

Team 10: out of ten

Turkey, Middle East Technical University

Designers: Team 26: Gobstoppers

Yağmur

Aras

Başak

Brief:

The problem we introduced to team 26 was about the Turkish multipurpose heating stove called Soba. After posting the brief, we got together on Discord to meet each other and answered their questions.

Initial Ideas:

Team 26 gave us many ideas with creativity and diversity. Each design was well thought out and detailed. They were inspired by many cultures, and gave us cultural insights. After we reviewed the proposals, we met up on Discord once again to give our critiques. We told them about the ideas we liked, namely the mushroom-shaped hood, heat adjustment with controlled air vents, hangers and storage space, safe-to-reach fire pokers, safety feedback, integrated water tank, and foot-warming brazier that works by pouring ashes inside.

Brief: The Soba Problem

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The Problem

Many houses in Türkiye still use coal stoves called Soba which have safety issues and it is difficult to ignite.

The Objective

An easily operated, safe heating solution that is fueled by coal and/or wood

Persona

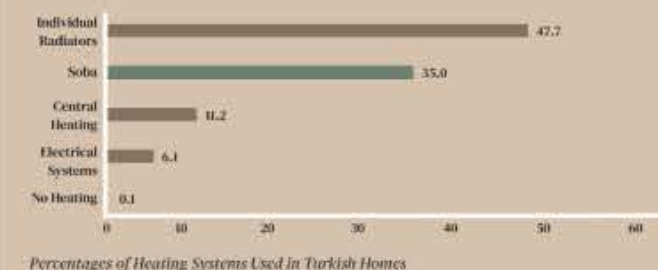
- Name: Kadir
- Age: 60
- Occupation: Retired Truck Driver
- Location: Trabzon, Turkey
- Education: Middle School Dropout

Bio: Lives in the countryside with his wife and is often visited by his children and their families. Uses Soba in his living room to keep warm because it's the cheapest option.

Habits: Uses the cheapest coal he can buy, and sometimes wood and paper scraps, as fuel. Usually uses paper for ignition but sometimes gets impatient and adds gasoline into the fuel even though doing so is highly dangerous. Cleans his Soba and chimney twice a year, before and at the end of summer. Always has a pot of tea brewing on the Soba.

Frustrations: The surface of the Soba is very hot and burnt his grandchildren's hands on several occasions, he himself almost got burnt once because he thought the Soba'd cooled down and tried to touch it. The soot from the Soba darkens the walls so much that he repaints them every three years. The ashtray of the Soba can't contain the ashes and they spill everywhere. Is scared of CO poisoning.

The Statistics



Overall View

In 2023, most homes in Türkiye changed their heating to natural gas. However, **33% of the houses across the country still use coal/wood stoves called Soba to warm up, cook, and gather as a community.** It is also a historic cultural element for the elders living at countrysides and their families. **There are approximately 18 million houses still using Soba.**

Unfortunately, Soba are not entirely safe or practical. According to studies, in five years, approximately **109 thousand people have suffered carbonmonoxide poisoning, and many have lost their lives to it.** Moreover, soot and ash emanating from Soba pollute both the environment and inside people's homes.

We need an immediate innovative solution for the families who are not likely to change their heating systems because of their socioeconomic state or inability to access natural gas. **How can we prevent CO leaks, explosions and poisonings, or in cases of occurrence, how can we alert authorities to save the people amidst? How can we make Soba maintenance more practical?**



Brief: The Soba Problem

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What is Soba?

- A heater made of cast iron
- Has a hollow interior in which fuel (coal, wood, paper, etc.) is put, with an ashtray on the bottom for easy cleaning
- The fire can be accessed from the lid on the top of the Soba to poke and reignite it
- Every exterior surface is burning hot, and the the top is utilized well (as seen in the picture on the 1st page)
- Sometimes has compartments that act as ovens
- Usually set up in the living room and is stationary once set up
- Ventilated only by a single pipe which connects to the chimney through a hole in the wall
- Is advised to be cleaned every two months



Cultural Insight

Soba have an important place in many Turkish people's hearts as both a cozy and efficient heater that keeps people warm during long winters, and as a hard to maintain necessity for the less fortunate. It is usually the only, or the best, heater someone has in their home, so the room it's placed in becomes a gathering hub for the family. It's also used in hotels or cafes to achieve a homey, warm feeling.

The children are sometimes taught not to touch it so they don't get burned by having their hand lightly pressed against the hot surface by an adult. It's a fun and relaxing cultural activity to cook chestnuts and potatoes, and brew tea on Soba, as well as putting fruit shells on it to enjoy aromatic smells.



Dangers and Hardships

- Lethal in cases of CO gas leaks
- Causes severe burns when touched, can burn or melt objects if they're close to it, flammable materials must never be placed near Soba
- Tedious to clean, is hardly ever cleaned as frequently as advised
- Takes a long time to ignite, should not be ignited with flammable liquids as the consequences can be... explosive
- The fire needs to be kept alive by poking and prodding, or
- Emits tons of polluting soot and ash
- Is heavy and hard to set up, and can't be moved around

Extras

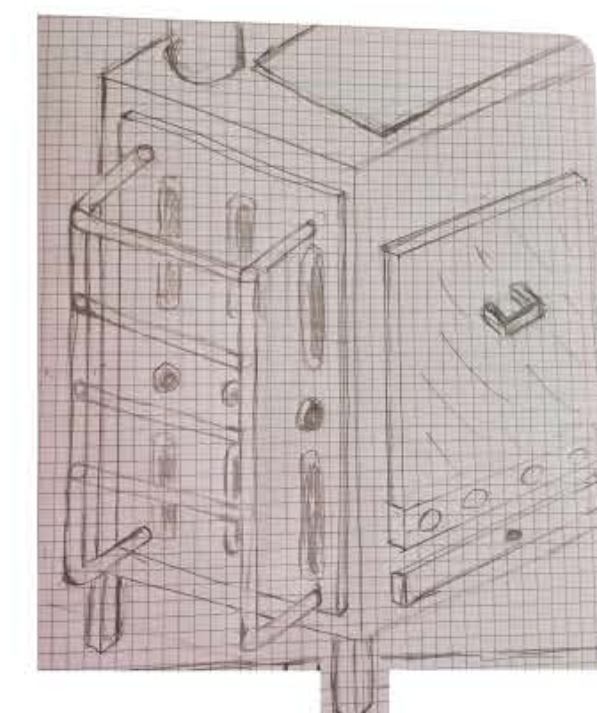
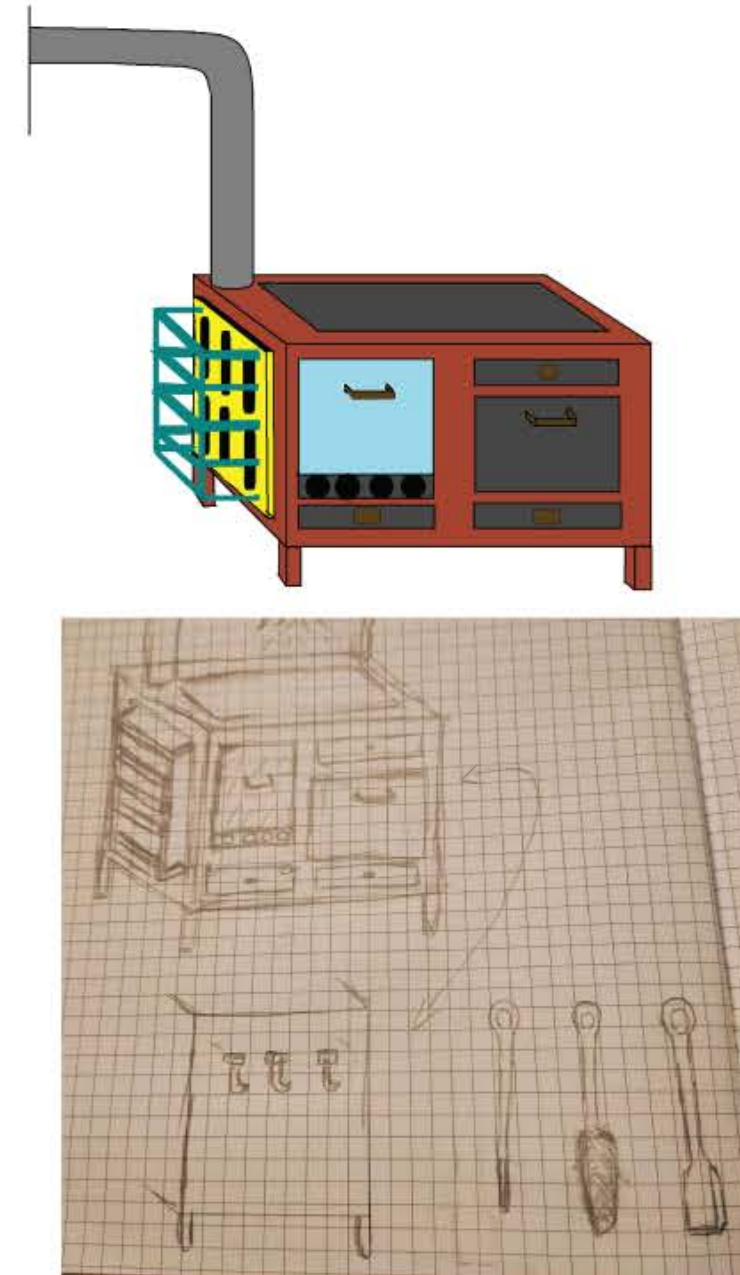
- Video of a Kuzine Soba
- Soba Ignition and parts of a soba
- Video of a different type of Kuzine Soba
- Cooking on a Kuzine Soba

Feel free to reach out to us for translations and explanations

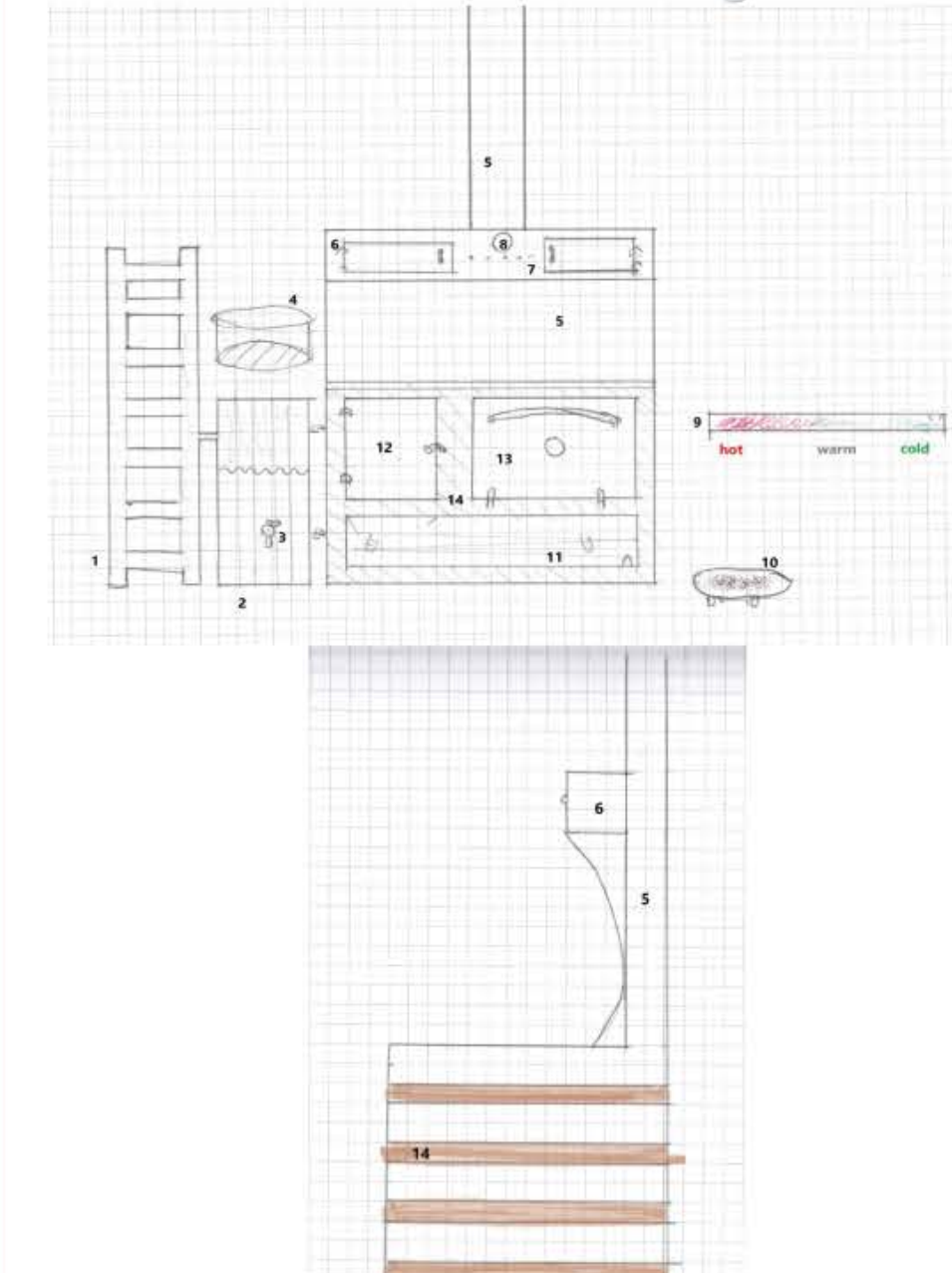
Good luck :)

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Flexi-Soba

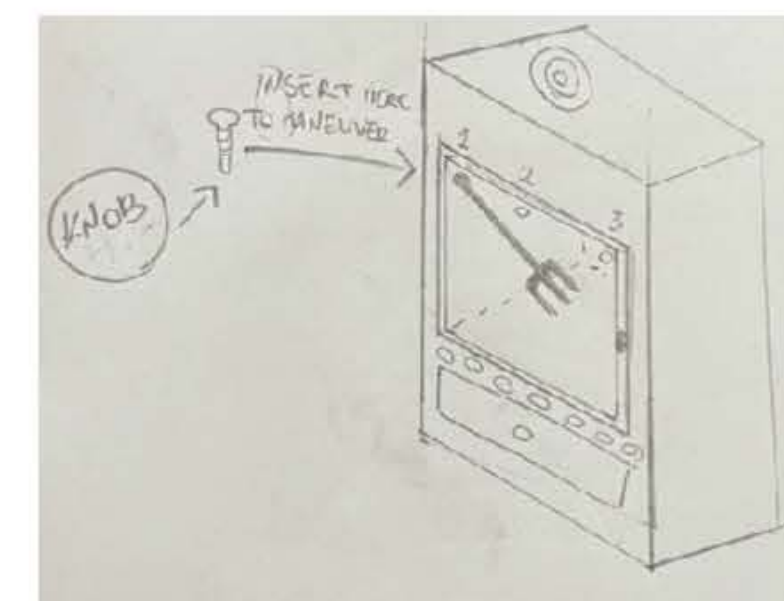
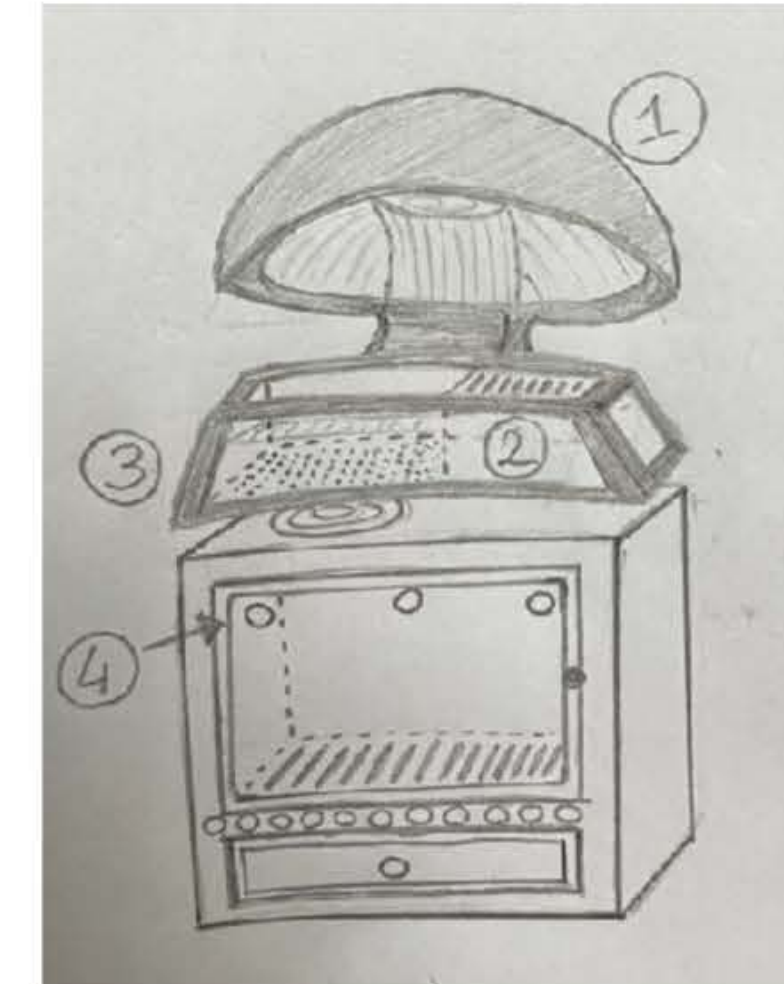


Kizumi Soba Design



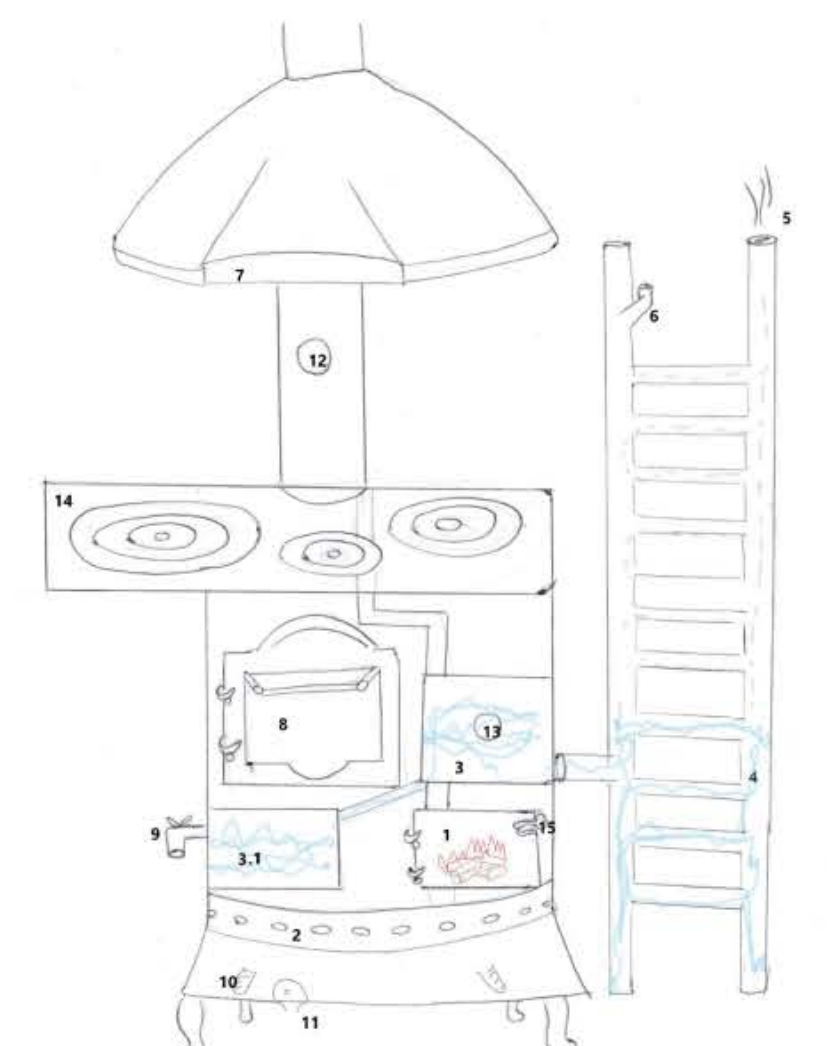
FUNGO-S-ObA

THE ITEM SAVES SOBA



TUTTY FRITTY SOBA

THE ITALIAN TASTE



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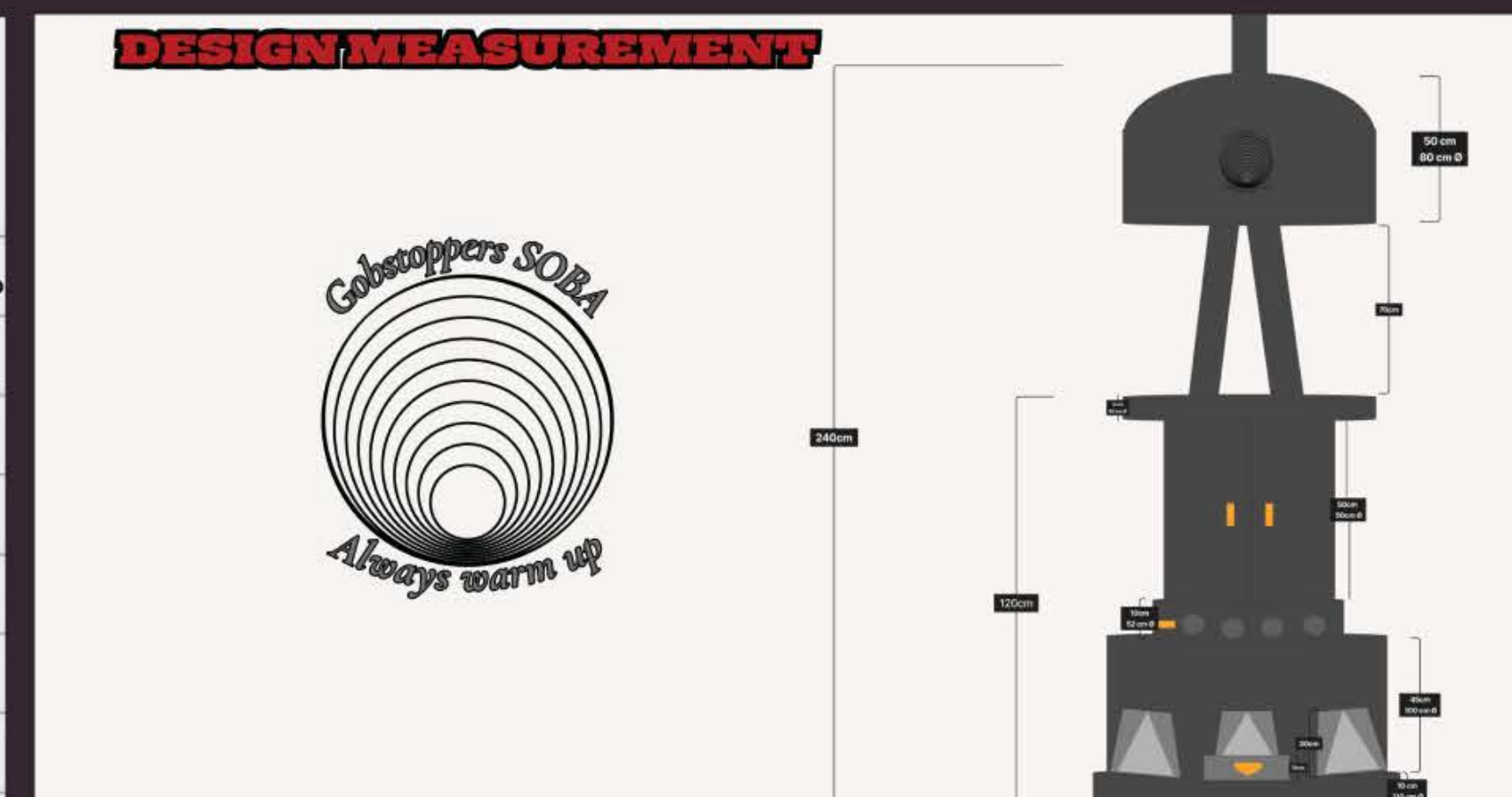
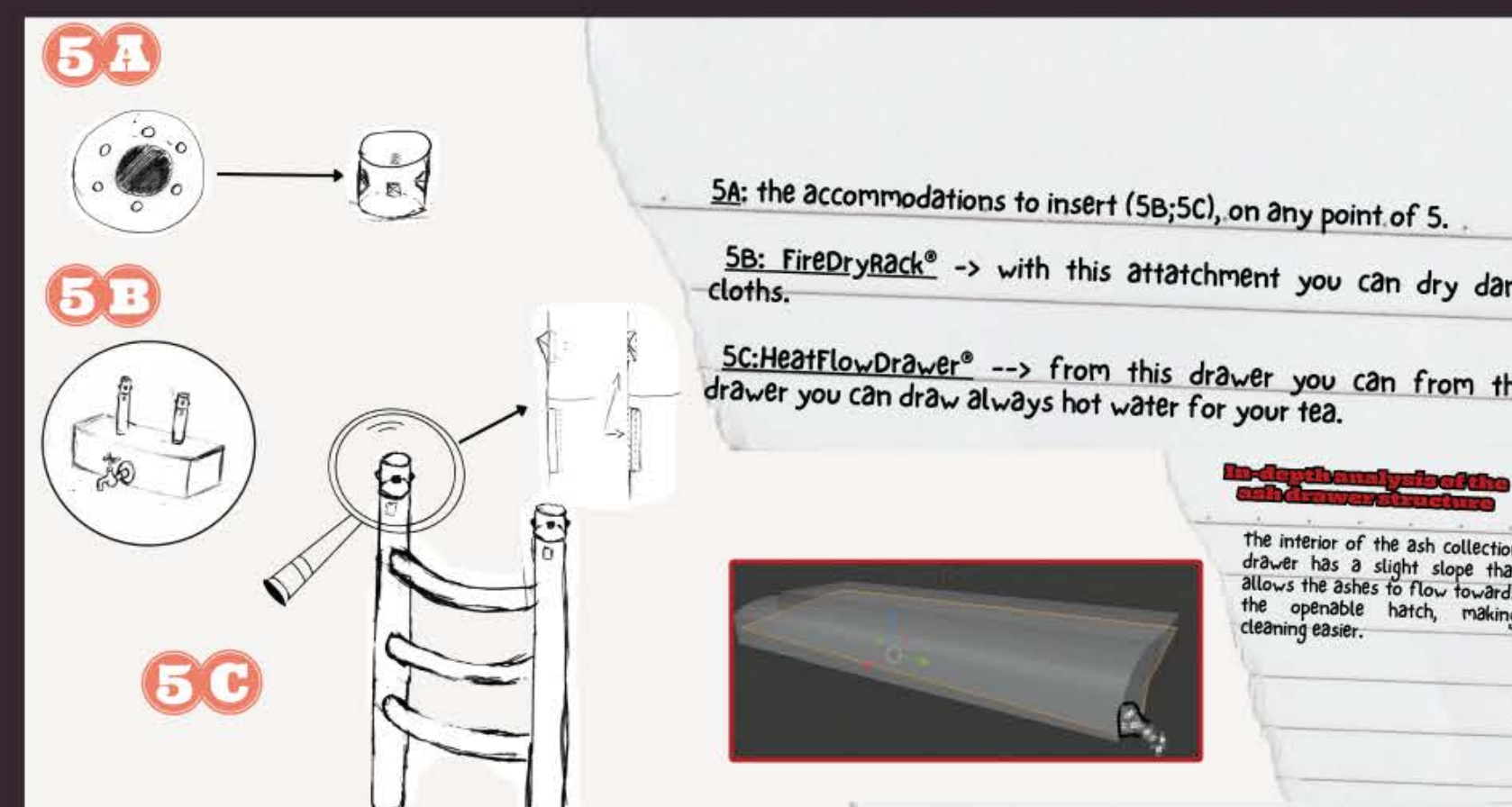
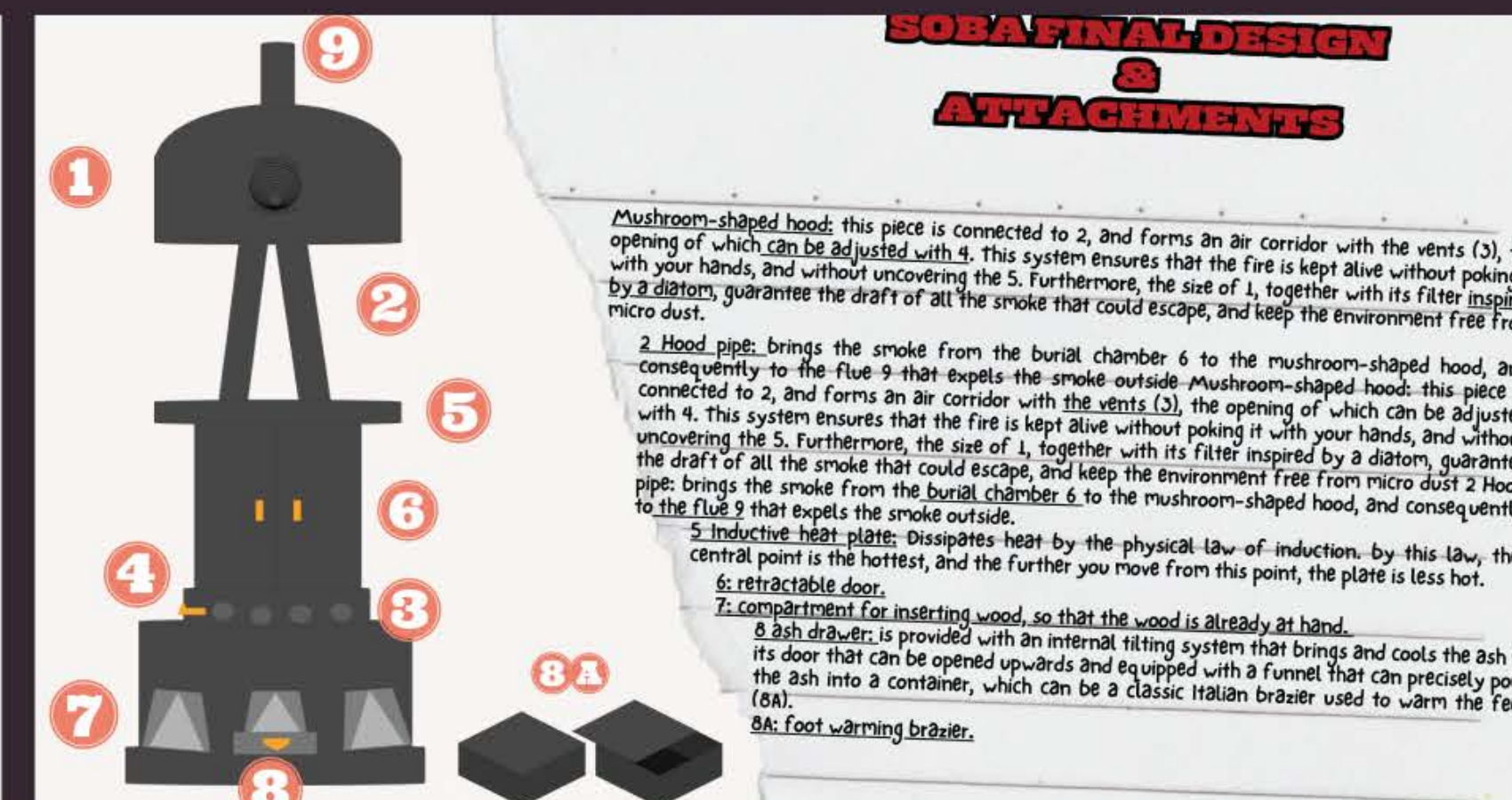


Başak



Final Idea:

GobstopperSoba is the beautiful result of team 26's hard work. It provides solutions to the problem of CO poisoning and soot with a mushroom-shaped hood and adjustable air vents. It has retractable doors to access the burning chamber, and compartments for convenient fuel storage. There are optional additions to the induction plate for hot water and a drying rack. Last but not least, you can reuse the ashes by collecting them from the ash drawer and pouring them in the foot warming brazier. We are very happy with the final design. The solutions are innovative, aesthetic, inspired, and obviously the result of hard work and research of many products from Turkish and Italian cultures. The only downside is that its size is too big for the average Turkish living room, so much so that we found the 1:2 scale mock-up a more suitable size. Overall, GobstopperSoba is a great solution to the soba problem, and for that we congratulate and thank team 26.



Overall Experience:

Working with team 26 overall was an amazing experience. As clients, we really appreciated their professionalism and kindness. They came up with interesting ideas and took our feedbacks seriously, working like true designers. The members of the team were always punctual and delivered a lot of ideas, which they later refined into a complete product.

Communication

Team 26 was open to communication and frequently updated us with their new ideas and development. They were very receptive and always answered our questions.

Technical Drawings

Their work was neat and they were able to express the measurements of their product clearly. On the other hand, they had a problem with the dimensions of the product. We had to use 1/2 scale in the video footage, which we found more suitable of a size.

