1.2 Evaluating New and Emerging Technologies to Inform Design Decisions

When evaluating a design, process or material key areas should be considered including;

1. Manufacturing capabilities
2. Budget constraints
3. Timescale
4. Materials used
5. Client/Market

When making design decisions, a designer must always consider future scenarios...
- Natural Disasters – floods and hurricanes
- Medical Advances – with medical advances, impacts on the populations must also be considered (medical advances that allow people to live longer also create a greater need for supporting the elderly)
- Travel – travel has not become significantly quicker in the last 50 years but is more comfortable
- Global Warming – must be heavily considered by ensuring low or no carbon output and sustainable resources and development.
- Communication – although it is cheap, easy, quick and global because of the internet, designers shouldn't assume that the client has access to hardware, software, infrastructure and power sources, now or in the future.

Ethical perspectives on new and emerging technologies

Companies that trade ethically are not totally driven by profit, they consider the product's wider implications to act fairly and honestly. Also they take into consideration fair pay for workers and suppliers, and having minimal environmental damage.

evaluation

Who will it benefit?	Who was it made by?	Where was it made?	Fairtrade companies should...
• Manufacturing new products creates jobs • New technologies create cheaper products for all • New technologies can benefit the consumer e.g. making their life easier	• Hiring low paid workers leads to exploitation • Rights of workers are a priority • Health and safety rules and building regulations in factories should be checked	• Cheap labour in other countries may save costs but exploit workers • New technologies may produce less pollution and waste	• Use raw materials from sustainable sources • Buy local materials • Seek to reduce energy consumption • Minimise impact of waste

Use of Materials	Carbon Footprint	Energy	Life cycle assessments
Designers should select fewer materials and ensure that they are recyclable, lighter and less toxic. Also should consider how the materials are sourced and its impacts.	Companies should be looking at ways to reduce their carbon footprint e.g. maximising energy efficiency, analysing their supply chain, recycling and using renewable energy.	Using fossil fuels harm the environment. Transporting goods burns petroleum. Companies should use energy efficient vehicles to transport their products. Making cleaner energy costs more but is better for the environment.	A life cycle analysis is a systematic evaluation of an objects impact on the environment at every production stage. This includes raw material extraction, manufacture, transportation, consumer use and disposal.

factors

Environmental perspectives on new and emerging technologies

Currently, preservation of the environment is a huge topic and companies must examine their supply chains to look for improvements.