





Good buy

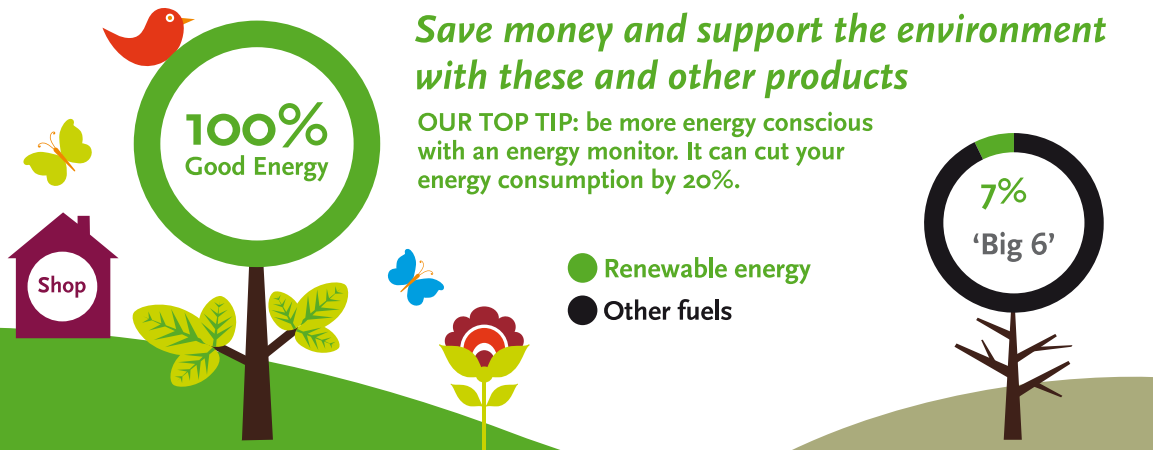
Goodbye

-  Energy saving lightbulbs use up to 80% less electricity
-  The ECO kettle uses 31% less energy than conventional kettles
-  Wind-up radios that give you hours of carbon free listening
-  Solar rechargeable LED torch gives 15 hours use from 1 hour of sunlight

-  Global warming globes
-  Carbon clunky kettles
-  Carbon reckless radios
-  Battery bingeing torches

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Good Energy
THE NATURAL CHOICE

Source: BERR Fuel Mix Disclosure Table based on 2008 disclosed figures. 'Big 6' figures are straight averages of 2007/8 disclosed fuel mix for npower/RWE; E.ON; British Gas; EDF; Scottish Power; Scottish & Southern.

Kitchen appliances

Kitchen appliances that wear out so fast they often have to be replaced are a good example of the built-in obsolescence at the heart of our consumer culture. Here, the environmentalist's motto 'reduce, re-use, recycle' is particularly important. Many of the gadgets in the average kitchen (such as juicers, blenders and deep fat fryers) go unused, but for those that are truly necessary it is crucial they are disposed of carefully.

OUR THROWAWAY CULTURE

At least six million kitchen appliances are discarded each year. As most of them are thrown into dustbins, very few are recycled as they could be. Friends of the Earth would like to see much higher recycling or re-use targets for waste electrical and electronic equipment. The organisation argues in favour of making products last longer, designing them for easy repair or for easy replacement of worn-out components, as well as for easy recycling for parts that cannot be re-used. FoE says that this should be the responsibility of the manufacturers, so that they carry the cost of recycling or disposal of their products.

Even if a piece of equipment seems to have reached the end of its life, that doesn't mean it's no longer usable. Second-hand shops often take old equipment and there are schemes around the UK to recover discarded electrical equipment. Wastewatch recommends that old appliances are not dumped in the bin but taken to a civic amenity site where they can be added to other scrap for recycling. Information is available from the local

authority, which will have a recycling officer, or from Wastewatch (www.wastewatch.org.uk).

MATERIALS USED

Various materials, such as stainless steel, iron and plastics, are used in most kitchen appliances. All the associated ills of mining and manufacturing come in to play – toxic waste, pollution, energy wastage and greenhouse gas emissions. Of course these things will continue to exist anyway, but a good way to minimise their impact on a personal level is to avoid buying new products, by choosing second-hand or reconditioned items instead.

TRIMMING DOWN

Weighing up how often an item will be used can be useful in deciding how necessary it is. If it is unlikely to be used on a weekly, or even monthly, basis, is it really needed? It also helps to think about ease of use, as there may be another way to do a job without resorting to over-

complicated gadgets that are often difficult to clean.

For example, a blender does many of the same jobs as a food processor but uses a smaller quantity of energy. A standard grill can easily be used instead of a toaster, and electric can openers have mostly been made redundant by the addition of ring-pulls to cans.

ENERGY USE

The energy efficiency of electrical appliances varies from model to model. As there is no eco-labelling scheme for small kitchen appliances, consumers have to rely on the energy usage being displayed on the product's packaging. A kettle draws up to

3KW, and when millions are turned on at about the same time (such as during television ad-breaks) the increase in demand is massive. Compared to electricity, gas is 30 per cent more energy efficient. This is why kettles used on gas cookers can be a better option than electric ones.

Hand-operated kitchen appliances, naturally enough, are the most energy-efficient kinds you can buy, not least the whisks, forks and knives that are absolutely essential for cooking!

You can save money on kitchen appliances by using www.gooshing.co.uk. This service searches over 300 shops to find the cheapest price on your chosen brand – and gives ethical ratings on the manufacturers.

KITCHEN APPLIANCES BRAND NAME	ENVIRONMENT				ANIMALS				PEOPLE				OTHER				Company group
	ENVIRONMENTAL REPORT	ECO SCHEMES	NUCLEAR POWER	ANIMAL WELFARE	HUMAN RIGHTS	ARMAMENTS	POLITICAL DONATIONS	OTHER CRITICISMS	BOYCOTT	ETHICAL ACCREDITATION	ETHICAL COMPANY INDEX						
BRAUN	○	○	●	●	●	○	●	●	●	○	●	●	●	○	24	Procter & Gamble	
BREVILLE	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Alba Plc	
BUSH	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Alba Plc	
DE'LONGHI	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	De'Longhi Spa	
DUALIT	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Dualit Ltd	
GOODMANS	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Alba Plc	
HINARI	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Alba Plc	
KENWOOD	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	De'Longhi Spa	
MORPHY RICHARDS	●	○	●	●	●	●	●	●	●	○	●	●	●	○	81	Glen Dimplex	
MOULINEX	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Groupe SEB	
PHILIPS	●	○	●	●	○	○	●	●	●	○	●	●	●	○	62	Royal Philips Electronics N.V.	
PIFCO	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Salton Inc	
PRIMA	●	○	●	●	●	●	●	●	●	○	●	●	●	○	81	Prima International Group	
ROWENTA	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Groupe SEB	
RUSSELL HOBBS	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Salton Inc	
SALTON	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Salton Inc	
SWAN	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Groupe SEB	
TEFAL	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Groupe SEB	

Key

- Top rating
- Middle rating
- Bottom rating

Source: The Ethical Company Organisation



- Morphy Richards
- Moulinex
- Prima
- Rowenta
- Swan
- Tefal



- Breville
- Bush
- De'Longhi
- Dualit
- Goodmans
- Hinari
- Kenwood
- Pifco
- Russell Hobbs
- Salton



- Braun
- Philips

Laundry detergents

The fact that every day is washing day for many families means that, collectively, we are expending far more energy, water and detergent on our laundry than ever before in history. None of these are good for the environment – particularly the detergents, which are often derived from rather unappealing petroleum by-products. Nevertheless, many companies produce eco-friendly alternatives, which can be just as effective and rarely cost much more than your usual brand.

OVER-PERFORMANCE

The mega-wash companies Procter & Gamble and Lever Brothers churn over 84 per cent of the British clothes that are washed every day. Their research and development divisions are masters at devising new and impressive-sounding formulations for their products, dazzling consumers with promises of whiter and whiter whites. While performance and value for money are undoubtedly important, most of the things put in the average British wash simply don't need the highest level of performance. As small, environment-conscious companies often point out, most of our clothes just require gentle freshening up – not full-scale decontamination.

INGREDIENTS TO WATCH

Detergents from the mega-wash companies are more likely to contain petroleum-based surfactants, which can take many years to biodegrade. Look for vegetable-based alternatives, and avoid detergents that contain other chemical ingredients

such as phosphates, phosphonates and carboxylates. Phosphates are a known cause of eutrophication, a process that disrupts the natural balance of rivers and streams and can cause problems for fish and other wildlife.

Enzymes used in detergents are not directly bad for the environment, but have in the past been reported to cause problems for workers in the factories making them. The good news is that these problems have been almost entirely eradicated in recent years.

Ecological brands including Ecover and Bio-D dispense with the most environmentally damaging ingredients found in the mega-wash products, particularly the petrochemical-based surfactants. Many of their products are certified by BUAV and the Vegan Society, so look out for the logos on their packaging. Some users find eco-friendly brands less efficient at removing the most stubborn stains, but their eco-credentials balance out the occasional use of something stronger!

OTHER INNOVATIONS

Some companies such as Ecover have begun to offer a refilling facility, so that detergent bottles do not have to be thrown away when empty. The sellers (such as a specialist shops

and health food stores) are provided with a supply of the product so that customers can return their bottles to the nearest available outlet and fill them back up. As most detergent packaging is not suitable for recycling, this is a significant step in reducing the amount of household waste produced.

Also available are products that claim to reduce the amount of laundry detergent required, or to remove the need for it altogether. Some work using enzymes, while others help to soften the water in the washing machine. Reception to these innovations has been mixed, with some saying that the products have lower stain-removing power, but they are nevertheless worth researching.

For most clothes, *The Good Shopping Guide* recommends a combination of Ecover/Bio-D or an equivalent eco-friendly detergent, plus a quarterly wash in biological powder for the dirtiest items. This will provide the best possible trade-off between efficiency and environmental impact.

60-SECOND GREEN GUIDE

- If using a mainstream brand, choose a washing powder over a liquid. Concentrated powder is better than standard powder
- Use soap-based detergents, or ones with a high soap content
- Vegetable-based surfactants are better than petrochemical-based ones
- Use a product without phosphates, phosphonates or carboxylates
- Make eco-products work better in hard water areas by using a water softener
- Choose a low wash temperature, or select the 'economy' cycle



- Bio-D
- Clear Spring
- Ecover



- ACDO
- Advance
- Co-Op
- Cyclon
- Logic
- Novon
- Surcare



- Ariel
- Bold
- Daz
- Dreft
- Fairy
- Persil
- Surf

LAUNDRY DETERGENTS BRAND NAME	Company group											
	ENVIRONMENT	ANIMALS	PEOPLE	OTHER	Company group	Score	Company group	Score	Company group	Score	Company group	Score
ACDO	●	●	●	●	●	81	ACDO Co	○	○	○	○	○
ADVANCE (TESCO)	○	●	●	●	●	86	McBride	○	○	○	○	○
ARIEL	○	○	●	●	○	24	Procter & Gamble	○	○	○	○	○
BIO-D	●	●	●	●	●	90	Bio-D Company	○	○	○	○	○
BOLD	○	○	●	●	○	24	Procter & Gamble	○	○	○	○	○
CLEAR SPRING	●	●	●	●	●	90	Faith Products	○	○	○	○	○
CO-OP	○	●	●	●	●	86	McBride	○	○	○	○	○
CYCLON (SAFEWAY)	○	●	●	●	●	86	McBride	○	○	○	○	○
DAZ	○	○	●	●	○	24	Procter & Gamble	○	○	○	○	○
DREFT	○	○	●	●	○	24	Procter & Gamble	○	○	○	○	○
ECOVER	●	●	●	●	●	90	Ecover	○	○	○	○	○
FAIRY	○	○	●	●	○	24	Procter & Gamble	○	○	○	○	○
LOGIC (ASDA)	○	●	●	●	●	86	McBride	○	○	○	○	○
NOVON (SAINSBURY)	○	●	●	●	●	86	McBride	○	○	○	○	○
PERSIL	●	●	●	●	●	43	Unilever	○	○	○	○	○
SURCARE	○	●	●	●	●	86	McBride	○	○	○	○	○
SURF	●	●	●	●	●	43	Unilever	○	○	○	○	○

Key
 ● Top rating
 ○ Middle rating
 ● Bottom rating

Source: The Ethical Company Organisation

Mobile phones

Although 50 million people own a mobile phone in the UK, we don't yet know enough about the potential health implications of this new technology. Whilst there is no firm evidence for a direct link between mobile phone use and health risks, experts tend to suggest we should remain cautious. This section will explore some of these health issues, and suggest the networks and handsets that are the most environmentally friendly.

ERRING ON THE SIDE OF CAUTION

The independent Stewart Report, published in 2000, analysed the links between mobile phones and ill-health, and concluded that there was no proof that using mobile phones led to health problems. However, it maintained that 'gaps in our knowledge are significant enough to justify a precautionary approach'.

The major potential health danger is that radiation emitted from the handset could lead to cancer. A recent Swedish report, which found that incidents of ear tumours increased fourfold among people who used mobile phones just once a day for ten years, suggested that this theoretical risk may be a reality.

More worryingly still, it has been proven that the radiation from mobile phones can alter DNA and proteins. While these DNA changes have not been linked to any specific health problems, many scientists believe more research needs to be carried out, and this development strengthens the argument for caution.

WHAT TO DO

Simple steps can reduce the potential risks. Try to avoid making calls when your phone has low signal, don't touch the aerial when the phone is turned on, and switch off the phone when it is not in use. It is also possible to choose a safer phone. Following the Stewart Report's recommendations, all mobile phones should display a SAR (specific absorption rate) value, showing the amount of radiation emitted by the phone. The maximum legal rate in the UK is 2.0 w/kg, but in the US phones must have a SAR value of 1.6 or less. Find the lowest SAR value at www.mobile-phones-uk.org.uk/sar.

The most important advice is directed towards children, who are more susceptible to the possible effects of radiation because their skulls are not fully thickened, their nervous systems are still developing, and they will use a mobile phone for longer during their lifetime. The Stewart Report advises that young people only use mobiles for essential calls and discourages companies from marketing their phones directly to children.

MAST DEBATE

Mobile phone masts have been the focus of much anxiety and campaigning, but in reality the health concerns associated with handsets are more serious than those linked to masts. In the UK, masts have been shown to emit radiation between seven hundred and ten million times below internationally agreed limits. Nevertheless, the Stewart Report recommends that they should be surrounded by an exclusion zone and located away from schools.

Greenpeace highlights the danger that some workers are exposed to when processing old mobile phones without proper equipment, and has persuaded some companies, including Sony Ericsson and Nokia, to eliminate harmful chemicals including flame retardants and PVC plastic from their products. Other companies, such as Motorola, have so far made no such commitment.

If you are one of the 15 million people in the UK who are disposing of a mobile phone this year, you can help to alleviate the environmental strain by recycling your handset. Many supermarkets, charity shops and mobile phone retailers offer recycling services, often for a good cause. Have a look at www.futureforests.com/recyclephone or www.childadvocacyinternational.co.uk for two charities who would be glad to receive your old phone.

RECYCLING

Many toxic chemicals go into mobile phones, making their disposal a potential health hazard. This often takes place in the developing world, where labour costs and environmental standards are lower.

MOBILE PHONES BRAND NAME	ENVIRONMENT	ANIMALS	PEOPLE	OTHER	Score	Company group	
NETWORK:							
O2	●	○	●	●	●	76	BT Group Plc
ORANGE	○	○	●	●	●	81	Orange S.A
T-MOBILE	○	○	●	○	●	76	Deutsche Telecom
THREE	○	○	●	○	●	52	Hutchison Whampoa
VIRGIN MOBILE	○	○	●	○	●	71	Virgin Group
VODAFONE	●	○	●	●	●	76	Vodafone
PHONE:							
NEC	●	●	●	●	●	65	NEC Corporation
NOKIA	○	○	●	○	●	62	Nokia
MOTOROLA	●	●	●	○	●	62	Motorola
PANASONIC	●	○	●	○	●	70	Matsushita Electric
SAMSUNG	●	●	●	○	●	45	Samsung Group
SIEMENS	●	○	●	○	●	48	Siemens
SONY ERICSSON	○	○	●	●	●	43	Sony/Ericsson

Key

- Top rating
- Middle rating
- Bottom rating

Source: The Ethical Company Organisation



Networks

- O2
- Orange
- T-Mobile
- Vodafone

Phones

- NEC
- Nokia
- Motorola



Networks

- Virgin Mobile

Phones

- Panasonic



Networks

- Three

Phones

- Samsung
- Siemens
- Sony Ericsson

Paint

It goes without saying that paint is a concoction of chemicals, but what is never really disclosed about those chemicals is how much damage they can cause to the environment and to human health. This chapter looks at some of the environmental claims behind conventional and 'natural' paints that are used to decorate interior walls (emulsions) and woodwork (glosses), and how safe they are in manufacture, application and disposal.

CHEMICALS

Modern paints are complex chemical concoctions, but most contain petroleum-based by-products from the oil industry, a sector not renowned for its commitment to environmental protection. Indeed, two of the largest paint companies on the table, Azko Nobel and ICI, are thought to be amongst the most environmentally damaging in the world.

Paint production is hazardous and uses a lot of energy. Making just one tonne of paint can produce up to ten tonnes of waste, much of which is toxic. However, the main issue with household paint is that of volatile organic compounds (VOCs). These occur in gloss paint more than emulsion. They evaporate during use, and can contribute to the formation of ground-level ozone. Several major paint brands now have a voluntary labelling scheme, which states the level of VOCs in their products using five categories from 'minimal' to 'very high'. Consumers in high-street stores looking to avoid high-level VOCs are usually offered new

generations of water-based gloss paints. These contain extra chemicals, so the eco-paint producers argue that it may be better to buy a solvent-based gloss paint from an environmentally aware company.

Conventional paints can emit an alarming array of noxious gases, including known carcinogens such as toluene and xylene. But the fumes given off by natural paints can also be noxious, so both types of paint may get a similar VOC rating. Other concerns are the use of synthetic alkyl phenols, alkyds and acrylics, and whether the product is biodegradable.

Titanium dioxide is used to improve the coverage or 'opacity' of the paint, and is also an important ingredient of many 'brilliant white' paints. Despite being in plentiful supply, titanium has a significant environmental impact because of the amount of energy used in its manufacture, which has led some companies to offer a choice of paints either with or without titanium.

15 to 25 per cent of paint sold in the UK is never used, so if you have waste paint at home contact your Environmental Health

Department for safe disposal or recycling. Remove paint from brushes before rinsing and don't pour it down the drain.

NATURAL PAINT?

The 'natural' paints on the market claim to be both safer to use and kinder to the environment than conventional products. Not all 'natural' paints are the same; some contain only organic ingredients, and several are based on traditional formulations that have been in use for centuries, whilst others, although free from VOCs, may contain synthetic alkyds, usually in order to improve their performance. Some also contain a small percentage of white spirit, sometimes labelled as 'aliphatic hydrocarbons'. The most common ingredients found in 'natural'

paints are linseed oil, lime, turpentine, d-limonene, natural earth and mineral pigments, chalk, casein and borax.

OSMO's products have been certified for ethicality by the Ethical Company Organisation's accreditation scheme.

PITY THE POOR PAINTER

Many consumers are turning to eco-paints, not only for the environmental benefits but also out of concern for their own health. In 1989, the World Health Organisation's cancer research agency found that professional painters and decorators faced a 40 per cent increased chance of contracting cancer, and went so far as to deem painting and decorating to be a carcinogenic activity by definition.



- Auro
- B&Q
- Biofa
- Casa
- Ecos
- Green Paints
- Keim
- Livos
- Nutshell
- Osmo



- Craig & Rose
- Farrow & Ball
- Fired Earth
- Focus
- Johnstone's
- Leyland
- Mangers
- Wickes



- Benetton
- Crown
- Dulux
- Homebase

Printers

PAINT BRAND NAME	ENVIRONMENT				ANIMALS				PEOPLE				OTHER				Company group
	ENVIRONMENTAL REPORT	ORGANIC OR ECO-LABEL	NUCLEAR POWER	ANIMAL WELFARE	HUMAN RIGHTS	ARMAMENTS	POLITICAL DONATIONS	OTHER CRITICISMS	BOYCOTT	ETHICAL ACCREDITATION	ETHICAL COMPANY INDEX						
B & Q	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Kingfisher Plc	
BENETTON	●	○	●	●	●	●	●	●	●	○	●	●	●	○	57	Edizione Holding	
CRAIG & ROSE	○	○	●	●	●	●	●	●	●	○	●	●	●	○	81	Craig & Rose Plc	
CROWN	●	●	●	●	●	○	●	●	●	●	●	●	●	○	62	Akzo Nobel NV	
DULUX	●	●	●	●	●	○	●	●	●	●	●	●	●	○	62	ICI Plc	
FARROW & BALL	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Farrow & Ball Ltd	
FIRE EARTH	○	○	●	●	●	●	●	●	●	○	●	●	●	○	81	Aga Foodservices	
FOCUS	○	○	●	●	○	●	●	●	●	○	●	●	●	○	71	Focus (DIY) Ltd	
HOMEBASE	○	○	●	●	○	●	●	●	●	○	●	●	●	○	62	GUS plc	
JOHNSTONE'S	○	○	●	●	●	●	●	●	●	○	●	●	●	○	71	Bain Capital	
LEYLAND	○	○	●	●	●	●	●	●	●	○	●	●	●	○	71	Bain Capital	
MANGERS	○	○	●	●	●	●	●	●	●	○	●	●	●	○	71	Bain Capital	
WICKES	●	○	●	●	●	●	●	●	●	○	●	●	●	○	76	Travis Perkins Plc	
Eco Paints:																	
AURO	●	●	●	●	●	●	●	●	●	○	●	●	●	○	90	AURO Natural Paints Inc	
BIOFA	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Biofa Naturprodukte	
CASA	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Blue Penguin Ltd	
ECOS	●	●	●	●	●	●	●	●	●	○	●	●	●	○	90	Ecos Paints	
GREEN PAINTS	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Green Paints	
KEIM	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Keim Mineral Paints	
LIVOS	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Livos Pflanzenchemie	
NUTSHELL	●	○	●	●	●	●	●	●	●	○	●	●	●	○	86	Nutshell Natural Paints	
OSMO	●	○	●	●	●	●	●	●	●	○	●	●	●	○	95	Woodex Ltd	

Key
 ● Top rating
 ○ Middle rating
 ● Bottom rating

Source: The Ethical Company Organisation

While we are increasingly aware of the colossal (and avoidable) paper wastage that goes on in offices, it is almost impossible to create a paper-free environment. A few strict rules can help keep paper use to a minimum while a careful choice of brand and model ensures that we support those manufacturers who do most to promote good labour practices. Purchasing printers with the smallest number of consumable parts and recycling cartridges can also make a big difference.

THE GREEN OFFICE

With a little common sense and a lot of encouragement, every office can become a more environmentally friendly place to work in. From the smallest gestures, such as using both sides of the paper to print on, to the more financially weighty ones, e.g. investing in an ecologically conscious printer, it all makes a difference. When it comes to choosing a printer, look for one with a recognised eco-label, in particular the TCO Development label. TCO labelling was launched by a Swedish initiative in 1993 and has since become the recognised benchmark for environmentally friendly office goods. It requires that the companies meet certain standards concerning the emissions, ergonomics, ecology and energy.

ENVIRONMENTAL MATTERS

The companies in this section are subject to many manufacturing regulations, which mean that their production processes demonstrate admirable environmental concern. However, the impact of printers

comes mostly from their use and disposal. To save energy, support those machines that meet the TCO and other energy efficient standards. Products from Brother have set the standard for environmentally friendly printers, and the company scores highly when evaluated under the Ethical Company Organisation's accreditation scheme.

DISCARDING PRINTERS

Of the million tonnes of waste electronic and electrical equipment (WEEE) that is thrown away on the UK every year, 39% is IT equipment. With these products made from a wide range of materials waste management is particularly difficult... in other words discarded computer hardware is an environmental health hazard just waiting to explode.

While it's possible to upgrade certain appliances, which saves purchasing replacements, there comes a time when this option is no longer viable and it is vital that machines are correctly and safely disposed of. To find the companies who can collect and dispose of electrical waste nearest you,

GOOD HOME & OFFICE

visit www.wasteonline.org.uk. There is also the possibility of donating your unwanted equipment to local charities and schools or even having them exported to developing countries (try www.donateapc.org.uk).

CARTRIDGES AND CONSUMABLES

Printers use either inkjet or laser technology, and both have their advantages and disadvantages (see the section on All-in-ones for more information). Of particular concern is the number of consumable parts contained in many colour laser printers, which can almost reach double figures in some cases. All require a drum and toner cartridge that will almost certainly need to be replaced or refilled at some point, but using printers with a separate cartridge for each allows the parts to be replaced independently, saving on unnecessary waste.

In 2003, only 30 to 40 per cent of the 40 million inkjet and toner cartridges sold in the UK were remanufactured or recycled. 12,000 to 14,000 tonnes ended up in landfills. Recycling and refilling old cartridges reduces the amount of waste

brother supports ethical shopping
at your side

created, and there are several companies and charities that can do this for you. Check out www.cartridgeworld.org, which supplies refills and buys used cartridges. For a generally more environmentally-friendly printer, look for long-life drums, refill the ink and toner cartridges, and change ozone filters where applicable. For a more environmentally friendly consumption of ink, print in 'draft' mode as often as possible. Print in black and white instead of colour, this uses less ink and is cheaper. If you have a lot to print, try printing two sheets to a side in landscape format.

LABOUR LAWS

With cheap labour being exploited for mass computer hardware production, there are few sound labour practices in the industry. CAFOD the Catholic Agency for Overseas Development runs a campaign for pressuring multinational computer manufacturers to adhere to recognised standards. Choose brands with high scores in 'People' section of the table opposite. See www.gooshing.co.uk for the best ethical office equipment at the best price.



- Brother
- Konica Minolta
- Lexmark
- Xerox



- Epson
- Kyocera Mita



- Hewlett-Packard
- Samsung

brother supports ethical shopping
at your side

PRINTERS

PRINTERS BRAND NAME	ENVIRONMENT		ANIMALS		PEOPLE		OTHER		Score	Company group
	ENVIRONMENTAL REPORT	TCO CERTIFICATE	NUCLEAR POWER	ANIMAL WELFARE	HUMAN WELFARE	ARMAMENTS	POLITICAL DONATIONS	OTHER CRITICISMS		
BROTHER	●	●	●	●	●	●	●	●	100	Brother Industries Ltd
EPSON	●	○	●	●	○	○	●	●	70	Seiko Corporation
HEWLETT-PACKARD	●	●	●	●	●	○	●	●	45	Hewlett-Packard Company
KONICA MINOLTA	●	○	●	●	○	●	●	●	80	Konica Minolta Holdings
KYOCERA MITA	○	○	●	●	●	○	●	●	75	Kyocera Corporation
LEXMARK	○	○	●	●	●	●	●	●	85	Lexmark Int Group
SAMSUNG	●	●	●	●	○	●	●	●	55	Samsung Group
XEROX	●	●	●	●	●	●	●	○	85	Xerox Group

Key

- Top rating
- Middle rating
- Bottom rating

Source: The Ethical Company Organisation (2008)

Sewing Machines

A sewing machine may seem an unlikely “green” accessory, but there are good environmental arguments for repairing everyday belongings such as clothes and soft furnishings, rather than throwing them away. If you can make these items at home you might save money too. While many of the products in this area are made by specialist companies, others involve much bigger names. Did you know, for example, that car manufacturer Toyota also makes sewing machines?

BUYING A MACHINE

When choosing a sewing machine, look for a model that is easily maintained. Buy from an established company that will be able to provide you with spare parts or a repairs service should the machine break down. Spending a bit more to start off with could be worth it in the long run, and will ensure that your machine doesn't end up in landfill within a few years. If you are upgrading to a new model the company may be required, under the EU's Waste Electrical and Electronic Equipment directive, to take back your old machine for recycling.

Look for an economical machine: the more efficient the motor, the less energy will be wasted when it is in use. Read *The Green Claims Code* (www.defra.gov.uk/environment) for guidance on the validity of companies' environmental claims, and check whether the machine carries the ISO 14021 mark. This is a voluntary international standard which guarantees that self-proclaimed “green” products have been fully and accurately labelled. Try Defra's *Shopper's Guide to Green Labels* for more information.

DONATING AND RECYCLING

Many charity shops are unable to accept electrical goods, but with a bit of resourcefulness you should be able to find a good home for your old sewing machine. Local councils will have details of any recycling programmes in your area, and may also be able to recommend options for reuse or refurbishment. Another alternative to disposal is the UK-based charity Tools For Self Reliance (www.tfsr.org), which collects goods for donation to communities in Africa.

TFSR works with artisans and small businesses to match unwanted tools to the people that need them. As well as carpentry, plumbing and building tools, they also accept sewing machines. If your old machine is a Singer hand or treadle, or an electric model that can do zigzag stitches and embroidery, and is in good working order, it could be spruced up by the volunteers at TFSR and sent to the developing world. There it will help workers improve their incomes – and become more self-reliant.

HAND-MADE FASHION

You've bought fair trade t-shirts, recycled trainers and second hand accessories, but why not go one step further and try making your own clothes? Most department stores and haberdashers stock a wide range of fabrics, and will happily offer advice on the best ways to approach a project. Sewing patterns are no longer the preserve of the unfashionable – established names such as Simplicity have updated their designs in recent years, and the internet is the place to go for truly original styles. Try online communities such as Wardrobe Refashion (<http://nikkishell.typepad.com/wardroberefashion>) for useful tips and eco-friendly inspiration. As well as new clothes, don't forget to look after the ones you already own. Washing at lower temperatures not only saves energy but also helps to protect colours and fabrics

from the effects of wear and tear. Most small rips can be sewn up or patched by machine, or your nearest clothing alteration company may offer a mending service. If the problem is too big to fix, be creative: re-use the material elsewhere or send unwearable garments to reclamation services such as www.traid.org.uk, who will be able to give them a new lease of life.

ETHICAL FASHION EVENTS

There is a new wave of ethicality entering the fashion industry at every level. From London Fashion Week to the Ethic Fashion Award (which features up-and-coming designers with the winners getting a Brother sewing machine) there is lots to look out for.

SEWING MACHINES BRAND NAME	ENVIRONMENT		ANIMALS		PEOPLE		OTHER		Score	Company group
	ENVIRONMENTAL REPORT	TCO CERTIFICATE	NUCLEAR POWER	ANIMAL WELFARE	HUMAN WELFARE	ARMAMENTS	POLITICAL DONATIONS	OTHER CRITICISMS		
BERNINA	●	○	●	●	●	●	●	●	80	Bernina of America, Inc
BROTHER	●	●	●	●	●	●	●	●	100	Brother Industries Ltd
HUSQVARNA VIKING	○	○	●	●	●	○	●	●	75	Kohlberg & Co
JANOME	●	○	●	●	●	●	●	●	80	Janome Sewing Machine Co Ltd
TOYOTA	●	○	●	●	○	●	●	●	60	Toyota Corporation

Key

- Top rating
- Middle rating
- Bottom rating

Source: The Ethical Company Organisation (2008)

GOOD SHOPPING GUIDE
ETHICAL COMPANY

- Bernina
- Brother
- Janome

?

- Husqvarna

X

- Toyota

Sustainable building

The aim of sustainable construction is to lessen the environmental impact of a building throughout its life cycle. It gives consideration to the choice of materials used, the building process, how the property affects the occupier and what might happen to the building when it is demolished. By using traditional skills, good management and renewable resources, sustainable building makes the foundations of modern living both ethically and environmentally sound.

UNHEALTHY APPETITE

Building and construction has an unhealthy appetite for energy and resources. 7 per cent of UK primary energy demand and 9 per cent of CO₂ production is used for construction materials. Domestic heating, lighting and cooking is responsible for around 30 per cent of UK energy demand and 30 per cent of CO₂ emissions. Around 115,000kWh of embodied energy are used in the materials, transportation and building of a typical three bedroom masonry house, but this is just 5 per cent of the energy needed to power the house during its life. By getting the design right, the potential for energy and resource savings is massive: a low energy timber frame house can halve both figures easily.

The 7.5 tonnes of CO₂ per year created by an average house could be cut by 50 per cent if simple and established energy conservation techniques were adopted. Government forecasts of climate change (higher winds, higher temperatures and increased flooding) are already evident in our weather, so CO₂ reduction must be a priority.

A sustainable balance between the reasonable requirements of people and nature lies at the heart of environment-conscious building. We must take care of the natural world and use its resources wisely because we are totally dependent on it for our survival. Quality of life for people comes from a sustainable, fair and healthy society, working in harmony with nature.

Sustainable building is as much a philosophy as it is an art, although the wealth of ideas and opportunities that spring from the concept can stimulate artistic talents that most of us never knew we possessed. It requires us to consider what buildings we use, how we build, how the building affects the environment and what happens when the building is taken down.

Design and construction to sustainable criteria will directly benefit local economies and will reduce transport and environmental costs. Since we live in a changing world, it is sensible to design buildings that can be recycled, so that materials and foundations can be easily reused and land is not degraded or polluted.

SUSTAINABLE BUILDING CRITERIA

By following a few basic principles anyone can create environmental improvements in their home or place of work:

- Avoid damage to people and the environment
- Use local renewable natural materials and resources
- Reduce emissions and non-degradable waste
- Minimise the use of materials and energy
- Select materials which combine useful properties
- Design with site and climate in mind
- Design for low cost, adaptability and recycling
- Adopt holistic thinking and design principles
- Protect and encourage biological diversity

ENERGY

The facts about CO₂ emissions and the greenhouse effect are well known. Vast amounts of energy are consumed in the production of building materials and during the lifetime of any building. Select materials and products that use the least energy in manufacture (natural or near natural) and can be re-used, or are already recycled. Ensure buildings are insulated to the highest possible standards, as this will reduce fuel bills. When designing a new building take advantage of the sun's free energy. Site orientation and the scrupulous use of glazing can make the

best of passive solar energy. Where possible investigate and consider using alternative, renewable forms of energy such as solar, bio-fuels and power from wind and water.

RESOURCES

Many materials used in buildings are from finite sources, so it is important to use those that are sustainable. Timber and bio-crops (such as straw) are generally considered to be the most renewable resource, provided they are grown and harvested in a sustainable way. Timber can also be recycled and reused. Always ask for timber and wood products that bear the Forest Stewardship Council (FSC) logo. The FSC is an independent, international and credible labelling scheme for timber and timber products. For more information visit their website at www.fsc-uk.org.

ATMOSPHERE

The effect of CFCs (chlorofluorocarbons) and HCFCs (hydrochlorofluorocarbons) on the ozone layer has been recognised for many years, and the damage associated with CFC emissions has been addressed by international governmental agreements. However, some insulations still use HCFCs. Although these have a lower ozone depletion potential, they carry a very high global warming potential. Alternatives such as cellulose, wool, cork and foamed glass are available and should be considered (see table on page 96).

More details on the use of CFCs and HCFCs in the home and their effects on the environment can be found in the section on fridges and freezers, page 63.

HEALTH

It is well known that exposure to chemicals can cause damage to the environment and human health. Hazardous chemicals are found in many products such as timber preservatives, paint and wood stains, although there are an increasing number of natural alternatives available. In particular, there is still excessive emphasis on treating timbers. For example, many banks, building societies and local authorities insist on extensive chemical treatment of existing woodworm when providing grants or loans. Many of the chemicals approved for use in this country have been banned or restricted overseas.

Within the fabric of a new building there is generally no need to treat sound timber against infestation and rot. Insect infestation and dry or wet rot in older properties can often be dealt with by changing the environmental conditions in the building, through adjusting humidity levels and temperature. There are companies that offer surveys in this respect, including necessary guarantees to satisfy third parties. If action is considered necessary then a boron treatment should be used. Boron is considered to be the least toxic of treatments.

Other issues related to health include the over-use of plastics in buildings, particularly PVC. Hazardous fumes result when PVC is burnt, but more recently it has been suggested that phthalates migrate from the plastic into the atmosphere. There is increasing scientific evidence to suggest that exposure to some of these chemicals may cause widespread problems including immune system damage and cancer, which has prompted Greenpeace to run a campaign

highlighting the problems of PVC. Evidence also indicates that some phthalates can disrupt the hormone system. Alternative materials to replace PVC include copper, stainless steel, iron and HDPE (for water pipes and drainage), timber (for cladding and sheeting), timber and aluminium (for windows and doors), clay (for drainage), timber and linoleum (for flooring) and rubber (for electrical cable).

WATER AND WASTE

There is a greater emphasis today on avoiding pollution of water supplies and conserving water. Reed bed sewage systems are an innovative and effective way of disposing of waste in a manner that is ecologically sound. WCs are available which use less water, but the ultimate green loo is the composting toilet, which uses no water, evaporates the urine and turns sewage into a valuable source of nutrients for the garden. There are also urine-separating toilets which isolate urine from faeces. The urine can then be piped onto hay or straw bales to produce nitrogen-rich compost.

Rainwater harvesting systems are available, which save and store rainwater from roofs for flushing toilets, washing and other household chores.

BIODIVERSITY

As more and more land is developed it is important to conserve and encourage wildlife. Trees, hedgerows and ponds can be carefully protected and retained during building operations. Consider setting aside small areas of land as wild nature areas, or establishing a new pond to promote

biodiversity. It is also possible to plant indigenous trees and hedgerows, and use dry stone walling to provide a habitat for animals and insects.

DESIGN

Good design is an integral part of sustainable building. Make the structure easily adaptable, for example by using demountable partitions so that the internal layout can be altered when necessary. Design also for health and comfort, to provide optimum levels of daylight, sunlight, temperature and fresh air.

COSTS

The cost of any building depends on the design. However, costs for sustainable building can be comparable. In the future they may even be cheaper as the concept of sustainability moves into the mainstream and the economics of scale come into play. Sustainable buildings give added value and avoid the hidden costs, in terms of health and pollution, associated with conventional buildings. Many eco-products are currently manufactured on a smaller scale and can therefore be more expensive or involve higher transport costs.

Comparing the energy costs of various materials (see page 95 for explanation)

PRIMARY EMBODIED ENERGY			
MATERIAL	kWh/m3	MATERIAL	kWh/m3
Lead	157,414	Concrete tiles	630
Copper	133,000	Concrete 1 : 3 : 6	600
Steel iron ore (blast furnace)	63,000 - 80,000	Lightweight clinker blocks	600
Aluminium	55,868	Local slate	540
Plastics	47,000	Local stone tiles	450
Steel recycled (electric arc furnace)	29,669	Sand cement render	400
Glass	23,000	Bricks (fletton)	300
Cement	2,860	Mineral fibre insulation	230
Clay Tiles	1,520	Home grown green oak	220
Bricks (non flettons)	1,462	Crushed granite	150
Plastic insulation	1,125	Cellulose (recycled paper) insulation	133
Gypsum plaster / plasterboard	900	Home grown softwood (air dried)	110
Autoclaved bricks	800	Sand and gravel	45
Concrete 1 : 2 : 4	800	Sheep's wool insulation	30
Imported softwood	754		
Foamed glass insulation	751		

SELECTION OF ECOLOGICAL BUILDING MATERIALS

Approximate figures for embodied energy (the energy used in a material's manufacture or mining) allow us to compare the energy costs of various materials, and reveal the advantages of recycling and of using easily won, natural materials. For example, the production of fibreglass requires 15 times more energy than Warmcell recycled cellulose insulation.

The tables showing values for Primary Embodied Energy (page 93) and Thermal Conductivity (page 96) clearly reveal that nature has provided us with a good selection of materials for high performance construction. Most of the ones required for sustainable building can be found near the bottom of each table, while a few such as glass, gypsum, plastic and steel should be used, when unavoidable, in small quantities.

THE WAY FORWARD

Sustainable building needs to be more widely promoted. Ideally, it should be economical, supported by the government and widely accepted as the norm. Building regulations should ensure that the relevant minimum standards are met, such as increased insulation, as we currently fall way behind our European counterparts in this area. The skills shortage problem must also be addressed, and traditional skills (which tend to be more sustainable) must be re-taught.

Some non-renewable fuels are becoming cheaper (in monetary terms) despite their hidden environmental costs, so much more support needs to be given to the renewable energy sector and VAT reduced or

removed from this area. It would be helpful if a standard design could be developed for sustainable building, which would encourage the volume builders to embrace this form of construction. This would also make it easier to formulate suitable training programmes to deal with the skills shortage.

The consumer can help by being demanding, and refusing to accept the standard products on offer. We can demand higher levels of energy conservation, knowing that the building will be better for the environment and at the same time benefit the consumer with lower fuel bills and higher living standards. We can also be more demanding over what type of materials are used in the building. All of us should bear in mind the high levels of environmental degradation that are involved in many standard building products, and also take into account the ethicality of their production.

- *The Association for Environment Conscious Building (AECB) can supply more information on green architecture and sustainable building. It has a database of builders who are registered members of the Association, and began the CarbonLite programme for promoting 'carbon liberate' design. It also runs a training scheme, SussEd (Sustainable Skills and Education), which teaches sustainable building skills for the construction industry. For more information about this organisation send an A4 SAE (73p) to AECB, PO Box 32, Llandysul, Carmarthenshire SA44 5ZA, email info@aecb.net, visit their website at www.aecb.net or phone 0845 456 9773*
- *The Good Shopping Guide would like to thank John Shore (AA DipD) for his help in compiling this chapter*

THERMAL CONDUCTIVITY OF MATERIALS

MATERIAL	W/MK	MATERIAL	W/MK
Copper	380.000	Clay board (alternative to plasterboard)	0.140
Aluminium	198.000	Softwood / Plywood	0.138
Steel	48.300	Oil tempered hardboard	0.120
Granite	3.810	Chipboard	0.108
Limestone	1.530	Strawboard	0.098
Dense brickwork	1.470	Snow (average density)	0.090
Dense concrete	1.440	Woodwool slab (light)	0.082
Sand / Cement render	1.410	Stony soil (normal)	0.052
Very packed damp soil	1.400	Bitvent 15 sheathing board	0.050
Sandstone	1.295	Cork	0.043
Bricks (engineering)	1.150	Fibreglass insulation	0.040
Dry soil	1.140	Flax insulation	0.037
Clay bricks (compressed, unfired)	0.950	Sheep's wool insulation	0.037
Brickwork	0.840	Hair	0.036
Tile hanging	0.840	Warmcell (recycled paper)	0.036
Damp loose soil	0.700	Wall insulation	0.036
Water	0.580	Roof insulation	0.035
Adobe	0.520	Expanded polystyrene insulation	0.033
Glass	0.500	Polyurethane foam	0.023
Earth blocks	0.340	Still air	0.020
Thermalite blocks	0.140 - 0.190		
Plaster board	0.180		
Recycled wood fibre / Gypsum plasterboard	0.176		
Hardwood	0.160		

Sources: Centre for Alternative Technology; Environmental Science Handbook; Pittsburgh Corning; Timber Trade Fed; CIRIA; AECB.

Continued from page 95: Ecological building materials have good insulating properties

Reduce your bills and your carbon footprint



Easy steps for a low carbon future

Home is where the heart is, but it's also where most of our CO₂ emissions come from. Good Energy Shop provides an extensive range of products to help you reduce your carbon emissions, carefully selected and reviewed by our panel of independent experts. Everything for a low carbon future, from energy monitors to solar thermal panels, and of course 100% renewable electricity from Good Energy.