



“Community Creations”

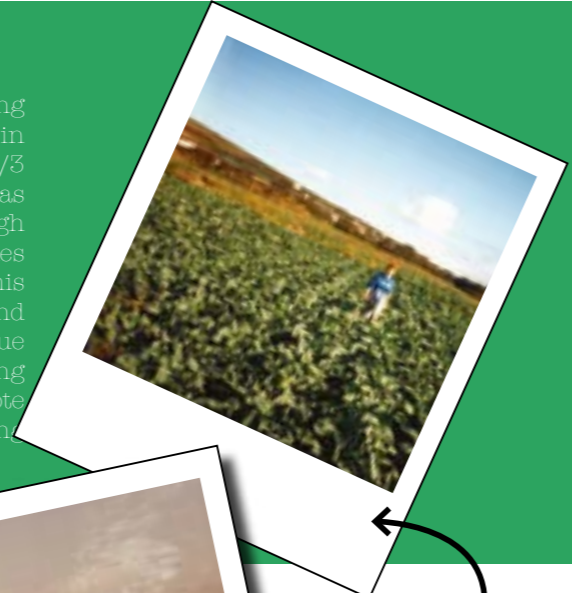
A sustainable design project specifically concerned with food and food waste



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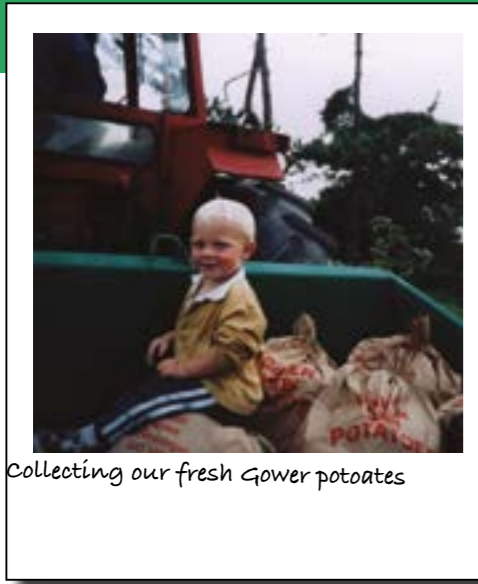
As a designer I have been specifically concerned with food and packaging waste. My upbringing on a rural farm in south Wales has had an influence in the my values of food and food production, causing questions as to why 1/3 of the food we nurture and produce is wasted globally, and problems such as obesity and starvation is so common. I want to address these issues through my design work by influencing others, as this is where changes in attitudes towards waste can be made. Communities lie at the heart of where this change can be made. Through my project I will use my skills to research and gain an understanding of three local organisations each presenting unique challenges and opportunities, whilst sharing common values in supporting both people and the environment. My material objects will actively promote the values within these communities whilst intercepting and preventing food waste.



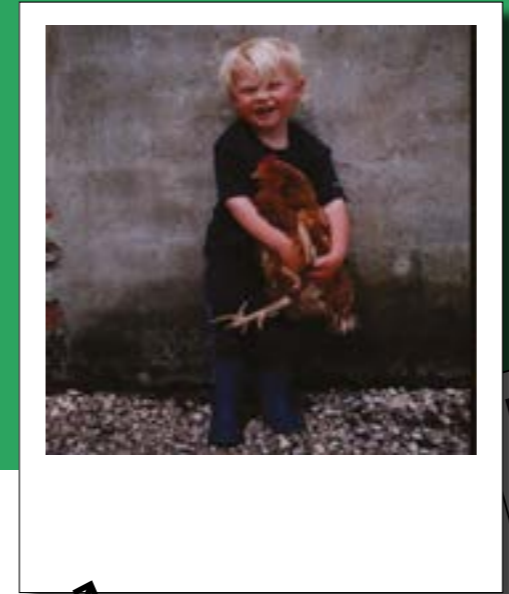
Mum in couli feilds, working for Gower Growers



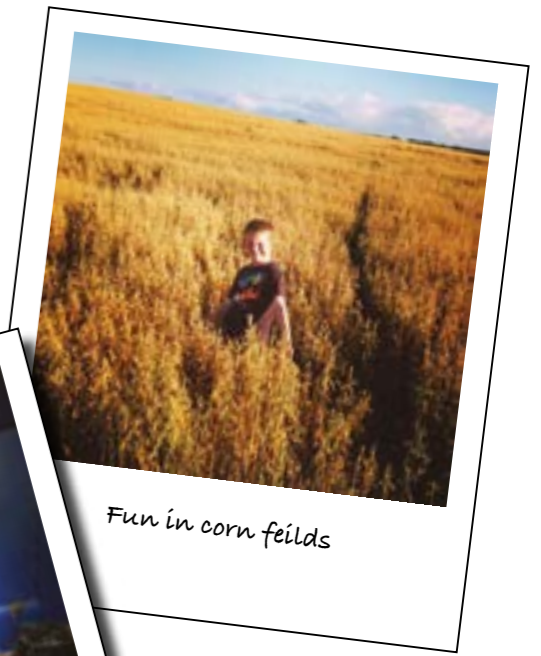
Mum aged 3, farming as been a way of life for my family for atleast 8 generations



Collecting our fresh Gower potatoes



Raising chicks for free range organic eggs



Fun in corn feilds

One third of the world's food is wasted
– 1.3 billion tonnes per year



enough to feed 3 billion people,
or 10 times the population of the USA

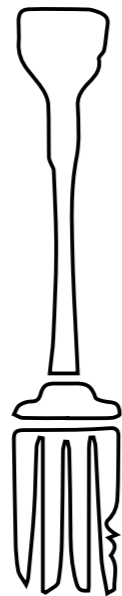
source: Tristram Stuart/FAO

'Community Creations'

aiming to promote the brand values of sustainable, social enterprises
through the strategic utilization of waste materials.

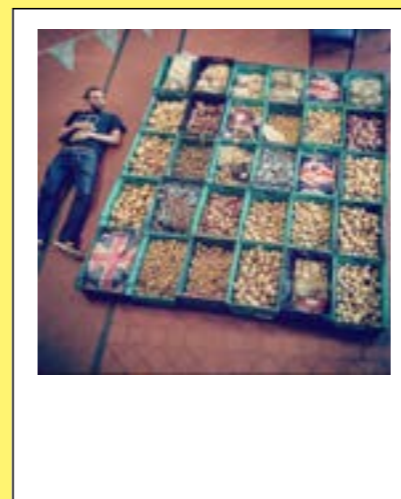


Live Project One



THE REAL JUNK FOOD PROJECT
BRIGHTON
EST 2014

**“in 2016 R_JF-
PB saved 568,71
tonnes of food from
landfill”**



Perfect Potatoes

The Real Junk Food Project (R_JF_P) is a global organisation that intercepts supermarket food waste otherwise destined for landfill.

The main source of income is volunteer run café's, which serve fresh meals from waste food.

In Brighton, the R_JF_P feeds approximately 400 residents every week, on a 'pay as you feel' basis. The innovative 'pay as you feel' concept encourages people to think about what that plate of food means to them, and value it in whatever way they can.

In 2016 R_JF_PB saved 568,71 tonnes of food from landfill, serving 19,943 plates of delicious food to the residents of Brighton. They currently occupy community buildings to run the cafe 5 days a week. Monday to Wednesday at St.lukes, Thursday at Hollingdean community centre and Friday at One Church. They rent all the equipment needed for their hospitality services. through donations they own two vans which allow them to collect food each evening for the cafe. Their next goal is to secure a permanent residence for the cafe, but need support from the community to do so.

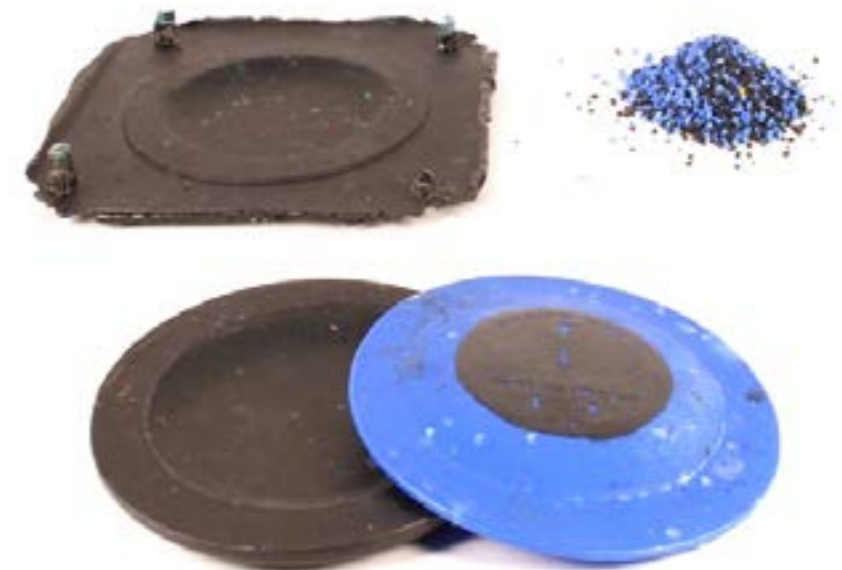
One of the main challenges faced by R&JFP is consistently communicating their core values to the public and encouraging wider community engagement. They want to remind the community of the positive impact they are having socially and environmentally. The importance of community support is vital in the R&JFP survival.

In response to these challenges I have developed two objects that seek to address the needs of R&JFP. I have volunteered with the project for two years, and in doing so have developed a knowledge of the projects ethos, goals and problems. I have met people from all walks of life, learned recipes from all parts of the world. Sharing food brings people together no matter who you are, R&JFP demonstrate this whilst improving the environment through fighting waste.



enjoying a feast at One Church after volunteering 3 hours preparing a tasty buffet from intercepted food waste !

'Crate Plate'





The 'Crate Plate' is a robust re-usable serving plate made from recycled food packaging crates. They are designed specifically for the Brighton cafe, stamped with their logo on the back of every plate. It utilises the food packaging that is left after food preparation. Re-alliterating the value in waste and engaging those who come to eat at the cafe about these issues.



"we are proud to see our plastic packaging being utilized into useful tools instead of going to landfill, I think these are great for the project and will enhance and encourage our purpose to a wider audience"

'Bin Lid Platter'



The 'Bin Lid Platter' is a canapé tray designed for public events and formal dinners, also made from food packaging crates. Together these objects help to fulfil the everyday hospitality requirements of R&JFP whilst also communicating the hidden value of waste.



Encouraging users to think about the value in what they waste #PayAsYouFeel bin lid

Research and Development

Volunteering at the Project

I have volunteered at the Real Junk Food Project Brighton since 2014. Here I have gained knowledge of how to intercept food waste to make delicious meals whilst making good friends with people from different cultures and backgrounds.

Everyone has something different to offer to the project, food brings people together and how better to do it than with what would have otherwise been wasted? Its a fulfilling experience, in which I have used my design skills to support the challenges the project face.

Designing their own branded equipment helps their goal to having a better established cafe, done so through intercepting the packaging waste they are left with each day.



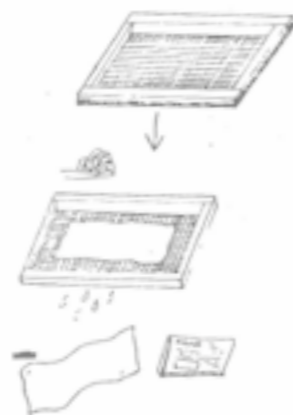


*"We save a lot of food from being wasted, but in the process its hard not to notice the serious amounts of packaging, which is sometime difficult to recylce"
Chris*

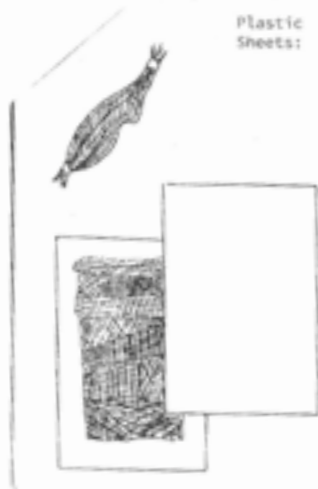




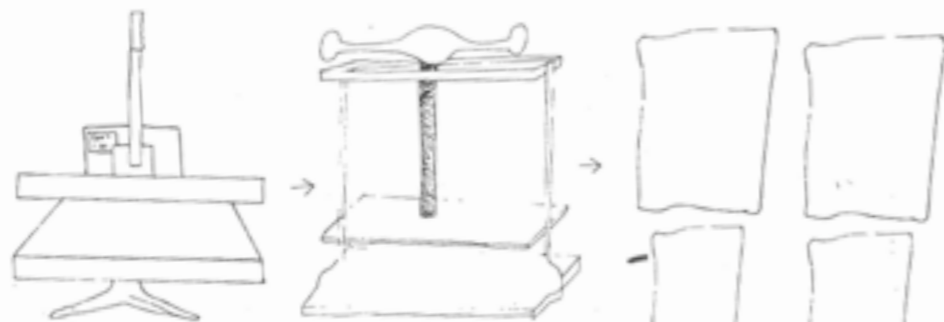
Cardboard pulp:
 -tear up cardboard (if too strong or thick soak in warm water to loosen fibres)
 -Place the teared pieces into a bucket of warm water
 -leave to soak overnight
 -use a hand blender to blend cardboard into a pulp, to a soup like consistency
 -leave for 24 hours



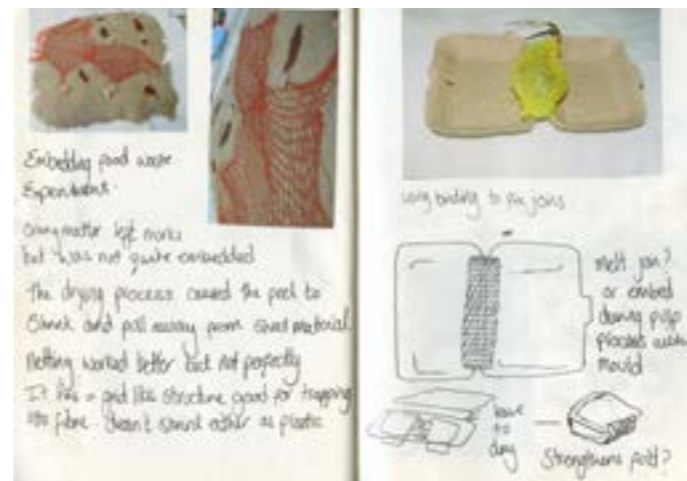
-use a strane of fine wire mesh to sift through the pulp and drain excess water
 -leaving you with a sheet of paper/card depending on the thickness
 -use 2-cloths and sponges to drain more water
 -for flat sheets, place straight into a drying cabinet or dry area and leave.
 -for shapes (in this instance bowls) a former is needed
 -any shape that is metal or smooth plastic is best as more fibrous materials such as wood will bind to the pulp and be very difficult to remove
 -gently place the damp sheet of pulp over or into your former, press down gently to create the correct shape and place into dry cabinet to dry
 -this should take 24 hours in a really dry area, but could take up to a week

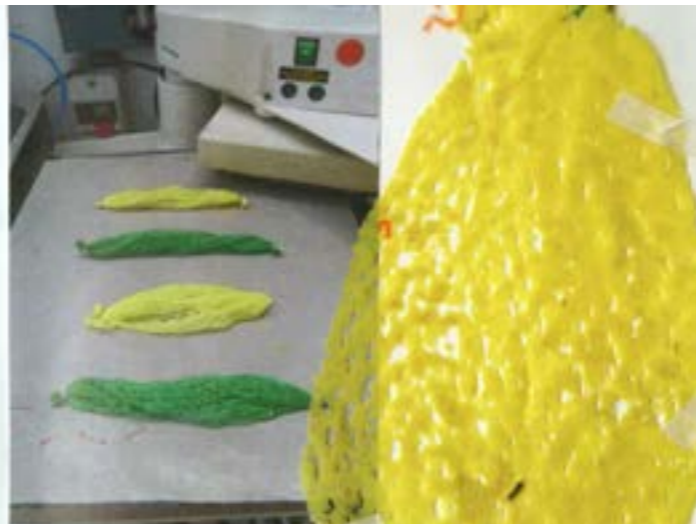









Plastic Sheets:



-gather together plastic netting/bags
 -carefully lay out between two teflon sheets, overlapping the nets several times to avoid holes
 -once they are arranged heat press the teflon sheet at 200 degrees for one minute
 -place under a flat press for 5 minutes until cool to ensure plastic sheet is flat
 -remove from press and teflon sheets
 -this flat sheet material will be used in this brief for dye sublimation, labeling and laser cutting.





Polymer Types	Examples of applications	Symbol	MeltPoint
Polyethylene Terephthalate	Fizzy drink and water bottles. Salad trays.	 PET null	260°C
High Density Polyethylene	Milk bottles, bleach, cleaners and most shampoo bottles.	 HDPE null	120°-180°C
Polyvinyl Chloride	Pipes, fittings, window and door frames (rigid PVC). Thermal insulation (PVC foam) and automotive parts.	 PVC null	160°C
Low Density Polyethylene	Carrier bags, bin liners and packaging films.	 LDPE null	105°-115°C
Polypropylene	Margarine tubs, microwaveable meal trays, also produced as fibres and filaments for carpets, wall coverings and vehicle upholstery.	 PP null	160°C
Polystyrene	Yoghurt pots, foam hamburger boxes and egg cartons, plastic cutlery, protective packaging for electronic goods and toys. Insulating material in the building and construction industry.	 PS null	240°C
Unallocated References	Any other plastics that do not fall into any of the above categories - for example polycarbonate which is often used in glazing for the aircraft industry	 null	



"The Project is doing great, however we are struggling keep a continuous flow of funding from the community, finding a way to communicate the importance of 'Pay as you Feel' without patronising or discouraging our customers would help. Posters and flyers could help?"

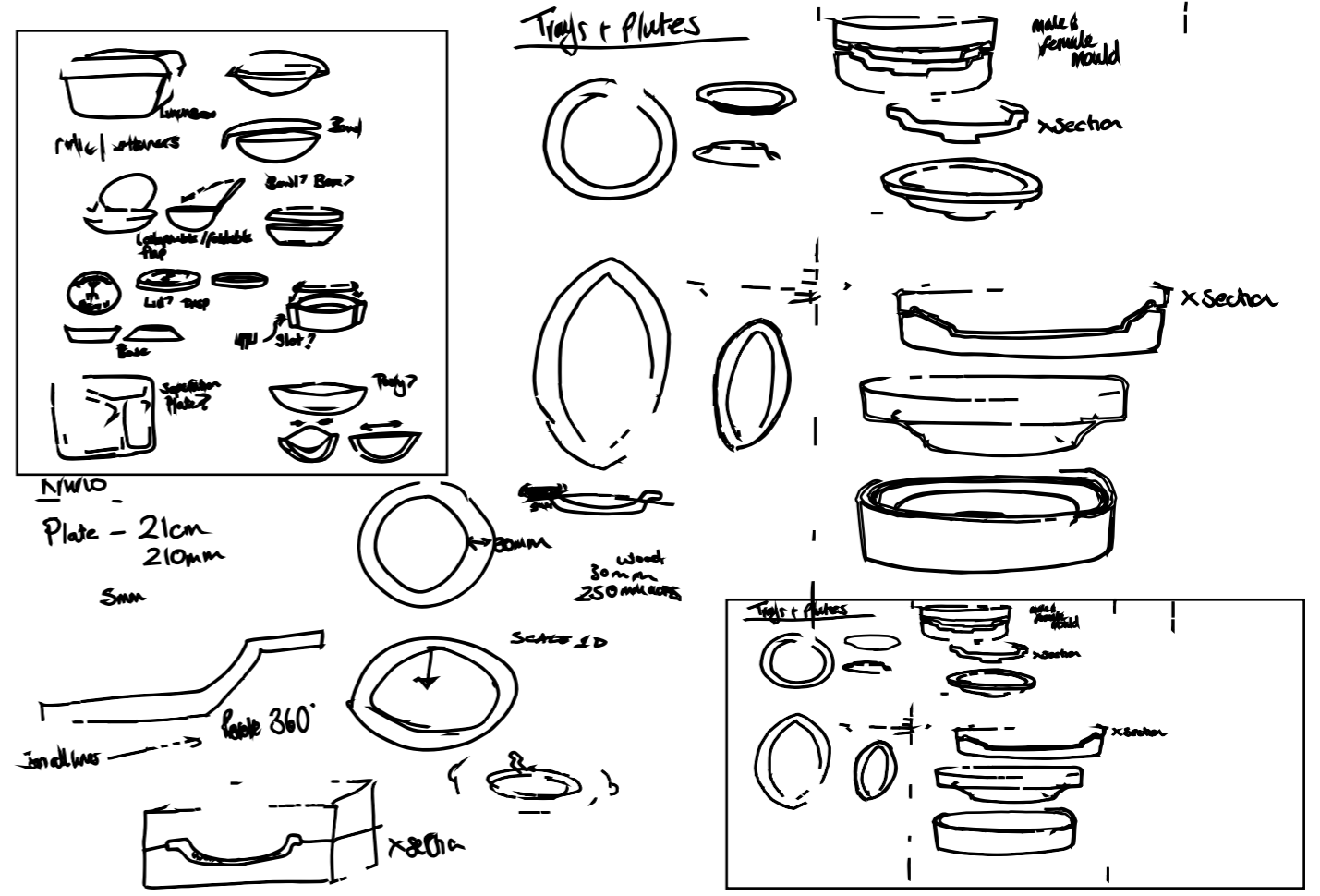
We also currently rent venues to run the weekly cafe, and rely on renting hospitality equipment, having our own ownership over our own equipment and securing a permanent residence are the next goals for our project"

George Beard- RJFP Co-ordinator





lathe plastic handle
Sewing spears
+ Tools





After discussions with RJFPB my design focuses in on utilising large amounts of food packaging to become a resource for addressing the above issues above. I began by creating useful appliances for the project from these materials. Lots of material experimentation is needed to understand the most suited for the demands of these appliances. LDPE mushroom trays can be heated at 160, chipped and pressed into blocks. This process gave me the ability to experiment with turning blocks on a lathe, in order to create handles for tools such as serving trays. Other LDPE plastics such as fruit and vegetable behaved best being heat pressed into flat sheets, and moulded whilst cooling, as material is too flimsy to chip. I experimented with moulding this into plates as that was a specific request from RJFPB to help their goals.

LDPE Plastic Sheets,
vacuum Formed

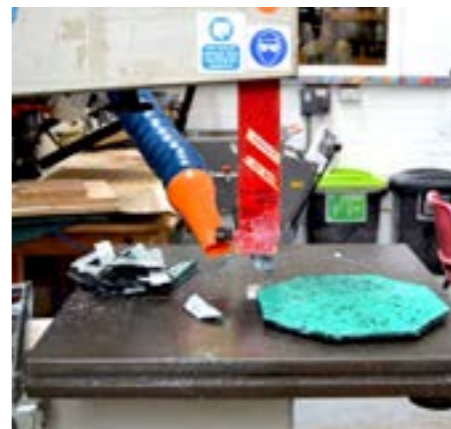
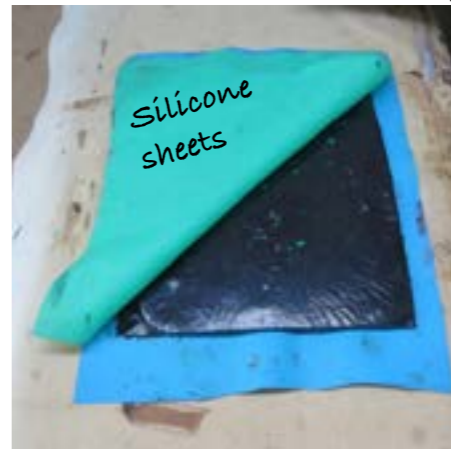


Cardboard bannana box,
pulped, takeaway



LDPE, HDPE, PET, PP mixture, Pressed

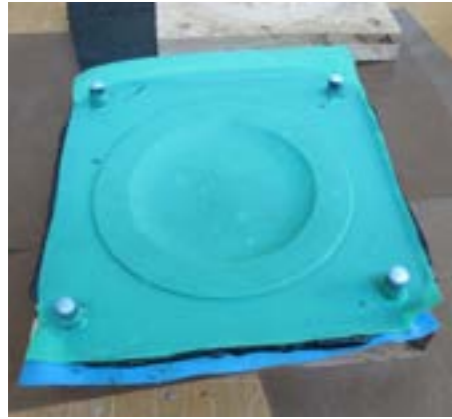




A4 sheet, in three layers

Pressed for minimum 30mins

Heat pressed either side for 90 seconds



Process development Refining the 'Crate Plate'

HDPE Food Crates are cut and chipped, this allows for even layers and better control over melting into sheets, done at 200c under a t-shirt press. Each sheet is approximately 1.5mm thick. One cart makes 12 A4 sheets, and one plate requires three sheets, approx. 4.5mm thick, meaning one crate creates four durable plates. The three melted sheets are compressed between a male and female master mould, to "stamp" out the product. Heat resistance silicone sheets work best for the process as they stretch leaving a matt finish and no creases. Once cooled in hydraulic press for 30minuites product can be removed, cut, sanded and polished.



Branding plates specifically for RJFP. This will promote the values of the project in reducing food waste to the community further. Using laser-cutting technology I cut their logo from LDPE plastic food packaging with the idea of melting each logo on. However the heat needed for this binding disfigured the logos and wasn't such a suitable method to use. Using 3mm MDF I re-cut the logo to imbed in female mould, making the logo part of the initial process. This was inspired by sealing wax stamp, used traditionally to seal letters. Mixing traditional processes with modern.



Creating a stamp within the female mould proved a more sustainable and consistent method in the branding process. However the behaviour of the plastic under pressure escapes into the larger crevices within the logo design. Leaving more narrow cuts of the stamp faint within the product. This would need revisiting, each cut area would need equal gaps to create a more even impression



Charity Dinner
with the Mayor of Brighton and
Hove



Awarding John West-
Mayor of Brighton
and Hove with a com-
plementary "Waste
Crate Plate"

Event	Dinner with the Mayor		
	Date+Time	Location	Payment Status
Tuesday, April 25, 2017 from 7:00 PM to 10:30 PM (BST)		St Stephens Hall Montpellier Place BN1 3BF Brighton United Kingdom	Complimentary
Order Info	Order #620772870. Ordered by Alison Rees on April 21, 2017 7:06 AM		
Type	Complimentary		

Through my work with RJFPB I was invited to present the mayor with a waste plate as a thank you from the organisation for his consistent support in the project and other charities across Brighton and Hove. This event was formal and inspired further design developments that would benefit the organisation.



"We are now catering for more formal events such as weddings and evening dinners. Doing this extra work is allowing us to raise enough funds to set up our own premises. It also allows the project to reach to parts of the community that we may not have just through our cafes. Having waste plates and other objects to use in such events would be great to demonstrate and impact our message to our users"

Volunteer RJFPB

When life gives you lemons....



'Feed Bellies Not Bins'

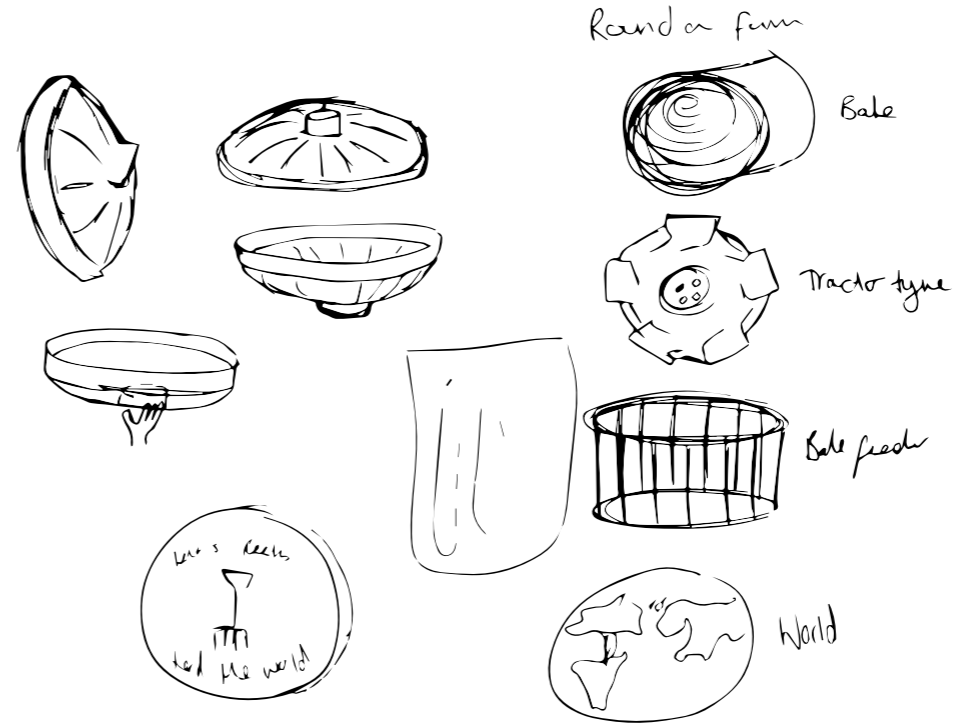
Key Requirments

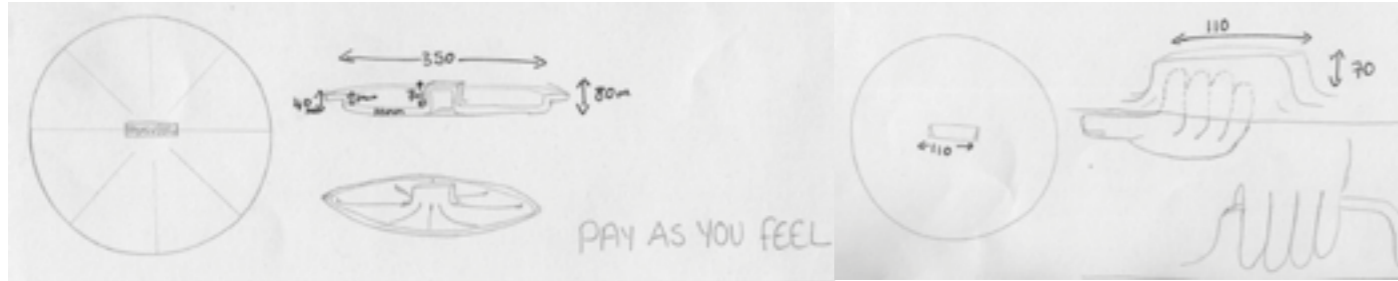
- Function
- Stack
- Lightweight
- Hold canapés
- Easy to hold
- Illustrate RJFP ethos
- Educate user through aesthetic
- Encourage/engage interest/support

An area where the project are gaining more financial benefits and engaging other members of society is by catering for formal events such as weddings and dinners. This is an opportunity to further illiterate the importance of issues surrounding food waste in an unique and impactful way. Canapés are an efficient method of catering in these events, as well as a way for volunteers to talk about what the project is about. There slogan "Feed Bellies and not Bins" is something that has inspired the design of 'Bin Lid Platter'. It addresses this slogan in its appearance.



Designing Junk Food in- spired serving platter

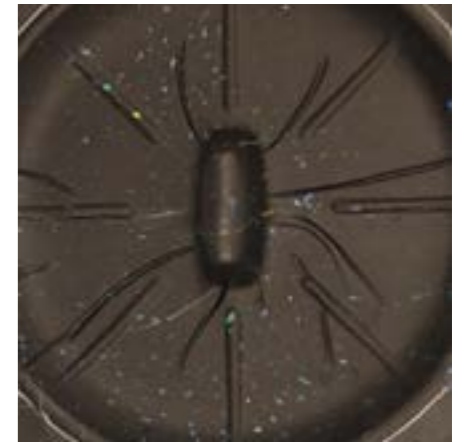
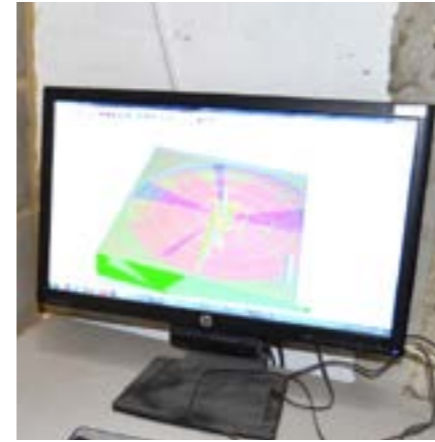




CNC Technology

I have used a similar process to making the 'crate plate' mould, drawing my final design from in-depth research, into Rhino software in order to cut precise moulds from MDF layered block in a CNC routing machine. This is necessary for the complex design of the platter in order to get a precise fit between the set. It contains 8 lips to replicate a standard bin lid shape, also holding food better and aiding presentation. The handle is then inverted to imitate an original whilst allow hold in use.

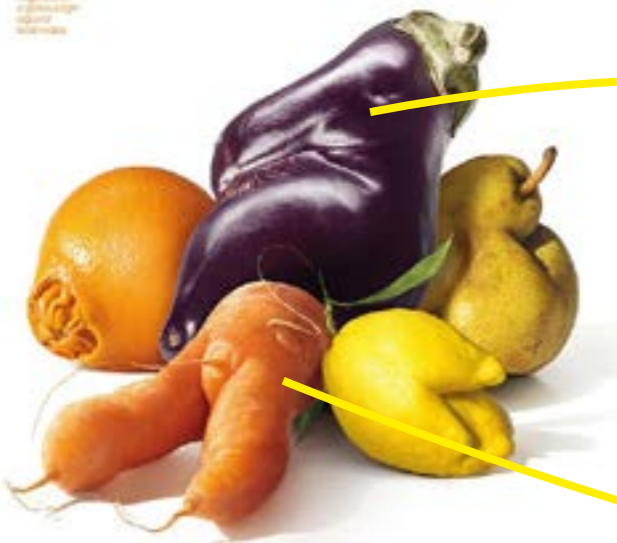
However due to the height difference between the handle and the base of the mould it causes the silicone sheets to crease and distort slightly which imprints onto the platter itself. I have modified the design process slightly to reduce marking, even with this each platter is slightly different and unique in its imperfections, whilst still serving its function. This compliments the campaigns to not waste 'ugly' produce, which still can serve its purpose regardless of cosmetic standards.



EAT
FIVE
A DAY

WEIRD FRUITS & VEGETABLES

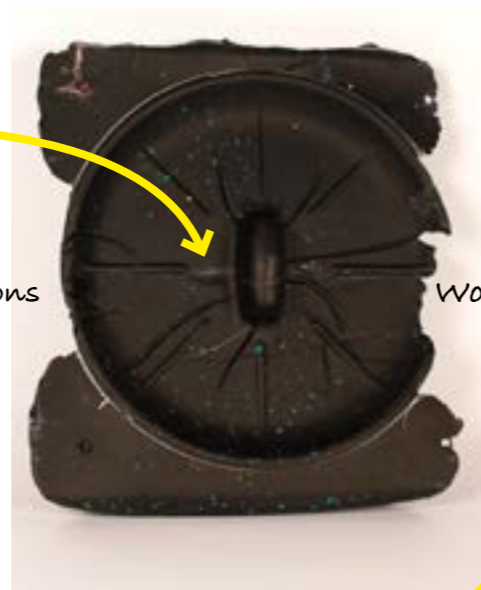
Apples
Bananas
Berries
Carrots
Citrus
Eggs
Leafy greens
Peanut butter
Pineapple
Spinach



INGLORIOUS
fruits & vegetables

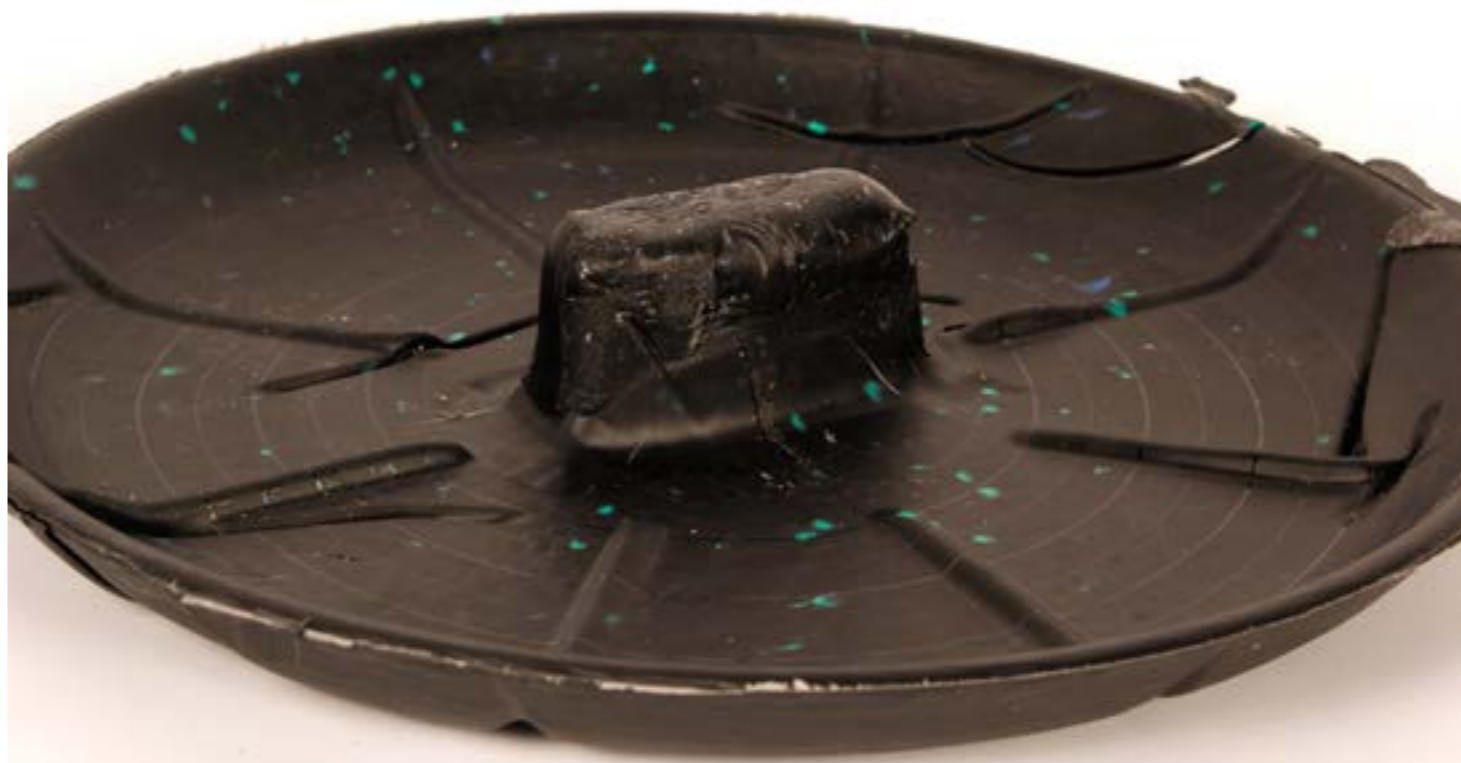
Both a 'glorious
fight against food
waste

WEIRD BIN LID PLATTER



Imperfections

Wonky



Critical Reflection

Live project one engages both with the community and organisation of the real junk food project. Working alongside real people who are making changes in attitudes and educating others on an environmental issue we are facing- Food waste.

This project had taken into consideration the values and ethos that RJFP has in reducing food waste and bringing the local community together to celebrate doing so. Ways to reduce waste and help support the RJFP are beneficial to its success as it is volunteer led and dependant on the support and network of the community. These critical points are commented and supported by the 'crate plate' and 'bin lid platter'.

Crate Plate- The refinement of this design has provided the RJFP with an ownership of branded robust plates, an answer to the issue of using disposable plastic plates, as they are cheap and renting plates from current venues. It utilizes waste HDPE plastic from the food waste collections, closing the loop on waste further, reducing the continuation of disposable plastic and with virtually no material costing's.

Development is needed in re-designing the logo former that stamps each base on the plate; due to the nature of the plastic it only escapes into larger crevices. The plate form is very standard and simple. This is something that can be re-visited in order to raise thought provoking discussions related to the critical subject of food waste.

'Bin Lid Platter' aims to provoke an impact of the core issues RJFP are promoting and challenging in external formal events they cater for. The design engages with members of society that may not attend regular cafes within the community. Our relation to a bin lid comments of the 1/3 of edible food that is wasted by us everyday. To serve 'al la carte' style canopies from food that society would have thrown away demonstrates all the reasons we shouldn't waste food. The platter provides an image that a receiver would associate to when thinking about throwing away food. The platter will encourage us to value food and change attitudes towards waste. The imperfections within the design add character and comment on value to be had in what we waste, cosmetic standards should not devalue what is to be hand in the food we are given.

Live Project Two

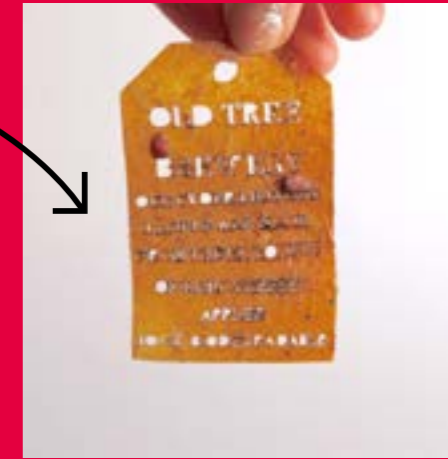


This growing social enterprise, a brew house, café and garden, funding itself through the use of degrading land in an industrial world. Volunteers visit orchards and gardens to pick fruits that would otherwise be wasted, and use it to brew their botanical drinks. In this way, the Old Tree provides local ingredients to fuel its brewery and café while creating a hive of social interactions. Old Tree stands for zero waste principles, using biodegradable packaging where possible and picking ingredients fresh from their botanical garden.

'Cyder Leather Labels'



Apple pulp bi-product
press apples-get cyder and
packaging!



I have utilised Apple Pulp to make 'Cider Leather' biodegradable packaging to be used on the brewery's botanical drinks bottles. Made from reducing the apple pulp into sheets, the Cider Leather can then be laser cut and used to package the cider bottles themselves. In this way, the project helps communicate Old Tree's zero waste principles and personality through branding and encourages the support of the brewery's environmentally friendly stakeholders and customers.

Research and Development



Operation Apple Press

Glastonbury
October 2016

I volunteered at Old Tree on an adventure into Glastonbury for 'operation apple press'. Here we hand picked and pressed an orchard of apples that produced the brewery with 2000 litres of cider. The owner had struggled to find an organisation that would use the produce, and without old tree the apples have been wasted and orchard wouldn't replenish for next year. The brewery work hard to utilise ingredients that distributors will not. These values stand the brewery apart from many others and their ethos should be promoted within the surrounding community. They are a leading example in a sustainably driven business.



Hand picked and pressed

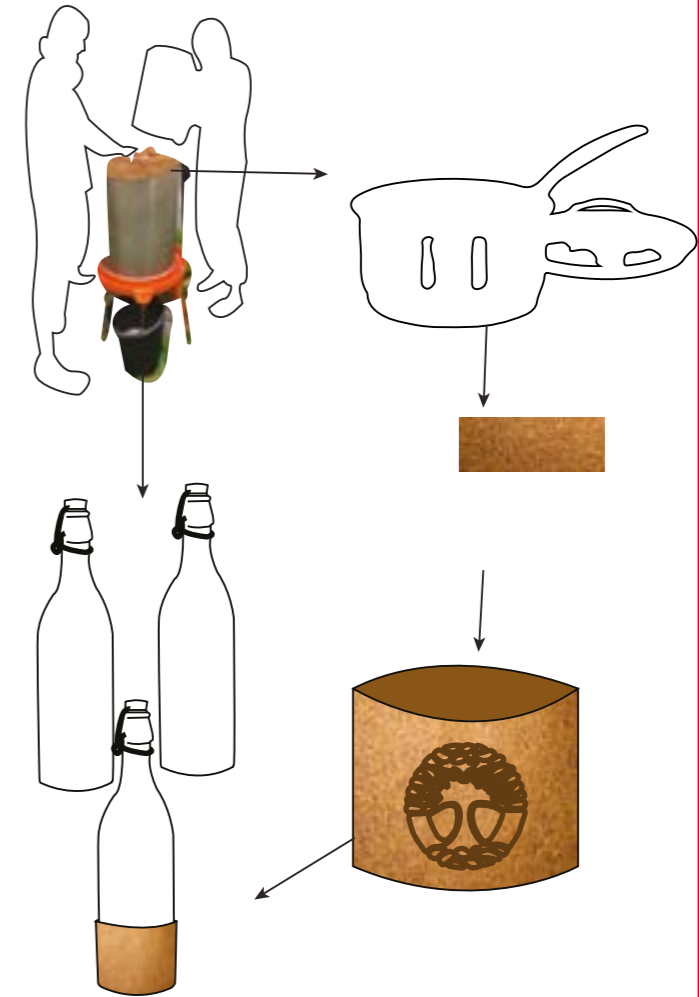


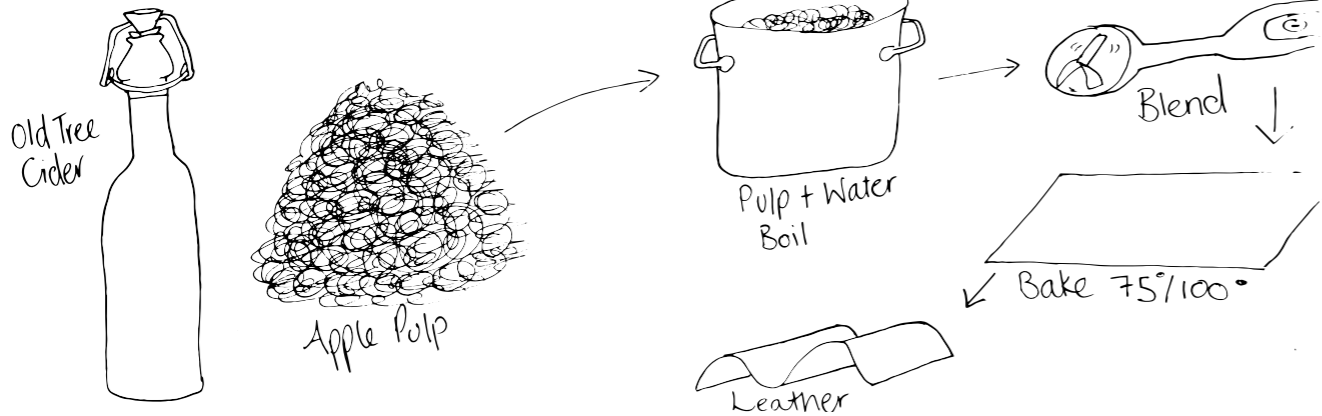
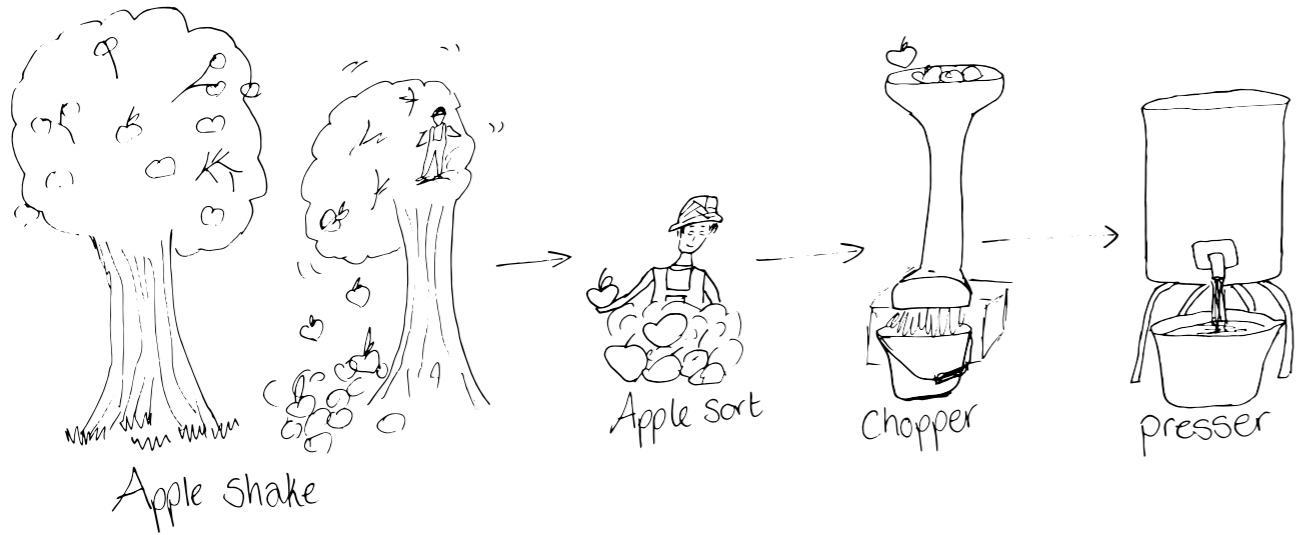
*Old Tree Family
Together we pressed 2000 liters of
scrumptious cider!*



Pulp to Packaging

I realised the amount of apple pulp that was produced could be utilised in a more innovative way than composting, and where I could offer my design and making skills back to the Old Tree family.





Boiling down pulp with splash of water to break down into finer fibers.



Edible Packaging:



Protein/Plant it Plate

Edible packaging experiment outcomes



Leather Bowl 1



Leather Bowl 2

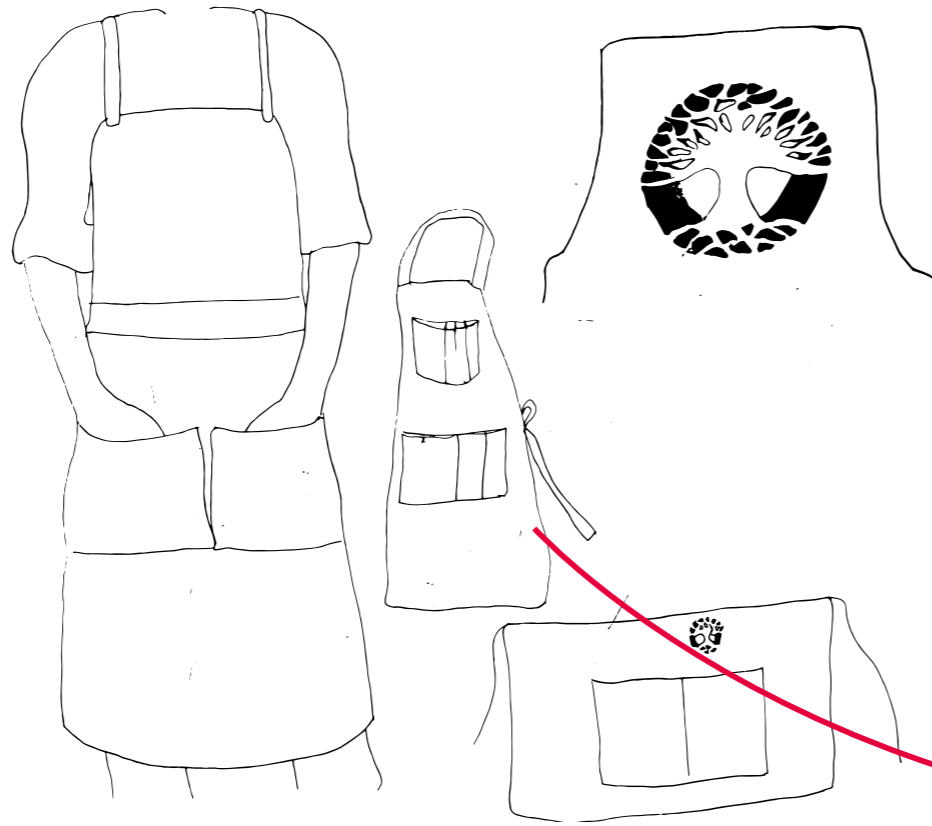
This proved unsuccessful in formations, as the shrinkage of the material is significant due to gravitational pull. It also is too porous to withstand liquids so wouldn't be functional.

My initial response to what this material could become for old tree was in creating edible packaging for there cafe and brewing events, inspired by Neolithic methods of carrying food and liquid in leather pouches.

Apple Aprons

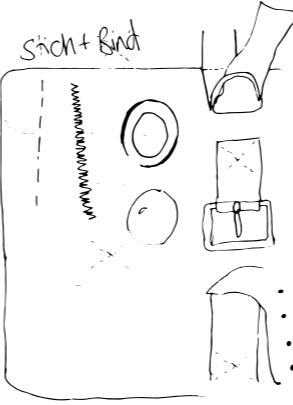
Here explores possibilities of the apple leather to be used at Old Tree. Could it become clothing for brewery by replacing leather with this biodegradable version? Environmentally conscious textiles? I began by stitching samples for making clothing for Old Tree brewery kitchen. However the material proved too soft to withstand machine stitching. Hand stitching may be a better option? However without further investigation and components the leather is not durable enough to withstand repetitive strain of wear and tear of physical human activity.

Wristbands could be produced, as edible wristbands for the many community focussed events that Old Tree hold. The issue for it to be deemed as food safe is it would need to be packaged to keep it sterile, defeating the objective of reducing packaging by utilizing waste.

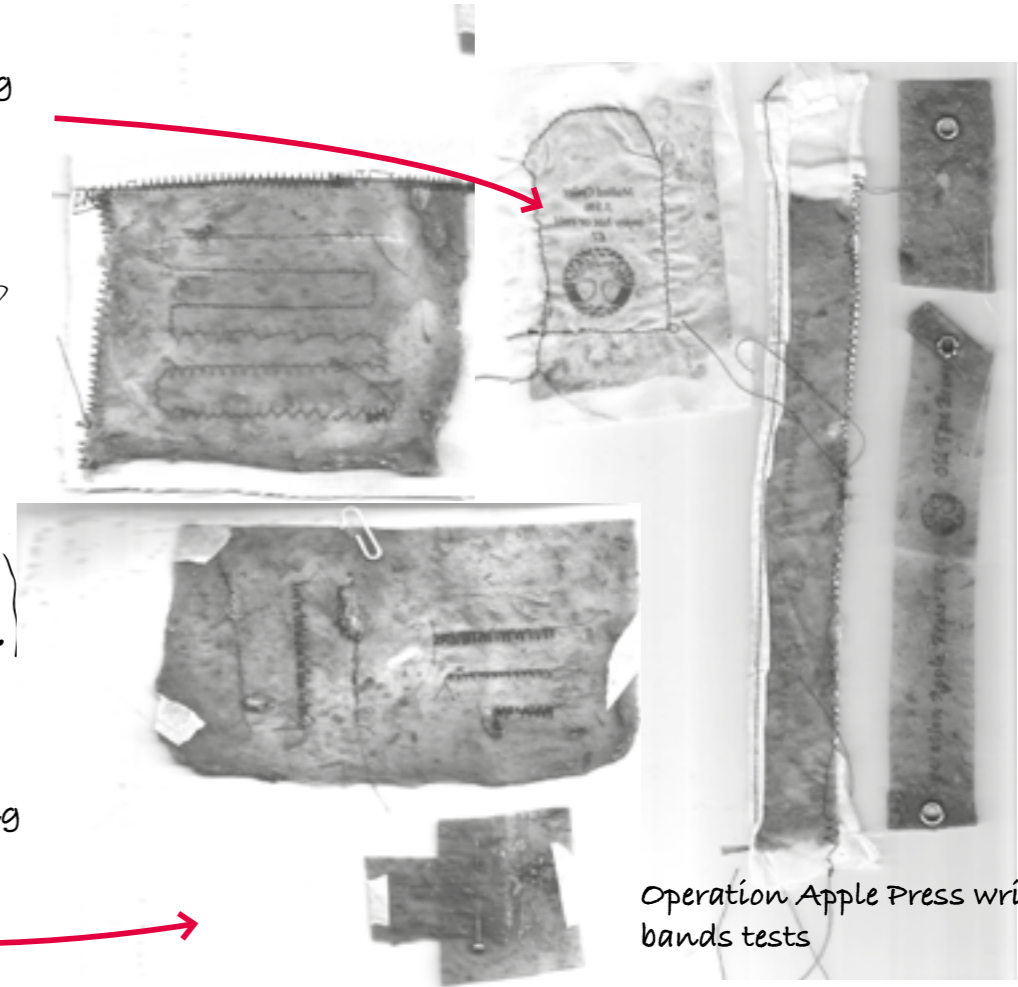


Stitching logos/Branding leather

Apple leather Apron ?



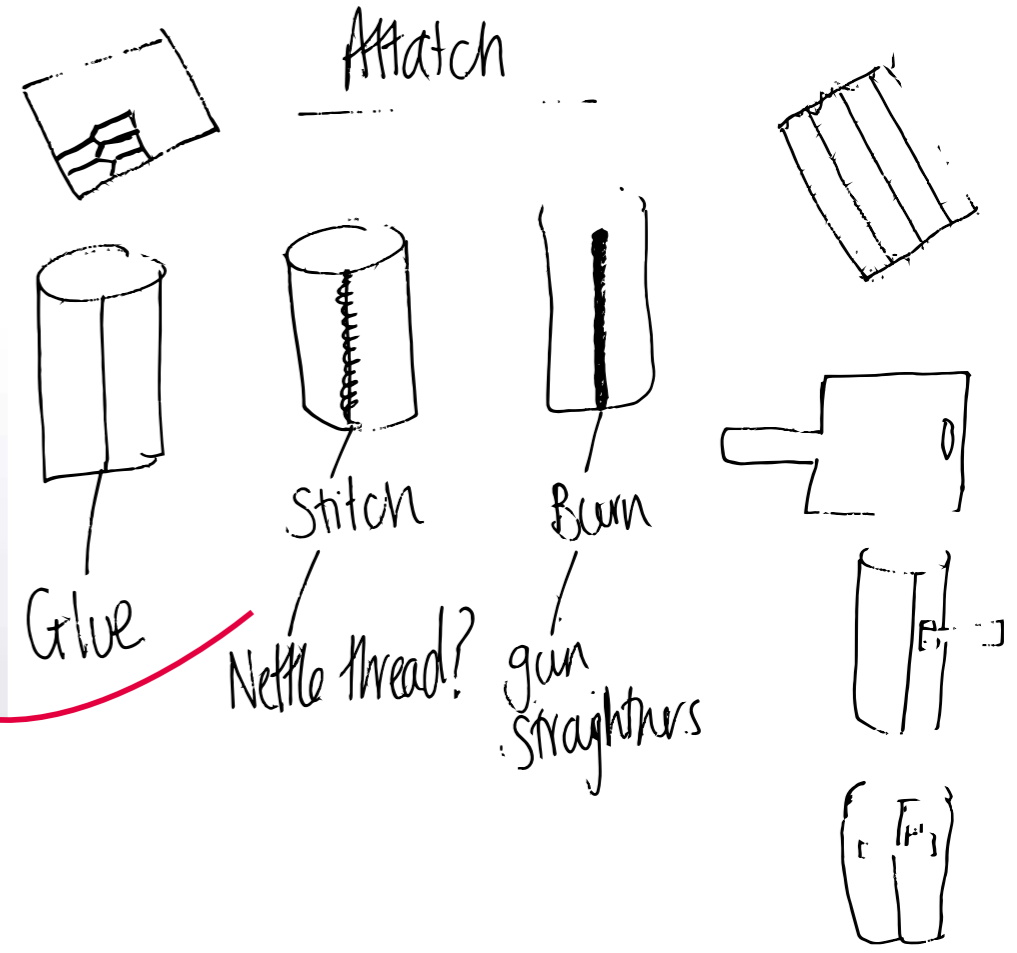
Stitching with sewing machine



Operation Apple Press wrist bands tests



using nettle thread to stitch leather, utalising other raw ingerdients used by the brewery



Old Tree
Drink the season
 February - March 2017

MENU *Fermented*

BOTANICAL HONEY CYDER
 Golden, clear, sharp & sweet, this is a Bramley cyder infused with Nettles, fresh Ginger, Lemon Balm and Calluna Hooley > 3.5% ABV

SEA-BUCKTHORN EBULIS
 Elderflower bubbly infused with Orange colour and citrus tang from hand-picked Sea-Buckthorn berries > 5.5%

SPICED PLUM CYDER
 A pre-mulled drink for winter warmth - Fermented Sussex plums blended with Apple and Pear cyder, spiced with Cloves, Cardamon, Star Anise and garden herbs > 8%

GREEN TEA KOMBUCHA
 Kombucha is fermented, sweetened tea, known in China as 'the elixir of life'. Sweet and sour in taste with probiotic properties, Old Tree Kombucha is made with Sencha Green Tea gently infused with botanically harvested from our Drink Forest garden > 1%

Soft

LIME SODA
 A powerful Lime cordial created by juicing hundreds of Limes and extracting all the flavour from the zest by steeping with filtered water, mixed with Pear Tree sparkling spring water, bottled at source in Sussex.

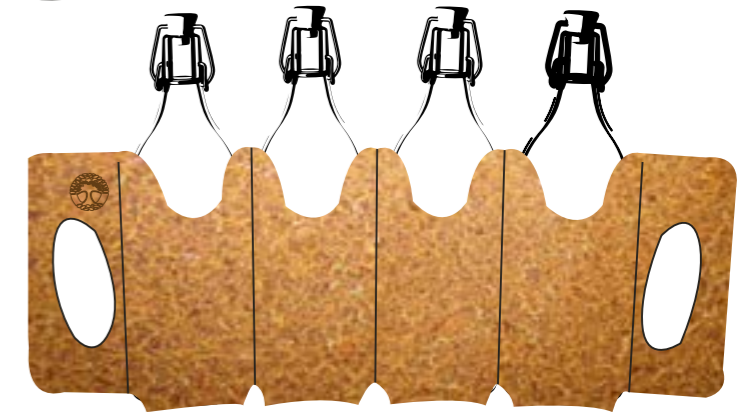
RAW BRAMLEY JUICE
 Cold-pressed raw juice of 100% Bramley Apples. A palette cleanser with an extra sweet, Vanilla taste imparted as the fruit was frozen before pressing.

* Old Tree is a social enterprise combining fermentation and gardening to make the most nourishing and delicious drinks. 20% of any thing we sell from our brewery and cafe goes into developing edible landscapes in re-usable 20L food and drink systems. Please see our website - oldtree.co.uk for all information on our missions, products and services. *

nettle thread/string for attachment



could flavour the leathers accordingly?
 edible labels flavoured to accompany drinks?



Laser Cutting Labels



alterations in text for bottles
produced via Adobe Illustrator

BOTANICAL HONEY CYDER
GOLDEN, CLEAR, SHARP AND SWEET,
THIS IS BRAMLEY CYDER INFUSED
WITH NETTLES, FRESH GINGER,
LEMON BALM AND CALLUNA HONEY
3.5%
MADE FROM A BIPRODUCT OF HAND PRESSED APPLES



Old
Tree
Brewery

BOTANICAL HONEY CYDER
GOLDEN, CLEAR, SHARP AND SWEET,
THIS IS BRAMLEY CYDER INFUSED
WITH NETTLES, FRESH GINGER,
LEMON BALM AND CALLUNA HONEY
3.5%
OUR CYDER LEATHER LABELS ARE MADE FROM THE BIPRODUCT OF OUR HAND PRESSED APPLES
100% BIODEGRADABLE



Old
Tree
Brewery



RAW BRAMLEY JUICE
COLD-PRESSED RAW JUICE
FROM 100% BRAMLEY APPLES
A FLATTE CLEANSER WITH
SWEET VANILLA UNDERTONES



OUR CYDER LEATHER
LABELS ARE MADE
FROM THE BIPRODUCT
OF HAND PRESSED
APPLES
100% BIODEGRADABLE
🐦 📷 ✉️ 📌
@oldtreewebrewery

social media links
traditional with technology



Final design focus



message in a bottle .

Through my development I have been provoked by the fact this material is made entirely from edible components, and could be flavoured accordingly to the drink it will accompany. Could the label be a message inside the drinks? Act as an edible packaging? Thus reducing packaging further.

It could be packaging's very own 'tequila worm', and stand apart from the unsustainable packaging processes we currently use today.

Experiments need to be made to test the behaviour of the leather when kept inside the liquid? The first experiments that i did saw the labels dissolve, in cider/lager and water.



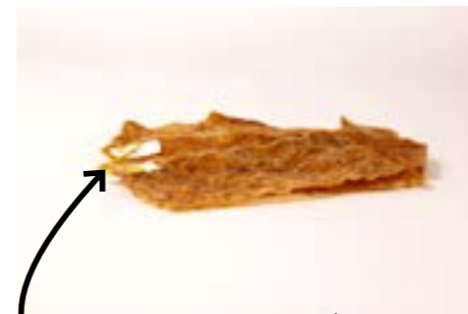
Department of Biomolecular Science



Various experiments
UV treatment of 30
minutes each side



I contacted Dmitry Berillo, who works within the biomolecular department of the university. We have worked together to experiment and treat the apple leather accordingly to create a durable but edible label that can withstand the liquid inside the bottle. This is an ongoing investigation that this live project will concentrate further to create an edible label durable enough to withstand the submergence in beverages from production to purchase.



Test samples with CornFlour,
Skimmed Milk and Sugar



First treatment proved
unsuccessful



Recipe -
NO SUGAR
470g Apple Pulp
500ml Water
4tblsp CornFlour

Boil for approximately 15
minutes
Blend fine
sift
layer 5mm thick
dry out for approx 4 hours

Place treated Label within the
bottle held by a sterile piece of
nettle thread.



Critical Reflection

Live project Two has focussed in on utilizing the bi-product of pressed apples made in brewing cyder for Old tree by complimenting the branding based upon their principles.

The leather labels have provided the brewery with a biodegradable alternative to the current label packaging they use. It fits the aesthetic criteria of the brewery in traditional appearance. Maintaining a natural touch, complimenting their ancient brewing methods. The leather combines primitive with technology, using laser cutting and social media relations. This provides Old Tree with individuality and innovation into the future of packaging and our attitudes towards unusual edible materials.

Tonnes of produce are wasted globally due to cosmetic standards and low profit turnovers. Old tree is an example of a sustainable business that changes these behaviours by harvesting abandoned or unwanted ingredients.

The apple leather labels communicate this to others, by allowing others to appreciate and think about the value in this rejected produce.

The labels have been deigned and developed with old tree input, supporting their requirements.

Further development of the binding using nettle thread would need addressing in the future for larger scale production, to be more efficient. Using nettle thread, made from the fibres of nettles left after brewing also utilises another ingredient. This hand stitching provides the element of craft and character, but only beneficial on a small scale in terms of efficiency, it requires time and precision. For larger scale production with larger turnovers of brewed drinks this element would need to have a better solution.

Experimentation with the unique edible label that can be enjoyed by consumer and leaves no packaging at all is a continuation for this live project. Its durability is not of a strong enough standard to be put into production yet. The laser cut logo will need attention to reduce the thinner areas of the label, as once submerged into liquid these narrow parts become prone to breaking. Alongside this is addressing the way in which the label is encased within the bottle. Designing a lid that aids the application of the labels into these bottles with a food safe standard would be the next step in design development.

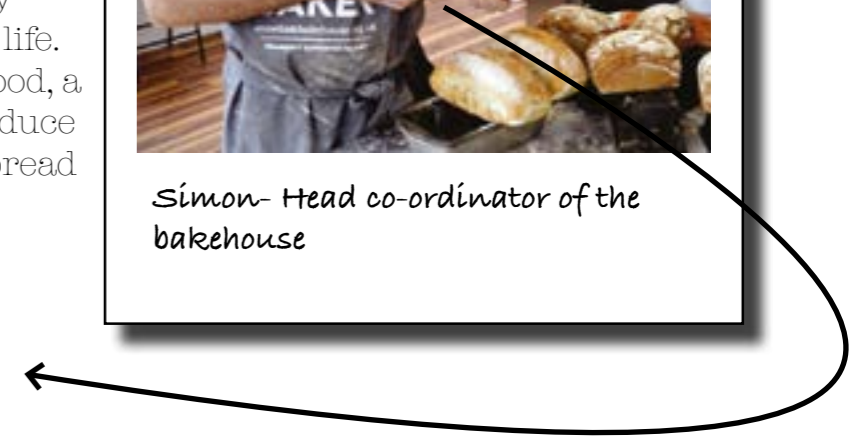


Stoneham Bakehouse is a volunteer led bakery based in Hove, which utilizes bread making to provide mental health support to the local community. Stoneham provides therapy to the community through the Art of Bread-making. It engages makers emotionally as well as physically, providing a transition away from the chaotic stresses of everyday life. In the UK, Bread is the most wasted food, a challenge the Bakehouse wishes to reduce through demonstrating the value of bread through emotional engagement.



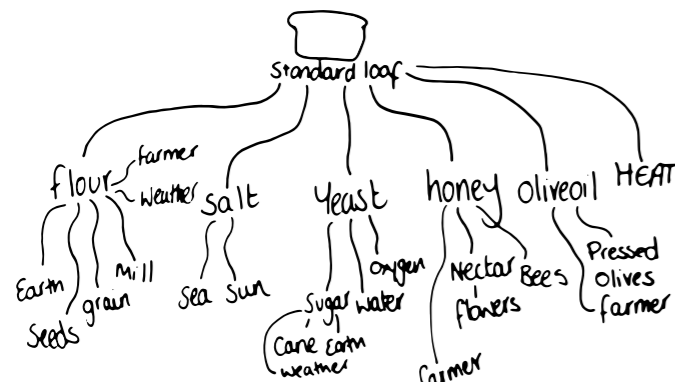
Simon- Head co-ordinator of the
bakery

using letters to personify
loaves of bread





① Understanding Bread



Earth · Air · Fire · Water

Make my own bread

- Blend locally sourced grain → make sea salt
- Yeast → Water → local honey

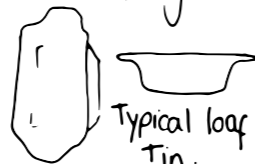
Bind to dough

Cook (Preferably in homemade oven)

500g home produced flour pinch of salt

* This is so I can really appreciate the life of the loaf *

② Personalizing to Consumer

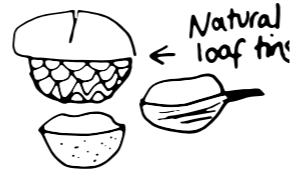
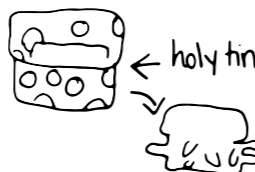


Branded Bread Such as hovis

ABC... laser cut metal letters?



magnetic? a justable people can personify it



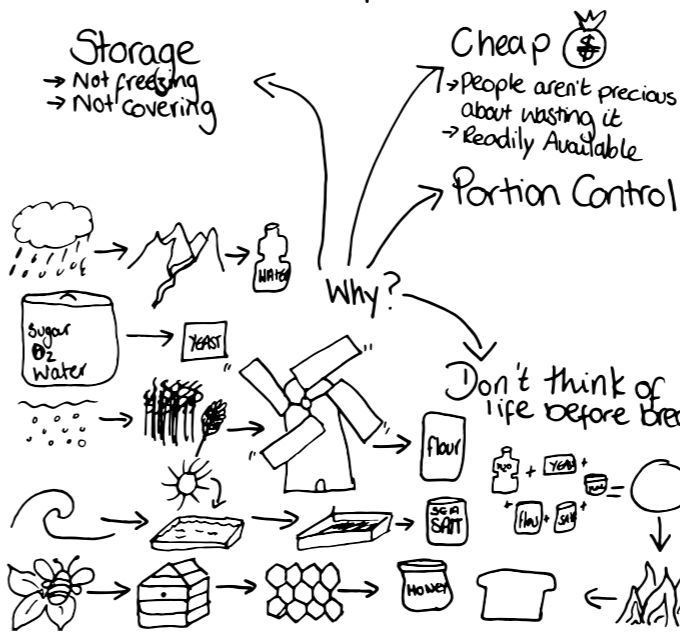
Bread tools?!

- Bowl flat-board
- Mould Plastic cover for proofing
- Bread knife

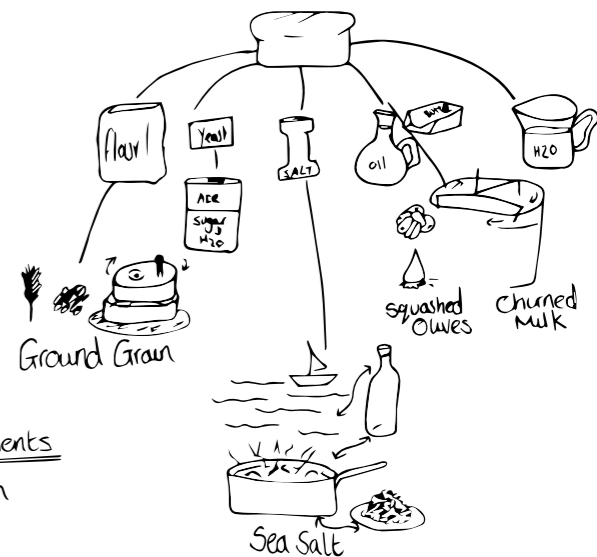
BREAD UK's Most Wasted food!

24,000,000 slices
1,300,000 loafs

* WRAP Nov 2009



Make from Scratch?



4 Elements

- Earth
- Air
- Fire
- Water

Tools

- Grinder
- Sauspan
- Bottle
- Presser
- Chum
- Jug
- Bowl
- knife
- spoon
- loaf tin

play . process . personify



Communicating a Message .

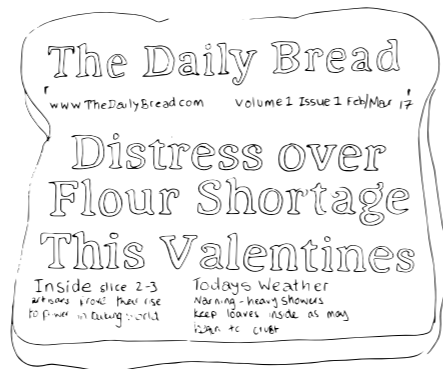


In response to the Bakehouse and my own concerns about bread, I developed a kit that enables the baker to print their own words within the loaf in order to engage them on a more emotional level. I volunteered at the bakery to gain understanding of what is required of them, in helping to engage those suffering from mental health. I experimented with baking methods that could provide enthusiasm to baking. Could bread not be used as a tool to encourage and engage not only the beaker but the receiver as well. A real sense of care is had within the Bakehouse and this aspect should be communicated through to the consumer also. We played with processes and what became most impactful was being able to send create messages, incorporated into the method and illustrated with the end product.

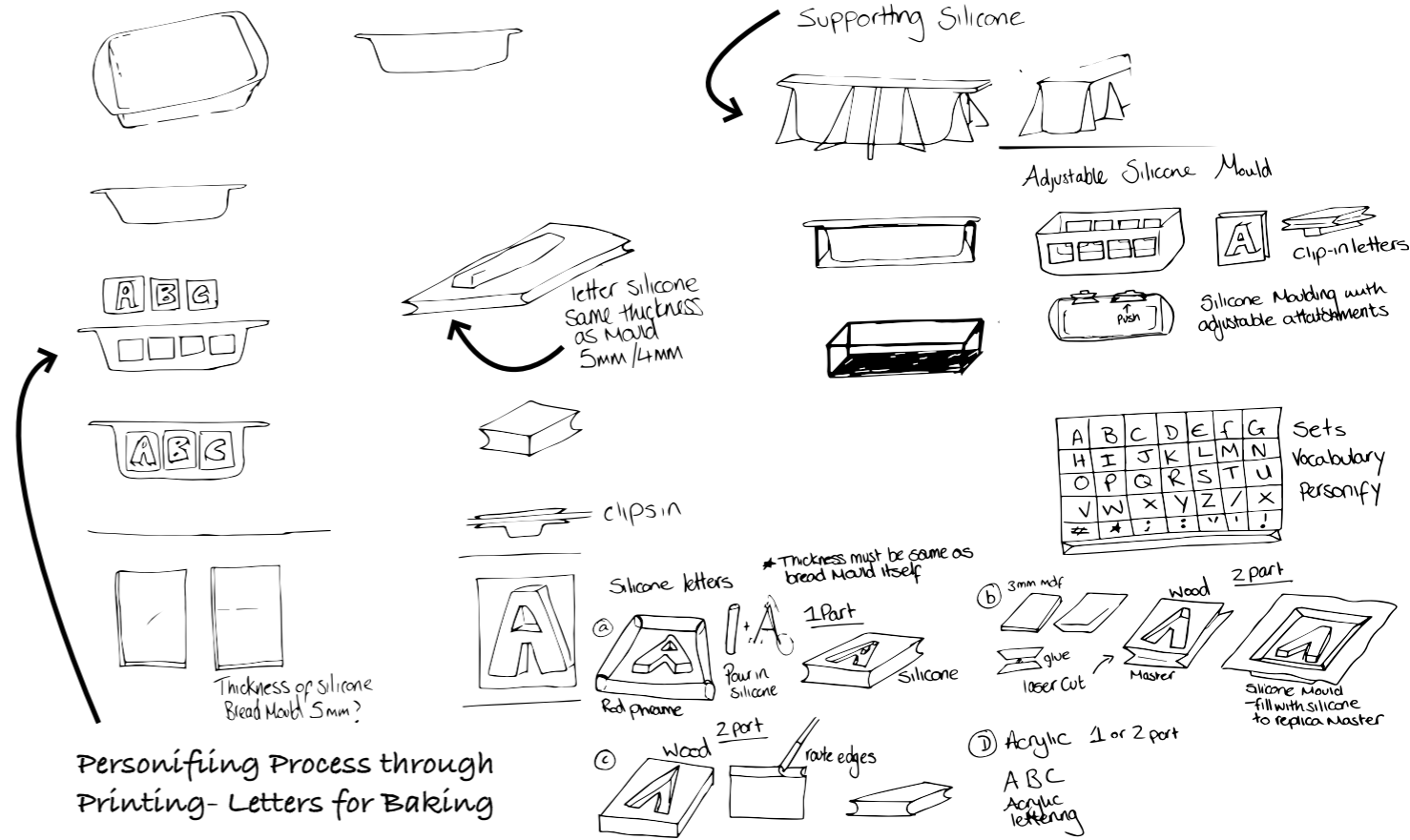
Printing Bread

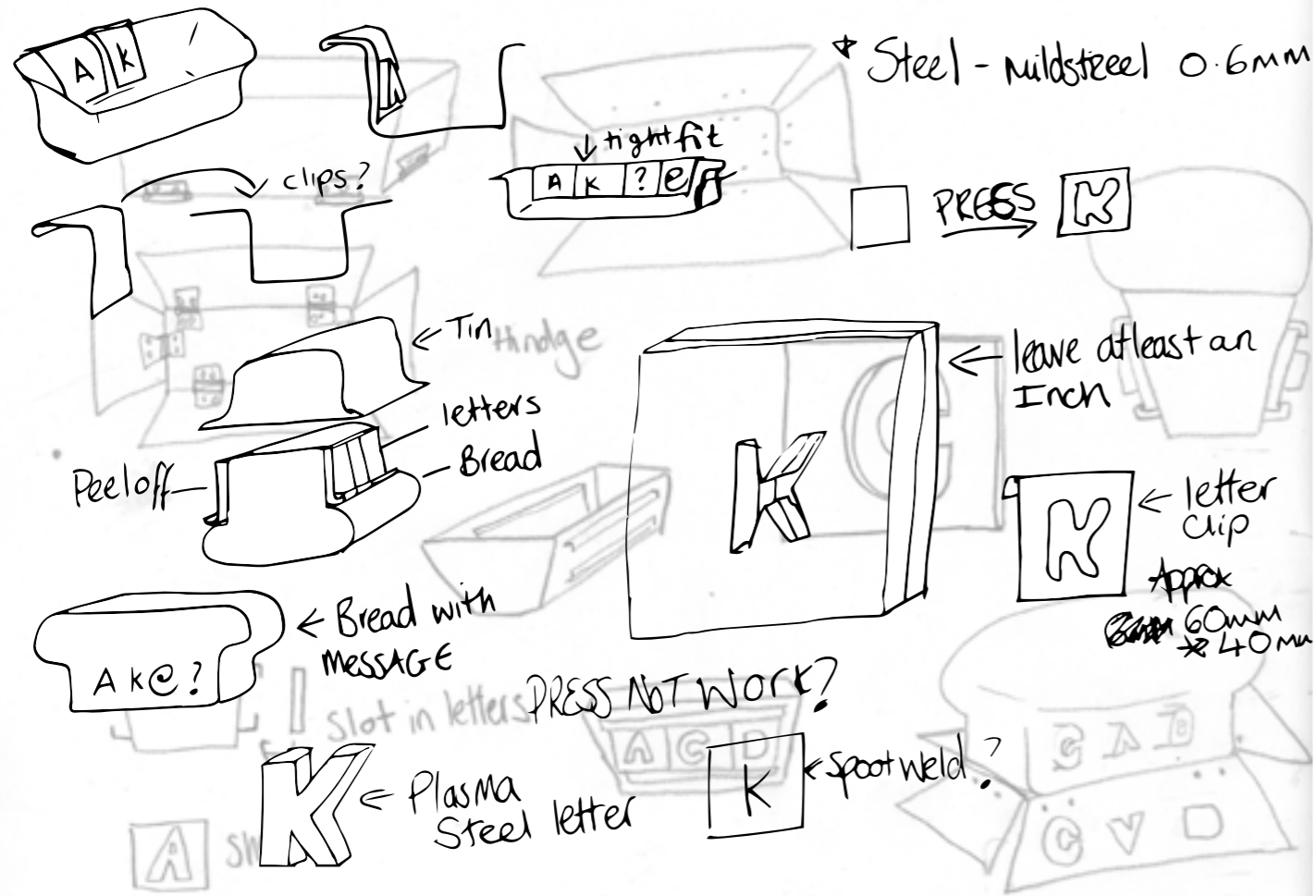
As demonstrated below by Sasha Tseng technology can allow us to laser onto bread. Using heat to toast only specific areas. Could value be added back into bread by it serving a whole new purpose in edible news printing? Reducing paper waste and bread waste? Convenience has a role to play in why we have become so wasteful. By taking time out to bake bread from scratch with others is a thought provoking, social and rewarding task. From a design perspective i feel that printing should become part of the process in making, to encourage the individuals personality and creativity whilst subconsciously developing the values to be had in bread and reducing bread waste.

News paper article.
February.
Printing news onto
your toast in the
morning? headlines?
weather?



Personifying Process through Printing- Letters for Baking





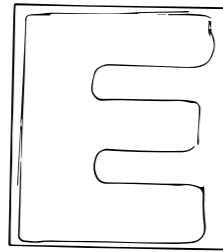
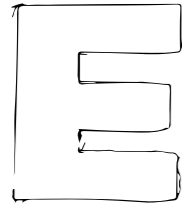
BAKE



Silicone Mould Making

My initial material experimentation began by using silicone. It is suitable for making moulds to form a wide variety of shapes according to what you require and can be coloured for a playful aesthetic. To test the behaviour of the bread in relation to this I created a baking tray from silicone, however the silicone available in the facilities has a lower flash point than that needed to bake bread, so wasn't a safe procedure to continue working with. A platinum based silicone that is food safe and can be heated up to 200 degrees would be needed to continue using this method of making. This would also mean suitable facilities and funding as it uses catalysts that effect other types of silicone. Silicone proved ideal in creating magnetic letters that can be placed inside baking trays to assemble your own messages; this is because magnets can be encased within the silicone as it cures. Samarium cobalt magnets can withstand up to 300 degrees of heat without losing their magnetisation, whilst having a strong pull.

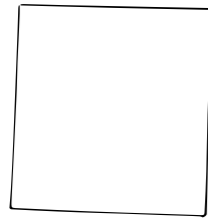
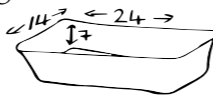
Design on Illustrator my designs - Think about Cut for plasma
 No Detailed space/Holes cause unwanted holes or wrong alt
 Size - started with



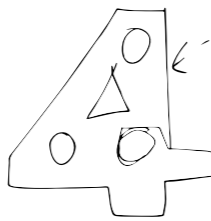
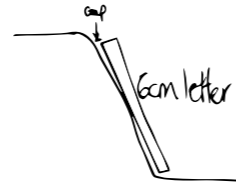
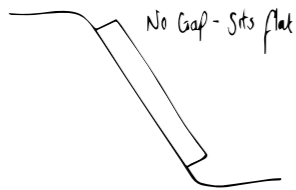
6x4/4s
 letters too large for
 standard bread loaf
 tray

*Thinking this product
 needs to be used by
 the 'everyday' user
 thinking about standard
 or beginner to baking bread

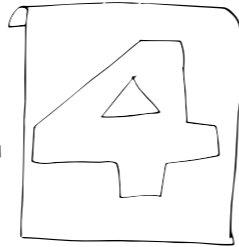
Standard baking tin
 Size (Denby bakeware) 24 x 14 x 7
 cm



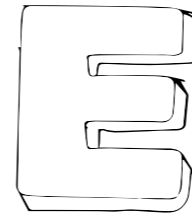
5x4
 ← letters to fit within this
 dimension



-Magnets?
 ferrite - 280° before passing
 it's magnetisity



Hatch ment & Non Stick

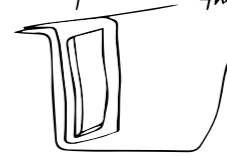


5mm thickness

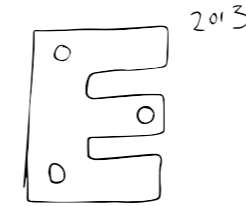
Magnets
 6mm x 3mm?



Magnets seem to be the best at holding letters in place
 floors → hard to get out of loaf tin
 ↓
 Get a strong magnet to remove
 letter from the loaf?



this method works better for
 that however be
 less universal



2 or 3
 Problem with hole
 Don't want to drill holes

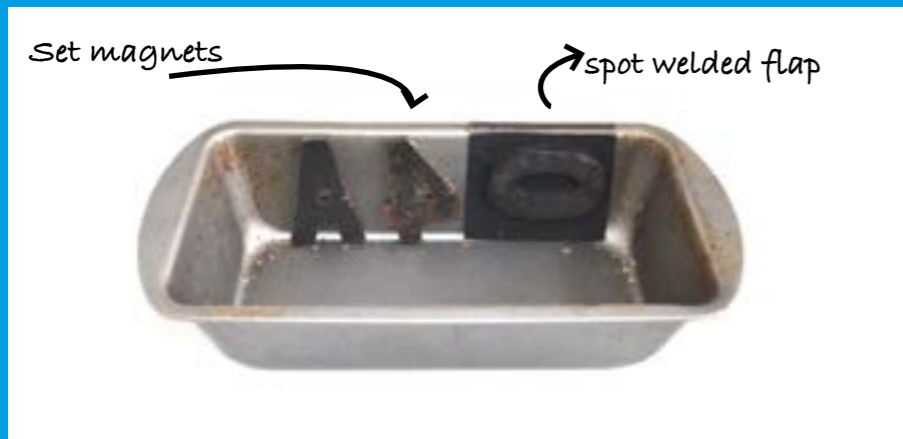


- 1 - Get smaller magnet?
 8mm x 2mm (Need the 0.7kg pull)
- 6mm x 2mm - no option 5x2 only 0.3kg pull

Securing them?
 Glue & Coating
 contraption?

Emailed Metcoat.com
 foodsafe? master bond.com
 ISF

laser cut Bread!

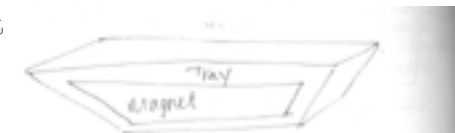
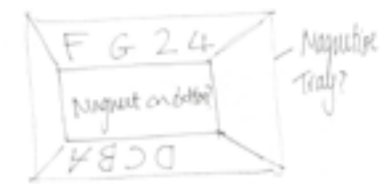


Mild steel lettering is a more traditional material that compliments the steel baking trays used at the Bakehouse. To create a full alphabet, numbers and symbols I designed the dimensions and drawings on illustrator to be used on plasma cutting software. This method enables precise and symmetric designs, necessary to create clear messages on the side of a loaf of bread.

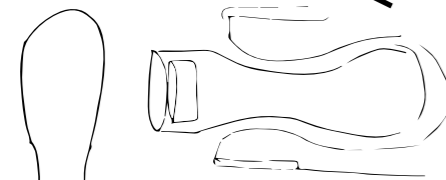
To the right shows images of different methods used to attach the letters inside the tray. Letter O is spot welded to 0.8mm steel sheet, formed with a lip to mount on top of the tray. Number 4 is 5mm mild steel, drilled with holes that encase magnets. After testing this in the baking process the magnetic symbol proved more uniform, neat and effective, avoiding extra markings that were had from using a sheet flap. This will be the basis of my bread letter kit.

The next task is to coat the steel symbols to become food safe and non-stick. After contacting many companies, PTFE coatings where able to provide Teflon coated service, but no magnets could be contained within the steel as the temperature needed for this procedure excelled that withstood by the magnets.

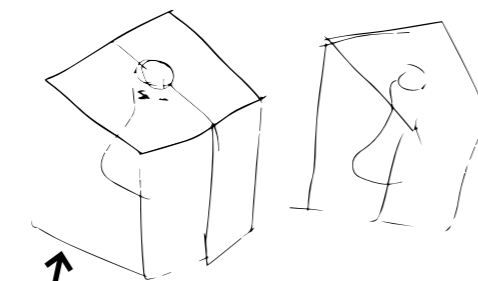
Another design aspect that has been addressed, in putting the magnets on the outside of the tray to hold the letters on inside in place. This would also allow easier removal after baking is complete as magnets can be removed easily.



Altho is woud more it be restricting user to use particular size bake tray
 → I woud want them to work "universal" for user- Not worrying about size of baking tray



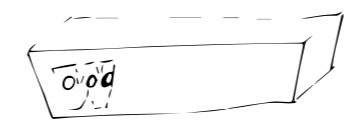
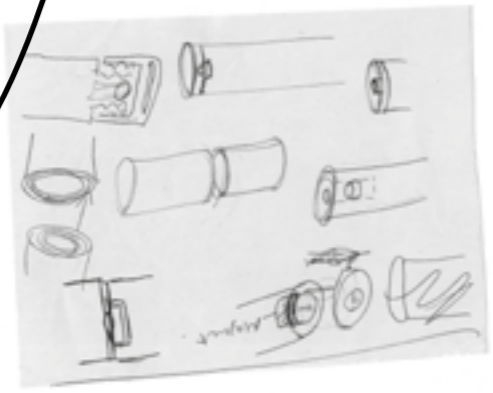
Jesmrite Works !!



designing a mould suitable for easy application to outside of trays

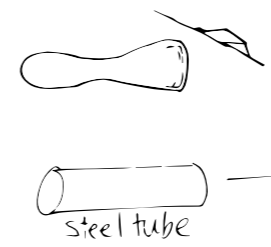
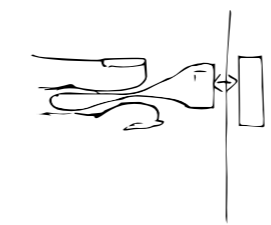
- come up with the Design → Plastene? Supersculpy? Wood?
- Silicone mould → 2 part? I need silicone
- Jesmrite B magnets

Silicone master mould?
using gesomonite to encase magnets within?
inspiration from pinching dough



Each letter has its own magnet?

Make magnet a feature?



Drill hole
stick magnet in with heat proof glue

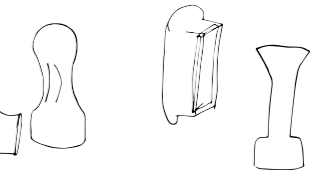
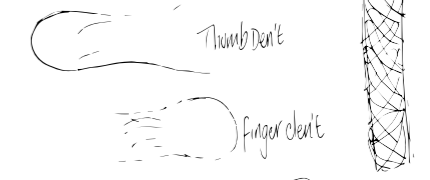


← can coat letters @ any temp if Magnet not included

coating means - 400°C + magnets only 300°C for magnetisity

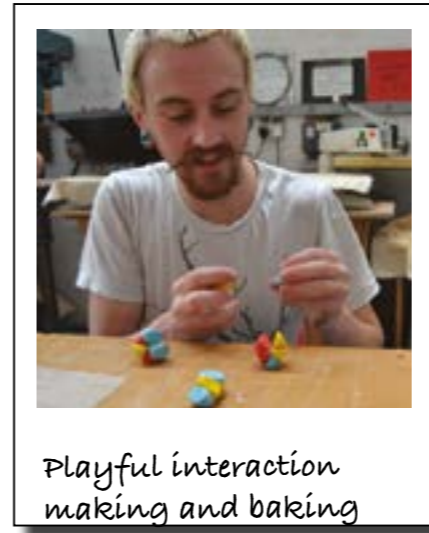
Make bread! - How do we hold bread?
- Play Day with bread & how we hold it

Ceramic Enamel Companies → PTFE COATINGS



Bread	Colours
Metal	
Thread	

Process.



*Playful interaction
making and baking*

The designs of the magnets have been inspired by the formations made in pinching and pressing dough. They are to fit comfortably between the forefinger and thumb for satisfying application to the trays. The use of gesmonite allows for the magnets to be encased within the shape without the use of additional substances such as glue. The Bakehouse regularly carry out workshops with schools in the surrounding community, which has influenced the colours chosen for the magnets. The choice of colours imitates those used in candy shops and toy stores. Rich vibrant colours invite people to take part in baking activities as they inspire a fun lively experience.



Critical Reflection

Live project three has been emotionally stimulating with regards to engaging the community on the value of bread and helping to reduce bread waste on an emotional level.

Again this has developed within the community project, to engage and understand their principles.

The design development of this project has been complex and inquisitive, with many problem-solving issues that have needed to be addressed.

The magnetic letters have provoked a creative and exclusive engagement with the user. They are limited in terms of only fitting five letters on standard side of a tray.

Making them smaller would mean a different process method, as the plasma-cutting machine cannot cut to small and fine details. This would mean further researching and developing material investigation with silicone. This would resolve many design challenges that have been faced through the progress of this project.

The magnetic “dough balls’ also inspire playful imagination and engaging personal responses. They also have design issues that require further development. As discovered through baking workshops at Stoneham, the magnets can be difficult to remove when hot and wearing thick protective oven gloves due to their size. The difficulty if using silicone material as the resolution is within community

organisations, such as the Bakehouse, they are non-profit and sustained by volunteers and human spirit, meaning access to funding for research investigation is not always feasible. My input as a designer at the Bakehouse is offered as a volunteer, benefitting my own investigations as well as their needs.

In the future this project will develop the material of bread itself. What could be done with waste bread? Can it be innovated for a new purpose?

This live project will continue in develop and critically research into design methods that work in response to the initial issue of bread waste and the challenges presented through the current development taken.



Promoting the brand values of sustainable, social enterprises through strategic utilization of waste materials.



Alison Rees Designs

T: 07766057638

E: ali.rees@hotmail.co.uk

W: alirees4.wixsite.com/ alisonreesdesigns