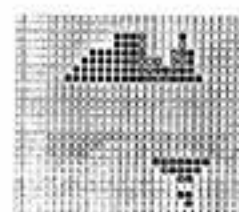


BOOK REVIEW



LOW ENERGY BUILDINGS IN AUSTRALIA
A design manual for Architects & Builders
Volume 1
Residential Buildings
Garry Bayerstock & Sam Paolino

Low Energy Buildings in Australia: A design manual for Architects and Builders. Vol.1. Residential Buildings. By Garry Bayerstock and Sam Paolino. Illustrated. 307 pp plus three appendices. \$45 including postage. Softcover. Published by Graphic Systems, 32 Shakespeare Street, Mount Hawthorn, WA, 6016.

Reviewed by David Oppenheim, Director of Taylor Oppenheim Architects in Melbourne.

Garry Bayerstock is a West Australian solar enthusiast. I first met him at the Perth Solar World Congress in 1983 where I learned of his Tecto computer programme. (So I freely admit my interest.) Since then Bayerstock and Paolino have taken this computer programme and produced outline parameters for energy efficient residential buildings in any area of Australia. And what a task it has been. With the help of Rod Potts from the Bureau of Meteorology, they have divided Australia into twenty-three climatic zones.

Zone by zone, they then discuss the effect of pointing a notional rectangular house north, south, east, and west, as well as 20° and 45° east and west of north (a total of eight directions). The parameters discussed are sun cut-off angles, glass areas, thermal storage volumes, insulation levels, fan sizing for various systems, auxiliary heating systems and payback periods. It is a wealth of information. Added to this (for each region) is a discussion of two storey and multiple unit housing, wind directions in winter and summer, recommended construction types and viable plan forms.

The work is the first in Australia that I know of to present the American approach of a tabular assessment of many climates across the country. This is useful as it highlights the variety of forms applicable — (atriums, "U" shaped, courtyards, cruciforms, "L" shaped, "Z" shaped, "H" shaped, complex shaped, stepped shaped, angled shaped, etc. etc.) and the differences in insulation, glass and thermal mass levels.

It also presents a balanced view of summer heat gain and winter heat loss. And perhaps most importantly, it tackles the question of the non-north facing building.

What the authors have produced is a guide that appears to be most usable now.

It will be a useful reference for students and building designers. It falls between the quick and dirty methods, and the more labourious methods. (The authors also have the "Tecto" programme available for more detailed analysis of more involved buildings, should that be desired). As a side comment, the quality of the printing left something to be desired. But I like the book, since it challenges my preconceived ideas and forces me to think them through again. Also, it is written and printed in Australia. ☒

Catering for individuals



• A "Tecto" method solar house.

Over the past 10 years Garry Bayerstock and Partners trading as *Tectroprojects* have developed a method of designing solar houses known as the "Tecto" Method. Based on a solar analysis computer programme the method is based on optimizing the glass areas, shading, insulation and mass for both summer and winter performance.

The attitude towards customers, says the firm, is one where individual housing needs, requirements and tastes are monitored in a thoroughly professional way by using highly developed interview techniques. Clients prepare a scrapbook of ideas, taped sessions are held and transcripts produced prior to formulating any concepts. The key initial factor is the site analysis.

An environmental plan is prepared indicating all the site conditions, levels, solar access, design problems.

The key to success, says the firm, is in working with competent builders who can pin down the cost and produce the final product. The firm has won H.I.A. Home of the Year "Design for Climate" four out of the five years the award has been presented in W.A.

The firm's Solar Design Centre has patented products and services to back up its general design and building expertise. Computer and advisory services are available Australia-wide via H.I.A. branches. The firm has a general solar information centre in WA for a wide range of solar products. Sales personnel liaise with the building industry.

Says Garry Bayerstock: "We are totally committed to the development, promotion, and marketing of low energy buildings and solar technology. We have credibility in this field and our clients have confidence in our houses actually working as they are designed. Apart from our architectural award winning capabilities this is the major reason for public interest in our company." ☒