MANCOMUNIDAD: SOLAR PANELS IN DESERT SPRINGS INSTALLATION STANDARDS - Version 2

Document Version 2 dated: 20th October 2022

This document defines the standards that apply to the aesthetic qualities of a solar panels installation on properties in Desert Springs resort.

Changes since Document Version 1 dated: 27th April 2022

Version 2 adjusts the standards to take account of the advances in technology associated with photo-voltaic solar panels. Their efficiency and power output has increased significantly in recent years and Desert Springs property owners can now think of supplying unused power to the national grid for the purpose of obtaining some income. Photo-voltaic panels are the most likely kind of panel that owners will want to install. It is still the case that a large number of panels may be required to provide what owners consider to be an effective power source leading to difficulty finding a suitable unobtrusive location for their installation.

Introduction

Property owners in Spain have the right to install green energy solutions for the purpose of supporting their property's electricity and/or water heating requirements. Property owners in Desert Springs are no exception and have the right to install solar panels. However, the communities in Desert Springs have decided that **the installation of wind turbines is not permitted** because of their noise pollution and appearance and because they devalue properties in their neighbourhood.

Since 2006, the Codigo Tecnico (CTE) has set standards for the technical installation of solar panels on properties in Spain, but it makes no statement about standards for the aesthetic requirements of neighbours and the community at large. Hence the document you are reading.

Installation of solar panels on a property alters the external appearance of the property and the Spanish Law of Horizontal Property and our Statutes, which all owners have signed up to, are very clear in stating that **prior to any construction that alters the external appearance of a property, authorisation must be sought and obtained from community members**. We have confirmation from two legal companies that the aforesaid community approval applies to proposals for green energy solutions.

The document titled “Proposed External Changes to a Property in Desert Springs – Approval Procedure” defines the procedure that an owner must go through in order to get approval prior to installing solar panels.

We consider below:

- Standards for the types of solar panel system that may be employed.
- Standards for the configuration and aesthetic requirements of solar panels in various locations around a property.
- Further considerations and examples of what not to do.

Types of Solar Panel System

There are two main types of solar panel system that are installed on private properties in Spain, namely Thermal Systems and Photo-voltaic Systems.

1. Thermal Systems

There are then two broad types of thermal panel systems, namely Siphon and Pumped.

a. **Siphon**

These panels operate on the principal that hot water rises and cold water falls. The typical system has a water tank on top (generally with a big publicity logo on it).

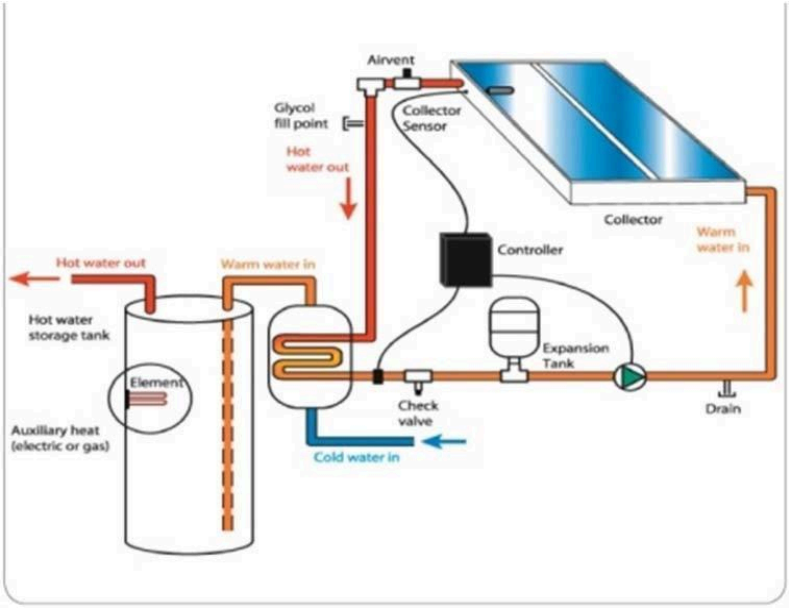
This system would be very unsightly on a sloping tiled roof or in a garden and could not be hidden behind the walls surrounding a flat roof terrace. A thermal siphon system with the high tank is non-standard for properties in Desert Springs and authorisation to install will not be granted.

A compact variant of the thermal siphon system has the water tank situated behind the panel.

This system is somewhat less efficient than the one with the high tank but an installation on a flat roof terrace or in a garden might be considered acceptable if the visual impact is considered minimal.

b. **Pumped.**

As the name indicates, this type of system needs a pump and ancillary equipment to make the water run. It has the advantage that only the panels and possibly a small amount of pipework need be visible outside a property. The pump and ancillary equipment can be put anywhere and the overall system is more efficient than the siphon type.



A disadvantage of this type of system is that it requires more maintenance. In particular, the pump can give problems if the property is not occupied for months at a time (which is typical for non-residents). Switching on after a long period without use, if done on a regular basis, can cause the pump to fail prematurely.

Here is an example of a solar panel which is part of a pumped system, demonstrating how only the panels themselves need be visible.

2. Photo-voltaic Systems

With these panels, solar energy is converted directly into electricity which is used to heat water and power devices in the home. Additionally, the design allows that some unused electrical power can be stored in a battery for later use or delivered back into the national grid system leading to savings in the cost of electricity supply to the property. A photo-voltaic system currently requires a greater area of panels than a thermal system to provide the equivalent immediate heating capability but it does provide power in a more flexible manner. The number of such panels required may however give rise to objections.

This house shown below is in Vera.

This is not the type of property we are envisaging for Desert Springs and stand-alone new builds in the style of the Vera house would probably not be authorised.

Location of Solar Panels and Aesthetic Requirements

Following are examples of what types of installation can be considered at different locations within a property boundary.

1. Sloping Tiled Roof

The panels must be attached precisely parallel to the roof line, either sunken into the roof tiles or on top of the roof tiles. No ancillary equipment such as a tank or pump may be visible outside the property. See the following diagrams.

We would require that the pipework in the example above be altered and hidden under the tiles.

2. Flat Roof

Panels are appropriate for a flat roof, whether terrace, garage or other structure, once the side view is not visible from ground level and is not considered invasive from occupied/used space on a neighbouring property's upper storey. Following are two examples.

3. Garden

A few thermal panels in a discrete location may be acceptable

4. Balcony

Installation on a balcony will not be authorised.

5. Pergola

Panels installed on a pergola must be attached parallel to the roofline of the pergola and any pipework/cabling must be run neatly along the timber beams and/or vertical supports The roof of the pergola must first be covered with bamboo or similar. No ancillary equipment such as a tank or pump may be visible outside the property.

6. Communal Installation

Installation of a system designed to support more than one property will not be authorised.

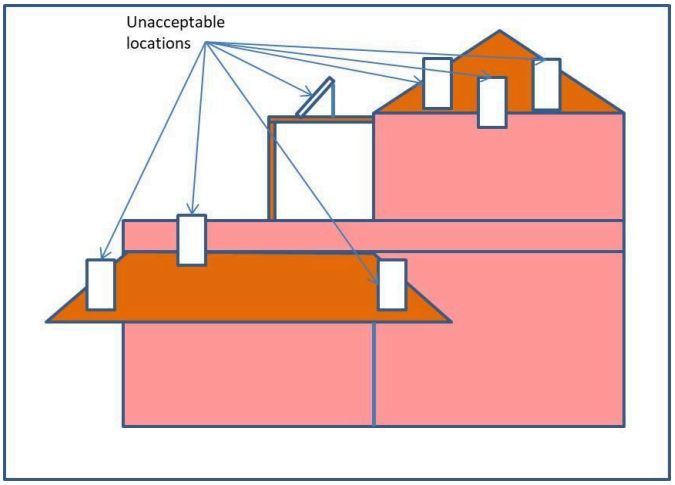
7. Considerations for Different Property Types

Villas, country cottages, town houses and apartments will have differing heating requirements and very different options regarding potential installation locations. When one takes into account the location of a property in the resort, installation of solar panels will present different and sometimes unique challenges. Authorisation criteria will be treated on a case by case basis.

Other General Rules

1. Panels must not overlap a roofline.

Following diagram gives examples where panels are seen to overlap a roofline in an unacceptable manner.



Examples of Unacceptable Installations