

Name of work :- Supply & installation of HVAC System at Bhai Bachitar Singh Ji Niwas, Takhat Sri Kesgarh Sahib, Sri Anandpur Sahib (Ropar)

VRF		
1	VRV Outdoor Unit	
	Supply of 100% Air Cooled VRV/VRF units with Rotary/scroll inverter Compressor capable of modulating capacity from 10%- 100% working on R410A with heating & cooling both. The prices should include any lifting, shifting and positioning of outdoor units. The unit shall be factory charged & any top-up gas/oil required for first charge should be included in the individual price quoted below. This shall include the nitrogen leak testing, oil charging, vacuumisation .The outdoor unit shall be a factory assembled unit housed in a sturdy weather proof casing constructed from rust-proofed mild steel panels coated with powder coated finish	Design to be done by the bidder calculating heat load
	The outdoor unit shall have multiple rotary/scroll compressors and be able to operate even in case of breakdown of one of compressor. Each ODU/CAN in a module should have multiple compressor for better redundancy incase of breakdown.	
	The heat exchanger for Outdoor shall be constructed with copper tubes mechanically bonded to aluminium fins to form a cross fin coil. The Condenser fins must be coated with Anti-corrosive treatment.The following safety devices shall be part of the outdoor unit:- High Pressure Switch, Low Pressure Switch, Fan Motor Safety Thermostat, Over Current Relay, Fusible Plugs, Fuses. Each unit shall be equipped, with an oil separator to ensure stable operation with long refrigerant piping. The outdoor units shall have a minimum COP of 5 at 50% Part Load condition in cooling only at outside ambient temperature of 43 deg.C dry bulb temperature and indoor temperature of 23 deg.C wet bulb temperature. the ODU shall have condenser fan capable of minimum 7 speeds for saving energy at various loading conditions	
	Note:- All out door/Indoor units should of non chinese manufacturing and only companies having their own manufacturing are eligible to quote.	
	Make: Daikin, Toshiba, Ogeneral, Mitshubishi, samsung.	
	The entire equipment including Installation & Gas charging etc. shall carry a warranty of 2 years from the date of commissioning for complete running of the system VRV Outdoor Unit (To be designed by bidder calculation heat load sheet	
2	VRV Indoor Unit	
	Supply, installation, testing and commissioning of high wall mounted air conditioners with corded remote control	
3	Centralized Control	
	Centralised Controller capable of controlling and monitoring the air conditioning system separately shall have all desired features like Operation of remote, setting of temperature , Mode Control, fan speed, swing control, switching on & off etc.	
4	All High wall Units for rooms to be with corded remote	
5	Common area indoor units and TFA to have corded remote	
6	Reception to be airconditioned with Ductables connected to VRF	
7	Bacnet based Centralised controller to be provided at reception	Should be able to control all Indoor units, Outdoor units, TFA's and AHU Kits through Centralised Controller
Corridor		
1	To be designed to maintain temp. 25 degree	

Toilet Exhaust		
1	Exhaust to be taken from each Toilet- rooms as per your sefl designed	
2	Common Toilet also to be ventilated	
Ventilation		
1	2 Liftwell and one Internal staircase to be Pressurised	All pressurisation and Fire Exhaust fans to be quoted with Panels wherein NO/NC contacts to be provided for linking with Fire alarm
2	Fire Exhaust to be provided for corridor	
Electrical		
1	Panels for outdoor and ventilations to be provided	Panels to meet IP 65 standard.
2	Electrical cabling and earthing to be quoted in BOQ	all Outdoor Cabling to be armoured and run on cable tray.
General		
1	Only OEM's to quote, Incase of authorised dealer quoting, undertaking from OEM required to provide service and spares support for next 7 years.	
2	Two year warranty from date of commisioning to be included. Critical spares MSL to be maintained at Site.	Technical training to the inhouse maintenance staff to be provided by OEM FOC.
3	Five year AMC rates inclusive of all consumables/Refrigerant Gas to be quoted. Critical spares MSL to be maintained at Site.	Agreement will be of Seven years, whereas amount will be paid yearly/six monthly as finalised by Committee.
Makes		
1	VRF- OEM	Toshiba/Daikin/Samsung/Mitsubishi
2	TFA	Edgetech, VTS, Zeco
3	Copper tubes	Mandev, Rajco, Maxflow
4	Axial Fans	Airflow, Blowtech, Kruger, Greenheck
5	AHU Fan Section	Airflow, Blowtech, Kruger, Greenheck, Edgetech
6	GI Sheets	SAIL, Jindal, TATA
7	Control Cables	Polycab, Havells, Bonton
8	Electrical Cable	Polycab, Havells, Bonton
9	Grills/ Damper/Fire Damper	Mapro, Caryaire, Glenstorms
10	Anchor Fasteners	Hilti, Fischer, Wurth
11	Insulation tubing/sheet	Kflex, Aflex, Armacell
12	Cable trays & Cable ladder	Rico, Profab Steelways, Sarcom & As approved
13	Main LT switchboards	CMKL, IPC, UPC, KEPL
14	PVC pipe	Supreme, Finolex, Kisan, Astral
15	Fire retardant flexible connection	Navaire, Airflow, Durodyne
16	Insulation Material -(Fiber Glass)	UP Twiga, Ownes Corning, Kimko
17	1100 volts single compression brass cable glands	Dowells/Peeco/Comet/Siemens/Comex
18		
19	1100 volts single compression PVC cable glands	Trinity Touch (Jacob)
20	1100 volt Cable lugs	Dowell's (Biller India Pvt. Ltd)
21	Terminal blocks & cage clamps	ELMEXX, PHOENIX, WAGO, Connectwel
22	MCB's/RCCB's	Schneider Marlin Gerin, Siemens, Legrand ,L&T
23	Moulded Case Circuit Breakers, Motor protection circuit breaker	Siemens, ABB, Schneider / L&T
24	Air Circuit Breaker	Siemens, ABB, Schneider / L&T
25	Automatic transfer switch (ATS)	Siemens, ABB, Schneider / L&T
26	Power/auxiliary, Capacitor control Contactors, overload relays,Timer	Siemens, ABB, Schneider, L&T
27	Current Transformer	Gillbert & Maxwell, Precise, AE,
28	Push Buttons, Indicating lamps LED	L & T (Esbee), Siemens, Vaishno, Teknik,
29	Selector switches	L & T Salzer, Seimens, Kaycee
30	Instruments – Digital	L&T Rishab, AE

Note

- 1 All above terms & Conditions are fixed for bidder to submit his own design for HVAC system atBhai Bachitar Singh Ji Niwas, Takhat Sri Kesgarh Sahib, Sri Anandpur Sahib (Ropar)
- 2 Rates to be quoted in break up BOQ including all taxes. No other Tax will be paid extra.
- 3 Bidders should have submit the shopping drawings before starting the work and take approval from Engineer Incharge before installtion of any items
- 4 The whole work should be complete with in Three Months
- 5 The Bidder will be responsible for making the hole in masnory work if any where required during work and same will be repair by his own cost.