

THE GREENING OF DESIGN AND PRINT

The World Commission on Environment and Development defines the term sustainable development as, "meeting the needs of the present without compromising the ability of future generations to meet their own needs."

Whether influenced by customer demand, industry regulations, investors/stakeholders, or motivated by personal conviction, designing and printing "green" is an accelerating trend in our industry.

As a corporation, Adobe takes its role as sustainability steward seriously, defining corporate responsibility as the ability to achieve commercial success while honoring ethical values, respecting people, communities, and the environment.

Bringing sustainable practices into your every day routine means finding and implementing ways to live, work and consume that minimize our impact to the environment, keeping it healthy and plentiful for future generations. Sustainability in terms of green design and print practices is a three-fold opportunity: 1). By reducing the waste stream in our daily design and print operations, we find opportunities to minimize our environmental footprint. 2). These waste minimizing practices can also result in cost reductions, material savings and quality enhancements, which can lead to a competitive advantage. 3). Adopting sustainable business practices can not only help companies improve their brand and thrive in an increasingly eco-aware industry, it can also emerge as a key issue for furthering our industry's future.

So, to get us started on this promising path, we invite you to review this document, which provides examples of how companies are using Adobe and its Ecosystem partners' technologies and solutions to turn design and print-related activities into positive, productive, and profitable environmentally-friendly choices.

1) Increase efficiency and reduce waste by instituting a PDF workflow.

Adobe Acrobat and the industry standard Portable Document Format (PDF) introduce new opportunities for consistency and predictability of document review and exchange. PDF Workflows add further efficiency enhancements with the ability to create and send electronic documents via e-mail, create forms, review and collaborate on-line, institute a soft-proofing review cycle, and attach information electronically about how a file should be printed and finished through the Job Definition Format (JDF) – much more than simply creating a PDF file.



An Adobe Creative Suite and Portable Document Format (PDF)-based workflow help streamline operations for environmentally friendly print service provider, Monroe Litho. The company trains customers how to create print-ready Adobe PDF files, which helps reduce prepress expenses and paper use, and ensures that jobs go through production quickly and accurately, without a lot of rework. "The Adobe PDF workflow is smooth, very editable, consistent, and repeatable," says Randy Allen, vice president of prepress for Monroe Litho. "By reducing errors and enhancing efficiency, our Adobe PDF workflow helps us boost productivity and cut down on wasted materials."

For more information on Adobe PDF Workflows, visit:
www.adobe.com/products/acrobat/solutions/creative/.

2) Recycle, reduce, reuse.



Think of the hundreds of times a day we touch paper – newspapers, cereal boxes, labels, catalogs, money, tissues, books, shopping bags, magazines, consumer packaging, and printer and copier paper used at home and at work. The average American consumes more than 700 pounds of paper a year, while Eastern Europeans and Latin American residents consume about 100 pounds per person per year. The average consumption in Australia is approximately 300 pounds per person per year, and Western Europe is more than 400 pounds per person per year.

Source: www.thedailygreen.com

To help reduce the waste impact on our environment, Adobe recommends using high post-consumer non-chlorine bleached recycled paper and recycling the already used paper from around the office. Studies reveal that recycled paper is equivalent to virgin paper in performance and many are competitively priced*, yet recycled paper accounts for less than 10 percent of the paper market. Only products deemed acceptable by the Chlorine Free Products Association are granted Processed Chlorine Free (PCF) and Totally Chlorine Free (TCF) emblems. Look for the symbols when purchasing recycled paper.



Source: www.alocalprinter.com/uk/recycled-paper/



Leading this effort is one of the nation's largest printers, Quad/Graphics, who is on the cutting edge of technology and for more than 35 years, has been a pioneer in green-printing practices, from reducing ink and paper waste to making sure print-shop air quality far surpasses legal guidelines. The company recycles more than 98 percent of its waste and has won numerous awards for environmental leadership.

3) Create a Web portal for your customers to submit print jobs online.

Looking for a tool that can simplify and streamline the process of ordering, purchasing, producing, proofing, approving, and reordering print jobs? Consider creating a branded Web-to-Print solution that resides on your company's Web site and allows customers to order collateral, request an estimate and submit jobs online. Not only does this speed the production process and avoid unnecessary errors, it helps reduce the amount of paper consumed – currently estimated at 10,000 sheets per office worker per year.

Source: www.comodo.com/products/fax/

When Consolidated Graphics Group established an online job submission solution based on Adobe PDF templates and the Job Definition Format (JDF), they saved 15 minutes of prepress time per job by eliminating preflighting, which enabled them to accept more jobs monthly. Through automation, they greatly increased their job ordering and submission efficiencies, reduced job ordering entry errors, and decreased their dependency on paper.



4) Optimize production efficiencies with JDF, reducing scrap, error and waste.



Industry standards have been key enabling technologies, and Adobe is a keen supporter of their development and adoption. Adobe PostScript was used to describe *pages*, Adobe PDF describes *documents*, and Job Definition Format (JDF) describes *jobs*. JDF content sent from the designer's desktop can contain the total number of pages in the job, the paper stock to be used, the run length, client

contact information, and delivery details. Further downstream at the print production site, the JDF would be used to gather manufacturing details as the job goes through the workflow – an incredible time-saver when jobs are ganged, as is more and more the case for this market segment. Essentially, JDF automates the process – speeds throughput, reduces errors, conserves paper and energy and lowers your production costs.

Adobe and many of its Ecosystem partners are building JDF-enabled technologies. As development and adoption increase, the benefits of JDF-based workflows will become more pronounced.

For more information on JDF, visit:

http://www.adobe.com/studio/print/pdfs/JDF-WP_A9_updates_july08.pdf

5) Use new online technologies to streamline proofing and speed approval cycles.

A traditional proofing workflow – printing, making multiple copies, mailing, transportation – relies heavily on both environmental and labor resources. Online proofing provides a method for a reviewer to receive a proof as an e-mail attachment, from a server-based review, download a proof from a branded online job submission or FTP site instantaneously, or create a proof seamlessly using the print profile of their print service provider. Online proofing is an interactive process combined with an element of communication that enables you to not only view a document or image onscreen, but to make comments and mark-ups, and return an approval status.

By integrating Adobe PDF JobReady into its full commercial print service, the New Haven Print & Copy company increased quality, convenience and efficiency. Prior to using Adobe PDF JobReady, incoming print jobs often lacked all the necessary fonts and correct printing specifications, or contained graphics in the wrong color space and resolution. Now, New Haven Print & Copy uses Adobe PDF JobReady to help its customers create print-ready PDF files on the fly, proof those files, and submit them for production. Their clientele proof everything from copies of manuals and booklets to polished dealer training material --- eliminating the need for hardcopy proofs.



“With Adobe technologies, our customers can easily generate print-ready Adobe PDF files. It’s convenient for them and it saves us time in print production,” says Craig Dellinger, president and general manager of New Haven Print & Copy.

For more information on PDF JobReady, visit: www.adobe.com/products/pdfjobready/

6) Create targeted marketing materials with variable data publishing technologies.

Nearly half of the direct mail that is printed and mailed to American mailboxes is thrown out unopened.* Why? It’s all a matter of relevance. Variable data publishing (VDP) is a value-added service that will offer your clients a more effective way to convey relevant, interest-generating messages to their customers. VDP has emerged as a key enabling technology that makes personalized communications a reality, producing a customized message for each recipient. By more effectively targeting the recipient, response rates and ROI improve, benefiting all parties, including the environment.

Source: Solid Waste Management Division: <http://sw.data3m2.com/recycle/reducemail.htm>

TREKK CROSS-MEDIA

Ahead of the pack in VDP services is Trekk Cross Media, where personalization extends beyond names, addresses and local promotions. “Think predictive modeling,” says

M.J. Anderson, Trekk's vice president for creative services. "We use the consumer's history and demographics to match them with products they might be predisposed to buying, and then use Adobe Creative Suite design tools to customize the piece with images and copy related to those products." VDP currently represents 30% of Trekk's business.

To learn more about Variable Data Publishing, visit: www.adobe.com/vdp.

7) Save on office and plant operational costs by powering down your equipment.

To use energy-saving features built into systems, set printers and copiers to "standby" mode after 20 minutes of non-use. Simply activating the power-save features on desktops can save 50 or 60 percent of the energy wasted when computers are left on, and idle, for 24 hours a day. Dimming the monitor, spinning down the hard disks and putting the drive to sleep are all simple steps that help reduce valuable energy.

Source: *Green Computing at Google*:

http://www.greenercomputing.com/reviews_third.cfm?NewsID=34965

Adobe customer Monroe Litho uses clean electricity to power its productivity. In fact, 100 percent of its electricity comes from clean, renewable, wind-generated sources. Monroe Litho's annual wind power purchase will offset approximately 2.5 million pounds of carbon dioxide (CO₂) that would have been released into the atmosphere through conventional power generation.



8) Sustainable packaging – Choose environmentally friendly paper and adhesives.

Discarded packaging represents more than 30 percent of the solid waste buried in U.S. landfills each year.

Sources: *Green 08*: http://green08.org/?page_id=7 and *HealthGoods.com*:

http://www.healthgoods.com/Education/Environment_Information/Solid_Waste/alternatives_waste_management.htm

We can reduce the size of our carbon footprint by adopting packaging and business practices that conserve resources and reduce environmental impact. By choosing the right paper, we save wood, water, energy, and cut pollution and solid waste. You may want to look for papers containing pulp made from agricultural residues such as wheat straw or rice straw.

Also, any bindings, adhesives, foils, and plastic bags used in printing or packaging printed material can render paper unrecyclable. Eco-friendly design means using only water-based adhesives on envelopes and mailing labels, making certain that they do not contain chlorinated organic compounds, many of which are persistent, toxic chemicals.

Source: *Environmental Defense Fund*: <http://www.edf.org/article.cfm?contentid=39>



Packaging printer Schawk, known for its work with top brand owners such as Target, Wal-Mart, General Mills, Procter & Gamble and Sony Universal is committed to creating the best brand imaging solutions in a manner that manages the world's natural resources and benefits the local and greater communities. Together with Coca-Cola, Procter & Gamble and Adobe, Schawk has formed the Intelligent Packaging Consortium to establish industry standards for packaging production workflows.

The Adobe packaging workflow, enhanced by Esko Software Suite 7, is one of many ways Schawk delivers on this pledge with a streamlined, efficient, and eco-friendly workflow. In addition, BLUE, Schawk's content lifecycle management system, enables Schawk to produce soft-proofs of client projects, which reduce paper consumption and associated transportation and

delivery costs. Anthem Worldwide helps clients choose the substrates, structures, and inks that will maximize their environmental sustainability options. Schawk also employs the use of renewable, vegetable-based printing inks, such as soy, and is exploring the use of water-based inks on substrates uses in flexographic printing.

Other organizations such as the Sustainable Packaging Coalition (SPC) are focused on raising awareness of the sustainability issues related to packaging, as well as fostering the development of tools and resources, partnerships and strategies to address them. The SPC is committed to eco-friendly packaging production and encourages other companies to be more environmentally active. Curtis Packaging, Kraft Foods, Unilever and Procter & Gamble are all members of the Sustainable Packaging Coalition.



9) There's no need to fly to meetings if you can join online.



Business travel is an increasingly significant expense and source of greenhouse gas emissions. Why fly when you can collaborate with colleagues and clients in real-time? By participating in meetings and client reviews online instead of in person, a small group collaborating between New York and San Francisco will realize a 98 percent travel cost savings and eliminate more than 44,500 pounds of CO2 emissions. You can take steps to contain travel budgets and reduce carbon emissions through the use of on line collaboration tools like Adobe Acrobat Connect.

For more information on Acrobat Connect, visit: www.adobe.com/products/acrobatconnect/.

10) Print what you need, when you need it.

Printing on demand has many advantages, and a printer who offers this service can be a valued partner. Old, outdated materials cost money to ship and to store, and are often, ultimately, discarded. It is reported that 50% of the contents in landfills is comprised of paper and packaging.* By utilizing Print on Demand (POD) workflows and technologies, clients enjoy the advantages of having more timely and targeted information, which reduces storage and shipping costs, as well as waste.

Source: Unisource : http://www.go2pmg.com/media/pdf/recycle_paper_facts.pdf

Adobe customer and InDesign User Group leader, Kenneth B. Chaletzky, president of Copy General offers customers the ability to post their marketing and training materials in an online digital storefront, replacing inventories of outdated documents with current, high-quality, materials. Copy General also prints short-run books for a variety of self publishers, a high value option that would not have been cost-effective with conventional printing.



11) Carefully select solvents and inks.

By using ink settings that are low in Volatile Organic Compounds (VOCs), and by careful selection and use of solvents, you can minimize the environmental footprint of your printing operation. The National Association of Printing Ink Manufacturers says that the replacement of petroleum oils with soy and other vegetable based inks will reduce our environmental impact. In fact, 90 percent of daily newspapers use them routinely for color printing.



A leader in the adoption of eco-friendly inks is Adobe customer, Hemlock Printers. Their inks, most of which are vegetable and soy-ink based, contain limited ozone-damaging petroleum distillates and minimal (VOCs). “Green” inks also help maintain color integrity, which is critical to good color management.

Metallic inks have the greatest potential for negative impact on the environment, as are inks that contain added arsenic, antimony, cadmium, chromium, lead or mercury. Ink powder contains cyanide-based chemicals that pollute water and solids when dumped in landfills.

Hemlock became the first printing company in the Pacific Northwest to receive the Forest Stewardship Council chain-of-custody certification. This FSC certification promises print customers that the path taken from forest to consumer - including all stages of processing, transformation, manufacturing and distribution - is environmentally safe.



12) Be creative, consistent and cost-efficient.

Adobe Creative Suite software is not only comprised of industry-leading applications that promote creativity, but because of the interoperability between the applications, it also elevates efficiency and productivity. Nike takes this functionality a step further, applying the Creative Suite to its sustainable design efforts. The company recently designed two sustainable shoes that use materials derived from the waste of manufacturing footwear outsoles, as well as materials from recycled used sneakers to create the Air Jordan XX3. Nike Zoom running shoe for women looks just like a regular sneaker; with laces made from 100% recycled polyester and the body is from 32% recycled materials.

According to Nike, the perfect sustainable product would be one that delivers premium design, maximum performance and zero waste – at every stage of its lifecycle. The company’s sustainable responsibility helps generate awareness of creative costs for other businesses, and shows the benefits of making fewer, more significant, longer lasting designs.

Source: www.Nikeresponsibility.com

13) Distribute and Print.

Ensure that materials are produced closest to the end user by implementing a distribute-and-print model. Rather than printing jobs that have to be shipped to their final destination, consider printing them close to or at their final destination. This reduces the environmental impact of trucking printed materials.

Edwards Brothers works to lower their customers’ total cost of doing business, and helps the environment at the same time. Some of Edwards Brothers clients have printing equipment on site to print books on demand at the customer’s locations, rather than having them shipped from Michigan.



14) Design tips help prevent scuffing of direct mail pieces -- without using special varnishes.

Adhesives, varnishes, laminates and coatings, if they are not recyclable, will divert your direct mail piece to the landfill rather than return it to a paper mill. Marketers often request these special finishes to improve the mail piece’s survivability during delivery, however, there are no guarantees that they will be properly disposed.

Mail pieces can be designed to avoid scuffing and damage to critical content areas without the use of varnishes. Talk to your local Postal Business Center to request a tour of their handling facility, and test some of your mailings with them to learn more about where the damage occurs and how to design around it.

Visit: <http://www.usps.com/businessmail101/> to learn more about designing for the mail.

15) Consider using bio-diesel in your delivery fleet.

Delivery trucks consume large amounts of fuel and emit greenhouse gases. More efficient turbo-diesel engines combined with biodiesel fuel transform your fleet into a sustainable asset.



Biodiesel is the name of a clean burning alternative fuel, produced from domestic, renewable resources, which contains no petroleum, and can be blended at any level with petroleum diesel to create a biodiesel blend. It's biodegradable, nontoxic, and essentially free of sulfur and aromatics. It also has lower emissions compared to petroleum diesel, is less toxic than table salt and biodegrades as fast as sugar. Since it is made from renewable resources such as soybeans, its make you less susceptible to fluctuating world oil and fuel price changes, and may event support your local economy.

Source: <http://www.biodiesel.org/>

16) Work smarter with content management tools.

Reusing and repurposing a central repository of digital assets and content will result in time and cost savings, greater consistency, and more effective branding. A world leader in enterprise content management solutions is EMC Documentum, providing an ECM platform that enables people to collaboratively create, manage, deliver, and archive the content that drives business operations — from documents and discussions to e-mail, Web pages, records, and rich media — using one common content platform and repository.



With Adobe Acrobat forms and the EMC Documentum content management platform, organizations can increase productivity and efficiency by automating forms-driven business processes. Integrating Adobe Acrobat software within the Documentum environment results in a solution that simplifies collaboration across the extended enterprise. EMC Documentum is also an OEM partner for Adobe Distiller Server and Adobe Graphics Server software.

Source: www.emc.com

17) Lighten up: Replace your light bulbs with eco-friendly, longer lasting alternatives.

Help reduce your overall energy budget. Replace conventional light bulbs with energy-efficient ones. One of the simplest things you can do to save energy and pollution is to swap out your old incandescent bulbs for compact fluorescent lights (CFLs). If you're not ready for a full-house makeover, resolve to start by changing just one light. If you replace just one out of four of your light bulbs with fluorescents, you can save about 50% on your lighting bill.

Source: EPA



CFLs don't use a hot filament, so they require a lot less electricity. A 15-19 watt CFL will produce the same amount of light as a 60 watt incandescent. That's a 75% cut in global warming pollution. By using CFLs, you are saving money, as well as helping to save the planet.

Source: [EnergyStar.gov](http://www.energystar.gov):

http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

18. Refresh responsibly.

If you have a cafeteria or break room refrigerator filled with water bottles to hydrate your hard working staff, consider replacing these with a water cooler. Or, distribute reusable water containers in metal or glass. According to Richard Brill of the Star Bulletin, "Production of the 29 billion polyethylene terephthalate (PET) water bottles used in the United States (about one bottle per person every four days) requires nearly 900,000 tons of the plastic, the equivalent of more than 17 million barrels of crude oil annually." Further, "Every ton of PET produced releases around three tons of carbon dioxide into the atmosphere. The bottled water industry added more than 2.7 million tons of carbon dioxide to the atmosphere in 2006, if the Pacific Institute's numbers are accurate, and even more in 2007 considering the growth of the industry. At end of the chain is disposal of the bottles -- only 15 percent of which are recycled -- which also consumes both energy and water. A large portion of the remaining 85 percent ultimately wind up in landfills." Consider making a refreshing change at your home or office; it can have a big impact.



® We're practicing what we preach. Adobe diverts up to 95 percent of its waste (computers, batteries, printer toner, fluorescent lamps, etc.) from landfill projects, placing the company in the top percentile nationally. In June 2006, Adobe became the first company to receive 3 platinum awards from the nonprofit U.S. Green Building Council under its current Leadership in Energy and Environmental Design Standards (LEEDS). That makes Adobe's San Jose headquarters the greenest corporate building on record in the United States.

Our efforts to support green design and printing practices will continue, and this document will be updated frequently. Please visit <http://www.adobe.com/aboutadobe/environment/> often, and if you would like to share some tips of your own, please send them to printing_promotion@adobe.com.