

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

SUMMARY - BMS SYSTEM HOSPITAL BUILDING

Sr. No.	Description	Amount
1	BUILDING MANAGEMENT SYSTEM	₹ 3,06,36,344.00
Grand Total		₹ 3,06,36,344.00

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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
		Video Conference and Interactive Display Solution				
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	23,81,780.00
2	BAH-VCIDS-FA-71	S/I/T/C of 86" Interactive Display, 3840 x 2160 4K Display, 178° Viewing Angle, 370 cd/m ² , 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	11,60,460.00
3	BAH-VCIDS-FA-72	S/I/T/C of Passive Wall Plate — HDMI: Front Panel Connection — 1 HDMI (F). Rear Panel Connection — 1 HDMI (F) on a flat, flexible cable.	3.00	Nos	₹ 14,509	43,527.00
4	BAH-VCIDS-FA-73	S/I/T/C of Dual HDMI Module Passive Wall Plate — HDMI: Front Panel Connection — 1 HDMI (F). Rear Panel Connection — 1 HDMI (F) on a flat, flexible cable.	3.00	Nos	₹ 21,709	65,127.00
		Building Management System				
5	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 Antivirus and required accessories etc.	1.00	Nos.	₹ 1,65,000	1,65,000.00
6	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	9,500.00
7	BAH-BMS-FA-76	S/I/T/C of Display monitor for BMS Graphical User Interface - LED 32 Inch	1.00	Nos.	₹ 36,000	36,000.00
		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)				
8	BAH-BMS-FA-77	S/I/T/C of 8 Port Switch	12.00	Nos.	₹ 10,000	1,20,000.00
9	BAH-BMS-FA-78	S/I/T/C of 12 Port Switch	12.00	Nos.	₹ 15,800	1,89,600.00
10	BAH-BMS-FA-79	S/I/T/C of 16 Port Switch	6.00	Nos.	₹ 22,500	1,35,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
11	BAH-BMS-FA-80	S/I/T/C of SOFTWARE 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	9,80,000.00
		DDC CONTROLLERS WITH IP : 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.				
12	BAH-BMS-FA-81	S/I/T/C of DDC CONTROLLERS WITH IP for Exhaust Air Fans	10.00	Nos.	₹ 58,000	5,80,000.00
13	BAH-BMS-FA-82	S/I/T/C of DDC CONTROLLERS WITH IP for Fresh Air Fans	10.00	Nos.	₹ 58,000	5,80,000.00
14	BAH-BMS-FA-83	S/I/T/C of DDC CONTROLLERS WITH IPfor Plumbing & FireFighting System	3.00	Nos.	₹ 58,000	1,74,000.00
15	BAH-BMS-FA-84	S/I/T/C of DDC CONTROLLERS WITH IP for Chillers & Pumps System	2.00	Nos.	₹ 58,000	1,16,000.00
16	BAH-BMS-FA-85	S/I/T/C of DDC CONTROLLERS WITH IP for Cooling Tower	1.00	Nos	₹ 58,000	58,000.00
17	BAH-BMS-FA-86	S/I/T/C of DDC CONTROLLERS WITH IP for Floor Mounted Air Handling Units	30.00	Nos.	₹ 58,000	17,40,000.00
18	BAH-BMS-FA-87	S/I/T/C of DDC CONTROLLERS WITH IP for Ceiling susended Units	15.00	Nos.	₹ 58,000	8,70,000.00
19	BAH-BMS-FA-88	S/I/T/C of DDC CONTROLLERS WITH IP for Loft Mounted Units	2.00	Nos.	₹ 58,000	1,16,000.00
20	BAH-BMS-FA-89	S/I/T/C of DDC CONTROLLERS WITH IP for Fan Coil Units	24.00	Nos.	₹ 58,000	13,92,000.00
21	BAH-BMS-FA-90	S/I/T/C of DDC CONTROLLERS WITH IP for Cassette Units	40.00	Nos.	₹ 58,000	23,20,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
22	BAH-BMS-FA-91	S/I/T/C of DDC CONTROLLERS WITH IP for Precision AC Units	2.00	Nos.	₹ 58,000	1,16,000.00
23	BAH-BMS-FA-92	S/I/T/C of DDC CONTROLLERS WITH IP for Hi-Wall Units	8.00	Nos.	₹ 58,000	4,64,000.00
24	BAH-BMS-FA-93	S/I/T/C of DDC CONTROLLERS WITH IP for All Electrical Panels System	10.00	Nos.	₹ 58,000	5,80,000.00
25	BAH-BMS-FA-94	S/I/T/C of DDC CONTROLLERS WITH IP for Transformer	1.00	Nos.	₹ 58,000	58,000.00
26	BAH-BMS-FA-95	S/I/T/C of DDC CONTROLLERS WITH IP for DG Set	1.00	Nos	₹ 58,000	58,000.00
27	BAH-BMS-FA-97	S/I/T/C of DDC CONTROLLERS WITH IP for Lifts & Escalators	12.00	Nos	₹ 58,000	6,96,000.00
28	BAH-BMS-FA-98	S/I/T/C of DDC CONTROLLERS WITH IP for For OT monitoring	9.00	Nos	₹ 58,000	5,22,000.00
		INTEGRATION				
		<p>S/I/T/C of The 3rd party Integration unit shall provide the interface between Ethernet LAN and the 3rd party field control devices or any other devices which need to be integrated. These shall also provide supervisory capability of functions over the devices connected to it. The purpose of using these units should be limited to integrate devices only, not for any DDC interface with GUI, provided by others. The Unit must provide the following hardware features as a minimum:</p> <p>a. Two No. on Board RS-485 port b. Provision to include / add additional communication card c. Two onboard Ethernet port d. 4GB memory</p> <p>The Integration unit shall provide flexibility of adding communication ports (RS485) by adding communication cards, minimum one slot, when required rather than adding additional unit itself. The Integration unit should have inbuilt memory for program storage. The Unit must communicate over TCP/IP with communication speed of 10/100MBPS. The Integration unit should be capable of handling multiple protocol simultaneously and should not be restricted to single protocol such as Bacnet, Modbus, M-Bus, KNX, SNMP. All integrators should be mandatorily BTL listed.</p>				
29	BAH-BMS-FA-99	S/I/T/C of Integration of Chillers	1.00	No	₹ 48,500	48,500.00
30	BAH-BMS-FA-100	S/I/T/C of Integration of VFD for Pumps	1.00	No	₹ 48,500	48,500.00
31	BAH-BMS-FA-101	S/I/T/C of Integration of Energymeters	3.00	No	₹ 48,500	1,45,500.00
32	BAH-BMS-FA-102	S/I/T/C of Integration of VFD for AHU's/CSU	2.00	No	₹ 48,500	97,000.00
33	BAH-BMS-FA-103	S/I/T/C of Integration fo DG Sync Panel	1.00	No	₹ 48,500	48,500.00
34	BAH-BMS-FA-104	S/I/T/C of Integration of Transformer	1.00	No	₹ 48,500	48,500.00
35	BAH-BMS-FA-105	S/I/T/C of Integration of UPS	1.00	No	₹ 48,500	48,500.00
36	BAH-BMS-FA-106	S/I/T/C of Integration of WTP	1.00	No	₹ 48,500	48,500.00
37	BAH-BMS-FA-107	S/I/T/C of Integration of ETP	1.00	No	₹ 48,500	48,500.00
38	BAH-BMS-FA-108	S/I/T/C of Integration of STP	1.00	No	₹ 48,500	48,500.00
39	BAH-BMS-FA-109	S/I/T/C of Integration of Elevators of Escalators	12.00	No	₹ 48,500	5,82,000.00

SR.NO	REF. CODE	DESCRIPTION	QTY	UNIT	S/I/T/C RATE	S/I/T/C TOTAL AMOUNT
40	BAH-BMS-FA-110	S/I/T/C of Integration of Elevators of OT monitoring	14.00	No	₹ 48,500	6,79,000.00
41	BAH-BMS-FA-111	S/I/T/C of Integration of Elevators of Medical Gas Plant	3.00	No	₹ 48,500	1,45,500.00
42	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"> • Supports 18 BACnet Object Types including • Trends, Schedules, Calendars, and Loops • Powerful, Flexible System Controller for the Most Demanding Applications • Expandable I/O Meets Additional Point • Count Needs • Non-Volatile Flash Memory Provides Utmost Reliability — Stores Both Application Program and Operating System • Optional Local Display/Keypad Provides Easy • Operator Interface • Local, Extended Storage of Log Data • View and Modify Information with Optional • Smart Sensor Display 	5.00	No	₹ 1,25,000	6,25,000.00
43	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	8,75,000.00

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44	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	9,50,000.00
		SENSORS AND FIELD DEVICES				
		Supplying, installing, testing and commissioning of the following sensors/transducers/transmitters:				
45	BAH-BMS-FA-115	S/I/T/C of DP Switch for AHU Run Status, 40-400 Pascals.	72.00	Nos.	₹ 6,500	4,68,000.00
46	BAH-BMS-FA-116	S/I/T/C of DP Switch for AHU Filter Status, 40-400 Pascals.	120.00	Nos.	₹ 6,500	7,80,000.00
47	BAH-BMS-FA-117	S/I/T/C of DPT for VFD Modulation, 0-1000 Pascals, 4-20mA Output.	120.00	Nos.	₹ 12,500	15,00,000.00
48	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	58,000.00
49	BAH-BMS-FA-119	S/I/T/C of Duct Smoke Sensor for Supply & Return Air.	120.00	Nos.	₹ 5,500	6,60,000.00
50	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	3,96,000.00
51	BAH-BMS-FA-121	Supply of Flameproof Bi-Level Switch for DG Tank Fuel Level Monitoring.	3.00	Nos.	₹ 22,000	66,000.00
52	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	66,000.00
53	BAH-BMS-FA-123	S/I/T/C of Immersion Temperature Sensors with Brass Thermowell, 150mm length.	16.00	Nos.	₹ 4,800	76,800.00
54	BAH-BMS-FA-124	S/I/T/C of Bi-Level Switch for Cooling Tower Sump Level Monitoring.	8.00	Nos.	₹ 16,500	1,32,000.00

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55	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	18,500.00
56	BAH-BMS-FA-126	S/I/T/C of Room Temperature Sensor for DG Room Temperature Monitoring.	1.00	Nos.	₹ 15,000	15,000.00
57	BAH-BMS-FA-127	S/I/T/C of DP switch for UVGI lamps	30.00	Nos.	₹ 18,000	5,40,000.00
58	BAH-BMS-FA-128	S/I/T/C of DP switch for heater	13.00	Nos.	₹ 14,500	1,88,500.00
59	BAH-BMS-FA-129	S/I/T/C of Operator Terminal	1.00	Nos.	₹ 21,800	21,800.00
60	BAH-BMS-FA-130	S/I/T/C of 2C x 1.0 Sq.mm FRLSZH Armoured cable With necessary glands & termination . FOR SIGNAL/COMMUNICATION (Colour: BLUE)	4,500.00	Rmt	₹ 126	5,67,000.00
61	BAH-BMS-FA-131	S/I/T/C of 4C x 1.0 Sq.mm FRLSZH Armoured cableWith necessary glands & termination . FOR SIGNAL/COMMUNICATION (Colour: BLUE)	3,250.00	Rmt	₹ 168	5,46,000.00
62	BAH-BMS-FA-132	S/I/T/C of HDMI EXTENDER WITH INDIVIDUAL ADOPTER HDMI Extender for CAT-5e / 6 Cables can only extend the 1080p HDTV display to 30 meters using one of the CAT-5e / 6 cables. This adapter not only breaks the HDMI cable's transmission length limitations, but also allows cable construction In the greater flexibility and convenience. Cat 5e or Cat 6 cable can substitute. it is conformed to the standards of IEEE-568B. Transmission distance can be up to 30 meters for 1080p using Cat cable Portable, Signaling transfer speed up to 1.65Gbps in support of 1080p display. Support 3D 1080P HDMI1.4 resolution, 4k*2k. Support HDCP1.1/1.2 6. Support resolution 480i/p, 576i/p, 720p, 1080i/p, 1920x1200, 4k*2k Transmission distance can be up to 30 meters for 1080P, 4k*2k using CAT-6 cable. Support hot swapping. Plug and play. Signaling rater up to 2.5Gbps in support of 1080p display HDCP compliant.	6.00	Pair	₹ 13,000	78,000.00
63	R2-ME-12-8-a	SUPPLY & LAYING OF PVC CONDUITS 25 mm.- Only PVC Conduits	3,750.00	Mtr	₹ 35	1,31,250.00
64	R2-ME-2-13-i	Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be minimum 86 Micron. 200 x 50mm (W x H) - (16 SWG - 1.6mm) with cover	750.00	Mtr	₹ 2,214	16,60,500.00
65	R2-ME-2-13-j	Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be minimum 86 Micron. 300 x 50mm (W x H) - (16 SWG - 1.6mm) with cover	750.00	Mtr	₹ 3,272	24,54,000.00
TOTAL AMOUNT IBMS - BUILDING MANAGEMENT SYSTEM (In RS)						3,06,36,344.00