</b></p>				
		<p>Arrangement for the AHU to run on normal starter incase of VFD failure. AHUs shall be controlled via VFD and Standalone Controller. The Canvas connection for AHU should be Fire Rated &amp; Fungal and Lint free.</p> <p>Cabling: Power cabling of copper armoured cable from panel to motor with double compression gland &amp; Copper armoured Control cabling with hookup to its controller.</p>				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		The unit will be certified by Eurovent/AHRI. AHU will be certified for mechanical performance like casing heat transfer coefficient class T3, Thermal bridging TB-2, mechanical strength D1 and casing tightness L1 according to EN 1886: 2007 standard. All AHU's are of UVGI Lights compatible. Note: All AHUs to operate with VFD, VFD package shall be supplied by AHU manufacturer. Bypass starter & Power/Control cabling from Starter to Motor shall be in HVAC Contractors Scope. Installation of AHU's shall mean Unloading, lifting-shifting, positioning, levelling & installation in place. All AHUs shall be delivered at site and Installed in place by skilled workmen of AHU supplier/Contractor. <b>(NOTE : CONTRACTOR SHALL VERIFY STATIC PRESSURE FROM CONSTRUCTION DRAWINGS BEFORE ORDERING.)</b>				
14	FAIR ITEM	2600 CFM at 135 mm static pressure. ( 6.5 T.R.) - For Ots Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above) (Minor & Septic OT)	2.00	Nos.	2,00,000.00	4,00,000.00
15	FAIR ITEM	2300 CFM at 55 mm static pressure. ( 7.0 T.R.) - Ceiling Suspended (X-ray-1&2)	2.00	Nos.	1,40,000.00	2,80,000.00
16	FAIR ITEM	2000 CFM at 75 mm static pressure. ( 5.0 T.R.) - Floor Mounted AHU with Mixing Box (rest description as above) (Obstetrics)	1.00	Nos.	1,70,000.00	1,70,000.00
17	FAIR ITEM	7200 CFM at 75 mm static pressure. ( 18.0 T.R.) - Floor Mounted AHU with Mixing Box (rest description as above) (DeliveryRoom)	1.00	Nos.	4,20,000.00	4,20,000.00
18	FAIR ITEM	4800 CFM at 75 mm static pressure. ( 12.0 T.R.) - Floor Mounted AHU with Mixing Box (rest description as above) ( Pre OP)	1.00	Nos.	3,20,000.00	3,20,000.00
19	FAIR ITEM	2000 CFM at 55 mm static pressure. ( 5.0 T.R.) - Ceiling Suspended (OT Corridor)	2.00	Nos.	1,20,000.00	2,40,000.00
20	FAIR ITEM	3000 CFM at 135 mm static pressure. ( 8.0 T.R.) - For Ots Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above) (OT-1TO8)	8.00	Nos.	2,40,000.00	19,20,000.00
21	FAIR ITEM	2600 CFM at 135 mm static pressure. ( 7.0 T.R.) - For Ots Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above) (OT CORRODOR)	1.00	Nos.	2,10,000.00	2,10,000.00
22	FAIR ITEM	7600 CFM at 95 mm static pressure. ( 19.0 T.R.) - For Post-OP Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above) (Post OP)	1.00	Nos.	4,60,000.00	4,60,000.00
23	FAIR ITEM	4000 CFM at 95 mm static pressure. ( 10.0 T.R.) - For NICU-Internal Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above)	1.00	Nos.	3,80,000.00	3,80,000.00
24	FAIR ITEM	2200 CFM at 95 mm static pressure. ( 6.0 T.R.) - For NICU-External Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above)	1.00	Nos.	2,10,000.00	2,10,000.00
25	FAIR ITEM	9000 CFM at 95 mm static pressure. ( 23.0 T.R.) - For MICU-1&2 Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above)	1.00	Nos.	6,50,000.00	6,50,000.00
26	FAIR ITEM	5900 CFM at 95 mm static pressure. ( 18.8 T.R.) - For MICU-1&2 Floor Mounted AHU with Heatpipe Provision & Mixing Box (rest description as above)	2.00	Nos.	4,10,000.00	8,20,000.00
27	FAIR ITEM	1200 CFM at 40 mm static pressure. (3.5 T.R.) - Ceiling Suspended	3.00	Nos.	1,00,000.00	3,00,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
28	R2-ME-9-16-a	<b>SITC of Chilled Water Fan Coil Unit 1.00TR / 400 CFM</b> complete with copper tube aluminum finned coil 3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	1.00	Nos.	25,092.00	25,092.00
29	R2-ME-9-16-b	<b>SITC of Chilled Water Fan Coil Unit 1.5TR / 600 CFM</b> complete with copper tube aluminum finned coil 3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	8.00	Nos.	26,415.00	2,11,320.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
30	R2-ME-9-16-c	<b>SITC of Chilled Water Fan Coil Unit 2.00TR / 800 CFM</b> complete with copper tube aluminum finned coil 3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	3.00	Nos.	40,513.00	1,21,539.00
31	R2-ME-9-16-d	<b>SITC of Chilled Water Fan Coil Unit 2.5TR / 1000 CFM</b> complete with copper tube aluminum finned coil 3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	1.00	Nos.	50,237.00	50,237.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
32	R2-ME-9-16-e	<b>SITC of Chilled Water Fan Coil Unit 3.00TR / 1200 CFM</b> complete with copper tube aluminum finned coil 3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	34.00	Nos.	59,150.00	20,11,100.00
33	BAH-HVAC-FA-55	<b>SITC of Chilled Water Four Way Cassette Units 4.00TR / 1600 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	1.00	Nos.	85,000.00	85,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
34	BAH-HVAC-FA-56	<b>SITC of Chilled Water Four Way Cassette Units 3.00 TR / 1200 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	1.00	Nos.	75,000.00	75,000.00
35	BAH-HVAC-FA-57	<b>SITC of Chilled Water Four Way Cassette Units 2.50 TR / 1000 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	1.00	Nos.	60,000.00	60,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
36	BAH-HVAC-FA-58	<b>SITC of Chilled Water Four Way Cassette Units 2.00 TR / 800 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	8.00	Nos.	50,000.00	4,00,000.00
37	BAH-HVAC-FA-59	<b>SITC of Chilled Water Four Way Cassette Units 1.50 TR / 600 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	7.00	Nos.	40,000.00	2,80,000.00



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
38	BAH-HVAC-FA-60	<b>SITC of Chilled Water Four Way Cassette Units 1.00 TR / 400 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	18.00	Nos.	35,000.00	6,30,000.00
39	BAH-HVAC-FA-61	<b>SITC of Chilled Water Four Way Compact Cassette Units 1.00 TR / 400 CFM</b> complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan, 2 way ON/OFF Control chilled water valve along with actuator , brass made Y strainer type ball valve, brass ball valve.All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,DIGITAL THERMOSTAT with necessary power and control wiring with PVC conduit etc. for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way ON/OFF Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fasteners, nut , bolts etc. to be included in the scope .All Cassette units shall be suitable for 220±6% volts, 50 cycles single phase power supply	23.00	Nos.	55,000.00	12,65,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
40	BAH-HVAC-FA-62	<b>SITC of Chilled Water Hi-Wall Units 2.00 TR</b> with factory fitted inbuilt 2 Way chilled water valve along with acuator, complete with copper tube aluminum finned coil 2/3 row deep chilled water coil, shall be with factory fitted with complete valve station consists of copper piping and maniflods & drain pan with drain pump, 2 way ON/OFF Control chilled water valve along with acuator , brass made Y strainer type ball valve, brass ball valve. All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,cordless remote for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Hi-Wall units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	9.00	Nos.	85,000.00	7,65,000.00
41	BAH-HVAC-FA-63	<b>SITC of Chilled Water Hi-Wall Units 1.50 TR</b> with factory fitted inbuilt 2 Way chilled water valve along with acuator, complete with copper tube aluminum finned coil 2/3 row deep chilled water coil,shall be with factory fitted with complete valve station consists of copper piping and maniflods & drain pan with drain pump, 2 way ON/OFF Control chilled water valve along with acuator , brass made Y strainer type ball valve, brass ball valve. All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,cordless remote for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Hi-Wall units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	9.00	Nos.	70,000.00	6,30,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
42	BAH-HVAC-FA-64	<b>SITC of Chilled Water Hi-Wall Units 1.00 TR</b> with factory fitted inbuilt 2 Way chilled water valve along with acuator, complete with copper tube aluminum finned coil 2/3 row deep chilled water coil,shall be with factory fitted with complete valve station consists of copper piping and manifolds & drain pan with drain pump, 2 way ON/OFF Control chilled water valve along with acuator , brass made Y strainer type ball valve, brass ball valve. All valves shall be of PN-16 pressure rating Quoted rates shall be inclusive of the cost of valve's thermal insulations as specified for chilled water piping insulation Pre- filters, high efficiency centrifugal fan easily cleanable synthetic filter,cordless remote for the operation of a 3 speed fan & Temperature control. other accessories etc. 3C x 1.5 Sq.mm.Power cable of 3 mtr.length with 3 pin plug top from unit motor to the nearest power socket shall be included in the scope of supply. 2 way Control chilled water valve will be of PN16 rating complete with motor 220/230 volt of actuator of suitable torque.The valve should be IEC 534 compliant , have 20 mm stroke.All necessary supporting hanger, MS structure for supporting units, anchor fastners, nut , bolts etc. to be included in the scope .All Hi-Wall units shall be suitable for 220±6% volts, 50 cycles single phase power supply.	9.00	Nos.	55,000.00	4,95,000.00
43	BAH-HVAC-FA-65	<b>SITC of 15.70 TR / 9,250 CFM / 65 MM ST.PR. (1 WORKING+1STD BY)</b> of Dual fluid micro-processor controlled Precision Air-conditioning Unit with scroll compressor(s) on HFC-410a / HFC-407c air cooled condenser with installation stand, insulated refrigerant piping with supports, DX cooling coil, Chilled water cooling coil, electrical heating coil, steam humidifier, necessary measuring and control devices, variable speed evaporator fan with motor, pre and micro-vee filters and inbuilt starter. Power will be provided by other agency near the indoor unit inbuilt starter. Power and control cabling from indoor to outdoor unit along with supports / cable trays and its stater Panel shall be included and it should compatible with BMS. Capacity indicated below shall be minimum from DX or Chilled water mode. Indoor unit shall have dual in-comer provision to receive source dual electrical feeders. Chilled water cooling coil shall be designed for inlet water temperature of 41 Deg.F and return temperature of 55.4 Deg.F.	2.00	Nos.	7,86,250.00	15,72,500.00
44	FAIR ITEM	<b>SITC of 7.6 TR / 5,150 CFM / 65 MM ST.PR. (1 WORKING+1STD BY)</b> of Dual fluid micro-processor controlled Precision Air-conditioning Unit with scroll compressor(s) on HFC-410a / HFC-407c air cooled condenser with installation stand, insulated refrigerant piping with supports, DX cooling coil, Chilled water cooling coil, electrical heating coil, steam humidifier, necessary measuring and control devices, variable speed evaporator fan with motor, pre and micro-vee filters and inbuilt starter. Power will be provided by other agency near the indoor unit inbuilt starter. Power and control cabling from indoor to outdoor unit along with supports / cable trays and its stater Panel shall be included and it should compatible with BMS. Capacity indicated below shall be minimum from DX or Chilled water mode. Indoor unit shall have dual in-comer provision to receive source dual electrical feeders. Chilled water cooling coil shall be designed for inlet water temperature of 41 Deg.F and return temperature of 55.4 Deg.F.	2.00	Nos.	5,23,443.00	10,46,886.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
45	R2-ME-9-2-b	Supply / Installation / Testing / commissioning Of Air Cooled Hi-Wall Split UnitsSupplying and erecting split type room irconditioning unit 1.5 TR 5 star capacity 250V, 50 cycles, A.C. supply having 1 No of air handling unit hiwall / floor mounting type complete with Refrigerent R410 A/R32 and COPPER CONDENSOR with drain pump at position as per specification no. AP-AC/SAC	6.00	Nos.	56,486.00	3,38,916.00
46	BAH-HVAC-FA-66	SITC of Water Leak detector below flooring.	4.00	Nos.	15,000.00	60,000.00
47	MTA-AC-109	POT STRAINER - 300 MM Ø	1.00	Nos.	1,07,137.00	1,07,137.00
48	MTA-AC-35	Supply, Installation, Testing & commissioning of Dial Type Pressure Gauge of approved Make & Range 0-10 Kg/cm2 & Dial Size 100mm withInsulation.	14.00	Nos.	2,163.00	30,282.00
49	MTA-AC-36	SITC of of Temp Gauge with thermowell of approved Make & Range 0-50 Deg C , Dial Size 100 mm.The Temp. Guage to be of Industrial type and all Internal working Parts in SS 304 Quality. Sensor Probe Length - apx. 200mm.As per technical specification mention in tender.SITC of Temperature Gauge with thermowell of approved Make & Range 0-50Deg C, Dial Size 100 mm with Insulation. The Temp. Guage to be ofIndustrial type and all Internal working Parts in SS 304 Quality. Sensor Probe Length - approx. 200mm.	6.00	Nos.	2,600.00	15,600.00
50	BAH-HVAC-FA-68	<b>SITC of 100mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	1.00	Nos.	73,250.00	73,250.00
51	BAH-HVAC-FA-69	<b>SITC of 80mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	1.00	Nos.	58,600.00	58,600.00
52	KSS-HVAC-040	<b>SITC of 65mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	3.00	Nos.	44,768.00	1,34,304.00
53	KSS-HVAC-039	<b>SITC of 50mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	5.00	Nos.	22,628.00	1,13,140.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
54	KSS-HVAC-038	<b>SITC of 40mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	14.00	Nos.	19,209.00	2,68,926.00
55	KSS-HVAC-037	<b>SITC of 32mm dia.</b> sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum.	13.00	Nos.	9,100.00	1,18,300.00
56	BAH-HVAC-FA-70	<b>SITC Ultrasonic Inline Flow Meter suitable of 200mm dia.</b> to be installed in Chilled Water Return header with necessary fittings and isolation valves etc. The valve shall be suitable for integration with Chiller Plant Manager /Variable Primary Pump Logic Controller. The precision of flow measurement shall not be lower than +/- 2%. Quoted rates shall be inclusive of the cost of piping thermal insulations.	2.00	Nos.	15,000.00	30,000.00
57	MTA-AC-35	SITC of of Dial Type Pressure Gauge the of approved Make & Range 0-10 Kg/cm2 & Dial Size 100mm. As per technical specification mention in tender.	106.00	Nos.	2,163.00	2,29,278.00
58	MTA-AC-36	SITC of of Temp Gauge with thermowell of approved Make & Range 0-50 Deg C , Dial Size 100 mm.The Temp. Guage to be of Industrial type and all Internal working Parts in SS 304 Quality. Sensor Probe Length - apx. 200mm.As per technical specification mention in tender.	82.00	Nos.	2,600.00	2,13,200.00
59	MTA-AC-37	Supply / Installation / Testing / commissioning Of Closed Expansion Tank & Centrifugal Air Separator With Insulation Alongwith All Required Accessories & Fittings, Suitable for flow rate of 1800 USGPM	1.00	Nos.	6,04,153.00	6,04,153.00
60	MTA-AC-200	Supply, installation, testing and commissioning Actuators( necessary cabling)	100.00	Nos.	10,507.00	10,50,700.00
61	BAH-HVAC-FA-73	Supply, fabrication, installation an testing of flexible <b>canvass connections</b> constructed between ductable unit / dampers / ducting of required size with fire resist flexible double canvas sleeve complete.	164.00	Nos.	1,500.00	2,46,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
62	BAH-HVAC-FA-74	SITC of Aluminum made factory fabricated Laminar Flow OT Plenum of 14 gauge thickness comprising of Terminal MERV- 17 HEPA Filters of 99.997% Efficiency down to 0.3 Micron particle size installed in zero leakage Aluminum made frame with Aluminum made perforated plate type SA grille inclusive with all necessary 4 nos. supply air Aluminum made VCD in supply air tappings to plenum.All necessary supporting Aluminum made structure , Aluminum made hangers,Aluminium made nut ,bolts, washers, Aluminum made channels, Aluminum made fasteners etc. shall be part of scope of supply. The contractor shall submit the GA drawing with technical specification before ordering for the OT plenum.OT plenum shall be designed at minimum at 25-35 CFM per Sq.Ft of supply air diffuser outlet terminal velocity (As per ASHARE 170 guideline) suitable for CFM mentioned in tender drawing. Size : 8 feet x 8 feet	8.00	Nos.	75,000.00	6,00,000.00
63	BAH-HVAC-FA-79	<b>SITC of Laminar Air Flow System of size 2500mm X 2500mm X 800mm.</b> The laminar should be constructed with Aluminium sheet Laminar system will introduce the highest air quality into the operation theatre. Air should be diffused into the room uniformly over the total area through perforated SS 304. The air diffusers should be installed in a manner which allows them to be removed for easy maintenance of air filter. HEPA filters (MERV-17) of H14 Grade 99.97% efficiency are used to ensure high quality clean air is supplied and under tight control of bacterial infection system.	8.00	Nos.	5,15,000.00	41,20,000.00
64	BAH-HVAC-FA-81	SITC of Of inside wall mounted Aluminium body Pressure Relief Damper to maintain 10 Pascal Pressure positive pressure difference complete with all design counter weight accessories etc.	18.00	Nos.	8,500.00	1,53,000.00
65	MTA-AC-209	<b>SITC Of AHU Room Wall Acoustic Insulation with 20mm THK Nitrile Rubberas per specification. (AHU Room Accoustic insulation</b> using food grade adhesive with open cell structured Fire Retardant nitrile rubber with density minimum 150 kg/m3 with all necessary fixing arrangements as per the specifications.)	150.00	Sqm	1,799.00	2,69,850.00
		<b>VENTILATION</b>				
66	RSG-18-FA-AC-97	SITC of PROPELLER FAN - 150 CFM / 5 MM ST.PR. Wall Mounted Propeller Fans For Toilet / pantry etc.	110.00	Nos.	7,800.00	8,58,000.00
67	RBH-FA-AC-130	SITC of PROPELLER FAN - 200 CFM / 5 MM ST.PR. Wall Mounted Propeller Fans For Toilet / pantry etc.	25.00	Nos.	7,500.00	1,87,500.00
68	MTA-AC-284	SITC of Free Flow Type Wall Mounted Exhaust Air Fan for toilets &Pantry Area of capacity: 300 CFM ( 5mm st.Pr.)	5.00	Nos.	4,788.00	23,940.00
69	BAH-HVAC-FA-85	SITC of PROPELLER FAN - 600 CFM / 5 MM ST.PR. Wall Mounted Propeller Fans For Toilet / pantry etc.	5.00	Nos.	18,500.00	92,500.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
70	BAH-HVAC-FA-135	SITC of 42,500 CFM / 50MM ST.PR./ TUBE AXAL / STP UG TANK Tube Axial Exhaust Air Fans & Casing drive, motor, mounting frame, starter, isolator , Necessary cabling & earthing strip & Filter For Following Capacities :As per AMCA210 standard "Laboratory Methods of testing fans for rating" Balancing quality - As per AMCA204 / ISO 1940 standard With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	1.00	Nos.	8,85,000.00	8,85,000.00
71	BAH-HVAC-FA-136	SITC of 38,000 CFM / 50MM ST.PR./ TUBE AXAL / STP UG TANK Tube Axial Fresh Air Fans & Casing drive, motor, mounting frame, starter, isolator , Necessary cabling & earthing strip & Filter For Following Capacities :As per AMCA210 standard "Laboratory Methods of testing fans for rating" Balancing quality - As per AMCA204 / ISO 1940 standard With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	1.00	Nos.	7,95,000.00	7,95,000.00
72	BAH-HVAC-FA-137	SITC of 30,000 CFM / 40MM ST.PR./ TUBE AXAL / STAIRCASE PRESSURIZATION Floor Mounted Tube Axial Frash Air Fans & Casing With Drive Package & Necessary cabling & earthing strip For Following Capacities For Staircase Pressurization With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	10.00	Nos.	6,35,000.00	63,50,000.00
73	BAH-HVAC-FA-138	SITC of 15,500 CFM / 40MM ST.PR./ TUBE AXAL / LIFT WELL PRESSURIZATION Floor Mounted Tube Axial Frash Air Fans & Casing With Drive Package & Necessary cabling & earthing strip For Following Capacities For Lift Pressurization With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	18.00	Nos.	3,45,000.00	62,10,000.00
74	BAH-HVAC-FA-139	SITC of 10,000 CFM / 40MM ST.PR./ TUBE AXAL / LIFT LOBBY PRESSURIZATION (RIGHT/LEFT SIDE) Floor Mounted Tube Axial Frash Air Fans & Casing With Drive Package & Necessary cabling & earthing strip For Following Capacities For Lift Lobby Pressurization With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	2.00	Nos.	2,35,000.00	4,70,000.00
75	BAH-HVAC-FA-140	SITC of 20,000 CFM / 40MM ST.PR./ TUBE AXAL / LIFT LOBBY PRESSURIZATION (RIGHT/LEFT SIDE) Floor Mounted Tube Axial Frash Air Fans & Casing With Drive Package & Necessary cabling & earthing strip For Following Capacities For Lift Lobby Pressurization With With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	2.00	Nos.	4,35,000.00	8,70,000.00
76	BAH-HVAC-FA-141	<b>SITC of Of Tube Axial Air Quantity 25,000 CFM, Static Pressure 40 MM;</b> Exhaust Air Fans & Casing drive, motor, mounting frame, starter, isolator , Necessary cabling & earthing strip & Filter For Following Capacities :As per AMCA210 standard "Laboratory Methods of testing fans for rating" Balancing quality - As per AMCA204 / ISO 1940 standard With With VFD With Stater Panel Compatability wirh BMS and its accessories and cabling, Fire Rating 300° C for minimum 60 minutes. 3 Nos. Of Fans. (2 Fans are working When Normal Mode & All Are fans Are Working In Case Of Fire Mode) with suitable to work on various modes. sound attenuator Piece for sound abserction included.	3.00	Nos.	7,50,000.00	22,50,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
77	FAIR ITEM	<b>SITC of Of Tube Axial Air Quantity 20,000 CFM, Static Pressure 40 MM</b> Exhaust Air Fans & Casing drive, motor, mounting frame, starter, isolator , Necessary cabling & earthing strip & Filter For Following Capacities :As per AMCA210 standard "Laboratory Methods of testing fans for rating" Balancing quality - As per AMCA204 / ISO 1940 standard With With VFD With Stater Panel Compatability wirh BMS and its accessories and cabling.; Fire Rating 300° C for minimum 60 minutes. 2 Nos. Of Fans. (1 Fans are working When Normal Mode & All Are fans Are Working In Case Of Fire Mode) with suitable to work on various modes. sound attenuator Piece for sound abosrtion included.	2.00	Nos.	3,42,500.00	6,85,000.00
78	BAH-HVAC-FA-143	<b>SITC of Commercial Deodorizer for STP Plant (Ozone Generator) Exhaiust Air Quantities - 21,250 CFM.</b> in Stainless Steel Construction suitable to discharge ozone in ducts, producing high volume of ozone via corona discharge method. The unit must have separate chambers for elctrical components & ozone generation, with isolation. Air intake to the unit shall be thru Hydrophobic pre filter, to contain moisture from getting in to the unit. Unit musti s provided with 2 fans, one for pre/ after cooling of electrical componenets & one for ozone injection in to the duct. Cabinet -1.2 mm Stainless Steel, Ozone Generation - Corona Discharge, Pre Filter - Hydropobic for air inlet, Nozzle Dia - 100 mm, Ozone Plate Life - 3000 hrs, Unit access - from side, Ballast & Other electrical components - Out of the air flow, Power Supply - 230 V/ SP/ 50 Hz.	2.00	Nos	11,68,750.00	23,37,500.00
79	BAH-HVAC-FA-144	<b>SITC of Scrubber 7,750 CFM</b> each comprising of extract air intake section, electrostatic precipitation technology, dry type air cleaner to remove oil, smoke and fumes from exhaust air, as per the Specifications. It also include require co-ordination and connecting pieces to installation the scrubber along with respective exhaust air fans: Electrostatic section shall be made of 16 gauge galvanised sheet, high bake epoxy powder coated, washable type aluminium mesh filters, stainless steel spiked ionizers to create high voltage DC field, aluminum collector plates which should be alternatively charged positive and negative with large collecting area with 14" deep cell, to work as magnet for charged smoke and oil particles. Average efficiency of 90-95% in single pass as per ASHRAE test method. Electrostatic Precipitator should be able to charge particles from 0.01 micron to 10 microns through solid state power supply. Collector cell should be of permanent type and incorporate slide out facility for easy removal for cleaning. Power supplies shall be 100% solid state UL Listed, Module of capacity above 7,750 CFM shall be equipped with Pulse width modulating (PWM)The system should be fitted with interlock switch for safety . The syste should allo connection to a fan section to achieve 500 FPM velocity across the air cleaner with scrubber panel.	5.00	Nos	6,58,750.00	32,93,750.00



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
80	RSG-18-FA-AC-62	SITC of PLC Cum Control Panel Design, BMS compatible power and control panel with all necessary control logics and software for each zone. PLC: which will consist of MODBUS for connectivity to BMS system for monitoring the system & programmed for pollution mode as per the enclosed write up CO sensors 30ppm & cyclic mode. When the pollution level goes beyond 100ppm whole system should run in high speed. POWER CONTROL PANEL: Exhaust fans as per the BOQ NOTE: Should have the provision for hooking up the panel with fire firing panel in case of emergency Should have the provision for monitoring the whole system through BMS (Not individual fans), CO Sensors- A carbon dioxide sensor or CO2 sensor is an instrument for the measurement of carbon dioxide gas & Measuring carbon	1.00	Nos.	5,41,260.00	5,41,260.00
81	MTA-AC-294	Supply / Installation / Testing & Commissioning of CO sensors as required.	18.00	Nos.	29,260.00	5,26,680.00
82	MTA-AC-280	Supply / Installation / Testing & Commissioning of Jet Fans complete with Silencers, guards, & mounting assembly for following specifications: Tip Velocity : 16 Meter / Second Air Flow : 1.8 Cubic Meter / Second RPM : 2840 / 1420 Sound Level : Not more than 54db at 2840 RPM at 1.5m Distance Fire Rating : 300°C for minimum 60 Min.	8.00	Nos.	1,17,040.00	9,36,320.00
83	MTA-AC-293	Mounting : Ceiling suspended Steel structure for Fans installation along with Anchor Fasteners (Hilti)	7.00	Nos.	17,100.00	1,19,700.00
		SITC of Heatpipe for the AHUs as mentioned & wherever required with the following capacities. Vendor shall do all the Parameters w.r.to the AHU as per design capacity & requirements for the selections and submit the same for Approval to concern incharge/Consultant. Heat pipes for enhanced dehumidification shall be of the 'wrap-around' type included in the AHU around the main cooling coil. The heat pipes shall consist of a precool and reheat fin block. Heat pipes will be delivered to the AHU manufacturer fully factory charged and sealed. A minimum of 100mm gap should be allowed between the leaving face of the cooling coil and the entering face of the heat pipe reheat section. This gap will permit the installation of sensors or other instrumentation to monitor the condition of the air after the cooling coil. The external fins shall be of aluminium with a minimum thickness of 0.14mm. Fins shall be of the continuous plate type to maximize the external surface area rather than individually finned tube pattern. The fins shall be of the rippled or louvered type to suit the application and spaced at such a distance as required by the conditions specified. If necessary, fin spacing may differ between the two sections of the heat pipe. In corrosive atmospheres copper fins, vinyl pre coated aluminium, or Bronzeglow/Heresite post coated aluminium may be used. Tubes shall be of refrigeration standard seamless copper C106 for heat exchanger use. Tube diameter shall be a minimum of 12.7mm with a grooved inner surface to enhance the internal surface area and prevent pooling of liquid. The minimum root thickness of the tube shall be 0.35mm. Casings shall be from galvanized sheet steel with a minimum thickness of 1.5 mm. The casing shall incorporate tube plates, side plates and intermediate stiffening plates as required. (Refer the specs for detailed TDS)				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
84	FAIR ITEM	Capacity upto 4000CFM	12.00	Nos.	1,45,000.00	17,40,000.00
85	FAIR ITEM	Capacity upto 7000CFM	2.00	Nos.	2,25,000.00	4,50,000.00
86	FAIR ITEM	Capacity upto 10000CFM	2.00	Nos.	4,05,000.00	8,10,000.00
87	Fair-Topiwala-AC-07	Supply Installation testing & Commissioning of ASPEN Make Drain Pumps, 12 L/h , Lift 2 m, with Discharge tube,safety switch & all Necessary accessories for Hi Wall Units.	12.00	Nos.	5,120.00	61,440.00
88	Fair-Topiwala-AC-15	Supply, installation and adjusting of disc valves suitable for exhausting toilet foul air ,comprising of an adjustable centre cone and coupling sleeve made of Aluminum sheet duly epoxy painted with approved color. The disc valve shall be fitted with a galvanised steel installation frame and the sleeve shall incorporate a foam-rubber gasket for airtight sealing. The centre cone should be adjustable for balancing and with a locking arrangement to maintain the desired flow rate. - 150mm Dia	280.00	Nos.	1,416.00	3,96,480.00
89	Fair-Topiwala-AC-58	Supply,installation,testing & commisioning of CAR Silicon bulb pressurized type as Specified below : Duct size 150mm x 100mm , Size 5" Air Quantity : 60-140 cfm	100.00	Nos.	2,100.00	2,10,000.00
		Supplying, installing, testing and commissioning of INLINE / INLINE CABINET FANS suitable for installing in any position in vertical or horizontal ducts. The casing shall be double skin, internally acoustically lined and constructed of galvanised steel. The fan shall be DIDW with forward curve impeller fitted with maintenance free external rotor motor. The motor shall be suitable for 220±10% volt single phase 50 cycles AC supply. All units shall be complete with duct flexible connector and volume control damper. The fan shall have low sound level exceeding not more than 40DBA at three metre distance. Cabling: Power cabling of copper armoured cable from control panel to motor with double compression gland. Cabling and earthing limited to 20 RMT max. Regulator shall be included in the cost along with the MCB/Panel required as per motor/fan Rating. Quoted cost shall include BMS Compatible control & starter panel for 3-phase motor fans. Necessary copper earthing should also be included. Cabling and earthing as required from Fan Elec.Panel to Fan motor shall be considered as included in this scope & no separate measurements shall be considered for this lumpsum item.				
90	Fair-Topiwala-AC-29	900 cfm capacity with 25 mm static pressure Fresh Air	2.00	Nos.	21,240.00	42,480.00
91	Fair-Topiwala-AC-28	1100 cfm capacity with 30 mm static pressure Exhaust air / Fresh air	3.00	Nos.	25,960.00	77,880.00
92	Fair-Topiwala-AC-32	1300 cfm capacity with 30 mm static pressure Exhaust air / Fresh air	3.00	Nos.	30,680.00	92,040.00
93	Fair-Topiwala-AC-45	1500 cfm capacity with 30 mm static pressure Exhaust air / Fresh Air	2.00	Nos.	35,400.00	70,800.00
94	Fair-Topiwala-AC-40	1800 cfm capacity with 30 mm static pressure Exhaust air / Fresh Air	3.00	Nos.	42,480.00	1,27,440.00
95	Fair-Topiwala-AC-46	1900 cfm capacity with 30 mm static pressure Exhaust air / Fresh Air	2.00	Nos.	44,840.00	89,680.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
96	Fair-Topiwala-AC-27	600 cfm capacity with 25 mm static pressure Exhasut / Fresh Air	29.00	Nos.	14,160.00	4,10,640.00
97	Fair-Topiwala-AC-30	700 cfm capacity with 30 mm static pressure Exhaust/ Fresh Air	36.00	Nos.	16,520.00	5,94,720.00
98	Fair-Topiwala-AC-25	200 cfm capacity with 25 mm static pressure Exhasut/ffresh Air	26.00	Nos.	4,720.00	1,22,720.00
99	Fair-Topiwala-AC-26	300 cfm capacity with 25 mm static pressure Exhasut/ffresh Air	18.00	Nos.	7,080.00	1,27,440.00
100	Fair-Topiwala-AC-52	500 cfm capacity with 30 mm static pressure Exhaust/Fresh Air	17.00	Nos.	11,800.00	2,00,600.00
101	Fair-Topiwala-AC-38	550 cfm capacity with 30 mm static pressure Exhasut/Fresh Air	12.00	Nos.	12,980.00	1,55,760.00
102	Fair-Topiwala-AC-39	400 cfm capacity with 30 mm static pressure Exhaust/Fresh Air	8.00	Nos.	9,440.00	75,520.00
		Supply / Installation / Testing & Commissioning of Ceiling Mounted Ventilation Unit Inline Type Exhaust/Fresh Air Fans & Casing for following capacity:				
103	MTA-AC-214	10000 CFM / 40mm St. Pr. With panel 3.73 KW.	1.00	Nos.	2,83,556.00	2,83,556.00
104	MTA-AC-247	800 CFM / 40 mm St. Pr. for Fourth Floor With panel 0.19 KW.	1.00	Nos.	46,284.00	46,284.00
105	MTA-AC-265	1200 CFM / 40 mm St. Pr. With panel 0.37 KW.	1.00	Nos.	52,934.00	52,934.00
106	MTA-AC-362	3000 CFM / 35 mm St. Pr. With panel 0.75 KW.	3.00	Nos.	1,04,430.00	3,13,290.00
107	MTA-AC-376	2800 CFM / 40 mm St. Pr. With panel 0.75 KW.	5.00	Nos.	1,03,096.00	5,15,480.00
108	MTA-AC-215	13000 CFM / 35 mm St. Pr. With panel 3.73 KW.	1.00	Nos.	3,46,864.00	3,46,864.00
109	BAH-HVAC-FA-103	SITC of 6,800 CFM / 32MM ST.PR./ CSU Ceiling Suspended Cabinet Type DIDW/SISW Exhaust/Fresh Air Fans & Casing, drive, motor, mounting frame, starter, isolator & Necessary cabling & earthing strip For Following Capacities : As per AMCA210 standard "Laboratory Methods of testing fans for rating" Balancing quality - As per AMCA204 / ISO 1940 standard With VFD With Bypass Stater Panel Compatability wirh BMS and its accessories and cabling.	1.00	Nos.	2,39,000.00	2,39,000.00
		Supplying, installing, testing and commissioning of SISW (Single inlet single width) centrifugal fan as per specification, with statically and dynamically balanced backward curved blades, galvanized steel housing, maintenance free bearings, belt driven complete with totally enclosed fan cooled squirrel cage induction motor, centrifugal fan belt drive and vibration isolators. Motor shall be suitable for 415±10% volts, 50 cycles, 3 phase AC supply & meeting criterion asperASHRAEstandard90.1-2016 and high efficiency (IS 12615) . Minimum 30 mm (WC) external static pressure after fan outlet.				
		The cost shall be including Panel for Fans as per kw rating of motor fan with regulator/MCB requores complete with accessories.				
110	FAIR ITEM	Duty: Kitchen Exhaust - Café	1.00	Nos.	2,90,000.00	2,90,000.00
		Capacity: 7500 CFM				
		Static Pressure : 70 mm wg				
		Fan Motor HP : 3.75 HP or as per requirement				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
111	FAIR ITEM	Duty: Kitchen Exhaust - Dinning	1.00	Nos.	4,50,000.00	4,50,000.00
		Capacity: 15000 CFM				
		Static Pressure : 70 mm wg				
		Fan Motor HP : 4.75 HP or as per requirement				
112	Fair-AMH-AC-39	<p>SITC of Circular inline fan Battery room exhaust fan with hydrogen sensor, suitable microprocessor based controller, starter, cabling etc., The starter panel shall be compatible with BMS. Adequate number of contacts should be available for On/Off command control, On/Off status, Run status, Auto/Manual Status, Trip status monitoring through BMS. The exhaust fan shall run for 1 minute at every 1 hour interval and also when the hydrogen level in the battery room crosses 50% of LEL. The controller would be connected to a sounder outside the battery room to provide an audio alarm in case of excess hydrogen presence. Cost to include the hooter and its wiring. All cables shall be as per the site and manufacturer requirement and laid in MS conduits with suitable glands, bushes etc., provision to trip on receipt of fire alarm signal. Rate shall be for the following capacity CFM's.</p> <p>Quoted cost shall include BMS Compatible control &amp; starter panel, OLP, SPP, ON/OFF push buttons with ON indications, 2nos. non polarised NO-NC contacts .</p> <p>MAKE :- Greenheck, Kruger, System Air, Dyna Air</p> <p>MAKE :- Omnicron, TechnoAir Solution, Proton (For sensor)</p>	1.00	Nos.	90,860.00	90,860.00
		<p>Supply, Installation, Testing &amp; Commissioning of (GSS) Vane / Tube Axial flow type fans complete with aluminium alloy blades with aerofoil design, bird screen, flexible connection &amp; gravity louvers at outlet. Motor shall be of 415 + 10% volts, 50 Hz. Sound level at 3mt distance from fan outlet shall not be more than 80 db(A) (Room Condition). Capacity shall be as follows &amp; as per detailed technical specification. The fans should be AMCA certified for AIR &amp; Sound. Manufacturer shall submit Certificate of conformity for 250 deg for 2 hours operation as per EN12101-3: 2002 issued by Internationally recognized Independent Fire Laboratory and should be submitted along with type test report. The Type test report should clearly indicate the make of motor used during the testing and the same make/model of motor should be supplied by the fan manufacture at the site. The cost including the star/Delta Panel &amp; cabling as per power rating for the Fans. Necessary copper earthing should also be included. Cabling and earthing as required from Fan Elec. Panel to Fan motor shall be considered as included in this scope &amp; no separate measurements shall be considered for this lumpsum item.</p> <p>MAKE :- Greenheck, Kruger, System Air, Dyna Air</p>				
113	Fair-AMH-AC-24	6000 CFM at 25 mm static pressure Exhaust Air Fan	16.00	Nos.	1,01,510.00	16,24,160.00
114	Fair-AMH-AC-23	5000 CFM at 40 mm static pressure Fresh Air Fan	16.00	Nos.	97,925.00	15,66,800.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
115	FAIR ITEM	Design, supply, installation and testing of proprietary Aluminium acoustic louvers to meet MEP requirements. Detailing, supply, fabrication and installation of complete works including aluminium louver blades fitted within aluminum end plate, HDG with PU paint steel substructure, aluminium flashing and SS grade 316 anchor bolts, bolts & nuts with spring washer, SS grade 316 bird mesh. Including all accessories, and as per Subcontract Drawings, and instructions of Contractor / Engineer. Aluminium finish in high performance powder coat. Subcontractor has to do their own design calculation as per the design loads given in Subcontract Specifications and to accommodate the minimum design & performance requirements stated herein and the Subcontract Drawings  Aluminium Acoustic Louvers - 12 inch Deep	220.00	Sq.mtr	43,500.00	95,70,000.00
116	Fair-AMH-AC-20	PLC Cum Sequential Controller - Supply and installation of Programmable Logic controller including timer, Aux.Relays, contactor as required with auto/manual selector switch, push button, indicating lamp, etc. The controller should automatically start & stop the Air-conditioning unit and close outlet damper as per the required schedule. Dry Contact Module for connecting External Sequential Controller with wall type Indoor units. The controller should give the sound alarm in case of failure of Air Conditioning unit accordingly include the necessary accessories. The controller shall automatically start the standby unit in case of failure of operating unit. The controller shall provide high temperature alarm in critical rooms. Provide Audible alarm with silencing switch to be installed at room entrance. PLC shall be BMS compatible & It shall be control the Sequence of 3 AC Units. (For UPS/IBMS/SERVER etc) MAKE :- Aircon Controls, Proton, TechnoAir Solution, Softhard Automation Pvt.Ltd., Selec Controls Pvt.Ltd.	8.00	Nos.	40,710.00	3,25,680.00
117	Fair-AMH-AC-08	Temperature & RH Duct/Room type sensor for signalling. MAKE :- Honeywell, Belimo, Omnicron	11.00	Nos	6,301.20	69,313.20
		<b>TOTAL AMOUNT HVAC SYSTEM (In Rs.)</b>				<b>12,31,21,571.20</b>
		<b>SAY</b>				<b>12,31,21,571.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI****PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS****On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072****COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR IBMS - HOSPITAL BUILDING****ESTIMATE OF IBMS WORK C.S.M.C.****2,30,53,940.00**

<b>Sr. No.</b>	<b>Item Code</b>	<b>Description of work</b>	<b>Qty.</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount of C.S.M.C. per annum in Rs.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of IBMS work per annum for period of next five years after expiry of free guarantee period of 1 year inclusive of all spares and consumables. Year: 2nd (5% of csmc estimate)	1	Year	11,52,697.00	Year	11,52,697.00
2	FAIR ITEM	Year: 3rd (6% of csmc estimate)	1	Year	13,83,236.40	Year	13,83,237.00
3	FAIR ITEM	Year: 4th (7% of csmc estimate)	1	Year	16,13,775.80	Year	16,13,776.00
4	FAIR ITEM	Year: 5th (8% of csmc estimate)	1	Year	18,44,315.20	Year	18,44,315.00
5	FAIR ITEM	Year: 6th (8% of csmc estimate)	1	Year	18,44,315.20	Year	18,44,315.00
<b>TOTAL</b>							<b>78,38,340.00</b>
<b>TOTAL, SAY RS.:</b>							<b>78,38,340.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES BMS WORKS - HOSPITAL BUILDING**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<b>Video Conference and Interactive Display Solution</b>				
1	BAH-VCIDS-FA-70	S/I/T/C of Video Conference Solution having 12x PTZ Camera, should support dual display for Video and content, 4K content sharing, wired and wireless content sharing, 3 or more microphones, should support 200 mobility users with 5 year license from day 1	2.00	Nos	₹ 11,90,890	₹ 23,81,780
2	BAH-VCIDS-FA-71	S/I/T/C of 86" Interactive Display, 3840 x 2160 4K Display, 178° Viewing Angle, 370 cd/m <sup>2</sup> , 20 Touch Points, 1 billion colors, Tempered and Anti Glare Glass, Android 8.0 or higher, 2 x 15W speakers, OPS PC having core i7, 8GB RAM and 256GB SSD	2.00	Nos	₹ 5,80,230	₹ 11,60,460
		<b>Building Management System</b>				
3	BAH-BMS-FA-74	S/I/T/C of CENTRAL CONTROL SERVER Intel® Xeon® CPU E5-2640 x64 (or better) compatible with dual and quad core processors; • Windows 10 (32 and 64 bit), • 8Gb minimum, 16Gb or more recommended for larger systems; • 2TB 2.5inch Solid State Drive; • Video card and monitor capable of displaying at 1024 x 768 resolution, or greater With Anitivirus and required accessories etc.	1.00	Nos.	₹ 1,65,000	₹ 1,65,000
4	BAH-BMS-FA-75	S/I/T/C of A 4 size Inkjet colour Printer suitable for the application, with driver software.	1.00	Nos.	₹ 9,500	₹ 9,500
5	BAH-BMS-FA-76	S/I/T/C of Display monitor for BMS Graphical User Interface - LED 32 Inch	1.00	Nos.	₹ 36,000	₹ 36,000
		S/I/T/C of 10/100/1000 Base-T Switch with IP multicast snooping and data-driven IGMP support and with 1000 baseT FO uplink ports and all related termination accessories as per vendor specific System requirement. (Pigtail,Sleeve, Patch Chords, termination etc)				
6	BAH-BMS-FA-77	S/I/T/C of 8 Port Switch	12.00	Nos.	₹ 10,000	₹ 1,20,000
7	BAH-BMS-FA-78	S/I/T/C of 12 Port Switch	12.00	Nos.	₹ 15,800	₹ 1,89,600
8	BAH-BMS-FA-79	S/I/T/C of 16 Port Switch	6.00	Nos.	₹ 22,500	₹ 1,35,000

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
9	BAH-BMS-FA-80	<b>S/I/T/C of SOFTWARE</b> Web Based Graphical Software meeting the requirements in the Given I/O Summary and 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 Management System as per Specifications. The BMS GUI software should be with SMS Facility supporting not less than 5000 points. Structured Query Language (SQL) is required for all system database parameter storage. This data shall reside on a server for all database access. Systems requiring proprietary database and user interface programs shall not be acceptable. Software shall be able to communicate with Lonworks, BACnet, Modbus devices or Sutaible Software with comunicat with each other units simultaneously, with unlimited user capacity. Same software can be utilized as programming / commissioning software of DDC, NAC etc. (All required Software with original license competent with BMS software)	1.00	Nos.	₹ 9,80,000	₹ 9,80,000
		<b>DDC CONTROLLERS WITH IP :</b> S/I/T/C of IP Based DDC controllers. UL and BTL Automation stations / DDC Controller. The controllers shall be 32 bit microprocessor based standalone with real time clock. The DDC's shall be capable of peer to peer communication with other DDCs on the basis of master & slave topology. Also it should come up with lockable MS mounting cabinets duly powder coated connector strip, internal wiring and space to house controller & relays, connector strip current transformer, MCB, internal wiring. (Contractor shall confirm his I/O provision w.r.t requirement on basis of data point). DDCs requiring more than 2 additional Plug in type IO Module cards or expansion modules to suffix the requirement of required inputs/outputs are not acceptable. Use of AI to DI multiplexer is also not acceptable. DDCs shall be compact factory fitted with IO Points With Enclosure necessary required.				
10	BAH-BMS-FA-81	S/I/T/C of DDC CONTROLLERS WITH IP for Exhaust Air Fans	10.00	Nos.	₹ 58,000	₹ 5,80,000
11	BAH-BMS-FA-82	S/I/T/C of DDC CONTROLLERS WITH IP for Fresh Air Fans	10.00	Nos.	₹ 58,000	₹ 5,80,000
12	BAH-BMS-FA-83	S/I/T/C of DDC CONTROLLERS WITH IPfor Plumbing & FireFighting System	3.00	Nos.	₹ 58,000	₹ 1,74,000
13	BAH-BMS-FA-84	S/I/T/C of DDC CONTROLLERS WITH IP for Chillers & Pumps System	2.00	Nos.	₹ 58,000	₹ 1,16,000
14	BAH-BMS-FA-85	S/I/T/C of DDC CONTROLLERS WITH IP for Cooling Tower	1.00	Nos	₹ 58,000	₹ 58,000
15	BAH-BMS-FA-86	S/I/T/C of DDC CONTROLLERS WITH IP for Floor Mounted Air Handling Units	30.00	Nos.	₹ 58,000	₹ 17,40,000
16	BAH-BMS-FA-87	S/I/T/C of DDC CONTROLLERS WITH IP for Ceiling susended Units	15.00	Nos.	₹ 58,000	₹ 8,70,000
17	BAH-BMS-FA-88	S/I/T/C of DDC CONTROLLERS WITH IP for Loft Mounted Units	2.00	Nos.	₹ 58,000	₹ 1,16,000
18	BAH-BMS-FA-89	S/I/T/C of DDC CONTROLLERS WITH IP for Fan Coil Units	24.00	Nos.	₹ 58,000	₹ 13,92,000
19	BAH-BMS-FA-90	S/I/T/C of DDC CONTROLLERS WITH IP for Cassette Units	40.00	Nos.	₹ 58,000	₹ 23,20,000



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
20	BAH-BMS-FA-91	S/I/T/C of DDC CONTROLLERS WITH IP for Precision AC Units	2.00	Nos.	₹ 58,000	₹ 1,16,000
21	BAH-BMS-FA-92	S/I/T/C of DDC CONTROLLERS WITH IP for Hi-Wall Units	8.00	Nos.	₹ 58,000	₹ 4,64,000
22	BAH-BMS-FA-93	S/I/T/C of DDC CONTROLLERS WITH IP for All Electrical Panels System	10.00	Nos.	₹ 58,000	₹ 5,80,000
23	BAH-BMS-FA-94	S/I/T/C of DDC CONTROLLERS WITH IP for Transformer	1.00	Nos.	₹ 58,000	₹ 58,000
24	BAH-BMS-FA-95	S/I/T/C of DDC CONTROLLERS WITH IP for DG Set	1.00	Nos	₹ 58,000	₹ 58,000
25	BAH-BMS-FA-97	S/I/T/C of DDC CONTROLLERS WITH IP for Lifts & Escalators	12.00	Nos	₹ 58,000	₹ 6,96,000
26	BAH-BMS-FA-98	S/I/T/C of DDC CONTROLLERS WITH IP for For OT monitoring	9.00	Nos	₹ 58,000	₹ 5,22,000
		<b>INTEGRATION</b>				
27	BAH-BMS-FA-112	<p>S/I/T/C of Bacnet Controller as per manufacture standard specification Bacnet controller discrimination controllers are native BACnet controllers that communicate on an RS-485 field bus as Master devices using the MS/TP BACnet protocol.</p> <p>Native BACnet MS/TP Communications for Interoperability to Third-Party Systems</p> <ul style="list-style-type: none"> <li>• Supports 18 BACnet Object Types including</li> <li>• Trends, Schedules, Calendars, and Loops</li> <li>• Powerful, Flexible System Controller for the Most Demanding Applications</li> <li>• Expandable I/O Meets Additional Point</li> <li>• Count Needs</li> <li>• Non-Volatile Flash Memory Provides Utmost Reliability — Stores Both Application Program and Operating System</li> <li>• Optional Local Display/Keypad Provides Easy</li> <li>• Operator Interface</li> <li>• Local, Extended Storage of Log Data</li> <li>• View and Modify Information with Optional</li> <li>• Smart Sensor Display</li> </ul>	5.00	No	₹ 1,25,000	₹ 6,25,000
28	BAH-BMS-FA-113	<p>S/I/T/C of Modbus Gateway Router Ethernet Enabled as per manufacture standard specification a translator (router) between the two networks allowing up to 32 Modbus RTU devices to be connected to a Modbus-TCP network. The gateway features a Modbus-TCP Server functionality and internally performs a transparent conversion between the Modbus-TCP and Modbus RTU protocols.</p>	5.00	No	₹ 1,75,000	₹ 8,75,000

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
29	BAH-BMS-FA-114	S/I/T/C of Data logger an embedded industrial computer that connects to Building Automation Systems (BAS) through BACnet/IP or BACnet Ethernet protocols Each locates all trend logs within the BAS and archives up to 5,000 individual trend logs on its local secure database. Trend log data is accessed through a built-in web interface, as well as through the software. Internal, local storage of trend log data. Built-in web UI for feedback, operational status and configuration. Vendor independent.Built-in connectivity to CopperTree's Native BACnet device. Industrial embedded PC with an internal required(60GB) solid-state hard drive. Configurable auto backup to external storage device. Firmware auto-update capability. Optional SQL connector.BACnet Protocols BACnet/IP BACnet Ethernet Mounting 35 mm horizontal DIN rail Includes rubber feet for flat surface mounting Connectors 5 Screw-type terminal connectors 1 DC Power Jack, ID 2.5 mm, OD 5.5 mm Wiring Class NEC Class 2 Power 24 VAC, 50 VA 12-28 VDC, 30 W Technology Intel® Atom™ D2550 processor 2 GB SDRAM 64-bit operating system Communication Ports 2 Gigabit Ethernet 4 USB 2.0, maximum 500 mA each Ambient 0° to 55°C (32° to 131°F) 10-90% RH (non-condensing) Dimensions 19.2 x 13.5 x 7.8 cm (7.6 x 5.3 x 3.1 in.) Weight 1.13 kg (2.49 lb) Compliance CE-EMC Directive 89 / 336 / EEC FCC Class B Listings C-UL ListedUL 916 Listed	1.00	No	₹ 9,50,000	₹ 9,50,000
		<b>SENSORS AND FIELD DEVICES</b>				
		Supplying, installing, testing and commissioning of the following sensors/transducers/transmitters:				
30	BAH-BMS-FA-115	S/I/T/C of DP Switch for AHU Run Status, 40-400 Pascals.	72.00	Nos.	₹ 6,500	₹ 4,68,000
31	BAH-BMS-FA-116	S/I/T/C of DP Switch for AHU Filter Status, 40-400 Pascals.	120.00	Nos.	₹ 6,500	₹ 7,80,000
32	BAH-BMS-FA-117	S/I/T/C of DPT for VFD Modulation, 0-1000 Pascals, 4-20mA Output.	120.00	Nos.	₹ 12,500	₹ 15,00,000
33	BAH-BMS-FA-118	S/I/T/C of Water DPT for Pumps VFD Modulation, 0-10Bar, 4-20mA Output.	5.00	Nos.	₹ 11,600	₹ 58,000
34	BAH-BMS-FA-119	S/I/T/C of Duct Smoke Sensor for Supply & Return Air.	120.00	Nos.	₹ 5,500	₹ 6,60,000
35	BAH-BMS-FA-120	S/I/T/C of Duct T&Rh Sensor for Return Air, +/-3% accuracy for Rh, 4-20mA Output.	72.00	Nos.	₹ 5,500	₹ 3,96,000
36	BAH-BMS-FA-121	Supply of Flameproof Bi-Level Switch for DG Tank Fuel Level Monitoring.	3.00	Nos.	₹ 22,000	₹ 66,000
37	BAH-BMS-FA-122	S/I/T/C of Flameproof Level Transmitter for HSD Tank Level Monitoring, 4-20mA Output.	3.00	Nos.	₹ 22,000	₹ 66,000
38	BAH-BMS-FA-123	S/I/T/C of Immersion Temperature Sensors with Brass Thermowell, 150mm length.	16.00	Nos.	₹ 4,800	₹ 76,800
39	BAH-BMS-FA-124	S/I/T/C of Bi-Level Switch for Cooling Tower Sump Level Monitoring.	8.00	Nos.	₹ 16,500	₹ 1,32,000

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
40	BAH-BMS-FA-125	S/I/T/C of Outdoor T&Rh Sensor with +/-2% accuracy for Rh along with Radiation Shield, IP65 rated, 4-20mA Output.	1.00	Nos.	₹ 18,500	₹ 18,500
41	BAH-BMS-FA-126	S/I/T/C of Room Temperature Sensor for DG Room Temperature Monitoring.	1.00	Nos.	₹ 15,000	₹ 15,000
42	BAH-BMS-FA-127	S/I/T/C of DP switch for UVGI lamps	30.00	Nos.	₹ 18,000	₹ 5,40,000
43	BAH-BMS-FA-128	S/I/T/C of DP switch for heater	13.00	Nos.	₹ 14,500	₹ 1,88,500
44	BAH-BMS-FA-129	S/I/T/C of Operator Terminal	1.00	Nos.	₹ 21,800	₹ 21,800
<b>TOTAL AMOUNT IBMS - BUILDING MANAGEMENT SYSTEM (In RS)</b>						<b>₹ 2,30,53,940</b>

MUNICIPAL CORPORATION OF GREATER MUMBAI							
PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS							
COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR MODULAR OTs WORK							
ESTIMATE OF MOD. OT WORK C.S.M.C.							Rs. 98,606,642
SR. NO.	ITEM CODE	DESCRIPTION OF WORKS	QTY.		RATE	UNIT	AMOUNT OF C.S.M.C. PER ANNUM IN RS.
1	FAIR ITEM	Comprehensive service and maintenance contract of MOD. OT WORK per annum for period of next five years after expiry of free guarantee period of 3 years inclusive of all spares and consumables. Year: 4th (5% of total cost)	1	Year	4930332.10	Year	Rs. 4,930,332
2	FAIR ITEM	Year: 5th (6% of total cost)	1	Year	5916398.52	Year	Rs. 5,916,399
3	FAIR ITEM	Year: 6th (7% of total cost)	1	Year	6902464.94	Year	Rs. 6,902,465
4	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	7888531.36	Year	Rs. 7,888,531
5	FAIR ITEM	Year: 8th (8% of total cost)	1	Year	7888531.36	Year	Rs. 7,888,531
<b>SECTION –II A TOTAL</b>							<b>Rs. 33,526,258.28</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 33,526,259</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES - MODULAR OT WORKS**

Sr.No.	Item Code	Description	Unit	Rate	Qty	Amount
1	KSS-MOT-01	SITC OF Pre-Fab Wall Panel - Stainless Steel Grade 304 Panel : The Pre-fabricated modular construction is designed and constructed for exact size, easy field installation and future disassembly, enlargement, or relocation. The operating room will be constructed from Pre-fabricated Panel of 1.2 mm or more thick Stainless Steel Grade 304 sheets, with a 12 mm thickbacking of gypsum board.	Sqmt	15,227.00	250.00	3,806,750.00
2	KSS-MOT-02	SITC OF Substructure Steel Assembly - Substructure elements of 1.5 mm thick GI extending from the finish floorto ceiling slab to make the wall panels free standing. Suitable substructure in GI for mounting wall panels along walls, with cross members to support equipments flush mounted in to the wall panels.Substructure will also have provision forrouting electrical wiring and gas Pipeline.	Sqmt	1,848.00	420.00	776,160.00
3	KSS-MOT-03	SITC OF Pre-Fab Ceiling- Stainless Steel Grade 304 Panel : The Pre-fabricated modular construction is designed and constructed for exact size, easy field installation and future disassembly, enlargement, or relocation. The operating room ceiling will be constructed from Pre-fabricated Panel of 1.2 mm or more thick Stainless Steel Grade 304 sheets, with a 12 mm thick backing of gypsum board. Suitable grid structure suspended from the ceiling slab should be provided to support the ceiling panels to the required height, and also provide for easy routing of electrical conduits, gas pipelines and bio air-conditioning ducts.	Sqmt	5,016.00	500.00	2,508,000.00

4	KSS-MOT-04	SITC OF Antimicrobial Coating: Filling of all Joints and cavities with metallic Epoxy Filler and Sanded Flush to provide a jointless finish and then sprayed with a water based liquid plastic aseptic and self setilizing wall coating system to a d.f.t. of 300microns with primer.	Sqmt	5,016.00	750.00	3,762,000.00
5	KSS-MOT-05	SITC OF Antistatic Conductive/ Dissipative Flooring: Seamless with perfectly curved flush-covings, resistance to mechanical stresses and dynamic loads and having conductive protection characteristics, 2 mm thick, washable	Sqmt	6,807.00	550.00	3,743,850.00
6	KSS-MOT-06	SITC OF PACS RETRIVAL SYSTEM : Recess mounted digital image viewing station designed for use in OT, which can work independently, or with PACS of Radiology department, with 40inch DICOM monitor, medical grade keyboard, touch pad. Integrated hardware with minimum i5 or latest processor, with suitable RAM,HDD and Windows operating system prevalent at the time of installation.	Nos.	1,227,093.00	11.00	13,498,023.00
7	KSS-MOT-07	SITC OF Surgeon Control Panel membrane type, mounted flush in the theatre wall, comprising of the following: 1 No. Day Time Clock 1 No. Elapse Time Clock 1 Set dimmer for peripheral/ planairlights 1 No. hands free telephone 1 No. Medical Gas status/ alarm 1 No. HEPA status/ alarm 1 set indicator only for temperature and humidity display Size - 650X 650 X 115 m	Nos.	331,405.00	11.00	3,645,455.00
8	KSS-MOT-08	SITC OF Unidirectional Laminar Air Flow Plenum Ceiling - constructed out of 1.2 mm thick SS 304 sheet of size 2800 X 2800 mm having 8 nos of hepa filters. The hepa filters having dust spot efficiency of 99.99% 0.3 micron. Air & Light diffuser made of mono filament precision woven polyester for the plan air ceiling to give a "LAMINAR FLOW" of filtered air. It also provides a diffused shadow less lighting system with Intensity control.	Nos.	1,433,099.00	3.00	4,299,297.00

9	KSS-MOT-10	SITC OF Cascade Pressure Stabilizer having multi 304 graded stainless steel blades to control room air pressure Size - 305 X 335 mm	Nos.	62,699.00	11.00	689,689.00
10	KSS-MOT-13	SITC OF Hermetically Sealing type of Manual Sliding / Swing Door having thickness of 40 min of size 1500 X 2100 mm single / dual leaf with PUF core sandwiched between Antimicrobial High Pressure laminates ( HPL ), with viewing window of size 300 X 300 mm. The doorleafs hung on extruded heavy duty aluminium alloy extrusion Doorframe for single side swing Doors, Sliding Doorleafs runs on (nylon wheels) within an extruded heavy duty aluminium alloy extrusion track / frames, for smooth effortless sliding with the help of handle.	Nos.	313,491.00	8.00	2,507,928.00
11	KSS-MOT-14	SITC OF Microprocessor based Electronic Automation (Operator ) for Manual Doorfor controlling the direction of movements, the acceleration and speed of the door, with a lownoise level pulse generator motor. It includes a photocell for user's safety. (For sliding door)	Nos.	331,405.00	11.00	3,645,455.00
12	KSS-MOT-15	SITC OF Radar Hand Switch	Nos.	18,809.00	11.00	206,899.00
13	KSS-MOT-16	SITC OF Foot Switch	Nos.	18,809.00	11.00	206,899.00
14	KSS-MOT-20	SITC OF Medical Gas Pipeline inside OT Compriseing of Cooper pipe 15mm Diameter 0.7 and 22mm Diameter 0.9, Pressure transducers , NIST Connectors,etc	Lot	268,706.00	3.00	806,118.00
15	KSS-MOT-21	SITC OF LED Peripheral Lights : Recess mounted IP54 Protocol, Non hygroscopic Peripheral Lights having power LED elements with suitable electronic driver and controls. The Peripheral light diffuseris fixed in powder coated aluminium frame. (Size: 1000/1200 X 230 mm)	Nos.	26,870.00	88.00	2,364,560.00

16	KSS-MOT-22	SITC OF 2- Bay Scrub Sink, with Infrared Photo sensor, Digital Timer with user defined Time interval 1,3,5 and 10 minutes,1 no. mixture valve and 1 nos. solenoid valves along with Manual Option Foot Operated mechanism/ Foot switch. Anti-splash metal body construction made of Stainless Steel Grade 304 polished finished. The Scrub Sink is provided with front access panel for ease of maintenance and repairs. 1 – Position size 1600 mm long	Nos.	313,491.00	9.00	2,821,419.00
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17	KSS-MOT-23	<p>SITC OF LED Double Dome OT Light with Ceiling mounted Double Dome LED OT lights having following features.</p> <ul style="list-style-type: none"> <li>- Light intensity Ec - 160 000 &amp; 130 000 lux,</li> <li>- Light intensity adjustment - 5 – 100%</li> <li>- Colortemperature Tc (with adjustment) - 3700 – 5000 K</li> <li>- Light field diameter d10 at Ec - 180 - 400 mm</li> <li>- Working range - 700 - 1400 mm</li> <li>- Color rendering index [Ra(1-8)] - &gt; 93 ( &gt; 95)*</li> <li>- Power supply - 90 – 250 V AC</li> <li>- Power consumption - 80 - 110W</li> </ul>	Nos.	2,895,902.00	3.00	8,687,706.00
18	KSS-MOT-24	<p>SITC OF Anesthesia Pendant - Double Arm Imported - Supply &amp; Installation of Double Arm Anesthesia Pendant, with 800 + 800 mm long movable arm, movable by 330°. Having weight carrying capacity of approximately 80Kg, Six Electrical Sockets 5/15 ampere &amp; Data Point, one adjustable monitor shelf, one fixed shelf with drawer and 6 nos. of Gas Outlets .</p>	Nos.	1,701,807.00	8.00	13,614,456.00
19	KSS-MOT-25	<p>SITC OF Surgeon Pendant - Double Arm Imported - Supply &amp; Installation of Double Arm Surgeon Pendant with 800 + 800 mm long arm having weight carrying capacity of 150Kg, movable by 330°, Six Electrical Sockets 5/15 ampere &amp; Data Point, Two adjustable monitor shelves, one fixed shelf with drawer and 6 nos. of Gas Outlets .</p>	Nos.	1,701,807.00	8.00	13,614,456.00

20	KSS-MOT-26	<p>SITC OF INTEGRATED CONTROL SYSTEM have open construction / architecture enables integration of the equipment and devices, can be controlled by the system using touch panel or PC, which presents the visual interfaces of the devices. The operator from one place has the possibility to control devices, equipment, &amp; Optional transmission, recording and displaying of the video signal (HD or SD). The operator have access to the hospital information system that stores information about patients. INTEGRATED Control features; OPERATING TABLES INTEGRATED CONTROL SYSTEM Enables remote control of the operating tables in operating block (OT). It can control all electro- hydraulic functional movements of the table</p>	Nos.	2,239,220.00	3.00	6,717,660.00
		<p>LIGHTING INTEGRATED CONTROL SYSTEM Enables control of Surgical lights installed in the operating theatre. Panel can control Single or Double head operating light. Enables to adjust intensity, colour temperature and ENDO function during miniinvasive surgeries, of each light head. The intensity of peripheral lights also can be adjusted. AIR-CONDITIONING SYSTEM INTEGRATED CONTROL SYSTEM System enables control / Display of air-conditioning parameters and Display the level HEPA filters. CAMERAS INTEGRATED CONTROL SYSTEM allows control of the overview cameras in the room and placed in the operating light head. The panel can control the overview camera settings, image zoom and image preview. Panel of camera in the light head can control zoom and rotation and preview of images.</p>				

		<p>MONITORS</p> <p>Medical monitors integrated with wall panels and mounted on operating lights arms. OPTIONAL MANAGEMENT OF AUDIO-VIDEO SIGNAL AND ACCESS TO THE INFORMATION SYSTEM INTEGRATED</p> <p>CONTROL SYSTEM enables to choose, save, preview, play and stop of the signal from cameras. The signal is recorded as per DICOM standard. INTEGRATED allows access to the hospital information system that stores information about</p>				
21	KSS-MOT-27	<p>SITC OF Hermetically High Pressure Sealed LEAD LINE Sliding door made out of Stainless Steel 304 sheet having thickness of 40- 48mm of size 1500 X 2100 mm single / dual leaf with PUF core sandwiched between Stainless steel 304 sheet, with viewing window of size 300 X 300 mm. The Extruded Aluminium Doorframe with Sealing Gasket provides Leak-less mechanism on three side of Door with extruded heavy duty anodized wall frame with non return air gasket, and drop seal provides leak less sealing with the floor.</p> <p>Doors are provided with standard accessories like Door closer,D type Handle etc.</p>	Nos.	1,047,954.00	3.00	3,143,862.00
22	RBH18-MG-FA- 54	<p>Supply, Installation, Testing &amp; Commissioning of IMPORTED RETRACTABLE OT PENDANT FOR MINOR OT It should comply and fully meets with the latest standard certificate from notified body must be submitted. Certificate of Origin must be given.</p> <p>As per tender technical specifications and approved makes..</p>	Nos.	1,770,000.00	2.00	3,540,000.00
<b>GRAND TOTAL SUMMARY</b>						<b>98,606,642.00</b>

<b>MUNICIPAL CORPORATION OF GREATER MUMBAI</b>							
<b>PROPOSED BMC GENERAL HOSPITAL &amp; STAFF QUARTERS</b>							
<b><u>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR MGPS WORK</u></b>							
<b>ESTIMATE OF MGPS WORK C.S.M.C.</b>						<b>Rs. 79,417,153</b>	
<b>SR. NO.</b>	<b>ITEM CODE</b>	<b>DESCRIPTION OF WORKS</b>	<b>QTY.</b>		<b>RATE</b>	<b>UNIT</b>	<b>AMOUNT OF C.S.M.C. PER ANNUM IN RS.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of MGPS WORK per annum for period of next five years after expiry of free guarantee period of 3 years inclusive of all spares and consumables. Year: 4th (5% of total cost)	1	Year	3970857.65	Year	Rs. 3,970,858
2	FAIR ITEM	Year: 5th (6% of total cost)	1	Year	4765029.18	Year	Rs. 4,765,029
3	FAIR ITEM	Year: 6th (7% of total cost)	1	Year	5559200.71	Year	Rs. 5,559,201
4	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	6353372.24	Year	Rs. 6,353,372
5	FAIR ITEM	Year: 8th (8% of total cost)	1	Year	6353372.24	Year	Rs. 6,353,372
<b>SECTION –II A TOTAL</b>							<b>Rs. 27,001,832.02</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 27,001,833</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI****PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**  
**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 40072****BILL OF QUANTITIES C.S.M.C - MEDICAL GAS PIPELINE SYSTEM**

<b>SR.NO</b>	<b>REF. CODE</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>S//I/T/C RATE</b>	<b>S//I/T/C TOTAL AMOUNT</b>
1	Fair-MGPS-OMH-7	SITC of 2 Gases Valve Box with pressure guage only for Oxygen & Vacuum. It Should fully complies with NFPA-99 standards or CGA standards. It should have zone valve box shall consist of the following components: A steel valve box which can house two to seven shut-off ball valves with tube extensions, an aluminum frame and a pull-out removable window. Pressure Gauges are included. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk- screen caution: "MEDICAL GAS CONTROL VALVES CLOSE ONLY IN EMERGENCY"	Nos.	20	50,000.00	1,000,000.00

2	Fair-MGPS-OMH-8	SITC of 3 Gases Valve Box with pressure guage only for Oxygen, MA4 & Vacuum. It Should fully complies with NFPA-99 standards or CGA standards. It should have zone valve box shall consist of the following components: A steel valve box which can house two to seven shut-off ball valves with tube extensions, an aluminum frame and a pull- out removable window. Pressure Gauges are included. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk- screen caution: "MEDICAL GAS CONTROL VALVES CLOSE ONLY IN EMERGENCY"	Nos.	12	60,000.00	720,000.00
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3	Fair-MGPS-OMH-9	<p>SITC of 5 Gases Valve Box with pressure guage only for Oxygen, N2O,MA4,SA7 &amp; Vacuum. It Should fully complies with NFPA-99 standards or CGA standards. It should have zone valve box shall consist of the following components: A steel valve box which can house two to seven shut-off ball valves with tube extensions, an aluminum frame and a pull-out removable window. Pressure Gauges are included. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk-screen caution: "MEDICAL GAS CONTROL VALVES CLOSE ONLY IN EMERGENCY"</p>	Nos.	4	80,000.00	320,000.00
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4	FAIR ITEM	SITC of 6 Gases Valve Box with pressure guage only for Oxygen, N2O,MA4,SA7,CO2 & Vacuum. It Should fully complies with NFPA-99 standards or CGA standards. It should have zone valve box shall consist of the following components: A steel valve box which can house two to seven shut-off ball valves with tube extensions, an aluminum frame and a pull-out removable window. Pressure Gauges are included. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk-screen caution: "MEDICAL GAS CONTROL VALVES CLOSE ONLY IN EMERGENCY"	Nos.	6	85,000.00	510,000.00
5	Fair-MGPS-OMH-10	SITC of Digital Area Alarm (2 Services : Oxygen and Vacuum) with pressure sensor : It should fully comply and meet with NFPA-99 and It must be UL Listed with UL certificate must be submitted. Medical Gas LCD Alarm : It should comply with NFPA 99, CSA Z7396.1 and CSA Z305.1. It should be UL or ETL Listed. The LCD alarm shall be microprocessor based with a 10" (25.4 cm) screen and capable of monitoring medical gases.	Nos	20	136,400.00	2,728,000.00



6	Fair-MGPS-OMH-11	SITC of Digital Area Alarm (3 Services : Oxygen, MA4 Air and Vacuum) with pressure sensor : It should fully comply and meet with NFPA-99 and It must be UL Listed with UL certificate must be submitted. Medical Gas LCD Alarm : It should comply with NFPA 99, CSA Z7396.1 and CSA Z305.1. It should be UL or ETL Listed. The LCD alarm shall be microprocessor based with a 10" (25.4 cm) screen and capable of monitoring medical gases.	Nos	12	181,500.00	2,178,000.00
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7	Fair-MGPS-OMH-12	SITC of Digital Area Alarm (5 Services : Oxygen,N2O, MA4 Air, SA4 Air and Vacuum) with pressure sensor : It should fully comply and meet with NFPA-99 and It must be UL Listed with UL certificate must be submitted. Medical Gas LCD Alarm : It should comply with NFPA 99, CSA Z7396.1 and CSA Z305.1. It should be UL or ETL Listed. The LCD alarm shall be microprocessor based with a 10" (25.4 cm) screen and capable of monitoring medical gases.	Nos	4	344,000.00	1,376,000.00
8	FAIR ITEM	SITC of Digital Area Alarm (6 Services : Oxygen,N2O, MA4 Air, SA7 Air, CO2 and Vacuum) with pressure sensor : It should fully comply and meet with NFPA-99 and It must be UL Listed with UL certificate must be submitted. Medical Gas LCD Alarm : It should comply with NFPA 99, CSA Z7396.1 and CSA Z305.1. It should be UL or ETL Listed. The LCD alarm shall be microprocessor based with a 10" (25.4 cm) screen and capable of monitoring medical gases.	Nos	16	370,000.00	5,920,000.00

9	FAIR ITEM	Sensors for Digital Area Alarm for Oxygen, Nitrous Oxide, Medical Air, Surgical Air & Carbon Dioxide.Sensors : It shall be mounted locally (in the rough-in box) by installing the copper pipe provided or mounted remotely. Sensors will be automated for gas specific detection. Each sensor unit is gas specific, with an error message display for an incorrect connection. Each sensor unit is gas specific, with an error message display for an incorrect connection.Sensor operating pressure range: Mid-Pressure: (0 psi to 99 psi) - OXY, AIR, N <sub>2</sub> O, CO <sub>2</sub> High Pressure: (0 psi to 249 psi) - NIT, IAR,	Nos	52	22,000.00	1,144,000.00
10	FAIR ITEM	Sensors for Digital Area Alarm for Vacuum.Sensors : It shall be mounted locally (in the rough-in box) by installing the copper pipe provided or mounted remotely. Sensors will be automated for gas specific detection. Each sensor unit is gas specific, with an error message display for an incorrect connection. Each sensor unit is gas specific, with an error message display for an incorrect connection.Sensor operating pressure range: Vacuum: (0 to 30 inHG) - VAC, WAGD, AGSS	Nos	45	13,000.00	585,000.00

11	Fair-MGPS-OMH-13	SITC of Medical Gas Terminal Units (Gas Outlets) for Oxygen : It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02- 01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	468	6,490.00	3,037,320.00
12	Fair-MGPS-OMH-14	SITC of Medical Gas Terminal Units (Gas Outlets) for MA4 Air 4 Bar :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02-01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	210	6,490.00	1,362,900.00

13	Fair-MGPS-OMH-15	SITC of Medical Gas Terminal Units (Gas Outlets) for SA7 Air 7 Bar :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02-01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	21	7,690.00	161,490.00
14	Fair-MGPS-OMH-16	SITC of Medical Gas Terminal Units (Gas Outlets) for Vacuum :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02- 01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	468		-

15	Fair-MGPS-OMH-17	SITC of Medical Gas Terminal Units (Gas Outlets) for Nitrous Oxide (N2O) :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02-01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	27	6,490.00	175,230.00
16	FAIR ITEM	SITC of Medical Gas Terminal Units (Gas Outlets) for Carbon Dioxide (CO2) :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02-01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	21	11,000.00	231,000.00
17	KSS-MG-24	Supply, Installation, Testing & Commissioning of Imported AGSS outlets with probe/adaptor. Its hould belt should comply and fully meets with the latest standard certificate from notified body must be submitted. Certificate of Origin must be given.As per tender technical specifications and approved makes.	Nos	23	23,105.00	531,415.00

18	FAIR ITEM	SITC of Medical Gas Terminal Units (Gas Outlets) for Entonox :It should fully complies and meets with the requirements of the UK DOH Health Technical Memorandum 02-01 (HTM 02-01) standards only. It shall be duly CE marked to the Medical Device Directive 93/42/EEC under the auspices of notified body no. and under this directive, med gas products are classified as Class IIb Medical Devices.	Nos	13	11,000.00	143,000.00
19	Fair-MGPS-OMH-18	SITC of Stainless Steel Ventilator Probe for Oxygen.	Nos	468	1,320.00	617,760.00
20	Fair-MGPS-OMH-19	SITC of Stainless Steel Ventilator Probe for Medical Air/ Surgical Air	Nos	230	1,320.00	303,600.00
21	Fair-MGPS-OMH-20	SITC of Adaptor for connecting with oxygen flow meter	Nos	230	1,320.00	303,600.00
22	Fair-MGPS-OMH-21	SITC of Adaptor for connecting with N2O	Nos	27	1,320.00	35,640.00
23	Fair-MGPS-OMH-22	SITC of adapter for connecting with vacuum regulator	Nos	360	1,320.00	475,200.00
24	FAIR ITEM	SITC of Stainless Steel Probe for CO2	Nos	21	9,000.00	189,000.00
25	FAIR ITEM	SITC of Stainless Steel Probe for Entonox	Nos	13	9,000.00	117,000.00
26	Fair-MGPS-OMH-23	SITC of Oxygen Flow Meter 0-15lpm :It shall fully comply and meets with active medical device of class IIa and in compliance with the EN ISO 15002: 2008 standard. It should be duly CE marked and comply with 93/42/EEC Medical Devices: General. It shall be CE marked with the notified body number specified. The flow meters should be of 0-15 LPM range for oxygen and with inlet pressure 50-60psi. (4.5 bar).	Nos	300	7,645.00	2,293,500.00

27	Fair-MGPS-OMH-24	SITC of High Flow Oxygen Flow Meter 0-70lpm :It shall fully comply and meets with active medical device of class IIa and in compliance with the EN ISO 15002: 2008 standard. It should be duly CE marked and comply with 93/42/EEC Medical Devices: General. It shall be CE marked with the notified body number specified. The flow meters should be of 0-70 LPM range for oxygen and with inlet pressure 50-60psi. (4.5bar).	Nos	69	20,606.00	1,421,814.00
28	Fair-MGPS-OMH-25	SITC of Humidifier Bottle : Polypropylene or Polysulphone 250cc Humidifier bottle should be unbreakable, reusable to disinfectants and complements.	nos	370	2,145.00	793,650.00
29	Fair-MGPS-OMH-26	SITC of Vacuum Regulator Unit :It shall fully comply and meets with active medical device of class IIa and in compliance with the EN ISO 10079-3: 2009 standard. It should be duly CE marked and comply with 93/42/EEC Medical Devices: General. It shall be CE marked with the notified body number specified.	Nos	370	27,500.00	10,175,000.00
30	Fair-MGPS-OMH-29	Supply of indigenous D type empty oxygen cylinder with cylinder valve and cap ( 46.7L water capacity) ISI Mark.	Nos.	60	27,500.00	1,650,000.00
31	Fair-MGPS-OMH-30	Supply of indigenous D type empty N2O cylinder with cylinder valve and cap ( 46.7L water capacity) ISI Mark.	Nos.	30	27,500.00	825,000.00



32	FAIR ITEM	Supply of indigenous D type empty CO2 cylinder with cylinder valve and cap ( 46.7L water capacity) ISI Mark.	Nos.	30	30,000.00	900,000.00
33	FAIR ITEM	Supply of indigenous D type empty Entonox cylinder with cylinder valve and cap ( 46.7L water capacity) ISI Mark.	Nos.	30	30,000.00	900,000.00
34	Fair-MGPS-OMH-31	SITC of Medical Gas Rubber tubing color coded throughout their length. All hoses shall incorporate an anti- static inner core (For All Gases)	Mtrs	650	440.00	286,000.00
35	Fair-MGPS-OMH-32	SITC of Oxygen Digital Fully Automatic Control Panel of 2000lpm. Input power to the manifolds is 110 to 240 VAC, 50-60 Hz. It should have flow capacity 4,500 SCFH [2,000 L/min]. (Maximum tolearance allowed will be only 10%).	Nos	2	984,500.00	1,969,000.00
36	FAIR ITEM	SITC of N2O Digital Fully Automatic Manifold Control Panel with heater	Nos	2	400,000.00	800,000.00
37	Fair-MGPS-OMH-33	SITC of Manifold, Header Bars, Tail Pipes:Oxygen Manifold Supply System (Cylinder Manifold Unit) of 10+10 size : 10cylinder manifold bank as left side and 10cylinder manifold bank as right side complete with 20nos.pig tail pipes and 20nos. non- return valves, all header racks.	Nos	2	330,000.00	660,000.00

38	Fair-MGPS-OMH-34	SITC of Manifold, Header Bars, Tail Pipes: Nitrous Oxide Manifold Supply System (Cylinder Manifold Unit) of 10+10 size : 10 cylinder manifold bank as left side and 10 cylinder manifold bank as right side complete with 20 nos.pig tail pipes and 20 nos. non- return valves, all header racks.	Nos	1	330,000.00	330,000.00
39	Fair-MGPS-OMH-35	SITC of Manifold, Header Bars, Tail Pipes: Nitrous Oxide Manifold Supply System (Cylinder Manifold Unit) of 4 + 4 size : 4 cylinder manifold bank as left side and 4 cylinder manifold bank as right side complete with 8 nos.pig tail pipes and 8 nos. non- return valves, all header racks.	Nos	1	165,000.00	165,000.00
40	Fair-MGPS-OMH-36	SITC of Manifold, Header Bars, Tail Pipes: Liquid Oxygen (Cryogenic Dura Cylinders) Stainless Steel Manifold Supply System of 10+10 size : 10cylinder manifold bank as left side and 10cylinder manifold bank as right side.	Nos	1	798,570.00	798,570.00
41	FAIR ITEM	SITC of Manifold, Header Bars, Tail Pipes: Nitrous Oxide Manifold Supply System (Cylinder Manifold Unit) of 2+2 size : 2 cylinder manifold bank as left side and 2 cylinder manifold bank as right side complete with 4 nos.pig tail pipes and 4 nos. non- return valves, all header racks.	Nos	1	810,000.00	810,000.00
42	FAIR ITEM	SITC of CO2 Digital Fully Automatic Manifold Control Panel	Nos	2	520,000.00	1,040,000.00

43	FAIR ITEM	SITC ENTONOX System main manifold : It should consist of manifold, header Bars, tail pipes, non return valves of 4+4 size □ 4cylinder manifold bank as left side and 4cylinder manifold bank as right side complete with 8nos.pig tail pipes and 8nos. non- return valves, all header racks.	Nos	1	180,000.00	180,000.00
44	FAIR ITEM	SITC ENTONOX System emergency manifold :It should consist of manifold, header Bars, tail pipes, non return valves of 2+2 size □ 2cylinder manifold bank as left side and 2 cylinder manifold bank as right side complete with 4nos.pig tail pipes and 4nos. non- return valves, all header racks.	Nos	1	140,000.00	140,000.00
45	FAIR ITEM	SITC of ENTONOX Digital Fully Automatic Manifold Control Panel	Nos	2	710,000.00	1,420,000.00
46	Fair-MGPS-OMH-37	Aluminium Ambient Vaporiser Coil for Liquid O2 to gas conversion for a flow of 200 Nm3/hr	Nos.	2	400,000.00	800,000.00
47	Fair-MGPS-OMH-38	Liquid Oxygen Line Regulator	Nos.	2	100,011.00	200,022.00

48	FAIR-AMH-MGPS-01	SITC of Vacuum Pump. : It should be oil lubricated rotary vane vacuum pump, having each vacuum pump capacity of 1500lpm with IEC Motor rating of minimum 7.5 HP @ 50 Hz or above. Vacuum pump shall comprise of air cooled, oil lubricated vacuum pumps suitable for both continuous and frequent start / stop operation at inlet vacuum vessels between 525mm Hg and 700 mm Hg. The ultimate vacuum of pump shall be 0.1 mbar with gas ballast valve closed. ( 3 W + 1 S)	Nos	4	645,890.00	2,583,560.00
49	FAIR-AMH-MGPS-02	SITC of Vacuum Filter (Bacteria Filter) of 50cfm to 60cfm – 3” Filter housing with drain flask.: It fully complies and meets with requirements of UK HTM medical standards. It should have BS 3928 sodium flame test certificate based on requirements of HTM standards.The bacteria filter should be designed for critical application involving removal of dry and wet dust, particulars, oil aerosol and water droplest, high efficiency glass fiber, fieece media from suction side of vacuum pump system. It should have efficiency of at least 99.995% when tested by sodium flame test and that should be according to BS 3928:1969.	Nos	4	186,000.00	744,000.00
50	Fair-MGPS-OMH-43	SITC of Pressure Guage (*4inchi)	Nos	40	4,400.00	176,000.00

51	Fair-MGPS-OMH-44	SITC of Electrical Control Panel for Vacuum pumps with time totalizer and phase preveneter and cascading	Mtrs	1	247,500.00	247,500.00
52	Fair-MGPS-OMH-46	SITC of Oil Free Rotary Screw/Scroll Air Compressor : Oil free Rotary Screw/scroll air compressor.It should be 50Hz, 3 Phase, 440volts. 11 Bar, 116 Psig. 99cfm or more at 11 Bar. 22 Kw & 30 Hp. The 99 cfm flow capacity for each compressor unit having suitable motor rating of Rotary Screw/scroll air cooled compressor. Compressors shall be oil free Rotary Screw/scroll compressors suitable for both continuous and frequent start/stop operation at a nominal outlet pressure of 800 kPa (8 bar). The air quality shall be 100% oil free, certified ISO8573-1. The compressor shall have a sound insulating enclosure. (2W + 1S)	Nos	3	3,000,000.00	9,000,000.00
53	FAIR-AMH-MGPS-OMH-05	SITC of 60cfm Heatless Air Dryer : Heatless Air Dryer : It should have air dryer desiccant type with ½” end BSP connection. It should have pre filter and post filter. It should be designed for ISO:7183- 1986 (E) standards. It should have dryer quality class -ISO 8573-1 standards. It should be made of aluminum construction. It should have purge loss 15+/- 1%. Active and Regenerative tower.	Nos	2	350,000.00	700,000.00

54	FAIR-AMH-MGPS-06	SITC of Coarse coalescing filter 1" of 50cfm to 60 scfm filter . It should comply with air quality standard ISO 8573-1: 2010. It should have profiled bowl design and push fit elements ensure quick and for reliable maintenance.It should have particle removal 1 micron. It should have maximum particle size class 2 micron as per ISO 8573-1: 2010 .	Nos	2	110,760.00	221,520.00
55	FAIR-AMH-MGPS-07	SITC of Fine coalescing filter 1" of 50cfm to 60 cfm filter. It should comply with air quality standard ISO 8573-1: 2010. It should have particle retention of up to 99.999%, and significantly reduced pressure loss. It should have particle removal 0.01 micron. It should have maximum particle size class 1 micron as per ISO 8573-1: 2010 . It should have maximum oil content 1 micron ISO 8573-1: 2010.	Nos	2	110,760.00	221,520.00
56	FAIR-AMH-MGPS-08	SITC of Activated Carbon Filter 1" of 50cfm to 60 scfm Filter. It should comply with air quality standard ISO 8573-1: 2010. It should have particle retention of up to 99.999%, and significantly reduced pressure loss. It should have particle removal 0.01 micron. It should have maximum particle size class 1 micron as per ISO 8573-1: 2010 . It should have maximum oil content 1 micron ISO 8573-1: 2010.	Nos	2	110,760.00	221,520.00

57	FAIR-AMH-MGPS-09	SITC of Fine Dust Filter 1" of 50cfm to 60 scfm. It should comply with air quality standard ISO 8573-1: 2010. It should have particle retention of up to 99.999%, and significantly reduced pressure loss. It should have pipe size connection 1" = 105scfm and 144nm3/hr.It should have particle removal 0.01 micron. (Maximum tolearance allowed will be only 15%).	Nos	2	110,760.00	221,520.00
58	Fair-MGPS-OMH-53	SITC of Pressure Reducing Station from 11 bar to 4 bar (for MA4 Air) and 7 bar (for SA7 air)	Nos	2	96,800.00	193,600.00
59	Fair-MGPS-OMH-54	SITC of Electrical Control Panel for Air Compressors with time totalizer and phase preveneter and cascading	Nos	1	247,500.00	247,500.00
60	BAH-MGPS-RA-01	Supply,Installation,Testing & Commissioning of (Imported)Duplex AGSS Plant 2400LPM capacity. Complete in all aspect. It should comply and fully meets with the latestst and certificate from notified body must be submitted. Certificate of Origin must be given. As per tender technical specifications and approved makes.	Set	1	5,513,831.00	5,513,831.00

61	KSS-MG-26	Supply, Installation, Testing & Commissioning of AGSS Remote Indicator(Imported) Complete in all aspect. It should comply and fully meets with the latestst and certificate from notified body must be submitted. Certificate of Origin must be given. As per tender technical specifications and approved makes.	Nos	13	98,095.00	1,275,235.00
62	KSS-MG-25	Supply, Installation, Testing & Commissioning of AGSS Hose assembly(Imported) Complete in all aspect. It should comply and fully meets with the latestst and certificate from notified body must be submitted. Certificate of Origin must be given. As per tender technical specifications and approved makes.	Nos	13	34,151.00	443,963.00
63	KSS-MG-27	Supply, Installation, Testing & Commissioning of AGSS Reservoir as per tender technical specifications and approved makes.	Nos	13	251,311.00	3,267,043.00
64	MGPS-MTA-FAIR-04	Supply, Installation, Testing and Commissioning of copper pipes of 35mm dia as per specifications including required accessories clamps, nut bolts, etc. Complete. Painting the medical gas pipeline wit h the approved colour.	rmt	250	5664.52	1,416,130.00
		<b>TOTAL AMOUNT PLMBING PUMPS (In Rs.)</b>				<b>79,417,153.00</b>



**MUNICIPAL CORPORATION OF GREATER MUMBAI**

PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS  
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072

**COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR NURSE CALL SYSTEM WORK****ESTIMATE OF NCS WORK C.S.M.C.****Rs. 80,09,300**

<b>SR. NO.</b>	<b>ITEM CODE</b>	<b>DESCRIPTION OF WORKS</b>	<b>QTY.</b>		<b>RATE</b>	<b>UNIT</b>	<b>AMOUNT OF C.S.M.C. PER ANNUM IN RS.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of NCS WORK per annum for period of next five years after expiry of free guarantee period of 1 years inclusive of all spares and consumables. Year: 2nd (5% of total cost)	1	Year	400465.00	Year	Rs. 4,00,465
2	FAIR ITEM	Year: 3rd (6% of total cost)	1	Year	480558.00	Year	Rs. 4,80,558
3	FAIR ITEM	Year: 4th (7% of total cost)	1	Year	560651.00	Year	Rs. 5,60,651
4	FAIR ITEM	Year: 5th (8% of total cost)	1	Year	640744.00	Year	Rs. 6,40,744
5	FAIR ITEM	Year: 6th (8% of total cost)	1	Year	640744.00	Year	Rs. 6,40,744
<b>SECTION –II A TOTAL</b>							<b>Rs. 27,23,162.00</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 27,23,162.00</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI****PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS****On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072****BILL OF QUANTITIES C.S.M.C - NURSE CALL SYSTEM**

<b>SR.NO</b>	<b>REF. CODE</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>S/I/T/C RATE</b>	<b>S/I/T/C TOTAL AMOUNT</b>
1	BAH-NCS-FA-133	S/I/T/C of the IP CONTROLLER_POE SWITCH 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 redundant Connection. Control LEDs for indicating the current operating state; - 2 x RJ45 sockets for connection of the external data bus; - In case of Failure of System switch Not more than 20 Rooms or 30 beds should be affected.	11.00	Nos.	66,938.00	7,36,318.00
2	BAH-NCS-FA-136	S/I/T/C of PATIENT HANDSET (NON VOICE) 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 keys, 2.80 metre connection cable with auto-disconnecting RJ45 connector plug. It shall be supplied with cradel for holding patient terminals	226.00	Nos.	7,480.00	16,90,480.00

3	BAH-NCS-FA-137	<p>S/I/T/C of BEDSIDE UNIT( NON VOICE) Connection module for patient handset shall consist of:</p> <ul style="list-style-type: none"> <li>-1 x RJ45 socket marked in colour and with measures to ensure that the push button is correctly connected, including auto disconnect, mechanism,</li> <li>-1 membrane keypad with:</li> <li>-1 call button (red with nurse symbol) including a finder/reassurance light,</li> <li>- 1 presence key/ cancel button (green) including a control LED.</li> <li>- 1 DIN port for co connecting Medical Divces</li> </ul>	226.00	Nos.	13,003.00	29,38,678.00
4	BAH-NCS-FA-138	<p>S/I/T/C of Pull Cord Button Basic pushbuttons for releasing calls with a pull cord, for individuals requiring assistance in situations with restricted mobility. Equipped with moisture-proof circuit board, cancel button and a locating and reassurance light status LED. The cancel button can be optionally configured as a green presence button. Intended for use in wet rooms Integrated locating and reassurance light Actuating the pull cord has the same effect as pressing a call button (red) Fast-exchange pull cord (approx. two meter) with snap hook Red grip with nurse symbol.</p>	30.00	Nos.	7,993.00	2,39,790.00

5	BAH-NCS-FA-139	S/I/T/C of LAMP ( ROOM ) INDICATOR For optical indication of calls, presences and reminders in the relevant colours conforming to VDE0834 consisting of: 5 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, 1 light chamber fitted with 3 ultra bright Yellow LEDs, 2 RJ45 ports for loop connectivity the LED life expectancy is approximately 100,000 operating hours	50.00	Nos.	5,489.00	2,74,450.00
6	BAH-NCS-FA-134	S/I/T/C of Nurse Station Terminal (UPTO 32 BEDS)Nurse Station shall comprises of minimum 6" large LC 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) , Querying receiver for speaking discretely, Microphone and loudspeaker for hands-free speech (incl. volume control), automatic changeover between hands-free and discrete speaking , Electronic circuit board with controller and FlashProm, 100BaseTX interface to the system switch, PC interface to the communications control panel , 2.8m connection cable with an RJ45 connection plug, which is protected, from disconnection, for connecting to a connection module . The ward terminal shall display date and time, indication of all presence, all set remindedrs, indication of all calls in accordance with standards. All call indications follow the priority and must display the exact Sensitivity: Confidential location of the calls. The ward terminal shall be provided along with suitable connection module & back box	8.00	Nos.	1,28,547.00	10,28,376.00

7	BAH-NCS-FA-142	<b>S/I/T/C of Management center - Nurse Call Server having following features : Distributor circuit board monitors</b>	8.00	Nos.	55,642.00	4,45,136.00
8	BAH-NCS-FA-143	S/I/T/C of <b>Management center</b> - Nurse Call Server having following features : LED Screen for Distributor circuit board monitors	8.00	Nos.	17,822.00	1,42,576.00
9	BAH-NCS-FA-141	S/I/T/C of <b>WALL BOXES</b> For countersunk-mounting, for installation of buttons and lamps	80.00	Nos.	62.00	4,960.00
10	BAH-NCS-FA-144	S/I/T/C of CODE BLUE FOR ICU BEDS 1 doctor call key (blue) including a finder light reassurance light, - a membrane keypad - Integrated sounder -2 RJ45 ports for loop connectivity	59.00	Nos.	5,117.00	3,01,903.00
11	BAH-NCS-FA-145	S/I/T/C of 1 call button (red) including a finder light / reassurance light, - 1 presence button (green) incl. control LED, - 1 x RJ12 (6 pin) sockets for connecting to the data connection - Incl. an installation frame for screw-free attachment to an installation case Circuit board is physically protected against moisture	30.00	Nos.	5,222.00	1,56,660.00
12	FAIR-AMH-NCS-12	Power Supply SMPS 24 V / 7Amps <b>Make: Osram, Philips, Ltech</b>	11.00	Nos.	4,543.00	49,973.00
<b>TOTAL AMOUNT PLMBING PUMPS (In Rs.)</b>						<b>80,09,300.00</b>

<b>MUNICIPAL CORPORATION OF GREATER MUMBAI</b>							
<b>PROPOSED BMC GENERAL HOSPITAL &amp; STAFF QUARTERS</b>							
On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072							
<b>COMPREHENSIVE SERVICE AND MAINTENANCE CONTRACT FOR PNUEMATIC TUBE SYSTEM WORK</b>							
<b>ESTIMATE OF PNUEMATIC TUBE SYSTEM WORK C.S.M.C.</b>							<b>Rs. 4,99,78,949</b>
<b>SR. NO.</b>	<b>ITEM CODE</b>	<b>DESCRIPTION OF WORKS</b>	<b>QTY.</b>		<b>RATE</b>	<b>UNIT</b>	<b>AMOUNT OF C.S.M.C. PER ANNUM IN RS.</b>
1	FAIR ITEM	Comprehensive service and maintenance contract of PTS WORK per annum for period of next five years after expiry of free guarantee period of 2 years inclusive of all spares and consumables. Year: 3rd (5% of total cost)	1	Year	2498947.45	Year	Rs. 24,98,947
2	FAIR ITEM	Year: 4th (6% of total cost)	1	Year	2998736.94	Year	Rs. 29,98,737
3	FAIR ITEM	Year: 5th (7% of total cost)	1	Year	3498526.43	Year	Rs. 34,98,526
4	FAIR ITEM	Year: 6th (8% of total cost)	1	Year	3998315.92	Year	Rs. 39,98,316
5	FAIR ITEM	Year: 7th (8% of total cost)	1	Year	3998315.92	Year	Rs. 39,98,316
<b>SECTION –II A TOTAL</b>							<b>Rs. 1,69,92,842.66</b>
<b>TOTAL, SAY RS.:</b>							<b>Rs. 1,69,92,843</b>

**MUNICIPAL CORPORATION OF GREATER MUMBAI**

**PROPOSED BMC GENERAL HOSPITAL & STAFF QUARTERS**

**On Plot bearing CTS No. 11A/4,Chandivali, Sangharsha Nagar, Kurla 400072**

**BILL OF QUANTITIES C.S.M.C - PNEUMATIC TUBE TRANSPORT SYSTEM**

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<b>Control and Annunciation Equipments</b>				
1	RBH18-PTS-FA-01	S/I/T/C of Compact automatic Linear Multi - Zone Transfer unit	1.00	Set.	1,13,99,615.00	1,13,99,615.00
		Compact Automatic Linear Multi-zone Transfer unit with 2 standerd zones and 4 power Lines and expandable to 12 standard zones including 6 powerlines NW160 for connecting and interchange of all zones and powerlines . Capable of storing carriers; with priority by-pass; with powerline & powertrain capabilities for sending multiple carriers in runs and With capabilities of carrier cradle moving from zone to zone at very high speeds				
2	RBH18-PTS-FA-02	S/I/T/C of Control Software with license dongle key with accessories	1.00	Set.	41,03,190.00	41,03,190.00
		Control Software Transposnet 5.0 ( License upto 10 stations) with basic features like : Supervision; Real time monitoring; Priority settings; Network viewing; System access and controls for each device on the network; Traffic flow analysis; Delay analysis; Logging of each transaction and error; Inventory controls; Location of carriers, Password controls, Carrier re-distribution; Pro-remote accessibility; Automatic Return feature of carriers to origin or to station with highest deficit; Programmable timetable for recurring functions; Divert Carrier function in case of absence; Various Priority Settings for urgent and emergency transports; Optimisation of pathways with intelligent alternate routing of carriers; Mechanical and electrical Control of all devices; System configuration; Access and timetable features; User Groups and group conditions and functions; Carrier Management; PowerLine and Powertrain for multi-carrier transports for optimized frequency and over long distances; Print module for reports and stastics, analysis reports; User profiles and rights; System graphic visualisations; Reports editing Software operable & accessible via License Dongle Key only				
3	RBH18-PTS-FA-03	S/I/T/C of side channel blowers	4.00	Nos.	16,14,171.00	64,56,684.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		Blower Unit Complete with Accessories and attachments 5.5 Kw. The unidirectional side channel blower confirms to EC machines directives 98/37/EC and low voltage director 73/23/EEC f.; DIN EN292 for safety of machines; EN60034-1 / DIN VDE 0530 Part 1 for rotating electrical machines; EN 60034-5 / DIN VDE 0530-5 classification of degree of protection DIN EN 60204 for safety of machine electrical equipment of machine Part 1 of Electric Motors and DIN VDE 0-1 insulation coordination for equipment within low voltage systems. Complete with silencer, filters, dampers & installation accessories and air switch device. Automatic activation through centralized control system.				
4	RBH18-PTS-FA-04	S/I/T/C of standard stations NW160	22.00	Nos.	7,15,405.00	1,57,38,910.00
		The receiving and sending stations for automatic receiving and sending of materials in the carriers. To conform to EU Directive for Electromagnetic tolerance 2004/108/EC; EEC directive for low voltage devices 93/68/EEC; EEC machines directives 98/37/EEC. To have ergonomically adapted sending and receiving heights. Wall mountable stations; Each device equipped with state-of-art maintenance free gear drive mechanism & self adjusting optical seals for moving parts for noise-less operations.				
5	RBH18-PTS-FA-05	S/I/T/C of Compact Stations NW160	4.00	Nos.	6,62,046.00	26,48,184.00
		The receiving and sending stations for automatic receiving and sending of materials in the carriers. To conform to EU Directive for Electromagnetic tolerance 2004/108/EC; EEC directive for low voltage devices 93/68/EEC; EEC machines directives 98/37/EEC. To have ergonomically adapted sending and receiving heights. Wall mountable stations; Each device equipped with state-of-art maintenance free gear drive mechanism & self adjusting optical seals for moving parts for noise-less operations.				
6	RBH18-PTS-FA-06	S/I/T/C of Free run stations NW160	1.00	Nos.	5,27,563.00	5,27,563.00
		Free Run Stations are required to locate the lost carriers in the control Room.				
7	RBH18-PTS-FA-07	S/I/T/C of Horizontal lab receiving / Automatic Multi Receiving stations NW160	1.00	Nos.	11,59,521.00	11,59,521.00



SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		<p>The station Device for in-stallation in laboratories with much reduced space capacity and always taking in consideration the ergonomically aspect. Conforms to EU Director for Electromagnetic tolerance 2004/108/EC; EEC directive for low voltage devices 93/68/EEC; EEC machines directors 98/37/EEC. With built-in special turn-around function, the carriers slow down, turn from a vertical position in the station to a horizontal position and roll horizon-tally in the arrival area.</p> <p>Receiving area at 93degrees with 2000mml; the device is compact size and connected to dedicated and independent powerlines.The device is wall / table top mountable; Each device should be equipped with state-of-art maintenance free gear drive mechanism &amp; self adjusting optical seals for moving parts for noise-less operations.</p>				
8	RBH18-PTS-FA-08	S/I/T/C of Diverter Units NW160	6.00	Nos.	6,13,994.00	36,83,964.00
		<p>The diverter units are switching device used at branching points in the system to direct the path of the carrier from a single tube at one end to three selectable tubes at the other end. The ends of the diverters are attached with forwarding tube network using steel clamps that are easily removable during servicing. To conform to EU Director for Electromagnetic tolerance 2004/108/EC; EEC directive for low voltage devices 93/68/EEC; EEC machines directors 98/37/EEC. Diverters are fitted with moveable tube that gently guides the carrier through the diverter in pre and auto-selected direction. The tube is positioned precisely at the selected port using proximity sensor built-in. The units are equipped with state-of-art maintenance free linear gear drive mechanism &amp; self-adjusting proximity digital sensors &amp; noise-less operations.</p>				
9	RBH18-PTS-FA-10	S/I/T/C of Power Booster pack	7.00	Nos.	1,92,076.00	13,44,532.00
		<p>The entier system network work on 36-40 LVDC supply (except 3 phase blower) to enhance the network communication signal, speed and DC Voltage supplied at periodic lengths depending up on the network, 200 VA / 36 LVDC power &amp; communication booster packs (power packs) are installed</p>				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
10	RBH18-PTS-FA-11	Providing of Carriers or capsules NW 160 330mmx120mm. Special carriers with caps for secure use; fully integrated rubber seal; payload up to 3 kg; Impact resistant and crystal clear polycarbonate middle body; With Loading Dimensions of 330mmH x 120mm ID; with Unique flip-top or Swivel caps for secure use; Metal-free design through rotation welding procedure; Impact resistant and crystal clear polycarbonate middle body, with integrated radio-frequency identification system.	54.00	Nos.	43,069.00	23,25,726.00
11	RBH18-PTS-FA-16	S/I/T/C of Optical Tube Switch Modular switch provided with built-in various devices, portable in nature, easily replaceable, com-connectable to various devices through the system with single control cable of high grade composite with grounding, power and data-com all three in one and fully screen and use grounded system concept to minimize electromagnetic and radio-frequency interference. Instrumentation wire type 2 x 2 x 0,22 x 1,9 <sup>2</sup> , Compatible with system on low voltage supply of 36V for human protection.	16.00	Nos.	27,037.00	4,32,592.00
12	RBH18-PTS-FA-21	Providing and Fixing of UPS For computer (pc)	1.00	Nos.	39,792.00	39,792.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		1. Capacity of 3000VA/2400W 2. Frequency range 400Hz-70Hz 3. Single Phase with ground 4. Power factor > -0.99 @ 220 to 230 VAC (input voltage) 5. Lowline transfer 160VAC/140VAC/120VAC/110VAC +-5% (based on load percentage 100-80%/80-70% /70-60%/60-0%) 6. Low Line come back 175VAC+-5% 7. High line transfer 300VAC+-5% 8. High Line come back 290VAC+-5% 9. Output voltage 208/220/230/240VAC 10. AC Voltage regulation +-3% battery mode 11. Output synchronized Frequency range 47 to 53 or 57 to 63Hz 12. Output frequency range battery mode 50Hz+-0.25Hz 13. Pure Sinewave form in battery mode 14. AC mode efficiency of approx.. 88% and battery model 83%				
13	RBH18-PTS-FA-22	S/I/T/C of computer with CPU INTEL i7 processor with smps cabinet	1.00	Set.	1,18,676.00	1,18,676.00
		PC with CPU with INTEL I7 with SMPS Cabinet 3.4GHz/8GB RAM 1 TB HDD RS232 Port (atleast 2) USB Ports (atleast 2) PCI Slot for ISDN/Modem Card Data Port Ethernet 100/1000 Lan Card Standard Keyboard Standard Optical mouse; 22" flat LCD Monitor Standard Mono laser A4 printer Original licensed MS-Office2016, and Win 2007 OS Antivirus licensed copy with				

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
		TOTAL AMOUNT PNEUMATIC TUBE TRANSPORT SYSTEM (In Rs.)				₹ 4,99,78,949

<b>Technical staff hiring during CSMC FOR M &amp; E</b>						
<b>BOQ - TECHNICAL STAFF HIRING</b>						
<b>S. NO.</b>	<b>Year</b>	<b>SALARY PER MONTH PER PERSON</b>	<b>NO. OF MONTHS</b>	<b>Salary per annum / person</b>	<b>NO. OF PERSONS</b>	<b>Total</b>
<b>1</b>	<b>01 (after DLP)</b>	40,000.00	<b>12</b>	480,000.00	4.00	1,920,000.00
<b>2</b>	<b>2 Year</b>	43,200.00		518,400.00	4.00	2,073,600.00
<b>3</b>	<b>3 Year</b>	46,656.00		559,872.00	4.00	2,239,488.00
<b>4</b>	<b>4 Year</b>	50,388.48		604,661.76	4.00	2,418,647.04
<b>5</b>	<b>5 Year</b>	54,419.56		653,034.70	4.00	2,612,138.80
<b>6</b>	<b>6 Year</b>	58,773.12		705,277.48	4.00	2,821,109.91
<b>7</b>	<b>7 Year</b>	63,474.97		761,699.68	4.00	3,046,798.70
<b>8</b>	<b>8 Year</b>	68,552.97		822,635.65	4.00	3,290,542.60
				<b>Total</b>		<b>20,422,325.05</b>

**Note :- 8% increment consider per year.**