502.12 Thermal Storage for District Cooling

All new district cooling plants must incorporate a Thermal Energy Storage (TES) facility. TES shall be designed with a capacity of at least 20% of the designed plant capacity.

502.13 Ductwork Air Leakage

For all new buildings, air ductwork must be designed, built and installed to ensure air leakage is minimized.

Ductworks attached to an equipment and having an external static pressure of more than 250 Pa and ductworks that are exposed to external ambient conditions or within unconditioned spaces, must be pressure tested prior to occupancy. This must be carried out as per Dubai Municipality's approved methodology and must ensure the compliant amount of air leakage is achieved.

Ductwork leakage testing must be carried out by a company that is specialised in commissioning of buildings and is DM approved.

502.14 Maintenance of Mechanical Systems

For all new and existing air-conditioned buildings, all mechanical, electrical and plumbing systems in the buildings must be serviced and maintained regularly.

1. Mechanical systems must be installed in a way such that adequate access is available. This would allow for regular inspection, maintenance and cleaning of the equipment, without the need to remove or dismantle any building components.
2. The building operator must ensure that a proper maintenance manual and schedule is developed for the building. This shall be based on the instructions for preventative maintenance or recommendation from equipment manufacturer or supplier or according to the latest edition of ASHRAE Standard 180 or equivalent as approved by DM.
3. The building operator must either have a service contract with a DM approved maintenance company or provide sufficient evidences that the equipment shall be properly maintained by competent members of their own staff.
4. Service records in the form of a service log book including details of both preventative and corrective maintenance must be kept onsite and be readily available for inspection by DM staff.

502.15 Control of Air Flow

For Golden and Platinum Sa'fa and for all new buildings, the fresh air supply to the building shall be controlled to prevent damage due to moisture. This is to ensure that occupant comfort, safety and health conditions are effectively maintained. This shall be achieved with appropriate and adequate use of temperature, humidity and DDC devices as part of a central building management system.

502.16 Control of Chilled Water

For Golden and Platinum Sa'fa and for all new buildings, the HVAC equipment and chilled water control shall be equipped with the hydronic balancing valves including pressure independent control valves for optimum energy usage and occupant comfort. The chilled water control shall be achieved with appropriate use of temperature, humidity and pressure monitoring devices as part of a central building management system.

502.17 Control of Air Conditioning Zones

For Platinum Sa'fa and for all new buildings, mechanical ventilation and temperature control system shall be designed such that it allows the occupants to control the air temperature and air speed in each thermal zone. In addition to achieving this requirement, there shall also be control of HVAC system in thermal zones using occupancy sensors that automatically modulate temperature and air flow-rate, based on occupancy. The system shall prevent in-efficient use of air-conditioning system, by use of interlocks in window / door / energy saving input contacts to the control devices. This shall be integrated with central building management system which can generate alarms, in case of deficient use.

502.18 Cooling of Corridors and Public Areas

For Platinum Sa'fa and for all new buildings other than villas, all open corridors and open public areas shall be cooled by use of renewable energy systems.

502.19 Air Conditioning of Parking Areas

For Golden and Platinum Sa'fa and for all new buildings other than villas, if air conditioning system is installed for cooling of parking area and in case of shortage in condensation water collected for such purpose, an indirect evaporative cooling system must be used, provided that the design comfort temperature is no less than 28° C.

502.20 Air Conditioning of Industrial Buildings

For all industrial buildings, where air-conditioning is required for areas other than areas where special systems are used for manufacturing process, air-conditioning shall be achieved by using indirect evaporative cooling system. This system shall be used, provided the design comfort temperature is no less than 28° C.

502.21 Cooling Water Purification to Enhance Cooling Efficiency

For all new buildings other than villas, chilled water system shall include water purification unit to prevent any calcification in the system. This shall also enhance the heat exchanger performance.

502.22 Heat Exchangers

For Golden and Platinum Sa'fa and for all new buildings other than villas:

1. Heat exchangers shall be designed and certified in accordance with the following:

- AHRI Liquid to Liquid heat exchanger certification program.
- The tolerances shall be as per ANSI / AHRI 400.

2. Selection shall consider thermal block load, pressure drop, thermal performance, temperature and provision for future additional loads.