#### 503.06 Cost of the Expected Performance Assessment

For Golden and Platinum Sa'fa and for all new buildings other than villas, the consultant must provide a detailed study on the effect of the additional requirements to meet the Sa'fa regulations. The study shall compare the cost of construction and operation of the building for the additional requirements when compared to a building without these additional requirements.

#### **503.07 Performance and Commissioning Reports**

For Golden and Platinum Sa'fa and for all new buildings other than villas, a detailed report on the performance of the building based on the design considerations must be submitted. This should include the actual performance reports for a minimum period of 6 months, of which three months shall be thermal peak months.

#### **503.08 Sustainable Awareness**

For Golden and Platinum Sa'fa and for all new buildings other than villas, the building operator must develop and provide a clear mechanism for sustainable awareness for the users of the building. This must include information on the consumption of energy and water in the building.

504

Chapter 4

# Onsite Systems: Generation & Renewable Energy

## 504.01 On-Site Renewable Energy - Small to Medium Scale Embedded Generators

For all new buildings, where a building incorporates on-site generation of electricity from a solar photovoltaic system, it can be a solar grid connected system or a solar off-grid system.

- A. The grid connected solar generator shall be connected to Dubai Electricity and Water Authority (DEWA) network, operated and maintained according to DEWA regulations.
- B. For off-grid solar system, the backup off-grid load is to be indicated in the Total Connected load (TCL) along with the grid based battery charger load, if applicable.

#### 504.02 On-Site Renewable Energy - Sustainable Water Heating System

For all new villas, labour accommodations, hotels, mosques, and educational facilities, sustainable water heaters must be used to provide the total demand of hot water for the building. In case of using solar water heaters specifically, the system must be designed to provide the building with 75% of the total demand on hot water. The tanks and pipes must be insulated.

For Golden and Platinum Sa'fa, this regulation is applied for all building typologies.

#### 504.03 On-site Renewable Energy - Electrical Power Generation

For Golden and Platinum Sa'fa and for all new buildings, the electrical power shall be generated on-site using solar panels. The power generation shall be 10% of the electrical load of the building (excluding electrical loads for fire extinguishing system, air conditioning units and air conditioning system pumps).

If sufficient space is not available to achieve the above percentages, then the electrical power shall be generated to cover 30% of the lighting load of the common areas, provided that the capacity of the solar panels shall not be less than 20 kWp.

505

Chapter 5

# **Energy Demand**

### 505.01 Reduction of Energy Demand

For Golden and Platinum Sa'fa and for all new buildings, innovative ideas and new mechanisms shall be provided that would contribute for at least 5% reduction in energy demand. These ideas or new mechanisms shall not be from the requirements listed in the regulations.

#### 505.02 Smart Building

For Platinum Sa'fa and for all new buildings, various building equipment and systems shall be provided with intelligent techniques to control and reduce the energy and water consumption of the building. The intelligent techniques shall also ensure the safety and comfort of the building occupants.

#### 505.03 Efficiency of Building Performance

For Golden and Platinum Sa'fa and for all new buildings, the following requirements can be replaced by using techniques that enhances the building performance.

| 501.01 | Minimum Envelope Performance Requirements                | 502.18 | Cooling of Corridors and Public Areas                     |
|--------|--|--------|---|
| 501.02 | Thermal Bridges  | 502.22 | Heat Exchangers   |
| 502.04 | Lighting Power Density - Interior                        | 503.06 | Cost of the Expected Performance Assessment               |
| 502.05 | Lighting Power Density - Exterior                        | 503.07 | Performance and Commissioning Reports                     |
| 502.10 | Exhaust Air Energy Recovery Systems and Condensate water | 504.03 | On-Site Renewable Energy - Electrical<br>Power Generation |
| 502.16 | Control of Chilled Water                                 | 505.01 | Reduction of Energy Demand                                |

The techniques used should increase the energy savings of the building. The energy savings percentage of the building when compared to a building designed with Silver Sa'fa regulations shall be at least 15% for Golden Sa'fa and 20% for Platinum Sa'fa.

60 | Dubai Green Building System, Version 2.0 - March 2020 Dubai Green Building System, Version 2.0 - March 2020 | 61