

Master's thesis

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Master's thesis

Ragnhild Finsveen Liven

## Designing an interactive exhibition

*What could sustainable lifestyles look like in  
Trondheim in 2050?*

June 2019





Norwegian University of  
Science and Technology

# Designing an interactive exhibition

*What could sustainable lifestyles look like in Trondheim in 2050?*

**Ragnhild Finsveen Liven**

Industrial Design Engineering

Submission date: June 2019

Supervisor: Casper Boks

Norwegian University of Science and Technology  
Department of Design



# Designing an interactive exhibition

What could sustainable lifestyles look like in Trondheim in 2050?



A master's thesis written by Ragnhild Finsveen Liven  
*Norwegian University of Science and Technology*

## **Designing an interactive exhibition**

*What could sustainable lifestyles look like in  
Trondheim in 2050?*

A master's thesis written by Ragnhild Finsveen Liven

### **Delivery date**

07.06.19

### **Collaborator**

Lucy Chamberlin

### **Supervisor**

Casper Boks

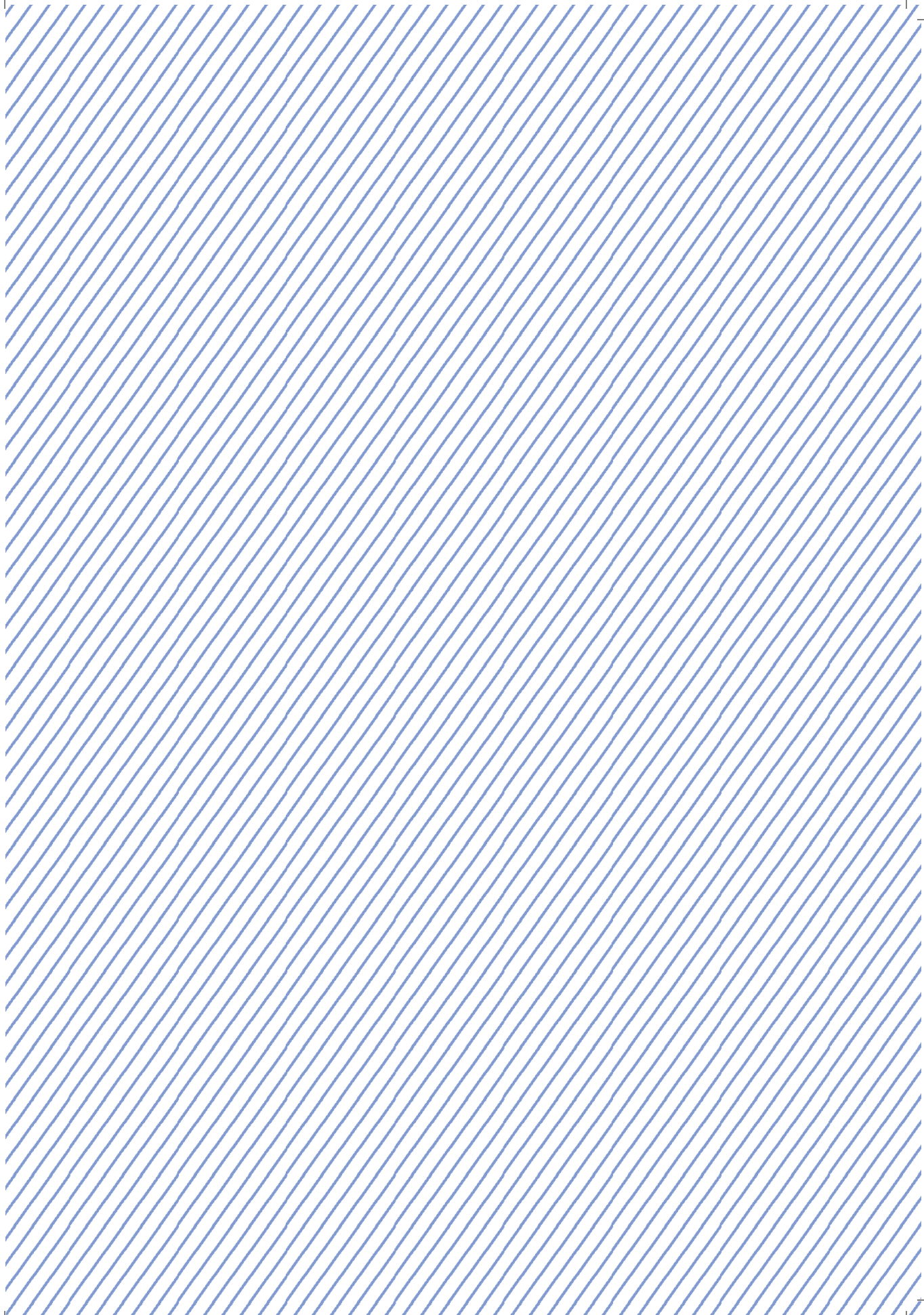
### **Client**

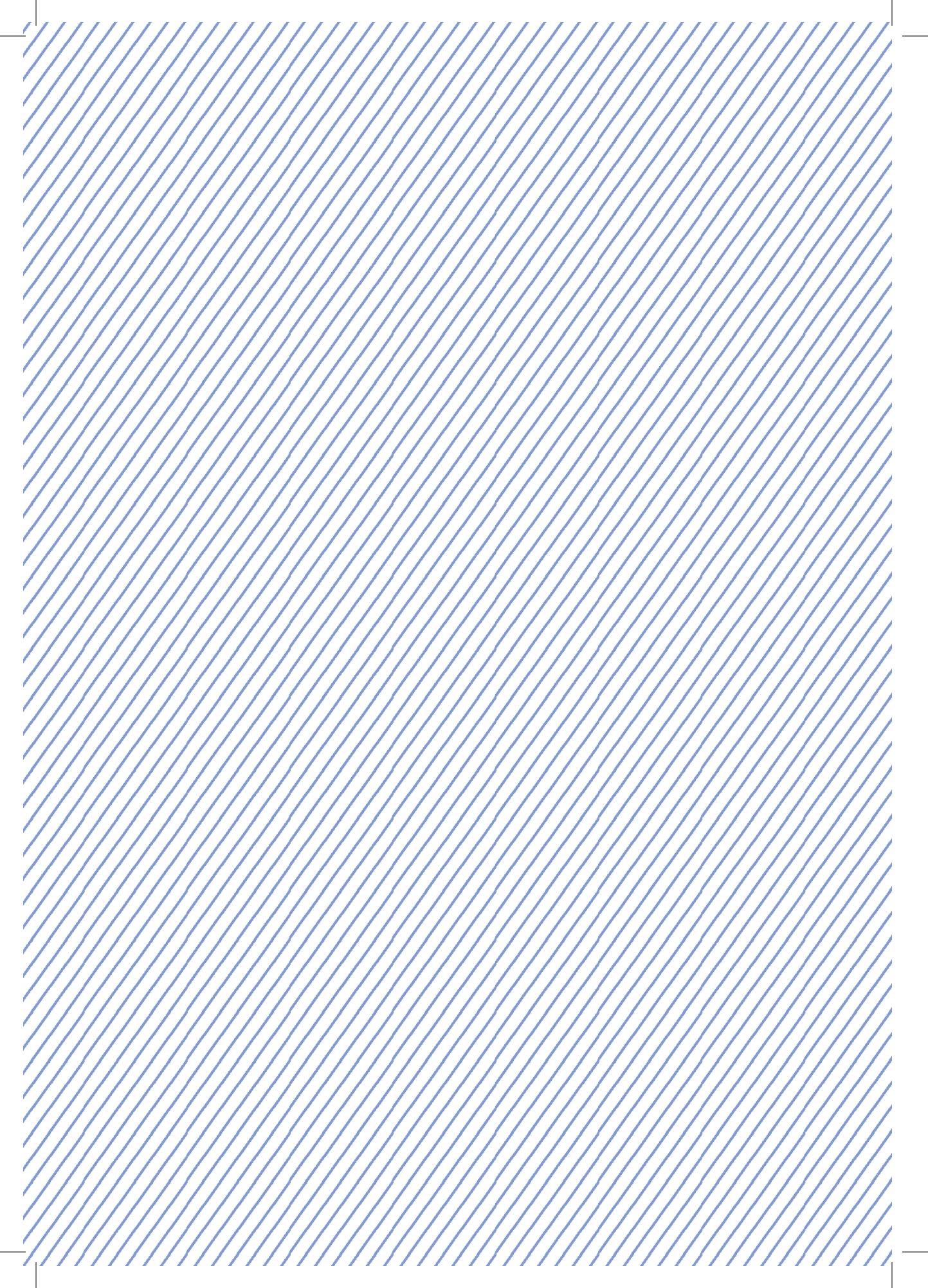
The Big Challenge Festival 2019 by  
NTNU Sustainability and the NTNU Science Museum



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# Preface

This master's thesis is written by Ragnhild Finsveen Liven at the Department of Design, NTNU. When choosing a project for my master's thesis, I wanted to find one that enabled me to challenge myself and learn new skills. This project gave me that opportunity.

Throughout the master's degree, my end goal has been to design and build an interactive exhibition that embodied the theme "Trondheim 2050". However, I have also utilized this project as a tool for exploration. I have personally aimed both to learn about new fields of design, such as speculative design, and use resources to understand the challenges of the future. My end goal was to be left with a broader understanding of how I could use my design background to develop solutions for a more sustainable future. Now, at the end of this project, I truly feel that these desires have been fulfilled.

First and foremost, I would like to thank my collaborator Lucy Chamberlin for giving me the opportunity to write a different and challenging master's thesis with plenty of educational value, and also for her valuable knowledge-sharing and input on my work in progress. Furthermore, I would like to thank my supervisor Casper Boks, for his constructive feedback and insight into relevant subjects.

I would also like to thank Sarah Elise Gjemdal from Sarah Panter, John Vinnem from JohnnyLove, and Thea Jacobsen from Livid Jeans for sharing their resources and knowledge, both during the project and for the exhibition's content. Thank you to festival staff members Leif Arne Hatlem and Stig Larssæther for answering all of my questions. Thanks to all my fellow classmates who have spent time discussing the subject with me, and who have made the last five years unforgettable. I would like to thank Oda, who volunteered to read through and correct my English writing.

A big thank you to my lovely family – mamma, pappa and Kristian – and to Hanne and Maren for their love, support and feedback. And to Are for giving me motivation, sharing his options and for his loving support.

*Trondheim, 07.06.19*



# Abstract

This master's thesis aims to outline the process of designing an interactive exhibition through design-driven research, ideation, development, and creation. The exhibition is themed "Trondheim 2050" and will be a part of the Big Challenge festival 2019 in Trondheim between the 16th and 19th of June. The final results will be displayed in two 20 feet shipping containers.

The preliminary research highlights why speculative design is a valuable and correct approach to the project. In addition, this section is an exploration of interactive exhibition design and contributes an early understanding of consumer habits and people's relationships with their own belongings. The synthesis of this part leads to the design brief – the project's vision and framework – which has guided me through the project. Among the key takeaways synthesized in the design brief is the importance of facilitating for reflection and providing careful provocation.

To build on the design brief, a scenario for the future of Trondheim is created. This leads to ideation phase 1, where the variety of themes considered for the project is presented. In its conclusion, the fashion industry is chosen as the overarching theme.

Following this choice is a new phase of insight-gathering and knowledge-building, where the fashion industry is investigated both through insight from literature and the knowledge of experts. Among the findings of the research are two key conclusions – there is a need to reduce the number of garments consumers acquire, and there is a need to facilitate better utilization of materials and resources that have already been made.

These key findings, in combination with the conclusions acquired through all early stages of the process, create the foundation for final ideation and concept development. Four main themes are presented as a part of this ideation: first- and second life store, collaboration with local businesses, reflection and interactive activities, and container layout. Out of these focus points, the reflection- and interactive activities are the main priorities. The chapter ends with an overview of the construction abstract and construction of the final displays.

In chapter 7, the final design concept is presented through 2D sketches. Each of the walls inside the two containers is presented one by one and the main elements are described. All details from the exhibition module (texts, graphical content, etc.) are added to the Appendix, where the reader can have a closer look at it.

The end results can be described as four main parts: In the first container, the exhibition audience will experience a first-life clothing store and a second-life clothing store from Trondheim Torg in 2050. In the second container, two activities take place where the audience is asked to reflect on their relationship with clothing and their habits in fashion consumption.

The last chapter aims to reflect, evaluate and conclude on both the process, the end results and the overarching theme which is the fashion industry.

# Sammendrag

Denne masteroppgaven presenterer en prosess hvor formålet har vært å designe en interaktiv utstillingsmodul ved hjelp av design drevet forskning, idémyldring, utvikling og utforming. Denne modulen vil være del av en større utstilling med tema «Trondheim 2050» som skal stå i Trondheim under Big Challenge festivalen 2019 mellom 16. og 19. juni. Sluttresultatet kommer til å ta plass i to 20 fots industricontainere.

Den tidlige innsiktsfasen belyser hvorfor spekulativt design er en verdifull og riktig tilnærming til prosjektet. I tillegg presenterer denne delen av oppgaven en utforsking av design av interaktive utstillinger og en tidlig forståelse av folks forbruksvaner og forhold til tingene de eier. Totaliteten av denne delen leder til en design brief - prosjektets visjon og rammeverk - som har vært ledende gjennom hele prosjektet. Blant hovedfunnene som presenteres i design briefen er viktigheten av å tilrettelegge for refleksjon og å opprøre/provosere folk med forsiktighet.

Basert på design briefen skapes det et scenario for Trondheim 2050. Dette scenariet leder til den første idémyldringsfasen hvor et utvalg av aktuelle temaer for prosjektet blir presentert. Til slutt velges klesindustrien som utgangspunkt for videre utvikling.

Valget av klesindustrien som tema leder til en ny fase med innsiktsarbeid hvor klesindustrien blir undersøkt både ved hjelp av litterær innsikt og eksperter. Blant funnene fra dette innsiktsarbeidet er to hovedpunkter - At det eksisterer et behov for å redusere antallet klær folk anskaffer seg, og at vi i større grad må utnytte de materialene og ressursene som allerede har blitt produsert.

Disse to hovedfunnene, i kombinasjon med totalen av innsikt og forståelse som har blitt opparbeidet, skaper et grunnlag for den endelige runden med idémyldring og utvikling. Fire hovedtema blir presentert i denne delen: Første- og andrelivs klesbutikker, samarbeid med lokale bedrifter, refleksjons- og interaksjonsaktiviteter og container layout. Disse er de fire mest sentrale punktene fra denne fasen i prosessen, men det er likevel refleksjons- og interaksjonsaktivitetene som har fått størst prioritering i prosjektet. Kapittelet avsluttes med en oversikt over skape- og byggeprosessen av den endelige utstillingen.

I kapittel 7 presenteres det endelige designet ved hjelp av en rekke 2D-skisser. Alle vegger i hver av de to containerne blir presentert individuelt og hovedinnholdet blir beskrevet. Alle detaljer fra utstillingsmodulen (tekst, grafisk innhold osv.) vil bli vedlagt i Appendix slik at leseren kan studere det mer i detalj.

Sluttresultatet kan sies å ha fire hoveddeler: I den første containeren vil utstillingens besøkende oppleve én butikk som selger nye klær og én butikk som selger brukte klær og tekstiler. Konteksten til disse butikkene er Trondheim Torg i 2050. I den andre containeren vil to aktiviteter finne sted. I disse aktivitetene vil de besøkende utfordres til å reflektere rundt deres personlige forhold til klær, samt deres forbruksvaner.

Det siste kapittelet har som mål å reflektere, evaluere og konkludere både prosessen, sluttresultatet og det overhengende temaet som er klesindustrien.

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## **RESOURCES**

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**PART 1**

# **Introduction**



*This chapter includes an introduction to this master's thesis with a description of its origin, purpose and my personal motivations.*

Page 14 - Project description

Page 16 - Background

Page 22 - Motivation

# Project description

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The concrete aim of this master's thesis is to:

*Design and build an interactive display that will take part in an exhibition themed "Trondheim 2050". The exhibition will be held between the 16th and 19th of June 2019 at Krigsseilerplassen in Trondheim during the Big Challenge festival. The specific theme for the module developed in this master's thesis is "Future Consumer", and the emphasis will be to express sustainability through circular economy systems.*

The exhibition module will take place in two industrial containers. Through the use of hands-on elements and provocative content, the purpose of the display(s) is to spark curiosity and facilitate visitors' reflection into own habits, and attitudes towards consumption today and in the future. The goal is to provoke, but also to inspire and motivate visitors to make different choices in their everyday lives.

This project aims to incorporate insights gained from literature and experts to understand and state a need for change in consumption. In addition, this research will serve as an inspirational foundation for ideation and concept development. Furthermore, user insight will serve a similar purpose, providing both inspiration but also valuable input on the final design.

## Master's Thesis for Ragnhild Finsveen Liven

### Designing an interactive exhibition: What could sustainable lifestyles look like in Trondheim in 2050?

*Design av en interaktiv utstilling: Hvordan kan man leve bærekraftig i Trondheim i 2050?*

In collaboration with NTNU Sustainability, the Science Museum in Trondheim will host an exhibition themed around "Future Trondheim" during the summer of 2019. The exhibition will showcase interactive displays inside industrial containers, and the content will be created by different fields of study from NTNU. This master's thesis is a collaboration between the undersigned and PhD candidate at the Institute of Design, Lucy Chamberlin. The aim is to design content for one of the containers taking part of the exhibition.

Through exploration within fields such as design futures, speculative design, storytelling and design for behavioral change, the aim is to create one or several scenarios which speculate about how Trondheim's citizens could live sustainably around the year 2050. At the end, these findings will be manifested physically through the development of the display. The goal is to give exhibition visitors the opportunity to see and feel what a future sustainable lifestyle could be, and hence spark curiosity. The aim is to challenge people's thinking and to inspire them with practical ideas about how they can change their behavior as soon as they get home.

This master's thesis will include:

- A literature review aiming for insight regarding sustainability and design for the future
- Acquisition of inspiration related to exhibition design
- Development of scenarios focusing on elements of sustainable everyday life in the future
- Prototyping and user testing of physical elements for the display
- Development and building of the elements that will take part in the display

This project is executed in accordance with "Retningslinjer for masteroppgaver i Industriell design".

Course supervisor (from ID): Casper Boks


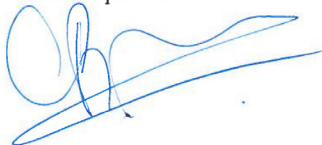
Additional supervisors: Nils Henrik Stensrud and Lucy Chamberlin

Starting date: January 11<sup>th</sup>, 2019

Due date: June 7<sup>th</sup>, 2019

Trondheim, NTNU, January 11<sup>th</sup>, 2019

**Casper Boks**  
Course supervisor



**Ole Andreas Alsos**  
Head of Department

# Background

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## **The Big Challenge Festival**

The Big Challenge Festival is an international science festival hosted by NTNU Sustainability, and takes place between the 16th and 19th of June 2019. The festival's aim is to spark debate and reflection around the challenges of the future through the sharing of knowledge and inspiration. Big names such as Edward Snowden, Stephen Fry and Sting will take part of the program. Speaking alongside them will be world-leading researchers, opinion leaders and performers (NTNU, 2019).



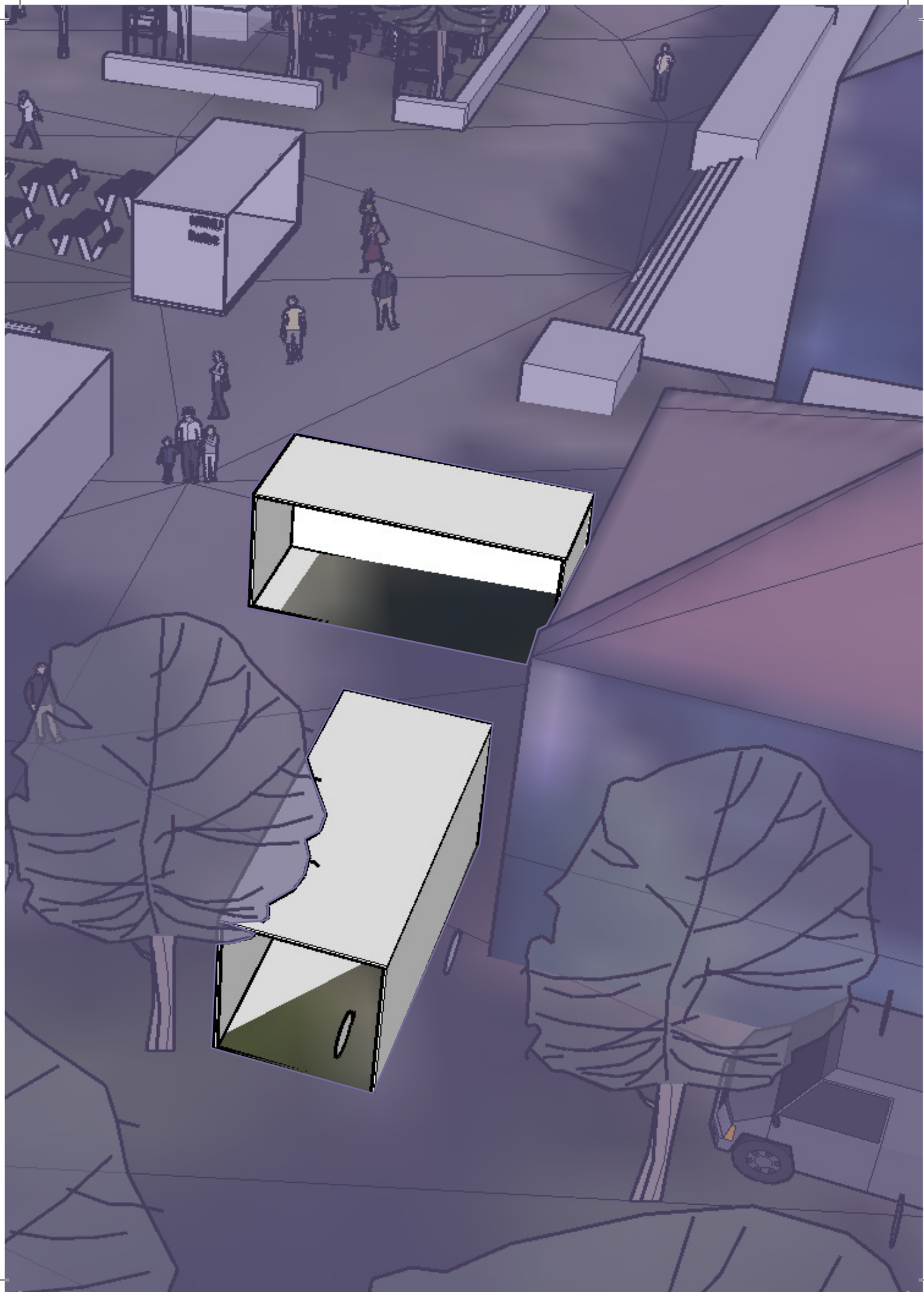
Figure 1: The Big Challenge logo (Futurum, 2019).

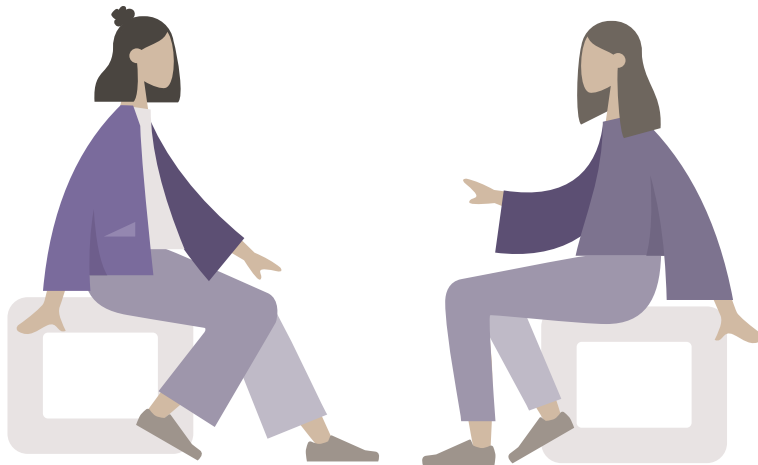


### **The exhibition**

As a part of the Big Challenge festival, there will be an exhibition - or a "Futurum" (see page 47) - in the city center themed "Trondheim 2050". The exhibition will be a collaboration between the NTNU Science Museum and NTNU Sustainability, in which the Science Museum is the owner and NTNU Sustainability is the responsible coordinator of the content. Several of NTNU's fields of study will develop the content of the exhibition, and the aim is to transform knowledge gained in research environments into interactive displays that visualise the future.

The exhibition will take place at Krysseilerplassen, close to where Fjordgata and Kjøpmannsgata meet. This part of the festival grounds will be free to enter for all that are interested. Each of the displays will be presented inside modular shipping containers or tents. The two highlighted containers on the following page represent the containers in which our exhibition module will take place. At the end of this four-day festival, parts of the exhibition will be moved to the Science Museum, where it will remain for one year.





### **Collaboration**

This master's thesis is conducted in collaboration with PhD candidate Lucy Chamberlin at the Department of Design. Lucy is writing her PhD thesis on the topic of circular economy and behavior change and was invited to contribute to the exhibition and festival before Christmas 2018. In the early planning phase, she decided to involve a master's student to collaborate with her in the development of the display. Hence, this master's thesis came to life. In order to make this thesis and the development of the exhibition relatable to Lucy's dissertation, the overarching theme of our display is centered around circular economic initiatives in the future.



Throughout the project, Lucy and I have had different areas of responsibility. Lucy has contributed with a solid foundation of knowledge on circular economy and behavior change. She has in addition provided valuable literary resources. Furthermore, as Lucy is educated in writing, she has contributed a lot of input on the written content for the final displays. In addition, many of the large, overarching decisions in the project are made together with her.

In the context of most design projects, in which designers work with clients, Lucy's role can be interpreted as that of an active client contributing throughout the project with valuable input. For this reason, I will sometimes refer to Lucy and I as "we". I have, on my side, worked as both a facilitator for the shared design process and as an individual designer conducting the research, ideation, refinement, development and building of the exhibition. More specifically, I have individually conducted the literature studies, interviews, and the majority of ideation and refinement. Furthermore, the final design (e.g. interior design, graphic design, building of physical props etc.) is solely done by me. It is also important to emphasize that the entirety of this master's thesis is being written by me. In the shared process with Lucy, I have, amongst other things, provided input on methodology for the activities we have conducted together.

# Motivation

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## **Challenging myself**

The vast majority of the projects I have undertaken during my five years at NTNU were addressed with a “traditional” approach to design, creating products or services aimed at consumers in the present or near future. Tackling a project in which the aim is neither to design for direct consumerism, nor the society we live in today, pose an unfamiliar challenge.

This thesis will end with a real-life exhibition taking place just a few days after I stage my final presentation. Working with exhibitions and displays, rather than consumer product development driven by Human Centered Design (HCD) methodology poses a challenge, but also an opportunity for learning.

30 years from now, Norwegian society will most likely look different from the one we know today. As the aim of this thesis is to create an exhibition which hypothesizes what this future might look like, my desire has been to look at the challenge with a speculative and fictional approach. It is one that I, at the master’s thesis beginning, had little experience using. Thus, his master’s thesis gives me an opportunity to explore and learn about a new branch of the design field.

### **Working with sustainability, and the opportunity to make an impact on society**

Environmental challenges and consumerism are both high on the agenda of the media and opinion leaders these days and are thus a current topic of interest in society. Designing and creating either products or visions for a future, in which we act more responsibly in our everyday lives, is something I find meaningful, interesting and motivating. As a designer, I have a responsibility to be conscious of the impact of the products I create. By conducting this project, I hope to develop a new mindset in approaches to future challenges, and by using a speculative approach I have aimed to achieve new insight into the subject by looking at it from a different angle.

Through the end result of this thesis, I have an opportunity to reach a large number of people both due to the location of the exhibition, and because of its connection to a large international event. I view this as a great responsibility and am curious as to how The Big Challenge's visitors can themselves be involved and make an impact, and at the same time be impacted by the exhibition. Sparking curiosity and reflection in an open user group, which consists of a broad variety of people, is a complex task to address. Challenges like these are interesting to tackle, and at the end, hopefully meaningful to both the visitors and myself.

PART 2

**Approach &  
Methodology**

*This chapter aims to ground my approach to the project.  
Furthermore, it includes a general description of the process from  
start to finish, with a brief introduction to the methodology used.*

Page 26 - Approach: The project

Page 27 - Approach: The audience

Page 28 - Applied methods

Page 32 - The project from A to Z

## Approach:

# The project

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### **Speculative and future-oriented**

To some extent, one might say that everything you design for the distant future will partially be based on speculation. When approaching the design challenge of this thesis, I felt it was important to speculate with care, and add elements of realism to bridge the present and the future. This is further discussed on page 38-45.

### **Relatable and everyday**

Unlike many fantasy scenarios made famous in popular culture – e.g. series like *Altered Carbon* and *Black Mirror* – the aim was not to create a dystopian, sci-fi oriented exhibition with a core focus on technology. With that in mind, it was also not a goal to design a utopian future. From the very beginning, the goal has been to design a display that is down to earth, relatable and everyday. Although we want to put the need to adopt more sustainable habits on the agenda, we desire to motivate and inspire, rather than instigate fear.

### **From idea to finished product**

This project incorporates the idea of an exhibition themed around the future consumer through ideation, exploration and development. At the end of this process, the aim is to be left with a physical, fully functional display by the 16th of June 2019. This implies that this master's thesis will also include the construction and production of the physical and visual elements that are to be included in the exhibition.

## Approach:

# The audience

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This exhibition will have a broad target audience (see page 64-67) with differentiated interests and engagements in the challenges of the future. This project aims to approach this diverse group of people using two main strategies. These two strategies are based on both the findings from the preliminary research (i.e. through the design brief on page 69), and on the vision of the Big Challenge “Futurum”-concept which aims to share knowledge and spark reflection around the future.

The first strategy is to provoke the audience with both facts and new ideas. Future sustainability challenges are not a quick-fix project, and may require small (or big) sacrifices. To cover this up could have a detrimental effect. Sharing knowledge and new ideas is a good place to start in order to facilitate a change in attitudes and daily habits. However, providing a foundation which informs about future challenges does not require a presentation that instils fear. Sharing inspiration and motivation is also important to prevent future climate challenges from coming across as an inevitable catastrophe. Hence, this display will both emphasize why consumer change is needed and towards how one can do so.

The second approach is to create a space of self-reflection. Providing hard facts alone could only succeed in overwhelming the viewer. How should people process the information provided, not solely in our module, but by the exhibition as a whole? In order to optimize this processing of information, and to further inspire and motivate, our module will also be a platform for individual reflection and shared discussion among peers. These elements will be linked to the “future consumer” theme, and the goal is to both achieve an immediate impact, but to also leave the audience with some long-term takeaways.

# Applied methods

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*This project is conducted using methodology familiar to that of human centered design processes. It contains elements of research and information gathering – such as a survey and interviews – and exploration and ideation – such as prototyping in different fidelities and user testing. Since a desire has been to learn about speculative design and designing for the future, a considerable amount of time has been spent gathering information and inspiration from various resources. This is reflected in the chosen methodology, especially for the first half of the project.*

*As will be discussed on page 42, speculative design projects may choose whatever methodology is appropriate for the process. Due to the fact that little is known about the future of 2050, the project is also approached with methodology that sparks ideation and speculation – such as The Slater-Owen Design futures technique and the Crazy 8 activity – which has served as a means to look away from the constraints of the contemporary society.*

## Literature studies

**What:** Using research and theory from published papers to gain an understanding of a certain topic.

**Used for:** Gaining insight into circular economy, speculative design, interactive exhibitions, the fashion industry, our relationship with clothes, and the KonMari method.

**Tools used:** Google Scholar and EndNote.

## Moodboard

**What:** A collage of images representing a general base of ideas that might represent the designer's vision or a foundation for inspiration.

**Used for:** Inspiration on interactive exhibitions.

**Tools used:** Pinterest.



### **Online survey**

**What:** An online tool for obtaining quantitative data about a certain topic. Respondents answer a set of prepared questions.

**Used for:** Quantitative insight-gathering on Trondheim's citizens' relationships with consumption and the future.

**Tools used:** Google forms.

### **Mini-interviews**

**What:** Quick interviews conducted to achieve a qualitative, but brief insight into a specific topic. Each interview was 5-15 minutes in length.

**Used for:** Gaining insight into the kind of items people wish to keep for 30 years or more.

**Tools used:** Pen and paper.

### **Design brief – MoSCoW**

**What:** Serves as the framework for a design project. Based on preliminary findings and understandings, it aims to converge the process to a concrete list of requirements - The design brief. The design brief in this master's thesis is divided into four categories - what must, should, could, and won't happen - in order to prioritize what elements should be emphasized throughout the project.

**Used for:** Framing the design challenge and creating a vision for the exhibition.

**Tools used:** Findings from literature studies, the designer's vision, and the desires and limitations provided by the exhibition's hosts.

### **The Slater-Owen design futures technique**

**What:** A method for creating a framework for the future context and understanding what ripple effects this framework has on society.

**Used for:** Creating a framework for Trondheim 2050.

**Tools used:** The design brief and the designer's understanding and vision.

### **Crazy 8 – How might we...?**

**What:** A tool for fast ideation.

**Used for:** Ideation on interaction elements inside the exhibition. Ideation on interaction elements inside the exhibition. A piece of paper is divided into eight squares. You have eight minutes, i.e. one minute per square, to generate eight ideas related to the theme provided.

### **Cardboard 1/12 scale prototyping**

**What:** A quick and low-fidelity way of prototyping to understand physical characteristics and explore possibilities without being constrained by high detailing and perfect finish.

**Used for:** Understanding the space of the two containers that are to be used in the exhibition.

**Tools:** Adobe Illustrator, cardboard, laser cutter, and knife.

### **Semi-structured interview**

**What:** Obtaining qualitative and in-depth insight into a given theme. Some questions are prepared beforehand, but the conversation can take new directions as the interview proceeds.

**Used for:** Obtaining expert opinions and learning new insight from fashion gründer Sarah Elise Gjemdal.

**Tools used:** Pen and paper.

### **User testing**

**What:** The designer observes and analyses the functions of a design through asking possible future users to test a prototype.

**Used for:** Testing and evaluating the KonMari activity

**Tools used:** A blank wall, post-its, posters, tape and markers.

### **Full scale mock-up**

**What:** A full scale and low-fidelity prototype of the final design.

**Used for:** Understanding the container space and playing with placement of exhibition elements.

**Tools used:** An empty room, markers, paper, placeholder objects found at the institute, mannequins, and fabric.

### **3D-modelling**

**What:** Digital prototyping and construction of the final design in a more realistic fidelity.

**Used for:** Detailing of the container content and playing with placement of exhibition elements.

**Tools used:** SolidWorks and KeyShot

### **Digital 2D-sketches**

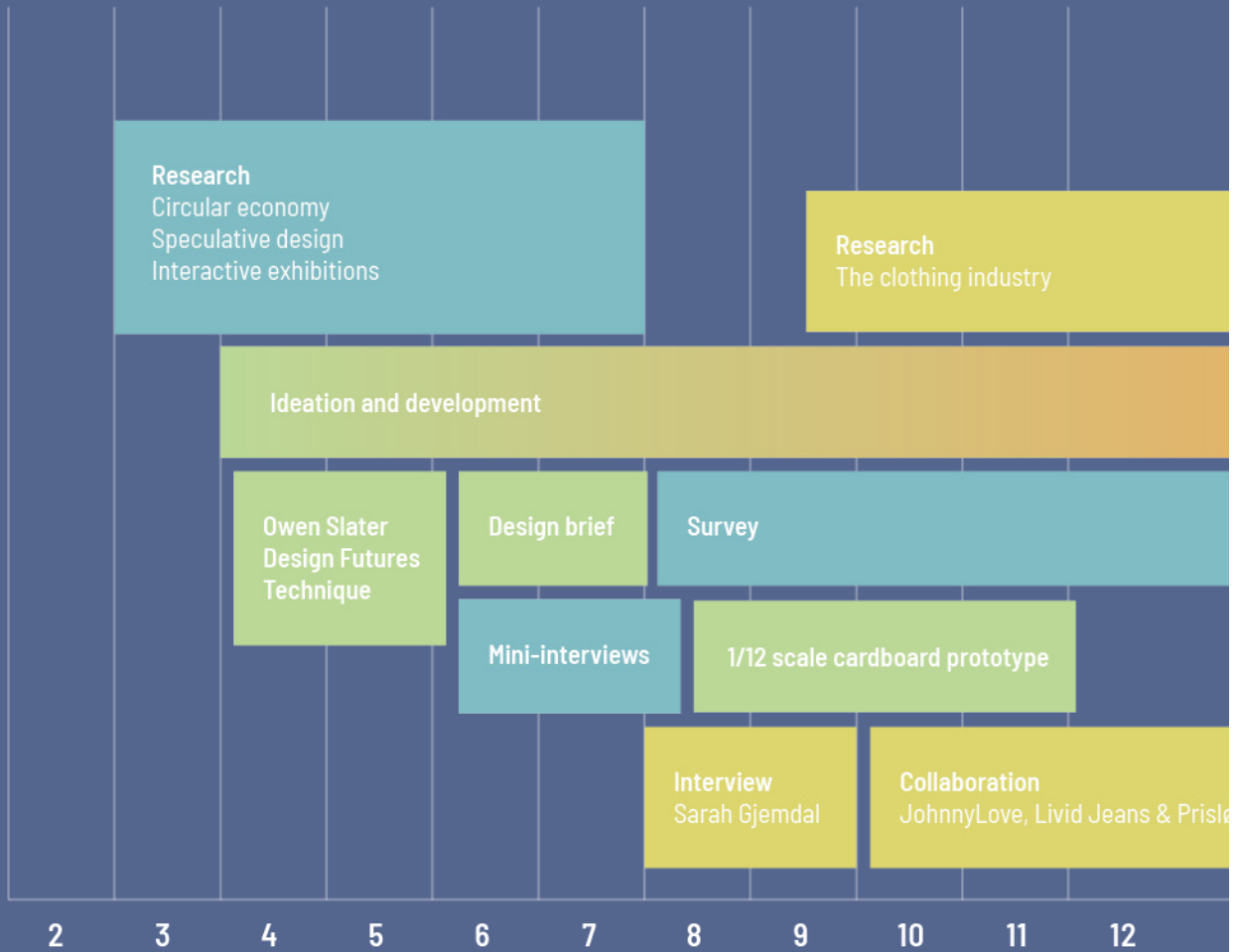
**What:** Detailed digital sketches in 2D to visualize the final concept with more details incorporated.

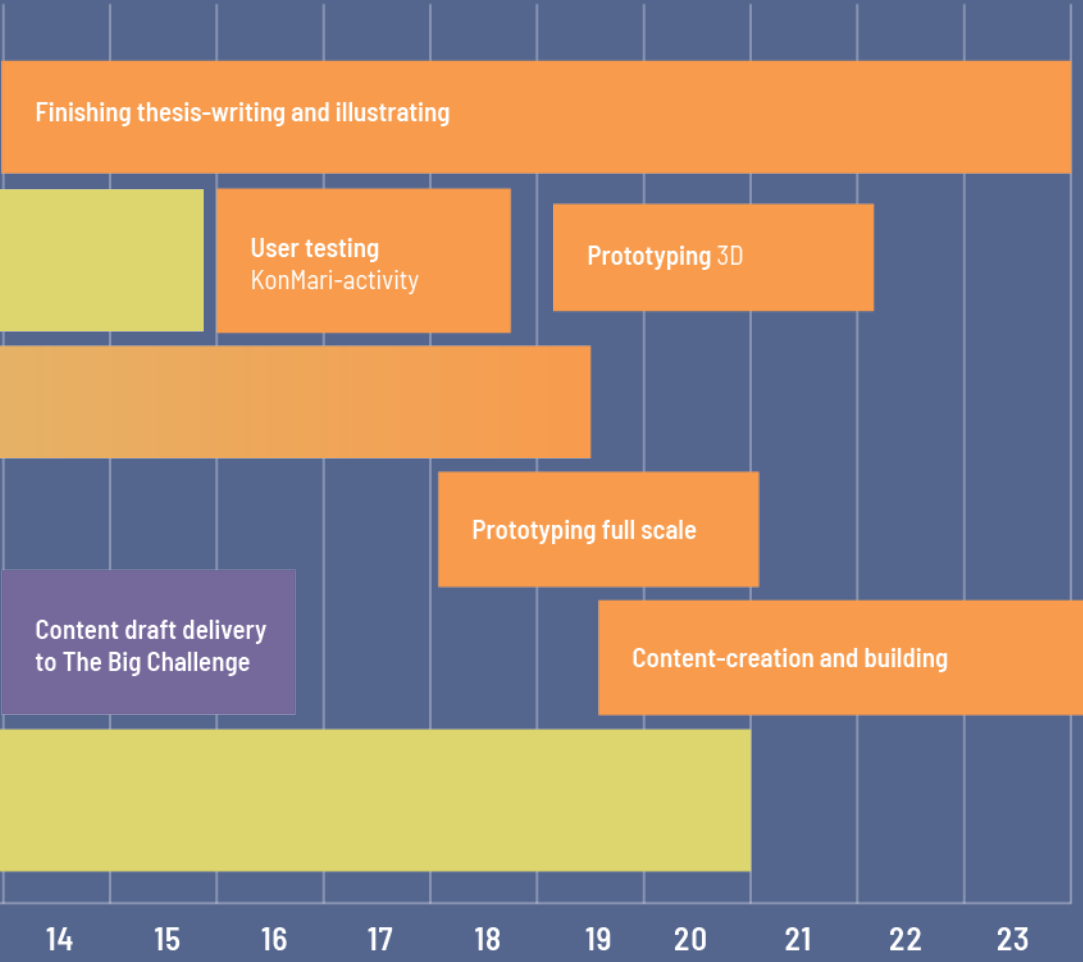
**Used for:** Creating a finalized drawing of the container's contents to use when communicating within the team, with the exhibition hosts, and with the carpenter. Furthermore, it is used for final detailing of exhibition details such as text and graphical elements.

**Tools used:** Adobe Illustrator

# Process timeline

This is a summarized illustration of the key elements of this master's thesis. The size of the boxes is a rough estimation of when each element occurred throughout the process.





Prisløs

**PART 3**

**Theory and  
preliminary research**

*This chapter includes information and insight that was gathered during the early stages of the project. Its aim is to create an understanding of speculative design, exhibition design and consumer habits in order to create a thorough knowledge foundation for the upcoming ideation phase.*

Page 36 - A quick look at: Circular economy

Page 38 - Literary insight: Speculative design

Page 44 - Speculative design: Where does this thesis belong?

Page 46 - Inspiration and insight: Interactive exhibitions

Page 52 - Literary insight: Design of interactive exhibitions

Page 54 - Survey: Consumption and the future

Page 60 - Items consumers wish to keep for a long time

Page 64 - Audience

Page 68 - Chapter conclusion: Design brief and vision

A quick look at:

## Circular economy

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An economic system characterized as “circular” (see figure 2) is one where materials, products and services are regenerative by design, which means that all components are traded in closed loops (Het Groene Brein, n.d.). Three of the main principles behind circular economy is to “design out waste and pollution, keep products and materials in use, and regenerate natural systems” (Ellen McArthur Foundation, n.d.). Their aim is to maintain the value of the items we use and exploit the potential of raw resources. Consequently, this system is grounded in smaller systems that optimizes the product’s lifetime through initiatives such as reuse, repair, remanufacturing and recycling (Camacho-Otero, Pettersen, & Boks, 2017). This gives rise to a need for collaborative and considerate systems where all actors (e.g. manufacturers, businesses and consumers) take part of a large network, in which the actions of one stakeholder impact the other actors. Hence, both short- and long-term impacts of decisions must be considered carefully in all stages of the value chain (Ellen McArthur Foundation as cited in Het Groene Brein, n.d.). In turn, the goal is to create a system that provides economic growth without increasing the use of, and the need for, resources, and one that reduces the environmental impact of our consumption (Galimberti, 2016).



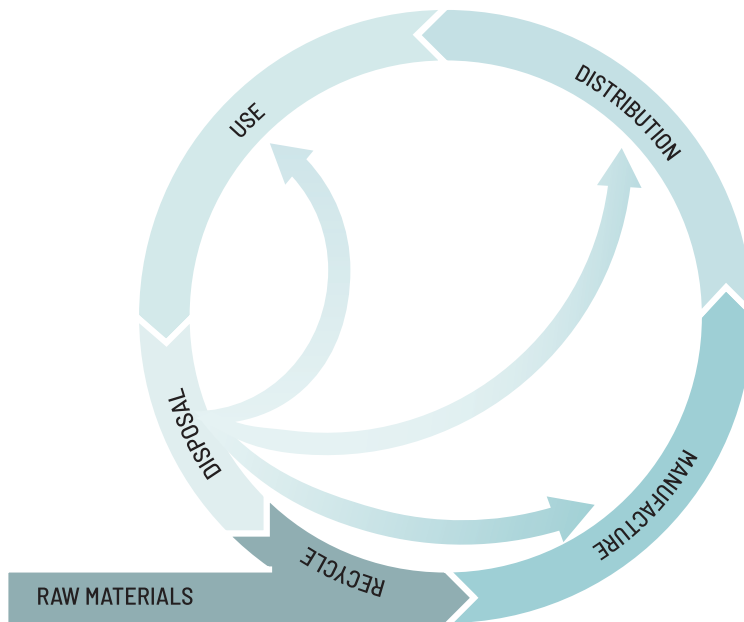


Figure 2: An illustration of the circular economic system (Galimberti, 2016).



### Key takeaways 1

Aim to design products or services in a way that enables the resources used to live out their full potential. Consider all parts of the value chain, not just the stages of use. How can the product or service retain or regain its value after leaving its first user(s)?

## Literary insight:

# Speculative design

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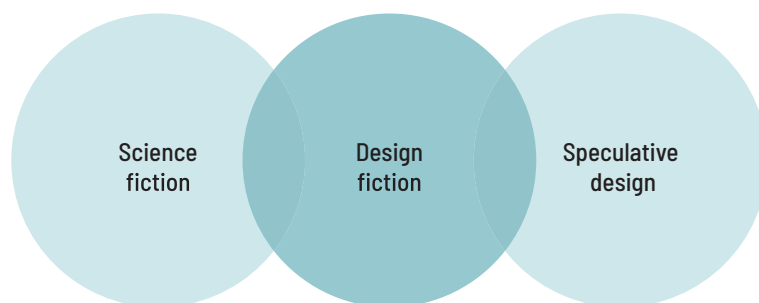
*The future is uncertain, and to some extent it is difficult to predict. How can we design a hypothesis on what the future might look like 30 years from today? Furthermore, how can we help our audience imagine and relate to the resulting, fictional scenarios? Several related fields of design, amongst them speculative design, have emerged in recent years to question and hypothesize the present and the future. The goal of this review is to outline what speculative design is, and to gain inspiration and insight into possible approaches to this specific project.*

*\*Throughout this thesis, I have chosen to use the terms “experimental design” and “speculative design” as umbrella terms for practices such as critical design, speculative design, design fiction.*

### **What is speculative design?**

The exponential growth of technological development contributes to more designers adopting an experimental approach to design (Helgason, Rosenbak, Smyth, & Mitrović, 2015). By asking “what if?” questions about the present and future (Kolehmainen, 2016), disciplines such as speculative design seeks to raise hypotheses about what could or should be (Helgason et al., 2015). The results of this process are often tangible prototypes representing an alternative present or a possible future.

The field of speculative design is influenced by science fiction (figure 3), commonly known from visual media such as films, comics and TV series. Like speculative design, science fiction presents futuristic scenarios, worlds and gadgets to engage the audience to imagine alternative presents or possible futures (Mitrović, 2015). Just as cinematic narratives are visualised using props, experimental design practices use what is often called “diegetic prototypes” to simulate plausible scenarios. However, compared to its relatives in the sci-fi industry, speculative design is exhibited in real life. There is no “closing the book” or “rolling credits on screen” at the end (Auger, 2013). The goal is to spark our imagination, facilitate reflection and open discussions, rather than make strict claims about the future (Helgason et al., 2015). During such discussions, we can exploit the potential of our collective imagination. The speculative designer serves as a storyteller that involves the audience as active agents in imagening their future everyday lives (Mitrović, 2015).



*Figure 3: The relationship between science fiction, design fiction and speculative design (Slater and Owen, 2012).*

The experimental approaches to design are characterized by many names. According to Auger (2013), the field of speculative design is closely linked to related activities such as design fictions, critical design, design probes and discursive design which

*“all remove the constraints from the commercial sector that define normative design processes; use models and prototypes at the heart of the enquiry; and use fiction to present alternative products, systems or worlds” (Auger, 2019, p.11).*

In other words, the experimental fields have many familiarities, and the differences are subtle and often based on geography or context (Auger, 2013)\*. A more traditional view is to see design as a profession, which aims to create products that meet a demand through user-friendly and often aesthetically pleasing design. Experimental design practices, on the other hand, shape a theoretical form of design focusing on reflection. They aim to inspire and provide new takes on the challenges of the future (Dunne & Raby, 2014, as cited in Helgason et al., 2015). In other words, the end goals of “traditional” design and speculative design are different, and one of the advantages of speculative design is that there is no necessity to bring the product to market (Auger, 2013). Owen and Slater (2016) state that this enables designers to “ideate from spaces free of constraints of the real”, and if executed correctly, designers can thus direct innovative research and development by constructing convincing future scenarios. Through imagination and using the correct medium, speculative design can raise questions, provoke action, open discussions and raise awareness. It can help us rethink the current world, and hence critically consider what we desire or do not desire for our future society (Mitrović, 2015).

### Example

An example of an experimental design project is James Chambers' "Attenborough Design Group", in which he poses the question "What if products could protect themselves from threats in their environment the way animals do in nature?" (Auger, 2013; Chambers, n.d.). One of the results are shown and explained in figure 4.



Figure 4: «Prototype 1: Floppy Legs» (Chambers, n.d.)

*«Portable hard drives are vulnerable to desktop spills. Floppy Legs has a set of moisture triggered legs embedded within its body. If it senses liquid nearby it will quickly 'stand up', distancing itself from the threat. This gives the owner time to move the hard drive away from the liquid, out of danger. When the coast is clear the device gently lowers itself back down».*

### **What to keep in mind?**

According to Auger (2013), a key factor to success in speculative design projects is “the careful management of the speculation”; projects that are too futuristic and present implausible conclusions will make the audience feel alienated and unable to relate to the concept, resulting in a lack of engagement. Consequently, a speculative design project requires a “bridge” to connect the audience’s understanding of the world they live in and the designer’s fictional prototype. In addition, catastrophic and dystopian scenarios, like the ones we often see in movies and literature, might lead to a sense that these consequences are unavoidable. This can lead to a passive attitude to the topic (Mitrović, 2015). However, it is important to maintain a balance, as proposals that feel too familiar and everyday can result in a similar response. Consequently, Auger claims that a speculative design solution needs to be “provocative whilst at the same time familiar”. This kind of contradictory reaction in humans has been described by social psychologists, in general terms, as “cognitive dissonance” (Auger, 2013).

In a speculative design project, “the past” is often represented by our contemporary world as it is today. Consequently, today’s society should impact the futures we design. This requires the designer to consider how current technologies and social relations will shape those of tomorrow (Mitrović, 2015). In order to ground the design in a logical or familiar reality, the designer should therefore consider the context in which the speculative vision exists. Furthermore, Auger argues that the designer should utilize the “mundane”, what is small and familiar. In this way, the speculative project can present its audience with provocative proposals, but still provide a logical link to our contemporary understandings (Auger, 2013).

### **Methodology?**

Unlike many other fields of design, the speculative branch has little specific methodology connected to it. Conducting a speculative project might instead be described as an attitude or position (Mitrović, 2015). Since speculative design can be seen as an interaction between many related practices, such as science, social science and film, it can use any methodology considered appropriate at any point in the process. This could mean different forms of storytelling, user testing, interviews, comedy or games (Mitrović, 2015). The choice of approach is dependent on the end goal and how the project proceeds.

As pointed out by Mitrović (2015), the process of speculative design might, at first glance, be seen as a top-down approach where the designer's visions and attitudes are placed at the center. However, it is important to emphasize that one of the core values of speculative design is to include the public through reflection and dialogue, exploring new social systems and technologies. Furthermore, speculative projects should have a connection with research of contemporary interest or context, as this would point its focus at the needs and desires of the people living in this future, speculative world (Mitrović, 2015).

### Conclusion

A speculative design approach can be helpful to projects that aim to hypothesize about the future without considering the commercial market value of the results. Through provocative displays, which bridge the gap between design and audience by involving what they know as everyday and familiar, a speculative design proposal can present alternative visions of what the future landscape might look like. This reflection, sparked by diegetic prototypes, can in turn help us reveal the objects and values that are currently most important to us (Helgason et al., 2015), and inspire us to think about not only what we want, but possibly what we do not want for our future (Auger, 2013). Hence, one of the key advantages of experimental approaches to design is their ability to uncover and materialize the future, and furthermore spark conversations and reflections about our needs and desires (Helgason et al., 2015).



#### Key takeaways 2

In speculative design projects you should:

- Encourage open reflection and/or discussion
- Allow for flexible interpretation
- Look away from commercial value
- Speculate with carefulness: Provoke, but provide logical links to the contemporary world
- Avoid dystopic/catastrophic scenarios

## Speculative design: Where does this thesis belong?

*The literature study on speculative design showed that this approach, like other experimental approaches to design, involves a variety of angles and nuances. With these in mind, where does this thesis belong?*

---

First and foremost, why choose a speculative approach to this project? There are several reasons for this decision. The first is that the year 2050 was the main framework provided to us at the beginning of the project. Looking at the last 30 years in retrospect, it is safe to conclude that technological and societal development has drastically changed the norms in society and how we behave. Designing an image of 2050 in a society 31 years younger will inevitably contain elements of speculation.

Furthermore, the end goal is to design an exhibition. This format allows the designer to play around with the concept and ignore the implications of commercial market value. Experimental design approaches often have their arena in exhibitions, and past attempts by others suggest these are suitable for projects of this kind. In addition, as described on page 22-23, my personal motivation for exploring an unfamiliar branch of design was also taken into account.

Fiona Raby and Anthony Dunne are seen as pioneers of the critical design movement. For almost two decades, they have explored future sustainable lifestyles by designing speculative scenarios (Vitra Design Museum, n.d.). In connection with their work, they have developed an "a/b manifesto" which aims to describe the way they conduct critical design (b), and comparing it to how most people understand design (a). In order to position this thesis within the speculative landscape, the "a/b manifesto" (figure 5) is used as a starting point.



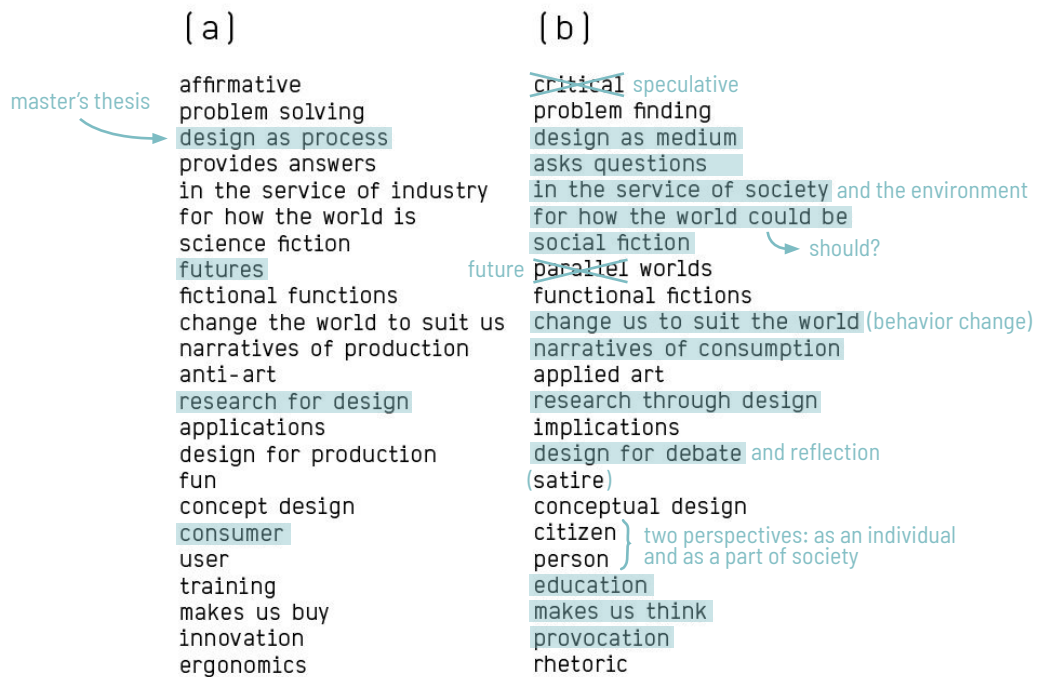


Figure 5: The “a/b manifesto” developed by Dunne and Raby (2009). The added modifications aim to position this thesis within the speculative design landscape.

As shown in the figure above, this thesis contains some deviations from Dunne and Raby’s approach. In addition to detailing a design for an exhibition, this project is also a master’s thesis, which is why some elements of “traditional design” are marked in figure 5. In other words, the project uses design both as a process (i.e. in developing the exhibition) and as a medium (i.e. the exhibition itself). In the figure, the most important elements are highlighted with a blue marker, and small modifications have been added by text.

## Inspiration:

# Interactive exhibitions

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The creators of the Big Challenge's exhibition, NTNU Sustainability and The Science Museum, envision the exhibition as a "futurum"; a combination of "future" and "museum". As opposed to the more traditional "museum", where emphasis is placed on things and events from the past, and where both the exhibits and the visitors often play passive roles, a futurum is a place for focusing on the future, hypothesizing and active participation (figure 6).

Aside from the futuristic focus, the participatory and interactive element is key in solidifying the futurum we want to create. Inspiration from two exhibitions that involved their audiences in order to engage, create content and challenge the idea of traditional museums have been obtained to explore possibilities. These are presented on the following four pages. The chosen projects merely serve as a foundation for inspiration, or a sort of moodboard, to kickstart the ideation process and see what has already been done.

<b>MUSEUM</b>	<b>FUTURUM</b>
Conserves the past	Creates futures
Objects in focus	Process in focus
Invites observation	Invites participation
Descriptive orientation	Normative orientation
Expert authority	Polyphonous and inclusive
Generic audience	Community-based

*Figure 6 (Chamberlin, 2019):  
Interpretation of the difference between a museum and a futurum.*

**1** **"The happy show" by Stefan Sagmeister**  
This playful exhibition takes its visitors on a journey through Stefan Sagmeister's experience of attempting to increase his own personal happiness. Through the use of interactive stations, film, infographics and physical objects, the audience is invited into Sagmeister's mind, but also encouraged to reflect on their own (MOCA, 2013). The colorful and creative points of interaction are easy to understand and access, which makes them both eye-catching and tempting to approach.

Figure 7 (Kim, 2013): Interactive stations from *The Happy Show*.

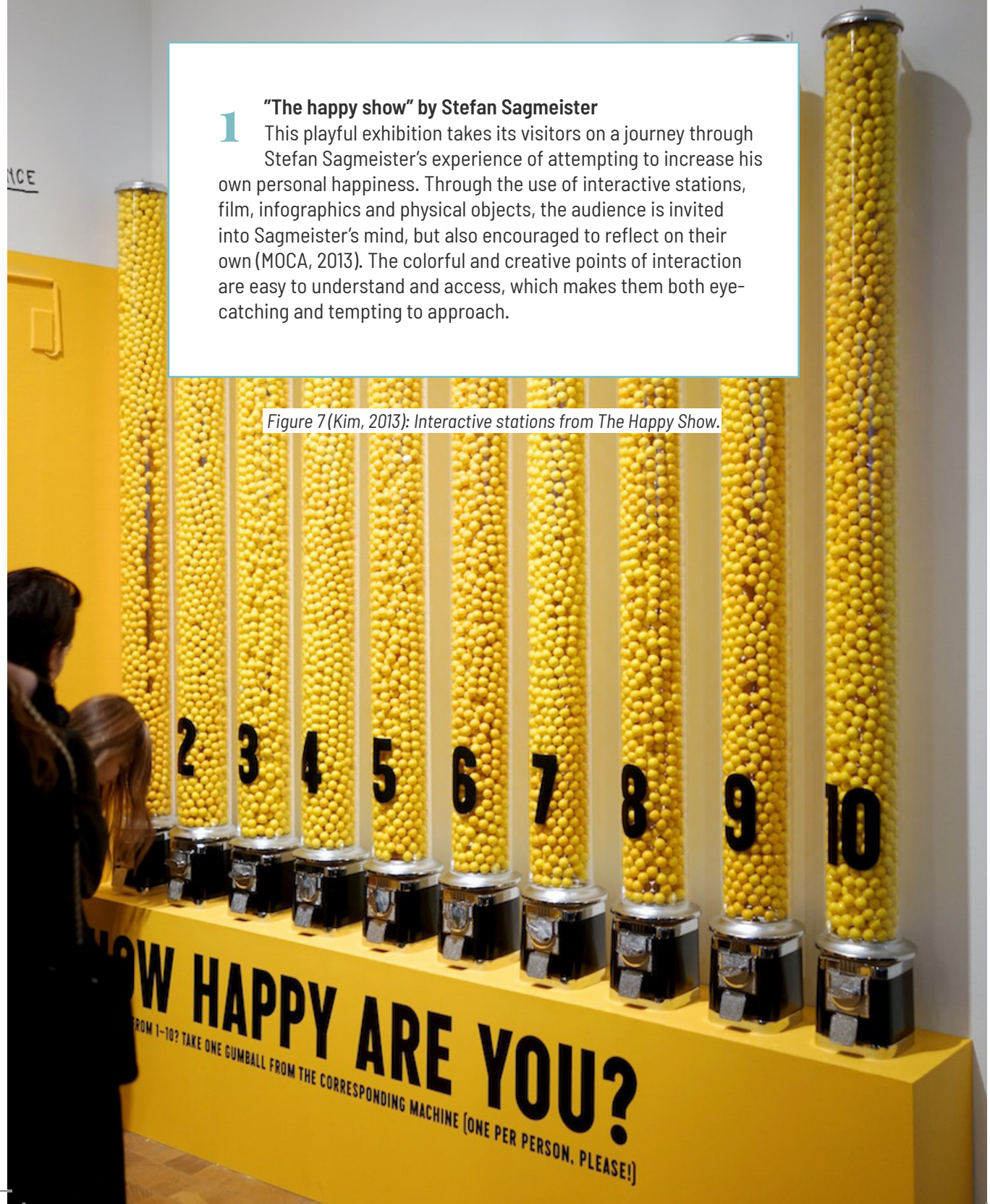




Figure 8-10 (Kim, 2013): Installations from *The Happy Show*.

**2** **“Process Lab: Citizen design”**  
This interactive exhibition was developed as a workshop environment, in which visitors are encouraged to reflect on and contribute to their community. With the help of design methodology, visitors are asked to explore their feelings and thoughts, record what matters to them, and finally propose solutions. Furthermore, the exhibition aims to highlight the power of collaboration between the community’s stakeholders and its citizens (ISA, 2016).



**PROCESS  
LAB:  
CITIZEN  
DESIGN**

*Figure 11 (Pollastri, 2017): Images from the Process lab.*

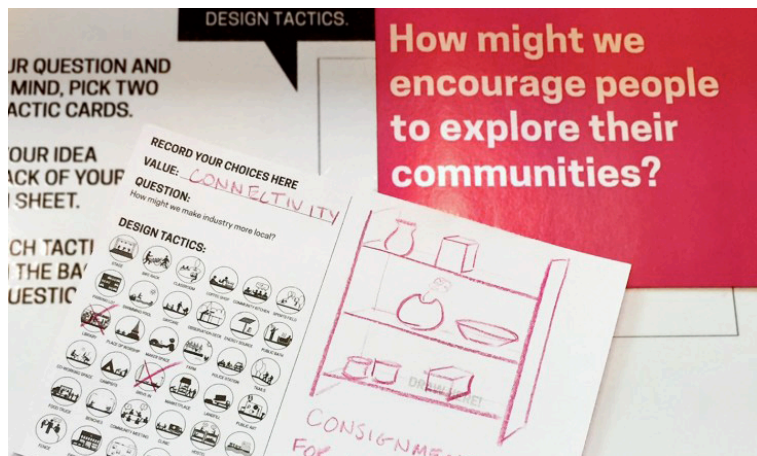


Figure 12 (Pollastri, 2017): Images from the Process lab.



Figure 13 (Cooper Hewitt, 2016): Interactive station at the Process lab.



Figure 14 (Norris, 2017): Interactive station at the Process lab.

## Insight from literature: Interactive exhibitions

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In the last few decades, there has been a shift from thinking about museum visitors as a homogenous and inactive mass public towards accepting visitors as active participants and interpreters (Hooper-Greenhill, 2006, as cited in Macdonald, 2007). In this new paradigm, design is recognized as a central part of the audience's experience, changing the very nature of knowledge-sharing rather than solely focusing on how to get messages across (Macdonald, 2007). In order to understand how to facilitate this "new" type of museum, Macdonald (2007) and Hornecker and Stifter (2006) have analyzed the behavior of people visiting interactive exhibits, and attempted to outline some general patterns. The key takeaways from their literary findings are listed to the right.





### **Key takeaways 3**

Macdonald (2007) found that:

- When visiting an exhibition, people expect, at least some degree, that they will be sharing this experience with others.
- Visitors will pay more attention to objects than text.
- Visitors will spend more time with hands-on displays. However, traditional static exhibits cause more discussion by acting as prompts for narratives.



### **Key takeaways 4**

Hornecker and Stifter (2006) found that:

- Hands-on displays that allow for bodily interaction, are particularly effective in attracting children.
- Exhibits that enable creativity, productivity and/or communication are the most engaging, as they facilitate open-ended activity on the visitors' behalf.
- Group engagement is key to create a good visitor experience. People often come in groups to have fun and socialize. Hence, facilitating group interaction is a central consideration.
- Hands-on displays are the only exhibits that succeed to engage all kinds of visitors, regardless of age and fields of interest.

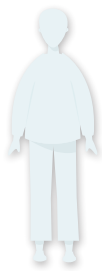
## Online survey: Consumption and the future

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*To gain an early understanding of Trondheim citizens' consumer habits and thoughts about the future, an online survey was published to obtain quantitative material. The survey was divided in two, with the first part focusing on their contemporary habits and attitudes, and the second focusing on the future. The goal of conducting this research was to see if there existed any trends or patterns that could serve as a starting point for ideation on exhibition themes. The following pages present some of the results of the survey, and are followed by the key takeaways.*

### ABOUT THE RESPONDENTS:

73 Trondheim locals answered the survey



**72,6 %**

are females



**53,4 %**

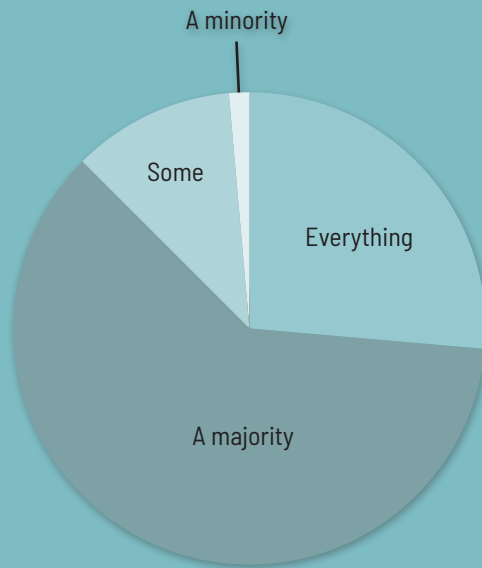
have lived in Trondheim  
for more than 5 years



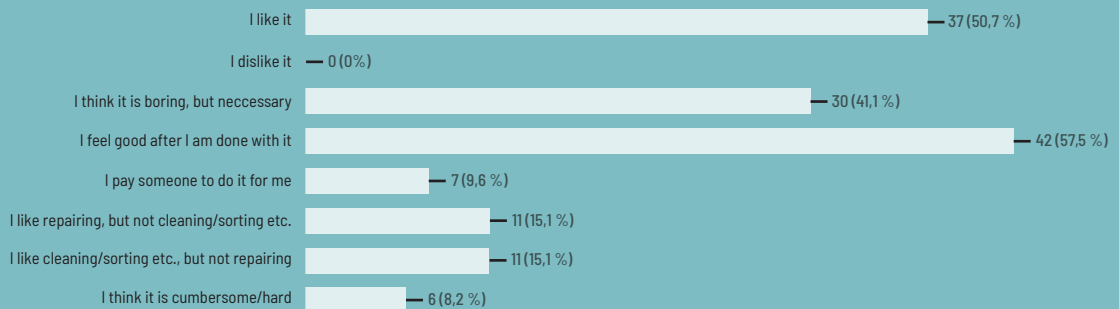
**65,7 %**

are below 30 years of age

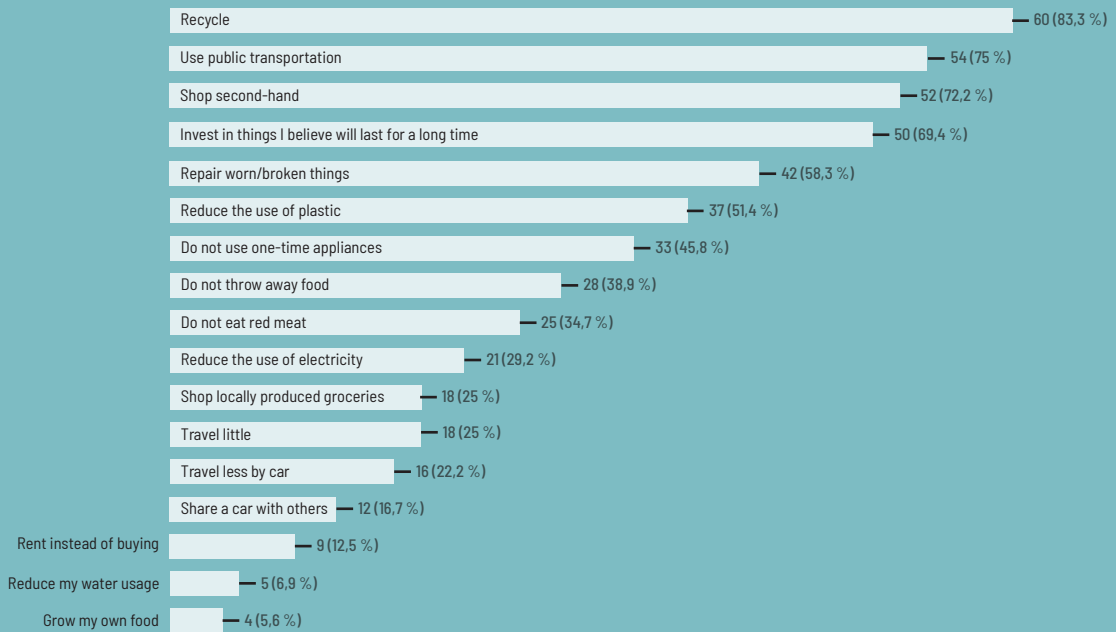
## 1. How many of the things you own do you feel in control over?



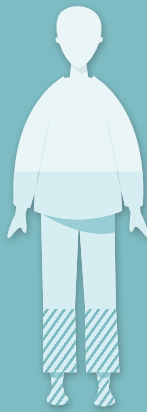
## 2. How do you feel about taking care of and maintaining the things you own?



### 3. In my daily life I...



### 4. Shopping habits:



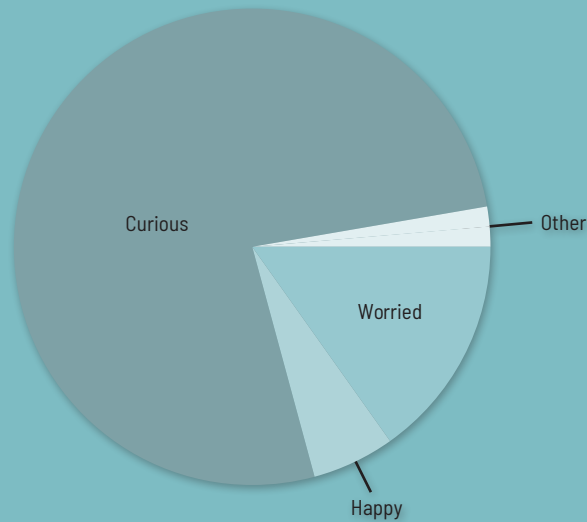
**60,3 %** say they put much consideration into a new purchase, whilst **24,7 %** say they are impulsive shoppers.



**47,9 %** say they try to be a sustainable consumer.

## THOUGHTS ABOUT THE FUTURE:

### 5. When I think about my future in 2050, I feel...



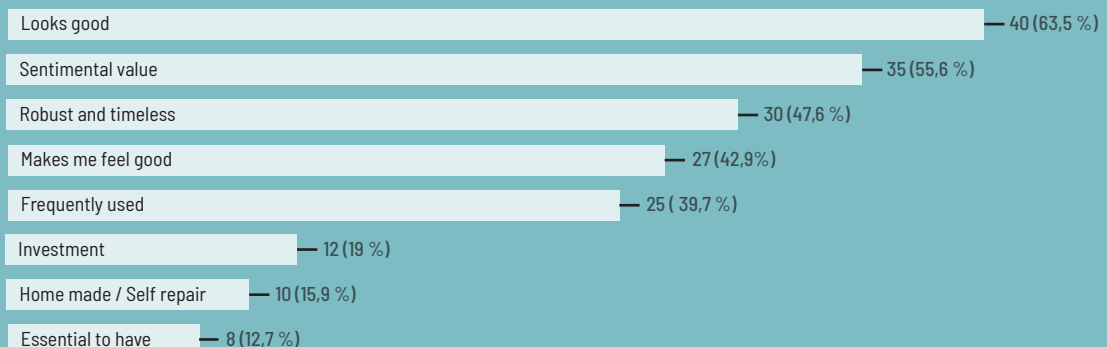
### 6. Related to your shopping habits in 2050: I think I will...



## 7. Name one thing you own today that you believe you would keep for 30 more years:



## 8. Why do you want to keep this object for so long?



## Reflection

The answers related to consumers' habits today (question number 3) suggest that a large share of the participants practise sustainable habits such as recycling (83,3%) and the use of public transportation (75%). This is a positive finding. However, a few other findings are just as noteworthy. First of all, it is difficult to say how consistently these habits are practised in everyday life. For example, the survey does not take into account how often a respondent takes the bus rather than drives their car. We know that 75% of the respondents use public transportation, but cannot draw conclusions as to whether this is a daily practice, neither can we ascertain that it has replaced another, less sustainable habit. However, it is positive to observe that a large share of the respondents practice such habits to some extent.

Another noteworthy, though less surprising, finding is that the sustainable habits most respondents practice are the ones the municipality has most successfully facilitated. Recycling and public transportation are both initiatives that have become a natural part of living in Trondheim. However, habits such as car-sharing (16,7%) and reducing individual water consumption (6,9%) are not practised by many and have been the focus of fewer initiatives by local and national government.

Looking at the findings in regards to future consumption, many respondents believe their shopping habits will change (question 6). 72,6% believe they will invest more in quality products, and just short of half of all respondents believe they will shop less. This does not state or predict how the respondents will actually change their shopping habits in the future, but it does suggest that a significant share have an underlying motivation, or at least expectation, that their habits will change.

The final part of the survey, which focuses on belongings that people intend to keep for a long time, shows that items such as clothes and accessories, and storage furniture (i.e. drawers and cabinets) are amongst those people believe will stay with them for 30 more years. Most mentioned in the clothing category were purses, expensive coats and shoes, home-made garments, and bunads. Namely, items of either high economic value and/or sentimental value, appear to stay with consumers for the longest periods of time. This is, not surprisingly, an obvious trend amongst the answers provided in all categories of this section. In addition, high quality and robustness seem important. This is further confirmed by the answers provided to why respondents wish to keep these items for an extended period of time. Finally, the appearances of each object is emphasized as an important factor by the majority of respondents, suggesting that timeless styles and good aesthetical qualities are both important.

## Mini-interviews:

# Items consumers wish to keep for a long time

---

In this era of fast consumption, a majority of the objects we purchase and use only stay in our lives on a temporary basis . Planned obsolescence, low quality materials and passing trends are factors that contribute to overconsumption, pollution and increasingly pressing environmental challenges. Amongst the possible measures to maintain a more sustainable lifestyle is to shift from a use-and-throw mentality to buying items we know will last for a long time. This is a desirable outcome, not only because it reduces our need to buy new things to replace the old, but also to utilize the full potential of the raw materials used in their design. The majority of people already have a few belongings that they have kept for a long time, but also wish to keep for the future. However, what kinds of items do we want to keep for 30 years? And furthermore, which items are realistically feasible to keep and use for such a long time?

To acquire a handful of possible answers to these questions, seven mini-interviews were conducted with randomly selected members of the public. These served as additional findings to support the survey; a way to obtain a slightly more qualitative foundation for question 7 and 8.

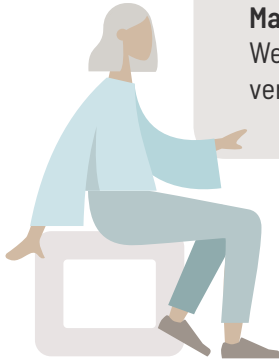
The interviewees were asked what kind of items they own today and use on a regular basis, which they also think they could keep for 30 more years, and subsequently the reasonings behind these claims. In these answers, they were asked to leave out items such as photos, art and jewelry.





**Female (19)**

The only thing I can think of is my teddy bear, which was given to me when I was just a baby. I keep it in my bed every night. The reason why this is the only thing I would have in 30 years, is that I do not own much stuff yet.



**Male and female (about 75)**

We have a couple of old bowls and troughs that are very usable, and we also like how they look.



**Female (49)**

The things I would like to keep for 30 more years have qualities such as affectional value and memories, but they also might represent my own identity. Furthermore, they are good to use. An example of this is my old rocking chair, which is of good quality, and which I have spent money to maintain and restore. I also have an old knitted jacket that my mom gave me years ago. It never gets worn out. It is warm, timeless and I wear it almost every day.

**Male (50)**

I think I would keep my leather belt for 30 more years. It is long-lasting, and honestly it just gets better with age.



**Female (24) and male (20)**

We almost do not own anything yet, so, to be honest, we can't think of anything we own today that we most likely would keep until 2050...



**Female (80)**

I have an old iron frying pan and an iron pot that I have had for years already. They have everlasting quality and get better when you have used them for a while. Furthermore, my grandchild built the lamps that hang above my living room table. These are also items I would keep for 30 more years. The lamps are long-lasting and have emotional value to me.



## Reflection

Among this small sample group of consumers, it was evident that young adults and teenagers in their 20's struggled to think of items they would keep for a long time. This is most likely related to the fact they either live at home or have moved out of their homes fairly recently, and live in small, shared apartments. These kinds of living situations are often characterized by a tight economy and involve few personal items, which has in turn been reflected in the survey's findings.

Among the adults and elderly aged between 50-80, the majority of items mentioned were objects that had already been kept for a long time. The respondents chose to look back at their lives, and offered examples of items they had already kept for 20-30 years. They characterized these items as "long-lasting" and said they got "better with age". This was typically said about materials such as iron and leather, with the former being primed with oil when used for cooking, and the latter developing a nice patina over time, as well as and being shaped by use.

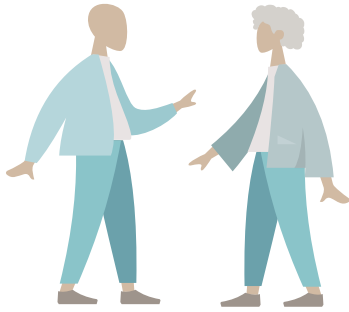
Finally, the emotional value of the items was mentioned as an important factor. The three interviewees who brought this up, all had different reasons for their attachment to each object. Amongst these were memories, time spent maintaining the item, and a familial relationship with the person who gave it to them.

All in all, these interviews provided similar information to that obtained from question 7 and 8 in the online survey. However, they highlighted the underlying qualities of characteristics such as "sentimental value" and "quality", and contributed a further understanding of the importance of these characteristics.

## Audience

---

*The visitors of this exhibition will most likely be a diverse group of people. Some people will visit in passing, some might have planned their visit from the outset, some might come in groups, either for social purposes or because they are a part of the festival, and some might come alone. Furthermore, the visitors will have different degrees of knowledge of the theme beforehand, vary in age, and have different levels of interest in the topic. In order to pinpoint a more specific audience, hypotheses for six categories of visitors to the exhibition is created.*



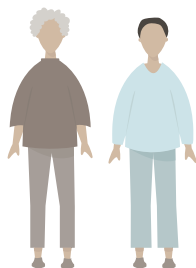
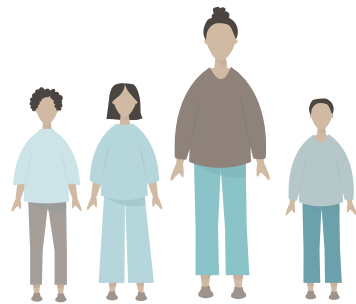
### **Festival participant**

This individual has paid to take part in the festival and is likely to have an above average level of interest in the challenges of the future. He or she will drop by the containers to get inspired, take a break from the indoor festival program and discuss the exhibitions with fellow participants.

### **Groups of schoolchildren**

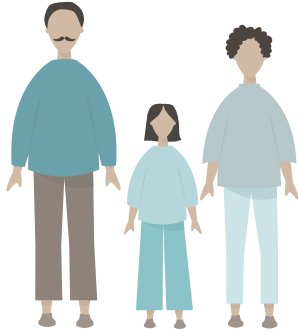
As a part of their educational program, some groups of schoolchildren will come visit the exhibition\*. The age of these schoolchildren has not yet been provided to us, but they are likely to come from local lower secondary schools (ungdomsskole) and upper secondary schools (videregående). The children and teachers are likely to be interested in educational content and playful displays.

\*The information about this was not provided to the writer of this thesis by four weeks prior to the master programme's delivery date. Thus, there has been little emphasis on customization to optimize the experiences of participating schoolchildren.



### **Environmentalist**

This individual is engaged in issues surrounding consumption and climate change. They attend the exhibition to satisfy their own curiosity, get inspired, and be exposed to new thoughts and ideas on the subjects. They will already be familiar with many of the themes discussed, but still seek to find out how the Big Challenge has chosen to address them.



### **Families**

A pair of adults and their children attend the exhibition together as a social activity, and perhaps to also learn something new. The parents may already have an interest in the theme, and want to see what it's all about. The children are likely to be looking for playful and hands-on displays to interact with.

### **Social groups**

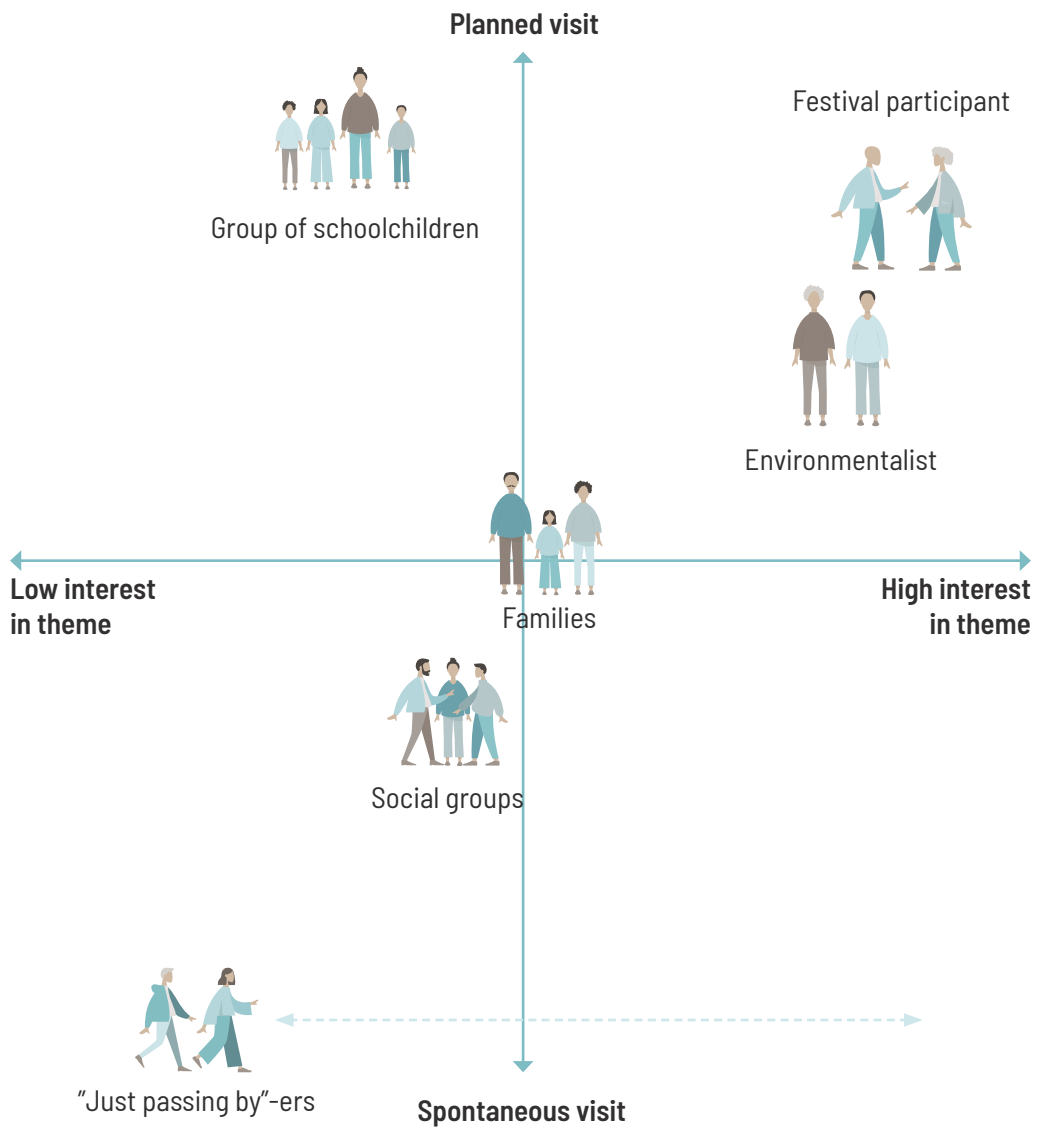
A group of friends drop by the exhibition for many of the same reasons as "the family": mostly to socialize, but perhaps also to learn or get inspiration, depending of their interest in environmental sustainability. They have seen some posters put up in the city centre, and decide it will be a nice day out.



### **"Just passing by"-ers**

This can either be an individual who has chosen to drop by on their way to the shops, or a group of individuals who have come across the festival grounds by coincidence. Both decide to enter to satisfy their curiosity. Some might have heard of the festival already, but many have not, hence their level of interest in the festival's theme is likely to vary immensely. As a result, something will need to grab their attention in order to get them to enter the containers. If the display is easy to interact with and sparks some curiosity, they might choose to stay and continue exploring the exhibition.





## Chapter conclusion:

# Design brief and vision

*A prioritization of requirements for the exhibition based on findings from research, the event host's desires, and the team's ambitions.*

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Before entering an early ideation phase, we needed to find a common ground and mutual understanding of what we wanted the exhibition to be. Based on the key takeaways from the preliminary research and the event host's desires, we created a list of requirements. Each of these requirements were categorized in a "Must - Should - Could - Won't" diagram in order to prioritize each requirement.

**Must:** In accordance with the vision, these are the minimum requirements for the display to be successful.

**Should:** These are important requirements that should be fulfilled because they add value to the display and the audience's experience, but they are not critical to achieve.

**Could:** These are desirable requirements, but they will not be prioritized if the teams face time constraints.

**Won't:** Factors that could have been a part of the approach, which we chose to leave out.

Even though the resulting requirements were ranked from high to low priority, they would all need to be taken into account, especially those in the "must" and "should" categories. This categorization was a helpful tool to systemize and prioritize focus points throughout the process, and contributed significantly to the project as a whole.



## The exhibition ...

### **MUST**

- Focus on the future
- Have a consumer perspective
- Invite participation
- Be culturally relevant
- Have hands-on elements
- Spark reflection and curiosity
- Be everyday and relatable
- Serve as a potential source for inspiration
- Contain provocative elements

### **SHOULD**

- Not be dystopian
- Bridge the future and the present
- Encourage a behavioral change
- Be social
- Be aesthetically pleasing
- Inform
- Grab attention

### **COULD**

- Be #instagramable
- Challenge
- Be fun

### **WON'T**

- Be technology-driven
- Be far-fetched or alienating

**PART 4**

# **Exploration**

*This chapter includes material, thoughts and ideas from the ideation phase. Its aim is to explore the concept of Trondheim in 2050, and subsequently pinpoint an overarching theme for the exhibition.*

Page 72 - Giving context to the project: Trondheim in 2050

Page 78 - Ideation: Possible themes

Page 84 - Crazy 8: How might we...?

Page 87 - Prototyping 1.0: 1/12 scale model

## Giving context to the project

# Trondheim in 2050

---

The Slater-Owen Design Futures Technique (Owen & Slater, 2016) is a technique which was originally developed for designers or businesses to imagine a future iteration of their product. The aim of this activity is to gain actionable insights and create an ability to materialize possible futures through conceptualizing. Although this thesis is not aimed at designing a future iteration of a product, the methodology of the Slater-Owen Design Futures Technique can be translated and adjusted to create a framework for the future of Trondheim. By setting some constant factors for society 30 years from now, we can further hypothesize which kind of ripple effects the world “we have built” will have for everyday life. Furthermore, through backcasting from the future towards the present, we can say something about what will need to happen in order for our fictive future world to come true.

The following two pages represents the outcome of a session where the aim was to create a framework or scenario for what Trondheim could be like 30 years from now. In other words, to create a setting in which the speculative exhibition content will exist. The framework is created in collaboration with Lucy and is first and foremost based on our shared visions and speculations about a future we believe is plausible, and moreover, desirable.

## STEP 1

# BUILD A POSSIBLE WORLD

### **Economic system**

We are adhering to a late capitalist system, which emphasizes circular initiatives in businesses, with evident financial initiatives and support for sustainable consumption and habits. National and local government have established economic consequences for wasteful behaviour.

### **Government**

We are still living in a democratic state, but government policy is more regulative than ever before. As a result, we face stricter rules and laws regulating how production and consumption are conducted, but on the positive side, the government has enforced many initiatives to make sustainable living more convenient.

### **Society**

We are living in super-urban societies. The environments that surround our individual homes have become central parts of society. As the city has grown bigger, improvements have been focused on creating many small city centers within the larger city. This reduces the need for frequent personal transportation in daily life.

## STEP 2

# RIPPLE EFFECTS CAUSED BY STEP 1

### **Society**

Sustainable living is the norm and wastefulness and pollution are regarded as shameful. A shared economy and circular economic initiatives are accepted by the vast majority of people, but there are still groups within our society that reject this change. Even so, most people aim to reduce their ecological footprint and spend more time taking care of the things they own in order to reduce their consumption. This has in turn created a diversity of local hubs in the "smaller cities within the city" where people meet to repair and restore their belongings.

### **Business**

Businesses have adopted a more holistic system for resources, production, sales and aftercare. Due to new governmental restrictions, they have been forced to make this change. Most businesses will take more responsibility for the products they create beyond the point when their user will not or cannot use them anymore. This has created a number of new professions within afterlife care of services and products.

### **Resources**

New regulations ensure sustainable use of resources on an everyday basis. Plastic is a rare commodity, but remains common in areas where it has more environmental benefits than natural materials. In general, society recycles an extensive variety of materials from a time they know as the "wasteful 10s and 20s" (i.e. 2010-2020), and even before. This has in turn supported the process of cleaning our oceans and nature areas, which is still under way.



The results presented on the previous two pages have established the bigger context on which the project is based. Further ideation, and in turn the final results, will be based on the idea of this future world.

## Ideation

# Possible themes

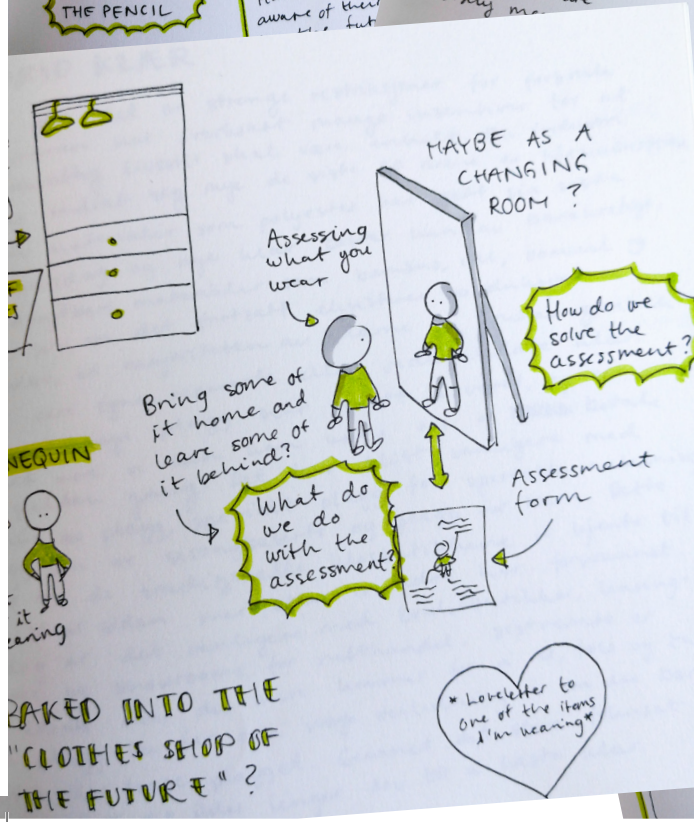
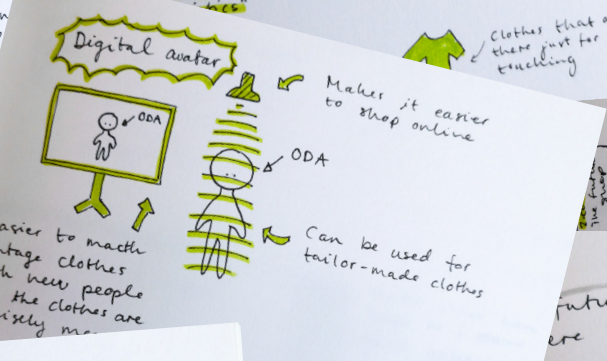
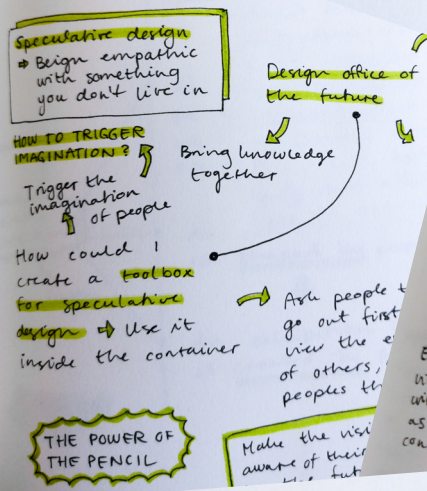
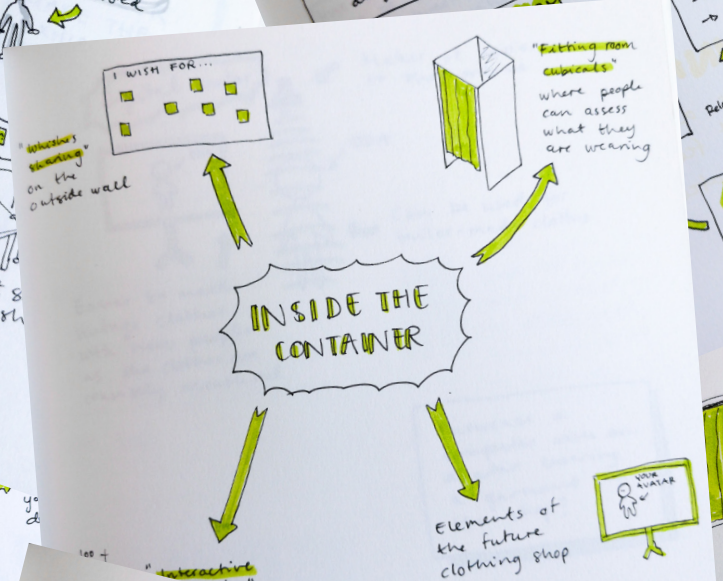
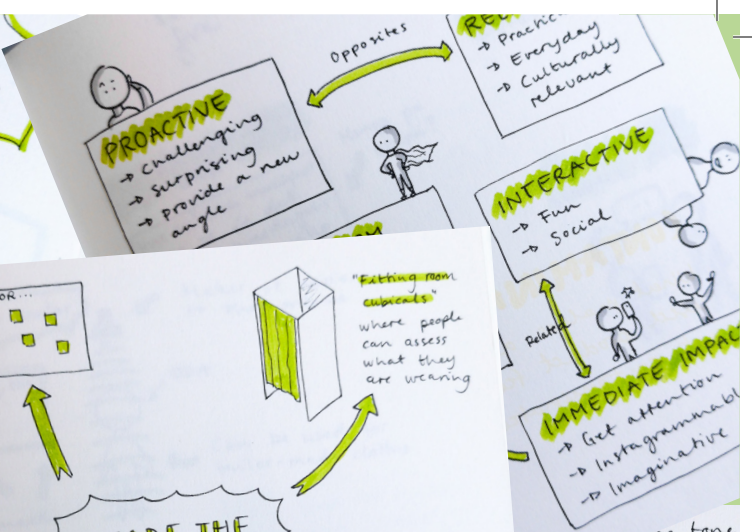
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*This section aims to take the reader through a chain of ideas, which were developed throughout the early ideation phase. The goal of this phase was to explore possible themes and overarching concepts for the containers. At the end of this phase, we concluded it was desirable to be left with a single concept, which could serve as a starting point for further ideation and development of the displays, as well as an overarching theme for the exhibition as a whole. Hence, this ideation can be seen as a method to converge all themes specified in the ideation process to one tangible theme. During this process, five main ideas were developed. Each of these are briefly illustrated and presented in chronological order in the following pages.*

*To highlight the process and criteria for the selection of a final idea, some points from the design brief have been included in this section. These are also present to emphasize some of the pros and cons surrounding each idea.*




# WAYS FOR INTERACTIVITY




# 1 RE-KEA

A meeting place where you drink coffee and discuss, watch, touch and feel small initiatives promoting circular economic living in the future. The module will be split into five sections: remember, rent, rethink, redesign and repair. How can the future become as user-friendly as IKEA, as convenient as Amazon and as aesthetically pleasing as Apple?

 *Social*

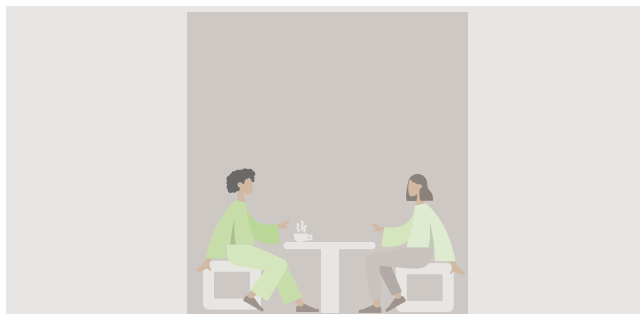
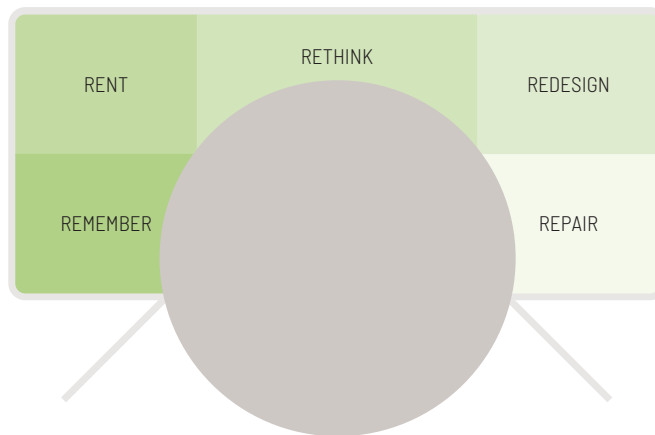
 *Not enough provocation (?)*

 *Future focus*

 *Lack of reflection-triggering activities*

 *Provides inspiration*

 *Lack of participative elements*





## 2 The tiny home of the future

A container split into two parts. One of these is a future kitchen which emphasizes functional sustainability through gadgets, furniture and tools that make our habits less wasteful. The other part could be a future bedroom that emphasizes sustainability through emotional bonding with what we own. Every object on display should tell its own story. How can good functionality and emotional attachment to the things we own make our daily lives more sustainable?

👍 *Everyday*

👎 *Lack of consumption focus*

👍 *Future focus*

👎 *Lack of reflection-triggering activities*


👍 *Provides inspiration*

👎 *Lack of participative elements*



**3 A workshop and meeting place**  
A workshop space where visitors can explore and create ideas about the future together. A place of reflection where you are encouraged to contribute with your thoughts and thus be a part of shaping the exhibition. Grab a cup of coffee, have a chat and leave your mark.

 *Social*

 *Lack of provocative elements*

 *Invites participation*

 *Lack of informative elements*

 *Sparks reflection*

**4 The future furniture store**  
A furniture store where you do not buy anything – it is there to be watched, felt and assessed. Trained employees can advise on the testing and feeling processes, but also on whether you should rent or buy an item. The concept store highlights and exaggerates the need for conscious consumerism, and forces people to think twice about purchasing a new item.

👍 *Provocative*

👎 *More focus on the store than the consumer*

👍 *Consumer perspective*


👎 *Lack of reflection activities*

👍 *Sparks reflection*










**5 The future of the fashion industry**  
A take on how we might do shopping of clothes differently 30 years from now. One or several concept stores that showcase circular ways of shopping clothes, containing elements from a bigger store concept. Feel materials, explore new cuts and styles and customize your own look. There will also be several small interaction points where the audience is asked to reflect on their habits and feelings towards clothes and the fashion industry.

 *Reflection activities can get a bigger emphasis to ensure deeper reflection that could result in a more long-term impact.*

## Final standing idea

At the end of this ideation phase, the fashion industry was chosen as a starting point for the consumption perspective. Furthermore, it was desirable to include a platform for discussion and reflection. Thus, we ended up with a combination of idea number 3 and 5: an exhibition that hypothesizes what future clothing stores could be like, which in addition provides elements of reflection/discussion triggering interaction points or activities.

-  *Provocative*
-  *Encourages changed behavior*
-  *Consumer perspective*
-  *Potential for socializing*
-  *Culturally relevant*
-  *Sparks and facilitates reflection*
-  *Provides inspiration*
-  *Bridges the future and the present*

## Why choose the fashion industry as a starting point?

The choice to go with clothes instead of furniture or the interior of a home was an intuitive one, based on the design brief criteria, and made because we wanted to illustrate the challenges that exists within this industry. The fashion industry constitutes a large proportion of the world's CO<sub>2</sub> emissions, water usage and water pollution. Furthermore, items of clothing are very personal to their owners, and this makes a good starting point for individual reflection. Moreover, consumer's emotional attachment to the things they own was discussed as a central topic during the project's ideation phase, and seen by us as a possible incentive to encourage more sustainable behavior. Hence, this choice of direction for the project came with a large number of positive opportunities.

## Crazy 8

# How might we...?

---

According to literary resources on the design of interactive exhibitions (page 53), three factors stood out as important for the success of interactive displays: facilitating the creation of personal content, supporting group interaction, and providing visitors with hands-on experiences. In combination with the initial vision formulated at the beginning of the project (page 69), this serves as a foundation of desirable characteristics for the exhibition. In order to explore the possible options to meet these criteria, a “Crazy 8” ideation session was conducted. The session was divided into three parts, which focused on the following questions:

### **How might we...**

1. Facilitate the creation of personal content?
2. Support group interaction?
3. Spark reflection and/or debate?

Some of the interesting outcomes from this session are presented on the following pages.



1 Wall of Stories  
(wear your heart on your sleeve)

Wall of Shame / Confessions

2 Personalised Voting Wall

Michelle Alan  
Anna

3 Leave yourself behind ...

Have one possession on our display & collect @ end of day.

Label it.  
Pablo Piche

4 Sort the LANDFILL your stuff!

pile of stuff

Low-key way of sharing thoughts without being constrained.

5 PARTY GAMES!

Cry  
Sing  
Story  
Shout

Alternatives

What would you do if there was a Target / Skills Group Discussion

Hobbies + Skills

Write your pledge

... instead of shopping?

6 Make Your Own ...

- People get to make / repair a small item & take away w/ them.

An opportunity for participants to shape the exhibition by sharing. This makes the exhibition fluid, and to some extent open-ended.

1

→ Make this into a product that is not contaminated

Display peoples items

2 Outside wall

I WISH THAT TREND IN 2050 WILL BE...

Wall for sharing wishes

3 Pick one item you have on you and leave it behind

An opportunity to sit down and consider the subject matter, which might encourage and facilitate deeper reflections.

4 Draw your favourite item

Letter to future me ...

5 CREATE NEWS HEADLINES THAT YOU HOPE TO SEE ON THE NEWS IN 2050

Glue Pens

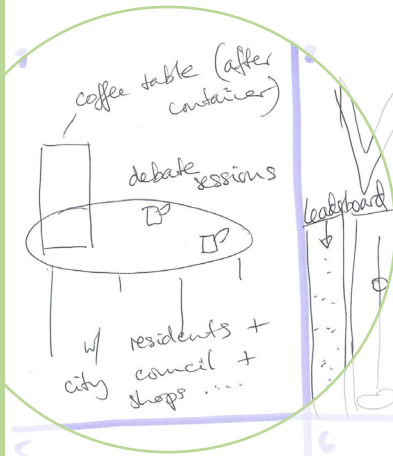
6 CREATE A PROTOTYPE OF ...

7

Bring it home and do not open in 5 years

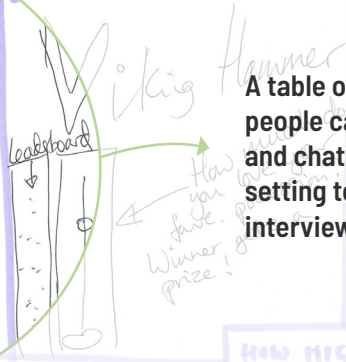
8

Bring it home and do not open in 5 years



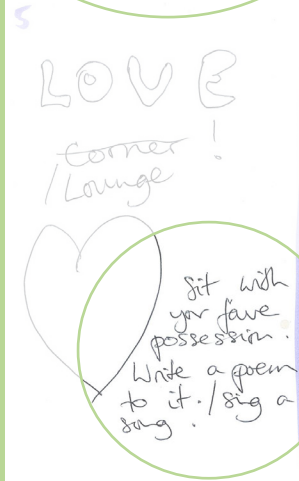
A table outside where people can grab a coffee and chat. This is also a good setting to conduct individual interviews.

How much does it COST?  
Game to guess the REAL COST of ordinary items (coffee machine, jeans, chair, TV)

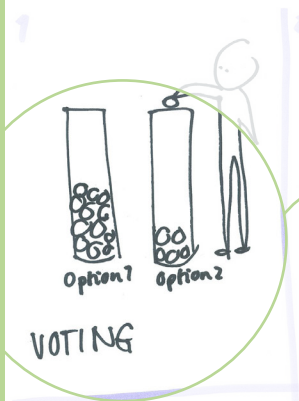
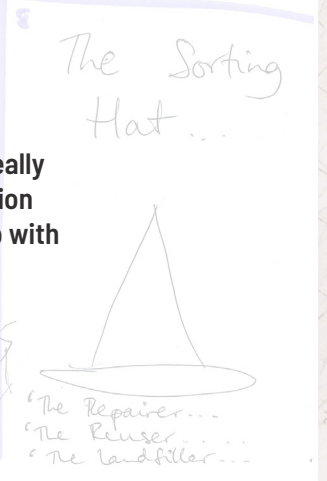


How MIGHT WE sports, reflection/debate? fun + enjoyment.

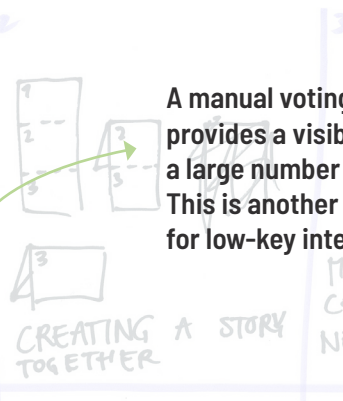
guess which product on the shelves is new/old. What does 'new' mean?



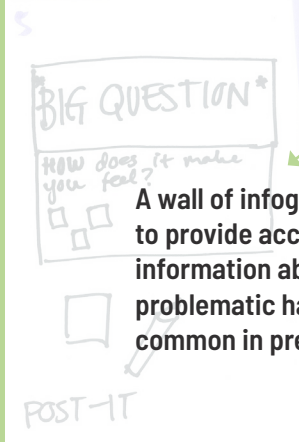
The YUCK  
How does your items really make you feel? Reflection about your relationship with the things you own.



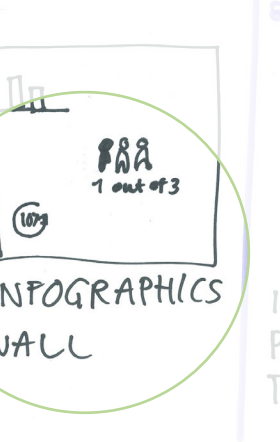
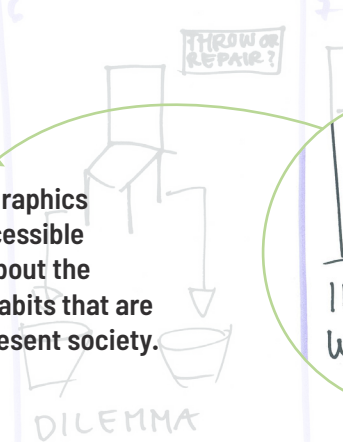
A manual voting station that provides a visible result after a large number of visitations. This is another opportunity for low-key interaction.



MAKE VISITORS CREATE A TV-NEWS



A wall of infographics to provide accessible information about the problematic habits that are common in present society.





## Prototyping 1.0

# 1/12 scale model

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This model was built during the early stages of the project to understand the dimensions of the two containers, where the exhibition will take place. It was not a sophisticated build, but with the inclusion of small cardboard humans, it became clear that our available exhibition space had significant limits. This realization made it easier to “kill darlings” and focus on a short, clear and easily understandable method for communicating the content.

**PART 5**

# **Understanding**

*This chapter includes information related to the fashion industry. After converging to one theme - the fashion industry - in the previous part, the aim of this new phase was to diverge on the theme of fashion to gain a better understanding of the chosen exhibition theme and furthermore to get inspiration for ideation and development of the final display.*

Page 90 - Contemporary relevance: The impacts of fashion

Page 94 - Our relationship with clothes

Page 100 - Interview with fashion gründer Sarah Elise Gjemdal

Page 104 - Behavior change: The KonMari method

Page 110 - Chapter conclusion: Foundation for final design



## Contemporary relevance: The impacts of fashion

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*This section aims to highlight the contemporary relevance of introducing green initiatives within the fashion industry. On the following pages are a few hand-picked and short, but eye-opening, facts related to the negative effects of our clothing habits in the western world.*



**VISCOSE T-SHIRT**  
1-6 weeks



**COTTON SOCKS**  
1 week-6 months



**MERINO SWEATER**  
9 months

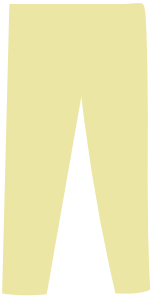


**LYCRA SPORTS WEAR**  
20-200 years

**How long does it take  
to decompose clothes  
in landfill?**



**DENIM JACKET**  
10-12 months



**POLYESTER DRESS**  
200+ years



**LEATHER BAG**  
50 years



**SILK TOP**  
1-3 years



**LINEN TOP**  
2 weeks



**WOOL JUMPER**  
1-5 years



**NYLON TIGHTS**  
30-40 years

Figure 15: Decomposing time for typical garments (Fashion Revolution, n.d.).



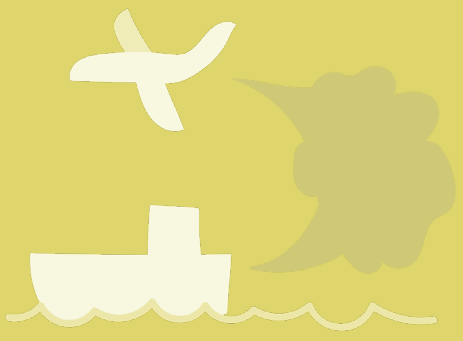
Between 1995 and 2010 the amount of textile waste from private households in Norway increased by 23 000 tons, which is an increase of 80%

(Klepp & Laitala, 2016)



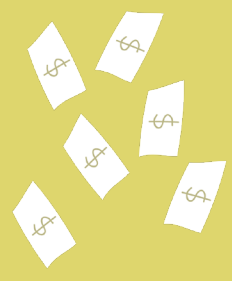
Clothing consumption is set to rise 63% by 2030, – equivalent to more than 500 billion additional T-shirts.

(Global Fashion Agenda, 2017)



Textiles production releases more than 1.2 billion tonnes of greenhouse gases every year; more than those of all international flights and maritime shipping combined.

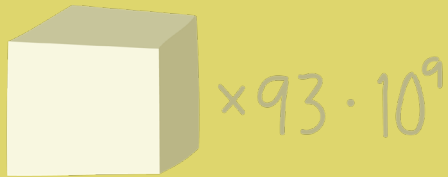
(Ellen McArthur Foundation, 2017)



The average person buys 60% more clothing and keeps it for half as long as 15 years ago!

#fashionrevolution





The fashion and textile industry spends  
**93 billion cubic meters**  
of water each year.  
That is the same amount of water  
needed to satisfy five million people.

(Kamal, 2019)



**20%** of global industrial water  
pollution comes from the  
treatment and dyeing of textiles

#fashionrevolution



The number of plastic microfibrils from  
textiles entering the ocean between 2015  
and 2050 could accumulate to an excess  
**of 22 million tonnes**

(Ellen McArthur Foundation, 2017)



It takes **2720 litres** of  
water to make one t-shirt.  
That's how much we drink in 3 years!

#fashionrevolution

## Insight from literature: Our relationship with clothes

*Clothes are some of our most personal and intimate belongings. We wear them close to our body, they are a way of expressing identity and they can impact how we feel about ourselves. The relationship between people and their clothes has been a big topic of interest within fashion research. Amongst this research is a major, Norwegian study conducted by Klepp and Laitala (2016) aiming to investigate central themes within fashion and clothing in Norway, and furthermore making knowledge about fashion consumption more available to the public. With this study (Klepp & Laitala, 2016) as a base, the aim of this section is to paint a picture of our relationship with clothes - now and throughout history-, understand the need for new systems and thoughts within fashion, and get inspiration for how we can be more sustainable users of fashion.*

---

### **Different ownership systems**

The intimate relationship we have with our clothes is perhaps the reason why we view clothing as personal property. This attitude is often taken for granted and has ripple effects in our attitudes to other types of ownership. As stated by Stranbakken and Heidenstrøm (2013), some people view reuse of clothes from a late, close and dear relatives as nice, whereas others feel disgusted by it. Sharing can be viewed as a form of dematerialization (Klepp & Laitala, 2016). Even though private ownership remains the most common form today, ownership forms where several people use the same garment do exist, especially between family members and acquaintances. Examples of shared ownership forms are sharing, renting, loaning and “stealing”.

**Sharing:** One or several owners use the same garment. E.g. a mother and daughter invest in a winter coat they both can wear.

**Renting:** The user is (usually) not the owner of the item. The item is rented out for a period of time against money or other forms of payment. E.g. a bride renting a wedding dress from a wedding store.

**Loaning:** The item is used by its owner and others. The “others” loan the item for a period of time, often for free. E.g. friends loaning garments from each other.

**“Stealing”:** The user is not the owner of the garment. The user loans the item without the owner knowing it but has the intention of giving it back. E.g. a little sister “stealing” her big brother’s hoodie.

### Do you share or loan clothes, shoes or sports gear with any of your family members or acquaintances?

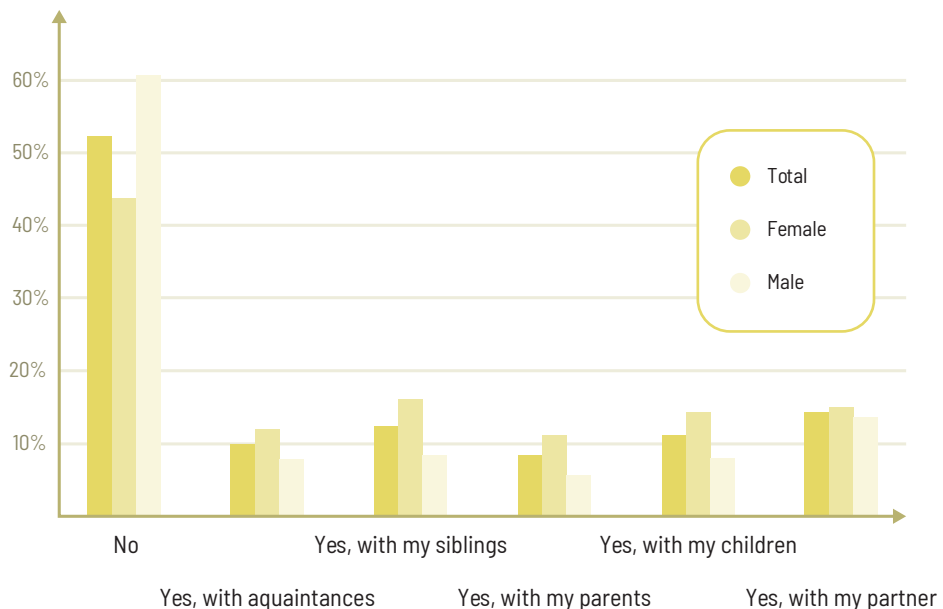


Figure 16: Respondents relationship with sharing or loaning clothing, shoes and sports gear (Klepp & Laitala, 2016).

In a longer time perspective, we have other forms of sharing where the owner is replaced, but the garment remains the same. These forms are more commonly known as inheritance and second-hand. The former is common within families and acquaintances, whereas the latter also has commercial value.

Shared ownership can intensify the use and potentially reduce the number of garments needed per person. In a time where the amount of newly purchased garments pose a real threat to the environment, there is an increasing need to think bigger regarding the sharing economy of clothes. As stated by Klepp and Laitala (2016), the environmental benefits of systems replacing the need to buy new clothes has a huge potential.

### **Amount**

The amount of clothes per person has had a dramatic increase during the last decades. Whilst clothes and textiles used to be an expensive investment made to last for a lifetime, today's consumption is characterized by a "use and throw"-mentality. Fast fashion constitutes enormous negative consequences. Amongst them are water pollution from toxic chemicals, water usage in material production and textile dyeing, CO<sub>2</sub> emissions from production and transportation, and violations of human rights by child labor. Despite this fact, there is too little research conducted on the amount of clothes we consume.

In the 19th century, an average male farmer had about 44 pieces of clothing in his wardrobe. The same number of garments were also seen in female wardrobes. The newest pieces of clothing were worn to church or formal gatherings, whilst the older ones were used at home and during work (Eliert Sundt, 1869, as cited in Klepp & Laitala, 2016). In comparison, today's Norwegians have on average 359 pieces of clothing. This number is based on the fact that we acquire about 67 garments each year (2013) and that an average garment has a lifetime of 5,4 years. Furthermore, the amount of textile waste from private households are increasing at a large pace. Between 1995 and 2010, textile waste increased with nearly 80%.

The dramatic increase of garments in our wardrobes started once imported cotton was introduced to the Scandinavian markets. In modern times, the introduction of new materials such as synthetical fabrics have further contributed to this growth. When cotton made its entrance to the north during the second half of the 1800s, another effect did also emerge: women's wardrobes remained of same economic value, but the number of garments increased. However, men's wardrobes remained the same.

### **The difference between men and women in fashion consumption**

As stated by Klepp and Laitala (2016), the differences between men and women's wardrobes have likely continued up until today. A generalization could be to say that female fashion emphasizes variation and renewal, whilst male fashion is characterized by quality and functionality. Even though quality and longevity are important for both sexes, these characteristics are expressed differently. For women, this is an ideal most commonly expressed in the "large garments" or "main garments" and not in the accessories. E.g. the same dress can be used several times if "you choose a tasteful, timeless model that can change its character by combining it with belts, scarfs or jewelry" (Brøgger, 1960, p.91, as cited in Klepp and Laitala, 2016, p. 16). The cheaper garments are used for variation and is hence a way to satisfy the need for excitement and renewal. This urge to "renew yourself" and follow trends are amongst the factors that contribute to the growth of fast fashion and the increasing harmful impact in which the fashion industry poses on the environment.

### **Sustainable clothing habits**

One of the most popular forms of sustainable shopping today is buying second-hand or vintage; used clothes. Klepp and Laitala (2016) suggests that this could be because this is the form of sustainable clothing that resembles buying new clothes the most. However, they argue, the goal should be to reduce the amount newly purchased garments, even if second-hand shopping is more sustainable. Thus, we should also aim to develop good solutions, services and systems within the sharing economy of clothes, such as sharing, renting and loaning. This calls for more research on the topic of sharing economy, investigating the premises for sharing clothes and the motivations and limitations within such systems.

Another take on sustainable clothing is to reduce the need to buy large quanta of garments in the first place. One of these initiatives are what bloggers and fashion media in the last decade have described as “the capsule wardrobe” (Klepp and Laitala, 2016): A notion that refers to a wardrobe where a small number of clothes can be combined in many different ways and thus give the owner a broad variety of outfits. Essentially the goal is to have a diversity of possible outfits, without owning a large number of garments. In order to achieve a capsule wardrobe, the owner should buy garments with basic and matching colors, classical cuts, timeless style and good quality.

Prolonging the lifetime of our garments could lead to fewer purchases. But in order to make this work, consumers need faith in the brands they in which they buy from. Today, there is usually little correlation between price and quality. A shift towards less, but better clothing, calls for both the willingness of the consumers and a guarantee that what they buy will last for long. Klepp and Laitala (2016) found that 71% of their respondents would like to pay extra for clothes if they were guaranteed that the garments would have a long lifetime. Another study shows that the willingness is there, but some conditions needs to be present for it to be realized:

## Which of the following, if any, would result in you buying clothes which last and look good for longer, even if each item were more expensive?

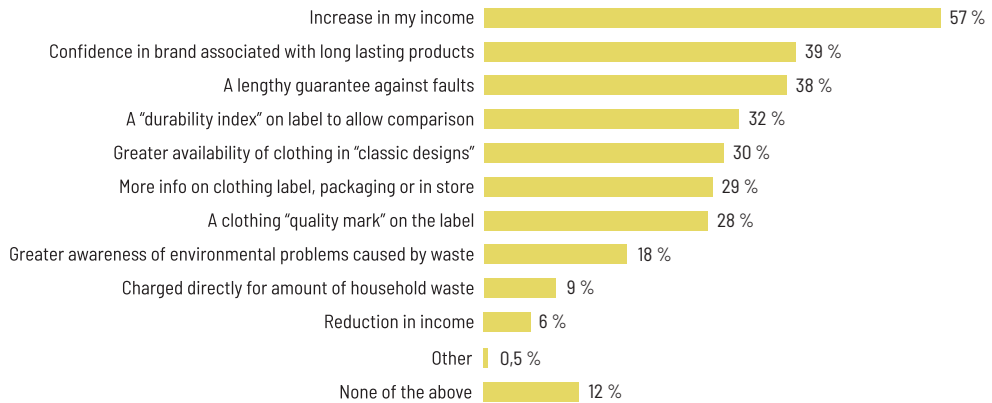


Figure 17: Drivers for buying clothes that last and look good for longer in Great Britain (Gracey and Moon, 2012, as cited in Klepp & Laitala, 2016).



### Key takeaways

There is a need to:

- Reduce the amount of new purchases
- Improve and develop solid solutions for the sharing economy of clothes
- Change attitudes away from fast fashion and towards quality and longevity



## Interview: Fashion gründer Sarah Elise Gjerdal

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*Sarah Elise Gjerdal is a young and engaged individual with a passion for sustainable consumption. In 2016 she founded a second-hand shop named Sarah Panter, which turned out to be the very first store to introduce a pant system for clothes in Norway. Between 2017 and 2018 her store was open at Merkur-senteret in the city center of Trondheim. Due to renovation at Merkur, the store is currently closed for an indefinite period of time.*

*Besides her initiative with the pant shop, Sarah is currently engaged in a co-localization project for sustainable, small businesses in Trondheim. Together with a team, Sarah is working for Trøndelag county administration (Trøndelag fylkeskommune) to assess whether a co-localization initiative will be profitable. If it turns out to be a viable project, it will be put to life after the summer of 2019.*

*Due to her burning engagement, knowledge and experience with sustainable businesses, especially sustainable clothing, it was interesting to have a chat with Sarah to pick her brain about what she believes is the future of fashion. Furthermore, what made Sarah Panter a successful concept and what did she learn from the year running the store?*

*Image taken by Sarah Panter.*



### **Why Sarah Panter was a successful concept**

Sarah Panter ended up being a successful business from an economic perspective. The store did not experience a deficit, however, the founder herself did not take out much salary. When asked about what made Sarah Panter a viable concept, the founder mentions four main factors:

Although a bit surprising, the first success factor was to not showcase the store as a second-hand shop. The desire was for the store to be perceived as a regular clothing store. Sarah explains that this was the aim because she wanted to target a new customer base. "The majority of young people are not very interested in buying used clothes. Hence, I felt a need to create a concept that appealed to those who do not spend much time taking sustainable measures in their consumption".

Secondly, the store kept a strict regimen for which clothes they would take in and not. "If a garment was smelly or strained, we would either not accept it or not pay for it". Hence, they were able to avoid the "classic second-hand store smell" that is usually prominent in such stores. Furthermore, it made the clothes appear fresh and new.

Third on the list of success factors are professional help. To set up the store a professional display designer was hired to set up tables, racks and to create a natural flow through the store. This made the store user friendly with a professional look.

The last, but not least, of the success factors is the pant system itself. Besides being one of its kind in Norway, pant of clothes created a valuable substitute to existing ways of giving old clothes new life. Firstly, the pant system is more profitable than giving clothes away, as customers would get money in return for their used clothes. Secondly, pant is easier than using sales channels like Tise or Finn, as Sarah Panter would take care of the reselling.

## What does Sarah think will be the future of the fashion (Gjemdal, 2019)?

### **Tailoring with the help of digital systems**

"I believe that tailoring will be more common and made more available. Maybe your body is scanned digitally in order to customize clothes. Digital mirrors previewing clothes on your body are already being used, developed and tested today".

### **Second-hand shopping**

"I think the second-hand market will become bigger and more available. More people will buy used clothes instead of new".

### **Rental of special items**

"In general, I do not believe that rental of clothes will become a big thing, as clothes are very personal and about identity. However, I do believe in rental of garments and items for one time use and for special occasions. Like renting a nice ball gown for one night".

### **Small, local shops**

"I hope, and believe, that small and local businesses will get a bigger share of the consumer market in the future - That we rather choose to shop from a local store than at e.g. H&M."

## **What does Sarah think is necessary measures to take in order to be a more sustainable fashion consumer (Gjemdal, 2019)?**

### **1. More quality and more classic cuts**

"Today, the big brands design and sell garments that they know will be out of fashion pretty soon. One year it is hoodies, another year it is flared jeans... This creates an indefinite urge to renew your wardrobe. Hence, I believe that if we were to create clothes of good quality with more classical cuts, patterns and colors, we would also keep them for longer".

### **2. Investment in clothes**

"I think a lot of sustainable habits related to clothes, e.g. repairing and reshaping, will be more evident if we spend more money on each garment. If you buy something for 100 NOK, is it worth repairing, or should you just buy a new one? Contrary, investing in a quality garment constitute a bigger initiative for spending time maintaining it."

### **3. Sustainable alternatives and experiences**

"Related to the co-localization project we are working on – If such initiatives are made cool and accessible, they will become a worthy competitor to stores without a sustainable profile. I also believe that the "shopping urge" will be replaced with meaningful activities and experiences in the future, at least to some extent. So, if the city center becomes a place for experience rather than shopping, we will cut consumption as well. The government has to facilitate these changes."

### **4. Providing adequate and correct information**

"One of the things that pushed me in the right direction was reading about the problem. One example is how shocked I became when I read that the fashion industry is the second most polluting industry after oil and gas. I believe that we sometimes forget about this industry, as the emphasis is usually placed on road meat, planes and transportation. At the same time, I think we should be careful to not frighten people. They might get a bit tired of it. We should provide hard facts, but at the same time inspire and motivate."

## Behavior change

# The KonMari method

*As the literature study on page 94-99 suggests, sustainable clothing habits rely on reducing the number of newly purchased garments per person. We need to change our desires towards quality and longevity instead of quantity and constant renewal. This shift can be challenging to realize in a consumerist society. The majority struggles to “sacrifice” some of their most beloved goods for the benefit of our planet; whether it is cutting out the juicy steak, traveling to tropical beaches more rarely, or limiting the monthly acquisitions of beautiful fashion. For some, arguments of ecological sustainability are not sufficient motivation. Therefore, it is valuable to look at other arguments, motivations and measures to facilitate a more sufficient way of living (Callmer, 2018). This section aims to highlight some key findings from a study conducted by Callmer (2018) where a decluttering technique named the “KonMari method” show significant improvement in consumption, even though ecological sustainability was not the motivation.*

---

### **What is the KonMari method?**

The KonMari philosophy, developed by Japanese tidying expert and author, Marie Kondo, has in recent years gained a large audience, both for its effectiveness, but also for its introspective and forward-looking emphasis. The method is a careful decluttering process aiming to help its practitioners create a harmonious home (KonMari, n.d.). The word “decluttering” refers to getting rid of the things that makes your home untidy. Through the decluttering process, the aim is to keep only what sparks joy or speaks to your heart. *All* items that do not, are taken out after you – literally – thank them for their service. This often results in a significant reduction of items (Callmer, 2018; KonMari, n.d.). One of the crucial aspects of this process is the order in which you conduct the decluttering: You start with clothes before you move on to books, papers, komono (Japanese for miscellaneous), and at the end things of sentimental value. In addition to the decluttering itself, the KonMari method also emphasizes that you must treat your items with the respect they deserve. An extension of the method



Figure 18: A drawer organized using the KonMari method. The aim is to make sure that all items are visible (Bright, 2019).

is thus specific ways of storing your belongings. This is often seen most profoundly through the way you should fold your clothes (see figure 18)(Callmer, 2018).

### **Behavioral change as a result of KonMari**

Callmer (2018) studied a group of female, and a few male (1,3%), Swedish KonMari practitioners. The top three motivations for conducting the method was:

- Discontent with one's home environment (e.g. a messy home)
- Too much stuff (e.g. lack of control of their belongings)
- An interest in trying it out

In context of this thesis, it is notable that none of these are explicitly related to ecological sustainability. Some respondents did also mention motivations such as an upcoming move or taking measures in the home to feel better (due to e.g. psychological or physiological health issues). In retrospect, a common experience among the informants was a "new sense of ease and/or harmony in their homes" (Callmer, 2018, p. 10). Furthermore, all informants state that they see the KonMari method as more than just a tidying up process. The thorough process of reflecting about what sparks joy and makes you feel good, helps you realize what is really important to you as a person.

### **Key findings in Callmer's study**

Callmer (2018) states that "the method seems to have had quite an extensive impact both on how the informants think about consuming new things and on their actual consumption behavior" (Callmer, 2018, p. 11). More specifically she found that:

#### **Percentage agreeing with the following statements:**

##### **BEFORE KONMARI**

*"I shop on impulse"*

**48,7 %**

*"I buy a lot of things I do not need"*

**39,6 %**

---

##### **AFTER KONMARI**

*"I shop on impulse"*

**1,9 %**

*"I buy a lot of things I do not need"*

**0,3 %**

The change in behavior and attitudes are further emphasized by the quotes (Callmer, 2018, p. 12) on the following page.

### Woman A (43)

"When it comes to choosing, everything becomes more difficult (...). I need a knitted sweater now because I walk around freezing all the time, but it takes time to find one. I have become so picky in what I allow, because that sweater should become a life companion. It should stay with me until it falls to pieces and stick with me through thick and thin. Sometimes it feels almost like choosing a new partner - you have such high demands that you just stay single for the rest of your life."



### Woman G (43)

"It has become clearer to me what my taste is, and I have started to feel like "this is me, no matter the trend". And that is a good thing, in a way, because it means that I can choose not to choose a lot. [...] But since I have discarded those things, I no longer have... blankets. Because the ones I had didn't spark joy, so they had to go. But the ones there, in the store - they spark joy, because they are more in line with where I have found myself. So I can see that it goes in that direction, that there have been some purchases because of that. [...] But I think, and hope, that these new purchases are more permanent: Now I have bought this because I like it and because I trust this feeling. [...]"



### **Reflection**

This study (Callmer, 2018) found that practitioners of the KonMari method drastically changed both their attitudes and habits in consumption after joining the philosophy of decluttering and only keeping “joy sparking” belongings. What is interesting with this method in particular is that the positive effects of it is more than just a tidier home. For instance, many respondents in the study said that better economy was a positive side effect. Furthermore, many have reduced dedicated time for cleaning and tidying in their everyday. In addition, it is interesting to see how motivations other than ecological sustainability can drastically reduce consumption. In retrospect, many respondents describe that a positive effect of their new lifestyle is an experience of living more sustainably. However, this was not the motivation to begin with.

The findings of this study imply that people who dedicate time to reflect about their priorities, desires, habits, and relationships with their belongings over time might change behavior in consumption. Again, it is interesting that this was neither a motivation for the practitioners to begin with. Decluttering and reflection around what our belongings makes us feel makes an interesting starting point for the exhibition. Is it possible to design an activity that can be a starting point for this type for reflection?





Figure 19: Marie Kondo explaining how to fold a t-shirt (TimePass Machi, 2017).



#### Key takeaways

The KonMari method results in:

- A better overview of one's personal belongings
- A more conscious and close relationship with one's personal belongings
- A ripple effect, which is more conscious and sustainable consumption habits

## Chapter conclusion:

# Foundation for final design

*The early ideation phase ended with an open and general idea of which direction the exhibition would take - Namely the clothing industry as a theme and a desire to combine this with activities for reflection and discussion. In combination with the fruitful input from the fashion industry research, a solid foundation for ideation and concept development was laid.*

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### **Key findings from part 5**

Two of the main approaches to sustainable clothing are to

- Reduce consumption through acquisition of long-lasting garments of high quality, and to
- Reuse what already exists

Furthermore, clothing consumption can on a personal level be reduced by

- Establishing a better overview of the garments in your wardrobe, and by
- Establishing a closer and more conscious relationship with your garments (i.e. only buy and keep garments that spark joy).

With this as a base, ideas related to “first life clothing” and “second life clothing” emerged. How can we design what shopping for first- and second-hand clothing will be like 30 years from today? And at the same time, how can we inspire and motivate for a behavioral change in consumers’ clothing habits today? These were questions that were desirable to answer, or at least explore, during the upcoming ideation phase. In addition, it was desirable to further ideate for points of interaction and reflection activities within the exhibition. Over time, the reflection activities became my main priority of the exhibition, as this part of our display ended up involving visitors the most.

The next chapter aims to introduce the final phase of ideation, converging towards tangible design concepts.

### **PRACTICAL FRAMEWORK**

Throughout the ideation process there have existed a few boundary conditions which have influenced the choices that have been made, e.g. limitation of space and number of visitors.

Most of these conditions have been given to us by the hosts of the Futurum. Due to minor changes from their side, the conditions have slightly changed over time. However, the following are the final ones:

#### **Area**

Our part of the exhibition has been given two 20 feet containers of 5,9 m x 2,34 m and 5,9 m x 2,25 m.

#### **Audience size**

No exact estimation given. Might be around 300-500 each day, but that is just our own guess.

#### **Budget**

About 90 000 NOK

#### **Language**

Everything should be in Norwegian, however it is desirable that we include English translations

**PART 6**

**Ideation &  
development**

*This chapter includes a summary and explanation of the key parts of the final ideation and development process of the containers' content. In order to create a better overview of this process it has been divided into five categories:*

Page 114 - Ideation

Page 126 - Ideation, user testing and development: KonMari activity

Page 134 - Ideation and development: "Me and my clothes"

Page 138 - Prototyping 2.0

Page 142 - Creation

# Ideation

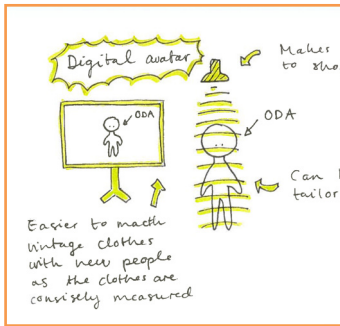
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## **CONTAINER 1: FIRST- AND SECOND LIFE CONCEPT STORES**

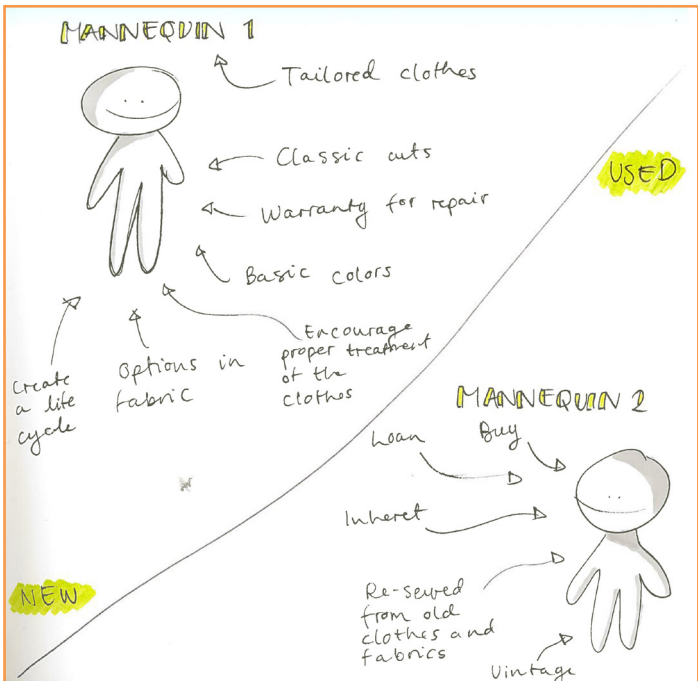
The combination of “Trondheim 2050” and clothes became a starting point for ideas surrounding two clothing stores from the future. To put these in context of the town, Trondheim Torg 2050 became the scenery of these stores.

Emphasizing ideals such as quality and longevity, the first store focus on how we might obtain new garments in the future. Clothes with classical cuts, timeless styles and high-quality materials support the ideal of garments that should last a lifetime. To ensure a personal bond between customer and garment, the clothing is tailored for the specific customer during production. Given that every consumer in 2050 have a digital avatar/twin, this will be done easily through the store’s online ordering system. The customer simply needs to choose a desired style, color and fabric, before he or she sends it for production accompanied by their digital body measurements. As businesses in 2050 take more responsibility for the life-cycle of their products, the store does also provide information and services for clothing care and after-life care.

Store number two is all about reuse; whether it is used garments or old fabric. Selling both old textiles, such as used curtains or bedsheets, and “do it yourself” sewing patterns, the store encourages its customers to create their own garments from second-life materials. In addition to this, the store does also provide pre-made second-life garments. As for the first store, this store does also provide services for repair and maintenance, as well as collection of worn clothes, rags or materials.



Klar man kan kjøpe er i større grad basisplagg og plagg med klassiske snitt. Mindre rare trenkplagg.



Utstilling av klar  
 → kan kjøpe et netts wor man får oppskrift slik at man kan sy plagget selv.

END - INSPIRE - MOTIVATION

A "feeling wall" where you can feel fabric

### **Collaboration with local businesses**

Three local clothing businesses were brought into the project to get expert opinions on the development of the final design: Prisløs, Livid Jeans and JohnnyLove. The three shops stem from local start-ups and have over time become established actors in Trondheim's city center. In contrast to large chain stores such as H&M, Carlings and Vero Moda, they design and develop garments in-house and express sustainability through e.g. self-production, use of sustainable materials, full life cycle services and/or in-house production.

Over time, all three businesses contributed valuable resources and insight to the project. Prisløs will sew outfits for mannequins in the "reuse" store, as well as providing the exhibition with textiles and garments for display. Livid Jeans and JohnnyLove will contribute with material samples, mannequins, photos and garments for the "first-hand" store.

The three shops are briefly introduced on the following three pages.





Figure 20: A jacket and a tote bag made of old materilas (Prisløs a, n.d.)



**Prisløs** is a small business selling second-hand items both in their store and on occasional pop-ups around town. Compared to second-hand stores such as Fretex, Prisløs travels around to collect unique pieces of vintage and second-hand garments, which gives their customers a variety of cool and original styles to choose from. In addition, Prisløs upcycles old fabric into new clothes, purses and scrunchies. Competent employees design and sews these items inhouse. The store is also in on the co-localization project that Sarah Elise Gjemdal (page 100) is engaged in.



Figure 21: Jeans from Livid Jeans (Livid Jeans a, n.d.)(Livid Jeans b, n.d.)

## LIVID JEANS

as their name suggests, is a jeans producer and seller.

The store started up less than 10 years ago and has over the years gained a good reputation in Norwegian cities such as Trondheim and Oslo. Several qualities make Livid Jeans an interesting business: Besides making their own jeans, they offer free first-repairs and use raw-denim material (denim that has not been washed during production). Furthermore, they have initiated a program called "Saved" where customers can return an old pair of jeans in change for 150 kr of store credit. If the used pair is still in good shape, they give it a face lift and resell it in their second-hand store. If it's too worn to be resold, they use the material to repair other pairs of jeans. If the pair is completely worn out, they give it to Fretex so the material can get a new life as e.g. wall insulation (Livid Jeans c, n.d.).



Figure 22: Clothes from Fall/Winter Collection 18/19 (JohnnyLove a, n.d.)

**JOHNNYLOVE** JohnnyLove was launched in 2006 with the vision of “making men dress up in daily life” (JohnnyLove c, n.d.). Since then they have expanded to design, produce and sell women’s clothes as well. JohnnyLove is a brand with respect for materials. They aim to design clothes that matches your personality and gives a “tailored look” (JohnnyLove c, n.d.). A majority of the garments are one-colored with classical and recognizable styles. During the last years, they have started experimenting with recycled materials such as recycled wool and polyester. Furthermore, the designer and founder himself, John, is experimenting with designs and ideas for future clothing. More precisely he is focusing on how clothes and our habits of using clothes may change in a future with more extreme weather and fast-shifting seasons.

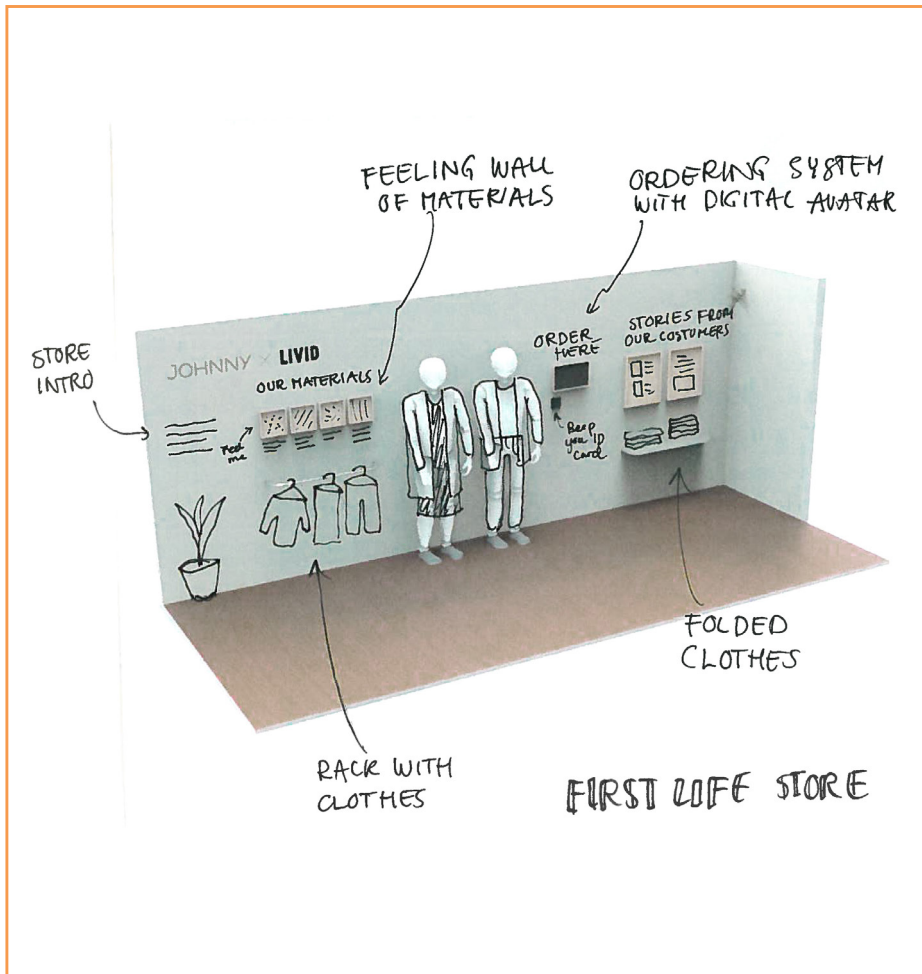


Figure 23: 3D-model + sketch of the idea for the first-life clothing stores with Livid Jeans and JohnnyLove as key collaborators.

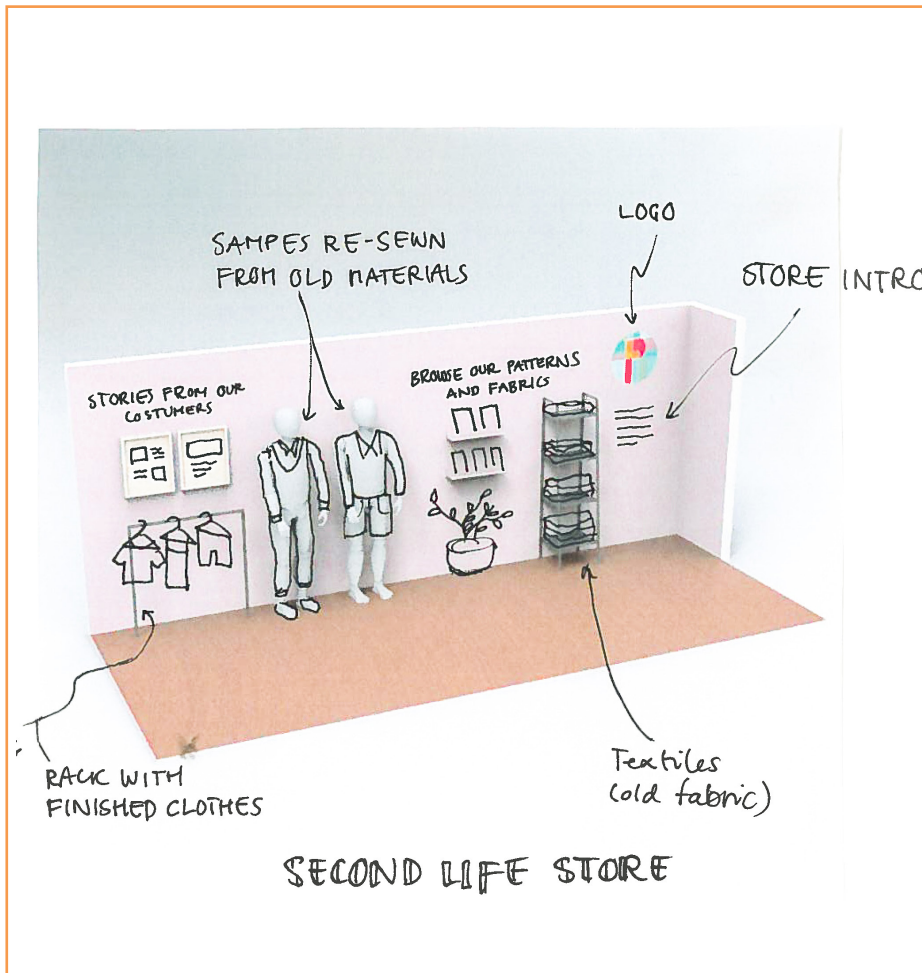


Figure 24: 3D-model + sketch of the idea for the second-life clothing stores with Prisløs as the key collaborator.

## **CONTAINER 2**

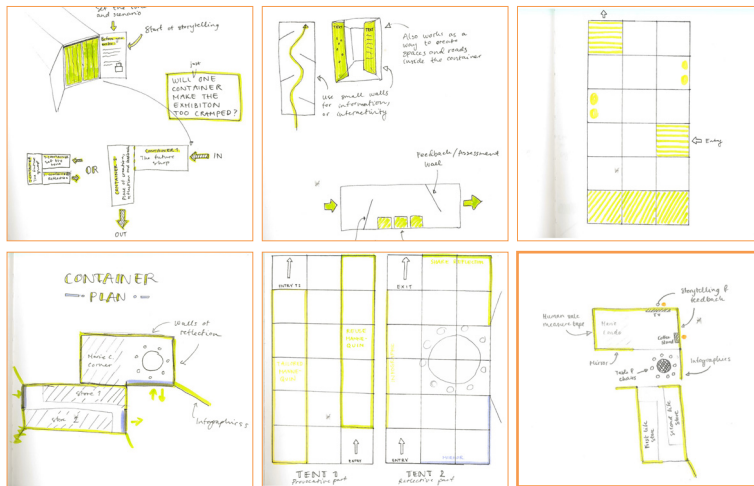
### **Reflection- and interactive activities**

There have been several rounds of ideation regarding activities for interaction and reflection. Themes that have been brainstormed are e.g. individual and shared reflection, voting, workshops, discussions, storytelling etc. As the overarching ideas for the exhibition have changed over time, there scope of these activities did also change. At the beginning the idea was to implement several smaller points of interaction in which visitors could give feedback on certain questions and share ideas. However, over time, it was decided to rather create two large reflection activities to facilitate a deeper and more holistic thought process. Subsequently, the future clothing stores and the reflection activities were split between to individual containers. The following page presents some sketches of the ideas that were up for discussion. Two of these has been taken further into the process and refined.

Me and my clothes:  
 Voting for different statements and  
 building a story (see page 134).



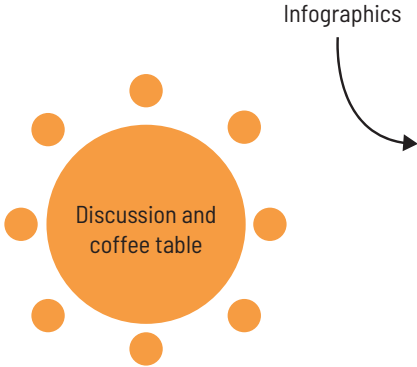
KonMari reflection activity:  
 Reflection around our relationship  
 with clothes today (see page 126).



## CONTAINER LAYOUT

As mentioned on the last page, we initially imagined the concept stores and reflection activities to be mixed together; within each concept store there would be drops of small points of interaction or reflection. However, over time it was decided to divide the exhibition into two parts – One for the concept stores and one for reflective activities. The decision to do so was made because of space limitation within each container. It was not desirable to make the concept stores take up space on the expense of the reflection activities and vice versa. By dividing the exhibition in two – one container for the stores and one for reflection – it was easier to create holistic concepts.





Introduction to theme



## Ideation, user testing and development:

# KonMari activity

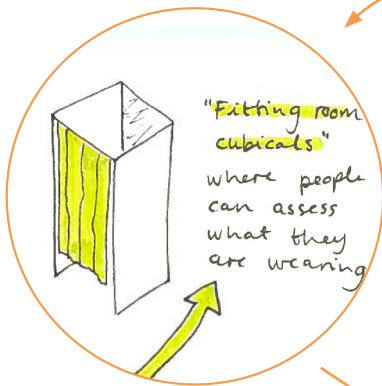
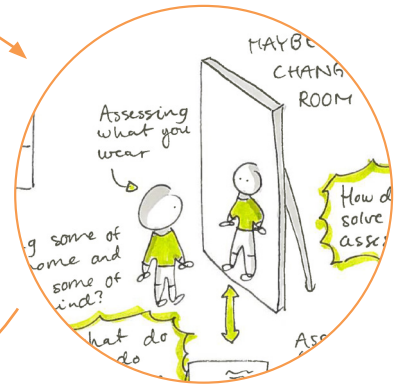
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*The KonMari method became an inspiration source for creating a hands-on reflection activity using decluttering, “does it spark joy” questions and/or folding techniques as the core; either as a literal translation, or as a refined translation of the core values. The following sections takes the reader through the journey of ideation and exploration for realizing these thoughts, beginning with a summary of proposed concepts before moving on to user testing and conclusions.*



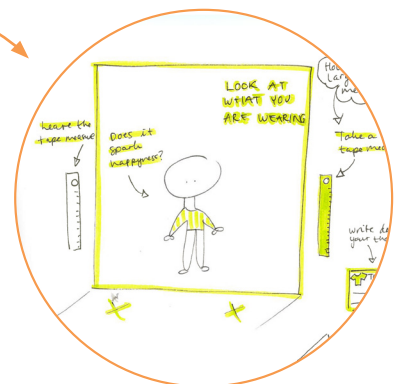
**1** With folding and sorting techniques as a starting point, ideas at the beginning were centered around activities where people could learn how to systemize their clothing properly. However, these ideas did not focus on introspective reflections, and as people would need to sort a couple of “random” garments in the display, the personal aspect of KonMari would be lost.

**2** Over time an idea related to mirrors evolved. In order to facilitate introspective reflection of personal garments, a possibility was to let visitors assess the items they wear during the exhibition visit.



**3** Many ideas around future clothing stores were prominent during the ideation. Thus, one idea was to place a KonMari activity in a fitting room context. In this way, the activity could naturally be included in the environment of a fashion store. However, there was a desire to facilitate the possibility of discussion with peers, and thus the cubicles would be a bit restrictive.

**4** When the decision to divide the exhibition into two containers was made, more space were available for this activity. Hence, the final idea before user testing was to ask people to reflect about how their clothing makes them feel whilst standing in front of a large mirror. To compliment the reflection, several smaller points of interaction could be placed around to allow for visible feedback.



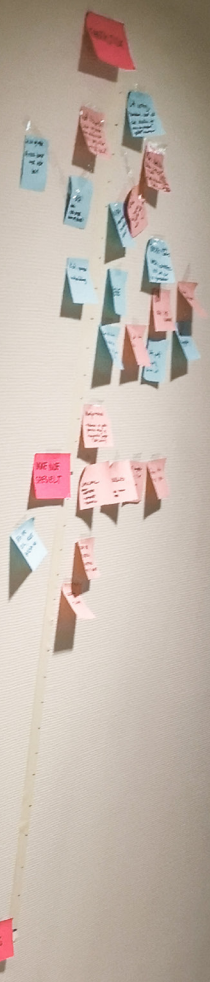
TA EN TITT PÅ  
DEG SELV &  
KLÆRNE DINE  
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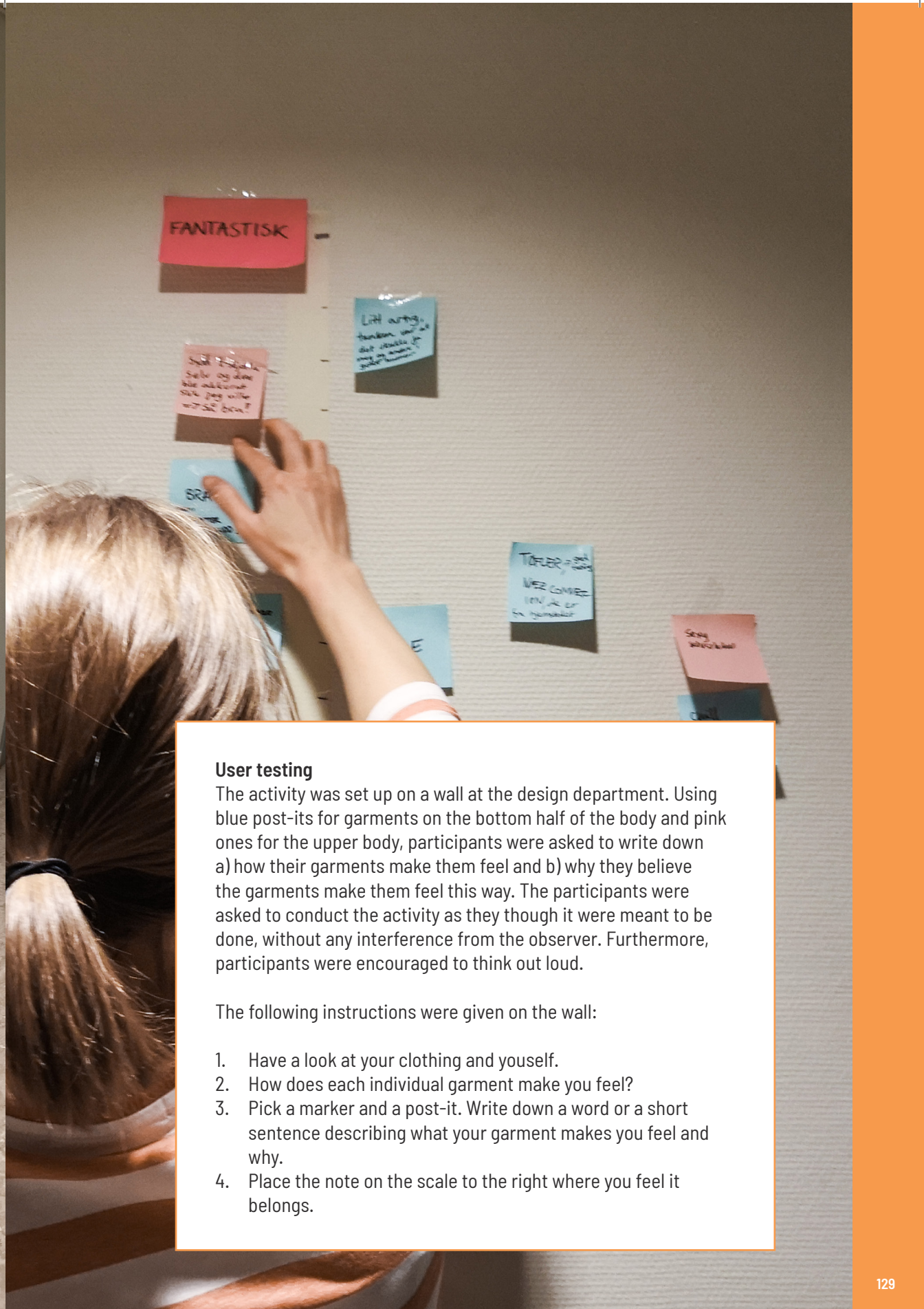


Hvordan får hvert  
enkelt plagg deg til  
å føle om deg selv?  
↙

Ta en lapp (eller fler)  
og skriv et ord eller  
en liten setning om  
hva du føler, og hvorfor  
↓

PLASJER LAPPEN EN  
SKALLEN TIL HVITTE  
DER DU SINES DEN  
HVERE HJEMME D





### User testing

The activity was set up on a wall at the design department. Using blue post-its for garments on the bottom half of the body and pink ones for the upper body, participants were asked to write down a) how their garments make them feel and b) why they believe the garments make them feel this way. The participants were asked to conduct the activity as they thought it were meant to be done, without any interference from the observer. Furthermore, participants were encouraged to think out loud.

The following instructions were given on the wall:

1. Have a look at your clothing and yourself.
2. How does each individual garment make you feel?
3. Pick a marker and a post-it. Write down a word or a short sentence describing what your garment makes you feel and why.
4. Place the note on the scale to the right where you feel it belongs.

## Outcomes

The majority of the participants understood how to conduct the activity. However, some notable “errors” occurred:

- One participant stuck the post-it to the mirror before s/he transferred it to the measure scale
- One participant didn't see the post-its at first, as they were placed close to the ground. Thus s/he chose to answer verbally. The person later corrected this, when s/he took the time get a closer look at the activity as a whole.
- One participant used several post-its to express multiple feelings for one garment
- There were a variety of ways people choose to write their answer(s) on the post-its

It is likely that the two first errors occurred as a result of the placement of the content. Since the activity contains several steps, it is important to both clarify which order things are to be done and to be conscious of the placement of each step to ensure an intuitive and understandable flow.

The last errors are related to the post-its/instructions. There were few constraints leading the user to answer “correctly”. And thus, people naturally chose to answer in the way they felt was intuitive. A possible measure to ensure a more intuitive and consistent way of obtaining answers is to make custom made answer-stickers that leads the answer in a more concise direction; that the stickers could e.g. ask the visitors to complete one or several sentences such as “My garment makes me feel...” and “because...”.

As pointed out by one of the participants, people emphasize and value clothes to different extents. “What you wear doesn't always say something about who you are”. It is important to be considerate when formulating the first question to ensure that people e.g. do not focus on their body or looks, even though clothes and such feelings are not mutually exclusive - one can

affect the other. However, it is the garment, and the feelings it sparks on a personal level, that should be the center of attention.

For the purpose of the user test, participants were asked what they believe was the intent of doing such an activity. The majority answered something in line with: "To create a conscious relationship with your clothes". Some also mentioned "to indirectly shape a more conscious relationship with shopping clothes".

The follow-up questions and discussions emerging after the user test were fruitful, as it made space for a shared reflection. It could be relevant to include this as a part of the activity itself. One could e.g. provide a question at the end for people to bring with them home, think about during their stay at the exhibition or discuss with other peers.

The ideation, user testing and refinement led to a tangible concept for the KonMari activity. This is presented on the two following pages.



#### **Key takeaways**

To improve this activity, consider:

- Placement of all parts in relation to each other
- Formulation of questions and instructions
- Custom make stickers for answering
- Create a part for follow-up question(s) or reflection regarding the intent of the activity

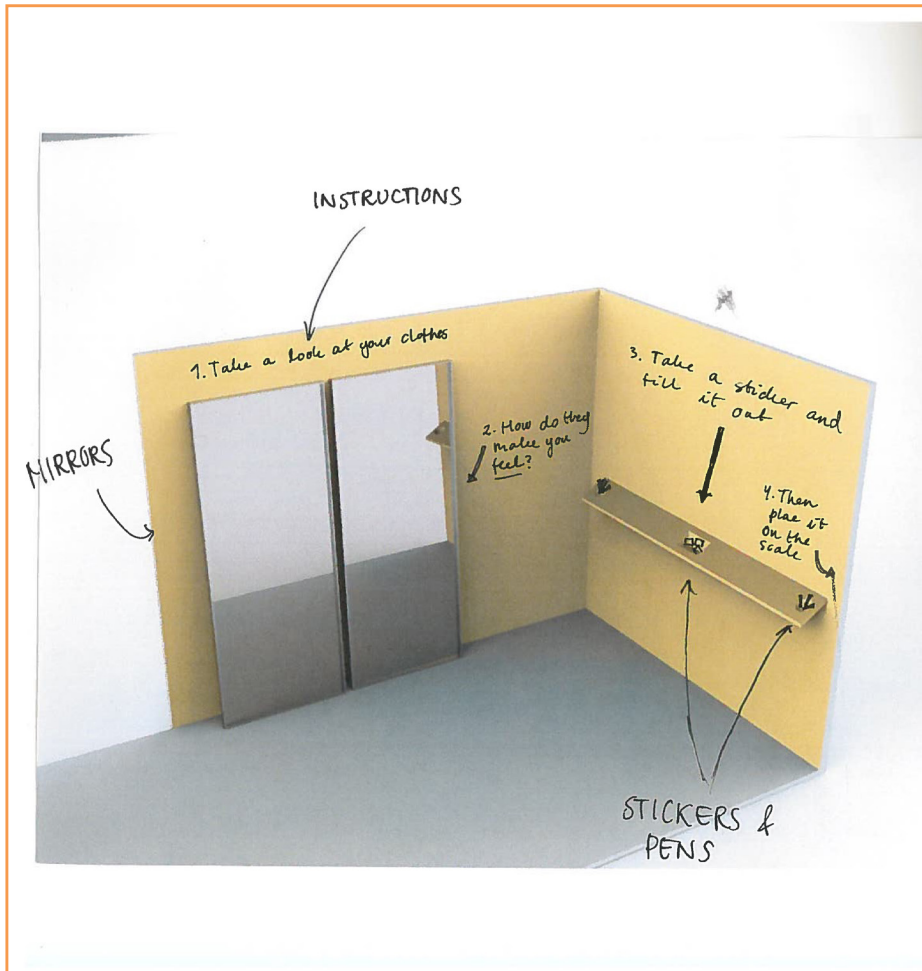
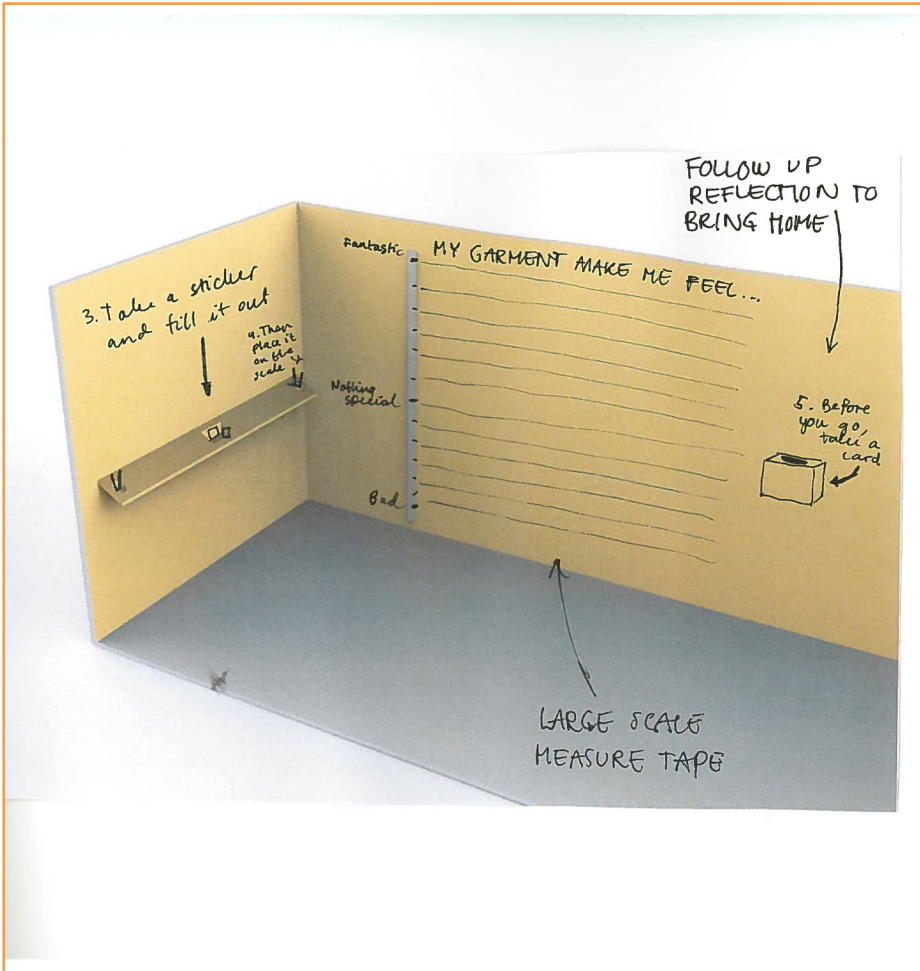


Figure 25 and 26: 3D-model + sketch of the idea for the KonMari activity. These sketches was the starting point for creating and constructing the final design.





## Ideation and development:

# “Me and my clothes”

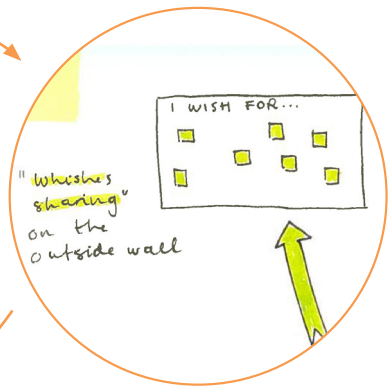
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*The KonMari activity aims to help visitors reflect on their relationship with what they already own. To extend reflection further, it was desirable to develop another reflection activity with focus on clothing habits from before purchase to the end of life of a garment – A more general and holistic view at people’s consumption habits today. As for the other reflection activity, there has been several iterations of ideation before the final concept was landed. This process is summarized on the following pages.*

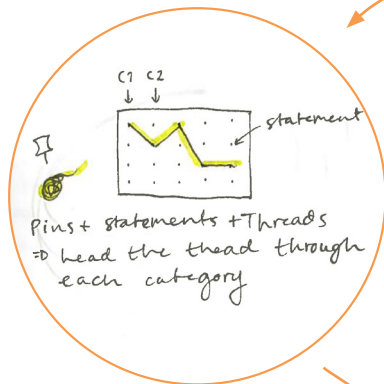


**1** Starting with the idea of giving people the option to vote between e.g. two different attitudes or statements, the idea was to implement several small and low-key points of audience feedback. However, it was desirable to make it a bit more personal which led to...

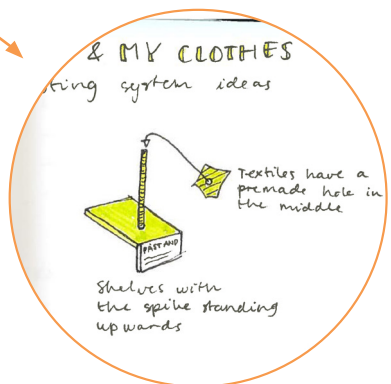
**2** ... the idea of having a "sharing wall" where visitors were asked an open-ended question and encouraged to write the answer down and further put it on the wall. This idea has followed us throughout the whole project, as goes for many other ideas.



**3** Another emerging idea was to combine idea number 1 and 2 into a concept for personal storytelling where the audience is asked to assess different statements and create their own story. The idea pictured would be a large wall with several statements within categories such as "before purchase", "during use" and "after use". By guiding a piece of thread through one statement in each category, each visitor can reflect on and build up their own "me and my clothes"-story.

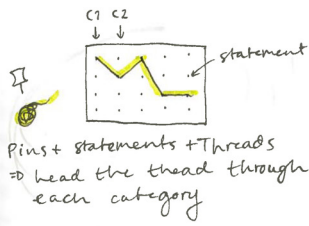


**4** The last round of ideation took idea number 3 to a refinement stage. The idea was more or less the same: Having categories for different states of interaction with clothes and several statements within each of these. Emphasis was placed on how to make the voting easy, understandable and less messy than the first idea. At the end the idea was to use pieces of fabric to place a vote on the statements.



# ME & MY CLOTHES

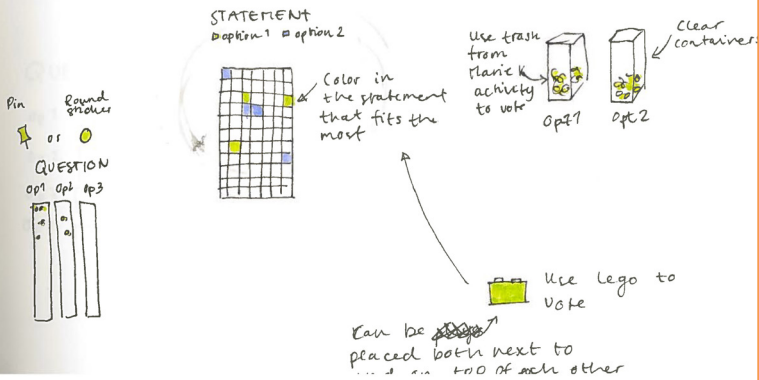
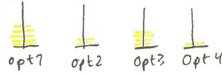
## A story



Vote by placing a paper note over the large pin

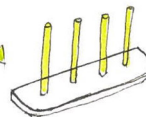
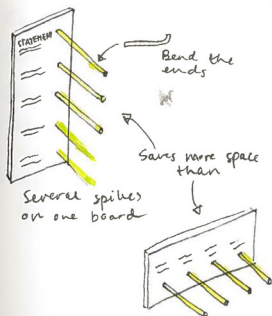
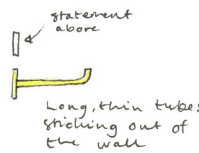
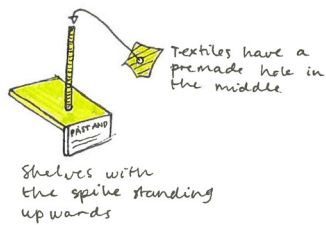


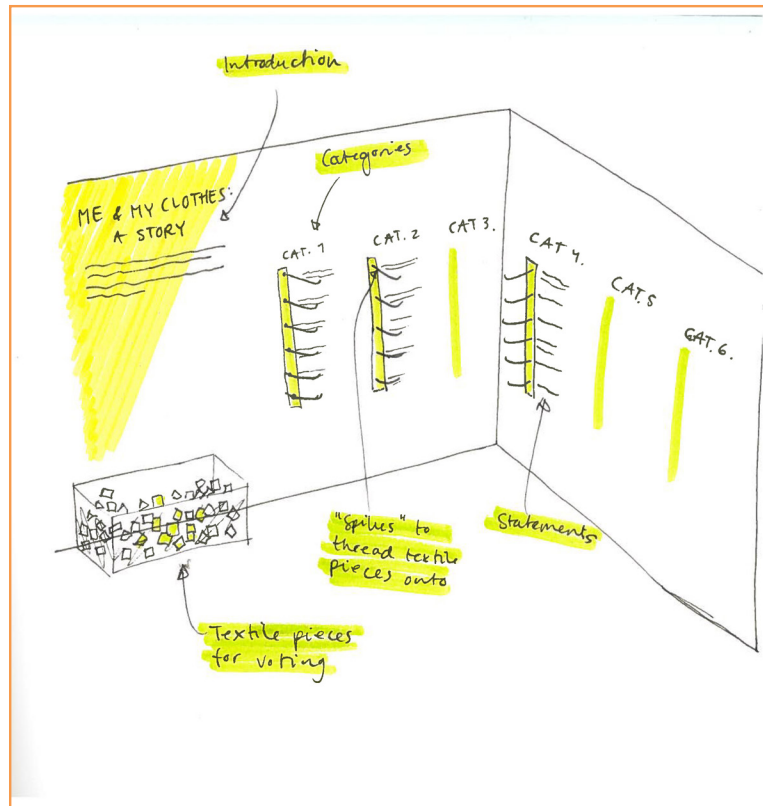
REGARING....



# ME & MY CLOTHES

## Voting system ideas



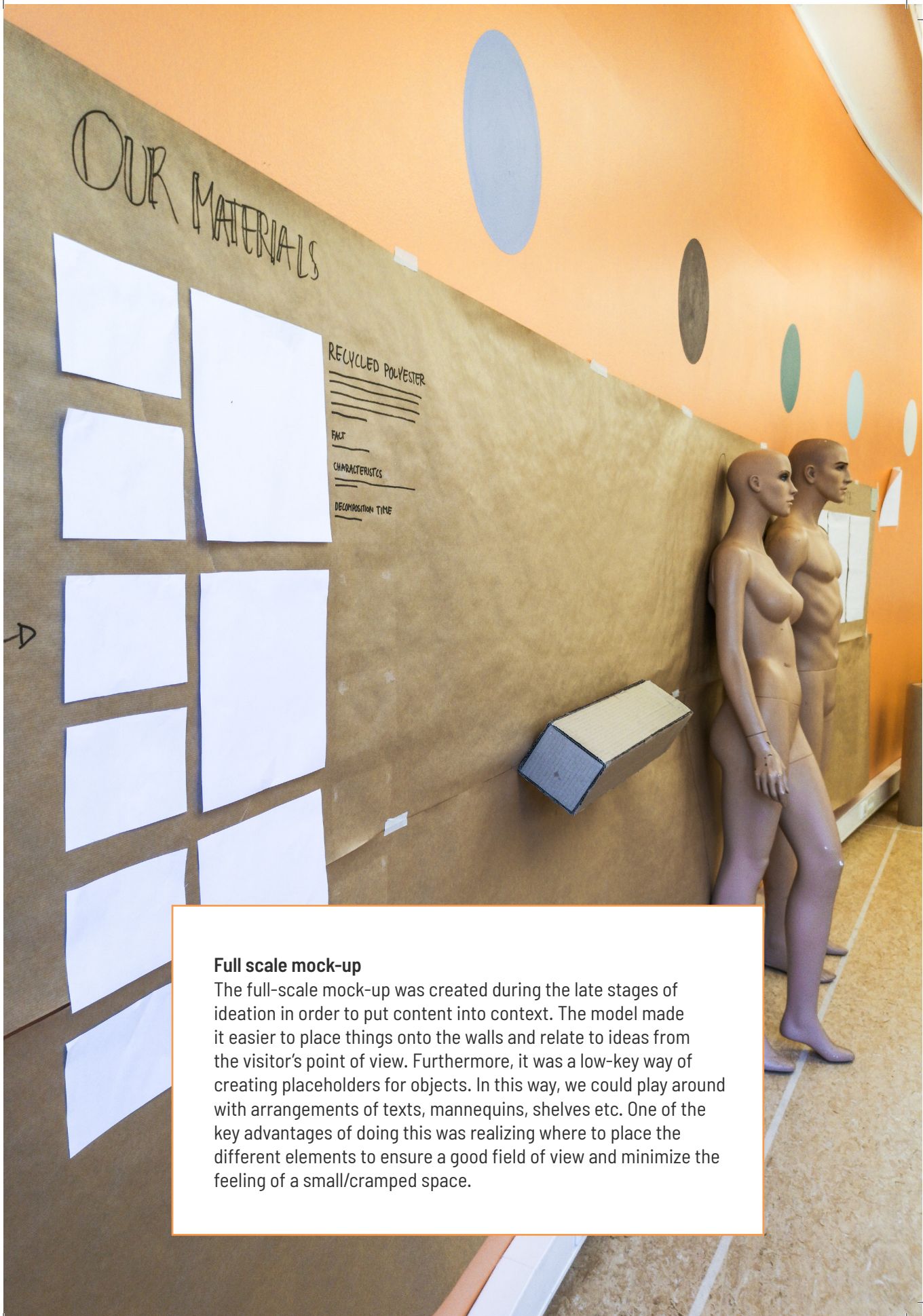


The final concept foundation is called “Me and my clothes: A story”. The activity lets the audience take a position between statements. There is developed six different categories and within each of these there are seven statements. To “vote” or take a position, the audience must pick with them six textile pieces. To place their “vote”, they thread their textile piece over the spike belonging to their chosen statement.

## Prototyping 2.0

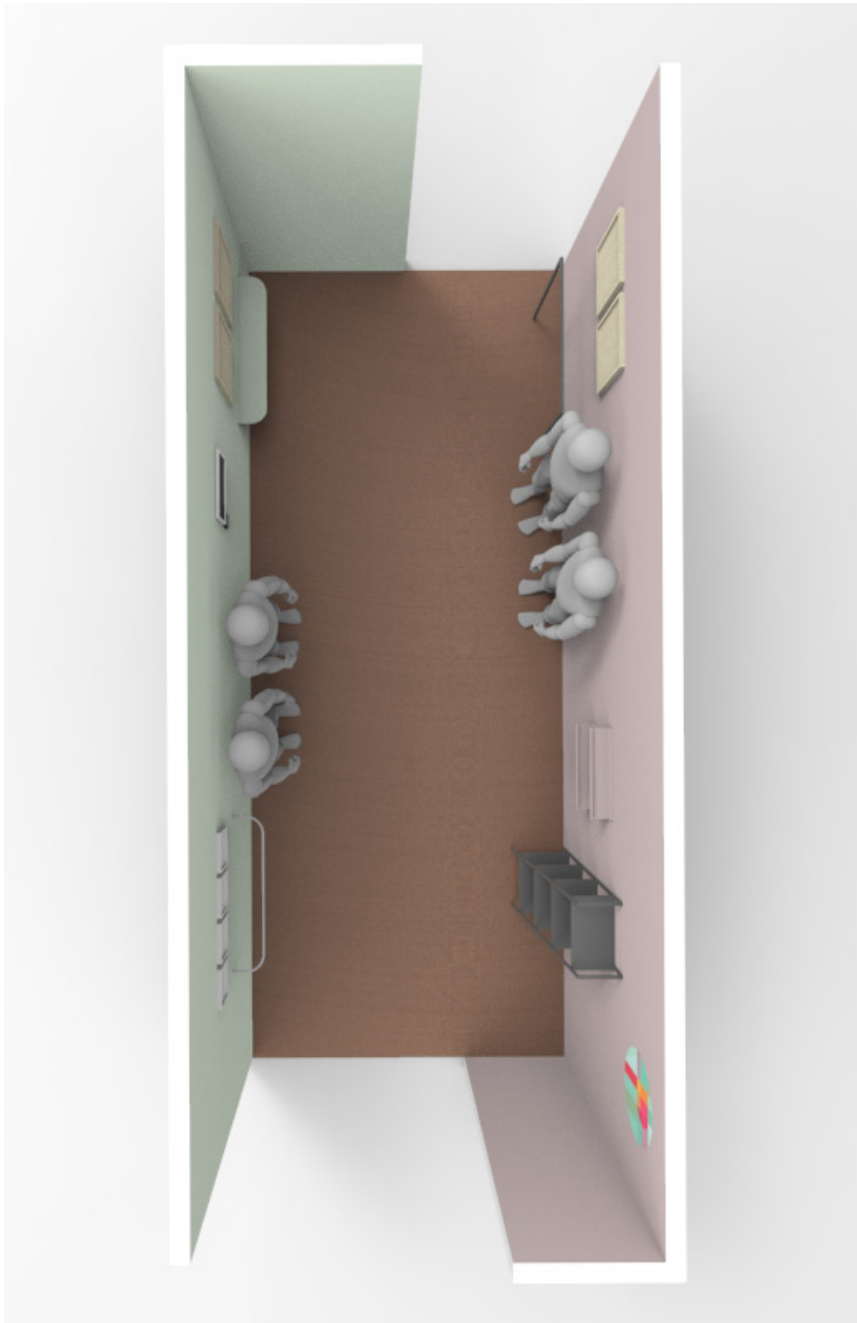
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*From early on prototyping served as a medium for understanding the physical space of the two containers. This prototyping was a three-part process, going from a cardboard scale model (page 87), towards a full-scale mock-up, and at the end a 3D model in SolidWorks. Each of these served their own purpose but in general, all prototypes allowed for spatial understanding, which at the end made it easier to scale and create the containers' content, and to limit ideas.*



### **Full scale mock-up**

The full-scale mock-up was created during the late stages of ideation in order to put content into context. The model made it easier to place things onto the walls and relate to ideas from the visitor's point of view. Furthermore, it was a low-key way of creating placeholders for objects. In this way, we could play around with arrangements of texts, mannequins, shelves etc. One of the key advantages of doing this was realizing where to place the different elements to ensure a good field of view and minimize the feeling of a small/cramped space.





### **3D-modelling**

Right before the building phase began, 3D-models were made to play some more with the placement of objects in a cleaner and tidier setting. Furthermore, some of the interior needed was not developed, and SolidWorks did hence serve as a tool for rapid experimenting with the shape of objects such as shelves, tables and racks. In the full-scale mock-up, some of the items were just paper, cardboard or simply sketches on paper, thus the 3D-model served as a way of refining the ideas. At the end, the 3D-models were used as a final draft and starting point for the building of the final content.

A photograph of a conference table with design materials. On the table, there is a color palette with various shades of orange, yellow, and green. Next to it is a 3D architectural model of a building. Several paper elements are scattered on the table, including a large sheet with a grid of color swatches and several smaller sheets with text and diagrams. The background shows a wooden chair and a wall with a light switch.

## Creation

*In addition to finalizing the master's thesis, the last weeks of the project was dedicated to creating and constructing every element of the exhibition. This includes both creating a finalized 2D-sketch to use as a base for creation, writing all texts, graphical design of the visual elements, constructing and preparing physical props, and getting printing matter ready for print.*



*Figure 27: The given timeframe for exhibiton finalizing.*

### **Time frame June**

Figure 27 shows the given time frame for finalizing the containers. On the 3rd of June the first containers arrive at the festival grounds. However, our specific containers do not arrive before the 11th. The carpenter will start his work on the 12th, fitting in walls and lighting, and the day after that, we will get access to start fitting in the content. This means that we only have two days for getting everything into place. As a result of this, the majority of elements should be finished on beforehand to limit the work necessary on the 13th and 14th.

Due to the given constraints in finalizing the displays, the exhibition will not be finished before the 14th of June. Because of this, pictures of the physical end result will not be included in this report.

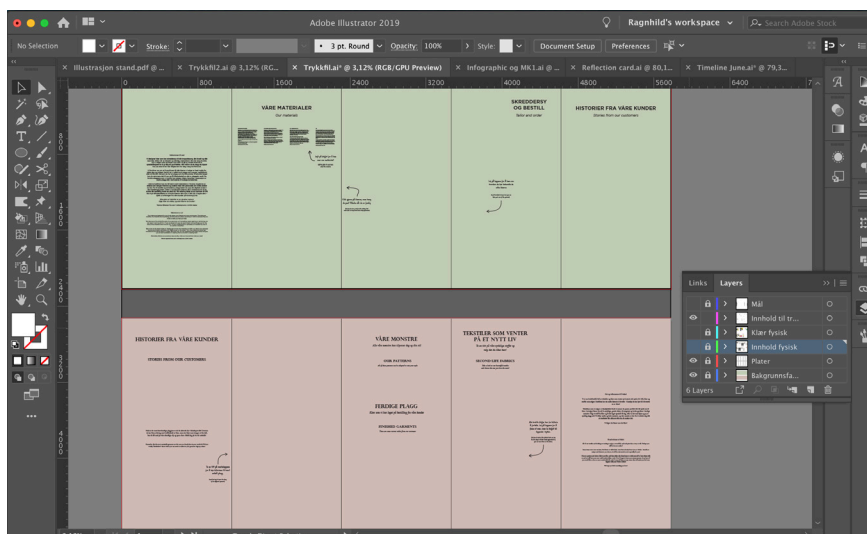


Figure 28: Preparing the plywood boards for print

### The walls and on-wall-text

One of the key challenges of finalizing the display has been to find a way to fit text directly onto the container walls. In the beginning, the plan was to fit in the plywood walls, then prime and paint them, and at the end transfer custom-made text stickers to them. However, due to the limited time frame, this solution was not feasible. At the end, it was decided to print every on-wall-text, as well as the wall background colors, directly onto the plywood boards before fitting them into the container. In this way, all parts of the walls could be pre-made before the 12th.



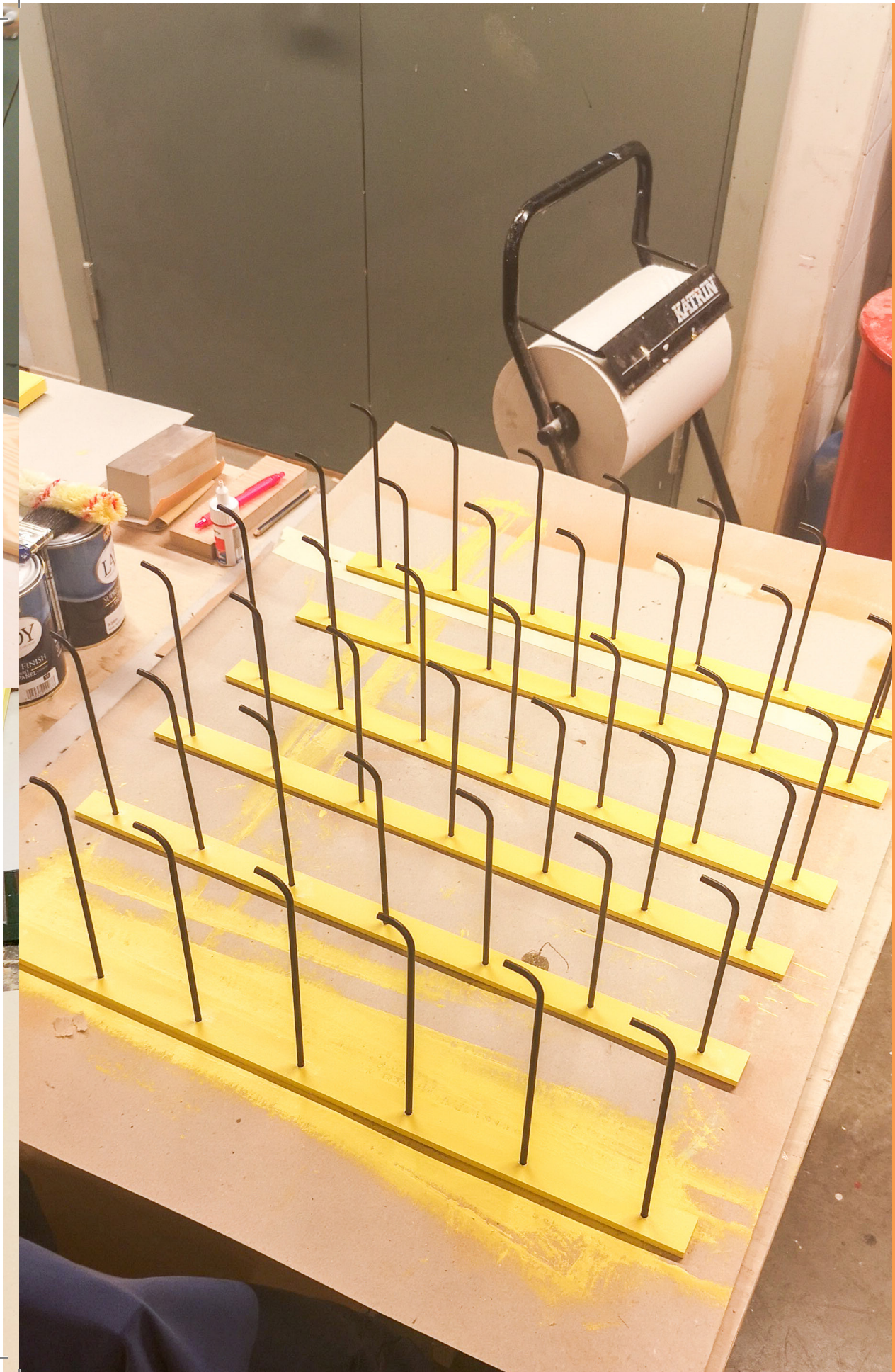
Figure 29: Print on plywood (giprint, n.d.)



### Physical props

The physical props were either bought – e.g. mirrors, frames, and shelf brackets – or custom made at the institute workshop – i.e. shelves and store signs.





# POLOGENS

av Martine Aunaas

# KORTERMET SKJORTE

av Martine Aunaas



# SLIM FIT BUKSER

av Martine Aunaas

# JAKKE

av Martine Aunaas





DER VIEW

# JOHNNYLOVE X LIVID JEANS

Order and tailor your new garment here

1 Choose style - Women's - Coats - Luna Coat



**LUNA COAT**  
Women's  
Price: 4500 kr

Luna Coat is a light and soft coat made of wool. It's perfect for chill weather during spring, summer and fall. The water-repellent weave and lanolin in the wool protect you from sudden rain showers.

2 Select material and color - Wool



**WOOL**  
This coat is only available

3 Upload your



receiver to upload your digital avatar

**Additional printing matters**  
Some props were also printed both at the design department and through a professional print shop.

**PART 7**

# **Results**

*The final exhibition will not be, as mentioned on page 143, finished until the 15th of June. Because of this, the report does not include pictures of the final, physical display. However, the illustrations added in this chapter are 2D sketches of what the final content will be like. Only minor changes might be needed due to unforeseen events.*

*This chapter contains explanations and illustrations of the general layout seen as a whole. Due to the large amount of small details within each container the majority of texts and graphical elements are placed in the Appendix where it is possible to study the content more in detail.*

Page 153 - Exhibition module introduction: Future Consumer

Page 156 - Container 1: First-life clothing store

Page 162 - Container 1: Second-life clothing store

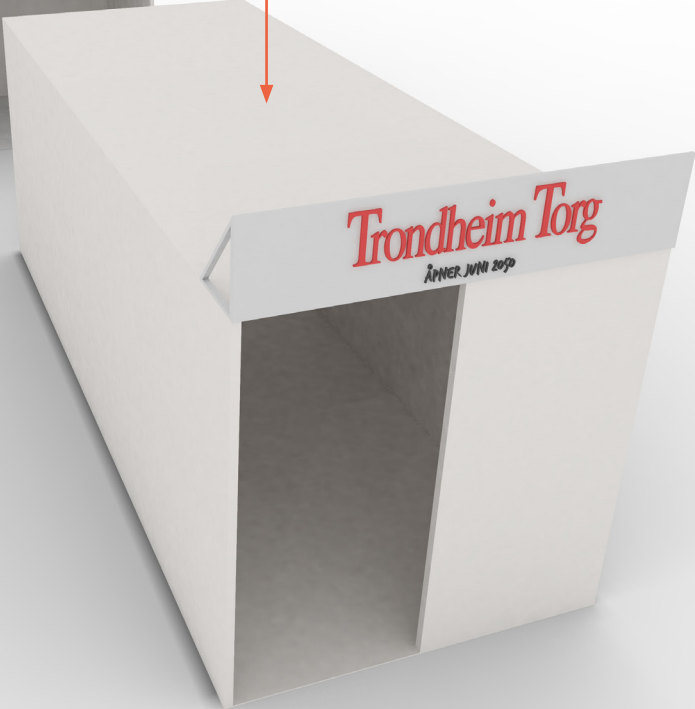
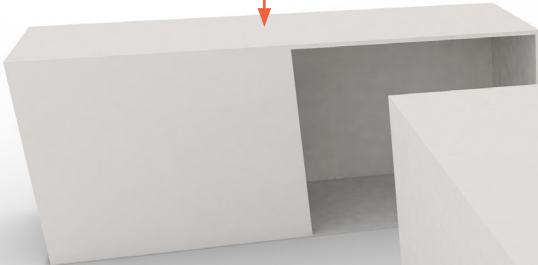
Page 168 - Container 2: The KonMari activity

Page 174 - Container 2: Me and my clothes: A story

Page 179 - Container 2: Infographics

**CONTAINER 2**  
Reflection activities

**CONTAINER 1**  
First- and second life stores



## Exhibition module introduction

# Future Consumer

*What does the future of clothes shopping look like? How will we think about, wear and get rid of our clothes in 2050? It can be difficult to imagine what does not yet exist, so Future Consumer uses storytelling, performance and fun to suggest scenarios for a circular economy, question our preconceptions around clothing and help us to take part in a more sustainable future.*

---

Future Consumer is an interactive exhibit based on Design research, including Speculative Design, Participatory Design and Design Fiction. It displays more sustainable or circular future scenarios for clothing, and suggests that these are what we could, or should, be aiming towards.

The exhibit comprises 2 modules, one provocative, one reflective. The provocative module is inspired by a future interpretation of two 'concept stores' in Trondheim Torg 30 years from now. Influenced by stores that currently exist in the town centre such as Livid Jeans, Prisløs and JohnnyLove, the two concepts show first and second-life circular clothing scenarios and incorporate stories about other Trondheim wearers as well as next-life options for reuse, repair and share.

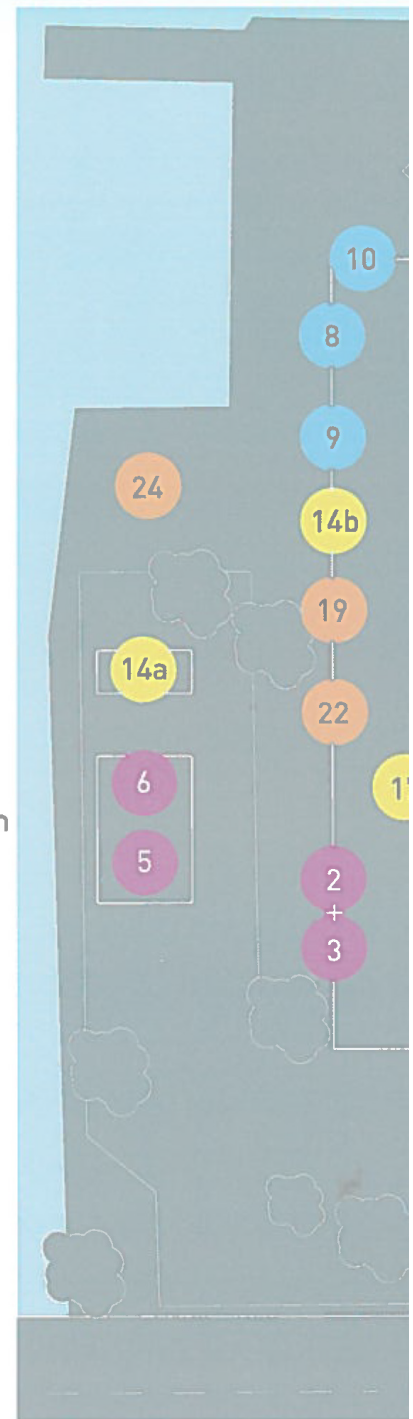
The reflective module provides a chance to reflect on the scenarios in the first module, and on your own clothing preferences and habits. Using mirrors, emotional tape measures, story walls and infographics, you can contribute to the future of fashion and see your responses recorded beside those of other visitors and residents.

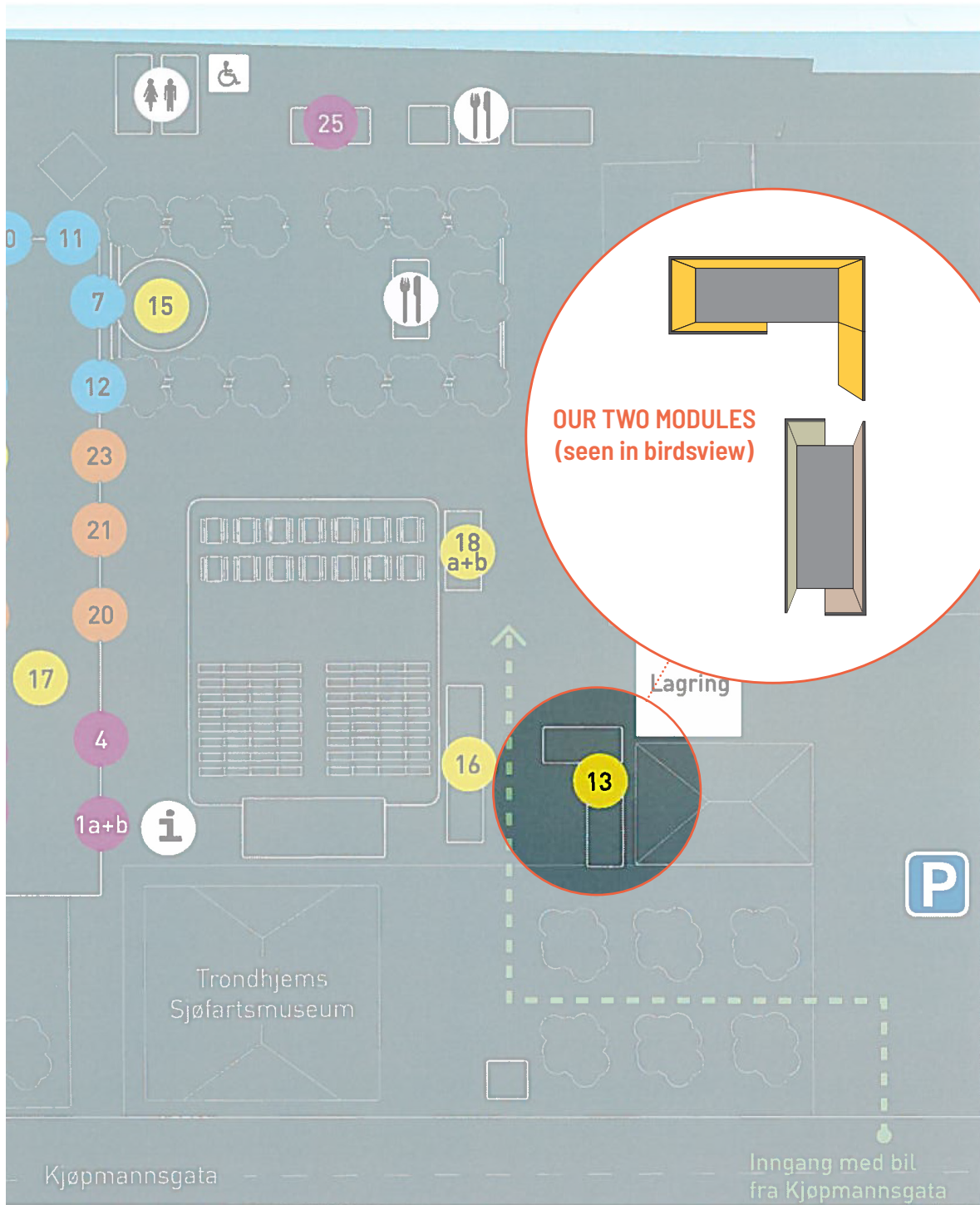
The future is not always about robots and aliens, sometimes it is here with us in our own wardrobes and shopping centres - and through design and imagination it is possible to create new possibilities that can help to change perceptions and behaviours.

Come in and see for yourself!

# FUTURUM

- 1a Elektrisk framtid
- 1b Ren solenergi for framtida
- 2+3 Klimaendringer i Trondheim
- 4 Byens naturmangfold 2050
- 5 Lyd i havet - skjult trussel
- 6 Ocean Charters – hva skjedde?
- 25 Humlebuzz
- 7 Den karbonnøytrale byen i 2050
- 8 Smarte plussbyer
- 9 Nullutslipp i alle bydeler i Trondheim
- 10 Hva er en god by for deg?
- 11 Digital tvilling av Ålesund
- 12 Lab for framtidens bolig
- 13 Framtidens forbruker**
- 14a Off the Grid
- 14b Mikrohuset
- 15 Grønn gaming
- 16 Vår påvirkningskraft
- 17 Tidsveggen
- 18a Body in motion
- 18b Bedre søvn for bedre helse
- 19 Credo
- 20 Krønchy kryp
- 21 Framtidens næringskilde
- 22
- 24





- 22 Havets planter – framtidens mat
- 23 Mat og livsstil
- 24 Bioreaktor

Figure 30: The arena map of the Big Challenge festival grounds (Futurum, 2019).

## Container 1

# First-life clothing store

---

"Welcome to J x L!

Our clothes are designed for your body shape, your lifestyle, and your environment. The styles are versatile, the materials are long-lasting, and the cuts and colours are always in fashion because they are made to make you feel your best.

We take care of the whole life cycle of our garments, so if something needs repairing or reinforcing, you can return it and we will fix it. If you are bored of it, you can send it back and we will pay you for the value of the materials which we can use – if not in clothing then in upholstery or insulation by one of our partner companies.

Take a look at the classic styles on display, get to know the materials, and talk to us about your personal requirements before uploading your digital avatar to the system. Your new clothes are made near Kristiansund and will be ready in a week. We know from our own experience that these clothes will give you as much satisfaction in wearing them as we had in creating them.

Remember, fabrics are a precious resource. Buy what you love and love what you wear!"

*The introduction to the first-life store – "Johnny x Livid. See point 1 on the following page.*



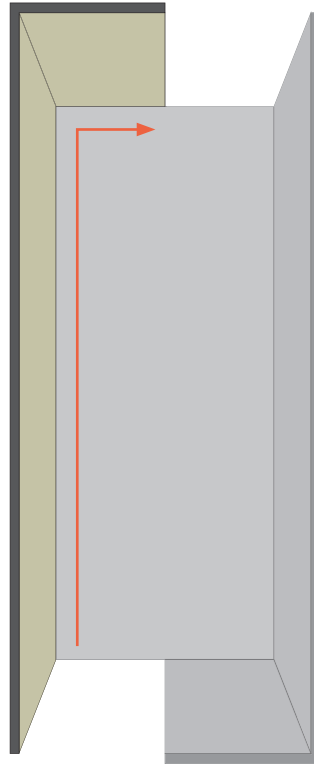
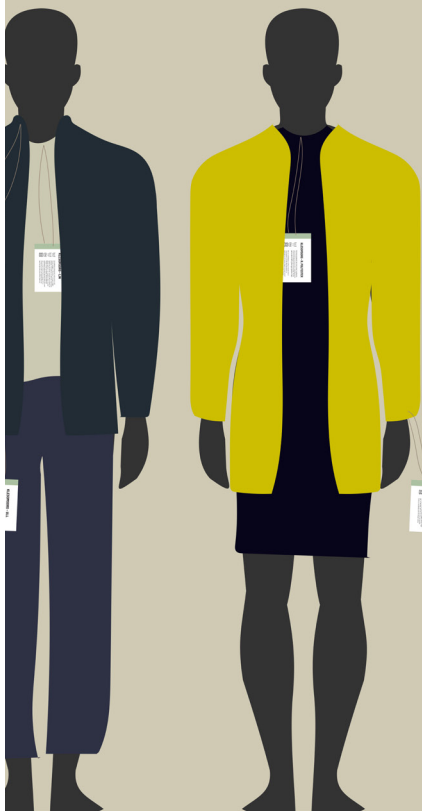




Figure 31: 2D-sketch of the final design for the First-life clothing store.

## SKREDDERSY OG BESTILL

Tailor and order



5

Les på lappene for å lære om hvordan du bør behandle de ulike klærne

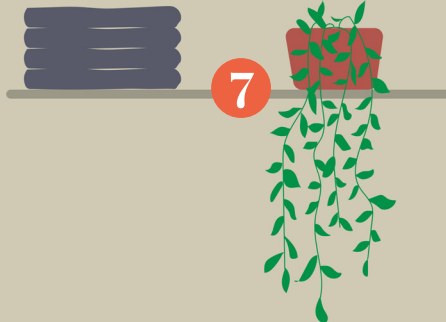
Read the labels to learn how you can take good care of the garments



6

## HISTORIER FRA VÅRE KUNDER

Stories from our customers



7

## **1 Introduction to the store (Appendix B)**

Store logo and an introduction to the core values of the store. The introduction welcomes the audience, which in this case takes the role of “shoppers” on Trondheim Torg in 2050.

## **2 Material samples (Appendix C)**

Four selected materials that the store uses in their clothing: Wool / Recycled wool, denim, recycled polyester and linen. Some of these have several variations that the audience can turn to view. Behind each material sample is a short introduction to each material with some key facts about its characteristics.

## **3 Clothes rack**

A rack with an assortment of clothes that are “sold” in the store. Here, the audience can view samples of classical, high-quality garments. Furthermore, the garments serve as props to create a clothing store “feeling”.

## **4 Mannequins and labels (Appendix D)**

The mannequins are dressed up in sample clothes which is provided to us by JohnnyLove and Livid Jeans. Each garment contains a label where the audience can read about how to treat the garment in the best possible way and what they can do with the garment when the time comes to get rid of it.

## **5 Tailoring and ordering interface (Appendix E)**

A “computer touch screen” imitating what the store’s system for tailoring and ordering would be like. The screen is not interactive, but just a placeholder for what the concept could be like. Underneath the screen is a black receiver in which future customers of the store will use to tap their ID chip to upload their digital avatar and conduct their payment.

## **6 Storytelling from customers (Appendix F)**

Stories and pictures from Johnny x Livid future customers. The stories aim to tell the audience about what future consumers might be like, and how they relate to their clothing.

### **Shelf**

**7** Shelf for clothes samples. As goes for the clothing rack, the garments on the shelf serve as props to create the clothing store vibe.

The exhibition does also contain handwritten instructions to guide the audience in interacting with the displays. These are placed in Appendix G.



Figure 32: Scale model of the final design.



Figure 33: Scale model of the final design.

## Container 1

# Second-life clothing store

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"Hi and welcome to Prisløs!

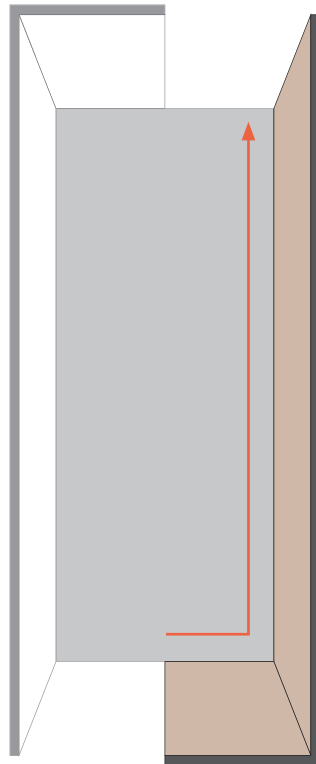
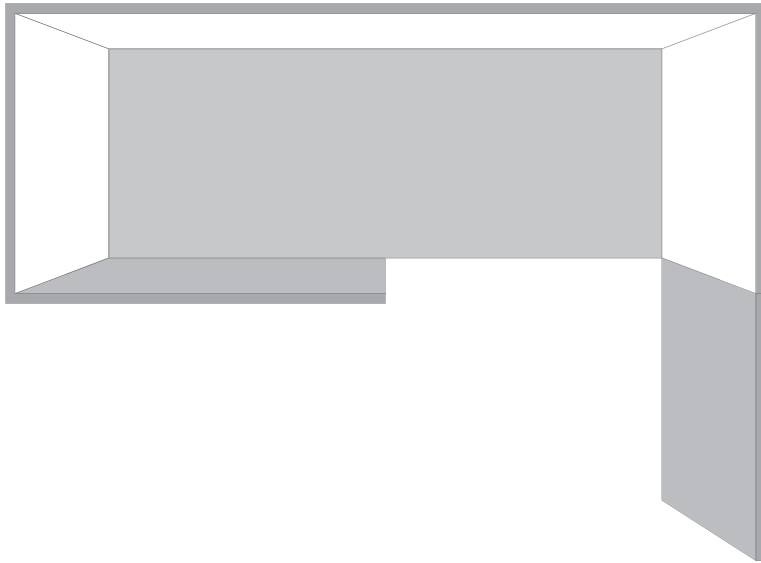
All of our textiles and clothing are waiting to enjoy a second life, and each piece has a story to tell. Perhaps you will be its new author?

Some items were once curtains, bed sheets or tablecloths, some have already been worn as clothes - but all are unique and whatever you choose, it will be reinvented as new especially for you! Choose a pattern and select a fabric you like, and then either take them home to stitch yourself or leave them with us and we will have your new outfit ready within a week. Don't forget to leave your measurements, let us know if you would like a close or more comfortable fit, and of course if there are any extras that will make you feel even happier with your Prisløs clothes!

We hope you find something you love!"

*The introduction to the second-life store - Prisløs. See point 1 on the following page.*





## HISTORIER FRA VÅRE KUNDER

### STORIES FROM OUR CUSTOMERS

6



Husk at de mest bærekraftige plaggene er de du allerede har i kleskapsel ditt! Deresom du har liten erfaring med vedlikehold av kler, men eier kler som trenger et lite løft, kan du bli med på våre ukentlige «Sly og spar»-kurs. Meld deg på via vår nettside!

7

Remember that the most sustainable garments are the ones you already have in your wardrobe! We host weekly "Sly&Spar" classes where you can mend or makeover your garments. Sign up online!

Ta en titt på merkelappene for å lese historiene til hvert enkelt plagg.

Read the tags to learn the story of the different garments.

5



## VÅRE MØ

Alle disse kan tilpa

### OUR PAT

All of these patterns can be ada



## FERDIGE I

Kler som vi har laget på best

### FINISHED GA

These are some current orders

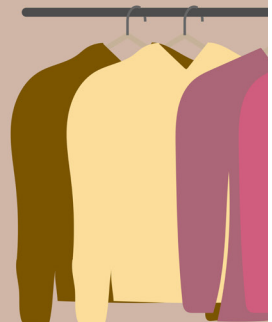


Figure 34: 2D-sketch of the final design for the Second-life clothing store.

## TEKSTILER SOM VENTER PÅ ET NYTT LIV

*Take a look at our beautiful textiles and  
choose the one you love the most!*

### SECOND-LIFE FABRICS

*Take a look at our beautiful textiles  
and choose the one you love the most!*

2



*Alle brukte stoffer har sin historie  
å fortelle. Les på lappene for å  
fåne ut mer, men la stoffet bli  
liggende i hyllene.*

*Feel free to look at the fabrics! Each one has  
its own story to tell. We would appreciate it  
if you can leave them on the shelves.*



1

Hi and welcome to Pricks!

Vi er en bruktbunikk full av tekstiler og kler som venter på å starte sitt andre liv! Alle kler og stoffer som selges i butikken har sin unike historie å fortelle - Kanskje du har lyst til å forvante en av disse?

Tekstilene vi selger er håndplukket av oss, og passer perfekt til å bli nydelig om til kler. I utvalget finner du alt fra ryddelige gamle skoler, til sørgjette og brukte gardiner i forskjellige mønstre. Velg et stoff du liker og få det laget spesielt til deg, eller ta det med hjem og sy et nydelig plagg selv! Vi tilbyr unike og kule mønstre, og våre ansatte er her for å veilede deg slik at resultatet blir akkurat slik som du ønsker det.

Vi håper du finner noe du liker!

Hi and welcome to Pricks!

All of our textiles and clothing are waiting to enjoy a second life, and each piece has a story to tell. Perhaps you will be its new author?

Some items were once curtains, bed sheets or tablecloths, some have already been worn as clothes - but all are unique and whatever you choose, it will be reinvented as new especially for you! Choose a pattern and select a fabric you like, and then either take them home to stitch yourself or leave them with us and we will have your new outfit ready within a week. Don't forget to leave your measurements, let us know if you would like a close or more comfortable fit, and of course if there are any extras that will make you feel even happier with your Pricks clothes!

We hope you find something you love!

## MØNSTRE

kan tilpasses din stil

3

### PATTERNS

can be adapted to suit your style



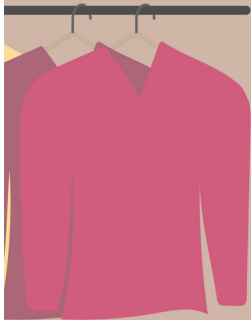
## GE PLAGG

er på bestilling fra våre kunder

4

### ED GARMENTS

current orders from our customers



### **1 Store sign and introduction (Appendix H)**

As for the first-life store, this store does also contain a store sign that is a modification of Prisløs' contemporary logo. Underneath the logo is an introduction to the store - what they do and their values.

### **2 Textiles shelf**

This shelf contains old textiles such as bed sheets, curtains and table cloths. These serve as props for the textiles this future store would sell to their customers for sew-it-yourself projects - i.e. what was the material's prior purpose.

### **Patterns (Appendix I)**

**3** Pattern brochures that serve as props for setting the stage of the future second-hand store which sells sew-it-yourself patterns for clothing.

### **Clothing rack**

**4** The rack contains samples of clothes that have been re-sewn from old fabric. These garments will be loaned to the exhibition by Prisløs which has made the garments.

## **5 Mannequins and labels**

The mannequins will be dressed up in garments that contemporary Prisløs has sewn especially for the exhibition. One of the garments are e.g. made out of an old bed sheet. As for the fabrics (point 2), the garments will have small labels telling the story of the garment and/or the garment's material - i.e. what was the material's prior purpose.

## **6 Storytelling (Appendix J)**

Pictures and stories from Prisløs' 2050 customers. How do people use old fabric and second-hand clothes in the future?

## **7 Closure text (Appendix K)**

A short text motivating and reminding the audience about the importance of taking care of what they already have. Furthermore, it serves as a prop to tell the audience about the store's "sewing classes".

All of the handwritten exhibition instructions are placed in Appendix L.



Figure 35: Scale model of the final design.



Figure 36: Scale model of the final design.

## Container 2

# The KonMari activity

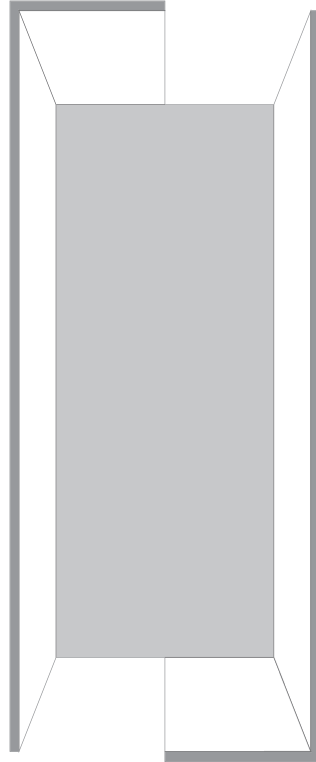
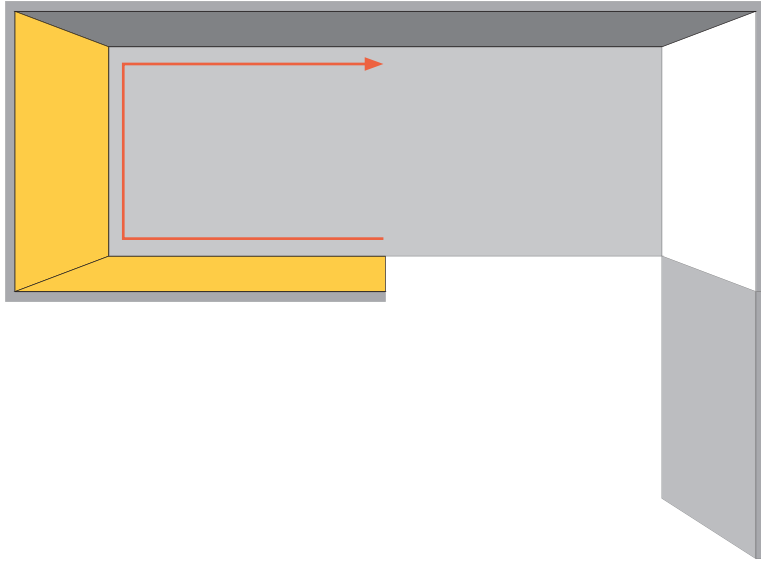
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"Time to reflect about your clothing.

Have a look in the mirror. Choose one piece of clothing and think about it carefully: How does it make you feel? Do you love it or feel indifferent towards it or even dislike it? Be careful not to start judging yourself, only how you feel about the clothing!"

*The introduction to the KonMari activity. See point 1 on the following page.*





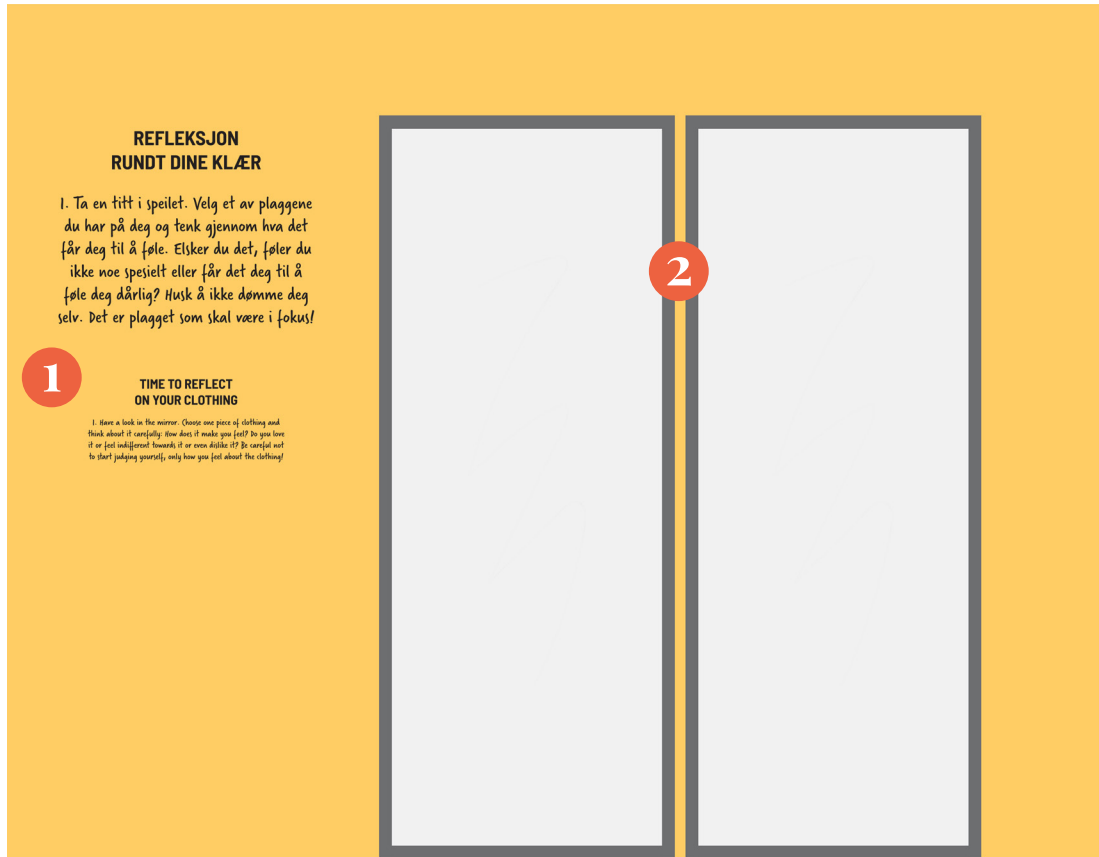
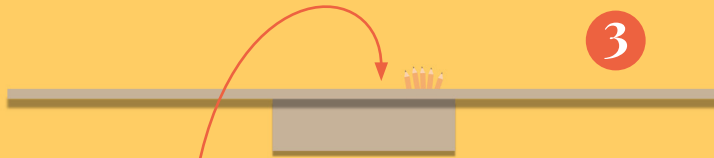


Figure 37-38: 2D sketches of the final design of the KonMari activity.

2. Ta en tusj og et klistremerke og skriv ned hva plagget ditt får deg til å føle og hvorfor.

2. Take a marker and a sticker and write down what your garment makes you feel and why.



4

Plagget mitt får meg til å føle meg...

My garment makes me feel...

fordi... / because...

Figure 39: This custom made sticker allows the audience to note down their responses.

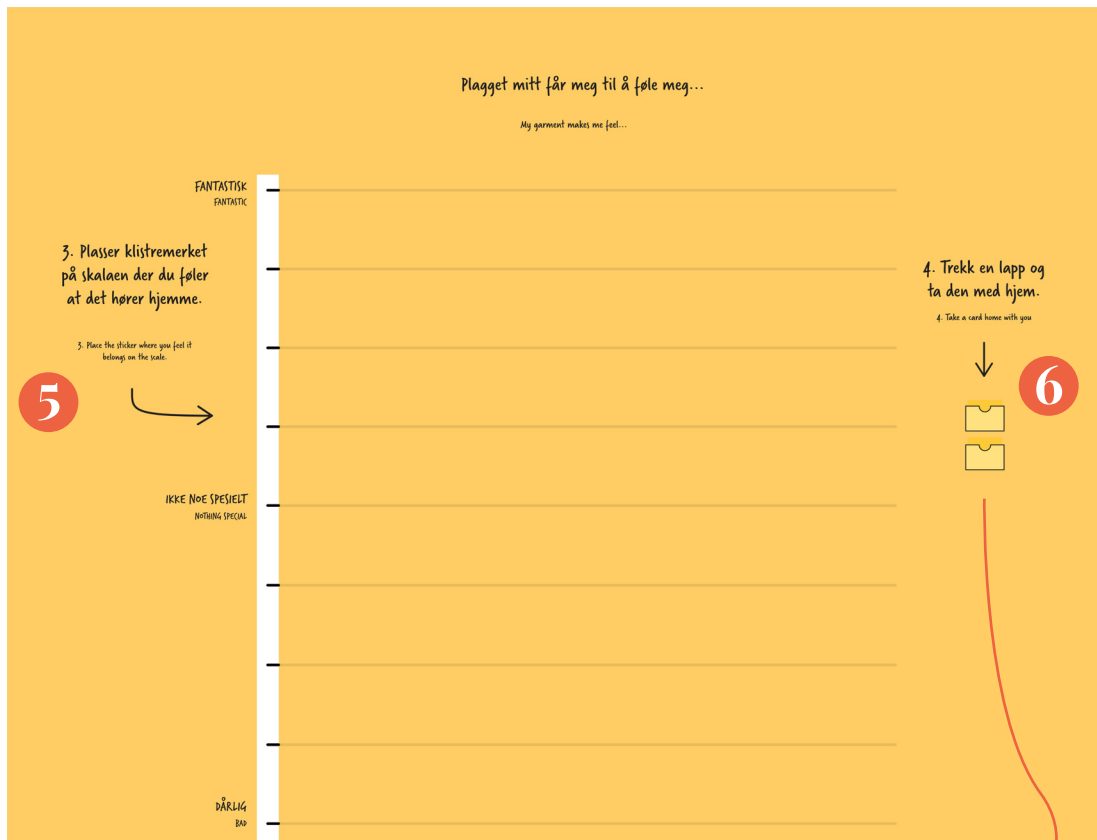


Figure 40: 2D sketch of the final design of the KonMari activity.

## A LITTLE CHALLENGE

Inspired by Marie Kondo & her KonMari method

Garments can spark joy for many reasons – Whether it is because of comfort, memories, a nice fit, aesthetics, identity, protection from the weather, or anything else.

What if we only owned garments that made us feel good?

The next time you purchase a garment or tidy your wardrobe we would like to challenge you to think about such things. Which garments speak to your heart and spark joy?

Figure 41: Challenge card for the KonMari activity.

## **1 Heading and introduction 1 (Appendix M)**

The reflection starts with part one of the activity, namely asking the audience to have a look at themselves in the mirror. Furthermore, the audience is asked to assess one of their garments – How does it make them feel?

## **2 Mirrors**

Two large, free-standing mirrors that are big enough for four people to have a look at themselves at the same time.

## **3 Shelf and instruction 2 (Appendix M)**

The audience is asked to take a marker and a sticker to answer the question from part 1. The shelf contains a box with stickers and markers and are present to give the audience some underlay while they write on the stickers.

## **4 Feedback sticker (Appendix N)**

Custom made stickers that the audience can use to conduct the activity. The stickers has two fields to fill inn: One for what feeling the garment sparks, and one for describing the reason why this feeling is evident.

## **5 Large scale measure tape and instruction 3 (Appendix M)**

The audience is further asked to place their filled-out-sticker on the wall. Following the scale given, they are asked to place it where they feel the sticker belongs.

## **6 Take-home-challenge and instruction 4 (Appendix M & O)**

Lastly, the audience is asked to pick a challenge card from the small pocket on the wall. This card contains a challenge that the audience is encouraged to think about after they leave the exhibition.



Figure 42: Scale model of the final design.

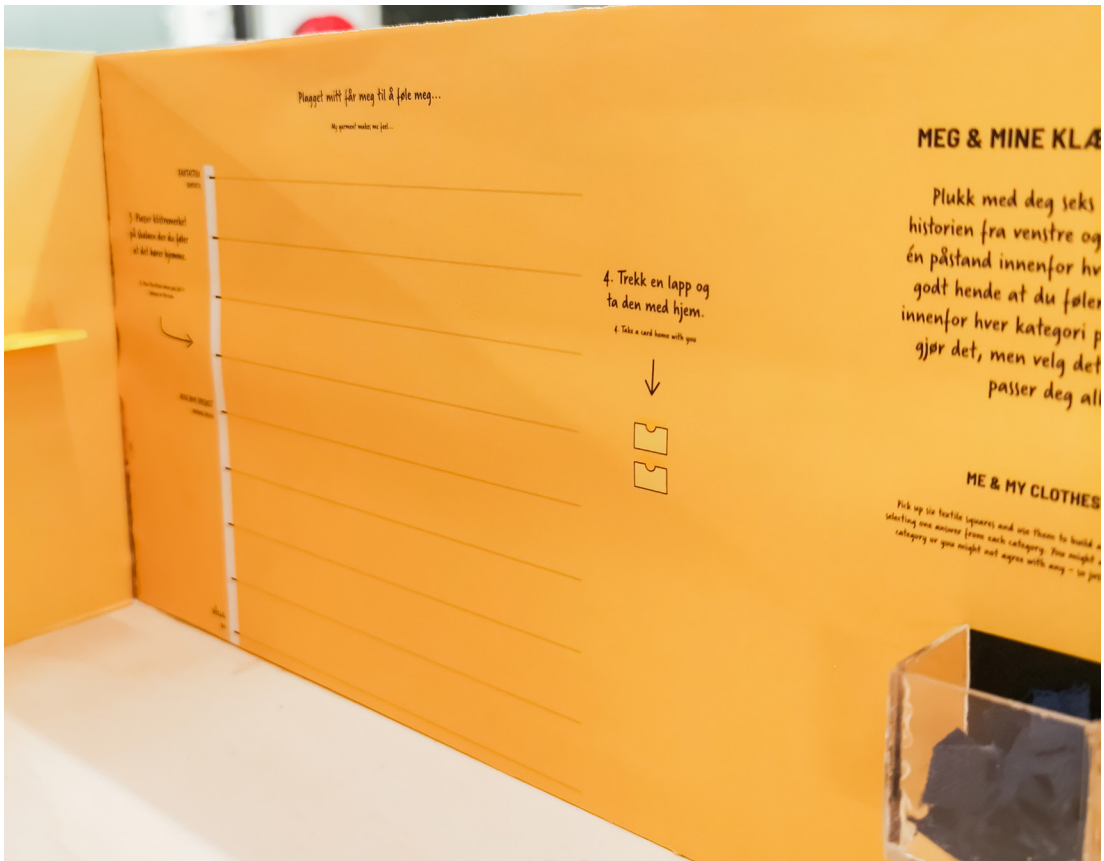


Figure 43: Scale model of the final design.

## Container 2

# Me and my clothes: A story

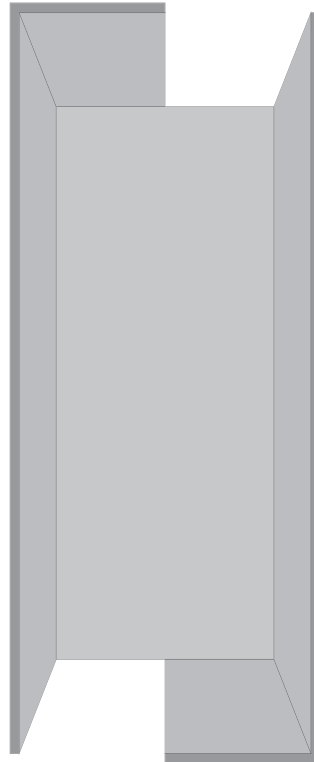
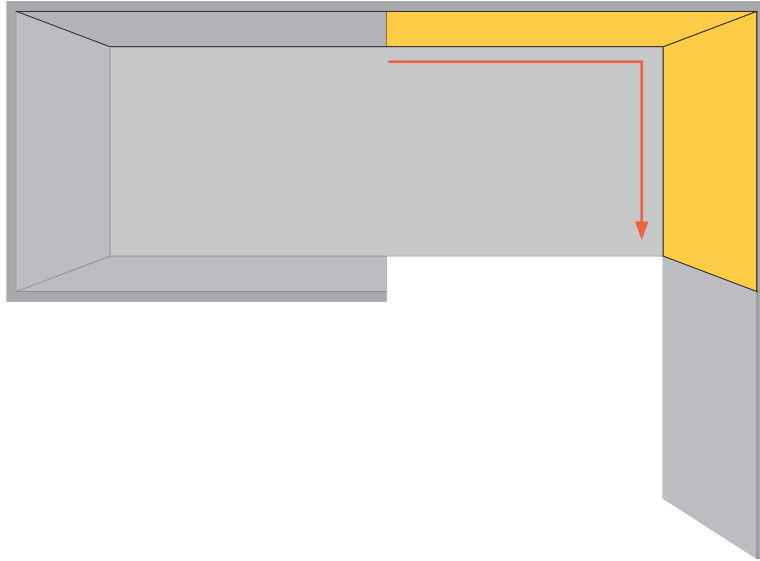
---

"Me and my clothes: A story

Pick up six textile squares and use them to build a story of you and your clothes by selecting one answer from each category. You might agree with several statements in each category or you might not agree with any - so just pick the one that fits you most!"

*The introduction to "Me and my clothes: A story". See point 1 on the following page.*





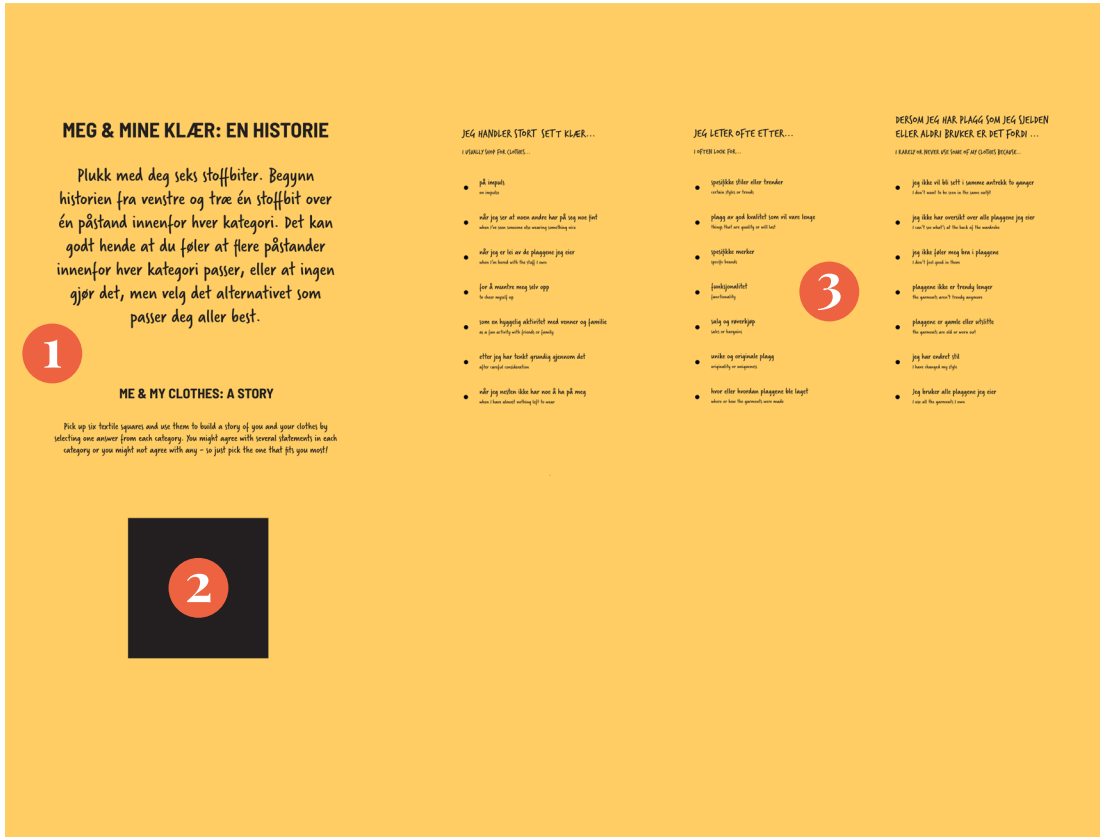


Figure 44-45: 2D-sketches of the final design for Me and my clothes: A story.

### NÅR JEG KVITTER MEG MED KJÆR, SÅ ER DET FØRST...

when i get out of love it's always...

- du er utroligst eller skille  
They are amazing or split
- du ikke passer lenger  
They don't fit anymore
- jeg ikke vil hvordan jeg skal erstatte deg  
I don't know how to replace them
- fordi jeg er lei av deg  
I'm tired of them
- fordi du ikke er bredde lenger  
They are not as deep
- fordi jeg trenger plass til nye kjærlighet  
I need to make space for new love
- jeg vil finne seg selv  
I want to know who i am

### MÅTEN JEG KVITTER MEG MED KJÆR PÅ ER Å...

The way i get out of love is to...

- handle deg selv  
Just focus on myself
- gi deg til utroligst person  
Give them to amazing
- utgi deg på utroligst  
Just focus on amazing
- hjelpe dem med andre  
Help them with others
- gi dem til venner eller familie  
Give them to friends or family
- handle med utroligst til nye  
Use the amazing to find new things
- hjelpe dem på et lag  
Just focus on the group or other

### I FREMTIDEN ØNSKER JEG Å...

In the future, i want to...

- utforske meg selv og kjærlighet  
Explore myself and love
- kunne bli kjærlighet og vil bruke meg  
I can be love and i will use myself
- bruke meg til å erstatte utroligst  
Just focus on amazing
- bli kjærlighet i stedet for kjærlighet  
Just focus on amazing
- bli mine egne kjærlighet  
I will be my own love
- hjelpe kjærlighet i stedet for kjærlighet  
Just focus on amazing
- hjelpe meg selv  
Just focus on myself

### **1 Introduction and instructions (Appendix P)**

This part introduces the new activity and gives the audience instructions for how to conduct the activity from start to finish.

### **2 Textile pieces box**

This box will contain a large amount of pre-cut textile pieces that are to be used for conducting the activity. The textile pieces will have holes in them in order for people to thread them onto the “spikes” that belongs to each statement.

### **3 Categories and statements (Appendix Q)**

Six categories are developed for the audience to build their story. Within each category are seven statements, and the audience must only choose one statement for each category. To the left of each statement (marked as a dot on the 2D-sketch), are spikes or steel tubes that the audience will thread a piece of fabric over in order to place their vote.



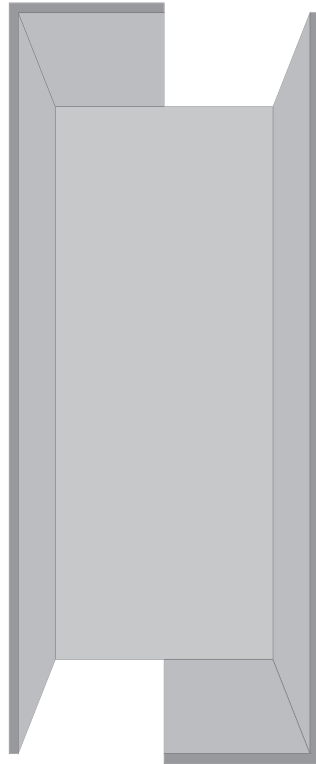
Figure 46: Scale model of the final design.

## Container 2

# Infographics

---

To state why there is a need for a behavior change in clothing habits, eight handpicked facts about the negative impacts of fashion is illustrated and presented to the audience. These are short, but relatable, facts that are presented either in comparison to or in the context of something familiar. This makes the numbers easier to understand, and hopefully a bit provocative and impactful.



# NOEN FAKTA OM KLESINDUSTRIEN

A FEW FACTS ABOUT THE CLOTHING INDUSTRY



## AVFALL

Over 1 år blir søppelposer sendt over fjell og med helikopterhelikopter til en søkk av 100 millioner deler. Avdeler av 7% blir resirkulert til nye klær.

Every year 100 million worth of clothes are discarded. Less than 7% is recycled into new clothing.

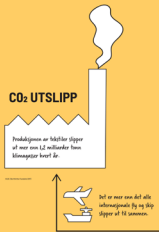


## MIKROPLAST

Klær og tekstiler er kilden til mikroplast i vann.

Omkring 200 millioner deler av mikroplast kommer til å bli med i fjæren i 2020. Dette er 10 millioner deler mer enn i fjæren i 2015.

Over 200 million pieces of microplastic will be in the water in 2020. This is 10 million pieces more than in the water in 2015.



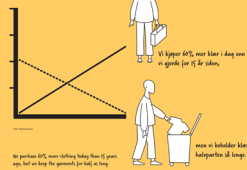
## CO<sub>2</sub> UTSLIPP

Produksjonen av tekstiler slipper ut mer enn 1,2 milliarder tonn klimagasser hvert år.

Det er mer enn 100 ganger så mye CO<sub>2</sub> utslipp som fra en bil som slipper ut 12 tonn CO<sub>2</sub>.

Textile production releases more than 1.2 billion tonnes of greenhouse gases every year, more than three times of all international flights and sea freight shipping combined.

## FORBRUK DE SISTE 15 ÅRENE



## FORURENSING AV VANN

70% av alle kjemiske forurensninger som kommer fra tekstilindustri kommer fra behandling og farging av tekstiler.

70% of global industrial water pollution comes from the treatment and dyeing of textiles.



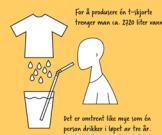
## FORBRUK AV KLÆR I NORGE

Borgerne har i snitt 373 klær i garderoben sin.

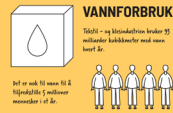
20-40% av alle klær blir kjøpt eller solgt hvert år.

Norwegians have on average 373 garments in their wardrobe. 20-40% are newly or second-hand.

## VANNFORBRUK



It takes 220 litres of water to make one t-shirt. That's three times as much as a glass of coffee.



The textile and textile industry uses 95 billion cubic metres of water each year. That is the same amount of water needed for drinking and bathing by 12 billion people.

Figure 47: The infographics wall is placed on the open door of container 2. For a closer look, see Appendix Q.





Figure 48: Scale model of the final design.

**PART 8**

# **Epilogue**

*This chapter includes reflections, evaluations and conclusions about the process, the final result, and the fashion industry.*

Page 192 - Project evaluation and conclusions

Page 195 - What is the future of fashion?

## Project evaluation and conclusions

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### **The end results**

Using the design brief as a basis for evaluation, the end result has met our criteria. The exhibition peeks into the future with its content from the first- and second life stores in container 1. Its theme – the fashion industry – is culturally relevant for the contemporary societal debates about sustainability, and the displays provides its audience with an everyday scenario; namely clothing stores. Putting the person – the consumer – in the center of attention, the exhibition furthermore aims to provoke and spark curiosity with the container 1 content and information sharing in e.g. the infographics wall. The reflection activities in container 2, extends the experience, as it allows the audience to focus on themselves and their habits and attitudes. By asking people to assess their relationship with clothing and consumption, these activities facilitate reflection and encourages a behavior change. The open nature of the activities lets visitors discuss with each other – if desired – and challenges them to reflect about questions they might not have thought of before. Seen as a whole, the exhibition states a need for change in clothing consumption, but in addition it provides inspiration and motivational factors that might have both an immediate impact and a long-term impact on its audience.

### **The process**

This master thesis has had two main goals: The project itself, which is to design an engaging, interactive exhibition that are finished the 16th of June 2019, and my personal motivations, which was to learn both about “new” approaches to design and about the theme chosen.

Ideation has more or less been key throughout the project in parallel with the research. Sources of inspiration such as Pinterest have been of value, though my (and Lucy's) visions and ideas at the end had the bigger emphasis. Using online inspiration in combination with findings from research and my own ideas has been exciting to translate into tangible concepts.

A high level of ambition has made this project a fun, but challenging task to finish. In the vast majority of courses I have taken at the university, projects have ended at the concept stage. Conducting a project that has to be a 100% finished for use two days after I give my final presentation has demanded discipline. As we ended up with a quite extensive exhibition module with much content, a lot of practical planning such as budgeting, building plans, calculations, communicating with the carpenter, and so forth has taken up much time. Furthermore, a lot of small detailing had to be made for the design to be of full value. This includes furniture design, graphical design, writing, interior design etc. In addition, thorough research was prioritized at the beginning to create a steady foundation for concept development. This has been very rewarding and made it easier to make decisions with comfort. However, all these factors made less time for other things that I also would have loved to implement.

If I were to do this all over again, one thing I would have done differently is to limit the container content down to fewer elements. Even though we are very happy with the results, the large amount of content and small details has sometimes made it hard to prioritize what to emphasize the most. The development of two concept stores and two reflection activities which all demands

several rounds of ideation and refinement, and at the end detailing and adjusting, made it difficult to find time for e.g. thorough user testing of all parts. At the end I decided to prioritize the reflection container for a more in-depth exploration. If there was more time in this project, I would have prioritized to user test the totality of the user experience within each container.

### **Collaboration**

The collaboration between Lucy and I have been very fruitful, as we have supplied this project with different skills and background knowledge. Whereas Lucy came into the project with solid knowledge on circular economy and behavior change, I brought design methodology and skills such as skills for process facilitation, insight gathering, digital developing, and creation to the table. This have made it easier for us to divide tasks and focusing points, even though decisions often were taken together. Google Drive has been our friend when sharing ideas, literature, drafts and etc. when we were not able to meet up in person.

### **Speculative design as an approach**

It was early on decided to approach the project with a speculative design angle. This has been both fun and educating, as it was a topic I did not know from before. The end result could have ended up being more speculative than it turned out, however, the goal was always to design a future with a touch of familiarity and realism. Thus, the final displays themselves ended up being less futuristic and strange than what I might have imagined in January. However, it is important to emphasize that the choice of using speculative design, in combination with the following framework we built for Trondheim 2050, allowed us to make decisions that we most likely would not have taken if we were to approach the project in a different way.

## What is the future of fashion?

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After half a year working with future scenarios, the fashion industry and sustainable consumption – What do I believe is the future of fashion? To share my thoughts on this question, I have chosen to divide the answer into two categories: What changes are needed at 1) at a societal level and 2) an individual level.

Initiatives taken from the government, municipalities and businesses will impact the clothing industry system and the consumer's behavior. Laws and regulations promoting sustainable systems will over time become a natural part of society if thorough planning and economical resources are prioritized to ensure that the "new way" is an adequate substitute. Evidence of this is e.g. the pant and recycling system's in Norway, which a majority of Norwegians view as a natural part of their daily life. These habits have over time become the norm and have thus facilitated both a change of behavior and attitudes.

In relation to clothing, some sustainable systems are established, as e.g. Fretex' clothes deposit boxes. However, to change Norwegian's wasteful clothing habits more initiatives needs to emerge. A good place to start, from the clothing businesses' point of view, is to state more clearly the relationship between prize and quality. Being a sustainable fashion consumer is not easy today, as prize and quality often lack correlation, and because few brands market their sustainable clothing with recognizable brands. Furthermore, what is the definition of a sustainable garment? All materials have their positive and negative sides. Plant fibers like cotton need large amounts of water to grow and demand large

land areas that could otherwise be used for food production, but they are biodegradable, plastic free and CO<sub>2</sub> binding in production. Contrary, polyester is energy efficient and durable, but it releases microfibers and are made from fossil resources. As a consumer, it is difficult to navigate this landscape, and the government and clothing businesses need to facilitate a clarification.

Furthermore, holistic services need to come in place. Fashion businesses need to take more responsibility for the products they create and sell. Offering end-of-life-services, repair and maintenance help, and proper guidance to their customers will both reduce waste and reduce customers' need to constantly buy new garments. All of these services are well established in other industries, such as for cars and electronics, so if people were to invest more in clothing in the future, why should it not be a standard there as well?

Many of these initiatives can be translated to the consumer's perspective. Consumer's need to take better care of their clothes e.g. through more proper treatment of garments in storage and washing. Furthermore, repair and maintenance of clothing should become a more natural part of daily life. However, as a majority of the garments people purchase today are cheap and of low quality, these habits feel unnecessary. Why spend time repairing a shirt you bought on sale for 100-200 NOK? The extremely low price of (especially) chain store garments makes maintenance habits a low priority.

As emphasized several times throughout this thesis, one of the main concerns should be to reduce frequent acquirement of new garments. Clothing should not be a fleeting property, but rather an investment. This is easy in theory, but as the norms in society puts pressure on renewal, and as the fashion industry creates constantly passing trends, fast fashion is sustained. This calls first of all for a change in attitudes. Consumers need to create a more conscious relationship with what they own.



*Farmer: Did you know it takes three sheep to make one sweather?*

*City snob: That's fantastic! I didn't even know they could knit!*

**Thank you for your attention**

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# Appendix

- A Sarah Gjemdal consent form
- B First-life store (FLS) introduction
- C FLS material info
- D FLS clothing tags
- E FLS interface for tailoring and ordering
- F FLS storytelling of customers
- G FLS exhibition instructions
  
- H Second-life store (SLS) introduction
- I SLS sew-it-yourself patterns
- J SLS storytelling of customers
- K SLS closure text
- L SLS exhibition instructions
  
- M KonMari instructions
- N KonMari sticker
- O KonMari challenge card
  
- P "Me and my clothes: A story" instructions
- Q "Me and my clothes: A story" categories and statements
  
- R Infographics

### SAMTYKKEERKLÆRING FOR INTERVJU

Dette intervjuet gjennomføres som del av innsiktfasen i masteroppgaven til Ragnhild Finsveen Liven og doktorgraden til Lucy Chamberlin ved NTNU Trondheim. Prosjektet vi gjennomfører sammen er rettet mot en utstilling som skal stå i Trondheim under Big Challenge festival i juni 2019. Utstillingen har temaet «Trondheim 2050» og vi ønsker, i vår del av utstillingen, å fokusere på sirkulærøkonomi og klær.

Ansvarlige: Ragnhild F. Liven ([ragnhild.f.liven@gmail.com](mailto:ragnhild.f.liven@gmail.com)) & Lucy Chamberlin ([lucy.chamberlin@ntnu.no](mailto:lucy.chamberlin@ntnu.no))

Veileder i faget: Casper Boks ([casper.boks@ntnu.no](mailto:casper.boks@ntnu.no))

### Mål

Dette intervjuet gjennomføres fordi vi ønsker å få inspirasjon fra nytenkende aktører i klesindustrien. Vi ønsker å:

- Høre litt om ditt prosjekt med butikken Sarah Panter
- Lære om hvilke erfaringer du har opparbeidet deg med prosjektet ditt
- Forstå hva gjenbruk betyr for deg
- Lære og inspireres av dine tanker rundt fremtiden til klesindustrien
- Idémyldre raskt rundt spesifikke idéer knyttet til utstillingen vi skal utvikle

### Gjennomføring

Vi ønsker å gjennomføre et semi-strukturert intervju hvor vi på forhånd har forberedt noen spørsmål som vi ønsker å fokusere på. Samtalen kan ta ulike retninger underveis avhengig av hvilke samtaletemaer vi sammen kommer inn på.

Deltakelsen er frivillig og du kan når som helst velge å ikke svare på et spørsmål, avslutte intervjuet eller trekke deg fra prosjektet i etterkant. Hvis vi velger å benytte informasjonen fra dette intervjuet i oppgavene våre ønsker vi å referere til butikken din, Sarah Panter, og ditt fulle navn. Hvis du ønsker å lese gjennom utfallet av intervjuet før oppgaven publiseres kan du ta kontakt med oss og få innsyn i oppgaven. Dersom du ønsker å bli anonymisert i oppgaven er dette også greit, da krysser du av boks nummer 1 nederst på siden.

Vi kommer til å ta lydopptak under intervjuet slik at vi kan transkribere det i ettertid. Det er også ønskelig å ta bilder som vil brukes som illustrasjon i masteroppgaven. Dersom du ikke ønsker å bli fotografert kan du krysse av boks nummer 2.

Informasjonen som kommer ut av dette intervjuet vil benyttes som et inspirasjonsgrunnlag til utstillingen vi skal utforme.

### Tillatelse

Masteroppgaven og doktorgradsavhandlingen vil bli publisert på NTNU Open.

- Jeg ønsker å bli anonymisert
- Jeg ønsker ikke å bli tatt bilde av

Jeg har lest og forstått informasjonen over og gir mitt samtykke til å delta i intervjuet.

22.02.19, Trondheim

Sted og dato

*Sarah Gjerdal*

Signatur

## Appendix B - First-life store (FLS) introduction

Welcome to J x L!

Our clothes are designed for your body shape, your lifestyle, and your environment. The styles are versatile, the materials are long-lasting, and the cuts and colours are always in fashion because they are made to make you feel your best.

We take care of the whole life cycle of our garments, so if something needs repairing or reinforcing, you can return it and we will fix it. If you are bored of it, you can send it back and we will pay you for the value of the materials which we can use – if not in clothing then in upholstery or insulation by one of our partner companies.

Take a look at the classic styles on display, get to know the materials, and talk to us about your personal requirements before uploading your digital avatar to the system. Your new clothes are made near Kristiansund and will be ready in a week. We know from our own experience that these clothes will give you as much satisfaction in wearing them as we had in creating them.

Remember, fabrics are a precious resource. Buy what you love and love what you wear!



Velkommen til J x L!

Vi designer klær som kan skreddersys til din kroppsfasong, din livsstil og ditt nærmiljø. Stilen vår er klassisk og allsidig, materialene våre har lang levetid, og vi velger snitt og farger som er spesialdesignet for å gi deg en god følelse. Vårt mål er at et plagg du kjøper hos oss skal bli en nær følgesvenn for deg i lang tid fremover.

Vi forsikrer oss om at livssyklusen til alle klærne vi selger er best mulig for både deg og miljøet. Derfor tar vi alltid imot plagg som trenger vedlikehold eller et lite løft. Dersom du har et plagg som du ikke ønsker å beholde lenger kan du returnere det til oss og få tilbakebetalt en del av plaggets verdi. De brukte plaggene som vi mottar kan for eksempel selges videre, benyttes i reparasjon av andre plagg eller resirkuleres til isolasjonsmateriale.

I denne butikken vil du bli kjent med materialene vi bruker, inspireres av stilene som henger fremme og få mulighet til å snakke med våre ansatte om hvilke ønsker du har for ditt plagg. For å bestille og skreddersy et plagg laster du opp din digitale avatar i vårt bestillingssystem. Klærne våre blir produsert i Kristiansund, og du vil motta bestillingen innen en ukes tid. Vår erfaring tilsier at du kommer til å få like mye tilfredsstillelse av å bruke klærne våre som vi fikk da vi lagde dem.

Ikke glem at tekstiler er en dyrebar ressurs!  
Kjøp klær du elsker, og elsk klærne du bruker.

### RECYCLED POLYESTER

Polyester is a synthetic material derived from oil. Although new plastic-based textiles like this are no longer made because of the environmental hazard, recycling the old material from e.g. waste clothes and fishing nets keeps it in use and prevents it from releasing pollutants through landfill or incineration. Recycling the polyester requires very little energy and water, retains all of its useful properties, and does not take up land that could otherwise be used for food production.

**Fact:** Polyester used to be mixed with other fibres and used in many types of clothing. Now we only use it in very durable styles such as coats and outdoor wear, since it is expensive to extract the fibres and cannot be released to the environment.

**Positive characteristics:** Polyester is a robust and elastic material with a long lifetime.

**Biodegradation time:** Over 200 years

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### RAW DENIM (ORGANIC COTTON)

Denim is a strong material made of natural fibre from the cotton plant. Raw denim, also known as dry or unwashed denim, is the purest form which has never been washed or distressed. This saves a lot of water and avoids the need for harmful chemicals usually used to treat denim. It also makes your raw denim extremely durable and means that everything you do - the way you walk, what you carry in your pockets - will leave its mark over time, so it becomes entirely unique to you.

**Fact:** By turning to organic production of cotton and reducing overall outputs, the use of toxic chemicals in denim production can be reduced by 93%.

**Positive characteristics:** The denim textiles are woven to be robust and durable. You can save water by washing them less often and freshening them up in the freezer instead. Furthermore, organic cotton is more durable than normal cotton, so these garments have a longer life.

**Biodegradation time:** About one year

## **WOOL AND RECYCLED WOOL**

Wool is a yarn that is created from the fleece of animals such as sheep and goats. Individual wool fibers attach together when spun to create yarn, which is then used to create garments. Having evolved over many millennia to protect sheep, wool is perhaps the most technically advanced material we know. It is lightweight, warm, naturally stain and wrinkle resistant, and keeps you warm in cold weather and cool in hot weather.

**Fact:** Wool is 100% renewable and natural and will decompose in your garden!

**Positive characteristics:** Wool is breathable and antibacterial (self-cleaning) which means that it rarely smells and only needs occasional washing. After a day's use just let it rest overnight so that the lanolin can work to kill odour-creating bacteria. Then it will be ready for wearing again the next day!

**Biodegradation time:** About one year

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## **LINEN**

Linen is a very sustainable fiber which is made from the blue-flowered flax plant. After hemp, linen is the least demanding fibre in terms of energy and water used in its production. Flax only needs rainwater to grow, and thus avoids the need for intensive irrigation and chemical interventions. In addition, flax has a positive effect on soil, improving the quality of the next crop.

**Fact:** Back in 2019, the cultivation of European flax was helping to capture 250,000 tons of CO<sub>2</sub> per year - the equivalent of an old petrol car driving 60,000 times around the world. This year Norwegian flax production alone has more than doubled that!

**Positive characteristics:** Linen fabric is flexible and 2-3 times as durable as regular cotton. Moreover, it breathes well and gets softer after it is washed and used. The cloth's moisture-repellent properties and airy structure mean that it does not absorb sweat - so all garments made of linen are excellent for hot summer days.

**Biodegradation time:** A few weeks

## RESIRKULERT POLYESTER

Polyester er et syntetisk plastmateriale som stammer fra olje. Selv om plastbaserte tekstiler ikke lenger blir produsert, kan man ved å resirkulere eksisterende polyester forhindre at plasten havner på avfallshauger eller kommer på avveie i naturen. Resirkulering av polyester krever lite vann og energi. I tillegg vil materialet fortsatt beholde alle sine positive egenskaper. En annen positiv side ved resirkulering av plastfibre er at det til sammenligning med naturfiber ikke beslaglegger store landbruksområder som ellers kunne blitt brukt til matproduksjon.

**Fakta:** Historisk har polyesterfibre ofte blitt kombinert med andre fibre som ull for å lage mange ulike typer klesplagg. I dag benyttes denne teknikken kun i robuste plagg som jakker og yttertøy fordi det er så kostbart å skille fibrene fra hverandre.

**Positive egenskaper:** Polyester er et slitesterkt og elastisk materiale med lang levetid.

**Nedbrytningstid:** Over 200 år

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## RÅ DONGERI (ØKOLOGISK BOMULL)

Dongeri er et solid materiale som er laget av naturfiber fra bomullsplanten. Rå dongeri, også kjent som tørr eller uvasket dongeri, er materialet i sin reneste form fordi det i motsetning til "vanlig dongeri" ikke har gjennomgått vask i produksjonsprosessen. Dette utgjør store besparelser av vann og skåner miljøet for utslipp av skadelige kjemikalier. I tillegg blir materialet svært slitesterkt, noe som gjør at alt du foretar deg i dongeriplagget - for eksempel måten du går på og det du har i lommene - etterlater seg helt spesielle merker over tid. Dermed blir plagget helt unikt for deg.

**Fakta:** Ved å gå over til økologisk produksjon av bomull reduserer man giftbruken med 93%.

**Positive egenskaper:** Dongeristoffet er vevd slik at det er robust og slitesterkt. I tillegg trenger man sjelden å vaske rå dongeri. Legg heller plagget i fryseren for å friske det opp. Økologisk bomull er mer slitesterkt enn vanlig bomull, dermed har disse plaggene lengre levetid.

**Nedbrytningstid:** Rundt et år

## ULL

Materialer laget av ull stammer fra fibre vi finner hos blant annet sau og geit. De individuelle ullfibrene er lette å binde sammen og gjøre om til garn. Dette garnet er ypperlig å lage klær av. Ulla har gjennom evolusjonen utviklet fantastiske egenskaper for å beskytte sauene, noe som gjør at det er et av de mest teknisk avanserte materialene vi har i dag. I tillegg er ull et lett materiale som holder godt på varme, og som er vanskelig å rynke eller skitne til.

**Fakta:** Ull er 100% fornybart og naturlig, og vil dermed kunne komposteres i hageavfall.

**Positive egenskaper:** Ulla puster godt og har antibakterielle (selvrensende) egenskaper som gjør at det sjeldent lukter. Dermed trenger vi sjeldent å vaske ullplagg. Etter en dags bruk bør du la plagget hvile i et døgn. På den måten vil lanolinen i ulla få tid til å jobbe med de lukt-fremkallende bakteriene.

**Nedbrytningstid:** Rundt et år

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## LIN

Lin er bærekraftig fiber som stammer fra den blåblomstrede linplanten. Etter hamp, er lin den naturfiberen som krever minst energi og vann i produksjon. I områder med jevnlig nedbør trenger planten kun regnvann for å gro, noe som gjør at den ikke trenger intensiv kunstig vanning. I tillegg til dette har linplanten en positiv effekt på jorden hvor den dyrkes - Den forbedrer jordsmonnet for neste avling.

**Fakta:** Tilbake i 2019 samlet dyrkingen av lin i Europa opp cirka 250 000 tonn CO2 hvert år. Dette er like mye CO2 som en gammel bensinbil hadde sluppet ut dersom den kjørte 60 000 ganger rundt jorden. Norsk produksjon av lin utgjør i 2050 mer enn dobbelte av dette!

**Egenskaper:** Linstoffet er elastisk og 2-3 ganger så slitesterkt som vanlig bomull. I tillegg puster det godt og blir mykere etterhvert som det vaskes og brukes. Linets luftige tekstur og fuktavvisende egenskaper gjør at svette ikke absorberes i plagget, men heller fordamper på huden. Dermed er alle linplagg ypperlige å bruke på varme sommerdager.

**Nedbrytningstid:** Noen uker

### AFTERLIFE CARE

*With so much use, your garment may need a little extra care from time to time. And if you decide that you yourself no longer want to wear it, it may yet have many future lives – so please hang this tag in your wardrobe or keep it in a safe place so that you can refer to it in the future. Look at the back of this tag to learn what you can do with the garment when you no longer want to keep it.*

#### **My garment has seen a lot of use and needs some repair or attention**

Our denim comes with a lifetime guarantee and the rest of our clothes have a 10-year warranty, so you can bring them back again and again and we will patch the elbows, reinforce the crotch or cuffs, mend any holes and generally give things a new lease of life! Come and visit us in the store or post us your items.

#### **I am bored of my garment, but it is in good condition**

Bring or send your item back to us and we will check it over, give you 25% of the cost price if it's in good condition, and then pass it on to a new owner via our Saved programme!

#### **I no longer want my garment, and it has seen better days**

Even if you think no-one else will be able to wear your item, we still want it back! We know the value of the materials that went into it, so we can easily use them again in patches, or pass them on to our partners for use in furniture, insulation, soundproofing and bus or bike upholstery. Woollens with natural dyes can also be composted. There is a drop-off in the shop or you can post your item to us.

## ØNSKER DU IKKE Å BEHOLDE PLAGGET LENGER?

*Selv om du ikke ønsker å beholde plagget ditt lenger kan det fint få et nytt liv et annet sted! Derfor oppfordrer vi deg til å beholde denne lappen slik at du vet hva du kan gjøre med plagget en gang i fremtiden. Bla om til neste side for å få noen tips om hva du kan gjøre med plagget etter det er ferdig hos deg.*

### **Plagget mitt er slitt og må repareres eller vedlikeholdes**

De fleste av klærne våre har enten livstids- eller 10 års garanti. Det betyr at du kan ta med plaggene tilbake hit igjen og igjen for å få hjelp til å lappe hull, styrke svake punkter eller generelt gi dem "et lite løft". Bare stikk innom butikken eller send oss plagget i posten.

### **Jeg er lei av plagget, men det er i god stand**

Ta med deg plagget til butikken eller send det i posten slik at vi kan se over det. Dersom plagget er i god stand gir vi deg 25% av salgsprisen tilbake. På den måten kan plagget få et nytt liv hos en ny eier.

### **Jeg er lei av plagget og det trenger vedlikehold**

Selv om du tror at ingen andre ville ønske/kunne bruke plagget så ønsker vi fortsatt å ta det imot. Materialet har fortsatt verdi og kan brukes til så mangt. Deler av plagget kan for eksempel bli brukt til lapping eller sammensetting av nye klesplagg. Er det veldig slitt kan det brukes til lydisolering eller komposteres dersom materialet er naturlig. Mulighetene er mange!

## LIFETIME CARE - WOOL



Animal hairs like wool should only be washed when absolutely needed. Always use a detergent designed for woollens and wash on a gentle cycle or hand wash. Stains can also be removed with a damp cloth. Dry the garment flat and placed in its normal shape. If you hand washed the garment, place the damp garment flat on a clean towel, roll the towel up and squeeze out excess water.

## A LITTLE TIP

*Moths love woollens and often leave big holes in clothes. They don't like light so regularly worn items are less likely to end up with holes than those left in storage.*

*Putting cedar wood balls in your wardrobe can help keep them away, or store your woollens in sealed cotton bags as moths don't like cotton.*

*To get rid of moths, put your woollens in the freezer for 24 hours, take them out and bring them up to room temperature, then repeat once again.*



## KLESOMSORG - ULL



Ull bør kun vaskes når det er absolutt nødvendig. Husk å alltid bruke et vaskemiddel som er utviklet spesielt for ull, og vask alltid på et ullprogram eller for hånd. Får å unngå at klesplagget endrer form når det tørker bør det tørkes liggende på en rett overflate. Hvis du håndvasker plagget kan du legge det i et håndkle, rulle det sammen og forsiktig skvise ut overflødig vann før plagget tørkes.

## ET LITE TIPS

*Møll elsker ull, og kan over tid etterlate plaggene dine med store hull. Siden møll ikke er noe glad i lys vil plagg som brukes regelmessig ha mindre sannsynlighet for å få slike skader enn plagg som blir lagret på mørke steder.*

*Et annet tips kan være å putte sedertre-baller i kleskapet ditt eller legge ullplaggene dine i bomullposer.*

*For å bli kvitt møll kan du putte ullplaggene dine i en fryser i 24 timer. Det kan være lurt å gjøre dette i to omganger.*

## LIFETIME CARE - DENIM



If your jeans aren't actually dirty, you can put them in a bag in the freezer to freshen them up! If they really need washing, do so at 30 degrees Celsius, close zips or buttons and turn them inside out beforehand.

## A LITTLE TIP

*When drying denim, flatten the garment into shape and then hang-dry or dry flat. This prevents or reduces the need for ironing!*

## KLESOMSORG - DONGERI



Hvis jeansene dine ikke er skitne av flekker, anbefaler vi deg å la være å vaske dem. Putt dem heller i en pose i fryseren for å få bort bakterier og friske dem opp. Hyppig vask av jeans vil føre til at de fortere slites ut og mister fargen sin. Dersom du likevel føler at du må vaske plagget anbefaler vi at du gjør det på 30 grader. Husk å lukke glidelåser og vrenge buksene før vask.

## ET LITE TIPS

*Når du skal tørke jeansene er det lurt å riste eller forme plagget før du tørker det hengende eller liggende på en flat overflate. Dette gjør at du unngår rynker og slipper å stryke de.*

## LIFETIME CARE - LINEN



Linen fibres are strong when they are damp so even delicate linens can be washed in a machine. Keep the water warm or cold - the smooth surface of the flax fibres easily shed stains, and 30C uses less energy of course. Give your linen plenty of space in the machine as it is very absorbent - which makes it a fantastic summer material - and can soak up to twice its weight in water! Use a gentle detergent, dry it outside on a line or flat if your linen is knitted.

## A LITTLE TIP

*If you do want to iron it do this on both sides whilst it is still damp; pure linen can take a pretty high temperature. Of course, we think the relaxed crumples of well-worn linen are the definition of laid-back cool - and these get comfier and softer with age!*

## KLESOMSORG - LIN



Linfibrene er meget sterke, derfor kan selv delikate linplagg maskinvaskes. For å spare miljøet anbefaler vi at du bruker en kald vask, men du kan også bruke varmt vann. Det kan være en fordel å gi plagget godt med rom i maskinen siden tekstilet trekker til seg mye væske. Bruk et skånsomt vaskemiddel og heng det gjerne til tork på en snor ute i sommerhalvåret. Dersom plagget ditt er strikket bør du tørke plagget liggende på en flat overflate slik at det ikke mister formen sin.

## ET LITE TIPS

*Dersom du ønsker å stryke plagget anbefaler vi at du gjør det på begge sider mens plagget ennå er fuktig. Vi synes likevel at linplaggene rynker gir et kult og avslappet uttrykk. Dessuten vil disse rynkene bli mykere og mer komfortable etter du har brukt plagget en stund.*

## LIFETIME CARE - POLYESTER



Recycled polyester shouldn't need much washing, but if you do put it in the machine once in a while use a cool wash and remember to empty the pockets and close the zips first.

Of course, the most important thing to remember is your microfibre bag to prevent the plastic microparticles from escaping into the ocean!

## KLESOMSORG - POLYESTER



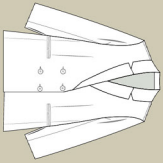
Resirkulert polyester bør ikke trenge regelmessig vask, men dersom du synes det er nødvendig kan du maskinvaske plaggene på lav temperatur. Husk å tømme alle lommer og lukke igjen glidelåser først.

Ikke glem å legge polyesterplaggene dine i en mikrofiberbag når de skal vaskes! Ved å gjøre dette forhindrer du at mikroplast fra plaggene slipper unna og havner i havet.

# JOHNNNY X LIVID

Order and tailor your new garment here

1 Choose style - Women's - Coats - Luna Coat



LUNA COAT  
Women's

Price: 4500 Kr

Luna Coat is a light and soft coat made of wool. It's perfect for chill weather during spring, summer and fall. The water-repellent weave and lanolin in the wool protect you from sudden rain showers.

2 Select material and color - Wool



WOOL

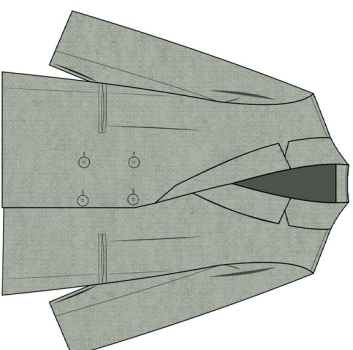
This coat is only available in wool.

3 Upload your digital avatar to tailor the garment



Tan the receiver to upload your digital avatar

ORDER PREVIEW





### SEBASTIAN & HELLE

Helle og Sebastian flyttet fra Spania til Trondheim for fem år siden for å komme nærmere Helles norske foreldre. Sebastian var klar for et nytt eventyr og jobber i dag på et hagesenter på Lade. Deres lille datter, Mariana, har akkurat startet i barnehagen, og elsker å være med foreldrene sine på sykkeltur i sentrum. Både Helle og Sebastian har gått til innkjøp av en allværsjakke i resirkulert polyester fra Johnny x Livid. Helles jakke har kun vært inne til reparasjon én gang siden hun kjøpte den. Dette på tross av at hun nesten bruker den hver dag i høst- og vårmånedene. Sebastian elsker følelsen av linskjortene fra J x L. I følge ham selv gjør de han både kul og stilfull, og i tillegg blir skjortene bare bedre etterhvert som de brukes. Han tar gjerne en slik skjorte på seg når han skal slappe av etter en lang dag på hagesenteret, og passer alltid på å tørke dem på en snor ute slik at de alltid lukter friskt før bruk.

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Helle and Sebastian moved to Trondheim five years ago from Spain. Helle's parents are Norwegian and she wanted to get in touch with her roots, and Sebastian was up for a new adventure and found a job at the garden centre in Lade. Now they have a little girl, Mariana, who has just started at the kindergarten and who loves riding in the bike trailer while they are shopping. Both Helle and Sebastian have one of Johnny x Livid's all-weather jackets made from recycled polyester, which use a special weave to make them extra waterproof. Even though she wears it most days throughout the spring and autumn, Helle has only had to take hers in for repairs once, to get the cuffs reinforced. Sebastian loves the feel of J x L's linen shirts, which keep him cool and stylish in summer and seem to only get better with age. He puts one on to relax in the evening after a busy day at the garden centre, and makes sure to always line dry them outside so that they smell deliciously fresh!



## TOBIAS & ERIK

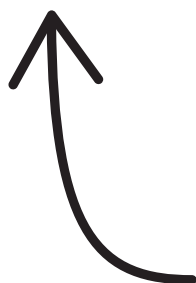
Tobias og Erik foreleser redesign og bærekraftig interaksjonsdesign ved NTNU. De har nylig startet på et nytt prosjekt i faget "Redesign av møbler", hvor de skal restaurere en gammel lenestol. I tillegg holder Tobias kveldsundervisning i reparasjon av sykler på universitetsverkstedet hvor han jobber. Erik kan sees på som en "jeans-fanatiker": Han eier kun to par jeans til enhver tid, og på grunn av dette har buksene hans fått et personlig preg etter omfattende bruk og flere runder vedlikehold. Man kan for eksempel se hvordan beltehempene over lommene har fått et frynsete preg etter at han har latt tomlene sine henge der time ut og time inn under forelesning. Jeansene hans har vært flere runder inne hos Johnny x Livid for tetting av små hull og løse sømmer - Likevel har buksene mange gode bruksår igjen før de må pensjoneres.

Tobias sverger til ull og bruker det til stort sett alle anledninger - både til fest, trening og hverdag. Derfor handler han seg blant annet én ny ullskjorte hvert femte år hos J x L. Hull, tynnslette partier og løse knapper er null stress å reparere hjemmefra etter at han tok et to-ukers sykurs arrangert av nabolaget, men dersom kragen eller ermelingen trenger et lite løft leverer han det i butikken for assistanse.

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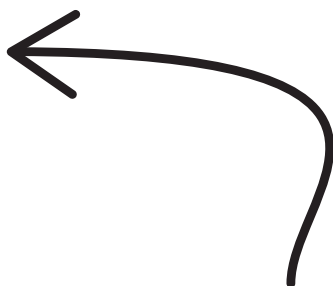
Tobias and Erik teach product redesign and sustainable interactions at NTNU. They have recently been restoring a chair frame ready for a course on furniture redesign, and Tobias has also been using the workshop to run after-work bike and electrical repair classes for local Trondheim residents. Erik is a fanatic when it comes to jeans: he only has two pairs but he can tell his life story over the past ten years by their marks and creases, from the frayed pocket edges where he hooks his thumbs while lecturing to the small hole in the leg chewed by his dog Sandi when she was a puppy. Johnny x Livid has patched the last pair five times - and there is still plenty of life in them! Tobias buys a new wool shirt every five years from J x L, and wears it for almost every occasion from skiing to dancing; he mends small holes and sews on buttons himself, but goes into the shop every now and then when the collars and cuffs need replacing.





Løft på stoffet for å lese  
mer om materialet

Lift the fabric to read more  
about the material

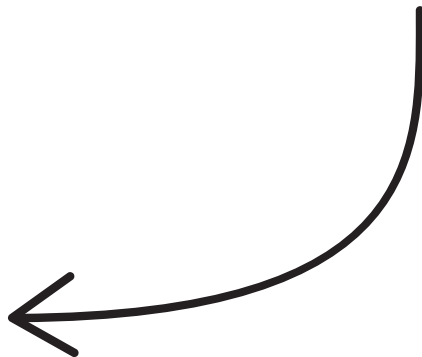


Kikk gjerne på klærne, men heng  
de pent tilbake når du er ferdig

Feel free to have a look at the clothes, but  
make sure to hang them back nicely afterwards

Les på lappene for å lære om  
hvordan du bør behandle de  
ulike klærne

Read the labels to learn how you can  
take good care of the garments



## Appendix H - Second-life store (SLS) introduction

Hi and welcome to Prisløs!

All of our textiles and clothing are waiting to enjoy a second life, and each piece has a story to tell. Perhaps you will be its new author?

Some items were once curtains, bed sheets or tablecloths, some have already been worn as clothes - but all are unique and whatever you choose, it will be reinvented as new especially for you! Choose a pattern and select a fabric you like, and then either take them home to stitch yourself or leave them with us and we will have your new outfit ready within a week. Don't forget to leave your measurements, let us know if you would like a close or more comfortable fit, and of course if there are any extras that will make you feel even happier with your Prisløs clothes!

We hope you find something you love!

Hei og velkommen til Prisløs!

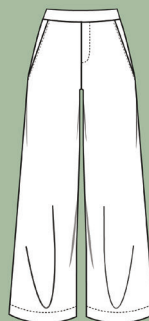
Vi er en bruktbuikk full av tekstiler og klær som venter på å starte sitt andre liv! Alle klær og stoffer som selges i butikken har sin unike historie å fortelle - Kanskje du har lyst til å fortsette en av disse?

Tekstilene vi selger er håndplukket av oss, og passer perfekt til å bli sydd om til klær. I utvalget finner du alt fra nydelige, gamle duker, til sengetøy og bruke gardiner i herlige mønstre. Velg et stoff du liker og få det laget spesielt til deg, eller ta det med hjem og sy et nydelig plagg selv! Vi tilbyr unike og kule mønstre, og våre ansatte er her for å veilede deg slik at resultatet blir akkurat slik som du ønsker det.

Vi håper du finner noe du liker!

# VIDE BUKSER

av Martine Aunaas



MØNSTER 1 | KVINNE | VÅR/SOMMER 2050

100 kr



av Martine Aunaas

# RETTE JEANS

av Martine Aunaas



MØNSTER 2 | KVINNE | VÅR/SOMMER 2050

100 kr



av Martine Aunaas

# LANGT SKJØRT

av Martine Aunaas



MØNSTER 3 | KVINNE | VÅR/SOMMER 2050

100 kr

av Martine Aunaas



# CHINOS

av Martine Aunaas



MØNSTER 1 | HERRE | VÅR/SOMMER 2050

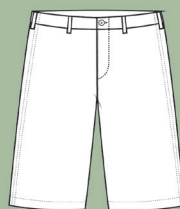
100 kr

av Martine Aunaas



# SHORTS

av Martine Aunaas



MØNSTER 2 | HERRE | VÅR/SOMMER 2050

100 kr

av Martine Aunaas



# SLIM FIT BUKSER

av Martine Aunaas



MØNSTER 3 | HERRE | VÅR/SOMMER 2050

100 kr

av Martine Aunaas





# KORT SKJORTE

av Martine Aunaas



MØNSTER 4 | KVINNE | VÅR/SOMMER 2050

100 kr

av Martine Aunaas



# SINGLET

av Martine Aunaas



MØNSTER 5 | KVINNE | VÅR/SOMMER 2050

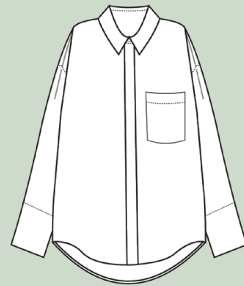
100 kr

av Martine Aunaas



# LØS SKJORTE

av Martine Aunaas



MØNSTER 6 | KVINNE | VÅR/SOMMER 2050

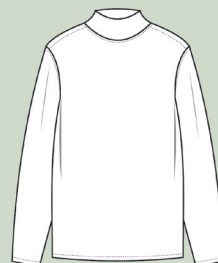
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# POLOGENSER

av Martine Aunaas



MØNSTER 4 | HERRE | VÅR/SOMMER 2050

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# KORTERMET SKJORTE

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# JAKKE

av Martine Aunaas



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### IDA & MAYA

Venninnene Ida og Maya bor i Trondheim og møtes ofte over en kopp med kaffe i sentrum. Maya drifter for tiden et verktøybibliotek i sitt lokale nærmiljø på Byåsen. Hun elsker å lage sine egne klær ved hjelp av mønstrene kjøpt hos Prisløs, og kombinerer dem gjerne med sine egne kreative idéer. Ida er på sin side travel med jobben som data manager i Trondheim kommune. Derfor foretrekker hun å få Prisløs sitt team til å sy klær for henne slik at hun kan bruke fritiden sin på å gå turer eller jobbe som frivillig for Røde Kors' Klimagruppe. Idas favorittopp er laget av Maya og ble gitt til henne i bursdagsgave i fjor. Toppen er laget etter et mønster kjøpt hos Prisløs, og tekstilet som ble benyttet kommer fra bestemoren hennes i Oslo.

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Ida and Maya are old school friends who still live in Trondheim and often meet up for a coffee or ice cream around town. Maya runs the tool library for her local community in Byåsen, and also likes to make her own clothes using the Prisløs patterns and her own creative ideas. Ida has a busy job working for the Kommune's data management team and prefers to have hers made up by the Prisløs stitchers so that she can spend her spare time hiking or volunteering for the Red Cross Climate Protection group. Ida's favourite top was made by Maya for her birthday last year, using a Prisløs pattern and material that had once belonged to her grandmother down in Oslo.

## ARI, BEATRIZ & THEA

Ari, Beatriz og Thea er for tiden studenter ved Fakultet for klimaforskning og kultur ved NTNU. De elsker å tilbringe finværsdager i parken eller ved Nidelven, hvor Ari pleier å peke ut ulike huber for klimamonitorering og datainnsamling. Thea elsker å kle seg i jumpsuits. Derfor har hun kjøpt tre ulike typer fra Prisløs som hun mikser og matcher med ulikt tilbehør. Beatriz elsker blomstermønstre og gamle kjoler, og har for første gang forsøkt å sy sin egen 80-tallsinspirerte kjole på sin lokale sy-hub. Ari bruker stort sett sorte jeans til alt mulig, men han elsker å kombinere dem med overdel i sterke farger som han pleier å få skreddersydd hos Prisløs.

Ari, Beatriz and Thea are students at NTNU's department of climate science and culture. They love hanging out in the parks and by the river when the weather is good, and Ari likes to point out the climate monitoring and data collection hubs around town. Thea thinks dungarees are the comfiest style in the world, and has three different Prisløs pairs which she dresses up and down and wears in all weathers. Beatriz loves floral patterns and vintage dresses, and recently tried making one for herself at the local sewing hub, based on a style from the 1980s. Ari thinks that pretty much anything goes with black jeans, but bright colours are the best - and he has several shirts made from sheets and dresses that he found on the material shelves at Prisløs.

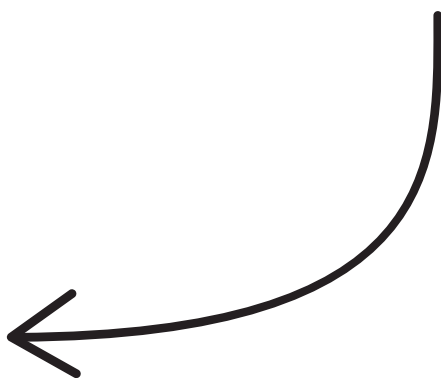


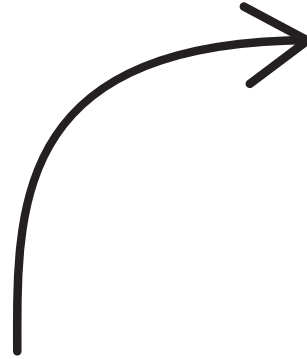
Husk at de mest bærekraftige plaggene er de du allerede har i klesskapet ditt! Dersom du har liten erfaring med vedlikehold av klær, men eier klær som trenger et lite løft, kan du bli med på våre ukentlige «Sy og spar»-kurs. Meld deg på via vår nettside!

Remember that the most sustainable garments are the ones you already have in your wardrobe! We host weekly “Stitch&Save” classes where you can mend or makeover your garments. Sign up online!

Alle brukte stoffer har sin historie  
å fortelle. Les på lappene for å  
finne ut mer, men la stoffet bli  
liggende i hyllen.

Feel free to look at the fabrics! Each one has  
its own story to tell. We would appreciate it  
if you can leave them on the shelves.





Ta en titt på merkelappene  
for å lese historiene til hvert  
enkelt plagg.

Read the tags to learn the story  
of the different garments.



## REFLEKSJON RUNDT DINE KLÆR

1. Ta en titt i speilet. Velg et av plaggene du har på deg og tenk gjennom hva det får deg til å føle. Elsker du det, føler du ikke noe spesielt eller får det deg til å føle deg dårlig? Husk å ikke dømme deg selv. Det er plagget som skal være i fokus!
2. Ta en tusj og et klistremerke og skriv ned hva plagget ditt får deg til å føle og hvorfor.
3. Plasser klistremerket på skalaen der du føler at det hører hjemme.
4. Trekk en lapp og ta den med hjem.

## TIME TO REFLECT ON YOUR CLOTHING

1. Have a look in the mirror. Choose one piece of clothing and think about it carefully: How does it make you feel? Do you love it or feel indifferent towards it or even dislike it? Be careful not to start judging yourself, only how you feel about the clothing!
2. Take a marker and a sticker and write down what your garment makes you feel and why
3. Place the sticker where you feel it belongs on the scale.
4. Take a card home with you

Plagget mitt får meg til å føle meg...

My garment makes me feel...

fordi... / because...

## A LITTLE CHALLENGE

Inspired by Marie Kondo & her KonMari method

Garments can spark joy for many reasons - Whether it is because of comfort, memories, a nice fit, aesthetics, identity, protection from the weather, or anything else.

What if we only owned garments that made us feel good?

The next time you purchase a garment or tidy your wardrobe we would like to challenge you to think about such things. Which garments speak to your heart and spark joy?

# EN LITEN UTFORDRING

Inspirert av Marie Kondo & KonMari-metoden

At et plagg kan skape gode følelser kan bety så mangt – Det kan handle om komfort, minner, fin passform, estetikk, identitet, beskyttelse mot vær og vind, og mye mer.

Tenk om vi bare eide plagg som ga oss en god følelse?

Neste gang du skal anskaffe deg et plagg eller rydde i kleskapet ditt utfordrer vi deg til å tenke over slike ting.  
Hvilke plagg gir deg glede eller en positiv følelse?

## MEG & MINE KLÆR: EN HISTORIE

Plukk med deg seks stoffbiter. Begynn historien fra venstre og trøe én stoffbit over én påstand innenfor hver kategori. Det kan godt hende at du føler at flere påstander innenfor hver kategori passer, eller at ingen gjør det, men velg det alternativet som passer deg aller best.

## ME & MY CLOTHES: A STORY

Pick up six textile squares and use them to build a story of you and your clothes by selecting one answer from each category. You might agree with several statements in each category or you might not agree with any – so just pick the one that fits you most!

### JEG HANDLER STORT SETT KLÆR ...

- på impuls
- når jeg ser at noen andre har på seg noe fint
- når jeg er lei av de plaggene jeg eier
- for å muntre meg selv opp
- som en hyggelig aktivitet med venner og familie
- etter jeg har tenkt grundig gjennom det
- når jeg nesten ikke har noe å ha på meg

### JEG LETER STORT SETT ETTER ...

- spesifikke stiler eller trender
- plagg av god kvalitet som vil vare lenge
- spesifikke merker
- funksjonalitet
- salg og røverkjøp
- unike og originale plagg
- hvor eller hvordan plaggene ble laget

### DERSOM JEG HAR PLAGG SOM JEG SJELDENT ELLER ALDRI BRUKER ER DET FORDI ...

- jeg vil ikke bli sett i samme antrekk
- jeg ikke har oversikt over alle plaggene jeg eier
- jeg ikke føler meg bra i plagget
- plaggene ikke er trendy lenger
- plaggene er gamle eller utslitte
- jeg har endret stil
- Jeg bruker alle plaggene jeg eier

### NÅR JEG KVITTER MEG MED KLÆR SÅ ER DET FORDI ...

- de er ødelagte eller utslitte
- de ikke passer lenger
- jeg ikke vet hvordan jeg skal reparere dem
- fordi jeg er lei av dem
- fordi de ikke er trendy lenger
- fordi klesskapet er fullt
- jeg vil tjene penger

### MÅTEN JEG KVITTER MEG MED KLÆR PÅ ER Å...

- kaste de i søpla
- gi de til veldedige formål
- selge de på internett
- bytte de med andre
- gi de til venner eller familie
- bruke materialet til noe nytt
- putte de på et lager

### I FREMTIDEN ØNSKER JEG Å...

- uttrykke meg bedre via klær
- kun eie klær jeg elsker og vil bruke mye
- bruke mer tid på å reparere ødelagte plagg
- leie klær i stedet for å kjøpe nytt
- sy mine egne klær
- kjøpe kvalitet i stedet for kvantitet
- kjøpe mer brukt

### I USUALLY SHOP FOR CLOTHES...

- on impulse
- when I've seen someone else wearing something nice
- when I'm bored with the stuff I own
- to cheer myself up
- as a fun activity with friends or family
- after careful consideration
- when I have almost nothing left to wear

### WHEN I BUY CLOTHES I LOOK FOR...

- certain styles or trends
- things that are quality or will last
- specific brands
- functionality
- bargains or sales
- originality or uniqueness
- where or how they were made

### I RARELY OR NEVER USE SOME OF MY CLOTHES BECAUSE...

- I don't want to be seen in the same outfit
- I can't see what's at the back of the wardrobe!
- I don't feel good in them
- they aren't trendy anymore
- they are old or worn out
- I have changed my style
- I use all the garments I own



### WHEN I GET RID OF MY CLOTHES IT'S BECAUSE...

- they are damaged or worn out
- they don't fit me anymore
- I don't know how to mend them
- I'm tired of them
- they are out of style
- I need to make space for new ones
- I want to earn some money

### THE WAY I GET RID OF THEM IS TO...

- put them in the rubbish bin
- give them to charity
- resell them online
- swap them with others
- give them to friends or family
- use the material for something else
- put them in the garage or attic

### IN THE FUTURE, I WANT TO...

- express myself better through my clothes
- only have clothes that I love and will wear often
- spend time repairing my clothes
- rent clothes, instead of buying them
- sew my own clothes
- go for quality instead of quantity
- shop more second-hand



## AVFALL

Hvert år blir søppeldynger verden over fylt opp med tekstilmaterialer til en verdi av 100 milliarder dollar. Mindre en 1% blir resirkulert til nye klær.

KILDE: Ellen McArthur Foundation (2017)

Every year \$100 billion worth of textiles are landfilled. Less than 1% is recycled into new clothing.

# MIKROPLAST

Klær og tekstiler er hovedkilden til mikroplast i havet.



KILDE: Ellen McArthur Foundation (2017) og #fashionrevolution

Clothes and textiles are the number one source of microplastics in the ocean. At current rates, the number of plastic micro fibres entering the ocean between 2015 and 2050 could accumulate to an excess of 22 million tonnes.

## CO<sub>2</sub> UTSLIPP

Produksjonen av tekstiler slipper ut mer enn 1,2 milliarder tonn klimagasser hvert år.

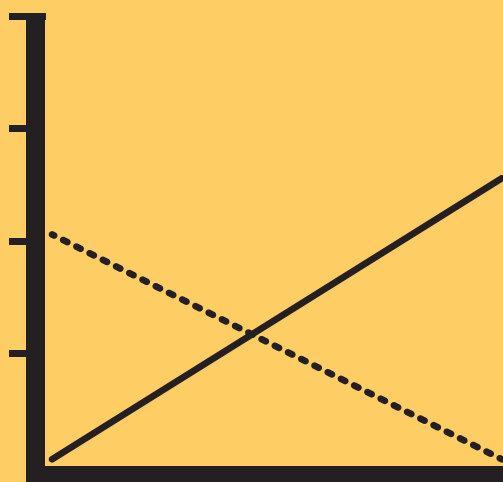
KILDE: Ellen McArthur Foundation (2017)



Det er mer enn det alle internasjonale fly og skip slipper ut til sammen.

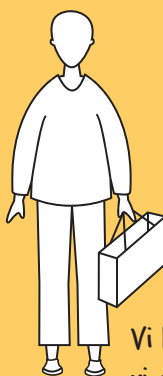
Textiles production releases more than 1.2 billion tonnes of greenhouse gases every year, more than those of all international flights and maritime shipping combined.

## FORBRUK DE SISTE 15 ÅRENE



KILDE: #fashionrevolution

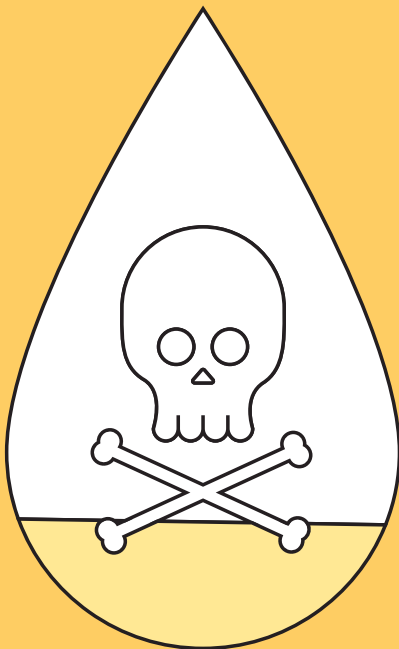
We purchase 60% more clothing today than 15 years ago, but we keep the garments for half as long.



Vi kjøper 60% mer klær i dag enn vi gjorde for 15 år siden,



men vi beholder klærne halvparten så lenge.



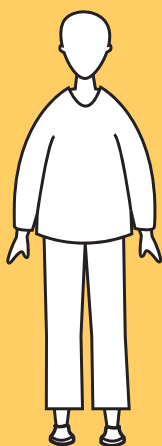
KILDE: #fashionrevolution

## FORURENSING AV VANN

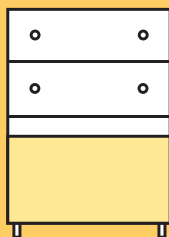
*20% av den globale forurensningen av vann kommer fra behandling og farging av tekstiler.*

*20% of global industrial water pollution comes from the treatment and dyeing of textiles.*

# FORBRUK AV KLÆR I NORGE



Nordmenn har i snitt 359  
plagg i klesskapene sine.



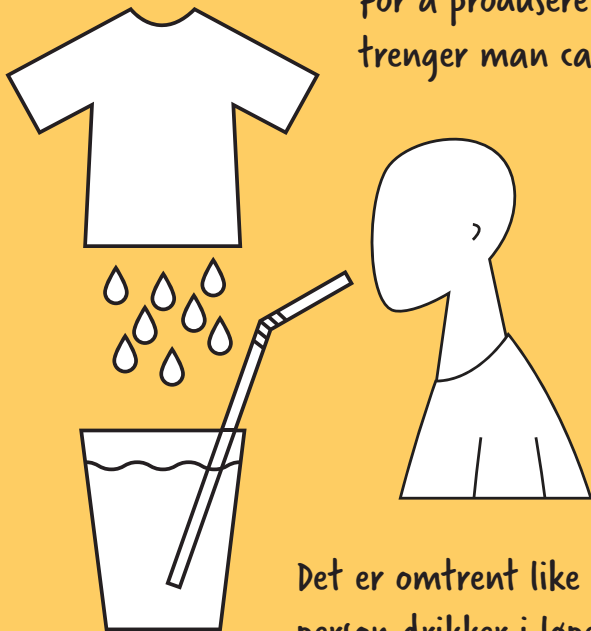
20-40 % av disse klærne blir  
sjeldent eller aldri brukt.

KILDE: Klepp og Laitala (2016) og #fashionrevolution

Norwegians have on average 359 garments in their wardrobes.  
20-40% are rarely or never worn.

# VANNFORBRUK

For å produsere én t-skjorte  
trenger man ca. 2720 liter vann.

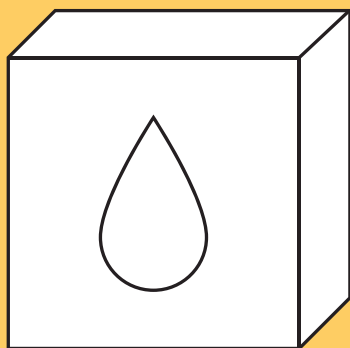


Det er omtrent like mye som én  
person drikker i løpet av tre år.

KILDE: #fashionrevolution

It takes 2720 litres of water to make one t-shirt. That's how much we drink in 3 years!

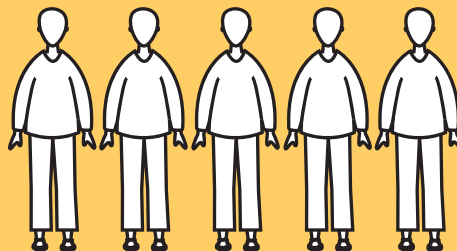




## VANNFORBRUK

Tekstil - og klesindustrien bruker 93 milliarder kubikkmeter med vann hvert år.

Det er nok til vann til å tilfredsstillere 5 millioner mennesker i et år.



KILDE: Arbetet (2019)

The fashion and textile industry spends 93 billion cubic meters of water each year. That is the same amount of water needed for washing and drinking by five million people.