

# Sustainable Graphic Design for the Print Industry

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The purpose of this study was to provide graphic designers with ideas and resources to help them design sustainable projects. This follows the current trend in the graphic communication industry of sustainability. The goal is to reduce the impact designed pieces have on the environment through their production, distribution, and lifecycle.

This study was conducted with case study analysis and elite and specialized interviews with members of the design community. Five case studies were analyzed using a sustainable design checklist provided by Design Can Change. This checklist served as the basis for sustainable design trends. Three representatives from graphic design-related businesses were interviewed to determine what individual companies are doing to implement sustainable graphic design. In addition, a printer was then interviewed after the analysis of the case studies and other interviews to determine which of the sustainable design solutions uncovered are practical in the print industry.

Overall, recycle-ability played a big role in the solutions discovered for sustainable graphic design. The minimization of waste produced by a project was also a key factor discovered. Graphic designers need to focus on making decisions that allow for a cylindrical lifecycle, rather than a linear one, which ensures sustainability.

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## Chapter I: Introduction

Sustainability is a common concern among today's consumers, and is influencing all aspects of the printing industry, including graphic design. Graphic designers now have sustainability to consider when designing a printed piece, because it is important for the survival of civilization. The goal of sustainability is to meet current needs without compromising the future. Specifically, it involves conserving the present environment by reducing the impact of global warming and the depletion of natural resources. This study asks the question: What are the major trends that graphic designers can use to create sustainable pieces?

One of the major goals for graphic designers is invoking change through visual communication. There are many things designers can do to create more sustainable packaging, business materials, publications, and additional printed designs. The size of the finished piece, use of front and back sides, size and placement of elements on the page, substrates containing recycled material versus virgin material, and many other things can all be determinates of whether a piece is sustainable or wasteful. It is extremely important that designers fully understand what the problem is and why it is being made. Designers should be called upon to use their education and knowledge to apply solutions that are sustainable. When designing it is vital to think of the life cycle of the printed piece; for example, can it fulfill more than one purpose? If so, that would be true sustainable design.

The purpose of this study is to help graphic designers fulfill their responsibility in the new green movement. One of the biggest challenges for graphic designers is that the

material used for most printed pieces is paper made from wood pulp. Fortunately, there are new options that are a great substitution and better for the environment including recycled and synthetic paper. In the following chapters, current and new research showed how designing with sustainable outcomes in mind improved the impact of print on the environment, giving the world a sustainable future.

## Chapter II: Literature Review

### Definition of sustainability

Sustainability is a system that allows for present needs to be met, without hindering future generations from meeting their own needs (Benson, 2008). The terms sustainability and sustainable design acquired their current meaning during national and international debates surfaced about the environment and public policy in the 1980's. Sustainability is often referred to as “green” or “eco” design and has been interpreted as a technological and material response to practices that help improve the environment. Joel Towers noted, “sustainable work may mean the use of short-run production methodologies, print-on-demand publications, the specification of recycled papers and non-toxic inks, or the development of end products specifically engineered for reuse within artificial or biological nutrient cycles....” Sustainability, the best practice, applies to all design disciplines and provides ways to improve a disintegrating environment (Towers, 2005).

There is a clear impact that graphic design inflicts on the environment. Don Carli, a research fellow at the Woodside Institute for Sustainable Communication, created a publication for the American Institute of Graphic Arts (AIGA) that noted the third-largest consumer of fossil fuels worldwide is the pulp and paper industry. They are also one of the most substantial contributors to air and water pollutants, waste products, and the gases that cause climate change. The second-sizable use of carbon black, a substance derived from the incomplete combustion of oil, is printing ink and toner (Twemlow, 2005). “Going green” and becoming sustainable, specifically focusing on paper and ink specifications, is not a new concept for designers; it just has not been given any priority in the past (Poynor, 2008). The desire to change is found within designers, clients, and

consumers, the only question is how to achieve it (Rutter Kaye, 2005). The answer is sustainable design, a straightforward, yet important technique of designing alluring materials that do not impose damages to the environment (csdesign, 2008).

### **Role of Graphic Designers**

One of the standard goals of graphic design is promoting behavioral change (Poyner, 2008). Since a designer is both a maker and consumer, they have the profound power to provoke change while leading a sustainable design revolution (Benson, 2007). Designers can use their creative thinking and design skills to aid in the redirection of the world's present course—economically, socially, and environmentally. Every designer has different strengths and they should take their individual skill sets and passions to an area where they can make the most difference (McCarron Sienicki, 2007).

Many designers do not take the time to understand the context of a project and why it is being produced (Benson, 2007). This is important to do because good design can spark change through visual communication evoking different possibilities (Towers, 2005). Graphic designers choose the materials and processes used to create a final piece; they are the ones who decide how natural resources are used and what kind of waste is produced (Twemlow, 2005). These designers are responsible for making eco-conscious packaging and products. The best way to achieve this is to think innovatively (Gaddy, 2005).

### **Education for Graphic Designers**

Sustainability is a serious issue, but graphic designers are not taught how to effectively deal with it in design programs around the United States. In order for sustainability to have a meaningful place in education, it must be seen as essential to the future and a popular concern. Additions to or new project assignments should incorporate

sustainable modes of production, energy usage, material selection, and waste reduction (Towers, 2005). It is critical that graphic designers remain current with trends in the printing and production industries because they are constantly changing (Metropolitan Group, 2008). Designers should use this knowledge to discuss specific project goals with their clients to determine the best sustainable solution (Benson, 2007).

### **Connecting to the customer**

Clients tend to have a misconceived notion that sustainable design will have higher costs and less quality. In fact the opposite is true, sustainable design is the best use of materials to reduce energy consumption, pollution and waste. This can be achieved by using less paper, ink, and chemical processes—which helps to reduce expenses and environmental costs (csdesign, 2008). It is important that designers use their knowledge of sustainable design practices to persuade their clients that organic products will produce lower impact or renewable design solutions (Rutter Kaye, 2005).

### **Rethinking design**

The recent popular concern of global warming is driving graphic designers to recognize the flaws in their creative process and ultimately attain new methods for design. In order for a graphic designer to practice sustainability, the materials used for projects should be renewable, recyclable, and/or reusable (Benson, 2007). The Metropolitan Group's design studio has the following tips when contemplating design ideas, the whole package should be taken into consideration to reduce waste. White space should only be used for functional design purposes; otherwise it is a waste of space. Instead of printing and sending out mass mailings, the correct audience should be targeted for a more consistent response (Metropolitan Group, 2008). Designers need to rethink sustainable solutions for



their client's design problems. The desired outcome of minimizing paper, ink, or creating a digital solution can be achieved by asking the right questions in the beginning (Benson, 2008). Think beyond what the client is asking for, there may be a possibility of using the project for a higher purpose. The designer should be willing to explore alternative methods to create printed items (McCarron Sienicki, 2007). They should also consider that perhaps the best solution would be to not design anything new at all (Rutter Kaye, 2005).

Communicating through materials that have the least possible affect on the environment is what good design is all about (Twemlow, 2005).

### **Type of media for project**

There are many options that designers have for the final execution of a project. They need to decide the best format for the project—palpable, digital, or some sort of system such as an in-store cooking demonstration rather than the printing of an instructional book (Benson, 2007). Not every design needs to get printed, it could be just as effective in a portable document format (PDF), a website format, or an email format. If the designer chooses to have the project printed, careful quantity planning should be a high priority. Printing too many copies is wasteful and printing too little requires additional print runs, which are costly, both financially and environmentally (csdesign, 2008).

### **Paper usage**

The main material graphic designers use is paper. Designers are contributing revenue to the third most polluting industry in the world, paper mills, by not acknowledging the environmental impacts of paper distribution and consumption. These paper mills are responsible for the depletion of over 50 percent of the world's forests (Benson, 2007). Paper will be one of the most difficult things for designers to cut back on,

because of its frequent use for proofing and printing the final design. As a result of this and the general public's attitude, paper makes up about one-third of the contents in American landfills. In general, there are three things that graphic designers can do to decrease the use of paper: reduce the use, recycle, and always use the most earth-friendly paper possible. American's recycled 52 percent of all paper and paperboard products produced in 2006 according to the U.S. EPA (Benson, 2008). Producing one ton of paper with virgin fiber uses the wood from two to 4.4 tons of trees. If recycled fiber is used, it takes 1.4 tons of paper products out of landfills to produce the same amount of pulp (Neenah Paper, 2006). The bottom line is that the consumption rate of the world's forests to make paper is higher than the replenishment rate. It is the designer's responsibility to find other substrates to use that do not contain virgin wood pulp. Many parts of China and India use paper that is made with up to 50 percent of agricultural residues, such as wheat, rice straw, bamboo, and cotton (Benson, 2008). It is critical that environmentally responsible papers are used in sustainable graphic design (csdesign, 2008).

### **Sustainable labels (FSC, SFI, PCF)**

There are several labels and certifications controlled by governmental agencies or non-profit organizations that are important to sustainable graphic design. Processed Chlorine Free (PCF) paper is made of post-consumer waste and is either left unbleached or bleached without using chlorine, a harmful chemical (Benson, 2007). Elemental Chlorine Free (ECF) and Totally Chlorine Free (TCF) both use the same concept; the pulp is bleached by other means than using chlorine. In March 2005, TCF processes produced only five to six percent of the kraft pulp produced in the world and ECF processes

produced around 75 percent. This pulp was used to make the highest quality white printing and writing papers (Bleaching by CSIRO, 2007).

The Forest Stewardship Council (FSC) is a non-profit organization that focuses on the sustainable management of forests. A chain-of-custody certification is issued to companies, generally printers, so they can track that the origin of a particular paper is from an FSC-certified source. There are currently 1,718 companies in the United States with a chain-of-custody certification from the FSC. If designers choose FSC-certified paper for their project they are not only helping the environment, but also shows support of the highest social and environmental standards in the market. The purchase of FSC-certified paper contributes to conservation, responsible management, and benefits the communities living near the FSC forests (FSC, 2008).

Green-e is an independent certification program for companies who choose to use renewable energy, derived from wind, water, solar power, or bio-gas (Benson, 2007).

Approximately two percent of the United States electricity is produced from renewable resources (Green-e, 2007). The Green Seal is also a non-profit organization that provides certifications to companies that produce responsible products that hold up to a solid set of environmental standards. The Green “Seal of Approval” has become known for reliability, fairness and integrity (Green Seal, 2007).

### **Material choices**

Graphic designers who are dedicated to sustainable design for print only focus their intentions on the materials used for the project: paper, inks, plastics, and computers (Twemlow, 2005). The ink choice is very important, printing a navy blue and metallic logo with two spot colors would surely be better than four colors (CMYK) and metallic ink.

Vegetable and soy-based inks are just as good in quality as petroleum-based and much easier to clean, deink, and recycle once the piece is no longer needed. The sustainability of a design can also be determined by how it is laid out on a sheet. It may have the same end result and be less expensive for the client if the size is changed slightly using less printing plates and lower print qualities (csdesign, 2008). Also, it is important for the designer to ask if the substrate is made of recycled content and recyclable. The designer should work with vendors to reduce unneeded waste, such as excessive trimming. It is important that the graphic designer find the best tools and materials possible to complete the project sustainably (Metropolitan Group, 2008).

Another way to think about sustainability besides materials is the energy put forth by the client and the designer. For example, when a company's identity system is updated, a large amount of energy and new resources are required and waste is produced—abandoned stationary, business cards, and signage. Alice Twemlow notes, “As long as we keep acting as if graphic design ideas [are] totally disposable, we'll have a lot of trouble developing a true culture of sustainability at any level in our profession,” (Twemlow, 2005).

Many graphic designers associate sustainability with using green materials. This conveys that designers are only thinking about the execution because having environmentally responsible design decisions is only one element of sustainable design. Some other elements are forming decisions based on humanity and the long-term economic significance (McCarron Sienicki, 2007). Graphic designers should consider impermanence when creating designs, instead of permanence. By choosing materials that can easily decompose, compost, be recycled and are made of recycled content, the designer encourages the natural cycle of the planet (Benson, 2007). When creating a solution, the

designer should consider choosing local and sustainably grown or recycled materials, using renewable energy throughout the production, using vendors that have equally sustainable business practices, and educating the consumer about the life cycle of the item (Benson, 2007).

### **Lifecycle of designed piece**

“Comprehending the entire life cycle of the materials used in design projects—and understanding how the products themselves change over time—is key to sustainable design,” (Twemlow, 2005). Can the design fill more than the initial purpose—a pocket folder and a brochure, a brochure and a poster, a brochure and an envelope? Does the solution provide both biodegradability and long shelf life, thereby, decreasing the number of reruns in the future? Can the design fulfill more than one purpose; therefore, not contributing to the waste in landfills? These are important questions that the graphic designer must consider (Metropolitan Group, 2008). Design Ignites Change is a program that was developed by AIGA and Worldstudio. After the completion of a project executed in New York, the program realized that in order to be truly sustainable, they could not let the material, in this case banners, end up in a landfill. The program called upon Andy and Kate Spade to make the banners into tote bags. The bags were then auctioned off and the proceeds were given to scholarship and mentorship programs that help students shape their artistic and sustainable talents; thereby giving back to the community to help future generations (McCarron Sienicki, 2007).

## Chapter III: Research Methods and Procedures

Graphic designers can use the following trends to ensure sustainable design: using recycled materials, conserving energy, and designing with reusability in mind. Two research methods were used to prove this point, analyzing case studies and elite and specialized interviewing. Case studies provide the observation of an individual or company and tell the reasons an individual or group does what it does and how it affects them. According to Dr. Levenson, elite and specialized interviewing is a method of obtaining information from busy people in high positions. These people are of great importance and must be interviewed differently from the “average” person to obtain useful information (Levenson, 2001).

The case studies used for this research project were found on the Renourish web site (Case Studies, 2008). The case studies chosen analyzed one group of college students from the University of Illinois and four design firms: Studio Flux, Celery Design Collaborative, Little & Company, and Rizco Design. They all gave a brief summary of the project, a list of who was involved with the project, project specifications—including information about the substrates, vendors, print job, finishing, and distribution—and any useful knowledge gained by the final solution. Specific information about what the design establishment has done to further sustainability, such as certifications and use of renewable energy, was also included.

These specific case studies were chosen to compare and contrast different types of graphic design projects. A sustainable design checklist found on the Design Can Change web site was used to analyze all five of the case studies. The following categories outlined on the checklist were used for the analysis: strategy, execution, production, distribution, and

end-of-useful life. The analysis revealed the common trends that each case study used and what could be improved. “Design Can Change is a non-commercial initiative aimed at bringing together the design community and making system-wide change to how our work affects the planet,” (Design Can Change, 2007).

There are many people in the graphic communication industry that have a great deal of knowledge about sustainable graphic design. There are design firms and freelance designers who have implemented sustainable design into their everyday practices. Interviews with people from these sustainable companies show what has worked and what has not for design projects and procedures. The questions that were asked were both general and specific, revealing what each company has done to fulfill their responsibility for sustainable design.

- When did you first become aware of sustainable graphic design?
- What has your company done to make the day-to-day operations more sustainable?
- How is your company designing differently to incorporate sustainable design?
- How do the designers consider the end-use or life cycle of the created piece?
- What is your process for determining a printer for a specific project?
- Does your company use any sustainable design resources? If so, which ones and how do they assist the design process?

These questions were used to drive the discussion of sustainable graphic design, however, based on the individual discussions some questions were either omitted or added. The companies contacted were all graphic design-related. The following individuals were interviewed for this research:

- Cheri Larsh-Arellano
  - Creative Director, Conscious Creative

- Compiled October 24, 2008
- Nancy Jo Ward
  - Freelance Designer
  - Compiled October 29, 2008
- Debra Rizzi
  - Founding Partner, Rizco Design
  - Compiled July 9, 2007 by Eric Benson for a case study on the Renourish web site

To follow up the analysis of the case studies and interviews, Mehrdad Azadan, Production Manager, from Alonzo Printing was also interviewed. The purpose of this final interview was to determine what sustainable design solutions, discovered in this research, are practical in the print industry—specifically offset printing. Topics that were discussed were proofing, substrates, ink, gang-running projects, and design layout.

Finally, after all the research was gathered and analyzed, conclusions were developed to answer the proposed research question: What are the major trends that graphic designers can use to create sustainable pieces?



## Chapter IV: Results

### Case Study Analysis

Each case study analyzed had its own unique elements. The first was a case study done by Organic Design Operatives based on a packaging and branding project Studio Flux completed in 1996. They were presented the challenge of designing an identity and packaging system for B.T. McElrath Chocolatier, which minimized waste and reduced environmental impacts. The last requirement was difficult because FDA laws at the time prohibited food contact with recycled material.

The second case study was completed May 26, 2006 and was about a brochure that Celery Design Collaborative created that informed major paper buyers about Fox River Paper's environmentally friendly paper lines and paper-making practices. They chose to make the piece educational for designers and paper buyers, as well as promotional.

The third case study was completed November 14, 2006 and was a summer gift that was created by Little & Company to send to their friends and clients. The gift was to not only be environmentally responsible, but should also enhance the environment. They chose to make a biodegradable card with seeds in the paper, that could be planted and enhance any landscape.

The fourth case study was completed April 22, 2008 and was material for the Art Directors Club of New Jersey, including an invitation, call for entries postcard, awards hang tag, and brochure, all designed by Rizco Design. Three goals were set for this project: minimize resources, utilize eco-friendly printing and paper, and ensure that the end-product is recyclable.

The last case study was completed May 27, 2008 and was a BFA catalog showcasing graduating student work for the University of Illinois college (UIUC). A team of senior graphic design students were selected to design the catalog, which is the main source of recruitment for the UIUC School of Art + Design. This year's book was meant to improve overall recruitment and minimize its ecological footprint.

### *Strategy*

All the projects served multiple purposes, while meeting the client's needs and sending an effective message to the audience. The best example of this is the brochure for Fox River Paper. Three major strategic themes were discussed in the case study: educate the reader, focus on positive actions, and have a comprehensive environmental overview. These three things make the piece more than just a promotion for Fox River Paper's paper line. It provides the piece with valuable information that the audience will likely save for reference later. On top of that, it also empowers the audience to make positive changes in their decisions. Celery Design Collaborative defined their role in the project as "strategic branding partner" for Fox River Paper. This gave them more freedom for creativity and eco-innovation than other "graphic designers" who would have been waiting for specifications from clients.

All of the projects also had limited environmental impact throughout their lifecycle. This was due to the eco-friendly choices that were made by each designer for each individual project. Some of these choices were simple such as using recycled paper or choosing local vendors and suppliers. While other choices required more of an effort, maximizing the space on a press sheet or gang-running different pieces.

### *Execution*

Most of the pieces produced in each case study will unlikely benefit from additional strategy. The reason for this is that many of the strategies were thought out in detail before settling on the final solutions. This is what separates great graphic designers from average graphic designers—they consider all the options before settling on the correct one. All the case studies, except for the UIUC BFA catalog, use an appropriate format. The Fox River Paper brochure was a printed piece to show off their paper and how it prints. The plant-able greeting card showed Little & Company's clients that their business is not only appreciated, but that the company deeply cares about the environment too. The materials for the Art Directors Club of New Jersey were implemented through print and interactive means. The packaging for B.T. McElrath Chocolatier comprised of multiple components to make product changes easier and more eco-friendly in the future. The designers of the UIUC BFA catalog did incorporate a lot of great environmental attributes to the printed piece, but the catalog could have benefited from an interactive side as well.

Maximizing space on the press sheet is critical for reducing environmental impacts. It minimizes press time, saves raw materials such as ink, paper, and energy, while only using one set of plates for the job. There are generally two ways to maximize space on a press sheet. The first is to make sure the document size is optimized to fit on the press sheet. Both the UIUC BFA catalog and the Fox River Paper brochure used this method. The second is to gang multiple jobs or components on one press sheet obtaining maximum efficiency; this is commonly referred to as a gang run. Rizco Design used a gang run to print all the materials for the Art Directors Club of New Jersey.

Another way to ensure a sustainable environmental impact in print is to design with recycle-ability in mind. The best way to start is with using recycled materials, reducing the

amount of raw material used (paper, ink, and energy), and raising awareness by displaying environmental specifications on the piece. All of the projects in the case studies used recycled materials and reduced the amount of raw materials used by creating a cohesive design strategy. Only the Fox River Paper brochure and the plant-able card displayed environmental specifications.

### *Production*

Using local vendors and suppliers minimizes transporting and shipping distances, which reduces the carbon footprint of a project by using less energy. The UIUC BFA catalog, Art Directors Club of New Jersey materials, and the plant-able card all used local vendors and suppliers. However, the plant-able card did not use a local vendor for the seeded paper. They felt that since the paper was biodegradable and could be planted, that offset the extra energy used to obtain the paper. All the case studies, except the packaging for B.T. McElrath Chocolatier, also used vendors that have environmental certifications and use renewable energy.

Using recycled paper saves countless trees. There are many options to consider when choosing paper for a project. In addition to using recycled paper, it would be optimal to also contain post consumer waste fiber (PCW), be FSC certified, processed chlorine free, and produced using renewable energy. Every project used PCW containing paper, however, the packaging for B.T. McElrath Chocolatier was the only project that did not have 100% PCW. All of the projects varied on the other paper attributes used. Another paper that could be used contains tree-free fibers such as kenaf, hemp, and bamboo. The only project to implement this was the plant-able card, which contained seeds.

No specialty metallic or fluorescent inks were used on any of the projects in the case studies. These inks contain more VOC producing solvents than regular petroleum-based inks and are more difficult to remove in the recycling process. Instead, vegetable or soy-based inks were used reducing the amount of harmful VOCs produced, while making recycling of the projects easier.

During binding and finishing, solvent-based adhesives in the bindings and labels should be avoided, staple use should be limited, and foil stamping, thermography, and lamination should also be avoided. All of these attributes make recycling of a product very difficult and sometimes impossible. Solvent-based adhesives add to pollution by producing VOCs. None of the projects used foil stamping, thermography, or lamination. The Fox River Paper brochure used staples, but in moderation.

The amount of material used for packaging should be at a minimum, reducing wasteful material. This is not only good for the environment, but reduces the total cost as well because less material is used in the end. Packages should also nest and stack well for efficient transportation. The only case study that involved packaging was the packages for B.T. McElrath Chocolatier. Creating different components reduced the material used to make the packages—a box, a label, and a strip of paper that wrapped around the box. Since the product information was not printed on the box, but on the strip of paper it reduced the amount of material that would need replacement in the future for possible product changes. The packages were box-shaped enabling efficient packing and transportation.

### *Distribution*

All the projects in the case studies accurately targeted their audiences reducing the amount of printed pieces needed. Mailing is much more efficient with up to date mailing

lists, ensuring only your targeted audience receives your printed piece. Labels should be avoided when mailing because they make recycling more difficult and may contain solvent-based adhesives. The plant-able card by Little & Company avoids using labels by printing permits directly on the cards with soy-based ink and the addresses were ink-jetted using biodegradable, pigment-based, water-fast inks. The cards that were sent after the mass mailing had addresses written with non-toxic, water-soluble Crayola® markers.

### *End-of-useful life*

Overall, the projects in the case studies analyzed could be recycled and/or reused. Successful design strategies minimized the de-inking process and produced sustainable designs and solutions. One solution discussed in the Little & Company case study was the “cradle-to-cradle” concept. It contrasts the “cradle-to-grave” model that many industries use today. Instead of being a linear life cycle, “cradle-to cradle” is a cylindrical model incorporating elements that are biodegradable, recyclable, or reusable. The ultimate goal is to begin and end in the same place producing no waste. Employees at Little & Company believe that designers have the power to bring this cylindrical thinking to the forefront of the industry and successfully change consumers’ ideas of product life cycles.

## **Interviews**

### *Sustainable Graphic Design*

After looking through the different interviews, it was discovered that all three businesses used basic sustainable design principles—but one stood out from the rest. Conscious Creative takes sustainable graphic design very seriously and has their clients make a commitment to it before the beginning of a project. They only use 100% recycled paper, with at least 50% PCW, soy or vegetable based ink, and green certified printers.

Conscious Creative was the only company that stated there were sustainable design specifications in their project contracts.

The most common sustainable graphic design solution for all three companies was recycled paper and soy or vegetable based ink ensuring that the end product would be recyclable. They also recommended certain page sizes to best fit the press sheet, minimizing waste. Virtual proofs, or soft proofs, were also used to reduce waste. The functionality of the final piece is also considered by Conscious Creative and Nancy Jo Ward to help determine the best design strategy. Conscious Creative and Nancy Jo Ward also do not print on any substrates containing plastic, including synthetic paper, because it is not biodegradable. Rizco design concentrates on reducing colorization and processes used to produce the final product. Conscious Creative only uses coating in their designs if it will be aqueous coating. They also specifically request no shrink-wrapping from printers, instead rubber bands could be used to keep the pieces together or scrap paper could be used to separate pieces.

### *End-use and Lifecycle*

Considering the end-use and lifecycle of a piece is a very important part of sustainable graphic design. Conscious Creative focuses on only using recycled paper and strongly encourages renewable uses of their designed projects. Recycling the final product when it's shelf life is over increases it's lifecycle allowing it to be used for a new product. Better yet, designing a piece with maximum shelf life is even more sustainable because it reduces the energy required to recycle the original material over and over again.

Rizco Design implemented a program that educates their clients and holds the company accountable for sustainable graphic design. The program consists of three

sections: office, design, and printing; each with its own measurability: 20%, 30%, and 50% respectively. At the conclusion of a project, each section is graded through an online, electronic report card that is distributed to their clients. A higher percentage means that Rizco design incorporated more sustainable strategies into a section.

### *Sustainable Day-to-Day Operations*

There are many designers who not only place an effort on sustainable graphic design, but they also try to make their day-to-day business operations more sustainable. According to Cheri Larsh-Arellano, Conscious Creative is using CFL light bulbs, energy compliant computers, and a virtual proofing system for customers. They also turn off computers and lights when not in use, recycle, compost, only use 100% PCW recycled paper, and try to do things more digitally resulting in less paper use. Nancy Jo Ward reuses paper to reduce the total amount of paper consumed by her operations, and emails all proofs to cut back on paper usage and shipping. She also tries to limit driving distance and time by conducting phone meetings, which increase her efficiency and productivity. Her studio is designed for energy efficiency by allowing a lot of light through many windows. Debra Rizzi from Rizco design claimed their first step to making their office more sustainable was recycling. They also use office supplies and cleaners that are “green” from vendors with strong environmental programs, FedEx and Staples. The office now uses wind power as its source for electricity.

### *Determining Vendors*

In order to truly have a sustainable graphic design project, the vendors chosen should ultimately have the same goals because most of the resources used are during the paper manufacturing and printing phases. Conscious Creative has a handful of



“environmental” printers they use, each one having their own specialty. They only give work to printers who have environmental certifications, use vegetable or soy based inks, and stock paper with recycled content. Conscious Creative chooses which printer they use based on the job and what the printer specializes in. Nancy Jo Ward chooses her printers based on their quality, service, ethics, and prices—not only on their environmental qualifications.

### *Sustainable Design Resources*

External resources can be very beneficial for sustainable graphic design. There are some good ones listed in chapter two of this report. “The Designers Accord is a global coalition of designers, educators, researchers, engineers, and corporate leaders, working together to create positive environmental and social impact,” (Designers Accord, 2008). Creative Conscious is one of over 100,000 members of this community. They also actively participate in sustainable design forums. This helps to create awareness, share ideas, and promote sustainable graphic design.

### *The Print Reality of Sustainable Graphic Design*

Sustainable graphic design can be implemented in a number of ways; however, some are better in theory than practice. Substrates with tree-free fibers, such as wheat, bamboo, and cotton do not run as well on press than traditional paper according to Mr. Azadan, Production Manager at Alonzo Printing. The press speed is often reduced to accommodate the rougher texture of the tree-free fiber paper. This increases the run time inadvertently increasing the amount of energy needed for production and cost of the job. Depending on the substrate, some printers may not even print on it, due to a fear of the substrate causing damage to the elements of the press. Paper with recycled content runs almost identically to paper without it.

Soy or vegetable based ink does not functionally run any differently on press than petroleum-based ink. It is actually easier to clean because there is less VOC producing chemicals. The one downside to soy or vegetable based ink is that it does not dry very quickly on coated paper and some other stocks. Aqueous coating can help seal the ink and keep it from offsetting to the backside of the press sheets as they stack at the delivery point. Aqueous coating is also easier to run because there are no plates required, which minimizes material usage as well.

Gang runs are a practical way to save raw materials, such as paper, ink, and energy. They produce pieces with very high quality, as long as similar colors are ganged together. It is difficult to maintain consistent color on short and long runs where the color across the press sheet varies significantly. The same problem is encountered with large areas of solid color. If color is carefully considered when gang running multiple projects, less material is consumed because color consistency will be easier to make and hold.

Mr. Azadan estimated that about 10-15% of the proofs produced at Alonzo Printing were soft or virtual proofs. This helps save paper and shipping that would normally be used when producing a hard proof.

## Chapter V: Conclusions

This purpose of this study was to answer to the question: What are the major trends that graphic designers can use to create sustainable pieces? The analysis of the case studies and interviews exemplified that no matter what type of project, brochure, card, book, or packaging, it is critical and possible to design sustainably. The biggest thing to consider is the strategy that will be used to implement sustainable graphic design. This can make or break the effectiveness of the project. Graphic designers have the unique role of influencing sustainable design decisions that affect every aspect of a project.

Graphic designers are more than just creators—they are creative strategy experts. Ultimately, the sustainable fate of a project lies in the designer's hands. With that being said, it is the designer's responsibility to determine the best sustainable design solution for individual projects. This includes fulfilling the client's objectives, while communicating an effective message to the audience and giving the piece a maximum shelf life. The piece would also benefit from filling multiple purposes and not depending on other elements or efforts to support it. It is an absolute must that the project has a minimized effect on the environment throughout its lifecycle.

This study uncovered many ways to accomplish sustainable graphic design. The first is to ensure recycle-ability of a project. This entails the use of recycled paper, paper produced sustainably (FSC certified, processed chlorine free, and produced with renewable energy), using soy or vegetable based inks, and not using specialty metallic or fluorescent inks because of the removal difficulty in the recycling process. Finishing techniques should also be limited and avoided when possible to make recycling easier. The second thing to consider is vendors and suppliers used during the process. Local vendors and suppliers who

have environmental certifications and use renewable energy are the best choice because they will have the least impact on the environment. The last main point to consider when designing a sustainable project is proper audience targeting. This ensures less waste produced during the production and distribution of the project. The only other thing to keep in mind when creating sustainable graphic design is a cylindrical lifecycle, rather than a linear lifecycle. This minimizes the effect that a project has on the environment—the main purpose of sustainable graphic design.

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