

## 7.1 Minimising waste production

Waste minimisation is about trying to reduce the amount of waste produced by individuals and society in general. Manufacturing process should be designed to keep energy use and resources to a minimum. Designers must consider the product life cycle (i.e. what happens to it after it reaches the end of its working life?)

### **Reduce** materials and energy

More efficient manufacturing processes and better materials are being developed. Minimising waste often requires additional investment due to new, efficient machinery, but savings can be made as a result because they use less energy. More efficient use of materials can also lead to minimising waste. Lighter and stronger materials have led to a reduction in the size of some structural components, which means less materials is needed to make certain products.

### **Reuse** materials and products

Reusing means using a material or product more than once. A product might be used repeatedly like a glass milk bottle. Another example is an old watering can which could be used as a planter in the garden. Both examples show the product has been reused and not put in landfill.

### **Recover** energy from waste

Energy can be recovered from waste (EFW – energy from waste) and waste can be converted to energy (WTE – waste to energy), in the form of heat or electricity. Sometimes the heat is fed straight into houses to meet needs, which means other energy needs are reduced.

### **Recycle** materials and products and use recycled materials.

Recycling means processing an old material into a new usable material. The aim is to reduce the demand for new materials, which reduces the energy consumption and reduces air pollution. Therefore less waste is produced as fewer products or items are being disposed in landfill sites.

Glass, paper, metal and textiles can be recycled and some plastics too.

Salvage is also another type of recycling where parts are stripped out of products and recycled.