

## **NEW Section 3.5.11 Solar Energy**

**Adopted: 01-16-09**

**(Applies to All Homesites)**

### **3.5.11 Solar Energy Systems**

This section covers two types of solar energy systems that may be used in residential installations: Water-Heating and Photovoltaic.

A solar water-heating system captures the sun's heat and transfers it to water circulating through its solar panels (or collectors). It is typically used to heat a swimming pool's water.

A solar photovoltaic system captures the sun's light and converts it to electrical energy that becomes available as a power source.

The design standards and installation requirements for solar systems are indicated below.

#### **Design Standards:**

Solar water-heating and photovoltaic systems shall meet all applicable health and safety standards and requirements imposed by state and local permitting authorities.

Solar water-heating systems shall be certified by the Solar Rating Certification Corporation (SRCC) or other nationally recognized certification agencies. SRCC is a nonprofit third party supported by the United States Department of Energy. The certification shall be for the entire solar energy system and installation.

Solar photovoltaic systems shall meet all applicable safety and performance standards established by the National

Electrical Code, the Institute of Electrical and Electronics Engineers, and

accredited testing laboratories such as Underwriters Laboratories and, where applicable, the rules of the Public Utilities Commission regarding safety and reliability.

#### **Installation Requirements:**

For new-home projects, detailed drawings for the proposed system must be included with construction documents.

For retrofit installations, a Plan Change application must be submitted together with detailed construction drawings of the proposed system.

Construction drawings shall be drawn to show all of the following:

- The location and number of panels.
- Method of attachment to the roof structure.
- Location of all other exterior system components (i.e. pipes, brackets, etc.)
- Manner of screening panels from off-site view.
- Energy calculations determining the number of panels and surface area required.
- For solar water-heating systems, a certified approval issued by an authorized rating organization such as the SRCC or FSEC must be provided.

After Aesthetics Council approval of solar photovoltaic systems, a copy of City permit must be provided before installation.

An illustrated brochure of the proposed solar units shall be submitted. It should clearly depict the solar panels and all other materials to be used in the installation.

Roof-mounted solar panels shall be installed on the plane of the roofing material and flush mounted.

In new-home construction, it is best to make the solar panels an integral part of the roof. That design approach may significantly improve appearance and reduce cost.

Ground-mounted solar panels shall be installed close to the ground and according to the City of San Diego zoning setback requirements and in compliance with Santaluz Interior Yard Expansion guideline 2.6.

In deciding where to locate the solar panels, the system designer should consider available options and make an effort to minimize the off-site view of the panels and supporting structures.

To further lessen the visual impact of solar panels and structures, additional mitigation measures may be required. These may include positioning trees, bushes or patio walls, in a manner that does not unreasonably hinder the system's efficiency.

Photovoltaic solar panels shall be all-black with anti-reflective glass. Water-heating collectors shall be matte black. All installation materials shall be dark in color. Aluminum frames and all other visible parts, with the sole exception of the solar surfaces, shall be anodized or otherwise color treated in black, dark bronze, dark brown or a color that blends with the roof tile.

In new-home construction, inverters and electrical panels, as well as all pipes and/or wiring must be concealed. In retrofits of existing construction, inverters and electrical panels, as well as all pipes and/or wiring must be

concealed as much as possible. All exterior plumbing lines and other visible installation parts shall be painted in the color scheme that matches as closely as possible the colors of the structure and materials adjacent to said parts (i.e. panel boxes or pipes on walls shall be painted the color of the walls while roof plumbing shall be the color of the roof.)

Homeowners may not have solar systems installed on common areas, club areas, or easements.

**Important Notes to Homeowners:**

Solar systems installation projects should never be taken lightly. A solar energy system is a large custom-made appliance that happens to be attached to your home's exterior.

The location, appearance and mode of installation of the solar panels are critically important to preserve as much as possible the attractiveness of the home's exterior architecture.

A high quality home deserves a high-quality solar energy system that provides superior performance and satisfactory appearance. Conversely, shoddy solar installations inevitably become community eye-sores.

The Aesthetics Council strongly recommends homeowners to consider using only high-quality solar products, and hiring a certified professional to design the system and a reputable contractor to install it.