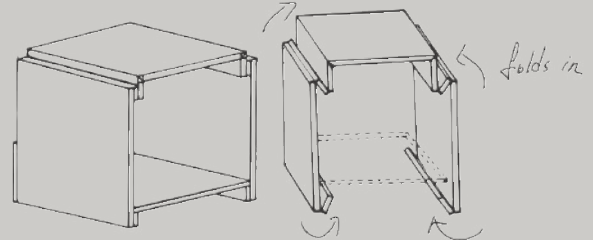
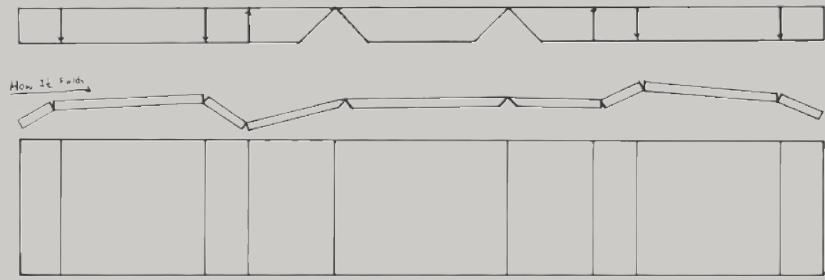


# Section 1: Concept

Describe your concept (text and images)  
Why it is needed?



3 STEPS TO MAKE

CUT IT

FOLD IT

STACK IT

From the inspiration of "Minimalist furniture" and "Small space living". I designed "UP". A storage system made with corrugated cardboard.

This is an idea of **using up the dead space** in the room and also to **prevent self - harming** in prison.

"UP" allows user to fill up the dead space in the room, and with the "**Multi functional coat hanger**", they will be able to use up the dead space in the wardrobe as well. Therefore they maximize the limited space they have and also be able to organise stuffs in a better way.

To make it is very easy. Once the shape is cut out, users can just easily **fold them into shape**.

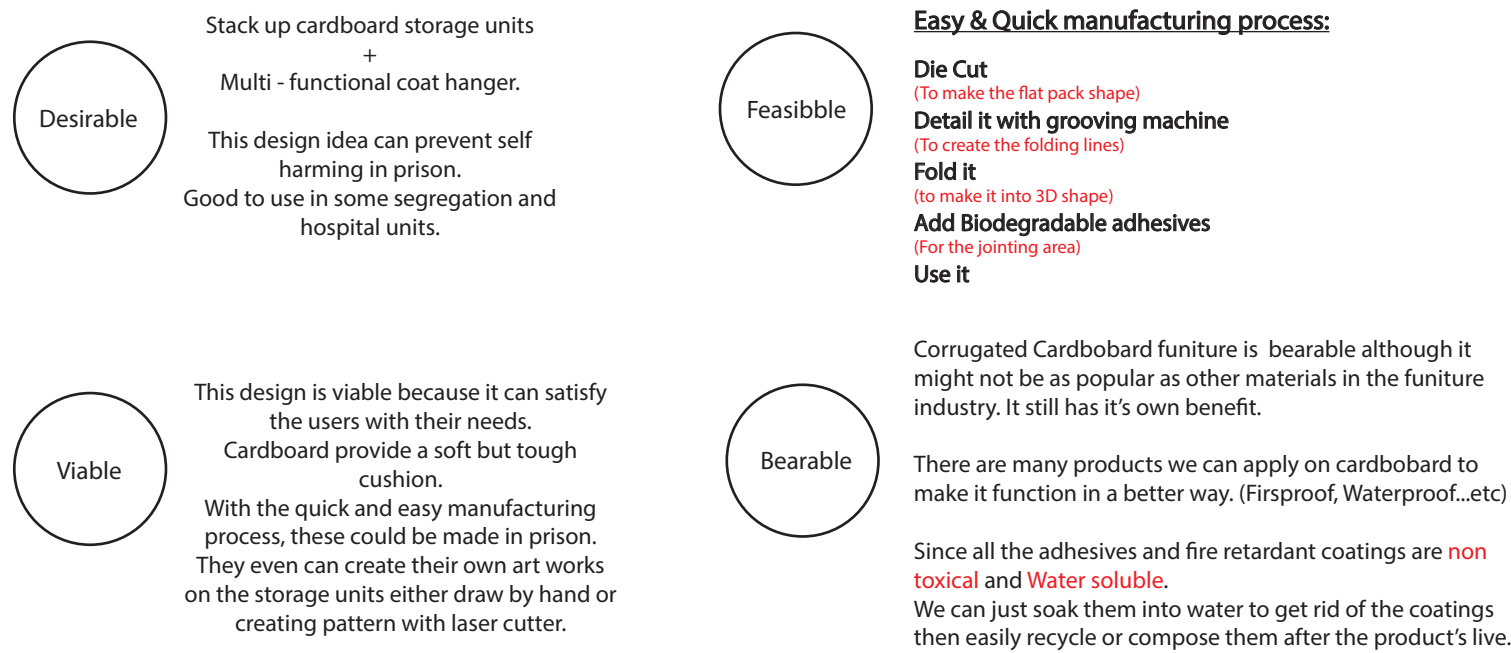
It's a **100% customisable** and **100% Eco - Friendly** product.

Quick manufacturing process. Good for Prison use.

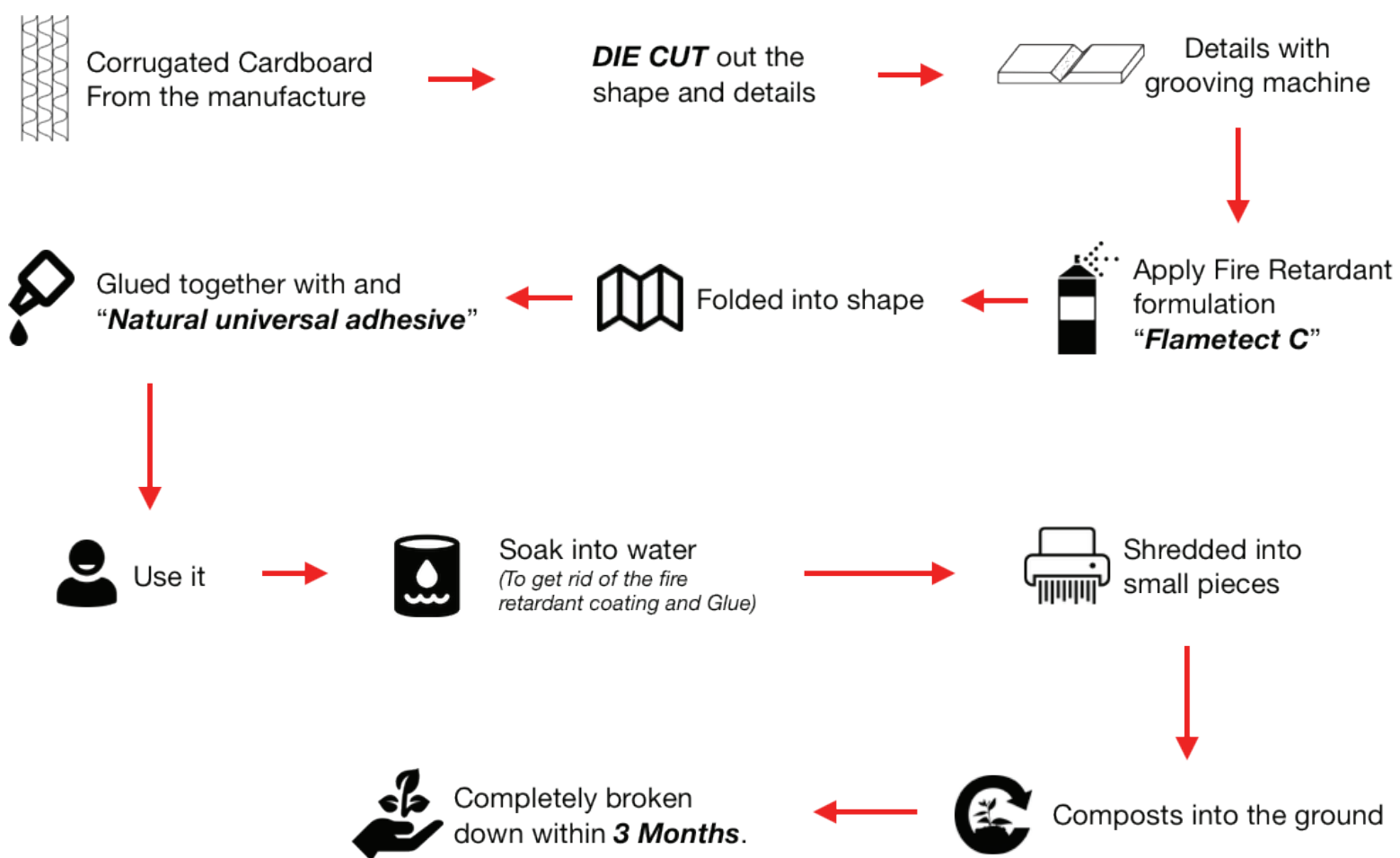
The sizes can also be easily adjusted before the manufacturing process, so that they can fit into most of space.

## Section 2: Desirable – Feasible – Viable – Bearab

From the diagram, list out the strengths and weaknesses of your concept in relation to these aspects.  
What materials would your design involve and how are they extracted, manufactured and then recycled? – Show cradle to cradle cycle.



### Manufacturing Process of “UP” the stack up storage system



Section 2: Desirable – Feasible – Viable – Bearab

From the diagram, list out the strengths and weaknesses of your concept in relation to these aspects.  
What materials would your design involve and how are they extracted, manufactured and then recycled? – Show cradle to cradle cycle.

Flametect C is a annually tested & audited by Warrinnton Fire: A Certifire Registered Product  
Its pH value is 8 and it is fully soluble inn water. It is Safe and easy to use in any environmet.

The company also Supply to...

Waitrose

Hilton

Harrods

Disney

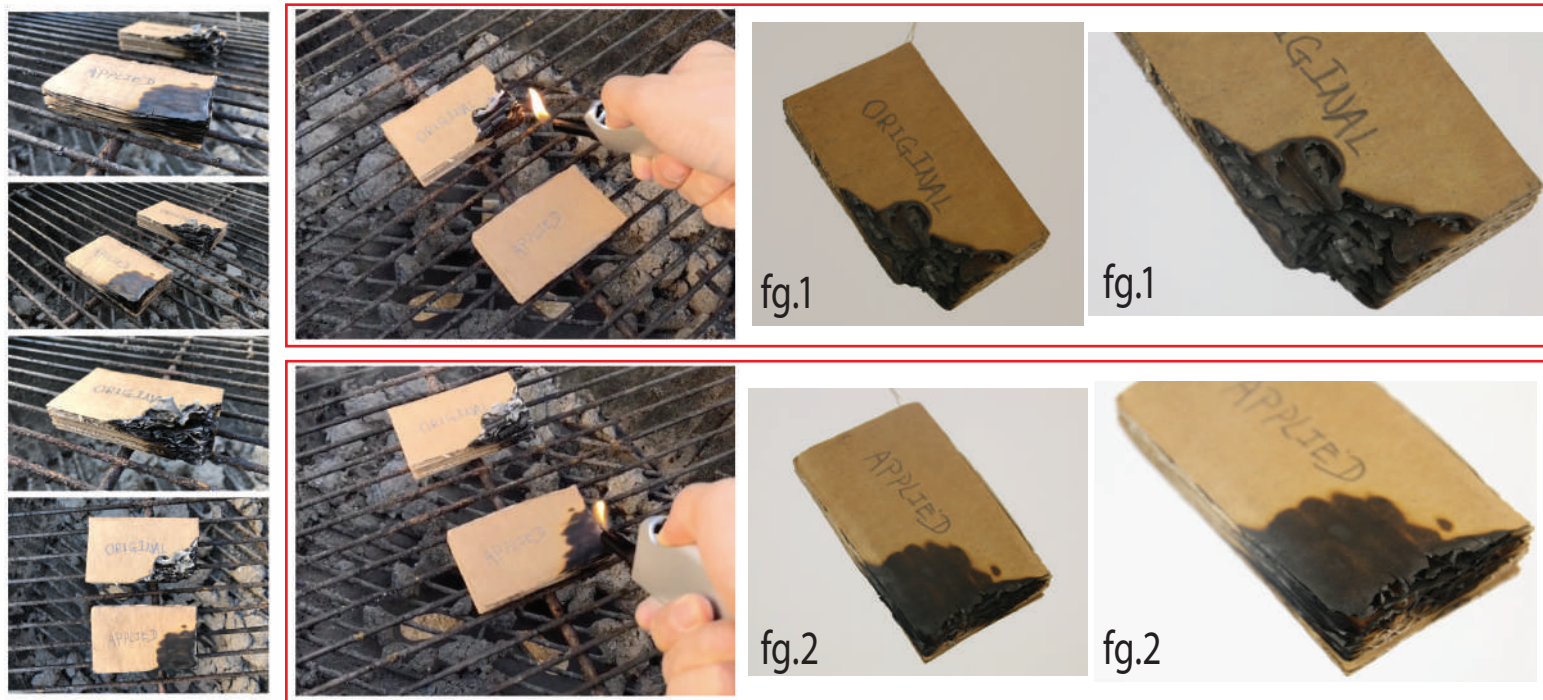
Nando's



I did some testing with the spray and here is the result:



Water based flame retardant. Completely Odourless.  
Treats on average 10 sq. metres per litre.  
Possibly more on light weight materials.  
Produced In An ISO 9001 Quality Assured environment to exacting standards.  
Full Certification with every order traceable to A UKAS accredited laboratory.  
For use around metal items use Flametect Nitro.  
It is a non-toxic non-hazardous formulation , that is easy to apply.  
High strength product can be diluted 1-2 times with water.  
Most effective on natural materials or natural synthetic blends.  
Can achieve B.S.5867 Part 2 Type B  
Dry clean durable 3-4 cycles (No water Injection)

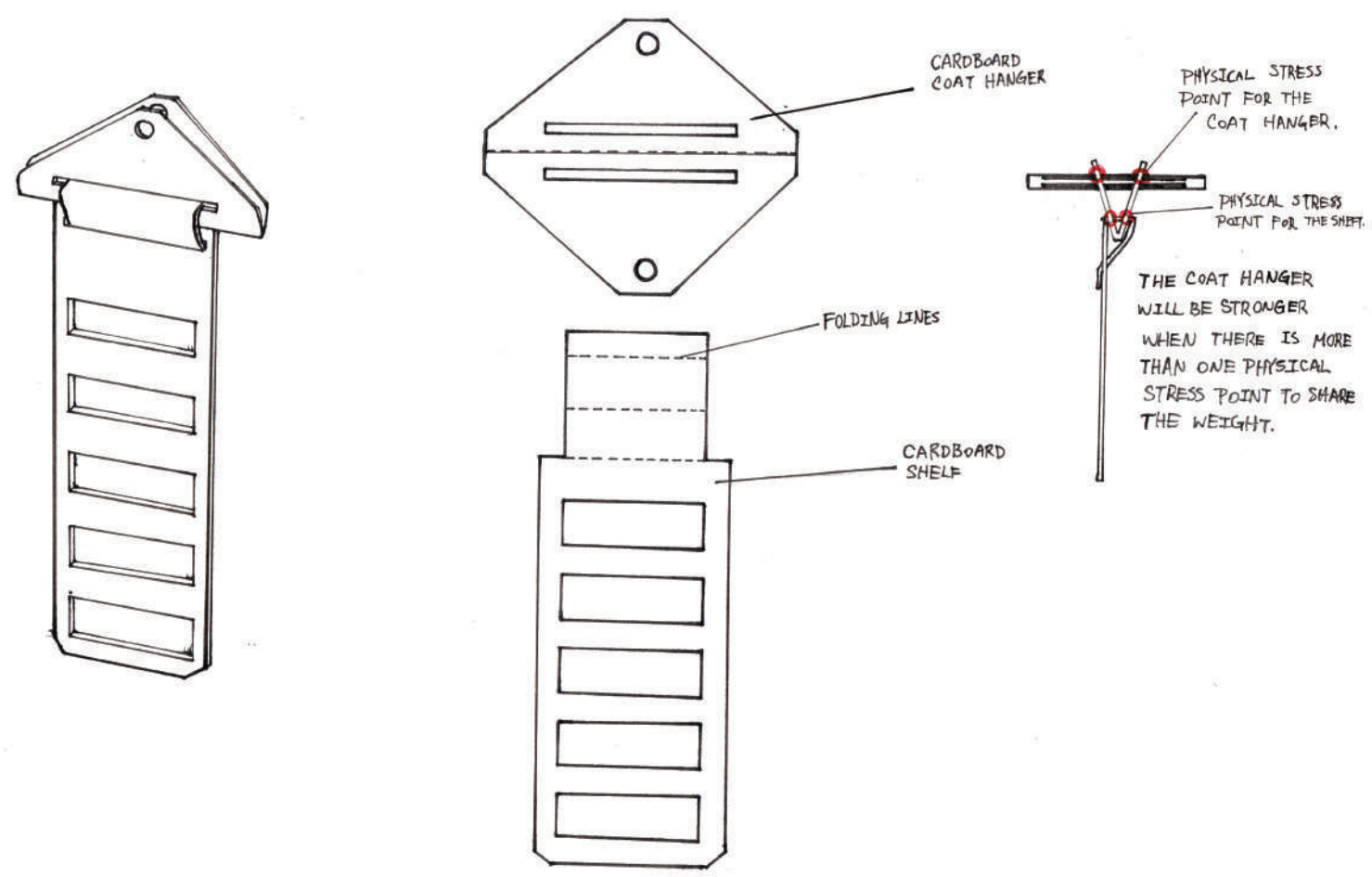


"fg.1" is non treated cardboard - The cardbobard burt out quickly and Flame remains after lightig up. Loads of smokes created.  
"fg.2" is treated cardboard with Flametect C - The cardbobard didn't burn out, no flames remain after lighting it up for 1 minute.  
Very little smoke created.



### Section 3: Further actions

At which point of the research are you now?  
What needs to be developed at this point of the project, what would need more research? Ex: hinges, mould specifications etc...



The re-designed coat hanger are made with two parts. The Coat hanger itself and the extra shelving at the bottom. They can be used separately. It is designed to be assembled without using any adhesives which makes it easier to recycle or compose after used.

By creating more than one “Physical stress points” on the coat hanger the new version of the coat hanger can provide more strength and easier access with the middle storage part when use.

That means the coat hanger is now stronger, more eco- friendly and more user friendly.

**Material:** Triple wall corrugated cardboard (10mm thick)

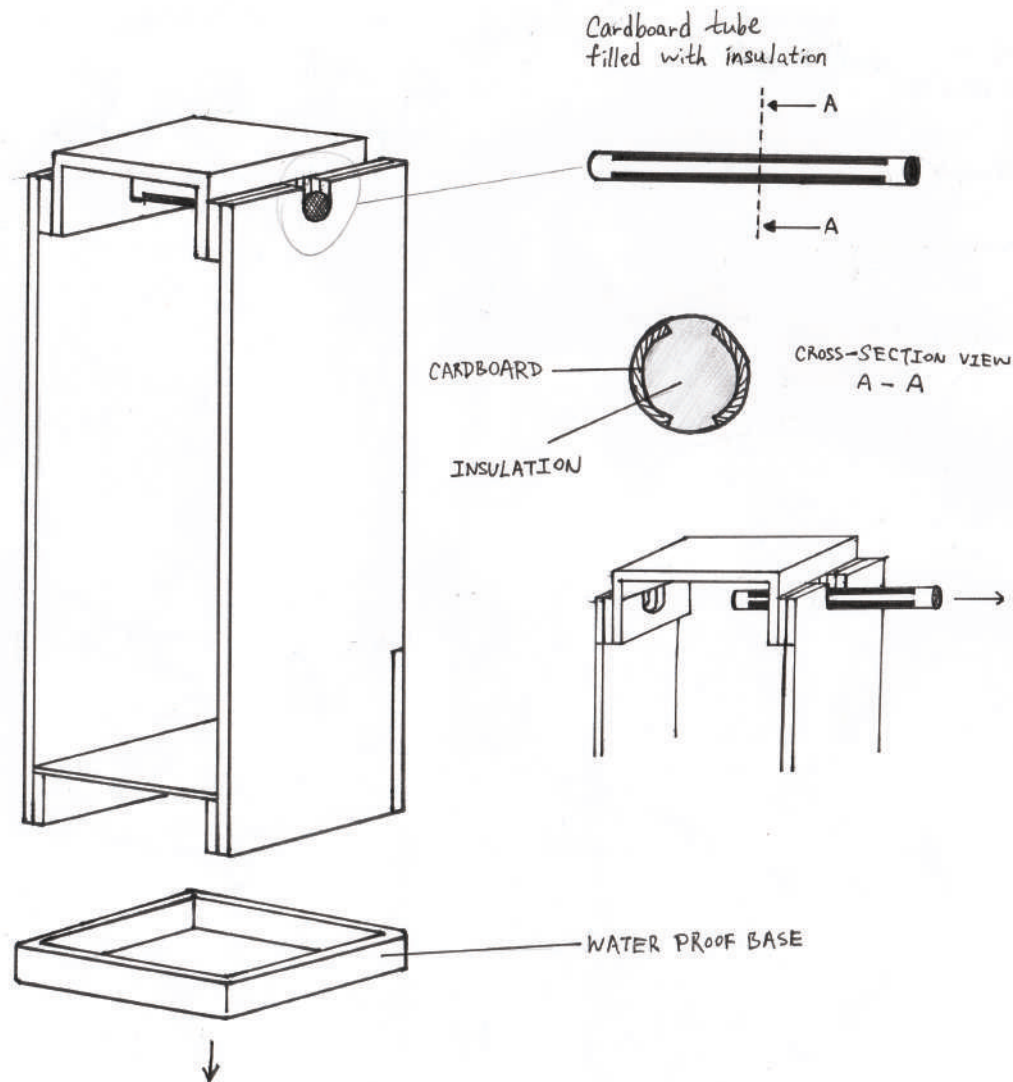
**Manufacturing process:** Die Cut & Grooving

**Fire Retardant spray:** Flametect C

## Section 3: Further actions

At which point of the research are you now?

What needs to be developed at this point of the project, what would need more research? Ex: hinges, mould specifications etc...



The re-designed wardrobe coat hanging bar is now became a “Cardboard tube” with insulation of charcoal foams which will give it extra support on the strength and most importantly, the charcoal insulation can absorb smells in the wardrobe.

**Material:** Triple wall corrugated cardboard (15mm thick)

**Manufacturing process:** Die Cut & Grooving

**Fire Retradant spray:** Flametect C

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Initial idea of the **Waterproof base:**

**Material use:** Polypropylene (PP) - Recycleable

**Manufacturing Process:** CNC / Injection moulding

**Why do we need this:** To prevent the cardboard get wet when it's touching the floor.

## Section 3: Further actions

At which point of the research are you now?

What needs to be developed at this point of the project, what would need more research? Ex: hinges, mould specifications etc...

With my colleague **Alferd Low's** research and testing on active charcoal, he managed to create different forms of materials which contain active charcoal inside to absorb smells in different areas.

This part Credits to:  
**Alfred Low**



We came up with an idea of, what if the storage units and coat hangers are made with some kind of materials which also have active charcoal inside? So that the whole storage system can absorb smells in the room, but also green and fire retardant and good for recycle and composing.

After doing researches about "how to make cardboards", we decided to collaborate each other's work and try to make some a new cardboard which includes active charcoal inside.

Here, we made active charcoal cardbobard sheets with recycled cardboard and active charcoal powder.



We added charcoal powder from one table spoons to Five table spoons into grinded cardboard and press them into a sheet form to see the result.

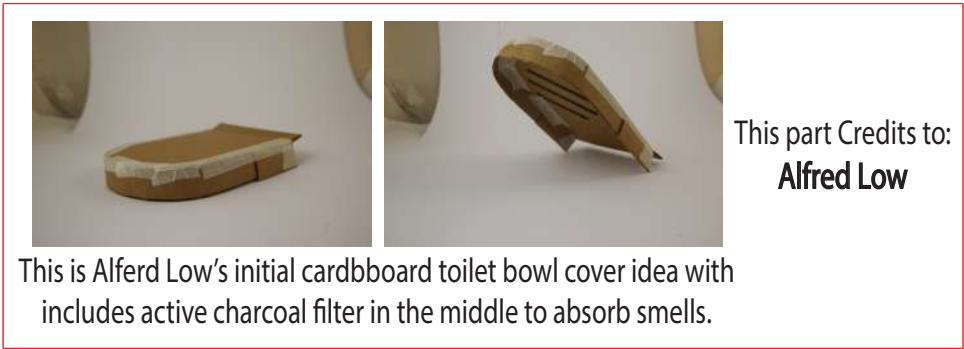
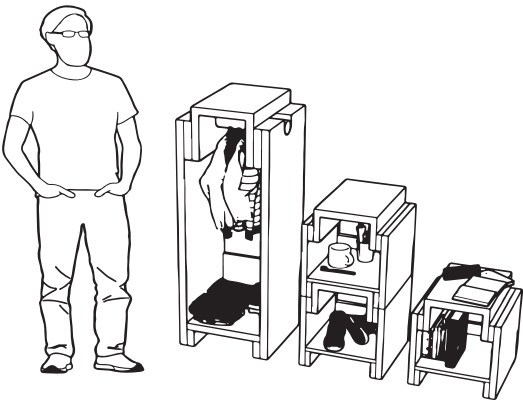
**Lab test needed** to see if the acrtive charcoal will still absorb smells after combining with other materials.

If this work, **active charcoal can be added during the manufacturing process of making corrugate cardboard.**

That means the **storage system could be made with this charcoal cardbobard sheets.** in the future

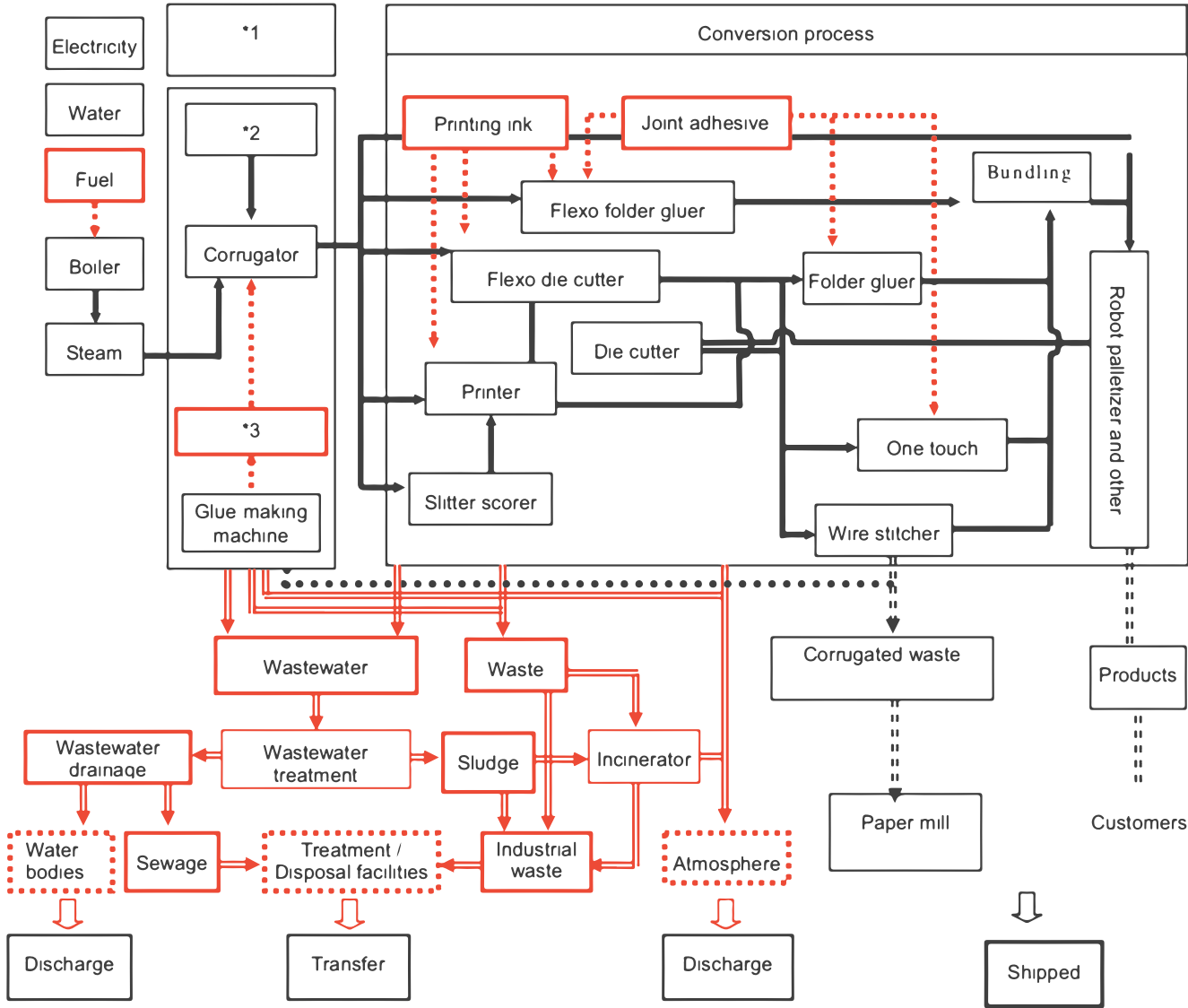
# Section 3: Further actions

At which point of the research are you now?  
What needs to be developed at this point of the project, what would need more research? Ex: hinges, mould specifications etc...



We are also thiking if the lab test can prove that the active charcoal cardboard works, we might also be able to make the whole toilet bowl cover with this new material (active charcoal corrugate cardboard).  
We can also develop the structure of the toilet bowl cover to make it stronger for sitting

Here is a overview og manufacturing process flow for Corrugated Packaging Industry



The discharge of all Class I Designated Chemical Substances, at the points indicated by the dotted boxes [graphic], are subject to reporting