



How to be an Ecological Architect (in 10 easy steps)

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PREFACE

Subject: How to be an Ecological Architect (in 10 easy steps)

Dear Friends of the Environment:

This culture must live in accord with itself and its environment. There are few who can argue against the need to live in harmony with the resources of the planet. The materials and supplies we draw from the Earth will ultimately return to it again.

Understanding the Earth as a closed loop system, we must be conscious of our actions and practice diligence with our buildings. More than the careful selection of earth-friendly materials, ecological design includes a journey for both client and designer.

As we realize that more and more designers wish to be environmental, we also acknowledge that they might feel overwhelmed when faced with the vast resources of this field. Most of the current materials being produced assume a certain level of familiarity with ecological design.

For the aspiring ecological designer, a clear "starting point" is difficult to find. The purpose of this text is to act as a crash course in what you could do to begin your lifelong education to being an "Ecological Architect." As this list is ever evolving, we ask that you continue to update your copy regularly.

Thank you for your good beginning and your care about our planet.

Yours Etc. ,

ERIC COREY FREED
Graphics Editor, ecoTECTURE.com

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the same consciousness that | journal of ecological design
created it." | mailto:ecotecture@rkeytex.com
Albert Einstein | http://www.ecotecture.com
 | Direct: 415 - 474 - 7777
Eschew Obfuscation | Fax: 208 - 247 - 3002



INTRODUCTION

So, you want to be an ecological designer? While there are many concepts and ideas to understand, you have taken the first, and most important step: you have sought a place to begin. Please do not feel discouraged by the amount of information. Everyone must begin at a beginning, and by just beginning, you have already made a difference.

1: BUY (& USE) THESE REFERENCE BOOKS:

ADPSR: Architectural Resource Guide and Database

Edited by David Kibbey

<http://www.adpsr-norcal.org/adpsr/menu/ResourceGuide/resourceguide.html>

The HOK Guidebook to Sustainable Design

by Sandra F. Mendler, William Odell

Price: \$70.00

<http://www.amazon.com/exec/obidos/ASIN/0471379069/rkeytexDESIGN>

The Ecological Design Handbook

by Fred Stitt (Editor)

Price: \$79.95

<http://www.amazon.com/exec/obidos/ASIN/0070614997/rkeytexDESIGN>

Green Building Resource Guide

by John Hermansson

Price: \$30.36

<http://www.amazon.com/exec/obidos/ASIN/1561582190/rkeytexDESIGN>

Prescriptions for a Healthy House : A Practical Guide for Architects, Builders and Homeowners

by Paula Baker

Price: \$23.96

<http://www.amazon.com/exec/obidos/ASIN/0970210701/rkeytexDESIGN>

Alternative Construction: Contemporary Natural Building Methods

by Lynne Elizabeth (Editor), Cassandra Adams

Price: \$70.00

<http://www.amazon.com/exec/obidos/ASIN/0471249513/rkeytexDESIGN>

The Alternative Building Sourcebook : Traditional, Natural and Sustainable Building Products and Services

by Steve K. Chappell (Editor), James J. Marks

Price: \$19.95

<http://www.amazon.com/exec/obidos/ASIN/1889269018/rkeytexDESIGN>



2: BUY (& READ) THESE THEORY BOOKS:

R. Buckminster Fuller: Your Private Sky, The Art of Design Science
by Joachim Krausse (Editor)
Price: \$52.00
<http://www.amazon.com/exec/obidos/ASIN/3907044886/rkeytexdesign>

Green Architecture
James Wines
Price: \$19.99
<http://www.amazon.com/exec/obidos/ASIN/3822863033/rkeytexdesign>

A Primer on Sustainable Building
by Dianna Lopez Barnett, William D. Browning
Price: \$16.95
<http://www.amazon.com/exec/obidos/ASIN/1881071057/rkeytexdesign>

From Eco-Cities to Living Machines : Principles of Ecological Design
by Nancy Jack Todd (Contributor)
Price: \$15.16
<http://www.amazon.com/exec/obidos/ASIN/1556431503/rkeytexDESIGN>

Ecological Design
by Sim Van Der Ryn
Price: \$17.56
<http://www.amazon.com/exec/obidos/ASIN/1559633891/rkeytexDESIGN>

Designing With Nature : The Ecological Basis for Architectural Design
by Ken Yeang, Kenneth Yeang
Price: \$27.96
<http://www.amazon.com/exec/obidos/ASIN/0070723176/rkeytexDESIGN>

Design for Human Ecosystems : Landscape, Land Use, and Natural Resources
by John Tillman Lyle, Joan Woodward
Price: \$30.00
<http://www.amazon.com/exec/obidos/ASIN/155963720X/rkeytexDESIGN>

Natural Capitalism : Creating the Next Industrial Revolution
by Paul Hawken
Price: \$21.56
<http://www.amazon.com/exec/obidos/ASIN/0316353167/rkeytexDESIGN>

For additional titles, contact me at: info@organicarchitect.com



3: SUBSCRIBE TO THESE JOURNALS:

ecoTECTURE: The Online Journal of Ecological Design

<http://www.ecotecture.com>

The goal of ecoTECTURE is to empower our readers to solve environmental problems. We accomplish this by providing timely, mission-critical information about the rapidly developing field of ecological design.

Email: info@ecotecture.com

GreenClips

Twice a month GreenClips is distributed electronically to over 10,000 readers interested in sustainable building design. But we can't do it without the financial support of our sponsors and members. If you find GreenClips valuable, please consider becoming a sponsor or voluntary member.

Email: chrishammer@greenclips.com or call 415.928.7941 for details,

The Atlantic Monthly

<http://www.theatlantic.com/politics/enviro/environ.htm>

Thought-provoking, in-depth articles on various topics, environmental & otherwise.

E/The Environmental Magazine

<http://www.emagazine.com/>

E/The Environmental Magazine was conceived to create an independent publication on environmental issues-- a magazine that could educate, inspire and empower Americans to make a difference for the environment.

Environmental News Network (ENN)

<http://www.enn.com>

ENN provides an easy-to-read and well-designed daily e-mail news digest including headlines and summaries of important environmental news worldwide. Other features include interactive polls, book reviews, live interviews and more.



4: VISIT THESE WEBSITES:

<http://www.e-architect.com/pia/cote/>

American Institute of Architects (AIA), Committee on the Environment (COTE)
Promotes sustainable building designs and construction techniques. Site includes building case studies, technical papers, and other resources.

<http://www.ucsusa.org/guides/greentips.html>

GreenTips: environmental ideas in action.

http://www.earthshare.org/news&resources/environmental_resource_guide.html

Environmental Resource Guide by Earth Share. Earth Share's member agencies devote their efforts to a wide variety of issues, from rainforests to oceans, and energy to animals.

<http://www.ecomall.com>

Earth's Largest Environmental Shopping Center: Your First Stop to Shop for Green Products That are Good for People and the Environment.

<http://www.spaceshipEarth.org>

spaceshipEARTH (sE) is a Web-based initiative designed to catalyze awareness and action towards realizing humanity's options for success. It is run by the Buckminster Fuller Institute.

<http://www.greenguide.com/>

The Green Building Resource Guide is a database of over 600 green building materials and products selected specifically for their usefulness to the design and building professions. This site is a companion to the book of the same name listed above.

<http://www.greenspec.com/>

GreenSpec. Information on 83 environmentally preferable building products. This is a small sample of what is included in the printed version which covers more than 1,200 products.

<http://www.harrisdirectory.com>

Harris Directory

National on-line database of green building materials (available for purchase).

<http://envirolink.netforchange.com/>

EnviroLink Network is a comprehensive resource for individuals, organizations and businesses working for social and environmental change.

<http://www.greenmarketplace.com/>

GreenMarketplace is the leading guilt-free shopping e-retailer providing environmental goods, services and information on the Internet. Due to their highest product standards and commitment to ethical purchasing, they attract and offer the most earth-friendly and socially-conscious array of products available on the web.

<http://www.epa.gov/epahome/topics.html>

The mission of the U.S. Environmental Protection Agency is to protect human health and to safeguard the natural environment--air, water, and land--upon which life depends.

<http://www.usgbc.org/>

U.S. Green Building Council

A non-profit promoting green building policies, design practices, technologies, and building rating systems.



5: JOIN THESE ORGANIZATIONS:

ADPSR (Architects/ Designers/ Planners for Social Responsibility):

adpsr@aol.com -OR- <http://www.adpsr-norcal.org>

ADPSR sponsors a lecture series in San Francisco and an email news service. Get involved with both.

Friends of Kebyar:

<http://www.kebyar.com>

Friends of Kebyar is an international network of people interested in original and innovative design and Architecture, especially organic architecture that is not "mainstream" - Architecture that defies the tyranny of imported styles. We advocate creative and unusual solutions to the challenges facing today's designers.

<http://www.greenpeace.org/>

Greenpeace is an independent, campaigning organisation which uses non-violent, creative confrontation to expose global environmental problems, and to force the solutions which are essential to a green and peaceful future.

<http://www.ran.org/>

Rainforest Action Network works to protect the Earth's rainforests and support the rights of their inhabitants through education, grassroots organizing, and non-violent direct action.

6: GET INVOLVED:

<http://www.bioneers.org>

The Bioneers seek to cultivate both a material and a spiritual basis for their ongoing conservation through practical and visionary solutions. They hold conferences and educate the public about the environment.

<http://www.lgc.org/>

A nonprofit, membership organization, the Local Government Commission (LGC) is composed of forward-thinking elected officials, city and county staff, and other interested individuals. Commission members are committed to developing and implementing local solutions to problems of state and national significance. The LGC provides a forum to help local governments create and sustain healthy environments and economies.

<http://www.earthshare.org/>

Earth Share, a federation of America's leading non-profit environmental and conservation charities, promotes environmental education and charitable giving in employee workplace campaigns. For more tips or to find out how your workplace can help the earth, email them at info@earthshare.org, or call (800) 875-3863.



7: ATTEND LECTURES AND EVENTS:

<http://www.pge.com/pec/>

The Pacific Energy Center is a resource of PG&E to educate architects and designers about conserving energy. During the past nine years, they have offered over 500 seminars, lectures, and workshops. Their lecture series is an incredible resource.

<http://www.craigslist.org>

craigslist is a community where people can: give each other a break, get the word out when it comes to everyday, real-world stuff restore the human voice to the Internet, in a humane, non-corporate, environment. Check it regularly for all types of local events for dozens of cities.

<http://www.socialdomain.com/>

SocialDomain.com is an events calendar.

MORE LINKS:

Political & Communities

<http://www.greenpeace.org/others/political1.shtml>

Alternative Commercial:

<http://www.greenpeace.org/others/alternat.shtml>

Anti-Nuclear:

<http://www.greenpeace.org/others/antinuke.shtml>

Information & Education:

<http://www.greenpeace.org/others/edu&info.shtml>

Other Institutes:

<http://www.greenpeace.org/others/othrnngo1.shtml>

Public Media:

<http://www.greenpeace.org/others/publiccdrom1.shtml>



8: THINGS YOU CAN DO AT HOME RIGHT NOW:

1. Use Seventh Generation products in your home & office. Seventh Generation's mission is to provide affordable, high quality, environmental products that get the job done and help keep you, your home and our planet healthy.

<http://www.seventhgen.com>

Marketer of environmentally friendly non-toxic household cleaners, laundry & dish products; 100% recycled, non-chlorine bleached bathroom & facial tissues, paper towels & napkins; plus recycled plastic trash bags & full-spectrum light bulbs.

2. Change your long distance carrier to Working Assets Long Distance (WALD). Working Assets makes it easy for busy people to support causes they care about. Through their sales, customers can generate donations for progressive nonprofit groups just by doing what they do every day. Best of all, it does not cost a penny more. <http://www.wald.com>

3. Use a canvas bag when you shop at the supermarket. Every paper bag you don't take saves trees and 3 hours of equivalent electricity. Every plastic bag you don't use stops the eventual pollution of your ground water. Plastic bags are not biodegradable, even if they say they are. They do not decompose fully. Also the ink is made up of cadmium, and is highly toxic when it is released. Supermarkets use paper that has never been recycled before and they always say "recyclable" not "recycled".

4. Wear a sweater. Instead of heating your entire house. Wear warmer clothing while you are lounging around the house.

5. Use compact fluorescent lightbulbs to save 40% on your energy and give off 20% more light.

6. Drive efficiently. Driving efficiently can save ten percent or more on fuel costs alone even if you don't reduce the number of miles you drive. If you drive less, you save even more. And what's more, driving efficiently is safer driving. Keep your car serviced.

7. Recycle / Reuse. Use both sides of the paper in your office and recycle the paper in bins when finished. Refill and reuse your ink jet and toner cartridges. Buy products that are recycled or have recycled contents. Reuse whatever you can, including aluminum pie tins, glassware, plastic cutlery and aluminum foil. Precycle: buy products with recyclable packaging.

Recycle everything, including:

- o toner cartridges
- o aluminum cans
- o newspapers
- o telephone books
- o 2 liter plastic soda bottles
- o milk jugs
- o steel containers
- o organic material/cuttings
- o glass

8. Use natural inks in your printers and fax machines. <http://www.pneac.org/listserv/printech/e-general.html>

9. Stop Junk Mail. The junk mail Americans receive in just one day is not only a nuisance, but could produce enough energy to heat a quarter of a million homes! If you saved up all the unwanted junk mail for one year, you would have the equivalent to one and a half trees, which would add up to 100 million trees every year in just the United States.

To help stop junk mail, write to:
Mail Preference Service



organicarchitect

Direct Marketing Association
11 West 42nd Street
PO Box 3861
New York, NY 10163-3861

Recycle the rest of the junk mail you receive.

10. Change your Kitchen Habits. Use reusable containers for food storage instead of wrapping food in foil or plastic wrap. You can also use unbleached coffee filters, which does not produce the deadly toxin dioxin in its manufacturing. Use rags to wipe up spills instead of paper towels, and use biodegradable wax paper and bags.
11. Check your hot water heater. Hot water heaters account for about 20% of all the energy used in your home. Turn your water heater down to 130 degrees to save energy. Also, insulate your heater with a pre-fab 'blanket,' but be careful not to block off air vents on gas heaters. This can save you 7-8% of your energy usage. You can also drain 2 quarts (or 2 liters) of water from your hot water heater every 2 months from the valve at the bottom of the tank. This prevents accumulation of sediment and prolongs the life of your water heater.
12. Recharge Your Batteries. Batteries contain heavy metals, such as mercury and cadmium, which have become a major source of contamination in dump sites. They either break apart and are released into the soil or are incinerated and the deadly heavy metals are released into the air. Did you know that the average annual use of mercury in batteries is over what the government limits in dump sites by four times. Here is what you can do to help: use batteries which are rechargeable. Recycle alkaline batteries if you can. They can extract the mercury and cadmium for reuse.
13. Do not buy products from endangered animals. Over 6.5 million dolphins have been killed by tuna fisherman. Ivory purchases have made the elephant nearly extinct.
14. Never release helium balloons into the air. Fallen balloons cause the death for countless numbers of sea turtles and whales. Metallic balloons cause power outages when they get caught in power lines.
15. Use cloth diapers. Americans trash over 18 billion disposable diapers a year. Diapers take up 1% of America's landfills and they take 500 years to decompose. Cotton diapers can be reused 100 times and decompose in 1 to 6 months. These disposable diapers consume 1,265,000 metric tons of wood pulp and 75,000 metric tons of plastic. After using disposable diapers we are supposed to wash them out, only 5% of us do. Millions of tons of dirty, possibly disease-infected diapers wind up in our "sanitary" landfills. You can find cloth diapers in the local Yellow Pages.
16. Do not dump oil, grease, antifreeze, pesticides, fertilizers, paints, cleaners, and other toxic household products down the storm drain. These drains, found in the gutters on the sidewalk, are not treated by the sewage treatment plant--they go straight into our rivers, lakes, and oceans.
17. Buy in bulk. This saves on packaging and reduces the amount of industrial waste generated to make the packaging.
18. Shop for durable, long-lasting products. For example, use a metal razor instead of disposables, or a metal roasting pan instead of a disposable one.
19. Compost. Leave the grass clippings on the lawn, and start a backyard composting bin for yard clippings.
20. Reuse. Instead of throwing away furniture, appliances and clothing, look for a place to donate them.



9: THINGS YOU CAN DO IN YOUR ARCHITECTURAL PROJECTS RIGHT NOW:

1. Specify a Low-Flow Faucet Aerator -- By attaching one of these devices, you can reduce water flow by 50%, and the water flow will seem stronger! If only 10,000 4-person households would install low-flow aerators, 33 million gallons of water would be saved yearly.
2. Specify non-toxic and healthy paints -- Use latex paint instead of toxic oil-based paint. AFM Safecoat (<http://www.afmsafecoat.com/>) produces a line of healthy paints.
3. Use Low Flush Toilets -- In your household, 40% of the pure water is flushed down the toilet. You can use small plastic bottles, filled with water or stones to displace the amount of water in toilets. This will cause it to be a "low-flush toilet," or you can use a displacement bag in your tank. Both save you 1-2 gallons per flush. You can also install toilet dams which causes part of the water in your tank not to run out with the flush. If you can, 2 dams can be installed. These alterations can save you one gallon per toilet dam. With a plastic bottle you will be saving 8-16 gallons of water every day (if you flush 8 times a day), 56-112 gallons per week, and 2,900-5,800 per year. If we had 100,000 families do this simple thing, we would save 290 million to 580 million gallons a year!
4. Be aware of your showers -- If a four person family showers each day for 5-minutes, in one week they would use 700 gallons of water. This is enough water for a person to live off of for three years. You can buy either an aerated, or a non-aerated shower head which cuts your water output by 50%. The aerated is as if not more powerful than a regular shower head, it mixes air with the water. The non-aerated shower head pulses, but you get a good sprat and it can be called a "massage showerhead". With a family of four taking 5-minute showers, with a low-flow showerhead you can save at least 14,000 gallons of water a year. So if 100,000 families installed low-flow shower heads we would save 1.4 billion gallons.
5. Use Fluorescent Lighting -- Lighting results in 1/5 of the electricity consumed by the U.S. By using electricity we are contributing to global problems by making power plants and industrial business generate more polluting emissions. Using a fluorescent light bulb, which doesn't flicker or hum, is much more efficient than an incandescent bulb. They last longer and use 1/4 the amount of energy. A normal incandescent bulb lasts 750 hours but a fluorescent bulb will give off the same amount of light yet last for 7,500 to 10,000 hours with 1/3 of the wattage. Also within a fluorescent lightbulb's life time it will stop 1,000 pounds of carbon dioxide from going into the atmosphere, if it is substituted for the traditional bulb. Even though fluorescent lights are initially more expensive (around \$15) it will take 13 traditional bulbs to last for the same amount of time (figure the savings on that!). Saving you even more money a fluorescent light will cost you \$10 for electricity during its life time, whereas during the same period incandescents use up \$40. However you might want to use fluorescent lights more where you are going to be using it for long periods of time. They don't fit in some of the small lamps or covered fixtures. Here is an interesting fact. By installing a single fluorescent light bulb in 100 million households in America, you would save the energy equivalent of all of the energy that is generated by a nuclear power plant running full time, over the course of one year.
6. Use CFC free products -- Chloro Fluoro Carbons destroy the ozone layer, which protects us from harmful UV rays.
7. Instead of specifying wood floors made from pine, use bamboo, or reclaimed lumber. Pine wood comes from the clear-cutting of our forests. Bamboo is sustainably harvested by cutting the plant and not killing anything. Bamboo is also 10 times stronger than pine, and will last longer.
8. Use recycled insulation -- The Department of Health and Human Services has placed fiberglass insulation on its list of suspected carcinogens. Cellulose insulation is one attractive green alternative to the fiberglass batt insulation that typically is installed in most addition and remodeling projects today. All-Weather Insulation (800-467-0211) is one of many producers of cellulose insulation.
9. Careful demolition -- Change your notes on your demolition plans to salvage existing items for possible reuse. Windows, doors, skylights and fixtures can all be easily salvaged. Anything not reused can be sold to Whole House Building Supply (650-856-0634).



THOUGHTS:

"Continuously nature shows him the science of her remarkable economy of structure in mineral and vegetable constructions to go with the unspoiled character everywhere apparent in her forms."

- Frank Lloyd Wright

10: SUSTAINABILITY 101:

Sustainability means long-term cultural, ecologic and economic health and vitality.

It has also been defined as meeting our needs today while ensuring that future generation can continue to meet their own needs. Sustainability involves preserving the natural environment upon which people and economies depend.

For human activities to be sustainable over time, they should:

- Meet people's economic and social needs
- Use renewable resources, such as timber and fish, at a rate that can be maintained over time
- Gradually reduce reliance on nonrenewable natural resources, such as coal and oil
- Reduce reliance on and limit the release of toxic substances that do not readily break down in nature
- Use all resources as efficiently and fairly as possible so that present and future generations can meet their needs
- Use land in ways that meet diverse needs, conserve financial and natural resources, and preserve its ability to meet future needs
- Reflect the interdependence of social, economic and environmental conditions
- Preserve the integrity of ecological processes and biological diversity

For more information about the definition of sustainability, the following web sites are recommended:

Center of Excellence for Sustainable Development:

<http://www.sustainable.doe.gov/overview/ovintro.shtml>

Sustainable Measures:

<http://www.sustainablemeasures.com/Sustainability/index.html>

THE FUTURE:

The future holds great promise and great potential for disaster. In order for you to create change, you must begin with yourself. By reading and following this document, you have already taken steps to ensure our future.

You now have a responsibility for continue this lifelong education to being an "Ecological Architect."

Thank you for your good beginning and your care about our planet.

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