

Knowledge Organiser 2 Year 8 Product Design

Charles Renee Mackintosh



Charles was born one of eleven children in Glasgow, Scotland in 1868. During his childhood Charles suffered from disabilities.

He walked with a limp and developed a problem with his right eye which caused it to droop. Because of these disabilities Charles was encouraged to spend time in the countryside when he was young.

It was his love of the countryside and flora, which was to manifest itself later in his life.

Mackintosh enrolled at the Glasgow School of Art at the age of fifteen. A year later he joined John Hutchison architectural practice to train as a draughtsman.

After completing his apprenticeship he moved to Honeymann and Keppie in 1889. In 1890 Charles won the coveted 'Alexander Thomson Travelling Studentship' for Public Design. With his prize of £60 he decided to travel to Italy and Europe.

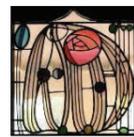
This trip was to change his life, and he was to develop an individual style, influenced greatly by his experiences in Europe. Mackintosh also looked to Japanese Art, which added a depth to his newfound ideas.



Mackintosh continued his studies at the renowned Glasgow School of Art where the new principal Francis Newbery had transformed the School. He encouraged the students to follow the latest trends in art, design, crafts and architecture.

It was during this time that Charles formed a close friendship with a fellow draughtsman Herbert MacNair, they both shared a vision of a new and symbolic architecture.

CHARLES RENE MACKINTOSH



CAD—Computer Aided Manufacture

Advantages of CAM	Disadvantages of CAM
Quick – Speed of production can be increased.	Training is required to operate CAM.
Consistency – All parts manufactures are all the same.	High initial outlay for machines.
Accuracy – Accuracy can be greatly improved using CAM.	Production stoppage – If the machines break down, the production would stop.
Less Mistakes – There is no human error unless pre programmed.	Social issues . Areas can decline as human jobs are taken.
Cost Savings – Workforce can be reduced.	



KEY WORD FOCUS:

James Dyson	CAD
Engineered boards	Acrylic
Life cycle analysis	Workshop
Pillar drill	
Thermoplastic	Thermosetting plastic

You should be able to explain the meaning of each of these terms by the end of this rotation.

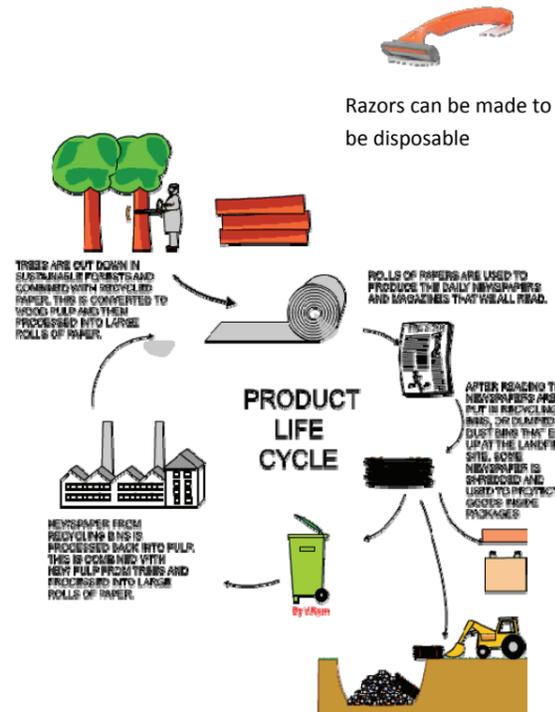
5: Informing Design Decisions

5.1 Planned obsolescence - Planned obsolescence is when a product is deliberately designed to have a specific life span. This is usually a shortened life span.

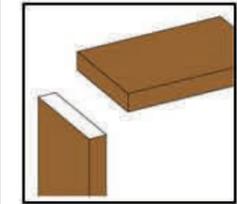
5.2 Design for maintenance - Products are often designed to be thrown away when they fail... This can be achieved by designing products that can be repaired and maintained.

5.3 Disposability – Some products are designed to be disposable.

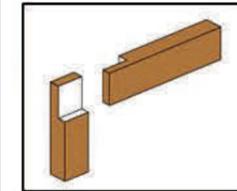
5.4 Product Lifecycle -



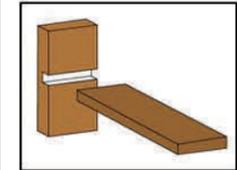
Wood Joints



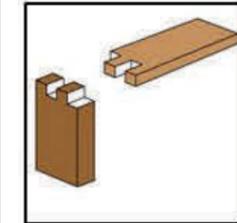
Butt Joint



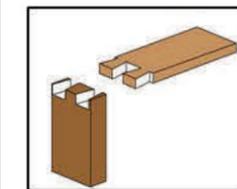
Lap Joint



Housing Joint



Comb Joint



Dovetail Joint

Case Studies:

- Look at the designer Charles Renee Mackintosh and discuss his influences and describe some of his famous pieces of work.
- Research the designer decisions section and complete a life cycle analysis of a product of your choice.
- Study the different wood joints and draw one of your choice.
- Research different types of adhesives used in Product Design.
- Learn the key word focus for this module.
- Find out how CAM is used in our school and give an example of a CAM made product.

There are different kinds of *adhesives* for different jobs.

P.V.A. – Poly Vinyl Acetate – best for joining 2 pieces of wood together

Epoxy – a *thermosetting* resin that can be used to bond most types of material

Contact Adhesive – a glue type that creates a tacky bond on both surfaces to be joined. It can be used with most materials.