MAHATMA GANDHI MISSION TRUST

MGM INSTITUTE OF HEALTH SCIENCES, CENTRAL PURCHASE DEPARTMENT (CPD)

7. E-Tender for Central Heating System

Tenders invited from reputed Manufactures or their authorised distributors / dealers of Central Heating System System at MGM Hospitals, Sanpada, Navi Mumbai, in the format given bellow:

Name & Address of Vendor: _____

MGM HOSPITAL
SANPADA, NAVI MUMBAI

RADIANT CONSULTING ENGINEERS
RJ-221/HWS

HOT WATER SYSTEM - BOQ

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
	HOT WATER SYSTEM						
	WATER COOLED HEAT PUMP						
1.00	Supply, Installation, testing and commissioning of Heat pump capable of operation on water to water basis. The heat pump system should be based on a closed circuit hot water flow of 60° C out of the unit with 55° C return for operation. a) Details of Heat pump: i) Min. Output heating capacity - 60 KW (1W+ 1SB) ii) Refrigerent R-407C/R-134A/R-410A iii) Water inlet to evaporator - 13.0 TO 14.5 deg.c iv) Water outlet from evaporator - 7.5 deg.c v) Water inlet to condenser - 55.0 deg.c vi) Water outlet from condenser - 60.0 deg.c vii) Type of Copressor - Scroll Compressor viii) Compressor Quantity - Min 2 no. ix) Casing - Stainless steel x) Min COP - 4.5 b) Safety features: i) Water flow swith protection ii) Antifreeze protection iii) High/low pressure protection iv) High discharge temperature protection v) Compressor overload protection	2	Each				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
	PLANT ROOM AUXILIARIES						
2.00	Supply, Installation, testing and commissioning of Plate type heat exchanger including all Supports & mountings as specified mentioned in the data sheet. i) Capacity - 61000 Kcal/hr ii) Primary side flow - 13200 lph iii) Secondary side flow - 13200 ph iv) Primary side temp. inlet - 60 deg. C v) Primary side temp. outlet - 55 deg. C vi) Secondary side temp. inlet - 55 deg. C vii) Secondary side temp. outlet - 50 deg. C viii) Max. Pressure drop - 5 kPa ix) Design temp. - 80 deg. C x) Max. design pressure - 8 bar	1	Each				
3.00	Supply, Installation, testing and commissioning of Plate type heat exchanger including all Supports & mountings as specified mentioned in the data sheet. i) Capacity - 41000 Kcal/hr ii) Primary side flow - 9000 lph iii) Secondary side flow - 9000 ph iv) Primary side temp. inlet - 60 deg. C v) Primary side temp. outlet - 55 deg. C vi) Secondary side temp. inlet - 55 deg. C vii) Secondary side temp. outlet - 50 deg. C viii) Max. Pressure drop - 5 kPa ix) Design temp. - 80 deg. C x) Max. design pressure - 8 bar	1	Each				
4.00	Supply, Installation, testing and commissioning of Hot Water Storage Tank with all accessories mentioned in the data sheet. i) Capacity - 4000 liters ii) Material - MS with food grade expoxy coating inside and primer coating outside iii) Inlet water temp. - 15-28 deg. C iv) Outlet water temp. - 60 deg. C max v) High water temp. set - @ 55 deg. C	3	Each				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
5.00	Supplying, installing, testing & commissioning of vertical/Horizontal centrifugal pumps CI Head & Base, SS304 Impeller along with moto, Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump. The pump shall be suitable for 415±10% volts 3 phase AC supply. **Recircualtion Pump:** No. of Pumps : 2(1W + 1S) Capacity : 100 LPM of Each Pump Head : 25 m Water temp. : 60 - 80 deg C Note:-1 set consists of 2nos. of pumps (1Working + 1Standby) Min Pump Efficiency at duty point - 65% Motor Eff. Rating - IE3	2	Set				
6.00	Supplying, installing, testing & commissioning of vertical/Horizontal centrifugal pumps CI Head & Base, SS304 Impeller along with moto, Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump. The pump shall be suitable for 415±10% volts 3 phase AC supply. **Chilled Water Circulation Pump: (Pump between Heat pump evaporator & Chilled water return line)** No. of Pumps : 2(1W + 1S) Capacity : 15000 LPH of Each Pump Head : 20 m Water temp. : 20 deg C Note:-1 set consists of 2nos. of pumps (1Working + 1Standby) Min Pump Efficiency at duty point - 65% Motor Eff. Rating - IE3	1	Set				
7.00	Supplying, installing, testing & commissioning of vertical/Horizontal centrifugal pumps CI Head & Base, SS304 Impeller along with moto, Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump. The pump shall be suitable for 415±10% volts 3 phase AC supply. **Primary Pump: (Pump between Heat pump condenser side & plate heat exchanger)** No. of Pumps : 2(1W + 1S) Capacity : 22000 LPH of Each Pump Head : 25 m Water temp. : 55 - 65 deg C Note:-1 set consists of 2nos. of pumps (1Working + 1Standby) Min Pump Efficiency at duty point - 65% Motor Eff. Rating - IE3	1	Set				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
8.00	Supplying, installing, testing & commissioning of vertical/Horizontal centrifugal pumps CI Head & Base, SS304 Impeller along with moto, Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump. The pump shall be suitable for 415±10% volts 3 phase AC supply. **Secondary Pump: (Pump between plate heat exchanger & Block AStorage tank)** No. of Pumps : 2(1W + 1S) Capacity : 13200 LPH of Each Pump Head : 25 m Water temp. : 55 -65 deg C Note:-1 set consists of 2nos. of pumps (1Working + 1Standby) Min Pump Efficiency at duty point - 65% Motor Eff. Rating - IE3	1	Set				
9.00	Supplying, installing, testing & commissioning of vertical/Horizontal centrifugal pumps CI Head & Base, SS304 Impeller along with moto, Mechanical seal, suitable vibration elimination pads of approved design, drain pipe with valve (25 dia) for the pump. The pump shall be suitable for 415±10% volts 3 phase AC supply. **Secondary Pump: (Pump between plate heat exchanger & Block B Storage tank)** No. of Pumps : 2(1W + 1S) Capacity : 9000 LPH of Each Pump Head : 25 m Water temp. : 55 -65 deg C Note:-1 set consists of 2nos. of pumps (1Working + 1Standby) Min Pump Efficiency at duty point - 65% Motor Eff. Rating - IE3	1	Set				
10.00	Supply & Installation of soft water storage tank Syntex of 500 Liters, with level Indicator, vent & drain connection with 3.0 Meter MS structure from FFL.	1	Each				
	PIPING						
11.00	Supply, Installation of Cold water piping between chilled water return line and heat pump evaporator side using G.I "C" class pipes as per IS:1239 complete with fittings etc. as specified within the boundary as shown in Schematics.						
11.01	80 mm NB pipes	R.O	Metres				
11.02	65mm NB pipes	50	Metres				
12.00	Supply, Installation of Hot water piping using CPVC (SDR 11 & Schedule 80) pipes complete with fittings etc as specified within the boundary as shown in Schematics.						
12.01	100 mm dia	R.O	Metres				
12.02	80 mm dia	85	Metres				
12.03	65 mm dia	120	Metres				
12.04	50 mm dia	125	Metres				
12.05	32 mm dia	75	Metres				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
13.00	Supply,Installation of Forged Brass Ball valves having PN 16 working pressure complete with holding & mating flange joints as specified.						
13.01	25mm gunmetal valve (Shut off)	12	Each				
14.00	Supply, Installation of butterfly valves having PN 16 working pressure complete with holding & mating flange joints as specified.						
14.01	100 mm	R.O	Each				
14.02	80 mm	17	Each				
14.03	65 mm	14	Each				
14.04	50 mm	14	Each				
15.00	Supply, Installation of NR valves '& `Y' strainers having PN 16 working pressure complete with mating flange joints as specified.						
15.01	50mm N.R. Valves	12	Each				
15.02	65 mm N.R. Valves	8	Each				
15.03	80mm N.R. Valves	4	Each				
15.04	50mm Y Strainer	8	Each				
15.05	65 mm Y Strainer	2	Each				
15.06	80mm Y Strainer	2	Each				
16.00	Supply, Installation,testing & commissioning of Globe valves having PN 16 working pressure with flanges, unions as req.						
16.01	32 dia Nominal Bore	3	Each				
16.02	50 dia Nominal Bore	30	Each				
17.00	Supply, Installation,testing & commissioning of Air Release valves having PN 16 working pressure with flanges, unions as req.						
17.01	25 dia Nominal Bore	3	Each				
18.00	Supply, Installation,testing & commissioning of Safety valves having PN 16 working pressure with flanges, unions as req.						
18.01	25 dia Nominal Bore	3	Each				
19.00	Supply, Installation,testing & commissioning of Air Vents with Isolation valve, flanges, unions as req.						
19.01	25 dia Nominal Bore	2	Each				
20.00	Supply, Installation,testing & commissioning of Pressure gauge with flanges & Needle Valve, unions as req.						
20.01	25 dia Nominal Bore	14	Each				
21.00	Supply, Installation,testing & commissioning of Temperature gauge with flanges, unions as req.						
21.01	25 dia Nominal Bore	14	Each				
22.00	Supply, Installation,testing & commissioning of Temperature sensor with flanges, unions as req.						
22.01	25 dia Nominal Bore	5	Each				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
	HOT INSULATION						
23.00	Providing and fixing Nitrle rubber insulation with factory laminated black treated woven glass cloth on hot water supply and return pipes, fittings, valves etc. generally as specified and shown in the scheme						
23.01	100 mm dia 38 mm thick Insulation	RO	Metres				
23.02	80 mm dia 38 mm thick Insulation	85	Metres				
23.03	65 mm dia 38 mm thick Insulation	120	Metres				
23.04	50 mm dia 38 mm thick Insulation	125	Metres				
23.05	32 mm dia 25 mm thick Insulation	75	Metres				
24.00	Supply, Installation of Hot water storage tank insulation with hot bitumen at 1.5 kg/sqm and stick the rigid insulation (in segments for cold insulation) holding it in position with 20 mm x 0.63 mm galvanised wire mesh. Apply hot bitumen at 2.5 kg/sqm over the finished surface and wrap it with 6 mm tar felt with 50 mm over lapping. Retain the tar felt with 1 mm galvanised steel wire. generally as mentioned in the specification	4	Each				
	POWER DISTRIBUTION						
25.00	HOT WATER POWER PANEL as shown in Dwg no **RJ/221/-HSW-301:** 'SUPPLY,INSTALLATION,TESTING & COMMISSIONING OF ALL LT PANELS WITH SPECIFIC INCLUSIONS: (THE LT PANELS SHALL BE AS PER FINALIZED DESIGN/DRAWING & DISCUSSIONS) The outgoing feeders as indicated in SLD shall have suitable range of followings. ALL Digital electronic MFM and KWH meter shall be provided with RS 485 port/RJ-45 communication port compatible for BMS & Three phase indicating lamps protected by 2 amps SP MCBs. All MCCB's shall be suitable for (Icu= Ics= 100% at 415/433Volts, --kA for 1 sec as specified in the item, Wiring with space heater, thermostat and control MCB's shall be provided for all vertical sections of LT panel, All incoming as well as outgoing feeders shall have pad locking facility, Suitable danger board shall be provided, All MCCB's shall be provided with front rotary handle and operating mechanism for door interlock with Pad locking of MCCB's handles in "OFF" Position, The Panel fabricator shall provide Al. Bus-bars link from Breakers wherever more than two nos. of cables are terminated in the breakers. Additional set of C.T.s, potential free contacts, connectors, contactors with wiring etc. are to be provided for BMS including space required for various transducers in Main Switch Board sections. Only transducers shall be supplied by BMS contractor. All hinged door shall be earthed through 2.5 sq mm tinned braided copper wire, All the panels containing switchgear upto 630A rating shall be PTTA as per IS 8623/IEC 60439, and above 630A shall be type tested assembly as per IEC:61439. All the panels shall be internal arc protection for minimum 0.3 sec. as per IEC and specifications. All motor feeders MCCBs shall be of motor duty icu=ics=433v=1 sec.. Supporting/Base rigid steel framework, TPN ACB's / MCCB's shall mean 3 pole ACB's / MCCB's with adequate size of neutral link. Painting/lettering on Breakers and distribution boards, the location they serve, providing on each panel its circuit diagram.	1	Set				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
	CT's shall be properally mounted and clamped. Connection of CT's for measuring instrument / relays shall be done through connector / terminals. Model, current capacity location and frame size of switchgear shall be written inside of the panel doors with paint / permanent marker as approved shop drawings / site requirement. Final rating & various parameter, in addition to the specified above shall be selected on the bases of ambient conditions at site, approved equipments rating, client specific requirements, standards specified in the tender, requirement for the NOC from various statutory authorities, All Back access panel shall be housed with encapsulated Spark gap based class-1/type-1 SPD with in built fuse for each incomer at each Bus Section of 100kA 10/350mS as per IS/IEC 62305-3 LPL-I. All front operated panel/Sub panels shall be housed with Mov(Metal Oxide Varistor) based class-2/type-2 SPD with in built fuse for each incomer at each Bus Section of In 10kA & Irms 20kA 5/20mS as per IS/IEC 62305-3 LPL-I.						
26.00	Supply and laying heavy duty 1100V grade PVC / XLPE insulated sheathed & armoured (unless otherwise specified as flexible) Fire Retarded Low Smoke (FRLS) cables indoor or outdoor with AL / Cu conductors as specified and shown on drgs. complete with: a) Cable clamps on walls,trays, columns, beams, built-up trenches, cable markers etc. for indoor cables. b) Earthing the glands armouring etc.						
26.01	3C 35 Sq.mm A2XFY Aluminium armoured cable	150	Metres				
26.02	4C 2.5 Sq.mm YWY copper armoured cable	420	Metres				
26.03	4C 1.5 Sq.mm YRY copper armoured control cable	125	Metres				
27.00	Making cable end terminations including brass double compression crimping type copper lugs for cable sizes mentioned below						
27.01	3C 35 Sq.mm A2XFY	16	Each				
27.02	4C 2.5 Sq.mm YWY	24	Each				
27.03	4C 1.5 Sq.mm YRY	12	Each				
28.00	Supply and fixing of Perforated Cable tray with horizontal & vertical bends, reducers, Tee's, cross over , suitable supports and brackets and other accessories as required confirming to IEC-61537. The Tray shall be galvanized for corrosion protection confirming to DIN EN 10346 / ISO 1461 .The trays should be tested for a safe working load of 150 Kgs with a span distance of 1.5 meters and the deflection should be within the limits as per standard. The safety factor shall be 1.7 times of the safe working load. The perforated tray shall be supplied with the standard length of 3 Mtr .						
28.01	150 mm width x 50mm Height	50	Metres				
28.02	300 mm width x 50mm Height	15	Metres				
29.00	Supply and laying, Testing and commissioning of following items for interconnecting the earthing stations ,panels, DBs etc. of the following sizes in built up trenches /surface/wall complete with holes & fixing, jointing / terminating accessories as per specifications & drawing complete as required.						
29.01	50mmx 6mm AL. strip on surface or in recess	60	Metres				
29.02	4.00 mm dia copper wire (8 SWG) on surface or in recess for loop earthing as required.	80	Metres				
29.03	900mm long earth bars 25 x 5 copper with 10 dia perforations	1	Each				

Sl. No.	ITEM DESCRIPTION	QTY	UNIT	MATERIAL (RS)	LABOUR (RS)	RATE (RS) (Material + Labour)	AMOUNT (RS)
	MISCELLANEOUS						
30.00	Supply, Installation of Ultrasonic Type Hot Water Flow meter with Software port for BMS connectivity						
30.01	100 mm dia (0-150 GPM)	1	Each				
30.02	80 mm dia (0-100 GPM)	1	Each				
31.00	Structural Steel Platform for Hot Water Mixing Tanks and for the whole plant room at the terrace level.	200	Kg				
32.00	Doing complete automation of operation with outlet temperature, pressure sensors including necessary control panel, cabling and other accessories etc. The control panel shall have provision for integrating with BMS for following features. i) Hot water supply temperature (2#Analog input) ii) Storage Tank Hot water temperature (3#Analog input) iii) Pressure of supply hot water (2#Analog input) iv) Hot water return temperature (2#Analog input) v) Heat pump working (3#Digital input)	1	Lot				
	Total						-

Kindly email your lowest quotation as above with your terms & conditions as well as applicable brochure / catalog, user list to only etenders@mgmuhs.com

Date:	**Name:**
	Designation:
	Email ID:
	Mobile No:
	Full Address:
SEAL	