

Pi, sculpture serie by Ilhan Koman

ELVIRA KOMAN

---

## The museum

My master thesis will focus on how to create a museum with an architecture that is experienced with the senses. The museum will house the sculptures of the artist Ilhan Koman and the location for the museum is on Drottningholm, Stockholm. The project will be made in the studio Building and Tectonics through research by design.

Sensibility, tension and presence are three aspects I think are important for generating a multi-sensory experience of architecture, an atmosphere and are words I want to explore within the field of architecture.

## Index

Introduction	p. 1-28
Volume	p. 29-35
Diagrams and drawings	p. 36-45
Light	p.46-73
Material	p.74-91
Materiality	p. 92-109
Importance of detail	p.110-117
What it stands on	p.118-135
The dramaturgy	p.136-151
Reflections	p. 152-161
References	p.162-163



Ilhan Koman working on his sculpture "Medelhavet" or "Akdeniz Heykeli" in the late 70s

Research question - Master thesis

How can architectural qualities help create an atmosphere and an experience for the senses

How can my museum, its situation and its objects create an architectural experience together



Ilhan Koman working with an iron sculpture in Drottningholm, around 1960.

An investigation of the sculptures' relation to space and atmosphere.

Through this exploration I will investigate the relation between the sculptures and space and atmosphere. It will end up with a catalogue for me to use as a tool when starting to work with the museum, a pre-study and inventory

The aim with this investigation is to focus only on the sculptures and their relation to space with its many aspects. My ambition has been to try to separate it from associations with the actual museum.



Indian institute of management Ahmabad, Architect Louis I. Kahn

## What is atmosphere

Zumthor explains the atmosphere in a concise and pertinent way. (Zumthor, P. 2006) He divides the aspects that create atmosphere into nine chapters which each are thoroughly explained. Some of them are more abstract than others but even the most abstract aspects are very easy to recognize and sympathize with. For example the sound of people around you, talking but not to you, the sound of activity in a public space that does not concern you but still are recognizable for you. That is a situation all can relate to, yet it is harder to define what gives the feeling of the space, is it the life and activity or is it the buildings around you or the bench you are sitting on.



Floating roof, Dobrava, Slovenia. Architect: Oton Jugovec

Atmosphere according to Peter  
Zumthor:

The body of architecture  
Material compatibility  
The sound of a space  
The temperature of the space  
Surrounding objects  
Tension between interior and exterior  
Levels of intimacy  
The light of things



The Condestables House. Architects: Tabuenca & Leache

The experience of architecture through your senses.

Pallasmaa writes about the focused and unfocused vision. (The eyes of the skin. 2005) How the things you unconsciously perceive can have a bigger impact on the overall impression than the things in focus. He argues that architecture today is so occupied with pleasing the focused vision that the aspects perceived in the periphery get lost. That what we sense through our peripheral perception makes us part of the situation instead of only observers. Further on he talks about how the architecture is more than what an image can give us. That visual images isolates architecture and exclude other sensory aspects.

In order to reach other senses than only the visual, this exploration uses analog methods and physical models. Even though it is on a different scale the experience of the material and relation between different parts in the object is more present when you can feel, touch and come close to it in reality.





Stone pillar, Sulemaniye Mosque, Istanbul

## Architecture that trigger our senses

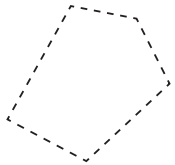
The experience of architecture is something that happens between you and what you perceive. What defines it can be small or big, it can be abstract or more concrete. For someone the impression of a space can be defined by the warm temperature and humidity in the air while for another one can be the feeling on the fingertips when touching the surface of the wall that sticks to their mind. The way architecture is experienced partly through our associations and memories makes it personal and mystical and unpredictable you could say. But what we can predict is how to make architecture that can trigger our senses. Pallasmaa compares architecture with the cinema, how a world is created by fragments of a context in the movie together with the imagination and personal associations among the audience.



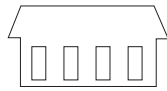
Old stone building on shipyard in Beyoglu, Istanbul.

*"The way spaces feel, the sound and  
smell of these places,  
has equal weight to the way things  
look."*

(The eyes of the skin. Juhani Pallasmaa.  
2005)



The location



The building



The sculptures

---

### The situation

The place, the building, its objects and the architectural values/aims

Together they create the starting point for the project.



The sculptures' relation to space and atmosphere

Light  
Touch  
Weight  
Emotion  
Smell  
Material  
Position

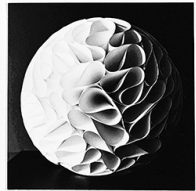
Contrast  
Scale  
Light  
Expression  
Movement  
Sound  
Texture



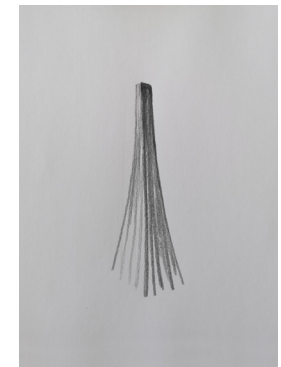
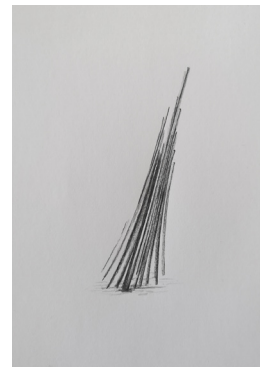
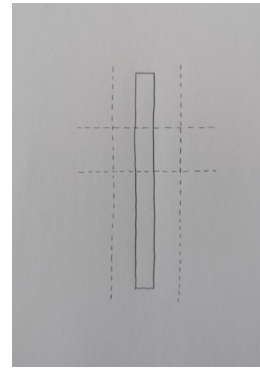
$\pi + \pi$  John Proulx



$4\pi$



$\pi + \pi + \pi + \pi +$

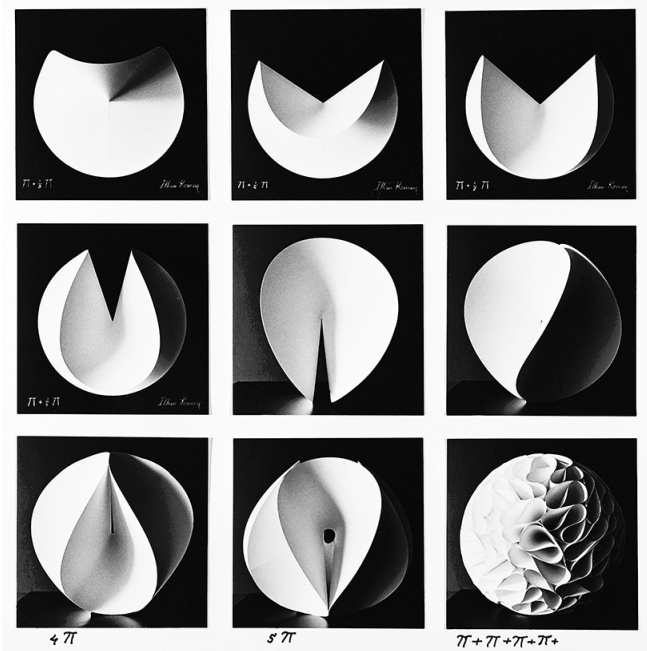




Iron sculpture

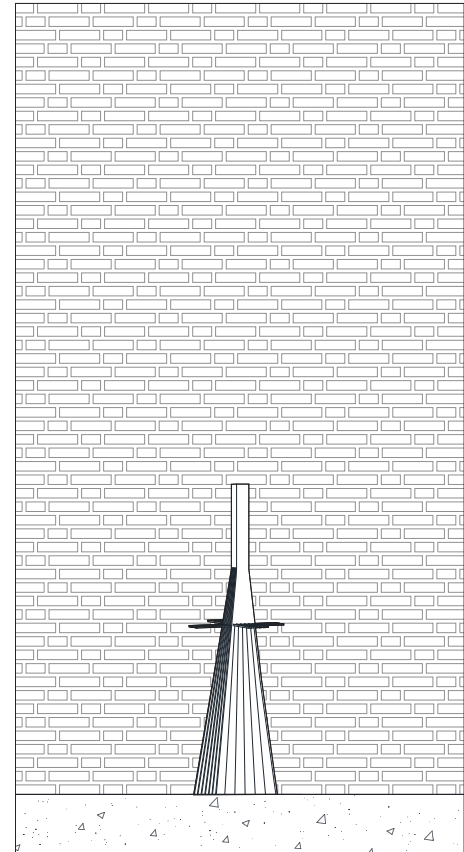
Calm  
Balance  
Mature  
Weathered (sv: vittrad)  
Lonely

"An old wise person" or  
"a surprised abandoned person"



Pi

Balance  
Softness  
Tension  
Fragility  
Organic  
Weightless  
Precise



Volume





Physical models representing the iron sculptures, scale 1:20

### The iron sculpture

These sculptures Ilhan Koman made during his Iron-period, the sculptures from this 10 year period were a lot about bending and forcing the hard and rough material into something soft, without losing the hard character of the material.

The contrast from the light is important, as well as the shadows that help get a sense of the volume. The light exposes the shape and volume and invites the viewer to come closer to experience it from another scale.



Physical models of the Dervish in cardboard, scale 1:20

## The Dervish

The Dervish (the wandering man) is a sculpture made in wood. It is important to show the vibrance, the movement in the sculpture, and the softness in the bent material at the same time as it is thin, elegant and fragile.

The pictures to the right shows the sculpture in different light settings. The walking man needs space around it to move and a soft light to show the wood. I think the shadows could help highlight the movement and the association with a dancing dervish but it is not the main focus.

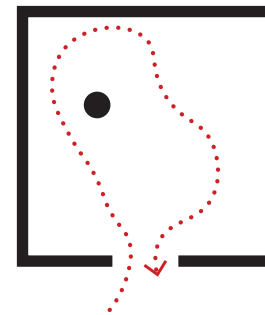


Physical models of Pi, scale 1:2

## Pi

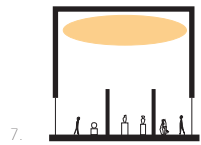
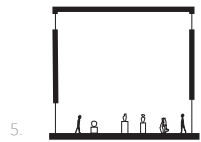
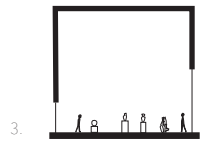
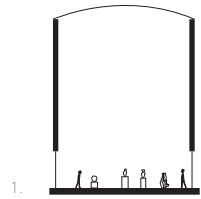
To the right shows parts of the sculpture series "Pi" with the effect of the contrast in the background not achieved by light but by the colour of the surface it is placed on.

The background helps display the lines of the sculptures, but with a too dark background the shadows that give sense of the volume disappears in it.



Iterations #2

Diagrams and drawings



Sections showing light openings

1.  
Even light  
Neutral light  
Light from above  
Big space  
High ceiling  
Free composition

2.  
Even light  
Neutral light  
Light from above  
Free composition

3.  
Back light  
Long shadows  
Big space  
High ceiling  
Free composition

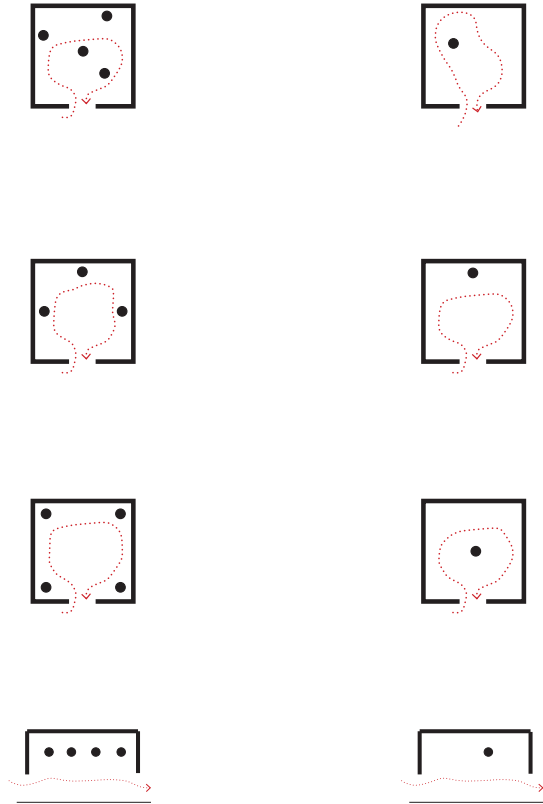
4.  
Back light  
Long shadows  
Free composition

5.  
Daylight from both  
directions  
Indirect and direct light  
High ceiling

6.  
Daylight from both  
directions  
Indirect and direct light

7.  
Daylight and artificial light  
combined  
Light differences in space  
Indirect light  
High ceiling  
Divided space

8.  
Daylight and artificial light  
combined  
Light differences in space  
Indirect light  
Divided space

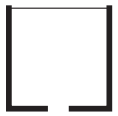
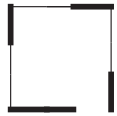
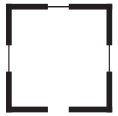
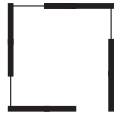
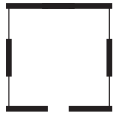
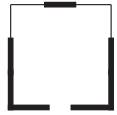


Plan of room and objects

## Position

How the sculptures are placed in the space is part of what defines it, it creates movement patterns for the visitor but also it defines from where the sculptures can be viewed. The shape and size of the room is also an aspect which affects how you approach the sculpture.

Should it be a space where you arrive and can move among the sculptures or where you pass through experiencing the sculptures from the side is a question to ask for each object.



## The light

The light is an essential part in how to orient and lead the movement. It can also be used to make the space be about the sculptures not only by pointing the spotlight to the object but by creating the atmosphere for the sculpture. The light combined with the placement of the sculptures has the opportunity to define how the sculptures should be experienced, it is about contrast and silhouette, the surface of the sculpture, the scale of it and its position, the many aspects of the characters in the sculptures can be supported by the space around it and articulated by the light.







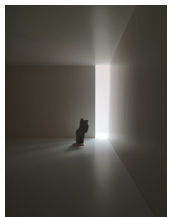
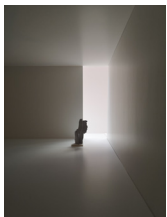
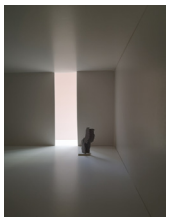
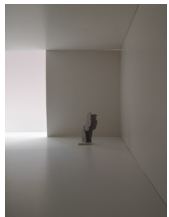
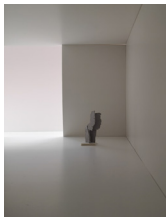
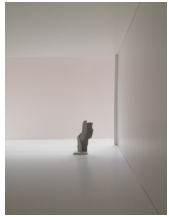
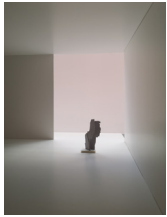
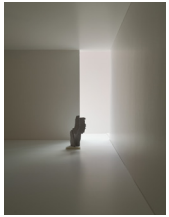
Iterations #3

Light

Elvira Koman - The sculptures relation to space and atmosphere  
ARK258 - Matter, Space, Structure 3

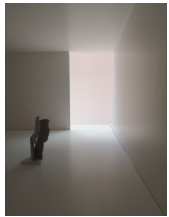
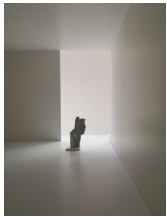
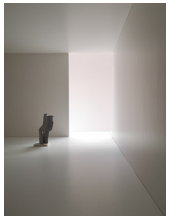
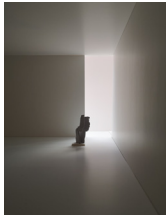
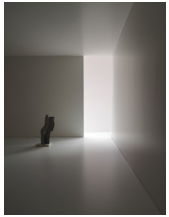
*"Shadow gives shape and life to the  
object in light."*

(The eyes of the skin. Juhani Pallasmaa.  
2005. p.47)

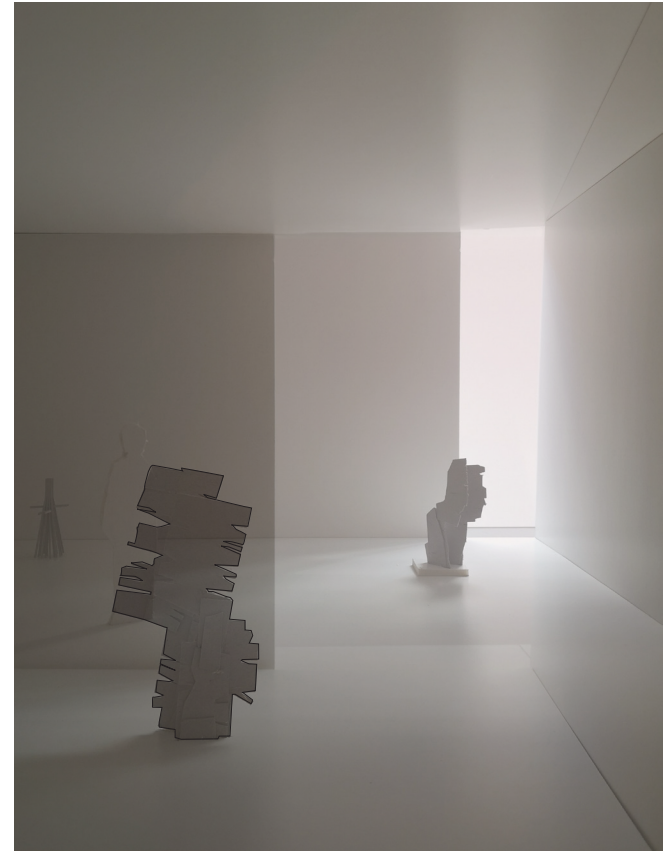


Light openings



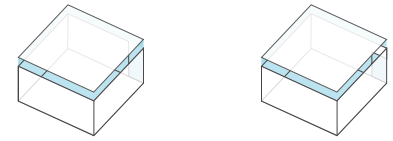
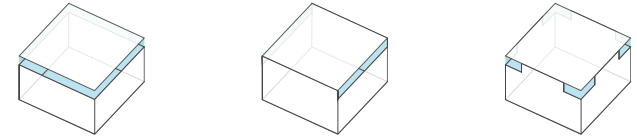
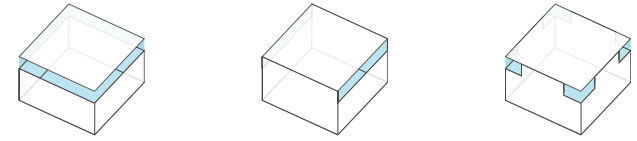


Position in light



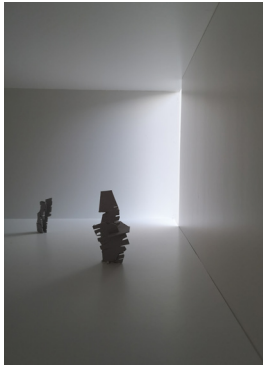


Light from above

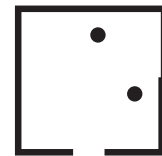
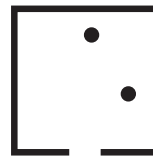
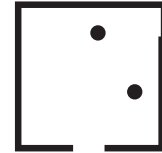
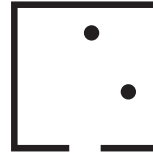


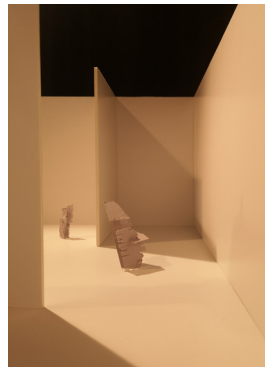


With an outside motive

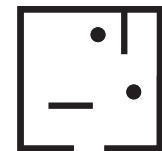
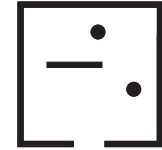
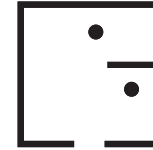


Light from the side





Dividing space





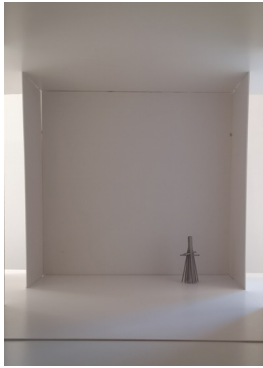


## Light and shadow

The light from the side can give the same contrasting effect as the back light. The effect of the light can be even stronger if the opening is kept thin. For the iron sculptures the silhouette is important and the contrast by the light can be a way to highlight that.



Backlight, diffuse



Sidelight, diffuse



Backlight with outside



Light from side and above



## Blending in

The outside can be included in the experience of the room. By opening the walls to nature the outside becomes part of the motive. The Dervish almost disappears in the woods. This does not only camouflage the object in the room but gives a variation in the lightning in the room depending on season, weather and time of day. This setting may suit the iron sculptures in a better way in order not to hide the objects.



Iterations #4

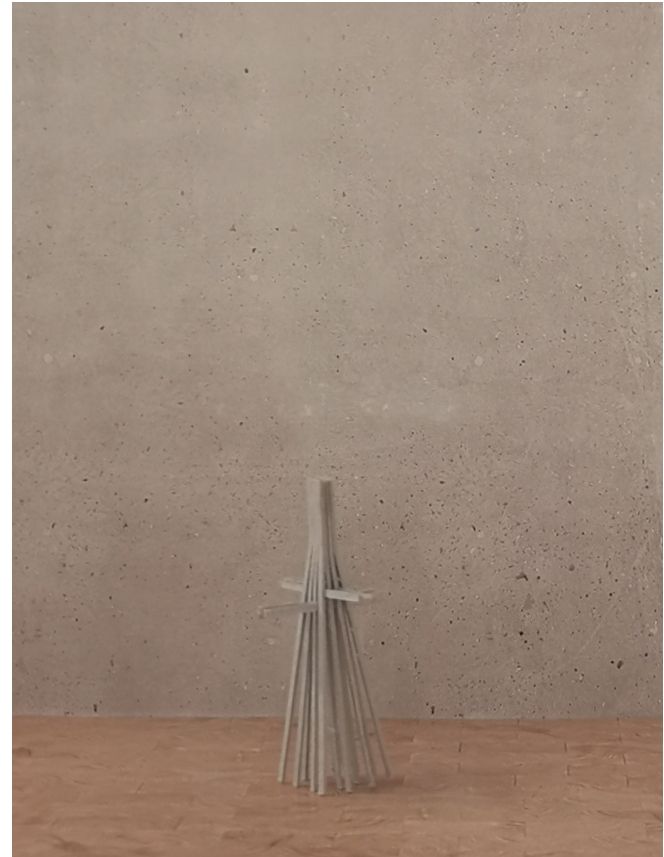
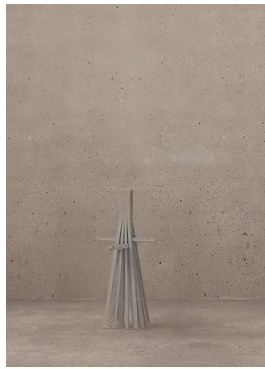
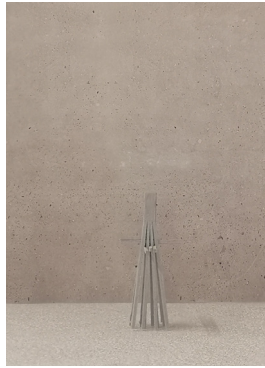
Material

## The material

The material has an important role in shaping the space, not only by framing the room but as something you sense and associate to. The materials can either give materiality and place your experience in a bigger context or it can be anonymous and almost non existing.

With this iterations I have printed out the materials on paper and made physical models only for the visual effect. In the next chapter I start making physical models more accurately representing the materials.





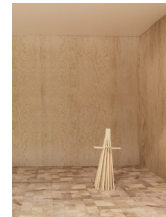
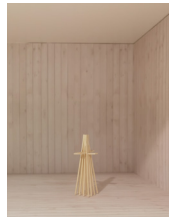
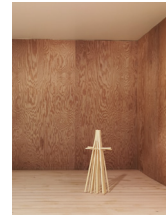
The floor in relation to walls



The floor in relation to walls



The floor in relation to walls



The floor in relation to walls



The floor in relation to walls



The floor in relation to walls



In relation to scale



Iterations #5

Materiality



### Materiality in the material

The materiality is not the same as material. The materiality is when a material can be felt and experienced. In order to explore the material I have made physical models in the scale of 1:15 so that they can be felt by your senses. The iterations are also an exploration in how the different combinations of material gives different experiences.



Brick wall and oak floor, model 1:15



Wall in birch wood and floor in concrete, model 1:15



Wall in planks of birch, scale 1:15



Wall in glass, scale 1:15



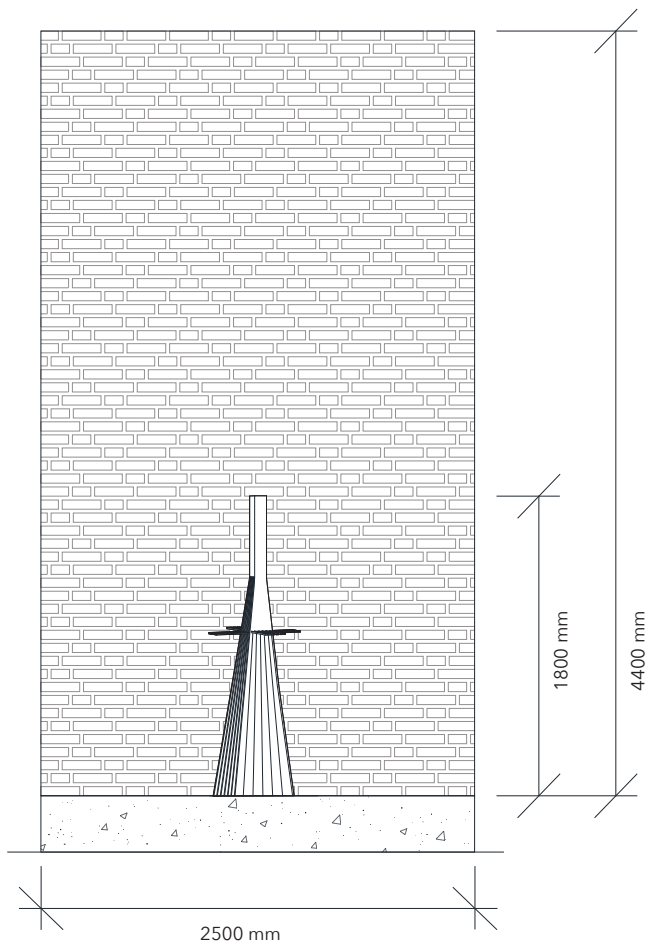
Wall in concrete with and without shadow list, scale 1:15

Wall in concrete with and without shadow list, scale 1:15



Bright grey bricks, scale 1:15

Red bricks, scale 1:15



### The relation to the object

The materials of the room relate to each other but also to the objects in the room. The pictures show different combinations of the wall and the floor. In the pictures on the next page the same combination is shown but with another sculpture. When comparing them, the relation between the different materials becomes obvious and the space in relation to the object is clear, the object becomes part of the experience of the space.



The material in relation to the sculpture







Iterations #6

The importance of detail



### Materiality in detail

To achieve materiality in the materials the details has to be cared for. Different materials have different utilities and are therefore solved with various detailed solutions. But the details can also be made to achieve something more than the technicality. A meeting between the wall and the floor can be made to cast a narrow line of shadow along the corner. The end of the wooden planks in the floor can be hidden in a small slot in the concrete wall or the finish of the wall surface can be made in a certain way only for the experience when touching it and with no other reason. In this chapter I have explored some of the details.



Shadow list in concrete model 1:15

### Care for the detail

I think the details are very much based on the materials you work with and therefore this investigation is more as a glimpse which has to be explored further with the materials I decide to work with for the museum. But the importance of the detail is something I want to state with this chapter. The way the details for each material and function can bring something to the room but also the way the details can be used to show the caring for the space and the ambition of shaping something for the visitor to be in.



Physical models 1:15







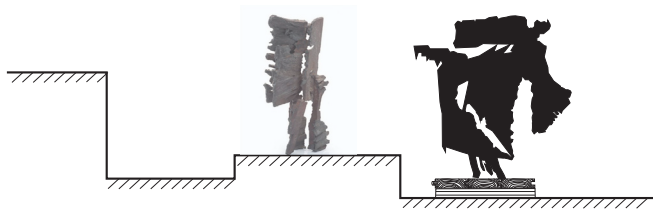
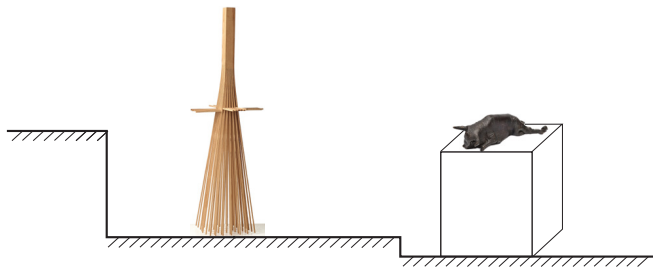
**Iterations #7**

The base and how the sculptures are ensembled



The relation to other materials





Section of levels

### The height of the base

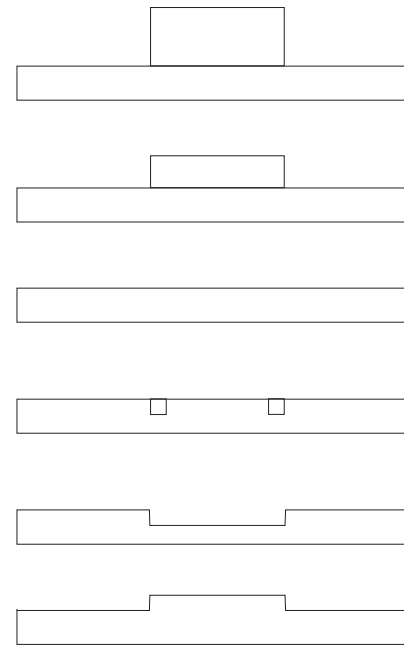
What the sculpture stands on affects how the sculpture relates to the room but also how the art is viewed, it defines from which height it is seen and how close you can get to the objects. The foundation can be loose elements possible to rearrange, but it can also be integrated in the building, fixated permanently, part of the floor.

If using the levels of the floor as part of the base the exhibition area gets fixed and permanent, which could be positive if wanting to shape the space specifically for the objects but maybe too static.

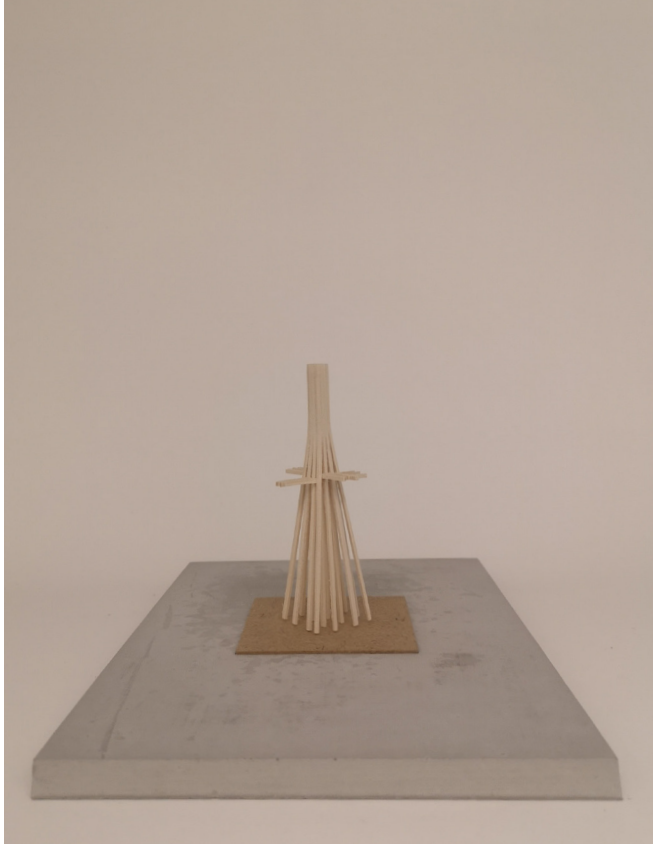


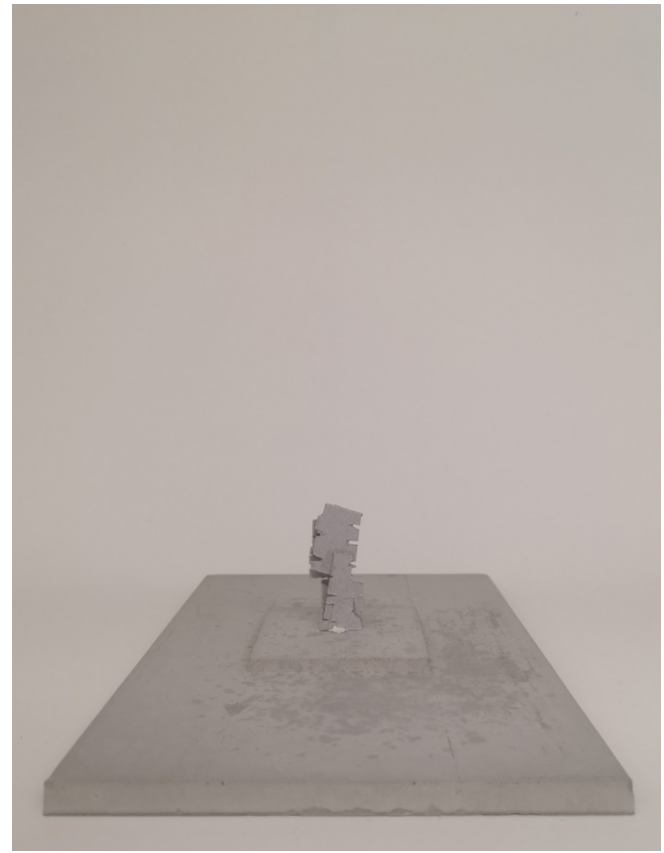
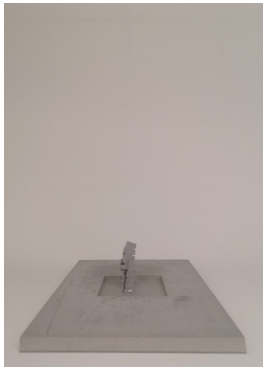
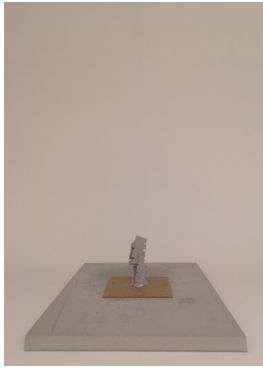
### The material of the base

The material of the base can contrast to the materials of the room or to the sculpture itself, or it could be made to blend in, become part of the object. It could be made to shine in order to get a reflection from the sculpture or more rough to absorb the shape of the shadow from it. All these variables are possibilities to shape the space for the sculptures and the museum.











Iterations #8

The dramaturgy





1950-60	Clay period
1960-70	Iron period
1970-80	Wooden period
1975-85	Science period

### The dramaturgy

The sculptures by İlhan Koman can easily be divided into different groups, both by time, material and character/theme. In his artwork he explored different materials during different periods. Each period and material has its own characteristics but common for them all is how he used the limitations of the material to find tension in the shape and how the curiosity and playfulness is a driving part for his explorations.

In order to arrange a dramaturgy for the exhibition of his sculptures both a grouping for the narrative and an inventory of the sculptures physical needs are necessary.



The bronze sculptures, size 15-35cm

## The bronze sculptures

The bronze sculptures were originally made in clay. Most of them were from a theatre play in Paris where he was asked to make the characters in the play.

They need an even light in order to prevent reflection in the metal and the objects should be placed so that you could walk around to view it. The detail in the surface makes it necessary to be able to come close to it and to place it at a convenient height for the eyes.



The iron sculptures , 60-200cm

## The iron sculptures

The iron sculptures are made by big pieces of iron that are welded together into different figures. The figures are asymmetric and rough but still well balanced through gravity and composition. Some of the sculptures stand on a rough wooden base made of wood burnt with tar. This is something Ilhan used as a base for several sculptures and something that I think should be kept and seen as part of his work.

The iron sculptures come from the first period of his life in Sweden. They are the last sculptures that are more like figures or characters. After this period he started to interest more in wood and his artwork got more and more influenced by geometry and mathematics.

In order to experience the iron sculptures fully a bigger exhibition room is needed and conditions that put focus on the elegant silhouette of the rough sculptures. It is also necessary to make it possible to walk around the sculptures, and to be able to experience them by approaching them, giving them the space to be experienced in several scales. I also think they should be placed in the same room, as a group of free standing individuals either separated or forced together.



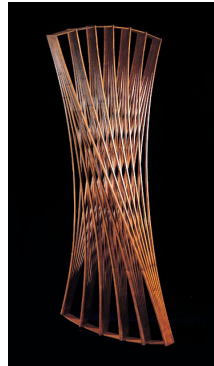
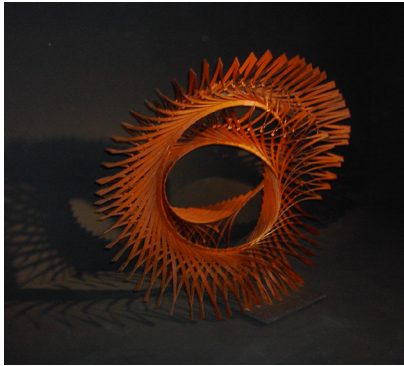
Endless column. 40x3x200 cm.. Response to Brancusi. 19x19x100 cm

## The wooden sculptures

The wooden sculptures are very much shaped by the limitations of its material but still created by the playfulness and exploration. Some of them are made only by testing the material and some of them are made by mathematical calculations. A lot of these sculptures have the shapes we more often see now since the digital tools for parametric design are accessible. But his work is made by hand and with the material as the limitation and not the computer. I think there is something that happens when the material is part of what gives its shape, the material becomes part of the sculpture.

The wooden sculptures are in very different sizes. But I think the main focus for them should be to see the full figure of them, it is the shape and balance in them that are important and not the close up detail.

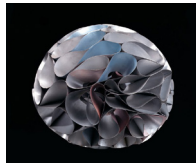
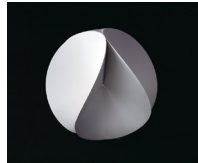
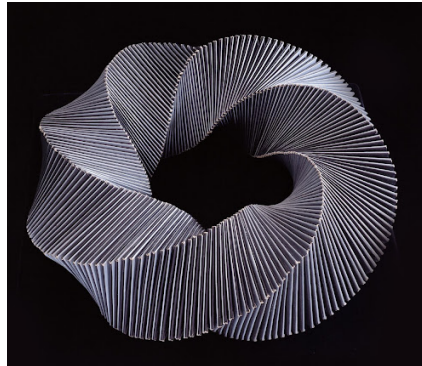
In order to show the shape and volume the background of the object is important, it should be materials that do not camouflage the sculpture and the light should be soft to not disturb the thin wooden pieces of the geometry.



Size approximately 200-300 cm

### The wooden sculptures

Some of these wooden sculptures were later on made in titanium in order to stand the outdoor climate when used as public art. When looking at them in the original material and comparing it to the ones in steel I think it is obvious how the sculptures lose some of their dynamic and life when changing material.



Size approximately 15-50 cm

## The Scientific sculptures

In the last period of Ilhans life he put a lot of interest in geometry and mathematics, wind and movement. He investigated the subjects practically through models. These sculptures are sometimes more design objects than art objects, they are more anonymous and less personal one could say. But they are still an essential part of Ilhans art work and represent his connection to science and engineering. These sculptures are not as big as the others and they have different needs, some are moving and more with a mechanical focus and some are transparent and hanging from the ceiling.



*Reflections*



## Conclusions

The result of the investigation is the catalogue I have made. The conclusion by this exploration is not a definitive answer but an orientation in both the art work of İlhan Koman and its relation to space, and in how to explore architecture for our senses. In order to invite senses that may not be included when only looking at something through our digital screen or a two dimensional print a lot of work has been put on making physical models. As an answer for my investigation of the sculptures relation to space I have summarized some of the conclusions from my material.



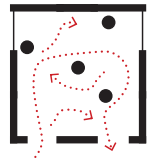
1.



2.



3.



4.



5.

### The iron sculptures

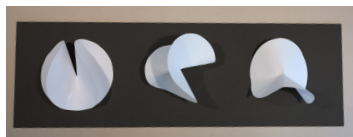
The iron sculptures should be placed in groups. (4) They should be positioned so that the viewer can approach them and experience them on a different scale. The silhouette of the sculptures are important and that can be created either by backlight or sidelight. The openings for the daylight do not need to be big, sometimes the effect can be even bigger if it is kept small. (3) The original wooden base should be kept for those that have one. For the other sculptures, they should stand on the floor directly. (5) In order to meet the rough material the floor should be in wood, that can give softness. (1, 2)



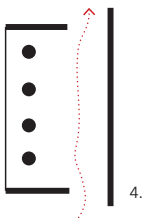
1.



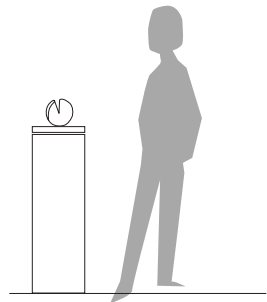
2.



3.



4.



5.

## The Pi serie

To make the shape of the sculpture series Pi visible they should be placed with a background that contrasts to the white colour. (3) But in order to make the shadows visible the background can not be too dark. (2) The Pi sculptures are quite small and they need a base to stand on. (4) Wood would be a suitable option in terms of colour. The globe shape of the sculptures has a diameter of 13cm and the series consists of 10 objects. With the shape of the sculpture and the small size of it they do not need to be placed with access from all directions, the shape and character can be viewed from one direction and from above. (3 & 4)



1.



2.



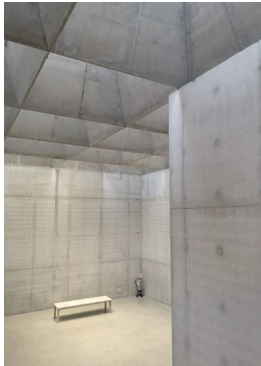
3.



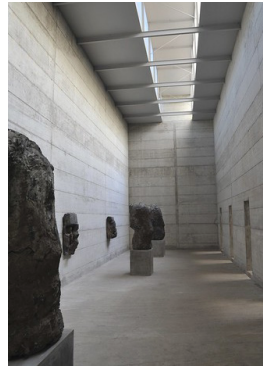
4.

## The Dervish

The dervish needs a wall behind in order not to disappear in the background. (1 & 2) The shadow can be associated with a dancing dervish. (4) The shadow also helps to bring movement in the sculpture. (3) Important for the dervish sculpture is to have a floor with an even surface so that the sculpture can move on the floor. Even if it will not actually be in movement the feeling is still there if the space allows it to.



Liljewalchs extension, Gert Wingård  
Stockholm, Sweden



La Congiunta, Peter Märkli.  
Giornico, Schweiz



Giacometti Gallery - Jörgen Bo & Wilhelm Wohlert. Louisiana, Denmark



National museum. Stockholm,  
Sweden

## Bibliography

Pallasmaa, J. (2005). *The eyes of the skin : architecture and the senses (2. ed.)*. Wiley.

Pallasmaa, J., McKeith, P., Tullberg, D., & Wynne-Ellis, M. (2012). *Encounters : architectural essays (2. ed.)*. Rakennustieto.

Zumthor, P. (2006). *Atmospheres : Architectural environments ; surrounding objects*. Birkhäuser

Ilhan Koman. *Retrospektif/retrospective*. Istanbul, Yapi Kredi Yayinlari (2005).

Kertsin Koman. *Koman*. Kalejdoskop förlag AB (1994).

Sasioglu, T. (2020) *Building with presence*. Chalmers tekniska högskola / Institutionen för arkitektur och samhällsbyggnadsteknik (ACE) Examensarbete för masterexamen.

Eliasson, A. (2021) *Scenic presence*. Chalmers tekniska högskola / Institutionen för arkitektur och samhällsbyggnadsteknik (ACE) Examensarbete för masterexamen.

Conversations with the sons of Ilhan Koman; Ahmet Koman and Korhan Koman

Personal participation in Hulda Festival, a journey into art and science, with the work of Ilhan Koman (2005)  
<https://vimeo.com/192102642>