

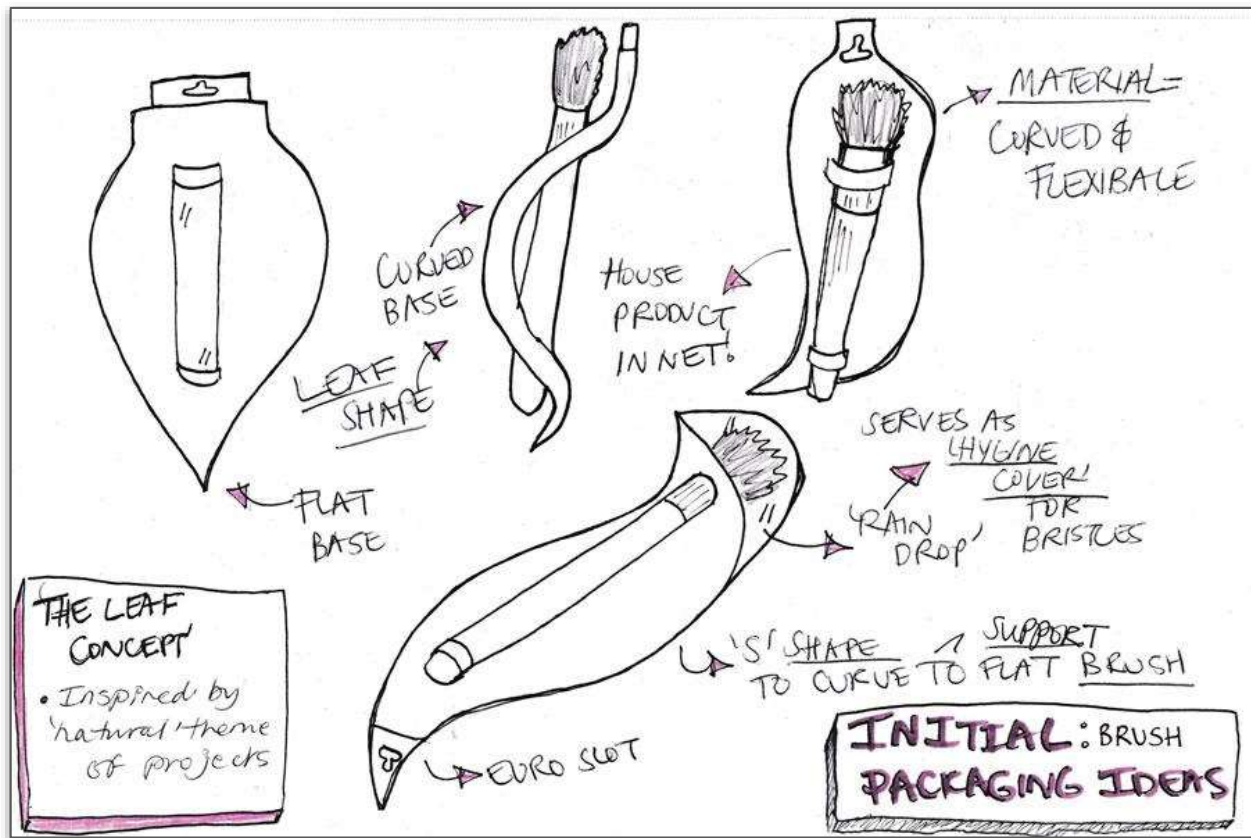


COSMETIC ACCESSORY PACKAGING DESIGN PROJECT

MATERIAL RESEARCH PRESENTATION

By Lucy Hopkins

Initial Packaging Design Ideas

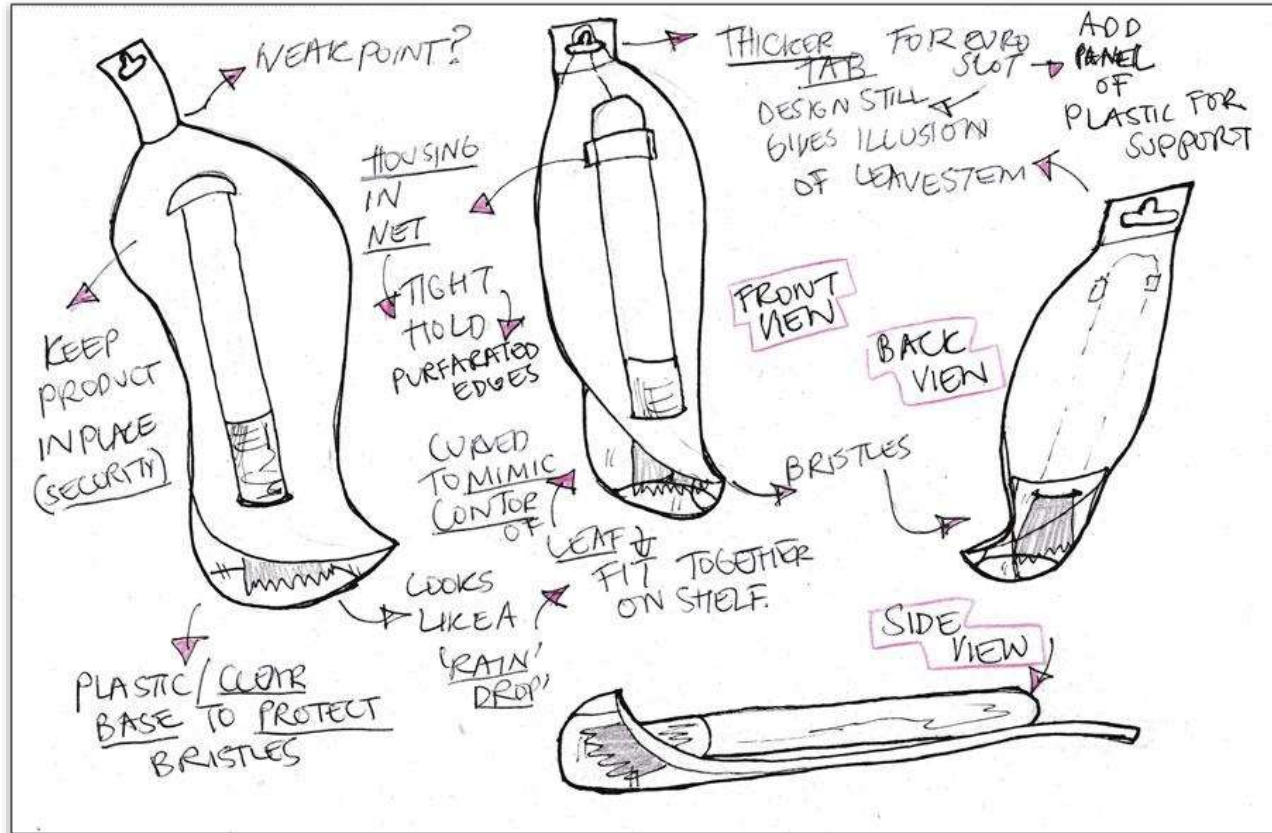


THE LEAF CONCEPT

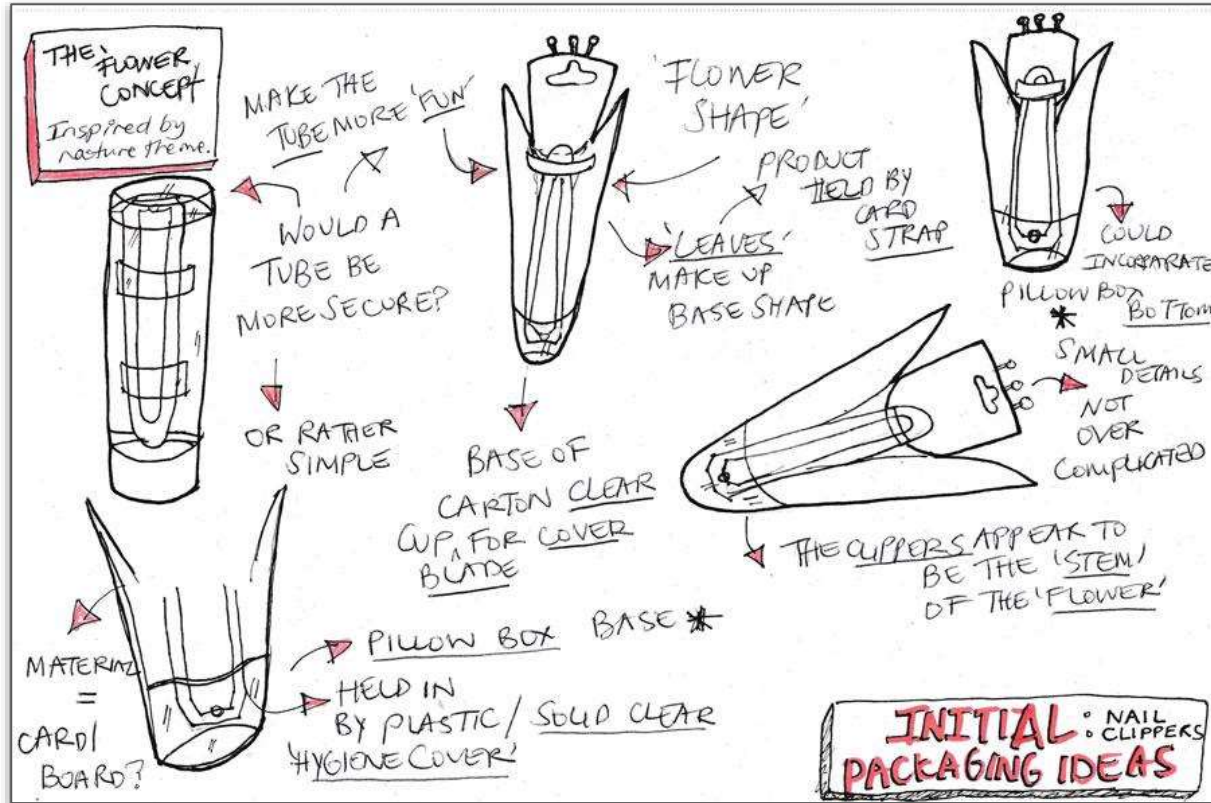
- Inspired by 'natural' theme of projects

INITIAL: BRUSH PACKAGING IDEAS

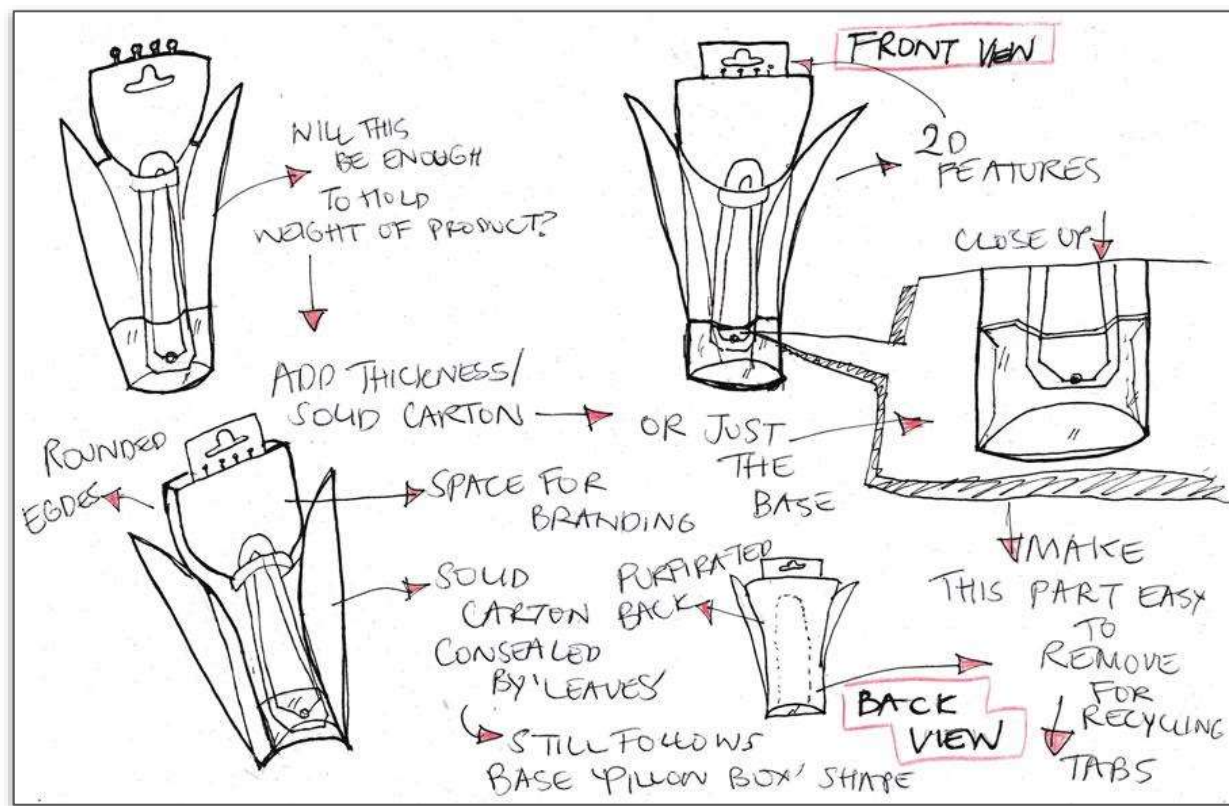
Initial Packaging Design Ideas



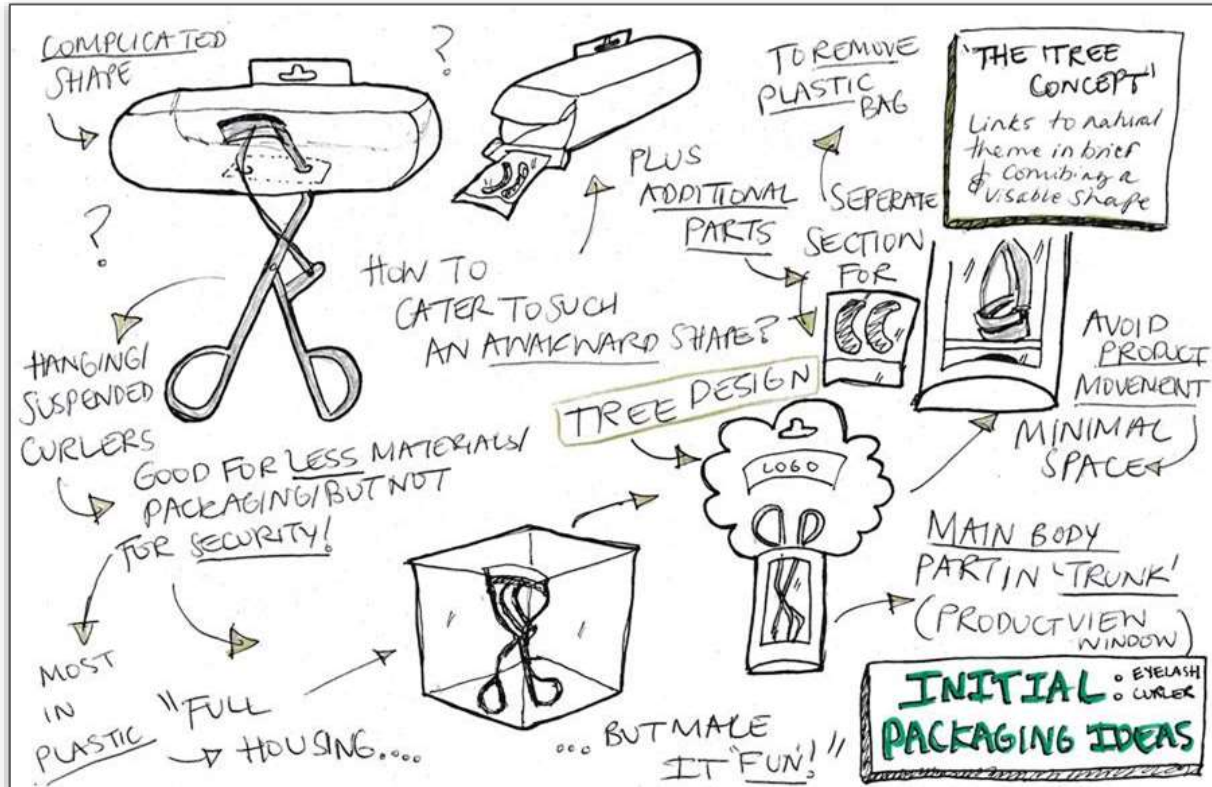
Initial Packaging Design Ideas



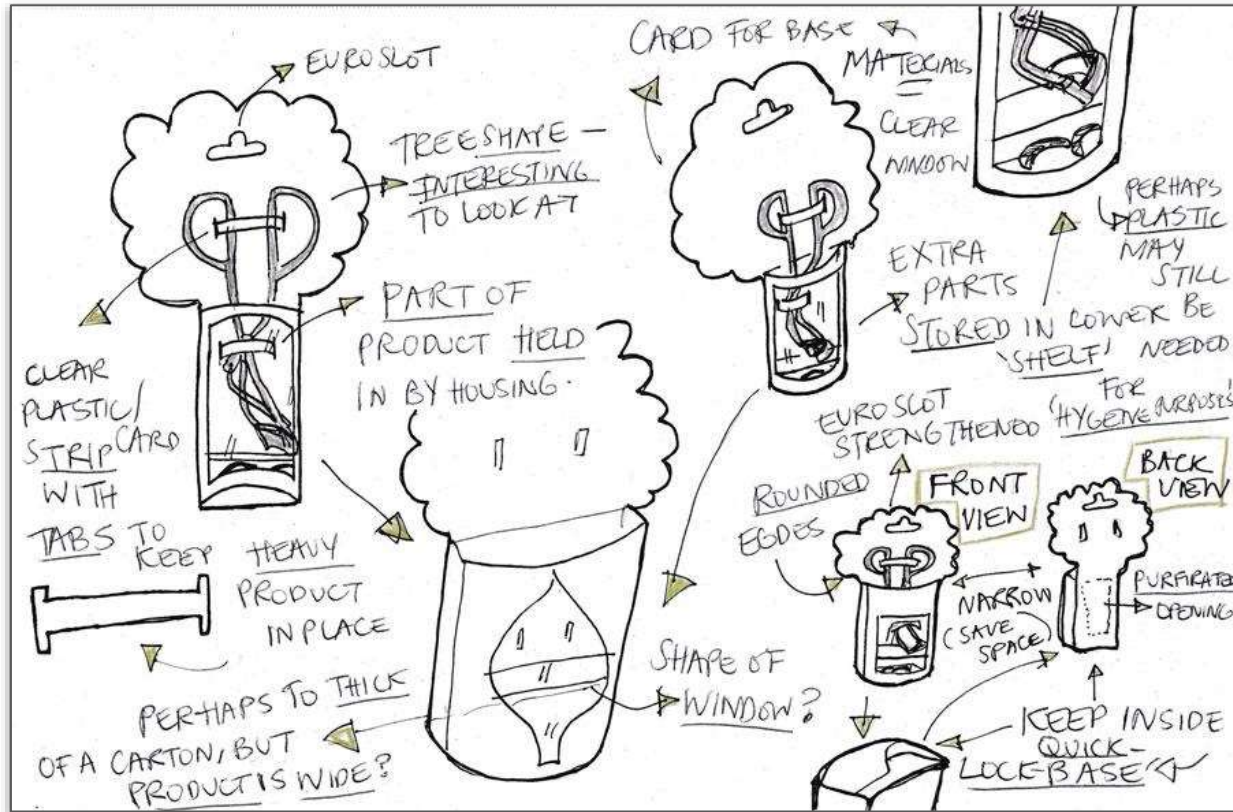
Initial Packaging Design Ideas



Initial Packaging Design Ideas 🌳



Initial Packaging Design Ideas





PHASE TWO MATERIAL RESEARCH

Primary Observation & Trends

Primary Observation & Trends Research

MATERIALS & PACKAGING

In the next leg of the project I explored the trending innovations of product packaging materials. This research revealed the materials common in industry and more importantly why these were applied to particular product.

I attempted to cover almost all forms of common packaging materials, including those deemed not environmentally friendly, as it is also key to consider different avenues and alternatives that could offer valuable insights to the project.



I also recorded how products from other market sectors were packaged, such as confectionery, stationary and cooking utensils. This extra attention furthered my scope on structural design to add to the findings from PHASE ONE.

Research Method

PRIMARY OBSERVATION

My observation method consisted of (physical references purchased in PHASE ONE) photographing the front and back of a series of products, focusing on the disposal information. This combined with my limited knowledge of packaging materials was enough to identify most of the materials I observed.

The retailers covered consisted of WHSmiths, Boots, Superdrug, M&S, Tkmaxx, Paperchase, and Robert Dyas. This range allowed me to gather inspiration on products that were external to the cosmetics market. The variation of each shop environment and product made it easier to identify any patterns in types of packaging materials used in the general market.



Key Observations General Product Market



Paperchase



RETAILER –
Paperchase



RETAILER –
Robert Dyas



**GENERAL
MARKET
PRODUCTS**

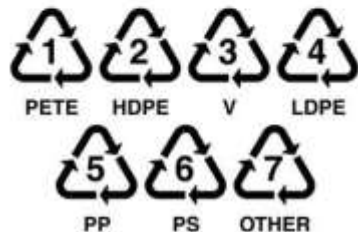


RETAILER –
Boots



RETAILER –
Superdrug





Key Observations Cosmetic Product Market



Superdrug 

RETAILER -
Superdrug



**COSMETIC
MARKET
PRODUCTS**



RETAILER -
Boots



RETAILER -
Tkmxx



Primary Observation Analysis

THE VERDICT

A combination of plastic and card (e.g., 'Blister Packs') were the most common packaging materials used across the cosmetics and general product market. I think these are the most popular because of the effectiveness of their collective properties in housing a product and making it look attractive to the consumer;

- Can keep heavy/bulky/awkwardly shaped products secure in packaging (prevent damage/theft etc.)
- A product/product feature can be concealed by a plastic/card 'hood' incorporated into the packaging to cover for consumer safety or hygiene.
- Both materials can be sourced in recycled versions or be recycled at the end of life.
- Best for product visibility: clear presentation of product purpose and brand.



PHASE TWO

PRIMARY RESEARCH OUTCOME

This primary exploration was an excellent source of creative ideas and has built on my previous knowledge of packaging materials. I now understand how singular or multiple materials can be enhanced with design features and combined to best suit the specifications of a product.

The next step was to understand the fundamental makeup of these industry materials to help me decide on my own materials going forward into the design phase of the project.



PHASE TWO
SECONDARY MATERIAL RESEARCH

**The Consumer Product Packaging
Industry**

The Consumer Product Packaging Industry

FUNDAMENTAL THEORY

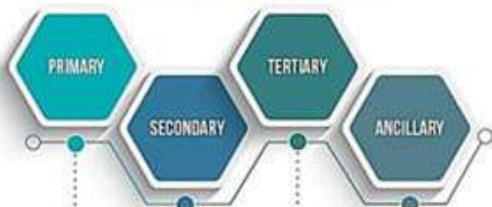
In this part of PHASE TWO I carried out secondary research. This investigation revealed the fundamentals of packaging materials, from its virgin form to consumer application, as well as the current environmentally-friendly materials/alternatives available in the packaging world.

I also recorded the characteristics of these materials and what uses/market sectors they are best suited for. This is helped identify the appropriate materials for my own structural designs, estimate the possible costs and production processes that would be required on a commercial scale.



Common Packaging Materials & Industry Practice

Types of Packaging



- Laminated Pouches
- Plastic containers
- Thermoformed products
- Tin Can
- Parchment Paper
- Wet strength paper
- Laminates
- Monocarton
- Retort pouches
- Paper shell laminate
- Composite Cans
- Glass containers
- Shrink Wrap
- Cling Film
- Woven Sack
- Jute Sacks
- BCF/PPCC
- Paper bags
- Bubble wrap

- Plastic crates
- Plastic trays
- EPS trays
- Wooden crates

- Corrugated Fiber Board
- Wooden crates
- Wooden containers
- Wooden pallet
- Plastic pallet

- Adhesives
- Printing Inks
- PP Straps
- Caps & Closures
- Tapes
- Labels
- Cushioning Material

**INDUSTRY CLASSIFICATION –
PACKAGING MATERIALS**



Paper/Board



Glass

COMMON PACKAGING MATERIALS



Plastic

Wood



Metal

Common Materials Plastics

DESCRIPTION & USAGE

Plastic is considered to be the most common and hard to dispose of packaging material. It comes in all forms from a solid pot to a flimsy transparent bag. The light nature of plastic, cheapness and manufacturing versatility is why it is the packaging material of choice.

TYPES/USES

Polyethylene (PE)

Depending on density, PE can be formed into film, bottles, tubs and laminated into sachets/pouches etc.

Polypropylene (PP)

PP is crack resistant and is used for dispensers, bottles, jars, trays, or laminated into crisp bags and pouches etc.

Polyethylene terephthalate (PET)

PET is commonly stretch blown into bottles containing food, drink and toiletries as it has good clarity, as well as suitability for a moisture barrier and heat resistance (carbonated drinks/oven ready meals etc.)



Polyvinyl chloride (PVC)

Namely the 'worst' plastic because of containing the most oil, PVC is used through vacuum forming inserts, clam and blister packs, and has efficient stretch and grip when laminated into a film (cling film).

Polystyrene (PS)

PS is most known as a protective moulding and dunnage for housing fragile products, but is also made into moulded toiletries, bottles, jars and cups.

Common Materials Plastic Environmental Impact & Disposal

From production to end of life, plastics seem to only harm the environment in their existence. It is well known that plastic in its virgin form is derived from fossil fuels, a non-renewable resource, requires an extensive amount of energy to source and manufacture, and emits greenhouse gases in the process. Although highly recyclable, some forms of plastic such as PVC (films) still aren't and end up on landfill, or worse can pollute and degrade the environment.



Plastic may be deemed as the 'enemy' in the eyes of the consumer, but can be of some benefit to the environment. This is down to its extensive life span enabling plastic to be used multiple times over and the minimal weight of plastic packaging means less fuel is required to transport the material/goods during production, so less greenhouse gasses are emitted!

Common Materials Glass

DESCRIPTION & USAGE

Glass, made from silicon dioxide (sand), is considered a classic material in the food and beverage world. This is because it is an impermeable material that can preserve a product for an extended period of time.



TYPES/USES

Amber Glass

Used for beer and pharmaceutical/beauty products that react to exposure to ultraviolet radiation. It has the greatest light resistance out of all the coloured glass types (Cobalt/Green).

Borosilicate Glass

The most used glass type as it is highly resistant to breakage and is used for cookware and glassware.

Soda Lime Glass

Soda Lime is another popular glass type, typically used for all manner of products such as drinking glasses, tableware, bottles and jars.

Common Materials Glass Environmental Impact & Disposal

The production, transportation and disposal of glass (recycling) is a process that has been proven to cause more harm to the environment than plastic bottles. This is because glass takes more resources and energy to produce, plus the weight of the material requires more fuel and energy to transport.



On a positive note, recycling glass is still beneficial to some extent as it can be repurposed into further material. This regeneration, similar to plastic, prevents more virgin material being made and therefore preserves our earth's resources.

Common Materials Paper & Board

DESCRIPTION & USAGE

Paper and board, made from cellulose fibres or other sources, is considered the most basic materials available in multiple varieties with different applications. It is becoming more popular being 100% biodegradable with the rise against virgin plastics.



TYPES/USES

Paperboard

Paperboard is a thick and single layered material that is made from virgin fibre pulp from wood chips (comes in several subvarieties). It's surface is easy to cut, form and print onto, whilst being an equally strong barrier for protection and product security.

Solid Bleached Sulfate Board (SBS)

Bleached paperboard is made from bleached virgin wood pulp that can be coated in clay to enhance its printing capabilities. It is white in colour on both sides, commonly used for medical, cosmetic, perfume and confectionary products etc.

Coated Recycled Board Paperboard (CRB)

CRB paperboard is made from 100% recycled material and is coated with a thin layer of natural clay that makes it easier to print onto. It is considered a good option to stand out to buyers seeking environmentally conscious packaging. CRB is used for soap, detergent, paper products (e.g., tissues), dry foods (e.g., Cereal boxes) etc.

Folding Box Board (FBB)

FBB is similar to other paperboard types, but has different layering properties that were developed to create a light-weight material that requires fewer trees than SBS or CRB. FBB's smooth surface makes it better for folding and embossing, and lengthens the life of manufacturing dies.

Common Materials P & B Environmental Impact & Disposal

Derived from 100% natural and biodegradable materials, paper and board is considered the most environmentally friendly and sustainable material in the industry. The regulation of trees to counteract deforestation and maintenance of our natural carbon sink can be supported by choosing packaging from sustainably sourced forests.



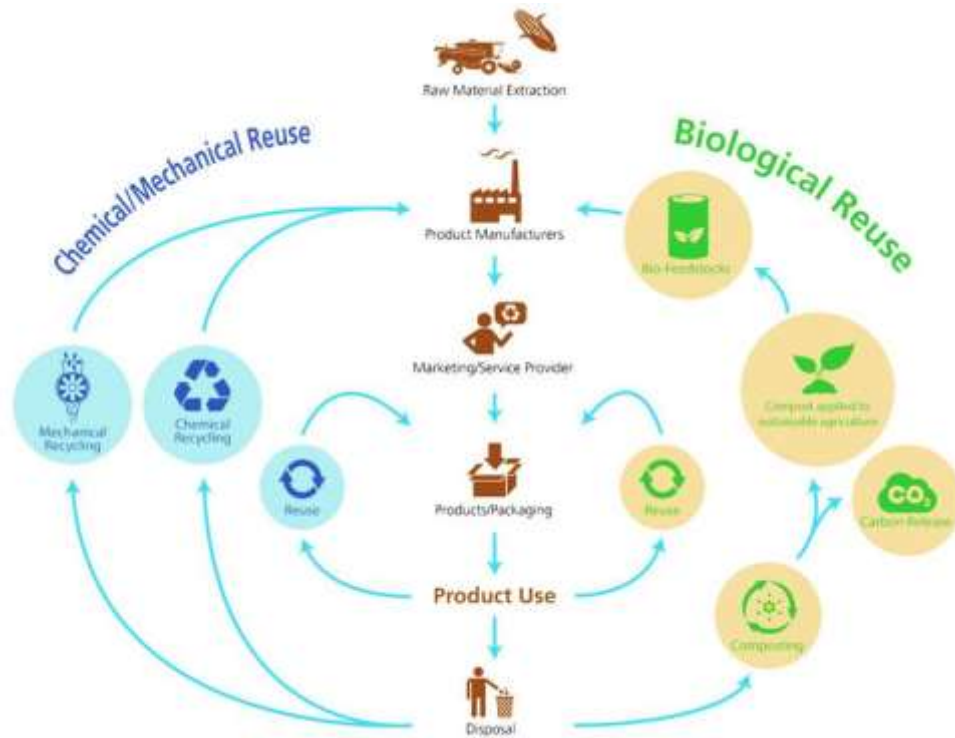
Organisations such as the Forest Stewardship Council supervise and promote sustainable forest management on a global scale. The replanting and regenerative management of this material counteracts and reduces the carbon footprint of board packaging production. However, it is argued that plastics are still the material due to its durability, water resistance and ability of keeping products hygienic and secure. The light weight of plastic means it produces less emissions than paper in its production and transportation.



PHASE TWO
SECONDARY MATERIAL RESEARCH

**The Industry Environmentally-Friendly
Materials & Initiatives**

Industry Eco-Initiatives & Packaging Design



How does it work?

- 

1. Shop on the Loop Store

Choose products that you want to reuse, and place your order.
- 

2. Receive your order in a reusable Loop Store

Receive your order in a reusable Loop Store. The Loop Store is a reusable, high-quality, and durable container that can be used for many years.
- 

3. Request a free pick-up

Request a free pick-up. The Loop Store will be picked up by a Loop Store driver. The driver will take the Loop Store to the Loop Store and will return it to the Loop Store.
- 

4. Reuse your Loop Store

Reuse your Loop Store. The Loop Store is a reusable, high-quality, and durable container that can be used for many years. You can use it for many years and it will be returned to the Loop Store.

Eco-Materials Recycled Paper/Board

DESCRIPTION & USAGE

Recycled paper and board has the same durability and sustainable qualities as regular paper and board, except this material is the recycled end-product.



TYPES/USES

- Paper of an equal or lower grade is used for copy paper, household tissues and toilet paper etc.
- Mixed paper fibres are made into paperboard (CRB) for all applications from food packaging to greetings cards.
- Paper of a high GSM grade is made into cardboard for pizza boxes, shipping boxes etc.

Eco-Materials Recycled P & B Environmental Impact & Disposal

Paper and cardboard are organic materials, but if the pulp is sourced from unsustainable and forests with endangered species, consumption on a large scale can damage the environment.



It is considered the most eco-friendly to source packaging from post-consumer or post-industrial recycled paper and cardboard. Or as I mentioned in my general material research, use materials that are FSC-certified as these are sourced from sustainably managed forests.

Eco-Materials Bioplastics

DESCRIPTION & USAGE

Bioplastics are derived from plant or other natural/renewable materials instead of fossil fuels and means they can break down naturally. The material is formed by converting sugar from plants into polylactic acids (PLAs) or polyhydroxyalkanoates (PHAs).



TYPES/USES

'Bio-based & Biodegradable Plastics (PLA/PHA)'

These plastics are made with starch blends, e.g, corn, sugar cane and cassava. This is currently used for disposable items like straws, containers and bottles.

'Bio-based & Non-Biodegradable Bioplastics (Bio-PET, PE, PVC)'

These plastics are like the common types - PE, PP and PVC, but are made from renewable bioethanol. Bio-PE and Bio-PET is used for retail packaging, such as drinks bottles.

Eco-Materials Bioplastics Environmental Impact & Disposal

Despite being more eco-friendly in some forms than traditional plastics, after looking at the life-cycle of bioplastics, this isn't the case. The production of starch-based bioplastics can cause high levels of pollution because of the fertilizers required to grow the crops.



So it appears common plastics and bioplastics are too close in their negative environmental impact to deduce whether one is better than the other.

Eco-Materials Recycled-Plastics

DESCRIPTION & USAGE

At the end of life, plastics can be recycled into further plastic material and plastic products for packaging, bags, furniture and building materials etc.



TYPES/USES

Recycled Polyethylene (rPET)

Post-consumer PET plastic is hot washed into a flaked material. rPET is used in retail packaging, food packaging, blankets, car parts, shoes, and is used as a greener alternative to PVC (non-recyclable) and blister/clamshell packaging - known as a H-Loc Trapped Blister.

Recycled High-Density Polyethylene (rHDPE)

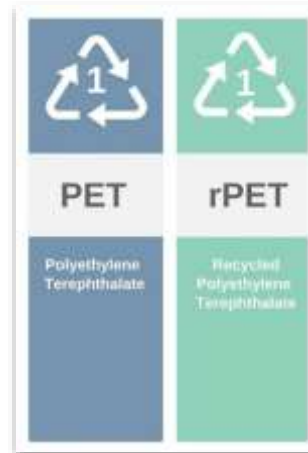
HDPE is recovered from the post-consumer waste stream, mainly plastic bottles, and is put through an extensive process to remove contaminants. rHDPE is typically used to produce further plastic bottles.

Recycled Polypropylene (rPP)

Recycled PP can be recycled into numerous products, such as clothing fibres, food containers, compost bins and dishware. The material is made via melting and granulation.

Eco-Materials 'rPlastics' Environmental Impact & Disposal

The benefits of recycling plastics include the prevention of pollution and conservation of non-sustainable resources and energy. This is due to plastic taking upto one thousand years to biodegrade. However, not all types of plastic are recyclable (e.g., PVC films) which means some still end up in landfill.



PHASE TWO CONCLUSION

MATERIAL RESEARCH OUTCOME

The research tasks during PHASE TWO opened my eyes on the complexities of choosing materials for product packaging. This examination of the larger scale market, from the trends to eco-initiatives has enhanced my learning to an industry level.

To help choose my own materials for the project, I selected two-three of the 'common' and 'environmentally-friendly' alternative materials from my research.

These have been presented in a table to enable easy comparison. Despite all materials having some disadvantages, choosing materials with more benefits than drawbacks helped to maintain the 'environmental' focus of the project.

Click Link For Material Suitability Table

<https://drive.google.com/file/d/1f-JHaiq0bqH6EzMV2JbUhZUNTN83NWwn/view?usp=sharing>

RAREBREED PROJECT: PACKAGING SUITABILITY TABLE						
MATERIAL	PRODUCT APPLICATION (Uses & Design Possibilities)	AFFORDABILITY (Rough Cost)	DURABILITY (Product Security & Design Freedom)	ECO-FRIENDLY	PROS & CONS	PRODUCT/PACKAGING SUITABILITY (Out of 5)
PAPER & BOARD Solid Bleached Board (SBB)	SBB is a PAPERBOARD made from bleached virgin wood pulp and is white in colour on both sides. High-end, Consumer Goods, Cosmetics, Greetings Cards etc.	Average Price = £200 - £900 per 1000 Sheets (Size & Supplier Dependent)	SBB can be coated in clay to enhance its printing capabilities.		<ul style="list-style-type: none"> • High-quality outcomes for printing • High-quality outcomes for embossing & hot stamping. • Strong Material • Expensive 	Nail Clippers 3/5
PAPER & BOARD	A form of PAPERBOARD with similar properties to SBB . Except FBB is made up of thin and multiple	Average Price = £200 - £500 per	FBB's layering properties make		<ul style="list-style-type: none"> • Light weight. • Virgin Pulp sourced from recycled paper or from protected forests (<i>PEFC/FSC</i>). • Requires fewer trees to make than SBB. 	Powder Brush

Now...onto my progress from choosing the packaging materials and the journey so far with the practical exploration, development and refinement of my own packaging designs...

