

Badak ac



## **Badak-ae**

Grace Im

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Capstone Project  
Sheridan College

[2022 - 2023]

# Contents

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<b>Introduction</b>	<b>6</b>
General Intro	6
Motivation & Proposal	9
<b>Research</b>	<b>10</b>
General Philosophy	10
Secondary Research	12
Case Studies	18
Interviews	24
Findings: Property List	26
<b>Synthesis</b>	<b>28</b>
<b>Ideation</b>	<b>30</b>
Initial Sketches	30
Initial Exploration	32
Additional Sketches	34
Task Consideration	36
Continuing Conceptualization	38
Top 3 Concepts	42
Final Concept	44

<b>Concept Development</b>	<b>48</b>
Design Finalization	48
Validation	63
Design Refinement	70
Tambour Samples	73
Foam Samples	74
Upholstery Samples	79
<b>Final Design</b>	<b>82</b>
Badak-ae	82
Model Making Process	88
<b>Acknowledgments</b>	<b>99</b>
<b>Reflection</b>	<b>100</b>
<b>Index</b>	<b>102</b>
<b>Bibliography</b>	<b>105</b>

# Introduction

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## General Intro

Currently, South Korea is well-known for its pop culture (ex. K-pop or K-drama) and food (ex. Kimchi or Korean BBQ). However, when revisiting the culture of the *Joseon Dynasty*, Hanok are strongly cherished and depended upon structures that are underappreciated today. From the fall of the *Joseon Dynasty* to present times, traditional Korean architecture, Hanok (*Han* = Korean, *ok* = House) is one key element of the culture of South Korea that has been preserved to the best of the abilities of its citizens [1].



[fig.1] Felix Valdivieso, 2022. Untitled



[fig.2] Kinomaster. Untitled



## **Motivation**

I identify as as a person of a Korean nationality. However, since I was never able to visit South Korea in person before, I chose to focus on Hanok (traditional Korean architecture) - something I've been told stories about but is now pushed to the side and taken for granted as Korean pop culture began to gain popularity.

• • •

## **Proposal**

With an intent to share the appreciation of traditional Korean architecture (Hanok) from outside its home country, I aim to address the qualities of Hanok design and showcase their uniqueness through an object that can be found within smaller sized households.

# Research

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## General Philosophy

Between Korean, Chinese, and Japanese cultures, all 3 architecture styles have influenced one another - all deriving from the philosophical standpoint of *Neo-Confucianism* - a belief leading from Buddhism until Catholic religion was recognised [2].

To embrace/to live in *harmony* [1] with nature. Differences include...

- South Korea: To truly blend in with the surrounding nature.
- Japan: To exist alongside nature in consideration to their natural disaster prone location.
- China: To stand out from nature along with their spirituality.

Traditional Hanok in South Korea is known as vernacular architecture where it continuously adapts in accordance to the surrounding environment [3]. Traditional architecture in Japan and China, however, while working in harmony with the environment, do not define as vernacular.



[fig.3] Korean Culture and Information Service, 2016. Korean Hanok Architecture.



[fig.4] WhereInTokyo.com, Untitled.



[fig.5] Zhu Difeng. Temple in Fuzhou.

## Secondary Research

Hanok design can be seen as being a blend between traditional architecture of China (Decorative + Symbolic) and Japan (Minimalistic). However, appearance-wise, Hanok resembles traditional Japanese architecture more than Chinese.

One property of Hanok design is the invitation of playful spontaneity.

- Example A: the wooden supporting beams (man-made) have been adjusted to fit the stones they would reside on [4].
- Example B: preserving the natural forms of wood with minimal manipulation instead of the use of artificially straight forms [5].

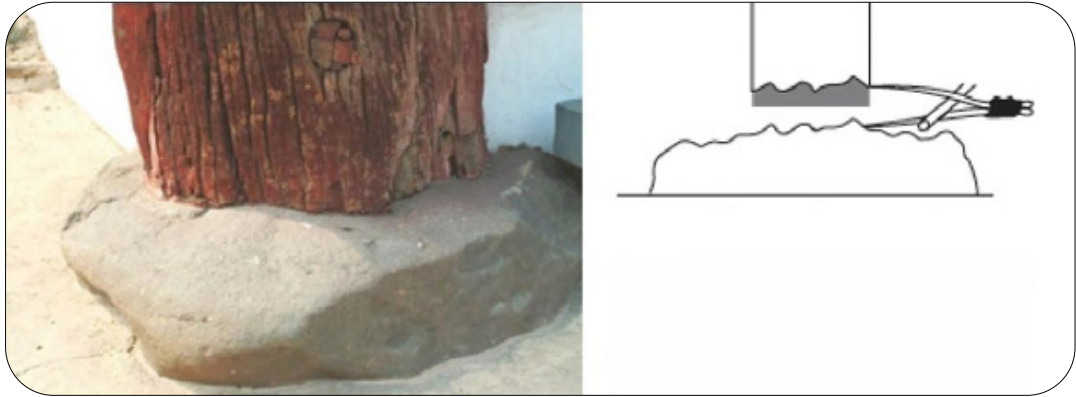
• • •

For all three cultures, the major similarities include the idea of using only natural materials. Additionally, the basic skeletal structure of the architecture all use interlocking wood to fasten rather than hardware. Furthermore, the roof also consists of very similar tiles (Hanok roof tiles = giwa - the most notable roof style).

• • •

Another quality to Hanok designs were the multi-purpose rooms. Aside from the kitchen, each room incorporated furniture that would rarely designate the room as strictly the bedroom or living room. No chairs were used and each piece of furniture had more than one role.

All these considerations invite changes in order to adapt, displaying Hanok design characteristics that make it unique to their culture.



[fig.6] Jackson, B. and Koehler, R., 2012. Untitled  
Adjust and Adapt (Playful Spontaneity)



[fig.7] Studio Ko, 2018. Untitled  
Giwa

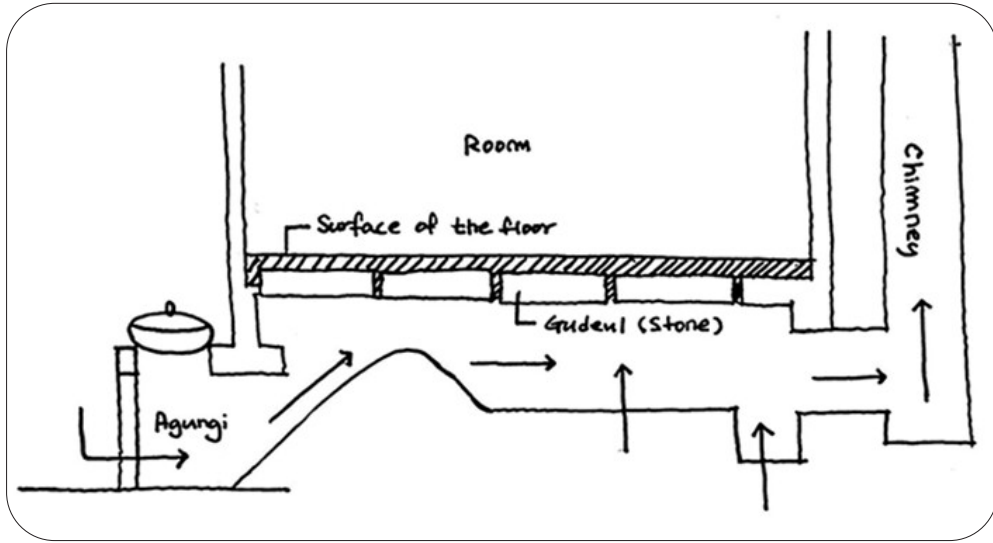
## Features

Of all their characteristics, 2 distinct features of Hanok make it unique to the Korean culture.

### 1. The *ondol* and *maru* system:

[5] Strongly believing in having direct contact with the environment, Hanok incorporates a heating system (*ondol*) underneath the flooring; due to this, the entire structure is elevated from the ground. From the main fire pit/heat source (*agunggi*) located in the kitchen of the Hanok, heat would travel all around from within the floor and walls until leaving through a chimney.

[5] In contrast, the cooling system (*maru*) of Hanok were simple open spaces around the structure that allowed the circulation of the wind to flow throughout. These spaces are located between the entrance of the structure (end of elevated structure) and the entrance to the rooms (going indoors). These spaces also served as a leisure space for both owners and guests.



[fig.8] Lee, K., 2021. Untitled  
Diagram of the Ondol System



[fig.9] 문화재청 2015. Untitled  
Maru

[fig.10-12]  
`나의세상 mondomio, 2014. Untitled



[fig.10] China



[fig.11] Japan



[fig.12] South Korea



## Features

### 2. The hanji doors with unique frames (*changho*):

Each door frame from the 3 Asian cultures is different. While China is complex and decorative, Japan follows a more minimalistic style. Hanok door frames fit in between as simple yet flexible.

Within Hanok, the *changho* framed the Hanji paper which served as an insulating sheet to maintain warmth over cold-weather rather than acting as simply a means to hide.

## Case Studies

### Chimney Light Series by SWNA

- In a means to create a soft and cozy ambiance, an easily maneuverable lamp was designed.
- Mimics the same soft light view as the Hanji doors within Hanok designs. One of the more well-known aspects of Hanok design, these doors are good insulators and allow for only enough sunlight to pass through to create an elegant and cozy environment.
- Downside, it appears to resemble a generic cloud more so than anything else.

### Boryo by Arumjigi

- Dedicated to families in South Korea who live in cramped apartment rooms with limited space, they follow the same Hanok room meaning “multi-purpose” rooms.
- They take up very little space and are very easy to keep organized. As mentioned before, being multipurpose, Boryo allows for one room to be the living room and bedroom as they can change from a seating-type area to a bed whenever the user pleases.
- The only downside is that it is not too easy to clean.
- Very similar to the room setting of traditional Hanok, follows the same dynamic.



[fig.13] SWNA. Chimney Light



[fig.14] Boryo. Arumjigi

## Case Studies

### High U Stool by SuBin Seol

- “Traditional Korean art features more natural and organic curves than Art Deco’s circles or squares.” [7]
- Seol focuses on combining Korean traditions with Art Deco which is clearly showcased through a specific series of chairs (which includes this stool).
- This stool in particular takes apart the appearance of the Hanok roof, obtaining majority of her inspirations from its basic structure.

### Dami by Seung Yong Song

- Dami uses solely eco-friendly materials and is meant to mimic the shape of a Korean grill. Dami, translating to “put in” [8], represents woven basket textures as they have been in the Korean culture (woven baskets, sandals, etc.). The series was known for its lightweight strong durability and the traditional beauty that was achieved with modern objects.
- Plays on lines (mimicry of the *grille*) from changho and overall skeletal structure. The forms of certain components are multipurpose in accordance with people and their environment.
- Although they follow similar aesthetics and style, it is more the modernised aesthetics to Korean culture rather than looking at the traditional Hanok itself.



[fig.15] SuBin Seol, High U Stool





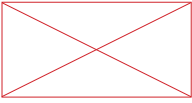











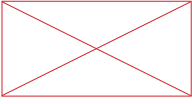





[fig.16] Seung Yong Song, Dami

## Reviewing

Creative matrix comparing existing objects with my intents to seek out relevancy of each idea.

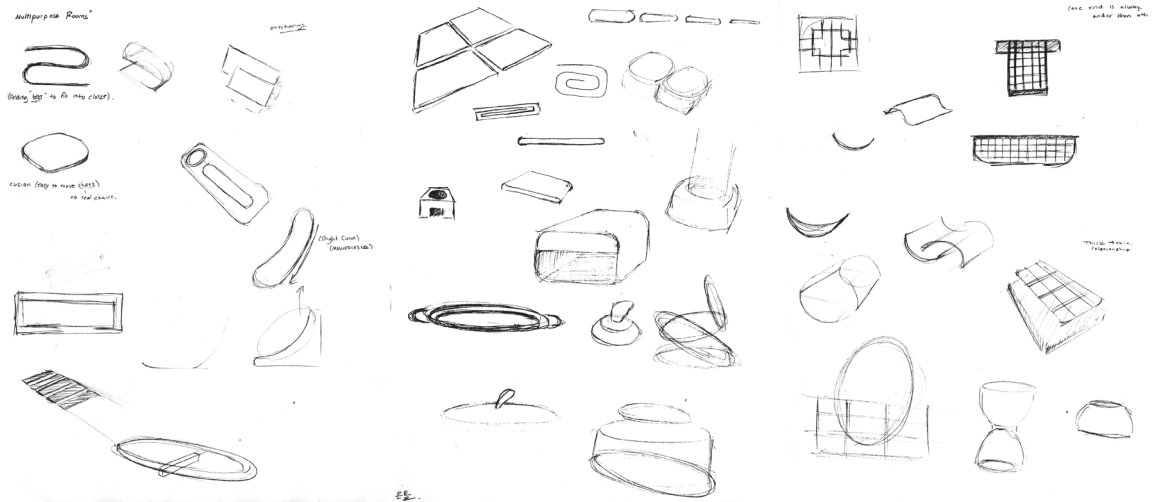
Early rough sketch explorations derived from existing objects research  
(Vague form explorations):

	MULTI PURPOSE	LIGHTING	FURNITURE	OTHER
ELEVATION	 BADAC SANG A CHOI	 CHORONG LAMP JOONGHO CHOI	 FLOOR BENCH STUDIO WORD	 NATURAL SPEAKERS JOON&JUNG
ASYMMETRY		 ZERO G LIGHT SERIES SWNA	 CHIEUT TABLE SEUNG JUN JEONG (JAY DESIGN)	 2011 KIA DESIGN PETER SCHREYER
COMFORT	 BORYO ARUMJIGI DESIGN	 OLLY BEBOP DESIGN	 BLANK SOFA CHO HYUNG SUK	 DISASTER KIT LIFE CLOCK SWNA
FRAME	 DAMI SEUNG YONG SONG	 NOVA JINSHIK KIM	 GWA MOTIF - SERIES CHOI JOON WOO	 GRAVITY HEADPHONES KYUMIN HA
PLAYFUL SPONTANEITY		 FEATHER LIGHT LEE KWANG HO	 HIGH U STOOL SUBIN SEOL	 PYEONG CHANG (2018) OLYMPIC MEDAL LEE SEOK WOO

Least Relevant
 


 Most Relevant

[fig.17] Grace Im, 2022. Creative Matrix



## Interviews

I received varying points of view from people who were willing to give feedback and share their experience with me (who had never had a chance to visit South Korea despite identifying with a Korean nationality). Their feedback informed me of ideas that should be avoided, what I should look out for, and the ideas I was clueless about/had a misconception of. They gave me hints on what to explore more.

• • •

Hanji gifts (Toronto, ON)

- The founders of Hanji gifts shared the impact Hanok designs had on their stores in Toronto. They shared their point of view on their brief time spent in South Korea; what attracted them the most to Hanok were the patterns visible on its doors, the subtle details, and the quietness that is endearing.

Dragan Acimovic (Mississauga, ON)

- Dragan described the narratives behind architectural pieces and shared his views on the creation of one environment. He spoke about the shared responsibility between the decorative aspects of an architectural piece as well as the interior components (i.e., furnishings) that would evoke certain emotions.

S2VICTOR (Seoul)

- The interviewee shared their disappointment in the gradual decrease of form considerations and Korean cultural colours within modern product designs. They delve into the fact that Korean Hanok shows immense tenderness within its design choices. They bring up CMF design, which was a huge consideration for traditional Hanok.



Jin Won Han (Oakville, ON)

- Jin shared her personal experiences with Hanok structures. She went in-depth into describing certain systems of Hanok (ondol = floor heating system) as well as the details of its doors and how they differ from Japanese traditional sliding doors (shoji). Jin also went in-depth into the materiality choices of Hanok, focusing on the mud from rivers and hanji (mulberry paper).

BEBOP (Seoul)

- The interviewee described their concerns for the younger generations of South Korean designers as they are all focused on following the most popular trends. This leads to very chic and cool designs that inevitably lose their more traditional aspect.

Thang Tran (Oakville, ON)

- Thang shared his views on product narratives. Going in-depth into task-driven products and the considerations of their functions in relation to those tasks. He shared information about a variety of similar ideas through different asian cultures, allowing for a better grasp at what is relevant.

## Findings: Properties List

With the research methods along with the interviews conducted, a list was created to showcase what design qualities make up Hanok architecture that could also be influential to products.

Overall, the points that have been highlighted could potentially be focused on while the remaining, more general properties could play a role in incorporating certain subtleties.

• • •

*Hanok design has naturalistic simplicity:*

- Korean designs show details that are subtle and display the quietness of nature (ex: Roof of Hanok = gentle curves; roof of Chinese architecture = exaggerated curves). Rather than a western society's minimalistic approach which is accomplished by reducing to capture the essentials, Korea displays it as the ease of nature.

*Hanok design displays pure formality:*

- There is a desire and curiosity about the forces that govern nature. Therefore, there is a respect for and a curiosity about the simplicity of various forms that derive from the relationships between people and the environment around them. A substitution of stylistic features.

*Hanok design adjusts for the nature around:*

- Hanok design made sure to adjust accordingly to the natural resources around them. The posts were shaped in accordance with the stones that were used as the base rather than shaving down the stone to make space for the posts. The structure was elevated to make room for the natural heating source (ondol) underneath.

*Hanok design display playful spontaneity:*

- Hanok designs showcase a playful spontaneity as they were always adjusting to the environment around them. There were improvisations at times (the post example above) and they dominated the "go with the flow" attitude.

*Hanok design avoids exaggerations:*

- As Hanok structures are meant to blend in and harmonize with the surrounding nature, the designs rarely hold any flamboyant decorations or exaggerated forms.

*Hanok design displays Korean culture as floor-based:*

- Hanok does not incorporate chairs or other seating tools within its designs as they value the relationship between the floor and the human body. The belief was that a room contained memories, and thus people need a deeper relationship obtained by touch.

*Hanok design displays a trend of asymmetry:*

- Overall, the formation of the Hanok follows their environment - therefore, they are rarely ever symmetrical. The relationship between thick and thin, rough and smooth, are only a few examples.

*Hanok rooms are multi-purpose:*

- As rarely any rooms in Hanok was meant for a specific role (except the kitchen), every item within the room had more than one use.

*Hanok design incorporates frame-like qualities:*

- Hanok designs show frames throughout the entirety of the structure; they are strictly frames and in no way a cage. Examples: the layout of Hanok structures, no matter the location, are in the shape of squares or an 'L'. These layout shapes are a way to frame the surrounding nature without trapping it. Similarly, the screen doors use timber to frame and secure the hanji paper onto them.

*Hanok design incorporates CMF design:*

- Hanok designs follow the "Colour, Material, and Finish" design style (flooring, walls, etc.) for the optimal response to harmony and coexistence with nature. Considerations are made for the surrounding environment as well as the people living within.

# Synthesis

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[fig.18] Park, Fouser, R. J., & Lee, J., 2015. Untitled



## What does it Prove?

Through the conducted research, Korean designs have tried to stay up to date with the global trends to the point where traditional qualities have begun to fade. Alongside that, the dominating cultural motivations from China and the ever-rising popularity with the Japanese create a misconception that traditional Hanok designs have little to no unique Korean qualities. This is the result of it constantly being overshadowed by the more well-known Asian cultures.

There are many properties that allow Hanok designs to be differentiated from other Asian architectural styles. Recognizing which qualities of design should be avoided and which ones could be experimented/challenged further helps focus on what should be showcased in the conceptual phase.

• • •

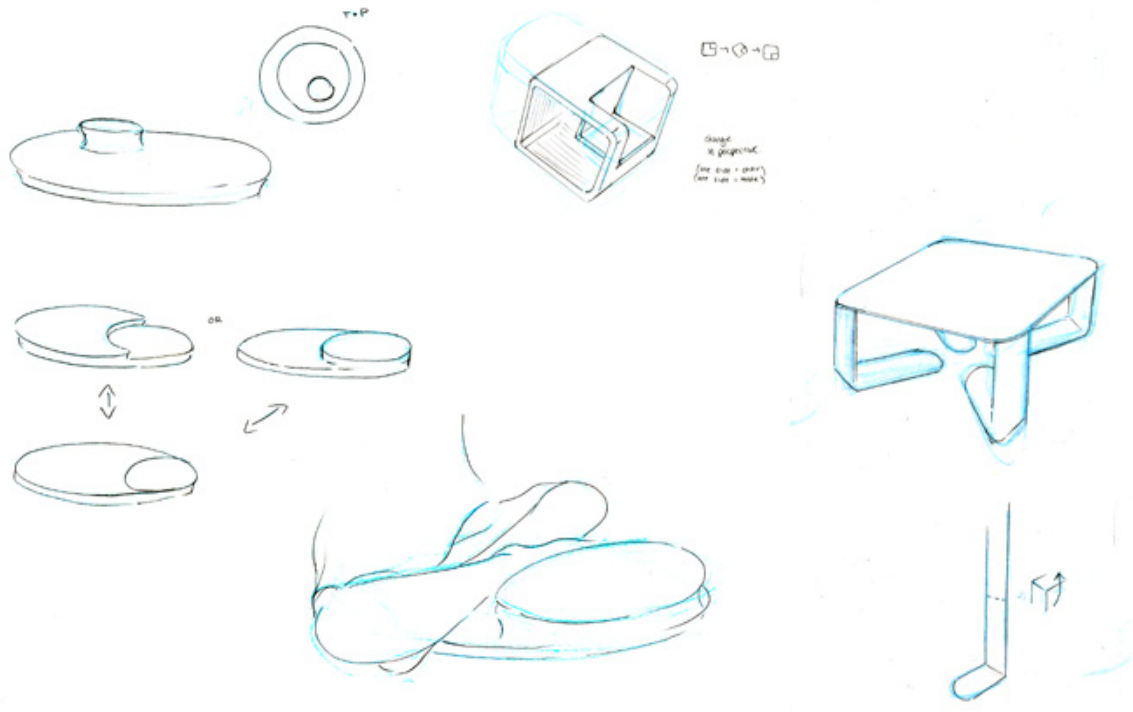
## Brief

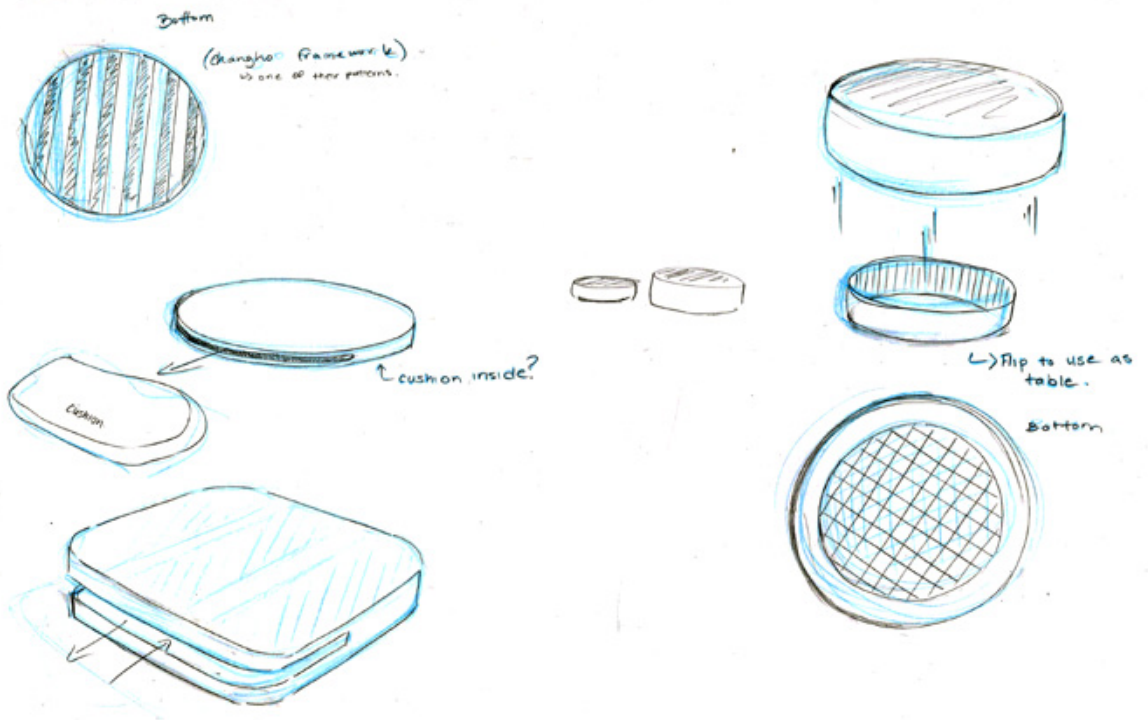
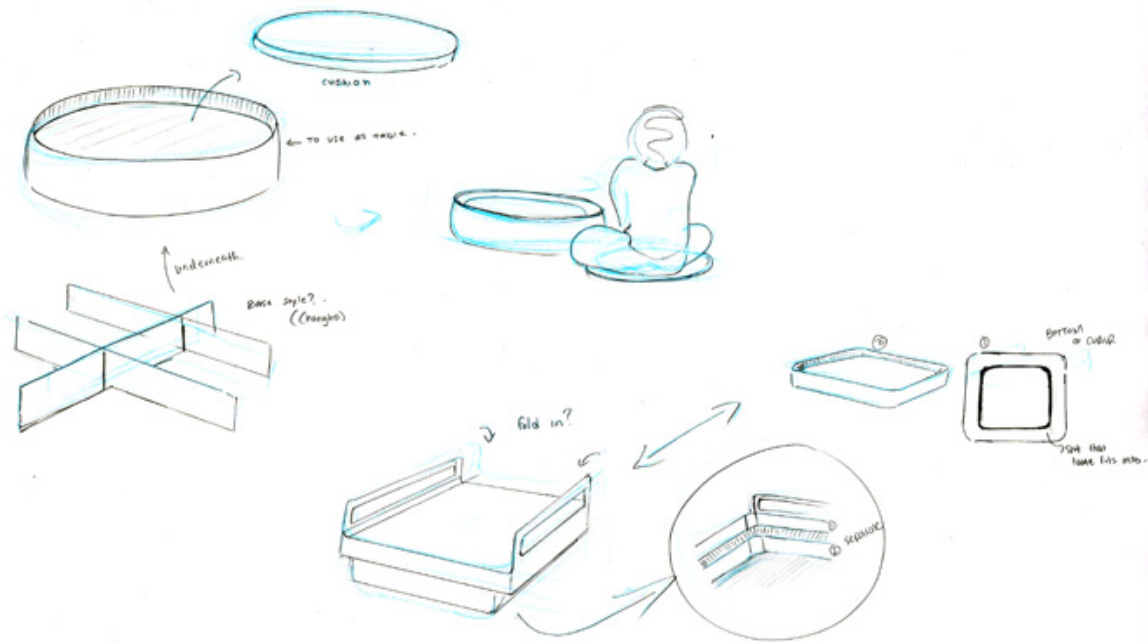
To design a multi-purpose product that merges a seating and working surface by focusing on activities typically done on the floor, so as to reintroduce the treasured floor-based culture of Hanok.

# Ideation

## Initial Sketches

Initial sketches to generate ideas based on acquired knowledge from research.





## **Initial Exploration**

Model in photos: Elizabeth Yeji Im [younger sister]

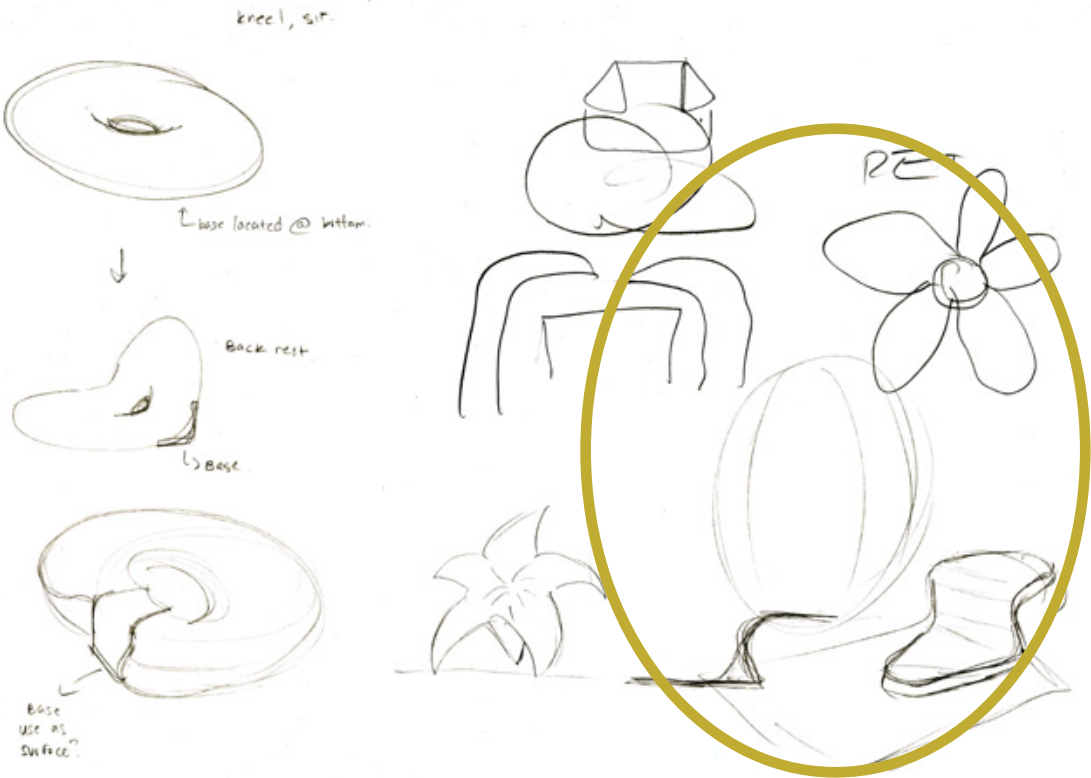
Initial exploration on very basic actions done on the floor along with an existing floor cushion (max 2 cushions). My sister was invited to use said pillow(s) in any and every way she could think of.

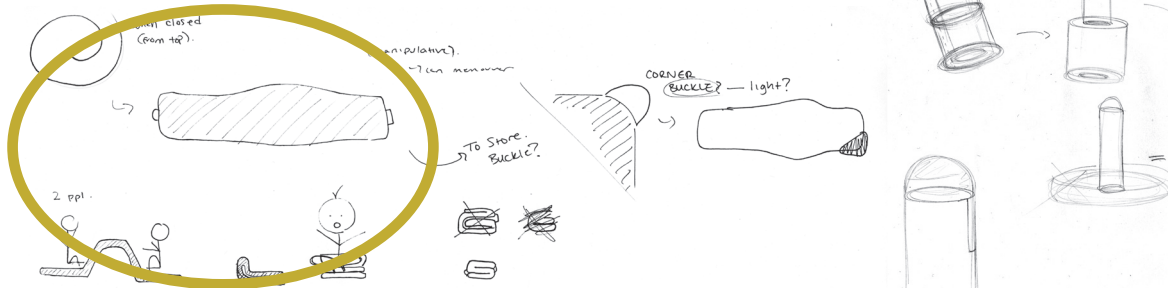
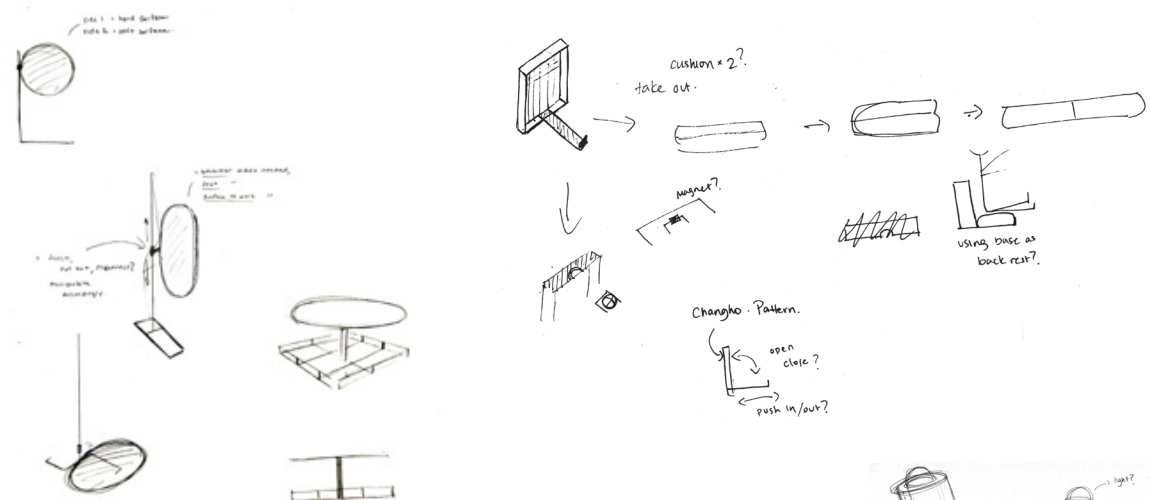
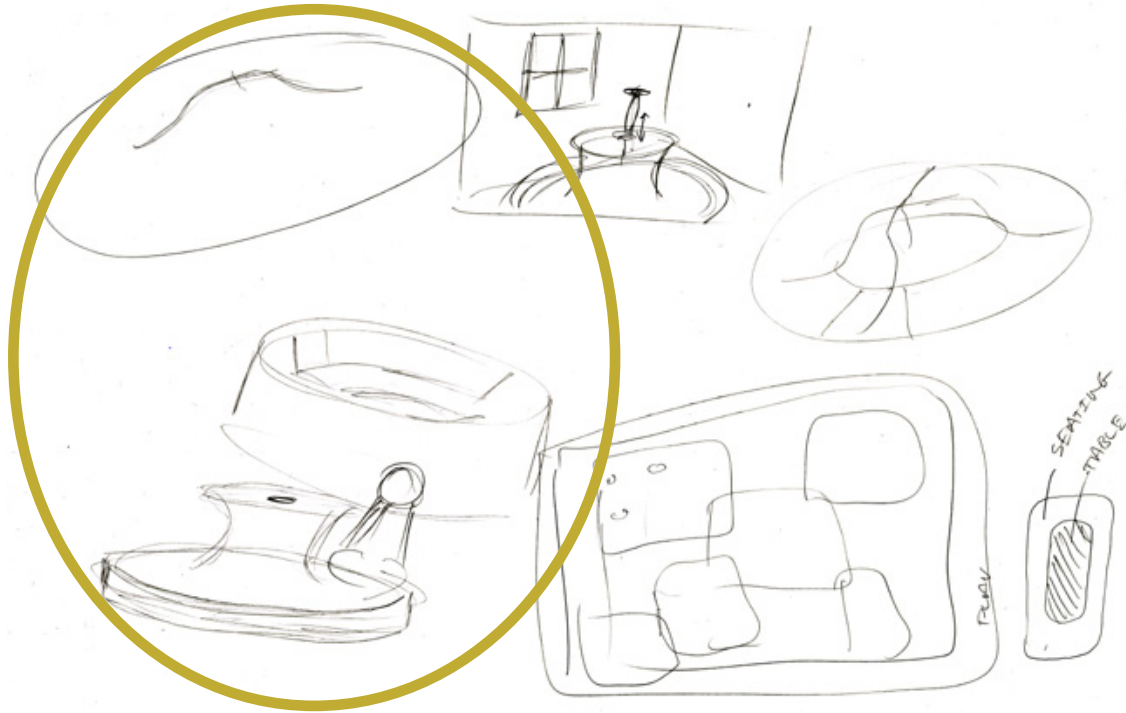




# Additional Sketches

Discovery: going in the direction of using a legless chair as a base.





## Task Consideration

With my main inspiration being my mother who loves to knit and crochet on the floor, I viewed other tasks that were commonly done on the floor (i.e., studying, playing guitar, crafts such as origami, reading, wrapping gifts, and in korean tradition - brewing/serving tea).



[fig.19] Milos Tasic. Untitled  
[fig.20] Gstockstudio. Untitled  
[fig.21] Gpointstudio. Untitled

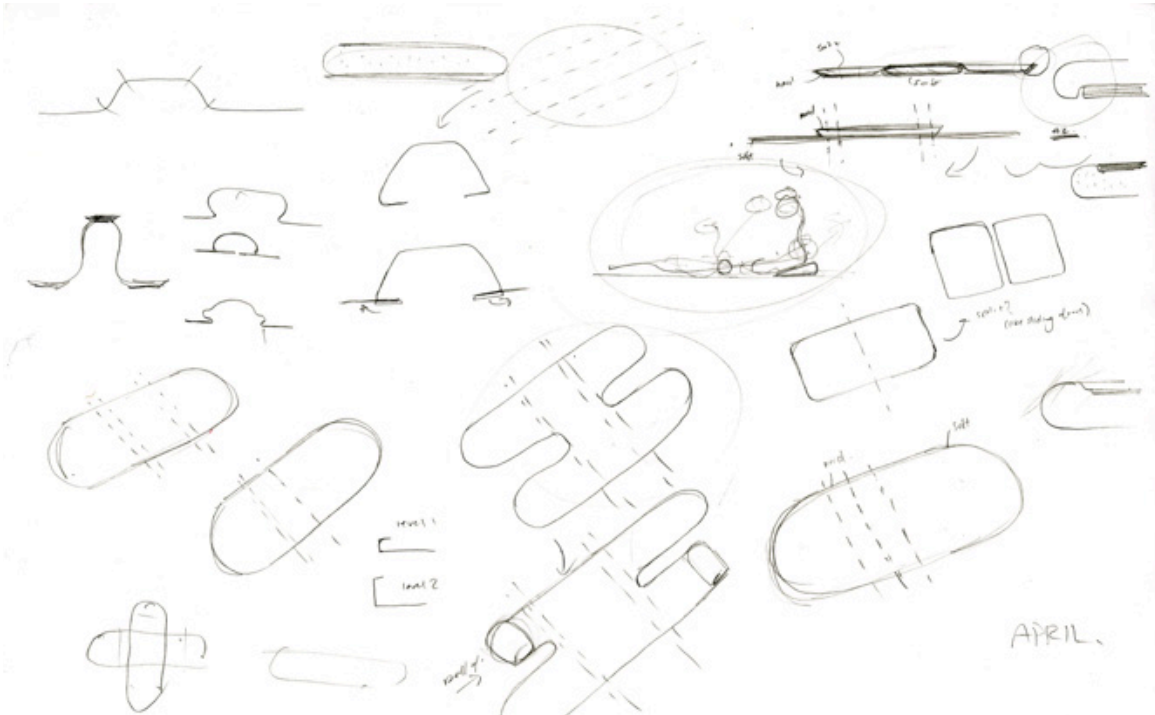
[fig.22] Fly\_dragonfly. Untitled  
[fig.23] Eggeeggjiew. Untitled  
[fig.24] Big Berry Backstage. Untitled

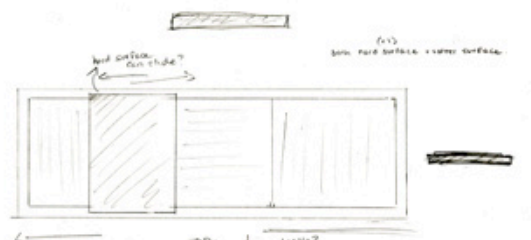
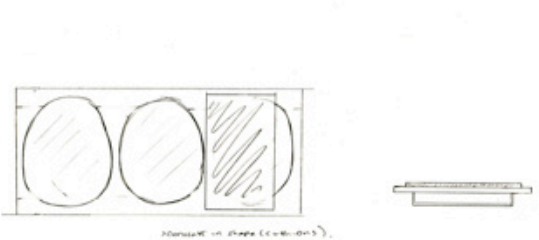
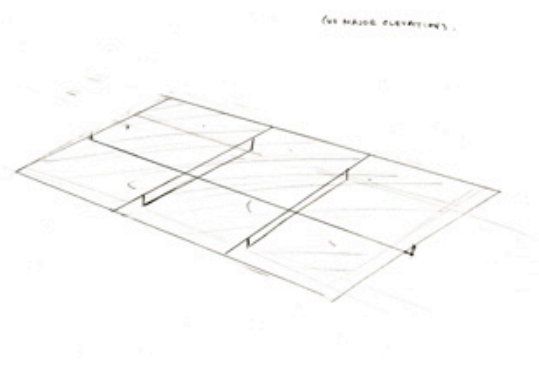
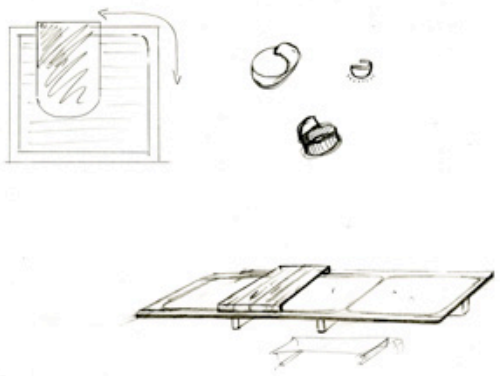
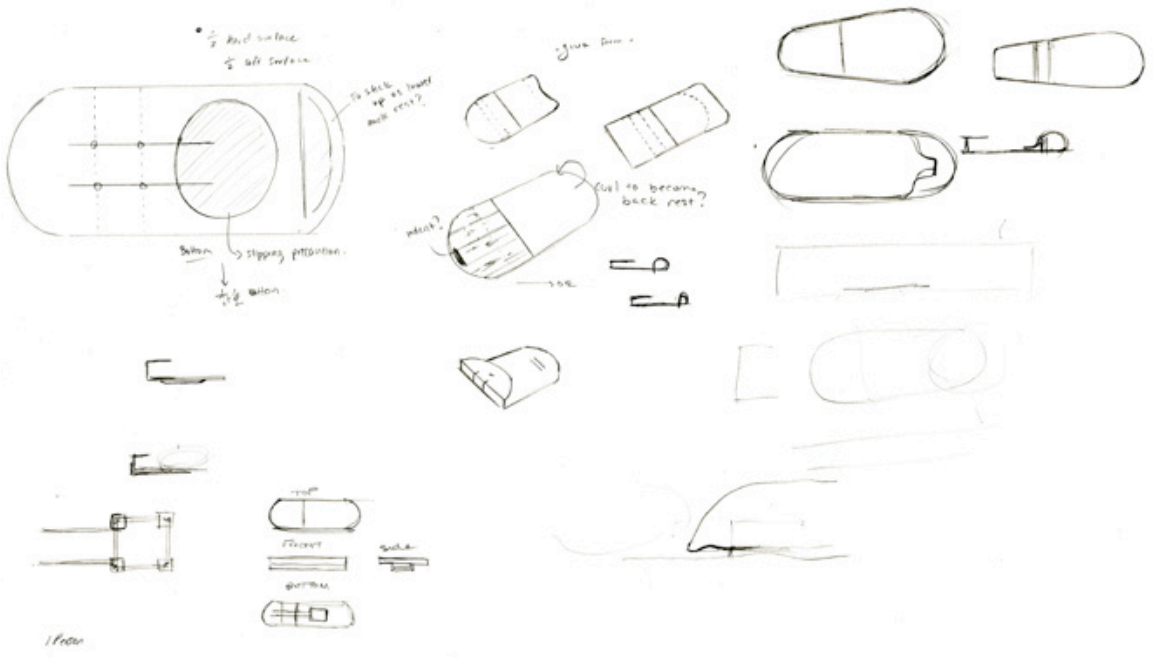


Model in photo: Mom

# Continuing Conceptualization

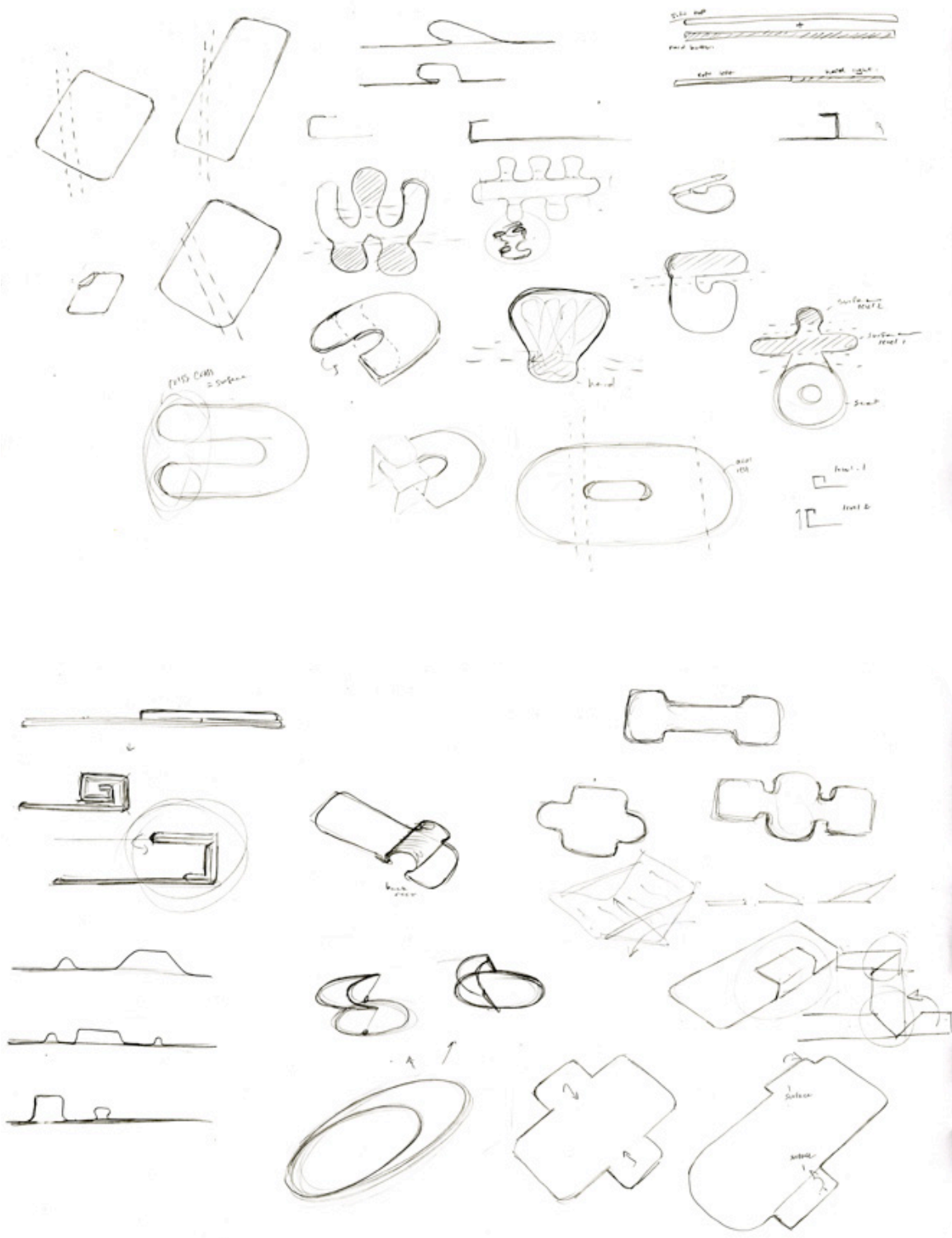
Looking into unique ways to make a legless chair work alongside (without clashing with) a working surface.



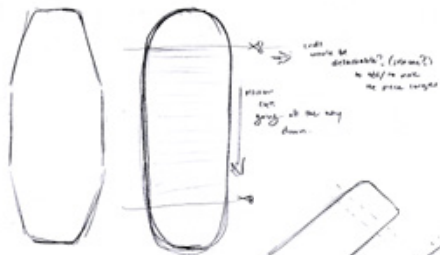


LIGHT?  
 (or including light, put in public space)  
 (non-visibility)  
 ex.

②







could work as a decorative element? (frames?)  
 in 1/2" or 1" wide  
 no glue target

please cut at the very bottom



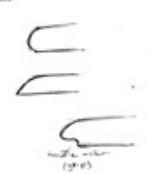
into a lip

about 1" - 1.5" wide  
 to point B - "finger"?

folded  
 up at the corners with



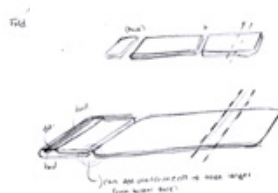
edge spread



half a circle (1/2")

flexible when  
 from being closed?  
 "it won't collapse because  
 the air is being sucked  
 into the space between the  
 pages" (for the same reason as the  
 "book" case)

just material? could? protection from?  
 cheap material? not good?  
 to make sure the  
 book...



fold

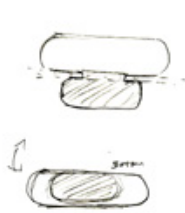
fold

fold

fold

fold

fold

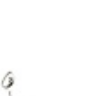


all heights (1-3)  
 change in the top



1/2" wide

1/2" wide



1/2" wide

1/2" wide

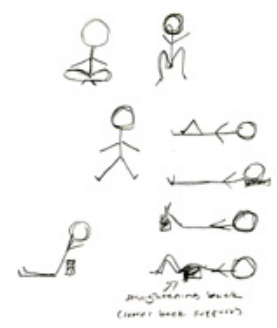


1/2" wide

1/2" wide



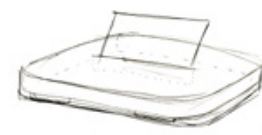
rolled



programmable book  
 (cover book, 100-100)

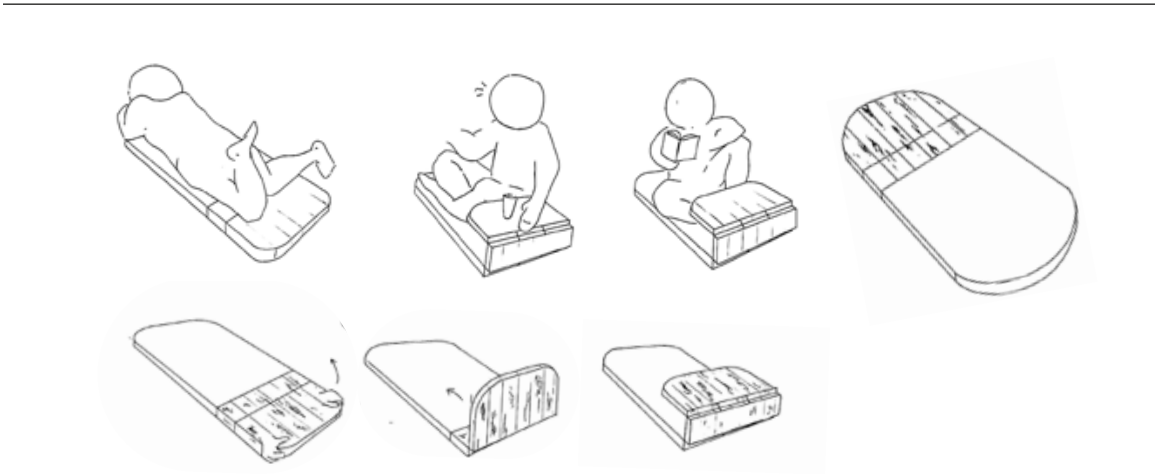


with gap  
 that can hold  
 the book  
 that is open



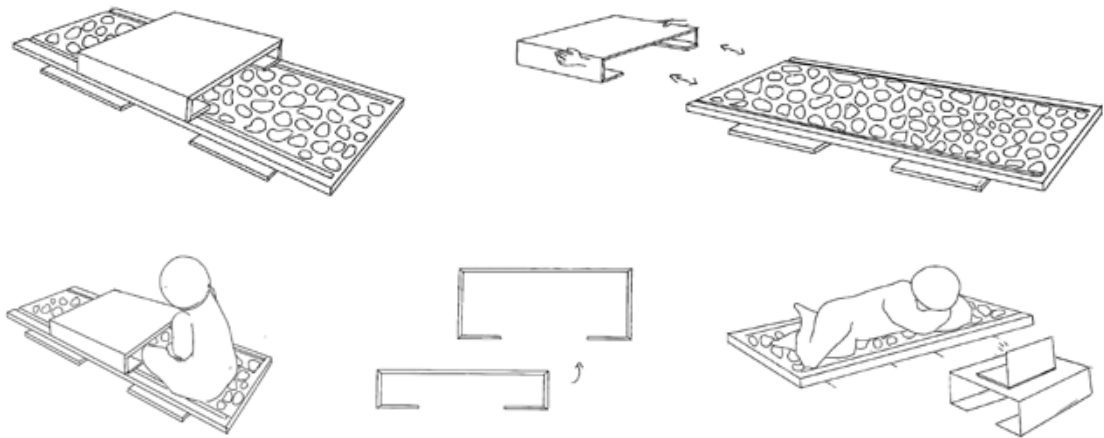
### Top 3 Concepts

Through all the stages of conceptualizing, the top 3 concepts were ones that were different from the existing market yet followed the same aesthetics and style seen within Hanok designs. Each concept followed the same intent of a seating alongside a work surface, yet they displayed individual uniqueness. They are not completely unfamiliar and by doing so, I hoped to evoke a feeling of inclusion for the potential user.



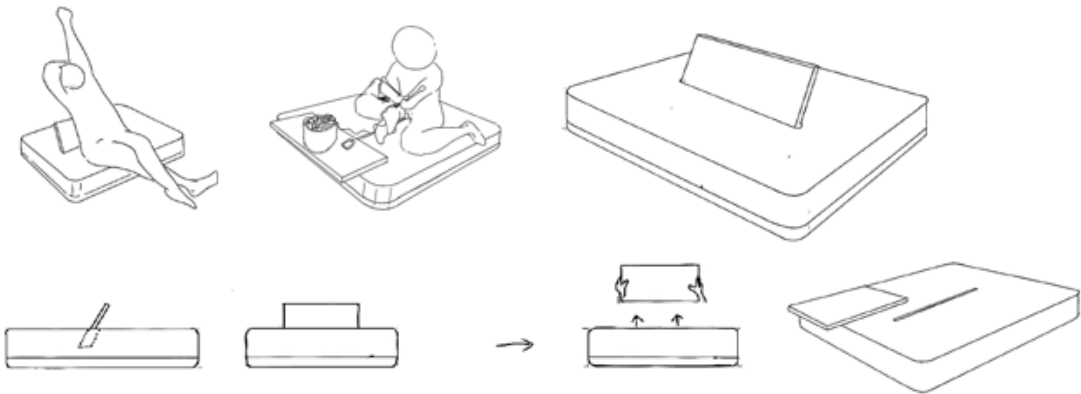
#### Concept 1:

Carpet-like when on the ground. The idea is to split a seating, half into a hard material and half into a softer material. The purpose of the harder material (most likely wood) is so the user may be able to use it as a surface to work on. The softer material would remain a seating for the user - following the existing floor cushions.



### Concept 2:

Bench-like seating that is elevated off the ground. The seating texture resembles that of stones which Hanok typically used for a sense of connection to the earth as well as a sense of security. These 'stones' would be made of bean bags or an idea following rice pouches for comfort. Lastly, a working surface would slot along the sides to use no matter where the user is on the bench. If needed separate, it can be slid off the bench and used on the side.



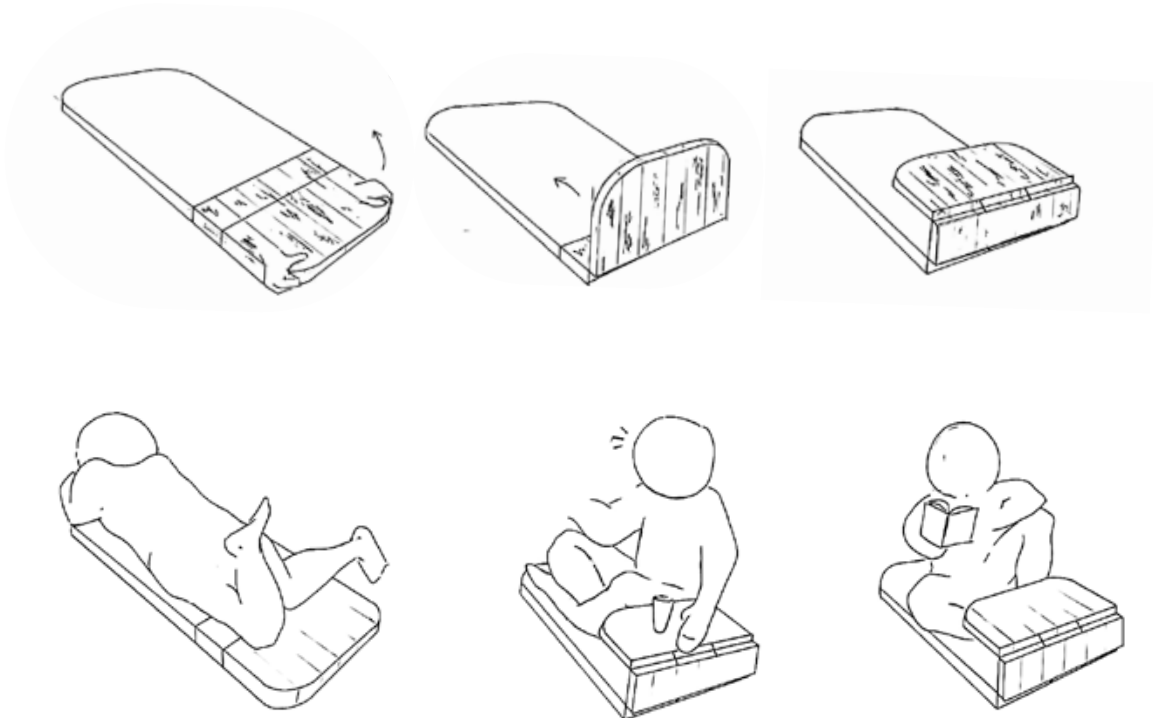
### Concept 3:

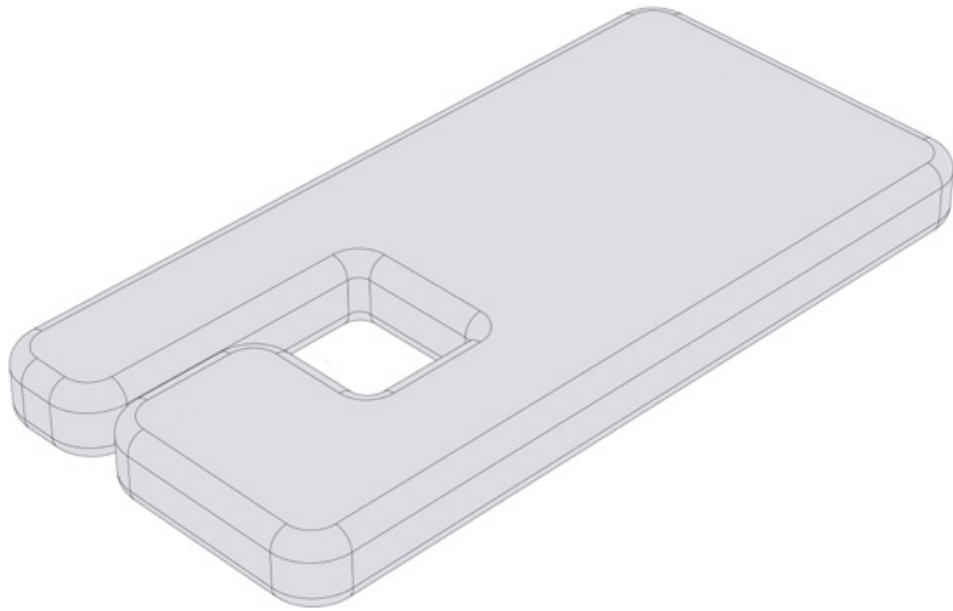
Without a doubt, the weakest of the three concepts, this seating follows the idea of a maru, being elevated off the ground. A sturdy board would slot into the center of the seat to be used as a lower back-rest. If not needed, it can be taken out and used as a surface to work on.

## Final Concept

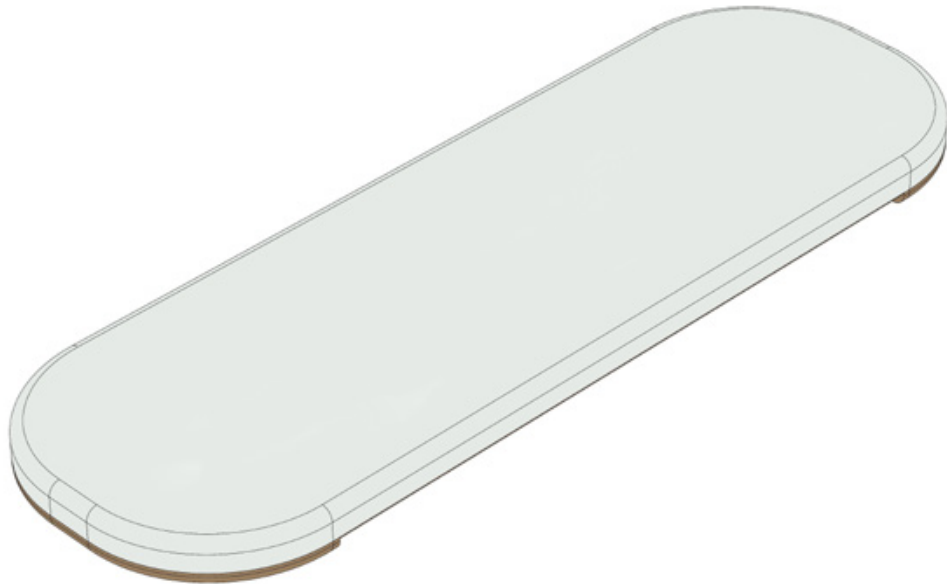
Displaying 2 iterations of the final concept (Concept 1).  
Overall, it is for a casual user-made environment at home.  
Not intended for the use of eating meals, but revolving around the main inspiration of knitting on the floor.

When not in use, it can be stored away or left out on the ground as a rug as it would not get in the way of many things.





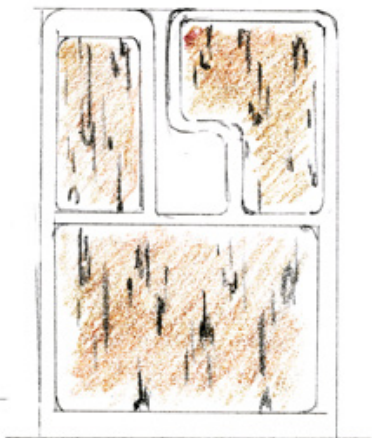
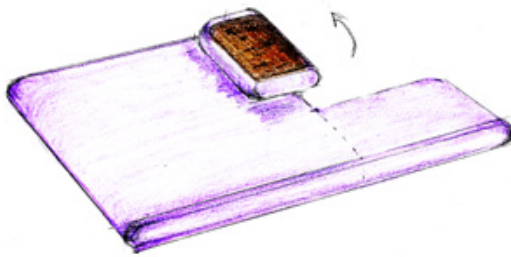
Iteration 1



Iteration 2

**Iteration 1.**

- Can be manipulated by the user.
- Hook portion can be pulled up/flipped over to use as a working surface.
- Extended arm next to the hook portion can be separated and used as an arm/back rest.





## Iteration 2.

- Can be manipulated by the user (more versatile than iteration 1).
- Can be used flat as a surface to lie on or can fold up a portion to use as a headrest.
- Fold up halfway to use as a work surface alongside a seat.
- Fold up all the way to make use of a higher seat.

# Concept Development

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## Design Finalization

Deciding to move on with iteration 2 of my final concept, I looked into making it more viable for the intended materials.

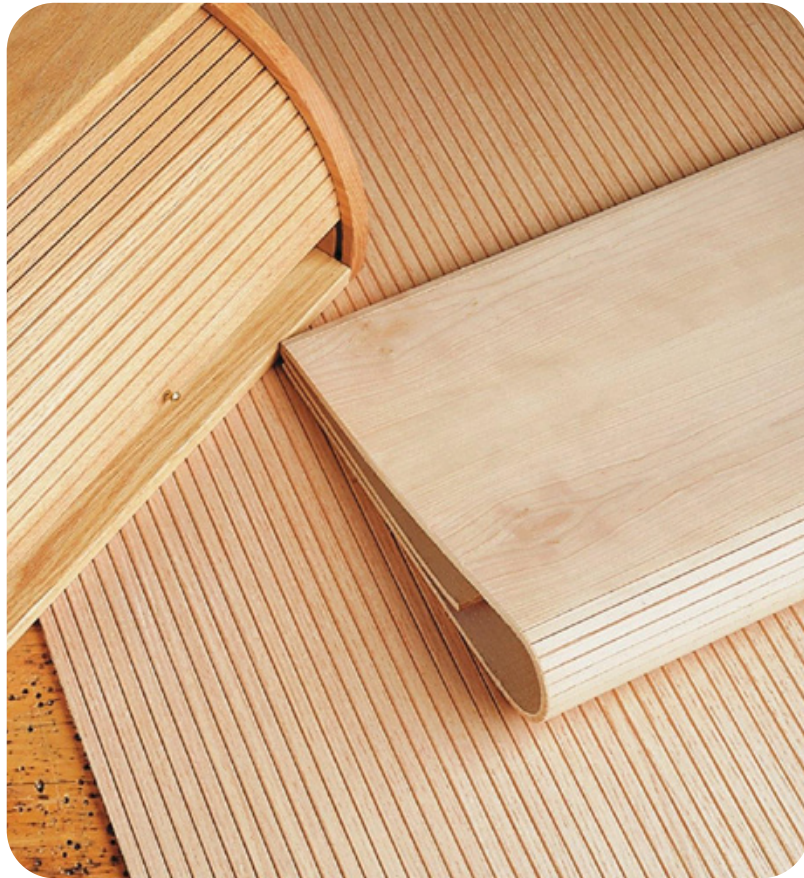
My initial thoughts were to make the entirety of the product fold like origami where there would be sharp edges and folds. However, realizing that it made everything feel very mechanical, straying from the aesthetic I had in mind.



I went on to search for a more fluid folding method.







[fig.25] Lee Valley Tools Ltd (2023).  
"Wooden Tambours"  
Tambour Assembly

**Discovery:**

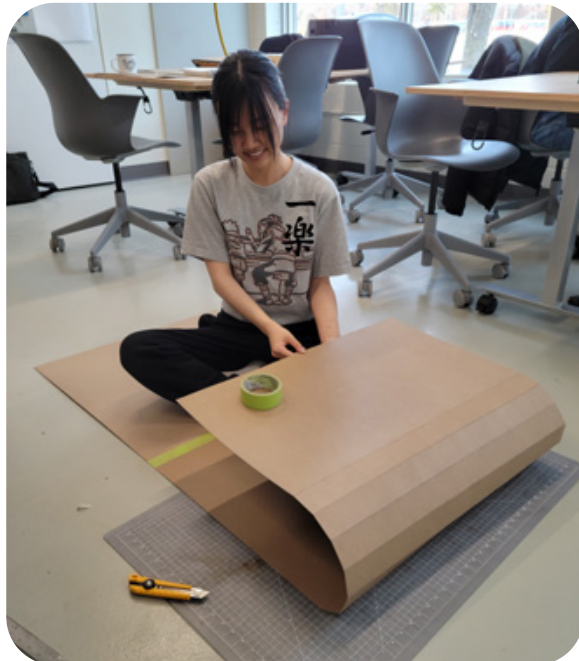
Finding the best wood-working option for making wood flexible. After discovering the method of Tambour doors, I began by playing around with different panel width's through smaller models.





### Discovery Cont'd:

With the same smaller models, I played around with different variations. Including angling the work surface as well as having multiple work surfaces.



### **Full Scale Models:**

Getting a better sense of the final scale by creating a full-scale paper cut-out of the potential final product.

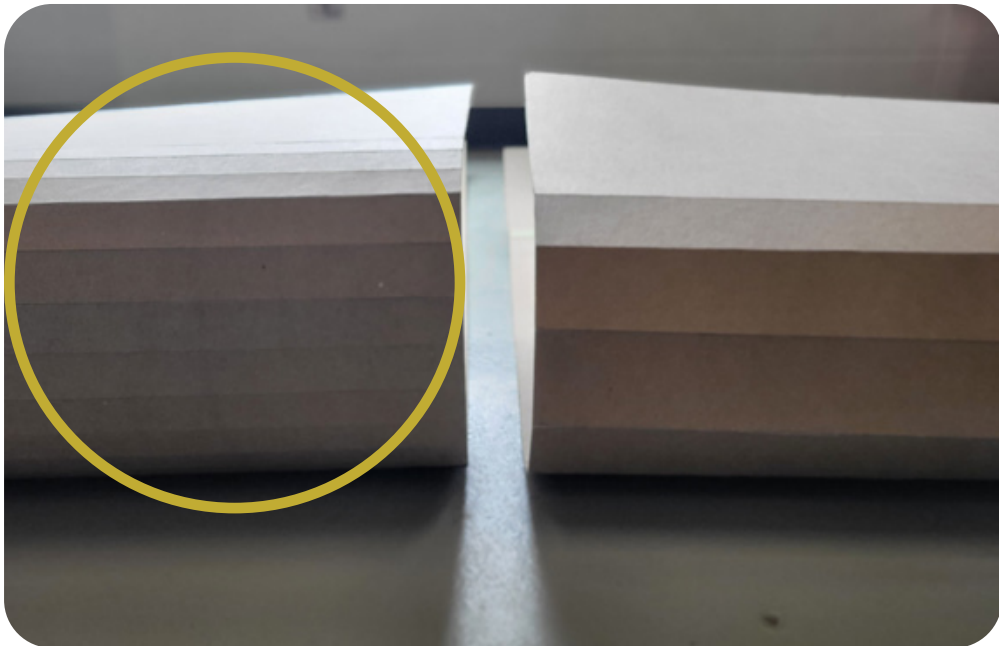
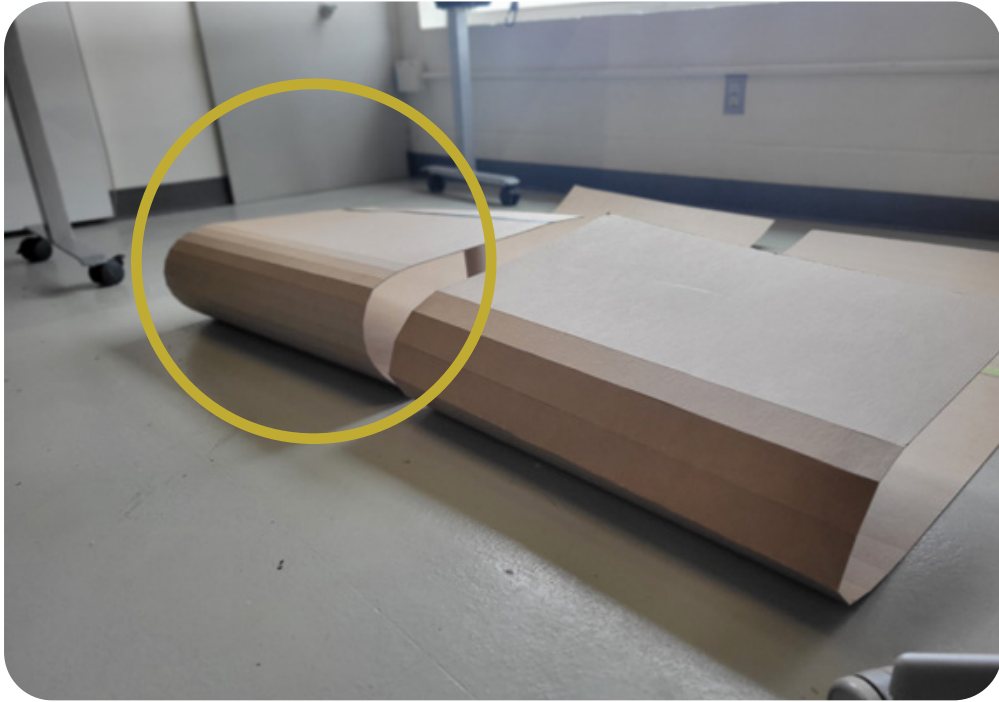
This was thought out by thinking about its relation to the spacing in rooms at my own home, the average dimensions of existing Korean floor cushions, as well as the overall comfort felt by those who have tried sitting/lying on the flat paper cut-out.

### **Panel Finalization:**

Final Two Panel Width = 1" and 2".  
Decided Upon Panel Width = 1".

I finalized the width of the panel by viewing the fluidity of the folds. Reviewing that transition to working surface helped me realize the importance of the fluidity. I achieved that through the 1" panels.

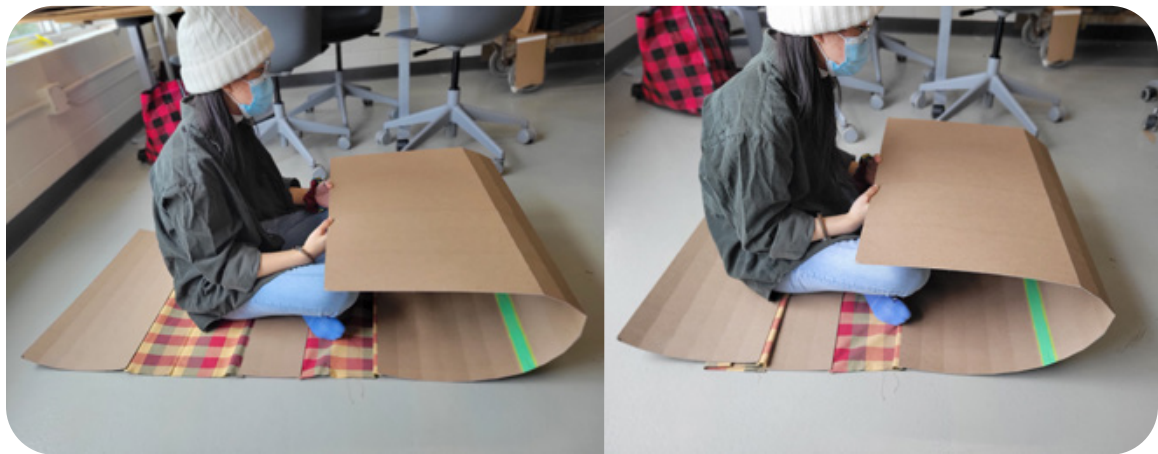




### **An Afterthought:**

One final thought I had while in the design finalization phase was something that was encouraged to test out.

Attaching fabric in between a couple panels to make it longer or shorter, in accordance to the users desires. However, both the comfort and sturdiness is questionable.



Model in photos: Brianna Wong

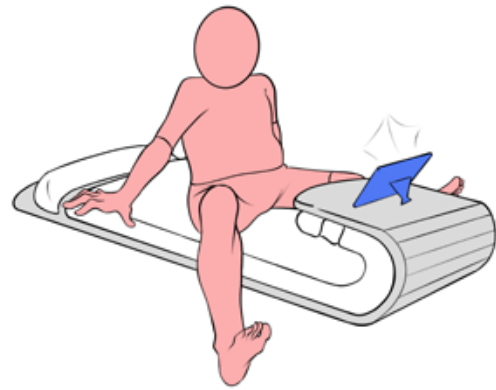
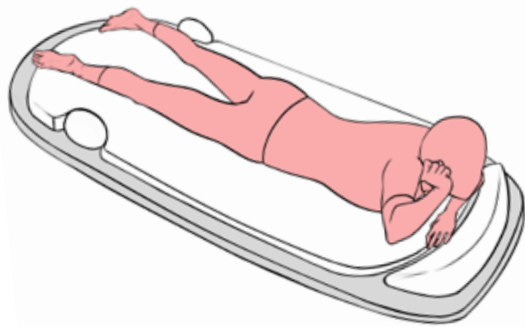
### Final Touch:

After deciding to not move forward with the fabric attachment version, I was able to move forward with final touches for this phase. That included the final radius of the corners as well as getting a feel for the thickness of the wooden base.



Model in photo: Mom





## Validation

Moving forward with iteration 2 of my final concept, I looked into making it more viable for the intended materials. Iteration 2 followed the intentions better than iteration 1, following closely with the style of Hanok. Keeping the overall form simple with a natural fluidity to it best fit my intentions.



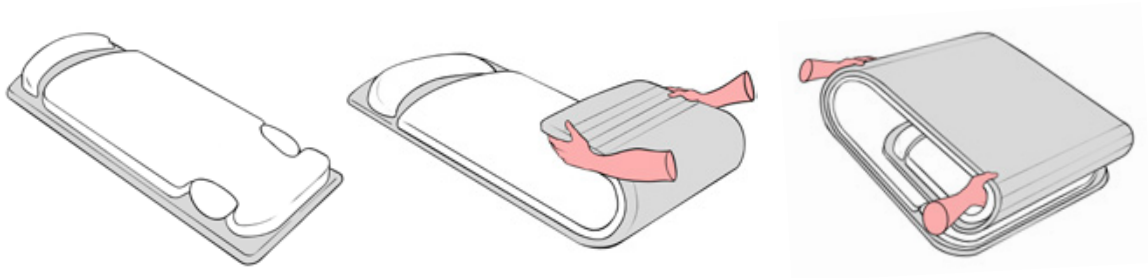


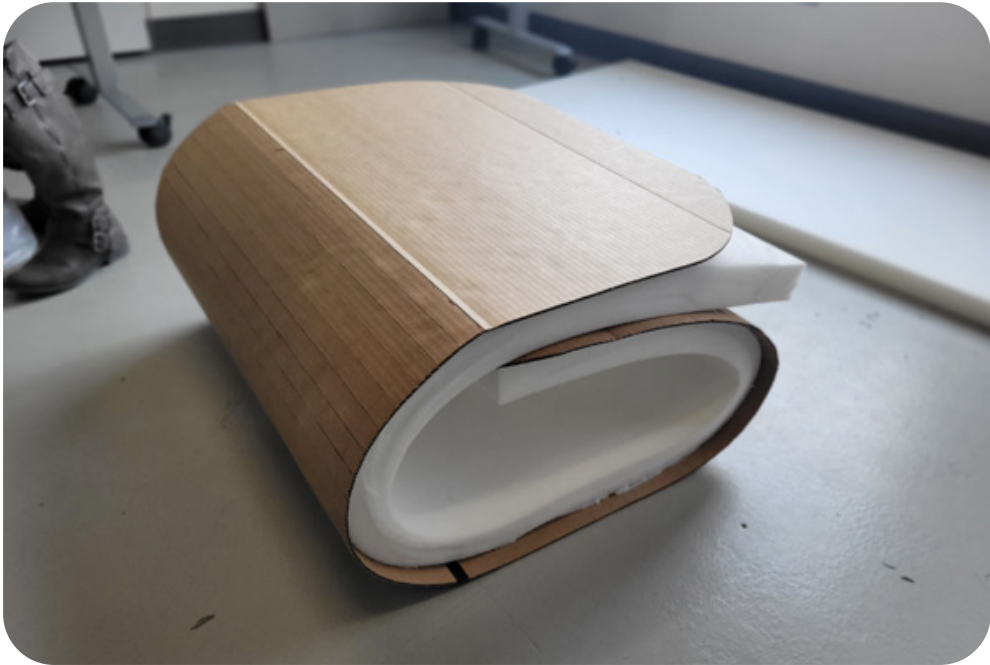
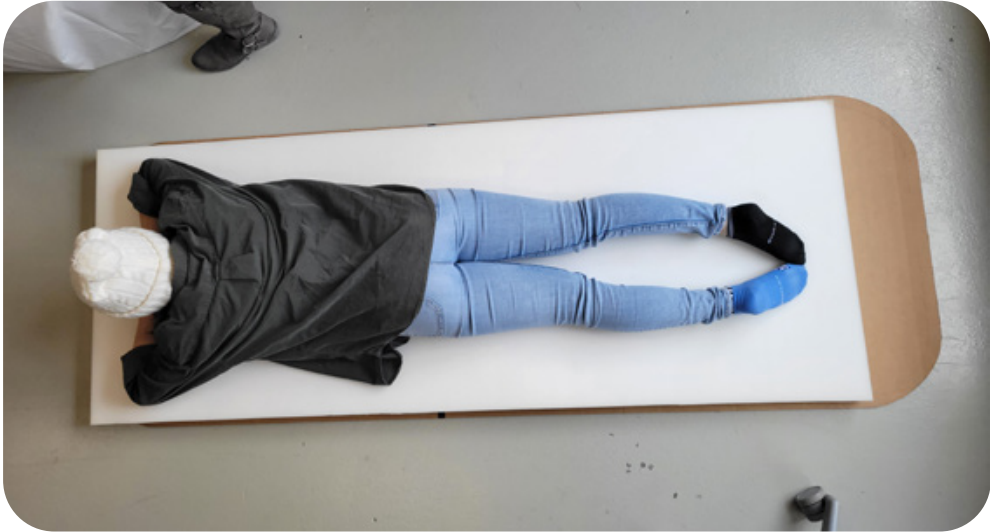


Model in photos: Brianna Wong

**Storage:**

The goal is to allow for easy storage - being able to be stored flat or in a folded state.





**Behind the Layers:**

Using the material choices of Hanok as a huge source of inspiration, the materiality behind Badak-ae was decided on based on its connection to that piece of inspiration and its feasibility.



### Wooden Base

Use of baltic birch plywood for the wooden tambour. This is to decrease the chances of having the wood warp. To secure the tambour panels, a plain yet tough sheet of canvas fabric was adheared to the back.



### Cushion

The soft portion consists of 3 parts.

- » The innermost cushion made of low density polyurethane foam.
- » Over the cushion is the inner layer of upholstery. Fabric that is a mix of spandex and cotton allowed for the forgiving stretch that the foam required.
- » Over the spandex fabric is an additional layer of fabric with a neutral tone, allowing it to work alongside the wood tone rather than clashing against it.

Having the upholstery not only aids the aesthetics, but it allows for an easy access to clean Badak-ae.



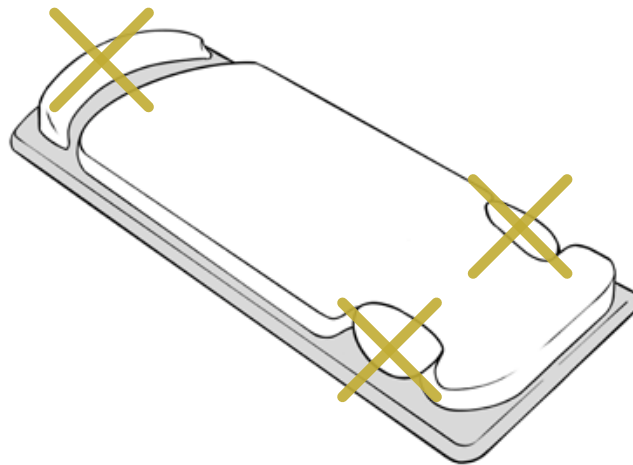
### Shadow

Using F15 industrial felt was the best fit for this portion. It prevents the wood from dust, dirt, and the other possible damages it could obtain from wood to hard surface contact.

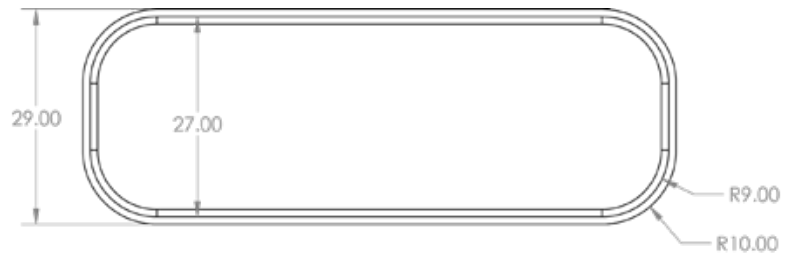


## Design Refinement

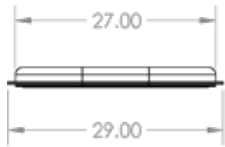
After playing around with the foam. It's been decided to remove the bumpers because (a) they no longer served a purpose and (b) they took away from the intended aesthetics.



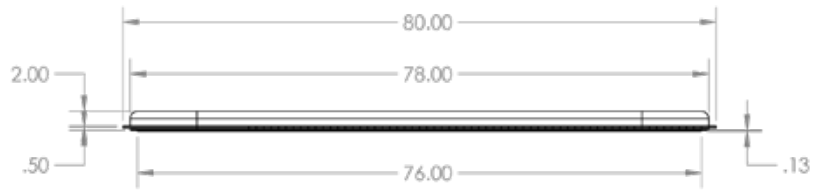
The dimensions were finalized by the end of this phase. The removal of the bumpers helped immensely as it removed unnecessary details. One key point was to keep it as flat as possible to really emphasize the floor based culture.



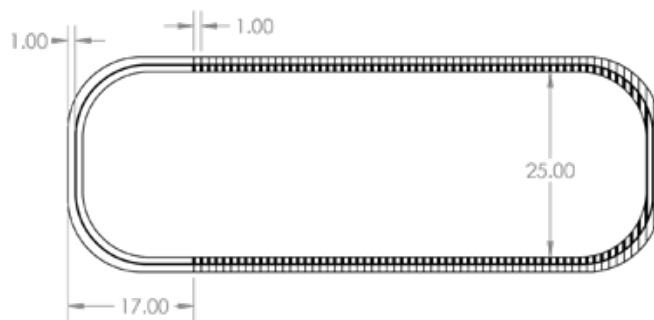
Top View



Side View



Front View



Bottom View





### Tambour Samples:

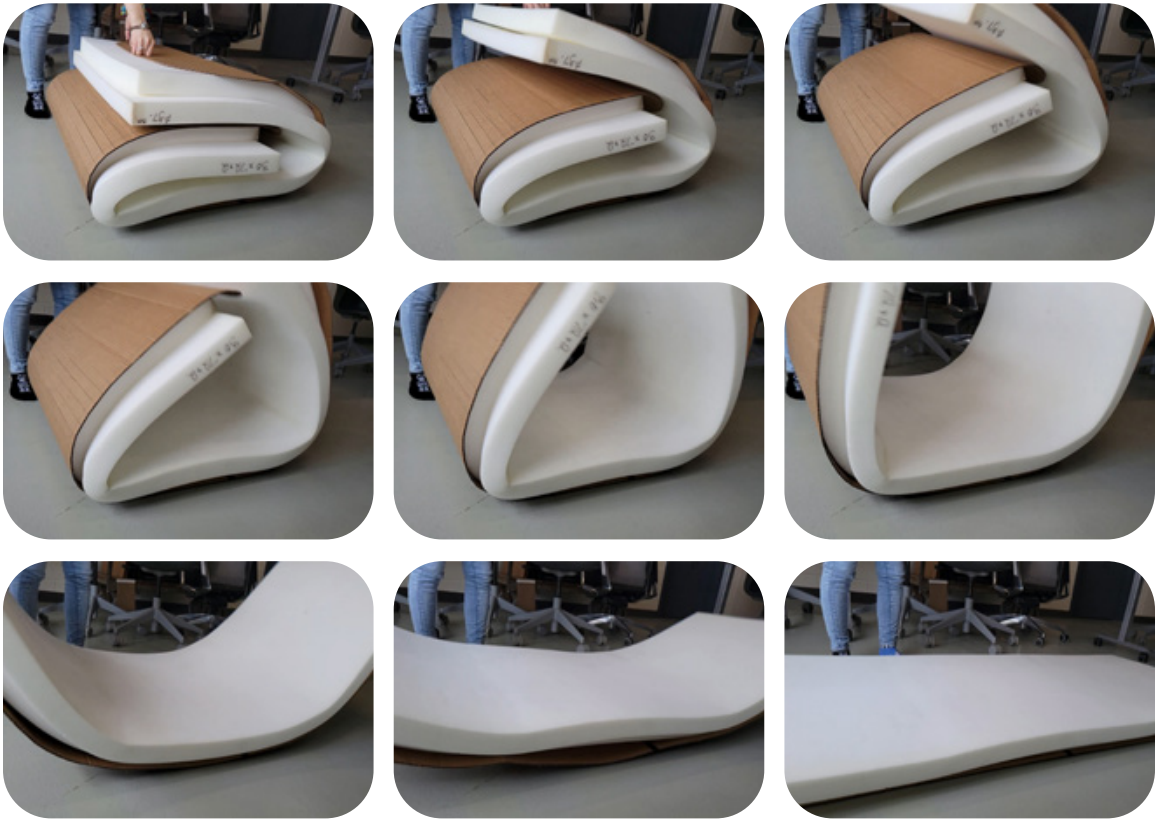
Testing out the 2 different thicknesses (1/2" & 3/4") and testing out the tambour assembly on a smaller scale test as it was my first time using this assembly method. It was decided that the 1/2" plywood flowed much better.

I also tested for chipping of the wood when using the router to break the edges as well as including a rabbit.

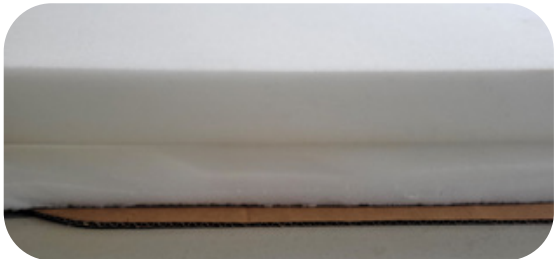
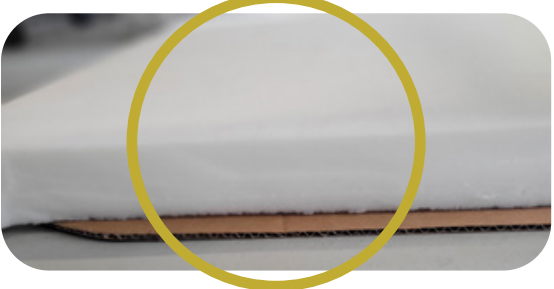
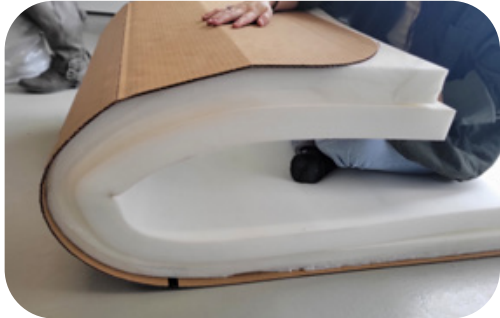


### Foam Samples:

The thickness of the foam was debated on. Whether or not one sheet of the 2" foam sheets was enough. However, as I played around with multiple sheets, any more than one sheet would be extremely difficult to fold over.



More than one sheet ends in a 'failure'. Not wanting to stay folded; wanting to remain flat.

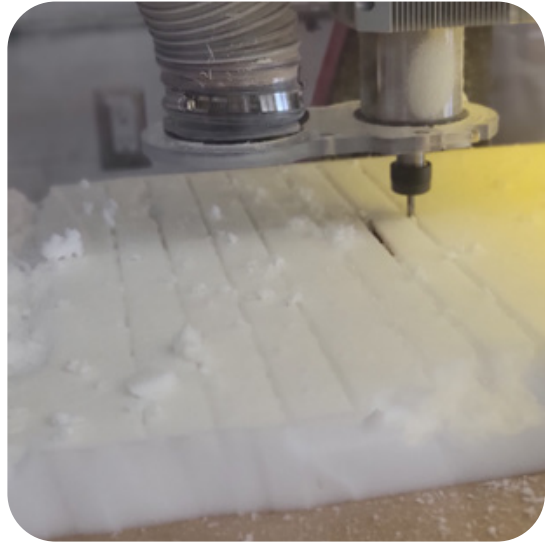


## Foam Samples Cont'd:

The tricky part was to figure out the best way to get multiple clean, uniform cuts on the foam sheet I was using. This turned out to be the most time consuming part of the tests.

The tests that were done:

- Using a box cutter - this was great but time consuming on top of the fact that you would need another person to watch the angle of the blade as you are cutting.
- Using a bandsaw - after changing the bandsaw blade to the most appropriate blade, this turned out to be the best way to cut the foam to the intended size. It was easy to maneuver the foam sheet (despite needing someone to hold the end of the sheet) which allowed for clean cuts in the form of straight lines and curves.
- Using the CNC machine - trying out a couple different drill bits on the foam sheet, it was discovered that a downcut bit worked the best. However, even with a downcut bit, the spindle speed had to have been reduced to 10%. As clamps would not work on a softer material, the foam had to be taped down to the machine bed. Despite how secure it was, the foam tended to bounce up when the bit got too close to the edge. Not only that, but the largest cut could only be the thickness of the bit (1/8") - being forgiving enough for only one pass.
- Using the track saw - this method was the best option as it produced very clean, uniform cuts throughout the entirety of the foam sheet while maintaining great depth control. The even pressure applied by the track itself was probably the key point to producing these cuts. All in all, it wasn't the most time consuming choice and after doing the samples, I decided that this would be the chosen method to be used for the final piece.





## Upholstery Samples:

The main concern of the upholstered layers was the relationship it had with the covered foam sheet. It had to have enough room for the foam within to shift a little for it to prevent any chance of it exploding out.

Pleats were played around with; having them run in areas the foam would bend, it was an option to allow the foam some breathing room.

- The conclusion was that pleats would be too messy, taking away from the overall aesthetics. In addition to that, it turned out that pleats were not mandatory as the upholstery worked just fine with the foam (if the foam is given some wiggle room).



Considered pleats

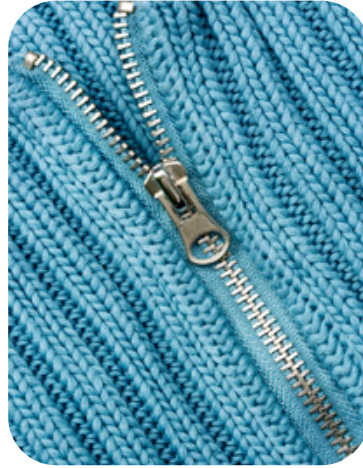
### **Upholstery Samples:**

The fastening method for the upholstery required a lot of thought. Not only was it important for it to flow with the idea of Hanok, but it had to be a method that users would be comfortable using on such a narrow piece of furniture. A regular clothing button was almost immediately ruled out while pillowcase folds or pillowcase ties were looked more deeply into. Although the thought of them resembled the idea of Hanok strongly, it was not ideal for Badak-ae. Instead, the next best thing was zippers and snap-on fasteners. However, if use comfort was also taken into consideration, zippers would be a better choice than snap-on fasteners. Hence the decision to move forward with zippers.





Pillowcase folds to keep pillow filling inside.



[fig.26] Amelie [Open Zipper on Sweater]



[fig.27] 3HLinen



[fig.28] KongJies



[fig.29] Mulroy

# Final Design

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## **Badak-ae**

This product is a piece of furniture that is meant to optimize the experience of doing certain activities on the floor. Though it may resemble the appearance of a mat, it would not function the same way.

As the entirety of the product could be used, one side would be a softer material while the flip side is of a harder material. By keeping the entirety of the item flexible, the user can maneuver and adjust according to their desires. This quality would also allow for easy storage; leaving it out flat or folding it up to hide away. The simpler the form, the more inclined people would be to adjust and use. The simpler the form, the more forgiving it is to clean. If spills were to take place, or other little accidents, the upholstery can be removed and washed.

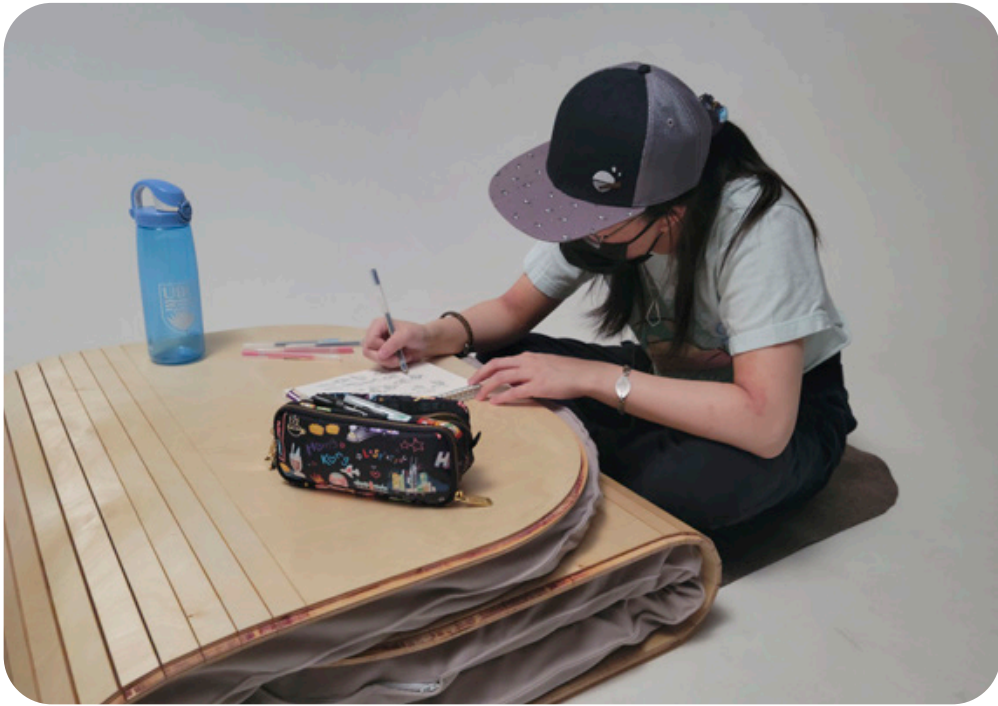




Used Flat  
Models in photos: Akbar Anwari, Madison Solda, Brianna Wong



Used Semi-Folded  
Models in photos: Brianna Wong



Used Folded Tri-Fold  
Models in photos: Madison Solda, Brianna Wong



Can carry and move around with two people. Another option would be to wrap the felt around the entire folded piece to carry alone.

## Model Making Process

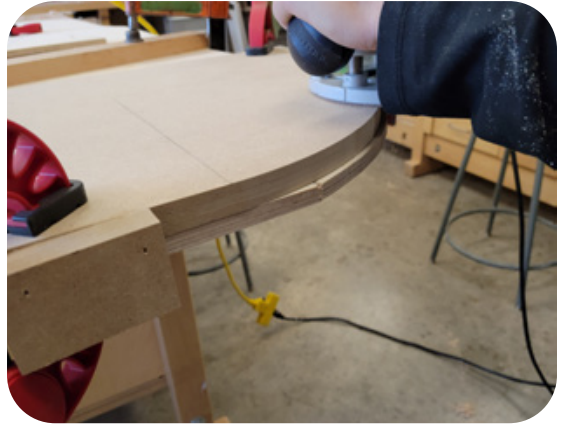
Starting with the wooden base, a 4 x 8' sheet of plywood was marked and cut to be a little bit larger than the correct size (in case the edges need to be trimmed after the glue up). Once finished, all the necessary panels were cut out and organized according to the initial markings (for the wood grains to flow throughout).

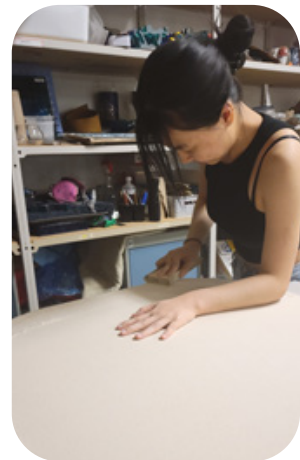






After creating a jig for the panels to reside in, all pieces were fit in place. Once everything was secure, I was able to mark the location of where the canvas would be glued onto. Making use of the vacuum compressor, applying even pressure on the surface of the glued area was easy to accomplish. When the initial curing period was up, I was able to break the panels apart to prevent them from sticking together before they dried.





Now that the piece was fully dried, I was able to trim the edges of the piece down to the its correct final size. Once trimmed, the edge work could be done i.e., adding the rabbit and routing the sharp edges. Along the way, minor mistakes were able to be fixed. Sanding came after everything else was completed.

## Foam & Fabrics:

After the wooden portion of the final was completed, it was easiest to get the foam done and out of the way. As soon as I finished cutting the slits into the foam sheet, I was able to move onto the upholstery. Going from marking the fabric to cutting and pinning the fabric to its correct form, the time consuming sewing came after (I recieved alot of help from my mom and grandma considering I have almost no experience in the textile field).





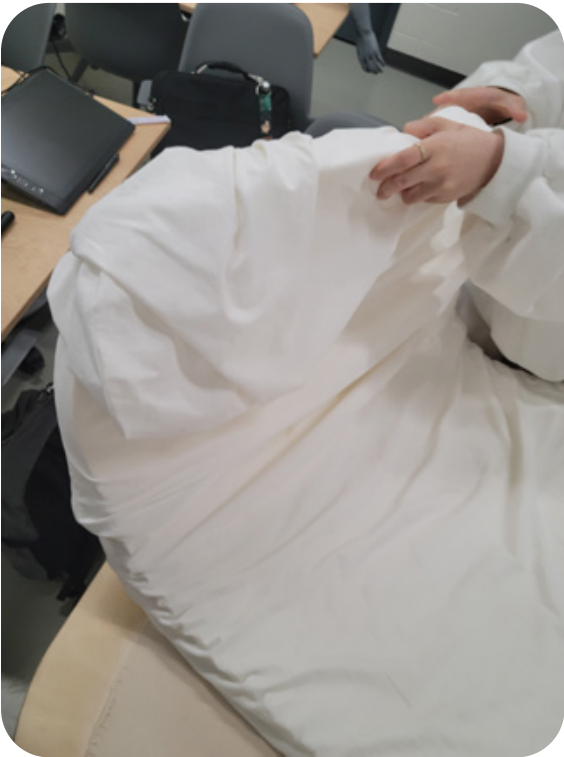
**Finale:**

As the major components were finishing up, I was able to move on to completing some of the final detail work. This included applying the finish onto the wooden base as well as fitting the two layers of upholstery

**Note:**

- It was a great idea to add the inner layer of upholstery as it held any and all mess from the foam while allowing for the exterior to slide in easier.



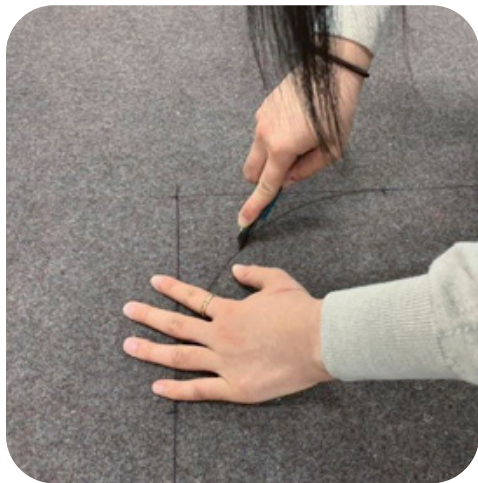


### Finale Cont'd:

After the upholstery was set, I was able to go in and at long last, add the fasteners. I then worked on sticking the dual-lock onto the wooden base first before tracing the location of each and adding it onto the underside of the fabric. After making some subtle adjustments post sewing the dual-lock onto the fabric, the dual-lock was stapled into the base. Making sure everything was secure, I moved on the last detail.







The final touches to this project was the shadow component considering it was an addition to the design that was not thought of until later into the project. It was a straightforward and easy task with no complication. Once that was done, Badak-ae was completed.

# Acknowledgments

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## Acknowledgments

The year was hectic at best but throughout the entirety of my capstone project, I have received immense support from my main advisors, Scot Laughton and Lee Fletcher. Through thick and thin, they were patient, open to give feedback, and always pushed me to take my project that much further. With my tambour assembly, which I had no experience with, Christina Pupo dedicated some of her time to patiently walk me through the steps with my samples while helping me out for the final piece. Overall, this project has received so much support from family and friends which added to the final piece; adding onto my satisfaction for it as well. I'm grateful for everyone involved who was willing to give me advice, point out areas that could be worked on more, etc. Lastly, to the interviewees who were willing to spend some time answering some of my questions, this project could have taken a huge turn if not for their contributions during my research phase.

I want to say *Thank You* to everyone who has supported my capstone project.

# Reflection

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## Reflection

While being Korean yet never being able to physically visit the country, I had the chance to dive deep into the South Korean relic of Hanok which I never had done prior to Capstone. I learned of the many similarities and unique differences between the traditional architecture of China, Japan, and of course South Korea.

In regards to the design, Badak-ae incorporated components in areas that I was not so familiar with. The tambour assembly was a concept I just learned of thanks to my advisor. Therefore, making one on such a large scale with only doing a few samples beforehand was quite intimidating. It's something I would want to play around with more along with various types of wood as well. Despite going into it with anc, the outcome was very satisfying. In regards to the textiles aspect, the trickiest bit was always sewing the zipper onto the fabric. It's something that people with years of experience still struggle with, or so I've been informed. Through these experiences, I've learned a lot, struggled but strived and though it may not be perfect, I understand what could be fixed and should be done next time.

Nonetheless, during capstone I rediscovered the joy of working on the floor. Just simply observing people and witnessing different activities done on the floor, it was a fun exploration that helped me to decide what qualities I typically needed to stay away from when ideating. It was also a fun experience to hear stories of acts done on the floor that I had never heard of.



# Index

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[fig.1] Valdivieso, F. (2022, September 13). Kool Korea goes global: bts & co. IE University. <https://www.ie.edu/insights/articles/kool-korea-goes-global-bts-co/>

[fig.2] Kinomaster. Untitled [Photograph]. Adobe Stock.

[fig.3] Cartwright, M. "Ancient Korean Architecture." World History Encyclopedia, <https://www.worldhistory.org/#Organization>, 13 Oct. 2022, <https://www.worldhistory.org/Korean-Architecture/>.

[fig.4] "Edo-Tokyo Open-Air Architectural Museum: Koganei." WhereInTokyo.com, <https://whereintokyo.com/venues/25083.html>.

[fig.5] Sullivan, M., Qiyi, Liu and Silbergeld, Jerome (2022, March 4). Chinese architecture. Encyclopedia Britannica. <https://www.britannica.com/art/Chinese-architecture>

[fig.6] Jackson, B. and Koehler, R. (2012) Korean Architecture: Breathing with Nature. Seoul Selection. [https://books.google.ca/books?id=00KQCgAAQBAJ&printsec=frontcover&dq=isbn:1624120474&hl=ko&sa=X&redir\\_esc=y#v=onepage&q&f=false](https://books.google.ca/books?id=00KQCgAAQBAJ&printsec=frontcover&dq=isbn:1624120474&hl=ko&sa=X&redir_esc=y#v=onepage&q&f=false)

[fig.7] Studio Kō. (2018, October 7). Traditional Korean roof tile "Giwa" and Jew-ajang [제와장:製瓦匠], a master Giwa maker Han Hyeongjun(1929-2013) @ Los Angeles, California [photos]. Facebook <https://www.facebook.com/344946452631105/posts/566576730468075/>

[fig.8] Lee, K. (2021). The Floor: A Reinterpretation of the Korean Home, Focusing on the Ondol. Space and Culture, 0(0). <https://doi-org.library.sheridanc.on.ca/10.1177/1206331220976486>

[fig.9] 문화재청. (2015, March 9). 한옥의 중심공간, 마루. 문화재. [https://www.cha.go.kr/cop/bbs/selectBoardArticle.do?nttlId=23224&bbsId=BBSMSTR\\_1008](https://www.cha.go.kr/cop/bbs/selectBoardArticle.do?nttlId=23224&bbsId=BBSMSTR_1008)

[fig.10-12] 나의세상 mondomio. (2014, August 29). 한중일 전통창호 비교: 무엇이 다를까? 한국, 중국, 일본 창호?? 네이버 블로그. [https://m.blog.naver.com/ye-j1763/220107398228?view=img\\_4](https://m.blog.naver.com/ye-j1763/220107398228?view=img_4)

[fig.13] SWNA. (n.d). <https://theswna.com/projects/chimney-light>

[fig.14] 아룸지기 디자인팀. (n.d). 아룸지기. <https://arumjigi.org/eng/product/index.php?p-code=E1810301>

[fig.15] Seol, S. (n.d). U-Stool-Series. Subin Seol. <https://subinseol.com/U-Stool-Series>

[fig.16] Contemporist. (2012 May 10). The Dami Series by Seung Yong Song. Contemporist. <https://www.contemporist.com/the-dami-series-by-seung-yong-song/>

[fig.17] Im, G., 2022. Creative Matrix.

[fig.18] Park, Fouser, R. J., & Lee, J. (2015). Hanok: The Korean House. Tuttle Publishing.

[fig.19] Milos Tasic. Untitled [Photograph]. Adobe Stock.

[fig.20] Gstockstudio. Untitled [Photograph]. Vecteezy.

[fig.21] Gpointstudio. Untitled [Photograph]. Adobe Stock.

[fig.22] Fly\_dragonfly. Untitled [Photograph]. Adobe Stock.

[fig.23] Eggeeggjiew. Untitled [Photograph]. Adobe Stock.

[fig.24] Big Berry Backstage (2018, February 18). Korean floor culture. Medium. <https://medium.com/bigberry/korean-floor-culture-2f7b6849ca2d>

[fig.25] Lee Valley Tools Ltd (2023). "Wooden Tambours". Lee Valley, Lee Valley Tools Ltd. <https://www.leevalley.com/en-ca/shop/hardware/project-supplies/tambours/40016-wood-en-tambours>

[fig.26] Amelie. Open Zipper on Sweater [Photograph]. Adobe Stock.

[fig.27] 3HLinen (n.d). "Set of 2 Linen Pillowcases With Ties Beige White Grey Colors." Etsy. <https://www.etsy.com/listing/777405166/set-of-2-linen-pillowcases-with-ties>

[fig.28] KongJies (n.d). "Clothes Hidden Button 100 Sets 10mm Sew-on Snap Buttons Stainless Steel Snap Fastener Press for Sewing Clothing (Black and Silvery)". Amazon. <https://www.amazon.ca/Clothes-Buttons-stainless-Fastener-Clothing/dp/B08M5Z6S-7J?th=1>

[fig.29] Mulroy, Zahra. "Why the buttons on men's and women's shirts are sewn on opposite sides." 20 September 2016. Mirror. <https://www.mirror.co.uk/news/weird-news/buttons-mens-womens-shirts-sewn-8875698>





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