

Home

What is home? For refugees, forced displacement reshapes their idea of home. The Jungle play is based on true events, depicting the struggles they encounter.

Okot I have never been this far from my mother . . .
I cannot be boy any more . . . That was my first death.

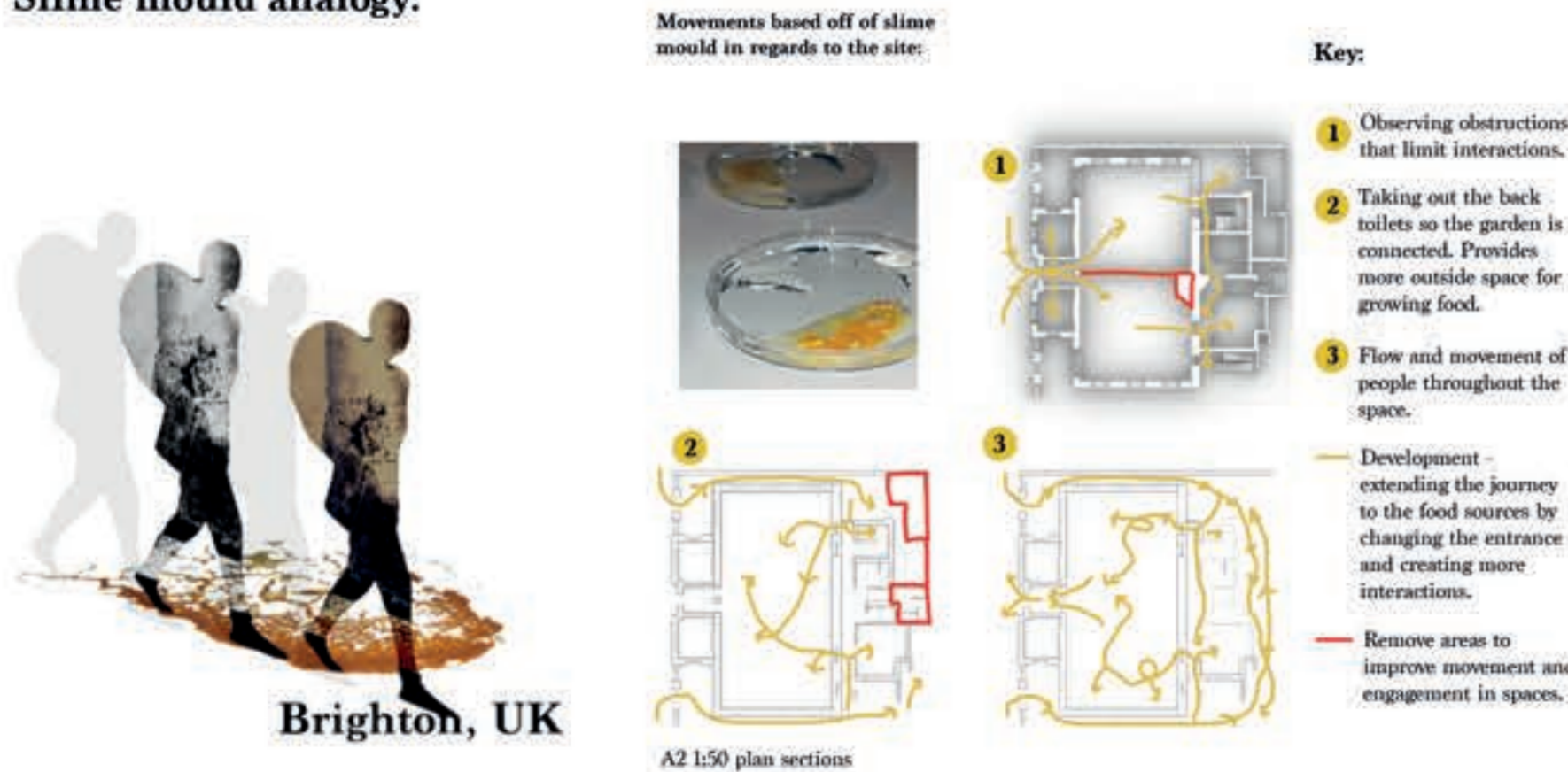
Description:

This project aims to integrate refugees into the local community through communal gardening. Creating a self-sufficient system that optimizes food growth is at the heart of this project. I employed slime mould as an analogy for movement within my design, as well as inspiration for materiality, to help optimize the reduction of CO2 and landfill waste. I utilized a range of sustainable and eco-friendly materials.

DEATH OF ONES HOME. HOPE. REBIRTH.



Slime mould analogy:



Further research:










While exploring nearby parks, I searched for slime moulds but instead found a variety of fungi, decaying wood, and leaves. These types of environments are ideal for slime moulds to thrive in. However, slime moulds can be microscopic, their size depends on the specific type and stage of their life cycle. Therefore, they may exist in their unicellular form on this plant matter.

Materials to gather from this:

Decay is a process of form making

Looking at where slime moulds are found for materiality.

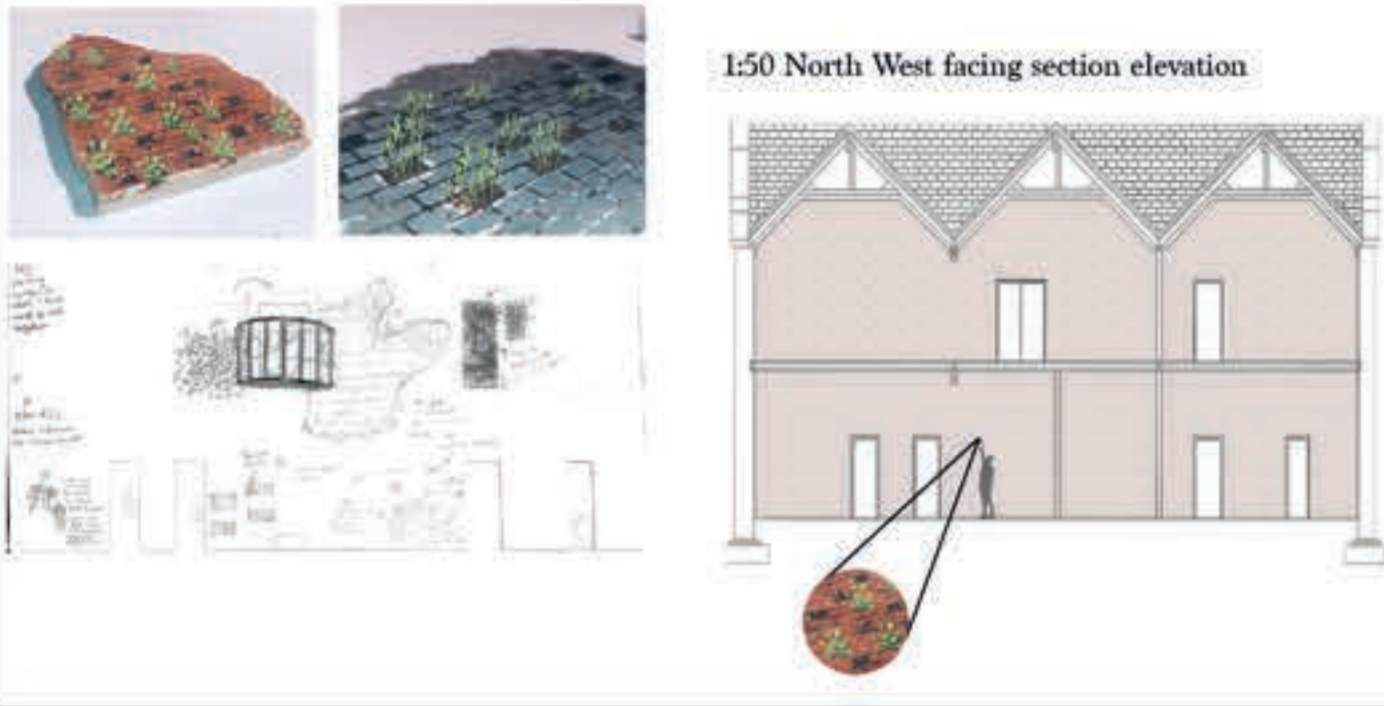
Findings & what materials I could use:

	- Timber		- Moss for humidity
	- Mushroom space for eating		- Soil
	- Leaves degrading for soil health		- rammed Earth
			- Cob

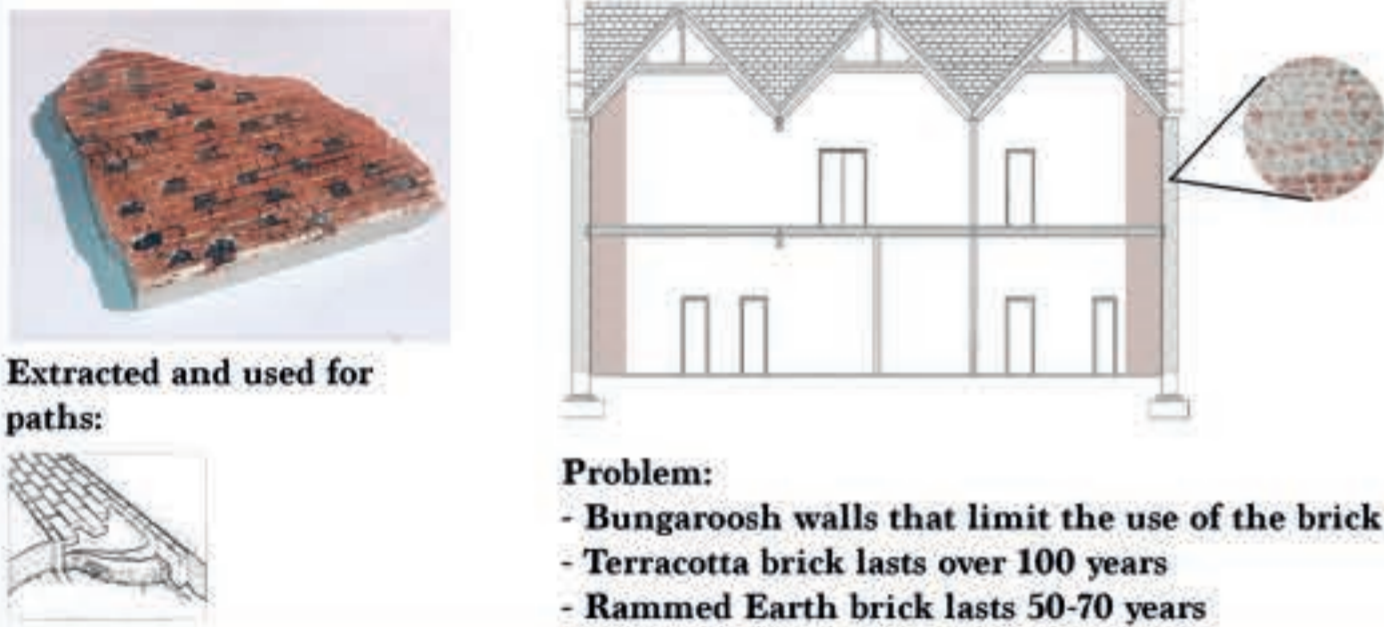
Walls

Exploration of soil based materials to either grow food or portray building decay. Death, hope, rebirth.

1:50 concept model & sketches



1:50 Rammed brick wall (Terracotta brick extracted)



-Solution:

- Use a rendering to cover walls to optimise the internal environment for both growing plants and human health.

1:50 Bungaroosh wall with Terracotta render



Terracotta benefits:

- Thermal mass properties, regulation for plant health
- Helps maintain optimal humidity levels to prevent mold or mildew growth.
- Environmentally friendly
- Terracotta can help improve indoor air quality by absorbing toxins and pollutants from the air.

Use for material samples:



The concept

Problems that require action

Alterations

Soil test



Silt soil results



To create the correct soil type:

Rammed Earth soils: Sandy Loam, Loam, or Clay Loam
Cob soils: Loam Soil
Loam Soil can be used for both. Heres what you add to Silt soil to achieve Loam soil:

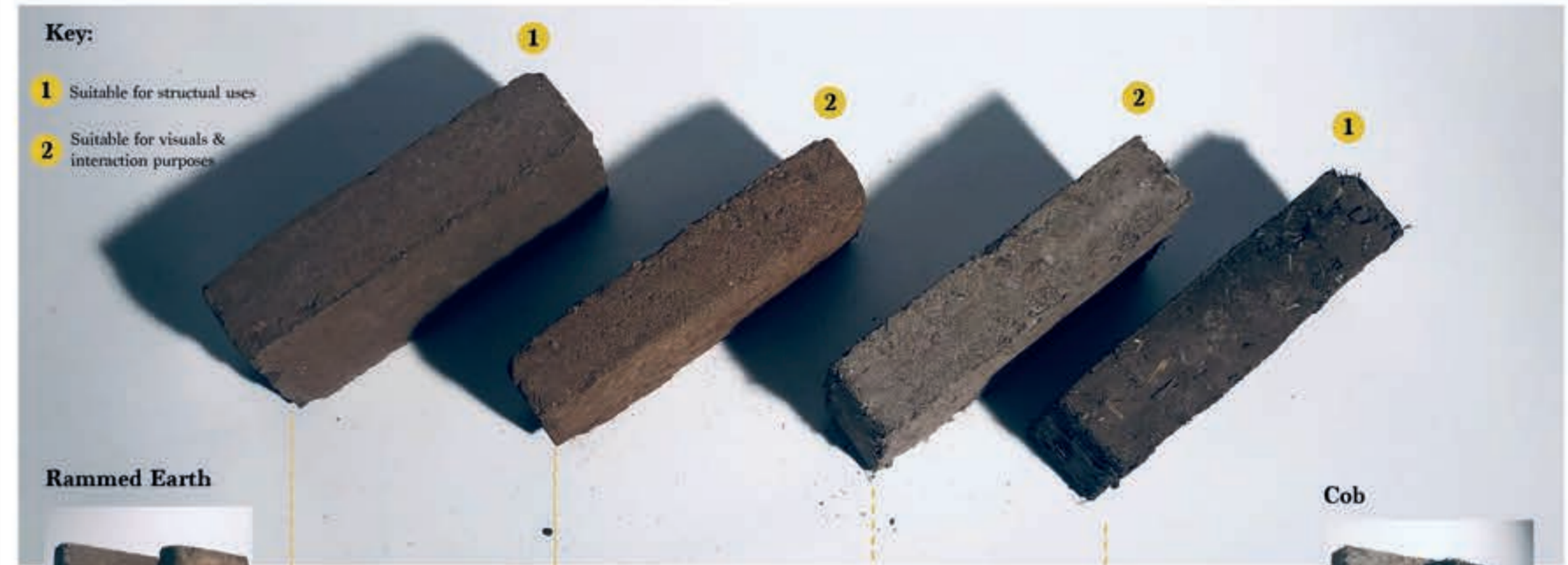
- 22% clay
- 27.82% silt (keep the amount present)
- 50% sand

Loam soil graph:



Key:

- 1 Suitable for structural uses
- 2 Suitable for visuals & interaction purposes



Rammed Earth



25% clay
 25% silt
 40% sand
 10% cement stabiliser

Add water so it looks rained upon

Conduct drop test:

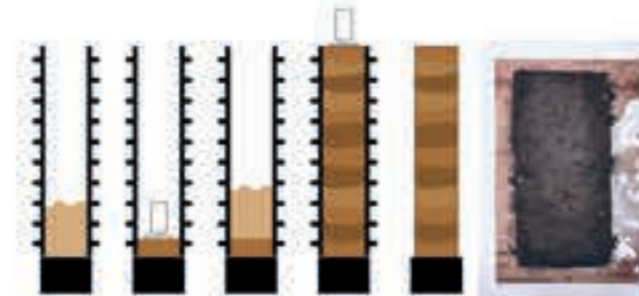


Experiment:

25% slip clay
 25% silt
 40% used coffee grounds
 Add water

Added local waste coffee grounds creates a opportunity for fast decomposition of a brick but it is not for structural intent.

Rammed Earth making process



Fire resistant test:



A 300mm wall - resistance of at least 90 minutes

Cob making process



Cob is fireproof

Sunflowers cleanse soil, ready for growing.



Experiment:
 20% Clay
 70% Sand
 10% Straw

Add water, miricle grow, sunflower seeds & knead.

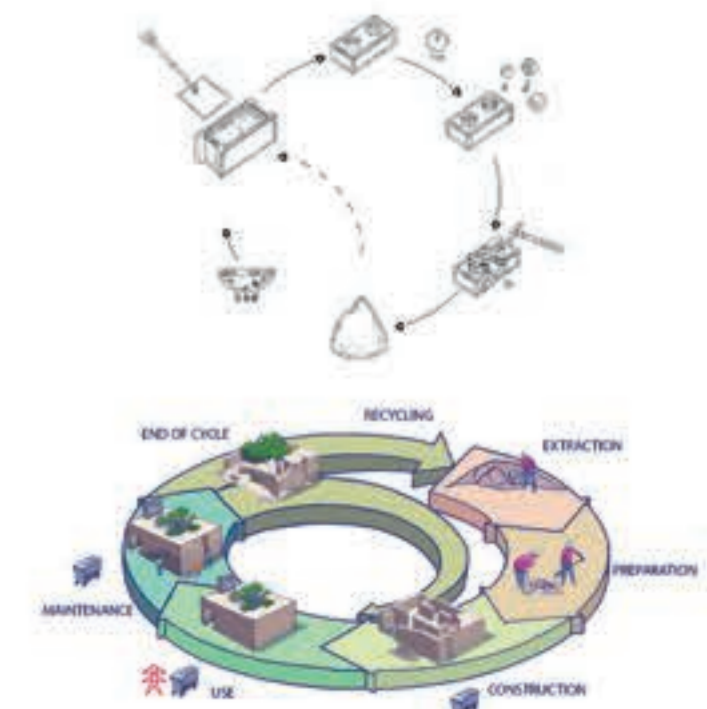
Cob



20% Clay
 70% Sand
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Add water so it looks rained upon & knead.

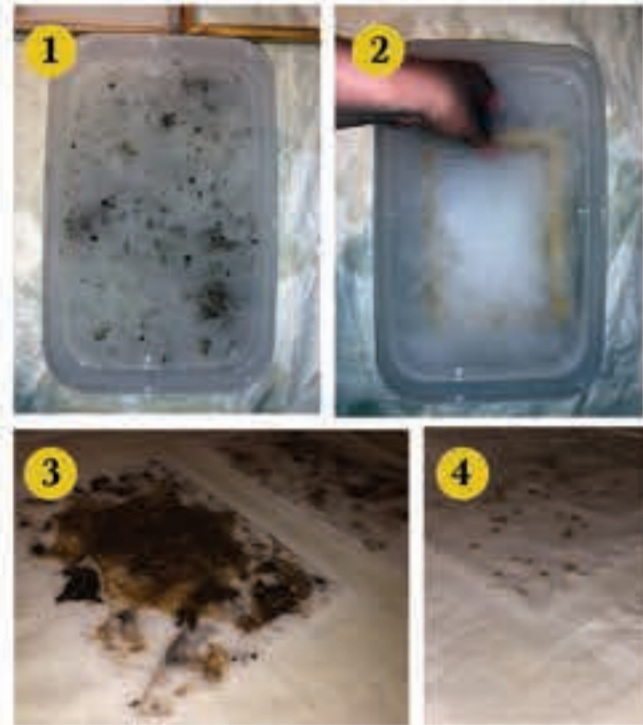
Cradle to cradle for both:



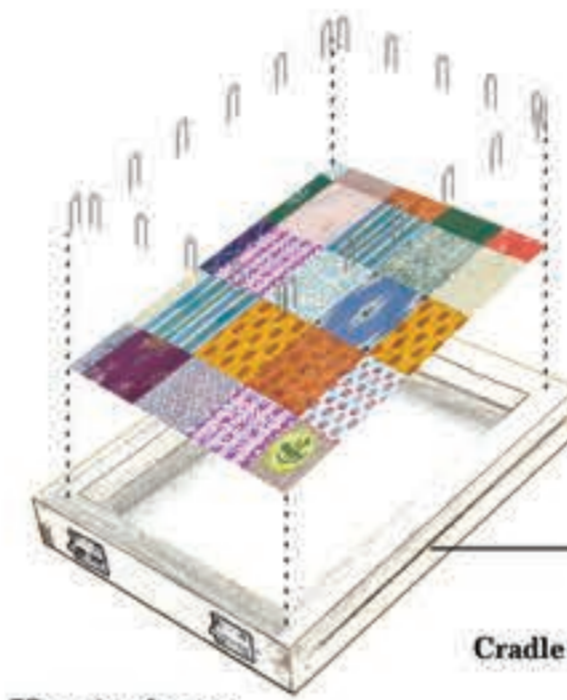
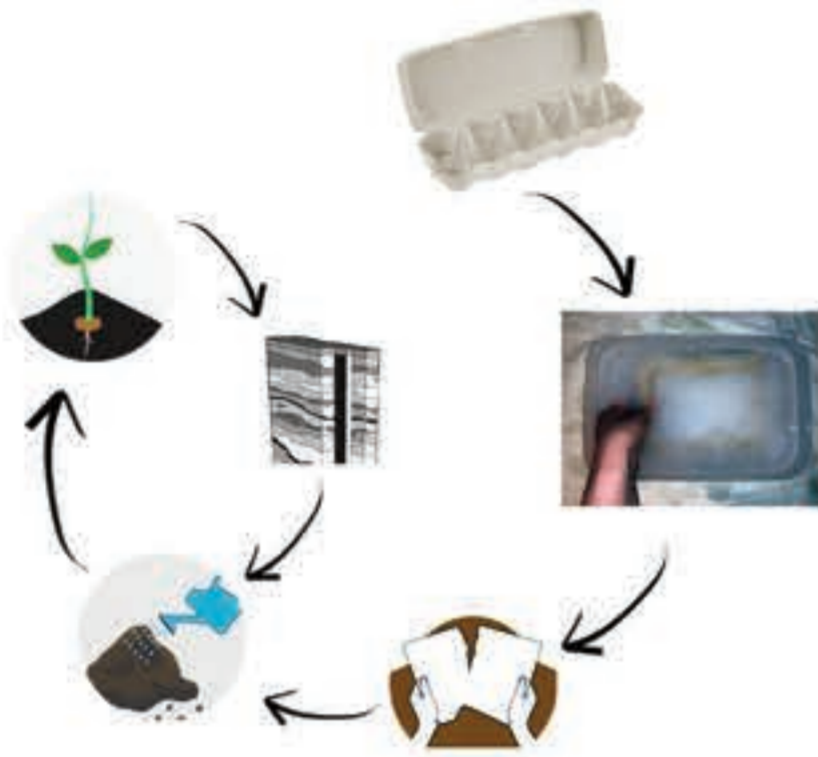
Development & seed paper station

Creating an onsite paper-making station made of recycled materials.
The seeded paper can be torn off the wall and planted to produce vegetables, acting as carbon sinks that help remove CO2.

Recycled paper making process:



Decaying leaf recycled paper. Seeded recycled paper.



Attach tightly woven fabric to the frame e.g. Cotton. This can be found in local charity shops, stitched together making a big sheet of material to stain the paper.

Stappling the fabric to the frame ensures that the fabric does not sag.

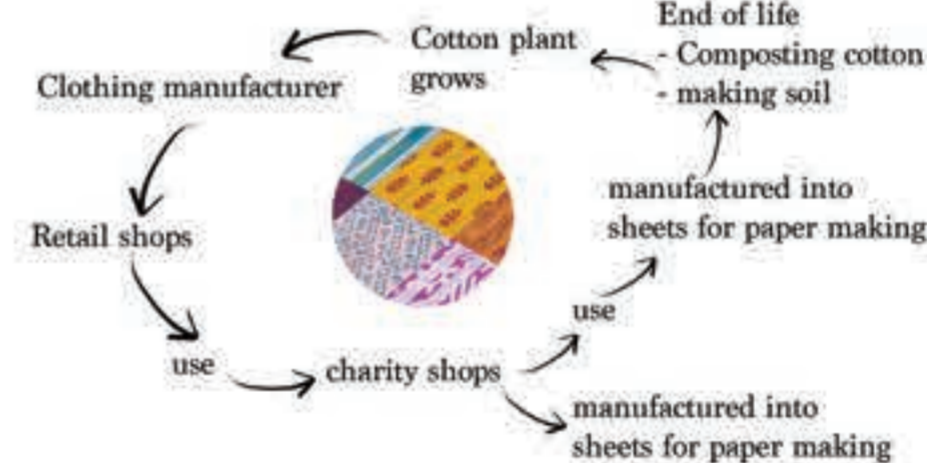
Nailing the fabric to the frame might not be as secure and could cause more maintenance due to various holes the nails have made, damaging the frame.

European Larch is naturally resistant to moisture, decay and is grown in the UK.

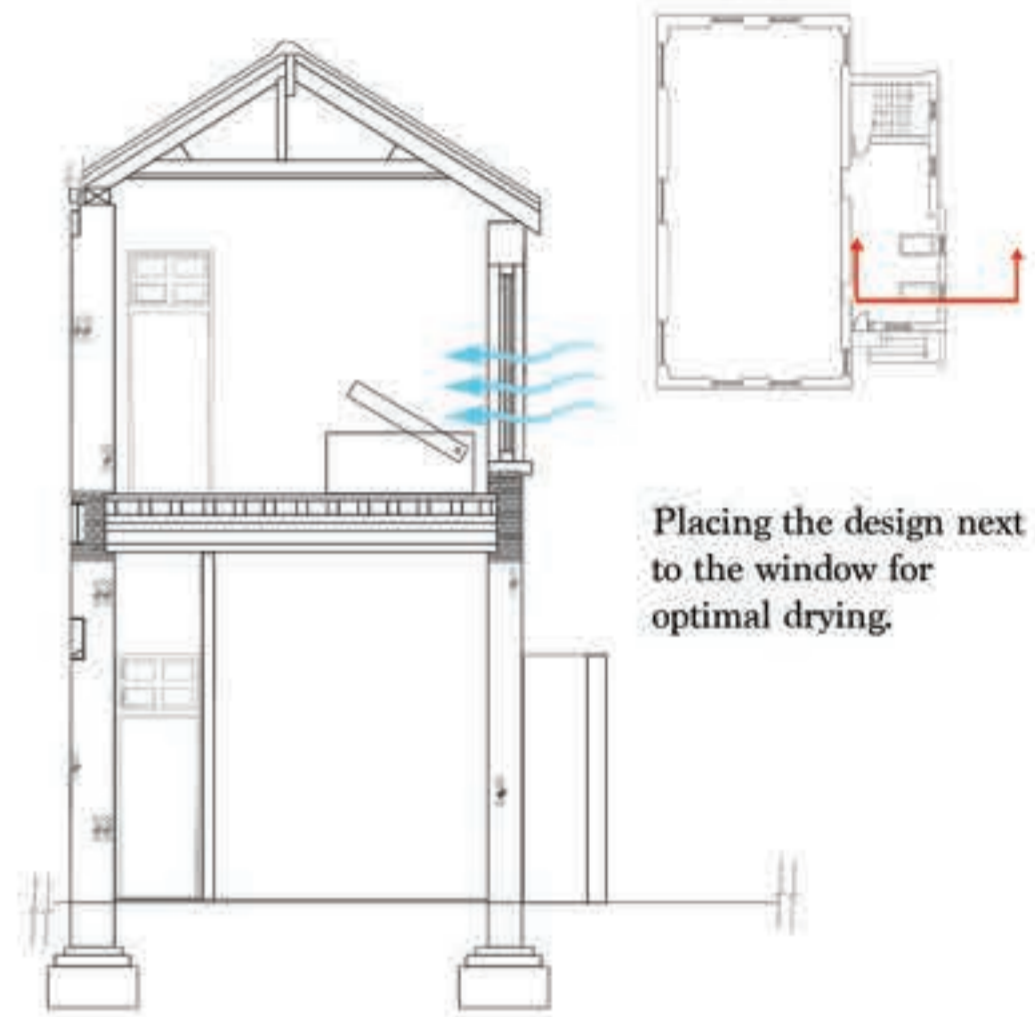


Herringbone stitch seam

Cradle to cradle:



1:50 Section elevation



Placing the design next to the window for optimal drying.

Taking the embedding of seeds & making it into an activity for the community.



1:1 Rammed Earth sample with mixed seeds for planting & decaying leaves for extra soil nutrients once planted.



Micro-fibres allow pieces to be stuck back on & left to be planted another day.



How this is used in my final 1:50 model:



Incorporating a composting station

Creating a self-sufficient space for composting. Nutrient-rich soil will be used to grow food. Locals are encouraged to drop off their food scraps for composting.

Experimental design:



Collection of local food waste.

Decomposing bags are getting ready for soil use.



Wall odor remover:

Coffee grounds can remove odors from 20-90%



Solution:

Using a divider to block the smell entering the centre space.

Using a rammed earth, coffee, non load bearing wall to reduce the smell.

Lets reduce landfill:

50% of what we put in the bin can be compostible

What ends up in landfill?
21% scraps alone

15% paper/paper board

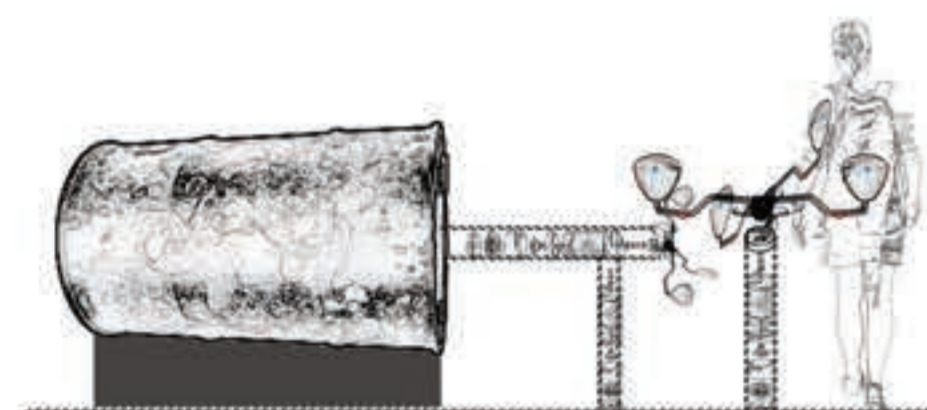
8% trimming

8% wood waste

Limitation:

Coffee grounds can only absorb odours when their molecules are not saturated. Once saturated, it becomes ineffective.

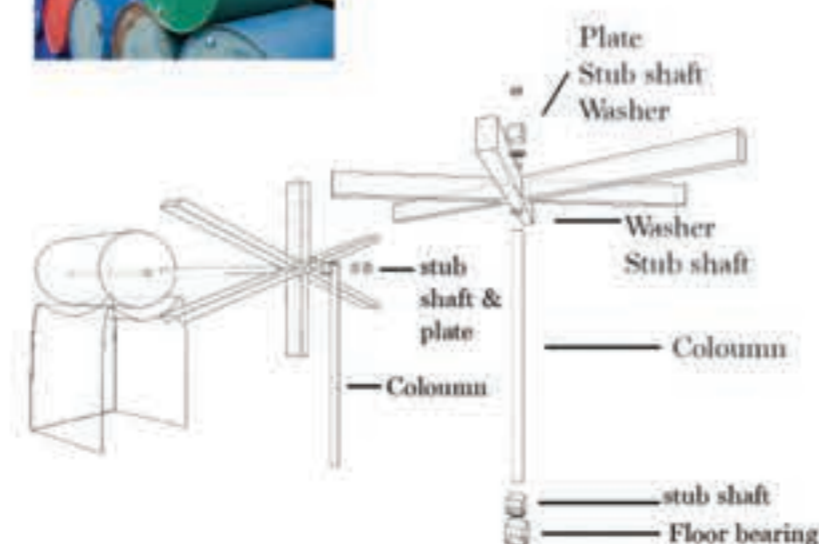
Final design solution:



Using the waste of local cafes that don't compost their used coffee grounds.

500,000 tonnes of waste coffee grounds are produced every year in the UK & end up in landfill.

Recycled oil drum:



Final model



- Using cotton filling as a substrate to generate a cushioned fill to the seating
- Grow mycelium on cotton filling
- Place inbetween Timber seat slots begin the drying process
- European Oak timber panels
- Mycelium
- Mycelium & cotton filling
- Reclaimed Timber

