

The 6Rs:

Reduce: This is when the designer tries to reduce any unnecessary packaging, energy and waste during the manufacturing stage and also tries to reduce the products eco and carbon foot print during the products life cycle. This stage also involves the designer thinking about built in obsolescence. (Built in obsolescence is when a product gradually becomes non-functional over a period of time or purpose) and how to not use it just to ensure the customer will repurchase it.

Reuse: This is when a product can re-used for the same or a new purpose and because of this products can be suited to alternative uses. Re-using is for example donating your old clothes to charity and then the charity re-using the clothes for other people.

Recycle: You can recycle most things made from plastic, paper, glass and metal. Primary recycling is the same as re-using and secondary recycling is when you cut pieces from the material the product is made from for a new use without chemically altering the properties of the material. Tertiary recycling is altering the chemical properties of the product or a part of it to make it into a new and useful product.

Refuse: Products with unnecessarily over-packaged cases, that are toxic chemicals, have been transported along way, arent eco-friendly, arent morally or socially acceptable and/or are not economically viable might be refused by customers.

Rethink: Designers need to think about how to improve the product's performance at doing it's function and they need to think about making the product more eco-friendly, more socially and morally acceptable as well as more economically viable. They also need to think about how to utilise the materials and parts of another product which has become waste for a purpose without processing it.

Repair: Sometimes it is easier to replace something rather than

repair it and sometimes it's not. For example a straightener just may be cheaper to replace rather than to get fixed however if something in a set of furniture breaks it is cheaper to replace the one chair etc than to replace the whole set as it may cost a lot.

Social Issues and Moral Issues

The product should be universal if possible but if there is a smaller group of people that the product is being designed for, the product must be adapted to meet their specific needs. These are the social issues.

Anthropometrics is the measures and parameters of the human body so that the product can be made to an appropriate size and to fit for the uses by humans.

Ergonomics is about how comfortable the product is for use by the user. The ergonomics could be affected by the size, weight, texture etc of the product.

Moral issues are concerned with the way in which products are manufactured and the comfort, pay and well-being of the workers who make them as well as their safety and treatment. In sweatshops (a factory or place of work where the wages are low and the conditions are poor or even illegal) the workers aren't treated right and so this creates a moral issue and so people may refuse to buy the product.

Another moral issue is if the safety of users of the products are/is protected. The COSHH (Control of Substances Hazardous to Health) regulations require employers to control substances that can harm workers health because using chemicals or other hazardous substances can put people's health at risk to injuries and diseases etc. Also the kitemark symbol is awarded by the British Standards Institute (BSI) to products which are safe to use.

The ethical trading initiative (ETI) is an alliance of non governmental organisations (NGOs), companies etc. which promotes improvement in the implementation of codes of practice and more morally made products.

Cultural Issues

Different cultures are being considered in the designs of new products due to globalisation (this is the internationalisation of products, labour and skills throughout the world) because different cultures have different views and meaning to different things. For example Jews don't eat pork so you wouldn't make hot dog earrings for the Jewish target market. This is a cultural issue and designers need to be careful not to offend any cultures.

Environmental Issues

Sustainable materials are usually ones which are biodegradable (can degrade naturally), not finite resources and environmentally friendly in their use.

CFCs are a group of synthetic substances containing bromine and chlorine developed in the 1930s and used widely until 1980s as they were thought to be safe and then were discovered as the main cause of harm to the ozone layer.

The ecological footprint is the measure of the impact of human activities on the environment and it shows how many earths would be needed for sustainable use if everyone had the same lifestyle. However the carbon footprint is a measure of the impact of human activities on the environment in terms of CO_2 or greenhouse gasses released into the atmosphere.

Carbon Offsetting is when people and companies try to reduce the negative impact they have on the environment by using more ecological resources and methods of energy generation (eg. using renewable sources).

Reforestation is a carbon offsetting scheme where you replant trees to soak up some of the negative effects of carbon dioxide. You can also use energy generated from renewable sources such as

- Hydropower
- Wind
- Solar
- Geothermal
- Tidal/Wave

In order to tackle the disposal of products and their redundant packaging, there are labels and symbols to guide the consumer in disposing their packaging in a particular way which is safe and environmentally friendly.

Design Issues

Good designs and product choice improve the quality of life because more people will want to buy newer, smarter, more modern and innovative products over old designs. This is why designers keep up to date with trends.

Eco-design is trying to minimise the damage during the product's life cycle (Design, manufacture, retail, use, disposal) on the environment.

Sustainable design is a way of thinking that supports responsible designing and making that does not deplete a product's function but at the same time does not have a negative effect on the environment, society and the economy.