

Combined Annotated Bibliography

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

Allenby, Braden R., and Deanna J. Richards, eds. *The Greening of Industrial Ecosystems*. Washington: National Academy Press, 1994.

Examines "the greening of industrial systems through the lens of industrial ecology." Includes a number of short papers that can make good handouts in both theory and practical application of industrial ecology. [KR]

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 discussed 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]

Bone, Eugenia. "The House That Max Built." *Metropolis* (December 1996): 37–42.

A great article describing Pliny Fisk's Advanced Green Builder Demonstration Project in Austin, Texas. This "house" embodies the philosophy of bioregional design researched by Fisk's Center for Maximum Potential Building Systems. The building utilizes many regionally significant recycled-content and byproduct-based building materials as well as an open-ended post-and-beam framework that allows for disassembly and reuse. [KR]

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]

Brunskill, Ronald William. *Illustrated Handbook of Vernacular Architecture*. London: Faber and Faber, 1978.

A survey of Great Britain's vernacular architecture. Domestic, agricultural, and industrial types are catalogued. The socioeconomic influences on building size, use of materials, and methods of construction provide cultural insight to more than 200 years of building. Sustainability issues include the use of materials at hand, ingenuity of design with a limited palette, and the relationship of fashion and need to form. Particularly interesting are bricklaying methods designed to conserve brick and the selective (and sparing) use of imported materials as needed for structural strength. [BR]

C. T. Donovan Associates, Inc. *Recycling Construction and Demolition Waste in Vermont*. Submitted to the Vermont Agency of Natural Resources, Department of Environmental Conservation, Solid Waste Management Division, Waterbury, Vt., December 1990.

This body of research is specific to the Northeast United States. Within that region, it takes a comprehensive look at all aspects of construction and demolition waste from supplies to markets. [KR]

Catacuzino, Sherban. *Re-Architecture: Old Buildings/New Uses*. New York: Abbeville Press, 1989.

Provides 54 case study examples of adaptive reuse from 15 countries, organized by categories of buildings and building types. The introduction, "The Tradition of Changing Use," outlines the history of reuse from ancient times to the present, including examples of planning policies and financial incentives throughout the world. [KR]

Commoner, Barry. *Making Peace with the Planet*. New York: Pantheon Books, 1990.

Chapter 3, "Prevention vs. Control," describes how two decades of changes in production technology have sometimes improved the quality of the environment. It would make a good introductory reading to "A. Waste Prevention" in this compendium's *Recycling and Reuse* module. [KR]

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]

Daly, Herman. *Steady-State Economics*. 2d ed. Washington: Island Press, 1991.

An excellent work that strives to expose the fallacies of "limitless growth." [KR]

Dell'Isola, Alphonse J., and Stephen J. Kirk. *Life Cycle Costing for Design Professionals*. New York: McGraw-Hill, 1981.

Discusses the theory, history, and application of life cycle costing. Includes step-by-step worksheets for analyzing material, maintenance, labor, and other costs incurred in the construction and operation of buildings. The authors break down the total cost of ownership over time (including construction, operation, and interest expenses) and compare a typical owner's concerns to a typical designer's goals. They discuss how to evaluate methods and materials in the design stage for their long-range cost implications. Included are case studies, selected data, economic tables, and sample scope of work to assist architects in determining and justifying appropriate fees for their analyses. Educational supplements with more extensive cost data and exercises are also available.

Diamonstein, Barbaralee. *Buildings Reborn: New Uses, Old Places*. New York: Harper & Row, 1978.

Provides 95 examples of adaptive reuse, with the projects arranged alphabetically by city. Emphasis is placed more on the excitement of reuse than on the economics. The introduction, "Memory's Anchor," is an excellent reading of the "recycling phenomenon" and its relationship to our architectural heritage, philosophical attitudes, politics, and social systems. [KR]

Fisk, Pliny, III. "Integration vs. Conservation: A Renewable Energy Building Block for the 21st Century." *Integration Compendium*. Austin, Tex.: The Center for Maximum Potential Building Systems.

Argues that "integration is fundamentally a more important conservation tool than conservation." Fisk combines natural and industrial systems in architectural design by analyzing metabolic processes and available resources based on input-output data. [KR]

———. "Towards a Theory and Practice of Sustainable Design." Presented at the National Convention of the American Institute of Architects, Boston, 21 June 1992.

Provides a good summary of an approach to sustainable design that is rooted in regional climate and resource conditions. The basics of bioregionalism, metabolic design and the development of a boundary-driven framework for life cycle analysis are discussed. [KR]

Fisk, Pliny, III, and Gail Vittori. "The Texas Recycled Content / Advanced Green Builder Demonstration Home Project." In *Conference Proceedings for National Passive Solar Conference*, Washington, April 1993.

Provides a conceptual overview of the Advanced Green Builder Demonstration Building discussed in D.1.2 Case Study in this compendium's *Recycling and Reuse* module. Written before the building's construction, the paper focuses on the ideas that informed the design process rather than the materials. [KR]

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.

Gershman, Brickner & Bratton, Inc. *Construction, Demolition, and Landclearing Debris Research and Assessment*. Prepared for The Clean Washington Center, a division of the Department of Community, Trade, and Economic Development, Seattle, May 1995.

This body of research is similar to that by C.T. Donovan but is specific to the Northwest region of the U.S. Organized by typical construction and demolition materials; gives in-depth analysis of sources, quantities, markets, improvements, and recommendations. [KR]

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]

Hawken, Paul. *The Ecology of Commerce*. New York: HarperCollins, 1993.

Addresses the basic question, "How can we create profitable, expandable, companies that do not destroy the world around them?" The entire book is exceptional. It is written for a general audience and is packed with examples that support the arguments. If I were to teach a seminar on sustainable design issues, I'd assign this book. [KR]

Holmes, Hannah. "Reuse It!" *Garbage V*, no. 4 (September/October 1993): 38–43.

Introduces five innovators of reuse, including Jim Broadstreet, an architect and builder well known for his creative ways of incorporating salvaged materials in architecture. See his book, *Building with Junk*. [KR]

Ivy, Robert A. "Rural Education." *Architecture* 83 (October 1994): 62–65.

Provides an good case study of the Bryant house in Masons Bend, Alabama, designed and built by students participating in Auburn University's Remote Rural Studio. Written from an educational perspective, the terse text focuses on the design process. [KR]

Knapp, Daniel. "Reuse: The Underestimated Source Reduction Technique." Berkeley, Calif.: Urban Ore.

Knapp, Daniel, and Mary Lou van Deventer. "Integrated Resource Recovery Facilities" and "Establishing A Reuse Business." Berkeley, Calif.: Urban Ore.

All three of these Urban Ore reports provide an excellent overview of the reuse business and materials recovery. Knapp is probably the only Ph.D. that is a general manager of a salvage yard. His perspective on the yard's role within municipal waste management plans is based on both scientific study and first-hand experience. [KR]

Landecker, Heidi. "Recycling Redux." *Architecture* 80 (May 1991): 90–95.

Highlights the recent work of Dan Rockhill & Associates, a design/build firm that reuses salvaged materials in residential projects. The buildings are well-proportioned and crisply detailed, representing a very discriminating and crafted approach to reuse. [KR]

LeBlanc, Sydney. "From Humble Sources, Earthy Elegance Springs." *The New York Times*. (Thursday, April 18, 1996): C1, C6.

Covers the recent work of the Remote Rural Studio at Auburn University, describing the straw bale Bryant House and the smokehouse and chapel that were constructed from salvaged materials. [KR]

Lynch, Kevin. *Wasting Away*. San Francisco: Sierra Club Books, 1990.

Probably the most comprehensive book available on the subject of waste, decline, and decay. Lynch writes from the perspective that these processes are a necessary part of life and growth. He acknowledges all forms of wasting for virtually every profession. Underlying values that frame the discussions are maintaining health and safety of human settlements, achieving efficiency in land and resource use, and the need for adaptability and recycling. [KR]

Malin, Nadav. "What's New in Construction Waste Management." *Environmental Building News* 4, no. 6 (November/December 1995): 1, 12-14.

One of the best publications available on sustainable design and construction; provides an excellent overview of current job-site waste management strategies. [KR]

McDonough, William. "A Boat for Thoreau: Architecture, Ethics, and the Making of Things." *Business Ethics* (May/June 1993): 26-29.

Based on his observations of the Earth Summit in Rio de Janeiro, the author discusses his philosophy of design that acknowledges the scarcity of natural resources and the impact of architecture and construction on the natural environment. [KR]

McHenry, Paul Graham, Jr. *Adobe and Rammed Earth Buildings: Design and Construction*. New York: John Wiley, 1984.

This primer on earth construction includes examples from around the world and selected construction details. The principle of thermal mass as an energy conservation tool is examined. Design issues, applications, and building techniques are included. Directed at homeowners as well as designers. [BR]

Milligan, Charles, and Jim Higgs. *The Wizard's Eye: Visions of American Resourcefulness*. San Francisco: Chronicle Books, 1978.

A sourcebook of projects and ideas successfully carried out at both individual and community levels that demonstrate the "vision that sees gold in the stuff that looks like lead." The introduction by Buckminster Fuller discusses the recirculation of materials; it is excerpted from *Nine Chains to the Moon*, originally published in 1938. [KR]

Mumma, Tracy, et al. *Guide to Resource Efficient Building Elements*. 5th ed. Missoula, Mont.: Center for Resourceful Building Technology, 1995.

This is not just a directory of material-efficient, energy-efficient, and recycled building products. Steve Loken, CRBT's founder and president, has done his homework: he discusses the environmental impacts of each category of building components, the use of indigenous resources, and the managing of natural resources. The CRBT offers a number of other publications including "Job-site Recycling and Waste Reduction," "Strawbales as a Building Element," and a narrative history of the ReCraft'90 project. [KR]

Murtagh, William J. *Keeping Time: The History and Theory of Preservation in America*. New York: Sterling Publishing, 1990.

A good overview of the historic preservation movement as well as solid definitions regarding the confusing language of preservation and reuse. [KR]

Pawley, Martin. *Building for Tomorrow*. San Francisco: Sierra Club Books, 1982.

According to the author, "This book is an attempt to look at the potential of waste. It is a book founded on a heresy, the idea that there is nothing unnatural about massive overproduction, high levels of waste, and marginal survival — all of which are as much characteristics of the natural world as of our own industrial society. The potential of construction for the absorption of waste in the future is everywhere agreed, but the idea that the whole resource base of the industry might change in the pursuit of this aim is still a dream." [KR]

Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, NJ: Prentice Hall, 1969.

An examination of vernacular architecture and the lessons it holds for working with site and climate. Discusses material selection and site orientation; explores the link between behavior within a space and the form of the space. Intended for readers familiar with historic residential style. [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]

Shopsin, William C. *Restoring Old Buildings for Contemporary Uses*. New York: Whitney Library of Design, 1989.

Written as a "sourcebook" for practitioners and students, it is intended to "streamline" the practical matters of preservation, restoration, and adaptive reuse. While landmarks and monuments are included, the focus is on the "creative preservation" of ordinary buildings. Chapter 4 discusses the approval process; Chapter 9 describes the trade-offs, limits, and strategies for integrating mechanical, electrical, plumbing, and lighting systems. [KR]

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]

Van der Ryn, Sim, and Stuart Cowen. *Ecological Design*. Washington: Island Press, 1996.

More than just giving an overview of ecological design, this book investigates design principles that are inherent within any discipline dealing with the preservation and restoration of ecological systems. It is not a detailed technical reference, but a series of well-connected discussions that describe the proliferation of excellent work in ecological design as a whole. An excellent resource guide and annotated bibliography is included. [KR]

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]

Wilson, Forrest. "Building with the Byproducts of Society." *AIA Journal* (July 1979): 40–45.

The author moderated the first International Conference of Garbage Architects, held in May 1979 at Florida A&M. The host was Martin Pawley, then-professor of architecture and director of Florida A&M's Experimental Low-Cost Housing Unit. Other conferees included Witold Rybczynski, then-director of the McGill University School of Architecture's Minimum Cost Housing Group; and Michael Reynolds, architect and builder of Earthships in New Mexico. This article is a discussion of both the background of "secondary use" and the architectural explorations of that time using industrial by-products. [KR]

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]

Young, John E. and Aaron Sachs. *The Next Efficiency Revolution: Creating A Sustainable Materials Economy.* Worldwatch Paper 121. Washington: Worldwatch Institute, September 1994.

A well-researched, thorough examination of the effects of current natural resource consumption on the global environment. It focuses on the unsustainable practices of primary material-extraction industries and offers a "revolutionary" alternative in the form of recycling, reuse, and remanufacturing. [KR]