

Insight Series #4

Haptic Installation

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Somerset Maugham, the British novelist, playwright and travel writer, once wrote, “the writer cannot afford to wait for experience to come to him; he must go out and search for it”. This is the essence and attitude of this research proposal.

A collective research was done on haptic perception, which refers to: the sense of touch from Greek “I fasten onto, I touch” (it is a form of nonverbal communication). We worked on the haptic perception by blocking the sight as the most dominant senses, measured by most of the people as the dominant one. The aesthetics for that reason was in this study absolutely not an issue!

We did many different experiments with ‘blind folded’ sessions to get a better

insight in how the 'other' senses appear within the haptic experience. Numerous test and field trips were organized, in addition to the haptic experiments, an exhibition was organized to experience the audience their senses. We tested on a (on) orthodox way sound in space, smell and the orientation, touch and materials, taste by eating and drinking, all to develop a broad view on tactual senses. And the theoretical research included readings of Pallasmaa, Merleau-Ponty, Hall, among others.

In his book *The Poetics of Space*, Gaston Bachelard quotes a passage from the novel *L'amoureuse initiation* by Oscar Milosz that clearly shows that spatial sensation also depends on one's cognition and is independent of the scale. Without tactility and considerations for the human body and its senses, spaces become unreal.

Operating from this hypothesis, I am curious about the idea how the architectural designer translates his ideas into shape, space, materials, light and time.

All these aspects have a direct link to the senses: sight, hearing, smell, taste, touch, balance. Some material can light or shine, but how does it feel, what sound does it makes, what are the properties of that material and what effects has it on people?

Materials and surfaces have a rich and complex language that evolves and changes over time. Stone speaks of her distant geological origins, its durability and inherent symbolism of durability, brick is reminiscent of earth and fire, gravity, and the timeless traditions of the building, bronze calls the extreme heat of manufacturing, the old processes of casting and passage of time as measured in the patina. Wood speaks of her two existences and time scales, his first life as a growing tree and the second as a human artifact by the caring hand of a carpenter or cabinetmaker.

According to professor of neuropsychology Edward de Haan, "the senses are peripherals". Often a single sense is predominant: the tongue of the chef, the

skin of one who touches something, and the nose of the perfumer. But which is the most strongly developed sense of the spatial designer? The prevailing wisdom holds that it is the sense of sight, in order to create “a feast for the eyes”, that one moment that evokes an experience of transience, while haptic perception is more about the experience of a temporary succession of senses. And that is precisely the focus of this research: How can we help people to experience ‘space’ differently to our present fleeting perception?

This research on haptic installations is realized in cooperation with the second year students of the Gerrit Rietveld Academie, department of ArchitecturalDesign. 12 students were working on their installation for 5 months. This book gives an overview of the research, the process and the final results. The international character and cultural differences of the participating students gave this topic ‘haptic and tactual senses’ a new dimension: the awareness that tactility is essential for the human body to experience space.

I realize that a book is not the best translation of that awareness but at least I hope you will experience it as a heavy book, a book that stimulates all your senses and not only your eyes.

Henri Snel, Tutor and Head of
ArchitecturalDesign

Contents

Haptic Installation

INTRODUCTION	1
> Henri Snel	
FEELING YOUR MOVEMENT	8
> Julia da Conceicao Estevao	
THE SOUND OF THE WIND.....	24
> Morag Mayer	
VOICE OF MATERIAL	34
> Gintare Kerbelyte	
WIND WHISPER	40
> Yu Song	
X + X = PLUS	48
> Sandy Bruns	
IMAGE SECTION	56
> Collective visual brainstorm	
HAPTIC ELASTIC.....	76
> Pierre-clément Nivière	
A HAPTIC BEAST	84
> Arthur Hortolomei	
UNDERSTANDING SPACE THROUGH SOUND.....	92
> Aisha Fouad	
GARDEN OF ODOR	98
> Anne Van Klooster	
PRAYER INSTALLATION.....	106
> Setareh Maghsoudi	
> Colophon	116

Feeling Your Movement

When I started this project about the senses, I was wondering about what sense or combination of senses would be the most interesting. You can use your eyes, ears and even your nose, to observe from a distance, but to use your touch, to really feel something you have to get more close. The taste didn't take my interest so much.

I decided that the touch seemed to me the most interesting. I collected different materials and started combining materials that feel the opposite of each other, For example something hard and cold combined with something itchy and fragile.

The next step was sewing the opposite materials together in a way that you can wear the structure on your body. One piece you can put around your arm and feels soft from the outside, but when someone presses it, the person wearing it will feel something itchy from the inside.

Then I made two pieces of clothes, not thinking about how it looks aesthetically, but focusing on how it feels. I was trying to make it feel heavy by sewing in a certain way and using fabrics and their qualities of feeling stiff or very flexible. Then I wanted the object to become less wearable.

I also combined fabrics with different structures, to hang them in a certain way, so you are able to walk into them, not really obvious how to enter. But in a way inviting to make a certain movement.

In the end I made another two pieces of garments as well, that are about how you put them on, the sound it makes and how you move when wearing them.

The making of the objects was a haptic experience, because I was adjusting to the body and finding out about the different reactions on them.















The Sound of Wind



Tonkin
Liu-Tree,
Inspiration
Photo

I put my headphones with music too loud, barely heard myself... Went on the bicycle and started my way to the albert hijn, it was scary on the bicycle I didn't hear when other bicycle came from behind. There was a big crossing with traffic light, I waited, while I was waited there were a lot of traffic around me cars and bicycles, I didn't dare to cross in red which is something I do sometimes... there was only one bicycle that stop in front of me the rest con-

tinued it made me feel that everything and everyone is passing me and that I'm watching it but I'm not a part of it. It was not part of my "reality", when it was green I passed though I double checked if there were bicycle around me, always checking.

The albert hijn is in the old street of Utrecht the oudegracht, it is a very busy street, I saw a lot of bicycle, people, closed shops, bars, traffic cars driving and parking but with all of this it was still not as scary and unsecured as walking in the supermarket. I had my safe place on my bicycle my own space.

I have arrived safely to the albert hijn and parked my bike. Went in and then it started.

I did not know what to expect from this experience but I was surprised from what I felt after.

I felt scared, not safe, people invading my space everywhere I went, although I tried to do my shopping as normal I found myself going next to fridges and

shelves, always looking for something safe next to me.

When I finish I stood in line to the cash register, put my stuff on the rolling machine, I didn't know if the girl in the cash register said something, I didn't look or heard, but I gave her my ah card because that what you do in the cash register... when it was finish I told her pin pleas but I guess she didn't heard me, I had to take my ear phones out I paid and put my ears phones back I notice people looked at me strange, I don't know if it was because there was a music in my ear phones and I choose not to listen to the "world" or just because I was strange I didn't care I just wanted to leave, when I was out I looked at the doors and I was proud I made it out.

The drive back was relaxing I could breathe fresh air again... I will never feel the same shopping in that Albert hijn, my eyes will always look.

A few of the things that have scared me whit out the ability to hear



Experimenting



1



2

1. Balloons on a net- block the sounds
2. Balloons on a net
3. Small bags as ear plugs- make sound
4. Small bags as ear plugs
5. Small bags as ear plugs



3



4



5

The experiment with paper bags in a net. How does the paper bags move and what sound do they produce.



Test sound



1

I have decided to work with recycle material and so I have decide to make a Material Bank where all the material is waste.



2

1./ 2.
My material bank.

3.
Transporting the materials on the train.

4.
Collecting waste material from a constructing site.



3



4





Voice of Material



I have started this installation creating process by looking into main purpose of haptic architecture which is to sensualise architecture through a strengthened sense of materiality and hapticity, texture and weight, density of space and materialized light. Haptic architecture engages and unites. Tactile sensibility replaces distancing visual imagery by enhanced materiality, nearness and intimacy.

I've got fascinated by natural sound of paper and how it effects when it's used as structural material

Idea and form was dictated by material I became attracted to-shaped paper. The qualities that fascinated me were feeling of texture and natural sound of material. When you touch paper you can feel its organic origin and the shape emphasizes the sound. I have decided to create a structure that is experienced thru different senses that are exaggerated by material. Touch > feeling > sound. One sense emphasizes another. I have experimented with different forms and shapes to find a best 'material'. I have used various size paper cones and made a structure by attaching them together. Different sizes create a texture that is attractive to touch and feel. And connection points bring playfulness of light and shadows.

I have placed installation outdoors where natural elements like wind and light could be a part of experience by adding visual depth and extracting sound of a structure. Calming effect of nature makes the installation more seductive.



1

The idea and whole process was based on emphasizing the material and its qualities. Trying to realize what haptic architecture is when it is used in practice and what are fundamental principles for designing in haptic way. Learning different approach to design and be conscious about human senses and how we can manipulate them with environment that we create.

1. Concrete-material that can inhabit many forms. Material that is often visually deceptive. It can be very smooth or rough, but always provides very pleasant natural feeling of stone.

2. Mud was often used as a building material because of it's nature to adopt to weather conditions. On summer it keeps cool and warm on winter.

3. Natural haptic surrounding-woods. All human senses get emphasized. Best example how it can be triggered by environment we are in.



2



3



1.
Rope has very strong textural feeling. One element created by many details.

3.
Manipulating light and shadows to create visual depth makes architecture more sensual and personalized.

4.
Brick is one of the oldest building materials.



4



3

Wind Whisper



Grains usually feel smooth to the touch. Before I cook rice, I like to sift through it with my fingers. But glued to the sides of the square, it makes the edges feel ragged.

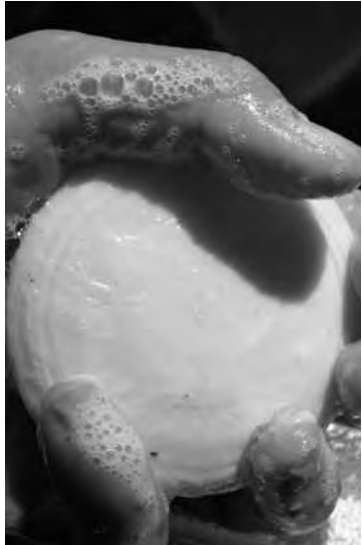
Before I took Henri's class Haptic Installation, I had not thought much about which senses people use to perceive the built environment. Probably I had assumed that it was sight. Indeed, sight plays the leading role in the way I experience architecture.

After having discussed the haptic and trained to experience things without seeing them throughout this semester with my classmates and teacher, I gradually

developed an awareness that space can be associated with a particular feel, smell, sound or even taste. I also become more aware of the role these senses play in my everyday interactions with my surroundings, and this awareness has made the experience fuller.

The site of this haptic study is mainly my house. The pictures show spots that as I realized are associated with particular sense perception and objects that were inspired by everyday experiences: cooking, getting dressed, walking up the stairs, stepping into the bed room after a sunny day, my husband and I having a drink on the terrace in the evening, playing with the sewing machine. To me, these discoveries were very exciting. Here I share some of these sensual experiences.

We were also encouraged to invent our own haptic materials. I experimented with materials that had a particular temperature, taste, or sound, or the ability to preserve their shape. Initially I wanted to create



1



2

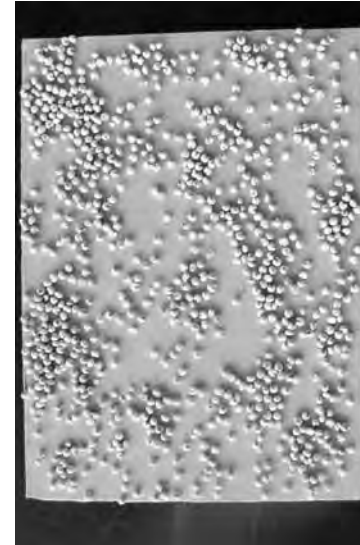
a material that has some unexpected hidden features. At first I planned to introduce metal wires into fabric so as to make it keep its shape and absorb heat. But in the process of testing aluminium foil, I discovered the noise it makes when woven into the fabric. So I ended up using this feature in one of my installations. People can sit in the middle of this haptic installation, touching it and listening to it.

1.
I used to keep old soap stubs. The smell from a stub of an old soap can always remind me of the time when I was using it.

2.
A newborn baby is comforted by being fed, by being touched and by sensing its mother's smell. Clearly, vision does not play the dominant role as it does for adults.

3.
I like to feel different kinds of grains. Here I made a small millet board. The density of the grains is such that the surface feels variegated but still slippery.

4.
I saw this beautiful pattern on the ground of a metro station. It was left when the melted snow had dried. I could not help tasting it. It is salt.



3



4



1



2

1.
After a sunny day, I like coming home to feel how the bedroom smells of sunshine.

2.
I don't like direct sunshine, so I rarely sit on the terrace during the day. But the brick wall absorbs the rays of the sun and in the cool evenings it emits pleasant warmth. So I enjoy the terrace in a different way.

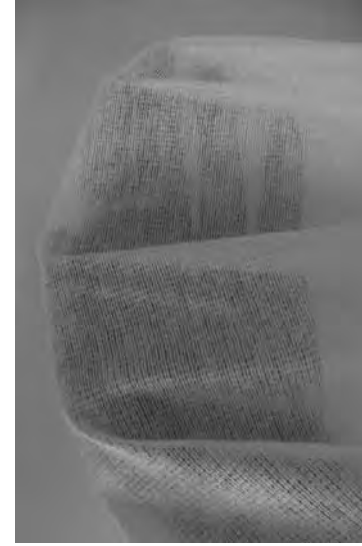
3.
The wooden stairs in my apartment tend to creak. This is often annoying, but in some situations, it can also be atmospheric.



3

4.
Aluminium foil is very common in everyday life. I am interested in the noises it makes. When you hold a sheet of aluminium foil and let it drop down, it makes a distinctive noise.

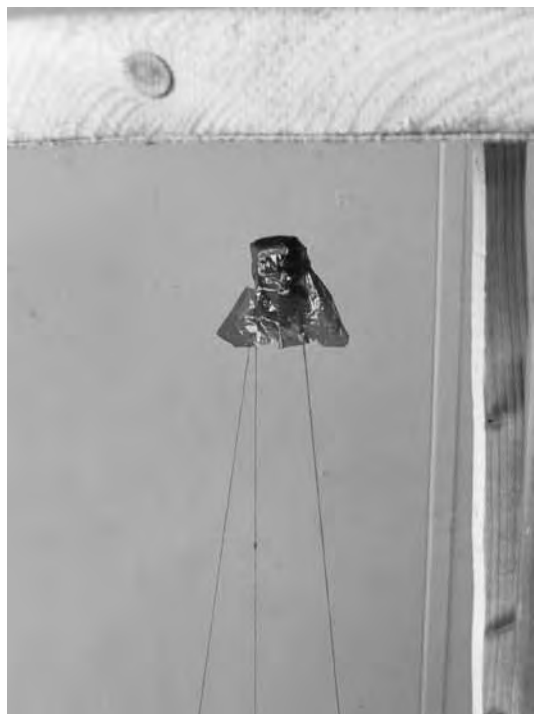
5.
Textile is the material that touches the skin most often. This semi-transparent fabric feels soft, smooth and slippery. It makes people want to touch it.



5

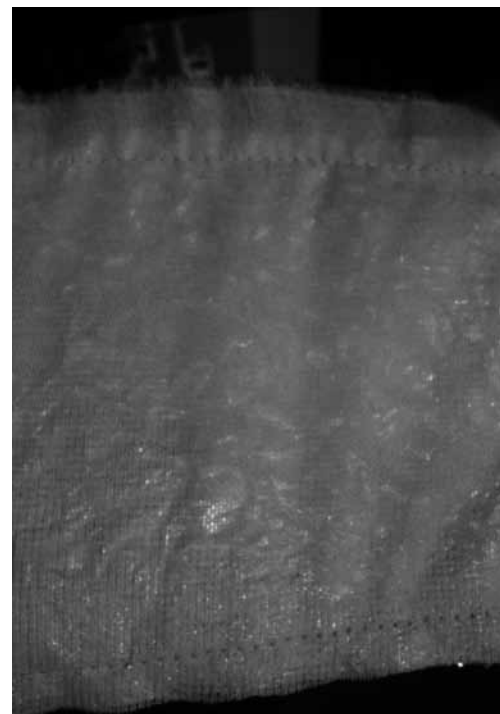


4



5

5.
I made this setting one year ago. Because of the field created by the magnet above, the other magnet is tied with threads and covered by plastic foil, is suspended in mid-air. The magnetic field is invisible, but it is there. When you gently touch the top of the blue part, you can feel the attraction. I made this setting one year ago. Because of the field created by the magnet above, the other magnet is tied with threads and covered by plastic foil, is suspended in mid-air. The magnetic field is invisible, but it is there. When you gently touch the top of the blue part, you can feel the attraction.



6

6.
When inserting a sheet of aluminium foil between two sheets of the fabric mentioned before, I got a new material. Its surface is slippery, but it can preserve a shape it is given. And I like the fact that it makes an interesting subtle noise.

X + X = Plus



Each space has its own qualities. How do you engage with space? It can be the sight, smell, taste, feeling or sound of a space that makes you feel comfortable. During my process I decided to create a piece of nature where everybody will feel comfortable.

In the process I had a connection with ice and sunlight. Those two elements of nature are never the same and change continuous. It are also two elements which you

first have to discover by your other senses than the eyes before you know what the qualities are.

That was the moment where I wanted to make an installation which would blind you by the light. You should find your way through space by feeling the warmth of the lights. The sun is everywhere on earth different. Which hotness do you prefer? Where do you feel comfortable? After all it is too dangerous for the eyes to blind them by strong light, so I blind fold the visitor. To me it is a very important part of the installation to be blindfolded. You really need the concentration to discover how lights and ice can work together and are able to create a beautiful experience for your other senses than the eyes.

Everybody knows that ice is cold and it can also be very hard. But when you touch it, it is some kind of magic. It is actually really soft and it becomes liquid. It melts. An element as ice, with so many qualities, is fun to work with. You can trigger the visi-



tor on many levels. I decided to play with the sound of melting ice to hang ice bulbs near real light bulbs.

I see mine installation as an interpretation of nature. It shows how two opposite elements can work perfectly together.









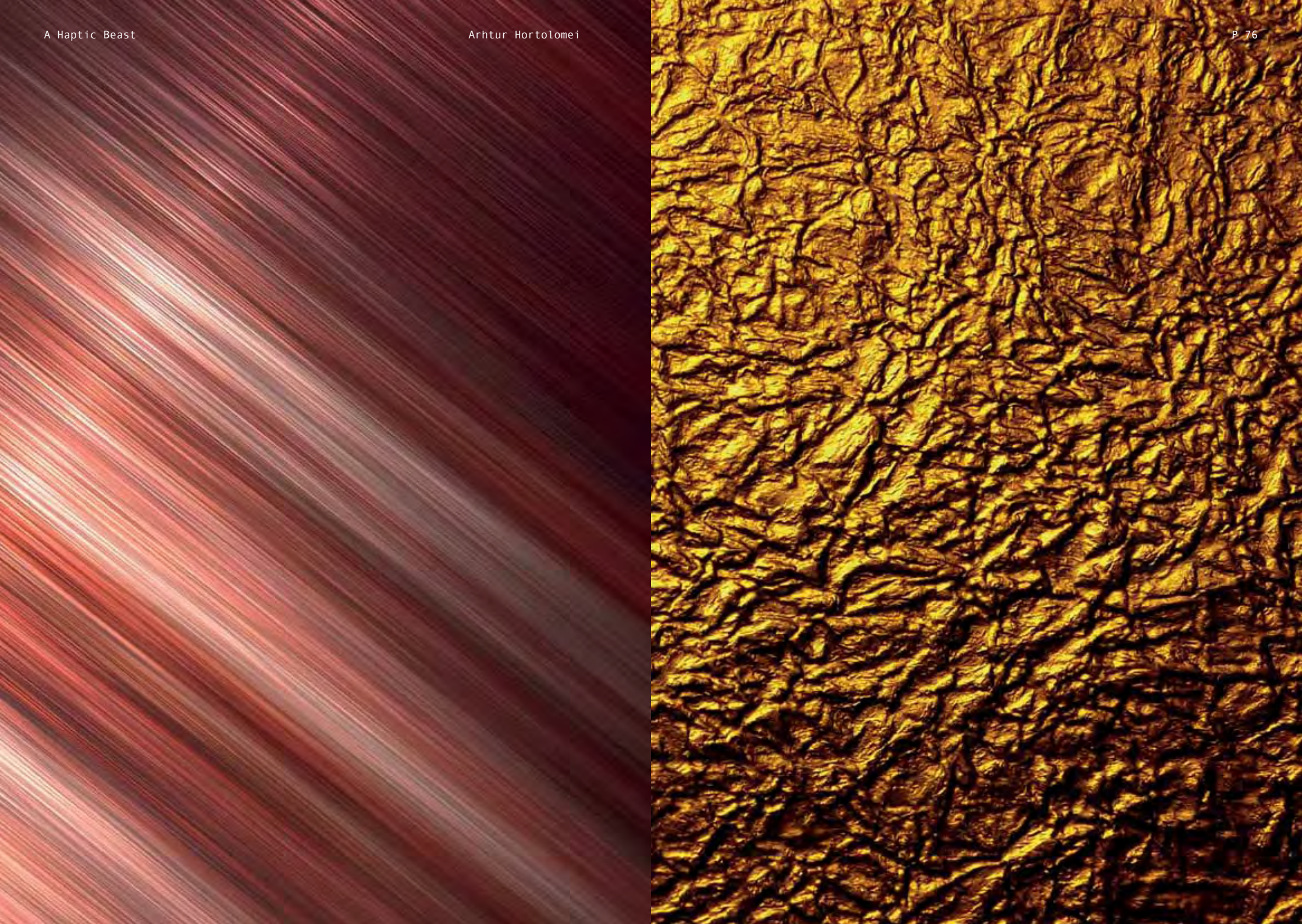






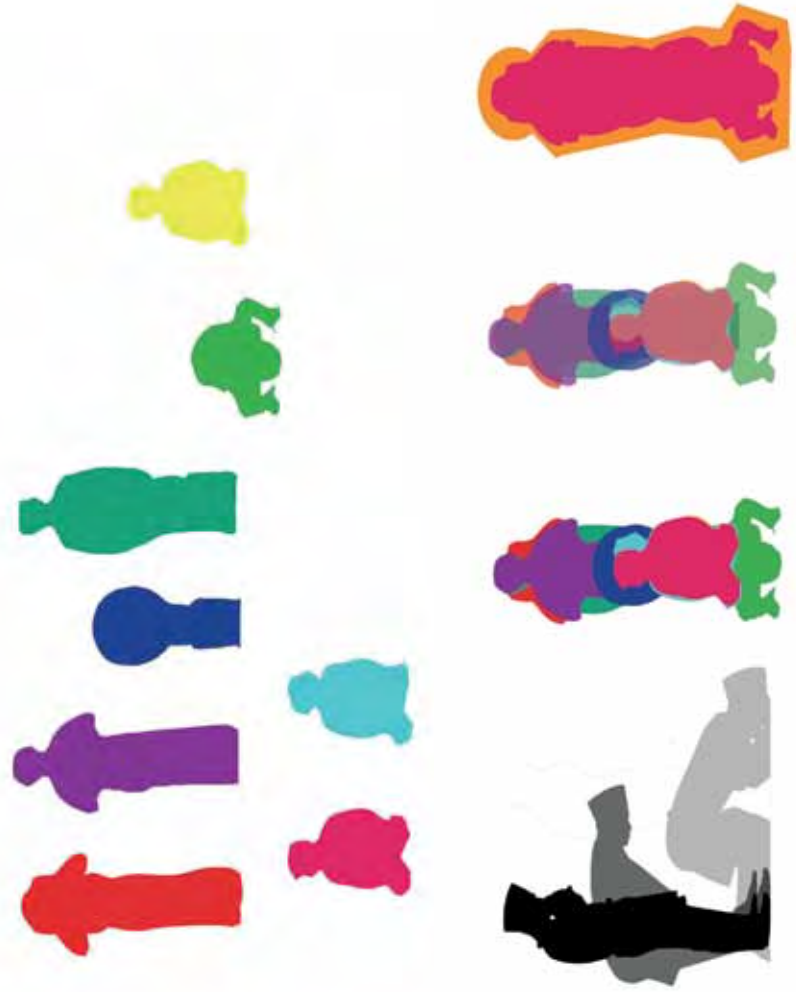












Haptic Elastic



1

My project is a personal interpretation of a haptic experience, I tried to express the feeling of gravity and balance, for that, my original idea was to create a structure that would move according to the person who experiences . in my first drawings, I wanted to create a seat held by rubber bands, which would be supported by a structure made of wooden rings, which are separated by a material that one could make the structure move. When I started to build this

1.
The Lead is a very heavy metal, used since millenniums. Extracted among from the "Galène" it is flexible and good bottom, it resists has the chemical agent and corrosion. But Lead is very toxic for the body, specially for the nervous system.

structure, I also really wanted to share feeling of being in the heart of the experience, and the wooden structure would be a skeleton. So I worked in France, with an artist in wood, which taught me a lot about how to use wood, how to carve wood, and how built well my idea. I spent two days on the this workshop, where I learned a lot. Then when I has pre-cut and prepared my structure, I returned to Amsterdam, with the wood, and then I began to assemble. I came after experimenting on how to make the best effort to make the installation any haptic. I first tried doing tests with a basic plastic chair that was supported,

This step helped me realize that I had to go further in my process, and the basic feeling I had, was not transcribed as I wanted. I work with a foam insulation, the shape makes the materials very pleasant to the touch. But to create a seat with the material I needed to strengthen it, so I braided my square meter of foam with elastic, then once my material was stronger, I came to

connect my seat with the wood structure by rubber bands, I just had to adjust the balance so that the slightest movement made by the user destabilizes. Then during the months of my project, I had time to ask people their reactions when they tried my installation blind fully, and suddenly, I adapted my project based on feedback. I asked throughout my process whether I should paint my structure or not ... then I realized that was not designated an experience, I had a design to structure the experience.



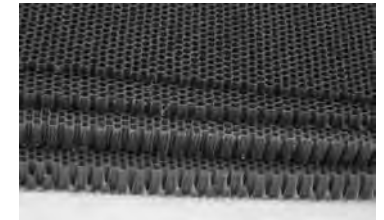
1. PHAT SHAG is a material made from New Zealand, 100% new felted wool in all natural shade, it has an extra thick finer of the pile in a multi player mottling. The sensation is very sweet and warm.

2. The tempering of the glass is a thermal or chemical process witch puts outside layers of the glass in compression to improve his compacts strength. The high compression of the glass breaks it, split in young pieces not edge and without danger. This effect provokes also a stung optical deformation.

3. Observing closely bees, human taken back the animal model of alveoli to make this material. It's generally used as a composite panels of departure sandwiches. But it can be in aluminium in cardboard, textiles, polymers ... it's also a very light material, who resists very well with compression.



2



3



4.
The mirror
is an object
of fantasy,
material
of truth,
the narcis-
sism and the
magic, the
mirror of-
fers an image
perfectly
inverted by
the reality.
It's made by
an index card
sleep for
slivering put
down under a
glass plate
before it was
established
by Tin. Today
it's sliver
or aluminium.





A Haptic Beast



1

The moment we got introduced to this very unusual course and therefore assignment, we knew that it was going to be an experimental journey. Starting off by reading a book from Juhani Pallasmaa - *The Eyes of the skin* we were introduced by our teacher and the readings from the book into the realm of so called “haptic perception”. Haptic” is defined by the use of all the other senses except sight and especially touch. The author in the book describes how

1.
Wood-
This material is one of the most essential to our society. Designers still love to use it to build their furniture. The touch of it, is very particular as there are quite many types of wood on the market. It is definitely a genuine product of OF nature. Since it is very hard and very textured this material equals strength. Visually striking, wood and timber deliver a perfect way to bring nature into your home and profit from the benefits it has to offer.

nowadays in a computerized age, we are clearly defined and dominated by the use of sight, especially in Architecture.

The aim of this course was of course to research and read about this particular topic and to come up with an installation resulting out of your research and personal findings within this theme. After an insightful visit at MATERIA, which holds a variety of incredibly diverse materials one can work with nowadays, I decided to start working with my favorite material: WOOD.

My initial thought was to built the entire “sculpture” out of wood and to make it an amorphous congregate of small wooden pieces stuck together. I was adding week by week layers and layers of scrap wood of all types ranging from MDF to press-plate to hardwood even cardboard. Eventually when the object became big enough it was clear that it was more visual but also quite hostile. After some talks with my teacher we decided to use layers of elastic fabric to cover it up which resulted in an incredibly soft

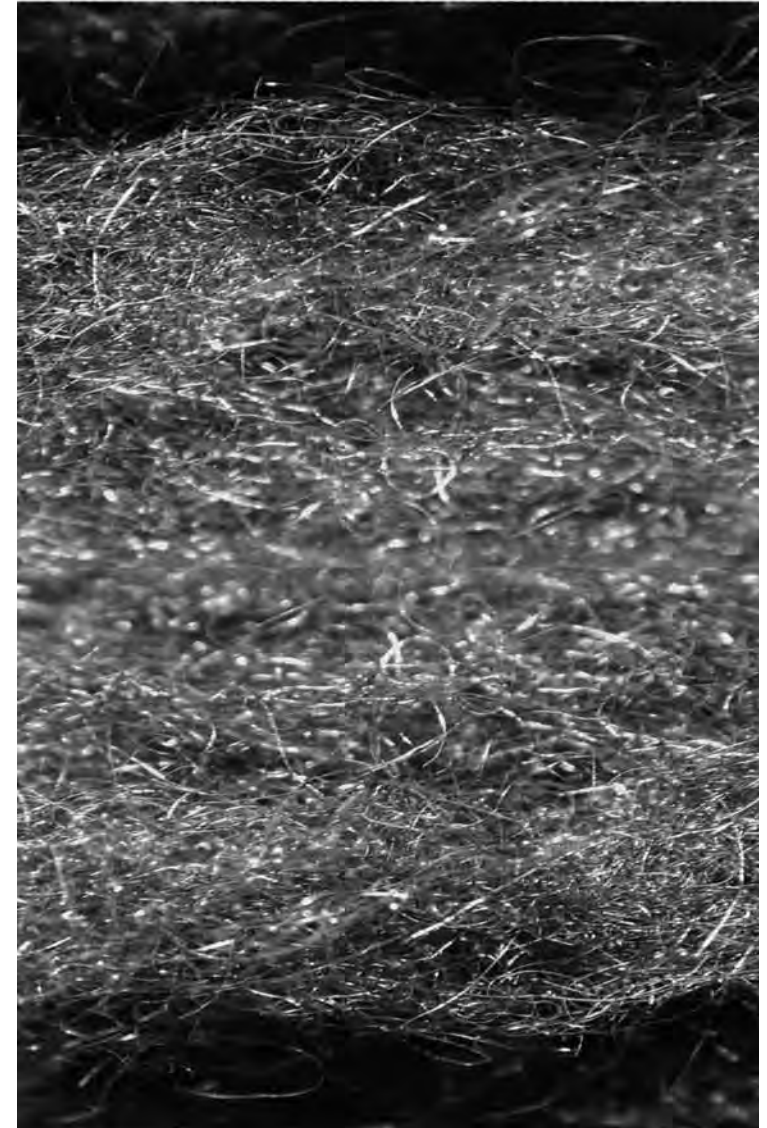
and tactile object, inviting you to explore its shape underneath by touching and grabbing the pieces that were sticking outside. Thus people could experience a whole new way of discovering an object when blindfolded and not aware of its shape.



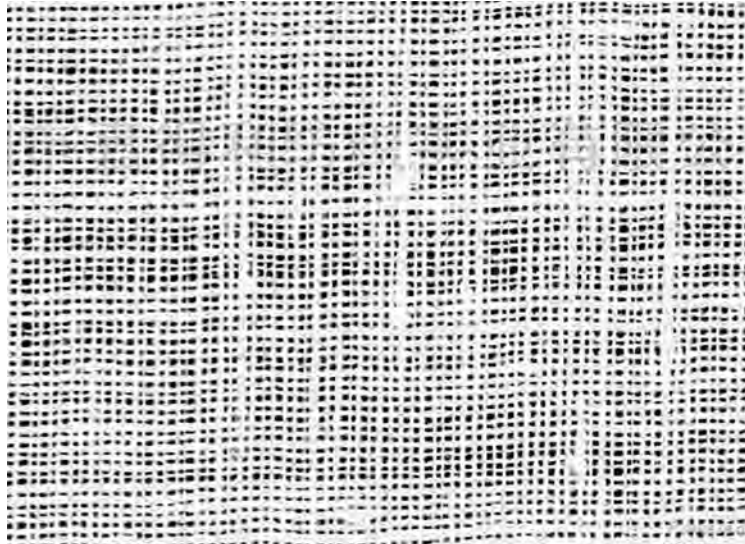
1

1. Rubber- This material comes from a tree and is collected primarily in liquid form prior to its hardening. Its elasticity is it's most sought after property as it really offers many fields of use such as the car industry or the office supply industry. It's texture feels soft but also quite rigid. You immediately feel the elasticity and also it's somewhat porous consistency especially when stretching it.

2. Steel wool - Being a very light, it has very interesting and particular properties. This makes it versatile and wonderful to use. It feels quite unpleasant since it can be confused with paper strings but not nearly as soft. Rubbing your skin against it can cause some serious rashes and bruises. The perfect word to describe this material is "scruffy". It looks and definitely feels that way.



2



3.
Linen-
This fabric feels very interesting to the skin since it is very airy and supple. We wear it in summer because it creates a sense of ease and is generally nice to touch because of its lightness. A very important aspect of it is its composition which originates from the fibers of the flax plant. It is also one of the oldest in world and mummies were wrapped in it. Unfortunately quite un-elastic.

3



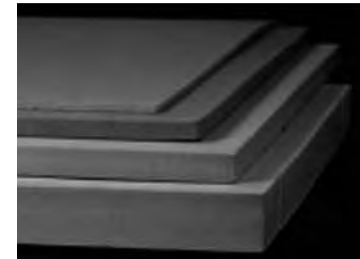
4

4.
Paper mash
This material composite is very special indeed. It combines the agility of paper and a surprisingly significant amount of rigidity. Initially masks used to be made with it but it again outgrew its primary use to be part of many inventive applications such as this bowl above. It feels a lot like normal paper except that it's more rugged and also thicker somehow. Definitely a must for a designer.

5.
Velcro -
Inspired by nature's burr's, this material imitates the seeds from rockburys as they attach themselves to animal fur or any fabric and are very hard to remove. There are 2 sides to it: A hook side and an attach side. For now more than 62 years this product has revolutionized some of our habits. The feel of it is also gritty and itchy thus making it something you don't really want to touch.



5



6

6.
Foam- The cellular composition of this material is rather interesting because small air pockets trapped in a liquid or gas forming the usual structure of this soft substance. When touched it feels like there are tiny little cubes, slightly rugged but still quite soft and cozy. Its use is widely spread since its not too expensive when used in combination with regular wooden furniture for example



7.
Styrofoam -
It is a material that has a lot of different uses. A truly genius invention, it serves especially as an insulator nowadays in any field that needs this kind of property. The general feel of it is quite fuzzy, somewhat unstable and also very dense. When touching it you can feel very well that it's synthetic. Personally it's not very pleasant to the skin but some find it very nice to touch.

Understanding Space through Sound



For my project, I have been looking for a way to make space understandable through only our sense of hearing. How can we sense space through sound?

There are two degrees of listening: listening to sounds and understanding the meaning of a message. I worked with both degrees: by creating sounds 'in itself', and at the same time these sounds in itself form a message about the meaning: of the space: about it's size and materials.

Sound is vibrating waves transmitted through solid, liquid or gas material. It needs both space and time, as it comes and goes from the source to the ear and back.

It can therefore not exist without space. But can space exist without sound? Is space something intangible we could only experience entirely through sound in stead of with our visual or tactile perception?

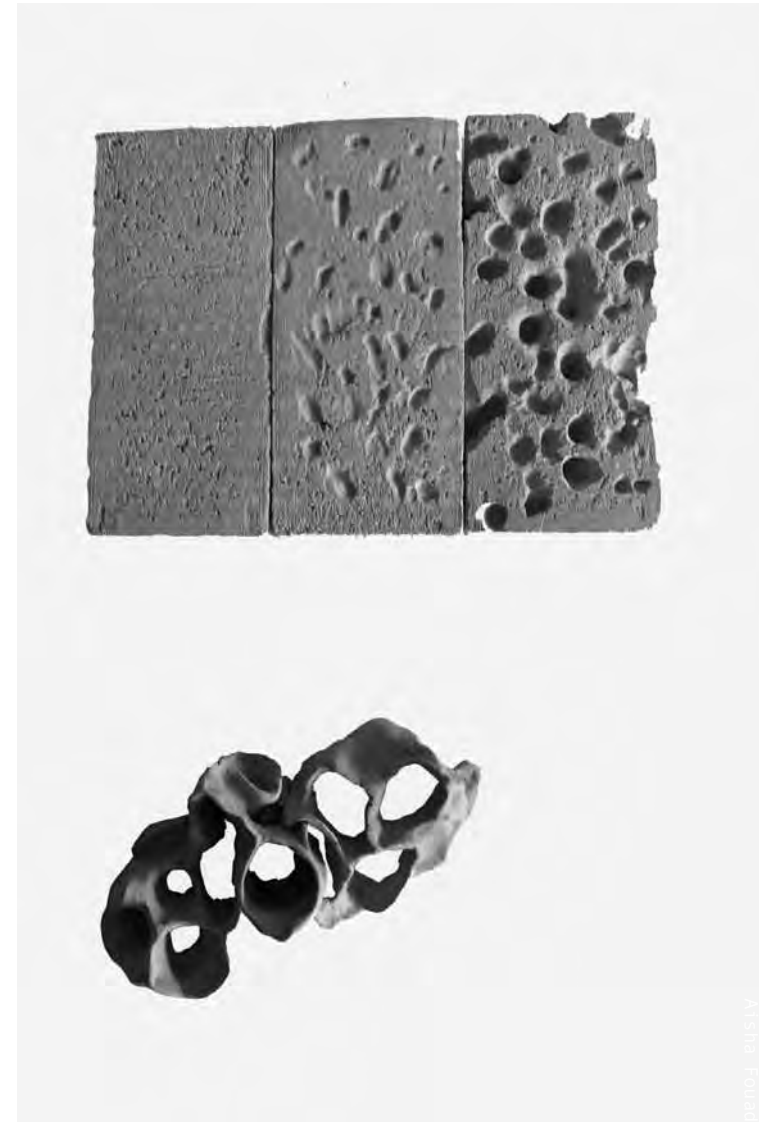
Because if you think about it, you cannot really 'see' to 'touch' space, only the obstacles within it. Our visual and tactile system cover only one dimension. There is no time involved as it is 'immediately' there. This motion of sound through time adds an extra dimension. And this leads to a more specific question: is sound the best way to experience space?

I think it is. Sound can make us understand everything that is present in the room, including 'invisible space'. What we see as 'empty space' but is in fact gas material that transmits sound waves.

I tried to create a universal audible language by mapping out the contours of the obstacles within a space as well as the 'empty space'. I used rolling objects that travel through space alongside materials that can give us direct information about the situation of the space, the size of it and what materials the obstacles consist of. Including the sound of empty space.



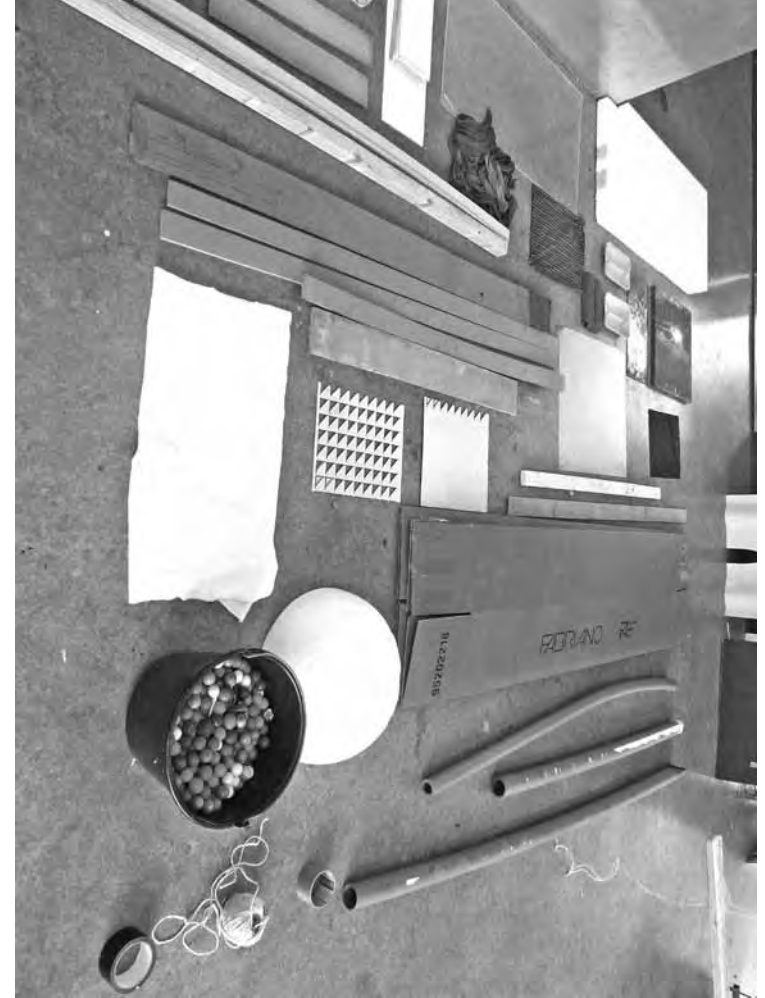
1. All senses contribute to our perception of space
2. What does brick test like?



2



3.
What if I
could create
A univer-
sal, audible
language
To explain
space?



Garden of Odor



1

For a couple of lessons we had a discussion about 'haptic', we read articles and the awareness of the importance of haptic architecture came. In these times visual is the most important sense in architecture. We forget about the other senses, although they're very important for being and feeling good.

Our course was all about the other senses, the feeling, how it smells, tastes, sounds... For me it was also about how it

1.
It speaks
to your
imagination.

makes you feel, about emotions. A feeling that is caused by a memory, by a atmosphere.

"Smells like home" is often said. And it's true. We are able to recognize places from our memory through smell.

Incense is known for the fact that it gives people rest and warmth. Not all the incense are the same. I did some research about the feelings that it evokes. There are hundreds of different smells, which all can cause some feeling or mood. But what does it mean for me? What do I want to accomplish? I came to the conclusion that I wanted to give people a happy and peaceful feeling. A place where people feel good, where they can dream.

Something that can give me the feeling of rest and peace are the trees, sun, grass, birds... nature.

I made a garden out of wooden sticks. It was something that intrigues me because it can move so subtle and I could fill up a space with very little material. The feel-

ing and the sound were very nice. I tried to reach the feeling that you where walking into a field of corn, where you get a bit lost. The sticks made me feel good. How they seem to work together and move slowly in the wind. Together with the incense the concept of a calm and peaceful place became even stronger.

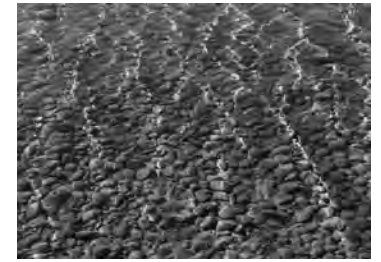
1.
The feeling,
the smell,
the many
dimensions.
2.
Staring,
feeling the
warmth, lis-
ten, smell.
3.
Transparent,
but reforms
sights be-
hind it.
4.
They act
differently
when they are
together.



1



2



3



4



1

1.
What if... We are one of the little animals that live in the grass. How would we react on the big blades surrounding us?

2.
Walking bare feet, leaving forms behind.

3.
Different form, a different background.



2



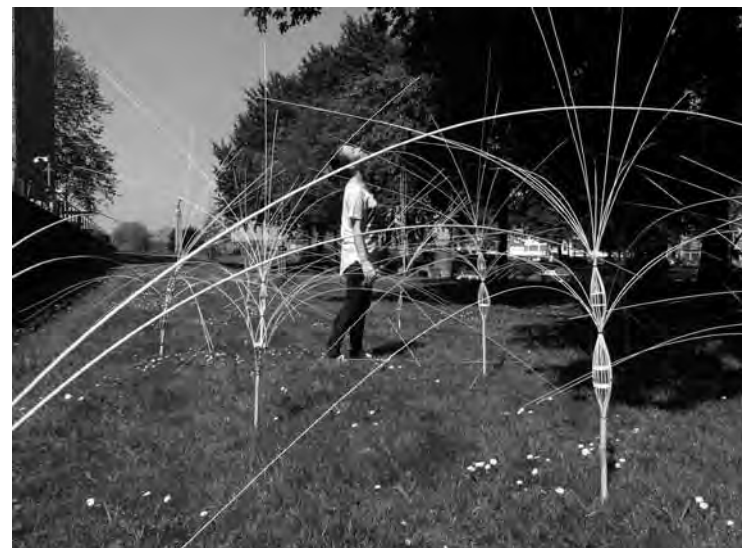
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4.
Odors are important for a good feeling or remembering spaces from the past. Smell is very personal.

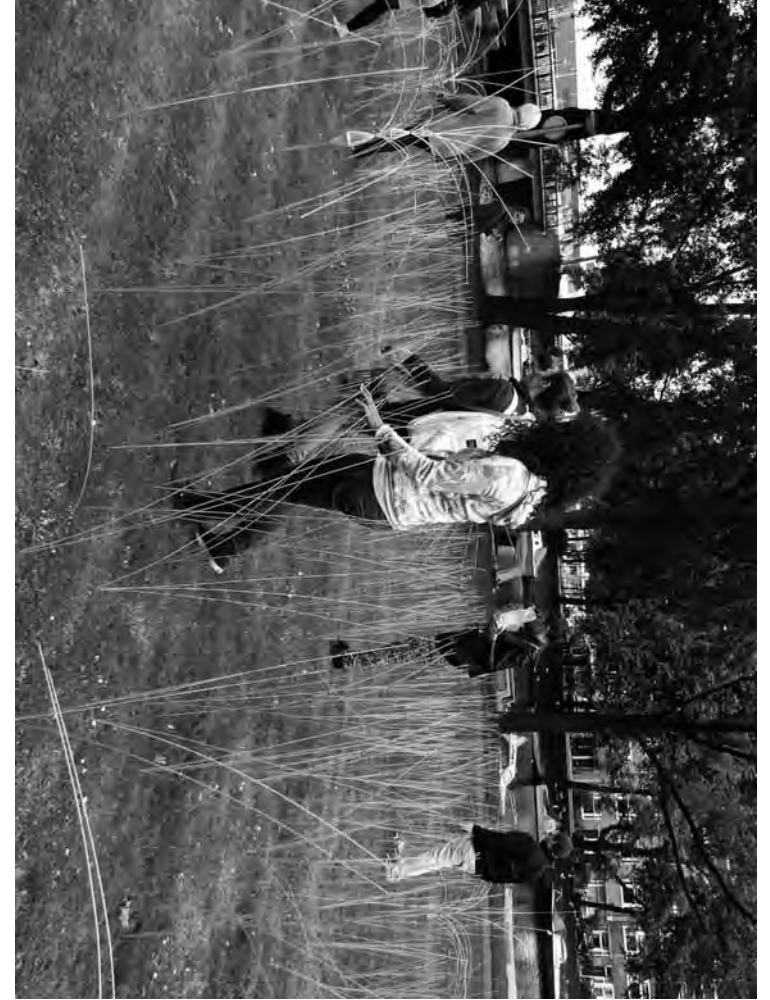
5.
You can follow your own path. Will you go where you think it smells good?



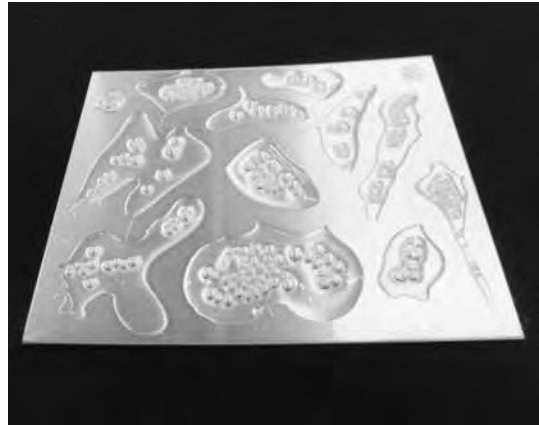
4



5



Prayer Installation



1

Haptic installation is an installation that you have to feel. It isn't important how it look. You have to feel it with your other senses. Though, smell, taste and hear.

I made an installation which on the one hand has to do with my research of materials and on the other hand, an important need, desire of mine.

My materials research is focused on contrasts between materials. For example, a combination between sharp & soft

1.
Hard, cold
aluminium
vs warm
soft glue

materials. This effect is surprising and tangible. I investigate how you get to a design by using your other senses and was inspired by the book, the eyes of the skin by Juhanni Pallasmaa where he talks about our senses and that the sense seen is considered important in the architecture and design world. On the outside of the installation I used cold and hard tin plates with a consumption print. This camouflages well and represent the outside world where we live. The inside you are surrounded by soft white fabric and it feels pleasant. The connection between the tin plates are made with tyraps.

As Muslims you pray five times a day and it often happens that I do my prayer at school. But there was no room available for me for this. That's why I combined the installation with my need for a prayer room. You can see different shapes on the outside which represent the prayer movements inside. It has an opening on one side and a round opening at the top so you get natural light. The senses I used are feel and hear.

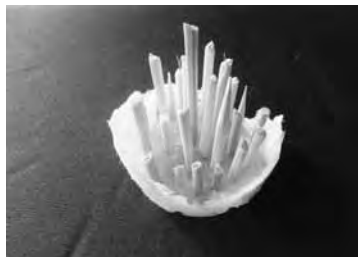
You can feel the different materials and you can hear the crackle of the tin plates.

I'm happy with my installation, it wasn't important how it looks but it's quite impressive. And most importantly, I now have my own space I can always use when needed.

1. Soft textile vs sharp plastic.
2. Wooden sticks vs flexible silicon.
3. Aluminium vs wool thread.
4. Sharp cold ceramic.
5. Light foam with elastic.
6. Layers of thickness vs soft & hard materials.
7. Soft, gelly vs plastic.



1



2



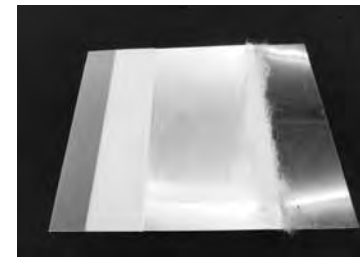
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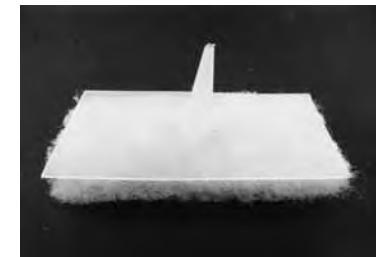
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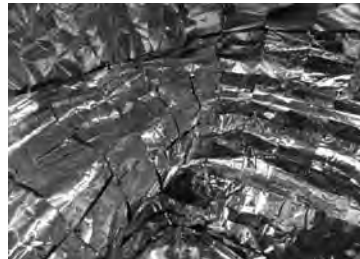


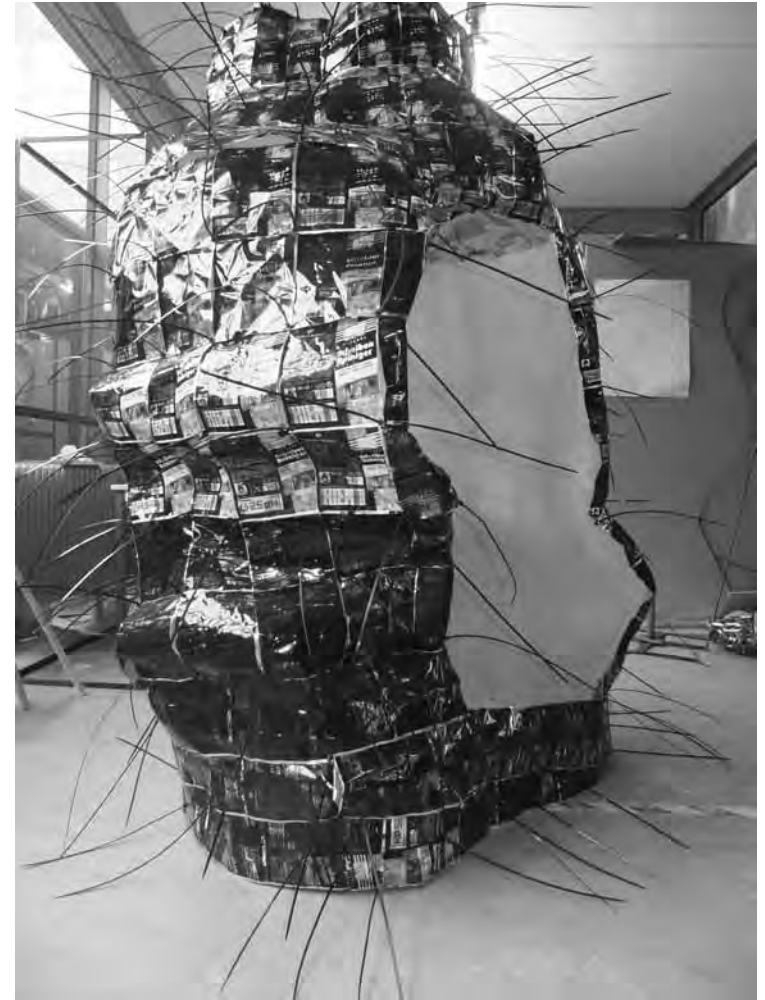
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7

Building Stages







Colophon

Insight Series #4

Haptic installation

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