

THE HALL OF THE MOUNTAIN KING



GABRIEL DANIELSSON
MATTER SPACE STRUCTURE 1
2022 JANUARY 09

SHORT PROJECT DESCRIPTION

This project is the creation of several visionary images of grand rooms carved out of the context of a mountain. The starting point for the project was the fictional setting of the Hall of the Mountain King, and befitting a king, I chose the site of *Skansen Kronan* in Gothenburg.

Since the topic of this studio is *Out of Context*, I decided that this project should adhere to the theme by both being carved out of the context of the site and by deriving the design from elements that I could find on the site. I used the shape of tree trunks for columns, mushrooms for the shape of the inner ceiling and pine needles as both decorative elements, pillars and railings. However I did not only limit myself to the natural elements of the site as inspiration for the design but I also expanded the design field to include music.

The musical piece *In the Hall of the Mountain King*, by Edward Grieg, was of course the first and most obvious starting point. Here I converted the musical phrases to forms by drawing the form that certain tone frequencies generated from so called Chladni plates. The phenomena that frequencies of sound give rise to a pattern is attributed to first have been observed by phys-

icist Ernst Chladni (1756-1827) in his experiment of acoustics. He distributed sand across a metal plate and had it vibrate at a specific frequency, thus producing a pattern. In my design I created a simplified non-chromatic translation of Edward Grieg's music and used it as the pattern for the floor tiles in the entrance lobby.

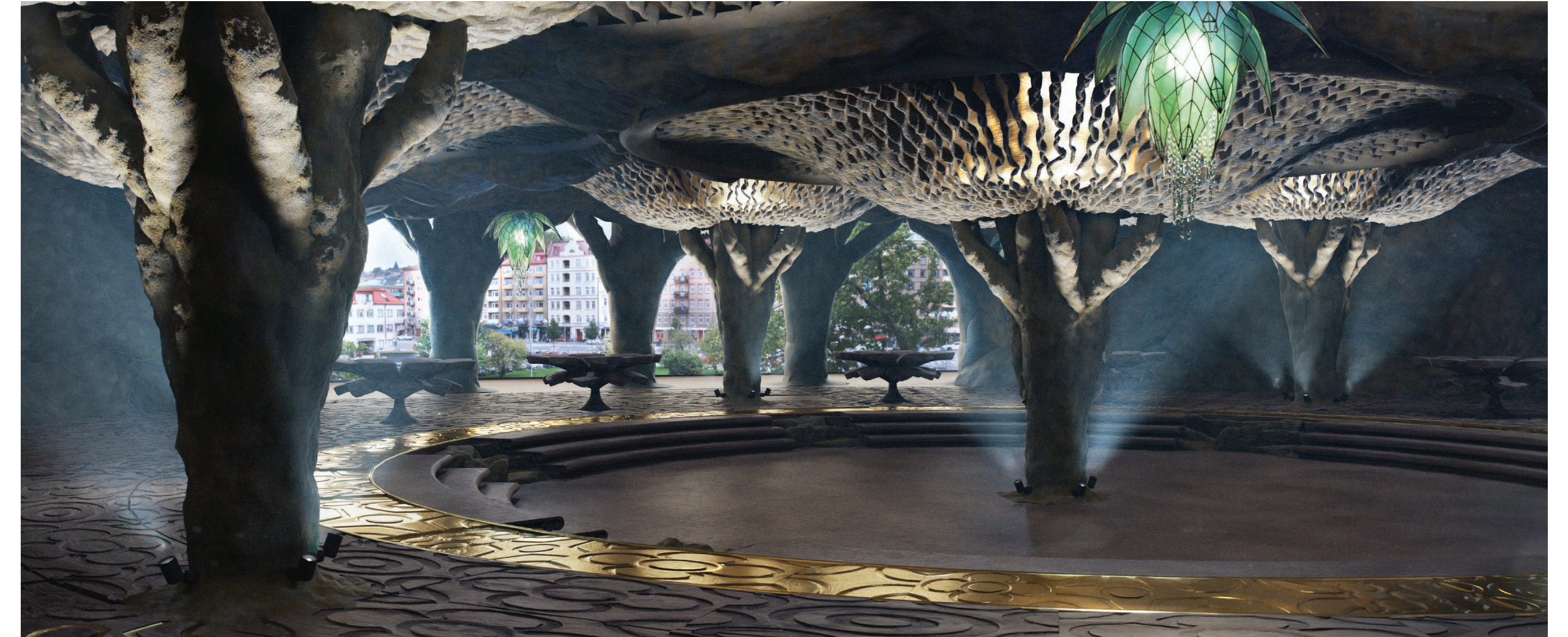
The source of music as inspiration for design was something that I used in the creation of other rooms as well. For example the characteristics of Igor Stravinsky's *The Firebird - the Infernal Dance* and *The Planets* by Gustav Holst was a great source of inspiration for the aesthetics of the grand concert hall.

For the creation of the staircase and the antechamber I used floral elements and pine needles as a design element. The shape of the ramp leading up to the entrance to the balcony designed by taking inspiration from the shape of the cow parsley flower.

In line with the theme, I also created a hybrid drawing. Here I not only made a hybrid by superimposing a drawing of the inner ceiling on the floor, but also in aesthetics and design story.



ENTRANCE LOBBY



The image depicts the lobby, or entrance room where the design was created using tree trunks mirrored along all axis to create columns. The ceiling was designed to be reminiscent of the underside of mushrooms and the benches were made of conifer seed

pods that were cut in half. The floor plates/tiling got their pattern from the translation of the musical theme *In the Hall of the Mountain King* by composer Edward Grieg to Chladni patterns. Out of this room I also created an illuminated drawing.

QUICK INFO ON ERNST CHLADNI

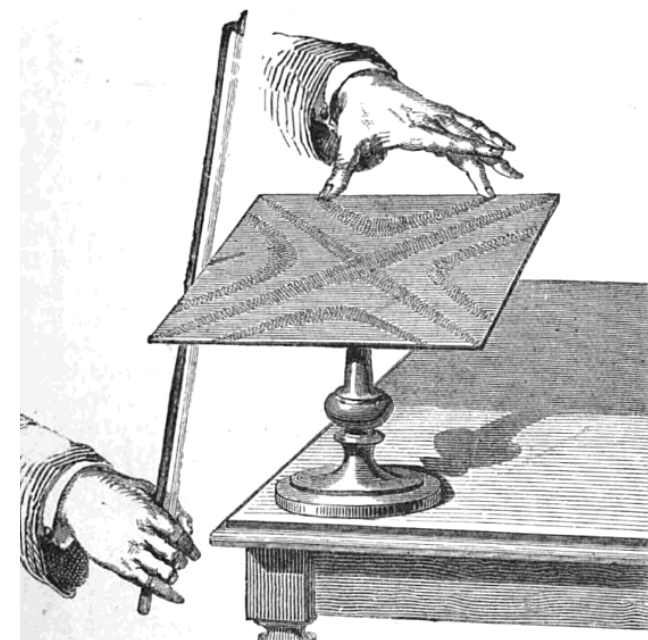
Ernst Chladni (1756-1827) was a musician and scientist within the field of physics and acoustics. He estimated the speed of sound through various gases and developed the Chladni plates where sound waves for a given frequency, in a way, are made visible. He also made pioneering studies about the origin of meteorites.

The Chladni plate is a metal plate that is constructed to resonate at a specific frequency. Sand, or other forms of particles, are spread out across the surface and then a bow is drawn along the plate to make it vibrate. The sand is moving along the most turbulent parts of the sound wave and lying still on the so called nodes. As seen - these patterns can be very complex especially at high frequencies.

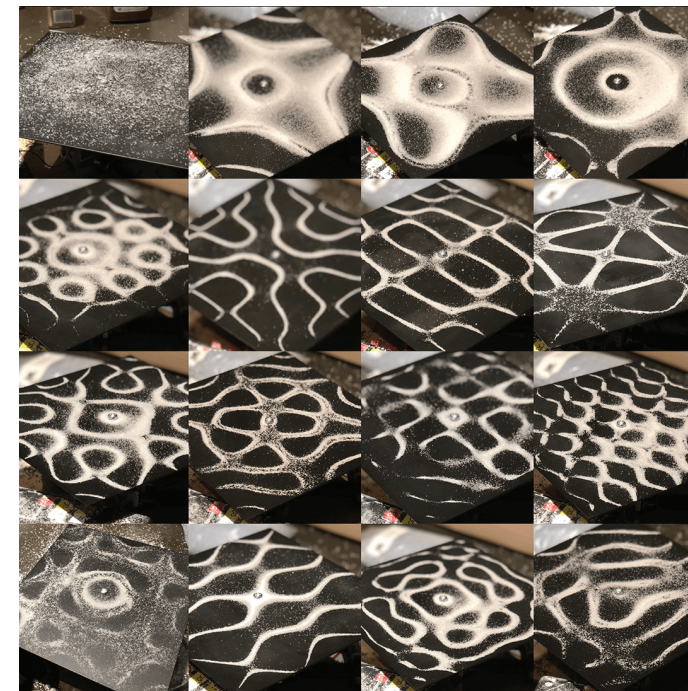
- Chladni figures live on YouTube: <https://www.youtube.com/watch?v=wE6A3rmuet0>
- Image: https://en.wikipedia.org/wiki/Ernst_Chladni
- Image: <https://pensar.com/chladni-plate/>



Ernst Chladni



Chladni plate



Chladni patterns

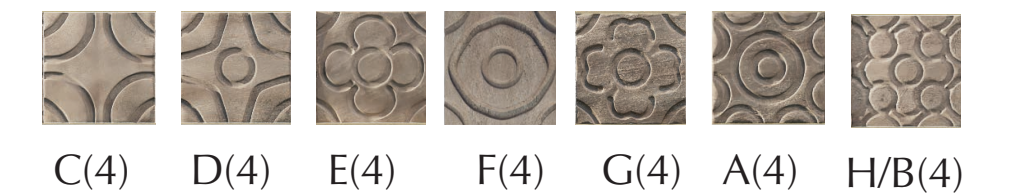
TRANSLATION OF A MUSICAL THEME TO CHLADNI PATTERNS

For the reason of simplicity I decided to only use the patterns of the tones ranging from C4 (261 Hz) to B4 (493 Hz) and to skip the chromatics. I can't avoid chromatics for *In the Hall of the Mountain King* so those notes are simply approximated to the closest non chromatic tone. To get few chromatic notes, and other problems, I transposed the theme from B minor to A minor.

To make the patterns fit according to the duration of the tone, I employed a similar system to the classical musical notation. A quaver (eight notes) has the shape of a square, while a crotchet (fourth note) is double the width and thus the pattern had to be elongated.

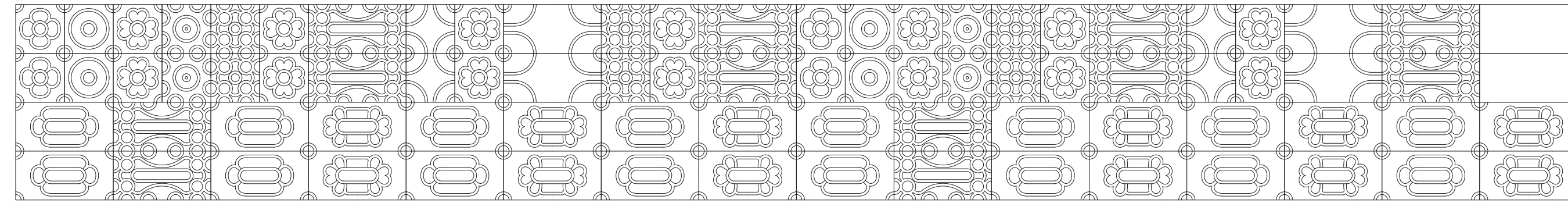
Alla marcia e molto marcato (♩ = 138)

Horns *pp* Celli u. double bass pizz. *p* Bassoon *pp*

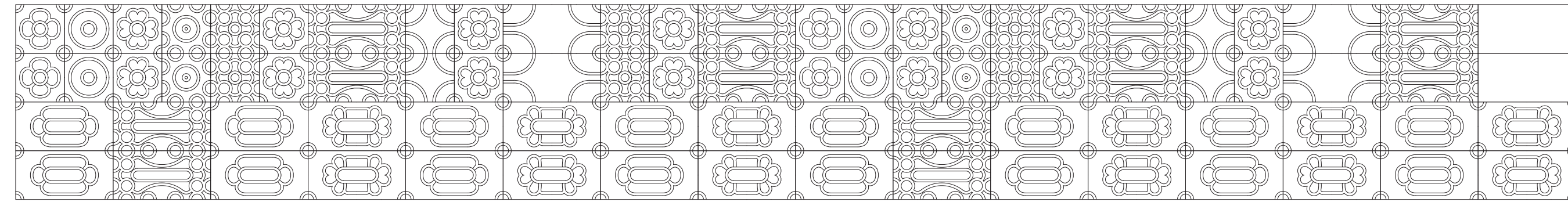


Theme to *In the Hall of the Mountain King* by Edward Grieg

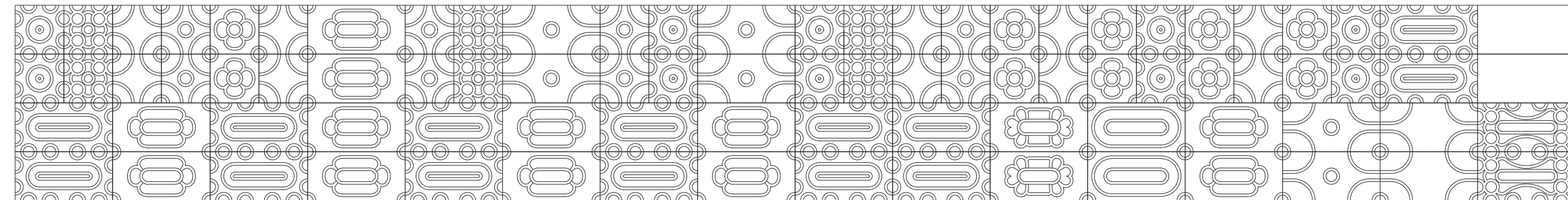
TRANSLATION OF A MUSICAL THEME TO CHLADNI PATTERNS



Theme (repeated twice)



Theme - transposed (repeated twice)



Theme - altered final cadence

ILLUMINATED DRAWING

During the middle ages, and to a great extent until the wide use of the printing press, manuscript making was sometimes intertwined with the ancient cultural art practice of illumination. This was the embellishment of books by illustrations and the application of precious metals - mostly gold leaf. Since this was both costly in terms of material and of the extremely time consuming process of creation, it was, for the most part, reserved for the church and the aristocracy. Since the theme of my design is the Hall of the Mountain King, such a cultural tradition was suitable to create a hybrid drawing.

I composed the borders of the Chladni pattern for Edward Grieg's famous musical piece and illustrated the section cut with roots to show the design inspiration. The miniture illustrations in the corners (measuring 1,2 x 1,2cm) also depicts drawings of the various natural elements that I used for the design: mushrooms, pine seed pods and maple leaves.

This illumination measures 297 x 420 mm and is painted with gouache and metallised with brass.



CORRIDOR AND RAMP



The image to the left illustrates a corridor that was designed using the shape of a leaf that was manipulated digitally by using smooth deformation and repeated to create a corridor. The image to the right showcases the ramp leading up from the antechamber of the

concert hall to the entrance to the balcony. The inspiration for the supporting structure of the ramp was taken from the shape of cow parsley with its branching flower head structure. The lamps are designed to look like water droplets.

ANTECHAMBER - FIRST FLOOR



ANTECHAMBER - SECOND FLOOR



The design element that were used for this room was mainly the shape of pine needles that were deformed and arranged digitally in various ways; both for the railing, the floor pattern arches and the oculus that also had, fittingly, the expression of a human iris.



View of the oculus



CONCERT HALL - VIEW FROM BALCONY



The image depicts the concert hall as seen from the balcony. The musical suite *The Planets* by Gustav Holst was used as a

great source of inspiration for this image, as well as the *Firebird* by Igor Stravinsky for the centrepiece.

CONCERT HALL - ENTRANCE

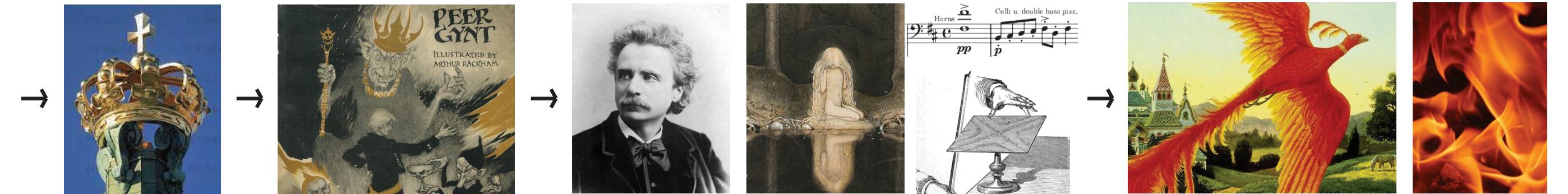
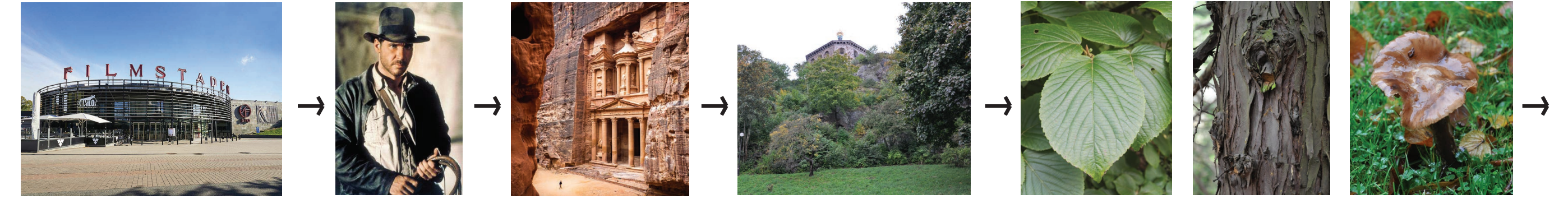


CONCERT HALL



ASSOCIATIONS/CHAIN OF THOUGHTS

In other words; references or allusions



Musical pieces that I have listened to while working:
In the Hall of the Mountain King, Edward Grieg
The Infernal Dance from *The Firebird*, Igor Stravinsky
Planets, Gustav Holst

(Other possible influences):
The New World, Antonin Dvorak
Turandot, Giacomo Puccini

PRE-STUDY



These two images were not part of the final structure and can be considered as pre-studies of experiments of the aesthetics of two tunnels. In one I modelled/generated a tunnel that looked like a

root system and in the other I used the shape of tree trunks as my base for the design.
