

How Climate Affects Design



Design With Climate by Victor Olgay (Van Nostrand Reinhold, 1992; 800/842-3636). Softcover, 11x8½, 190 pages. \$29.95.

Nearly 20 years ago, when the energy crisis was in the news daily, I figured I should get a handle on how to design houses that responded positively to their climatic settings. So I picked up a copy of what, to my mind, remains the best book on the subject, Victor Olgay's *Design With Climate*. The original hardcover was written for graduate students in architecture, and the new paperback edition is also for the serious reader — it's a pretty technical book.

In three concise sections, Olgay describes the bioclimatic approach to design, translates his approach into architectural principles, and applies the principles of "heliothermic" planning to four climatic regions of the country. Part One describes the general relation of shelter to climate, and outlines a method for applying climatic data, biological evaluation, and technological solutions to the findings. Part Two details site selec-

tion, "sol-air" orientation (combining the effects of sun and air temperature), solar control strategies, and optimum building forms for various regions. It also discusses wind, ventilation, windbreaks, and the thermal effects of building materials.

Part Three puts it all together. Olgay models the thermal behavior of structures in temperate, cool, hot-arid, and hot-humid zones, presenting specific design guidelines for structures in each zone. Much data and many charts, diagrams, and calculations complement the text.

There are some shortcomings, however. For example, Olgay's analysis of optimum length-to-width ratios for building dimensions considers only above-grade structures typical of the 1960s, with no indication of how to modify his recommendations for today's insulation levels.

But the methodology and general guidelines are there, and it's remarkable that this book has retained its relevance for nearly three decades. Environmentally conscious builders owe Mr. Olgay a debt of gratitude.

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Energy Reference



Energy Source Directory: A Guide to Products Used in Energy Efficient Construction (Iris Communications, 1993; 503/484-9353). Three-ring binder, 11x12, 500 pages. \$175.

Life has been a whole lot easier around the office since *Energy Source Directory* arrived. Housed in a three-ring binder, the 500-page reference is the most complete and most useful guide to specialized products and materials for energy-efficient construction that I've seen. It's divided into 15 categories, including Air Leakage Control, Heating, Indoor Ventilation, Insulation, Lighting, Moisture Control, and Water Conservation. Each product listing has its own page and provides contact information, specifications, a list of applicable certifications and codes, and a product description ranging in length from a few sentences to several paragraphs. Products are indexed by manufacturer and trade name at the end of the directory, along with very useful listings of

code and trade organizations.

The first edition of the directory, published last year (*Builder's Library*, 10/92), failed to include some products that I expected to find, such as the new Insul-Cot batt insulation. The 1993 edition, however, has been expanded and updated with many new products. Improvements include a listing of windows by type (casement, awning, double-hung, etc.) and listings of cooling equipment, which were missing from the 1992 edition. Also new are icons indicating the products made with a significant amount of recycled material or with alternatives to CFCs. Although I did notice a few inaccuracies in the way the icons were used, adding this type of information is an exciting development.

For the most part, the *Directory* is remarkably inclusive, and it is likely to grow even more complete through planned periodic updates. For builders and specifiers who can afford the relatively steep price, this is a must for the office. ■

Alex Wilson is editor and publisher of Environmental Building News, a newsletter on environmentally sustainable design and construction.