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Brand identity through a textile perspective

an exploration of the textile expression of Thule

Master's thesis in Industrial Design Engineering

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2022
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Chalmers digital printing
Göteborg, Sweden 2022

Cover: The final concept applied on the stroller Sleek.

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ACKNOWLEDGEMENTS

SPRING 2022

This project has been implemented as a master thesis project at the programme Industrial Design Engineering at Chalmers University of Technology. The project was conducted in collaboration with the concept development department at Thule Group.

Firstly, a big thank you to my daughter who has taught me all the important aspects of being a parent. She has also helped me with hours of user studies and without her the important user studies along the project wouldn't have been possible.

I would also like to thank my supervisor and examiner Johan Heinerud for guidance during the project. He has believed in, challenged, and structured the project along the way and contributed with some necessary expertise.

Finally, I would like to thank the whole Concept Development-team at Thule Group. I would especially thank Maja Petersson who have been my contact person and mentor at Thule. She has provided important knowledge of the brand and asked challenging questions. I would also thank my fellow master's student Aniena Francis from Linnaeus University who been working with the same case at Thule as I, which has enabled rewarding exchanges with new insights and perspectives.

JOHANNA BÉEN

JUNE 2022

ABSTRACT

The stroller market is characterized by rapid development and innovation, as well as intense competition from several leading brands. Thule Group, which has been the host for this master's thesis, have during recent years launched their own line of strollers, with the aim to establish themselves on the market. Thule is a brand with an image associated with the outdoors and an active lifestyle.

The project examines the brand identity of Thule and its design language, focusing on the textile expression. Using Thule's stroller model Sleek as a basis for further development, suggestions for a future textile concept have been outlined. These suggestions have been prototyped and applied on the Thule Sleek stroller for concrete visualization.

The project has resulted in a few main conclusions, both concerning Thule as a brand and baselines for future development. Suggestions for future developments of Thule's brand identity includes a focus on their Swedish heritage through a concept based partly on a Scandinavian, minimalistic design language. But it also holds an underlying focus on Thule's products carrying a range of clever and thought through functions, adding to the usability of the product. One single product design can be developed to suit both outdoor-, and urban fashion standards, considering the main aspects of the different styles in the design process. Thereby minimizing the number of different products needed for a single user. In future design processes the child should be considered a user of the product of equal importance as the adult, considering aspects of comfort, cover, and the need for a "closed space" for periods of rest, as well as other needs identified in the child's development.

Keywords: Brand Identity, Concept Development, Design Language, Textile Expression, User Experience

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1

INTRODUCTION

THULE

THE PRODUCT

- BACKGROUND
- AIM
- OBJECTIVES
- DEMARCATIONS

THULE

Thule is a Swedish brand, established in Hillerstorp in 1942, where the main part of research and development is still located today. Thule is a global developer and supplier of transport solutions, such as roof racks, bicycle racks and rooftop tents for cars, strollers, and backpacks. Thule is a premium brand addressed towards people living an active lifestyle, where quality and thought through design and usability are leading characteristics.

Background

Thule has extensive experience in developing different kinds of transport solutions such as roof boxes, bicycle racks etc. In recent years, Thule have expanded their scope, working more with textiles as part of their transport solutions, primarily in their *Active with Kids* product category. They have a clear brand identity when it comes to hard profiles, however with textiles and soft parts, they lack the same obvious design language that they now want to develop.

Aim

Through colours, shapes, and materials, find Thule's unique look among their textile products, all to stand out on the market and broaden the brand.

The development must be in line with Thule's core values *Shared Passion*, *Smart Solutions* and *Active Life*.



Objectives

To develop the design language of the stroller Thule Sleek, with a focus on textile expression, to be in line with the brand identity of Thule. The design language should also be applicable on the other products within the category *Active with kids*.

Overall focus in the project will be on the user experience, especially the tactile aspects and the expression of the textile materials and their image. As well as the overall experience of the product from the user point of view.

Demarcations

The design and development process must be limited to the Thule Sleek stroller, as well as:

- Being limited to the textile parts and aspects of the stroller,
- Only the single seat version of the stroller will be considered in the project,
- The users, studied, will be focused to Scandinavian/Swedish identity,



THE PRODUCT

The Thule Sleek stroller is an all-round stroller on which you can put both a basinet and a seat facing both forward and backward. It is in many ways similar to other brands strollers in the same category. It has a removable seat with a removable canopy. The stroller is a sibling stroller which means that a sibling seat can be added to it and thereby seat two sitting or lying children in the stroller. It is also possible to put a baby safe (baby car seat) on the stroller using adapters.

In simple terms, the stroller consists of two parts: one (or two) seats and the frame. The frame is made of aluminium and plastic with a basket made of textiles. The seat has an aluminium and plastic constructure covered with fabric. The fabric parts can be in different colours and the brushed aluminium can be painted black.

THE BRAND'S STROLLER SEGMENT

Today the brand has four different strollers on the market: *Glide*, *Urban Glide*, *Sleek* and *Spring*. The strollers have different purposes, where *Glide* is meant primarily for running, *Urban Glide* is a combination of urban-, and running stroller, *Sleek* and *Spring* are considered pure urban strollers. The stroller segment is divided into two categories: urban and active. Sleek, and Spring are in the urban category, Urban Glide 2 are in between, and Glide 2 are in the active category.

THULE GLIDE 2



Thule Glide 2 is a jogging stroller designed for runners. It has three big and fixed wheels which makes it roll fast and smooth but gives it a larger turning radius. The first version of Thule Glide was released in 2014.

THULE URBAN GLIDE 2



The Thule Urban Glide 2 is a more city fitted jogging stroller. With three big wheels it fits well both in the city and outdoors. The stroller is also sold in twin versions suitable for two kids.

THULE SLEEK



The Thule Sleek is the first "pure" stroller released by the brand and was launched in 2018. It is a city stroller that can fit both one and two kids. Unlike the other strollers, the *Sleek's* seat is reversible and replaceable with a bassinet.

THULE SPRING

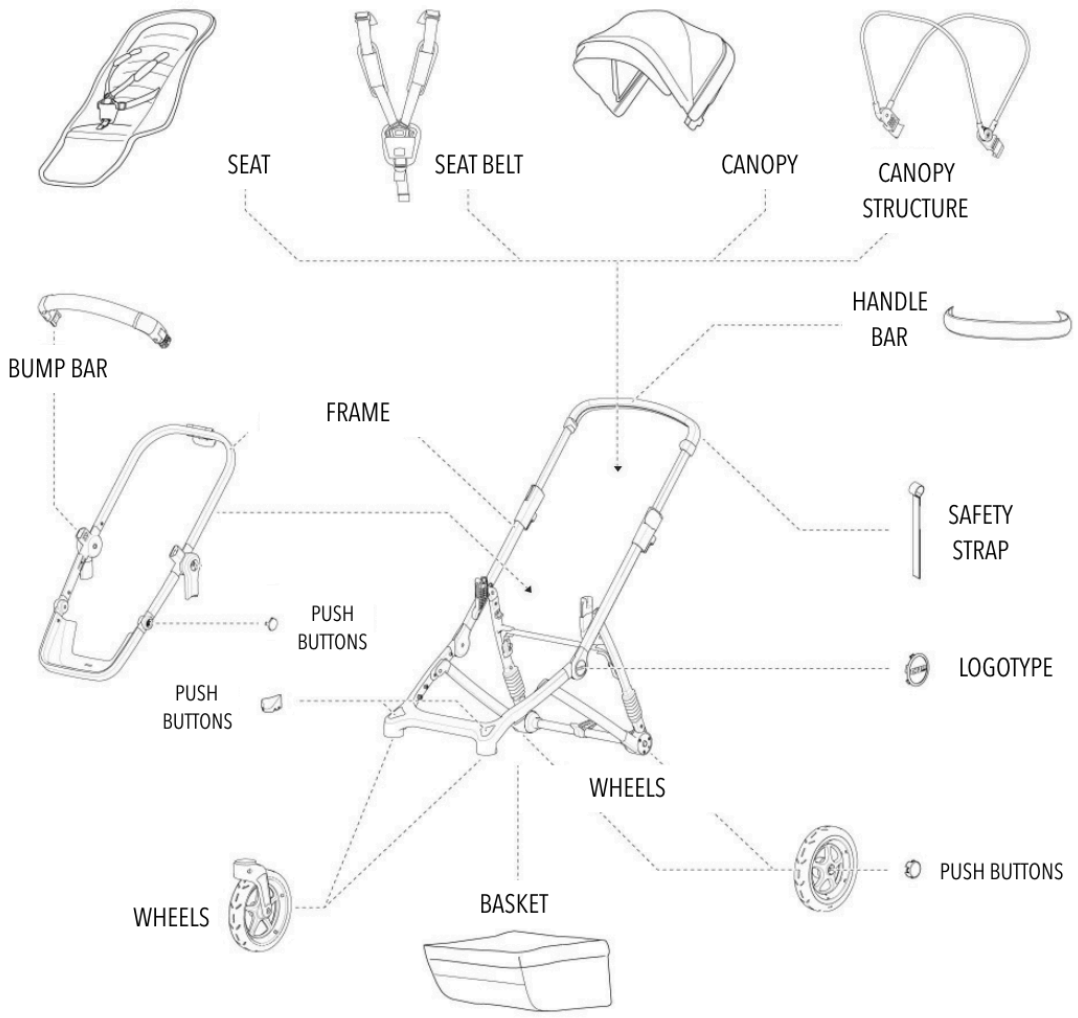


Thule Spring is the latest addition to the stroller family. It was launched in 2020 and is an urban stroller suitable for city environment excursions or as a stroller to bring on trips. It is lighter in overall weight than the other strollers and more compact when folded.

(Thule, 2022)

TECHNICAL TERMS

The parts of the stroller



Attachment webbing (Molle)

Attachment webbing are webbing constructed to enable attachment of various items. It is a woven webbing sewn or woven to enable attachments. The webbing is constructed with holes or loops which provides attachment points where cabin hooks, strings, and other kinds of attachable things can be fastened.

Mesh fabric

A mesh fabric is a loosely woven or knitted fabric which creates a net like open appearance. It comes in a range of thicknesses and weights.

Natural fibres

Fibres in the same form as they grow and comes from plant, animal, and mineral sources. Comparing natural fibres with manufactured fibres which are made into fibres through manufacturing with chemical compounds, natural fibres are in the same form as they were grown.

Reversed zipper

Zippers with the zip-locker on the opposite side from what zippers normally have, which results in a reversed zipper. The zip-locker is placed on the front and the zipper-teeth are located on the back in comparison to a regular zipper where the teeth can be seen from the front. The reversed zippers have a slimmer look, and the zipper-teeth are invisible, instead only an opening line is visible.

Rib-stop fabric

Rib-stop fabric is a woven fabric that is created with a reinforcing technique that makes them more resistant to ripping and tearing. This is achieved through creating a square pattern with a stronger reinforcement yarn.

2

OVERVIEW

THE FINAL CONCEPT

THE FINAL CONCEPT

The final concept is a suggestion for future development in the Thule's category *Active with kids*. The concept holds a focus where the needs both for the child and the adult, when utilizing the product, are viewed as equally important. The focus has been on creating something new but with the expression of being a Thule product projected through the shapes, lines, and design features of the final concept. For the development of the final concept, focus have also been on functionality, a quality expression, and an attractive look.

Inspiration for the concept has been derived partly from the classic trench coat, a timeless fashion piece with functional properties. This was done by viewing the concept as a jacket where the design and functions harmonize in balance with the design language of a Thule product. Thereby a stroller, with obvious similarities to a large range of similar strollers from other producers still received a unique and recognizable look.

The final concept combines an image of a fashionable urban lifestyle with outdoor properties, being functional enough to be used as a tool and dressed enough to fit the city life.

The textile materials are mostly chosen to be made of natural fibres. Both to challenge the plastic-oriented fabrics which the brand utilizes today, and for their own inherent advantageous properties. This also provides the product with a sustainable perspective, kindness to the user, limitations on the productions environmental impact and the visual expression.

The concept keeps a high level of functionality as it strives towards simplifying parenting through a number of integrated features, easing usability.

The concept consists of two areas of focus. The inside of the stroller keeps a main focus on the child, its comfort, safety and needs, while the outside is focusing mainly on the adult and giving the product's its unique Thule look.

The final concept is, in addition to everything stated above, designed to encourage personalisation of the product. Through the attachment webbing on various parts of the product the user can attach cabin hooks, straps, a cargo securing net, pockets, lights etc. The attachment webbing is made in reflective webbing and is placed on parts most likely exposed to lights from cars or bicycles. Hidden features are also placed on several different parts of the product, adding to its clean and minimalistic look. In addition, several features carry multiple purposes and possibilities for different utilization.



3

METHODOLOGY

METHODS

- THEORETICAL FRAMEWORK
- DESCRIPTION OF METHODS

PROCEDURE

- PROCESS
- APPLICATIONS OF METHODS



METHODS

The theories applied through the project are gathered and presented here.

THEORETICAL FRAMEWORK

Cognitive association

The human mind carries abilities to think, feel, remember, associate, to an extent vastly exceeding any other being on earth. Through experience the individual human learns to identify differences, as well as similarities. For example, an adult will in an instant recognize a cow, even if he or she has never seen that specific cow, or even the specific breed, before, while a little child may have difficulties to distinguish a cat from a dog (they can both be fluffy, have four legs and a tail, and be of similar size) (Harari, 2014).

Experiences can be made in a number of ways. They can be visual as well as practical, based on emotions and other senses. They all have in common that they are “recorded” in the human memory, from where they are utilized by the individual who carries them to further understand the world. The memory is divided into several different parts. We have a long-term memory, a short-term memory, a semantic memory, a perceptual memory and an episodic memory. They all serve different purposes helping us understand the world in which we live (Hjärnfonden, 2018).

In terms of visual expression and the individual´s ability to recognize, for example, a brand by the design of a specific item, the semantic memory and the perceptual memory play the main parts (Hjärnfonden, 2018).

The semantic memory creates and holds accusations. For example (for a somewhat educated individual in the western world) is the word France instinctively associated with the word Paris, or the date “9/11” is in the same way associated with a major terrorist attack on Lower Manhattan in New York (Hjärnfonden, 2018).

The perceptual memory helps us to, based on previously achieved information, for example distinguish a dog from a cat, night from day, or a Thule product from a competitor, given that the Thule product is designed to be recognizable a s such (Hjärnfonden, 2018).

Dynamic Brand Identity

The visual expression of a design or a brand can be viewed or approached in a manner called "*Dynamic brand identity"*. This is a way of making a design identifiable in a non-static way, by having the design project identifiable elements common among a certain brands line of products or services. Contrary to static elements, such as a logo, a specific shape, or a symbol, with its basic traits always the same, a non-static approach can mean working with a design concept in several dimensions.

This concept can be applied in many dimensions, limited mainly by the kind of product or item which is meant to project brand identity. In a digital setting, movement, sound, and other factors, affecting human perception, can be utilized. Through the development of social media, graphical designs, and other digital media techniques, which affects people's behavior concerning collection of information can be utilized to provide interactive performance's projecting brand identity.

When designing hardware, naturally, the number of available approaches are more limited, although they can range from small details, such as coloring, size of different details and similar items, to overall expressions given through forms, materials etc. However, they are likely to broaden and increase in numbers in the digital age (Linde, 2011).

DESCRIPTION OF METHODS

Throughout the project a number of different methods were used. In the following chapter these methods will be presented.

Participation-observation

This is done by studying the user in real life situations, as well as having them share experience, participating in the usage of a certain project and studying the product in its practical application. This is a method to identify and prioritize the needs of the user, important aspects of the product, goals and views of the user and creating an understanding of good user experience (Wikberg Nilsson et al., 2016).

Market and brand analysis

Gathering information and studying the brand and its potentials, resources, and individual characteristics, distinguishable from competition. Also building understanding and identifying aspects and areas of potential future development. Important aspects are to study goals and visions of the brand, and the competition within the same market segment. (Wikberg Nilsson et al., 2016).

Boards

A board is mainly a collection of pictures arranged to create a visual representation, but could also include words, drawings, colour and/or material samples. There are many kinds of boards, for example lifestyle board, mood board, styling board, usage board, visual board, and expression board. The visual representation could varies depending on the kind of board created. An expression board focus on creating a visual representation of the expression and a lifestyle board has it focus on visualise the lifestyle of the intended person or target group (Wikberg Nilsson et al., 2016).

Workshop

Workshop is a creative work-meeting where potential users, experts, or persons without a connection to the project meet and have an explorative session about a specific topic. The objective is to reach new insights through using the whole team's creative potentials. Both to explore the problems and potential and/or desirable solutions (Wikberg Nilsson et al., 2016).

Prototyping

Prototyping is used for testing and to visualise solutions of different kinds. The prototyping could be with both existing solutions and newly created of different materials and techniques, all to develop a good user experience. The method is used to visualise, communicate, and evaluate a specific concept (Wikberg Nilsson et al., 2016).

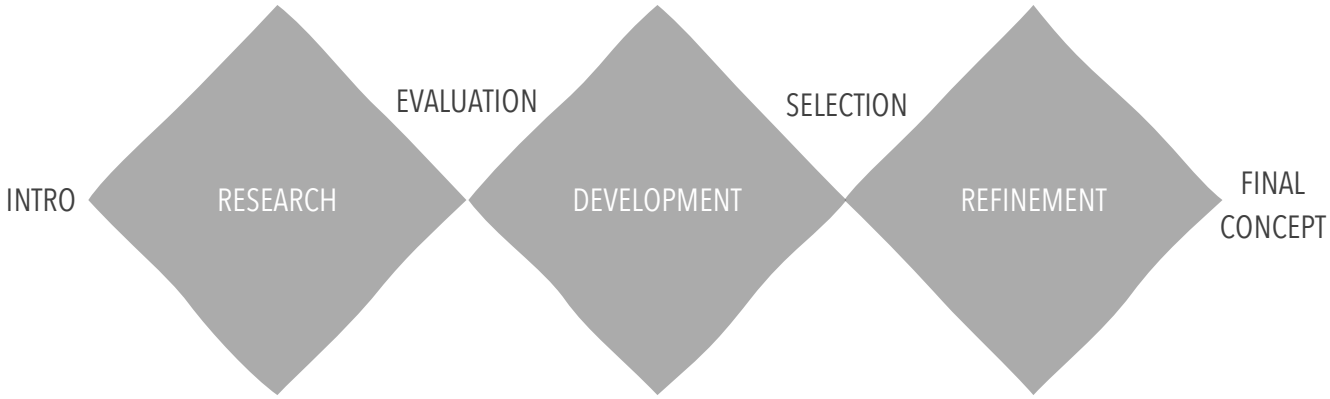
Design Format Analysis

Critical observation of the product to identify characteristics, leading to assessment of forms and factors, which are in turn ranked among themselves in order of importance. This is thereafter used as a basis to identify general design formats and their implications (Warell & Nåbo, 2002).



PROCEDURE

In the following chapter the project procedure is illustrated, both in a chronological manner and detailing how the different methods have been applied.



PROCESS

In the initial stage, the project was divided into three distinct phases, which were separated by two transition phases. The project began with a short introduction and resulted in a final concept - a physical prototype.

Intro

Before initiating the project, several initial aspects had to be managed. The focus was to understand the case at hand, with its problems, limits, and areas in need of further exploration. It all resulted in clear definitions of the purpose of the project and a good understanding of the brand and the company's expectations of the project.

Research

In the initial phase of the project, it was a lot about exploring the area on a broad level with different types of angles. To some extent, the investigation took place through a methodical approach, but at times curiosity in various areas was allowed to determine the way. Some areas that were investigated were crossed by pure coincidences, but in the end these insights played a crucial role in shaping the whole project. It was important to have as open mind as possible to get as broad a foundation to stand on before the next phase of the project.

Evaluation

Before moving on to the development phase, the information and insights gained in the research phase were processed. Here, the parts that were worth working on were selected, and the rest were left aside. This was done through a workshop where the insights from the research phase were presented and then jointly worked out what was worth continuing to further develop. The insights were summarized and formulated in what they would imply towards the development phase, such as actual problems and also possible solutions.

Development

In the middle phase, development, the ideas, and improvements that emerged during earlier parts of the project were tested. Various solutions to problems and concepts were explored. The focus was to understand the product further and thus gain an increased understanding of which solutions were realistically feasible and which added more than they took. The phase resulted in concrete solutions both in terms of design, with colour and exact shape but also in terms of functions and visual expression.

Selection phase

Before the final phase began, a selection was made of what would be included in the final concept. This was also carried out through a workshop with a presentation of the insights and then a joint decision of which parts would be included in the final concept.

Refinement

Before the final concept was created, some refinement was required of a few parts and aspects which were to be applied on the concept. A lot happened during the physical prototyping where insights and contradictions were discovered. The whole thing became a "learning by doing" process, where certain changes had to be made in the design to become technically feasible, but also new improvements were discovered and utilized. It was all about producing a prototype as realistic as possible.

Final product

The whole project resulted in a final prototype. In the last part of the results section, the final concept is presented. The final concept is presented in the smallest detail and is the result of the project’s various insights.

APPLICATION OF METHODS

Participation observation

In the beginning of the project, an example of the Thule Sleek was provided by Thule as basis for further test and development. The stroller and its features were tested and examined in different situations to gain a clear view of advantages and needs of further development. Throughout the project the stroller was put to practical use and daily observations were made. In the research phase the stroller was used with the intent to evaluate it as a product and with the focus on the textile parts. During the development phase the prototypes were tested in reality to be able to evaluate new solutions and design choices.

To supplement the practical studies analyses of others' experiences of the product, and strollers in general, were made. The goal was also to get an understanding of parents' "real" life with their children and strollers, what they struggle with and what's on their mind. This was done by studying posts and comments in various groups on Facebook related to children and parenthood involving strollers.

The focus, when analysing all comments and posts, was on the use of strollers and in particular the textile parts. The groups contain many knowledgeable people who are very well-educated and could be seen as the forefront of stroller users. They possess a surprisingly large amount of information about different strollers with their advantages and disadvantages, and in most cases have experience of a large number of strollers. The groups also included completely inexperienced users who were looking for help in various stroller issues. There was a great deal of interest in strollers and the discussions which have been studied, as part of the project, have been enriching and led to several important insights of value to the project. Participants in such groups have also generally been very supportive when various questions have arisen where they have either been able to search for the answers in the groups or in some cases a question has simply been thrown out in the groups.

As these groups oppose market research and other types of user studies, no such studies have been made, but instead external observations have been made. The content has been analysed in order to be able to distinguish trends.

Market and brand analysis

As part of the project, an understanding of different brands and markets was essential. This was done by analysing the market at large and the company (Thule) itself. The analysis was made from a prospective customer's perspective and was carried out by studying different marketing channels. It was especially important to study the company's own channels, how they choose to highlight their products and also themselves as a company and brand. Channels such as YouTube, Instagram or different brand's own websites were particularly important, but advertising in the form of posters and videos was also significant.

To achieve an understanding of the brand through a user perspective the brand was analysed through the brands own marketing channels. It was essential to project a view of the company and the brand through the eyes of a potential customer, in order to gain an understanding of what the company communicates outwards and is currently presenting to the market. Pictures and words were collected and then organized on expression boards.

Boards

Different kinds of boards have been used extensively to summarize different areas and insights. The most used have been expression boards to summarize expressions for different areas. Concept boards were also created but acted more dynamic, they were changed and recreated often. They acted as inspiration and organisation of different concepts and ideas. For the final product a vision board was created.

The expression boards were created to highlight and summarize different studies. The boards have been a support throughout the process and have supplied a base to return to, both as a source of inspiration as a means of preventing a drift too far away from the basic outlines of the project. Parts from the expression boards were later involved in the concept boards.

During the research phase, expression boards were used to summarize both Thule and other companies' products but also the entire company's brand image. The boards were composed of images from the companies' own website and were chosen to give a representative image of the brand, but images in areas that were perceived as extra interesting, or inspiring were also chosen separately. The images were complemented by words or phrases intended as a way of further enhance the expression given by the design.

When creating the concept boards different interesting pictures (both new ones and old picture used in the expression boards were collected), words, drawings, and material samples were organised into different categories representing different concepts. The materials were organised in different ways depending on the focus area of the concept. The concept boards were mainly used during the development phase. Depending on if the focus were materials or functions the materials were organised in different ways. However, were the materials used the same, even if not all material were used for all concepts.

For the final concept a vision board was created with the purpose of visualise the thoughts of the end-product. This vision board were created of new collected pictures that would represent the concept. The focus was to find picture with the same colour palette, represent the lifestyle of the intended user and the appearance of the final product.

Workshop

To get input from the outside to the project, some workshops, with a similar arrangement, have been held during the project. The participants have been engineers at Thule, working with product development. The arrangement was that ideas, insights and results were presented with a subsequent discussion about which parts felt most relevant and which were then selected to be included in the next stage. These occasions have been held in connection with the project having to be narrowed down and the direction having to be chosen, i.e., between different phases.

Prototyping

An important method in the project has been physical prototyping where sewing by hand and sewing machine have been an important part. Solutions and ideas have been tested in a practical manner by cutting fabric and sewing it together in the desired way. It has been important to work with the material as close to the intended result as possible. Both to be able to test the solutions but also to give an insight into how the material behaves in different forms. In an initial stage, paper models have been used and then replaced with fabric of different quality in order to use the final prototype as similar material as intended for future production. The original product has been of great help and has been used as a starting point for various modifications and changes.

Design Format Analysis

For the analysis 27 products were selected with an ambition to represent the brand's product range. The selection was done relatively quickly but with at least one product representing each product category. The analysis was then implemented with these products.

The analysis was done by critically studying the selected products and from them eight characteristic design formats, representing the brand, were selected. The selected products and design formats were put into a diagram for further rating. The selected products were then scored after how prominent the design formats were on each of the products. Significant occurring design format resulted in two points, partly occurring in one point and not at all occurring in zero points. The scores were then summarized, and both the products and the design formats received a final score. This score indicates what product consists of most design formats and should therefore have the most distinctive brand language. The design formats did also receive a score, which was used to rank the most important design formats for the brand.

The result was then analysed and used in further development.

4

IMPLEMENTATION

RESEARCH

- THE BRAND
- COMPETITORS
- USER
- THE PRODUCT
- MATERIALS

EVALUATE

DEVELOPMENT

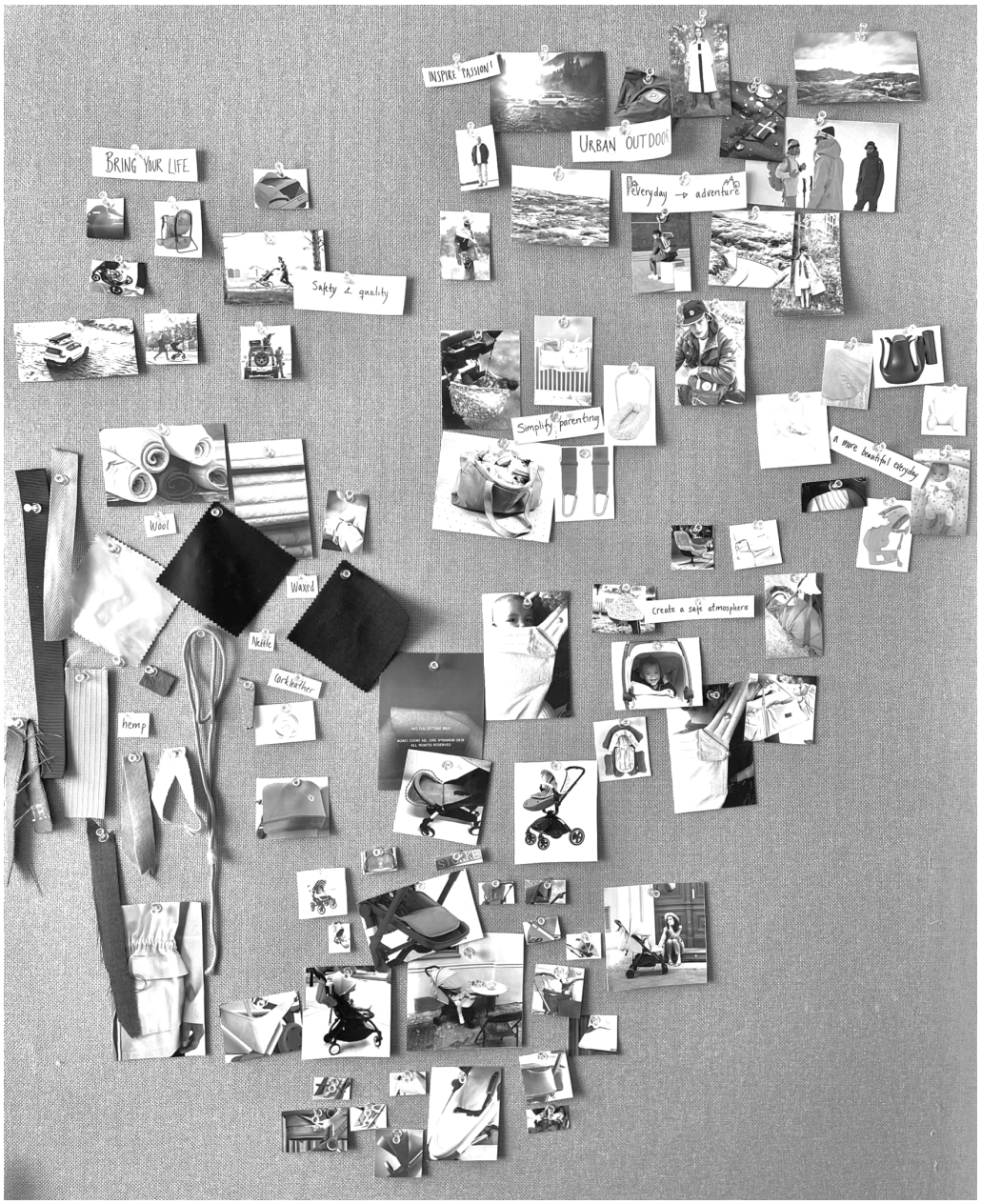
- FUNCTION
- FABRICS
- FORM
- COLOUR
- OVERALL

SELECTION

REFINEMENT

- OUTSIDE OF THE SEAT
- CANOPY
- INSIDE OF THE SEAT
- BASKET
- OVERALL

FINAL RESULTS


INSPIRE PASSION!
URBAN OUTDOOR
BRING YOUR LIFE
Everyday → adventure
Safety & quality
Simplify parenting
a more beautiful everyday
Wool
Waxed
Nettle
Cork leather
hemp
Create a safe atmosphere
STOKKE

RESEARCH

The following are results and conclusions reached during the research phase.

THE BRAND

What is Thule?

To establish an understanding of what Thule is, a brand analysis was carried out. The analysis resulted in an expression board summarising the outcome.

The brand uses the words *"Bring your life"* as a slogan. In combination with the collected pictures the keystone is visualised. The brand clearly communicates working with products related to bringing things with you. The analysis made it clear that the brand inspires the user to bring their belongings with them to explore life. They want to offer solutions to simplify for the users whatever adventure they plan to embark on.

When the collected pictures were organised together it became clear that the brand also wants to communicate speed, a feeling of being on the way. At the same time there is a harmony and calm in the pictures. They represent a rich and well-balanced life.

The brand is also clear in their communication that they stand for good quality, safety, good design and ease of use. They express a feeling that users shouldn't be limited by material things; their products shouldn't hold the user back, but rather aid in the user's adventures. They express themselves a vision to inspire their customers towards leading an active life, through their shared passion and offering of smart solutions.


Bring your life
Quality
Safety
Design
Easy to use
THULE
THULE SWEDEN

Design Format Analysis

To get a deeper understanding of the brands form language, a design format analysis was conducted. Eight significant design formats were identified in the brand's product range. It was important to find design elements in both the hard and soft parts of the brand's products (the results are presented in further detail in appendix I-V). They were identified by comparing different parts of the products, such as lines, covers, zippers, shapes, materials, etc. Thereby making it possible to compare bags with strollers and rooftop tent, since the products themselves are very different.

The most significant with Thule's products are the printed logo which is clearly visible and printed in the same way on all their products. After the logo their materials choices with brushed aluminium and matt black plastic are a significant sign for the brand. The meetings between these two materials are important for the expression of being a Thule product. The shaped aluminium profile is also significant for the brand.

Apart from the logo and the materials with aluminium and plastic elements, the most obvious design element is the dynamic expression integrated in a majority of Thule's line of products. The dynamic expression is found in both the shapes, the colours, and the material choices. The colours and materials are especially important on the soft parts. Active and sporty colours are used as khaki contrasting with neon colours. The fabrics does also express an active and sporty image by using rip-stop fabric (see appendix II).

Below two design features will be analysed in further detail since they are textile based, and therefore of particular interest.



Trapezium shape

When analysing the brand, the recurring trapezium shape became more prominent. It is found in both greater and lesser extent in the products. The shape is found both in the hard parts and the soft parts (see appendix III).



Folded seam

What is seen on most of the soft products is the folded seam that they use, it occurs in several places. They also use visible invisible-zippers or reversed zippers, as it is also called (see appendix IV).



According to the table of the Design Format Analysis (see appendix V) the most Thule-like product is the stroller designed for running, called Thule Glide (see picture above). It carries a majority of the identified design elements. Being a product with both hard and soft parts the design can include all types of elements. Comparing with the cargo basket, which looks more Thule-like but has received lower points because it only consists of hard parts and design formats related to soft parts won't give any points.

After the analysis it became obvious that the brand has a clear design language when it comes to the hard goods. The hard products are what they originated in and what they have worked with longest. The brand has a less obvious design language when it comes to the soft goods. Since the brand has expanded their range of textile products a lot in the recent years, they need to find elements in the soft parts that clearly communicates being a Thule product. However, there are some design details that are important for the soft products, even if these doesn't make the whole product express the Thule brand. As it looks today, it is the hard parts that signals Thule, while the textile is much less prominent.

Stroller analysis

To gain a better understanding of the Sleek it was analysed and compared with the brand's other strollers (see appendix VI).

DESIGN ANALYSIS

A design analysis was done on the brands four different strollers, focusing on the textile parts. There were significant differences between the Sleek and the other strollers. The most significant difference was the dynamic look. All the other strollers have it, but Sleek does not. The other strollers have a clear forward and upward direction in their design lineage, like the front wheel will fly when manoeuvring the stroller in a high speed. The Sleek has a look of crashing down into the street or that the child sitting in the seat will fly/jump out.

The expression of the Sleek changes a little bit when the seat is reversed and facing backwards. Comparing with the other stroller, where the seat isn't reversible, the seat is always facing forward. The frame on the Sleek lacks an obvious dynamic expression, which the other strollers have, in combination with a reversable seat that affect the experienced direction creates the non-dynamic look. A reason could be that the direction, which creates the dynamic look, is divided on the Sleek. Sleek, comparing to the other strollers, has a reversible seat which creates different visual expressions.

One design related thing to the dynamic expression is the shape of the basket. The other strollers have a basket with a significant direction aiming upwards and forwards, unlike the Sleek which has a downward direction but almost lacks a forward direction. When looking at the canopies there is no clear similarity but also no clear difference between them. The biggest difference is that Sleek's canopy is completely symmetrical but could be explained by the fact that the seat is reversible. All the canopies have a reflective edge, Sleek's is not positioned in the front like the others but because it is reversible it could be some logic reason. All the canopies carry a zipper part which is black. All the strollers have also got a hand/safety strap, which is quite unusual on strollers for urban use but looks the same on all the strollers.

Brand identity

To get an understanding of what Thule is and should be, other brands similar to Thule were analysed. The selected brands were considered as having the same origin and core values as Thule, standing for quality, and having a part in Scandinavian design with the goal of not holding the user back from their activities. The selected brands also had a similar target group and selling products related to an active and stylish outdoor lifestyle. The brands were brands to inspire from and perhaps join into the future. It may also be that they have previously projected similar values, but from which Thule today should aim to distance itself from due to various reasons and choose a different direction in the future.

A considerable effort was laid down towards putting together expression boards for the brands. The main focus was on choosing representative images, to compliment them and to further enhance the emotions, it was also supplemented with a few key words.

To limit the analysis, only five prominent Swedish brands were included in the analysis; *Volvo*, *Fjällräven*, *Filippa K*, *Houdini* and *Sandqvist* (see appendix VII-XI).

VOLVO

For Volvo three different boards were created (see appendix VII), one where they are now, one what they have been standing for in the past, and one focusing on where they are heading. All three should be seen as equally important and could be seen both separately and together. Because the brand is large and successful, they have both power and knowledge enough to affect the overall trends in the market, that was one reason why the brand was especially interesting.

Driving a Volvo has long been seen as something typically Swedish and when transporting something with the Volvo, Thule's products is commonly used, such as roof racks and roof boxes. The brand alludes gladly on their Swedish origin and heritage through their advertising and promotion. The company is constantly striving forward and in connection with the electrification of the vehicle fleet, it has been important for the company to be at the forefront and visualise the future.

Their products should be enjoyable and simple to use. Just like with Thule's products, they should inspire to adventure and give a feeling of security. The visual expression conveys a feeling of safety and good quality. Projecting a feeling that the brand and their products are loyal to its user, they are considered reliable.

FJÄLLRÄVEN

Fjällräven is a Swedish outdoor brand that has expanded a lot in the foreign market (see appendix VIII). Their iconic Kånken bag is sold all over the world and can be seen worn worldwide. They helped bring outdoor life to the city by creating a trend and acceptance to wearing functional clothing even in an urban environment. They produce durable clothes with a classic design where many of their products have looked the same since they were first launched decades ago. Thanks to the good quality of the products and their timeless design, they can be inherited for generations, which the company is happy to highlight. The company works hard to ensure that customers take care of their products, including cleaning and waxing, all to increase the lifespan of the objects.

FILIPPA K

Filippa K is a Swedish fashion house and creates Scandinavian minimalism at its best (see appendix IX). The company was an early adopter in the area of sustainability, thinking about responsibility and equality in the garment production. They declare where, by whom and how their garments are made in connection with the sale of the garment. Their garments have a simple and well-dressed design where great focus is on small and fine details such as seams and cuts. By removing and working with "less is more", they reach their characteristic simple expression. The expression of the garments has a purity and feels gentle to wear.

HOUDINI

Houdini develops and sells outdoor clothing made in a sustainable way and constantly strives for increased durability (see appendix X). They are at the forefront and inspire other companies and their surroundings to rethink and think about their impact. In addition to working with innovative sustainable materials, they work a lot to stretch the sustainable expression. What does a durable garment look like? Do you have to compromise between design and sustainability or is it possible to dress in clothes that are both stylish, functional, and kind to the planet? This is something that the company has managed to achieve and their products as well as business thinking are inspiring.
They have a Scandinavian aura and have a minimalistic expression on their products, even though they look quite simple it also gets the impression of that this is the future. The brand is in the leading edge with its responsible garment production and the garments functionality and utility.

SANDQVIST

Sandqvist is also a Swedish company that mainly sells bags of various kinds (see appendix XI). They describe themselves as *"We place focus on challenging the role of functionality in design and practicing both sustainability and respect for the environment at all times, without compromising aesthetics"*. They transformed the backpack into a cool bag and challenged the fashion thoughts about style by turning creating the backpack into a well-dressed statement piece. Their products are designed to simplify the customers life through clever solutions without having to look ugly. They are also quick to pick up new trends. For example, the trend of taking care of products, they sell a leather wax that looks more like a hand cream that the customer kindly wipe into the products.

What feels inspiring is how they work with colours, shapes, structures, and meetings in an interesting way. The combination of high functionality and design goes hand in hand with Thule's values and there is much in the company's textile choices and expressions to draw inspiration from. Especially how they work with different types of buckles to create different expressions and styles of otherwise quite similar bags in terms of function and shape. Although they dare to challenge colour combinations, it has the minimalist and Scandinavian style at its root which makes the products look simple without being boring.

COMPETITORS

To establish a better understanding of the market, competitors marketing strollers with a similar focus were studied. The selected brands are stroller brands that Thule consider as their main competitors. The competitors chosen were studied according to how they marketed themselves in their own channels and the collected materials was put together in expression boards for each brand. Even Thule as a stroller brand was studied, just to get the same perspective.

Through the analysis the following general conclusions were derived and should be studied together with the expression boards (see appendix XII-XVIII).

Emmaljunga

Emmaljunga clearly communicates a brand identity based largely on stability, family friendliness and Swedish quality, clearly stating their strollers are produced in Sweden (see appendix XII). Their projections of inherent quality and Swedish heritage is to an extent reminiscent of Volvo, and the way they market themselves.

Also, their textile expression is kind, both through their sustainable choices of textile materials and the traditional look and design and lastly the soft shapes on the textile parts. The stroller itself is projected with stability and friendliness, rather than coolness, as their prime properties.

Bugaboo

Bugaboo focuses largely on being a statement product, were having one means “you are in the club” (see appendix XII). They focus largely on the stroller’s look, being modern and clean through their luxury look on the fabric, zippers tone in tone, integrated functions, and the availability of different kinds of accessories. They also carry a thought through design with windows and ventilation placed in appropriate positions.

It is marketed mainly as a luxurious accessory for the parent, and the comfort of the parent, rather than projecting an ambition to carry for the child.

Stokke

Stokke clearly focuses their marketing on the bonding between parent and child and caring for the child while being in the stroller (see appendix XIV). They carry a typically Scandinavian design look, but with a different approach than, for example, Emmaljunga. This means a minimalistic outlook and sharp lines with soft curbs. It is hard in a way but yet soft, being a protective shield for the child towards the outside world, while soft and caring on the inside.

Stokke is not a statement piece in any way, it rather projects an image of being a helping hand in everyday life.

Cybex

Cybex carries a clear focus towards the parent, providing an enjoyable experience and in the same time being a luxurious accessory (see appendix XV). They provide a large variety of additional products but lacks a clear design language on their textile parts. They provide a number of thought through functions, such as ventilation on different areas of the stroller.

Britax

Britax is in many ways similar to Emmaljunga in that it carries a focus towards functionality, rather than being a statement piece (see appendix XVI). Britax carries a very thought through visual expression on their textile parts, it is functional and practical in its application, but rather anonymous to the onlooker.

Joolz

Joolz carries a conspicuous design, making it largely a statement piece, in some ways similar to Bugaboo (see appendix XVII). They have a hard and eye-catching visual construction, but in some ways project a soft look even though it carries sharp shapes. It holds a simple and clean design with very worked through textile parts, with, for example, fine seams and fabric elasticity.

Thule

Thule as a stroller brand, compared to its competitors, has a sportier visual expression with a sharper angle on its canopy and overall look (see appendix XVIII). It carries a Swedish/Scandinavian look with a minimalistic and functional design and features. It is viewed in some ways as a statement piece to project an image of the user as a sporty or outdoorsy individual, but the main focus remains on it being a helping hand for the user

USER

From the participation-observation two distinct users of the product were identified: the parent, and the child. The two different users integrate with the product in two different ways, but in manners of equal importance. The child in question integrates with the stroller by being a passenger while the parent integrates with it by being a driver. Both users, separately, need to be satisfied to create a sufficient product, but the interaction between the parent and the child is also of significance.

Below follows a discussion surrounding a few starting points concerning both the parent and the child, focused on basic needs in their respective situation, which in turn will have large implications for the design of the stroller and its different parts. Conclusions included in the discussion is largely based on the participation-observation conducted in the project.

The parent

Being a parent is both rewarding and trying. As part of everyday life, it involves some **worry and fear** for the parent. Not being sufficient or doing something wrong that can harm the child. This concern is something that companies linked to children's products like to take advantage of. Many products related to children are selling largely by stimulating the feeling of fear or anxiety that many parents have, for example not being good enough or/and doing things wrong that could harm their child. As a counter-reaction many parents strive to always be prepared for everything with kitted diaper bags, well-read in various fields and other precautions.

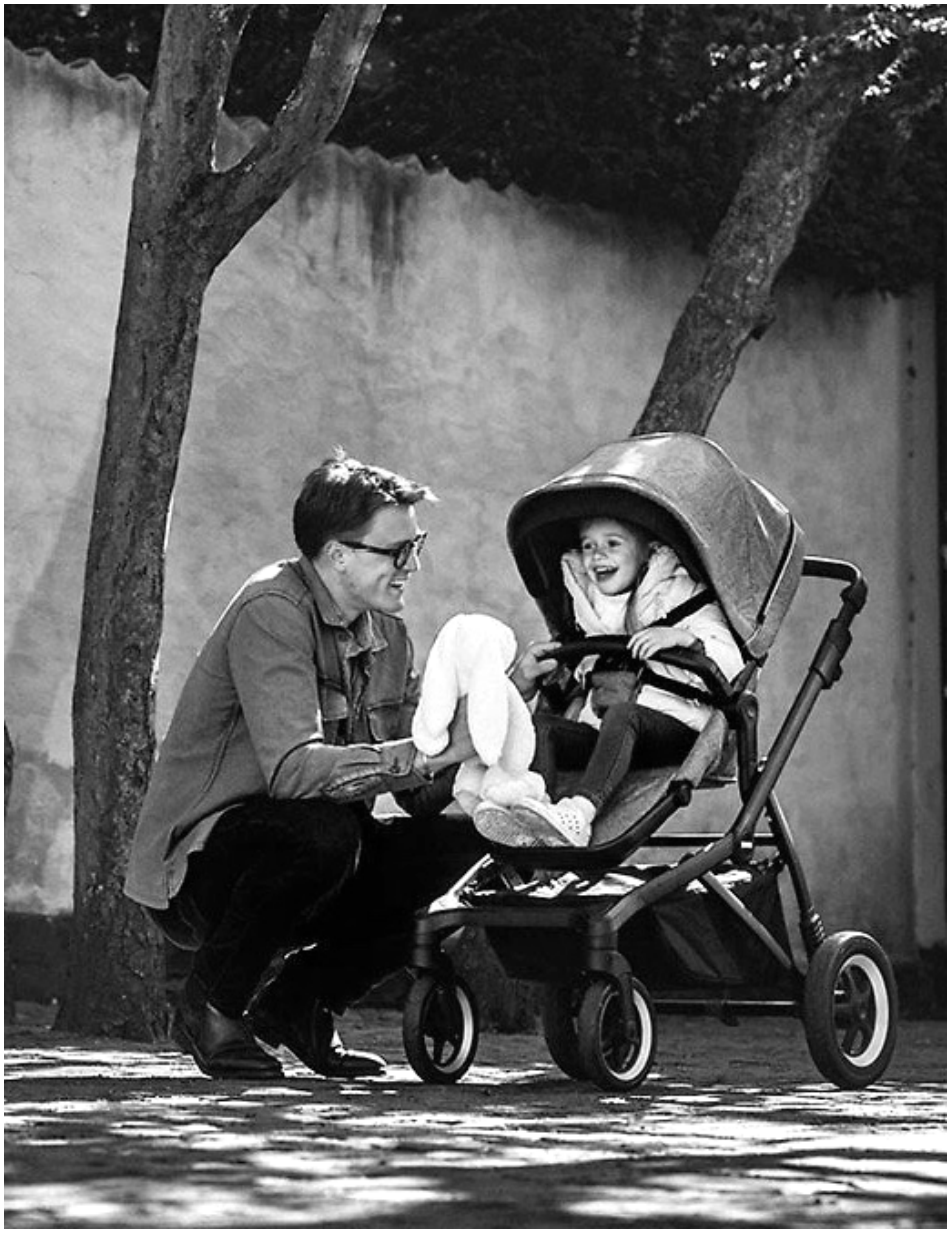
To be a parent is **exhausting** from time to time. Parents experience demands and expectations are placed on them, and in combination with the new life with another human that should be put in the first room. Potentially a new situation where parents must think of someone else first and meet its needs before its own. In addition to this, and maybe because of today’s modern and hectic society, the parent might experience that they never have enough of time.

Being a parent could also mean a lot of **pride**. The parent gets the chance to be someone’s role model and even superhero. To show and guide the little human in the big world could be something amazing and joyful. This will likely also be a source of **happiness**.



The child

Being a child on the other hand is not that simple either. The child is seen as an **innocent** individual and is a victim of its surroundings. It has no responsibility and as a natural part the child is seeking for security and protection. Just like with the parent, being a child can be **exhausting**. It is much to learn, and it is in a complex world with new things everywhere. But being a child also means a lot of **fun**. There are always new things to learn and to achieve new skills.



ERGONOMIC

When it comes to the ergonomics for the child, there are a whole bunch of guidelines on how the stroller's seat can be designed, all to protect the child and make it easier for companies to develop good products.

A clear water divider is the design of the seat. The seat can either be of so-called ergonomic design or of traditional/ordinary design. The research is divided when it comes to which seat is best for the child. One side believes that the ergonomic seat inhibits the child's muscular development by the child not being able to sit properly upright and thereby train its balance and muscle strength (Learn to Move, n.d.). The other side believes that the more compressed sitting position mimics the baby's position when it was in the mother's womb. The more stable and fixed position gives the child an increased feeling of security while the position also helps digestion (Simon, 2021).

OVERSTIMULATION

A growing concern for the health of today's young children is stress, high tempo and too many impressions, which leads to stressed toddlers. Today's parents are largely well-read and interested in their children's well-being, and on many levels much more involved in their children than parents have been earlier days. In the quest to activate the children sufficiently, there is a concrete risk to exaggerate. Far too many children today are instead overstimulated, says Gunilla Källgren (Gärdsmo Pettersson, 2020).

In the book *I barnets hjärna*, the author, who is a professor in paediatrics, describes that too much stimulation for children's brains can be harmful. A clear culprit for overstimulation is the TV and all the screens that surround us today. There are some studies that show that watching TV quickly means too many impressions for young children and even shown to increase the risk of developing ADHD later in life (Lagercrantz, 2012).

All children need stimulus-poor periods, even more so the very youngest children. It is during these quiet moments that the world becomes comprehensible to the child when it processes all new impressions (Gärdsmo Pettersson, 2020). It can be especially important for the child to have peace and quiet after preschool, limiting further activities can be a good idea. Children need many stimulus-poor moments with regular intervals to balance the impression-dense ones. A balance between moments of impression from the outside world and periods without external stimuli is important for children to develop into strong individuals with good self-esteem and a good ability to withstand the pressure of a rapidly swirling world. Gunilla Källgren emphasizes the importance of avoiding giving children a lot of impressions completely unnecessarily and giving time to the important interaction that must take place between parent and child.

Just as important as the balance between impression and calm is the need for interaction with the parents of the child. The youngest child needs a lot of attention with reactions from the parent to everything new that happens in order to be able to understand the world. Hugo Lagercrantz emphasizes that even though at the age of six months it has become popular to let the child sit facing forward in the stroller, the child is much more interested in having contact with his or her parent. It would rather receive attention from its parent than have a good view of the surroundings. He means that babies and children under the age of two should preferably sit backwards in the stroller to see the parent driving because it needs to see and communicate with its parent.

Trends

COLLABORATIONS

An increasing trend among outdoor brands, which has become increasingly common in recent years, is collaborations between fashion houses and outdoor brands. There is a strong influence of outdoor clothes on the streetwear, confirms the creative trend bureau Carlin (Carlin Creative, 2020). A major trend in society at large has been the growing interest in nature and the outdoors. The growing interest in outdoor clothing therefore is a logical consequence. The aim is to beautify outdoor fashion where city life goes hand in hand with outdoor life and the border between them is blurred. The fashion has gone from sporty with sneakers to actively outdoor with rough boots. Fashion is inspired by the modern human who lives and works in cities but who enjoys the outdoors in her spare time. Picking up on these trends, innovative collaborations appear on the market at regular intervals. Some of these collaborations are represented in the pictures to the right.

”STREETWEAR BRAND ARE IMPLEMENTING OUTDOOR CODES IN THEIR COLLECTIONS”

(Carlin Creative, 2020)

It is also possible to see a certain trend in the stroller industry where there has been some collaboration between different fashion houses and stroller companies. Some examples of this are the collaborations between the Italian stroller brand Inglesina and Dior, the collaboration between Bugaboo and Diesel, and the stroller brand Cybex and the fashion designer Jeremy Scott.

SUSTAINABILITY

The identified user of the stroller typically carries a large interest in matters concerning sustainability. This, along with the conclusions integrated in the following chapter, have been derived from stroller related Facebook groups.

This became clear during the user observations. In the following chapter, this is discussed in relation to other aspects of life for the intended user of the stroller.

This interest is generally twofold, both aimed directly on the user's child in matters of health, safety and other aspects, but also the consequences on the environment. They strive to participate in a change of behaviour towards a more cyclic and sustainable usage of resources, letting the world a good place for their children to grow up in.

Already today the users are accustomed to many kinds of sustainable solutions and are used to navigating towards sustainable solutions. The user prefers, and to a growing extent request, products developed in a sustainable way and with **sustainable materials**. Both concerning the fear that the child will be in close contact with toxic substances and a preference towards **sustainable production lines**. It is possible to distinguish a trend in, for example, parents choosing clothes made of organic cotton to a greater extent than non-organic ones for their children, although when buying clothes for themselves, it is less important. In general, **recycled and/or reusable materials** are a common trend, especially concerning plastic-based materials and is something that appears almost as a matter of course. It is increasingly becoming a basic request from the customer for a product to integrate **recyclable materials** to enhance sustainability. The users typically pay a successively larger interest to what happens with the product after it is discarded.

A distinguishable trend concerning products related to outdoor living is **care and repair**. Advocating the care of the products to increase their longevity has increased exponentially. A clear stance from the wear and tear of society by producing products of good quality that intend to last a long time.

Another act that to most of the intended user feel natural is considering **second hand**, both selling/giving away products but also buying already used products. It could be both an economical act and an act in favour of the environment.

Something that has become increasingly common and that has occurred for a while, especially in the automotive industry, is **leasing**. It has also become increasingly common to lease various items such as clothing and outdoor equipment, including children's clothing and child-related products.

Finally, a system that has been around for a long time is **owning together** such as cooperatives or pools. This is not something that is particularly common, if it even exists, among child-related products, but on the other hand it is available in preschool form. It is more common with carpools and public transport. Especially many companies with different collective solutions have appeared on the market recently, just take all the scooter companies that abound in the market that offer short-term loans of scooters.

THE PRODUCT

After some participation-observations through product trying, review reding and analysing discussions in Facebook groups about strollers, some knowledge about both strollers in general but also Thule Sleek in specific, which will be presented below.

The user

A stroller is used for the purpose of moving one or more children and sometimes also some items. In most cases, these things are directly related to the child, but it can also be things such as groceries or other items related to other small errands. A stroller of Thule Sleek's character can primarily be seen as a means of transport and could be a bit like a car, the main function is to transport one or more people and a sub-function is to transport things of various kinds.

MORE THAN "JUST" A STROLLER

To a family a stroller could be much more than "just" a stroller. As already mentioned, it can be a transport for a child/children, equipment, other items and groceries. For the child the stroller could be its own space where the child feels safe, it could be like a playroom, and it could be a cosy space for relaxing. For the parent the stroller could also be an object of support and safety. With the stroller the parent is always prepared and ready for when the child needs to rest and take a nap, it is like a portable/mobile bed. The stroller could also be a statement piece, depending on its colour, brand and accessories and creates the feeling of "being one of them" and/or "being a good parent".

MILDEW

In a Facebook group about strollers, there are often posts about strollers whose fabric has received mould infestation in the form of small dots, especially when the strollers have been stored in a storage room or similar. Among the parents there is a great deal of anxiety regarding the mould, whether it is possible to wash it off or if it is just to discard it. There is a great deal of concern among parents regarding health issues of children in relation to mould. Although some believe that the mould can be washed away, but with remaining stains, it is not entirely uncommon for parents to still choose to discard all or parts of the stroller simply due to mould infestation.

FADED FABRIC

A common phenomenon among used strollers, especially in the second-hand market, is sun-bleached textiles. Despite fully functional strollers in good condition, sun-bleached textiles reduce the resale value considerably. A large stroller supplier has had problems with their textiles quickly sun-bleached, which has created great dissatisfaction among customers. The sun-bleached textiles are not too unusual a topic of discussion in a stroller group on Facebook. Several parents have made real "catches" of strollers on the second-hand market that had sun-bleached textiles which they then repainted themselves with textile paint. Their strollers have gone from looking used to looking almost new. There are also parents who are tired of the colour of the textiles or bought a used stroller in a colour they are not completely fond of, and then chose to repaint it with good results. Worn textiles are a major factor in the stroller's loss of value and the reason why the stroller is thrown away or replaced.

SPACIOUS BASKET

An important feature in stroller design for many parents is a large shopping basket for storage. It often appears in the discussions in the Facebook groups about strollers. For a stroller that is used in everyday life, it can be especially important to have space for some grocery shopping, while if the stroller is used on a vacation, it can be excursion-related things that need space. A big advantage is also if it is easy to get the diaper bag into the shopping basket without it using up all the space.

SEEN IN THE DARK

It has turned out to be important for many parents that they and their strollers are seen in the dark, it is perhaps especially important here in the Nordics due to the darkness being present large parts of the day during winter. In the Facebook groups about strollers, parents share tips and show how they have adjusted their strollers to increase visibility in the dark. The parents mount extra reflectors, bicycle lights, light loops, use reflective covers, tape the strollers with reflective tape and some also mount led light loops. It is a matter of security to be seen in the dark and to have a well-lit stroller in the dark makes the parents feel safe and prepared.

Using the Sleek

In the following chapter pros and cons are discussed concerning the stroller in the centre of the project.



DIFFERENT SIBLING SEATS

When using the stroller as a sibling stroller a sibling seat must been added. The sibling seat, which is an extra individual seat, separate from the original one, and the original seat is different and therefore the seats have its fixed positions. The original must be placed at the top and the sibling seat at the bottom. It is not possible to change positions of the seats. This has been seen as a problem for some users. One user reviewing the stroller states that it would have been preferable if it was possible to change positions of the seats because when having two children with different sizes, she thinks it is easier to switch place of the seats than change the seat belt and perhaps even the footmuff (BarnvagnsGalen, 2018). When she is driving only one child, she would like to be able to choose in which position the child sits.

DEEPER SEAT

The stroller's seat is not deep enough. When trying the stroller, the child is almost slipping out, even if it is a small child, but because it is having a slippery snowsuit and the seat is not deep enough. When using a footmuff in the stroller almost everything is trying to slide out of the stroller. The seat feels narrow and slippery especially when driving over bumpy roads.

CLOSED BASKET

It has appeared that a major advantage of Sleek's shopping basket is that it can be closed completely. It is perceived as safer that way, unlike many other strollers where the basket is much more open. One user writes, in a Facebook group about strollers, that she once fell victim to a pickpocket who stole a wallet stored in an open basket under a stroller. After this, the person in question only uses strollers with closed baskets.

One difficulty with the closed basket is that it is difficult to open it and reach things stored inside. The zippers are too small, and the openings are not optimal. It is especially difficult to reach the baskets side opening when the child is facing the driver. The footrest is covering the view and the opening of the basket.

The closed basket also makes it difficult to over pack it. The space is sometimes not enough, and it is difficult to store more things when the basket is full. Even though if there are things big and flat, like a package or a bag, it could be stored on top of the basket. The way the basket looks today it is not possible to secure items stored that way.

CANOPY

The canopy is a bit short; it is possible to extend it through opening a zipper and the sun cover gets longer but it is not enough. During the day and if the child is sitting upwards, it is enough, but if the child is laying down or if the sun is standing low in the sky the canopy is too short (Allt om barnvagnar, 2018). Irritating lights and cold winds reach into the stroller seat, longer than wished writes the author.

The canopy is not enough for covering from all lights and cold winds, it is too thin for keeping the warmth inside the seat and the surrounding noise outside, and it is too short for giving a good cover of a small rain.

The canopy consists of a window created for the parent to look into the stroller when the seat is facing its direction. The window is not optimal and most of the time it is difficult to look into the stroller without bending over the stroller or bending down the body.

FOOTREST

The stroller has an angled footrest that is possible to position in four different angles. An angled footrest is preferable when having an ergonomic seat for many users. A problem with it is that it is not possible to position the footrest in a horizontal position. This is something that irritates many users, one of them writes about it as if it is not possible to have the footrest in a horizontal position it is not even worth having an angled footrest (Allt om barnvagnar. (2018).

LACK OF FEATURES

There are many features that some of the competitor's strollers have, which Sleek lacks. Some of them is unnecessary but some are useful. One of them is integrated mosquito net in the canopy. The mosquito net is always carried with the stroller, and it is easy to fold out from a pocket and fasten in on the right place.

Another useful feature is an integrated foot sleeve to the stroller. It protects the child's legs and feet from sun, rain and/or wind, and when using a footmuff it protects the feet as well. It attaches to the stroller's seat and also holds a potential footmuff in place.

One feature that was more common back in the days is the crotch strap. It prevents the child from slipping out from the seat when not using the seat belt. It is especially useful when attaching the child to the seat belt and the child tries to escape by sliding out of the seat, the crotch strap then holds the child in position.

Some stroller brand's offer seat liners that are a thin seat pad used under-neath the child to protect the seat from dirt. The liner is easy to change and wash. There are different kinds of liners, for example one type for summer and one for winter.

In combination with the changeable liners the canopy can also be switched from the regular one to a summer canopy. The main difference being that the summer canopy has ventilation sections which the regular lacks or have just a small section of.

OTHER

There are some more improvement points or problems detected. The stroller could be much cosier. As it is today it feels cold and like a public chair more than a child's crib. It is a bit tricky and difficult to change the position of the seatbelt and when not in use they are all over the seat. It would be preferable to hide them away.

Another annoying detail is the bulky rain cover. When not using it, it takes almost all the space in the stroller's basket. Typically, here in Sweden the rain can appear at any moment, so to be prepared the rain cover will be carried with the stroller all the time.

Because the basket is black it is a bit difficult to see what's inside, especially when it is dark outside. The black colour on the basket, thinking of the outside, makes dirt more visible than if the colour would have been dark grey.

MATERIALS

Today Thule uses mostly synthetic and plastic fibre fabrics in their soft goods products. To challenge and broaden their views, but also to meet the users demand, only natural fibres were selected and examined for the product.

Cotton

Cotton is one of the most used natural fibres and is important for many products. Its combination of the properties pleasing appearance, easy care, comfort, moderate cost, and durability makes it ideal for many textile productions. The fibres have a good absorbency which mean it can absorb a lot of water which also makes it dyed easily. The fibres are moderately resistant to sunlight but are flammable and burns easily. Even if the fibres are resistant to moths, they are prone to be attacked by mildew. The production of cotton uses large quantities of water, chemical compounds, and energy. The fibres creases easily, takes long time to dry, and sheds lint (Kadolph, 2014).

Flax

Flax is one of the oldest documented fibres used for fabric production. It has a good durability and is relatively strong considering it being a natural fibre, and more durable than cotton. It is more resistant to sunlight than cotton but burns easily, just like cotton. The fibres have smooth properties, which gives fabric made of them a good comfort. Compared to cotton, flax fibres have less environmental impact, but contributes to soil erosion. The fibres ages well but shrinks and creases easily. Flax fibres are lint-free but takes long time to dry and they are prone to mildew attacks. It is easy to remove soil from the fibres (Kadolph, 2014).

Hemp

Hemp has also been used for a long time and is considerd to be as old as flax. The fibres are stiffer than flax but still provides good comfort, in addition the fibres ages well. Unlike both cotton and flax, hemp is resistant to mildew, and hemp is also resistant to ultraviolet light. The fibres have a good absorbency which makes them easy to dye. When exposed to water the fibres are resistant to rotting. The fibres can be considered to be environmentally friendly; they do not require use of pesticides during production, consume much less water than cotton and grow quickly. The production also prevents soil erosion. The fibres can grow in both warmer and colder climates and hemp can produce 250 percent more fibre than cotton and 600 percent more fibre than flax on the same land. The fibres are highly durable and holds its shape well, they have also superior anti-bacterial properties (Kadolph, 2014).

Nettle

Nettle is a fibre which was used more commonly in the past and is called *Nordic silk* due to its fibres shining dimly. The fibres are soft and flexible, and the fibres are pleasant against the skin. Nettle fibres are the most breathable of all natural fibres and are better to absorb and release moisture than other natural fibres. It has good insulation properties which makes it cool in the summer and warm in the winter. The production is considered to be sustainable because the plant is easy to grow, no chemicals are needed as fertilizers and pesticides. The nettle farming is beneficial for insects and birds in the surroundings. The plant can grow where cotton can not, no irrigation is needed when growing and the plant prevents soil erosion. The fibres are easy to dye and have a greater elasticity than linen. The fibres are also anti-fungal, antimicrobial, and fire retardant (Knokkon, 2021).

Wool

The usage of wool fibres has a long tradition and there are many kinds of wool. The fibres are typically soft to skin, durable, and water repellent. They are naturally breathable, have an excellent heat retention, and good moisture absorption without feeling wet. The fibres have a high-level elasticity and excellent flexibility, elongation, and elastic recovery. The production is more expensive than other fibre production. It is easy to remove soil from the fibres and they do not soil readily, in fact grease and oil does not spot on to wool fabrics as easily as with other fibre made fabrics. The fibres are odour, wrinkle, and stain resistant, and have a good capability of self-cleaning. The fibres are also ultraviolet-light and fire resistant (Kadolph, 2014).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Everyday → adventure
Safety & quality
a more beautiful everyday
Simplify parenting
Wool
Nettle
hemp
create a safe atmosphere

EVALUATION

The conclusions from the initial stage are presented in the following chapter. In order to focus the project in one direction the findings had to be narrowed down, selecting the most interesting and which will be kept in the process to the next stage of the project. Some findings felt more important than others and therefore they were also brought onwards to the next phase.

THE BRAND

The brand develops products with good quality and with a significant dynamic expression. Their product should be an **enjoyment** to use, **functional** and **reliable**. They should also have an **active** expression and inspire the user to **discover together** and be **in motion**.

The brand's aim to inspire passion with their products, felt important to bring along. To understand what it means for this product it was divided into sub sections;

BEING A PARENT

The product should encourage the parent to be its best and project a feeling that the parent is succeding in its parenthood. It should also be easy to do the right things and hard or even impossible to do wrong or use the product in a wrong way. The stroller should also encourage the parent to be a good role model. It should also create the feeling of that it is easy and fun to being a parent.

BEING A CHILD

It is especially important that the product creates a feeling within the child of being in a safe space. It must be safe to be a child, especially when integrating with the product. It should also contribute to a good childhood and development for the child. It should also encourage the interaction between the child and parent

BRINGING THE CHILD

To bring the child should be easy, to whatever the parent likes or needs to do. The child, or the things around the child, should never be in the way. It should be fun to bring the child along and the product should create a feeling of wanting to always bring the child.

EXPLORING TOGETHER

The product should inspire to explore the world together, the child and the parent. It should be easy and fun to go on an adventure together. Spending time together on the terms of both should be simple and pleasant.

ACTIVE LIFE

The product should inspire to have an active lifestyle. The stroller should not stand in the way but should encourage, facilitate, and inspire an active life.

Design formats

The brand has some important design formats. For this project the most important ones to bring into next phase are the textile related. The trapezium shape, the folded seam, the dynamic expression and the visible invisible-zippers are ones that can be applied in the development phase. To get the Sleek to look more like the other strollers the dynamic shape must be worked on as the shape of the basket.

Inspiration from other brands

From the analysis of the other brands several insights were gained. From Filippa K working with fine details and peel off instead of adding details will be an inspiration in further phases. How they create a luxury and minimalistic look with choices of material in good quality and the fine seems was also inspiring. Houdini's way of working with sustainability and sustainable materials also feels appropriate for the project and to take inspiration from. They work also with the clean minimalistic look, as Filippa K, that feels futuristics without being cold. Instead, it feels kind and friendly, and like the only right choice which will be kept and applied on the prototyping in the development phase. From Volvo, inspiration will be taken from how they work with its interior in the cars. Particularly interesting is their shape choice, and to some extent also material choice, on the seats that can be applied to the stroller seat. From Fjällräven there timeless design and their promotion of caring and repairing the products will be taken into next phase. Finally, from Sandqvist inspiration from their work with a combination of colours and materials will be brought onwards. How they work with shapes and different buckles to create different expressions will also follow into the next phase.

Overall, the final product needs to be a functional product with smart solutions that are easy and intuitive, the product should also be of good quality and feel well worked through.



COMPETITORS

One thing that became particularly clear after studying competitors was that there were few brands that have the child in focus, or even view it as a primary user. The relationship between child and parent is also not seen as particularly important. The focus is instead on satisfying the parent with features and appearance. Even if the stroller is in some cases marketed to the parent to discover together with the child, it is always on the parent's premises. The stroller should primally be designed to easily carry the child. It is rare that the child's real needs are highlighted and in focus in marketing. The child is mostly presented as a package alternatively as an adult but in a smaller format, i.e., has the same needs as an adult. The child's different needs from the adults are thus not something that the competitors attach any importance to but could be something Thule could focus on to differentiate themselves from competitors.

USER

The knowledge about overstimulation is something that will be a significant part in the next phase. To use the product and design it so it can shield the child off from the surroundings and also create a safe and calm environment is a goal. The product should embrace the ability to relax. The design of the product should also enable and even encourage the interaction between the parent and child.

Onwards the inside and outside of the stroller should be seen as separate products. The inside is designed for the child and that environment should express safety and calmness, the outside is mainly for the parent and the visual expression as a statement piece is much more important. The stroller is much more than just a stroller especially when it comes to its visual expression. It could be a vital to the success of the stroller to view the stroller as an accessory and even as a statement piece instead of just a useful and necessary product.

The question of whether Thule should continue to have two tracks, one sporty and one urban on its children's products, feels less relevant after the trend survey. The trend with stylish outdoor fashion feels a way that Thule's products should go. The overall look of their products could be urban outdoor, they work well in the city and functional enough for the forests. The aim could be that the stroller can be taken from everyday life directly on an adventure and the visual expression should communicate that.

To create a more fashionable statement piece of the stroller the brand might also attempt collaborations with other brands as Filippa K, Houdini or Sandqvist. However, this is outside this project's limits.

The research and the work on ergonomics will not be continued. The shape and the angel of the seat depends a lot on the hard frame and since the project is limited to development on the textile part this will be left aside.

When it comes to sustainability issues these are of course important to bring into the next phase. The choice of materials is an important and doable thing to do. To consider materials that ages well, are kind to the environment and the users is important. Also, the fabrics should preferably be easy to care for and if necessary repair.

PRODUCT

It is not possible to change the sibling seat, so it is not possible to swich places. However, it is possible to facilitate the changing of the seat belts, by minimizing steps when changing the belt height.

The choice of fabrics is important specially to extend the service life of the stroller. The fabrics should be resistant or less prone to mould, the colours should not fade easily when exposed to sunlight, the fabrics should age well and should be easy to keep hygienic.

A longer canopy would be preferable, both to protect the child from sun, rain, and wind better, but also to create a better seclusion and keep the warmth inside the seat during cold seasons.

Many parents think it is important to be seen in the dark, the product should therefore encourage the user to achieve that. Both with integrated reflective parts but also enable parents to add more reflective products or lights if wanted.

The problem with the too narrowed seat should be further investigated. However, the footrest won't be a part to continue with. The footrest is dependent on the hard construction which is outside this project's limits.

Added features will be considered in the next phase but will depend on the overall expression of the product. The rain cover is still a problem that will be considered in the development stage. The basket under the strollers has some points for improvements, especially the closing and opening parts but also its shape and if it is possible to increase the volume.

MATERIALS

There are many kinds of fibres that have different kinds of properties when using them in their pure conditions. The fibres can then be combined and blended with other fibres and new properties will be reached to the final fabric. Most interesting fibres hemp, nettle, and wool. The hemp has good properties for application on the outside of the stroller. It ages well, are mildew and ultraviolet light resistant, and is environmentally friendly. The nettle could be used as a fibre in combination with others, to give shine and lustre to the fabric. The properties make it suitable to have close to the skin and could be used for the seat belt. It is also anti-fungal and antimicrobial, and it produced in a sustainable manner. The properties of wool makes it suitable for application inside the stroller where it easily gets dirty from the child's clothes and it creates a good climate. All these three fibres are fire resistant or fire retardant which is a good benefit.


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DEVELOPMENT

In the following chapter the results and conclusions from the development phase are presented.



FUNCTION

Seat

Problems that have risen concerning the seat were that the child easily slipped out from it, especially if it was wearing snowsuits or if the ground was uneven and if the seatbelt was not used.

Stroller	Depth (cm)	Width in backrest (cm)	Width in front (cm)
Thule Sleek	22	27	31
Emmaljunga NXT	23	28	30
Cybex	24	26	33
BabyJogger	25	29	36
Quinny	23	26	34
Joolz	22	19	31
Bugaboo	25	26	33
Nuna	19	23	31
ABC design	20	26	31
Average	**22,5**	**25,5**	**32**

Table of measured stroller seats

CROTCH STRAP

To prevent the child from slipping out from the seat a crotch strap is a common solution. As a first prototype a simple strap was created, just for testing the concept. The actual design was later explored.

WIDER SEAT

It has been pointed out that the seating area has been quite small, also an explanation for why the child easily slipped out of the seat. When measuring it and comparing it with competitors corresponding stroller seat measures, it turned out that seat of the Sleek wasn't especially small, in fact it was quite normal in size. Instead, when analysing the seat in more detail, it turned out that when the child was sitting mainly on the front of the seat, it tended to bend downwards and turned into a slide. To counteract this, a bolt was mounted in the frame, under the front of the seat. Originally there was a strap mounted at the same place, but it was too elastic and difficult to get completely tense.

HIDE THE STRAPS

In several user cases, the seat belt was not used. In these cases, it would have been desirable to remove them from the seating area, as not to risk creating discomfort if they end up underneath the child. Another wish (or problem) the emerged was facilitate the handling of the belt when different sized children ride in the same part. To change the position of the seat belt appeared to be a bit difficult and time-consuming. A prototype was developed with a seat belt only attached with one point for both the shoulder straps, instead of one for each strap (as Sleek originally had), hidden behind the seat but with an easy openable part. The solution not only enabled the belt to be easily hidden when not in use and simplifies belt handling, it also made it possible to have several belts (at different heights) mounted at the same time, but only the one used visible.

SEAT PROTECTION

The seat should be both gentle and rough. Gentle and soft to the child when sitting with bare skin and fine clothes but also rough and durable to dirty clothes straight from the playground. One solution, that was tested, was a seat cover. A cover that easily could be folded up, in order to protect the seat was developed. The protection was limited to only the seating area and was located under the leg and feet area of the seat. When used it could easily be folded up to cover the seat and creates a protection surface under the child's bottom, legs, and feet. To enable the seat belt to still be used regardless of the position of the cover a loophole had to be created.

POCKET

There is never enough space for storage of all the different items a parent wishes to bring with the stroller. To create more storage space a pocket under the fold up part was created. Ideas of having pockets in the back, on the outside of the seat and pockets in the basket were also investigated.



Canopy

The way the canopy was designed originally, it was fully functional but lacked some features that competitors had. Especially the length of the canopy was a big issue among users. To meet the requirements of a long canopy, a prototype with a longer canopy was created. The window was also made bigger, and the length of each canopy parts were changed, to better fit the use of it.

LENGTH

One extra part to the canopy was added to make it longer. With the extra part in combination with making the window-section longer the canopy was enclosing the whole child when using its full length. With the new design the child could be both protected from wind, snow, rain and sun in a better way.

WINDOW

The window was enlarged to enable more functions. Its position was also changed. Through changing its proportions and position the window could be used in a larger variety of situations. For example, when the canopy was fully closed the window could be used as a window for the child to look out from the inside. The window could also be used as a “roof window” for the child to look at the sky. The changed position also made it easier for the parent to look into the seat from different angles and with different length of the canopy.

VENTILATION

With the longer canopy it seemed necessary with added ventilation. This was not due to any safety reasons or similar reasons, but rather because at a first look, the enclosed canopy projected the feeling that ventilation would be required. For the visible satisfaction different designs of ventilation were tested. It became a detailed investigation of how different shapes would create different expressions.

BOOT COVER

The rain cover appeared to be too big to always carry with the stroller. With the longer canopy the child would be almost covered from the outside anyway. To complement it a boot cover could be a solution. The boot cover must be thin and should be seen as a shell jacket and should mainly be used for protection from rain, snow, and wind. To add more reflective material, an idea was to have it in reflective fabric. Its user area would then expand to also be used when it is dark for extra reflection. When not used the boot cover could be stored in the pocket that earlier was created under the fold up part. The shape was created through two significant seams, like those found earlier in the Design Format Analyses.



Basket

WIDER BASKET

The shape of the basket was an issue at the visual analysis of the strollers that Thule has on the market today. As a test of changing it, without reducing the storage volume, a prototype for an extended basket was created. It was also an attempt to increase the accessibility of the opening of the basket when the seat is facing backwards. The basket was extended backwards, and the shape of the back was changed to harmonize with frame of the stroller at the back.

ZIPPER

The zip-locker was found being too small on the original Sleek design, especially when using gloves, it could almost be impossible to open it without taking of the gloves. The zipper was also not optimal in its design when utilised. To simplify the accessibility of the basket different zipper solutions was created. For example, solutions of a zipper all the way around and zippers with two zip locks was tested.

LOCKING

The locking of the basket, in the back, was originally designed with hook and loop but with a full packed basket the locker tended to open itself. The hook and loop were too weak and maybe not the best solution. Therefore, different locking solutions were tested, both with easy accessibility and the design expression in focus.

OPENINGS

The opening of the basket tended to be a bit tricky. To pack the basket from the front both zippers needed to be opened and sometimes having some parts of the basket open would have been desirable. A solution of dividing the basket into one open and one closed area were investigated.



FABRICS

From the research phase wool, hemp and nettle were selected for further studies, due to the fibre's properties. The fabric's properties depend both on the fibres it is made of and how the fabric is made. During the development, different structures to the fabrics were investigated.

Structure

Today Thule uses mostly ripstop fabric on their products, for comparison other kinds of fabric were studied. One fabric structure that was especially interesting was twill fabric. Other studied structures were plain weave, jersey and mesh fabric.

TWILL FABRIC

Twill fabrics are commonly used in trench coats and jeans. The structure makes the fabric shiny and soft, it also makes stains and soil less noticeable. Because of the structure the fabric recovers better from wrinkles. It can also be made water and air resistant (Kadolph, 2014).

PLAIN WEAVE

Plain weave is the simplest weave and is used for example in bed sheets and curtains. The structure could be made of different materials and with different thickness. The structure creates fabric ideal for printing, however the fabrics tend to wrinkle easily and are less absorbent than other structure. Ripstop fabric is a type of variety of plain weave but is created with a net structure to stop potential rips (Kadolph, 2014).

JERSEY

Jersey is the simplest knitting structure and is commonly used for t-shirts. The structure creates a stretchy fabric and could be made of different materials and in different thickness. A problem with the technique is that the fabric is a bit sensitive, broken yarns can create problems with runs (Kadolph, 2014).

MESH FABRIC

Mesh fabric could be made through both weaving and knitting, characteristic for mesh fabric is the hole-pattern. The fabrics could be made of different materials where plastic is the most common. Leno weaves is made through weaving and is used for example in mosquito nets. The characteristic for the structure is that there are open spaces between the yarns which creates a net. The structure could be made with different sizes on the open spaces. Raschel knit is a mesh fabric created through knitting and are used for example laundry bags and fish nets. The knit could be made with different thickness in all three dimension (Kadolph, 2014).


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Inspiration

A brand that was identified during studies of structures and how to use different material in a clever way was Maap. They work with clothes mainly for bikers and have been a significant source of inspiration. One of the most interesting things was how they work with different structures on different parts of the clothes, depending on its needed properties. For example, under the armpits a mesh fabric was used for maximum ventilation and for the pockets extra stretchy fabric is used for possibilities to expand if needed. They have chosen fabrics for the functional use but at the same time used the different fabrics in different areas to create details.

From the inspiration, thoughts and ideas were derived on how and where to use different fabrics depending on its properties. One thought that was raised was whether to use knitted or weaved fabric. Knitted fabrics have a built in stretch and weaved fabrics are more static and stable structured. Stable parts as the canopy should therefor been made in a weaved fabric. Elastic parts could be made in a knitted fabric to encourage their properties.



FORM

The form depends on both the chosen materials and the stroller's functions. The focus on the development of the form was to create an expression in line with Thule's design language. It was also about exploring different directions and design styles.

Seat

INSIDE AND OUTSIDE

To highlight the focus on the child and the environment for the child, a prominent inside was created. Through the contrast between outside and inside the two separated users, parent, and child, would be highlighted in the product. An exploration through creating a minimalistic, sharp, and clean outside was done, with a focus on the parent. At the same time a cosy, gentle and kind inside, intended for the child, was explored. The focus was mainly on the meetings between the inside and outside, how they would interact with each other. Different materials and structures were tested, in combinations with different shapes.

HIDE FRAME

Within the other strollers of Thule, the frame is prominent, but in the analysis of the Sleek too many directions were discovered. With both a significant seat frame and a construction/handlebar-wheel-frame the expression became fragmented. In addition, when experimenting with concepts showing more of the frame the stroller tended to look like a Joolz stroller. To harmonize and create a more "Thule-look" an attempt to hide the seat frame was made. The experiment had the focus of balancing the expressions of the stroller through hiding the seat frame with fabric. The intention was to project comfort and softness with the seat rather than a strong construction. By hiding the seat frame the handlebar-wheel construction was emphasized.

Canopy

Different shapes on the canopy were analyzed. However, the main determining factor was the function of the canopy.

SHAPES

Different shapes on the different parts of the canopy were explored. Streamlined shapes inspired by the automotive industry were tested, among other things.

WINDOW

Different shapes of the window were explored. However, the governing factor was the functionality of the window.

Basket

The shape of the basket was explored, both to enable better functionality and creating a more harmonised expression. However, the shape of the basket was quite locked to what it originally looks like, depending on how the stroller folds and the use of sibling seat. What could be changed was small changes within the form. What was explored was how the shape on the back of the basket made the expression more harmonized.

COLOUR

Different approaches when using colours have been investigated, with their pros and cons weighed.

Properties of colours

The use of colours should be both aesthetic and have a functional reason, to be in line with the brand. The colours play a crucial role for the visual expression. The brand does a solid job of adding colours and shades to their various products, therefore exact shades will not be addressed. However, how and where to use different colours have been important to investigate. Also, what types of shades and what different colours have for different effects, have been studied.

An example is that light colours absorb less heat than dark ones. Using a dark colour on the canopy would result in creating a warmer atmosphere inside the stroller during sunny days. A lighter colour would therefore be preferable for the canopy. Also, dark and bright colours tend to bleach easier in the sun than light and colourless ones. Another example is that the basket underneath the stroller is exposed to dust, mud, and soil. A light colour would highlight the dirt, but a jet-black basket would also look dirty. A dark colour and greyish colour would be more suitable than a light and bright colour. Another part that is also easily exposed to dirt is the seating area. The same requirements go for the seating area as the basket.

Contrasting colours

On the hard parts Thule has a tradition of using brushed aluminium and matt black plastic. The design format could be used also on the soft parts, through working with contrasting materials and colours to create the same meeting and visual expression. For example, the pictures below.

Tone in tone

The popular stroller brand Bugaboo uses tone in tone on their products and have minimum of colour details. Especially significant is their use of tone in tone on the zippers and the fabric close to the zippers. The tone in tone creates a premium and luxury look. Both Filippa K and Houdini uses the concept of tone in tone on their products. It also gives their products a Scandinavian look. Also, the brands The North Face and Douchebag uses tone in tone on some categories of duffel bags and backpacks which makes them look less sporty and more street classy.

Accent colours

A third approach to colours is to using accent colours. Using accent colours are commonly seen among outdoor and sport related products. As earlier found in the brand analysis Sandqvist uses accent colours and have products with more than one colour. The combinations of different harmonising colours create a pleasant look but gives them also more identity and transforms them into more of a statement piece. The brand Maap, found during material studies, works also with accent colours but perhaps in a more playful way. Their work with the colours creates the brands more unique look and gives them a strong brand identity.


CONTRASTING COLOURS


TONE IN TONE


ACCENT COLOURS

OVERALL

Concept

TACTICAL

One concept that was further investigated was the tactical and military inspired concept. The tactical concept is, more or less, common in the outdoor fashion. The inspiration was the functional thought that everything has its own place and creating solutions that simplify for the user to personalize the product. The thought that everything should be easily reachable likely speaks to the ever-present thought of parents about functionality. Through using attachment webbing (Molle), different functions could be attached or expanded to the product. The solution with attachment webbing could be good both in a selling point by selling more accessories that the parents could personalize the stroller but also encourage the users' own creative solutions. The brand Sandqvist uses the tactical touch on many of their products, so does Douchbag and The North Face with their attachment webbing used on their bags.

SPORTY RETRO

Another concept that was investigated was to take on the sporty expression from a more retro perspective. Inspiration came, among other things, from having encountered the Babyride stroller, which had a retro feel but is marketed as a more terrain and sport-friendly stroller (describes itself as "all terrain stroller." Simple design with an interesting expression where solutions are perceived as almost self-evident. The previous trend research, with collaborations between outdoor brands and fashion brands where the designers draw towards a more retro-inspired expression, was also an inspiration in the exploration of this concept. Also, the brand analysis of Fjällräven, which has a more retro look or/and timeless design on their products.

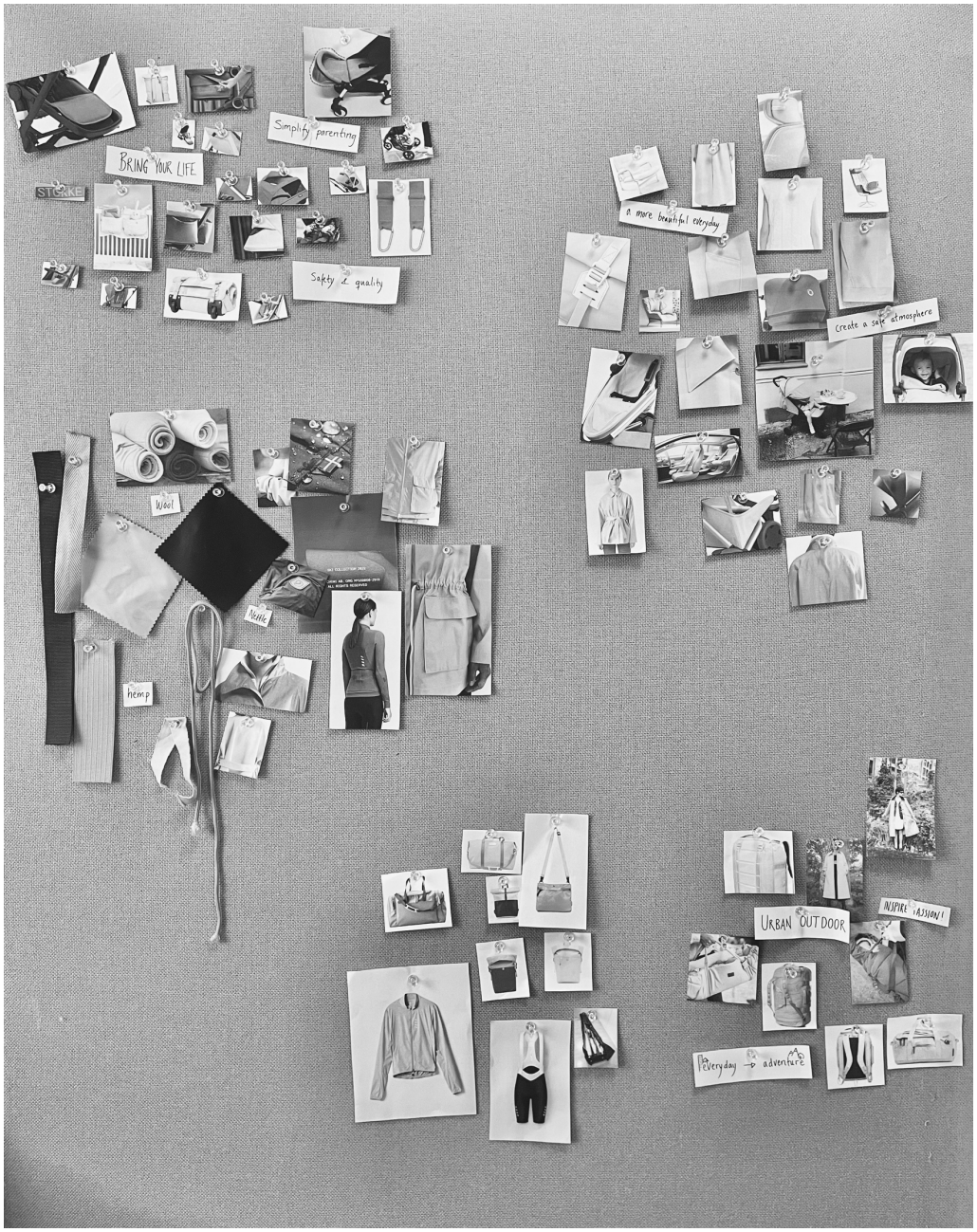
CLEAN MINIMALISTIC

Returning to the previous investigations into various brands that Thule could emulate, a purely minimalist concept was also explored. Inspiration came largely from Filippa K and Houdini but partly also from Volvo and Sandqvist. Main focus was on how to scale and create as pure and minimalistic expression as possible.

Simplify caring

To extend the life span of the product, explorations on how to simplify caring of the stroller was made. Solutions on separating the different textile parts of the stroller, both to make it easier when washing the fabric and also when repairing or replacing parts, was investigated. Several conclusions were drawn, for example that hard parts should be easy to take out when washing and parts worn in different ways should be easily separated.


TACTICAL
CLEAN MINIMALISTIC
SPORTY RETRO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SELECTION

The reached solutions from the development were analysed and selected, this is presented in the following part.

FUNCTION

The solution with the **crotch strap** was a success and will be kept as a part of the final prototype. However, the design must be in line with the product's overall expression. The seat will not be changed. After analysing the size of stroller's seat, the seat of the Sleek appeared normal. However, it is required that the structure is supported with a hard part at the front edge of the seat in order not to turn into a slide. The test with a solution that both simplify the change of the hight of the seat belt and enable the user to **hide the straps** will be kept. Also, the solution with the **seat protection** will be a part of the final prototype. The hole for the straps must, however, be redesigned to fit the construction and the overall expression.

Under the fold up seat protection a **pocket** will be located, storing the boot cover. The **boot cover** will be a simple design to take up minimum of space and will have those significant seams that was found in the design format analysis.

The **length of the canopy** from the development-phase will be kept. The concept with four parts canopy enables more variations and better uses of the canopy. The expanded **window** turned out to enable more variations of applications. The shape was the same as the original, but up sized, further changes felt unnecessary. Regarding the **ventilation** no good solution was found but the function was still good. The idea of integrated ventilation in the canopy will be brought into the next phase and if applicable in a good way it will be in the final prototype, if not it will be left aside.

The trials conducted of the enhanced basket was a success. A **wider basket** enables both a better visual expression and enables better reachability into the basket. The **zipper** will be extended to also cover the front side of the basket. The zip-locker will also be bigger to enable easier access. The **locking** of the basket in the back will be with magnetics complemented with a changeable buckle. The design of the basket will also enable a division of the interior into two parts and the **opening** with the zipper will be extended.

FABRICS

The stroller will mainly consist of two different fabrics. One made of **hemp** fibres and one of **wool**. The hemp fabric will be on the outside of the stroller, the canopy and the outside of the seat will be constructed with that, to take advantage of its UV-resistant properties. The inside of the seat will be in wool. The stain resistant and self-cleaning properties are appropriate for the function and application in daily use. Both the fabrics will be used with twill structure to create a luxury and functional look. Other fabrics that will be used is **reflective fabric** on the boot cover, **transparent fabric** on the canopy window, **dirt resistant fabric** on the seat cover, and **mesh net** on the backside of the boot cover pocket and in the ventilation parts on the canopy. For buckles and other metal parts as zip-lockers and buttons **dark aluminium** will be used.

FORM

For the final prototype, focus on creating an expression of **inside and outside** is important. In combinations with different materials and shapes the inside and outside will be prominent. The frame will be hidden with fabric to create a more harmonised and dynamic expression. The **shape of the canopy** will be stripped and minimalistic but with details with a clear purpose giving it more than just aesthetic functions. The shape of the **window** will also depend on function more than aesthetic expression. The shape of the back of the **basket** will be changed to be in line with the frame.

COLOUR

Focus on colours in the next phase will be on where and how the colours are used. The zippers will be in **tone in tone** with fabric and **accent colour** will be used on interaction points as the attachment webbing. The inside of the seat will have one shade and the outside will have another. The outside will be a lighter and brighter to absorb less warmth for the sun and bleach less prominent. The inside will have a darker shade to be more durable to soil and dirt and to create a calm space. The basket will be in the same darker shade as the inside of the seat. The darker shade will be more durable to dust and dirt from roads and gravel.

OVERALL

The end concept should be functional and easy to use. The overall look should therefore not be too complicated. A desire to give the product Scandinavian associations provided for a minimalistic and clean look. The product should be simple and intuitive. Focus should be on the child and the relation between the parent and the child. The design will take advantage of the tactical thoughts but will apply the attachment webbing through a cleaner, minimalistic approach. Some inspiration will be taken from the sporty retro, using the zipper in combination with a webbing in another colour to create a striped detail. Also, the timelessness in the category sporty retro will be a part of the final concept. The caring for the product is important, and the construction should allow easy cleaning and repairing for the user.


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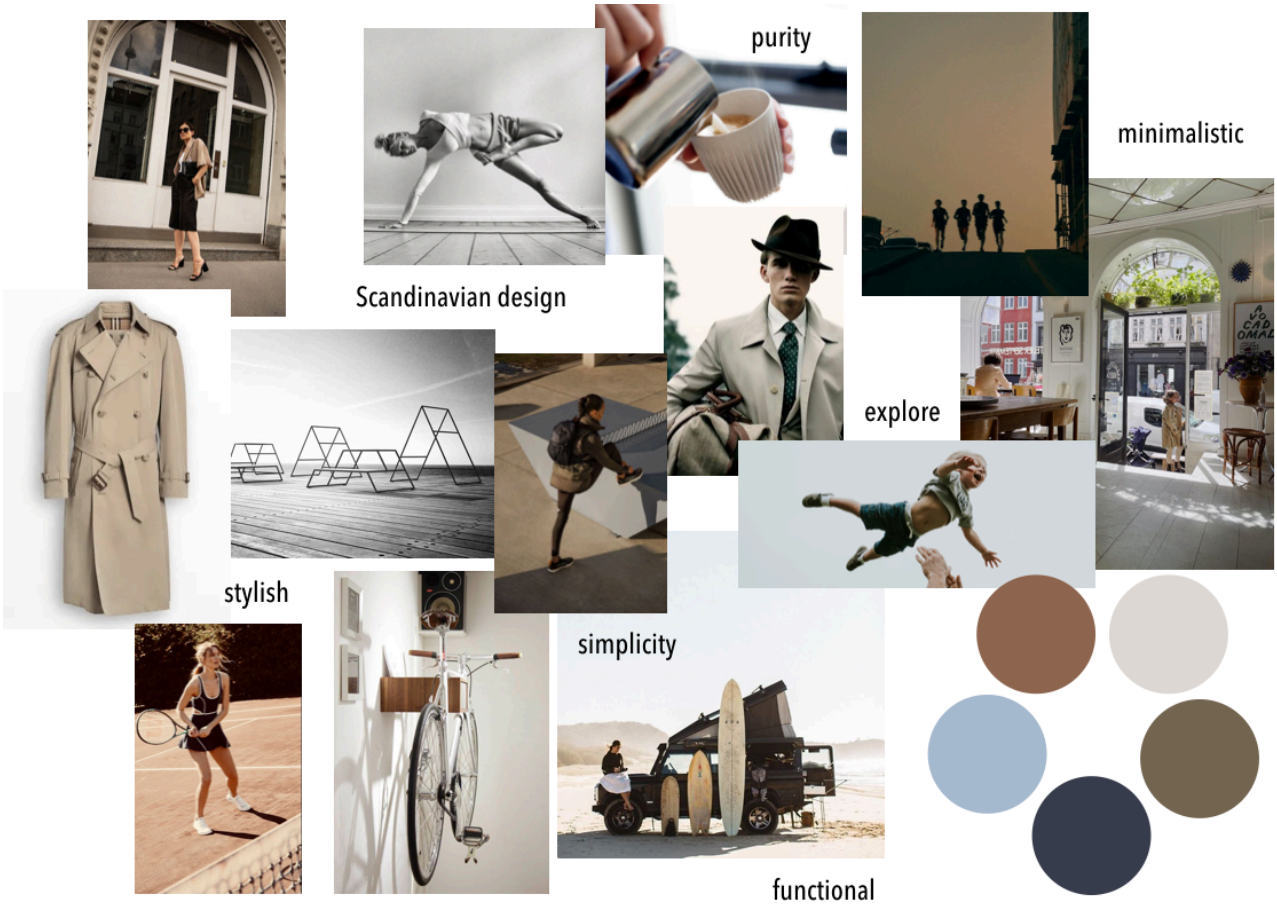
REFINEMENT

During the creation of the final prototype new design issues and solutions surfaced. The following part highlights these solutions and changes.



CONCEPT BOARD

For the final concept a concept board was created. The board is a summarization of the expressions, colours, and shapes for the final concept.

OUTSIDE OF THE SEAT

When creating the hidden pocket under the fold up part in the seat, obvious design solutions emerged. The pocket was intended for keeping the boot cover and when putting it inside the pocket, the solution of having the back of the pocket in mesh, raised obvious. Because the boot cover tends to get wet, when using it as a rain cover, and with a back of mesh the boot cover could easier been dried up. The fabric of the back was therefore changed from stroller seat fabric to mesh. The place of the zipper to the hidden pocket was also changed to the edge, which felt more naturally.

CANOPY

The most significant refinement with the canopy was the shape and construction of the window part. The part was developed to protrude with an edge over the connecting parts. This edge enabled covering of the zippers, when closed, as well as creating a space for an invisible ventilation in the front. This change also created the characteristic look of the canopy.
The attachment of the canopy to the seat were developed to also use an edge that attaches with hook and loop.

INSIDE OF THE SEAT

The outline seams were thought to be like the seams on the outside of the seat but because of the paddings the seams turned out to not look great at all. Instead of visual well-tailored seams invisible seams were selected. This choice also made the inside and outside more differentiated.

The opening for the seatbelt in the back, were first thought to be overlapping the hole but with the padding the opening cover turned to be too big. Instead, the opening was changed to be in the same size as the hole so it could fit in the opening when closed.

BASKET

Small changes were also made on the basket. The shape of the zipper was changed as well as the placement of webbing in contact with the zipper. The folded piece over the opening was extended to create a better look. Also, the webbing used for the buckle was changed into a webbing with reflective edges.

OVERALL

The attachment webbing was changed into a simpler one to create a more minimalistic look but still having the function. The inspiration came from one of Sandqvist's backpacks. The first thought was to have the webbing tone in tone with the stroller fabric but when changing to a more minimalistic solution a decision was made to make the webbing more prominent. Both to act as a detail, create a visual identity and to highlight the function. The webbing was also changed into reflective material to add one more function with it. The webbing was also placed and shaped to look like an accessory more than just a function.



FINAL RESULTS

The final concept should be thought of as a trench coat - stylish enough to be used in the city and functional as an outdoor product.

OUTSIDE OF THE SEAT

The seat consists of two parts, an outside and an inside. The outside of the seat holds the constructions and is mounted on the frame with buttons. The seat belt is mounted to this part as well as the hard parts for the seating area. The outside of the seat in combination with the canopy creates the characteristic look of the stroller.

The outside of the seat is clean, sharp, and minimalistic with details of well-tailored seams. The only protruding detail is the attachment webbing in reflective material on the back. The sharp and clean shape in combination with the attachment webbing were created with the intention to increase the overall dynamic expression, one of the most important design formats that were found earlier during the design format analysis. The attachment webbing also has an important role to communicate and give the product an active expression. The decision not to have the canopy cover also parts of the back of the seat, but to end immediately around the seat rest, was to keep the reclining shape of the back of the seat visible and immediately noticeable for the onlooker.

On the attachment webbing different things can be mounted such as bags, pockets, and carbine hooks. The fabric is a hemp twill fabric in a light colour, which are water repellent and easy to wipe off.

The hidden pocket for the rain cover is mounted on this part and is opened with an invisible zipper tone in tone with the seat fabric. As mentioned earlier, the backside of the pocket is made of a mesh fabric, also in the same colour as the seat fabric. The front of the pocket has a dirt resistant fabric, also in the same colour to create a minimalistic look.











CANOPY

The canopy is made in the same fabric and colour as the outside of the seat. The light colour is chosen both because it won't attract too much heat and to minimize the risk of ending up with a sun-bleached look. The canopy is mounted on the stroller through a metal and plastic construction in the frame of the stroller and can easily be removed. The ducts, where the construction goes through, are made in a contrasting colour on the fabric. The colour of the fabric is the same colour as the basket and seat inside. This was done to highlight where the construction is located and to make it easier for the user to understand where the construction is going when the fabric is to be removed. The fabric can be fully removed from the frame when need of cleaning, for example. The fabric is also attached with invisible Velcro straps in the back of the seat, where the canopy meets the seat.

The canopy is made in four sections where the first two sections are closable with tone in tone with the canopy fabric, zippers. The first section has a ventilation opening with a cover that can be opened for both ventilation and to get a view into the seat. The second section has the main function of enabling the canopy to completely cover the seat. The third section is the most functional. It has a design where the edges overlap the neighbouring canopy sections. If the zippers are closed, the overlap will appear over the zippers, and they will be covered. The other edge side contains an invisible ventilation port. The bottom of the section is shaped after the brands design format trapezium shape to create a more Thule look. This section also contains the window. The window has the same shape as in the original version, the form is considered as typical for Thule, but is enlarged and the position is changed. The window closes by invisible magnets and when rolled up it attaches with a strap. The window is placed so the parent easily can look into the stroller when the seat is facing the front. When the canopy is completely unfolded, the window acts as a windshield for the child to look out. The window can also work as a roof window for the child to watch the sky when the seat is in a lying position. The fourth section contains a plastic shade in the front to create a more stable look. The shade is integrated in the canopy to create a more minimalistic look but still enables full function.

Inside the fourth canopy part an attachment webbing is placed to enable attachment of different items. For example, a mosquito net could be attached, or toys or light loops, whatever the parents want to have inside the stroller.

When the canopy is completely folded up in combination with the rain cover it covers the child completely. The rain cover is simple in its design but carries the brands significant design format, for their soft products, a folded seam which is located in the bottom to create some extra space for the child's feet. The canopy is intended to cover from both rain, wind, snow, and sun. It is made of double layer fabric to be a better isolator from cold and sounds. The canopy could also be used to shield of the child from the environment and enables a safe and calm space. The canopy is also created to maximize the connection with the child and parent.















INSIDE OF THE SEAT

The seat is made of a wool twill fabric in the same colour as the basket, which is in a darker colour than the outside of the seat and canopy. The inside of the seat is exposed to more dirt and soil than other parts of the stroller, therefore a more rugged material is suitable. This part is therefore easy to detach and could even be changed into something else, for example a summer version or another colour. The inside of the seat is designed to be protruding from the covering part (outside) to create a “hugged” impression The design of the seat was also adjusted in a way to project a more stable expression, in contrast to the original version which projected a feeling that the child might fall or jump out.

The inside of the seat is made with rounder shapes to create a warmer and kinder expression. The seams are invisible to increase the difference between inside and outside of the seat. In the back of the seat is an opening for the seatbelt, which can be opened for easier access to the seatbelts attachment when changing its height. The shape of the opening is the trapezium shape, typical for Thule products. The seatbelt could also be stored away and covered with the opening part.

In the seat is also an opening for the seat belt and the crotch strap. The opening has also a trapezium shape and the seatbelt and/or the crotch strap can be stored under the opening, when not used.

The footrest fabric can be folded up to create a seat cover. The back of the footrest cover has the same dirt resistant fabric and colour as the underneath part. To enable usage of the seatbelt and crotch strap an opening is made in the footrest part, the same trapezium shape as the other openings to harmonize the other.













BASKET

The basket is in a darker shade than the outside of the stroller but the same as the inside of the stroller. The chosen colour is darker, so the dirt won't appear too easy. The fabric is the same hemp twill as the outside of the stroller and canopy.

The shape of the basket is slightly changed in the back to create a more harmonized and dynamic expression. The back of the basket is in line with the frame construction. The changes in shape also made the basket bigger, and the volume increased with approximately five litres. The widening of the basket made the opening easier to reach when the seat is facing backward, which was almost impossible before.

The zippers are made with a bigger zip lock and can be opened wider. The zippers are in the same colour as the zippers used on the canopy. The basket is constructed to be divided into one open part and one closed through zipping the top as a divider in the bottom of the basket. With the divided feature it enables more ways to store things. For example, the open space could be suitable for a diaper bag that should be easily reachable and the closed one could store other belongings.

In line with the zipper an attachment webbing is mounted. The webbing is made in a reflective material and acts both as an aesthetic detail, attachment function and reflective detail. In the attachment webbing various things can be mounted. For example, a stow net could be mounted to increase the stow volume, that could be perfect for bulky and/or wet things.

The opening of the basket in the back is closed by visible magnets, the same as the canopy window, and for extra security a changeable buckle is complementing it.

















OVERALL

The prototype is designed in an example of possible colour combinations. Other combinations could be light and dark blue, brown, and olive green.

All the fabric parts are easy to remove from the construction to enable easier washing and repairing for the user.

The stroller is equipped with useful functions to simplify parenting. It is developed to embrace the parents' different needs and enable their own creative solutions. The expression and design are created with the intention to be timeless and minimalistic without being boring and characterless.

To give the product an expression of being a Thule product, important design formats for the brand has been used. For example, giving the product an overall dynamic expression, to communicate the brands core values, connecting to ideas of an active lifestyle and inspiration towards movement. The trapezium shape has been used when possible as well as the folded seam. The invisible zipper was also applied when possible.




UPF 50+









5

DISCUSSION

OBJECTIVES WITH THE PROJECT

THE APPROACH

THE RESULT

AREAS THAT HAVEN'T BEEN FURTHER INVESTIGATED

OBJECTIVES WITH THE PROJECT

Based on the initial objectives of the project, a few main aspects were identified, which will be discussed briefly below.

Brand identity of Thule

The brand identity was explored and for the final product was developed to be in line with the forefront of their design of today, even stretching into a potential future. The brand identity for the textile parts in their products was less prominent than the hard parts. Therefore, a new brand identity for the textile parts was developed with a base in the most important factors that was founded in the studies.

Design language

The design language on the new version of Thule Sleek was developed with new shapes, colour scheme, materials, and functions. The new version has a new design language comparing with the brand's other textile products. However, the intention was to reflect the same design language as the brand is standing for in general through their line of products.

Textile expression

The textiles were made with a new expression. The intention was to reflect both the functional aspects and the premium segment and good quality which the brand wishes to project and be a part of. The visual aspects were meant to convey both durability and fashion. The textile expression was explored with the purpose to widen the horizons for what can be achieved with textiles.

Applicability on other products

An aim with the project was that the final concept should be applicable on the brand's other textile products within the segment *Active with kids*. This aim hasn't been given much focus during the project, although it remained a relevant aspect in the background. However, the achieved results could definitely be applicable on the other products within the segment. Especially the thoughts of having the child and its needs in focus during development and also the thought of offering solutions functional enough for being used in the outdoor but fit the city fashion in its visual expression.

User experience

Through the whole project the user experience for both the parent and the child was in focus. However, the parent's user experience has been easier to examine than the child's. In the case of the child a general experience has been drawn up through logical deductions based on general knowledge of children and growth development.

THE APPROACH

Collection of research materials and inspiration

The methods chosen for gathering information will inevitably affect the outcome in some way. A rather large amount of information has been gathered through studies of several Facebook groups with a large number of members on the subject of child strollers, or similar. Although information is gathered from several different sources it assumes that the person sharing his or her views and ideas firstly is interested enough to join such Facebook group, and secondly choses to share ideas openly. This will here and there bring a somewhat anecdotical aspect to the gathering of information, where one or a few individuals opinions might unintentionally affect the outcome in a disproportionate manner. This is a risk also present when reading reviews or watching them online. In addition to this, a rather large majority of the individuals taking part in discussions and sharing views are women, leaving the men's perspective somewhat sidelined.

The user studies

The user study was largely done by me, testing the stroller, its different applications and design features. This means very tangible conclusions was drawn, based on reality and not just logical deduction. However, being only one single individual, it is inevitable that my preconceptions, as well as individual characteristics, such as height, strength, etc., will play a part in decisions made concerning future developments.

Prototyping

The original stroller was analyzed in depth and after identifying potential needs for further development, sketching ensued, followed by sewing and several attempts of trials and errors. While this is a very concrete way of approach it is based mainly on one single individual's views (with the aid of the collected background materials). Hence the proposed improvements to someone else might not appear so advantageous. To establish which of the proposed improvements will be greeted as improvements by large parts of the users, user tests on a large scale are necessary.

Selection of materials for the prototype

Although materials choices have been given high priority throughout the project, the analysis have been limited to the different materials properties, feel, ruggedness and resistance to wear and dirt. Deeper analyses of mixes between different materials and different combinations have been left out, due both to limitations in knowledge and time.

This might prove to be a disadvantage in a potential further development phase of the suggested improvements of the stroller since there might be available other versions and possible combinations which has not been identified.

THE RESULT

Below follows a discussion concerning some important aspects of the end result, and what circumstances during the process that played parts in the final outcome.

One or two versions of the stroller design

During the initial phase of the project a question arose whether to pursue both an outdoor version and an urban version of the stroller, and if the textile expression should distinguish from each other, or just go with one version altogether. The latter version was chosen, largely due to the results received while trend tracking, which indicated that a common expression could very well work in both capacities.

The stroller in a bigger picture

During the development and research phases, the stroller was analyzed from a perspective of the bigger picture which the stroller is a part of. How the stroller affects the surroundings, both directly and indirectly, as well as the impact on the overall environment. These perspectives inspired to view the stroller as a part of the street view or an item coming along on an outdoor adventure, with several implications for both the visual design and practical functions on the stroller. Although these issues did not become a deciding point for any major decisions concerning design and outlook, they still played a role as background inspiration in the development of several of the design suggestions presented in the report, as well as shown on the prototype.

Consequences of the results

The final prototype, and the underlying study, could hopefully inspire to future development and establishment of a textile expression for Thule. The concept could imply that the *Active with kids*-segment of Thule's line of products should only have one category of products that suits both city life and outdoor adventures. This conclusion carries several advantages as it means a smaller number of different products and versions for different occasions, and instead a higher degree of flexibility inherent in each product, or in this case stroller.

AREAS THAT HAVEN'T BEEN FURTHER INVESTIGATED

Due to a limited amount of time and sources a few aspects, which were initially intended meant to be included as factors in the project, had to be left aside. They will not be discussed in detail, but one example will be given below.

When designing the inside of the seat it was initially intended to consider the development of the child's eyesight, which is very limited for newborns, and then successively increases.

6

CONCLUSION



Working from the original objectives of the project, stated in the introduction chapter, the project has resulted in the following main conclusions:

Definition of the brand and its position on the market

When analyzing the brand an aim was identified to inspire their customers towards an active lifestyle with a general outdoor focus. Furthermore, an ambition was identified to project quality and ruggedness, but at the same time slim and easy features with an overall ease of use. This has largely been achieved by the choice of materials and design traits on the brand´s different products.

Typical design formats were also investigated and analyzed through a trend perspective. To distinguish themselves from other similar brands, Thule, a producer of strollers, should offer outdoor compatible solutions that still fits into the city fashion.

Expectations of the user

Expectations of the users were identified, analyzed, and defined. The most important expectations were good functionality, a design which embraces the child's development process and thirdly an overall sustainable product.

In the area of functionality, the most common expectations were functions which clearly aided in daily usage, such as an integrated rain cover, a canopy which properly covered the child, etc.

In the area of the child's development process several important expectations were identified, mainly a lack of hazardous materials and substances in the construction of the stroller, but also an ergonomic and comfortable seat adjustable for a growing child, as well as a design which provided for good contact between the child and the parent while in motion.

Concept for future design language

A textile-oriented prototype was created intended to present a concept for future expression of the Thule´s products. The concept had its base in the results founded in the definition of the brand and the users' expectations. The goal with the concept was to explore and define a possible direction for the expression of the brands textile-products.

This prototype in itself represents a large part of the conclusions drawn throughout the project.



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APPENDIX

APPENDIX I – Products for Design Format Analysis

APPENDIX II – Dynamic expression

APPENDIX III – Trapezium shape

APPENDIX IV – Folded seam

APPENDIX V – Design Format Analysis

APPENDIX VI – Stroller analysis

APPENDIX VII – Volvo

APPENDIX VIII – Fjällräven

APPENDIX IX – Filippa K

APPENDIX X – Houdini

APPENDIX XI – Sandqvist

APPENDIX XII – Emmaljunga

APPENDIX XIII – Bugaboo

APPENDIX XIV – Stokke

APPENDIX XV – Cybex

APPENDIX XVI – Britax

APPENDIX XVII – Joolz

APPENDIX XVIII – Thule

APPENDIX XIX – Trends

APPENDIX I – Products for Design Format Analysis



APPENDIX II – Dynamic expression



APPENDIX III – Trapezium shape



APPENDIX IV – Folded seam



APPENDIX V – Design Format Analysis



APPENDIX VI – Stroller analysis

THE OVERALL DYNAMIC SHAPE



SHAPE OF THE BASKET

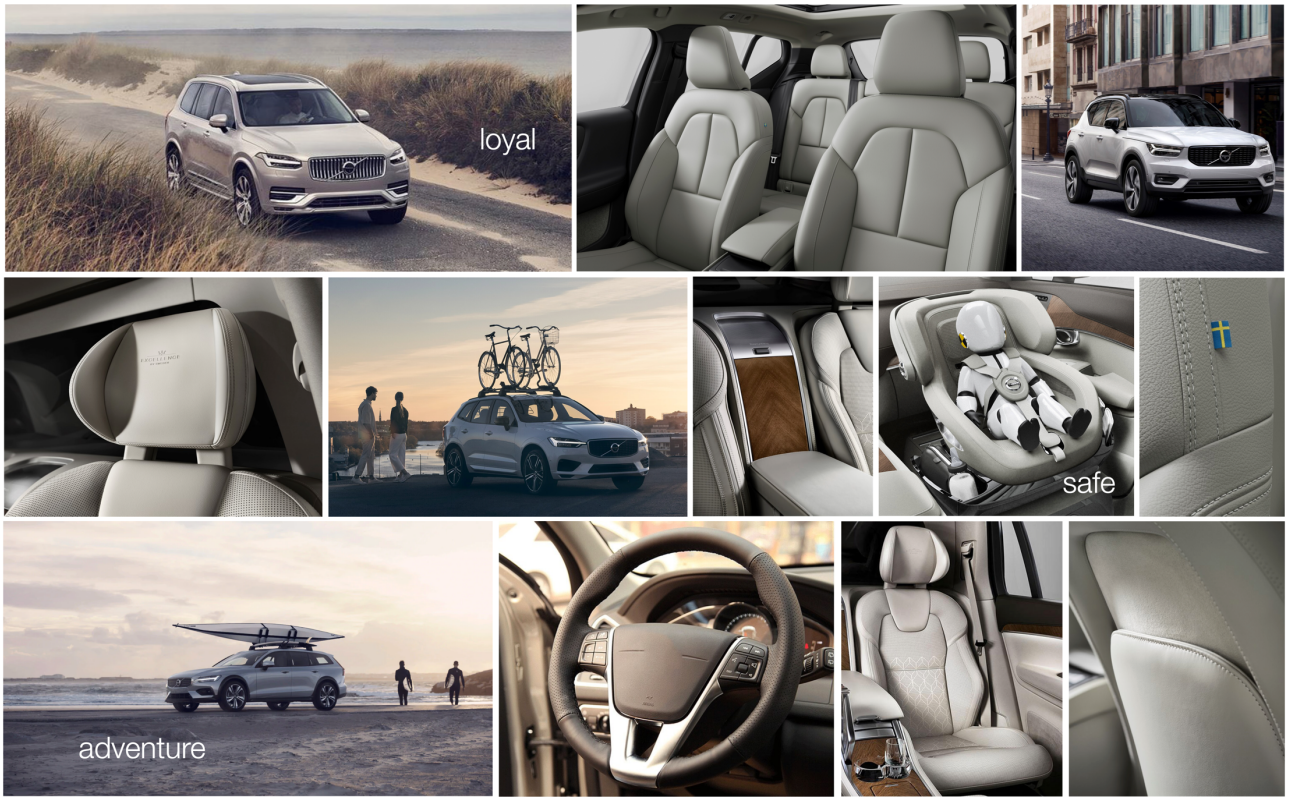


SHAPE OF THE CANOPY



APPENDIX VII – Volvo

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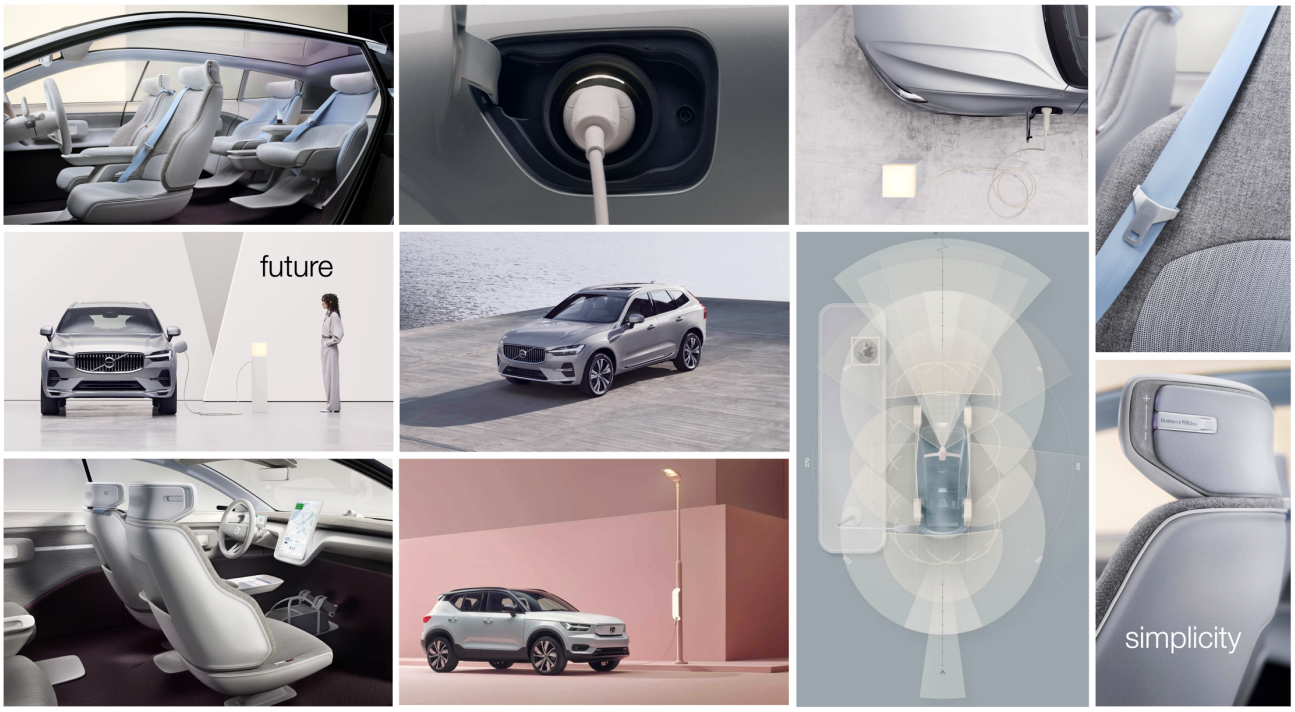
adventure


future
simplicity

APPENDIX VIII – Fjällräven

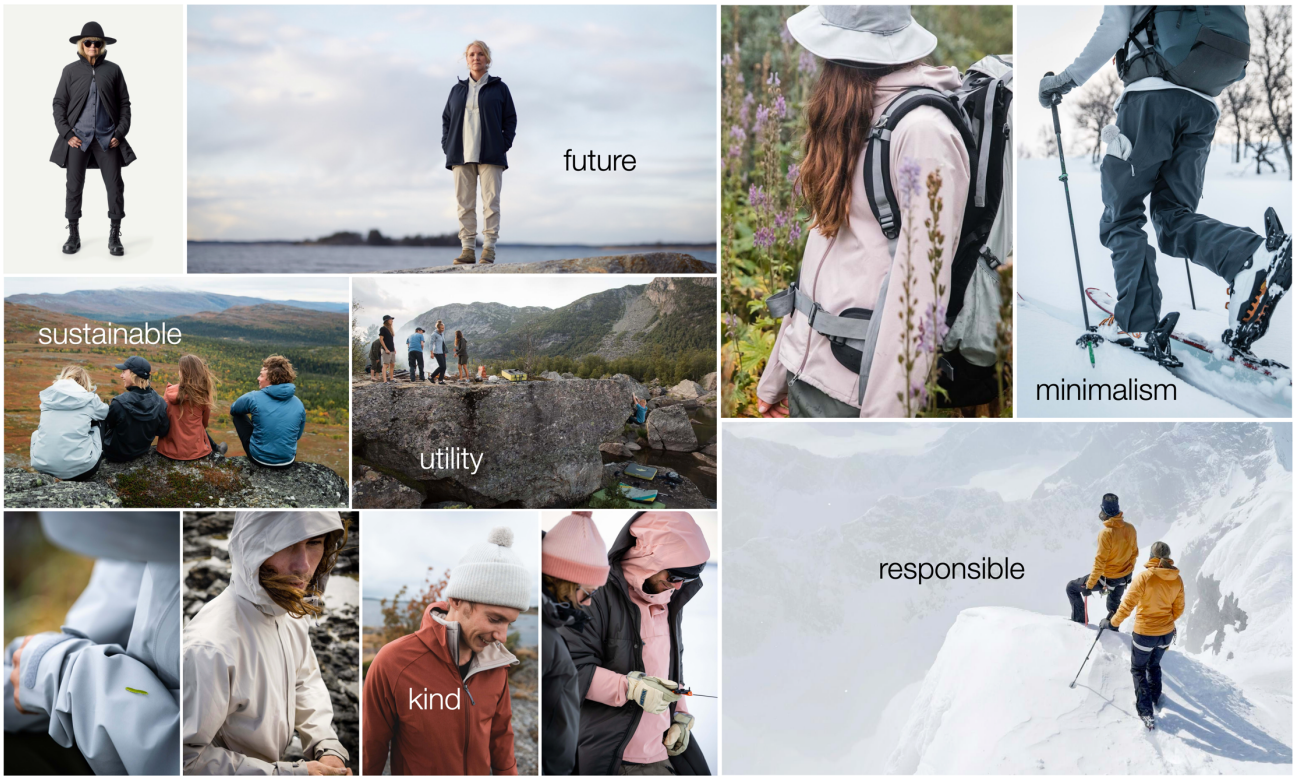


APPENDIX IX – Filippa K

scandinavian minimalism



APPENDIX X – Houdini



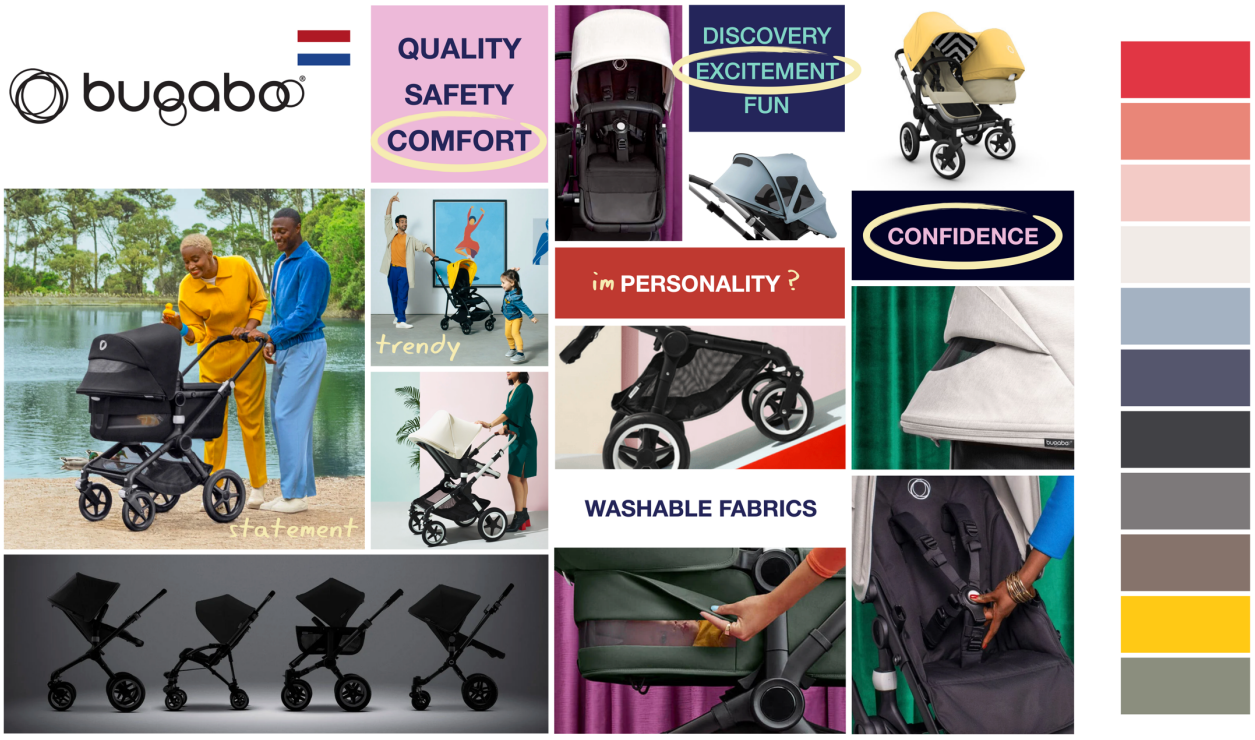
APPENDIX XI – Sandqvist



APPENDIX XII – Emmaljunga



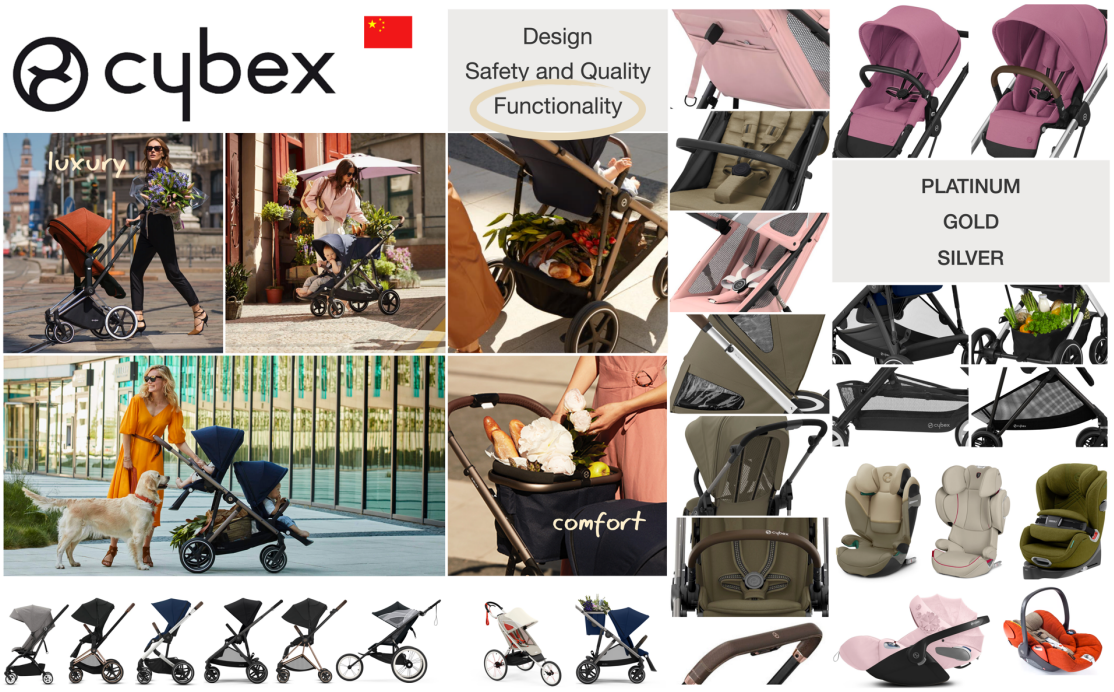
APPENDIX XIII – Bugaboo



APPENDIX XIV – Stokke



APPENDIX XV – Cybex



APPENDIX XVI – Britax



APPENDIX XVII – Joolz



APPENDIX XVIII – Thule



APPENDIX XIX – Trends



Pictures from collaborations of following brands:

ACNE Studios / Fjällräven
Diemme x GANT
Barbour by ALEXACHUNG
The North Face x Gucci Collection
Jimmy Choo x Timberland
Jack Wolfskin x GmbH

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