



### SCOPE OF WORK

No	Service Description	Unit Rate	Total Amount
<b>Major Service Description</b>			
<b>01</b>	<b>Plant and equipment inspection, adjustments, lubrication, and cleaning as per maintenance procedures.</b>		
	BMS will be done by another service provider		
	Chillers on the roof are part of the scope of work		
	Water Treatment: Contractor to submit water test results and give quote if there is a need for dosing.		
	Compressor Oil		
	Oil filters driers		
	Refrigerant		
<b>02</b>	<b>Plant and equipment inspection, adjustments, lubrication, and cleaning as per maintenance procedures.</b>		
	a) Taking compressor oil for analysis (quote will be submitted before samples are taken)		
	b) Change refrigerant filters if required (Quote submission should parts be required)		
	c) Check electrical connections and switchgear inspection of contactor points		
	d) Check control set up and set parameters		
	e) Check gas charges full load		
	f) Check for leaks and repair		
	g) Check evaporator approach temp and report findings		
	h) clean condenser coils		
	i) Check condenser approach temp and report findings		
	j) Check function and operations of chillers		
	k) Check load and unload sequence of chillers		



	l) Check oil heaters		
	m) Check all safety and water flow interlocks		
	n) Check compressor oil levels		
<b>NB:</b> Recommendations for screw compressor regarding oil change are that compressor oil should only be changed every 3 years or if oil test report indicates that oil is not fit for further use.			
<b>03</b>	<b>Chilled Water Pumps: service of pumps will include:</b>		
	a) Checking oil level and topping up if required		
	b) Assessing vibration of pump		
	c) Checking general condition of pumps		
	d) cleaning switchboards and control panels		
	e) Inspect electrical switchgear and tightening of all terminals		
<b>04</b>	<b>Air Handling Units: service of Units includes:</b>		
	a) General cleaning of Units and clean all washable air filters		
	b) Clean all panels and check for damages		
	c) Heat exchange coils cleaning		
	d) Checking of all heater elements		
	e) Checking of all V-belts for correct tension and alignment		
	f) Where necessary, checking and replacement of Pulleys		
	g) Cleaning of electrical components, switchboards, and electrical panels, also check for defect and replace if required.		
	h) Checking and recording of vibration and general operation		
	i) Examination of all ferrous metal components and corrosion treatment		
	j) Checking and greasing of all fan bearings.		
<b>05</b>	<b>Split type air-conditioning units includes console units, mid and high wall split, under ceiling split and cassette type split. Service of Units includes:</b>		
	a) Checking of cooling and heating operation		
	b) Checking of fan and fan motor operations		
	c) General cleaning will be carried out.		



	d) Evaporator and Condenser coils to be chemically cleaned		
	e) Condensate panels to be removed and cleaned		
	f) Leak testing of Refrigerant system		
	g) Operation of the unit to be checked and reporting of any malfunction.		
	h) All ferrous metal components to be checked for rust and treated if necessary.		
<b>06</b>	Fan Coil Units include ducted hideaway and cassette type. Servicing of all fan coil units includes one annual major service of all units.		
<b>07</b>	<b>Service includes:</b>		
	a) Washing of all filters		
	b) Removal and cleaning of all condensate panels		
	c) Heat exchanger coils to be chemically cleaned		
	d) Ferrous metal components to be checked for rust and treated if required		
<b>08</b>	<b>AC Distribution Boards:</b>		
	a) Electrical heater connections to be checked for correct amperage and faulty elements recorded.		
	b) Thermal overload setting to be checked and reset if required		
	c) Insulation resistance to be checked		
	d) Automatic operation sequence to be checked		
	e) Panel labelling to be checked.		
<b>09</b>	<b>Water Treatment:</b>		
	The contractor will once a year take water samples and give test report to the CEF (SOC) Ltd. If the test shows a need to dose chemicals, a quote will be issued for corrosion and scale inhibitors chemicals.		



10	<b>Issue a Certificate of Compliance on completion of works.</b>		
<b>Minor Service Check List</b>			
01	<b>Services required cover regular service, maintenance of plant and systematically inspect, adjust, lubricate, clean the plant and all equipment as defined in the detailed maintenance procedures.</b> a) BMS will be done by another service provider b) Chillers on the roof are part of the scope of work c) Water Treatment: Contractor to submit water test results and give quote if there is a need for dosing. d) Compressor Oil e) Oil filters driers f) Refrigerant		
02	<b>All maintenance (routine and breakdown) work on Heating and Ventilation Air-Conditioning, and Ventilation to be carried out on the following equipment listed below:</b> a) CIAT Air Cooled Chillers b) Chilled Water Pumps c) Air Handling Units d) Fans (Extract) e) Fan Coil Units f) Ducting g) Diffusers h) Split Units i) AC distribution boards		
03	<b>Basic service contract includes 2 x CIAT Air Cooled Chillers LDC 800V</b> <b>Minor Service will include:</b> a) Check electrical connections and switchgear b) Check control set up and set parameters		



	c) Check gas charges at full running load		
	d) Check for leaks		
	e) Check evaporator approach temp and report findings		
	f) Check condenser approach temp and report findings		
	g) Check running pressure and log		
	h) Check load unload sequence of chillers		
	i) Check all safety and water flow interlocks		
	j) Check oil heaters		
	k) Check compressor oil levels		
	l) Report all faults		
<b>04</b>	<b>Chilled Water Pumps: service of pumps will include:</b>		
	a) Checking oil level and topping up if required		
	b) Assessing vibration of pump		
	c) Checking general condition of pumps		
	d) cleaning switchboards and control panels		
	e) Inspect electrical switchgear and tightening of all terminals		
<b>05</b>	<b>Air Handling Units: service of Units includes:</b>		
	a) General cleaning of Units and clean all washable air filters		
	b) Clean all panels and check for damages		
	c) Heat exchange coils cleaning		
	d) Checking of all heater elements		
	e) Checking of all V-belts for correct tension and alignment		
	f) Where necessary, checking and replacement of Pulleys		
	g) Cleaning of electrical components, switchboards, and electrical panels, also check for defect and replace if required.		
	h) Checking and recording of vibration and general operation		
	i) Examination of all ferrous metal components and corrosion treatment		
	j) Checking and greasing of all fan bearings.		



06	<b>Split type air-conditioning units includes console units, mid and high wall split, under ceiling split and cassette type split. Service of Units includes:</b>		
	a) Checking of cooling and heating operation		
	b) Checking of fan and fan motor operations		
	c) General cleaning will be carried out.		
07	<b>Fan Coil Units include ducted hideaway and cassette type. Servicing of all fan coil units includes one annual major service of all units.</b>		
08	<b>Filters and ducts:</b>		
	a) Remove and wash all filter media		
	b) Check heating and cooling operation		
	c) Check all flexible duct for air leaks		
	d) Check all electrical and control components		
	e) General operation of all units to be checked and recorded		
09	<b>Extract Fans:</b>		
	a) General operation to be checked		
	b) Fans to be checked for abnormal vibrations		
	c) All electrical connections to be checked and tightened.		
10	<b>Diffusers/Grilles: All diffusers will be checked monthly and thoroughly cleaned during the annual service of all fan coil units. For any VAV installed diffusers, the following service will be conducted:</b>		
	a) Check the operation of motor		
	b) Checking and tightening of heater wiring		
	c) Checking of operation of heaters		
11	<b>AC Distribution Boards: Monthly Service:</b>		
	a) Panels to be cleaned internally		



	b) Terminals to be checked and tightened		
	c) LED globes to be checked and replaced		
	d) Starters, contactors, and relays to be checked to ensure moving bridges slide freely and all contacts are cleaned. Excessive burning of contacts will be investigated and rectified.		
	e) Amperage of all equipment to be checked.		

Major Service Pricing Schedule					
No	Description	Unit	Quantity	Rate	Amount
1	Service HVAC system	No	1		
2	Water treatment testing and reporting	No	1		
3	Replacement of all filters	Sum	1		
4	Call out fee	No	2		
5	Others (Specify)				
<b>Subtotal (Exc.VAT)</b>					<b>R</b>
<b>VAT (@15%)</b>					<b>R</b>
<b>Grand Total (Inc.VAT)</b>					<b>R</b>



**Minor Service Pricing Schedule**

No	Description	Unit	Quantity	Rate	Amount
1	Service HVAC system	No	1		
2	Service split air-conditioning units	No	34		
3	Water treatment testing and reporting	No	1		
4	Call out fee	No	2		
5	Others (Specify)				
<b>Subtotal (Exc.VAT)</b>					<b>R</b>
<b>VAT (@15%)</b>					<b>R</b>
<b>Grand Total (Inc.VAT)</b>					<b>R</b>

**LUMPSUM AMOUNT FOR ALL THE WORK FOR 5 YEARS (PRICING SCHEDULE)**

NO	DESCRIPTION	TOTAL AMOUNT
1	MAJOR SERVICE PRICING	
2	MINOR SERVICE PRICING	
3	OTHERS (SPECIFY)	
<b>SUBTOTAL (EXC.VAT)</b>		<b>R</b>
<b>VAT (@15%)</b>		<b>R</b>
<b>GRAND TOTAL (INC.VAT)</b>		<b>R</b>
		<b>(5 Year Period)</b>

