

ACC DESIGN GUIDELINE FOR SOLAR COLLECTORS

Revised 1-31-2022

Purpose: This guideline is established to ensure that (1) solar collectors are in compliance with the Covenants, (2) blend with their surroundings, (3) do not unduly obstruct views or produce objectionable light reflections on neighboring properties (4) and are constructed of durable, high-quality materials.

This guideline establishes limitations on the location, height, color and finishes of solar collectors and their supporting structures. The use of solar collectors is consistent with the spirit and intent of the Covenants.

The guidelines provide general standards only and the ACC reserves the right to deviate from them, as it sees fit, as dictated by site-specific considerations. Technology, cost and retrofit limitations will be considered in the approval of specific projects.

Authority: The SHHA Board formally recognized and adopted the ACC Design Guidelines (as contained in the ACC Handbook and on the SHHA website) as a “Community Document”, thus becoming directly associated with the Sandia Heights Covenants (approved by Board motion, August 11, 2021).

1. DEFINITIONS

- a. Solar Collector: Any of a wide range of devices designed to convert solar radiation into heated gasses or liquids, or to produce electrical power.
- b. Photovoltaic (also called “PV”) Cells/Arrays: PV panels (sometimes referred to as “modules”) consist of a large number of individual cells that convert solar radiation into usable electrical power. The panels (usually rectangular in shape and in the neighborhood of 30 inches by 60 inches in size) are mounted in a frame and covered by a sheet of high strength glass to protect the cells. The panels can be mounted in arrays consisting of two or more panels. The panels and arrays are the units that are physically mounted to the roof using some sort of a supporting framework.

2. NEW CONSTRUCTION

- a. Every attempt should be made to minimize the adverse visual impact of solar collectors.
- b. Solar collectors should be placed so as not to constitute an undue obstruction of views. Panels fit best on flat roofs with raised roof, external extended roof walls, thereby minimizing obstruction of views.
- c. Solar collectors are considered a “permitted roof mounted device” and are exempt from the County-mandated height restriction of 26 feet for residential structures. Every effort, however, should be made to keep height above the roof to a minimum.
- d. Solar collectors and support structures shall be composed of durable, non-glare, and non-reflective high-quality materials.

- e. Ground mounted solar collectors should be located adjacent to, and carefully integrated with the residence, site, and landscape design. Where freestanding wall enclosures are part of the design, solar collectors should be located in an enclosed area. Ground mounted solar collectors are considered to be “structures” and, as such, are prohibited in setback areas as specified in the Covenants and in Paragraph (1) e. of the ACC DESIGN GUIDELINE FOR SETBACKS.

3. RETROFITING OF EXISTING RESIDENCES

- a. The limitations set forth in paragraph 1 above should be considered as design goals wherever they can be accomplished without major reconstruction.
- b. Roof mounted solar collectors should be located as far back from the perimeter of flat roofed buildings as practical, so as to maximize the potential for existing parapets to screen them from view from the ground.
- c. Roof mounted solar collectors should be mounted as close to and as parallel to the surface of pitched roofs as possible without serious impact upon collector efficiency.

4. COLLECTOR PLACEMENT & ORIENTATION

- a. Collector placement and orientation shall give due consideration to both the efficient collection of energy and visual qualities.
- b. On a case-by-case basis, rectangular collectors may be required to be placed with their longer sides parallel to the horizontal and with their elevation angle at the minimum practical angle relative to the horizontal.
- c. It is noted that relatively small deviations from the optimum orientation of collectors, so as to maximize energy collection, measured in terms of azimuth and elevation angles, have relatively little impact on energy collection. *Where visual and view issues are negatively impacted, deviations on the order of up to 20 degrees from the optimum values may be required.*

5. COLOR:

- a. All framing parts of solar collectors must have a Light Reflectance Value (LRV) or Solar Reflectance (SR) of 60 to 65 or less; generally, a “tan” or darker shade.
- b. Refer to ACC DESIGN GUIDELINE FOR ROOFING for detailed technical specifications for Light Reflectance Value and Solar Reflectance Value.

6. GLOSS – NO HIGHLY REFLECTIVE FINISHES:

- a. A high gloss finish has the potential to reflect nuisance levels of light into nearby properties. All parts of solar collectors should have a gloss of 20 or less; generally, a flat, matte, velvet, eggshell, or suede finish. This gloss or sheen selection criteria can be verified by review of the manufacturer’s data.
- b. Where the technical specifications of the collector’s active components do not meet the gloss specification, the lowest gloss available should be used and the location and

orientation of the reflective surface should be chosen to minimize objectionable reflections.

7. REQUIRED DOCUMENTATION:

A plan view of the roof shall be included in the ACC application (See Figures 1 and 2) and shall include the following information:

- a. All dimensions of the roof and parapet heights if parapets are present.
- b. Distance of panels or arrays from parapets or roof edges.
- c. A diagram showing the orientation of the panels or arrays on the roof.
- d. Proposed pitch angle for the panels or arrays.
- e. Dimensions of panels or arrays, and total number of panels or arrays.
- f. Total height of installed panels or arrays above the roof.
- g. Framing materials and proposed color of frames.
- h. This information is needed for each roof level where panels will be installed.

SAMPLE ILLUSTRATION FOR SOLAR/PV PANEL

