Sustainable Design Annotated Bibliography

In the following descriptions of selected publications from the "Sustainable Design Bibliography," [KR] indicates annotations written by Kurt Rathman and [BR] shows descriptions penned by Brenda Rigdon. For information on obtaining publications not commonly found in your university library or bookstore, see the Bibliography.

Anderson, Bruce. *Solar Building Architecture.* Cambridge, Mass.: The MIT Press, 1990.

One of a 12-volume series summarizing federally sponsored research in solar energy systems. Discussion limited to the use of solar radiation for heat; does not cover photovoltaics, wind or wave power, or biochemical energy production. A brief examination of historical, climate-responsive archetypes is included, but the focus is on current technology, research, and applications. Urban planning and site issues, energy storage and distribution, and the importance of building envelope design are discusses in independent chapters. Specific situations of envelope-dominated buildings and interior load-dominated buildings are also addressed. This book is for people who have a solid background in architecture and some understanding of thermodynamics. [BR]

Barnett, Dianna Lopez, with William D. Browning. *A Primer on Sustainable Building.* Snowmass, Colo.: Rocky Mountain Institute, 1995.

Introduces the concept of sustainable design, reasons for using its principles, and general guidelines for its application. Deals with site development, transportation issues, building configuration, alternative energy systems, water conservation, and building materials. Includes an extensive listing of other publications, non-profit groups, and journals that deal with sustainable design issues. Geared primarily toward home-owners, but principles are applicable to commercial/industrial construction as well. [BR]

Brand, Stewart. *How Buildings Learn: What Happens After They're Built*. New York: Penguin Books, 1994.

An examination of the adaptive reuse of existing structures. Guidelines for designing easily adaptable building are discussed. [BR]

Required reading for a multitude of topics on architectural reuse. Chapter 12, "Built for Change," discusses change in architecture and construction methods that support constant revision over time. Adaptive reuse, durability, and design for disassembly are explained in terms of both whole buildings and materials. Chapters 3 and 4 are devoted to "low road" and "high road" concepts of durability and maintenance. Chapter 10, "Function Melts Form," is all about adaptation, flexibility, and "vernacular remodeling" of the home and office. [KR]

Brown, G. Z. Sun*, Wind, and Light.* New York: John Wiley, 1985.

An examination of design decisions that affect a building's energy use. Emphasis is on utilizing onsite resources in the forms of solar, wind, and geothermal energy. Intended for the reader with some background in architecture and energy principles. [BR]

Crowther, Richard L. *Ecological Architecture*. Boston: Butterworth Architecture, 1992.

The author is a practicing architect who has applied sustainable design concepts throughout his career. He argues for the necessity of sustainable design, discusses the strategies, and leads the reader through the process. Eleven case studies of his buildings are included; addressed are interior as well as exterior issues and the need for integration of technology and aesthetics. The economics of design choices, at the micro and macro levels, are examined. The book includes a reference section for design issues and suggestions for improving sustainability. While written for architects and architecture students, the information is presented in a format that is accessible to the general reader. [BR]

Fitch, James Marston. *Historic Preservation: Curatorial Management of the Built World.* Charlottesville: University Press of Virginia, 1990.

Presents economic, aesthetic, and cultural arguments for the preservation and/or adaptive reuse of existing structures. Traces the history of the historic preservation movement in the U.S. Both preservation theory and specific techniques for reconstituting damaged building fabrics are explained. Examples include the Plimouth Plantation and Colonial Williamsburg are used to examine the pros and cons of recreating historic structures. Includes a section on designing additions to historic buildings and retrofitting old buildings with new mechanical/electrical systems.

Gordon, David, ed. *Green Cities: Ecologically Sound Approaches to Urban Space.* Montreal: Black Rose Books, 1990.

A compilation of essays examining international approaches to urban design and the assumptions upon which these paradigms are based. Discusses a redefinition of urban park land, the concept of the dependent city, the modification of macro- and microclimates that result from development, and more. Provides both introductory and intermediate levels of information. Includes listings of selected horticultural services and suppliers, organizations and demonstration projects, and an introductory bibliography. [BR]

Schumacher, E. F. *Small is Beautiful: Economics as if People Mattered.* New York: Harper & Row, 1973.

A critique of classic economic theory, which emphasized growth at all environmental costs. Schumacher, an economist himself, challenges Western man's attitude toward nature and the "illusion" of technology. The focus is on the inherent contradiction in the assumption of endless economic growth and the reality of finite resources. The book addresses the dangers of encouraging developing countries to model their economic/industrial policies on the Western example. No background in architecture or economics is necessary for the reader. [BR]

Spirn, Anne Whiston. *The Granite Garden: Urban Nature and Humane Design.* New York: Basic Books, 1984.

Successful cities, ancient and modern, have developed by heeding their natural geography and evolving over time. These communities offer humane, sustainable lifestyles that allow their inhabitants to remain in contact with nature. Utopian, "planned" communities are unable to accomplish this level of comfort, because the design process doesn't allow for this critical evolution. The traditional planning process itself, with its emphasis on physical manipulation of the landscape, creates a variety of environmental and socio-economic problems. Some background in urban planning is helpful, but not essential for the reader. [BR]

Vale, Brenda, and Robert Vale. *Green Architecture: Design for an Energy-Conscious Future.* London: Thames and Hudson, 1991.

This book is fully illustrated with examples of environmentally friendly architecture. The greenhouse effect, patterns of consumption, and other environmental issues are addressed in the context of architecture and sustainable design. Case studies of existing buildings are included. No background in architecture is necessary to read this book. [BR]

Watson, Donald, and Kenneth Labs. *Climatic Design: Energy-Efficient Building Principles and Practices.* New York: McGraw-Hill, 1983.

Part I discusses primarily passive responses to climatic conditions: vernacular architecture, site orientation and planning, and psychometric principles are examined; methods of calculating solar irradiation, solar geometry, and heat flow are given. Part II focuses on the scientific application of the principles discussed in Part I. Part III lists climatic data for U.S. cities. [BR]

Yeang, Ken. *Designing With Nature: The Ecological Basis for Architectural Design.* New York: McGraw-Hill, 1995.

An examination of the conflict between the designer's concept of the environment and the ecologist's view. Assumes and argues for a "finite-resource" approach to design. Defines a series of overlapping, dynamic ecosystems and explores how these ecosystems are affected by building. Develops a framework for ecological design based on the correlation between user requirements and environmental impact. Aimed at undergraduate architecture students and readers experienced in architectural theory and practice. [BR]