



**HVAC**

HVAC Maintenance Proposal

**D**eutche **B**ank **D**olmen **M**all **C**lifton **K**arachi

(Year 2024-26)

## CONTRACTOR:

### Pioneer Services

2-C, Sunset Lane 1, Phase II, Ext. D.H.A, Karachi.

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## CLIENT:

**M/S Deutche Bank**

Off # 15-A 15th Floor, Sky Tower (West Wing) Dolmen City Karachi.

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**LIST OF EQUIPMENT**

|  |  |
| --- | --- |
| **S. No** | **EQUIPMENT** |
| 1 | Ducted Fan coil unit. 05 Nos |
| 2 | Water Cooled Package Unit 01 No |
| 3 | Ball Valves / Motorized Valves / Strainer / CFRV |
| 4 | VAVs (Variable Air Volume systems). 29 Nos |
| 5 | CAVs (Constant Air Volume systems). 08 Nos |
| 6 | Transfer Air fans. 04 Nos |
| 8 | Air devices. |

**SCOPE OF WORK:**

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### Water Cooled Package Unit (WCPU):

1. Checking refrigerant levels and inspecting for leaks.
2. Inspecting and cleaning condenser and evaporator coils.
3. Check motorized valve functioning properly
4. Check room temperature maintaining
5. Check thermostat working properly.
6. Removal and cleaning of chilled water strainers if required
7. Examining & maintaining water circulation systems, including pumps and valves.
8. Testing controls and safety features for proper functionality.

### Fan Coil Units (FCUs):

1. Cleaning or replacing filters regularly to maintain indoor air quality.
2. Inspecting and cleaning coils for efficiency and preventing blockages.
3. Check motorized valve functioning properly
4. Check room temperature maintaining
5. Check thermostat working properly.
6. Removal and cleaning of chilled water strainers if required
7. Lubricating fan motors and checking for any abnormal noises.
8. Testing thermostat and control settings for accurate operation.

### Valves:

1. Inspecting valve operations and ensuring they open and close correctly.
2. Checking for leaks and addressing any issues with valve seals or components.
3. Lubricating valve stems or actuators as needed.

**VAVs and CAVs:**

* 1. Calibrating and testing airflow sensors and controllers.
  2. Inspecting and adjusting damper positions for proper air balancing.
  3. Ensuring proper operation of controls and actuators.
  4. Check for any visible signs of damage, leaks, or wear on the VAV & CAV boxes, damper assemblies, and associated components.
  5. Ensure the area around the VAV & CAV is clear and unobstructed.
  6. Check and calibrate airflow sensors, pressure sensors, and controllers.
  7. Test the VAVs' response to changes in setpoints and temperature variations.
  8. Verify damper movement and adjust if necessary for proper airflow
  9. Inspect motors and actuators for signs of wear or malfunction.
  10. Lubricate moving parts as recommended by the manufacturer.
  11. Check electrical connections and wiring for any issues
  12. Evaluate the VAV & CAV control system for proper communication and functionality.
  13. Verify that the control sequence operates correctly.
  14. Check and verify the setpoints for temperature, airflow rates, and pressure differentials to ensure they align with building requirements and occupancy needs
  15. Clean dust and debris from the VAV & CAV boxes, ductwork, and associated components.
  16. Ensure the dampers, sensors, and actuators are free from dirt and obstruction.

### Transfer Air fans:

1. Inspection and cleaning of fan blades and housings.
2. Check motor ball bearing change if necessary
3. Check blower ball bearing change if necessary
4. Check belts, bearings, and motors for wear and tear.
5. Inspect belts, pulleys, and drives for wear, proper tension, and alignment.
6. Inspect the motor for signs of wear, overheating, or abnormal noises.
7. Check electrical connections and wiring for any issues.
8. Perform vibration analysis to detect any abnormal vibrations in the fan system.
9. Check and adjust the alignment of the fan blades if necessary to ensure smooth operation and airflow efficiency
10. Ensure air circulation is optimal and adjust dampers if necessary.

### Air Devices (Diffusers, Grilles, Registers, etc.):

1. Clean and inspect air distribution outlets for obstructions.
2. Clean diffusers, grilles, registers, and associated components to remove dust, dirt, and debris buildup.
3. Use appropriate cleaning methods to avoid damaging the surfaces
4. Inspect and adjust dampers or vanes for proper positioning and airflow control.
5. Verify that the adjustments align with the required airflow patterns
6. Inspect seals and gaskets for any signs of wear or damage
7. Clear any obstructions or debris in the vicinity of air devices that may hinder airflow
8. Ensure proper airflows and adjust dampers if needed.
9. Verify correct functioning of airflow control devices.

# Maintenance Timings

* 1. Monthly Maintenance Activities:
     + Basic cleaning and inspection of equipment or facilities.
     + Lubrication of moving parts if necessary.
     + Checking for any minor issues or adjustments needed.
  2. Quarterly Maintenance Activities:
     + Thorough inspection of equipment for wear and tear.
     + Testing machinery for functionality and efficiency.
     + Checking any parts showing signs of deterioration.
     + Cleaning and servicing components as required.
  3. Semi-Annual Maintenance Activities:
     + Deeper cleaning and servicing of equipment.
     + Calibration or adjustment of machinery for optimal performance.
     + Assessing the need for major repairs or replacements.
     + Conducting more comprehensive tests and evaluations.
  4. Annual Maintenance Activities:
     + Comprehensive servicing, including major inspections.
     + Replacement of components based on their lifecycle.
     + Conducting detailed system checks and performance evaluations.
     + Addressing any significant issues or overhauls necessary for long-term functionality.

**Scheduling and Timing:**

1. Preventive maintenance activities, including inspections, cleaning, and adjustments, will be scheduled **after regular duty hours**. This timing ensures that maintenance work does not disrupt normal operations or occupants' daily activities during working hours.
2. Additionally, maintenance will take place on **Saturdays and Sundays**, when the facility or building is likely to have reduced occupancy or be vacant, minimizing any inconvenience caused by maintenance activities.

# BI-ANNUAL HVAC PREVENTIVE MAINTENANCE

**CHARGES**

|  |  |
| --- | --- |
| Bi-Annual Charges: | 600,000 |
| SST 15%: | 90,000 |
| Grand Total Amount Rs: | 690,000 |

**Terms & Conditions**

1. Bi-Annual advance payment will be released against the Invoice / bill.
2. Prices include Sindh services Tax but exclude GST.
3. Prices are valid for a Two-year contract, and a new contract will be arranged a month before the current one ends.
4. Repairing or replacing parts/components will incur additional charges.
5. Transportation costs will generally be based on actual expenses.
6. Any specialized work done by a third party will have separate charges.
7. There will be an annual increase in charges.
8. Changes in government taxes will result in adjusted charges.
9. Our proposal is based for only maintenance activity, any materials or consumable parts needed for maintenance will be charged separately

**M/S PIONEER SERVICES M/S Deutche Bank**

(Contractor) (Client)