AESTHETIC DURABILITY

& REPAIR

APPENDIX

Appendix 1 - Project Brief

Appendix 2 - Case study selection

Appendix 3 - Hotspot Map

Appendix 4 - Re-design process images

Appendix 5 - DDW Research

Appendix 6 - A step further process images

Appendix 7 - Oven mitt Hotspot Map



DESIGN FOR OUL LULUTE



IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- · SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN. EDIT AND SAVE THIS DOCUMENT.

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

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Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy" Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1!

family name	6526	Your master program	nme (only select the options that apply to you):
initials	given name	IDE master(s):	IPD Dfl SPD
student number	4598865	_ 2 nd non-IDE master:	
street & no.		_ individual programme:	(give date of approval)
zipcode & city		_ honours programme:	Honours Programme Master
country		_ specialisation / annotation:	Medisign
phone		_	Tech. in Sustainable Design
email		_	Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right!

** chair	Dr. ir. S.F.J. Flipsen	dept. / section:	Circular Product Design
** mentor	M. Filippi	dept. / section:	Aesthetics
2 nd mentor			
	organisation:		
	city:	_ country:	
comments (optional)			

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

- Second mentor only applies in case the assignment is hosted by
- Ensure a heterogeneous team.
 In case you wish to include two team members from the same section, please explain why.

an external organisation.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair <u>Dr. ir. S.F.J. Flipsen</u> date <u>26 · 5 · 2023</u> signature

CHECK STUDY PROGRESS

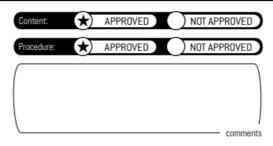
To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: Of which, taking the conditional requirements into account, can be part of the exam programme	30	_ EC _ EC			st year master courses passed ag 1st year master courses are:
List of electives obtained before the third semester without approval of the BoE					
name Robin den Braber	_ date	<u>31 - 0</u>	5 - <u>2023</u>	signature	Robin Digitaal ondertekend door Robin den Braber Datum: Braber 2023.05.31 Braber 18:3144 + 90290

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks?
- Does the composition of the supervisory team comply with the regulations and fit the assignment?



name _	Joni Sch	uurman	date	20 - 05 - 202	3 signat	ture	5	
IDE TU D	elft - E&	SA Department /// Graduation pro	ject bri	ef & study overview	/// 2018-01 v30			Page 2 of 7
Initials 8	& Name	C Vooren			Student number	4598865		
Title of P	miert	The possibility and desire to re	nair a	case study on the t	nastie maker			



The possibility and desire to repair: a case study on the toastie maker project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 15 - 05 - 2023 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...

EASE OF REPAIR

The Ellen MacArthur Foundation's "Circular economy systems diagram" illustrates how within each stage of the technical cycle products are allowed to remain rather than becoming waste. The inner loop, maintaining and prolonging, is where most value can be captured as the product is kept whole (Ellen MacArthur Foundation, 2019). To incorporate this idea into design practice means, among other things, to "design for physical longevity" and to "design for repairability". This means designing products that are durable and can be easily repaired rather than being discarded when they break or become outdated. This is exactly what the European Commission's proposal of the "right to repair" (2023) is about. Both inside and outside the legal warranty period, repairs of goods should become easier and cheaper.

However, creating products that users want to keep and repair is not just a practical matter. Because how does one design things that users want to keep, take care of and repair? In other words, how does one design things that people get emotionally attached to? I am under no illusion that there is a clear-cut approach to achieve this. There are many different, personal reasons for people to get attached to the things they own. Due to this subjective nature, I do not believe, nor have the intention of persuading people towards forming a particular attachment with something. However, I do think that there are certain factors to bear in mind that could contribute to making a product more desirable for a user to maintain.

In their research on consumer-product attachment, Schifferstein & Zwartkruis-Pelgrim (2008) find that "to increase the sustainability of people's consumption patterns by stimulating the degree of attachment between people and the product they own [...] designers should design products that evoke enjoyment, or facilitate the formation of associations between products and people, places or events (memories)".

HAPTICS

The first factor asks for products that evoke sensory and aesthetic pleasure. As Schifferstein & Zwartkruis-Pelgrim (2008) state, "a design strategy for achieving this can begin by evaluating the signals emitted by the product and the corresponding sensations perceived by the sensory systems (such as vision, audition, touch, smell, and taste) during use. The designer can then aim for a pleasant combination of ways to stimulate the product user". Jasper Morrison's definition of haptics, as quoted by Kenya Hara (2015) in his book "Designing Design" provides a beautiful description of a similar train of thought. Morrison describes haptics as "to make the senses drool", on which Hara commented "When we're hungry, we salivate at the sight of an inviting dish or savoury grilled meat, but Morrison meant haptic as the experience of seeing something that made all the senses "drool". What a fantastic metaphor"

TEMPORALITY

The second factor, as suggested by Schifferstein & Zwartkruis-Pelgrim, involves designing products that support the accumulation of memories. They talk about products showing physical signs of events and ageing with dignity, adding to the richness of the shared history of the owner and product. However, I feel this concept can be viewed more broadly, as it can also apply to the temporal relationship between product and environment, visible signs of how a product is produced, or any other temporal characteristic of an object. In her book "Aesthetic Sustainability", Kristine Harper (2018) describes how "as an object becomes a container of time – and thus physical. material, or concrete stories – it is charged with emotional and

space available for images / figures on next page

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Initials & Name	C Vooren	Student number 4598865	
Title of Project	The possibility and desire to repair: a case study of	on the toastie maker	











Temporality Do hit chair by Marijn van der Poll for Droog

image / figure 1: A few images to illustrate the topics of repair, haptics and temporality as outlined in the introduction



image / figure 2: ___A €10,95 toastie maker from Action

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Initials & Name C Vooren

Student number 4598865



PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Sustainable product design has become increasingly urgent and is fortunately receiving much-needed attention. However, determining what qualifies as a sustainable product is challenging, as there are many ways to view this from a design perspective. The approach of this exploration stays close to the product's essence, aiming to design products that are long lasting in the physical and emotional sense, as this is how products will be kept whole and in use as long as possible. Two main questions will be explored within this research, through a case study of the toastie maker.

1. SPECULATE

What would the toastie maker look like if it were designed prioritizing the possibility and desire to repair? (How would this impact designers' perception of appliance design?)

2. REALISE

What could a realistic embodiment look like, and how would it fit into our current world? (What aspects of it would be realistic, and what wouldn't?)

The questions will be explored through theory and methods on the possibility and desire to repair, as outlined in the introduction.

Ease of Repair - To be able to repair
Haptics - To make the senses drool
Temporality - To charge with time

ASSIGNMENT**

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The project aims to research and demonstrate the possibility and desire to repair of products through a case—study on redesigning the toastie maker. This will be approached through embodiment design, based on theory and methods on repair and product attachment.

While the toastie maker is a cheap appliance found in most Dutch households, its prevalence often leads to its use becoming so self-evident that it goes unnoticed. While it may not be the most glamorous and even a bit of a silly kitchen appliance, it remains true to its purpose without any pretense or deception. Its authenticity and everydayness make it an ideal subject for my exploration, as it has the potential to reveal new design perspectives clearly. In addition to its suitable character, the toastie maker is also difficult to repair and so cheap that it is often treated as disposable. Even though it may be used frequently and provide enjoyment, it fails to develop a sense of attachment with users and is readily replaced when breaking down.

The first phase of the project will be a broad and speculative exploration of ease of repair, haptics and temporality through prototyping. Research and concept design are closely intertwined and have a significant influence on each other: theory will be translated into tangible outcomes through speculative prototyping, model making, and visualizing. The expected results are several experimental (sub)concepts, collected in a booklet. Moving to the second phase, the goal is to detail one of the, or a combination of concepts from the first phase and create an integrated, functioning prototype that represents a realistic embodiment. Technological and aesthetic perspectives will continuously shift and merge throughout both phases.

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Title of Project	The possibility and desire to repair: a case study	on the toastie maker	



PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.



The project is intended to be a full-time endeavour with two main phases of speculating and realizing that involve an ongoing loop of documenting, reading, and reflecting, as well as necessary meetings.

EASE OF REPAIR - 3 to 5 products will be dismantled and analysed through disassembly maps and hotspot analysis, leading to new concepts through ideation and prototyping.

HAPTICS - In the assignment for his Haptics exhibition, Hara emphasizes the importance of prioritizing designing to tickle the human senses, rather than starting from shape or colour. The design process will involve researching materials, textures, details and mechanisms through sensory imagination and user testing. Rather than limiting the design to the traditional five senses, haptics will be explored through experiences such as "sense of pressure," "sense of temperature," and "sense of weight," recognizing the interconnectedness of all sensory experiences.

TEMPORALITY - Drawing from research on "A Feeling of Temporal Empathy" conducted by my brother Tom during his architecture graduation project at the TU Delft, the (dismantled) products will be viewed through twelve different temporal lenses, including "cycles," "ritual," "memory," "growth," and "deterioration." Models of potential designs will be built and tested against existing references and contextual factors to explore the temporal dimensions.

I anticipate taking several weeks off in the middle of the holidays, with the midterm planned before the summer, in consultation with the mentor and chair. I have also planned in one week off due to Dutch national holidays and a visit to Milan.

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APPENDIX 2 - CASE STUDY SELECTION



Weight distribution of criteria

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1.0	5	4	5	-	15	1120
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	8	4	е	2	12	870
0	5	4	е П	5	17	1220
	2	5	2	5	17	1100
	т	т	2	4	12	840
	right level of complexity	relatability	cost independent performance	product	without weight	with weight
	100	80	20	20		



HotSpot Mapping Datasheet

Seneral project information

		General project information	ject inf	ormation	_								Overall HotSpot Results	Spot R	esults						
		Brand name Product category Authors		Action Sandwich toaster C. Vooren									Total: - time to disassemble - number of tasks	ple	282 sec 47	Average: - time pe	Average: time per step force	14,1 sec/step	0	[1=low S=high 10=extreme]	
		Date	- [mei-23									- number of steps		20	- acces	- accessibility			[1=clear 5=moderate 10=difficult]	
		Location	IDE	10 Delft									- number of tools		7	- positioning	guinoi			[1=easy 5=moderate 10=difficult]	
		General				Aci	Activity				Accessibility	ibility	y Functional	nal	Mat	Material		HotS	pot In	HotSpot Indicators	
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Connection cover	2	yldr	Uns	Screw	. ph2	4	7	level 1	- level 0	1- level 1	level 1	- level 1	mose	37,	4						
Closing lid	no	main assembly					1	level 0	- level 0) - level C) - level 2	- level 1	level 0 - level 0 - level 0 - level 2 - level 1 - Thermoplastic	3,6	2		<u> </u>				
Rubber leg covers	00	main assembly				2	2	level 0	- level C) - level (0 - level 0	- level 0	level 0 - Rubber	2,2	2						
Bottom cover	00	main assembly				.≥	43	level 1	- level C)- level 1	l - level 0	- level 0	level 1 - level 0 - level 1 - level 0 - level 0 - thermoplastic	20	20,6			4	4	Tri wing	
Top casing	2	main assembly	rew	Screwdriver	ph1		20	level 1	- level C) - level i	L - level 1	- level 1	level 1 - level 0 - level 1 - level 1 - level 1 - Thermoplastic 177,	17	177,6	Δ		Δ		PBT, thermoplastisch polyester	
ַּ	2 !	main assembly					2	T I I	- level	- level	n evel o	z level z	z - Mixeu Materials II	ndiniy 14				Δ			
Coloured light	2 2	main assembly	Disconne	Screwaniver Hands	T T	7 7	9	level 1	- level G	- level (1 - level 1	- level 1	level 1 - level 0 - level	0,8	186,0 0,8			_	_		
Rubber ring light	9	main assembly	Remove	Hands		H	ĸ	level 0	- level C)- level () - level 0	- level 0	level 0 - Rubber	0							
Thermostatic switch	on h	main assembly	Unscrew	Screwdriver	ph1	. 5	13	level 1	- level C)- level 1	I - level 2	- level 2	level 1 - level 0 - level 1 - level 2 - level 2 - Other Electronics	4,4	4		<u> </u>		<u> </u>		
Neon lights	9	main assembly	Cut	Wire cutter		4	17	level 1	- level 0	1- level 1	1 - level 1	- level 0	level 1 - level 0 - level 1 - level 1 - level 0 - Other Electronics	0		<u>_</u>					
	no	main assembly	cut	Wire cutter		2	9	level 1	- level G)- level 1	1 - level 2	- level 1	level 1 - level 0 - level 1 - level 2 - level 1 - Other Electronics	0		Δ_	Δ_				
Shrink tubes	ou	main assembly	Remove	hands		9	7	level 0	- level G) - level C) - level 1	- level 2	level 0 - level 0 - level 0 - level 1 - level 2 - thermoset	8,0	gn.		Δ_				
Heating element lids no	ou sp	main assembly	Unscrew	Screwdriver	ph1	4	21	level 1	- level C) - level 1	1 - level 0	- level 0	level 1 - level 0 - level 1 - level 0 - level 0 - Stainless Steel	4							
Cable holder lid	ou	main assembly	Unscrew	Screwdriver ph1	. ph1	-	œ	level 1	- level 0	1- level 1	1 - level 0	- level 0	level 1 - level 0 - level 1 - level 0 - level 0 - Stainless Steel	2							
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Grill plate top	ou	main assembly	Other					level 2	- level 2	? - level 2	! - level 1	- level 2	level 2 - level 2 - level 2 - level 1 - level 2 - Aluminium	20	200,6		Δ_	<u> </u>			
Heating element bottom	ou Ou	main assembly	Other					level 2	- level 2	2 - level 2	2 - level 1	- level 2	level 2 - level 2 - level 2 - level 1 - level 2 - Mixed materials mainly 40	nainly 40			Δ_			Teflon layer + heating element stuck. Disconnecting was quite nice, done by making a large angle that wouldn't be	
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APPENDIX 3 - RE-DESIGN PROCESS IMAGES

Prototyping experiments, including several failed ones















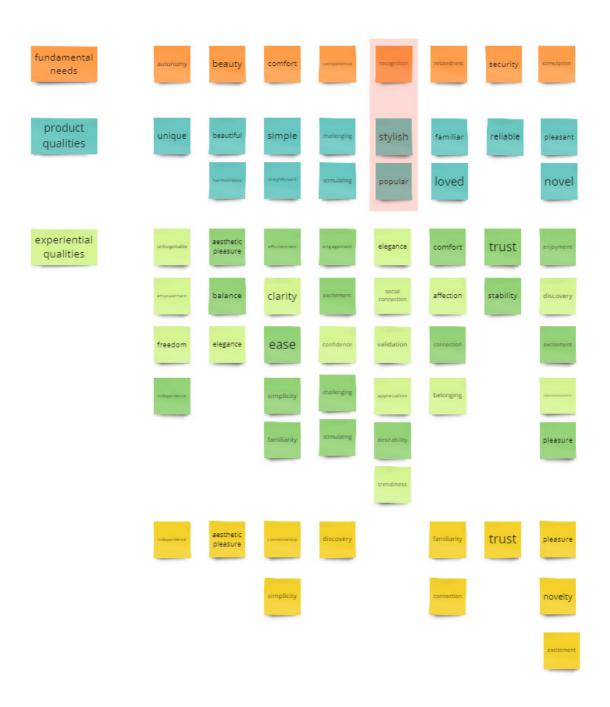




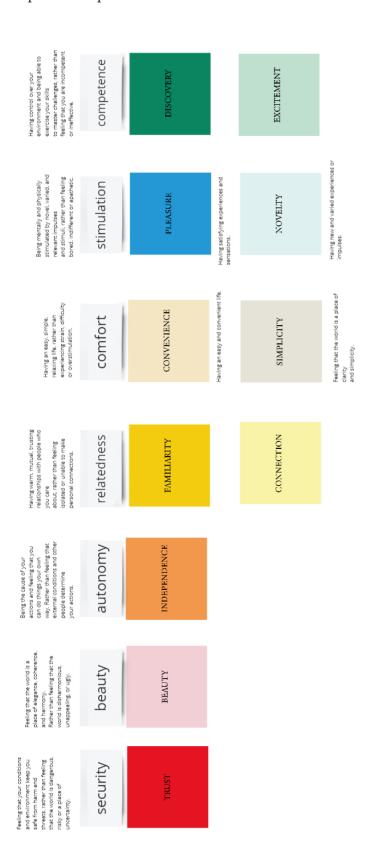




Translating fundamental needs to experiential qualities

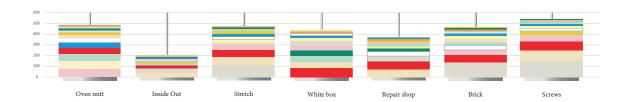


Experiential qualities and their fundamental need



Vote counting

Day 9													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independent	Connection	(other)		TOTAL
	6	1		2	6	1 5	5	4	5		2	2	3
Day 8													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independent	Connection	(other)		
	12	4	3	6	10	1 6		2	11 1	1	15	13	8
Day 7													
Trust	Discovery	Novelty	Excitement	Pleasure	Eamiliarity	Convenience		Beauty	Independenc		(other)		
	8	5	3 .	4	1	4 3	3	1	8 3		13	5	5
Day 6													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independenc	Connection	(other)		
	7	2		5	6	3	1	2	11 2		11	4	5
Day 5													
Trust	Discovery	Novelty	Excitement	Pleasure	Eamiliarity	Convenience	Simplicity	Beauty	Independent	Connection	(other)		
	3		5	6	8	2	2	2	8 1	1	7	4	4
Day 4													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience		Beauty	Independent	Connection	(other)		
	7	2	4 1	1	8	2 7		2	9		9	3	6
Day 3													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independent	Connection	(other)		
	5	2	2 1	2	3	3 3	3	3	3 2		6	1	4
Day 2													
Trust	Discovery	Novelty	Excitement	Pleasure	Eamiliarity	Convenience		Beauty	Independenc		(other)		
	4	2	1 :	5	9	4 3	3	3	15 2		6		5
Day 1													
Trust	Discovery	Noveltu	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independent	Connection	(other)		
	4	1	2 1	3	4	4 3	3		6		6	5	4
	56	19 2	0 64		55 2	2 33	1	9	76 11		75	37	48





																																			design of the object								
							, trustworthy														ed to be connected			neringen ophalen		you can use it forever									CRAFT: knowing that there is an individual behind the design of the object								PLAY: design is often too serious, make it fun
	(other)	eriets EMPOWERING	k lenen QUALITY	OLD SCHOOL	HISTORY	MEMORY	port. A r SENTIMENT; memory	CIRCULARITY	DURABILITY	len hier DURABILITY	QUALITY	NOSTALGIC	s, and r WEAR & TEAR	eates a PERSONALISATION	omst DUURZAAM	PRAKTISCH	THAT IT WORKS	USEFULNESS	noeten d TIMELESS	MEMORIES	COMPASSION: we need to be connected	possibl DUURZAAM	HAPPINESS	MELANCHOLY: herinneringen ophalen	in my a CURIOSITY	RELIABILITY: so that you can use it forever		EMOTIONS	QUALITY	in welk i SAFETY	IDENTITY		Е	F	F	ONNOS	DURABILITY	SUSTAINABLE	FUNCTIONALITEIT	PEACE	COMFORT	FUNCTIONALITY	PLAY: design is often
	sction	Ik will erop kur As a designer Omdat dat eer Experience m Feel good win't respect my fanders gebru Maakt het lew Goed over nal All independe ik wil me verbonden kunnen voelen met de objecten waarmee ik me omgeef, dat ik er iets EMPOWERING	shoul Form follows II'm more hap; I don't like pric Als het geen emotionele waarde heeft hoef ik het niet te bezitten, dan kan ik het ook tenen. QUALITY	want to use i Be stimulated like innovatic Want to make When I feel p I like to be abl Products shot Vroeger ging I like having a Without indegilk will een weerspiegeling van mezelf in alle objecten die ik bezit :- I	Why bother using if it's not. Love to see at Eigen regie in Items that remind me of people, places and times brings me the most joy	less effort and time Makes excited It reflects my I Verbinding voelen is iets dat samen kan komen door middel van een product	Objects have value for me will like to look at beautiful desi Connection to some objects is important to me because of the memories they transport. A r SENTIMENT; memory, trustworthy	I someonelsomething is together with me	Excited to learlik hou van dingen waar ik bi Nodig op dat moment dus gi Helps me feel like I'm surrou! need to feel save in my environment, surrounded by things I like	Gives me the It keeps me coming back to If something doesn't add so Products need to invoke a pils ontstaan door trust, discovery, pleasure, herinneringen, eigenlijk alle termen vallen hier DURABILITY	portant because it's more personal	If you trust your products, you will keep on Als ik tevrede Als is plezier hebt, dat is vak Because it helps me to do th Parce que sa fait un belle el Making a genuine connection with te product extends its lifetime	grow an emotional connection with my items. I also connect them to people, places, and r WEAR & TEAR	Er op vertrouwen dat het goed en veilig ver 1 m make som Plezier. Huck ing om naan te Moet doen wat ie moet doen. Een mooi object kan je dage Things start to feel more special and creating feelingskomnection towards them creates a I PERSCNALISATICN	Ik hou van de uitstralingsfei Ik kan me heel verbonden voelen met objecten door de dienst, de looks of de herkomst	It inspires a relationship bey Dan voel ik me empowered in mijn leven, een product als 'maatje'	s me feel I am home	grijk om me thuis te voelen	Directly affects my mood Ik kan niet iets wegdoen dat iemand me heeft gegeven of waarvoor ik moeite heb moeten d TIMELESS	The object becomes part of Connection gives, teaches, geeft voldoening	Because I'm a beauty seeke Really I only want to own meaningful stuff, not less not more	Het plezier dat ik kriig van de ideeën die ik kriig terwijl ik het ga gebruik Belangrijk dat het mooi in mIFI have a connection to things in beauty, use and pleasure I will have it as long as possibl DUURZAAM	Hierdoor voelt het persoonlijk en kan ik me ermee identificeren	Ik heb graag iets wat bij mij past qua functionaliteit en uiterlijk	Because feeling and story, the relationship between me and an object is important in my a CURIOSITY	Because I love to feel and connect not only with people but with everything	want to be connected to my possessions, I want them to mean something to me. I usually	Relation with the product	Because this is how we communicate :-)	it. Hopefully I will be excited to use it over a long / IK hou van het verhaal achter dingen; dat kan van alles zijn; hoe is dat gemaakti van welk	Personal value, the memories it brings <3	Veel van de dingen die ik in huis heblgebruik doen me denken aan een bepaalde periode	Belangrijk om connectie te hebben zodat je het langer gebruikt	When it holds a special sentimental feeling that is connected to a certain time or person									
	Convenience Simplicity Beauty Independenc Connection	ebru Maakt het leve Goed over na. All independe ik wil	shoul Form follows II'm more hapril don't like pro Als h	shot Vroeger ging Hike having a Without indep Ik wil	her using if it's not. Love to see ar Eigen regie ir Items	less effort and time Makes excited It reflects my Verbi	have value for me willike to look at beautiful desi Conn	n om direct te weten I like cute things to light up (To fe	dat moment dus g Helps me feel like I'm surrou'l neer	ning doesn't add so Products need to invoke a p Is ont	Om het leven makkelijker te Because that makes me hag it is important because it's more personal	it helps me to do th Parce que sa fait un belle el Makir	= meer tijd en energ Dat is wat ik zie I grow	m wat ie moet doen. Een mooi object kan je dage Thing	ik Ik hou van de uitstraling/sfe Ik kar	It inspires a relationship bey Dan v		Because bein Pleasure is a combi of beauty, convenience and a happy Things that are beautiful are Belangrijk om me thuis te voelen	Directly affects my mood Ik kar	The object becomes part of Conn	g new Because I'm a beauty seeke Really	ijl ik het ga gebruik Belangrijk dat het mooi in mIFI ha	Herd	Ikhel	es me I know the feeling it fits me		I wan	Belati	boring looking things! Becar	 t. Hopefully I will be excited to use it over a long Ilk hor 	Perso	Veel	Belar	When									
	Excitement Pleasure Eamiliarity Convenie	eer Experience nr Feel good whill respect my f anders gr	without trust Il Discovering a It's innovative Wil geprikkeli Because this Ik wil een ban Objects s	atic Want to make When I feel p I like to be abl Products	want the things i own to wo It's exciting to The feeling it Dat helpt voor verbinding Why both	Require	To be able to Always want to learn (more cLife is and sh Because I'm a hedonist Objects I'	can count on it that it works. It it doesn't, I lif it excites my The ones that we keep bring Het is fijn om direct te weten I like cute things to light up. To feel someonetsomething is together with me	Excited to lear Ik hou van dingen waar ik bi Nodig op	Gives me the It keeps me coming back to If someth	lif I want the pro Make it fun Om het le	on Als ik tevrede Als je plezier hebt, dat is vak Because	Because without that it's complicated goin; Maakt het leve! Like products that make me Gemak =	vei To make som Plezier: leuk ding om naar te Moet doe	can rely on it in any situation, I build a sp Keeps me on Plezier in het leven maken is belangrijk	Sort if building "muscle memory" together Because I war It brings me happiness? I guess	This makes it Your een fijne ervaring, een fijn leven	Because bein Pleasure is a combi of beauty, conven	To balance the seriousness of life	Without excitement life would be boring	Always positive and great feeling to start something	Het plezier dat ik krijg van de ideeën die ik krijg terw	Makes me happy hehe:-)	I don't like getting bored :-(I am always a very joyful person. I something excites	Excitement is for a good life and makes you feel aliw	Je maakt andere mensen soms ook blijer	Ik wil geluk ervaren in dagelijkse dingen	Doesn't count for everything but life's too short for be	When I buy something I want to feel excited to use it													
REASONS	Trust Discovery Novelty	Ik wil erop kur As a designer Omdat dat e	without trust if Discovering a It's innovati	I want to use i Be stimulated like innova	I want the things i own to wo It's exciting	Vertrouwen zillt creates joy, Speelsheid	To be able to Always want to learn (more	I can count on it that it works. It it doesn't	To stay with you, invest	I don't want it to be broken	Trust is the foundation of many thigs in lif I want the pro Make it fun	If you trust your products, you will keep o	Because without that it's complicated go.	Er op vertrouwen dat het goed en veilig v	I can rely on it in any situation, I build a s	Sort if building "muscle memory" togeth.																											

Example of written responses on the 'oven mitt' prototype

+ 011

Codes

Document Name

CONNECTION

I want to feel connected to the objects I surround myself

with, that I feel something about them

CONNECTION

If it has no sentimental value, I don't have to own it, I can

also borrow it

CONNECTION

Items that remind me of people, places and times bring me

the most joy

CONNECTION

☐ I want a reflection of myself in all the objects I own :-)

CONNECTION

Connection to some objects is important to me because of physical but with these objects it IS getting a physical one

the memories they transport. A memory is nothing

CONNECTION

I need to feel safe in my environment, surrounded by

CONNECTION

Was created by trust, discovery, pleasure, memories,

actually all terms fall under this

CONNECTION

It is important because it's more personal

CONNECTION

Making a genuine connection with the product extends its

CONNECTION

I grow an emotional connection with my items. I also

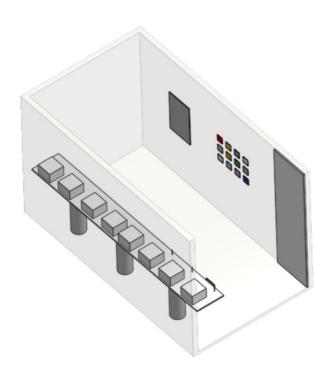
connect them to people, places, and moments

Example of coding the responses on 'connection' in Atlas.ti

Correlation between prototypes, Correlation between experiential qualities

									ľ											
									Independence										1	0,218269378
									Beauty									1	0,022554673	0,75224945
									Simplicity								1	0,123395776 0,275580166	0,180235191 0,022554673	-0,253196829
Screws							1	-	Convenience							1	0,28643916 0,434686689		-0,052441371	0,165568116 -0,322429025 -0,253196829
Clav						1	0,856453649		Familiarity						1	0,712112328	0,28643916	0,543728532	-0,447704416	
Car repair					1	0,521889949	0,75084757 0		Pleasure					1	0,215407918	-0,479826254 -0,374572299	-0,207248942	0,795419674	0,046657183	0,973247013
Transparent				1	0,788470809	0,415832898	0,499258206		Excitement				1	0,764446281	-0,188494428		-0,12178717 -0,458768247	0,377952667 0,538360009	0,309778471 0,214534664	0,638267455 0,768737435
Vacuum			1	0,509655892	0,721136441	0,849207482	0,983385619		Novelty			1	0,745792108	0,68707703	-0,424683633 -0,416078044	-0,051425362 -0,763494179				
Inside out		1	0,830873553	0,602750913	0,873197575	0,636683941	0,892235668	_	Discovery		1	0,0565206	0,532848275	-0,024933023	-0,424683633	-0,051425362	-0,46051996	-0,057733441	0,438565842	0,103826615
Oven mitt	1	-0,106900029	0,098867426	0,321373195	-0,00319697	0,008328779	-0,02402693		Trust	1	0,498538277	0,010374381	0,19635097	-0,039937431	0,050330697	0,479012273	0,42357751	0,325015846	0,70971977	0,075159548
	Oven mitt	Inside out	Vacuum	Transparent	Car repair	Clay	Screws	_		Trust	Discovery	Novelty	Excitement	Pleasure	Familiarity	Convenience	Simplicity	Beauty	Independence	Connection

Exhibition development





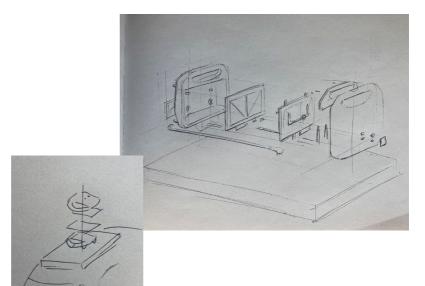






Design ride development







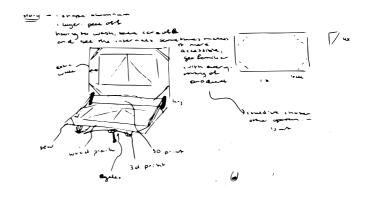


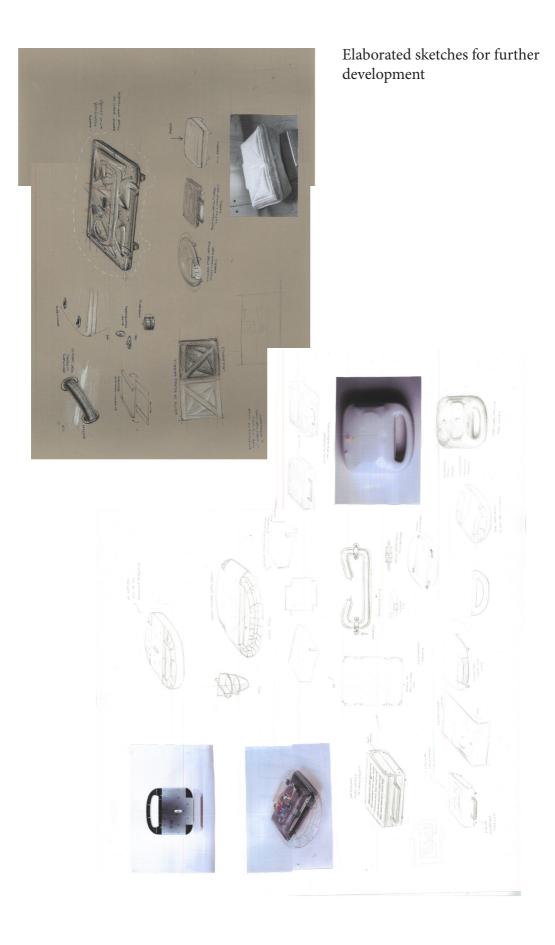


APPENDIX 5 - A STEP FURTHER PROCESS IMAGES

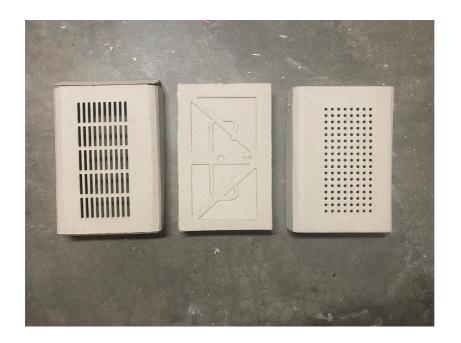
Simple sketches for







Cardboard tryouts

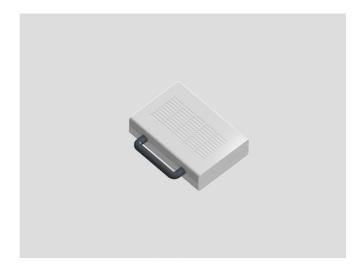




Digital exploration







$Mechanism \ / \ textile \ testing \ for \ final \ prototype$











APPENDIX 7 - OVEN MITT HOTSPOT MAP

HotSpot Mapping Datasheet

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Overall HotSpot Results

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