

# Booknotes

Ruedisili, Lon C. and Morris W. Firebaugh (Eds.), *Perspectives on Energy Issues, Ideas and Environmental Dilemmas*. New York: Oxford University Press, 1978. Soft Cover, 591 pages. Second Edition.

This reader, edited by a geologist and a physicist, focuses on the finitude of energy resources and the environmental dilemmas posed by production and use of energy. The second edition emphasizes economic concepts as a base for understanding, determining and evaluating energy patterns, the relative environmental and health costs of energy alternatives, solar energy as an imminent resource for heating and cooling and the impact of serious conservation efforts.

Several articles are of particular interest to the housing professional. Part I of the book (backgrounds and limitations), focuses on energy and the environment, economics, the energy situation and an overview of Carter's National Energy Policy. Part II is limited to fossil fuel energy sources while Part III focuses on nuclear fission as an energy source. Fusion, solar energy, oil shale, oil sands, geothermal and energy from waste products are discussed in Part IV (alternate energy sources). Perhaps this part of the book is of most interest to the housing professional, along with the section covering conservation, lifestyles and energy policy for the future.

As is the problem of every reader, some of the articles are out of date and style transitions are sometimes inconsistent. However, both the style and language of the articles are appropriate for housing professionals. A majority of the articles contain illustrations, tables and photographs for easier understanding, and conclude with suggested readings and bibliographies. An appendix of energy definitions and

conversion factors completes the new edition.

Overall, this book should serve as a good reference, but probably does not concentrate enough on specific issues related to housing to be useful as a text in an energy related housing course.

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Buckley, Shawn. *Sun Up to Sun Down: Understanding Solar Energy*. New York: McGraw-Hill, 1979. Paperback, 166 pages.

Buckley provides an interesting book which illustrates the concepts of solar technology for private dwellings, using the principles of collecting rain water as an analogy. Such a technique aids the reader in visualizing and understanding solar principles without cumbersome mathematics or complicated formulas. The first six chapters are devoted to methods of heat transfer and storage. Although this may seem to be excessive coverage, the concepts are well illustrated and comprehensible. This establishes a strong base on which to build the author's discussion of solar principles. The next two chapters discuss the particulars of heating and heat loss in a dwelling, with emphasis placed on the importance of a well insulated house when utilizing solar.

The remaining seventeen chapters discuss various aspects of solar technology: active and passive systems, air and water mediums, the use of diodes and other controls, parts of a solar collector, etc. Most of the information is oriented toward dwellings designed for solar application, but retrofits are also covered.

Two interesting chapters trace the operation of a solar collector through a typical day and night.

The final chapter attempts to answer the question: which solar heater? Unfortunately, the information presented is too general to be of much help. The author made no attempt to determine collector size, mounting angle or climatic biases. The reader will have a clear understanding of solar principles, but will have to do more research to apply these principles to his or her particular situation.

The principles presented in the book are clearly and concisely explained and well illustrated with sharp black and white sketches. Chapters are short, concise and cover a single concept. This technique maintains the reader's interest and allows absorption of one concept without confusion of others. A reader well acquainted with solar technology may find this technique boring, but most housing educators should gain increased understanding of solar systems. An extensive glossary and index are included.

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Davis, A. J. and R. P. Schubert. *Alternative Natural Energy Sources in Building Design*. New York: Van Nostrand Reinhold, 1981. Soft Cover, 287 pages. Second Edition.

Davis and Schubert's updated second edition provides a genre of information on alternative energy sources for building design. Nine specific areas are covered in the book: regional and site adaptation, energy conservation, natural cooling and ventilation, water power, wind power, active solar energy, organic fuels, integrated systems and passive solar energy. It should serve as an excellent resource book for housing educators and students, as over 200 diagrams, tables and formulas are used throughout the book to complement written materials. Hundreds of footnotes, references, eleven appendices and a full index are also provided.

The first sections of the book are particularly applicable to housing. These sections focus on energy

use and conservation in relationship to the natural and built environments, and explore practical alternatives to present technologically based energy sources. The material presented on various alternative fuel systems, natural cooling and ventilation, wind power, solar energy, organic fuels and integrated systems are excellent informative introductions to each area.

The book is tailored to architects and designers, moving from the general to the specific. As a result, portions of the book may be overly technical for non-design users, especially some formulas and detailed diagrams. However, housing professionals should find this an informative work, and is recommended reading to all those interested in energy concerns.

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Underground Space Center. *Earth Sheltered Community Design: Energy-Efficient Residential Development*. New York: Van Nostrand Reinhold, 1981. Soft Cover, 270 pages.

This book of guidelines offers homeowners and architects a comfortable and economical approach to earth sheltered housing based on modern construction techniques. It provides plans, details and photographs of existing examples of earth sheltered housing across the country, and illustrates how to design homes using such low cost natural resources and energy saving systems as layers of soil insulation and passive solar heating. Many of the homes described in the book suggest how designs can be adopted to take advantage of specific natural surroundings.

Avoiding the use of technical language whenever possible, the authors give clear-cut explanations of energy performance in earth sheltered housing, as well as helpful hints on selecting materials and equipment. Essential advice regarding density, marketability, site selection, roads and utilities, topography, soil data, climate and orientation, as well as other community design topics, should be of particular interest to developers of earth sheltered projects. Discussion of these topics in relation to conventional as well as

earth sheltered development is also provided, facilitating comparison between the two types of housing.

Forward-looking housing educators will value this comprehensive and timely study for its excellent analyses of prototypical sites for both conventional and earth sheltered housing which provide a frame of reference for use on individual sites. In addition, the detailed appendices and bibliography offer precise information regarding actual and proposed earth sheltered communities, reinforcing the general applicability of the various design guidelines. Unfortunately, many of the design criteria and renderings are quite technical in nature and are more applicable to urban planners and architects, rather than average homeowners and housing educators.

Thanks to the Underground Space Center, earth

sheltered community development need no longer remain a gleam in the energy conscious community planner's eye. *Earth Sheltered Community Design* provides the practical information necessary to make truly energy efficient communities a reality. Special bonuses of the book are the photographs and detailed floor plans illustrating the earth sheltered alternative as being aesthetically beautiful as well as maintaining its cost effectiveness. I feel rather safe in recommending the Underground Space Center's work to those who are interested in the specifics of earth sheltered housing and its related implications to future community planning and design.

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