

Two Step Chair

A high chair for public places

Master thesis in Industrial design

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A high chair for public places

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Abstract

Sitting in a high chair gives a feeling of security and of having control - you get an overview of the room you are in. But high chairs are often difficult to get up on, you feel clumsy, there is no good support for your feet and they are often quite uncomfortable.

The research I have done shows that many people therefore reject the high chair, despite the positive feelings it can also give. Those who still choose a high chair do so at times to drink coffee or have a drink, but rarely for rest and contemplation - situations where the feeling of security and control should contribute positively.

My interest in high chairs was aroused when I visited the Design Museum Denmark in Copenhagen. I noticed that the design classics were strongly dominated by low chairs. Only a few high chairs were presented at the museum. This finding became the starting point for this project. The question was: Why are there so few high chairs compared to low ones? Are high chairs needed at all and can the area of use be expanded?

The purpose of my thesis has been to investigate people's attitudes to high chairs, and then to translate this knowledge into a concept that can expand the use of high chairs so that the positive effects of high seating opportunities can be utilized to a greater extent.

For getting a few different perspectives I have turned to three groups that come into contact with high chairs in different ways, partly users of different ages, partly architects and orthopedists. After interviews with these groups, I have been able to map positive and negative characteristics, as well as suitable areas of use and placements of high chairs. With this knowledge as a basis, I have since designed my chair, Two Step chair.

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Introduction

Background

Chairs as objects have always fascinated me. There are a variety of different types of chairs that express different things. A chair can function both as a rental art object, but also just be functional and facilitate activities in everyday life. The chair is also an object that everyone can relate to, because of its frequency in the environments we live.

When I visited the Design Museum Denmark in Copenhagen, I noticed that the collection of so-called design classics were strongly dominated by low chairs. Only a few high chairs were presented at the museum while the entire walls of several rooms were filled by different low chairs. The picture I got was confirmed when I look around in everyday life, low chairs are everywhere, while higher chairs are usually found only in bars and in some cafes and offices.

This finding became the starting point for the project that I have now done. The questions for me were: Why are there so few high chairs compared to low ones? Are high chairs needed at all? Can the area of use be expanded?

Purpose

The purpose of my thesis has been to investigate people's attitudes to high chairs, and then to translate this knowledge into a concept that can expand the use of high chairs so that the positive effects of high seating opportunities can be utilized to a greater extent.



Designmuseum Denmark in Copenhagen

Research

History of sitting

Why we sit

Sitting is often synonymous with relaxation. How nice it is, after a long walk, cooking or after a stressful working day, to settle down in a comfortable armchair.

Most everyday activities, such as socializing, eating, reading, etc. are suitable for doing in a sitting position. Sitting provides the opportunity to perform activities in a position where the body rests. A lying position which also gives rest limits, on the other hand, the possibilities to do things meanwhile.

A sitting position means that you often can concentrate better than when standing. When you stand there is a subconscious activation of the whole body to keep the balance, which takes more energy.

Sitting high

Early in history, people who wanted to mark their higher status sat in an elevated position. In large halls, royalists and pharaohs sat on throne chairs to assert their power over the people and their servants. Another example is the richly decorated pulpit that were in the churches and were intended for the religious head.

I always find it exciting to try to understand what underlying factors are driving people's everyday behaviours. In an interview for Swedish television, the actors Lasse Åberg and Klasse Möllberg discussed the tendency of children to build tree houses. The context was that they both participated in a very popular children's program that took place in a tree house.

- Seeking protection by escaping into the trees to escape predators is a deeply rooted behavior in humans, stored in the so-called reptile brain, an instinctive behavior. One way for children to realize that instinct is to build tree houses, was their conclusion.

In order to find safe places, we are therefore looking upwards. As a child, this is natural for us.

For adults, similar instincts could be translated into when we choose to sit on high chairs, as a way to position ourselves in a position where oversight and control are facilitated. The biggest is the strongest.

High chairs

Practical functions have also controlled high sitting. In the United States, the high chair was introduced in bars in the early 1900s. The chair was so high that the person sitting on it would be at eye level with the bartender who was behind the bar. The close contact it provided would promote alcohol sales. High chairs have often since been referred to as bar stools.

The use of high chairs has since then spread and adapted to other environments and areas of use. Examples of this are hairdressers and barbers, where the variation between standing and sitting makes it easier to perform their job in an ergonomically correct way. The possibility of variation has also inspired other workplaces, for example office environments where it is common today that one wants to be able to vary between standing and sitting.

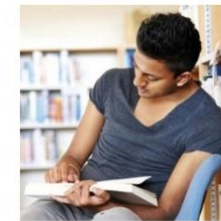
In cafes, bars and restaurant environments the use of high chairs has now expanded from being only at the bar counter to now also being placed in the room next to high tables, often near windows.

Places to sit

Many everyday activities, such as reading, eating, socializing, and checking the mobile, are usually performed sitting. To get a picture of what this might look like in different environments, I have chosen to investigate some types of environments that I find interesting.

In my research I focused on public environments. I have chosen not to include people's homes, as the conditions there are different from public environments. In a public environment behaviour are recurring, and everything happens more predictably, while in people's homes it is more individual and dependent on the individual people who live there, their interests and the physical conditions of their homes. Most activities that are preferred to be carried out while seated can, in principle, take place at any place in a home. For example, a person might like to read in the kitchen because the light is better there, while someone else prefers reading in a comfortable armchair in the living room. as it very individual and unpredictable, I believe that it is not possible to generalize about activities and how much time spent at home in the same way as in public environments.

In my research, I made a general estimate of how long each activity is performed, based on observations and my own experiences. I have found that the same activity, for example reading, lasts different periods of time depending on the environment in which it is performed. This is shown in my compilation. Since I am interested in what environments it is possible to sit high in, I have noted where this occur.



Cafes

Common activities:

Eating and drink, Socialize, read, rest, phone usage.

Time:

30 minutes – 1 hour

Comment:

Cafes are places where you can be on your own, or in groups, for a variety of reasons. If you are there by yourself, the reason may be that you want to get a break from work and the rest of the world, in cosy rooms. In addition to the mandatory fix, you can read a book, contemplate, and rest. If you are there in a group, the most common activity is to spend time, in addition to having fun, of course. Often different types of chairs, armchairs and sofas are usually offered, as different customers prefer to sit differently. Unless the cafe has its own profile with homogeneous decor, where all chairs are the same. At café windows, higher chairs are often placed, either oriented so that you sit facing the street - at a narrow high table, or with the side facing the window and the street.

Restaurants

Common activities:

Eat food, have drinks, socialize.

Time:

45 minutes - 2 hours

In restaurants the main focus is on food and the possibility of socializing. The chairs often have straight backs that give an upright posture and makes it comfortable to eat. During lunchtime the activities can vary slightly, then the mobile and sometimes even a laptop can be picked up. In some restaurants there are bar counters with bar stools. At the bar, people often sit for a shorter time waiting for a drink to be served, or longer if they decide to have the drink there.

Museums

Common activities:

Look at art, experience installations, contemplate.

Time:

5 minutes – 20 minutes

Comment:

People go to museums to have new experiences. As it often also means a lot of walking on hard stone floors, the opportunity for a shorter recovery is sometimes needed. Some form of seating is usually offered in the large halls. As the museums do not want people to stay in the same place for too long, comfortable furniture's are rarely offered, with armrests and backrests, for example. In addition to rest and recovery some people can also observe artwork for longer time from a sitting position.

Library

Common activities:

Read, work, study, drink coffee.

Time:

1 – 3 hours

Comment:

A Library is a place where most people seek peace and quietness to read, everything from newspapers and fiction to non-fiction. The choice of seat often depends on what you read. Several of the people I have asked and observed think that reading for pleasure is best suited in a reclined position, while non-fiction is best read when sitting upright on an ordinary chair. Sitting upright seems to facilitate concentration on heavier reading. Many people also bring laptops to the libraries for studying. Some want access to coffee or other drinks for both heavy reading and entertainment purposes.

Office and university

Common activities:

Computer work, writing, reading, discussing.

Time:

30 minutes – 3 hours

Comment:

Offices and universities and workplaces have many and similar environments. There must be good opportunities to be as productive as possible. Partly with super-ergonomic chairs for individual work, and with more ordinary chairs placed at large tables to carry out group work. It has become increasingly common to work at higher office desks, so that standing is possible. Then some people also choose to have a high chair to vary the standing with the sitting.

Airports

Common activities:

Waiting, resting, sleeping, reading, phone usage.

Time:

5 minutes – 2 hours

Comment:

Waiting, sometimes for quite some time, is often associated with airports after check-in is completed, or at a stopover. It may then feel welcoming to sit down to rest after having to walk long distances inside the airport. Often chairs with reclining backs are offered. In these you can also easily slumber, the waiting sometimes occurs at night. If you have just arrived with an aircraft and have to wait a shorter time to change to another, some people may however choose to stand because it can feel good to straighten the body after sitting for a long time in the same position on the aircraft. Many modern train and bus travel centres are arranged in much the same way as airports.

A sea of chairs



Variations of high chairs

In exploring what the range of high chairs looks like, I noticed that this can not compare with the range of ordinary low chairs. During a visit to the Design Museum in Copenhagen, I could see that only a few high chairs were included in the selection that most people consider to be design classics, but low chairs filled the rooms at the museum.

To get a clearer picture of which groups of high chairs there are, I have chosen to categorize them into different groups according to characteristic elements.

1. Classical

This type of chair / stool I have chosen to represent the classic first high chairs, the ones that started to be used in bars. With only a round seat and footrest, without back or armrests, they are easy to sit down on.

2. Modern

There are plenty of modern interpretations of the classic bar stool. This group of chairs is characterized by completely missing or having a very low backrest. The legs and feet of the chair may vary.

3. Design

This type I have chosen to call design chairs, because the focus is mainly on an astonishing aesthetic, rather than on function and comfort.

4. Backrest

High chairs with backrests are often found in people's home next to kitchen islands. The backrest promotes comfort when sitting longer. The backrest is typically lower than the ones on low chairs.

5. Armrest

An unusual sight is high chairs with armrests, but there are a few. With both armrest and backrest, longer sitting is made even more comfortable.

6. Office

This type of chair is very much like a regular office chair, although they are taller and have some kind of footrest. With and without armrests are offered.

7. Balance

High balancing chairs are a choice that is sometimes made for office purposes. They are different from other categories because they have no footrest. Here you instead have your feet on the floor and balance with the whole body to sit.

8. Umpire

These chairs differ considerably in height and are not something you have at home or encounter very often. They are used in sports and on beaches to get a good overview when you need to look far.



In essence, the range of high chairs is aimed at kitchen islands and bars and also offices. The range often matches these uses, both aesthetically and functionally. I have drawn this conclusion after analysing product sheets where the chairs are presented in their intended environments.

High chairs that are intended for kitchens are mainly made in hard materials such as wood, plastic and metal for hygienic reasons, the backrest is usually lower than on ordinary chairs. In bars, the majority of the chairs do not have backrests, or have a very low one, to be able to place under benches and countertops and to give an airy impression. The fact that most high chairs are not designed primarily for comfort, I think is due to the fact that the seating that is expected to be done there is of short duration, for example for a quick breakfast or a drink.

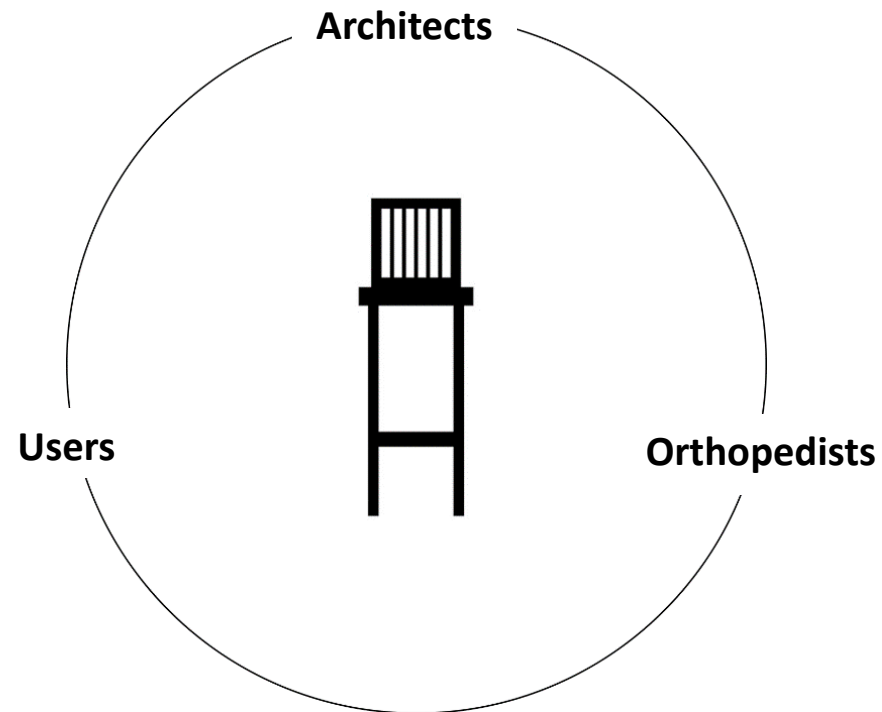
The design of the high work chairs is quite different from that of the bar stools. When the chairs are intended for work, adjustments are offered in height positions and angles for seat and backrest. Many have wheels. The hard seat is replaced by a soft seat cushion, and the backrest becomes significantly higher and stronger.

Common to most high chairs, with the exception of balance chairs, is that they offer some kind of footrest. Bar countertops are often equipped with a horizontal bar some 20 centimetres of the floor as an alternative footrest than the one on the chair.

The aesthetics also differ significantly between office chairs and kitchen chairs and bar stools. Much is obviously a consequence of all the functions that the work chairs want to be able to offer. They can be described as "office-looking". The office environment is also the environment where they are most often used. My theory is that they can also move into many people's homes because those who need to work from home get a sense of working atmosphere there too, and of course because the chairs are ergonomic.

Different perspectives

In the following chapter I explore different perspectives on high chairs and the sitting that is done on them. To get a nuanced picture, I chose to include three different groups in the research, architects - for their knowledge of how high chairs are used from an interior perspective in different rooms, users - to find out their views on high chairs and when and where they prefer to use them, orthopedists - to learn how sitting should be done from a well-being perspective.



What the architects think

I have asked two architects about their views on high chairs. The reason I wanted architects' perspectives was because I wanted to gain insight into when and why high chairs are used and what significance they have in different rooms.

Interview with Markus Bergström

The first architect I got in touch with was Markus Bergström, who is a university lecturer at the University of Gothenburg. I chose to ask a few open questions, to find out how he as an architect views the use of high chairs in general.

The first question to Markus was about how to use and place high chairs in the best way, and what significance they have for the interior from an aesthetic perspective.

Markus explains that chairs of different heights can create visual dynamics in a room that might otherwise look a bit flat. Different heights create islands in the oceans. Different heights also have different symbolic values and say different things about, for example, formality and rhythm.

My next question was about the advantages and disadvantages of sitting high, compared to sitting low, from the user's perspective.

Sitting a little taller, Markus thinks, makes it is easier to get up to sit down. The high chair becomes more temporary and you do not sink down. It can facilitate a shorter visit. Sitting high can be combined with standing, so in a company some people can stand while others sit without it becoming strange. Sitting high can also mean that you can be on a serving level with standing staff.

My last question to Markus was if he has any other views on high chairs and stools.

Markus replied that he thinks there is a big difference between high and high. The intermediate height 65 cm differs considerably compared to 75 cm. High

chairs are a category that is both abused but also underestimated. There are chairs and chairs again to draw. But it is perhaps the context, how and where the high sitting happens, rather than the furniture itself that makes it interesting. The chair does the room and vice versa.

Interview with Fredrik Eklöf

The other architect I talked to was Fredrik Eklöf. I used similar questions as in the interview with Markus Bergström but also added some extra as I got more reflections after my first interview with Markus.

I started by asking how Fredrik thinks that emotions and mood are affected for the person sitting high.

Fredrik believes that feeling is the very reason for wanting to sit on high chairs, as we people seek to find ourselves in places where we feel safe and in control. As far as the mood is concerned, Fredrik thinks that this is highly personal. He also explained that, for example, bar stools have a lot of cognitions and codes. Movies are a good example of this, where many scenes take place in bar environments, something that some people may want to identify with.

Something I have been thinking about is why high chairs are often placed next to windows in public environments, for example in cafes. My hypothesis is that this location may also affect those who are on the outside. I asked Fredrik about this.

Fredrik explained that, for example, sitting in a cafe by a window on a low chair, easily brings a feeling of insecurity when people walking outside look down on you. For this reason, high chairs are often placed at windows. On the other hand, Fredrik does not believe that it is of any significance to anyone outside, possibly whoever is outside could probably think of sitting inside.

I then asked how high chairs are used and placed in the best way, and what significance they have for the interior from an aesthetic perspective.

Fredrik thinks that high chairs should be used where they have a clear function, such as at bar counters and the like. Alternatively, where it is needed for the person sitting on the chair to feel safe in relation to the surrounding. Aesthetically, he thinks that they contribute to dynamics when there are seats with different heights, but that there is also a risk that it can become messy if not used properly.

My closing question was what the advantages and disadvantages are of sitting high compared to low from the user's perspective.

One of the advantages of high chairs, Fredrik thinks, is that people who are of different height can end up at the same height. Above all, very short people and very tall people can get a more ergonomic position by sitting rather than standing when, for example, talking to each other.

One disadvantage may be that it feels more temporary to sit on a bar stool compared to sitting on a regular chair, as one can easily feel restless.

“Different heights create islands in the oceans”



What users think

To gain an understanding of different people's attitudes about sitting on high chairs, I have asked some questions to a number of people of different ages. The results are presented below.

(W = Woman, M = Man and the number indicates the person's age).

Question 1:

Do you have a high chair in your home today? If so, where is it located?

Respond

Only five of the sixteen respondents had a high chair in their home. Half had the chair or chairs placed in the kitchen, and the other half in a study room. A decisive factor for having a high chair at home is that you also have a high table, high bench or bar counter that is adapted to the chair.

My conclusion is that fewer young people have high tables and benches at home, based on the answers, and that because young people often live in small apartment where there is often no space below a table at a lower height, which for many is probably considered the norm to have in a home. The exception is one of the younger respondents who had chosen to have a higher desk to study at.

The fact that the kitchen was the most common place where the high chairs were located did not surprise me, as kitchen islands, for example an independent group of cabinets with a workbench over, has become increasingly common in many homes in recent years. Often these kitchen islands have a height that fits well to stand by. With high chairs you can then sit by the kitchen island and have both a drink and breakfast.

Question 2:

What do you think is positive about high chairs?

Respond

Most respondents think that it is best to sit on high chairs when doing something that usually does not last so long, such as having a drink or eating breakfast. For longer sessions, most of those I asked think high chairs are uncomfortable.

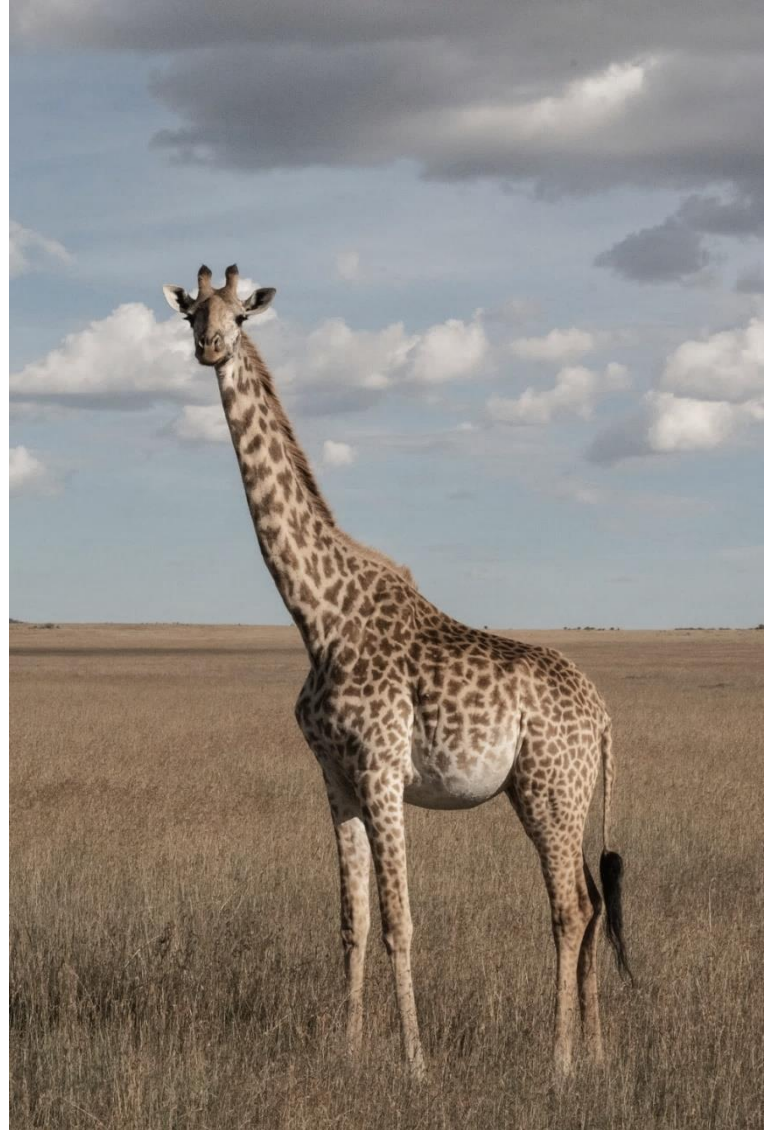
Many, especially the younger ones, feel active and more productive when sitting on a high chair, so it is good to sit like this when working and studying. One reason why the elderly do not respond the same, I think, is because the need for comfort often becomes more evident when one is older and may also be more sensitive to physical stress.

To get an overview, many people mention something positive with a high seat, and then refer to when they are in public places such as cafes and bars. "You get good visibility and perception of what is happening around, which in turn gives a sense of calmness and security," replies one of the respondents. The same trait and emotion was described by the architects, so getting an overview seems to be one of the foremost positive qualities with high chairs.

The fact that no one mentions a feeling of being, for example, a film character when they sit on high chairs, which architect Fredric Eklöf said, does not surprise me as I think it is a subconscious association that happens. Something I have noticed myself is that younger people (young adults) sometimes sit on bar stools in cafes with high counters, and that it is often similar to situations that can be seen in movies.

Something that many of the older people answered, but only one of the younger ones, is that they see the high chairs as easy to get on and off. My conclusion is that the elderly pay attention to this characteristic for the reason that the body becomes stiffer the older you become and that they subconsciously make that reflection. Rising from a low chair requires more force.

“High chairs are like giraffes, tall and stately”



Question 3:

What do you think is negative about high chairs?

Respond

Those who have negative perceptions of high chairs often refer to lack of comfort. The reason why so many people experience high chairs being uncomfortable seems to be mainly due to the low or complete lack of back support and the feet often not receiving enough support, which is because the footrest is not adapted to the person's leg length.

Of what emerges from the answers, many experiences that the feeling of sitting and dangling with their feet in the air is unpleasant. My theory is that this feeling could be explained by the fact that it is an unusual feeling, since the feet normally touch something in both standing, sitting, and lying positions. With something to rest your feet on, you get a better control over where the body is in relation to the surroundings and this creates a calm feeling. On the other hand, one of the respondents replied that dangling with their feet brought a sense of freedom.

For those who answered and who are short, high chairs become extra associated with uncomfortableness and awkwardness. Apart from the fact that the footrest is rarely at the right height for them, they may have their feet dangling in the air. The challenge and the problem will be getting up and off the chair. This can make them feel clumsy.

The fact that high chairs were easy to get on and off was one of the positive comments from the respondents. But this perception seems to depend on the height of the chair in relation to how tall the person is. A short person has often more difficulty to get up and out of a high chair.

Question 4:

Describe your feeling sitting high up.

Respond

Many of the younger respondents described their feeling in the same way, what they thought was positive about high chairs was to feel active and alert. None of the older people described their feelings and mood in that way.

Several respondent described that they got a sense of power, control, and a sense of royalty, all of which are similar descriptions of feeling secure in their position.

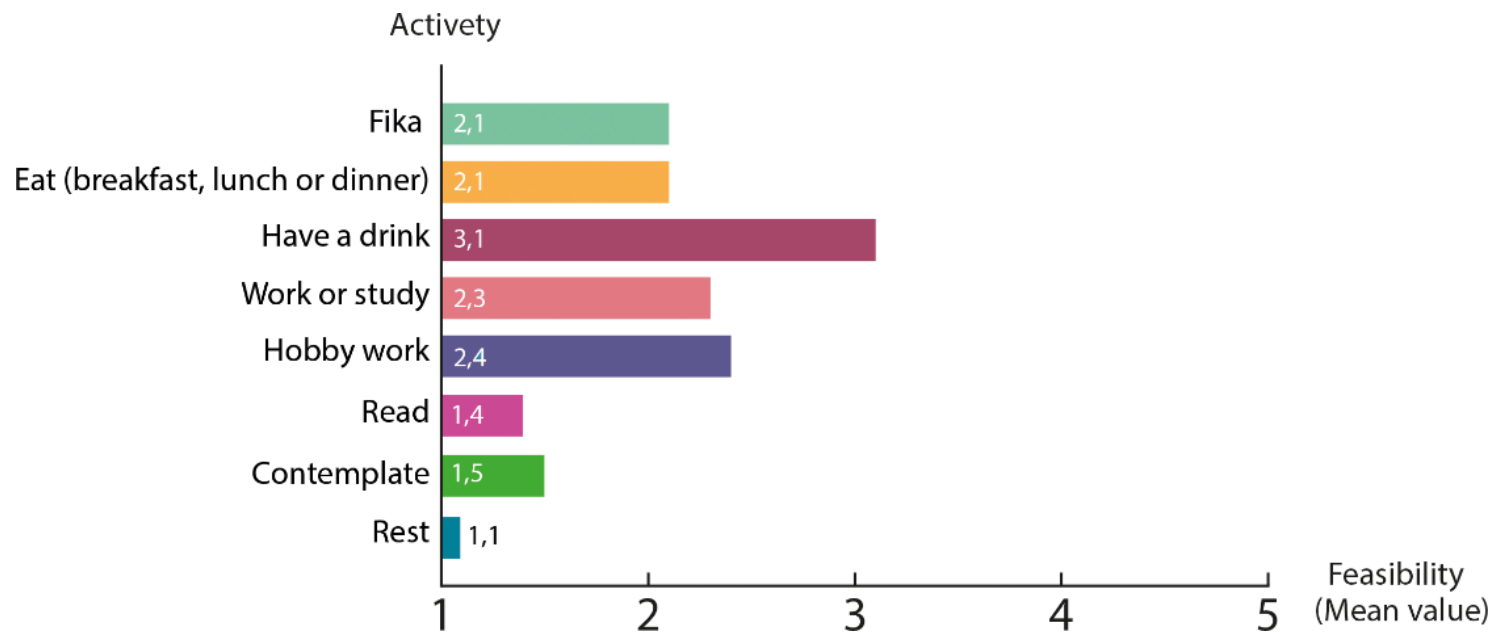
Safety was also something that several people described as a relation to their being given overview of their surroundings.

Question 5:

If possible, how likely would it be for you to choose a high chair for certain activities?

(A table or bench at an appropriate height is assumed to be located in front of the chair).

Evaluate with the numbers 1- 5 where 1 is least likely and 5 is most likely.



Most common activities

Have drinks, eat and work. These are the activities where users are most likely to choose high chairs to sit on.

Since my survey contains a relatively small number of respondents, I will only present some of the biggest differences between different ages and genders that I could read from the answers to the questions I asked. Drawing conclusions based on minor differences would not be credible or representative of reality.

Work and study

A clear difference was seen between the older and younger age groups for the alternative work and study. If the mean was calculated individually within the groups, the mean for the younger ones was 3.2 compared with 2.0 for the elderly. My theory is that the younger ones can sit longer on a high chair than the older ones, a time that is often required to work and study.

Have a drink

No major difference was seen between either sex or age for the overall most popular alternative: to have a drink. It is clear from the answers that the most common association for high chairs is bar stools in bars, from which high chairs originate. Bars are the place where most people come in contact with high chairs and can therefore relate and feel that it is something that belongs to drinking and partying experiences.

Difference between women and men

The biggest difference between women and men was the category work, study, and hobby work. For the men surveyed, the mean was 3.1 for working and study, and 3.4 for hobby work. The corresponding mean for the women surveyed was 1.7 and 1.8. Of the answers to the other questions in the form, all the respondents describe that they feel more active and more attractive when sitting on high chairs, but of the respondents, the men seem to utilize the perceived feeling to do some kind of work, while most of the women describe it is a good opportunity for social activities.

Place for relaxation

Absolutely the lowest of the options was resting. No wonder since most people feel the opposite, active and alert, and the factor that high chairs generally are perceived as uncomfortable.

Also reading and contemplating received low grades, probably because it, just like resting, is something that often works best when relaxed.

What the orthopedists think

Interview with doctor Bernt Ersson

To learn more about sitting from an ergonomic and anatomical perspective, I wanted to get the views and perspectives of the back specialist on the matter. I started by contacting doctor Bernt Ersson, that specializes in spines. We met at his clinic in Gävle where I was given the opportunity to ask how sitting affects the body and what positions are preferred for a healthy sitting.

Dr. Ersson began by explaining that the basic problem of sitting is the static strain that the body is exposed to when sitting in the same position for a long time. The whole weight of the person then becomes concentrated to one point, or to a few points, and tensions then arise easily. Dr. Ersson was clear that there is not a single correct position for sitting, but the key to healthy sitting is to vary between different sitting positions. In this way, the weight is spread and the body does not become overloaded on one spot.

Dr. Ersson then showed the chairs he had at the clinic, the ones he usually recommended to patients with back problems. The chairs he showed had in common was that they offered the possibility of variation in sitting. Chairs from the company Varier, such as Variable Balance designed by Peter Opsvik and Move designed by Per Øie, were Dr Ersson's own favorites when using balance, which benefits the variation in sitting as the whole body is activated when a person balances. When sitting in these chairs the whole body is used to sit in and the weight is distributed at several points instead of one.

I sat on several of the chairs and found Variable Balance as the chair that felt best and helped me to an upright and active posture. Instead of just my back, I felt that

my knees had to receive some of my weight. It was fun to sit on that chair, because it brought a balance momentum and it could swing easily.

I also liked the Move chair. The feeling of sitting was similar to that of the Variable Balance, but even here I was sitting high and instead of my knees my feet had to receive some of my body weight. I felt that no back support was needed when my posture was automatically straightened, to lean myself back did not feel like either necessary or as a good alternative. I also experienced that chair more aesthetically pleasing as it is more stripped down than many other work chairs.

Dr. Ersson also showed a saddle seat as an alternative that works well for many to sit on. The advantage of saddle chairs is that you sit with open angles on the hip and knee joints, so that blood circulation improves and also gives the body a natural line in sitting.

Interview with Laszlo Halasz

To get further views from similar expertise, I contacted Laszlo Halasz, who is a legitimate chiropractor and operations manager at Ryggcentrum Lund.

When asked which sitting position (only one) would work best for a healthy and normally built person for fifteen minutes to an hour, Halasz replied that a saddle chair because the body position you get from sitting on such is the best option. Even for a longer time he thinks it is the best option. Ideally, the chair should also have a backrest that accompanies the body movements forward and back, and that the seat should be freely movable to some extent.

I asked Halasz what effects different sitting positions can have on people in terms of energy, breathing and mood. Halasz responded that sitting more upright makes it easier to expand the chest and the breathing rhythm becomes more normal. If you crouch it becomes more difficult to breathe, and the brain perceives it as a protective position and indirectly the brain can interpret it as a stressful situation and change breathing negatively.

Selection from research

I have compiled some of my observations that I found the most interesting and that I have chosen to focus on.

Places to sit

The type of activity that is planned to be done often steers the choice of chair. Therefore, in places where visitors are expected to relax, chairs are often offered with soft seats and/or back-lean backrests. In places for activities where presence and concentration are required, chairs are offered instead which facilitate an upright posture.

You can also control the length of the sitting by offering different comfort. For example, in museums where it is not desirable for visitors to stay in the same place for too long, long benches are often offered without a backrest.

A sea of chairs

The high chairs available today are often missing backrest, or have only a low one. A substantial backrest, and also armrests, are among the unusual features of high chairs. Some form of foot support is offered to most people.

The height of the chairs is mainly controlled by the tables and benches they are expected to belong to, such as a bar counter or kitchen island. Therefore, the seat height is often around 70-80 cm up, with only a few exceptions.

Different Perspectives - Architects

A common reason why architects choose to decorate certain rooms with high chairs is to bring dynamics to the room.

People generally look for places where they feel safe and in control. If you sit on a low chair and someone walks past, a feeling of insecurity is easily created. Being able to sit high and end up on a more equal level as a standing person, and which also gives a better overview of the place you are at, neutralizes that feeling.

For people who have physical problems, and for various reasons have difficulties in sitting and standing up, a high seat height is often welcomed as it facilitates those moments.

Different Perspectives - Users

Have drinks, eat and work. These are the activities where users are most likely to choose high chairs to sit on.

Resting, reading and contemplating are the least likely activities.

Many of the users got a sense of power, control and royalty when sitting on high chairs. The feeling of being active and productive were common descriptions among the younger ones.

Gaining an overview, especially in public settings, so that you get a better idea of what's going on around you, was one of the most common positive experiences of sitting on high chairs.

Among the more negative perceptions, lack of comfort was the most common answer. This experience was based on the lack of a backrest that did not allow for a relaxed and backward-seated position. Another reason for the uncomfortable feeling was because the placement of the footrest rarely fits.

In people's homes, high chairs were consistently found either in the kitchen, at a kitchen island, or in a study. Directly deciding to have high chairs at home was also to have special high tables and benches. This was one reason why fewer young people have high chairs at home, as they usually live small and lack space.

Different Perspectives - Orthopedists

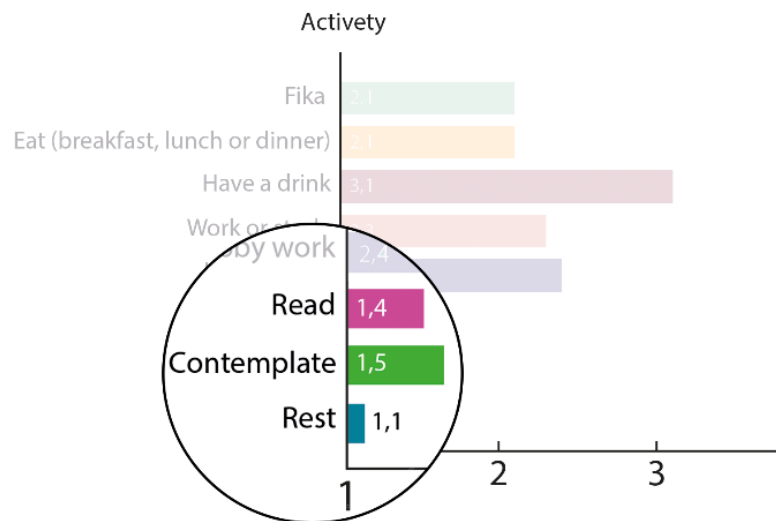
The key to healthy sitting is to vary between different sitting positions. No sitting position itself is healthy in the long run.

A more upright posture helps the natural breathing rhythm because the chest can expand more easily, and in turn, contributes to a sense of security within us.

Conclusion & Direction

What caught my interest most, after doing my research, were the activities that are not performed on high chairs at present. I asked myself what it was that made high chairs, which, although it gives a positive feeling of security to sit high, was nevertheless so negatively associated with the activities reading, resting and contemplation. I can find the answer to this when I read the responses from the users. The main reason was the uncomfortable feeling due to the lack of proper back, arm, and foot support.

Considering the range of chairs aimed at bars, kitchen islands and offices are already so fulfilled, a design for a purpose where high chairs are not usually found and used at the moment, felt most interesting to explore further.



The fact that the possibility of sitting high is so limited in everyday life and dependent on high tables and counters, I think is a pity, because the good qualities that high sitting brings, such as the feeling of control, royalty, security and active mood, are not taken advantage of fully.

My goal, therefore, was to combine the good qualities of high sitting with the activities of resting, reading and contemplation, which I think could even be performed better at a high seat height compared to a low one.

I chose to focus on public environments where I see the greatest potential for high sitting linked to the chosen activities. Some specific environments that I envision are large open spaces, such as libraries, travel centres and office environments. The need for this is mainly due to the insecurity that easily arises when sitting low, while people are in constant movement around. In large open rooms, high chairs, and then preferably high ones, would become like islands in an ocean and be able to contribute to the dynamics that architects strive for.

I have also strived to provide the opportunity for a varied sitting position, and an upright posture that promotes breathing and well-being.

Synthesis

Brief

Design a chair that

- is suitable to perform the activities of resting, reading and contemplation
- with its height best meets a feeling of control, security, royalty, and activeness
- is designed for public environments with large rooms where people are often in motion
- allows a healthy sitting
- works independently from a table.

Usage scenarios

The usage scenario where I want my concept to take place is in large open spaces, for example in libraries, in travel centres and office buildings. In these environments, people are constantly moving. An ordinary low chair, armchair or sofa becomes an unsafe place for a person to sit in because they are then on a level below passers-by. A high sitting, on the other hand, would equalize or even reverse that relationship, and the seated person would be the one in power instead. In order to be able to engage in relaxing activities such as resting, reading and contemplation, this safe state is needed in these environments.

Possibilities

- Safe place in a stressful environment
– with an overview
- Active resting
- Reading – Book or magazine
- Use phone
- Contemplating

Not recommended

- Socializing
- Laptop work
- Drinking or eating

Function analyses

Verb	Noun	Needed Desired	Comment
Enable	Sitting	N	
Support	Back	N	
Support	Feets	N	
Give	Overview	D	
Feel	Security	D	
Be	Safe	N	
Facilitate	Boarding	D	Elegant
Support	Arms	D	
Offer	Storage	D	Of cloathes and bags
Enable	Resting	D	



Environments



What is the right height?

My main focus was initially to find a height up to the seat to achieve the feelings power, royalty, control and an active feeling. With the materials and objects I had available, I could reach different heights.

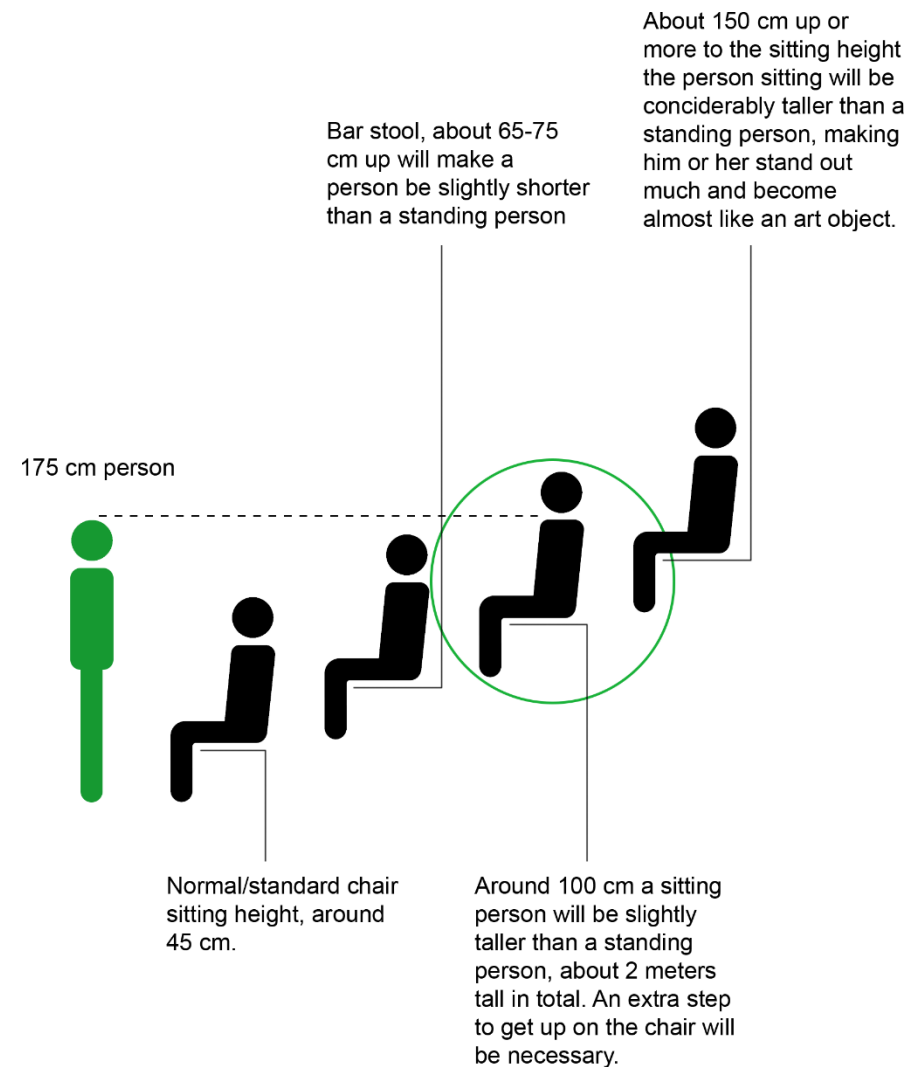
The thing I noticed when sitting on a chair of normal height for high chairs, about 75 cm up to the seat, was that I became slightly shorter than when I stood up, about ten centimetres.

When stacking boxes, to test a range of different heights, I found it appealing to sit at a height just over one meter. At this seat height I became significantly taller than I am, additionally, the overview improved and the feeling of power and control as well. However, an extra "step" is needed here to get up on the seat.

I created simple 2D human figures and placed these sitting at different heights. That way I could get a good picture of what the height differences might look like when someone sits at a certain height compared to a person who is next to them.

The height that I experienced fits best for my purpose was 100 centimetres up to the seat. At this height, a seated person will be about 2 meters long, which means that you will be slightly taller than most standing persons.

The reason why I did not choose an even higher seat height, for example, so that the person becomes 2.5 or 3 meters tall, is because the sitting person can then be seen as an elevated object like a work of art that captures the passing people's eyes and attention. In that situation, devoting yourself to the relaxing activities I want my concept to offer can be difficult.



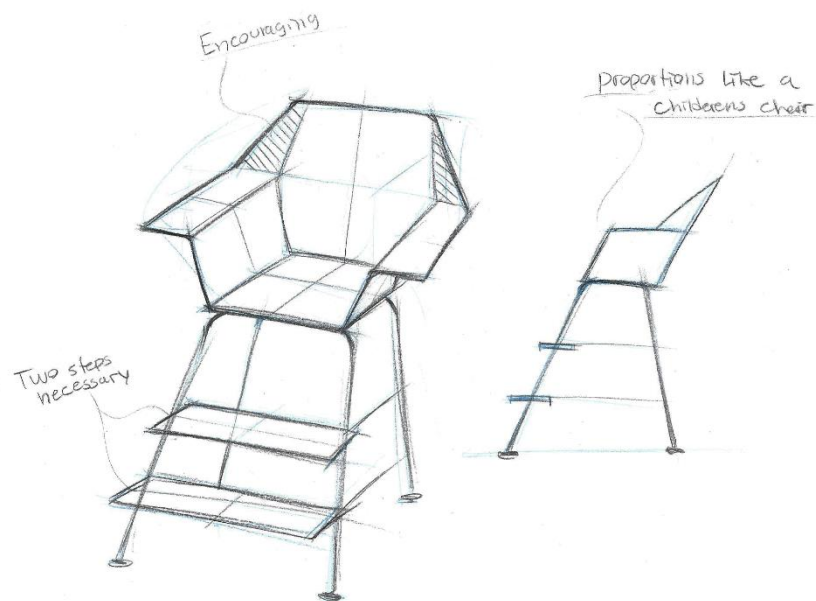
Moodboard - Feeling



First ideas

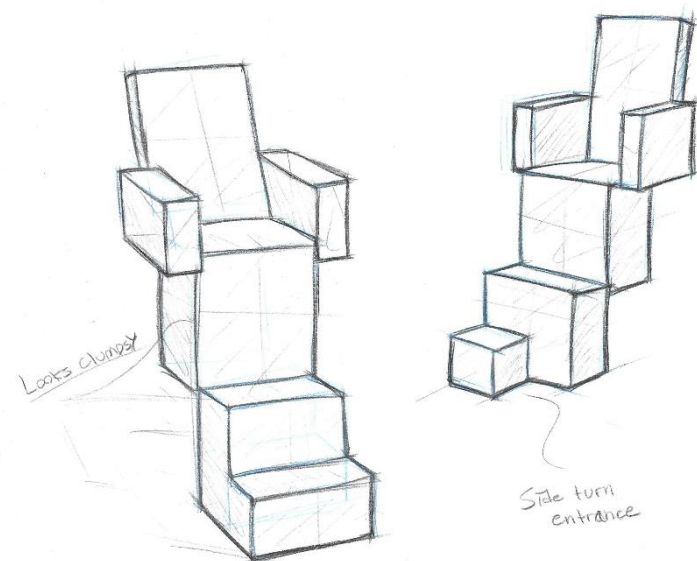
Tall chair

My first idea was to start from a regular chair, but to make it taller. I included the surfaces I knew would be needed - two wide steps, a seat wide enough to allow a varied and healthy sitting, and a backrest for comfort. A few sketches later, my biggest problem was that the chair looked like a children's highchair, something that was not desirable in the context. I realized that the resemblance to a children's highchair was due to the proportions between the seat and the steps being the same as for these, and they also often have two steps.



Block chair

The next idea was the "block chair". With its powerful elements, it did not resemble a children's highchair in the same way. I liked the angular shapes, but at the same time the block chair looked too big and clumsy. It would not fit into the modern environments in which it was intended to be placed.

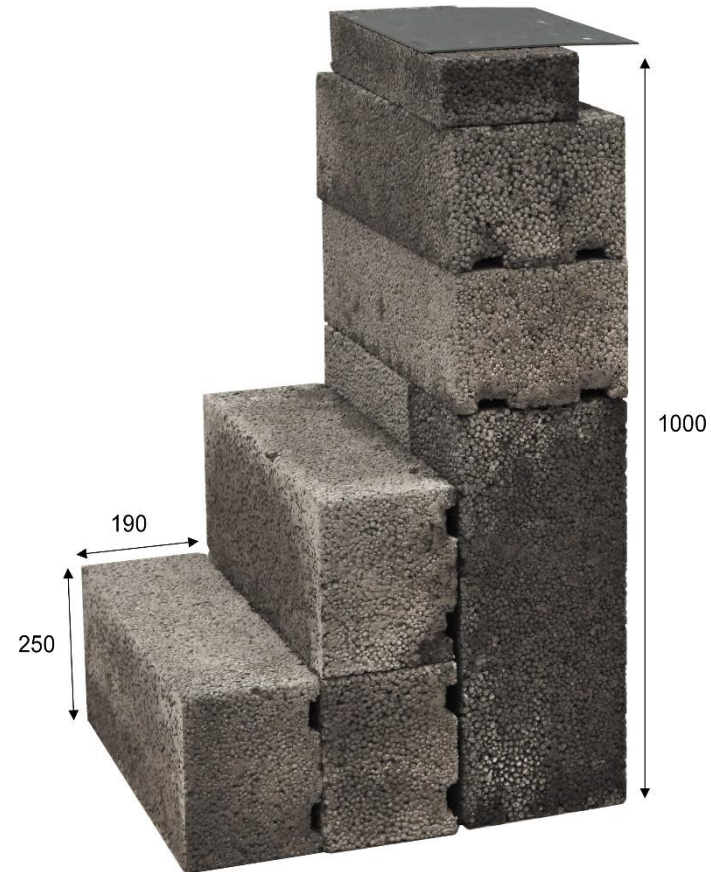


Mock-up – the steps

One of the biggest challenges with designing such a high chair was how to get up on it. Since the chair is intended to be in public environments among other people, it should be easy to elegantly step up on the two footsteps of the chair. I had earlier found that the lack of elegance was one of the biggest reasons why short people did not want to sit on a high chair, it was difficult to step up in it without seeming clumsy.

Using leca-blocks, I built a mock-up from the sketches I had done with the surfaces I knew would be needed. I chose to only build the steps and with only a narrow, simple seat because it was primarily the ascent I wanted to test.

I let two friends test different ways to interact with the model and give their views on their experience of the best way to get up on it. Other interactions with the mock-up were also noted.

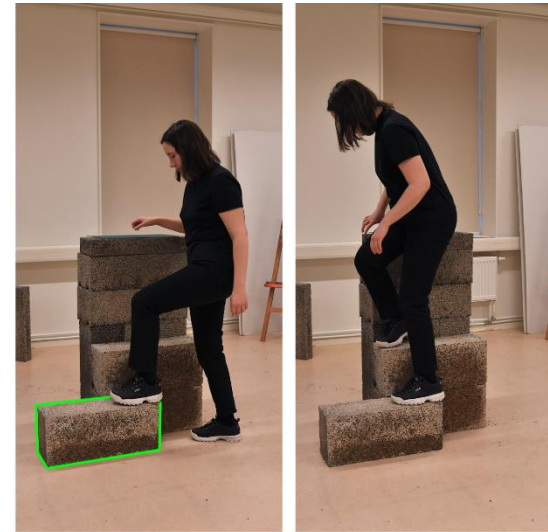


Testing



Formation 1

Stepping on straight from the front, the test participants experienced problems turning around to sit down when they reached the top step. They also felt that there was a lack of a good opportunity to hold on during the ascent.



Formation 2

When I moved the bottom step sideways, the test participants felt it was natural to approach the chair from the side. This in turn meant that almost 90 degrees of the rotation that needs to be done to be able to sit down was already completed. It then also

Elegantly ascend

The final formation of blocks in my mock-up (formation 2) resulted in the test participants being able to easily and elegantly ascend the steps with a natural rotation, after which they could sit down. They experienced that the height and width of the steps worked well. The test participants disagreed as to which foot they preferred to put first on the bottom step. The difference is in which direction the rotation of the body takes place, either forwards or backwards. However, they agreed that both methods worked well to get up to the chair seat.

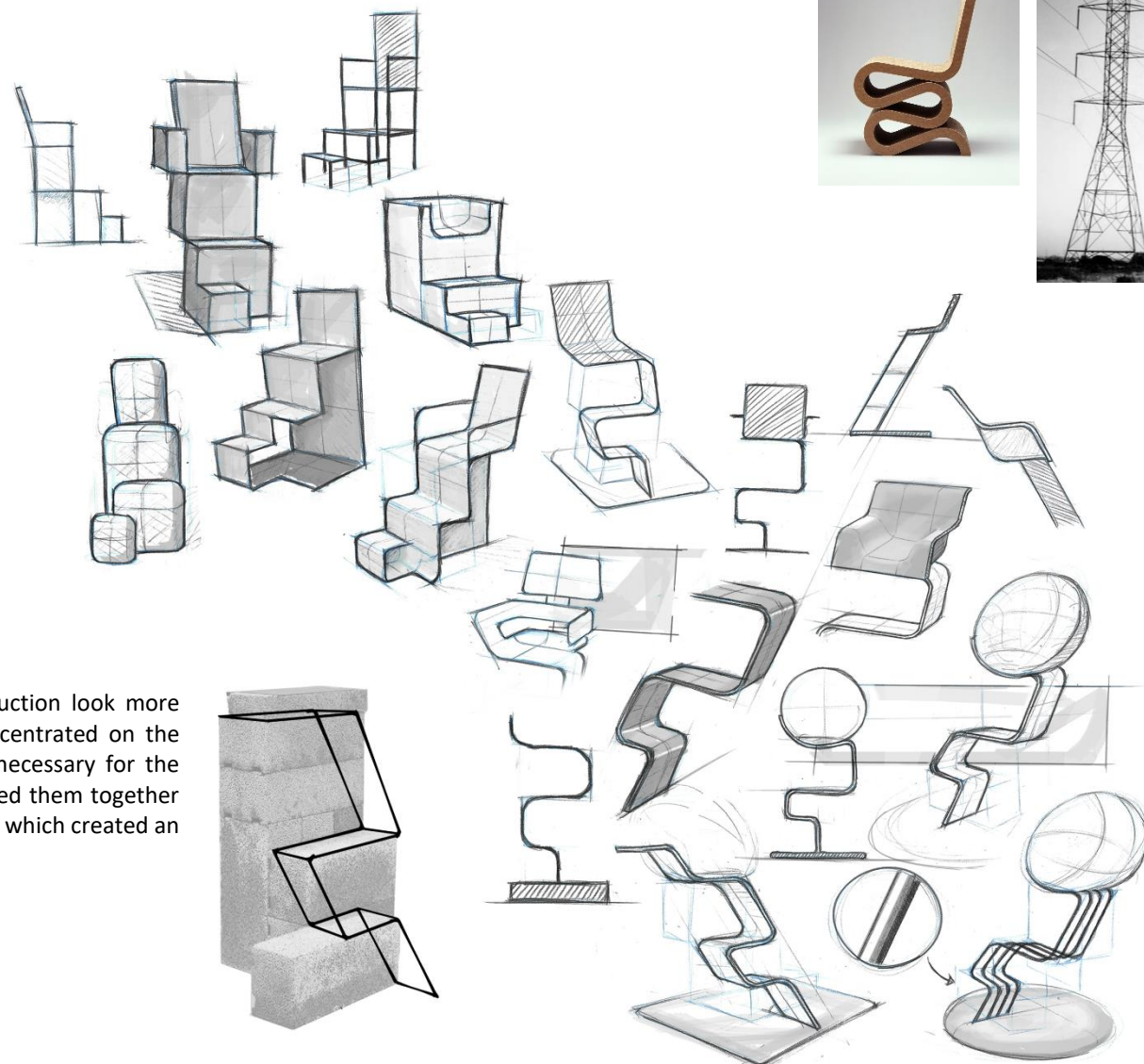
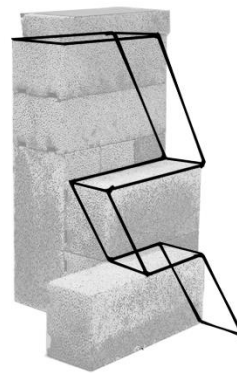


Concept development

My mock-up chair became the starting point for my further design. The challenge was to integrate a chair seat, without the chair being perceived as too large and clumsy.



To make the construction look more light and airy, I concentrated on the surfaces that were necessary for the ascent, and then I tied them together in a minimalistic way which created an interesting shape.



Inspiration

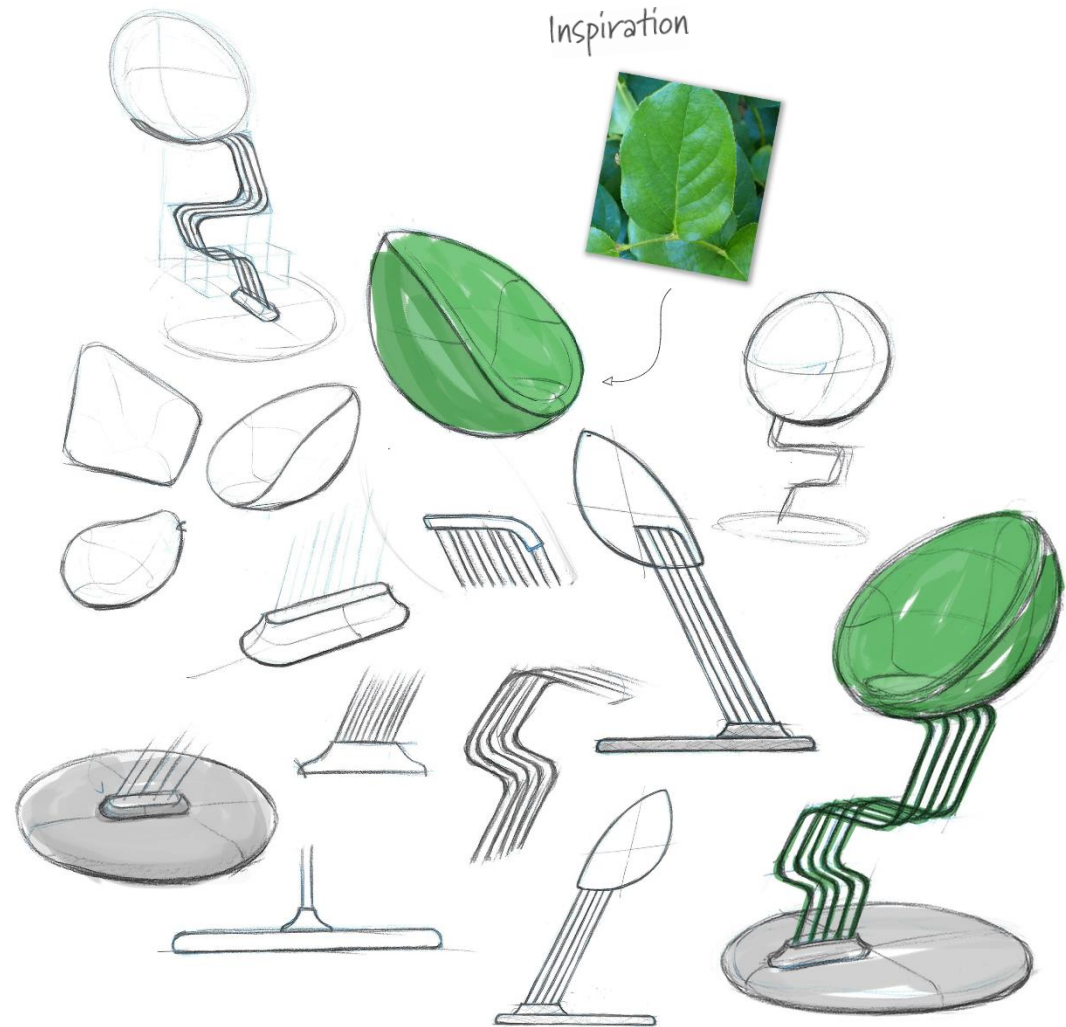


Final concept

A friend of mine, who was looking at my sketches, thought that one of them resembled a leaf with a winding stem. This inspired me when I defined the final form. The shape of the seat and green colour were chosen to reflect the resemblance to organic shapes.

The chair consists of four main parts:

- 1: A round concrete base plate, large and heavy enough to be safe and stable.
2. Five curved steel bars of a quality and dimension sufficient to hold the seat with a seated person. The curved bars also act as steps.
3. A "foot" between plate and rods that provides a visually smooth transition.
4. A leaf-shaped soft seat with an enclosing effect. I chose not to have any distinctive armrests to maintain a stripped-down look. The arms still get some support from the enclosing backrest.



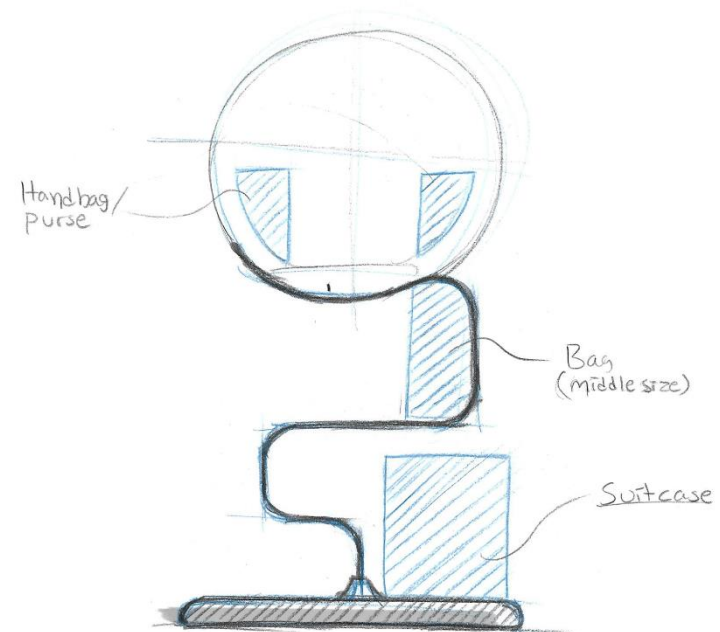
Interaction

The steps surfaces are the same as the model I built with leca-block, so the same natural rotation can be done to get up on the chair elegantly. To have balance while ascending, grabbing different places on the seat is possible.



Bag storage

Space for storing a small bag is desirable, as you sit so high that the bag cannot be reached if it is placed on the floor. The design has therefore been adapted so that the seat is wide enough to have a smaller handbag placed next to it. A medium-sized bag can be placed on the wide footrest and a larger bag can be stored under the footrest on the base plate of the chair.

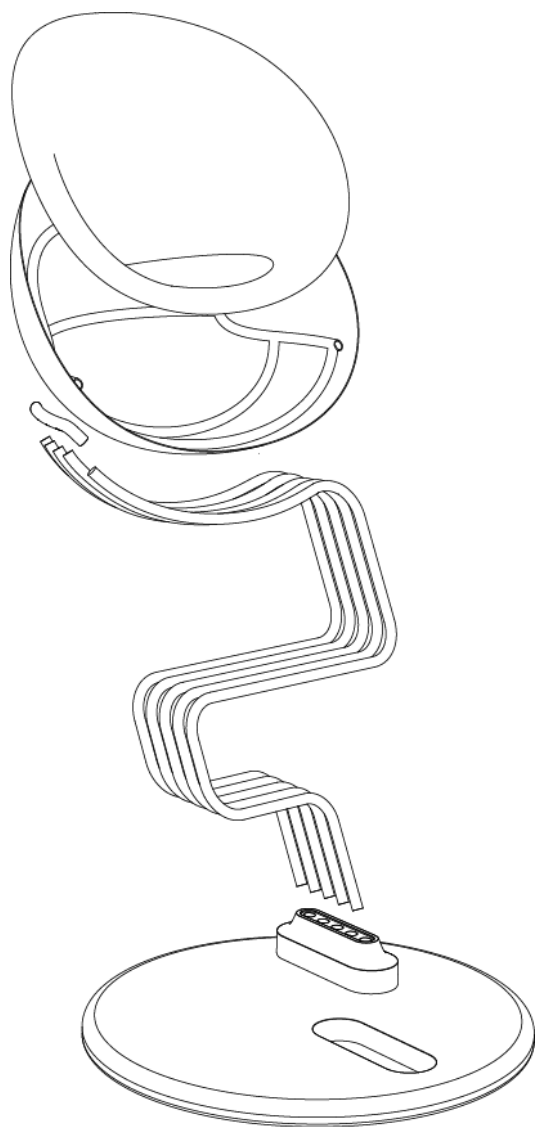


Result

Two Step Chair

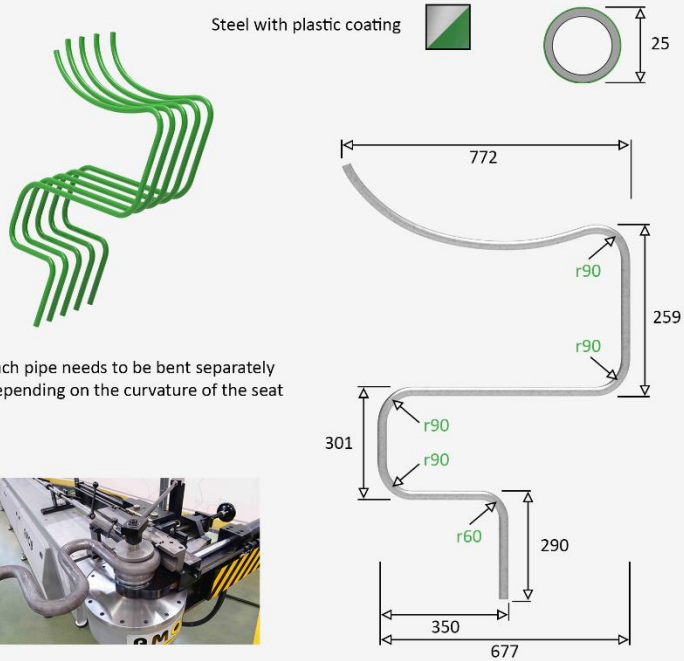






Construction

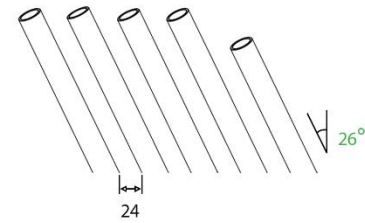
Pipes



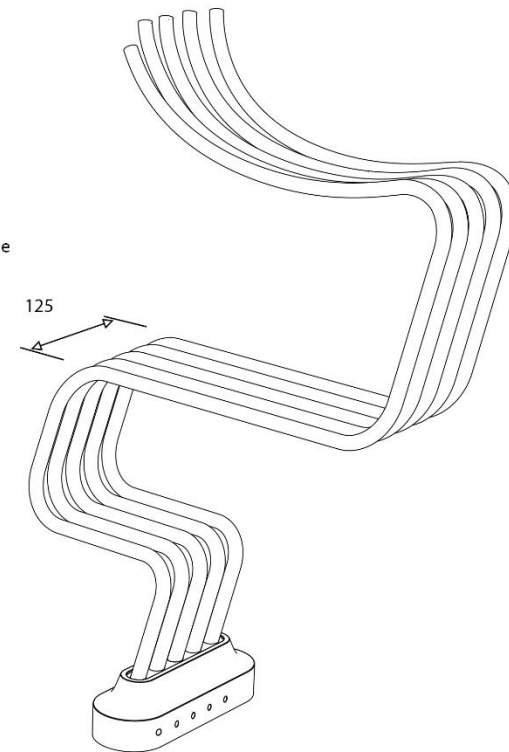
Each pipe needs to be bent separately depending on the curvature of the seat



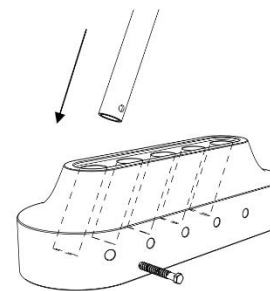
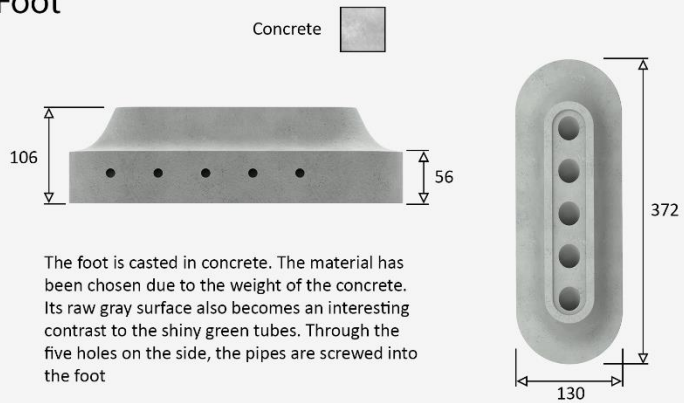
The type of machine that can be used to bend the pipes



The width of the footrest gives the same feeling as of resting the feet on the floor.

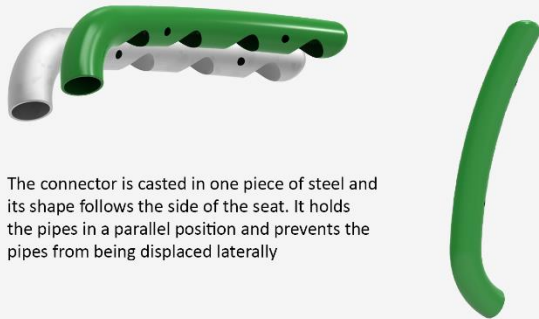


Foot

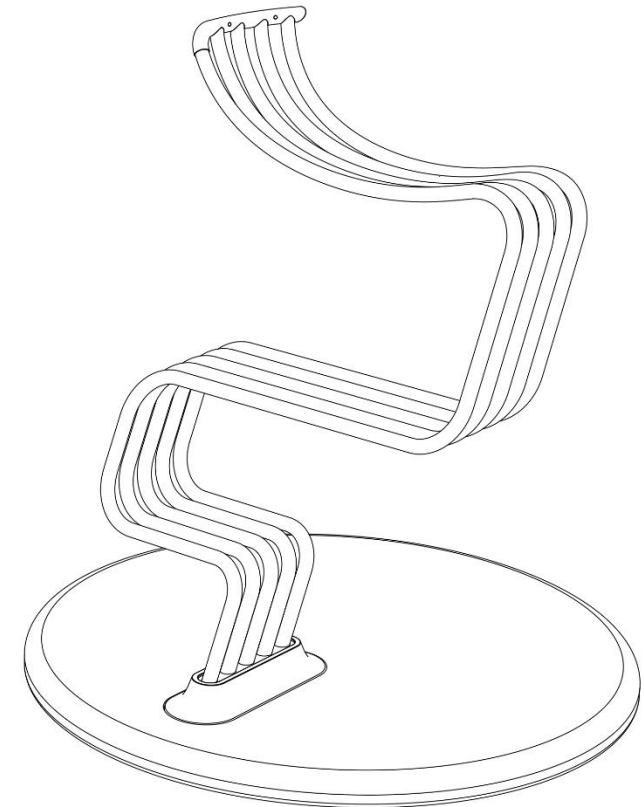
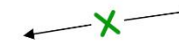
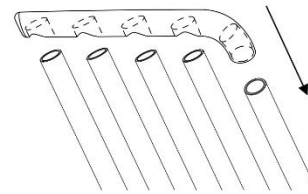


Connector


Steel with plastic coating 



The connector is casted in one piece of steel and its shape follows the side of the seat. It holds the pipes in a parallel position and prevents the pipes from being displaced laterally

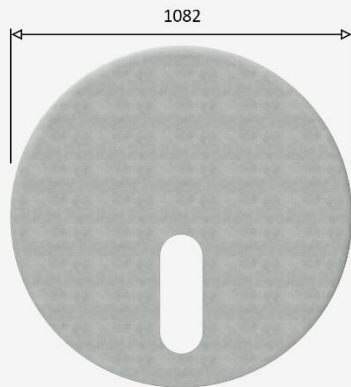


Base


Concrete 



Just like the foot, the base is made of concrete and weighs about 100 kg. The weight and size of the base means that the chair stands firmly and does not risk tipping over

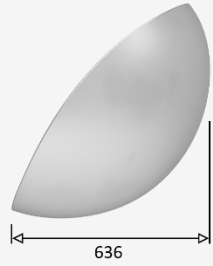


Seat

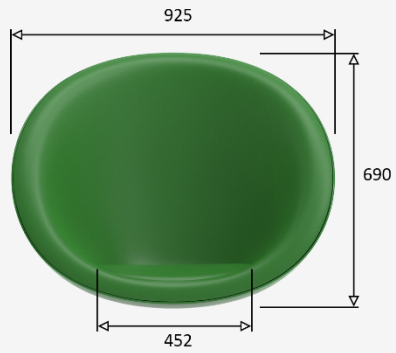
Steel with plastic coating 



A skeleton of steel pipes



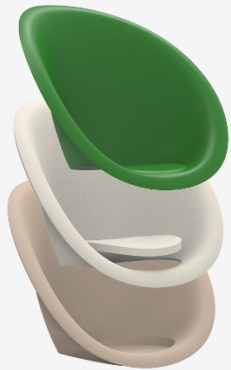
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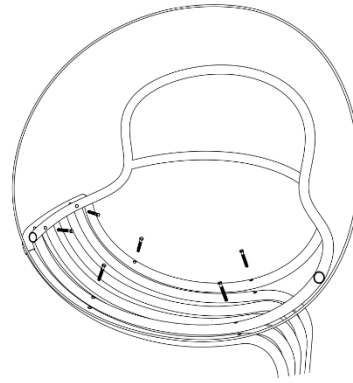
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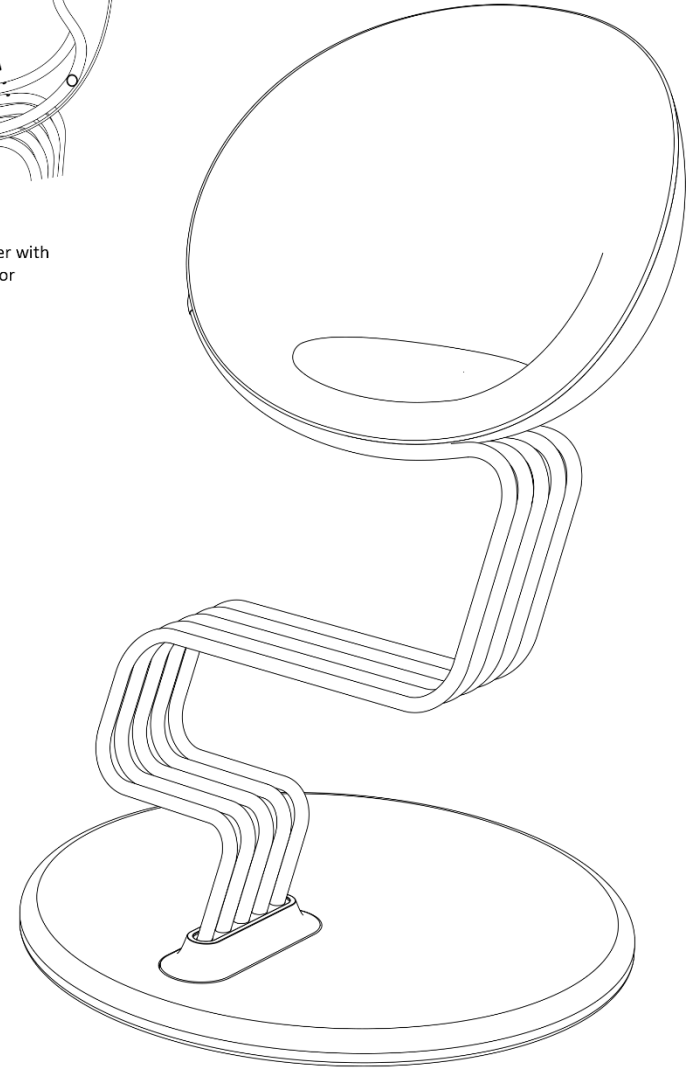
 Artificial Leather

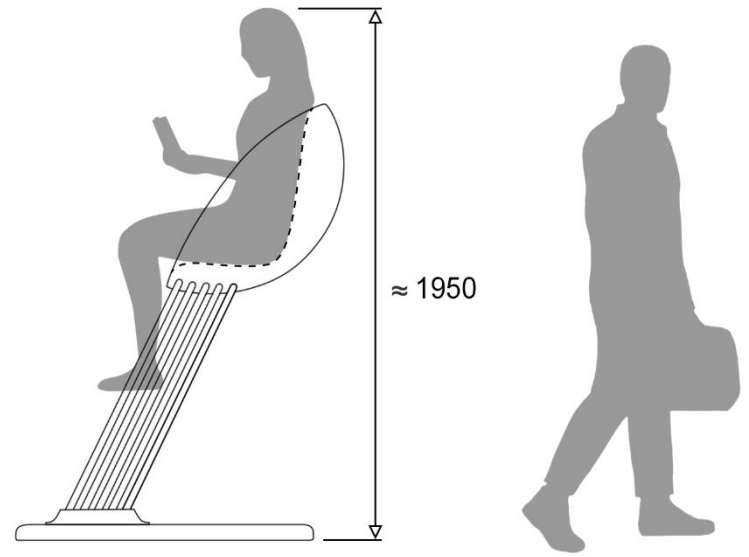
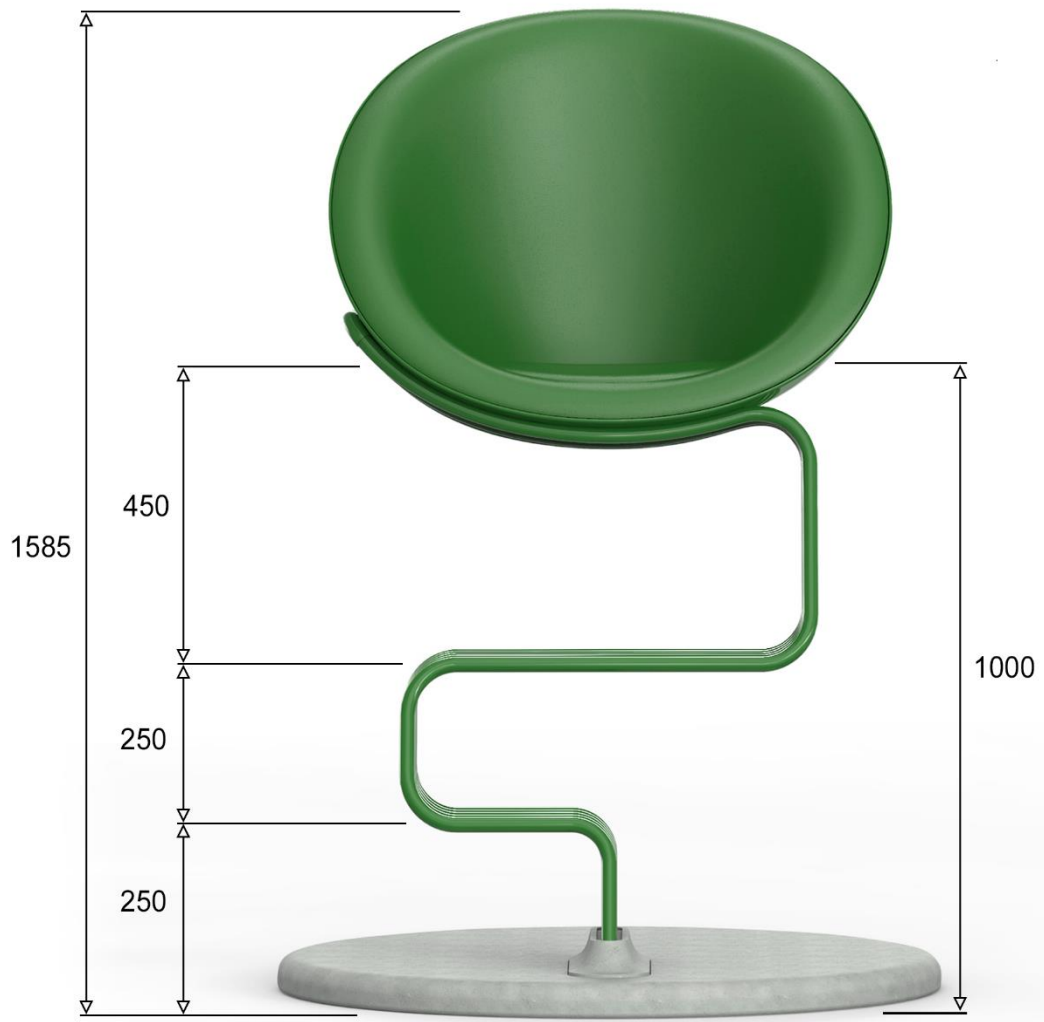
 Foam

 Molded plywood



The shell is screwed together with the skeleton to the connector





Placement

The chair is intended to be placed in small groups with three to five chairs, for example. If the chair stands alone, a seated person risks "feeling like in the spotlight", it does not contribute to a relaxed feeling, which is the purpose. Several chairs that are placed together in one or more groups also form islands that provide separating and exciting visual effects in a large room.



Reflection

The most challenging part of designing a chair, where thousands of variants already exist, is to come up with something new, interesting and unique.

A breakthrough for me in the process was when I came to focus on the activities that high chairs are not used for at present. It created an interesting conflict, and thus opportunities for innovative ideas. Many existing chairs were on my retina when the designing work began. I was worried that an overly functional design would look boring. But when I forced myself to let the shape follow the function, it resulted in a unique and playful design.

Due to the Corona pandemic, the school was closed and my workspace was limited to my apartment. It was not a desirable situation. But, it turned out to be a useful experience that forced me to develop my creativity. Cardboard boxes had to function as both chair legs and seats in the model building, and by making virtual scale models and doll people in the computer, I was still able to get a pretty good picture of reality. Having access to a physical workshop, when the final model was to be manufactured, would of course have been desirable. Then, for example, all dimensions could have been quality assured.

During the final stages of the design phase, I had to make several choices that were difficult. One was, for example, to opt out of an integrated table. The reason for that choice was mainly to not encourage the currently most common activities performed on high chairs, drinking and eating. Another choice was not to have any distinctive armrests. I found in my research that armrests could have been desirable, but not necessary. In the current design of the chair, it is natural to rest your arms and hands on your knees. To maintain a stripped-down and stylish design, I therefore choose not to have any armrests.

As a concept, I believe that my chair has the potential to fill a need and a new area of use - a place for relaxing activities in otherwise stressful environments. The fact that the chair is organically shaped and reminding of something from the plant kingdom promotes a positive feeling and breaks off otherwise open and sterile environments - it becomes an island in the ocean.