

PART 3: SCOPE OF WORK

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1 Description of the service

1.1 Executive overview

The purpose of this contract is to appoint a suitable qualified *Contractor* for the Provision of Technical Facilities Management Services to Eskom Real Estate (ERE) Megawatt Park Offices located at No. 1 Maxwell Drive, Sunninghill. The Gross Floor Area of the Megawatt Park building is 95 368m².

1.2 Employer's requirements for the service

The scope includes the provision of the following facilities management services:

- Building management services
- Heating and Ventilation Air Conditioning System
- Plumbing, stormwater and Drainage
- Civil works
- Mechanical works
- Generators and generator consumables
- Solar plant systems maintenance
- Electrical and UPS System
- Fire Protection & Sprinkler System
- Public Announcement system and Fire alarm
- Water Treatment, Swimming pool and Sewage System
- Transformers LV and HV ServicesPostal services
- Building Services
- Helpdesk Services
- Provision and maintenance of High mast lights and street lights
- Courier services
- Gym –Health Equipment Maintenance
- Maintenance of Gas operated equipments and refill of Gas cylinders

The *Contractor* shall provide all labour, supervision, administration and management, equipment, tools, supplies and material required to perform the facilities management services specified herein.

1.3 Detailed description of the service

Item	Description	Frequency
1.3.1	BUILDING MANAGEMENT SYSTEM (BMS) METASYS NETWORK	
1.3.1.1	<p>BMS METASYS NETWORK</p> <p>BMS and Controls – Services to be done By OEM accredited agent</p> <ul style="list-style-type: none"> • Advise on software upgrades to ensure communication to latest technology controllers and to prevent system from becoming outdated. • Do system back-ups monthly of database • Update graphics and do modifications to database when required • Check alarm and failure reports from controls workstation and resolve problems if any and pick up sequential problems from alarm counts. • Check BMS system workstation for correct operation and do necessary adjustments/programming • Give problem areas/defects first priority • Check step controllers (heaters, boilers, air-handling units) for correct operation and adjust where necessary 	Monthly

	<ul style="list-style-type: none"> • Check all switching and monitoring points (pumps, fans, chillers, flow switches, standby generators, diesel levels, inverters, all fire escape doors, generator room doors, switch gear room doors, transformer room doors, etc.) • Control loops to be checked and adjusted where necessary(e.g. sensor, damper, actuator cycle) • Check and ensure flow switches, static pressure sensors and timers are in order • Checking and repairing of fire damper operation and control • Checking of MEC controller and PB controllers for correct operation for system communication and there battery back-ups. • Supply SMS Alarm service and ensure correct operation thereof • Investigate problem areas for better control, experimenting with supply air, return air, enthalpy or averaging control • Check and repair server where necessary • Supply report after every service • System improvement and energy management to form part of service • Check and repair UPS's • Physically check damper operations that control return-, outside- and exhaust air and enthalpy to confirm correct operation as per BMS settings and to ensure economy cycles are functioning efficiently • Physically check actuator operation for dampers, vortex dampers, cooling towers to confirm correct position as per BMS settings – make sure bolts are properly secured to prevent slipping on damper shafts. • Examine, clean and test all control devices • Check and ensure all sensors – for air temperature: supply-, return- and fresh/outside air, humidity, enthalpy and room temperatures are functioning properly. • Also check all automatic temperature set points and adjust where necessary, including re-heater set points and sensors to switch on and off at the correct temperatures • Check boiler temperature and pressure sensors and overheat stats for correct operation • Physically check heating- and cooling coil valves positions are correct as per BMS Settings • Check that Chiller by-pass valves are operating correctly to prevent chillers from starting and stopping too frequently-do adjustments where necessary • All minor repairs where material is not required must be done as part of service • Check that water differential pressure controllers are operating correctly • Check all control interlocks on control panels and interaction with other controls are functioning correctly • Check that level switches on hot water and Chilled water make up and expansion tanks and on open hot water expansion tanks in Plantrooms P1A and P6 are functional • Ensure safety interlocks between boilers and chillers are operating correctly to prevent current overload • Source and supply and install necessary replacement parts. • Provide emergency call-out service – 2hour 1Hour response time – report on site within 4 hours 	
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<u>1.3.1.2</u>	<u>BMS METASYS NETWORK</u> <u>Service:</u> Defrag and clean-up of all hard drives to be done bi-annually	Bi-annual
<u>1.3.1.3</u>	<u>BMS METASYS NETWORK POINTS LIST</u> Service All of the general items below are described in the Points List. The Points List will determine the scope of work in that every point on each of the Points List shall be tested and proved to be functioning 100% correct. Five types of input/output signals to be checked Analogue input <ul style="list-style-type: none"> • Temperature, Pressure, Kilowatt etc. Analogue output <ul style="list-style-type: none"> • Control Signal to Valve, Damper Motor, Variable Speed Drive etc. Digital input <ul style="list-style-type: none"> • [Contact Condition, Door Switch, Sump Alarm, Pump Status etc.] Digital output <ul style="list-style-type: none"> • [Start/Stop of Pumps, Fans etc.] Incremental output <ul style="list-style-type: none"> • Similar to Analogue Output but Performed by Switching Relays] • The last and most important item to test is the operation of these outputs and inputs as an integrated control system by testing the program within the controller. Service of Analogue input <ul style="list-style-type: none"> • Physically inspect sensor for dirt, contamination or damage. • Measure the variable with an independent instrument (digital thermometer, multi-meter, current clamp meter, manometer etc. and check that this reading correlates with the Building Management System's reading within the tolerance of the sensor. • Check that the controller calibration values are current for that specific controller and rectify if required. Service of Analogue output <ul style="list-style-type: none"> • Drive the device manually via the controller keyboard and physically verify its operation. In case of valves, the temperature on each port of the valve must be measured when the valve is fully closed. Five (5) minutes later the valve should be opened to 50% and the same temperature measurements done again. Five (5) minutes later the valve should be driven 100% open and the temperature readings checked for final result. If there is a distinct difference between the three (3) readings for the valve temperatures, there is possibility of mechanical problems with the valve, strainer, etc. 	Monthly

	<p>Service of Digital input</p> <ul style="list-style-type: none"> Trigger the actual event which will cause a change of state and confirm that the Building Management System receives the event correctly. Open monitored door, trip chiller, trip filter differential pressure switch, turn on pump etc. <p>Service of Digital output</p> <ul style="list-style-type: none"> The output should be energised from the Building Management System and the corresponding equipment must be seen to start. <p>Service incremental output</p> <ul style="list-style-type: none"> Drive the device manually via the controller and physically verify its operation 	
	<u>NEW BMS SYSTEM DATA CENTER NIAGRA</u>	
<u>1.3.1.4</u>	<p><u>FIRE DAMPERS TESTING Roof</u></p> <ul style="list-style-type: none"> All the Fire Dampers shall be tested to ensure correct operation during an emergency. Activate from BMS. The Contractor shall be required to reset all the Fire Dampers after the test have been completed and ensure that all did reset. Prior arrangements to carry out these tests will be required from the Employer's Representative. 	Bi-annual and after any double knock fire event Service
<u>1.3.1.5</u>	<p><u>Fire Dampers Service</u></p> <p>Service</p> <ul style="list-style-type: none"> Fire Dampers shall be serviced as all related equipment/accessories to ensure the smooth and faultless operation of the Fire Dampers in the event of emergency. Equipment/Accessories will include the fire damper, links, limit switches, relays, all cabling, wiring and termination points etc. 	Annual
<u>1.3.1.5</u>	<p><u>Fire Dampers Ad Hoc Testing</u></p> <p>As and when required Service</p> <p>Testing as may be determined by unplanned events. Reset after Emergency Application or Activation of the Fire Dampers. Ensure all fire dampers returned to normal position</p>	
<u>1.3.2</u>	<u>Heating and Ventilation Air Conditioning System</u>	
<u>1.3.2.1</u>	<p><u>Trane Chillers, Carrier 30hr & York, Carrier 19EA41 & 19XR4041 & Climaveneta</u></p> <p>Diagnostics of defects, minor adjustments of controls and minor repairs. Major repairs such as dismantling of components, opening up of systems, the evaluation and re-charging of same etc., is not included in this coverage. Major repairs shall be reported to the Employer's Representative and a written quotation shall be submitted. On acceptance of the quotation the Employer's Representative will issue a written task order to the Contractor. Only upon receipt of the written task order, the Contractor may proceed with the major repairs as detailed in the task order. Routine</p>	Quarterly/ Monthly

	<p>maintenance will be done as per manufacturer's specifications, the below only an indication of work to be done.</p> <p>Service</p> <ul style="list-style-type: none"> • Record operating temperatures, pressures and amperages. • Check the operation of all safety controls. • Check the operation of the microprocessor • Check the condenser and evaporator tubes for fouling. (Performance checks only, no visual inspection). • Check oil and refrigerant charge. • Check for refrigerant leaks. • Check all gauges for functioning properly and correctly. • Check the operation of loading/unloading system. • Check control panel and starter parts for wear. • Check all flanges and tighten where necessary. • Tighten all starter and control terminations. • Carry out insulation resistance test on motor windings and record readings. • Report all detected system deficiencies in writing. • Check and discuss the operating log with the Employer's Representative. 	
<u>1.3.2.2</u>	<p><u>Trane Chillers, Carrier 30hr & York, Carrier 19EA41 & 19XR4041 & Climaveneta</u></p> <p>Service</p> <p>The annual service includes all the items listed in the above for the quarterly inspection and service in addition to the following items:</p> <ul style="list-style-type: none"> • Record operating temperatures, pressures and amperages. • Check refrigerant for acid and moisture • Take an oil sample for analysis and report • Check for refrigerant leaks. • Check all flanges and tighten where necessary. • Check control panel and starter parts for wear. • Re-calibrate and check operation of safety controls • Check the microprocessor program • Tighten all starter and control terminations. • Carry out insulation resistance test on motor windings and record readings. • Check the operation of loading/unloading system. • Remove the water boxes and inspect the condenser tubes. Take thickness readings and record. • Check the refrigerant charge. • Check and discuss the operating log with the Employer's Representative. • Run each unit and report any deficiencies and recommendations. • 	Annual
<u>1.3.2.3</u>	<p><u>Cooling Towers (PH1 Main plant, PH1 Data centre, PH2 Main plant & Climaveneta chiller) – (12)</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check General Operation • Drain Tower, Clean out Sump and Refill 	Quarterly/ Monthly

	<ul style="list-style-type: none"> • Check Operation of Ball Valve and Water Level (Float Approx. 13 mm Below Overflow) • Clean Out Sump Strainer • Check Water Does not Overflow on Shut-down • Clean Spray Nozzles • Check Bleed Valve is Clean (Setting to be adjusted by Water Treatment Contractor in Chiller Plant Room) • Check Fan Bearings • Check Fan Belts/Realign Drives (If Adjustment is Required) • Grease Fan and Motor Bearing • Clean Eliminators • Clean Mountings • Check Impeller Fan Blades • Check Water Entering and Exiting Conditions in Cooling Tower and Record • Lubricate Motor Base Slides and Adjusting Screws • Check that Air Intake Screens are Clean and Secure • Check for Unusual Noise or Vibrations • Inspect Protective Finish and Report Condition • Check for Unnecessary Water Carry Over • Check Sand Filter Installation. Clean Out Filter 	
<u>1.3.2.4</u>	<u>Blower/Fan Coils</u> Service <ul style="list-style-type: none"> • Check Operation of Unit • Check for any Vibration in Fans • Check for Restrictions at the Coil Inlets (Food Crates, etc) • Check Operation of Solenoid Valves • Ensure Expansion Valve Bulb is Secure • Clean Out Condensate Tray and Drain • Record Room Temperature (5 off) • (Freezer) Check Operation of Coil and Tray Heaters • (Freezer) Check Operation of Drain Heater Tape • (Freezer) Check Operation of Door Heater • Check Thermostat Operation of Drain Heater Tape • Check Thermostat Set Points (Located In Roof Space) 	Quarterly/Monthly
<u>1.3.2.5</u>	<u>Ventilation Fans</u> <u>2 x of Axial</u> Service <ul style="list-style-type: none"> • Check Fan in Operation • Check Motor Bearings • Clean Air Intake Screen 	Quarterly/ Monthly
<u>1.3.2.6</u>	<u>Supply Air Fans (34no)</u> Service <ul style="list-style-type: none"> • Check Fan in Operation • Check Motor Bearings • Clean Air Screen • Clean Filters • Check Motor and Terminal Connections • Ensure Impeller Bolt is Secure 	Quarterly

<u>1.3.2.8</u>	<p><u>Fans</u></p> <p><u>Return Air Fans</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Fan in Operation • Check Fan and Motor Bearings • Lubricate Fan Bearings • Check Condition of Fan Belts. Realign Drives if Adjustment is Required. Check Condition of Pulleys • Check Base Mounting Springs • Inspect Flexible Duct Collar • Ensure Coupling Guard is Secure • Check Motor and Terminal Connections • Check for Excessive Vibration <p><u>Exhaust Fans and Toilet Extraction Fans</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Fan in Operation • Check Motor Bearings • Clean Air Screen • Check Motor and Terminal Connections • Check for Excessive Vibration 	Bi-annual
<u>1.3.2.9</u>	<p><u>Split Air-Conditioning Units (153)</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Operation of Unit • Clean Air Filters • Check Condenser Fan Motor Bearings • Clean Cooling Coil Surfaces(Brush) • Check System Gas Charge (If and when required) • Check Operating Pressures and Record Suction & Discharge Pressure • Leak Test Refrigeration System • Check and Tighten All Terminal Connections • Check Operation of Reverse Cycle • Check unit Voltage and Amperages • Check Operation of Heaters • Ensure that Condensing Unit Coils are Clean 	Quarterly
<u>1.3.2.10</u>	<p><u>Air-Conditioning VRV's</u></p> <p><u>External Units</u></p> <p>Service of external units</p> <ul style="list-style-type: none"> • Check operation of each unit • Wash down coils on all exterior condensing units • Fill out report and hand copy to the Employer's Representative • Visually inspect units for any defects and/or damage. • Inspect all wiring and check all electrical connections. 	Quarterly

	<ul style="list-style-type: none"> • Check all filters and clean as required or replace. • Check all refrigerant pressures and record readings. • Check compressor to ensure that it is suspended freely, that all bushes are in good condition that the Klixon (overload protector) is operating efficiently, that the compressor is operating correctly and that it does not overheat in normal operating conditions <p><u>Internal units</u></p> <p>Service of internal Units</p> <ul style="list-style-type: none"> • Check condensate drains and clear if necessary to prevent internal water leaks. • Clean equipment generally and observe its operation in all its functions. • Check amperage readings on cooling, heating and fan only operation and compare to name plate ratings. • Check air filters and clean where necessary. Should the filter be damaged or torn it will be necessary to provide a new filter at the client's cost. • Check condition of evaporator coil and clean. Straighten fins with a fin comb where necessary. • Check condition of condenser coil and clean. Straighten fins with a fin comb where necessary. • Check condensate drip trays and treat for corrosion if necessary. Ensure unobstructed gravity flow. • Check condensate drains and clear if necessary to prevent internal water leaks. • Check fans to ensure that they are secured to fan shafts, not out of alignment and are free of corrosion, chips, dents, etc. • Check fan motor(s) to ensure that it (they) is (are) running freely and true and that the bearings show no sign of wear. Oil where applicable. Ensure that the baffle plates are secured between in and outlet air. • Check thermostats, switches and contactors and the wiring thereof to ensure that all electrical connections are secure and clean. • Check refrigerant system for leaks and repair where necessary. • Ensure that all copper tubing is clear of other components. • Clean equipment generally and observe its operation in all its functions. • Check amperage readings on cooling, heating and fan only operation and compare to name plate readings. • Clean outside of unit, particularly return air grill and discharge vanes. • Rust proof where necessary. • Check and tighten where necessary all refrigerant pipe fittings. • Check head and suction pressures to ensure that these are in accordance with specifications. If not adjust gas volume to required head. • Where conditions change due to excavations, construction, dusty areas or any kind of extraordinary exercises, the cycle of service may be adjusted to maintain healthy performance co-efficient • Check operation of BS selector box 	
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1.3.2.11	<p><u>Air-Conditioning: Package Units</u></p> <p><u>External Units</u></p> <p>Service for computer room</p> <ul style="list-style-type: none"> • Service of external units as per manufacturers specifications • Visually inspect all units for defects and/or damage • Inspect all wiring and check all electrical connections • Check all filters and clean as required or replace. • Check all refrigerant pressures and record readings • Check operation of each unit • Fill out report and hand copy to the Employer's Representative. <p><u>Internal Units</u></p> <p>Quarterly Service of Basement computer room</p> <ul style="list-style-type: none"> • Check condensate drains and clear if necessary to prevent internal water leaks. • Clean equipment generally and observe its operation in all its functions. • Check amperage readings on cooling, heating and fan only operation and compare to name plate ratings. • Check air filters and clean where necessary. Should the filter be damaged or torn it will be necessary to provide a new filter at the client's cost. • Check condition of evaporator coil and clean. Straighten fins with a fin comb where necessary. • Check condition of condenser coil and clean. Straighten fins with a fin comb where necessary. • Check condensate drip trays and treat for corrosion if necessary. Ensure unobstructed gravity flow. • Check condensate drains and clear if necessary to prevent internal water leaks. • Check fans to ensure that they are secured to fan shafts, not out of alignment and are free of corrosion, chips, dents, etc. • Check fan motor(s) to ensure that it (they) is (are) running freely and true and that the bearings show no sign of wear. Oil where applicable. Ensure that the baffle plates are secured between in and outlet air. • Check thermostats, switches and contactors and the wiring thereof to ensure that all electrical connections are secure and clean. • Check refrigerant system for leaks and repair where necessary. • Ensure that all copper tubing is clear of other components. • Clean equipment generally and observe its operation in all its functions. • Check amperage readings on cooling, heating and fan only operation and compare to name plate readings. • Clean outside of unit, particularly return air grill and discharge vanes. • Rust proof where necessary. • Check and tighten where necessary all refrigerant pipe fittings. 	Quarterly
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	<ul style="list-style-type: none"> • Check head and suction pressures to ensure that these are in accordance with specifications. If not adjust gas volume to required head. • Where conditions change due to excavations, construction, dusty areas or any kind of extraordinary exercises, the cycle of service may be adjusted to maintain healthy performance co-efficient • Check operation of BS selector box 	
<u>1.3.2.12</u>	<u>Brian Rickard Diffusers including MIM Diffusers</u> Service as per manufacturer's specifications: <ul style="list-style-type: none"> • Inspect and Test All "Brian Rickard" Diffuser Equipment to be in A Good Condition and to be Functioning Correctly • R317 Branch static controls to be calibrated • Floor pneumatic thermostats to be calibrated 	
<u>1.3.2.13</u>	<u>Plant Water Tanks</u> Service Chilled water tanks <ul style="list-style-type: none"> • Visual Inspection of Tanks and Piping • Check Condition of Insulation • Check for leaks • Operate valves • Check pressures are within limits 	Bi- annual
<u>1.3.2.14</u>	<u>Feed and Expansion Tank</u> Service <ul style="list-style-type: none"> • Check Level in Tank • Check Float Valve Operation • Check for Excessive Overflow/Rectify if Necessary • Clean Out Tank • Check and Report on Condition of Tank 	Bi- annual
<u>1.3.2.15</u>	<u>Water Treatment</u> Service <ul style="list-style-type: none"> • Chemical residuals are to be checked in the three cooling towers and the closed loop. • Close loop – Nitrate > 1260 ppm • Cooling towers – Zinc/molybdate (Zinc 2-5 ppm) • Conductivity of the water is to be checked • Closed loop – approx. 3000 microsiemens • Cooling towers – 700 – 1100 microsiemens • The Ph of the water is to be checked. • Closed loop > 9,5 • Cooling towers 7,0 – 9,0 • Chloride levels are to be checked on the cooling towers – 300 ppm max. • Alkalinity levels are to be checked on the cooling towers – 550 ppm max • All make – up water is to be tested for ph, alkalinity, chlorides and conductivity • According to the results above, the settings on the conductivity controller and the chemical dosing pumps are to be adjusted and recorded. 	Bi-annual

	<ul style="list-style-type: none"> Water meter readings are to be recorded and consumptions calculated. Microbiological activity is to be tested on a routine basis to determine biological growth in water. Twice a year, samples are to be drawn off the cooling towers and sent away for analysis to determine for legionella. A detailed record of all the above is to be entered in the on-site log book issued by the contractor for the plant and the contents discussed with Eskom's designated personal. A breakdown service on the water treatment equipment is to be available in between the routine service calls. Equipment inspections are to be made during shutdowns. A report is to be issued summarizing findings and recommendations. All water treatment chemicals to be supplied and topped up as and when required. 	
<u>1.3.2.16</u>	<u>Plant Distribution Boards and Control Equipment</u> Service <ul style="list-style-type: none"> The Contractor shall be responsible for the cleaning, service, maintenance and repairs to all Air-conditioning related Plant Electrical Distribution Boards and Control Equipment. The distribution boards will include the following: <ul style="list-style-type: none"> The Main Air-conditioning Distribution Board in the Main LT Switch Room in the basement, All distribution boards within the site Air Receiver- Pressure test and wall thickness test Air Compressor service according to the OEM standard	Bi-annual
<u>1.3.2.17</u>	<u>Gauges and Thermometers</u> Service <ul style="list-style-type: none"> Check for accuracy. Check for leaks. 	Bi-annual
<u>1.3.2.18</u>	<u>Refrigeration Equipment</u> Service <ul style="list-style-type: none"> Check Operation of Unit Clean Condenser Coil Check System Gas Charge Leak Test Refrigerant System Check Compressor Oil Levels Check Operating Pressures. Record Discharge and Suction Check Safety Cut-Outs. Record Discharge, Suction & O/P/S Record Time Delay of Oil Pressure Safety Switch Check for Signs of Oil Leaks Check for Signs of Vibrations Clean Condenser Coils (Hose) 	Monthly
<u>1.3.2.19</u>	<u>Cold Rooms (1xPrestcold K150/0025, 3xPrestcold K100/007)</u>	Monthly

	<p>Service</p> <ul style="list-style-type: none"> • Check Operation of Unit • Clean Condenser Coils (Hose) • Check System Gas Charge • Leak Test Refrigeration System • Check Compressor Oil Level • Check Operating Pressures and Record • Check Safety Cut-Outs and Record Discharge & Suction • Check for Signs of Oil Leaks • Check for any Signs of Vibration 	
<u>1.3.2.20</u>	<p><u>Counter Fridges</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Operation of Unit • Clean Condenser Coils (Hose) • Check System Gas Charge • Leak Test Refrigeration System • Check Compressor Oil Level • Check Operating Pressures and Record • Check Safety Cut-Outs and Record Discharge & Suction • Check for Signs of Oil Leaks • Check for any Signs of Vibration 	Quarterly
<u>1.3.2.21</u>	<p><u>Bar Fridges</u></p> <p>As and when required Service</p> <ul style="list-style-type: none"> • Pressure Test Refrigeration System • Check All Door Seals • Check General Condition of Fridge. • Record temperature. 	As and when required
<u>1.3.2.22</u>	<p><u>HVAC BMS</u></p> <p>Service of HVAC BMS (No. x89)</p>	Quarterly
	<p><u>Generic Checklist Example</u></p> <p>Oil</p> <ul style="list-style-type: none"> • Check for oil leaks; • Check oil level / Top up / Replace oil <p>Cooling system</p> <ul style="list-style-type: none"> • Check all fan belts; • Check for water leaks; • Check / Top up coolant level; • Check engine preheat; • Check radiator and coolant / core <p>Battery</p> <ul style="list-style-type: none"> • Check battery condition / Top-up; • Battery charger voltage; • Check battery terminals / clean <p>Fuel system</p> <ul style="list-style-type: none"> • Check for fuel leaks; • Check day fuel level; 	

	<ul style="list-style-type: none"> • Check for water in fuel separator <p>Air intake system</p> <ul style="list-style-type: none"> • Check air cleaner /clean; • Check inlet / outlet obstruction <p>Exhaust system</p> <ul style="list-style-type: none"> • Check exhaust system and rain flap <p>General checks</p> <ul style="list-style-type: none"> • Check engine mountings; • Check alt. mountings; • Check crankcase breather; • Check starter operation; • Clean plant if necessary <p>Electrical system</p> <ul style="list-style-type: none"> • Controller error codes; • Check all circuit breakers; • Check for loose panel connections <p>Change over test</p> <ul style="list-style-type: none"> • Mains fail test; • Change from Mains to Generator; • Change from Generator to Mains; • Building power restored <p>Start and run engine</p> <ul style="list-style-type: none"> • Frequency; • Coolant Temp; • Oil press; • Battery alternator voltage; • RPM 	
1.3.3	<p><u>Plumbing and Drainage Service</u></p> <ul style="list-style-type: none"> • Repair and replacement of leaking taps and cisterns • Replacement of copper and PVC pipes • Repairs and replacement of urinals, basins, sinks, tubs, troughs, runnel, shower trays, shower heads, tanks toilet. • Water connection to hydro boilers , water tanks sewer system and buildings • Unblocking of drainage structures , pumps including manholes • Grease or replace gullies • Replace aluminium glass shower door , manholes lids • Replacement of threaded tubing and valve • Installation of water tanks , hydro boilers • Pressure jetting-ad hoc maintenance • Wash bay sumps maintenance and issue disposal certificate –this is for major offices only • Attend to water leaks /blockages call outs • Keep basic spares on site to address leaking taps and pipes (copper and PVC) • Water tank repair and replacement • Septic /conservancy tank repair and maintenance. • Annual testing of boreholes • Storage tanks • Supply and installation of geysers and other hot water systems 	

1.3.4	<u>Civil Works and Mechanical</u>
1.3.4.1	<u>Civil Works</u> <p>Service</p> <ul style="list-style-type: none"> • Breaking down and removing brickwork, reinforced concrete including cutting off and removing reinforcement. • Break out and from opening through brick wall for window including necessary precast or concrete lintels, making good plaster or facings on one or both sides, into reveals. • Taking out and removing doors , windows, including thresholds and sills from brickwork to remain (build up or altering openings elsewhere measured) • Fixing of existing doors, windows and fanlights. • Ramp and steps to park home entrance • Ground stabilisation • Paving 3 metres around the park home • Painting • Tiling and glazing • Carpentry, masonry, joinery and ironmongery • Plastering • Bricklaying • Roof sealing • Fixing of existing roof covering complete with ridge and hip capping, fittings, flashings (elsewhere measured) with pitch not exceeding 50 degrees. • Clean existing roof covering using a high pressure water cleaning system and steel brushes removing all loose paint, spawl and deleterious matter. • Repairs to cracks in existing plaster • Taking up and removing vinyl floor coverings, carpeting and suspended floor. • Maintenance of drainage structures. • Repairs to existing structural steelworks including various types of fencing • Galvanising of existing steelworks • Maintenance of existing roadworks and markings including cut, fill, compact, primer and tarmac on existing worn out roads • Repair, replace and clean kerbing • Repair clean and maintain storm water catch pits and piping • Repairs of security gate (11) and roller doors (18)
1.3.4.2	<u>Sewer Sump Pumps and Controls Civil Works</u> <p>Service</p> <ul style="list-style-type: none"> • Inspect tanks and pipes for leakage, blockage, etc. check correct operation • Chemical flush • Inspection & servicing of pumps and non-return valves
1.3.4.3	<u>Submersible Pumps</u> <p>Service</p> <ul style="list-style-type: none"> • Check Pump Condition • Check Float Calibrations • Check Pump Operation • Check Pump Intake Screen Is Clean • Check Motor and Terminal Connections • Cable tunnel pump inspection – between MWP & CNC <p>NB: Ensure that pump is 75% submerged when checking operation.</p>
1.3.4.4	<u>Sewerage Controls and Alarm Panels</u>

	<p>Service</p> <ul style="list-style-type: none">• Check control panels for correct operation.• Ensure panel electronics is dry.• Check all connections.• Visually Inspect Contactors and Relays• Ensure that All Pilot Lights are in Working Condition• Check for Loose Connections and Tighten• Generally Clean Out Panels and Components• Ensure that All Control Gear Operate Correctly• Check Overload Settings• Ensure Wiring is Neat• Ensure All Panels Are Locked																																							
Item	Description																																							
1.3.5	<p><u>Electrical and UPS System</u></p> <p>Service</p> <ul style="list-style-type: none">• The checking of the mechanical soundness of all parts.• The checking of the semi-conductor power devices, transformers, filter elements and the like• The checking and, if necessary, adjusting of the voltage of the DC circuitry.• The checking and, if necessary, adjusting of the output voltage of the AC circuitry.• The checking and adjusting of all electronic regulating circuits.• The cleaning of the UPS system• The checking of the DC caps.• The checking of the AC filters caps.• The checking of all Fan operations.• Visual checking for Hot Spots (Hot Spots are discolouring of power wires and main bus bars)• The checking of batteries for loose connections, hot spots and terminal corrosion.• The checking of load currents and voltages.• The checking of environmental temperature and ensuring that it is within the UPS operational specifications.• The checking and recording on a log sheet of the voltage of each battery block.• The cleaning of the batteries.• Conduct a battery discharge test using the existing load connected to the Equipment to determine the capacity of the battery.• The checking of sufficient lighting.• Maintenance of electrical fence and perimeter lighting• Four-ways CNC perimeter lighting inspection/ repair <p>Should the Technician find any problem during the inspection? A detailed service report will be handed to site personnel directly after completion of the service</p>																																							
1.3.5.1	<p><u>Charger and Batteries</u></p> <table><tr><td>DESCRIPTION</td><td>QTY</td><td>MWP</td></tr><tr><td>Substation 108</td><td>9</td><td>Yes</td></tr><tr><td>Substation 19</td><td>9</td><td>Yes</td></tr><tr><td>Substation 49</td><td>9</td><td>Yes</td></tr><tr><td>Main substation</td><td>9</td><td>Yes</td></tr><tr><td>Kitchen mcc</td><td>9</td><td>Yes</td></tr><tr><td>Substation148-PHASE 2</td><td>9</td><td>Yes</td></tr><tr><td>Substation138-PHASE 2</td><td>9</td><td>Yes</td></tr><tr><td>Substation131-PHASE 2</td><td>9</td><td>Yes</td></tr><tr><td>Data centre</td><td>800</td><td>Yes</td></tr><tr><td>Club house</td><td>9</td><td>Yes</td></tr><tr><td>Substation 119</td><td>9</td><td>Yes</td></tr><tr><td>POLYCAN (25Ltrs) Battery water</td><td>1250 litres</td><td>Yes</td></tr></table>	DESCRIPTION	QTY	MWP	Substation 108	9	Yes	Substation 19	9	Yes	Substation 49	9	Yes	Main substation	9	Yes	Kitchen mcc	9	Yes	Substation148-PHASE 2	9	Yes	Substation138-PHASE 2	9	Yes	Substation131-PHASE 2	9	Yes	Data centre	800	Yes	Club house	9	Yes	Substation 119	9	Yes	POLYCAN (25Ltrs) Battery water	1250 litres	Yes
DESCRIPTION	QTY	MWP																																						
Substation 108	9	Yes																																						
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Substation 49	9	Yes																																						
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Substation148-PHASE 2	9	Yes																																						
Substation138-PHASE 2	9	Yes																																						
Substation131-PHASE 2	9	Yes																																						
Data centre	800	Yes																																						
Club house	9	Yes																																						
Substation 119	9	Yes																																						
POLYCAN (25Ltrs) Battery water	1250 litres	Yes																																						

	<p><u>Battery Tripping Unit</u></p> <p>Service</p> <p>Complied By: Clean off any acid from battery terminals</p> <p>Atams Mdledle</p> <ul style="list-style-type: none">• Check water levels on all cells• Check all connections• Check load circuits on battery• Check supply voltage• Check battery voltage• Test all single cell internal battery resistance (Test conducted per battery)• Test all single cell battery voltage(Test conducted per battery)• Check all indication functional• Compile test report according to Charger specifications <p><u>Battery Testing</u></p> <p>Service</p> <ul style="list-style-type: none">• Check hydrometer• Check casing condition• Check the water• Check terminals• Note Volts• Note Amps• Compile battery report• Checking of input and output terminations• Installation of batteries in battery cabinets or onto stands.• Checking of battery connections• Complete mechanical check of the UPS system.• Electrical and calibration check of the UPS system• Testing of all UPS alarm functions including Remote Alarm Panel (RAP) if supplied• Mains failure test, using existing load, to prove correct operation of UPS system• Explanation of UPS operation and alarms to customer• Hand-over acceptances.																		
1.3.5.2	<p><u>PA System</u></p> <p>Service and test the PA System (Building A, B, C & D) including a written report (No. x4)</p>																		
1.3.5.3	<p><u>Main and Sub Electrical Distribution Boards All Blocks</u></p> <table><tr><td>DESCRIPTION</td><td>QTY</td><td>MWP</td></tr><tr><td>PH 1 D/B</td><td>90</td><td>Yes</td></tr><tr><td>PH 2 D/B</td><td>60</td><td>Yes</td></tr><tr><td>MAIN KITCHEN D/B</td><td>8</td><td>Yes</td></tr><tr><td>SUB D/B</td><td>4</td><td>Yes</td></tr><tr><td>CLUB D/B</td><td>6</td><td>Yes</td></tr></table> <p>Service</p> <ul style="list-style-type: none">• The Contractor shall be responsible for the cleaning, service, maintenance and repairs to all Main and Sub Electrical Distribution Boards and Control Equipment. <p><u>Switches, Change-Overs, etc.</u></p> <p>Service</p>	DESCRIPTION	QTY	MWP	PH 1 D/B	90	Yes	PH 2 D/B	60	Yes	MAIN KITCHEN D/B	8	Yes	SUB D/B	4	Yes	CLUB D/B	6	Yes
DESCRIPTION	QTY	MWP																	
PH 1 D/B	90	Yes																	
PH 2 D/B	60	Yes																	
MAIN KITCHEN D/B	8	Yes																	
SUB D/B	4	Yes																	
CLUB D/B	6	Yes																	

<p>Complied By: Atams Mdledl</p>	<ul style="list-style-type: none"> • Main incoming supply, main switches, change-over systems, bus bars and the supply up's to each of the local isolators for each individual piece of equipment. <p><u>Air-Conditioning Plant Distribution Boards and Control Equipment</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the cleaning, service, maintenance and repairs to all Air-conditioning related Plant Electrical Distribution Boards and Control Equipment. • The distribution boards will include ALL Air-conditioning Distribution Board in MWP <p><u>Main and Sub Electrical Distribution Boards</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the cleaning, service, maintenance and repairs to all Main and Sub Electrical Distribution Boards and Control Equipment. <p><u>Refrigeration Distribution Boards</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the inspection, cleaning, service, maintenance and repairs to the refrigeration DB and Control Equipment in MWP. <p><u>Heating Distribution Boards</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the inspection, cleaning, service, maintenance and repairs to the heating DB's in MWP <p><u>Sump Pump Distribution Boards/Control Panels</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the inspection, cleaning, service, maintenance and repairs to the Sump DB's including control equipment. Sump Pump Control Panels in MWP. <p><u>Power Factor Correction on Distribution Boards</u></p> <p>Service</p> <ul style="list-style-type: none"> • The Contractor shall be responsible for the inspection, cleaning, service, maintenance and repairs to the power factor correction system installed on the Main Air-conditioning Distribution Board and Air-conditioning Distribution Board.
1.3.5.4	<p><u>Back-Up Lights (Emergency Lights)</u></p> <p>Service</p> <ul style="list-style-type: none"> • All material used must be SABCS approved. • Must be installed in all emergency escape route • Must back up for 3 hrs • Must be LED • All the lights must as per SANS10114-1
1.3.5.5	<p><u>Earthing and Bonding</u></p> <p>Service</p> <ul style="list-style-type: none"> • Must be done as per earthing and bonding regulation
1.3.5.6	<p><u>Infra-Red Scanning</u></p>

	Service <ul style="list-style-type: none"> • Must be done on the tested, balanced and commissioned complete electrical installation • Conduct an Infra-Red Scan survey on all the above mentioned distribution boards under full load condition. • On completion of the survey, a detailed written report including photographs shall be handed to the Employer.
1.3.5.6	<u>Certificate of Compliance</u> <ul style="list-style-type: none"> • Issue the certificate of compliance as electrical regulation.
1.3.5.7	<u>Underground Cable Marking</u> Service <ul style="list-style-type: none"> • Mark all underground cable with an approved cable markings • All HV cables feeding MWP and all cable distributing with in MWP. • All material used must be SABS approved.
1.3.6	<u>Fire Protection & Sprinkler System</u>
	<u>Fire and Smoke Detection</u> Service <ul style="list-style-type: none"> • All the equipment as specified above shall be serviced and maintained in strict accordance with the manufacturer's specifications and recommendations. • Manuals are available on the Site and shall not be removed from the Site.
1.3.6.1	<u>Fire Detection System and Alarm Systems</u> Service <ul style="list-style-type: none"> • Each smoke detector shall be activated and checked for operating correctly including all remote indication associated with the relevant smoke detector. • Each smoke detector shall be inspected during the service to be in a good condition and not damaged. • Each smoke detector shall be wiped clean during the service. • Ensure that during the service of each smoke detector is recorded as per its number on the service report sheet and checked accordingly. • The relevant fire panels shall be checked to ensure that all visual and audible alarm signals as per zone are correctly received.
1.3.6.2	<u>FM 200 Gas Fire Suppression System</u> Service <ul style="list-style-type: none"> • Before the Contractor proceeds to provide the Works, a risk assessment shall be conducted and all the relevant safety measures shall be put in place and be recorded in writing. • Test the operation of the entire system and record all the steps and the findings on the service report sheet. • Trigger test each one of the detectors and record all the steps and the findings on the service report sheet. • Visually inspect all gas cylinders, record all the findings. And the pressure on the service report sheet • Pressures test the gas cylinders when required by regulation or law.
1.3.6.3	<u>INSUL INERGEN Fire Suppression System</u> Service

	<ul style="list-style-type: none"> • Before the Contractor proceeds to provide the works, a risk assessment shall be conducted and all the relevant safety measure shall be put in place and be recorded in writing. • Inspect and service the two (2) panels at the server rooms. • Check and ensure that all connections are tight. • Check condition of back-up battery and ensure that the charging rate is correct. • Check all functions for possible alarm conditions and ensure that each alarm condition is received by the related server room panel and the building fire panel. • With the actuator disconnected from the Inergen bottles, ensure that the alarm condition and/or fire condition is received at the closest point to the Inergen bottles for actuation. • Inspect all pipe work relating to the Inergen fire suppression system and ensure that all pipe work is secure. • Ensure that each function for this fire detection and fire suppression system is checked and tested and that each of the functions checked and tested is recorded separately on the service report sheet.
1.3.6.4	<p><u>Break Glass Units</u></p> <p>Service</p> <ul style="list-style-type: none"> • Each break glass unit shall be activated and checked for correct operation including all remote indication associated with the relevant break glass unit. • Each break glass unit shall be inspected during the service to be in a good condition and not damaged. • Each break glass unit or shall be wiped clean during the service • Ensure that during the service each break glass unit is recorded as per its number on the service report sheet and checked accordingly. • The relevant fire panels shall be checked to ensure that all visual and audible alarm signals as per zone are correctly received.
1.3.6.5	<p><u>Maestro System</u></p> <p>Service</p> <ul style="list-style-type: none"> • Each of the Maestro systems shall be checked and serviced as per the manufacturer's specifications and recommendations. • Each Maestro system shall be thoroughly checked and ensured that all equipment is correctly mapped. • Each Maestro system shall be thoroughly checked to ensure that the entire system is functioning correctly. • Regular data back-ups shall be made not exceeding the quarterly service interval.
1.3.6.6	<p><u>Fire Panel</u></p> <p>Service</p> <ul style="list-style-type: none"> • All visual and audible alarms associated with the zones being tested are to be checked for correctness of operation. All control signals on fire panel and within the building to be tested and verified correct. • Check power supply unites and ensure satisfactory operation. • Check on condition of batteries and report any defects. • Check all cable terminations and ensure tightness
1.3.6.7	<p><u>Public Address and Evacuation Systems</u></p> <p>Service</p> <ul style="list-style-type: none"> • The PA & Evacuation System shall be tested per floor and be checked for correctness of operation. Speakers are present in the Basement, on the Lower Ground Floor, Diesel Pump Room at the Loading Bay, Sump No. 6 in the Car Park on Level P6, in the Lower ground Underground Parking Area, Ground Floor, 1st Floor, 2nd Floor, 3rd Floor, 4th Floor and Roof Plant Rooms and Equipment Rooms. • The PA & Evacuation System shall be tested "All Floors" and checked for correct operation. • All visual and audible associated alarms and signals are to be checked for correctness of operation.

	<ul style="list-style-type: none"> The PA & Evacuation System shall be checked for satisfactory system functionality by switching the "AC" supply "off" and running the system on "Battery Supply". Ensure that the "AC" supply is restored on completion of the test. The PA unit shall be checked and serviced as per the manufacturer's specifications. Manuals are available on the Site and shall not be removed from the Site.
	<p><u>Test Fire Signal to Fire Brigade</u></p> <p>Service</p> <ul style="list-style-type: none"> A test shall be carried out to ensure that a fire signal from the Eskom Building MWP is correctly received at the Emergency and Disaster Management Centre.
	<p><u>FIREMAN'S Emergency Telephone System</u></p> <p>Service is this 6666? Nowhere in MWP where there is a fireman's emergency telephone.</p> <ul style="list-style-type: none"> The fireman's emergency telephone system shall be tested and serviced as per the manufacturer's specifications and recommendations. Manuals are available on the Site and shall not be removed from the Site. All steps when testing and servicing the fireman's emergency telephone system shall be recorded on the service report sheet for.
1.3.7	<u>Waste Water Treatment and Sewage System</u>
1.3.7.1	<p><u>Waste Water Treatment</u></p> <p>Service</p> <ul style="list-style-type: none"> Chemical residuals are to be checked in the three cooling towers and the closed loop. Close loop – Nitrate > 1260 ppm Cooling towers – Zinc/molybdate (Zinc 2-5 ppm) Conductivity of the water is to be checked Closed loop – approx. 3000 micro Siemens Cooling towers – 700 – 1100 micro Siemens The Ph of the water is to be checked. Closed loop > 9,5 Cooling towers 7,0 – 9,0 Chloride levels are to be checked on the cooling towers – 300 ppm max. Alkalinity levels are to be checked on the cooling towers – 550 ppm max All make – up water is to be tested for ph, alkalinity, chlorides and conductivity According to the results above, the settings on the conductivity controller and the chemical dosing pumps are to be adjusted and recorded. Water meter readings are to be recorded and consumptions calculated. Microbiological activity is to be tested on a routine basis to determine biological growth in water. Twice a year, samples are to be drawn off the cooling towers and sent away for analysis to determine for legionella. A detailed record of all the above is to be entered in the on-site log book issued by the contractor for the plant and the contents discussed with Eskom's designated personal. A breakdown service on the water treatment equipment is to be available in between the routine service calls. Equipment inspections are to be made during shutdowns. A report is to be issued summarizing findings and recommendations. All water treatment chemicals to be supplied and topped up as and when required.
1.3.7.2	<p><u>Sewage System</u></p> <p>Service</p> <ul style="list-style-type: none"> Check control panels for correct operation. Ensure panel electronics is dry. Check all connections.

	<ul style="list-style-type: none"> • Visually Inspect Contactors and Relays • Ensure that All Pilot Lights are in Working Condition • Check for Loose Connections and Tighten • Generally Clean Out Panels and Components • Ensure that All Control Gear Operate Correctly • Check Overload Settings • Ensure Wiring is Neat • Ensure All Panels Are Locked • Sump pump and motor inspection bi-annually. <p><u>Water Meters</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check operation on BMS and recording. • Check for leaks. • Check all water meters for functionality monthly. <p><u>Water Testing</u></p> <p>Service</p> <ul style="list-style-type: none"> • Testing for Legionella and bacterial activity. • Sample points in building including potable water to be tested weekly by a water treatment technician. • Testing to be carried out by an accredited SANAS Test Laboratory. <p><u>Water Treatment</u></p> <p>Service</p> <ul style="list-style-type: none"> • Water treatment weekly on all plants as and when needed according to annual water testing results
1.3.7.3	<p><u>Swimming Pool Maintenance</u></p> <p>Maintaining of +-700 000l 1 000 000 L swimming pool .Cleaning of swimming pool and surrounding area and pump house.</p> <p>Check and inspect pool pumps and sand filters for defects and report to maintenance. DB board to be inspected.</p>
1.3.8	<p><u>Transformers LV & HV Services</u></p> <p>630 kVA Transformers 15no 1250 kVA Transformers 3no 1600 kVA Transformers 4no 1000 kVA Transformers 12no 2500 kVA Transformers 4no 400 kVA Transformers 4no</p> <p>Service</p> <ul style="list-style-type: none"> • Safety and environmental induction training • Take work permit, conduct risk assessment • Drain +- 1250 liters of oil out of the transformer (oil to be scraped by ERE) and disposed by an accredited oil refinery. • Remove insulation tape and packing from 11kv cable and disconnect cable from all three of insulators • Replace top cover seal • Insulators, All seals and grommets to be cleaned and replaced if necessary • All valves ,valve glands on main tank and balancing of pipe work • All radiator plug seals with PTFE seals (white) if fitted with bleeding plugs • Conservator tank, level indicators and relevant balancing pipe work

- Bucholtz relay checked for leaks and alarms.
- CT 's terminal blocks
- Change oil,
- Replace CT bushings
- Repair tap changer,
- LT bushing
- Open & inspect core
- Re-gasket Bocholtz flange,
- Repair tap changer
- Purify oil
- Change cilica gel
- Check WTI and OTI indicators for leaks
- Inspect explosion vent

High Voltage Switch

DESCRIPTION	QTY	FREQUENCY	MWP
Mini substation	1	Annual	Yes
Room 17	1	Annual	Yes
Room 20	1	Annual	Yes
Room 48	1	Annual	Yes
Room 51	1	Annual	Yes
Room 76	1	Annual	Yes
Room 109	1	Annual	Yes
Room 118	1	Annual	Yes
Room 132	1	Annual	Yes
Room 136	1	Annual	Yes
Room 147	1	Annual	Yes
Kitchen sub	1	Annual	Yes
Car park	1	Annual	Yes
Data Center	1	Annual	Yes
Sports	1	Annual	Yes
CLUB SUB	1	Annual	Yes
SPEAR	1	Annual	Yes
TOTAL	17		

Service of VCB and Panels

- Check all split pins are fitted and open
- Check all hardware is fitted and locked
- Check all travel stops are set correctly
- Lubricate mechanism
- Clean and Lubricate contacts
- Check mechanical trip (cover fitted)

- Check vacuum, gas bottles securely fitted with correct gaps indicating the condition.
- Check wear and traveling on moving contacts
- Check earth contact secured and making sufficient contact
- Check interlock functionality
- Clean and Lubricate contacts
- Check busbar (Main and Reserve)/ cable shutters functionality
- Check all gaps and clearances
- Lubricate all moving parts
- Check that there is no open accessible components (Inaccessible for rodents and vermin)

Panels

Service

- Check all main brackets and covers secured and on correct panel
- Check all auxiliary wiring secured (Not bridged and correct according to schematics)
- Check all Auxiliary fuses and links are secured and not hanging loose
- Check VT supply wiring and **indicator** for damage (J1 and J2)
- Check Battery supply wiring for damage
- Check all labels are fitted and correctly positioned (On correct panels)
- Check that all wiring on terminals are secured
- Primary injection testing on CT's
- Speed test
- Ductor test
- Ratio test
- Testing of current transformer
- Check the current drawn and the current indicated on the relay and that the relay issues a trip and that the breaker trips accordingly
- Check that the trip is issued and that the contact closes and trips the breaker
- Compile test report and hand to MV Format

Service of SF6 Gas breakers & Panels

- Check all split pins are fitted and open
- Check all hardware is fitted and locked
- Check all travel stops are set correctly
- Lubricate mechanism
- Check manual trip (cover fitted)
- Check breaker interlock functional
- Check busbar/cable shutters functional on housing
- Lubricate all moving parts

Protective Relays

Service

- Remove loose dirt and dust from relay cover before removing cover
- Visually inspect relay and case for damaged or broken parts, accumulation of dust, dirt or other foreign matter, rust, corrosion or evidence of moisture or burned contacts.
- Check contacts, check hardware for tightness, check electrical contacts for proper contact.
- Secure all connections mechanically.
- Record relay nameplate data, Serial NR CT Ratio and supply voltage
- Perform electrical tests and make note of all concerns noted
- If inspection and test indicate the need for repair, the recommendation will be communicated to the Forman in charge
- Check all auxiliary relay circuitry and trips functionality (Bucholtz, Temperature, explosion vent)
- Inject CT and note all relevant readings/errors
- Check and match current on (Test set PCU1000) and on protection relay display
- Check CT ratios and confirm that the Ratio on the CT and the relay is the same

Servicing of HT Isolators

- Remove oil from isolator tank
- Check tank for rust marks
- Check fixed contacts
- Check moving contacts and contact mechanism
- Check all split pins are fitted and open
- Check all hardware is fitted and locked
- Check tank gasket are correct and securely fitted
- In fused isolator- check striker pin trip bar free and movable
- Test HT fuse and check fuse rating
- Check earth contact fitted
- Check label
- Fill isolator with oil to SABS 555 standard
- Check all cable connections

Main Busbar**Service**

- Isolate, remove, strip, inspect and service main Bus Bars all in accordance to Manufacturer's Specifications at high level.
- Bus Bars at high level.
- Total Length
- No of Joints without Tap off Fuse Boxes
- No of Joints with Tap off Fuse Boxes:

Motorised Masterpact Breakers**Service**

- Isolate, remove, strip, inspect and service motorised Master pact breakers all in accordance to Manufacturer's Specifications

Non- Motorised Masterpact Breakers**Service**

- Isolate, remove, strip, inspect and service non-motorised Master pact breakers all in accordance to Manufacturer's Specifications

Main Switches Breakers, Busbars, Etc.**Service**

- Main incoming supply, main switches, change-over systems, bus bars and the supply up to each of the local isolators for each individual piece of equipment

Plant Room Cleaning**Service**

- All plant rooms, plenums, fan rooms, chiller plant room, cooling tower area and hot water tank surrounding area shall be cleaned from the top to bottom.
- All waste shall only be disposed of as.
- Clean Out Plenums by Using an Industrial Type Vacuum Cleaner with a Powerful Suction Action.
- All plant will be washed off with light detergent.
- All floors swept first and then washed off with non-potable water.
- Check aircon filters and report

Phase Out All Lights to LED

	<p>Service</p> <ul style="list-style-type: none"> • All light must be as per SANS10114-1 • Sample to be tested at the employers laboratory • LED wattage as specification • Emits up to Lumens: 5000 • Colour temperature Natural White • Silver frame • 5 year guarantee (50 000Hrs) • Maintenance free panel • Inspect weekly <p><u>Mini Sub-Station Scope of Work</u></p> <p>Service low voltage panel (monthly)</p> <ul style="list-style-type: none"> • Checking the connections and bars • Check fixing pieces of installed devices and moving elements of the housing • Check fuse links and existence of labels • Check earthing cables and connections • Check and clean insulators • Check auxiliary and control circuits (internal lighting, sockets, transformer thermal protection circuit, etc.) • Check the operation of the circuit breaker and test the protection • Check joints when required <p>Service medium voltage switchgear (annually)</p> <ul style="list-style-type: none"> • Check gas pressure in the medium voltage unit • Clean MV switchgear • Check operations of the MV switchgear (open, closed, earthed positions) • Check interlocking of the switchgear • Check the operation and protection of the circuit breaker <p>Service Transformer section (annually)</p> <ul style="list-style-type: none"> • Check the condition of the MV and LV cable • Check the condition of the MV and LV connections • Check thermal protection unit of the transformer and the adherent circuit • Check the oil level of the transformer • Check the earthing of the transformer • Check the insulation of the transformer • Collect oil samples from the transformer and test it <p>Solar plant maintenance</p> <ul style="list-style-type: none"> • Quarterly perform inverter service and maintenance • Bi-annually perform panel service and maintenance • Monthly perform solar plant inspection and report on the health status of the plant • Provide consumable spares required for ongoing maintenance
1.3.9	<u>Diesel Generator and Storage Tanks</u>
1.3.9.1	Diesel Generator

DESCRIPTION	ITEM	QTY
Standby Generator	Volvo 640 KVA	2
Standby Generator	Caterpillar 1100 KVA	1
Standby Generator	Detroit 510 KVA	1
Mobile generator	1250KVA	2
Standby generator	2MVA	2
Standby generator	400Kva	1
Standby generator	Deutz 800	1
Inspection and service		
<ul style="list-style-type: none"> • Check fan belt condition and tension • Check radiator passages is clean • Check radiator hoses and clamps • Add water conditioner • Drain radiator/system and refill • Drain oil and refill • Change fuel filters • Change oil filters • Change water conditioner filters • Change air filters (if required) • Check seal faces of elements, air cleaner, hoses and clamps for dust ingress • Check thermostat heater operation and temperature • Check all guards in position and secure • Check battery charger • Check batteries, lugs, clean and tighten • Battery test: <ul style="list-style-type: none"> ○ Check hydrometer ○ Check casing condition ○ Check terminals ○ Note Volts ○ Note Amps ○ Compile battery report • Start engine • Check for any leaks • Check charge alternator operation • Take oil pressure gauge reading • Take engine temperature gauge reading • Check low radiator level • Check low fuel level • When engine has stopped, top up with oil • Check alternator coupling • Check air vents on alternator • Check fuel system • Drain water trap • Check all pipes and fittings • Check exhaust, manifold, silencer and pipes • Check base and anti-vibration mounts • Run plant on load • Clean plant and equipment • Load test monthly including a report on load and offload 		
Annual Service		
The annual service includes all the items listed in above for the bi-annual inspection and service in addition to the following items:		
<ul style="list-style-type: none"> • Drain radiator • Refill with new water conditioner(coolant) • Drain oil 		

	<ul style="list-style-type: none"> • Supply and fit new oil filters • Refill with new oil • Remove and replace fuel filters • Remove and replace air filter • Run the set up to temperature and top up all levels afterwards • Check entire panel operation • Fuel system • Air intake system • DC electrical system • Engine • Lubrication service • Cooling system service • Air intake service • Servicing and testing Starting batteries • Cleaning batteries • Checking specific gravity • Checking electrolyte level • Check sump heaters for operation
1.3.9.2	<p><u>Diesel Storage</u></p> <p>Service Pressure tanks</p> <ul style="list-style-type: none"> • Pressure test of diesel tank. • Test for loss and leaks including a written report <p>Service Diesel tank & Diesel fuel testing</p> <ul style="list-style-type: none"> • Visual inspection of the fuel system. • Checking the filters, tanks, fillers and site tubes. <p>Service Conidia Bioscience test</p> <ul style="list-style-type: none"> • Conidia Bioscience Fuel-stat test and written report. <p>Service Filtration & Additives</p> <ul style="list-style-type: none"> • The diesel in both tanks will be filtered and polished if no filtration system is installed including additives added. • The “Fuel Right” method to be utilised <p>Service Fuel supply</p> <ul style="list-style-type: none"> • Supply of 50ppm diesel to fill up tank. • Proof of purchase to be submitted. <p>Service Hot water storage tank</p> <ul style="list-style-type: none"> • Hot water storage tank shall be thoroughly inspected and monitored during the summer period for any signs of leaks. • Repairs and/or recoating of the hot water storage tank shall be carried out during summer period.
1.3.10	<u>Building Services</u>
1.3.10.1	<p><u>Plant Room Water Pump Sets</u></p> <p>Service for Chilled water pump set</p> <ul style="list-style-type: none"> • Check Condition of Pump While Running

	<ul style="list-style-type: none"> • Check Mechanical Seal • Grease Bearings on Pump • Check Gland Drain and Clean • Check Condensate Tray and Clean • Check Bearings on Pump and Motor • Check Setting and Operation of Flow or PD Switch • Clean In-Line Strainers • Inspect Coupling Condition • Ensure Coupling Guard is Secure • Check Motor and Terminal Connections • Check that Non-Return Valves Seat and general condition • Check Change Over Pump Duty
1.3.10.2	<p><u>Condenser Water Pump Sets</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Condition of Pump when Operational • Check Mechanical Seal • Grease Bearings on Pump • Check Gland Drain and Clean • Check Setting and Operation of Flow or PD Switch • Clean In-Line Strainers • Inspect Coupling Condition • Ensure Coupling Guard is Secure • Check Motor and Terminal Connections • Check Non Return Valves Seat correctly
1.3.10.3	<p><u>Primary Hot Water Pump Sets</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Condition of Pump While Running • Check Mechanical Seal • Grease Bearings on Pump • Check Gland Drain and Clean • Check Bearings on Pump and Motor • Check Setting and Operation of Flow or PD Switch • Clean In-Line Strainers • Inspect Coupling Condition • Ensure Coupling Guard is Secure • Check Motor and Terminal Connections • Check that Non-Return Valves Seat and general condition • Check Change Over Pump Duty • Pumps to be run weekly
1.3.10.4	<p><u>Secondary Hot Water Pump Sets</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Condition of Pump While Running • Check Mechanical Seal • Grease Bearings on Pump • Check Gland Drain and Clean • Check Bearings on Pump and Motor • Check Setting and Operation of Flow or PD Switch • Clean In-Line Strainers • Inspect Coupling Condition • Ensure Coupling Guard is Secure

	<ul style="list-style-type: none"> • Check Motor and Terminal Connections • Check Change Over Pump Duty • Pumps to be run weekly
1.3.10.5	<p><u>Tertiary Water Pump Sets</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check Condition of Pump While Running • Check Mechanical Seal • Grease Bearings on Pump • Check Gland Drain and Clean • Check Bearings on Pump and Motor • Check Setting and Operation of Flow or PD Switch • Clean In-Line Strainers • Inspect Coupling Condition • Ensure Coupling Guard is Secure • Check Motor and Terminal Connections • Check Change Over Pump Duty • Pumps to be run weekly
1.3.10.6	<p><u>EW220 Electrode Boiler</u></p> <p>Service</p> <p>The annual service includes all the items listed in the above for the quarterly inspection and service in addition to the following items</p> <ul style="list-style-type: none"> • Check and tighten all electrical bus bar connections. • Remove Merlin Gerin ACB and service as per manufacturer's specification. • Shut down electrode boiler and inspect and check all internal parts. • A written report regarding the condition and/or any defects shall be presented to the Employer's Representative on completion of the inspection and check.
1.3.10.7	<p><u>EW220 Electrode Boiler</u></p> <p>Service</p> <ul style="list-style-type: none"> • Check and tighten all electrical connections. • Check that mains voltage on all phases is within the specified tolerance. • Check that all pressure and temperature set points are correct. • Check that all overload settings are correct. • Check that amperages are normal. • Check oil levels, for oil leaks from the gearbox. Repair oil leaks. • Lubricate drive shaft.
1.3.10.7	<p><u>EW220 Electrode Boiler</u></p> <p>Service</p> <p>The annual service includes all the items listed in the above for the quarterly inspection and service in addition to the following items</p> <ul style="list-style-type: none"> • Check and tighten all electrical bus bar connections. • Remove Merlin Gerin ACB and service as per manufacturer's specification. • Shut down electrode boiler and inspect and check all internal parts. • A written report regarding the condition and/or any defects shall be presented to the Employer's Representative on completion of the inspection and check

1.3.10.8	<p><u>Laboratory Testing</u></p> <p>Service</p> <p>Complied By: Comprehensive test by submitting samples of diesel fuel to a laboratory for analysis. Laboratory to supply a comprehensive report detailing any growing organisms in tanks.</p>
1.3.10.8	<p><u>Filtration and Additives</u></p> <p>Service</p> <ul style="list-style-type: none"> The diesel in both tanks will be filtered and polished if no filtration system is installed including additives added. The "Fuel Right" method to be utilised
1.3.10.9	<p><u>Heat Pump</u></p> <p>Service</p> <p>Club roof, Gym & kitchen roof</p> <ul style="list-style-type: none"> Heat pump base: Clean base outside and inside. Ensure drainage holes are clear. Check for rust and treat as required <p>Electronics</p> <ul style="list-style-type: none"> Look for signs of corrosion on PCB controller. Ensure all electrics are dry and clean Ensure all connections are good. <p>Piping</p> <ul style="list-style-type: none"> Check all piping and fittings for leaks. Check lagging. Clean the Y strainer. <p>Heat Exchanger</p> <ul style="list-style-type: none"> Reverse water flush system under pressure for =- three minutes. <p>Evaporator</p> <ul style="list-style-type: none"> High pressure cleans the evaporator with a neutral based cleaning solution. High pressure rinses the evaporator with water after five minutes. <p>Heat Exchanger De-scaling</p> <ul style="list-style-type: none"> Circulate the ITS de-scaling solution through the heat pump for two minutes. Switch of pump and leave for 3 – 6 hours as required. Flush out system with a soap solution to remove allscaling solution and debris. Fill with clean water and test the operation of the unit. Record the parameters after servicing.
1.3.10.10	<p><u>Hotwater Storage Tank: Kitchen Roof</u></p> <p>Service</p>

	<ul style="list-style-type: none"> Hot water storage tank shall be thoroughly inspected and monitored during the summer period for any signs of leaks. Repairs and/or recoating of the hot water storage tank shall be carried out during summer period.
1.3.10.11	<p><u>Hot Water Pumps</u></p> <p>Service</p> <ul style="list-style-type: none"> Check Condition of Pump When Operational Check Mechanical Seal Grease Bearings on Pump Check Bearings on Motor Clean In-Line Strainers Inspect Coupling Guard Is Secure Check Motor and Terminal Connections Check Non-return Valves Seat correctly Check Change Over Pump Duty Service solar heating panels for leaks
1.3.10.12	<p><u>Plant Room Cleaning</u></p> <p>Service</p> <ul style="list-style-type: none"> All plant rooms, plenums, fan rooms, chiller plant room, cooling tower area and hot water tank surrounding area shall be cleaned from the top to bottom. All waste shall only be disposed of as. Clean Out Plenums by Using an Industrial Type Vacuum Cleaner with a Powerful Suction Action. All plant will be washed off with light detergent. All floors swept first and then washed off with non-potable water.
1.3.10.13	<p><u>Cameras</u></p> <p>Camera and Housing</p> <p>For the system's camera and housing, verify the following</p> <ul style="list-style-type: none"> Camera/lens focus and auto iris is adjusted properly. Camera field of view is adjusted to customer's requirements. Camera/housing viewing window is clean, inside and out. Camera lens is dust free. Interior of camera enclosure is clean and dry. Check operation of pan tilt and zoom focus. Use controller in control room to check all these operations. <p>Wiring & Cables</p> <p>For the system's wiring and cables, verify the following</p> <ul style="list-style-type: none"> Check wiring and cable harnesses for wear and fray. Check to make sure cable is dressed properly. Check connectors and cable entry points for loose wiring. Check that the coaxial cable is transmitting an adequate video signal to control room. Signal should be free of distortion, tearing, hum-bars, EMI, and rolling. Make sure all coaxial connectors are insulated from conduit and pull boxes. Measure voltage supplied at each camera
1.3.10.14	<p><u>Power Supplies</u></p> <p>Service</p> <ul style="list-style-type: none"> Measure voltages Check battery terminals for corrosion

	<ul style="list-style-type: none"> • Check connections. • Check operation and panel lights for correct functioning.
1.3.10.17	<p><u>COMPRESSOR</u></p> <p>Service</p> <ul style="list-style-type: none"> • Service on compressor and related plant including written report.
1.3.10.18	<p><u>Automated/Controlled Doors, Gates, etc.(hardware related only)</u></p> <p><u>Turnstiles</u></p> <p>Service</p> <ul style="list-style-type: none"> • Turnstiles including written report. 9 in number. <p><u>Metal Sliding Gates</u></p> <p>Service</p> <ul style="list-style-type: none"> • Metal sliding gates, motors and access control including written report. <p><u>Large Metal Swing Gates</u></p> <p>Service</p> <ul style="list-style-type: none"> • Large metal swing gates, motors and access control including written report. <p><u>Roller Shutter Doors</u></p> <p>Service</p> <ul style="list-style-type: none"> • Quarterly service on roller shutter doors, motors and access control including written report. <p><u>Metal Sliding Doors</u></p> <p>Service</p> <ul style="list-style-type: none"> • Quarterly service on metal sliding doors, motors and access control including written report. <p><u>Glass Sliding, Swing and Revolving Doors</u></p> <p>Service</p> <ul style="list-style-type: none"> • Glass sliding, swing and revolving doors, motors and access control including written report. <p><u>Boom Gates, Motors, Mechanical Parts and Access Control</u></p> <p>Service</p> <ul style="list-style-type: none"> • Vehicle boom gates, motors, mechanical parts and access control including written report. <p><u>Distribution Boards</u></p> <p>Service</p> <ul style="list-style-type: none"> • Draw up an inspection sheet(s) for each of the mentioned Distribution Boards indicating all items that will be inspected and checked. • Check date when inspected/checked, the technician's name in print and signature. • Submit the original documentation to the Employer's Representative on completion. • Arrange a shutdown with the Employer's Representative to inspect electrical components for any signs of discolouring/ heating. • All electrical wiring shall be inspected for any signs of discolouring/ heating.

	<ul style="list-style-type: none">• All overload settings shall be checked and overload setting shall be in accordance with the manufacturer's data plate on each motor.• All electrical connections shall be checked for tightness.• All Earth Connections shall be clean and tight.• Check and ensure that all pilot lights/indicator lights and ammeters are functioning correctly.• All Distribution Boards shall be cleaned and vacuumed at the same time.												
1.3.11	<p><u>Uninterrupted Power Supplies (UPS)</u></p> <table><tr><th>DESCRIPTION</th><th>ITEM</th><th>QTY</th></tr><tr><td>Uninterruptable power supplies</td><td>Treasury Data centre 200kVA</td><td>2 1</td></tr><tr><td>Uninterruptable power supplies</td><td>Data control centre 500kVA</td><td>3</td></tr><tr><td>Uninterruptable power supplies</td><td>Inner web 80kVA 1</td><td>2</td></tr></table> <p><u>Servicing of UPS</u></p> <ul style="list-style-type: none">• The checking of the mechanical soundness of all parts.• The checking of the semi-conductor power devices, transformers, filter elements and the like• The checking and, if necessary, adjusting of the voltage of the DC circuitry.• The checking and, if necessary, adjusting of the output voltage of the AC circuitry.• The checking and adjusting of all electronic regulating circuits.• The cleaning of the UPS system• The checking of the DC caps.• The checking of the AC filter caps.• The checking of all Fan operations.• Visual checking for Hot Spots (Hot Spots are discolouring of power wires and main busbars)• The checking of batteries for loose connections, hot spots and terminal corrosion.• The checking of load currents and voltages.• The checking of environmental temperature and ensuring that it is within the UPS operational specifications.• The checking and recording on a log sheet of the voltage of each battery block.• The cleaning of the batteries.• Conduct a battery discharge test using the s existing load connected to the Equipment to determine the capacity of the battery.• The checking of sufficient lighting.• Should the Technician find any problem during the inspection• Submit the detailed service report will be handed to site personnel directly after completion of the service• where after arrangements to correct these faults can be made• weekly inspections (bi-annually service)	DESCRIPTION	ITEM	QTY	Uninterruptable power supplies	Treasury Data centre 200kVA	2 1	Uninterruptable power supplies	Data control centre 500kVA	3	Uninterruptable power supplies	Inner web 80kVA 1	2
DESCRIPTION	ITEM	QTY											
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Uninterruptable power supplies	Inner web 80kVA 1	2											
1.3.12	<p>Help Desk Services</p> <ul style="list-style-type: none">• The functions of the Helpdesk include but not limited to the following:• Providing a single point of contact for receiving all maintenance services calls, requests and complaints.• Preparing and issuing of work orders to the Employer for approval prior to any work been executed.• Closing of all the calls, requests and complaints once work is completed and verified by the Employer.• Preparing of monthly reports for corrective and planned maintenance work executed.• Executing ad-hoc services as and when requested by the Employer.• Contractor to ensure that there's a reliever for the help desk personnel.												

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	<p><u>Postal Services and Courier service</u></p> <p>SCOPE OF POSTAL COURIER / RECEPTION AND OFFICE SERVICE</p> <p>SCOPE FOR RECEPTION AND OFFICE SERVICE</p> <ul style="list-style-type: none"> • Stationery delivery to be checked against request and placed in the relevant cupboards. • Orders to be submitted via Helpdesk and despatched by Helpdesk via E-mail to supplier prior to 4pm each weekday. • Stationery Clerk to raise stock request and submit to supplier via the Helpdesk. • Requests and delivery notes to be filed awaiting invoice. • Copy of requests to be passed to the Stationery Clerk. • Stationery clerk to check goods delivered against requests and delivery notes. • Requests and delivery notes to be filed awaiting invoice. • Goods to be transported by Mailroom and Stationery staff to requestor. • Invoice Check Lists • Check list by supplier • Supplier information for Journals ; • Copies of invoices • Overheads - Monthly back-up documentation • Non-measurable monthly back-up doc.s • Collection certificates • Analysis of waste collected • Daily/weekly Registers for a period of two months - archived after two months for 2 years, then destroy • Purchase Order Reports : Spent against PO per Building - Bi-Weekly • Creditor payment Files - per month • Creditors report • Payment schedule • Unscheduled payments • Monthly Report File • Electronic payments confirmation report • Payment schedule per month • Invoices and credit notes • Payments and adjustments • Allocation report • Remittance advice's • Creditors report <p>SCOPE FOR POSTAL COURIER SERVICE</p> <p>To ensure that Eskom mailroom and courier services are completed in an efficient and timely manner and to ensure that staff perform to the required SLA.</p> <p>SCOPE MAILING</p> <ul style="list-style-type: none"> • • Logbooks • Cheques • Registered items : Posted and received • Mailbags • Records stating :

- Waybill number to specific branch Date, time
- Couriers
- Records of air waybills
- Drivers logbooks
- Back-up Documentation

Comply with all Mailroom and Courier SLA's.

INVOICE PROCESSING

- On receipt of invoice all relevant documentation to be checked to ensure invoice correct against orders.
- Invoice and backup documentation passed to Finance Administrator for processing.

COURIER - OUTGOING

- All goods to be despatched by courier to be collected by mailroom staff during collections.
- Mailroom staff to ensure that the form detailing shipping information accompanies the package.
- Package/letter taken to mailroom and passed to courier staff.
- Package dispatched as required.
- Waybill number and date of dispatch recorded on request form.
- Request form filed awaiting invoice.

INVOICE PROCESSING

- On receipt of invoice all relevant documentation to be checked to ensure invoice correct against orders.
- Invoice and backup documentation passed to Finance Administrator for processing.

COURIER – INCOMING

- Packages signed for by mailroom or security out of hours.
- Packages signed for by security to be retained in a secure place and passed to mailroom in the morning.
- Packages to be logged – information to include date of receipt and recipients name and department.
- Packages to be distributed with the mail runs and signed for by addressee or department secretary.

PROCEDURE

- The mail couriating system is characterized by transmittal documents and color coded delivery bags to minimize confusion and to track location of mail.
- Courier will be provided with one RED bag and corresponding transmittal document specifically for special delivery of By-hand mail, as requested by H.O.D's.
- Pier Place will be issued with four BLUE bags for Techno Centre mail and four BLACK bags for Century City mail.
- Century City will be issued with four BLACK bags and two YELLOW bags.
- Techno Centre will be issued with four GREEN bags.
- The Yellow bags are specifically intended for the distribution of Flight tickets, issued by AMEX, who are based at Century City to staff at Techno Centre.
- All Courier times are subject to a minimum of 30 minutes leeway.
- All VIP requests will be treated as priority and daily schedules will be adjusted to accommodate these requests.

COURIER FUNCTIONS

The courier is responsible for the transporting of Eskom mail, stationery, assets and personnel to pre-authorized destinations at predetermined times.

- All service requirements to be conducted for Facility or VIP purposes must be arranged through the Switchboard, 24 hours in advance, with all urgent VIP requests to be vetted by Mr XXXXX.
- All staff transporting requirements must be arranged 24 hrs in advance, through the Switchboard.
- Any delays in service must be reported to Switchboard, who will then advise relevant senior staff of these delays so contingency plans can be made, where necessary.

MAILROOM FUNCTIONS

The Switchboard Operators will provide the Mailroom functions for Eskom, and as Distribution Centre for XXXXXXXX buildings. All mail must be accurately sorted and distributed via the internal distribution, internal courier and external courier systems.

Mail is delivered each morning and must be signed for, sorted and then redistributed via the Internal mail system. The mail to be sent out from XXXXX or valuable XXXX Place mail must be logged by item and signed for at each destination or recipient.

All outgoing mail is to be sent via external courier at 16:00 each afternoon. All non – valuable mail or internal mail envelopes will be sent on one waybill no. to each destination and the waybill no. logged. All valuable, urgent, by-hand and confidential mail will be individually logged with corresponding waybill no. All Vodacom letters are to be franked and delivered to the Post Office via internal courier. All registered letters are to be logged with corresponding Registered letter no. and receipt of delivery by courier to be returned to mailing room and attached to log sheet.

Gym Equipment Maintenance - Health and Wellness Department

Scope of work/supply

Comprehensive trained and qualified service teams, to carry out the following:

- Service
- Lubricate
- Adjust and inspect all equipment.
- Replace parts and broken equipment.

They should then compile a list of spares required. A quote for replacement parts and spares must be emailed through for acceptance within one-week of the service. This should also include inspecting and testing of replaced parts. Should parts not be available immediately, a time commitment to replacement should also be included. In the case of ad hoc repairs, the company will do a callout within one-week of being informed of the equipment breakdown.

During each preventative maintenance visit, ALL equipment covered under the agreement will have its exterior and interior thoroughly cleaned, inspected for safety, lubricated and adjusted according to the manufacturer's specifications

Upon the completion of services rendered to the Gym. The contractor will complete a Maintenance Checklist that will indicate any need for repairs that were discovered to avoid any downtime on equipment.

Specification of Product or Goods(including but not limited to)

• NB:

• EQUIPMENT NAME	• EQUIPMENT DESCRIPTION	• NO
• TECHNOGYM CYCLES	• SPINNING BIKES	• 30
• JOHNSON C7000 UPRIGHT CYCLE	• UPRIGHT EXERCISE BIKE	• 11

• JOHNSON R7000 RECUMBENT CYCLE	• RECUMBENT EXERCISE BIKE	• 7
• JOHNSON S7000 STEPPER	• STEPPER/CLIMBER MOTOR	• 2
• JOHNSON W7000 ROWER	• CARDIO ROWING MACHINE	• 4
• ELLIPTICAL TRAINER MATRIX E1X	• ELLIPTICAL TRAINER	• 4
• VISION T60 AC TRADMILL	• TREADMILL	• 10
• MATRIX BACK EXTENSION BENCH	• BACK EXTENSION BENCH	• 1
• DOUBLE DUMBBELL RACK & ACCESSORIES	• RACK	• 2
• MATRIX PLATE TREE & WEIGHT PLATES	• OLYMPIC PLATE TREE	• 1
• MATRIX CONVERGING CHEST PRESS	• CHEST PRESS SEATED	• 1
• MATRIX LEG EXTENSION	• LEG EXTENSION ROM	• 1
• MATRIX HORIZONTAL LEG PRESS	• HORIZONTAL LEG PRESS	• 1
• MATRIX SEATED LEG CURL	• LEG CURL SEATED	• 1
• MATRIX CALF PRESS	• PLATE LOADED CALF SEATED OLYMPIC	• 1
• MATRIX UTILITY BENCH	• DUMBBELL BENCH	• 1
• MATRIX OLYMPIC FLAT ADJUSTABLE BENCH	• BENCH PRESS ADJUSTABLE	• 1
• MATRIX CABLE CROSS OVER MACHINE	• TRICEP/BICEP HIGH LOW PULLEY	• 1
• MATRIX ARM CURL	• BICEP CURL	• 1
• MATRIX DIVERGING LAT PULLDOWN	• LAT PULLDOWN	• 1
• MATRIX DIVERGING SEATED ROW	• SEATED ROW CHEST SUPPORT	• 1
• MATRIX PECTORAL FLY	• PEC DECK	• 1
• MATRIX 45 DEGREE LEG PRESS	• HYPER EXTENSION 45 DEGREE	• 1
• MATRIX CRUNCH ADJUSTABLE BENCH	• SIT UP BENCH ADJUSTABLE	• 1
• MATRIX CONVERGING SHOULDER PRESS	• SHOULDER PRESS MACHINE	• 1
• MATRIX TRICEPS EXTENSION	• TRICEPS EXTENTION MACHINE	• 1
• MATRIX PROME LEG CURL	• CURL PRESS MACHINE	• 1
• MATRIX HIP ABDUCTOR MACHINE	• HIP ABDUCTOR MACHINE	• 1
• MATRIX HIP ADDUCTOR MACHINE	• HIP ADDUCTOR MACHINE	• 1
• MATRIX DIP/CHIN ASSISTANCE MACHINE	• DIP/CHIN ASSISTANCE MACHINE	• 1
• MATRIX SMITH MACHINE	• SMITH MACHINE	• 1

	<ul style="list-style-type: none">MATRIX OLYMPIC INCLINE ADJUSTABLE BENCH PRESS	<ul style="list-style-type: none">INCLINE ADJUSTABLE BENCH PRESS	<ul style="list-style-type: none">1	
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Complied By: Middle Manager Real Estate

Atams Mdledle



16.04.2025