

Noah Davis

Industrial Design Portfolio

About Me



Education

North Carolina State University

Industrial Design Major

Computer Programming Minor

Graduated May 2026

Experience

Technician Newspaper

Layout Designer

January 2025 - April 2025

Design Editor

April 2025 - September 2025

Skills

3D Modeling

Solidworks

Autodesk Fusion

Blender

2D Image Editing

Adobe Illustrator

Adobe Photoshop

Adobe Indesign

Procreate

Prototyping

3D Printing

Sewing

Woodworking

Computer Programming

Java, C, C++

HTML, CSS, Javascript

Who am I?

I am a designer interested in furniture, cooking, tech products, layout design, computer programming, writing, and humanity centered design.

Contents



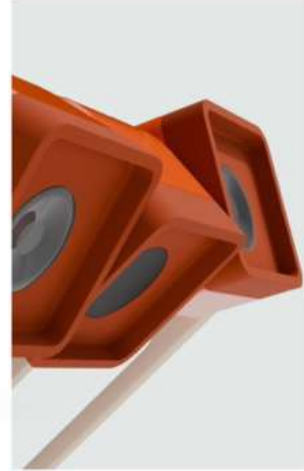
**Hydroponic
System**



**Toaster +
Salamander**



**Work From
Home Furniture**



Apollo



Off the Ground



**Cake Sewing
Machine**



Hydroponic System

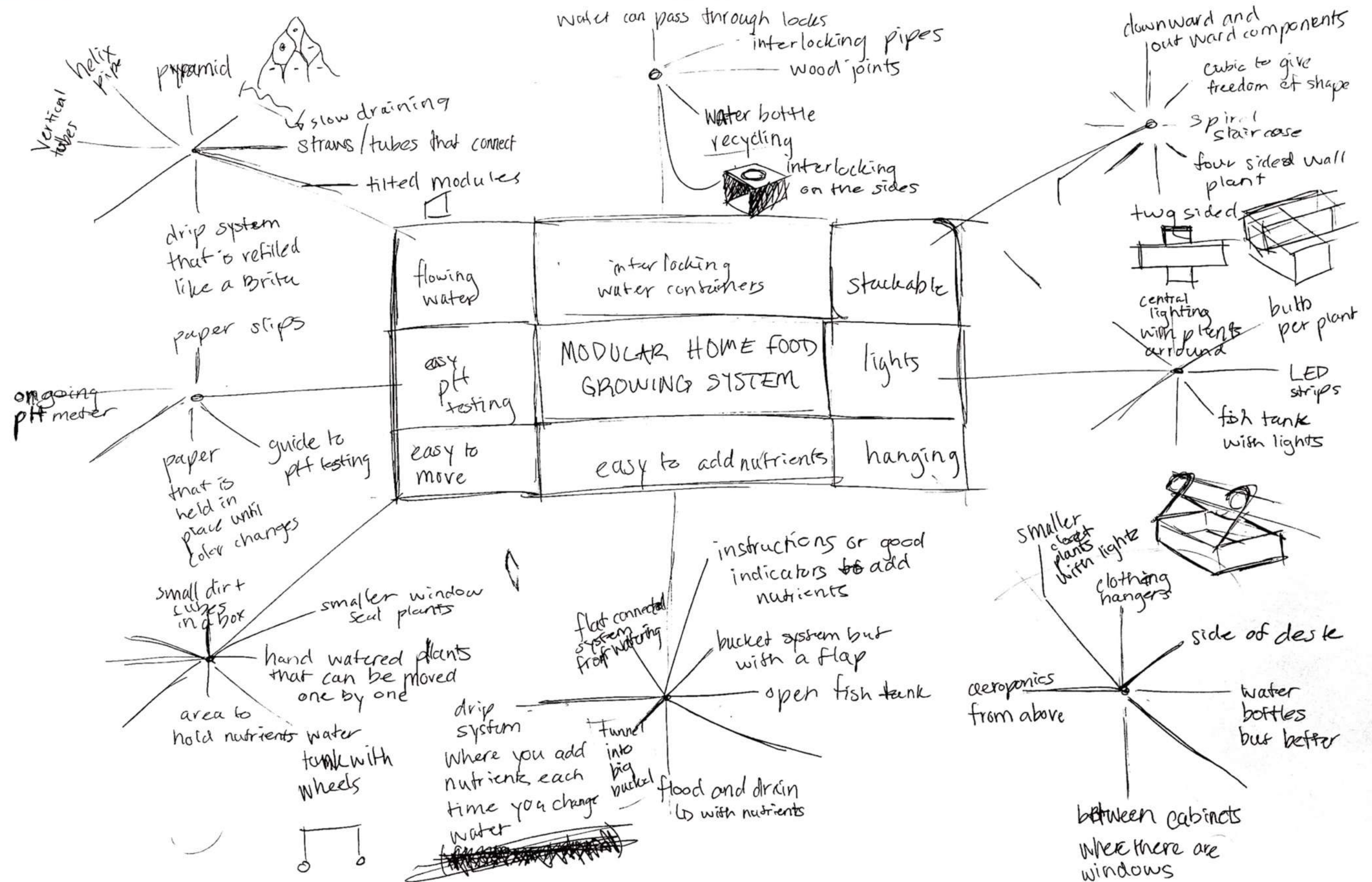
Spring 2024 and Spring 2026

Design a scalable hydroponic system for an individual to assemble and maintain themselves.



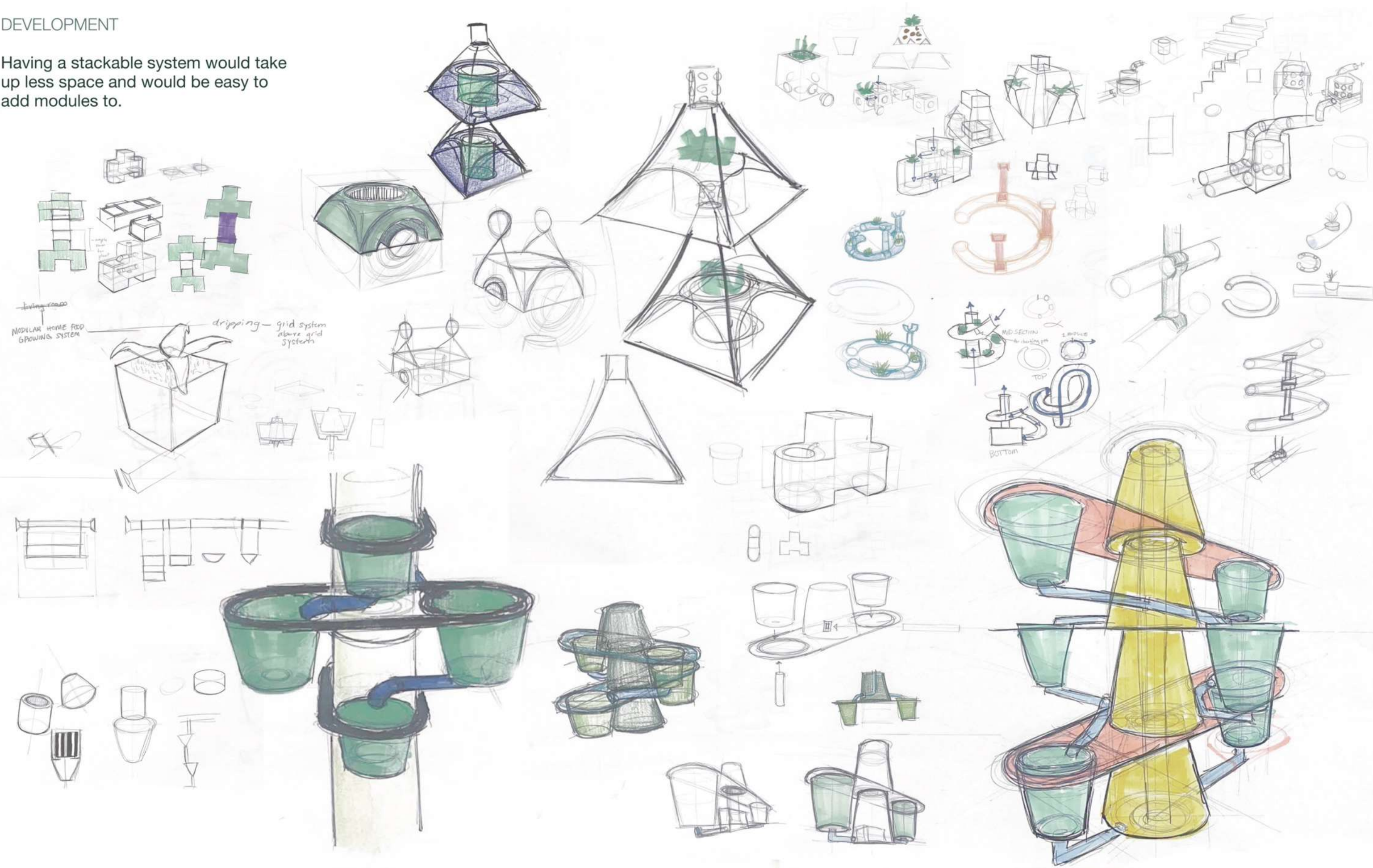
Hydroponics is a soil-free, water-based cultivation method that delivers nutrients directly to plant roots.

DEVELOPMENT



DEVELOPMENT

Having a stackable system would take up less space and would be easy to add modules to.



DEVELOPMENT



This prototype uses a water pump to push water to the top. Water trickles down to each modular unit. Up to six feet of layers can be added.

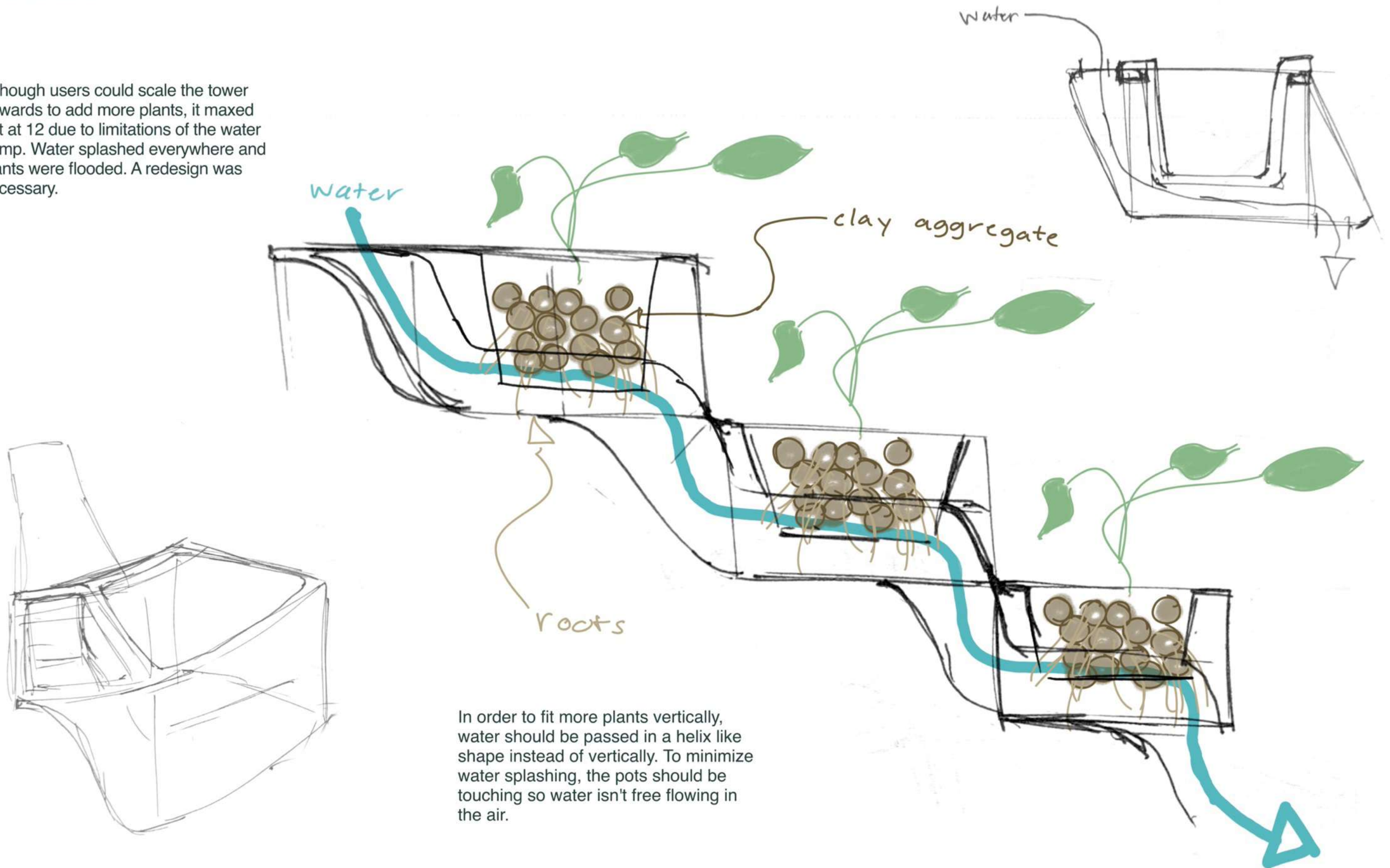


After finishing this prototype, it was clear that there was too much splashing, and the whole system needed to be more compact.



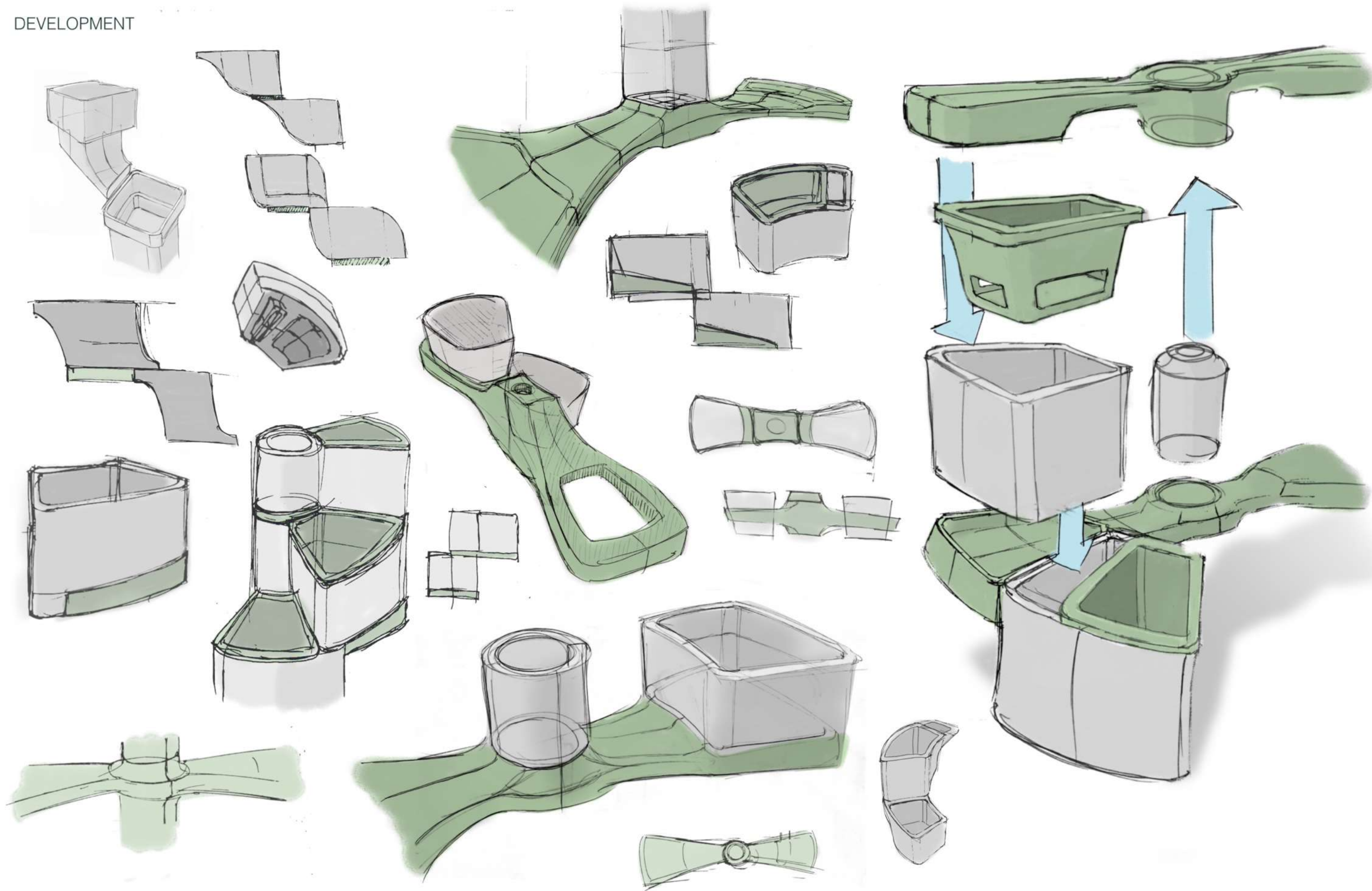
DEVELOPMENT

Although users could scale the tower upwards to add more plants, it maxed out at 12 due to limitations of the water pump. Water splashed everywhere and plants were flooded. A redesign was necessary.

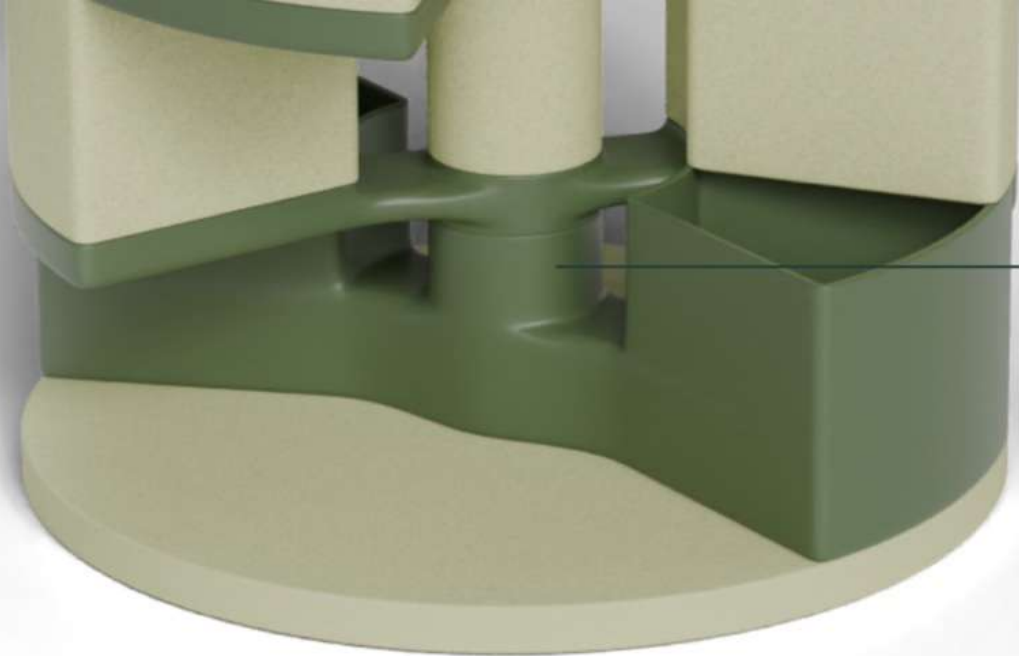


In order to fit more plants vertically, water should be passed in a helix like shape instead of vertically. To minimize water splashing, the pots should be touching so water isn't free flowing in the air.

DEVELOPMENT



FINAL



At the base, a water pump moves water to the top of the tower.



The stream of nutrients is split into two helix-shaped paths.



FINAL



Large holes on the baskets allow for water to easily flow through the hydroponic roots.



FINAL





Toaster + Salamander

Fall 2025 and Spring 2026

Discover issues
with a current
toaster oven and
redesign it.

A toaster was disassembled in order to understand how sheet metal is manufactured. Other discoveries were made as well. Air gaps reduce heat on the surface and Joule heating requires fewer parts than expected.



RESEARCH

Most toaster ovens take up too much counter space.



How can a toaster take up less counter space?

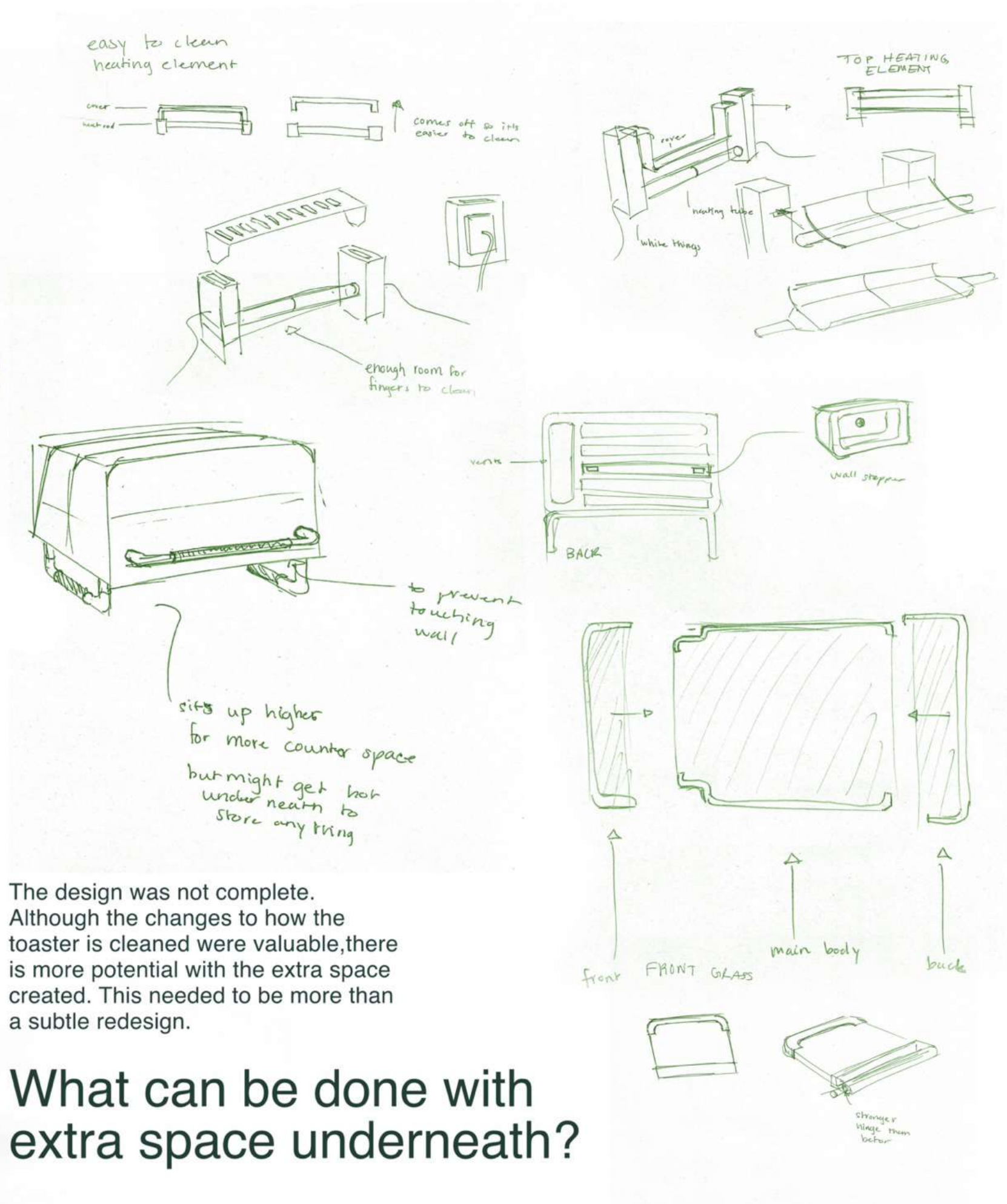
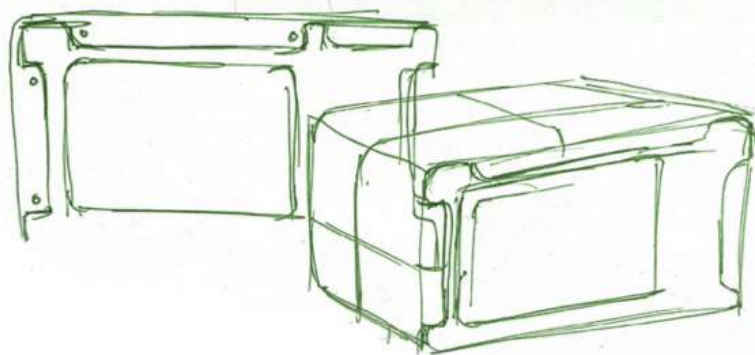
Most toaster ovens are difficult to clean.



How might it be easier to take apart a toaster and clean Joule heating rods?

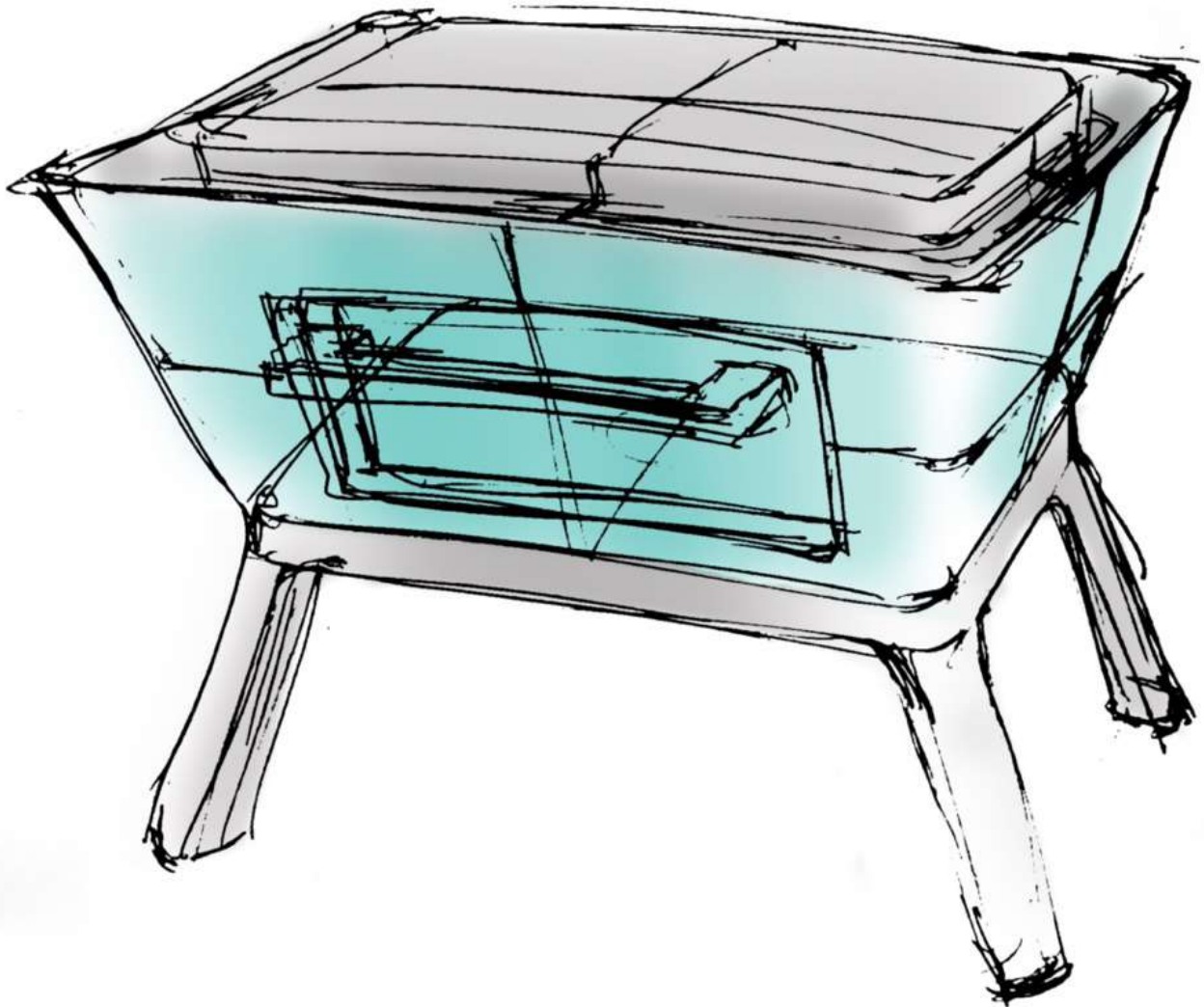
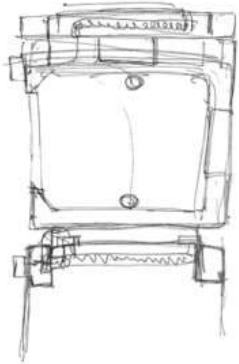
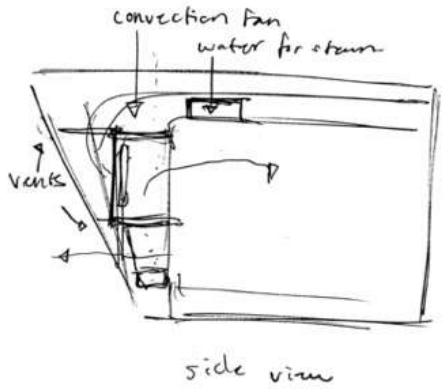
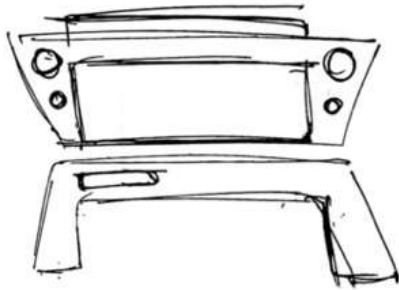
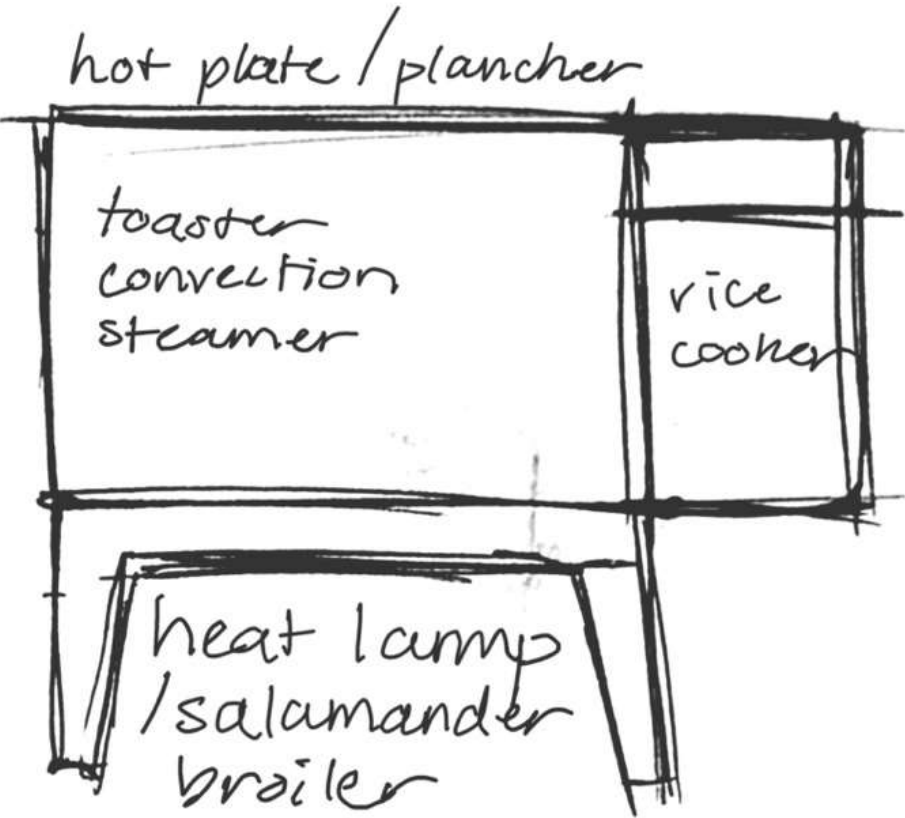
DEVELOPMENT

The first concept was a critique of the toaster I took apart. It elevated toaster that provided more counter space. The grates covering the heating system can be removed so a human can clean the tubes to prevent fires.



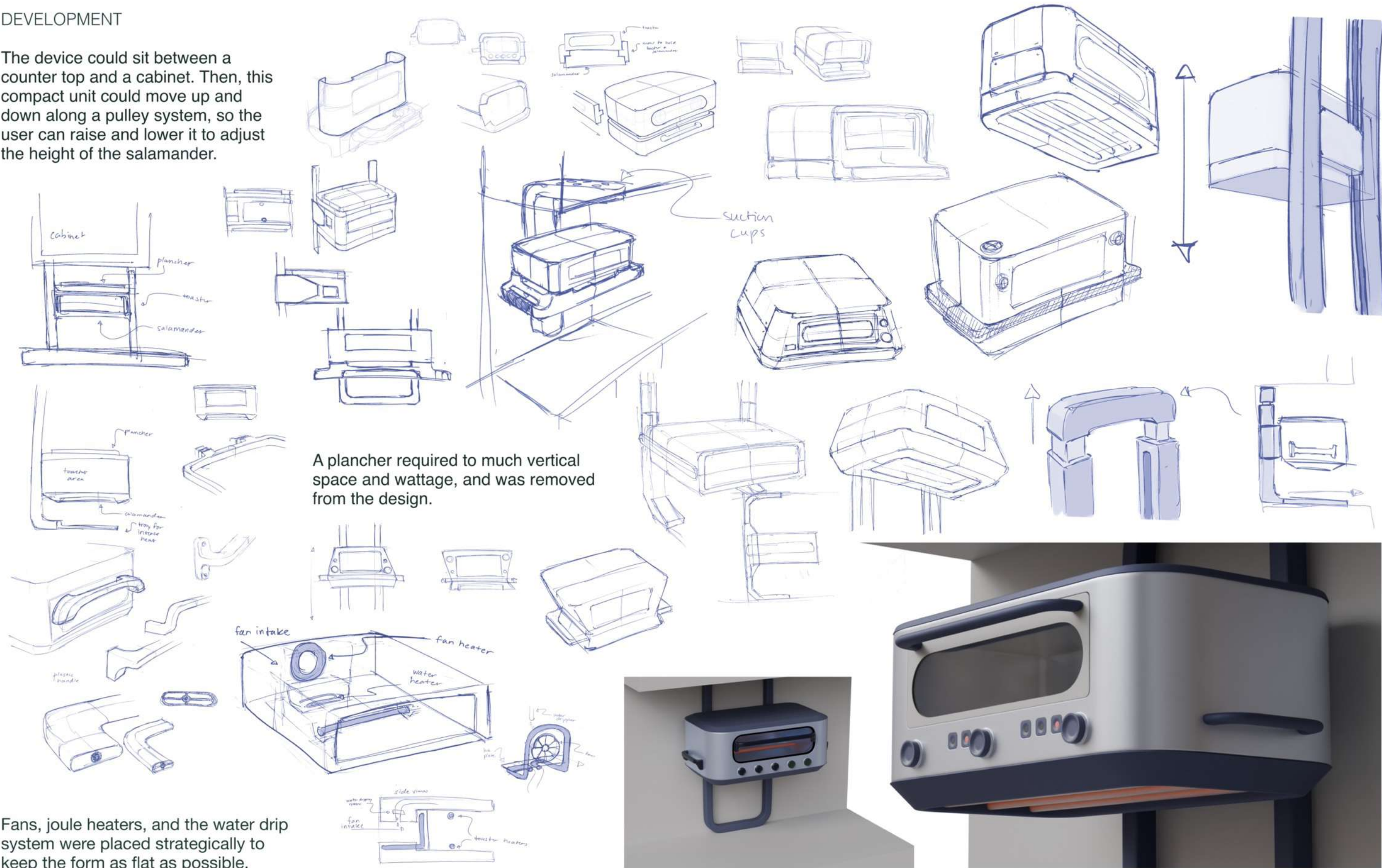
Toaster + Plancher + Salamander

A salamander broiler makes great use of the extra space underneath. A plancher was added as well to create a multicooker design.



DEVELOPMENT

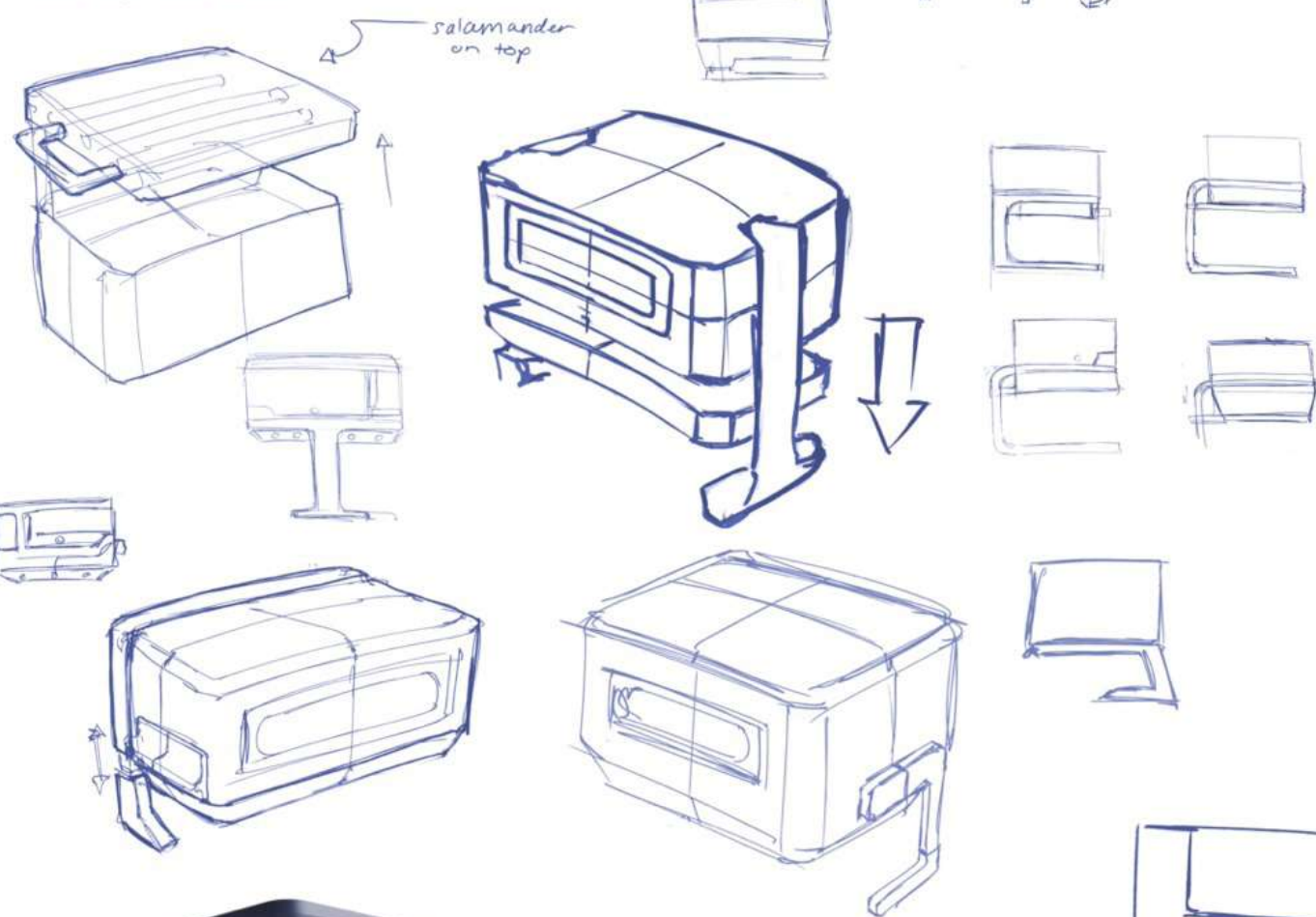
The device could sit between a counter top and a cabinet. Then, this compact unit could move up and down along a pulley system, so the user can raise and lower it to adjust the height of the salamander.



Fans, joule heaters, and the water drip system were placed strategically to keep the form as flat as possible.

DEVELOPMENT

Eventually, the wall mounting system was completely ditched. It only made sense to have the salamander part move up and down.

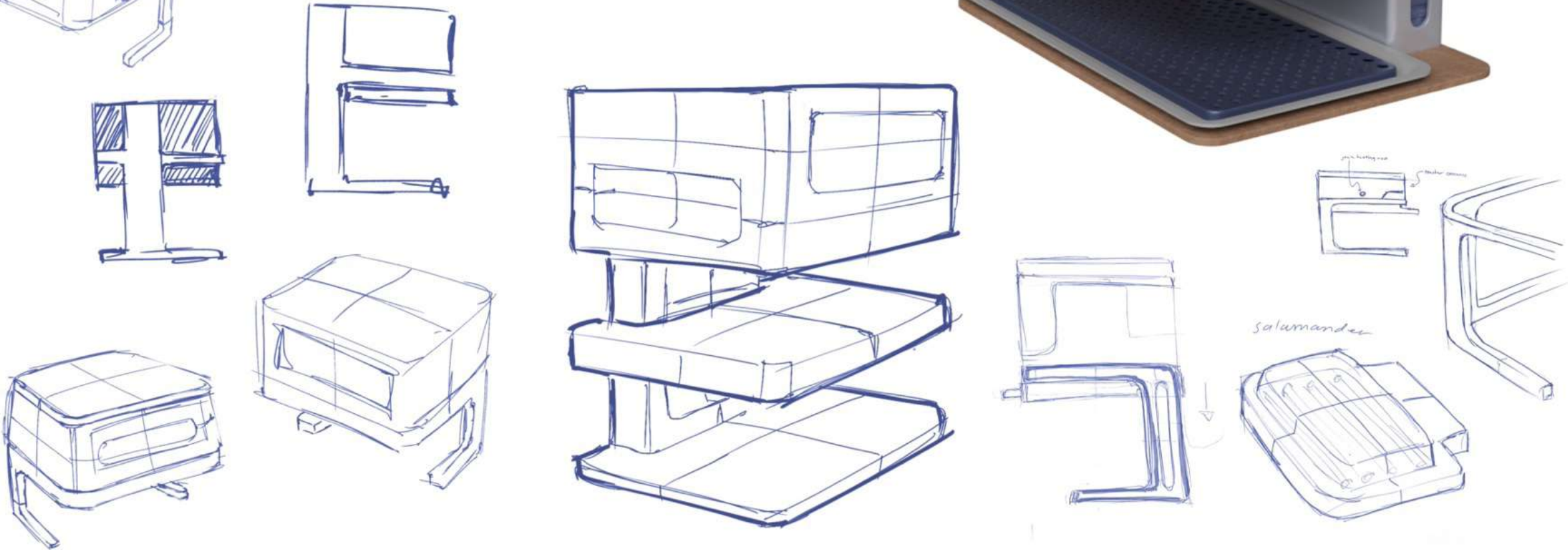


Cork was added underneath to prevent heat transfer to the counter. A tray with cork can slide in underneath the salamander for high intensity heat. However, the half circle openings on the sides of the salamander were too restrictive.

Now that the sides are removed, it looks unstable. How can the side supports be brought back in a more subtle way.



Although this concept was the correct amount of compactness, there was no space to insert a pulley system for the salamander.



FINAL

The final design still addresses the counter space issue, which is one of the issues that initiated the whole project. Users can place anything underneath the broiler. Additionally, cooked food can sit under a heat lamp while other food is being cooked. The salamander broiler can crisp or brown any dish to finish it off.

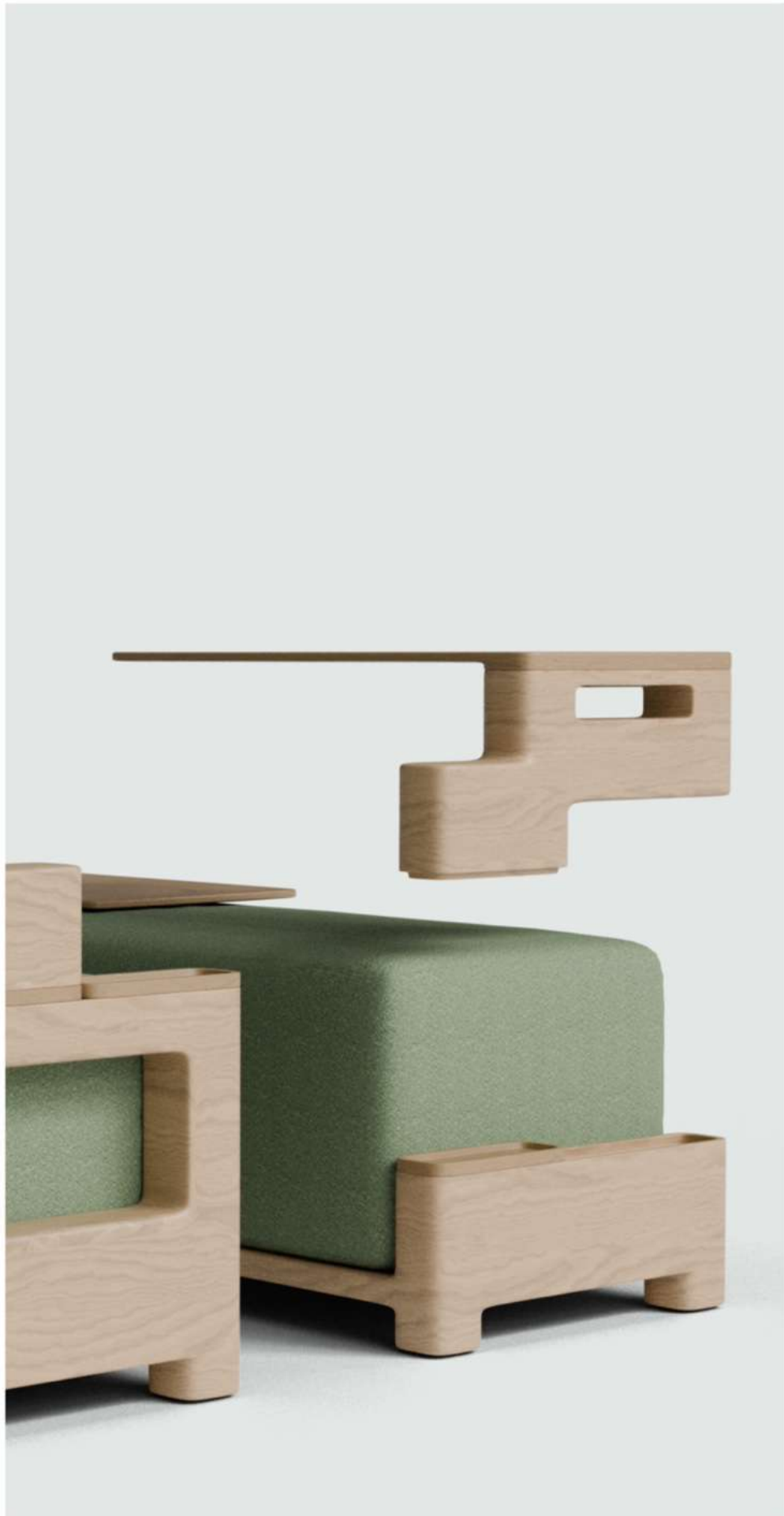


FINAL



A vent for the fan intake is located on the right side. A vent to cool the water tank is on the left side. Having these units on the left and right sides allows the toaster to take up less space going forwards and backwards.





Work From Home Furniture

Spring 2026

Design furniture for a work from home environment in a post 40-hour work week society.

As advancements in technology keep speeding up our tasks, do we really need to find more ways to fill up the 8 hour work day, or can we just accept that our 40 hour work week is unnatural and outdated.



RESEARCH

"Millions of employees finish their work by lunchtime and spend the rest of the day pretending to stay busy."

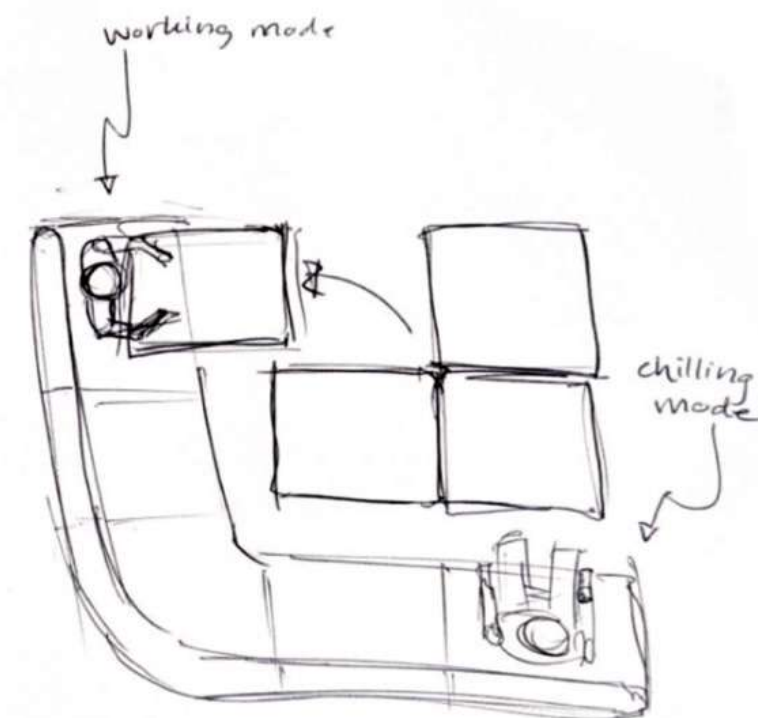
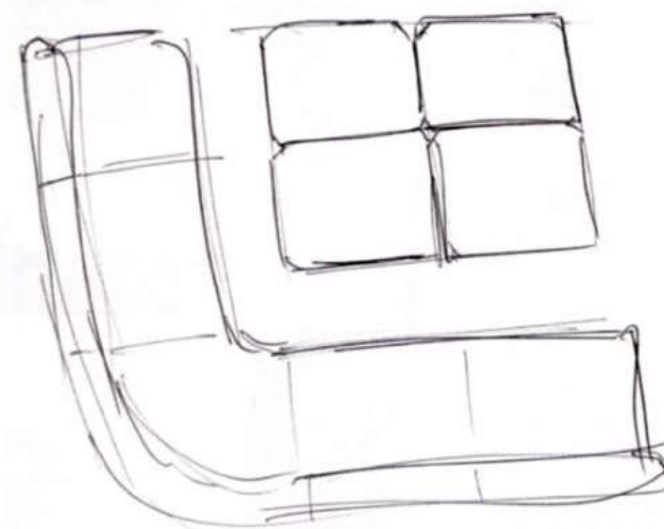
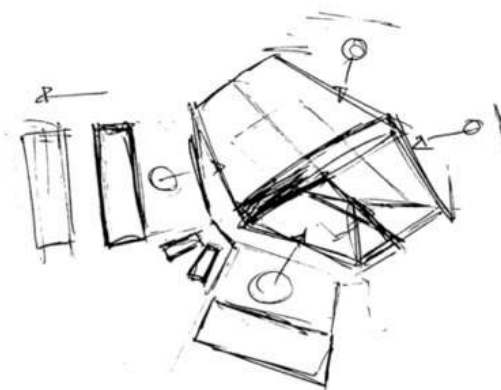
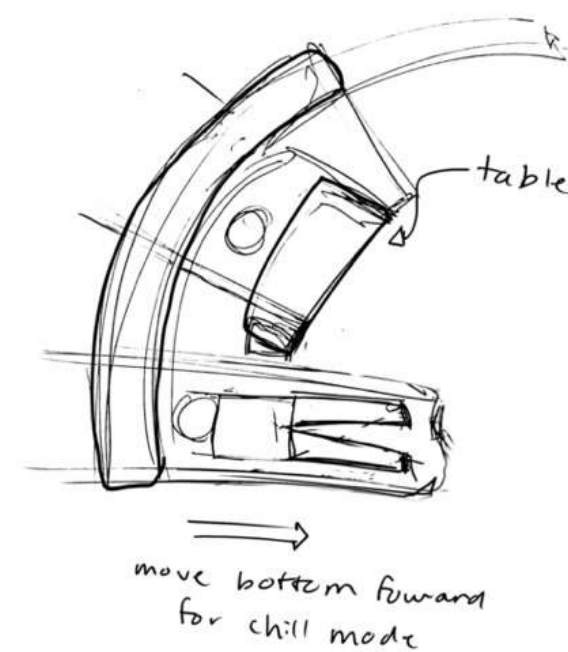
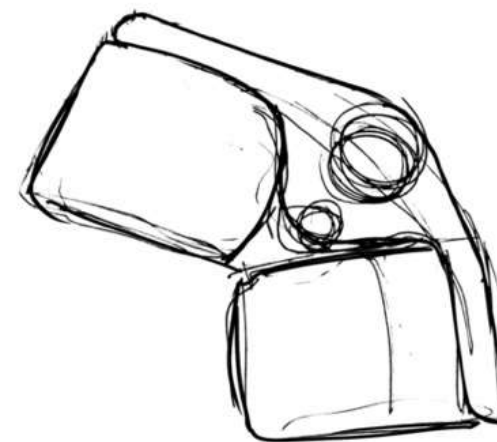
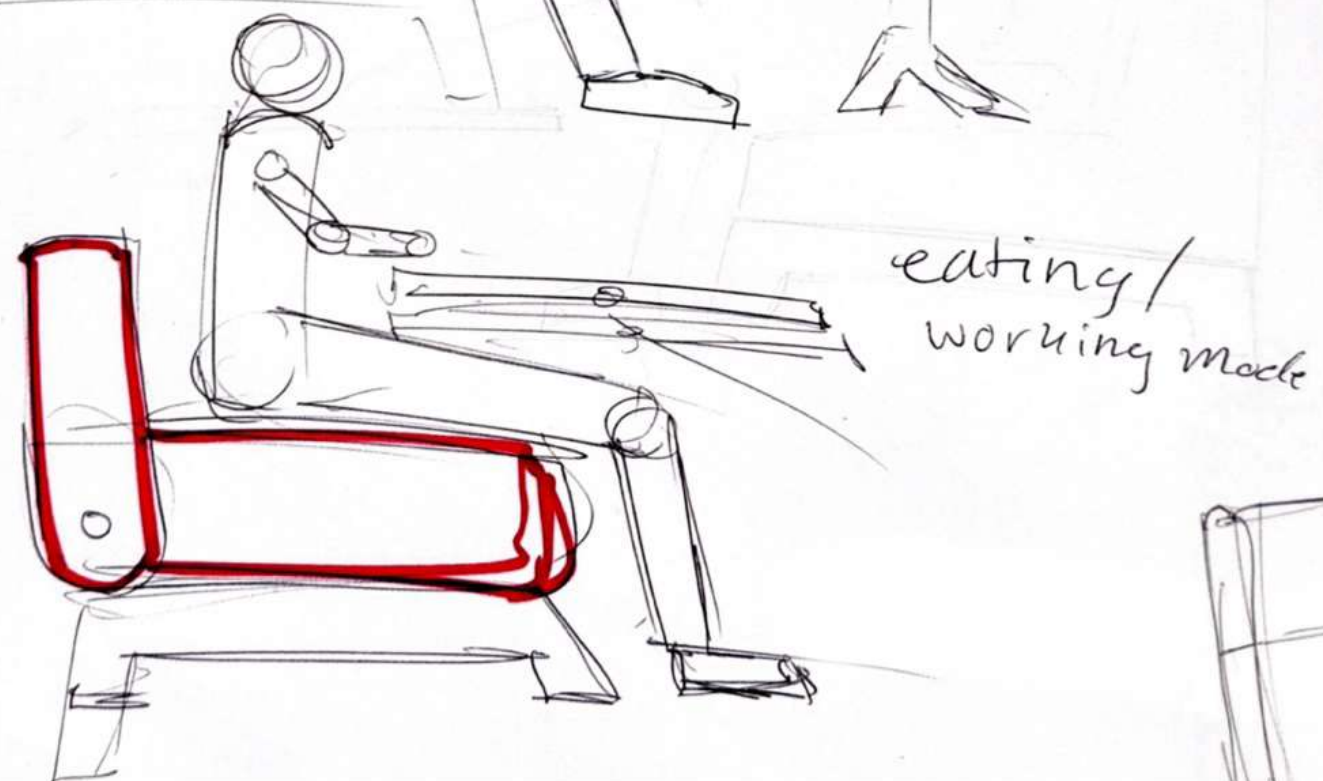
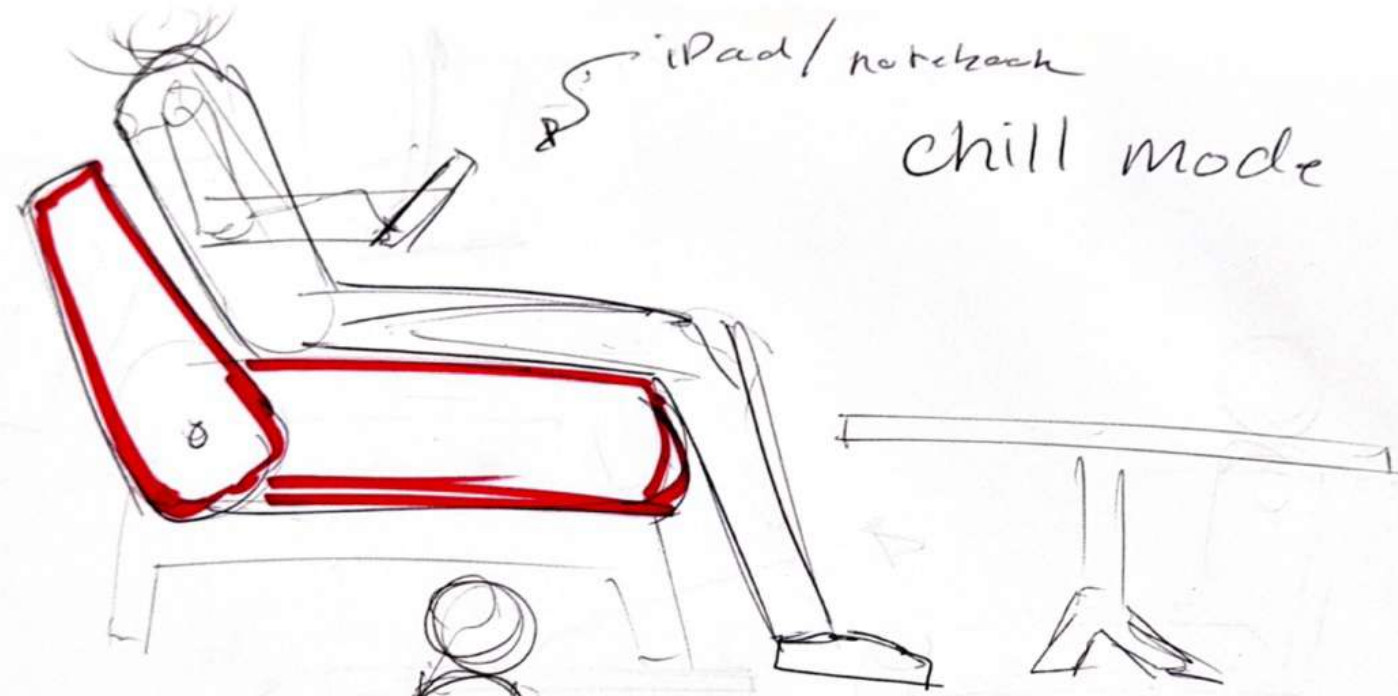
— James White



How might furniture support work that exists in small bursts opposed to longer 8 hour days. Most existing solutions are small, clunky and difficult to move out of the way. The user should be able to hide the table top in plain sight when it is not being used.

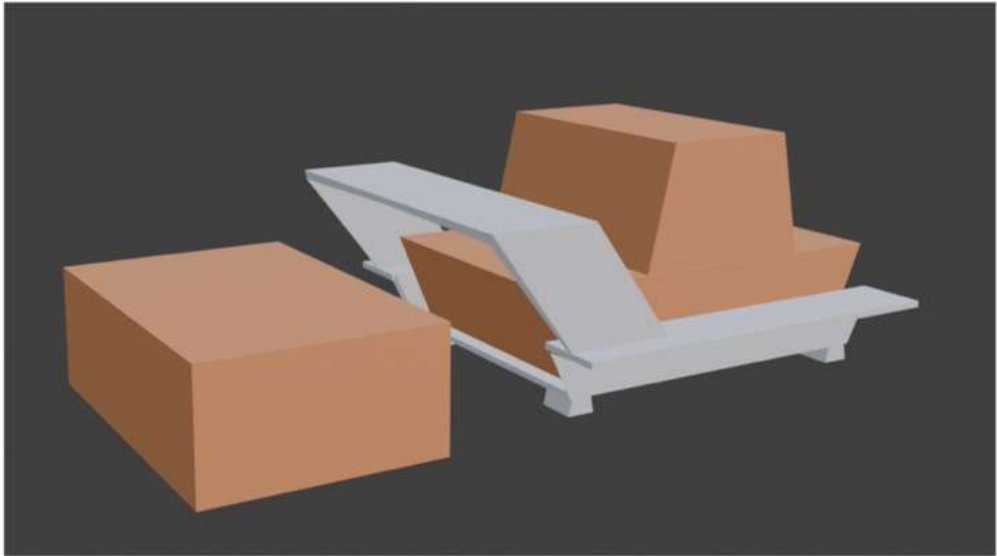
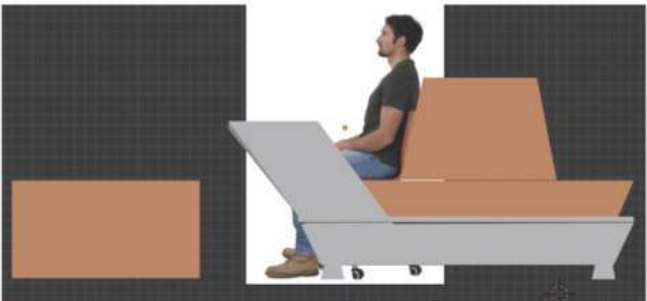
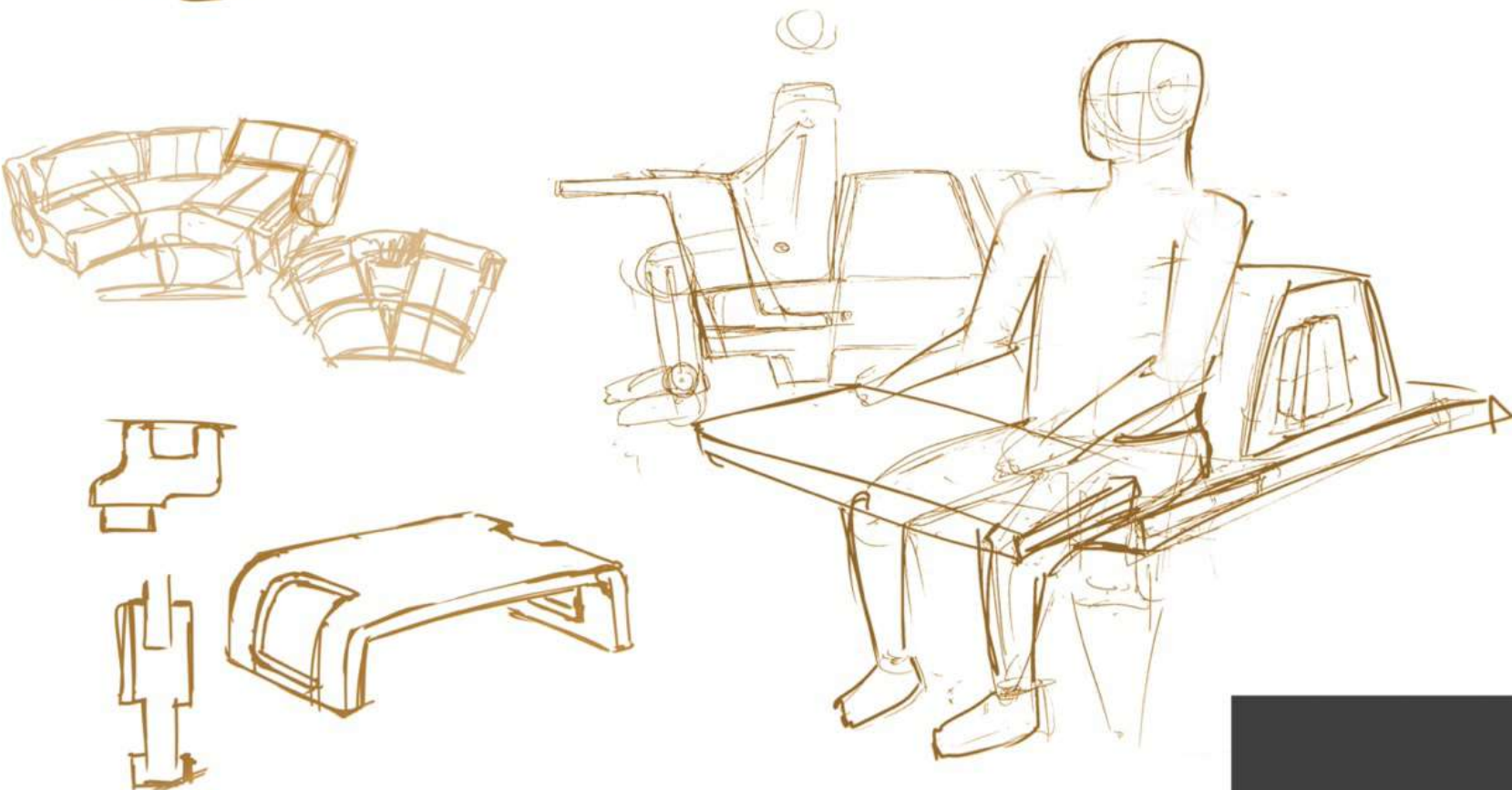
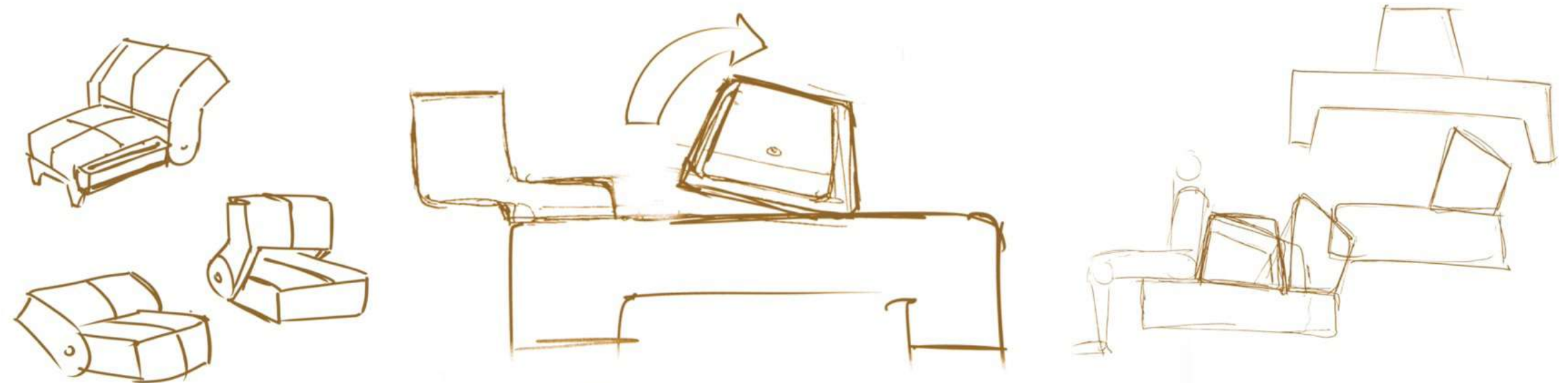


DEVELOPMENT



DEVELOPMENT

How will the backrest move? How will the table top change locations? These questions were explored with different concepts.



DEVELOPMENT

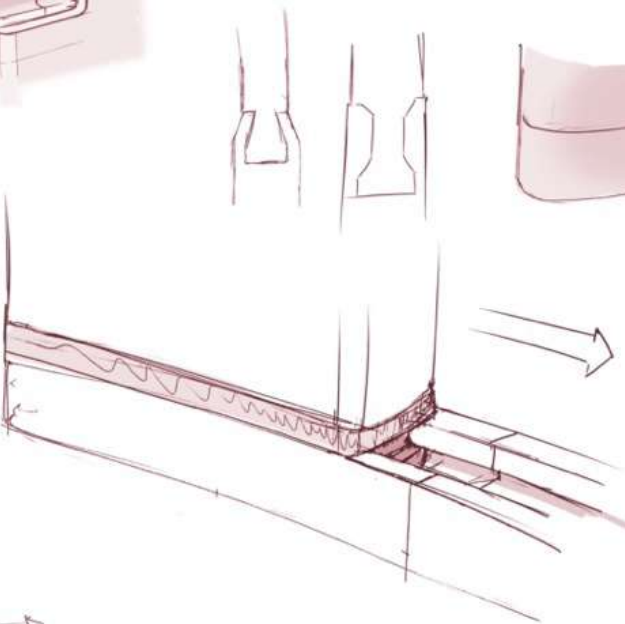
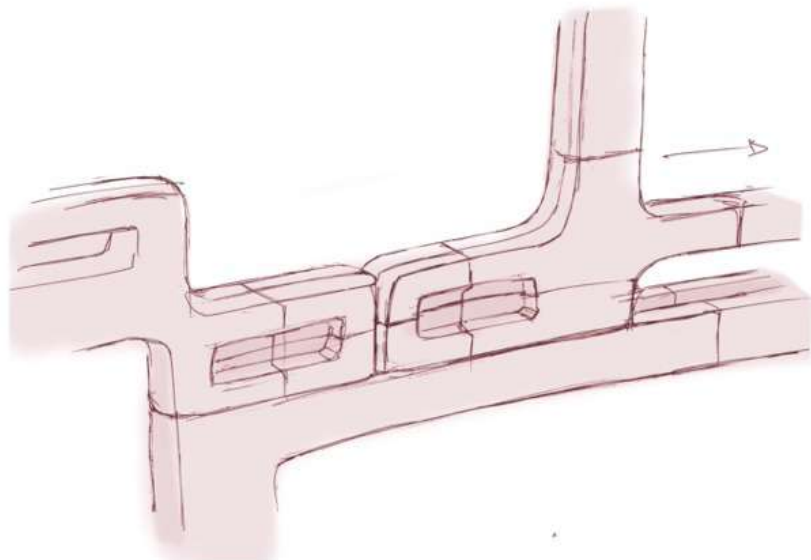
Both the table top and the backrest move on along a rail to be adjusted. Making them look stable was the next priority.



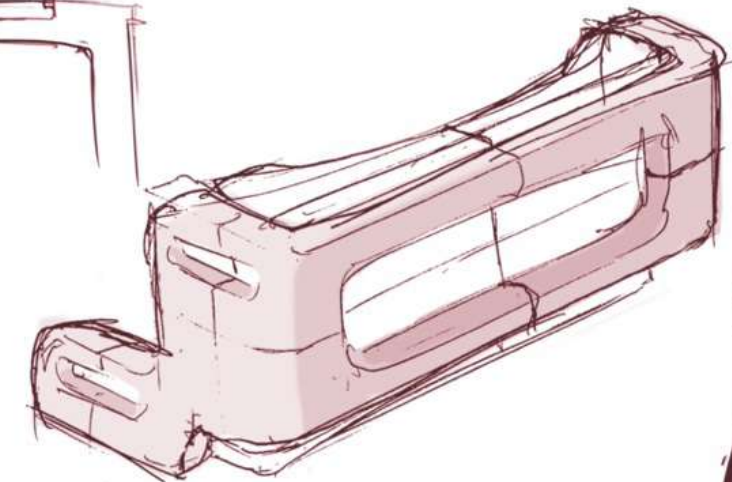
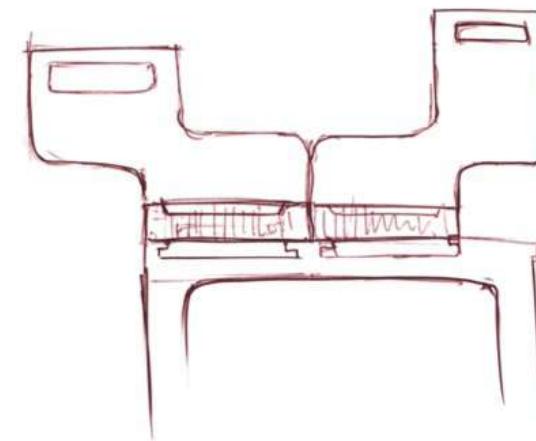
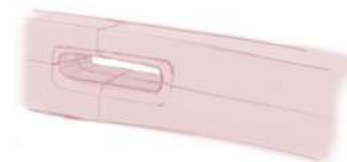
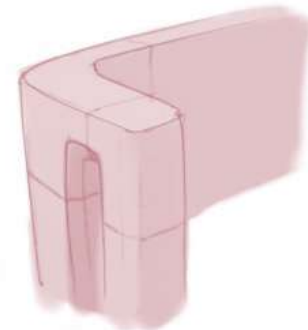
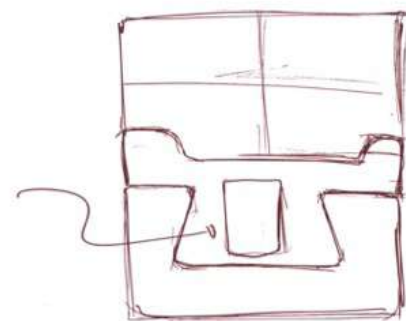
Table height and seat height were tested using cardboard mockups, and then a reference image for sketching and 3D modeling.



Multiple methods for attaching the table top were thought out. It made the most sense to simply attach it vertically opposed to horizontally (forward and backwards from the user's perspective). This led to using magnets to secure the table top.



magnet



FINAL

Backrest and table tops can move for customizable use. The table tops can act as a coffee table or be pushed forward for a comfortable ottoman foot rest.



Having the backrest pushed forward is great for work mode. When a break is needed, it is pushed backwards for more space to relax.



FINAL

The table top and back rest are attached with magnets. Pressing the button located in the slots releases them.

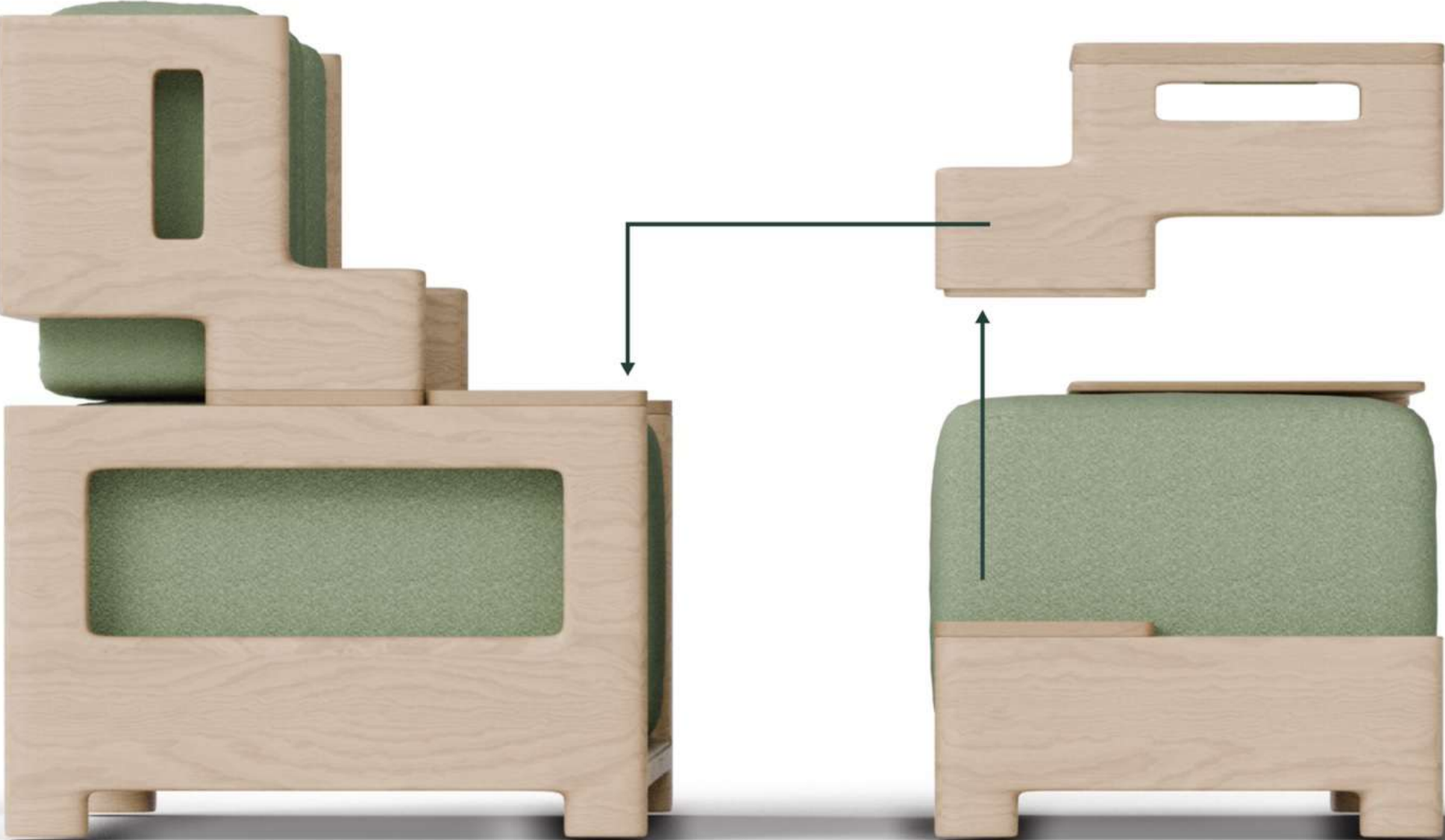
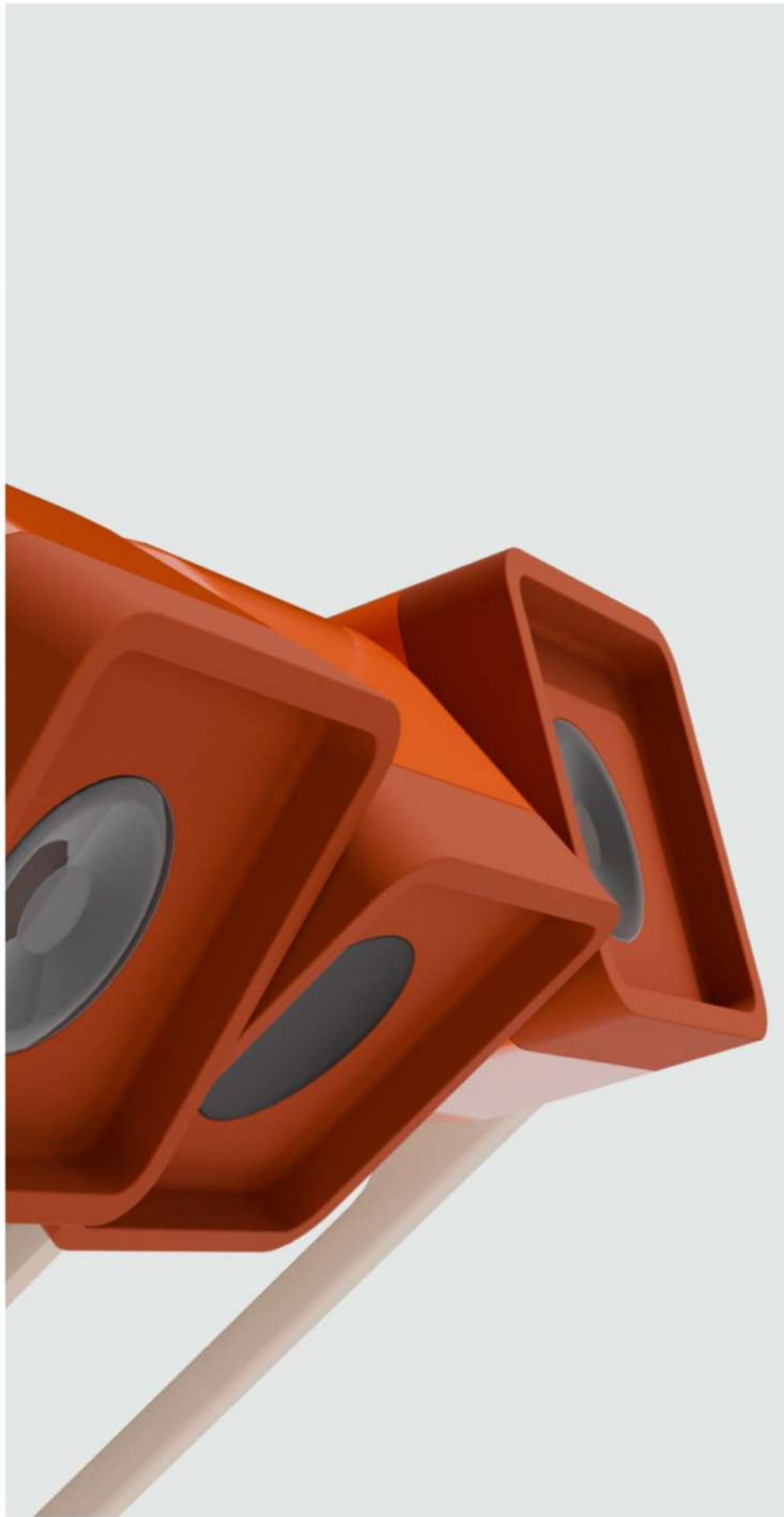


Table tops can swivel to allow users to easily pause work and take a break.





APOLLO

Fall 2025

Lenovo Sponsored Studio

In collaboration with Amy Han, Brianna Scott, and Tracy Lavorini

How can a physical + digital experience create a better learning experience using artificial intelligence?



RESEARCH

College students and young professionals who have to learn new skills at their job. This was done in order to understand how AI is used to learn, and any emotions that come the the process.

"I learn best when I can see what I'm supposed to do and then do it myself, either right after or as it's being explained"

— a 21 year old college student studying film

"I want to still be in control, like 80% if I'm giving a number value. I don't like to use AI generally."

— a 23 year old inside sales specialist learning new software at work

"Most models are generally yes men. If you tell it something is a problem, most of the times it'll agree with you and try to rationalize it after."

— a 23 year old post-grad student working on an AI-embedded software

Learners run the risk of becoming over-reliant on AI systems, which may hinder development of independent problem solving skills.

RESEARCH

Researching existing products that use new technologies helped us understand what already exists, and what technologies are advancing.



Tour Box allows creatives to customize their workflows by assigning functions to the controller.



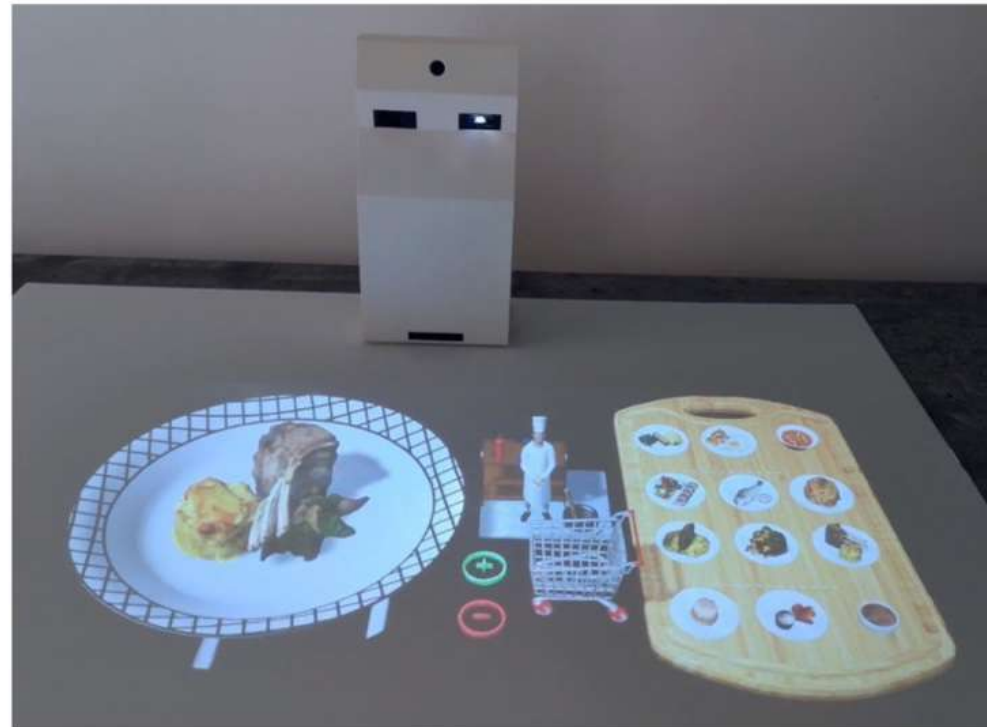
Merge Cube allows learners to view 3D objects and intuitively move their around via a physical cube.



AR mats allow for multiple users to see the same 3D environment on a shared table top.

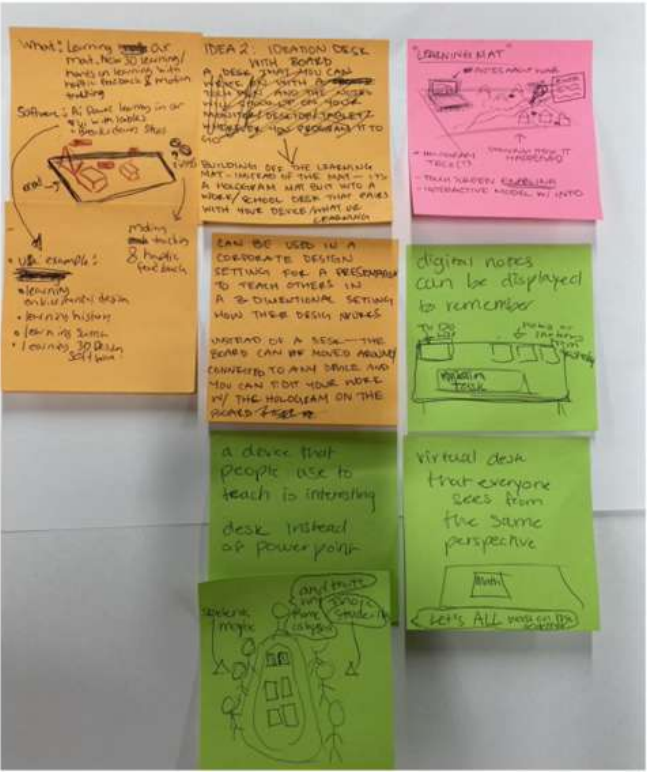
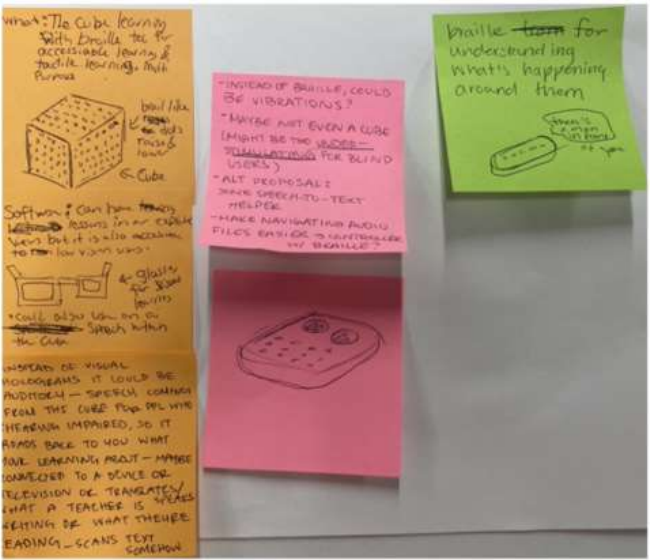
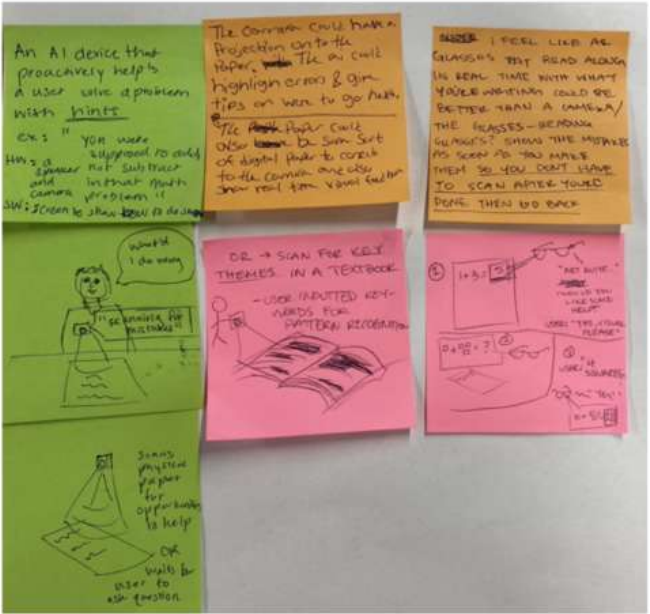
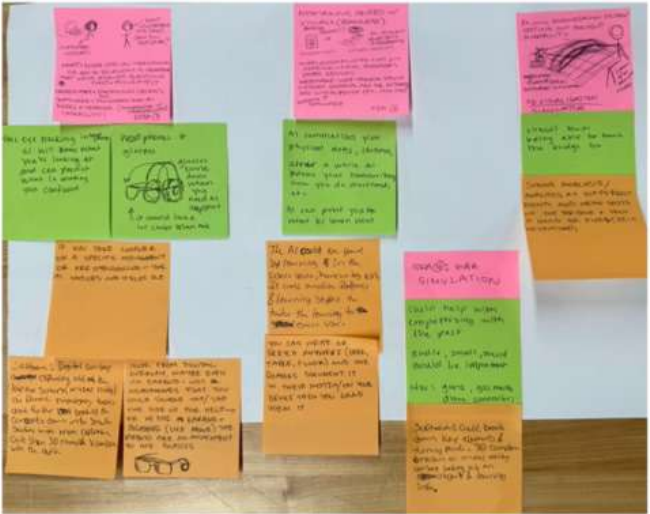


Rabbit R1 is a portable device designed for communicating with AI.



Hololamp is a 3D projector that uses an eye tracking camera to project 2D images that appear 3D from the user's angle.

DEVELOPMENT



#1: Note / Lecture Helper

- Audio and/or visual stimulation (ideally both)
- AI buddy for studying
- real-time scan for immediate help/assistance

Amy Han

Device: VR glasses and/or headphones

Amy Han

#2: Virtual Desk / Mat

- Smoother flow of communication between teams
- real-time feedback for tasks such like 3D modeling

Amy Han

Device: Virtual "plane" that is basically giant screen

Amy Han

#3: Handheld Object

- VR learning space
- guided navigation
- built-in haptic feedback & motion sensors
- 3D visuals (can move around, zoom in/out, provide exploded views, etc.)

Tracy Lavorini

Device: Handheld "smart" object w/ VR headset or glasses

Amy Han

The final idea to move forward with was desktop product that could provide feedback in physical work environments. This would connect to a digital product for digital work as well.

DEVELOPMENT

Learners need reliable support that guides them without taking away problem-solving skills, so they gain real understanding.

Physical User Flow:

1. The user is working on their own and they run into a problem.
2. They turn on the AI device for guidance.
3. The AI device scans their environment and then gives feedback.
4. The learner turns the device off and resumes individual work.

Digital User Flow:

1. The user wants to recap previous work and learn more.
2. They open the digital app on their computer and can view all previous work that was scanned.
3. The learner can interact with an AI language model that understands what they have been working on.
4. The user continues learning with the AI via quizzes, study guides, reviewing past mistakes, etc.

Physical Product Requirements:

A device that scans a learner's environment and provide feedback with 2D or 3D projections onto their workspace.

The device will require an environment scanning camera, a projector, and an eye-tracking camera.

The user can interact with hand motions and their voice.

The device can easily be turned off and all cameras can be hidden.

DEVELOPMENT



The initial concepts were focused on ways to hide the camera, and understanding how this object would fit into a desk environment.

Prototypes helped visualize how much space this object would take up on a desk.

DEVELOPMENT



This foldable desktop device was presented to Lenovo for feedback. It was clear that the form was too complicated and the cameras were too large.

DEVELOPMENT



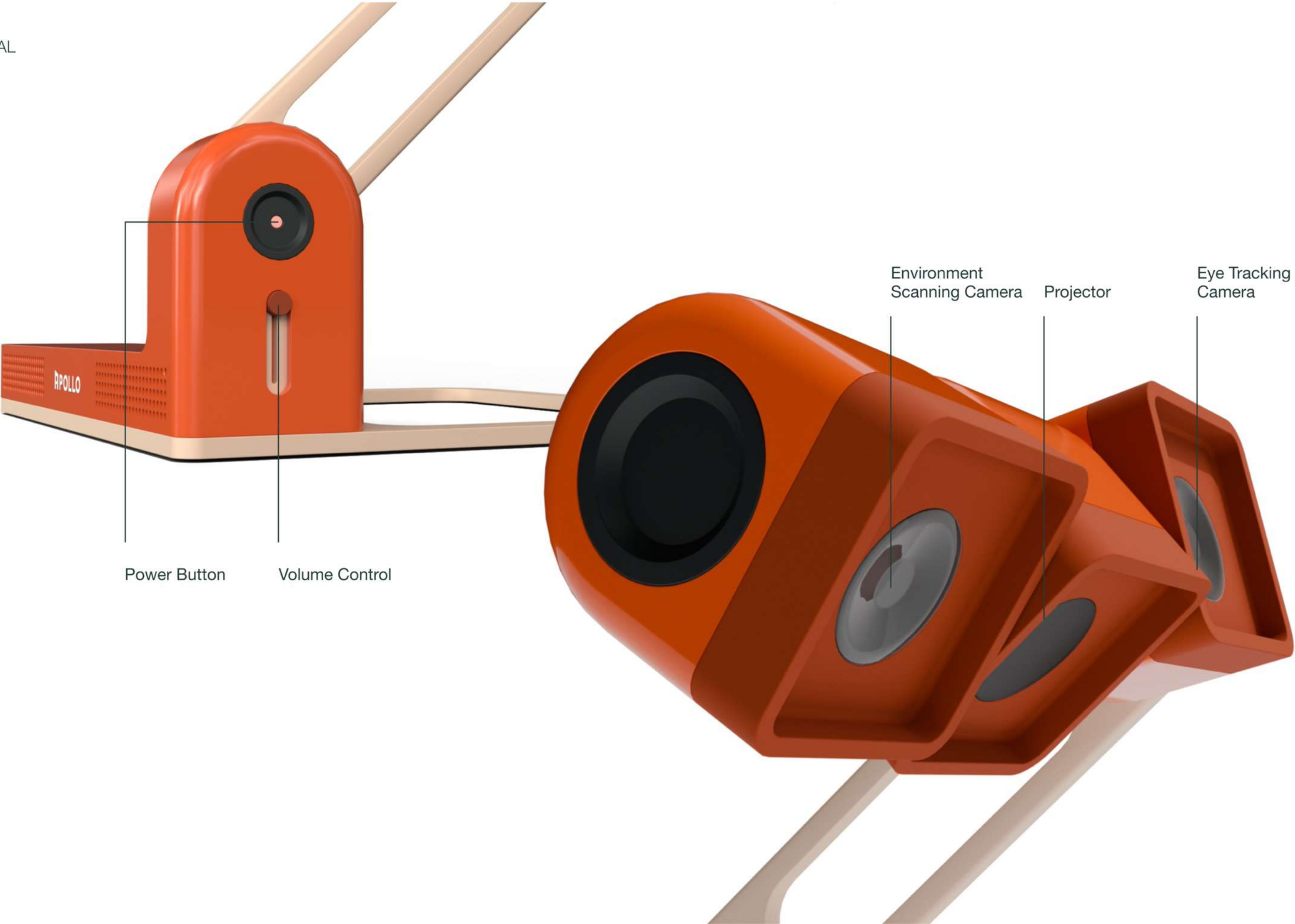
The concept evolved to a modular set of three units, where the environment scanner unit could be removed and taken on the go.



FINAL



FINAL



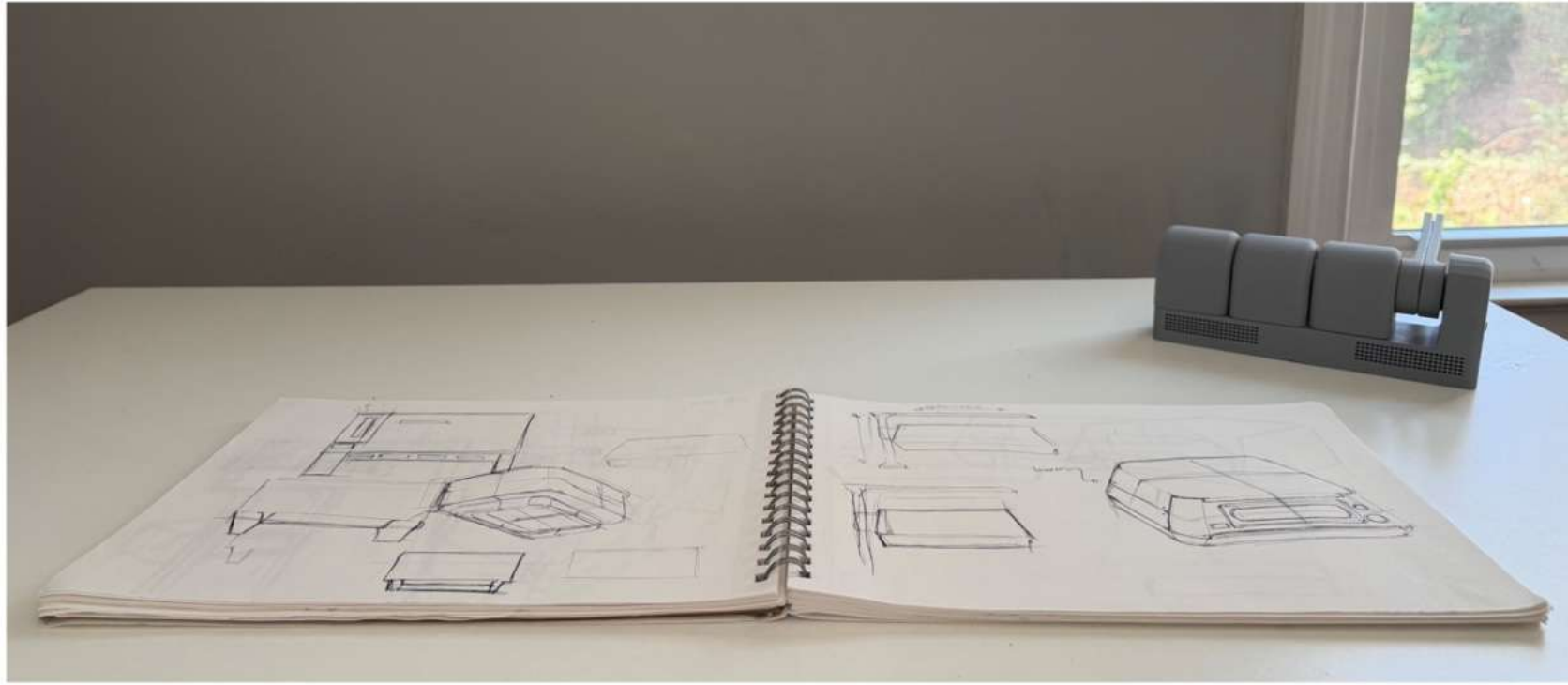
FINAL



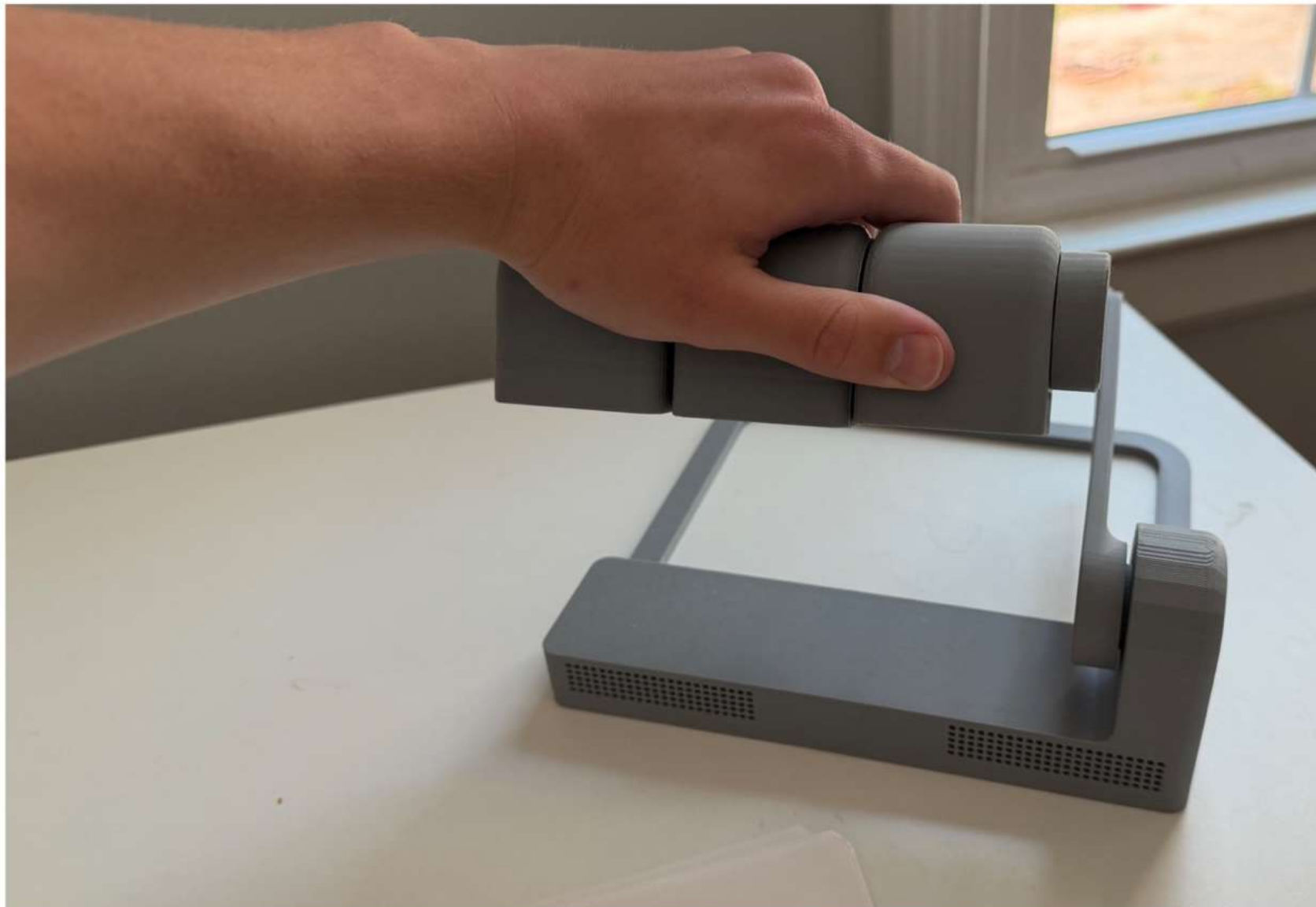
The environment scanner can be taken on the go and attached to a portable stand.



FINAL



The user is working and Apollo is turned off.



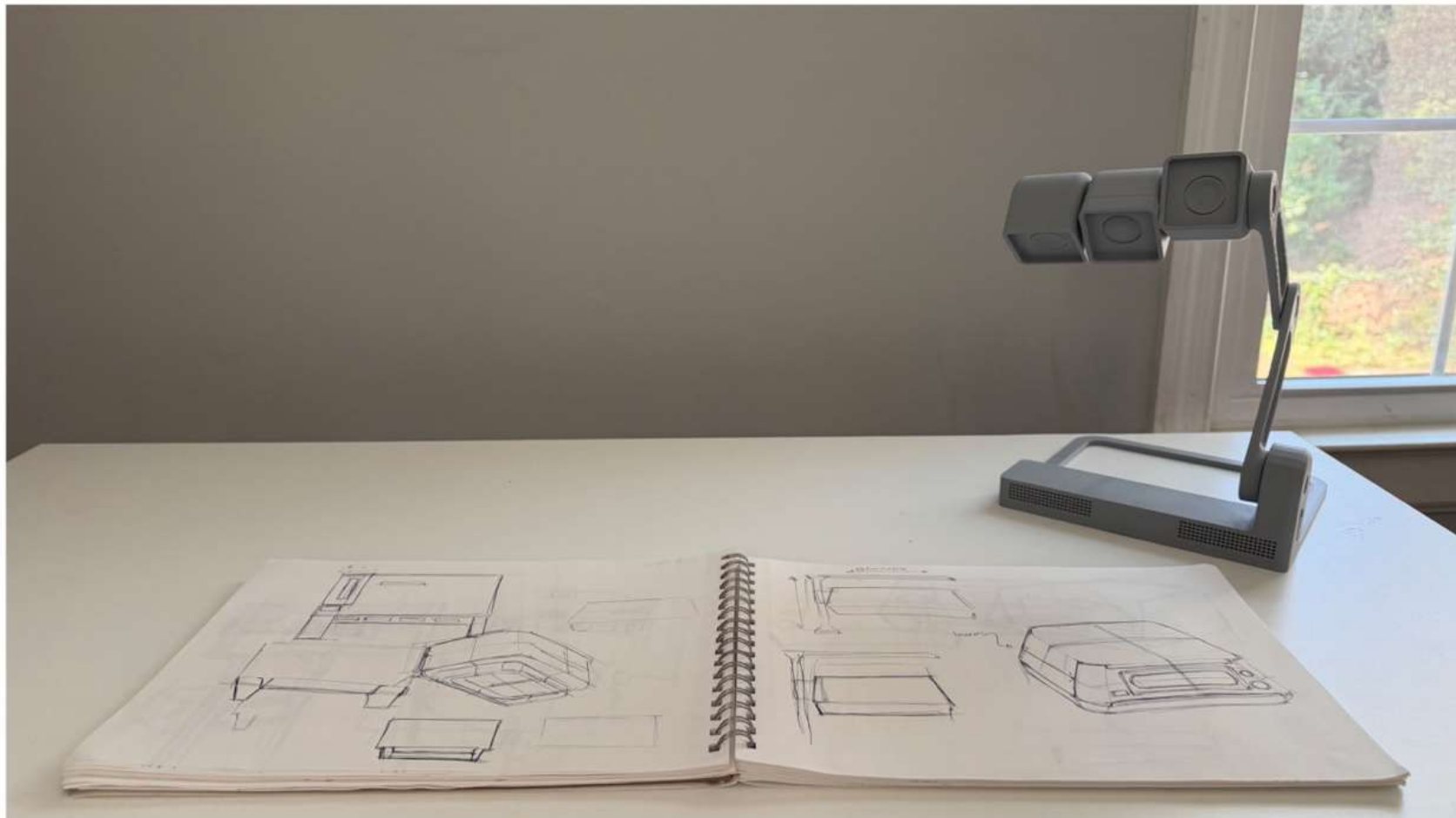
The user wants feedback on their work so they lift up the cameras.

A 3D printed prototype was created to demonstrate functionality when presenting the concept to Lenovo.



When they press the power button, Apollo starts scanning work and tracking the user's eyes.

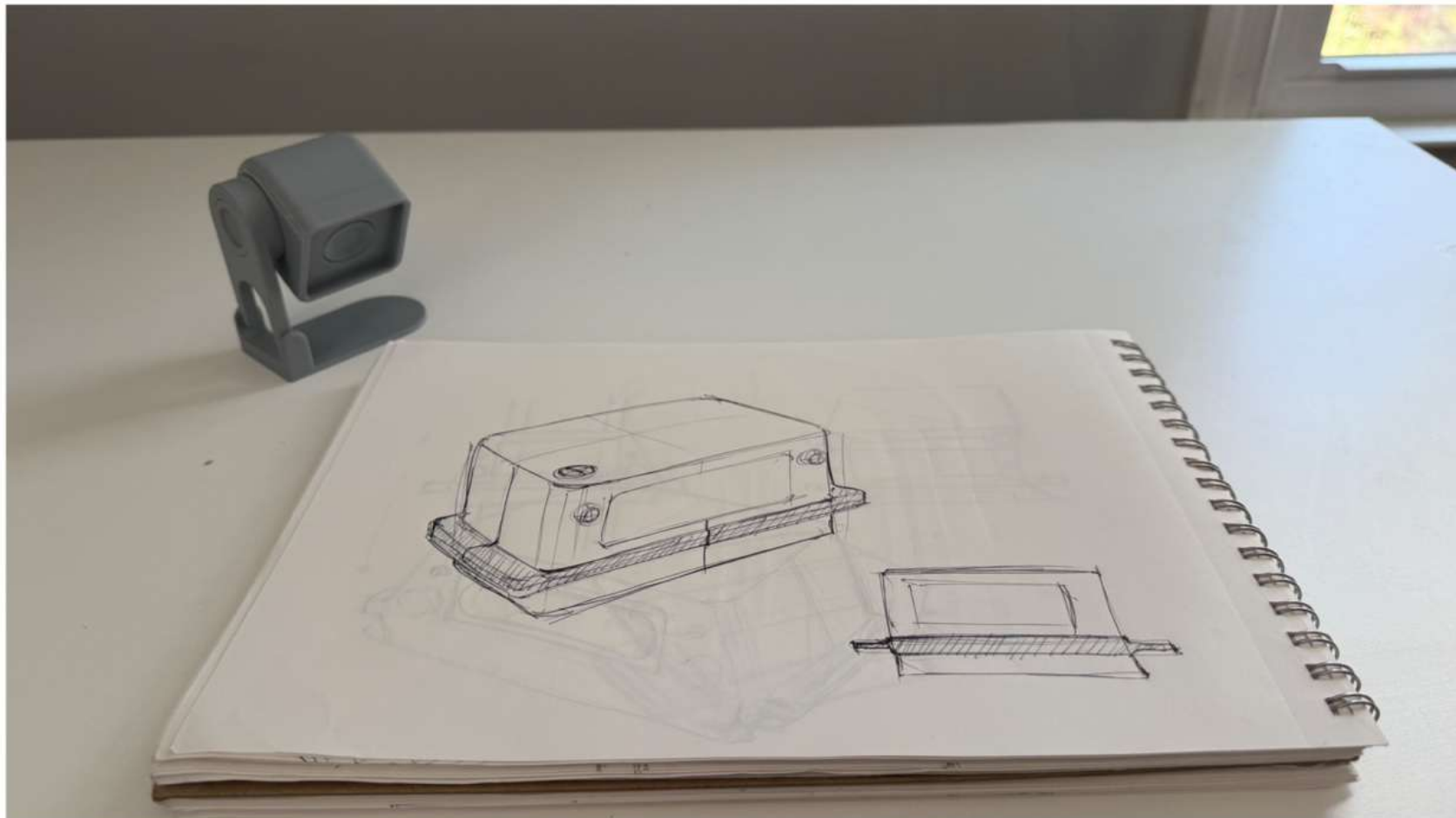
Feedback can be requested with the user's voice. Apollo can also use context clues to understand what the user is struggling with based on the desk environment and past work.



Feedback is given by projecting on top of the user's work.

Everything scanned and projected is saved and can be found on the Apollo app.

FINAL



When on the go,
the user can bring
the environment
scanner to keep
Apollo up to date.

Please select project to start learning session

Apollo Archive

Suggested

Recent

Backyard Tiny Home

Garden Shed

Small House

Backyard tiny home

Spacial Design for Tiny Home

Constraints

W: 8.5 Feet

H: 13.5 Feet

L: 24 Feet

Updated: 3:54pm Nov 29, 2025

Start Learning

22'

12'

LOFT

264 sq ft

5'10"

11'

ROOM

121.26 sq ft

20'7"

11'

ROOM

154.55 sq ft

6'

5'

ROOM

36 sq ft

5'10"

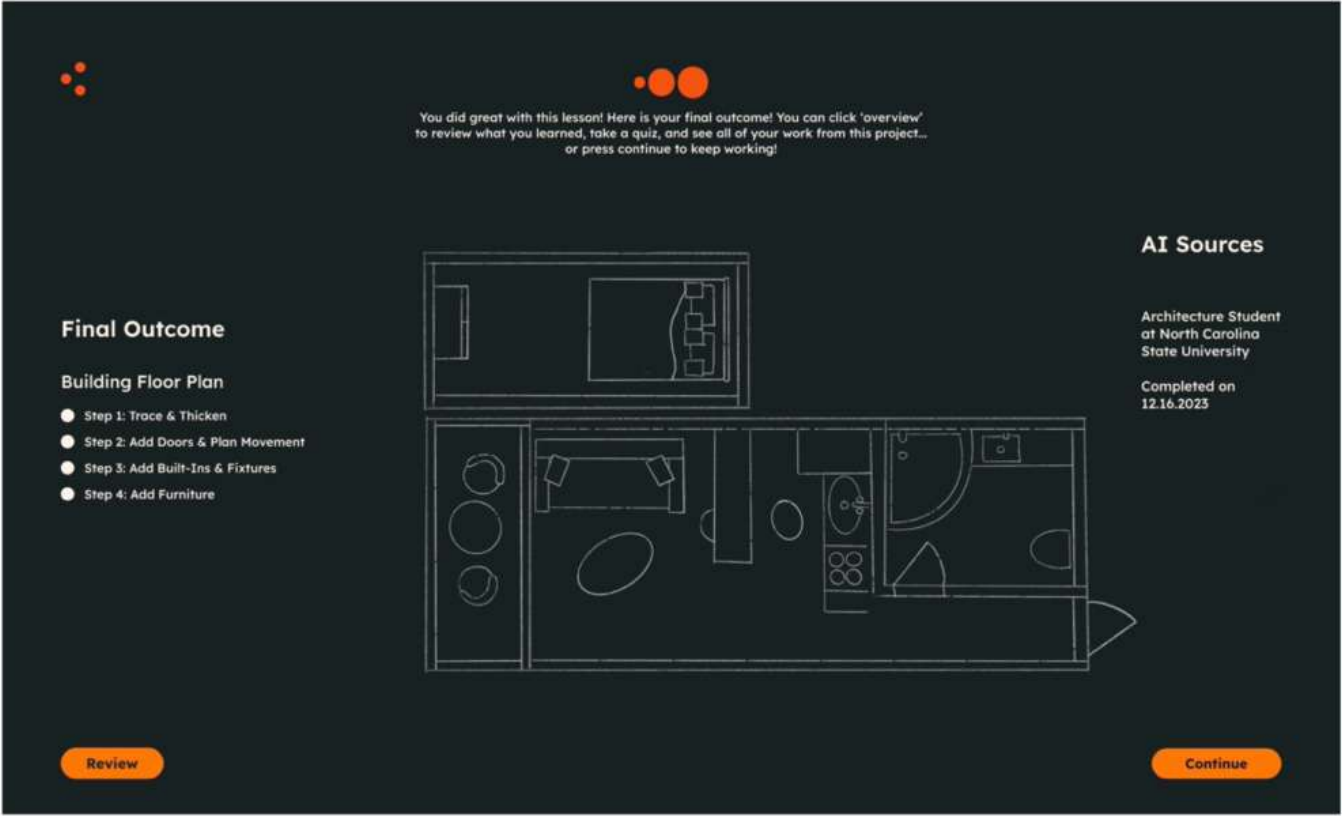
13'0"

20'7"

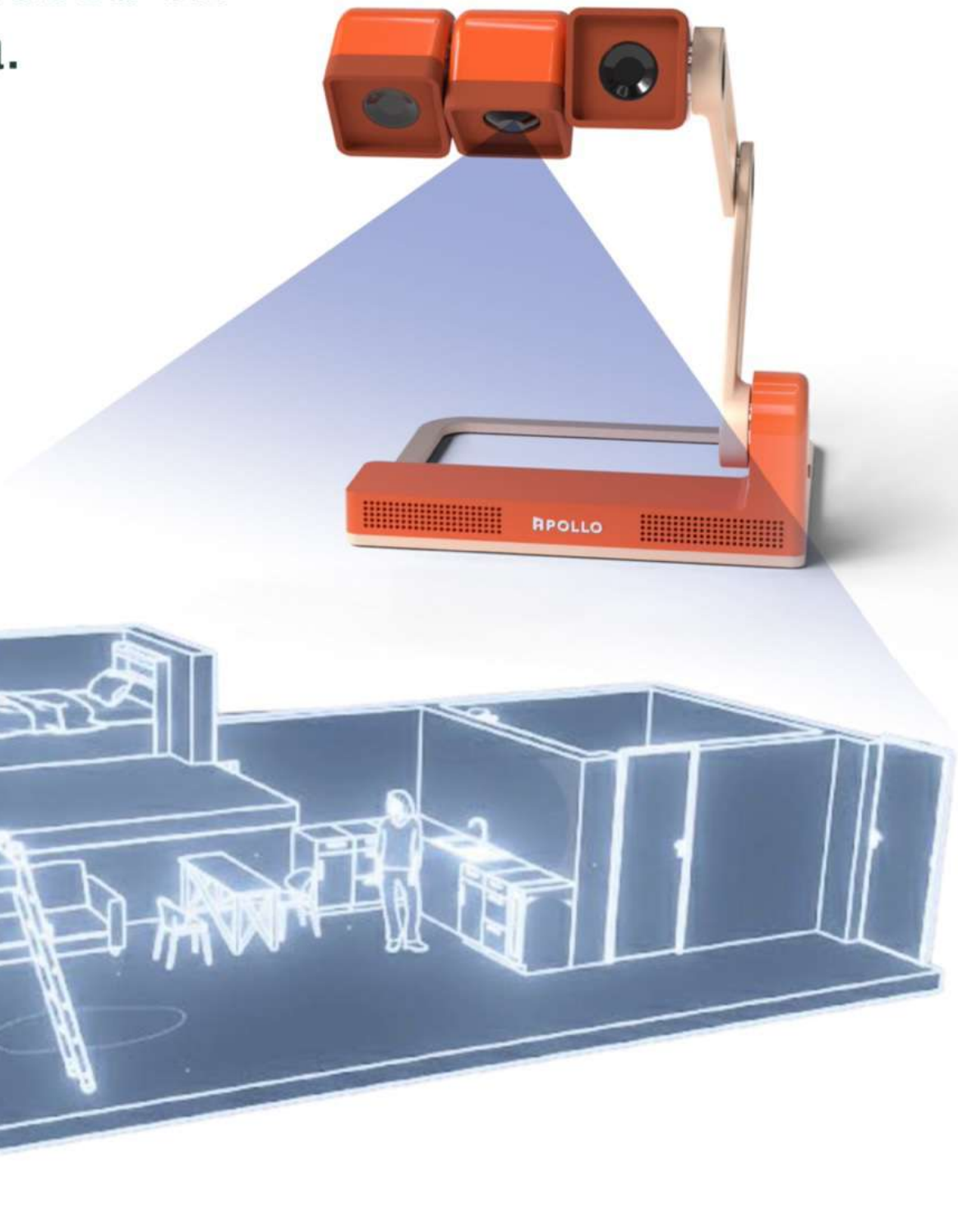
5'

2'

Any past work can be viewed later and expanded upon with the Apollo desktop app.



The user can do customizable lessons based on past data.



3D models can be projected from the projector to create a more engaging learning environment.

FINAL



APOLLO
Lenovo



Off the Ground

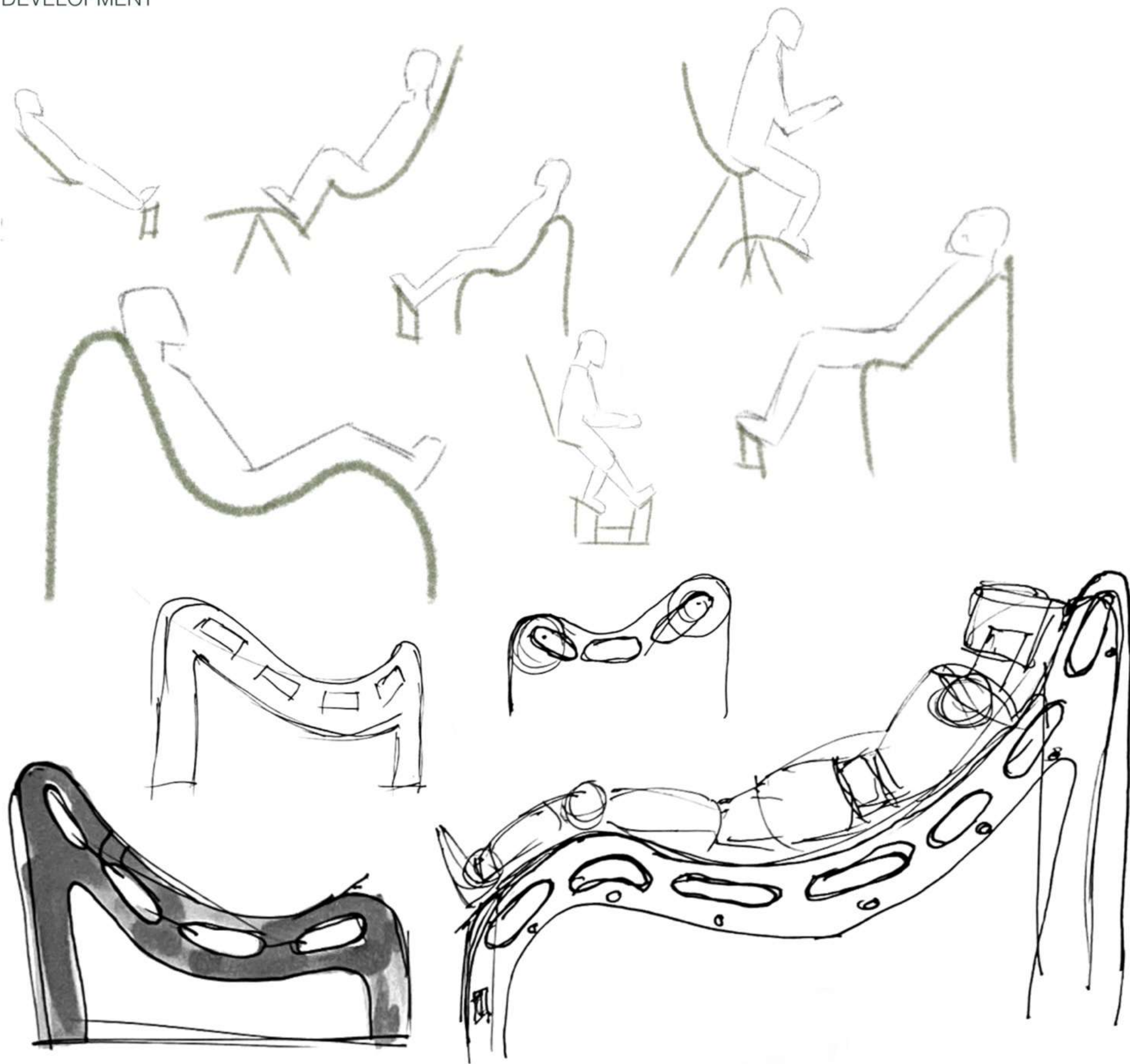
Summer 2024
Furniture Design
Prague, Czech Republic

BRIEF

Create a piece of furniture where the body does not touch the ground. The user's position should feel weightless and natural.



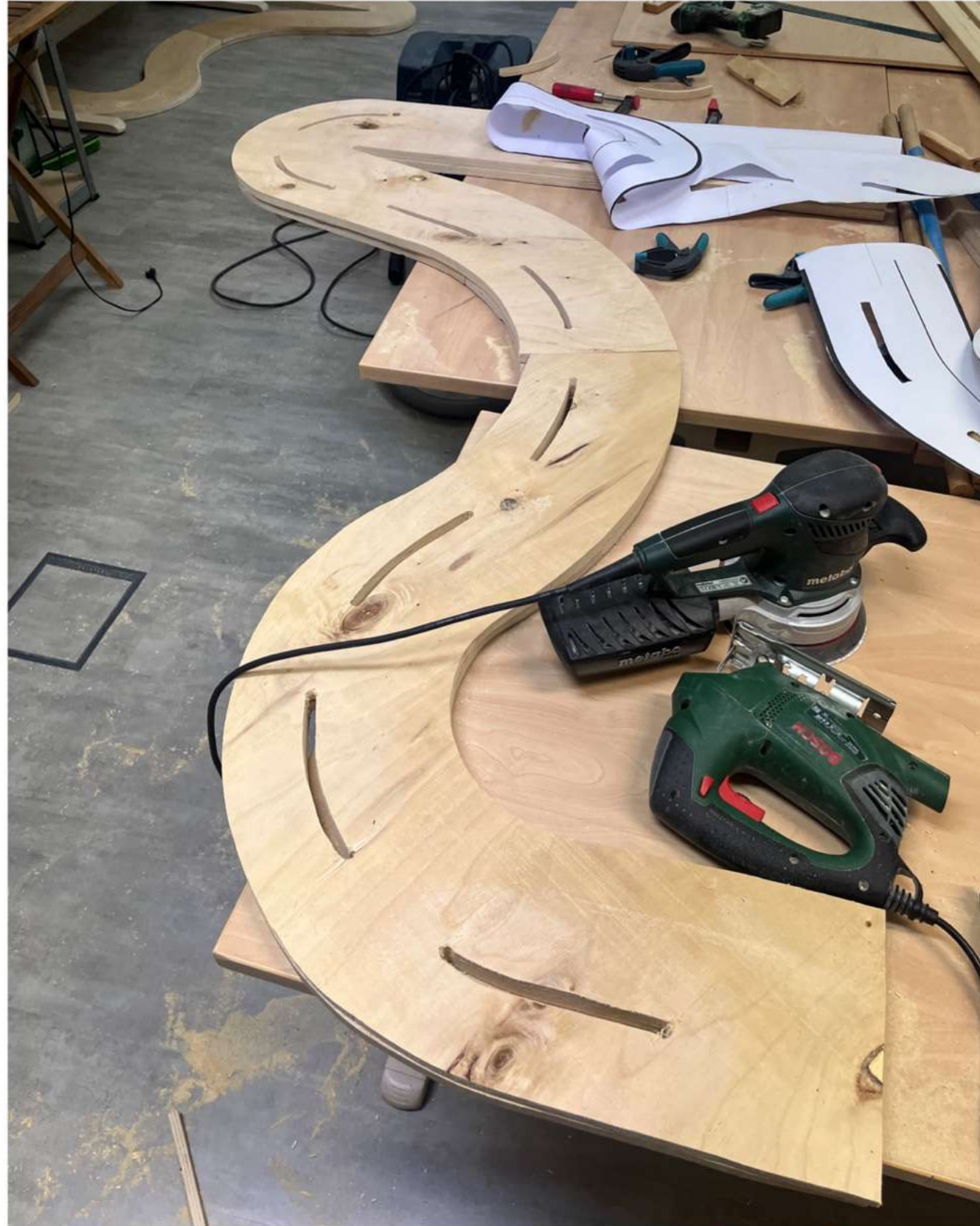
DEVELOPMENT



DEVELOPMENT



There were not large enough pieces of plywood, so overlapping pieces were glued together to create the full frame. Each piece was cut with a jigsaw.



DEVELOPMENT



PVC pipe was used to hook in the fabric straps into the wooden slots.

FINAL



FINAL

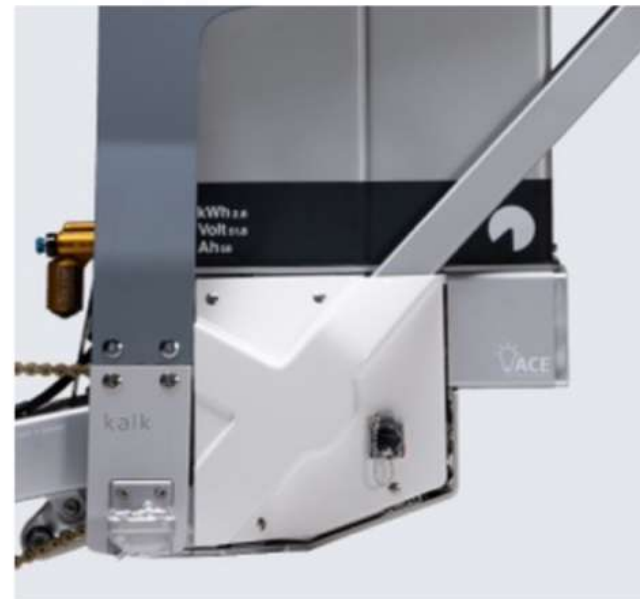




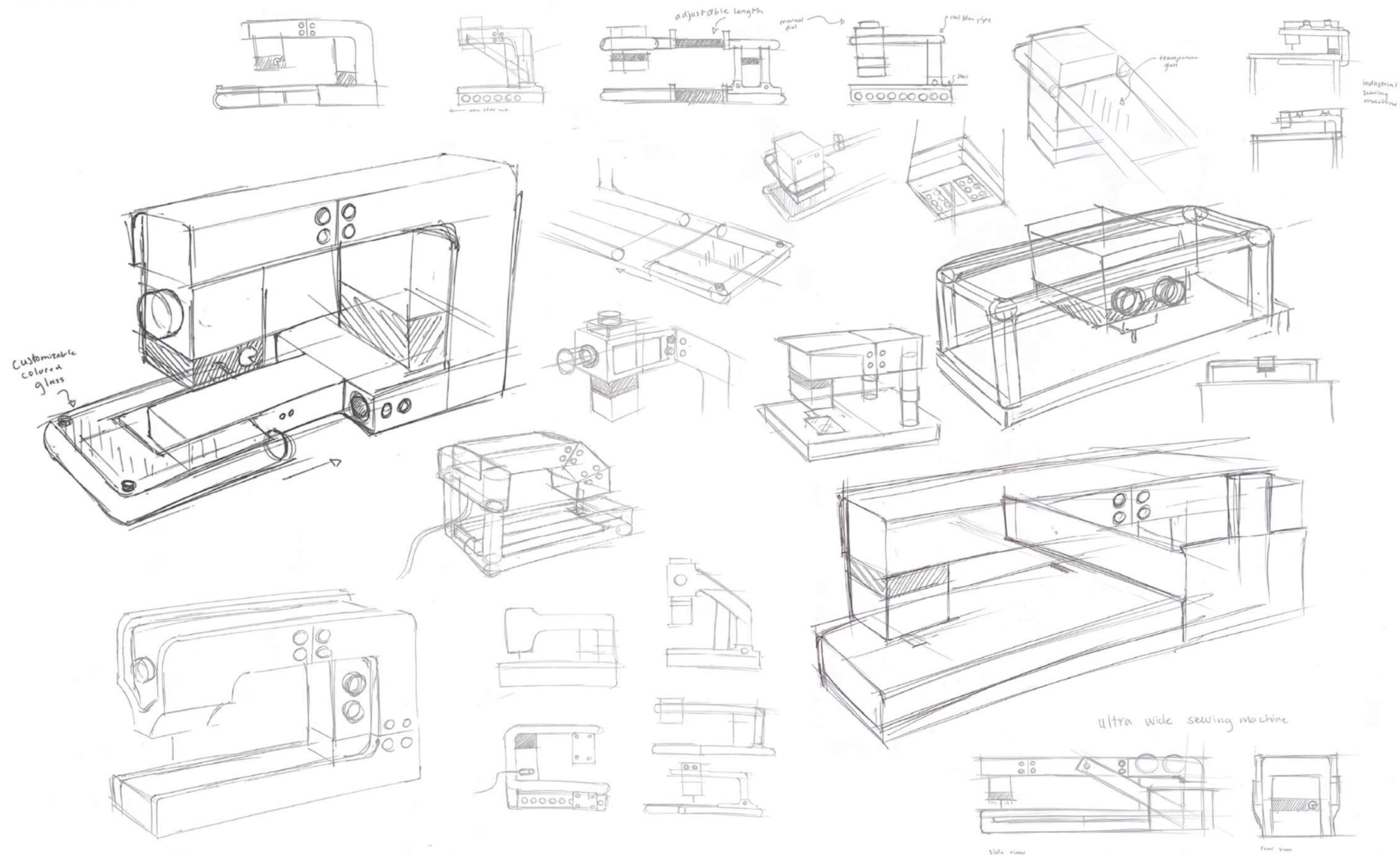
Cake Sewing Machine

Fall 2024

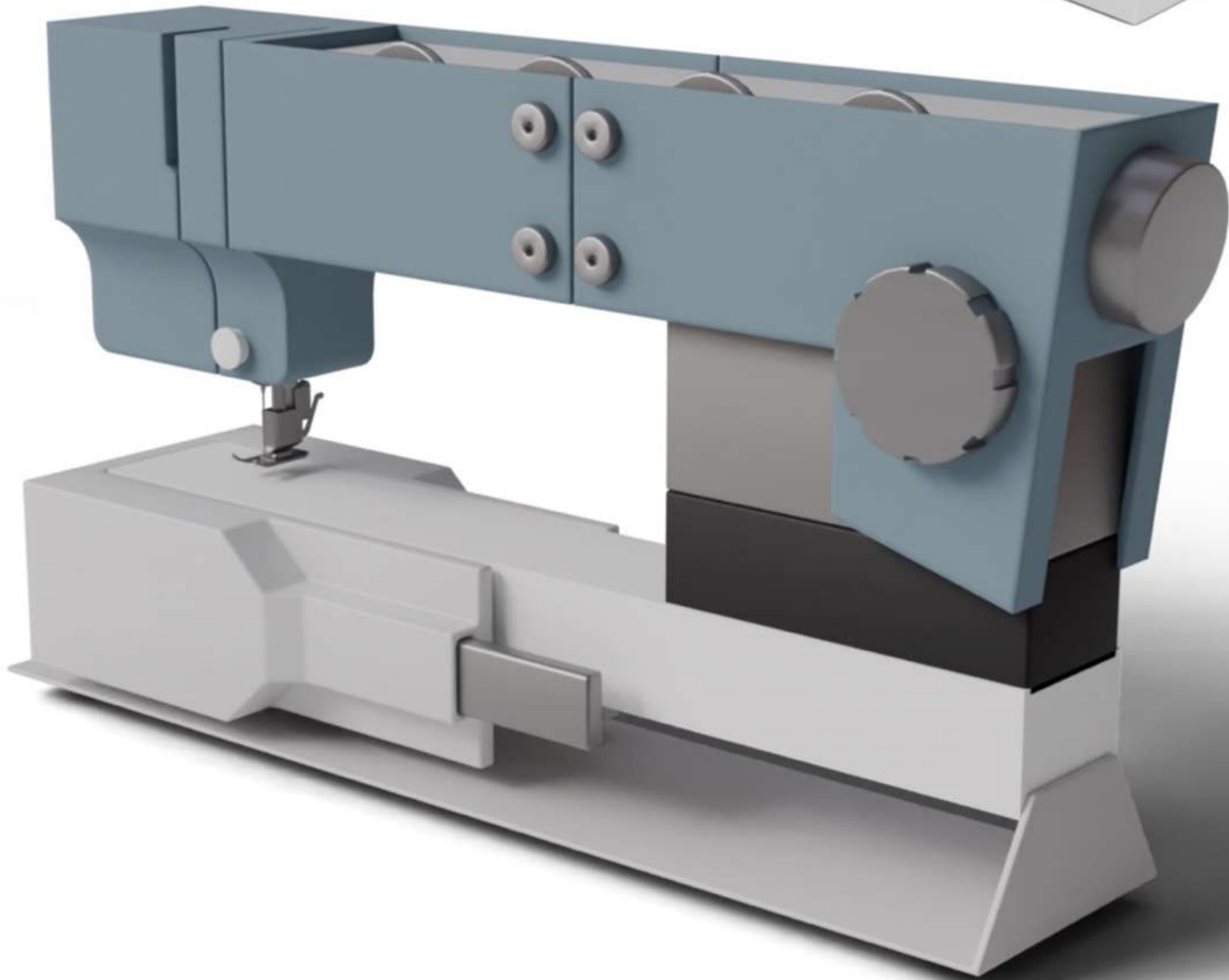
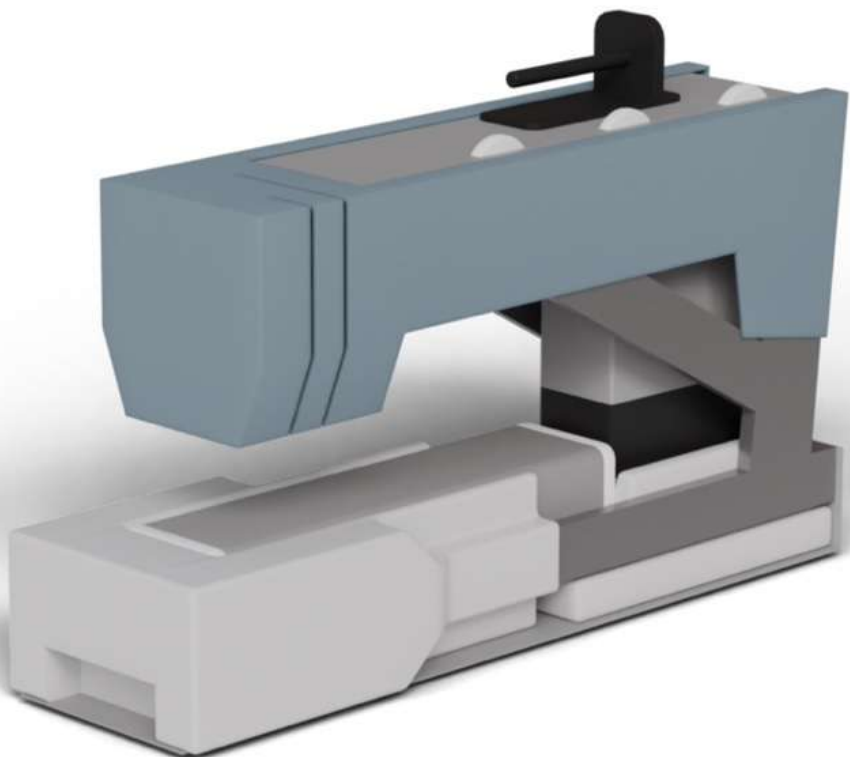
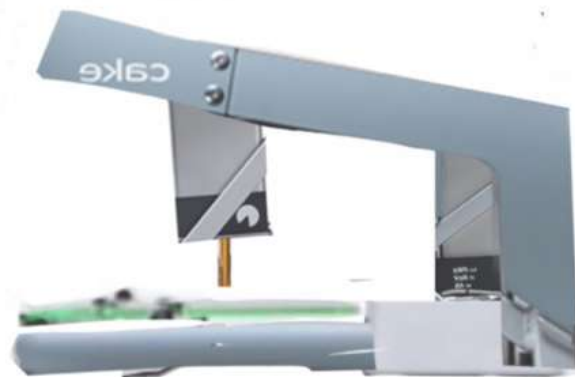
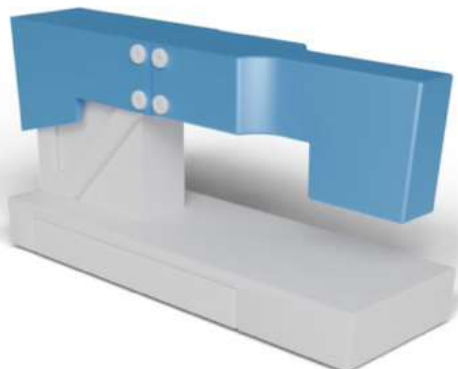
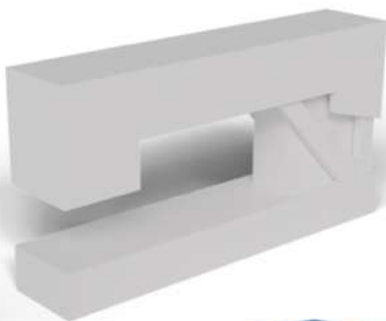
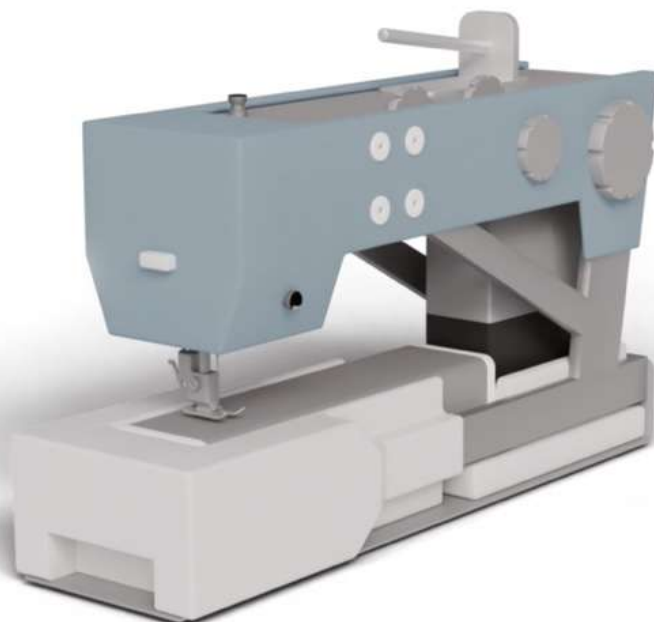
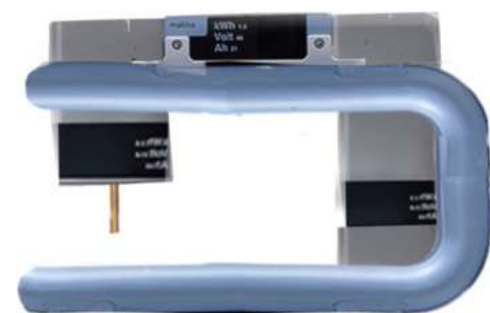
Use Cake's branding language to design a sewing machine.



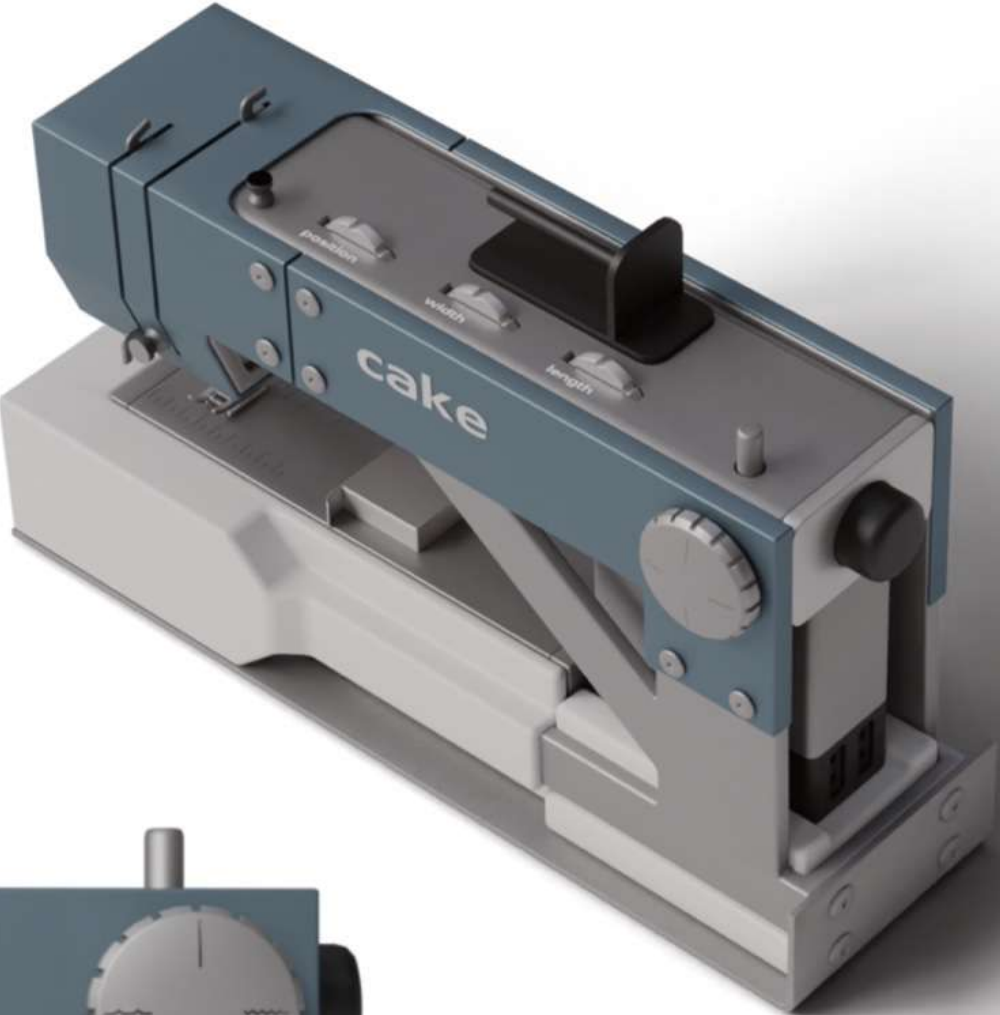
DEVELOPMENT



DEVELOPMENT



FINAL



FINAL



Similar to the Cake bikes, the chargeable battery is removable. Sewing can be done anywhere while a separate battery is charged at home.

FINAL



cake

Other Work

Graphic Design Portfolio
Website

Thank You

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