

The Eco-friendly House

# Green is Beautiful



Claudio Santini

Text by Dafna Zilafro

images  
Publishing

## About the authors



### Claudio Santini

Born and raised in Rome, Italy, Claudio's passion for photography began at an early age. While studying at the Architectural University and the Istituto Europeo di Design in Rome, he developed an interest in architectural photography, and began documenting the work of many emerging architects. His work was quickly procured and published by architectural publications such as *Abitare*, *Domus*, and *Casa Vogue*. Since moving to Los Angeles in 1989, he has continued his long-term relationship with the most influential architectural and interiors magazines in Italy, and his photographs have been featured in American publications such as *Architectural Record*, *Sunset*, *Home*, *Country Living*, *The New York Times*, the *Los Angeles Times*, and the *San Francisco Chronicle*. Today, Claudio's inspiration comes from broader architectural trends that shape society at large, including the green movement, which has caused a political, social, and environmental sea-change. Claudio is an avid sailor, and lives in Los Angeles with his wife and 8-year-old son.



### Dafna Zilafro

In addition to a career as a marketing and public relations professional, Dafna has worked as a freelance writer since 1993, publishing a wide variety of magazine and newspaper articles, book chapters, advertising concepts, biographical, and marketing-related materials. Her architectural writing includes contributions to numerous architectural books and magazines, including *1000 x Architecture of the Americas*, *Contemporary Home Design*, *Architecture Technology + Design*, and *Trend Magazine*. In partnership with her colleague, Claudio Santini, Dafna makes her first foray into publishing a book in its entirety with *Green is Beautiful*. She lives in the Los Angeles area with her husband and dog.

# Return the Heat: Passive Solar

As bare feet bury themselves in warm sand on a cool spring day—or as a dog sprawls across a cool basement floor in the heat of the summer—passive solar heating and cooling techniques are organic and intuitive, as old as the earth itself.

Ancient Greeks and Romans used passive solar design and the sun to light and heat indoor spaces. Socrates wrote, “In houses that look toward the south, the sun penetrates the portico in winter.” Romans advanced the art by covering south-facing building openings with glass or mica to hold in the heat of the winter sun. Through calculated use of the sun’s energy, Greeks and Romans offset the need to burn wood that was often in short supply.

In passive solar heating, elements of the actual living space capture, absorb, and distribute heat from the sun. South-facing glass admits solar energy into the house where it strikes thermal mass materials such as masonry floors and walls. The thermal mass absorbs, and thus tempers the intensity of the heat during the day. At night, when outside temperatures drop and the interior

space cools, the thermal mass radiates heat back into the living space. The re-radiation of collected daytime heat maintains comfortable temperatures during cool nights, and may continue to provide heat through several cloudy days.

In passive cooling, the system works in reverse. At night, thermal mass in the home absorbs and retains cool temperatures. If shaded from the sun during the daytime, thermal floors and walls remain cool, and emanate cool temperatures. Proper ventilation, fans, or other mechanical devices further the effect of either passive heating or cooling by circulating the air throughout the home.

Implementing passive solar techniques relies heavily on properly siting the home on the land. Designers will site passive solar houses on the portion of property that receives the most sunlight between the hours of 9:00 a.m. and 3:00 p.m. during winter months. Buildings generally oriented along an east–west axis are more efficient for both winter heating and summer

cooling, allowing maximum solar glazing (windows) to the south to capture the sun’s rays, and minimizing east–west exposure to the intense morning and afternoon summer sunlight.

A home’s common areas—living rooms, dining rooms, family rooms, and kitchens benefit most from passive solar when located on the south face of the building. Alternatively, rooms least used, such as closets, storage areas, and garages are best located along the north wall where they can act as a buffer between high-use living space and the cold north side.

The passively heated home utilizes time-tested techniques, harnessing energy from the world’s most available natural resource. Thermal masses of stone, natural earth, concrete, and other organic materials gently moderate the home’s climate throughout the year, much as the earth itself adjusts to the seasons.



## Sena Residence

Carmel Highlands, California  
Architect: Corver + Schicketanz Architects

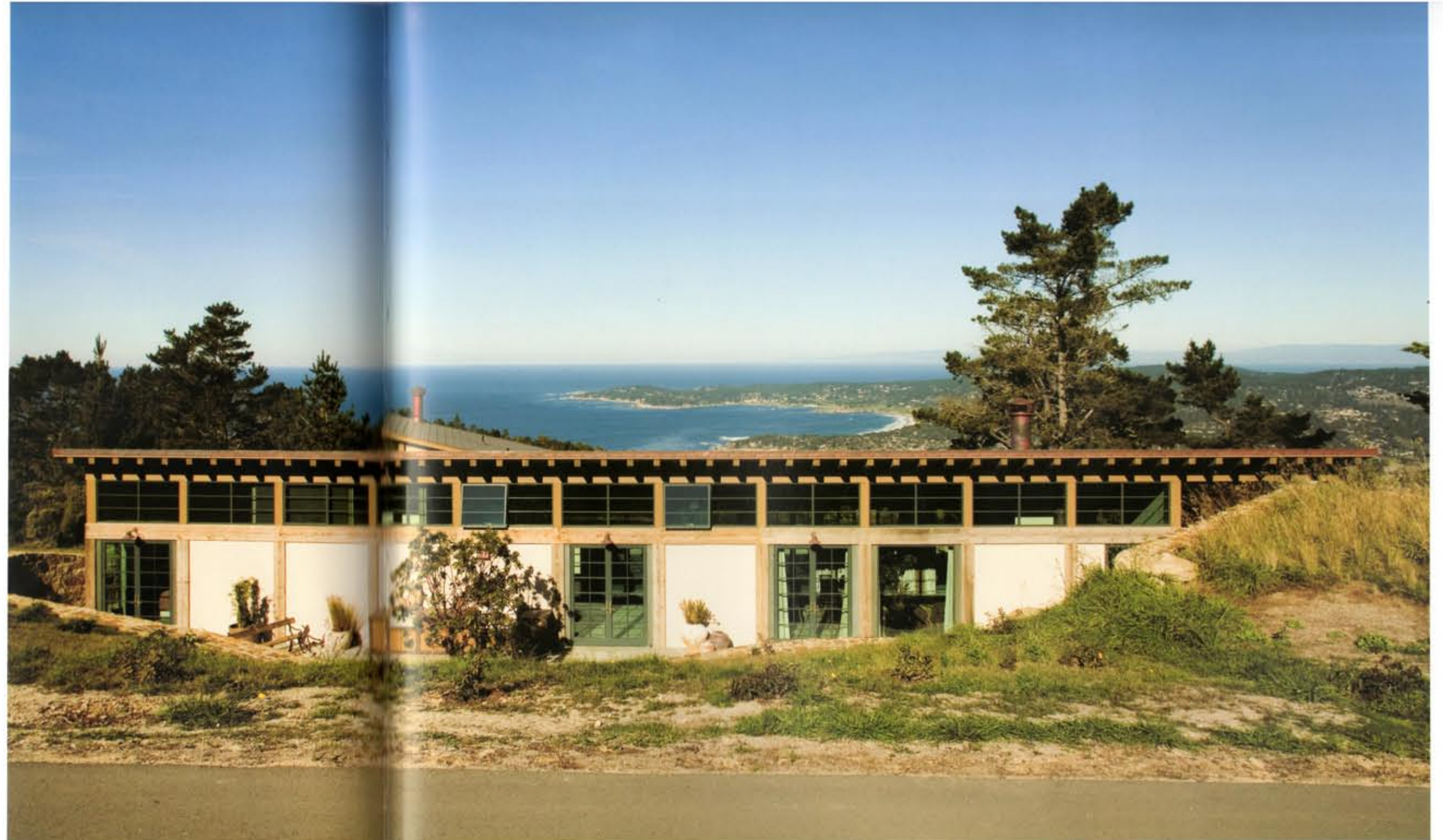
Located in the Carmel Highlands, a lush area of rugged beauty between Carmel and Big Sur on the northern California coastline, the Sena Residence incorporates a rich history into its newly fashioned habitat. Many of the home's finishes and interior materials come from reclaimed timbers and other recycled items. Once a table, the home's front door was purchased from the Anderle Gallery in nearby Carmel. According to the gallery owner, the table originated from the reclaimed wood floor of a 200-year-old temple in Korea that burned down. The home's plank ceiling stock is reclaimed from torn-down barns and fencing from around the Western United States. Wood trim on the interior and exterior posts, and the horizontal band above the windows and doors came from a salvaged, turn-of-the-century trestle bridge in St. Louis.

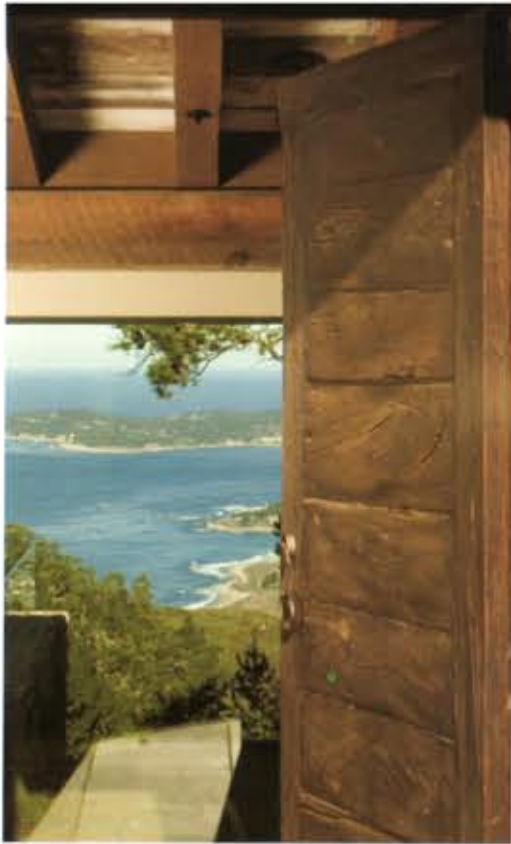
The Sena Residence takes glorious advantage of prevailing breezes and natural sunlight, in spite of its challenging north-facing site. Situated in a natural bowl, the home climbs a fairly steep slope and faces the ocean to the north with a window-

filled façade and French doors. A sun-kissed patio carved into the hillside reaches for the southern sun, where most of the natural light and heat enter the home. French doors and operable windows draw both the sun and natural breezes in through this elevation. During cooler times of year, the southern uphill patio becomes a refuge from the harsher ocean climate, and draws necessary heat from the sun onto the stone floors. Passive solar heating, combined with high efficiency, hydronic radiant heat and low-voltage lighting minimize the home's artificial energy requirements.

Built for a family with children, the Sena Residence is as practical as it is beautiful, and as healthy as it is ecologically responsible. Oversized natural materials complement muted tones of low-VOC paints and nontoxic finishes. Elemental, not ornamental, the palette is durable, and the home's tremendous expanses of glass elevations frame aerial views of the peninsula meeting the Pacific Ocean.

1 The Sena Residence with its view of the Big Sur coastline in the background





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- 2 Reclaimed wood on the front door derives from a 200-year-old Korean temple that burned down. The wood became a table before its new life as the Sena entry.
- 3 French doors on the eastern elevation draw morning sunlight into the home
- 4 Stone floors on a southern patio retain heat from the sun



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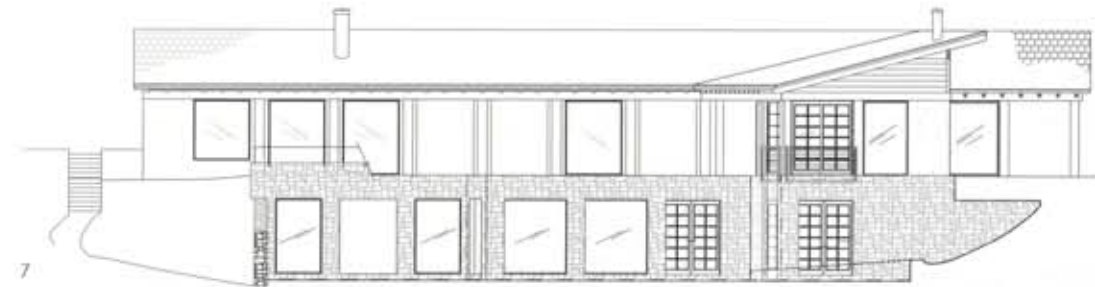
"During cooler times of year, the southern uphill patio becomes a refuge from the harsher ocean climate, and draws necessary heat from the sun onto the home's stone floors."



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- 5 French doors cast a decorative shadow
- 6 Daylight streams in through a high window
- 7 Elevation drawing
- 8 Master bedroom
- 9 Master bathroom