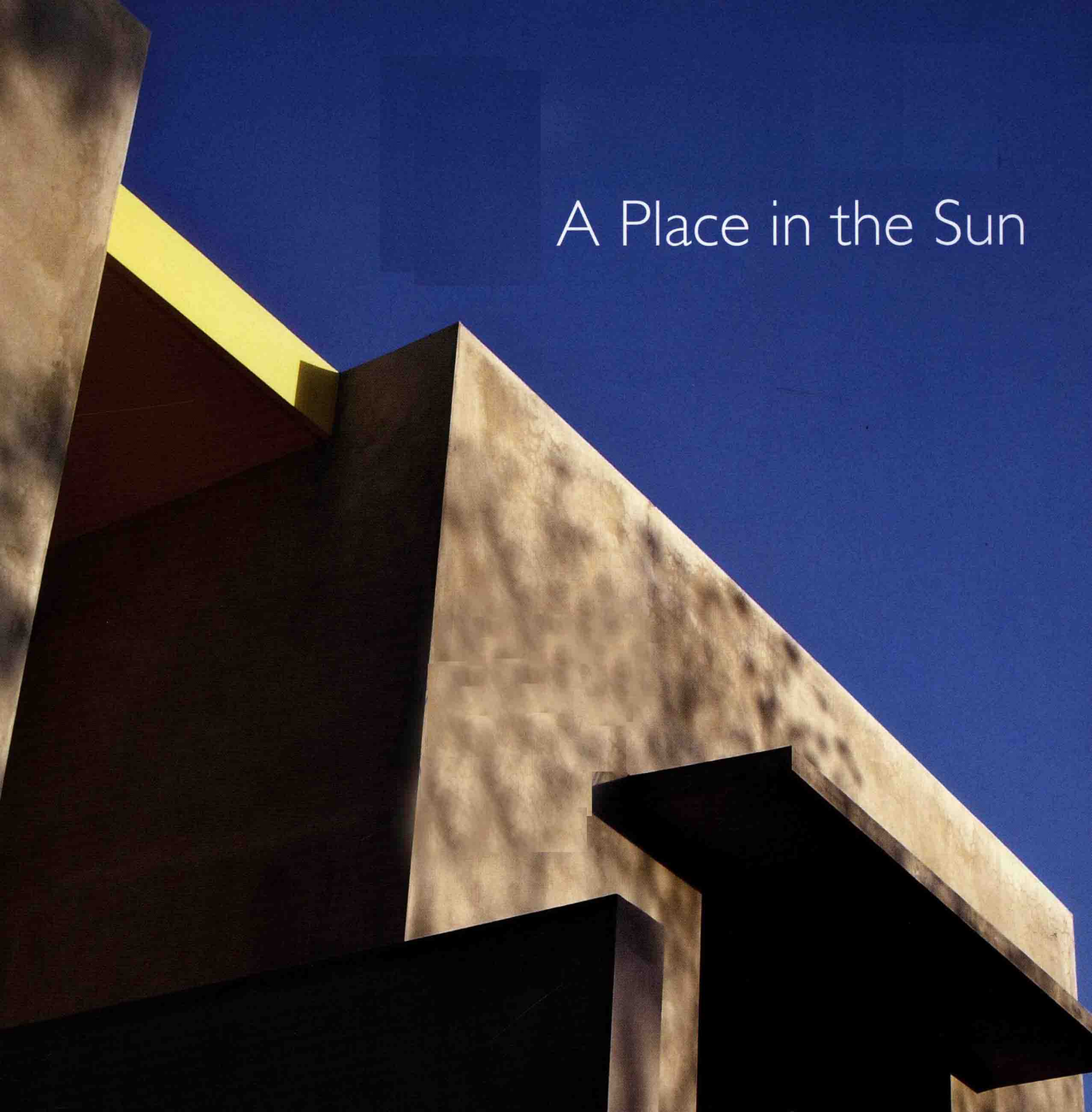
# A Place in the Sun

## Green Living and the Solar Home

Stephen Snyder

Rizzoli New York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Page 1: John Hix Studios, Casa Solaris, Vieques, Puerto Rico

Pages 2–3: Robert M. Cain, Architect, Briar Creek Farm, Varnville, South Carolina

Left: David Stark Wilson, WA Design, Stinson Beach House, Marin County, California

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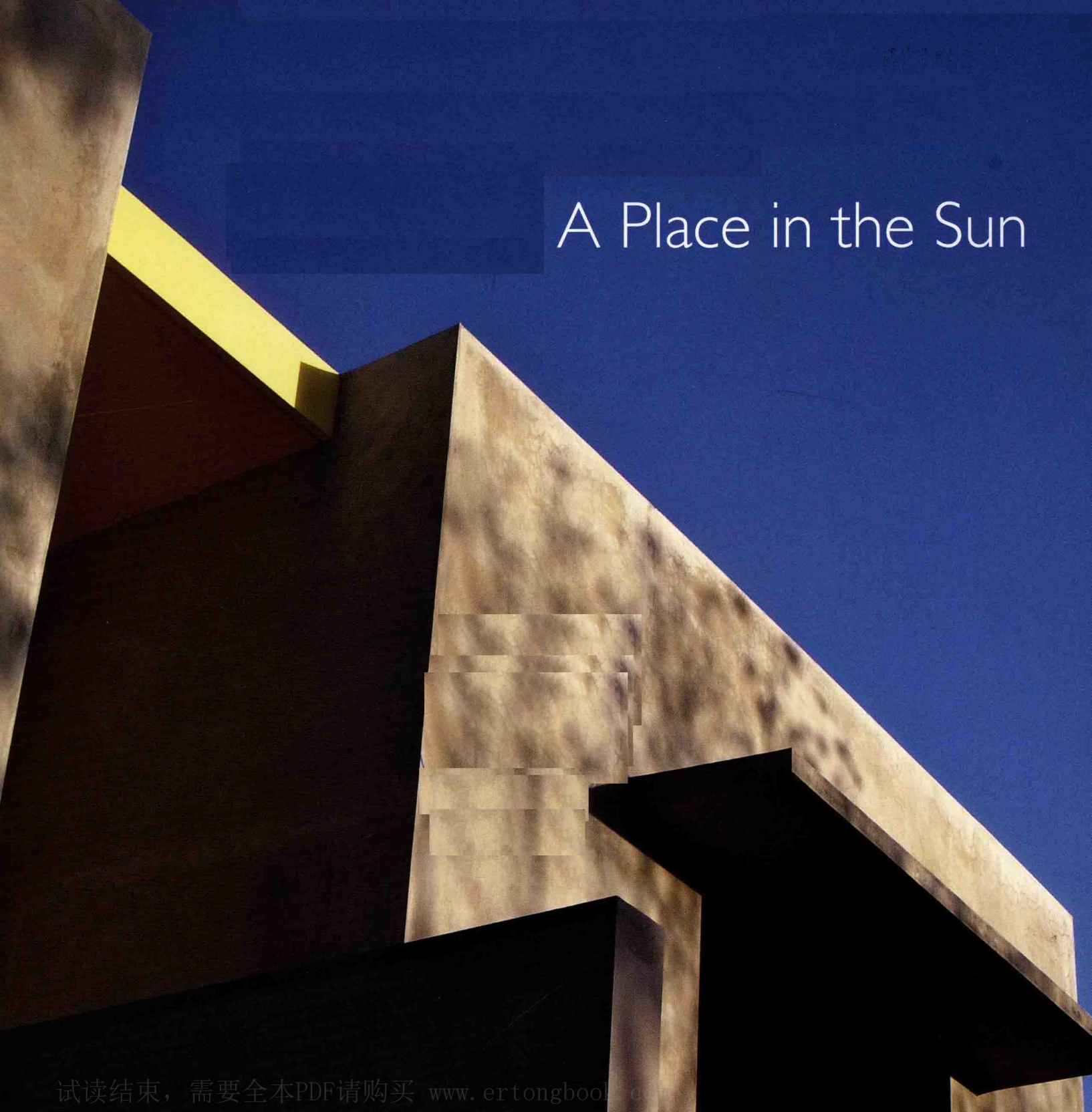

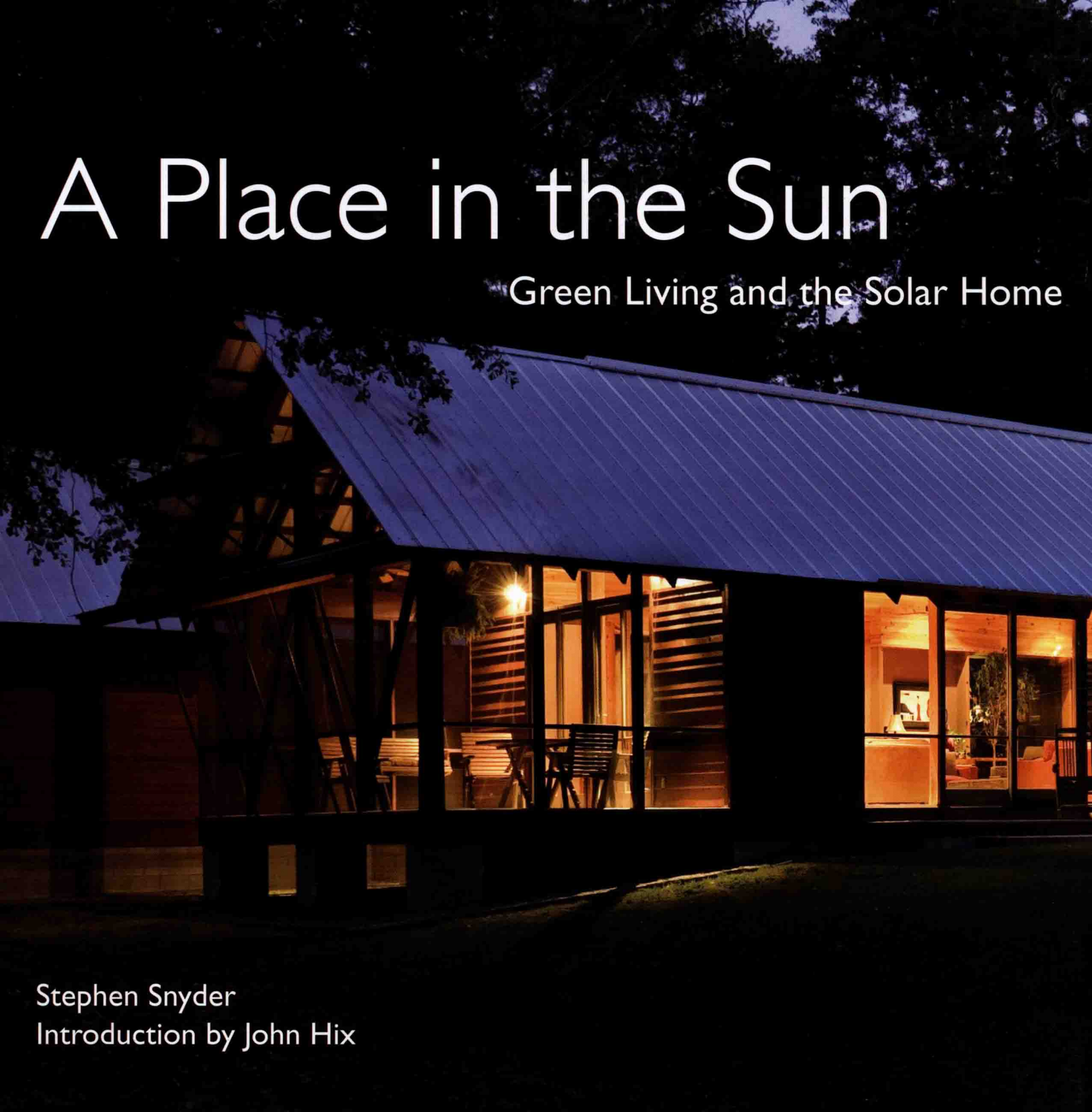

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Introduction by John Hix

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# Acknowledgments

Left: Lake|Flato Architects, Hacienda Ja Ja, Alamo Heights, Texas

Opposite: Lake|Flato Architects, Leon Springs Residence, Bexar County, Texas

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# Introduction

John Hix

Right: John Hix Studios,
Hix Island House,
Vieques, Puerto Rico

Study nature, love nature, stay close to nature. It will never fail you.
— *Frank Lloyd Wright*

I saw many huts that the natives made [in Africa.] There were no architects there. I came back with multiple impressions of how clever was the man who solved the problems of sun, rain and wind. — *Louis Isadore Kahn*

Biologist D'Arcy Wentworth Thompson, in his seminal book *On Growth and Form*, explained that subtle environmental forces cause natural life forms (cells, plants, and animals) to evolve by natural selection, or survival of the fittest. Human habitats, buildings, and community designs should likewise be strongly influenced by these natural forces. If the form and skin of architecture take these forces into account, we can reduce our need for oil, coal, and atomic reaction. If we move away from hermetically sealed, energy-dependent buildings, we can decrease our electricity consumption. We should strive to get as close to zero energy use as possible.

In this book, Stephen Snyder has assembled a collection of contemporary architects who convert environmental technology, in varying degrees, into art by choosing ecologically sound materials and by recognizing a site's natural characteristics. Because regional topography, local vegetation, and appropriate construction methods are intrinsic parts of their aesthetic decisions, these architects help reverse the damage wrought by massive energy consumption. Instead of adhering to a prescriptive set of forms endorsed by fashionable trends or to the comfortable reassurances of an easily accessible design vocabulary, these buildings are based on the unique challenges of each site.

All architects should strive for a balance between the natural environment and the protective functions essential to buildings. This balance can best be achieved with climate-related design and a commitment to energy efficiency. Architects should learn from the vernacular buildings in the region around each site. Indigenous buildings, like living creatures, evolved through human selection of the most resilient, durable, and long-lasting dwellings. To broaden an understanding of the interface between raw nature and a controlled inhabited environment, architects can learn from similar climatic conditions that occur in different locations around the world.

I am attracted to the houses in this book that, through their configuration and, in some cases, their skin, modulate existing climatic conditions to provide protection and comfort for the occupants. It is in designing a building's skin that forces in the natural environment may be harnessed. The envelope can be made to admit solar heat, fresh air, cooling breezes, humidity, and natural light. Mechanical systems need be called on only when the internal environment cannot be tempered organically. I believe there is more potential in the study and development of a building's skin than in structural innovation.

We should learn that the house does not contain the machine: the house is the machine.

# *Sunset* Magazine 2012 Idea House

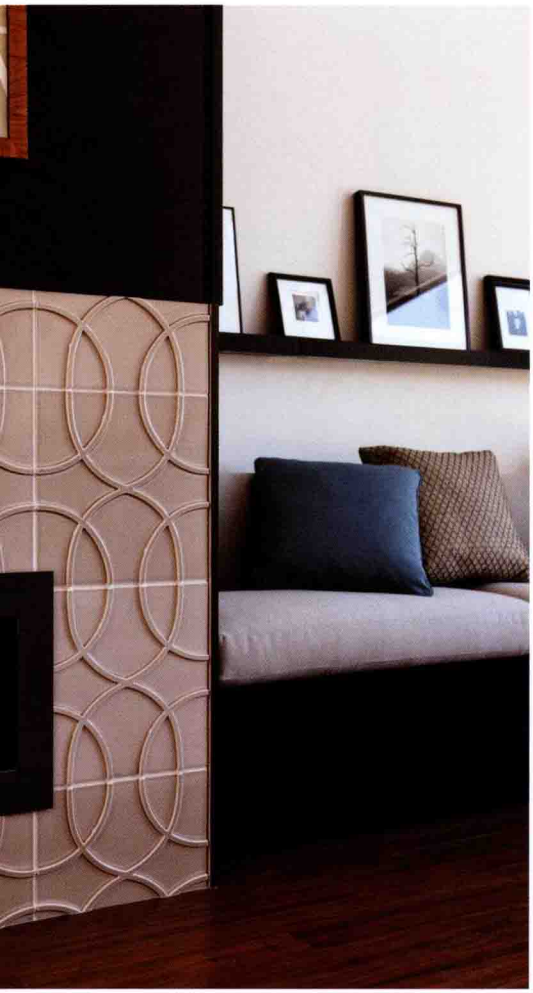
Healdsburg, California

Architect: Blu Homes

Every year since 2005, *Sunset* magazine has sponsored an "idea house" to showcase trends in homebuilding and remodeling. In 2012, *Sunset* partnered with prefabricated house builder Blu Homes for the annual feature. Blu's iconic Sunset Breezehouse had debuted in *Sunset* magazine in 2005, and for the 2012 Idea House, Blu Homes developed a "next generation" Breezehouse on a breathtaking site in Sonoma County discovered by owners Jack and Rosemary Wardell.

Both the original Breezehouse and the updated, more spacious version, which is LEED certified, are based on the dogtrot homes of the southeastern United States. In these vernacular residences, built in the days before air conditioning, a well-ventilated central area between living spaces promoted ample airflow. In the Breezehouse, the living and dining areas, or Breezespace, replicate the dogtrot with energy-efficient glass walls that can be opened to the outdoors at both front and back. The metal butterfly roof and clerestory windows invite sunlight into the Breezespace. During the day, the floors and walls absorb the sun's heat; at night, it is slowly released back into the home.

On either side of the Breezespace are modular wings that contain the kitchen, two bedrooms, four bathrooms, a separate den and office (which can be used as additional bedrooms), a wine cellar, and laundry and mechanical rooms. Wide hallways promote the flow of air throughout the residence. A detached Breezepod serves as a guest cottage. The indoor-outdoor interplay of the Breezehouse is underscored by numerous outdoor living spaces and an exterior



water feature, a two-by-eight-foot fountain with two spouts.

Manufactured in Blu's Vallejo, California, factory, the residence was "unfolded" at the site in Healdsburg in a matter of weeks, not months or years. The team included Blu Homes architect Joseph Remick, interior designer Sharon Portnoy, landscape architect Steve Hinderberger, and landscape designers and stylists Bonnie Gemmell and Jessy Berg from Habitat Design.

Research into materials and methods—cutting-edge computer modeling, innovative use of steel, and pioneering folding technology—makes Blu's homes easier to erect and less costly than site-built homes, even than many other prefabs. A bright, open design makes for living spaces that feel deceptively large; in reality, the relatively small footprint generates a smaller carbon footprint.

Blu Homes made the new Breezehouse even greener than the original by adding a solar thermal water heater, which heats the house via a Warmboard radiant floor system and provides hot water for domestic use. Among the host of additional green features are low-VOC paints from Benjamin Moore's Aura product line; maintenance-free fiber-cement siding products; structural insulated panels, which provide a tight air seal that contributes greatly to the overall efficiency of the residence; and a high R-value wall assembly with rain screen, exterior insulation, and blown-in wall cavity insulation. The structural steel and light steel in the home are up to 77 percent recycled. Manufacture of the steel frame produced less waste than lumber (2 percent versus 20 percent); the frame itself is recyclable. The Idea House also features bamboo floors throughout and low-flow water fixtures.

## Prefab Homes

Architects and manufacturers have been developing prefabricated homes—kit, mobile, panelized, and modular homes—since the early twentieth century. In architecture, the term "prefab" generally describes a modular house that is manufactured off-site, in a climate-controlled factory, and then transported to the building site for assembly. Prefab homes offer many options for size, height, and layout. Prefab house construction is characterized by efficiency of scale and lack of waste, making it a popular choice for green homes.