

Affordable **Home Design**

Innovations and Renovations



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Martha Torres



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Introduction

One of the most basic human needs is the dwelling. Architecture has to meet this need with designs that guarantee with the highest of principles the client's well-being and comfort. Designing a house is one of the most important challenges architecture has had to face, not only because it is one of the most recurrent projects, but because it often means dealing with smaller investments and finding ways to accommodate the economic restraints of each individual project.

Given such economic considerations, the spatial quality of the house is often determined by the costs invested in it. But a habitable space can be designed in many forms, without large budgets. Ingenious solutions that address cost-effectiveness in terms of design or financial considerations can generate highly attractive results.

There are many starting points from which to achieve an affordable solution: from the structural proposal of the dwelling, to that of the materials, to sustainable projects that increase the initial investment but compensate by making the house more economical in terms of energy consumption. All of these proposals are valid from the architectural point of view.

This book surveys different affordable typologies: extensions for houses or apartments that are already standing, ecological housing designs, sustainable and structurally cost-effective houses, and new buildings in strictly coded conservation zones. The aim is for the wide array presented here to examine different responses to the same significant architectural challenge.

NEWLY CONSTRUCTED HOUSES

ECOLOGICAL / SUSTAINABLE

FOUR HORIZONS 10

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VILLA MARIA 30

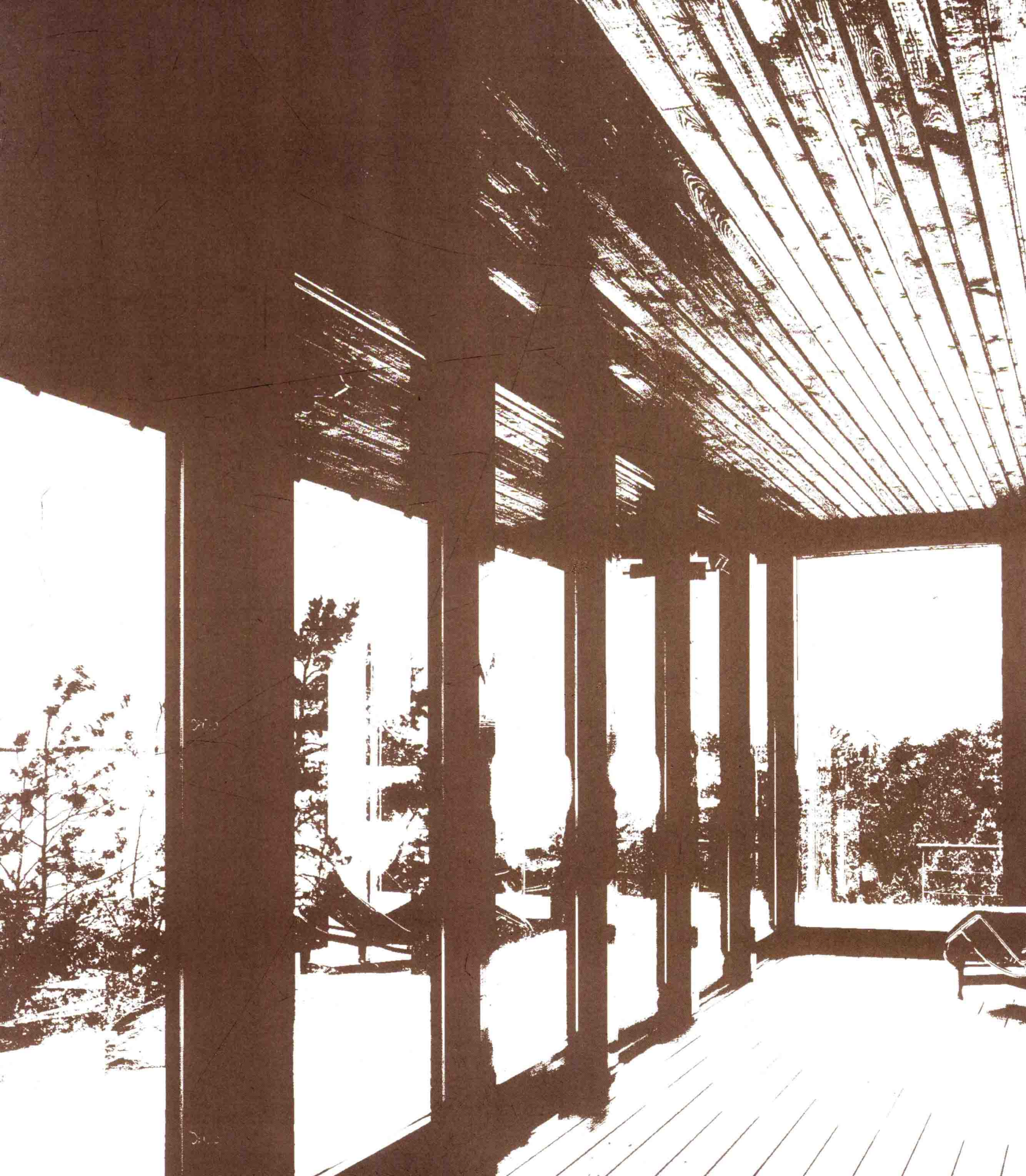
STRUCTURALLY ECONOMICAL

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This project is located on a cliff in the midst of a eucalyptus forest recently designated as a National Park. The isolated enclave of the residence and the absence of public utilities (water, electricity, sewer, or phone) suggest that designer and client were inclined to experiment with extreme conditions and the idea of a self-sufficient home. Consequently, the site is manipulated so that its self-regulating processes will not damage human interests. From this standpoint, the house wasn't built to "protect" nature but to organize the sustainability of human presence. This brings new challenges to the house since it must obtain, control, and manage its own energy sources.

The architects' holistic approach was to reconcile activities with a low environmental impact, to use readily available materials and technology, and to recycle the waste produced. Water is supplied by rain collection. Solar energy is used for water heating and generating electricity. Wood burning is used for heating and cooking. The residual waste is treated and sent back to the environment with the knowledge that it will not affect the surroundings. These orientation and construction solutions allow for natural climate control.

On the exterior, we find a series of solar panels, generators, and the garage and stables that open onto an enclosed garden. The covering of the house is resolved with a freestanding, double-sloping roof. As is typical with many Australian barns and agricultural warehouses, a steel structure with galvanized metal is used. In Four Horizons, the positioning, orientation, selection of materials, construction methods, and the careful management of resources and waste were all brought together by an integral concept of harmonious living.



Project: **FOUR HORIZONS**

Architect: **Lindsay Johnston**

Photographers: **Peter Hyatt, Michael Nicholson**

Location: **Watagan Forest, Hunter Valley, Australia. 1998**





The double covering allows for ventilation of the interior living spaces and regulates temperature and lighting. Water is collected in large tanks that can provide water reserves for many months.

