

**NIUM
NATIONAL INSTITUTE OF UNANI MEDICINE
BANGALORE**

**TENDER
FOR
RENOVATION
OF
MATERNITY WARD OPERATION THEATRE FOR NIUM
AT BANGALORE**

NOVEMBER 2011

VOLUME -III

HSCC (INDIA) LTD.

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TENDER NO. HSCC/112/PM/KITCHEN/PG-I/10

PROJECT: MATERNITY WARD RENOVATION						
Bill of Quantities						
CIVIL WORKS AND SERVICES						
Item No	Description of Item	Qty.	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1	2	3	4	5	6	7
1.00	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead :					
a)	Of area 3 sq. metres and below	4.00	Each			
b)	Of area beyond 3 sq. metres	4.00	Each			
2.00	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	50.00	Sqm			
3.00	Dismantling flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	45.00	Sqm			
4.00	Scrapping of existing wall paint	70.00	Sqm			
5.00	Dismantling existing false ceiling & supports complete in all respects	50.00	Sqm			
6.00	Providing and laying cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.					
a)	1:2:4 (1 cement : 2 coarse sand :4 graded stone aggregate 20 mm nominal size).	2.00	CUM			

Item No	Description of Item	Qty.	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1	2	3	4	5	6	7
7.00	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.					
a)	40mm thick with 20mm nominal size stone aggregate.	45.00	Sq.M			
8.00	12 mm cement plaster of mix; 1:4(1cement:4 fine sand)	50.00	Sqm			
9.00	Flooring					
	Providing and laying of approved make Epoxy ceramic aggregate mixed abrasion resistance flooring over IPS flooring. Antistatic Epoxy flooring to be laid over Epoxy Primer coating applied on levelled IPS floor.					
a	Supply & laying of 2mm thick self leveling screed and Antistatic Epoxy Flooring.	45.00	Sqm			
b	Supply and laying of 150mm wide epoxy coving for wall to flooring	80.00	Rmt			
10.00	Providing and Applying Epoxy paint on walls as per specifications and as directed by the Engineer in charge	110.00	Sqm			

Item No	Description of Item	Qty.	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1	2	3	4	5	6	7
11.00	Ceiling					
	40 mm thick Double skin totally flush Walkable false ceiling panels made with 0.8 mm thick Galvanised Powder coated Skin Pass (GPSP) sheet on both side with 36 ± 2 kg/m ³ density PUF as infill, with suitable Ceiling grid and supporting hardware. Joints shall be sealed with cleanroom compatible silicon sealant. Panel will be class "0", fire rated.Factory made cutout -16 Nos. (Approx.) in the ceiling panel for light fixture & supply & return air grills/HEPA boxes in the ceiling panel	50.00	Sqm			
12.00	Coving					
	Extruded aluminium powder coated/Anodized clip on type covings for the entire wall to wall and wall to ceiling. .					
a	R-70	44.00	Rmt			
b	3D internal/ external corner coves	16.00	Nos			
13.00	Laminar Flow Tent					
	Supply & installation of Laminar Flow Tent is made of 0.8mm thk SS-304 grade, no-4 finish sheet and provision for flanges for Duct connections and 6mm perforated grill. Size 8ft x 8ft x 700mm ht. (Duct connection and Diffusers/Dampers, filters if any required are not in the scope of HVAC part) Tent will be made so as Laminar Flow System to integrate with OT equipments	1.00	Nos			

Item No	Description of Item	Qty.	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1	2	3	4	5	6	7
14.00	Doors					
	44 mm thick doors made with Poly Urethane painted 0.8mm thick GPSP sheets on both sides with PUF as infill, 1.2 mm thick GPSP powder coated door frames totally flush with the wall panels, hardware like push plates, handles, door closure, double glazed view glass of std size, Stainless Steel Ball Bearing butt hinges and provision for concealed automatic door bottom Drop seal etc. Supply & Installation of double glazed view panels with flush design, with 6mm thick float glass fixed in double panel with necessary arrangements.					
	900 X 2100 Single leaf door	2.00	Nos			
	1200 X 2100 Double Leaf Door	1.00	Nos			
15.00	Light Fixture					
	Bottom opening 3 X 36 W light fixtures(Non flameproof) in MS powder coated finish including housing SS 304 mirror finish reflector for cleanroom application with necessary hardware for mounting with electronic choke (wipro/Philips). Usage of dimmer ballast with the PCB=3 Nos for dimming of all the 8 Nos. light fixtures. The gasket between glass & bottom frame and top housing & sealing panel shall be cleanroom compatible. (Lamp - OSRAM/ GE/philips). Each light fixture must be connected with OT Control Panel by means of 1.5 sq.mm Single Core PVC insulated Aluminium Conductor Cable of IS : 694	8.00	Nos			

Item No	Description of Item	Qty.	Unit	Rate in Rs. (in Figures)	Rate in Rs. (in Words)	Amount In Rs.
1	2	3	4	5	6	7
16.00	OT Control Panel					
	Tile based Membrane type Operation Theatre Surgeon Control Panel (6 service Tiles) consisting of display like Real time, Count down time, lighting control through dimmer, Telephone, Gas pressure set point, Alarm, Room Temperature and Relative Humidity. mounted flush in the theatre wall with Distribution Board complete with all accessories etc. (size 650mm x 650mm). Lighting Control along with i. Day time clock -Digital ii. Elapsed Time Clock -Digital	1.00	Lot			
17.00	Storage Cabinet					
	Supply & installation of storage cabinet made of 0.8mm thk SS-304 grade, No-4 finish sheet shelves and locable doors ize 1200mm x 2100mm ht .	1.00	Nos			
18.00	X-Ray Viewer					
	2 - Plate x-ray viewing screen. It is designed to provide flicker free luminance for the film viewing purpose. The X-Ray viewing screen should be illuminated by 4 pieces of high frequency fluorescent lamps and the dimming is controlled by the usage of dimming ballast with the PCB that is mounted inside. The diffuser will be able to diffuse the light evenly and to provide enough luminance for film viewing. It will be made of high quality opaque acrylic sheet. The film will be held firmly by using spring loaded clips for ease of mounting and demounting.	1.00	Nos			

BILL OF QUANTITIES (HVAC WORKS) FOR NIUM, BANGLURU

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required to fulfill the intent and purpose as laid down in the specifications and or the drawings.						
The tenderer shall quote rates in figures and in words under column 5&6 and extend amount to column 7						
<u>Sub Head -A, Equipments</u>						
1.0	Supplying, installation, testing and commissioning of 7.0 TR (Actual capacity), programmable microprocessor based, Air-cooled Package Type precision DX units complete with condensing unit, scroll compressor, air-cooled condenser with fan and evaporator,interconnecting refrigerant piping with indoor and outdoor units,pre charge refrigerant necessary insulation. Microprocessor Based Control Panel should be capable for Heating, Cooling & Humidification controls and interlocking with control wiring etc. complete with following and as per specifications and requirement.	1	No.			
Indoor Unit						
	a) Fan Section and canvass connection (Double Skin Type with thermal break profile)					
	b) Centrifugal Blower(backward curved) with Capacity of 2700 CFM and 125mm Static Pressure.					
	c) Cooling Coil Section/s with 7.0 TR / 6RD cooling coil/s as per specifications.					
	d) Pre, fine and HEPAFilter with filter sections as required.					
	e) Drain Pan and Drain Connection.					
	f) Drive motor, Drive arrangement guard etc.					
	g) Necessary vibration isolator and supporting arrangements.					
	h) Fresh air intake arrangement, necessary water drain and air purge valve wherever required etc.					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	i) Canvass connection ,necessary foundations,2 nos pressure gauge,2nos thermometer etc					
	j) double skin section 50 mm (inner 0.63 mm outer 0.8 mm poder coated GSS sheet) with thermal break profile for housing fine, microvee and Hepa filters complete as per specifications					
	Outdoor Unit for above					
	Suitable Air Cooled Type Condenser with Aluminium Fins & Copper Tube Coils for above indoor unit.					
	b) Scroll Type Hermetically sealed Comperssors.					
	c) Suitable condenser fans for the condensing unit.					
	d)necessary hard drawn copper refrigerant piping per circuit with kinnifoam insulation along with clamps,supports,fittings such as bends,tees,reducers etc complete as per specifications and requirement					
2.0	Supplying, installation, testing and commissioning of Pan Type Humidifier made from minimum 2mm thick stainless steel sheet top closed and insulated with 50mm thick expended polysterene (T.F. Quality) complete with incommining MCB, humidstate and control wiring for OTs.					
2.1	Capacity 6 KW	1	no.			
3.0	WINTER/MONSOON HEATING ARRANGEMENT FOR OT AHUs					
	Supply, installation, testing & commissioning of winter/monsoon heating/reheating arrangements fixed in ducts/ plenums complete with strip heaters, fixing frame work, insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats/ humidistats through electro magnetic type contactors and safety thermostats/ geysterstats as specified complete with wiring for interconnections with 1.5 sq.mm copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc.					
3.1	1.5 KW x 2 banks	1	no.			

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
4.0	SPLIT AIR CONDITIONERS					
	Supply , installation , testing and commisioning of HI wall split air conditioner comprising of the following.					
	a) Outdoor condensing Units					
	b) Indoor Evaporative Units					
	c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping.					
	c) Safety and operational controls					
	e) Hiwall splits shall be suitable for single phase power supply and complete with voltage stablizer.					
	f) Mounting arrangement and structural supports for outdoor unit are included.					
	g) The units should have atleast 3 star rating from BEE.					
4.1	Capacity : 1.5 TR	1	Nos.			
4.2	Capacity : 2.0 TR	1	Nos.			
5.0	Inline Fans					
	Supply, installation, testing and commissioning of Inline Fans as shown in drawings and as per equipment schedule . Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/- 6% V, 50 Hz AC supply. Item shall be complete with starter & cabling.					
5.1	Duty: OT exhaust					
	Air Quantity : 300 CFM					
	Static Pressure : 20 mm wg	1	Nos.			
5.2	Duty: Scrub exhaust					
	Air Quantity : 150 CFM					
	Static Pressure : 20 mm wg	1	Nos.			
	<u>Sub Head- B, Air Distribution</u>					
6.0	ALUMINIUM DUCTING					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition.					
6.1	22 gauge	40	Sqm.			
6.2	20 gauge	25	Sqm.			
6.3	18 gauge	15	Sqm			
7.0	FIRE DAMPERS					
	Supply, installation, testing and commissioning of motorized combined smoke & fire dampers made out of GI sheet of at least 120 minutes fire rating complete with GI damper of required size, smoke sensor, etc as per specifications and shop drawings.					
7.1	Fire/smoke Damper	2	Sqm			
7.2	Actuator & control panel	2	Nos.			
8.0	VOLUME CONTROL DAMPERS					
	Supply, installation and testing of volume control dampers of GI sheet, box type to be provided in ducts complete with suitable links, levers and quadrants for manual control of air volume and air balancing as per specifications and drawings.	2	Sqm			
9.0	CEILING DIFFUSERS					
9.1	SQUARE DIFFUSERS					
9.1.1	Supply, Installation, testing and balancing of square/circular supply air diffusers of powder coated aluminium construction with attached volume control dampers as per specs. and drawings.	1	Sqm.			
9.1.2	Supply, installation, testing and balancing of square/circular return air diffusers of powder coated aluminium construction without volume control dampers as per specifications and drawings	1	Sqm.			
9.2	LAMINAR FLOW DIFFUSERS					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
9.1.1	Providing & fixing of stainless steel plenum duly reinforced and made 100% air tight complete with 55% free perforated grilles(18 Gauge SS) at bottom for laminar flow in OTs. The plenum shall be insulated with 15 mm closed cell polyethylene insulation & shall be manufactured & installed by specialised agency as per designed to be approved by customer/Consultant Size: 900 x 600	10	Nos			
10.0	Providing & fixing of aluminium powder coated grilles with 60% face area. The grill shall be complete with damper & complete 25 mm thick aluminium filters	2	sq mtr.			
11.0	DUCTING INSULATION					
	Closed cell, Fire retardant, self extinguishing type crossed linked polyethylene insulation density not less than 24 Kg/sqM, 'K' value not more than 0.028 Kcal/degC with adhesive tape etc. on ducts complete as per specification and drawings.					
11.1	15 MM Thick	80	Sqm.			
	<u>Sub Head - C, Electrical</u>					
12.0	AHU MAIN DISTRIBUTION PANEL					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	Supply, installation, testing and commissioning of AHU panel suitable for 415 V, 3 phase, 4 wires, 50 Hz power distribution system. The panel shall be cubicle non draw out type free standing floor mounting sheet metal enclosed flush front with aluminium busbars, separate earth bus bars to be provided throughout the length of the panel. The incoming & outgoing feeder breakers, fuses, indicating lamps etc. shall be accommodated in a modular multi-tier arrangement. The painting shall be done as per relevant codes as specified in the specifications. Adequate size cable alley shall be provided all round the panel and in the back for each cable bending and termination. The outgoing feeders inside the panel shall be connected through solid bus bar. Flexible cable links are not acceptable. Bus bars shall be provided with sleeves or heat resistant insulated paint. The panel shall be suitable for cable entry from top. The panel shall be fabricated after the approval of fabrication drawings.					
	i) All doors to have pad locking and shrouding arrangement.					
	ii) All switches to be heavy duty type base mounted having operating handle.					
12.1	AHU PANEL					
	INCOMER					
	1 no. 125 A, 415/500 V, FP MCCB 35 KA					
	1 set indication lamps with control fuses.					
	1 no. (0-500V) voltmeter with selector switch.					
	1 no. (0-125 A) ammeter with selector switch with CT's					
	BUSBARS :					
	150 A TPN Aluminium bus bar 415V , 50 Hz.					
	OUTGOING					
	1 set-63 A FP MCCB 10 KA outgoing with ON/OFF indicating lamps and push buttons complete, for 7.0TR AC unit and associated panels.					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
	1 set-32A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete, for heater banks					
	1 set-32A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete, for humidifiers for OT.					
	1 set-32A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete, single phase preventor, 5.0 HP suitable starters for AHU motor with thermal overload protection and spare NO-NC contacts for interlocking, ON-OFF indication lamps with push button for motor as required.					
	1 set-32A FP MCCB 10 KA outgoing with ON/OFF indiacting lamps and push buttons complete					
	Complete as above	1	set			
13.0	CABLING					
	Supplying, laying, effecting proper connections, testing & commissioning of following size of 1.1 kv PVC insulated aluminium conducting armoured cables along with necessary cable tray as per IS 1554 Part- 1 laid on surface of wall/ceiling etc. & termination with brass compression glands as required.					
13.1	3 C X4 sq. mm. Cable	20	Rmt			
13.2	3 C X6 sq. mm. Cable	20	Rmt			
13.3	4 C X10 sq. mm. Cable	25	Rmt			
13.4	4 C X16 sq. mm. Cable	35	Rmt			
13.5	3.5 X50 sq.mm Cable	80	Rmt			
14.0	Supply & installation of following sizes of perforated MS cable trays including horizontal & vertical bends, reducers, tees, cross members and other accessories as required and duly supported from the ceiling/wall/floor with MS suspenders/supports and including painting etc. as required					

ITEM NO 1	DESCRIPTION OF ITEM 2	QTY 3	UNIT 4	RATE IN FIGURES (Rs.) 5	RATE IN WORDS (Rs.) 6	AMOUNT (Rs.) 7
14.1	100 mm widthx50 mm deep x1.6 mmthickness	50	Rmt			
15.0	EARTHING					
15.1	Earth pits with GI earth plate of size 600mmx600mmx6mm thick including all accessories , down watering GI pipes 40mm dia and providing masonry enclosure with cover plate having interlocking arrangement and watering pipe etc. with charcoal of or coke and salt) complete as required	1	Set			
15.2	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
15.2.1	25mm x 3mm	50	Rmt			
16.0	Providing and fixing earth wire of complete as per specifications as required.					
16.1	8 SWG wire	30	Rmt			
TOTAL for HVAC works						

**“Renovation for Maternity ward” OT for National Institute of Unani Medicine
(NIUM), Kottigepalya, Magadi Main Road,
Vishwaneedom Post, Bangalore- 560 0911**

SUMMARY

TOTAL CIVIL WORK

TOTAL HVAC WORK

GRAND TOTAL (CIVIL + HVAC)
