

# Process Book

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Green Kettle



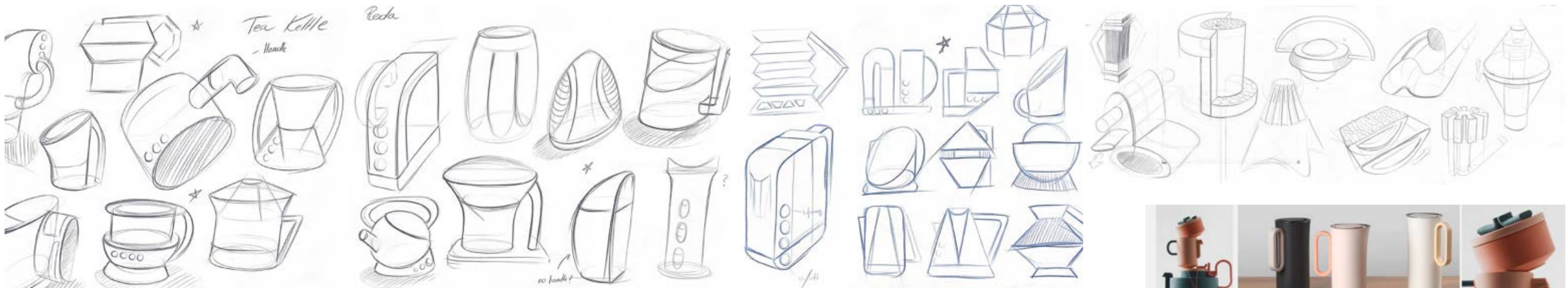
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# Research

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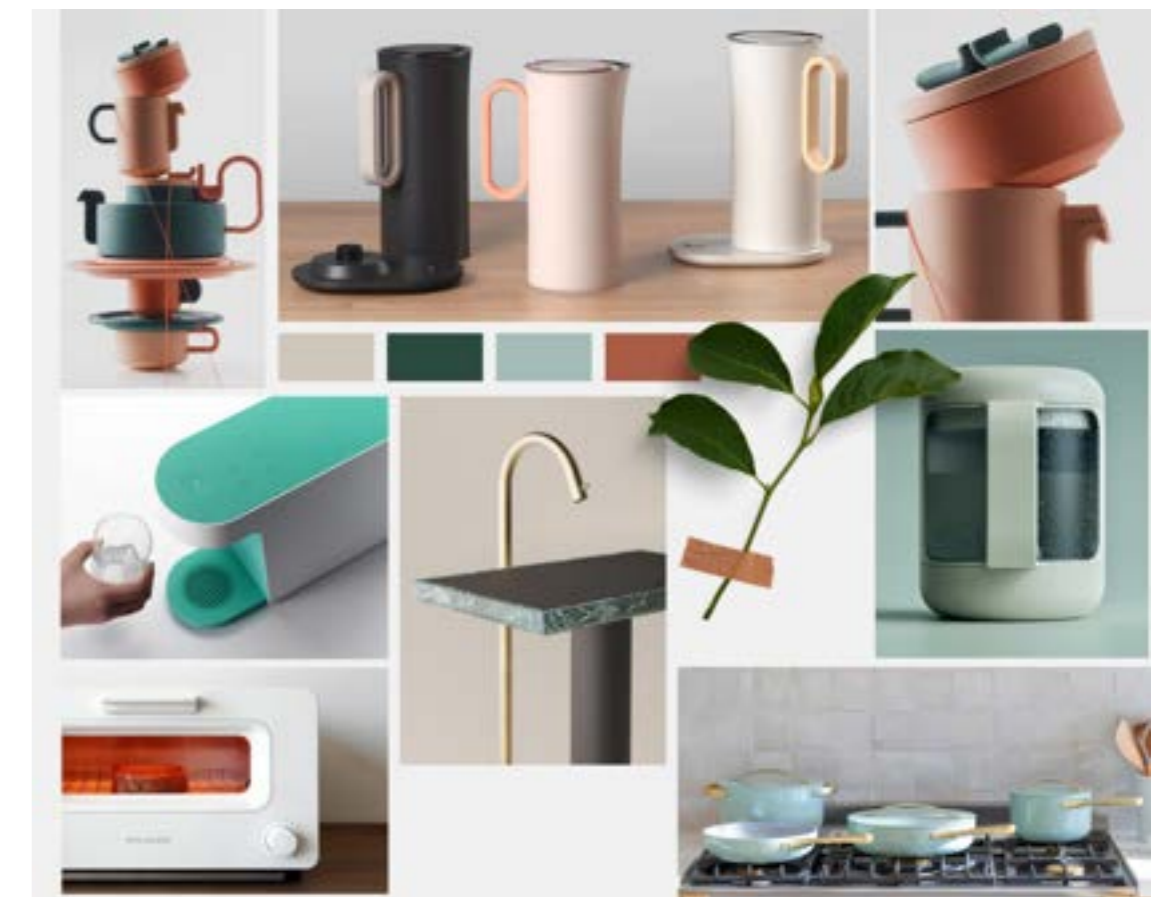


# Getting inspired

The very first steps were all about looking out there and getting inspired by objects as well as hand crafted shapes.

I created these quick form and movement studies to get inspired towards a new inventive and unexpected function and simultaneously let it influence how I begin my design.

I was not committing to any product category yet, only exploring unique color, texture, and shape combinations.



# Style

In our current saturated kitchen appliance market products can be grouped into four rough major styles. With the majority falling under the Clean + Classic look meant to blend in and recede into the depths of our cabinets.

A new wave and trends that are emerging lean more towards pushing the limits of the form and turning kitchen appliances into statement pieces that don't only function well but are also pleasing to have on the counter.

Before I began Designing I knew it was going to be all about discovering an inventive form.

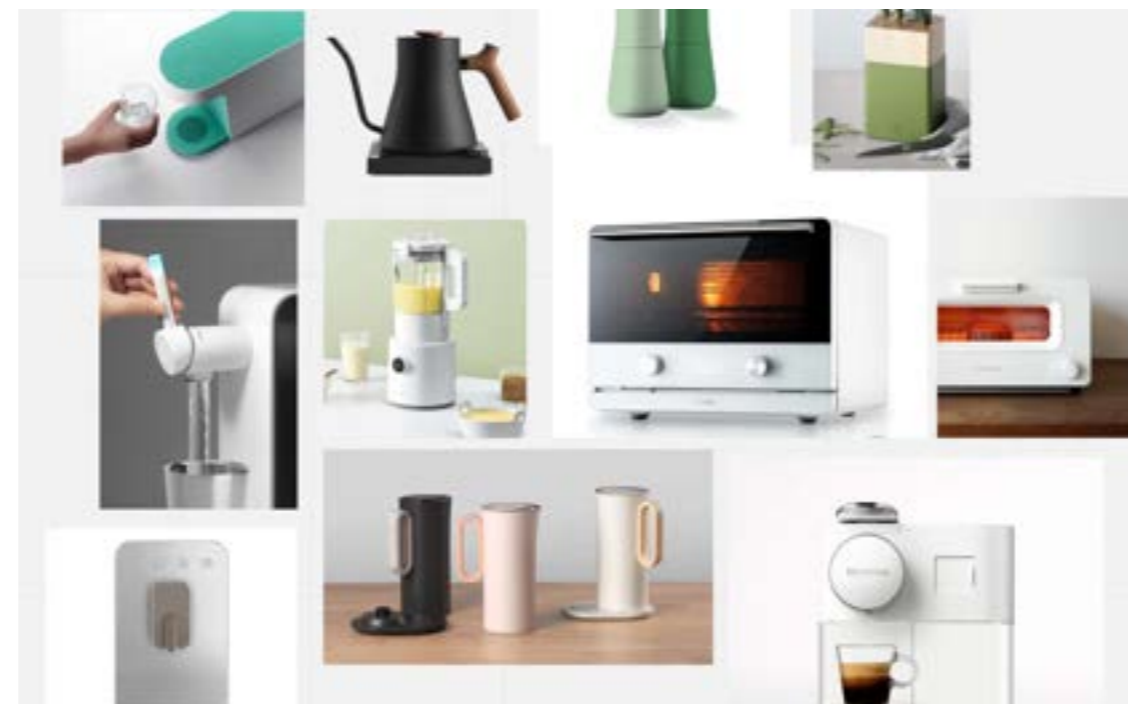
Timeless + Clean



Modern + Edgy



Futuristic + Minimal



Retro + Round



# Kettles + Tea brewing

Kettles have been around for a while but their function has not changed a lot because the function of a kettle remained the same - to boil water.

However with new products coming on the market and getting more tailored to tea brewing I was interested to see if there was a way to create a kettle that would be able to perform both functions:

**Boiling the water and steeping the tea.**

1890s



1910s



1930s



1950s



1970s



2000s



2010s



2020s



# Tea Brewing Chart

There are 6 main types of tea that all have unique processes of brewing displayed below. Inserting the tea at the wrong temperature for the wrong amount of time can greatly influence the flavor of your tea. This general guidance and measuring the time and temperature becomes very important when wanting to get the most out of your brew.

However, to keep track of every step requires a lot of time and equipment.

Processed Tea Leaves

Non-Tea leaf

Type:

White

Green

Oolong

Black

Pu-Erh

Herbal



Temp:

175 °F

170 °F

195 °F

212 °F

190 °F

212 °F

Time:

4 min

1.5 min

2.5 min

4 min

5 min

2-6 min

Research

# Interview - Camilla Fuller

A professional chef and a tea enthusiast



## About Camilla:

Camilla was a wonderful inspiration and a source of information. She spent a lot of time abroad learning about tea culture and witnessing tea ceremonies.

She tries to use loose leaf tea as much as possible because she lived in places like Taiwan where tea is grown, “especially the variety of oolong.” She can tell the difference in the quality of the tea she is using.

To her it is all about where the tea leaf itself is coming from and weather it is from the region that she is familiar with.

## The Conversation:

*“I know that if I had a way **I should control the temperatures** of the tea because of how important it is...”*

“I have an electric kettle and I don’t measure the temperatures of the tea because my kettle doesn’t have that ability. But I know that I should do it because of how important it is for green tea. I usually steep it for the time it takes to do my morning stretches and meditation.”

*“I usually **steep my tea** for the time it takes for me to do my **morning stretches** and meditation.”*



# Form Development

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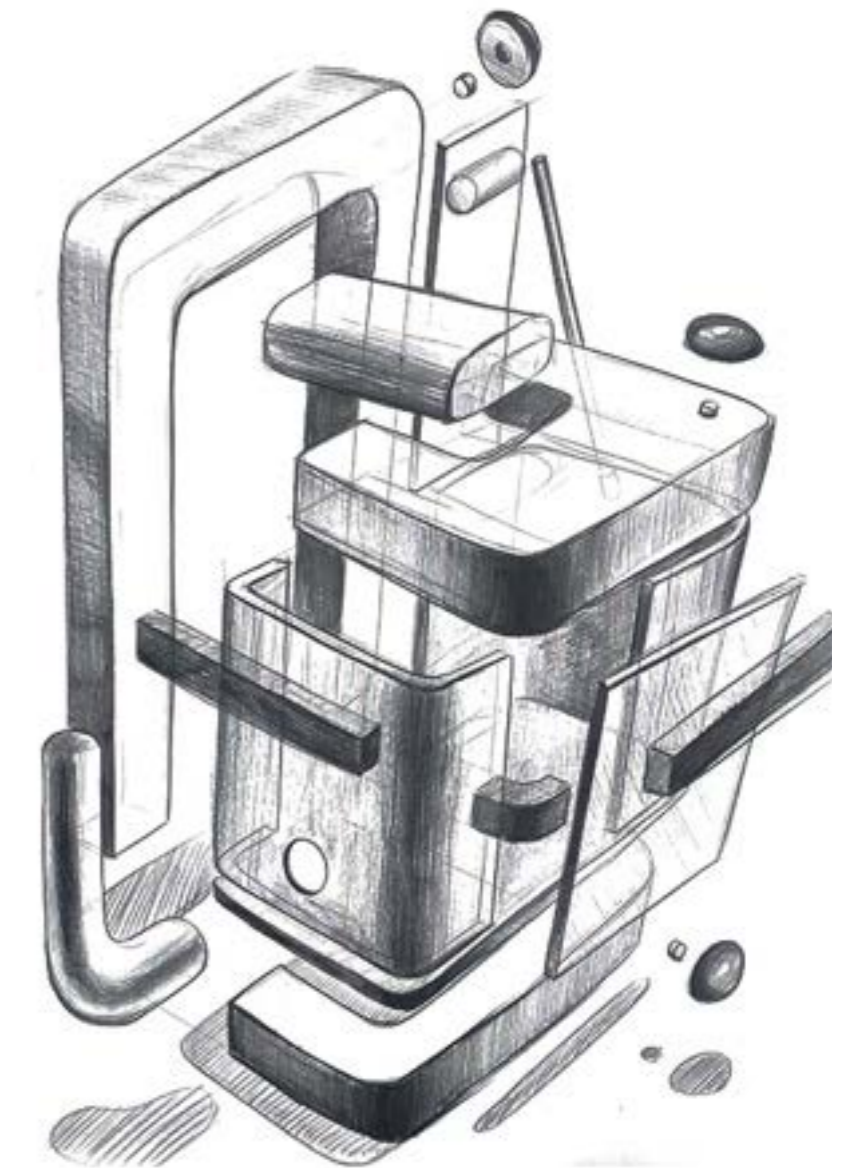
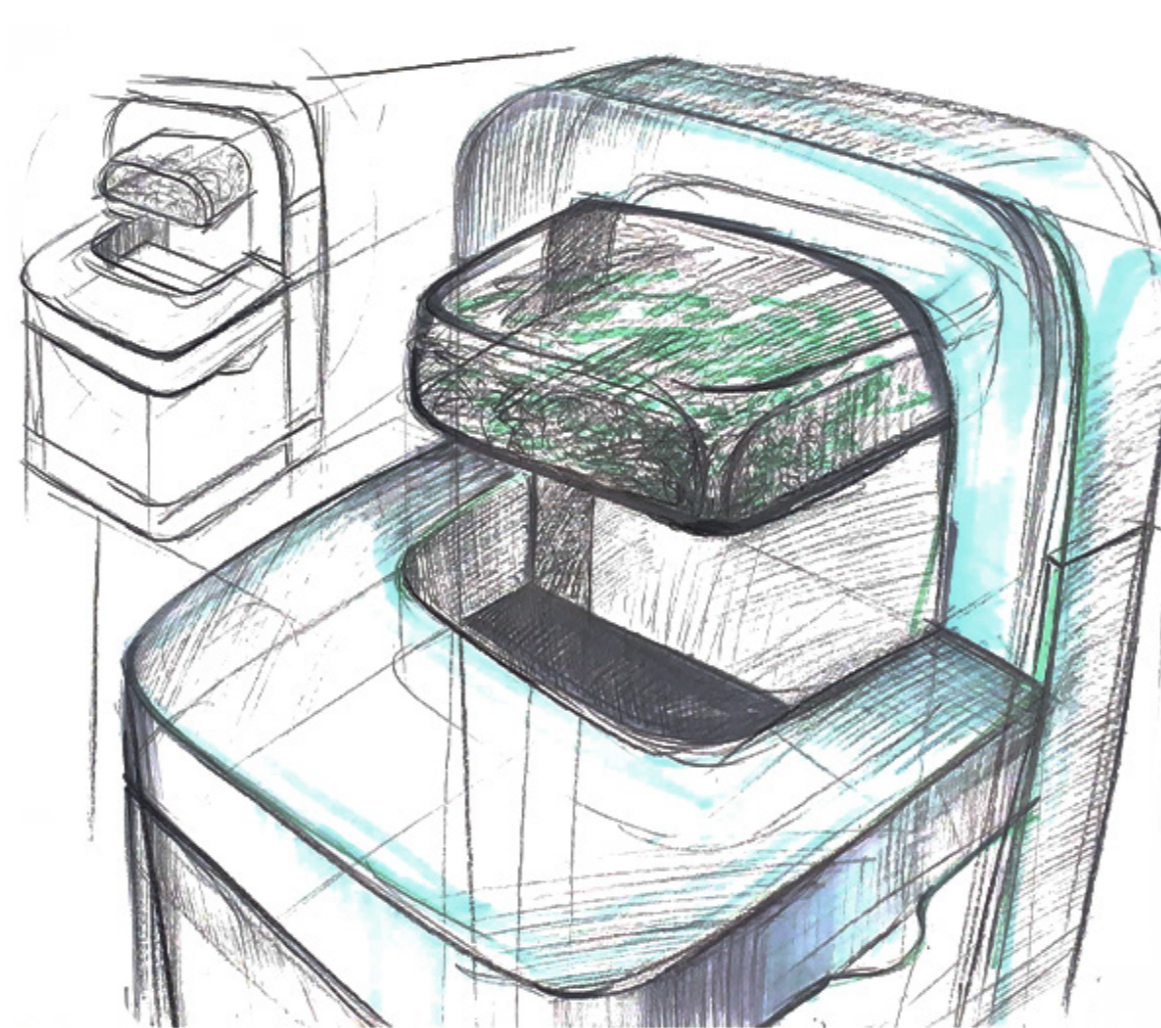
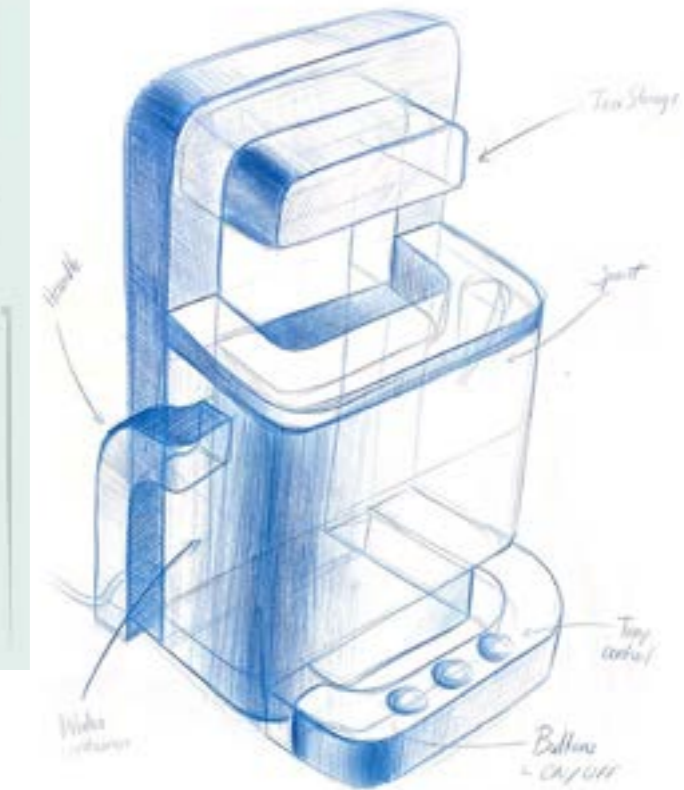
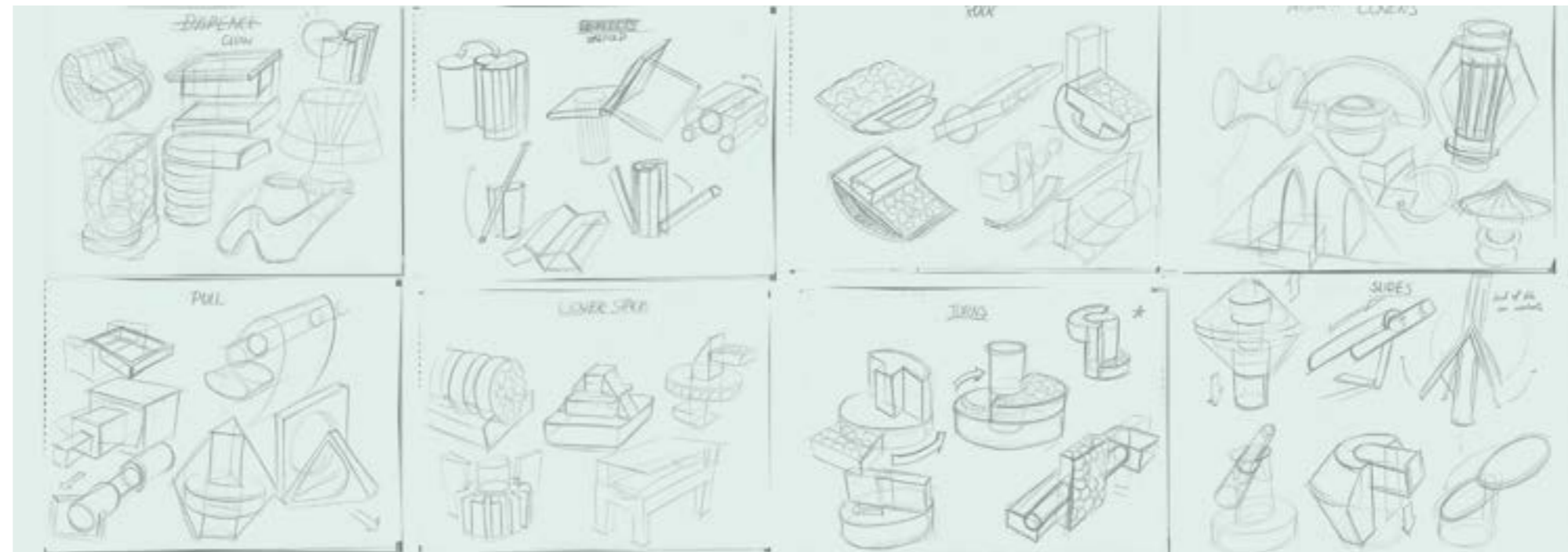


# The Broad Idea

In this stage of the process I knew I wanted to make a tea brewing machine made out of three components.

The first one being **the water reservoir**, the second key element being the **frame** and the third smallest component was the **tea pod** of some kind.

I jumped into the project with a very whimsical approach and wanted to maintain this rough form as much as possible throughout the process.

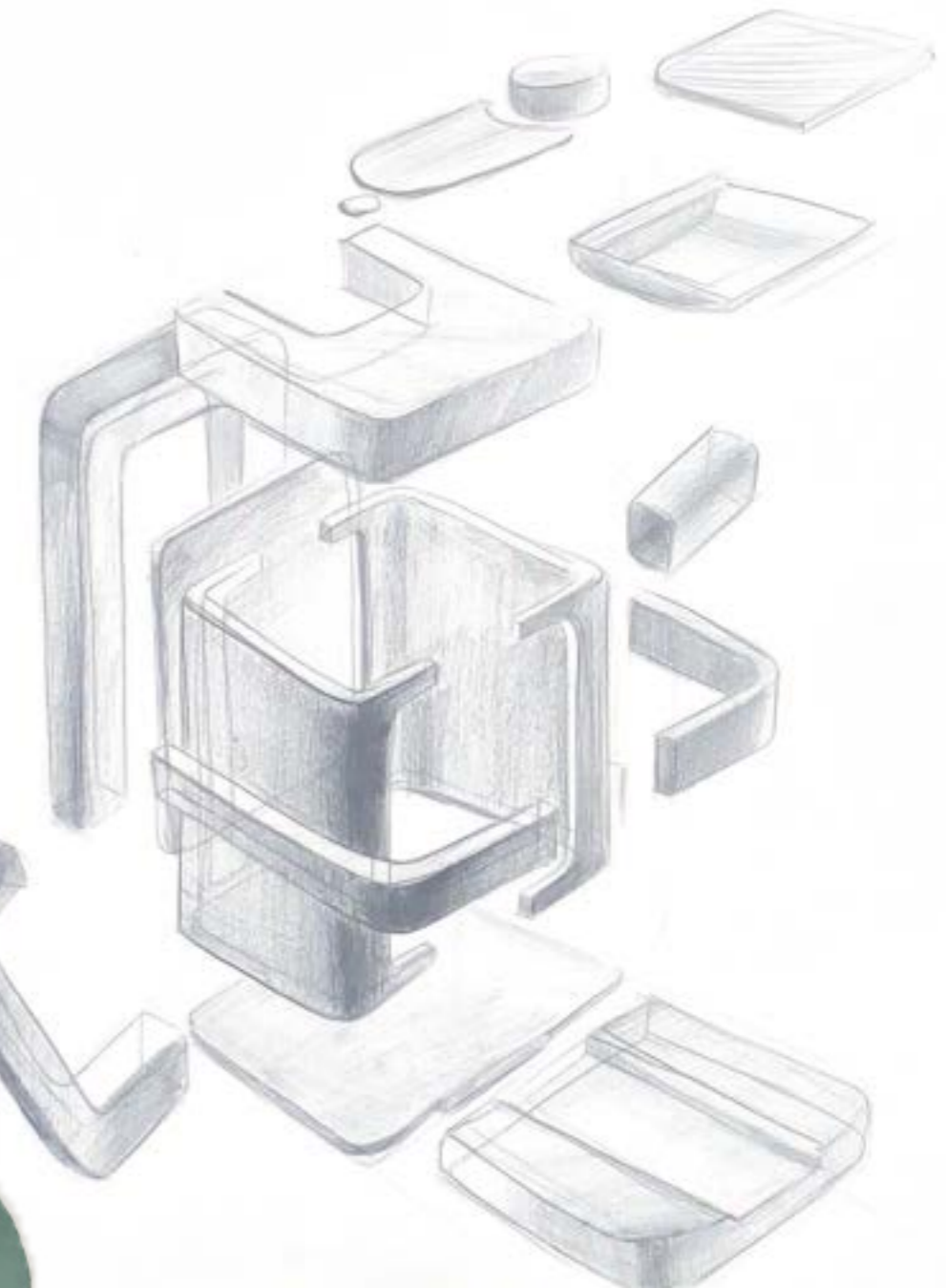
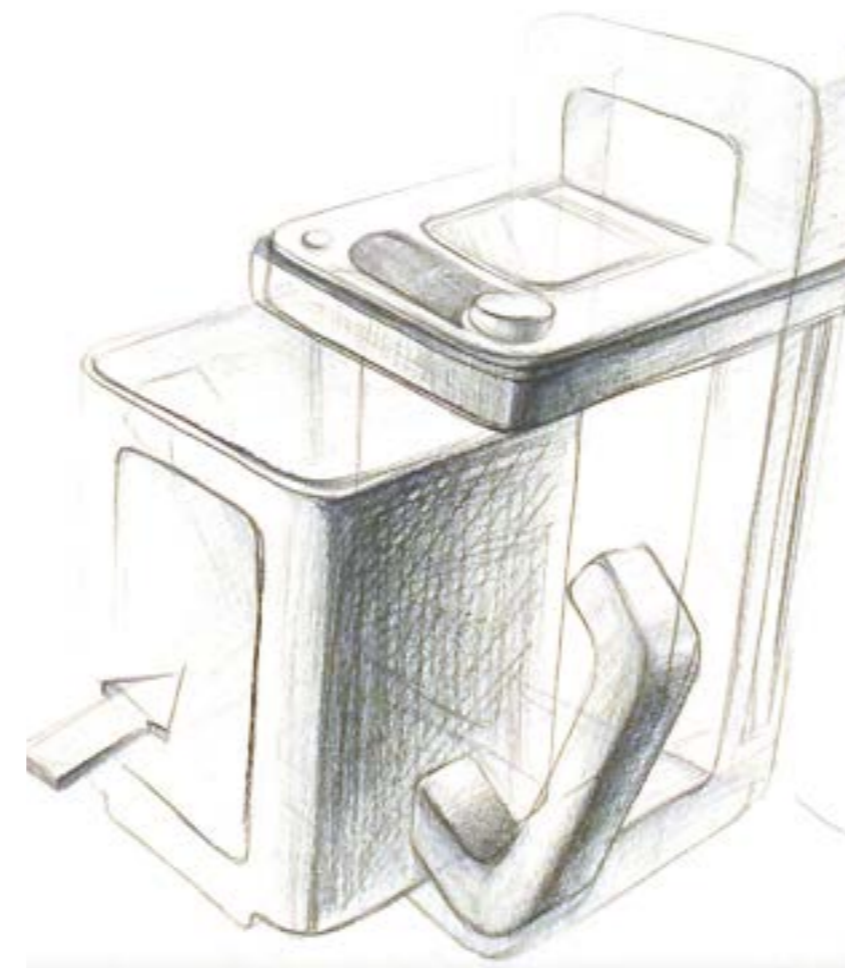


# Problem Solving

In this stage of the design I was concerned with the biggest components of the kettle. I looked for ways how the water reservoir could rest inside of the frame or the shape of the handle that would be ergonomic.

I even experimented with having an outside moving component that would lower together with the tea pod and create a sculptural component and a locking mechanism.

In the end these ideas didn't work very well because **inserting the kettle straight on was not going to be practical**. I needed to find a logical solution for how would the kettle be used.



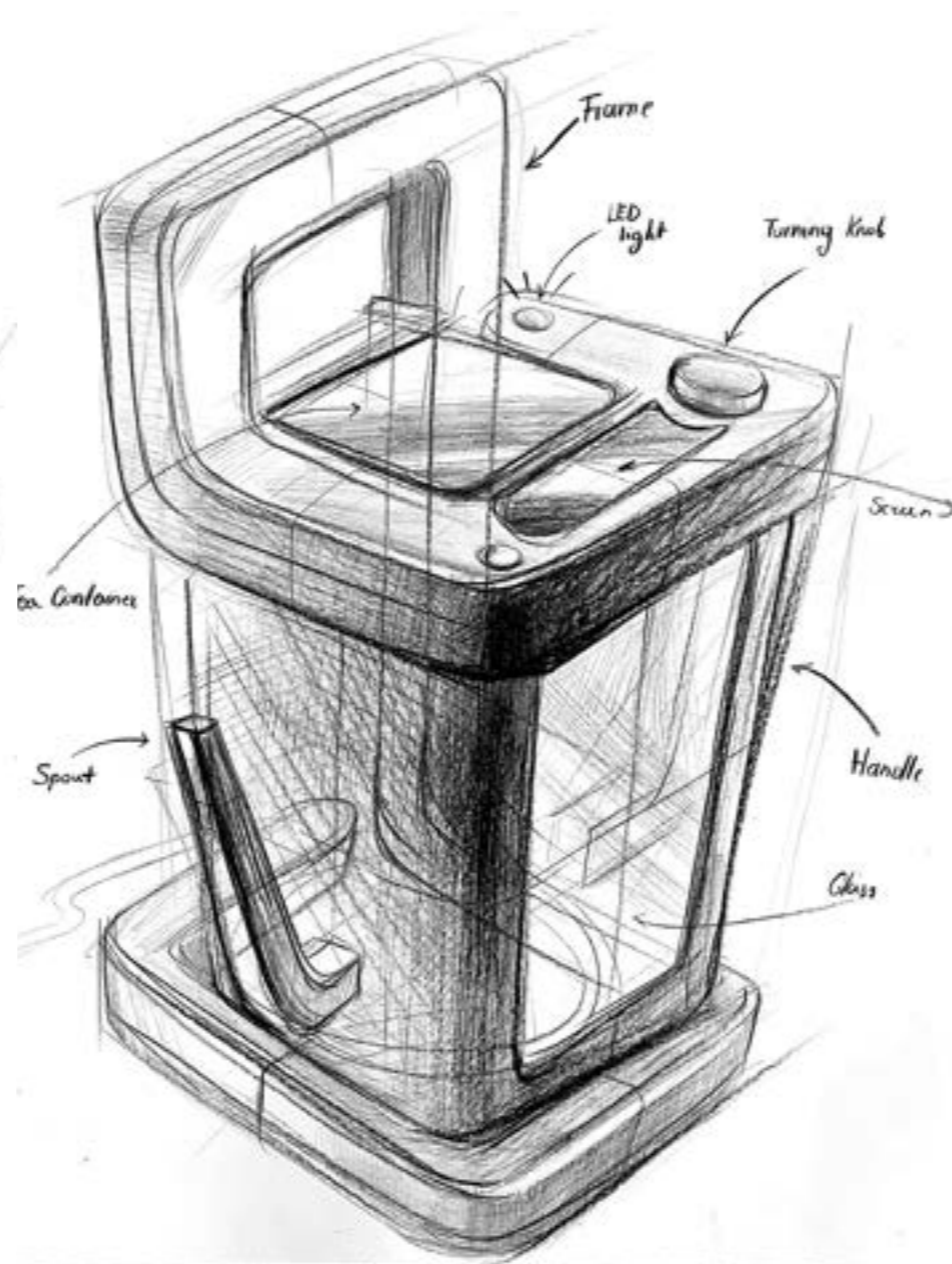
# Color, Details and Displays

Besides problem solving the functionality and the key elements of the kettle I wanted to think of color and the user interface.

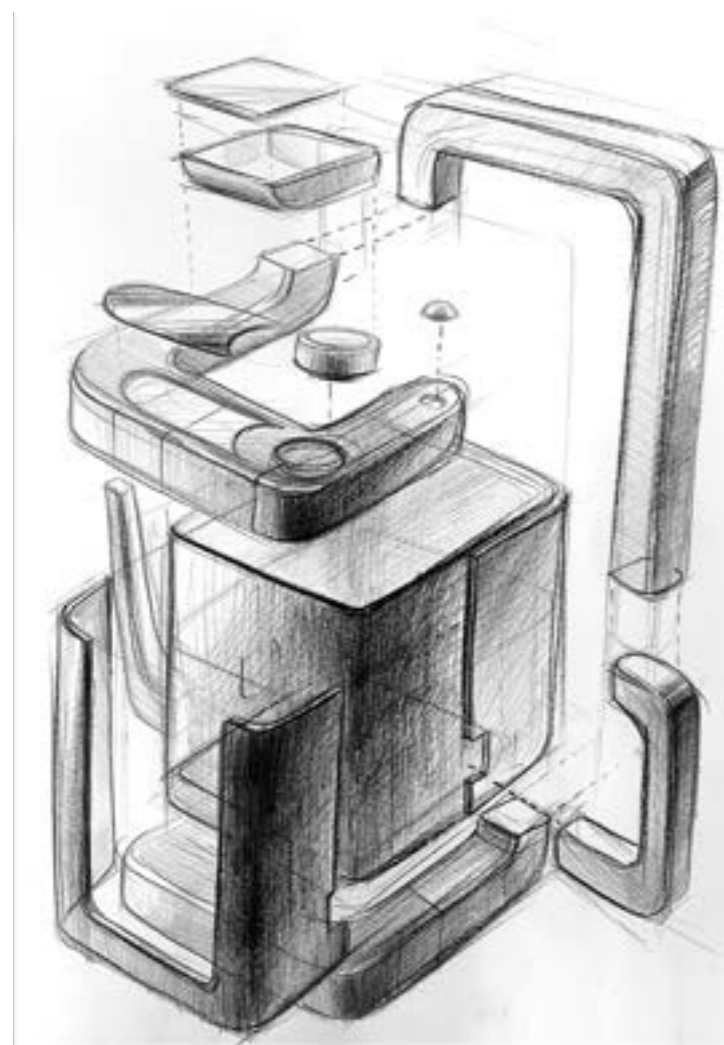
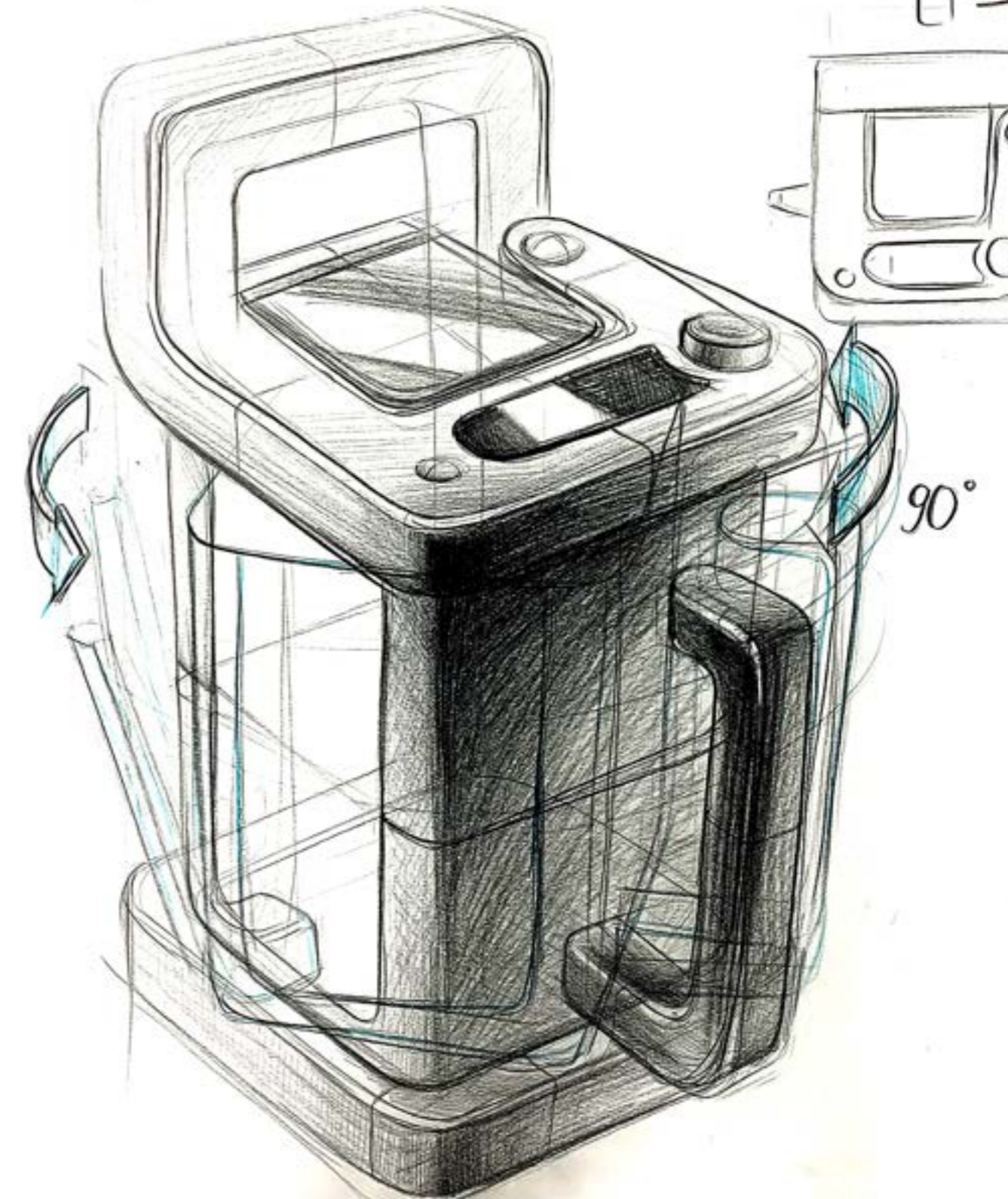
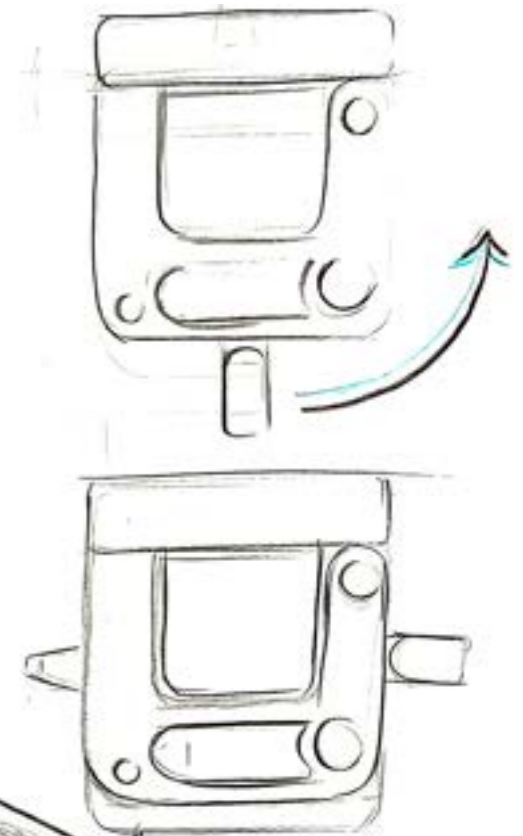
This color turned out brighter than I anticipated. I knew that even though I was seeking to find a shade of green that would stand out this color was making it look a little bit less mature to be in the kitchen. **A less saturated green would make it appear more sophisticated.**

I knew that the display needed to stand out in some way and become part of the whole design with its shape. This is why I chose this pill shape screen with **one edge that forms to the round dial button.**





# Form meets Function



It wasn't until I revisited my older design idea that I thought about bringing it back to the non-symmetrical base, removing one of the legs while having the **kettle insert through the front side of the frame and then twist 90 degrees into place!**

After reaching this idea with my sketches I finalized the design on paper and moved it into CAD.

# User Story

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# Caitlin, 28

Hartford, Connecticut

Profession - Real Estate Agent

Relationship Status - Dating, Living on her own

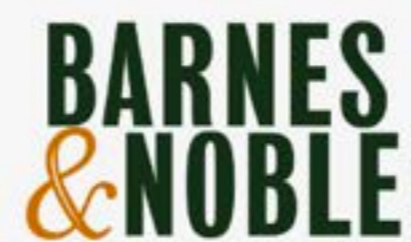
## Priorities:

- Enjoys rest after a long day of work
- Makes an effort to maintain an efficient environment at her home
- Loves to explore new healthy habits
- It is important for her to be hospitable

## Motivations:

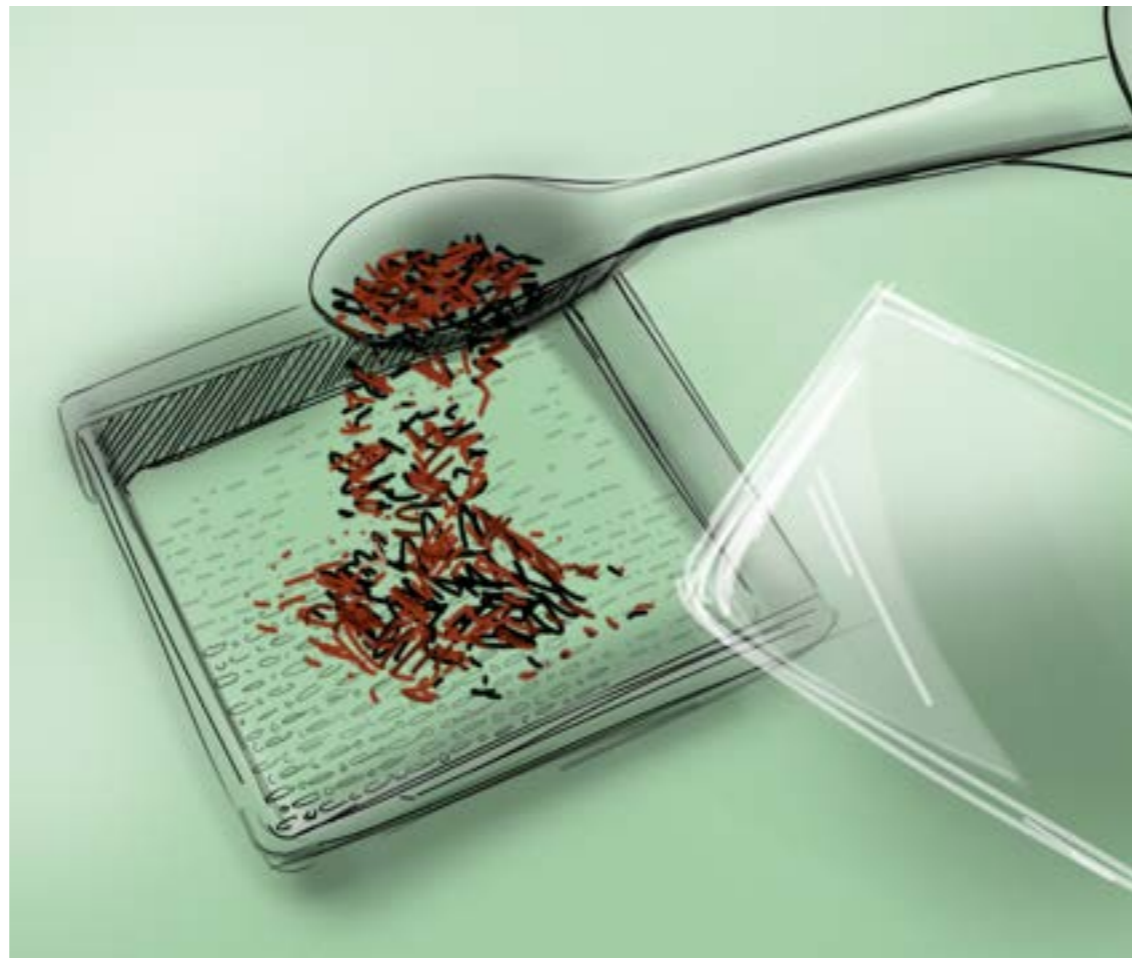
- Wishes to save time in her routine
- Struggles with clutter and organization in her kitchen

*"I am more of a tea drinker than a coffee drinker."*



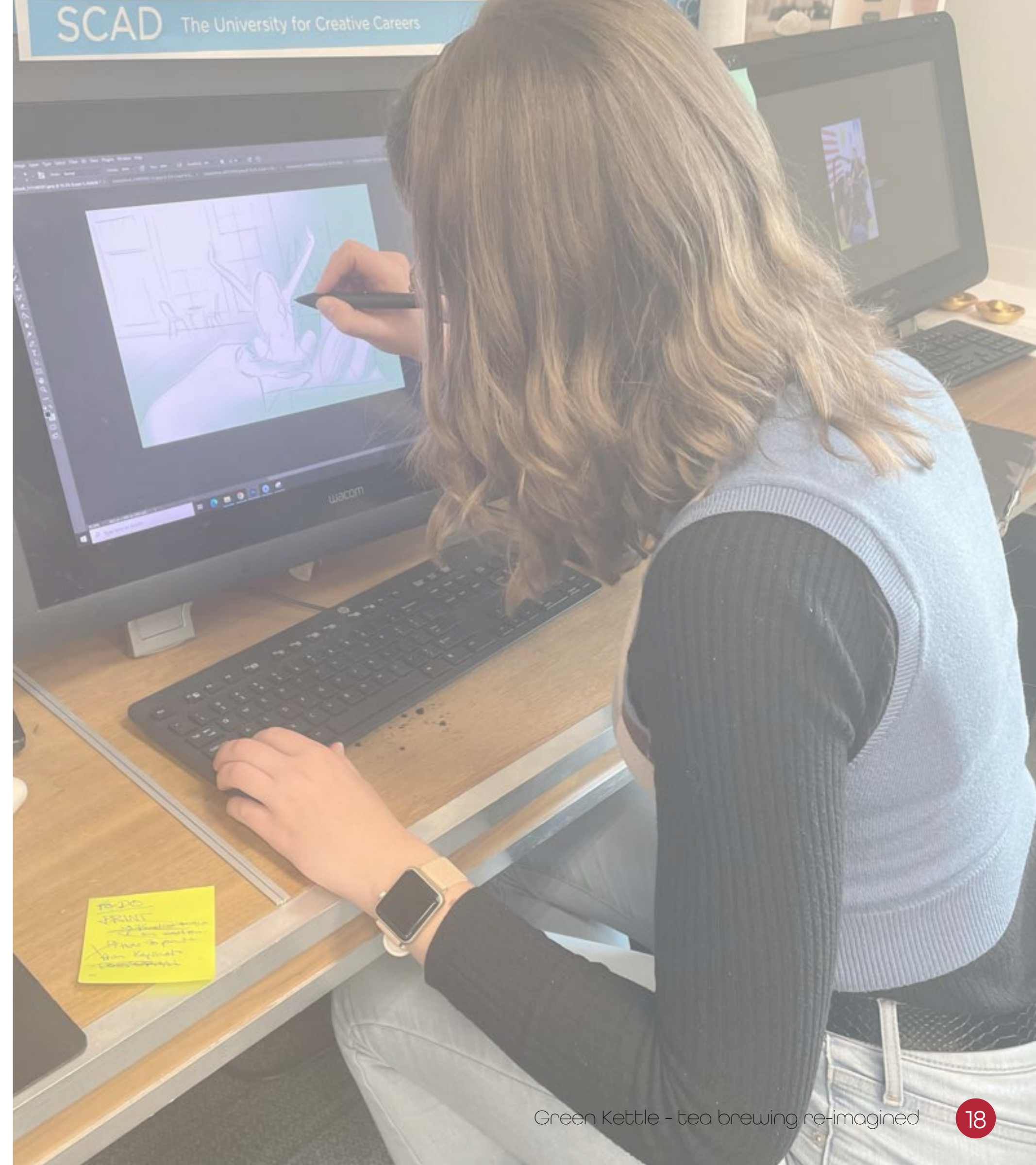






# CAD + Rendering

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# Thinking in CAD

Although I had a very clear idea of what I wanted to do using CAD software, there were many precision decisions made along the way.

I also needed to think about how would this kettle be 3D printed using the polyjet printers and how would each detail be textured and colored.

## Manufacturing side:

This stage of the process helped me think through how the whole kettle would be manufactured using plastic. I thought about where the seam-lines would go if the parts would be injection molded. How could I communicate the grips using an over molded texture of a grip.



# Rendering by Hand

Drawing this kettle on 32in by 40in paper not only helped me commit to the CMF but also it allowed me to create an strong orthographic visual.

I thoroughly enjoyed drawing this large scale piece using chalk pastel which is one of my favorite dry media colored materials.

I put in roughly 9 hours into this drawing and it definitely unleashed my love for the artistic side of Industrial Design.



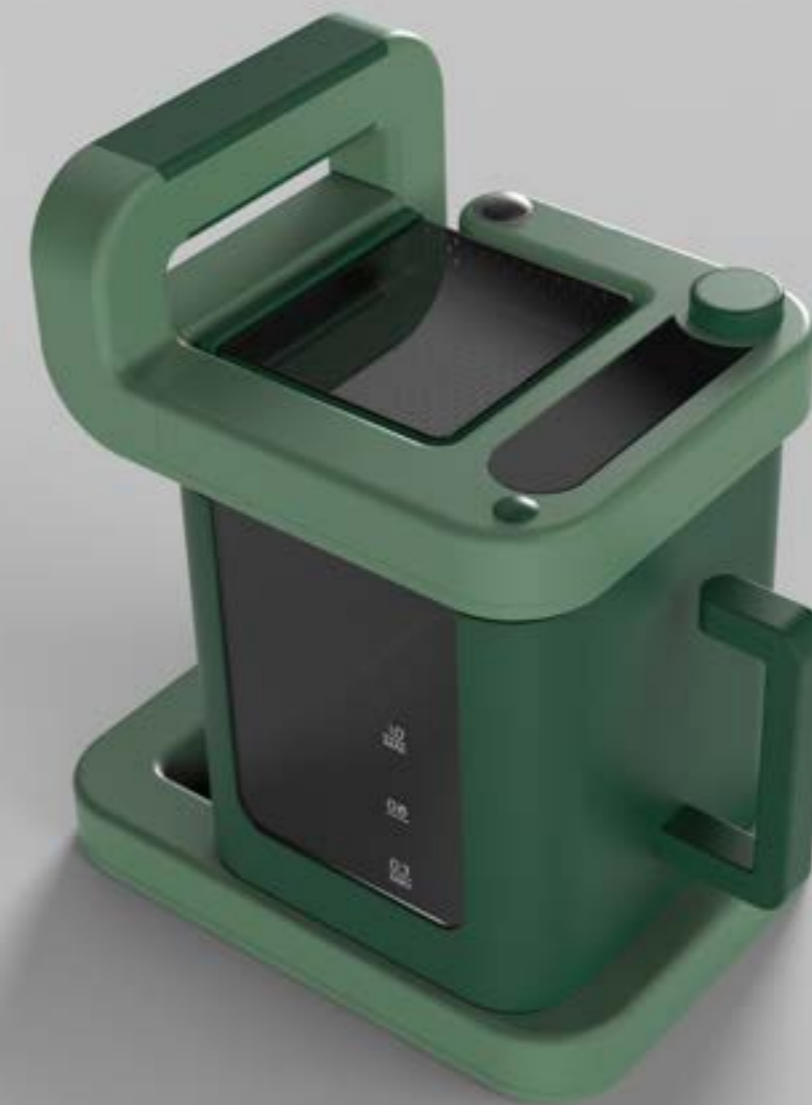
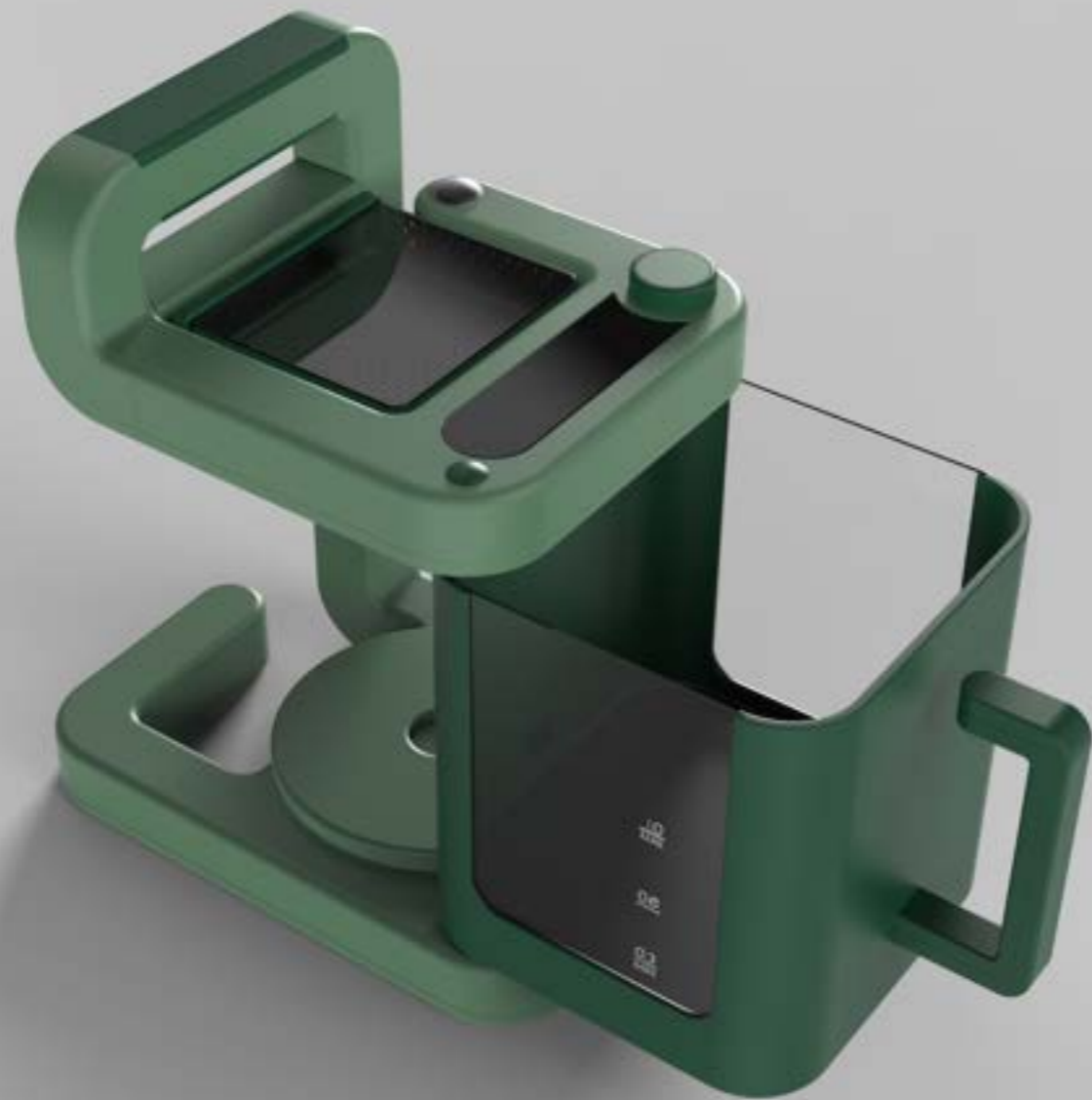












# Physical Model

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1.6

0.6

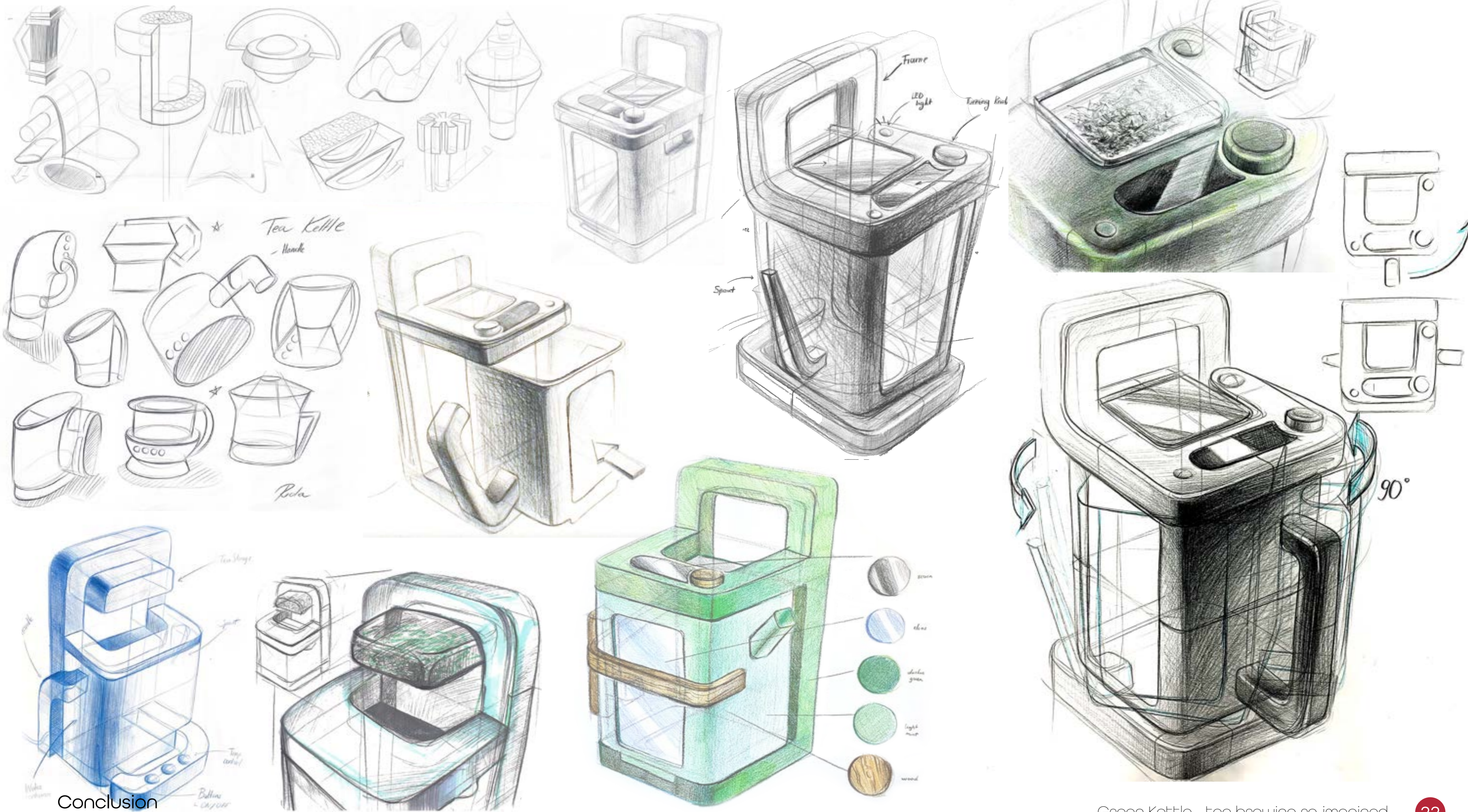
0.3  
MIN











Conclusion



Conclusion