

TENDER

FOR

**Construction of Administrative Office for (KUHS) – SITC of Air
Conditioning Works**

**PART-III
PRICE BID**

TENDER NO. HLL/ID/13 / 39(A)

MAY 2013

**HLL LIFECARE LIMITED
INFRASTRUCTURE DEVELOPMENT DIVISION**

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1 COMMERCIAL CONDITIONS

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for Construction of administrative Office for KUHS – SITC of Air Conditioning Works.

1.0.2 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.3 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

1.1 UNIT RATES

1.12 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

1.2 BRIEF DESCRIPTION OF PRICING

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

1.2.3 The quoted price shall be inclusive of all taxes and duties whether payable by the contractor or to be deducted at source. This shall include those applicable among

VAT, Sales Tax, Income Tax, Customs Duty, Excise Duty, Turnover Tax, Service Tax, Work Contract Tax, Octroi, Labour Welfare Cess or any other Taxes and Duties prevailing in respect of this contract. **ANY BID STATING THAT TAXES ARE EXTRA WILL BE SUMMARILY REJECTED.**

1.3 INCOME TAX

Any payment to the contractor as per contract will be made after deducting income tax as per the rules and regulations.

1.4 SALES TAX AND EXCISE DUTY

The tenderer shall clearly indicate sales tax, Excise and other duties as applicable in his offer for carrying out this work.

1.6. SUBMISSION OF BILL

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

1.6.2. Within the above frame work of the terms of payment the contract's interim bills -
As per clause 7 in GCC.

1.7. EXTRA ITEMS

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and

special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

- 1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

1.8. OVER TIME WORK

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

- 1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.
- 1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.
- 1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners, architects and the consultants.
- 1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

2. SPECIAL CONDITIONS

2.1. EXECUTION WORK

- 2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

2.2. CERTIFICATE OF COMPLETION

- 2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the plants.
- 2.2.2 The work shall not be considered as completed and put into beneficial use until the consultants have certified in writing that the same has been completed and put into beneficial use.
- 2.2.3 The defects liability period shall commence from date of such completion or any specific date mentioned therein.

SITC of HVAC works of Kerala University Of Health & Science
BILL OF QUANTITIES

S.NO.	DESCRIPTION	UNIT	QTY	Unit Rate	AMOUNT (Rs)
1.00	WATER COOLED SCREW CHILLING UNITS				
1.1	Supply of Screw Type WATER CHILLING UNITS with 130TR capacity, screw type compressor, Machine Mounted starter panel, water cooled condenser, insulated chiller and condenser, vibration isolators, integral refrigerant piping and wiring, Including first charge of refrigerant and oil. Motor shall be suitable for 415±10% 50 cycles. 3 phase AC supply. Refrigerant shall be R-134a (2W+1S).Chiller should deliver at least 130 TR and shall have an IKW/TR less than 0.67 (at 100 % load) at ARI conditions. (Rated in accordance with ARI standard 550/590-2003)				
	However, the manufacturer has to select the chiller as per the following site conditions				
	<u>Chiller</u>				
	CHW IN 54 Deg F				
	CHW OUT 44 Deg F				
	<u>Condenser</u>				
	CDW IN 90 Deg F				
	CDW OUT 97.50 Deg F				
	Evaporator Fouling Factor 0.000100 Sqft Hr deg F/Btu				
	Condenser Fouling Factor 0.0002500 Sqft Hr deg F/ Btu	Nos.	3		

1.2	Port clearance, loading, unloading shifting, lifting, Installation, testing and commissioning of chillers	Lot	3		
2.00	PUMPS				
	Supplying, installing, testing and commissioning of end suction back pull out type Centrifugal Chilled/ Condenser Water Pumps @ 2900 rpm including base frame , coupling and coupling guard, Vibration isolators,3 phase electric motor, complete with Bronze impeller , SS shaft and mechanical seal .(2W+1S)				
2.1	Primary chilled water Pumps				
	Flow rate - 312 USGPM	Nos.	3		
	Head - 14 M				
2.2	Condenser water Pumps				
	Flow rate - 520 USGPM	Nos.	3		
	Head - 17 M				
2.3	Secondary Chilled Water Pumps				
	Flow rate - 312 USGPM	Nos.	3		
	Head - 27M				
2.4	Variable Frequency Drive				
	Supply, Installation, testing & commissioning the VFD's as per specification including all accessories mentioned below in a complete IP 20 VSPS control panel.	Set	1		
	Consisting of variable frequency drive for all three pumps, one dedicated microprocessor based pump controller per zone housed within this enclosure panel with parallel pumping software duly down loaded and two differential pressure sensor / transmitters as per the site requirement. Pumps				

	and VFD panel/ Accessories shall be sourced from a single vendor.				
3.00	COOLING TOWER				
	Supply, installation, testing and commissioning of INDUCED DRAFT COOLING TOWERS. Each tower shall be complete with basin, casing, distribution system, filling, louvers, ladder, fan and motor. Motor shall be suitable for 415±10% volts, 50 cycles, 3 phase power supply. Tower for air-conditioning system shall be selected on the basis of water temperature 90-97.5° F, ambient wet bulb 82° F .(2W+1S)				
	Cooling tower shall be suitable for 130 TR capacity Screw Chiller	Nos.	3		
	Flow rate - 520 USGPM				
4.00	Ceiling suspended Air Handling Units				
	Supply, Installation, testing & commissioning of double skin AHU's of 0.6mm GSS skin of 120 gsm of and Fan sections of 25mm panel thick duly sandwiched with PUF with forward curve centrifugal fan having efficiency more than 60%, supply damper and including accessories like view port , limit switch, draw through type Filter, Chilled water cooling coil and with thermal bridging having coil section with 6RD copper coil having fins 5fins per cm, with provision of prefilter section with set of washable prefilters having efficiency of 80% down to 10 microns. The drive unit comprising of TEFC Class F motor with VFD control shall be				

	installed on a common base and isolated from the bottom casing through spring mounts complete, Fan outlet velocity not to exceed 2000fpm, provided with thermostat 3 speed controls with VFD.				
	FIRST FLOOR				
4.1	E LIBRARY AHU 1&2-7630 cfm, 10TR, 20MM ESP, 6 ROW	Nos.	2		
4.2	PROJECTION ROOM-2380 cfm, 6TR, 20MM ESP, 4 ROW	Nos.	1		
	SECOND FLOOR				
4.3	DEANS OFFICE AHU 1-2540 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.4	DEANS OFFIC AHU 2-3266 cfm, 9TR, 20MM ESP, 6 ROW	Nos.	1		
4.5	VISITING DEANS OFFICE-2900 cfm, 8TR, 20MM ESP, 6 ROW	Nos.	1		
4.6	MEETING HALL AHU1-2638 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.7	MEETING HALL AHU2-2262 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
	THIRD FLOOR				
4.8	CE'S OFFICE-1847 cfm, 5TR, 20MM ESP, 6 ROW	Nos.	1		
4.9	CONFIDENTIAL ROOM-2111 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
4.10	MEETING HALL AHU1-2504 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.11	MEETING HALL AHU2-2146 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
	FOURTH FLOOR				
4.12	REGISTRAR OFFICE-1800 cfm, 5TR, 20MM ESP, 6 ROW	Nos.	1		
4.13	FO-1500 cfm, 4TR, 20MM ESP, 6 ROW	Nos.	1		
4.14	MEETING HALL AHU1-5000 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.15	MEETING HALL AHU2, 6TR, 20MM ESP, 6 ROW	Nos.	1		
	FIFTH FLOOR				

4.16	SYSTEM OFFICE AHU1&2-5263 cfm, 10TR, 20MM ESP, 6 ROW	Nos.	2		
4.17	SYSTEM OFFICE AHU3-4737 cfm, 9TR, 20MM ESP, 6 ROW	Nos.	1		
4.18	SYSTEM MANAGER-2200 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
4.19	SERVER ROOM-3000 cfm, 8TR, 20MM ESP, 6 ROW	Nos.	1		
4.20	MOISTURE FREE STORE (AHU with 1.5 KW strip heater in 3 separate banks- 1.5 KW x 3 banks including all accessories such as humidistat, thermostat, contactors etc)-1600 cfm, 4.5TR, 20MM ESP, 6 ROW	Nos.	1		
4.21	MEETING HALL AHU1&2-4543 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	2		
	SIXTH FLOOR				
4.22	VC CHAMBER-2300 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
4.23	CONFERENCE ROOM AHU1&2-4300 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	2		
4.24	PVC CHAMBER-2000 cfm, 5TR, 20MM ESP, 6 ROW	Nos.	1		
4.25	GC ROOM AHU1-2585 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.26	GC ROOM AHU2-2216 cfm, 6TR, 20MM ESP, 6 ROW	Nos.	1		
4.27	DINING ROOM&WAITING ROOM - 2500 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
	SEVENTH FLOOR				
4.28	VC CHAMBER-2600 cfm, 7TR, 20MM ESP, 6 ROW	Nos.	1		
4.29	SENATE HALL AHU1-6400 cfm, 20TR, 20MM ESP, 6 ROW	Nos.	1		
4.30	SENATE HALL AHU2-6400 cfm, 20TR, 20MM ESP, 6 ROW	Nos.	1		
4.31	MINI CONFERENCE ROOM-2850 cfm, 8TR, 20MM ESP, 6 ROW	Nos.	1		

4.32	DINING ROOM AHU1-3579 cfm, 10TR, 20MM ESP, 6 ROW	Nos.	1		
4.33	DINING ROOM AHU2-3221 cfm, 9TR, 20MM ESP, 6 ROW	Nos.	1		
5.00	Fan Coil unit				
	Supply, installation, testing and commissioning FCU with single skin GSS skin of 120 gsm with 3row coil, forward curve fan including valve package of ball with & w/o strainer and 2 way valve with thermostat, The unit shall be suitable for operation on Single phase 230 volts 50- cycles, the fan shall have three speeds.				
5.1	FCU 1.5TR 450 cfm (ANTE ROOM)	Nos.	1		
6.00	Four way Cassette type				
	Supply, installation, testing and commissioning Ceiling suspended Cassette type fan coil unit complete with three row chilled water copper tube aluminum finned coil, quiet high efficiency centrifugal fan with permanently lubricated fractional horse power motor, easily cleanable synthetic filter, sandwich insulated drain tray, two way valve with actuator and cordless remote for the operation of the fan. Attractive grill as integral part of the unit. Provision for the fresh air intake. The unit shall be suitable for operation on Single phase 230 volts 50- cycles, the fan shall have three speeds.				
6.1	4 Way 1.5 TR 450 cfm	Nos.	6		
6.2	4 Way 2 TR 600 cfm	Nos.	6		
7.00	PIPING				
	PIPING-CHILLED WATER				

	ABOVE GROUND				
7.1.	Providing ,fixing and commissioning of the following Pre insulated- MS C class pipes cut to required lengths and installed with all welded joint, providing and fixing in position necessary fittings like bends, elbows, tees, reducers and mating flange etc. The insulation is with 36 kg per cum PUF of thickness 30mm upto 125mm dia pipes & 50mm for higher sizes with 0.6mm lock seam spiral GI jacket.				
a	150 mm dia.	RM	234		
b	125 mm dia.	RM	80		
c	100 mm dia.	RM	18		
d	80 mm dia.	RM	84		
e	65mm dia.	RM	138		
f	50mm dia.	RM	180		
g	40mm dia.	RM	240		
h	32mm dia.	RM	264		
i	25mm dia.	RM	12		
j	20mm dia.	RM	36		
	<u>PIPING-CHILLED WATER UNDER GROUND</u>				
7.2	Supply, installation, testing and commissioning of chilled water piping complete with MS 'C' class pipes and fittings and pipe supports and insulated with 50 mm thick eps moulded pipe sections, polythene sheet, wire netting and cement plastering and covered with tarfelt as per the Technical Specifications, for burying underground. Pipe sizes:				
a	150 mm dia.	RM	124		
b	125 mm dia.	RM	16		

c	100 mm dia.	RM	18		
	PIPING-CONDENSER WATER				
7.3	CONDENSOR WATER PIPING.				
	Supply, receive, store handle, install test and commission the following condenser water with GI class (B) pipes complete with all fittings such as bends, tees, elbows, reducers, flanges, special fittings, suspension hangers, supports, etc. as reqd. for installation as per site requirement and the pipe of GI class B should confirm IS 3589				
a	200 mm dia(should have 6 MM thickness).	RM	90		
b	150 mm dia.	RM	84		
c	40 mm dia	RM	30		
d	32 mm dia	RM	24		
	<u>PIPING- CONDENSATE DRAIN WATER</u>				
7.4	Providing ,fixing and commissioning of condensate drain water piping with necessary insulation and with necessary fittings like elbows, tees and reducers etc.				
a	50 mm dia PVC	RM	18		
b	40 mm dia PVC	RM	35		
c	32 mm dia PVC	RM	60		
d	25mm dia PVC	RM	150		
8.00	Providing, fixing and commissioning of the PN16 Butterfly valves				
a	150 mm dia	Nos.	18		
b	125 mm dia	Nos.	18		
c	50 mm dia	Nos.	4		
8.1	Providing, fixing and commissioning of the PN 16 Ball valves.				

a	40 mm dia	Nos.	36		
b	32 mm dia	Nos.	34		
9.00	Providing, fixing and commissioning of the PN 16 balancing valves				
9.1	150 mm dia	Nos.	3		
9.2	125 mm dia	Nos.	3		
10.00	Providing, fixing and commissioning of the PN 16 flexible connector				
10.1	150 mm dia	Nos.	12		
10.2	125 mm dia	Nos.	18		
11.00	Providing, fixing and commissioning the PN16 NRV(Dual Plate check Valve)				
11.1	150 mm dia	Nos.	3		
11.2	125 mm dia	Nos.	6		
12.00	Providing, fixing and commissioning of the PN 16 Y strainers				
12.1	150 mm dia	Nos.	3		
12.2	125 mm dia	Nos.	6		
13.00	Providing, fixing and commissioning of the Flow switch for chillers	Nos.	6		
14.00	Providing ,fixing and commissioning of the Dial type thermometer	Nos.	104		
15.00	Providing ,fixing and commissioning of the Dial type pressure gauge	Nos.	110		
16.00	Providing and fixing the 2 way type Modulating Valve				
	Supply, Installation, testing and commissioning of 2 way modulating valves with linkage ,thermostat(digital thermostat suitable for modulating valve) and actuator. Valve should have minimum pressure rating of PN 16.				

16.1	65mm dia.	Nos.	1		
16.2	50mm dia.	Nos.	2		
16.3	40 mm dia.	Nos.	18		
16.4	32 mm dia.	Nos.	17		
17.00	Expansion Tank				
	Supply ,installation, testing and commissioning of Expansion Tank made of HDPE duly insulated with suitable material and of 1000 liter capacity. Scope shall include float valve mechanism and necessary valve packages.	Nos.	1		
18.00	SHEET METAL WORK				
	Supply, handle and erect and commissioning of factory fabricated GSS ducting as per drawing, complete with all fittings such as tee bends, special off-chutes, turning vanes, splitter dampers, ins.doors, transformation pieces slip on flanges etc. as reqd. as per IS 655 including suspension and supporting arrangement for plenums, ducts, complete as reqd. and as per specs.				
18.1	24 gauge GSS factory fabricated duct (upto 750mm any side-)	Sq.m	1365		
18.2	22 gauge GSS factory fabricated duct (above 750mm upto 1500mm anyside-)	Sq.m	585		
18.3	20 gauge GSS factory fabricated duct (upto 1500mm upto 2250mm any side-)	Sq.m	20		
18.4	18 gauge GSS factory fabricated duct (above 2250mm any side-)	Sq.m	60		
19.00	GRILLES & DIFFUSERS				
	Supply, fixing and commissioning of the following grilles and diffusers. Machine				

	made, powder coated, supply and return air grilles and diffusers of design to be approved (material : Extruded Al)				
19.1	supply air grille with damper	Sq.m	11		
19.2	supply air diffuser with damper	Sq.m	11		
19.3	Return air grille without damper	Sq.m	20		
19.4	Return air diffuser without damper	Sq.m	10		
19.5	Factory made fresh air dampers with louvers and control lever.	Nos	37		
20.00	Supply ,fixing and commissioning of fire damper with fusible link. Fire damper shall be of 16 gauge GI construction. Blades shall be complete with Stainless steel spindles, linkages and self lubricating brass bush and should have a 1 1/2 hour fire rating.	Sq.m	15		
21.00	Duct damper.				
21.1	Supply, fix, balance, and commission louvre type smooth supply air duct dampers with linkage, lever, fixing arrangement etc. complete brass bushings. Material of construction shall be GI.	Sq.m	15		
22.00	Supply, Fabrication, installation and testing of the insulated flexible ducting, complete with connecting rings, duct supports etc .				
22.1	250 mm dia	RM	126		
23.00	Supply, installation and testing of Plenum Box (350x350x350) made of 24G G.I with necessary threaded rods for supports.	Nos	35		
24.00	Supply, installation and testing of Plenum Box (425x425x350) made	Nos	35		

	of 24G G.I with necessary threaded rods for support.				
25.00	Supply ,installation, testing and commissioning of butterfly dampers of following size made out of GI.				
25.1	250 mm dia	Nos	70		
25.00	Duct Insulation				
	Duct external Thermal insulation				
25.1	supply ,fixing and commissioning of 12 mm thick class o closed cell elastomeric nitrile rubber insulation with adhesive as per site requirement	Sq.m	2030		
	Duct Acoustic insulation				
25.2	Supply, fixing and commissioning of Accoustic lining with 10 mm thick open cell elastomeric nitrile rubber as per site requirement	Sq.m	600		
26.00	Structural work				
26.1	Supply and fabrication of MS structural work in Plant Room/Cooling tower Basin.	Kg	500		
	GRAND TOTAL (In Words & Figures)				

