Product Design: Sustainable/Green Design

Find Books on Sustainable Product Design - Here are some examples of **subject** headings in ADDISON:

Broad Subjects
Design – Environmental aspects
Design, Industrial – Environmental aspects
Green marketing
Green products
Industrial management – Environmental aspects
Manufactures – Environmental aspects
New products – Environmental aspects

Product life cycle
Product life cycle – Environmental aspects
Recycled products

Material Types:
Bamboo
Biodegradable plastics

Recommended Reading

Ashby, Mike and Kara Johnson. *Materials and Design: the art and science of material selection in product design.* Oxford; Boston: Butterworth-Heinemann, 2002. (TS171 .A84 2002 ART/ARCH)

Benyus, Janine M. *Biomimicry: innovation inspired by nature.* New York: Perennial, 2002. (T173.8 B45 2002 Newman)

Billatos, Samir B. and Nadia A. Basaly. *Green Technology and Design for the Environment.* Washington, DC: Taylor & Francis, 1997. (TS171.4 B54 1997 ART/ARCH)

Charter, Martin and Ursula Tischner. *Sustainable Solutions: developing products and services for the future.* Sheffield: Greenleaf, 2001. (TS171.4 S8 2001 ART/ARCH)

Datschefski, Edwin. *The Total Beauty of Sustainable Products.* Crans-Près-Céligny, Switzerland: Rotovision, 2001. (TS149 D27 2001 ART/ARCH)

Cara Brower, Rachel Mallory, and Zachary Ohlman. *Experimental Eco-Design: architecture, fashion, product.* Crans-Près-Céligny ; Hove : RotoVision, 2005.

Fiksel, Joseph, ed. *Design for Environment: creating eco-efficient products and processes.* New York: McGraw-Hill, 1996. (TS171.4 D478 1996 ART/ARCH)

Fuad-Luke, Alastair. *Eco Design: the sourcebook.* San Francisco, CA: Chronicle Books, 2002. (TS171.4 F83 2002 ART/ARCH)
> A catalog of contemporary eco-design, the four chapters of this book include "Objects for Living", "Objects for Working", "Materials", and "Resources". Each product profile includes an image of the product, manufacturer and designer information, the "eco-strategies" used in order to make the product, any design awards given, and the main materials and components used. The introduction provides a concise overview of green design history, beginning with the British Arts and Crafts movement, and the key individuals and publications associated with green design are profiled. Also included in the introduction is a "manifesto for an eco-pluralistic design", comprised of 14 guidelines for designers. The "Resources" chapter includes contact information of designers, manufacturers and suppliers, eco-design strategies, green organizations, a glossary, and bibliography.

Fuller, Buckminster. *Operating Manual for Spaceship Earth.* New York: Dutton, 1978. (T14 .F84 1978 ART/ARCH & Newman)

Harper, Charles A., ed. *Handbook of Materials for Product Design.* New York: McGraw-Hill, 2001. (TA403.4 H365 2001 ART/ARCH)

Hawken, Paul, Amory Lovins, and L. Hunter Lovins. *Natural Capitalism: creating the next industrial revolution.* Boston: Little, Brown and Co., 1999. (HC106.82 H39 1999 Newman)

Henstock, M.E. *Design for Recyclability.* London: Published by the Institute of Metals on behalf of the Materials Forum; Brookfield, Vt., USA: Institute of Metals, North American Publication Center, 1988. (TS214 H46 1988 Newman)

Keoleian, Gregory A. *Product Life Cycle Assessment to Reduce Health Risks and Environmental Impacts.* Park Ridge, N.J.: Noyes, 1994. (TS171.4 K45 1994 Newman)

Mackenzie, Dorothy. *Green Design: design for the environment.* London: L. King, 1997. (TS171.4 M23 1997 Newman)

McDonough, William and Michael Braungart. *Cradle to Cradle: remaking the way we make things.* New York: North Point Press, 2002. (TD794.5 M395 2002 ART/ARCH and Newman)

Nattrass, Brian F. *The Natural Step for Business: wealth, ecology, and the evolutionary corporation.* Gabriola Island, BC: New Society Publishers, 1999. (HD30.255 N388 1999 Newman)

Otto, Kevin N. and Kristen L. Wood. *Product design: techniques in reverse engineering and new product development.* Upper Saddle River, NJ: Prentice Hall, 2001. (TS171 .O88 2001 ART/ARCH)
  Chapter 14, "Design for the Environment" covers Life Cycle Assessment and a variety of specific design approaches to reducing environmental impact of products. Includes charts of major federal EPA environmental laws, OSHA laws, eco-labeling programs and ISO standards.

Papanek, Victor. *Design For the Real World: human ecology and social change.* Chicago, Ill.: Academy Chicago, 1985. (TS171.4 P37 1985 ART/ARCH)

Papanek, Victor. *The Green Imperative: natural design for the real world.* New York: Thames and Hudson, 1995. (TS171.4 P37 1995 ART/ARCH)

Ryan, John C. and Alan Thein Durning. *Stuff: the secret lives of everyday things.* Seattle, Wash.: Northwest Environment Watch, 1997. (HF5413 R93 1997 ART/ARCH)

Tischner, Ursula. *How to do EcoDesign?: a guide for environmentally and economically sound design.* Frankfurt am Main: Verlag form, 2000. (TS171.4 H69 2000 ART/ARCH)

Wann, David. *Deep Design: pathways to a livable future.* Washington., D.C. : Island Press, 1996. (TS171.4 W36 1996 ART/ARCH)

Certification Programs

Greenguard Environmental Institute: Certification for low-emitting interior products including furniture, consumer products and office equipment. Website includes Greenguard certification standards by product type as well as a searchable directory of certified products. http://www.greenguard.org

Greenseal Certification: The Green Seal is awarded to products that have less impact on the environment and work well. To earn the Green Seal a product must meet the Green Seal environmental standard for the category as demonstrated by rigorous evaluation and testing and a plant visit. http://www.greenseal.org/

Energystar: http://www.energystar.gov/

Environmental Choice (Canada): http://www.environmentalchoice.com/

Cradle to Cradle Certification: http://www.mbdc.com/index.htm

Scientific Certification Systems (SCS): http://www.scscertified.com/

Chlorine Free Products Association: http://www.chlorinefreeproducts.org/

Smartwood: http://www.rainforest-alliance.org/programs/forestry/smartwood/

Standards
Greenseal Environmental Standards: http://www.greenseal.org/standards.htm#environmental

Companies Practicing Green

Herman Miller: http://www.hermanmiller.com/ (click on the "Environment" link)

Other links

Business Ecodesign Tools (IDSA Ecodesign Section):
http://www.idsa.org/whatsnew/sections/ecosection/tools/tools_0.htm

Centre for Design at RMIT University – sustainability, research, solutions: Includes a section on sustainable products and product systems http://www.cfd.rmit.edu.au/

EPA – Design for the Environment (DfE): http://www.epa.gov/dfe/

Greenbiz.com: http://www.greenbiz.com/

GreenBlue (Cradle to Cradle design): http://www.greenblue.org/index.html

IDSA Ecodesign Section: http://www.idsa.org/whatsnew/sections/ecosection/index.html

Okala Curriculum Guide: "Okala is an introductory curriculum on ecological design for product design students. Okala was co-developed by Philip White, Louise St. Pierre and Steve Belletire. Eastman Chemical, Whirlpool and the IDSA/EPA Partnership supported its development." http://www.idsa.org/whatsnew/sections/ecosection/okala.html

Sustainable Packaging Coalition: http://www.sustainablepackaging.org/

UNEP-SETAC Life Cycle Initiative an introduction to Life Cycle Assessment…?
http://www.uneptie.org/pc/sustain/lcinitiative/

Find Articles
on Sustainable Product Design Here is a *selected* list of library-provided databases that contain citations and possibly full-text articles related to sustainable product design (Available to VATech community only). To access these databases from the University Library's homepage (http://www.lib.vt.edu) click on the "articles/databases" link, or go directly to http://www.lib.vt.edu/dsp/index.php?action=AllDatabases for an A-Z list of databases/links to databases.

Interlibrary Loan If you want to obtain an article or conference proceeding that the University Libraries do not own, try requesting the item from Interlibrary Loan/ILLIAD http://www.ill.vt.edu/ You can request many other types of items not owned by the libraries, including books, videos, and thesis/dissertations.

- **ABI/Inform Global (online & full-text):** Covers business and management topics. Includes citations to articles in over 1000 journals in business, management, finance, and economics. Abstracts coverage is from 1971 to the present. Full-text coverage is from 1991 to the present. Full text available for 500+ journals.

  Use the "Topic Finder" to track articles on product design, package design, design engineering, product life cycle, product acceptance, and MUCH more.

- **Art Full Text:** Citations back to 1984, with full text as far back as 1997. Subjects include antiques, archaeology, architecture & architectural history, art history, contemporary art, costume, crafts, decorative arts, folk art, graphic arts, **industrial design**, interior design, landscape architecture, motion pictures, museology, non-western art, painting, photography, pottery, sculpture, television, textiles, video art, etc.

- **Compendex:** The *Comprehensive Engineering Index* online. Coverage is from 1970 to the present.

- **CSA Illumina – Arts & Humanities Database Search:** CSA Illumina allows searching across the following databases – *Art Bibliographies Modern, Avery Index to Architectural Periodicals, Design and Applied Arts Index,* and *Bibliography of the History of Art.* These databases may also be searched individually.

  o **ARTbibliographies Modern (ABM)** provides full abstracts of journal articles, books, essays, exhibition catalogs, PhD dissertations, and exhibition reviews on all forms of modern and contemporary art, with more than 13,000 new entries being added each year. Entries date back as far as the late 1960s. ABM is the premier source of information on modern and contemporary arts dating from the late 19th century onwards,

including photography since its invention. It includes abstracts of English and foreign-language material on famous and lesser-known artists, movements, and trends.

A subject words sampling for ABM: *ecology and art · sustainability · environment and art*

- o The **Avery Index to Architectural Periodicals** offers a comprehensive listing of journal articles on architecture and design, including bibliographic descriptions on subjects such as the history and practice of architecture, landscape architecture, city planning, historic preservation, and interior design and decoration. It contains more than 440,000 thousand entries surveying over seven hundred American and international journals. These include not only scholarly and popular periodical literature, but also publications of professional associations, American state and regional periodicals, and the major serials on architecture and design of Europe, Asia, Latin America, and Australia.

- o The **Bibliography of the History of Art (BHA)** covers the current international literature on the history of art. BHA surveys the visual arts and material culture from late antiquity to the present. Included are both the fine arts (architecture, sculpture, painting, drawing and prints) and decorative and applied arts (popular art, folk art). BHA indexes and abstracts 1,400 journals, as well as books, conference proceedings, essays, exhibition catalogues, selected art dealers' catalogues, doctoral dissertations and microform publications. Abstracts are in either French or English and the thesaurus for data from 1990 is in both languages. BHA incorporates the complete contents of International Repertory of the Literature of Art (RILA) and Repertoire d'Art et d'Archeologie (RAA).

- o The **Design and Applied Arts Index (DAAI)** contains over 130,000 annotated references from more than 500 design and craft journals and newspapers published from 1973 onwards, and data on over 50,000 designers, craftspeople, studios, workshops, firms etc., making it the largest index of its kind in the world. Research articles are covered, along with topical news items, conference and seminar reports, and book, video and exhibition reviews.

A subject words sampling for DAAI: *sustainability · design and the environment · life cycle analysis · life cycle assessment · design for sustainability · industrial design and the environment · design for disassembly · furniture: environmental considerations · packaging: environmental considerations*

- ▪ **Factiva:** Factiva (formerly known as Dow Jones Interactive) provides full-text access to 8000 magazines, trade journals, newspapers and newswires as well as company and industry reports and web sites. Factiva is optimized for use with Internet Explorer 5.01 or higher on Windows operating systems, and may not function properly, or at all, with Netscape browsers or Macintosh operating systems.

- ▪ **Grove Dictionary of Art Online (full-text):** More of an online encyclopedia than an index, The Dictionary of Art contains 45,000+ full-text signed articles on a vast range of visual arts, architecture and design topics from prehistory through the present.

- ▪ **Infotrac Onefile:** The interdisciplinary nature of industrial design research may require you to search indexes outside the fields of art and architecture. Infotrac is an index that covers a wide variety of disciplines and includes some full-text to five major newspapers, 89 newswires, general interest periodicals and refereed academic journals.

- ▪ **LexisNexis Academic:** Access to over 1 billion full-text documents covering a wide variety of subjects. Search for documents in these broad areas: News, Business, Legal Research, Medical, and Reference.

- ▪ **LexisNexis Statistical:** Indexing and abstracts to statistical reports from U.S. federal and state governments, or from privately published, international, or intergovernmental sources.

Journals *For a full list of ID journals, see the Industrial Design library guide.*

- • **The Journal of Industrial Ecology** (available through the e-journals database)

- • **The Journal of Sustainable Product Design** (available through the e-journals database)

Films

Ecological design [videorecording]: inventing the future / director, Brian Danitz ; produced by Brian Danitz and Tzelovanikov ; writer, Phil Cousineau. [Brooklyn, NY] : Ecological Design Project, 1994. (NA2542.35 E26 1994 ART/ARCH and Video 4573 Newman)