Green Design: A Guide to environmentally responsible graphic design

Jitinan Paisansathan

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ROCHESTER INSTITUTE OF TECHNOLOGY

A Thesis Submitted to the Faculty of
The College of Fine and Applied Arts
In Candidacy for the Degree of
Master of Fine Arts

Green Design; A Guide to Environmentally
Responsible Graphic Design

By

Jitinan Paisansathan

5/19/92
I, __________________________, hereby grant permission to the Wallace Library of RIT, to reproduce my thesis in whole or in part. Any reproduction will not be for commercial use or profit.
I dedicate this project to my Mom and Dad.

I have endeavored to do this with their love and support.
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Thanks to my thesis committee:

R. Roger Remington who conveyed great graphic design knowledge to me and guided me to success.

Heinz Klinkon who supported me to achieve my goal

Nancy Ciolek whose generosity and kindness kept me going even when I was frustrated.

Thanks also to:

Carla Tedeschi for her tolerant disposition

Michelle Stacy for her patience with improving my English

Keith for his generosity

and my classmates, especially Connie, and my roommates for our wonderful friendship and fellowship.
Origin Of The Project

I began to establish a few thoughts about my thesis last spring. I was interested in working on social issues but did not have a definite plan of what I really wanted to accomplish. After discussing it with my Professor, R Roger Remington, I decided to think it over again. He suggested to me that I write down some ideas when I return home. During my vacation in my home country of Thailand, a few ideas came to me. I decided to do something positive for environment and wanted to be a part of designers concerned for environmental communication and preservation.

The Reasons Of Choosing This Project

In my opinion, the environment surrounds and belongs to everyone. It affects human living. At this point, I started to look within myself and finally decided to work on an environmental guide for graphic designers to gain better understanding about environmental responsibilities.

Designating The Title Of The Project

After deciding on the topic, I chose my thesis title to be "Green Design" because green symbolized the visual make-up of environment. Green is used to communicate ecological creativity within designers to experiment with environmental modes of design. With helpful suggested subtitle revisions of assistant professor, Nancy Ciolek, for making the definition of the title clearer, the subtitle of my thesis became "A Guide To Environmentally Responsible Graphic Design".
Writing The Thesis Proposal

I chose a broad topic for my thesis proposal (see Appendix 1) so that I could approach applications in several ways. After the proposal was approved by the College of Fine and Applied Art and selected committee members, I wrote my thesis planning document (see Appendix 2) and timelines (see Appendix 3) in the Fall quarter of 1991. This included revisions from my Professor, R. Roger Remington.

Work Procedures

In doing this project, I integrated everything I had learned in graphic design including applying my computer skills. Minoring in computer graphic design helped me to expand my creative ideas and to utilize the software in representing design applications. During the beginning stages of building this project, I had gathered a large quantity of research on environmental issues which involved graphic designers. I attended weekly meetings with Professor R. Roger Remington and thesis committee members to receive valuable feedback and to report my weekly progress. This was a method for developing a hierarchical flow of organizing ideas. During the design process, I created mind mappings (see Appendix 4) and the representational matrices (see Appendix 6) for brainstorming ideas and schematic concepts. I organized flowcharts for designing the applications. The interactive media application was developed and reviewed by all committee members. When it was completed, I began to design the manual for using the application.
Research

I focused on environmental issues which related to graphic design. I began with the *Eco Newsletter*, which was dedicated to the synthesis of the design practice and ecological objectives contributed by the American Institute of Graphic Arts (AIGA). I looked through the issues of AIGA from 1989 to 1991. These issues gave me tremendous thoughts and information including other important resources, *AIGA Journals*, *NAPEC Quarterly*, Microfilms and books in the Wallace Library of RIT.

Timelines

The timelines (see Appendix 3) were created on "Mac Project" program version 1 distributed by Claris Corporation. I ran the program on the Apple Macintosh computer. The timelines indicated the dates and work procedures for completion of the project.

Goal and Objectives

This project will be an environmental reference for graphic designers and the objectives are as follow:

- to encourage graphic designers to make conscientious decisions about environmental preservation
- to give information about the true nature of environmental concerns generated by graphic designers
- to represent the environmental benefits supported by the designer's environmental awareness
- to stimulate environmental responsibilities of the designers to consider the end state of their project, garbage or reusable resource
- to give a basic understanding of recycled paper and its characteristics

**Consideration Of Media**

To create this project, I first decided to use mixed mediums for the printed applications, posters and brochures. I changed from a printed application to an interactive media application in order to reduce paper waste. This program would run on an Apple Macintosh computer. The application could be installed on a floppy disk and the disk could be reused for other uses. It would last longer. The applications of printed pieces had limitations of material expiration and generated more waste.

**How the Application Would Function**

The application would be utilized by environmentally responsible graphic designers in this field. The project contents were categorized into three sections: recycled paper, ink considerations and designer guidelines. This application allowed user interaction by activating navigators provided in the system through buttons and charts. The navigators allowed the user to interact with the application. These were important parts of the interactive media application. The navigators acted as the liaison between the user and the project. By using navigators, the system could be utilized from one topic to another in the same sequence or could skip to any topic in the project. Simultaneously, the manual could be utilized with the application and also provide a better understanding of the project contents.
Software Used

Supercard version 1.5, distributed by Silicon Beach Software, was used to create the application. The application could run independently without having the Supercard software installed into the hard drive. However, there were some font and system requirements. The project was designed with the postscript fonts, Helvetica Condensed Light and Helvetica Condensed Bold. The user should install all sizes of these fonts into his or her system folder for better resolution. If the fonts were not installed, the user could run the project but the font resolution might be distorted. Also the project had to be run on an Apple Macintosh with at least 1 MB of memory (1024K) that used system 6.02 or a later version.

Schematic Project Development

As guides for building the applications, three kinds of flowcharts were produced to identify the relationship between the content and the applications. These flowcharts identified the map of the interactive application (see Appendix 10) and the navigator chart for operation throughout the application. The flowchart for the project operation (see Appendix 21) was used as a navigator screen within the application itself. After examining the datasheets for the application, I organized the project contents and established rules for the screen interfaces by building a chart (see Appendix 11) for the interfaces. This specified all elements such as buttons, effects, and graphic elements.
Feedback From Thesis Meetings

In addition to the regular thesis committee meetings, additional meetings with Professor R Roger Remington were held every week to develop the work procedure and to report the project progress. I also had weekly individual meetings with assistant advisor, Nancy Ciolek. Her suggestions helped me resolve various computer problems. During the first weekly meetings, I had worked on verbal and visual interpretive matrices (see Appendix 5, Appendix 6). Professor R Roger Remington suggested that I should recategorize representations of my keywords. At the first thesis meeting, the thesis planning documents and the first draft of the flow chart were distributed to all committee members. The first animated sketch on the computer screen was also represented (see Appendix 17). We discussed making the clear connection between environmental issues and designers. The comments and suggestions from them helped me to reorganize the relationship of the project contents. I developed flowcharts and sketched versions of animation as well as the sketches of the manual. After discussion with professor R Roger Remington, he recommended that the interactive media application should become top the priority and the manual should follow the design system of the interactive media application. As a result of the committee members’ comments, my project advanced into the design process, which is described in the next section. At the second meeting, the new flowchart draft #3 (see Appendix 9), the map of the project (see Appendix 10), the chart of interfaces of main card (see Appendix 11).
and sketches of the manual cover (see Appendix 24) were submitted in this meeting. I also represented the sketched version (see Appendix 20, Appendix 21). All committee members suggested that I should develop interfaces such as line systems, positions of buttons and typography. I began designing the manual after completing the interactive application.
Process

The beginning Stages And the Involved Theory

I began my process with mind mapping (see Appendix 11) to brainstorm ideas and to find keywords for representing my project. Eventually, the six chosen keywords were waste, process, environment, paper, graphic design and ink. The keywords were analyzed into three sub-categories: iconic, indexic and symbolic representation. These keywords were then formatted into the representational matrices of Semiotics theory. I used the matrices to visualize the concepts and to translate my ideas into design appropriate to the function desired. Mihai Nadin had mentioned in his book, Advance In Human-Computer Interaction that Semiotics examines everything that is interpreted by human beings as a sign; and defines the circumstances under which interpreting something as a sign allows for its better understanding, or for an improved use of it. Semiotics is a theory of interpretation in which I applied these principles to communicate and utilize in my project. Examples include color selections and icons.

Creating the Sketch Version

Based on the keywords and concepts of environmental communication, I created sketched versions of the interactive media application. Consulting with Professor R Roger Remington, I defined the vocabulary of the application and constructed the design system. The vocabulary of the components for the project interfaces appear on the screen as icons, colors, screen layout and buttons. With respect to vocabulary of the components, the application and the screen layout would become concise and clear.
Developing the interactive Media Application

The vocabulary was applied to the application. The line system and icons were used to identify subjects. I focused on green and blue as primary color choices because from the matrices, (see Appendix 5, Appendix 6), they accurately communicated the project content and represented the sense of environmental harmony. There were four different screen layouts. The main card layouts (see Appendix 29) used a line system to indicate the topics. The information card layouts were divided into three categories. This consisted of recycled paper (see Appendix 29), ink considerations and designer guidelines. Some layouts were differentiated by the icons of the subjects while other layouts were for charts. The navigator chart layout (see Appendix 29) represented the project operation in the format of a flowchart. For the recycled paper charts, I applied colors and a line system to divide the information on the layouts.

In addition to the interfacial layouts, tonality and coherence were considered throughout every screen card. Tonalities of the screen cards were arranged from simple to complex and from light to dark. Every typographical layout was represented with bars, lines and shapes and was constructed by a unit grid (see Appendix 14). Unfortunately, the Supercard software did not have a grid system so the grid was created on a transparent sheet and traced over the computer screen.
Editing Animation

I changed and revised the literal transformation of the animations (see Appendix 17) into a more abstract transformation (see Appendix 19). The computer animation metamorphosed from the graphic elements to the title of the project. During the refinement stage, the letter "G" (see Appendix 16) was changed to a bitmap font so it would harmonize with geometric shapes of graphic elements.

Designing the manual

For the manual, the thumbnails (see Appendix 23) and the sketches (see Appendix 24) were produced. Subsequently, the primary sketches of the manual were developed. I selected Helvetica Condensed Light because of its formal characteristic: clean, legible and suitability to the image of Green Design. I found that the manual size was not appropriate to the project context. Based on the proportion of computer screen, I resized the manual proportion (see Appendix 25). While designing the cover, I created an extra panel for the front cover in order to contain the project disk. The panel could be folded and kept behind the cover. Creating the cover layout, I imitated the animated image to identify the unity of corporate design in relation to the interactive application and the manual. All pages used the same unit grid to construct the layouts.
Mechanicals And Binding

First, I used two colors printed on light gray recycled papers.

Unfortunately, the available recycled paper did not have the proper thickness. I found that the paper was too limp. I printed one page on a sheet of the paper and adhered the next page together. The page layouts were done in Design Studio version 1.01, distributed by Manhattan Graphic Corporation. The layout were printed directly from the laser printer. For the prototype, I used chromatec and pantone color film to produce blue-green images. For binding, I chose the spiral wire binding, which was durable and appropriate to the format of the manual. Every page was professionally trimmed into equal sizes according cropmarks indicators.
The project itself was a good learning experience for me. I have gained a better understanding of the design process and expanded my creative ideology. The problem solving aspect of this design process was challenging, yet rewarding. Essentially, the project idea was compatible with the graphic design process, theory and Semiotics. I used Semiotics to visualize the conceptual representation and pragmatics, which fulfilled the environmental communication objectives. The project was a practical exercise. It gave me the opportunity to combine the graphic design process with computer design skills. I hoped my project, Green Design, will help develop positive steps toward supporting environmental communication in graphic design community and also utilize in improving the environmental quality for human lives. Finally, I also hope that my Green Design project will be a practical resource for environmentally conscious designers to express their environmental awareness in a useful way.
Appendix 1 Thesis Proposal
"The purpose of the thesis is to promote environmental concerns dealing with the 3R campaign: Recycling, Reusing, Reducing. By using promotional media, the graphic design community will better understand environmental protection. Applications might include posters, calendars, brochures, direct mailing pieces or stationery product, computer program, etc. The application would be developed using graphic design process that govern the relationship between words and pictures."
Appendix 2 Thesis Planning document
Thesis Proposal

Project Title:
A series of promotional pieces for encouraging environmental concerns, and environmentally conscientious decisions for the graphic design communities.

Client and Address:
The graphic design communities such as design firms, studios and advertising agencies.

Designer and Address:
Jitin Paisansathan
335 Fairwood Circle Rochester, NY 14623
Tel. (716) 334-6723

Project Description:
The project consists of promotional pieces such as interactive media stacks, the printed Interactive media manual, a poster and a folder for packaging. This project will be used interactive media program to build the hypercard stacks or supercard stacks which are utilized in specific details of the recycling program and environmental tips of designing for designers. The manual will be designed for better understanding of using the stacks. Posters will be used to promote broad sense of the content such as 3R campaign: recycling, reducing, reusing which is the virtue of recycling and promote the stacks. These could be used as a tool for the designers to gain the correct information of recycling and help the designers to make environmental decision. This project will use less color and be produced from recycled paper.
Situation Analysis

Every book, magazine, office paper and commercial printer has contributed steadily to the landfill problem. In considering this problem, graphic designers could take the responsibility for creating a portion of this problem. They could be a significant part of helping this environmental situation to focus on their own environmentally responsible design. As a designer who is part of the graphic design community, this project could be an important experience of responding to environmental concerns. The discipline would not use environmental promotion for commercial advertising. For the society, this project would be a design to meet the functional and aesthetic needs, as well as representing the concepts without conflicts of ethical values.

Goal

This project will be a resource for graphic designers to gain better understanding of environmental concerns and incorporate the recycling program by creating environmentally responsible design as well as encouraging the market of recycled materials.

Objectives

- to give information about the true causes of the recycling, garbage, and landfill problem
- to represent environmental benefits for the future
- to encourage graphic designers to make conscientious decisions for helping environmental protection
- to stimulate environmental responsibility of the designers to consider the end state of their projects; garbage or usable resource
- to give a basic understanding of recycled paper technology so that the designers can design their projects successfully and be easier to recycle
Process and Strategies

- Develop flow charts to find relationship of the whole information
- Study the causes of recycling and effect for the future
- Explore relationship between the environmental benefit and virtue of recycling
- Choose and find words and images that can represent environmental concerns for designers
- Define formats of applications to represent the relationship between environmental concerns and designers.
- Experiment with possibilities of design to represent the relationship that is based upon graphic design theory and semiotics which utilizes visual syntax and determine the composition of design
- Use graphic design theory to clarify the content and eliminate redundancy
- Explore effects of visual syntax which could code the messages of environmental conscience of graphic designers
- Define the messages which effectively stimulate the designers' conscience such as, environmental quotes from environmental specialists and environmental quotes of prominent designers
- Experiment effects on the chosen messages
- Experiment with simple animations on interactive media stack
- Focus on typography composition to the dominant subject, the 3R campaign and subdominant tips for designing in environmental mode and other details
- Explore relationship between the piece's function and the content
- Define the formats that represent functions and effectively communicate the content of recycling
- Study uses and the significant quality of recycled paper
- Represent pro and cons to both virgin paper and recycle paper technologies by using organized codes such as chart, diagram, etc
- Have the recycling mark and the message which indicate the piece that could be recycled in the same way of environmental concerns
**Practical Considerations**
- Possible outside resources such as Monroe County environmental organization in Rochester, recycle product stores, etc. RE library, environmental magazine, design magazine, and environmental newsletter.
- Possible outside budget; student grants for environmental design.

**Dissemination**
The stack may be used on computers, Macintosh, and the compact disks which have interactive media program. At the same time, the manual will be used in the classroom. The poster will be used on the walls of buildings, rooms, and studios and the folders for packaging will be tactile in hand.

**Evaluation Plan**
- Evaluated by comparing its solution to other social issues which are similar.
- Evaluated by comparing its function to the community needs.

**Bibliography**
Eva Anderson. "Designer recycle their ideas. why not paper, too?" Eco Fall 1989
Patrick Coyne. Recycled paper. Communication Arts (September-October 1990), P. 83-86
GLOSSARY OF TERMS:

aesthetic: keenly responsive to and appreciative of beauty in art and nature, etc.

concept: a mental image; especially a generalized idea formed by combining the elements of a class into the notion of one object.

conscientious: careful and thorough; done in accordance with conscience.

designer: one who create designs.

environmental: the aggregate of external circumstances, conditions and things that affect the existence and development of an individual group.

ethical: conforming to right principles of conduct as generally accepted by a specific profession.

evaluate: to find or determine the worth of appraise.

garbage: anything worthless or offensive.

landfill: the place for disposing the solid waste.

recycling: method for resuming a cycle in process to reuse the raw materials of discard products from both consumer and industrial sources.

redundancy: being more than is required.

semiotic: a theory of how meaning is created through signs and symbol in our lives as well as a model for expressing meaning - especially that which is less obvious or more deeply represented in culture.

typography: the arrangement of composed type.
Appendix 3 Timelines

- Fall quarter, classes begin: 9/1/91
- Proposal due: 9/12/91
- Time plan 1-2: 10/5/91
- Definition of the proposal draft 1: 11/10/91
- Draft 2-6: 11/13/91
- Last day of fall quarter: 11/14/91
- Write the proposal: 11/17/91
- Categorize and read: 11/19/91
- Winter quarter classes begin: 11/22/91
- Study supercard manual: 12/5/91
- Meet committee members: 12/8/91
- Identity functions and set goals: 12/15/91
- Develop general flow charts to find relationships of the whole content of recycling: 12/15/91

- Start thesis: 11/17/91
- Gather and organize information: 11/19/91
- Have a trip: 11/21/91
- Categorize and read: 11/22/91
- Study supercard manual: 12/5/91
- Meet committee members: 12/8/91
write thesis part 2

4/10/92

write thesis part 3 (last one)

4/18/92

meet committee members

4/13/92

type

4/16/92

make diagrams

4/10/92

write conclusion

5/10/92

type

5/15/92

last day of spring quarter

5/12/92

write introduction

5/16/92

meet committee members

5/18/92

revise thesis part 1

4/24/92

revise thesis part 2

4/27/92

revise thesis part 3

4/30/92
Appendix 4 Mind Mapping
### Representational Matrix

<table>
<thead>
<tr>
<th>Iconic (Look Like)</th>
<th>paper</th>
<th>graphic design</th>
<th>ink</th>
</tr>
</thead>
<tbody>
<tr>
<td>newspaper</td>
<td>designer, purchaser</td>
<td>soy bean</td>
<td></td>
</tr>
<tr>
<td>magazine, direct mail</td>
<td>pencil, color</td>
<td>petroleum</td>
<td></td>
</tr>
<tr>
<td>whitening, yellowing</td>
<td>lines, typography</td>
<td>solvent, linseed</td>
<td></td>
</tr>
<tr>
<td>post-consumer materials</td>
<td>paper</td>
<td>corn, heavy metal</td>
<td></td>
</tr>
<tr>
<td>pre-consumer materials</td>
<td>creative, impact</td>
<td>vaporate fume</td>
<td></td>
</tr>
<tr>
<td>recyclable</td>
<td>paper consumer</td>
<td>de-ink, sticky</td>
<td></td>
</tr>
<tr>
<td>renewable</td>
<td>conscious, ideal</td>
<td>dry</td>
<td></td>
</tr>
<tr>
<td>reusing, disposal</td>
<td>communication</td>
<td>responsibility</td>
<td></td>
</tr>
<tr>
<td>landfill, sanitary</td>
<td>responsibility</td>
<td>responsibility</td>
<td></td>
</tr>
</tbody>
</table>

### Indexic (Points to)

<table>
<thead>
<tr>
<th>Symbolic (Convention)</th>
<th>publishing</th>
<th>packaging</th>
<th>media</th>
</tr>
</thead>
<tbody>
<tr>
<td>paper</td>
<td>packaging</td>
<td>media</td>
<td></td>
</tr>
<tr>
<td>stationery</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Signifiers

<table>
<thead>
<tr>
<th>Signified</th>
</tr>
</thead>
<tbody>
<tr>
<td>soy bean</td>
</tr>
<tr>
<td>petroleum</td>
</tr>
<tr>
<td>solvent, linseed</td>
</tr>
<tr>
<td>corn, heavy metal</td>
</tr>
<tr>
<td>vaporate fume</td>
</tr>
<tr>
<td>de-ink, sticky</td>
</tr>
<tr>
<td>dry</td>
</tr>
<tr>
<td>black</td>
</tr>
<tr>
<td>press</td>
</tr>
<tr>
<td>printers</td>
</tr>
<tr>
<td>Signifiers</td>
</tr>
<tr>
<td>--------------------</td>
</tr>
<tr>
<td>recycling</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Appendix 6 Interpretive matrix #2
### Representational Matrix

<table>
<thead>
<tr>
<th>Signifiers (Points to)</th>
<th>paper</th>
<th>graphic design</th>
<th>ink</th>
</tr>
</thead>
<tbody>
<tr>
<td>iconic (Look Like)</td>
<td>newspaper, magazine, mail</td>
<td>designer, typography, publishing, drawing</td>
<td>press, printers, pant</td>
</tr>
<tr>
<td>Indexic</td>
<td>material, disposals, landfills</td>
<td>idea, communication, visual, commercial, conscious</td>
<td>evaporate fume, sticky, solvent</td>
</tr>
<tr>
<td>Symbolic (Convention)</td>
<td>white, books, box</td>
<td>art supplies, pencils, color</td>
<td>block, a drop, brush stroke</td>
</tr>
<tr>
<td>Signifiers</td>
<td>Recycled</td>
<td>Iconic (look like)</td>
<td>Indexic (points to)</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 7 Flowchart #1
Recycling symbols of environmental friendliness

Soy-based Ink

Petroleum-based Ink

Environmentally friendly tips for designing

Environmental benefits

Question to ask vendors

Soy-based Ink

Petroleum-based Ink

Environmentally friendly tips for designing

Environmental benefits

Question to ask vendors

Designing for sustainability

Solid waste management

Recycling

Paper manufacturing

Solid waste

Guide lines

Definitions

Actions

Promotion

Recycled paper

Bleaching process

Ink

Safe

Friendly

Environmental friendliness

3R campaign

What

Quality

Advantage

Usage

Environmental benefits

Environmental benefits

How to ask vendors

What to do

Why to do
Appendix 8 Flowchart #2

[Diagram of flowchart with steps and decision points marked with symbols and labels such as "Welcome", "GOALS", "Environmental Guidelines", etc.]
Appendix 9 Flowchart #3
Appendix 10 Map of the stack
Jitan Pasanathan
Map of the stack
Effect to be used
from each main card to other main cards, use warping effect
from each main card to other subcards, use wipe right effect (forward)
from each subcard to main cards, use wipe left effect (backward)
from each subcard to other subcards, use wipe right effect (forward)
from each subcard to other subcards, use wipe left effect (backward)
In introduction, from main card to subcard, use blind effect

Title of the project
welcome animation
3 R campaign

Introduction
Introduction card
about the stack
about the manual

Preface
Preface card
goals
how to use the stack
component of the stack
available sources for more information
reference
biography

Contents
recycled paper
where it come from
quality of recycled paper
environmental benefits of recycled paper
the meanings in chlorinefree recycled paper
the meanings of recycled symbols
charts of recycled paper
ink
effect of petroluem-based ink
the comparison of petroluem-based ink and soy-based ink
designer guidelines
actions
questions to ask vendors

decision made
Appendix 11 A Chart Of Card Interfaces
**INTRODUCTION**

<table>
<thead>
<tr>
<th>Card</th>
<th>Individual Buttons</th>
<th>Consistent Buttons</th>
<th>Window</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Card</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. about the stack</td>
<td>3. go next main card</td>
<td>window 1</td>
<td>Blind effect for 1, 2</td>
</tr>
<tr>
<td></td>
<td>2. about the manual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcard</td>
<td></td>
<td></td>
<td></td>
<td>Blinder effect for 1-6</td>
</tr>
</tbody>
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**PREFACE**

<table>
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<th>Consistent Buttons</th>
<th>Window</th>
<th>Effects</th>
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<td>2. how to use</td>
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<td>3. component</td>
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<td>4. available resources</td>
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<td>6. biography</td>
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**CONTENT**

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<td>8. the comparison of ink</td>
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<td></td>
<td>9. action</td>
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<td>10. questions</td>
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</tr>
<tr>
<td>Subcard</td>
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<td>window 1</td>
<td>Wipe right effect for 1</td>
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<tr>
<td></td>
<td></td>
<td>2. back previous card</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3. go next main card</td>
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**CONCLUSION**

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<th>Consistent Buttons</th>
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<th>Effects</th>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. back to previous card</td>
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Appendix 18 Animation

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Appendix 19 Animation

The Sketch Version # 3
Appendix 20 The Interactive Media Application

The Sketch Version #1
Appendix 21 The Interactive Media Application

The Sketch Version # 2
Designer guideline

List of recyclables and non-recyclables

<table>
<thead>
<tr>
<th>Recyclables</th>
<th>Non-recyclables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>Plastic</td>
</tr>
<tr>
<td>Cardboard</td>
<td>Wood</td>
</tr>
<tr>
<td>Glass</td>
<td>Metal</td>
</tr>
<tr>
<td>Newspaper</td>
<td>Foam</td>
</tr>
<tr>
<td>Magazine</td>
<td>Plastic wrap</td>
</tr>
</tbody>
</table>

In parts of the world, there may be differences in the list of recyclables.

Some tips on how to recycle:
- Separate recyclables from non-recyclables.
- Follow local recycling rules.
- Reduce, reuse, and recycle.
- Use recycled products.

Additional resources:
- Recycling centers.
- Educational programs on recycling.
- Community recycling initiatives.
Appendix 22 The Interactive Media Application

The Refined Version
Appendix 23 the Project Version

the animation parts
A Guide to Environmentally Responsible Graphic Design

click here to begin
maincards: the introduction cards
main cards: preface cards

After reading, click to make this dialogue box disappear.

- to give accurate environmental knowledge for graphic designers to create environmentally responsible designs
- to provide specific environmental information dealing with graphic reproduction
- to encourage designers' environmental concerns by suggesting environmental tips
- to encourage the market of recycled materials
- to define the meanings of environmental modes

How to use this book
System Requirements
Project Goals
Components of the project
Reference list
Available resources for more information
main cards: the navigator card and the content card
main card: the conclusion card

As designers we can have a positive effect on the environmental concerns of today. We should consider the resources and origins of paper fibers; post-consumer fibers are pertinent for our environmental endeavors. They are obtained from waste paper in our community. When paper is produced, the fibers affect the quality of the recycled paper. The papers become flexible for embossing and have dramatic benefits for the environment.

Today many papers claim they are recycled without actually taking into account any environmental concerns. By learning the truth of paper, designers are able to understand the actual characteristics used to produce design pieces with correct environmental qualities.

The designer's next concern should be ink. By striving to choose printers that use high soy-based ink content, designers can encourage

information card: the recycled paper card

Quality of recycled paper

Malleable quality is an extra sturdy paper which has fibers that have been reused. The paper absorbs well and tends to absorb ink quite readily, as well as passing easily through the press.

On the opposite side, the paper is more limp than virgin paper, so many paper mills increase the weight to compensate for the quality. Another distinct quality is texture. Steve Esser of Esser Design in Phoenix said "the texture is the best thing of recycled paper, which is softer and more human"
information cards: recycled paper cards
Information cards: recycled paper and ink issues cards

Recycled Paper with Post-Consumer Waste

<table>
<thead>
<tr>
<th>Paper maker</th>
<th>Basis</th>
<th>Recycled</th>
<th>Finish/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creo Pacific Paper Corporation</td>
<td>65</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>Nem-brand</td>
<td>24</td>
<td>50</td>
<td>10+</td>
</tr>
<tr>
<td>Text</td>
<td>70+</td>
<td>50</td>
<td>10+</td>
</tr>
<tr>
<td>Cover</td>
<td>85+</td>
<td>50</td>
<td>10+</td>
</tr>
<tr>
<td>Generic</td>
<td>25</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>Test</td>
<td>80+</td>
<td>100</td>
<td>10+</td>
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</tbody>
</table>

Hopper Paper Company

<table>
<thead>
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<th>Basis</th>
<th>Recycled</th>
<th>Finish/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters</td>
<td>24</td>
<td>50</td>
<td>10+</td>
</tr>
<tr>
<td>Text</td>
<td>80</td>
<td>50</td>
<td>10+</td>
</tr>
<tr>
<td>Cover</td>
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<tr>
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</tr>
<tr>
<td>Cover</td>
<td>80</td>
<td>50</td>
<td>10+</td>
</tr>
</tbody>
</table>

Soy-based Ink

In general, soy-based inks contain vegetable base content and require small amounts of petroleum for drying as well as extra time on the press. They are a bit more expensive than conventional inks because of lack of demand. Some colors of soy-based inks are still in early development such as metallics, special opaquers and fluorescent colors. Nevertheless, we should avoid using these colors because they have higher heavy metal content and are difficult for recycling.
information cards: ink and designer guideline cards
information cards: designer guideline and help cards

- Environmentally responsible design tips:
  1. Design envelopes without cellophane or plastic windows.
  2. Use water-soluble glue.
  3. Avoid designing self-adhesive stationary because the adhesive material may gum the recycling machines.
  4. Avoid over-labeled coverage on paper.

- Help card instructions:
  1. Help: Click on to go to help card.
  2. The Navigator Chart: Click on and each box in the chart is an active button which navigates to its information.
  3. The Next Card: Click on
  4. The Previous Card: Click on
  5. The First Main Card in the row: Click on

- For instance, you may click this button for information card and return to the content card.
Appendix 24 The Thumbnails of The manual
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Preface

With the reinforcing of understanding the environmental concerns for green design project, this book is a simple suggestion for users to experiment with the project and also give the unique information on the environmental issues.
Starting with Miata, you need to know:

Let familiar with desktop

What you need to know
Starting
Main cards

1. Get and get rid of the individual information boxes; They are accessed by following the brief instructions displayed in small types such as "Click on topics", "Click on subject". Then the information box will appear on the screen and it can be disappeared by clicking in the boxes afterwards.

A box which is appeared by clicking on its topic:

Z Use the information box: They contain scroll bars which let you see through the whole information by dragging the small box or pointing at the arrow of the bar:

The scroll bar
What it is all about

It is important to concern the involve issues of graphic design production from origins of materials using in design process through the process of design in order to create the last stage of the design piece within the environmental responsibility.

Recycled paper
Ink issues
Designer guidelines
Recycled paper

Origins

Generally, the material for making the paper came from

1. Manufacturing residues: They are waste paper which are generated in the process of manufacture such as trimming, envelop cutting etc.

2. Post-mill waste: This waste paper derived from printing plants and need to be de-inked before recycling.

3. Post-consumer waste: They are paper materials which are collected from outside the paper mills and printers such as homes, offices and retail stores.

Quality

Malleable quality is major advantage of the paper because the fiber has been reused as the paper can emboss well and tend to absorb oil quite well as well as easy to run through the press.
The effect of Petroleum-based ink

Unfortunately, the petroleum-based inks which are employed in many printers cause hazardous effects such as:

- Air pollution from emission of evaporate fume or VOC (volatile organic compound) which is harmful to human health.
- Water pollution from washing solvent into sewers.

Besides the heavy metals comprised in any ink cause the health risk. For instance, Barium is harmful to lungs, heart and liver. Chromium, lead, Arsenic and Cadmium tend to cause cancer. Copper, Zinc and Mercury are toxic to water lives. Selenium causes lung irritation, trouble breathing, liver and lung damage. Antimony irritates eyes and skin.
These following tips are good guidelines for designers to approach green design. They guide in how to recycle materials and use recyclable materials in design.

1. General tips:
   - Design products and packaging to allow for easy disassembly and recycling.
   - Use materials that are renewable or recycled.
   - Minimize waste generation and use recycled materials.

2. Design and production tips:
   - Select environmentally friendly production methods and materials.
   - Implement recycling programs within the organization.

3. Tips for general tips and life design and production tips:
   - Set up recycling programs in workspaces which can encourage the cycle of recycling.
   - Design envelopes will not use cellophane or plastic windows. The process to make cellophane has many toxic requirements.

These following tips are good guidelines for designers to approach green design. They guide in how to recycle materials and use recyclable materials in design.
Following the lack of environmental concerns, designers could approach the positive change through the
wholecycle of design process. Considering the initial sourcing, the origins of paper are
different. The post-consumer fibers are pertinent for the environmental response. The
fibers originate from the waste paper in communities. Becoming paper, the fibers affect
the quality of the paper. The papers are malleable and absorb ink well and also have
dramatic benefits to environment.

Today many papers claim that they are recycled without the accurate lack of environ-
mental concerns. Learning the truth of paper, designers accurately understand the real
aspects of paper and employ the recycling symbols in the right property.

The next involved concern is ink. Keep choosing the printers which used the high pow-
The general resources


3. Linda Graf. Graphic Arts of Marin. Sausalito


5. EPA Guidelines contact E.H. Pechan & Associate, Inc.

5537 Hampstead Way, Springfield, Virginia 22151 (703) 941-4452

5. American Paper Institute

260 Madison Ave, New York, New York 10016 (212) 340-3626
Appendix 29 Color Refinement
Appendix 30 the manual and the application program disk