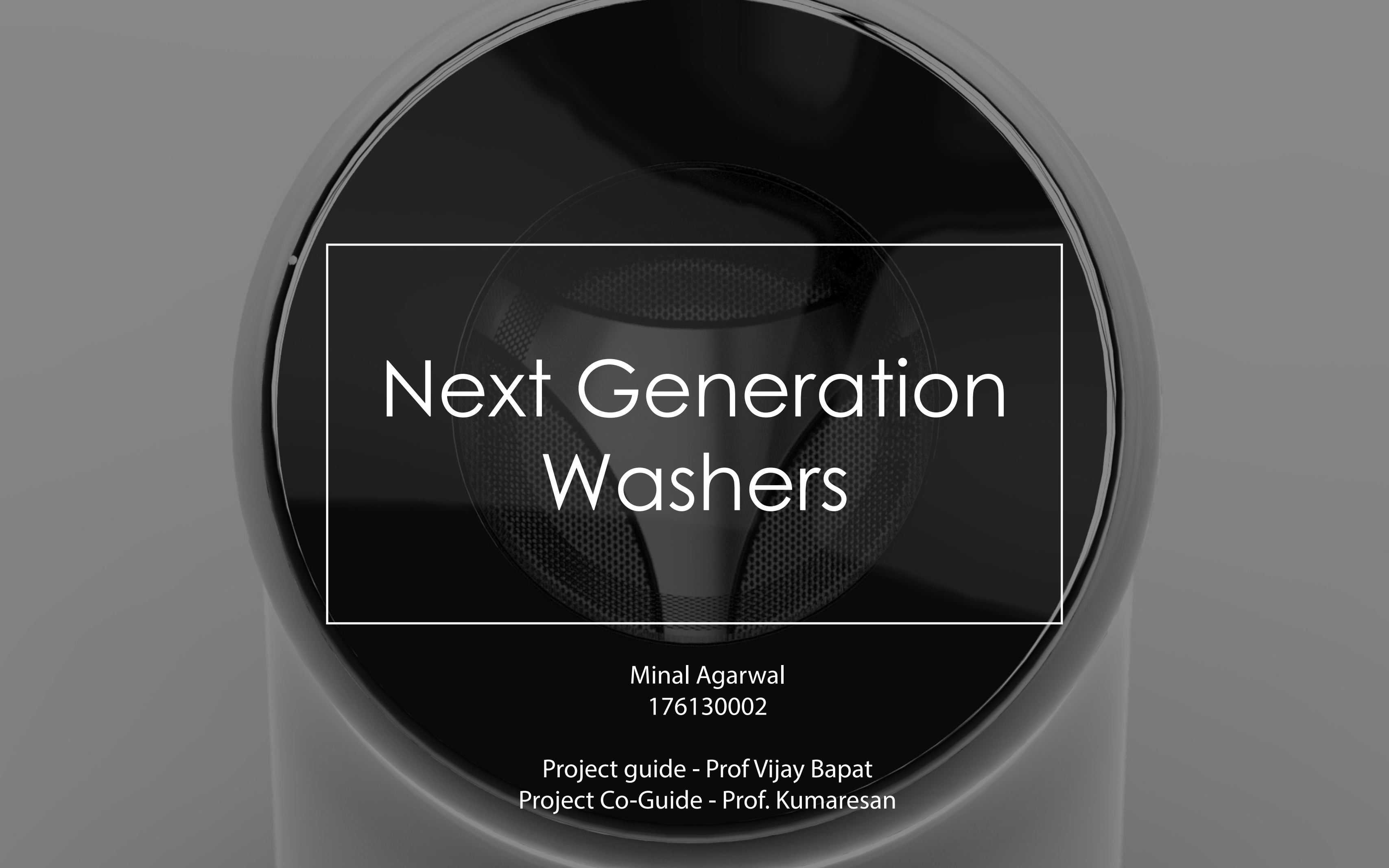
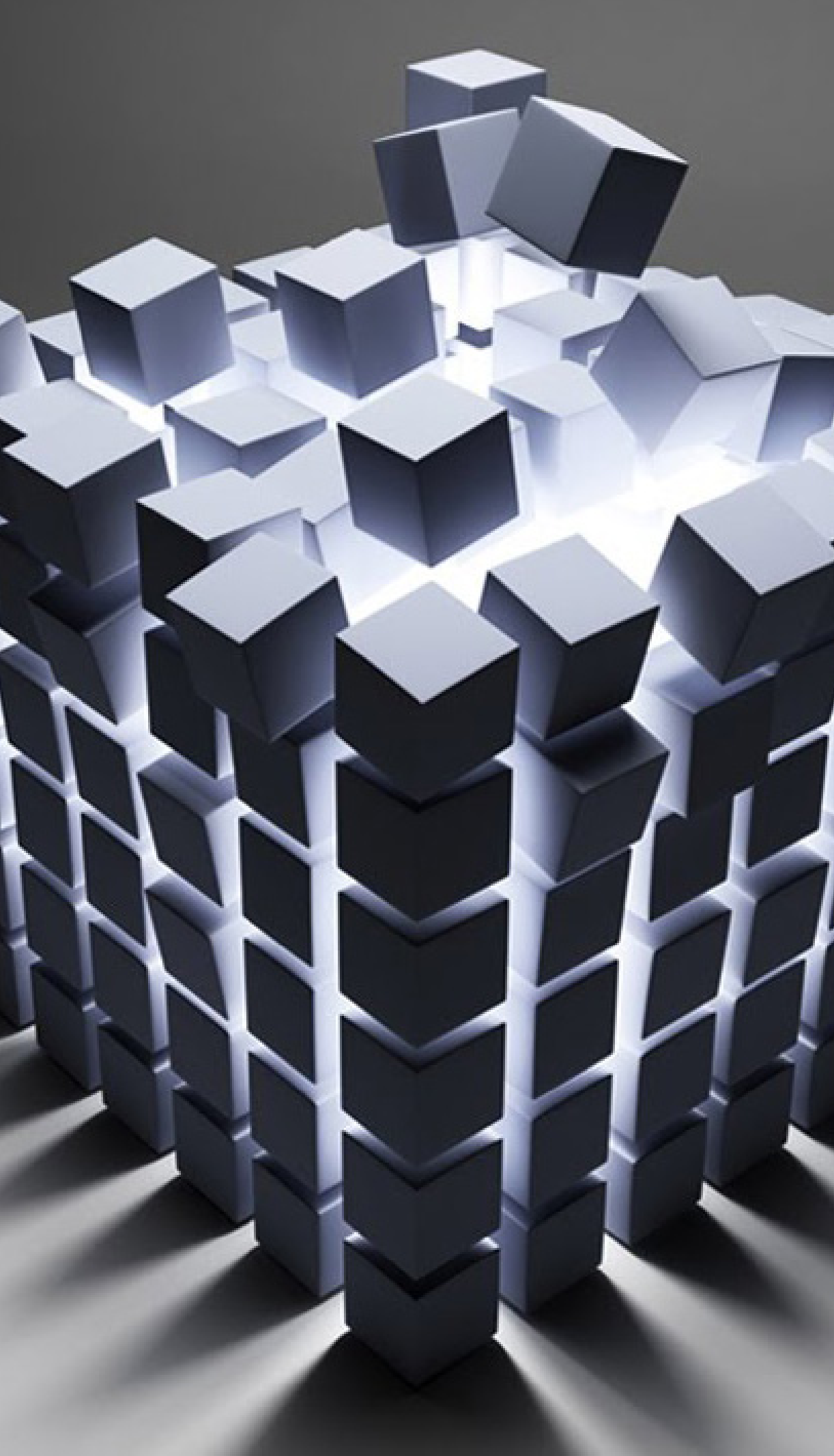




Next Generation Washers

Minal Agarwal
176130002

Project guide - Prof Vijay Bapat
Project Co-Guide - Prof. Kumaresan



Future Manufacturing

Nano- Materials

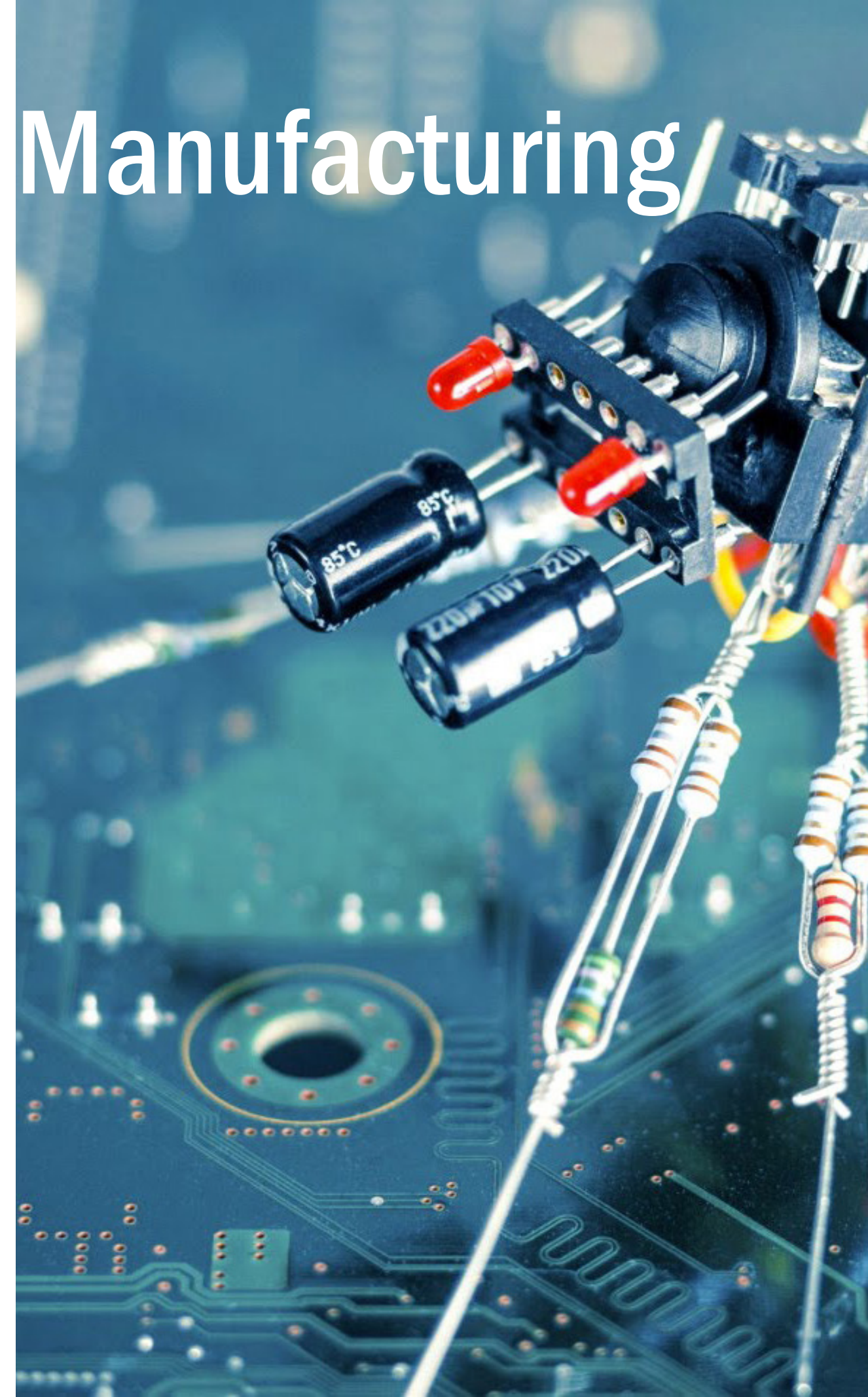
Bio Polymers

Bio Fabrication

Digital Fabrication

Advanced Robotics

4-D Printing





Future Technology

Internet of things

Artificial Intelligence

Robotic Assistants

Cyborgs

Neural Lace

Full dependence on
Renewable sources of energy





Future Fabrics

Tech Infused

Self Healing

Decomposable

Color Changing

Customisable

Longer life

Smart clothes

Medical Functions

Protective Functions

Sports Functions

Vanity Functions

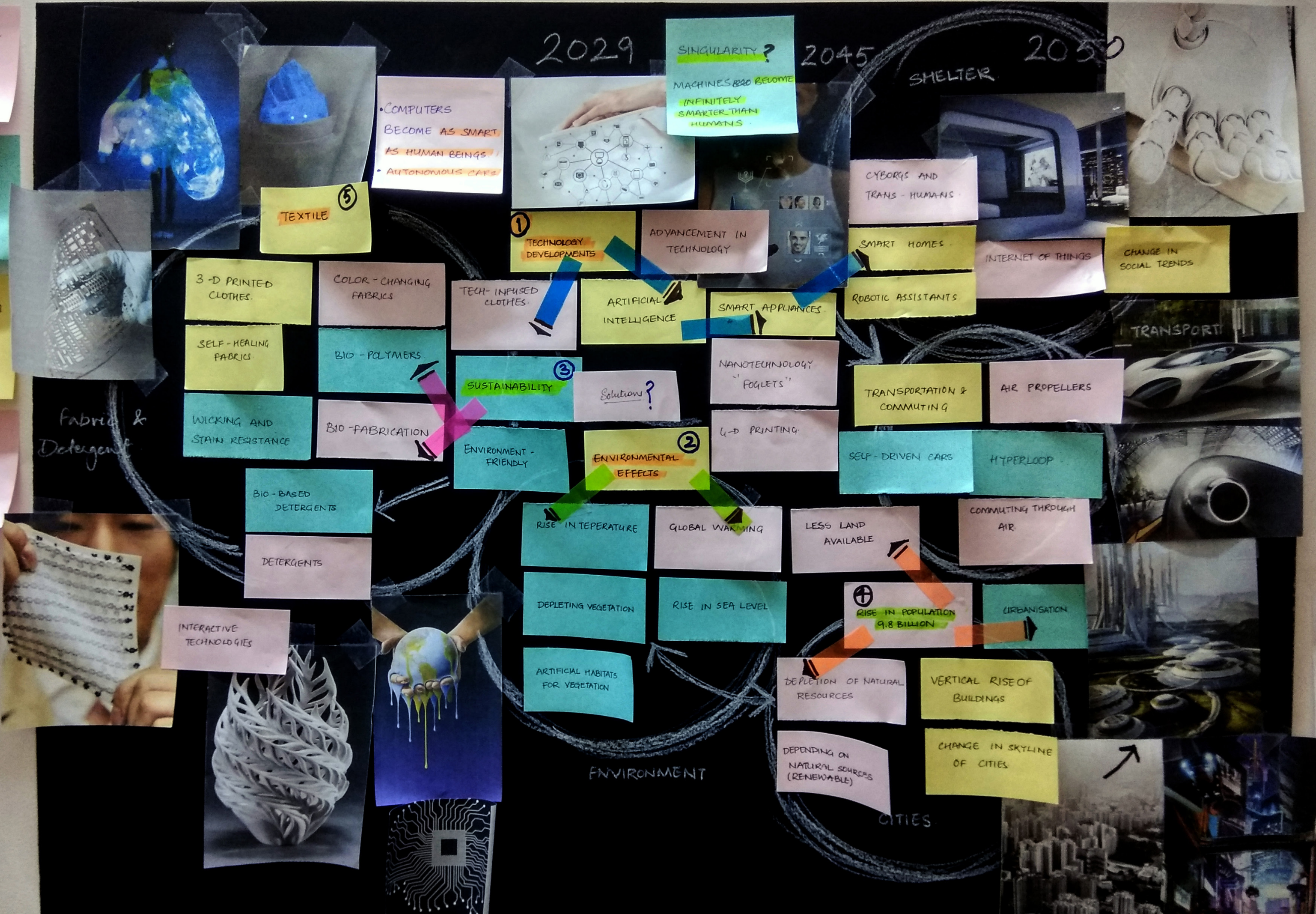


WASHING MACHINE
HISTORY ☒
WORKING ☐
- Mechanical
- Chemical

MINDMAP ☐
TRENDS IN
Technology ☐
Fabric ☐

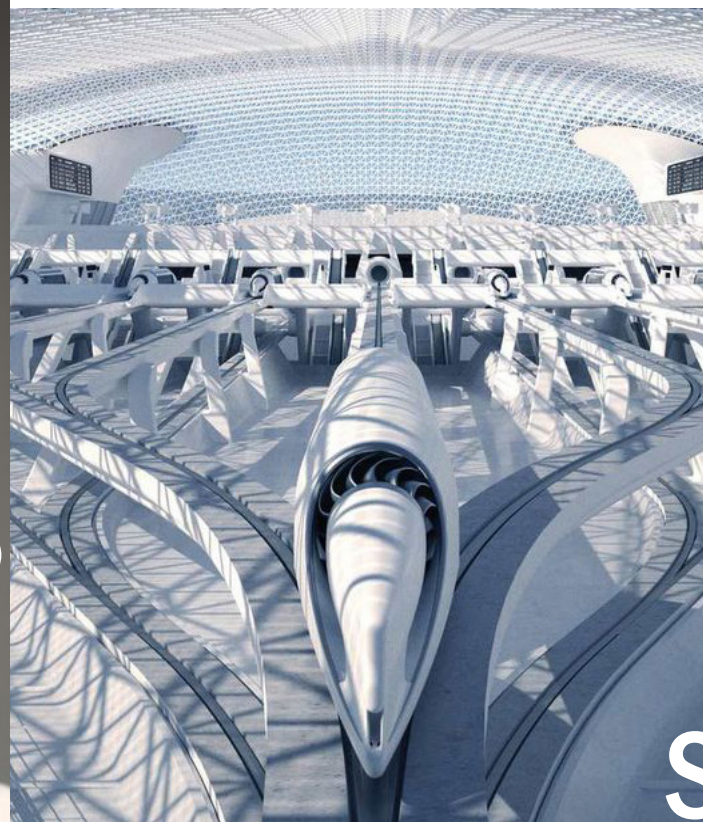
2050
- PREDICTIONS ☐
acc. to mindmap
- SCENARIOS
CITY — ☐
HOUSE — ☐
PEOPLE — ☐
(PERSONAS)

BRIEF ☐
PROBLEM
USER REQUIREMENTS
SCOPE
DEFINING USERS
ENVIRONMENT





Cyborgs



Speed



Smart Fabric



Nanotechnology



Artificial Intelligence



Sustainability



Connect

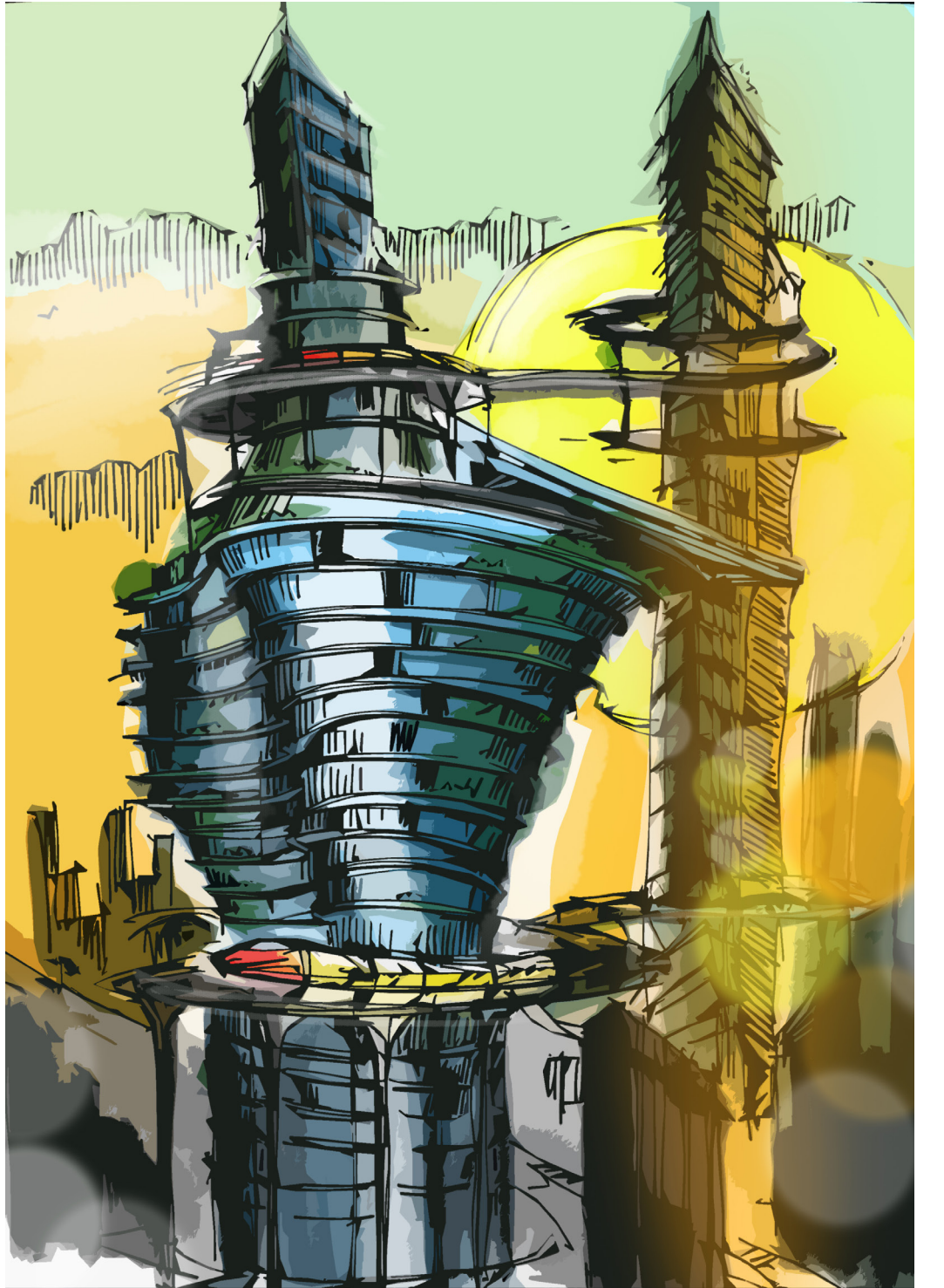
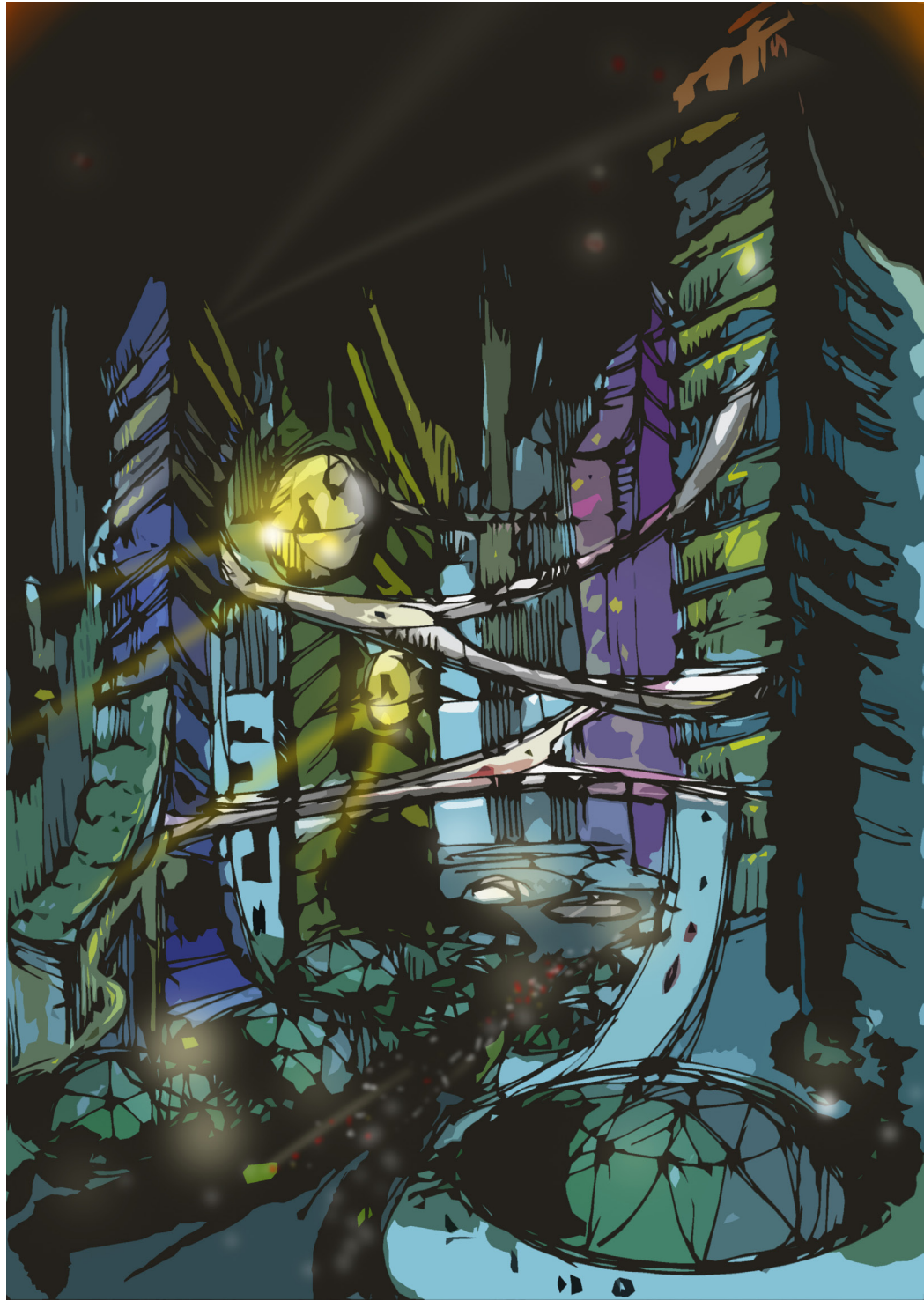
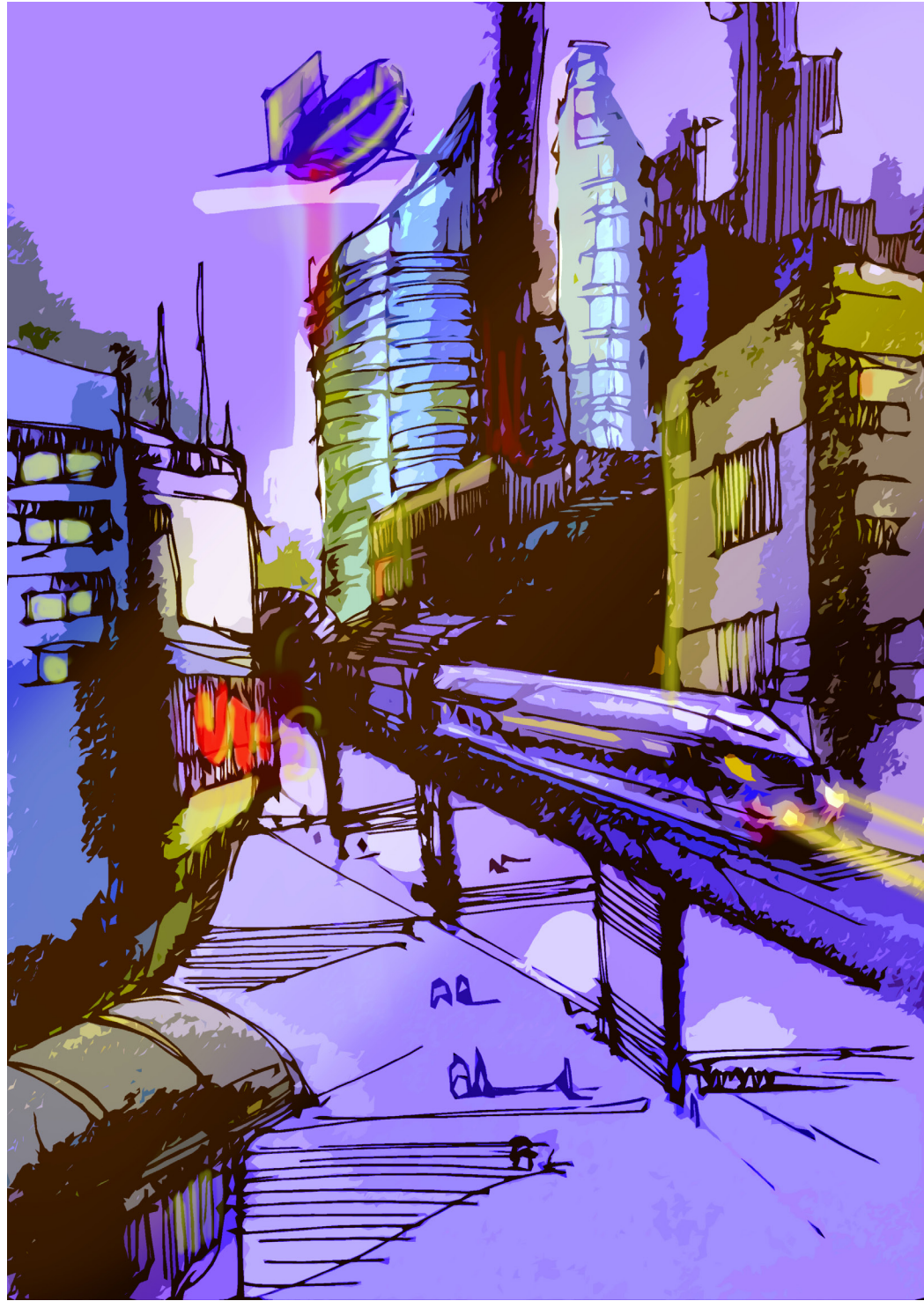


Smart Living



trans humans





NEXT GENERATION

USER STUDY

PRIMARY USER AND SECONDARY USER

LOCATION OF THE WASHER IN THE HOUSE

FREQUENCY OF USAGE





PROBLEMS

LOADING AND UNLOADING IN A FRONT LOADING WASHER

THE NEED OF THE WASHING MACHINE TO BE NEAR A WATER SUPPLY AND DRAINAGE

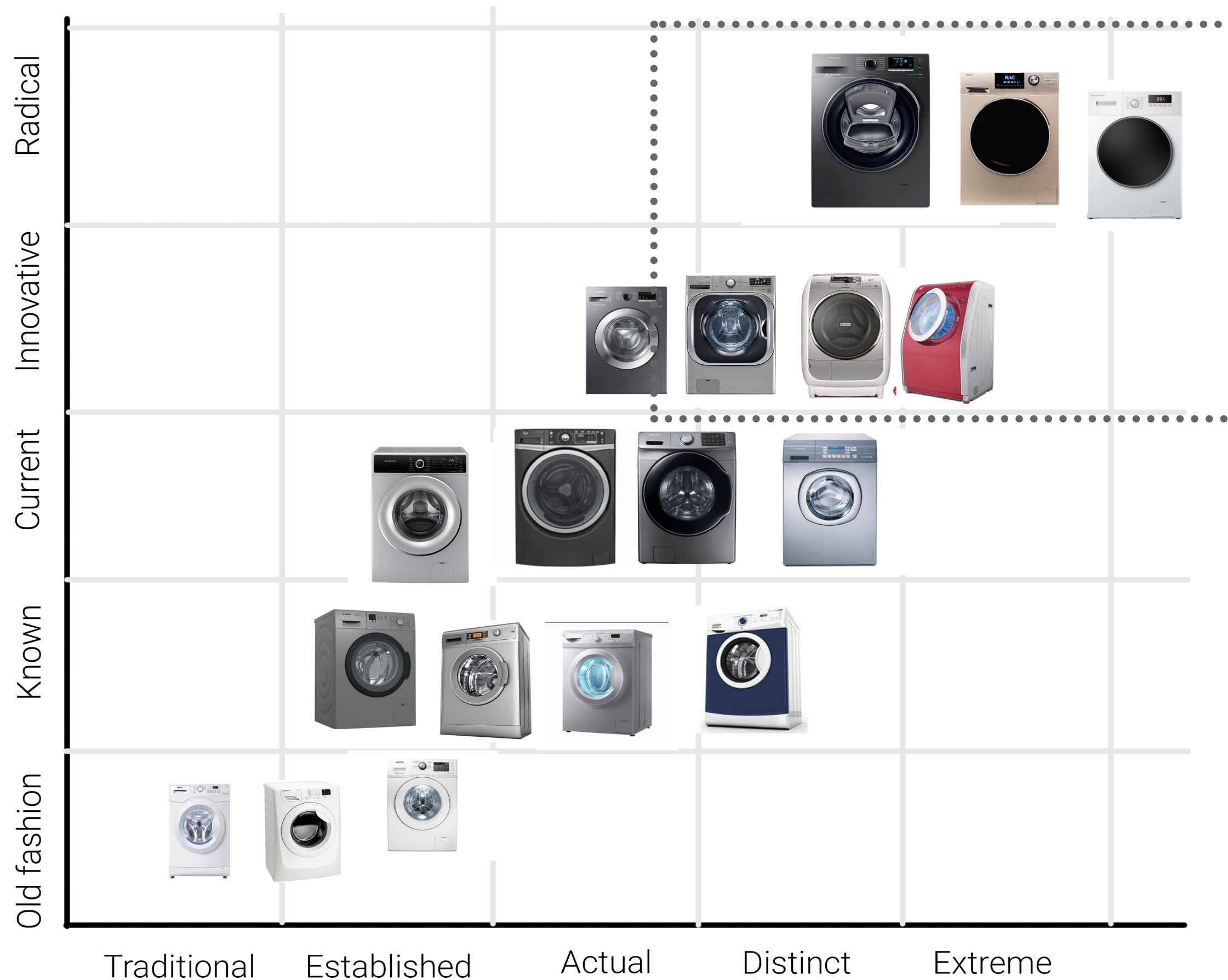
NOT ALL CLOTHES CAN BE WASHED TOGETHER

EXCESSIVE USE OF WATER

ADDING CLOTHES IN THE MIDDLE OF THE WASH

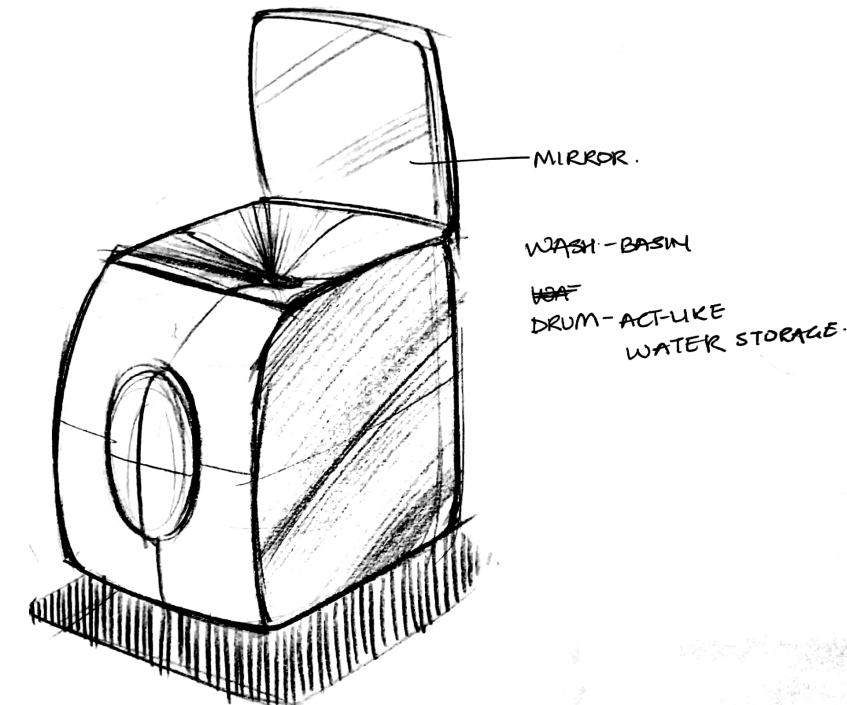
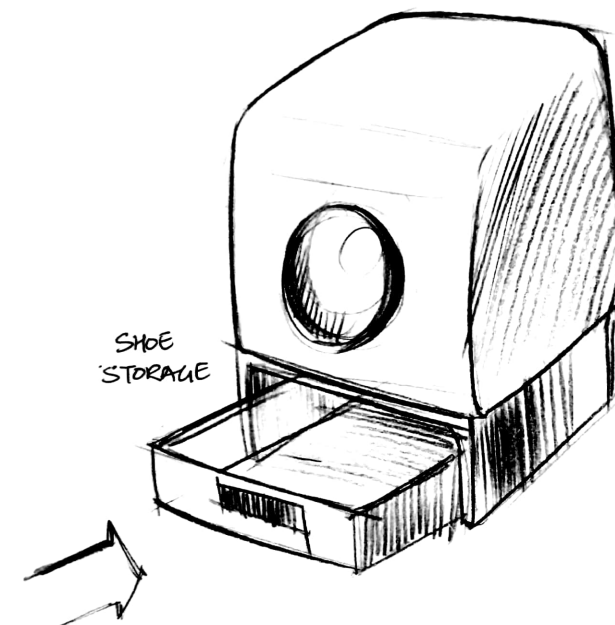
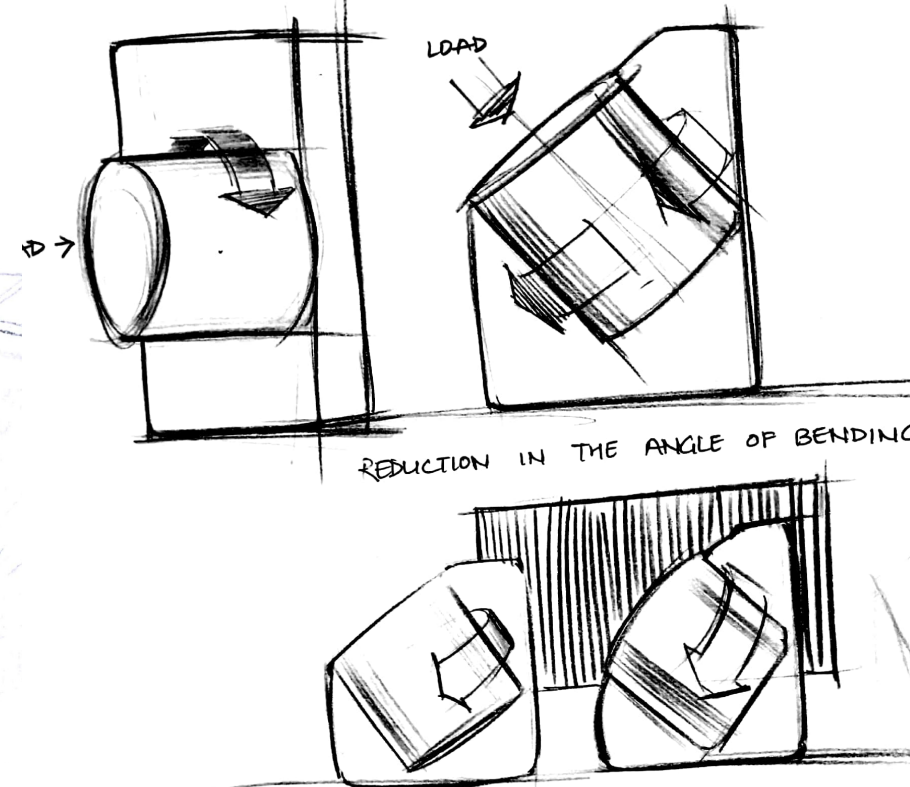
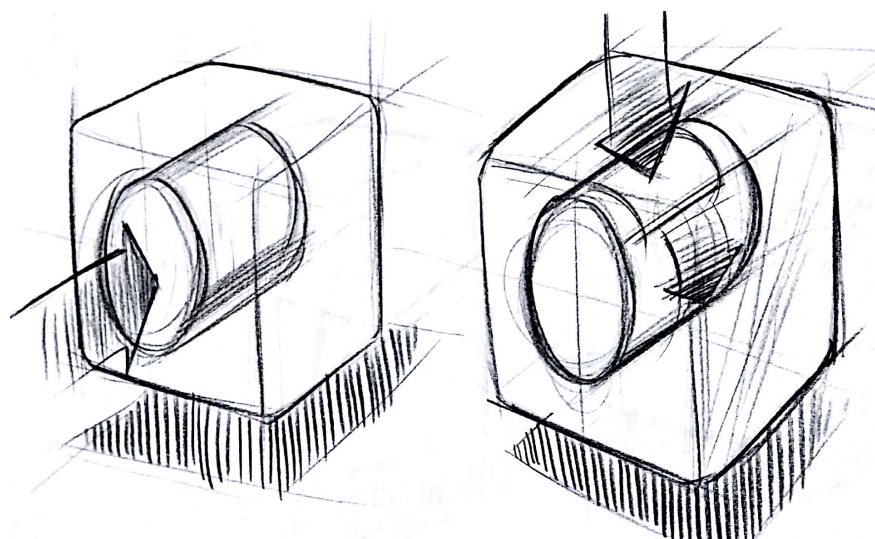
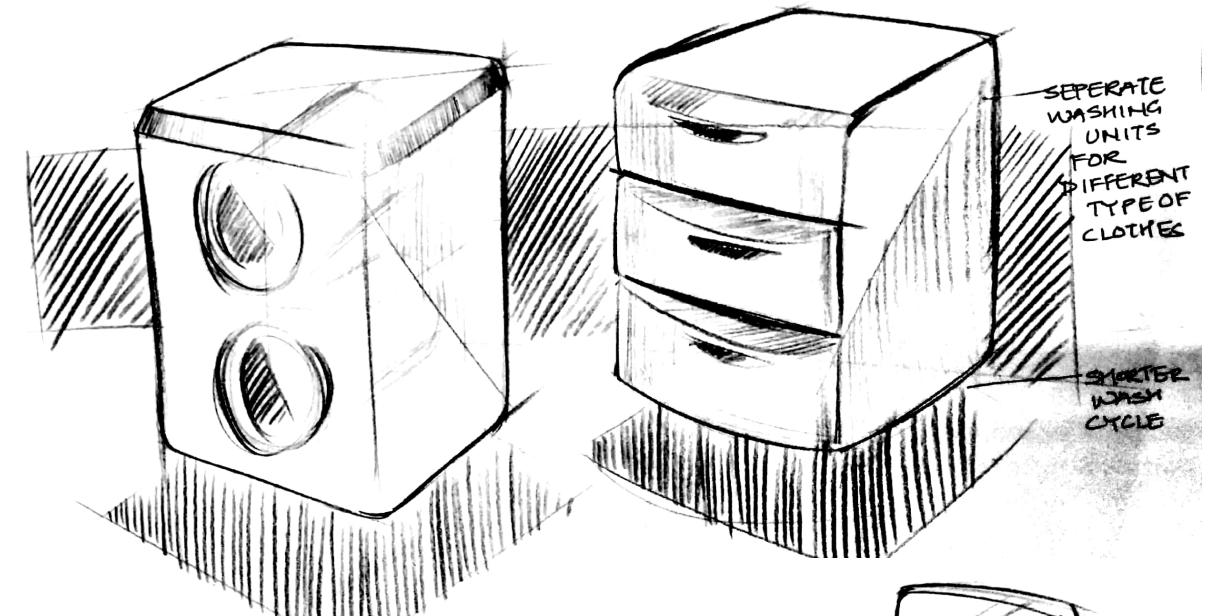
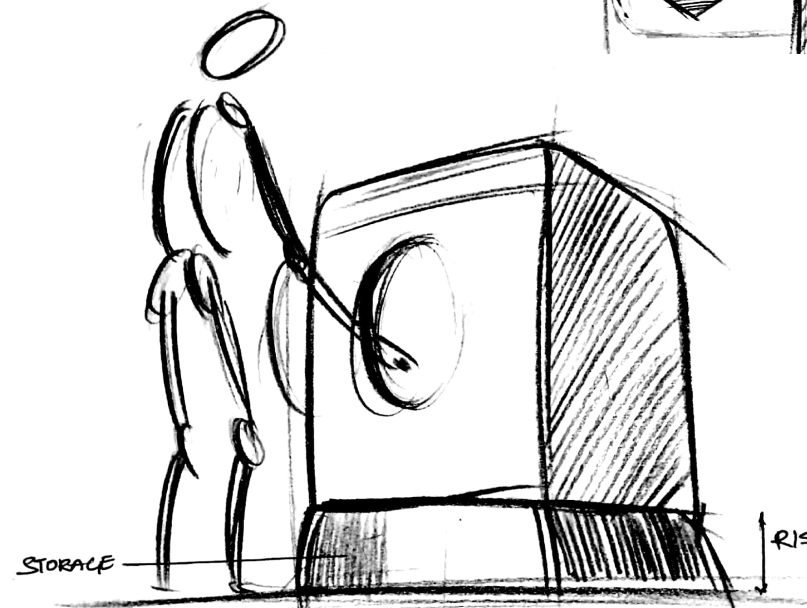
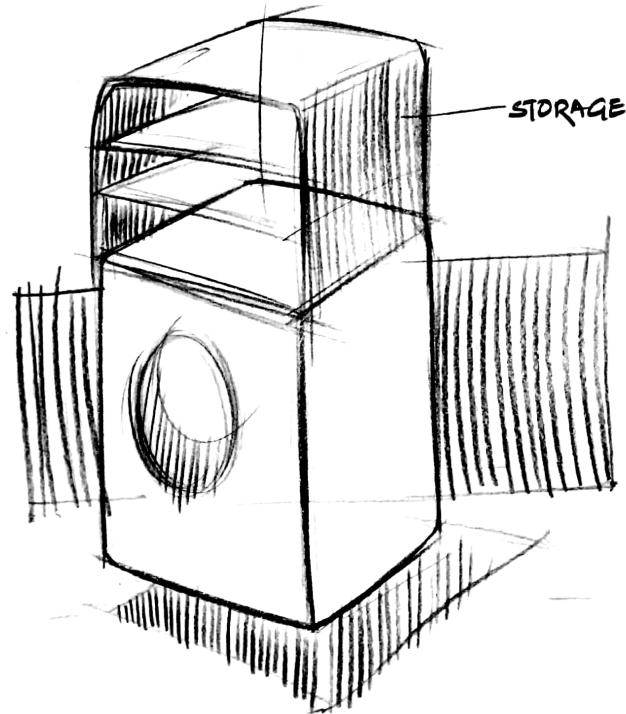
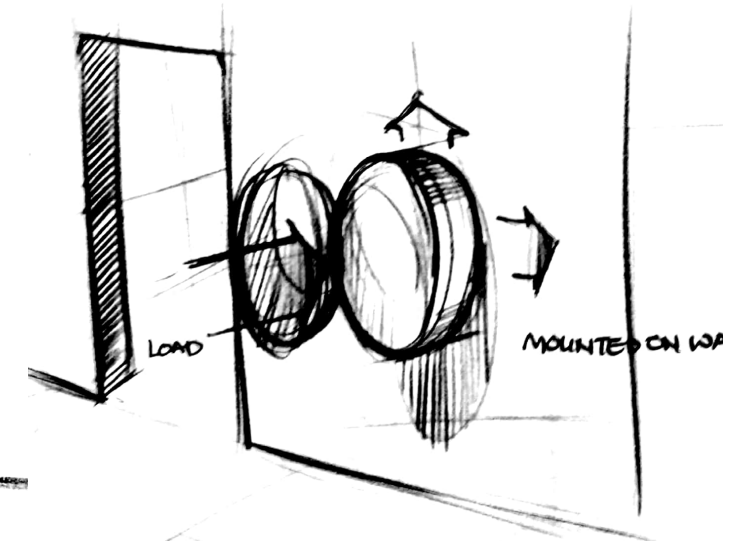
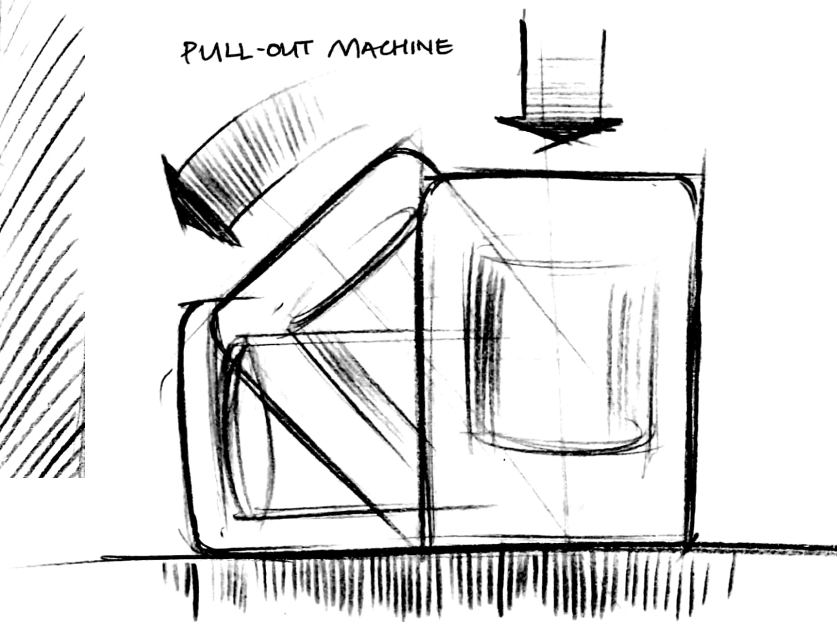
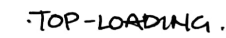
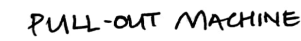
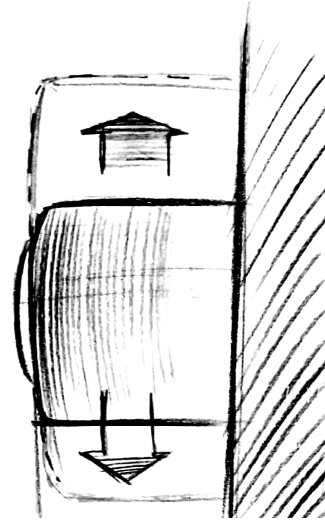


WHY FRONT
LOADING?



MARKET MAPPING

INITIAL IDEAS



DESIGN STATEMENT

To design an innovative and convenient to use next generation washer which will not only be **user friendly** but also shall have a **unique** identity.

DESIGN BRIEF

USERS & TARGET MARKET SEGMENT

Primary users : Family Members
Secondary Users : Housemaids

Indian middle income Households

DESIGN BRIEF

USER REQUIREMENT

Easy to use
Good quality of wash
Uses less water

DESIGN BRIEF

BROAD PRODUCT SPECIFICATIONS

User Friendly
Space saving
Latest technologies for washing
Unique identity



SLEEK



MINIMAL



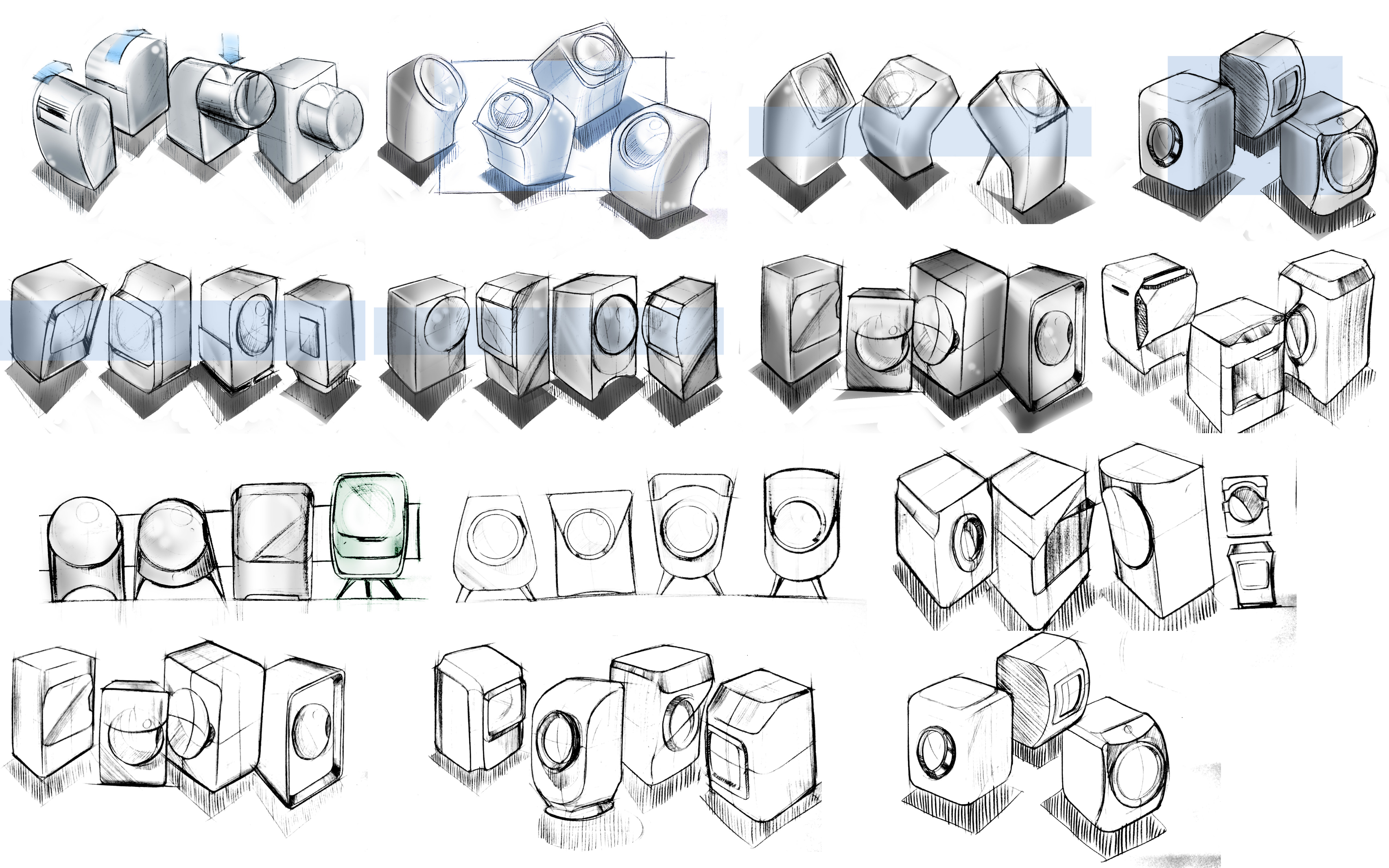
CLEAN

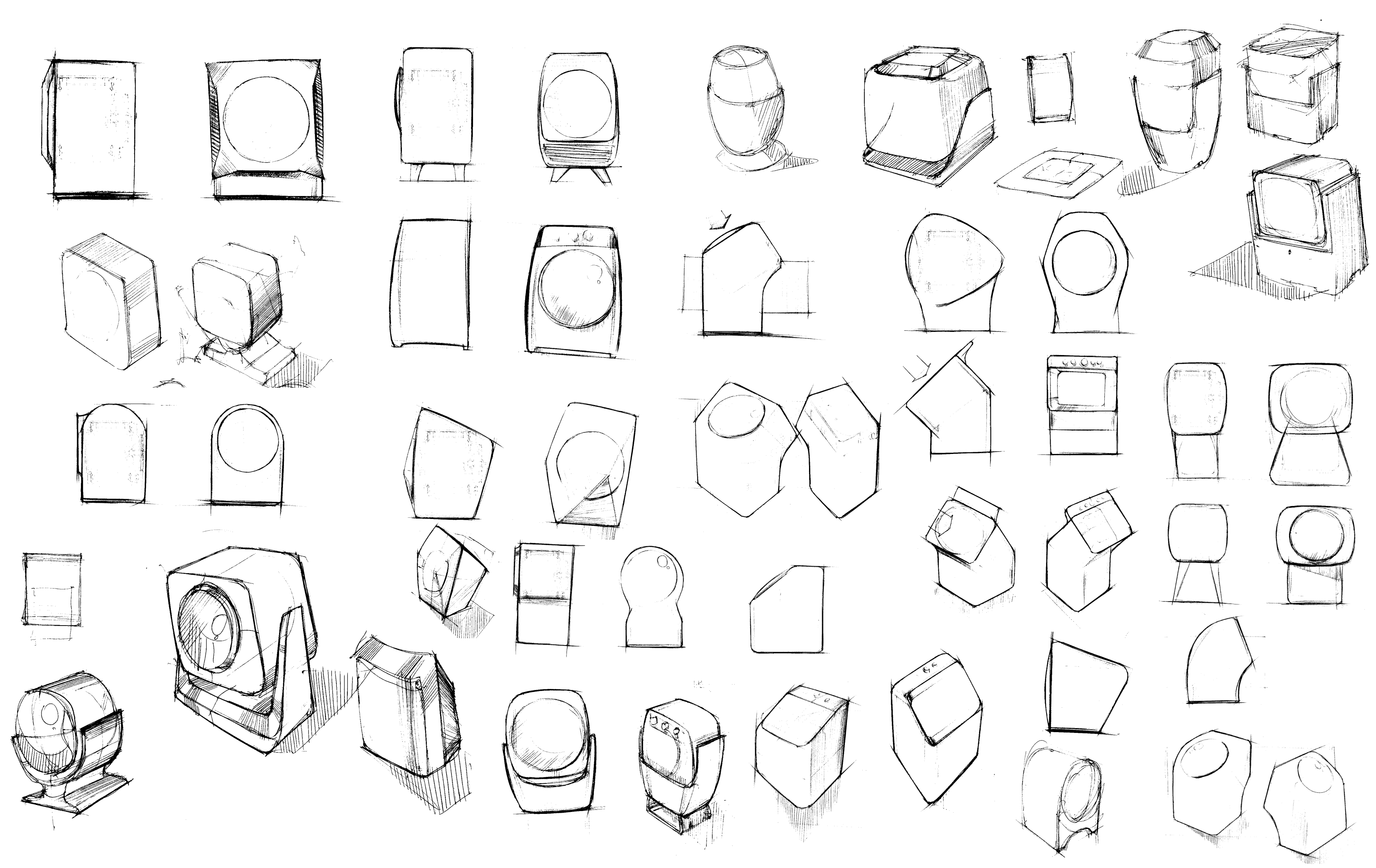


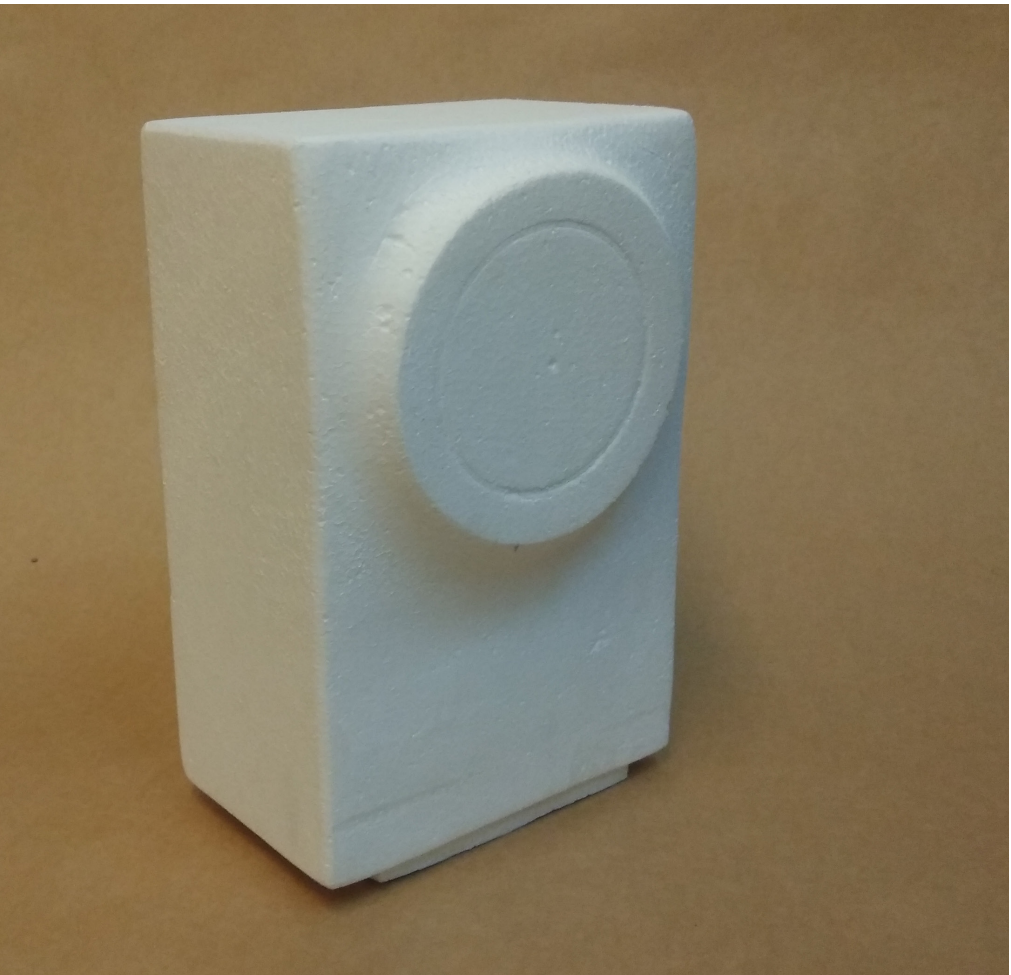
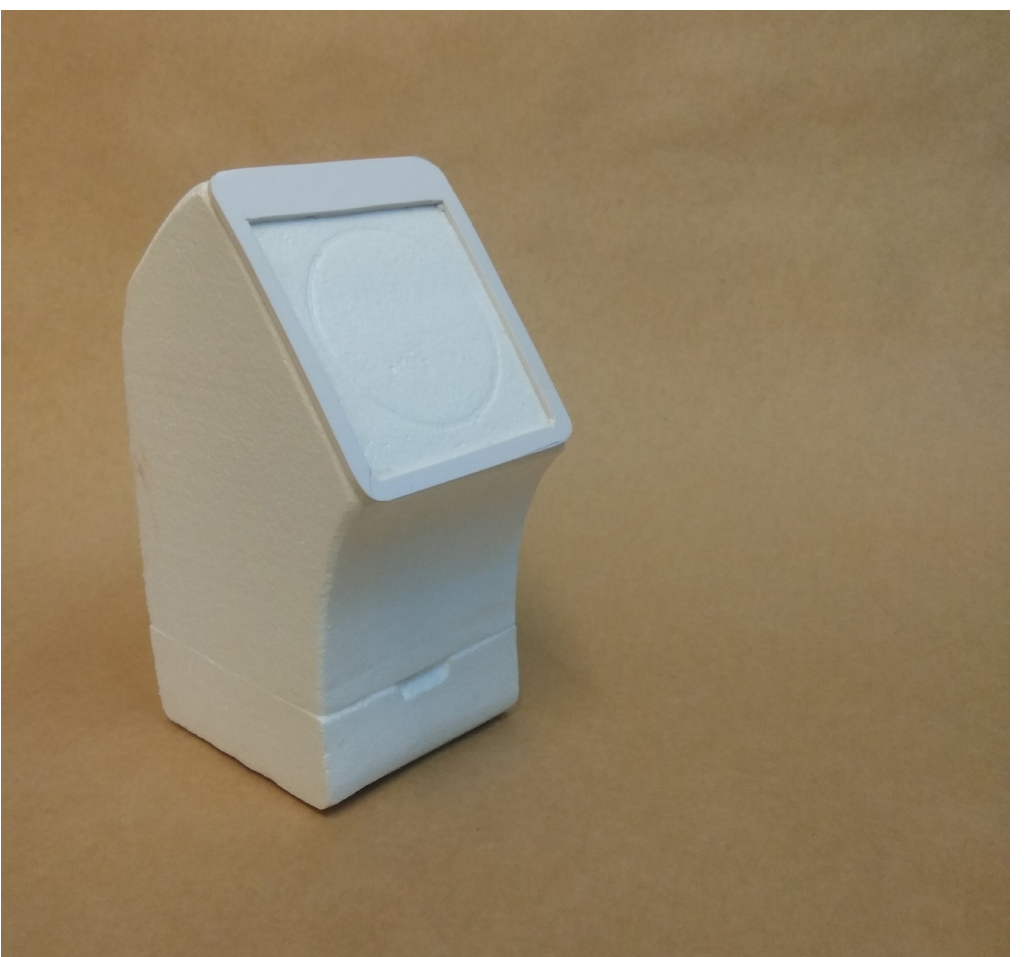
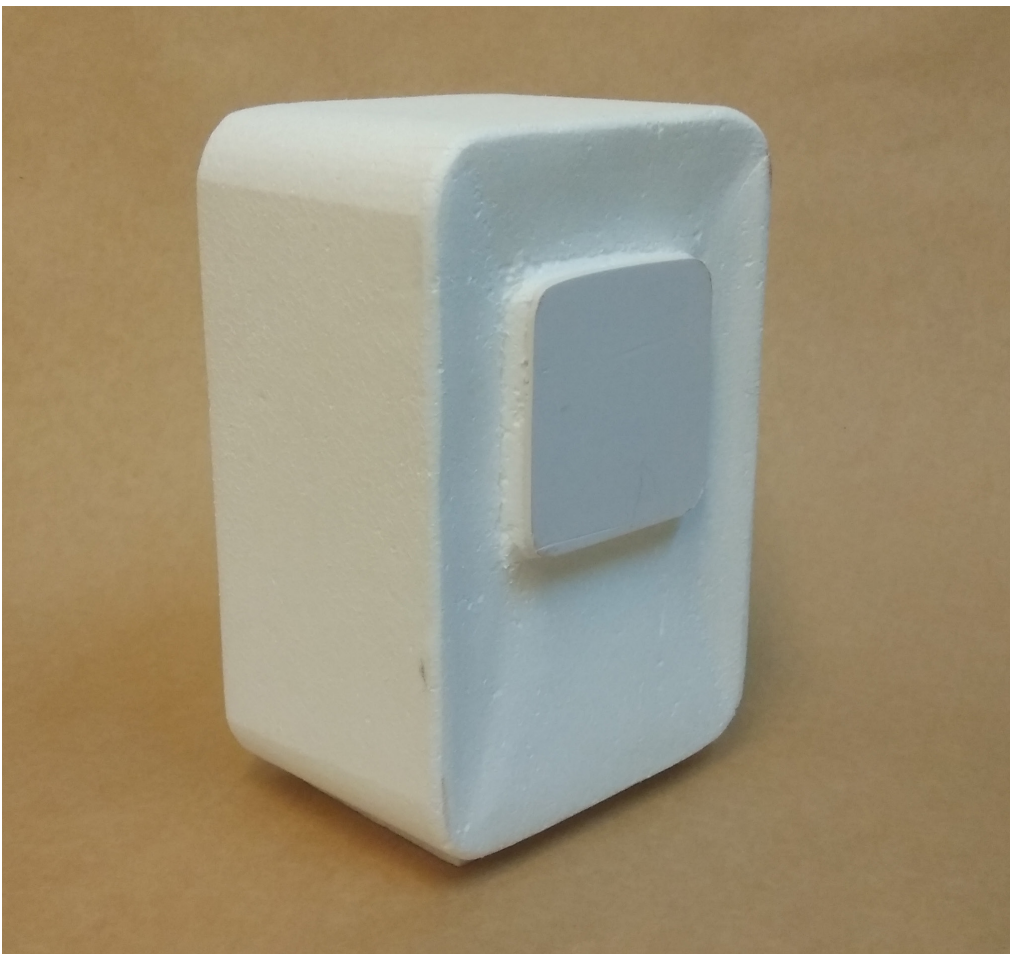
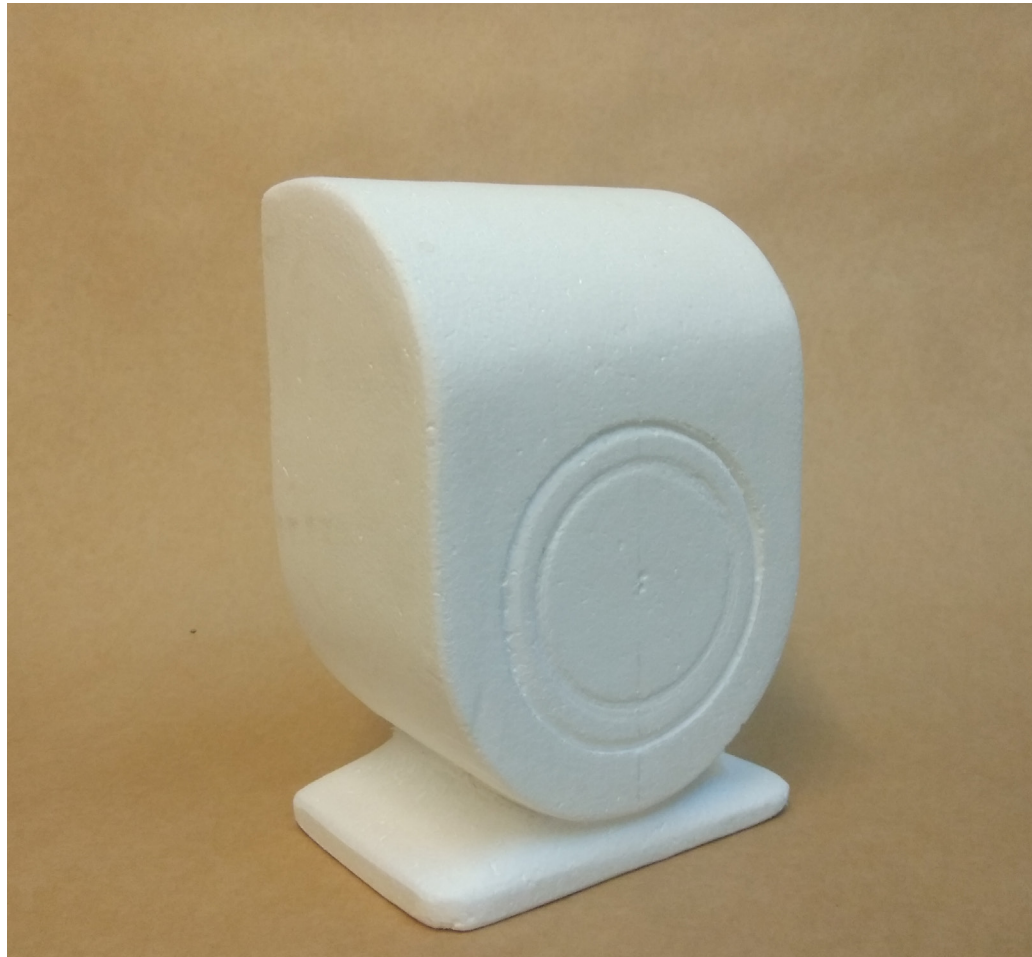


RETRO

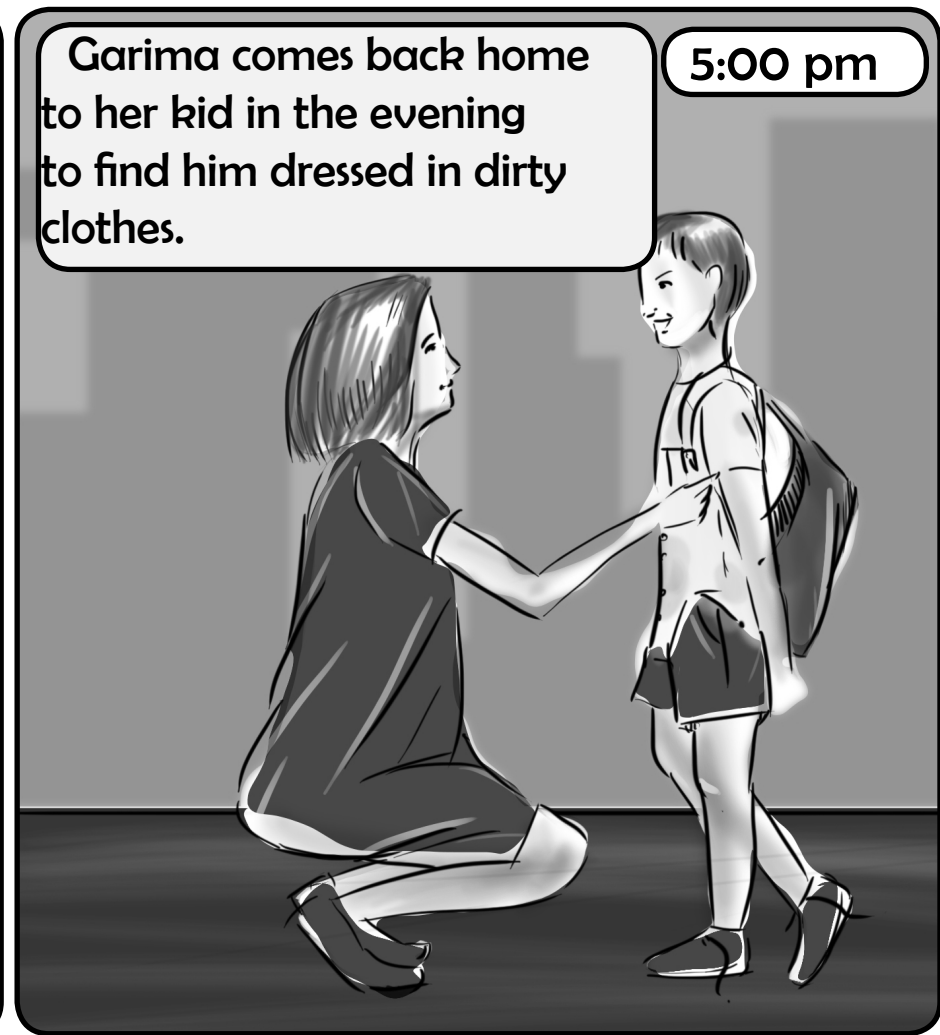


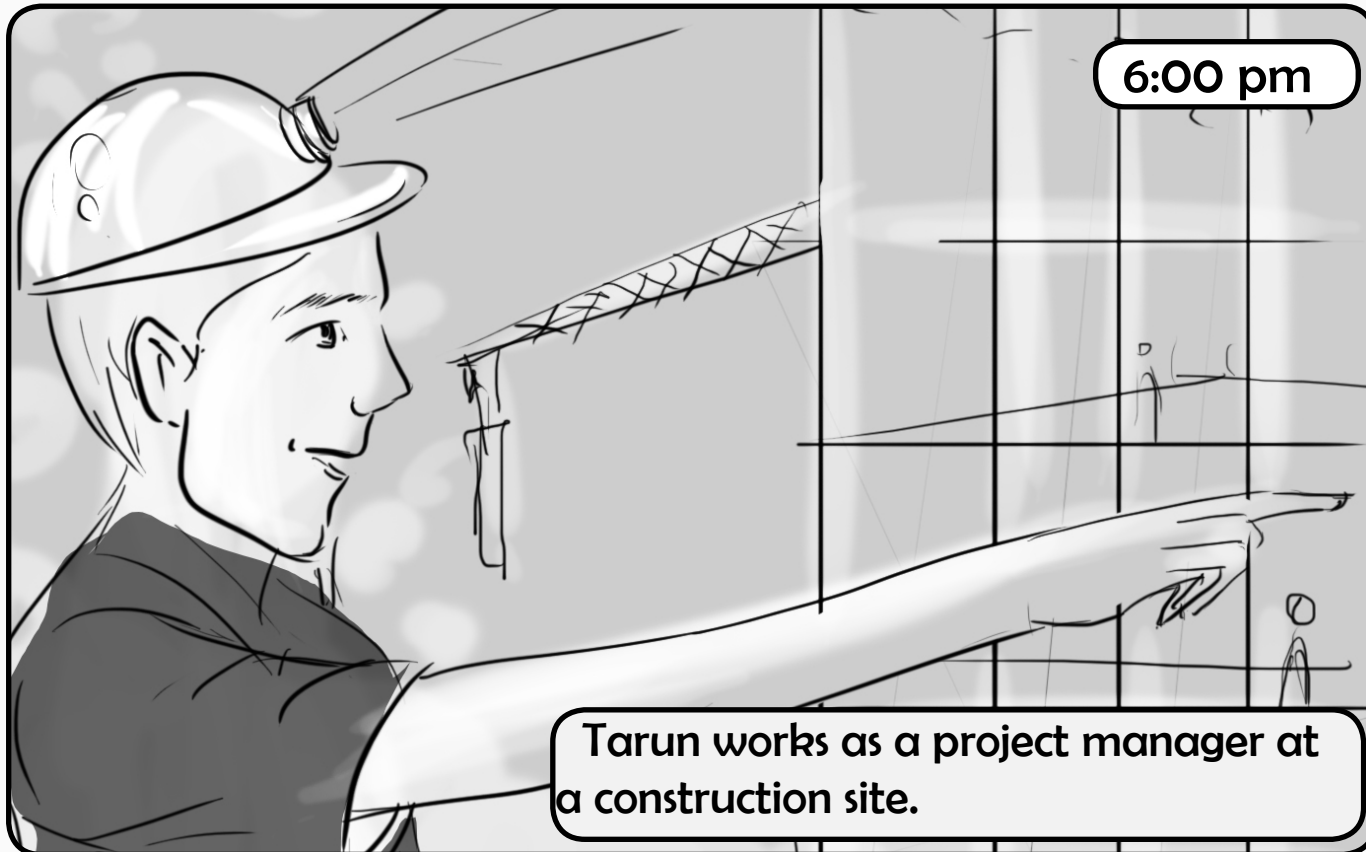






Scenario

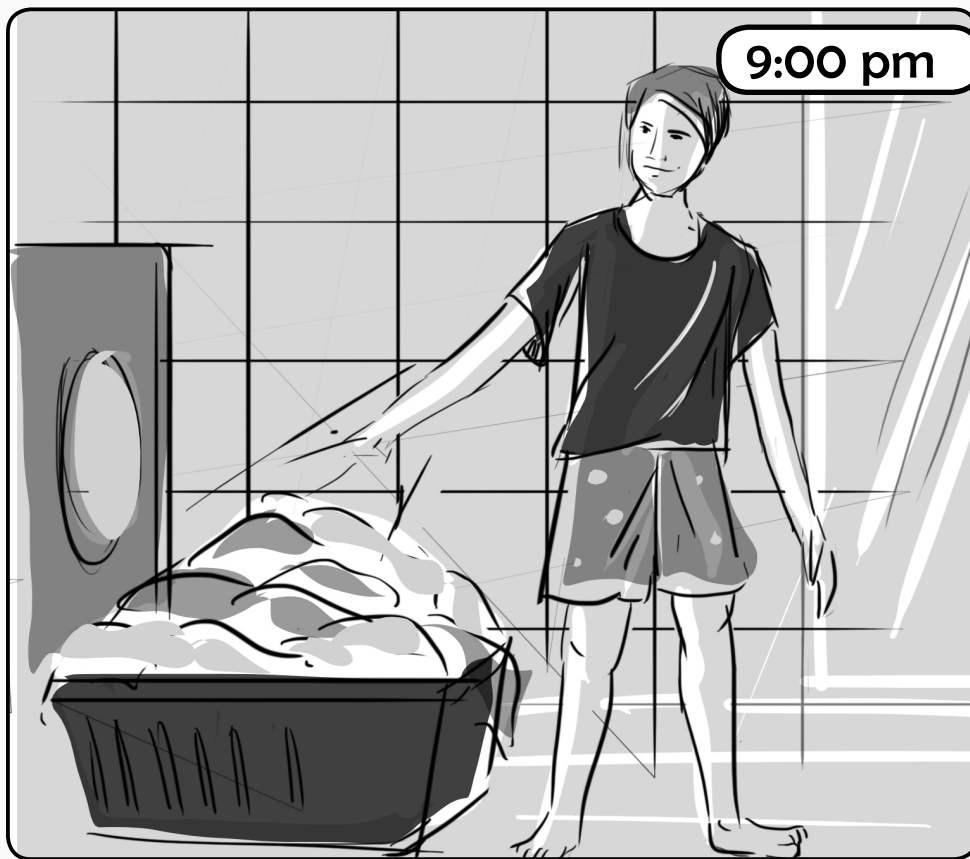




Tarun works as a project manager at a construction site.



They live in a smart house and also have a smart car, they have them customised to their needs.



He comes late in the evening and freshens up, adds to the pile of clothes. His clothes are more soiled due to workplace.



Garima has severe back issues, and it's difficult for her to bend to load clothes again and again, as they are not equally dirty and cannot be washed together.



This couple looks for an alternative for washing their clothes more efficiently without wasting much time of their lives.

Scenario

Lack of family time

Individualistic living

Health Issues

Family members responsible for their own work

Internet of things

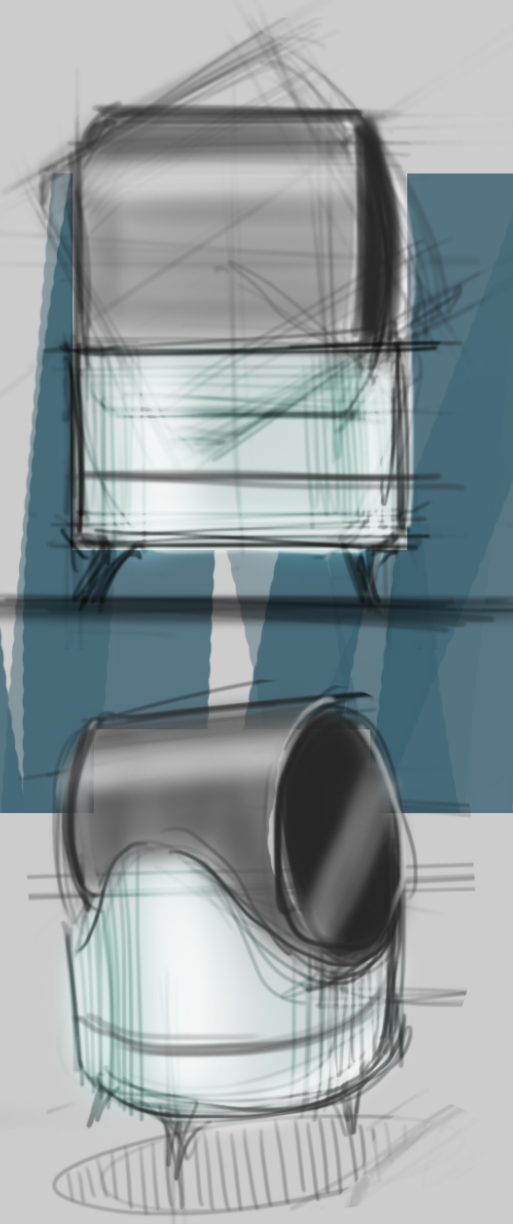
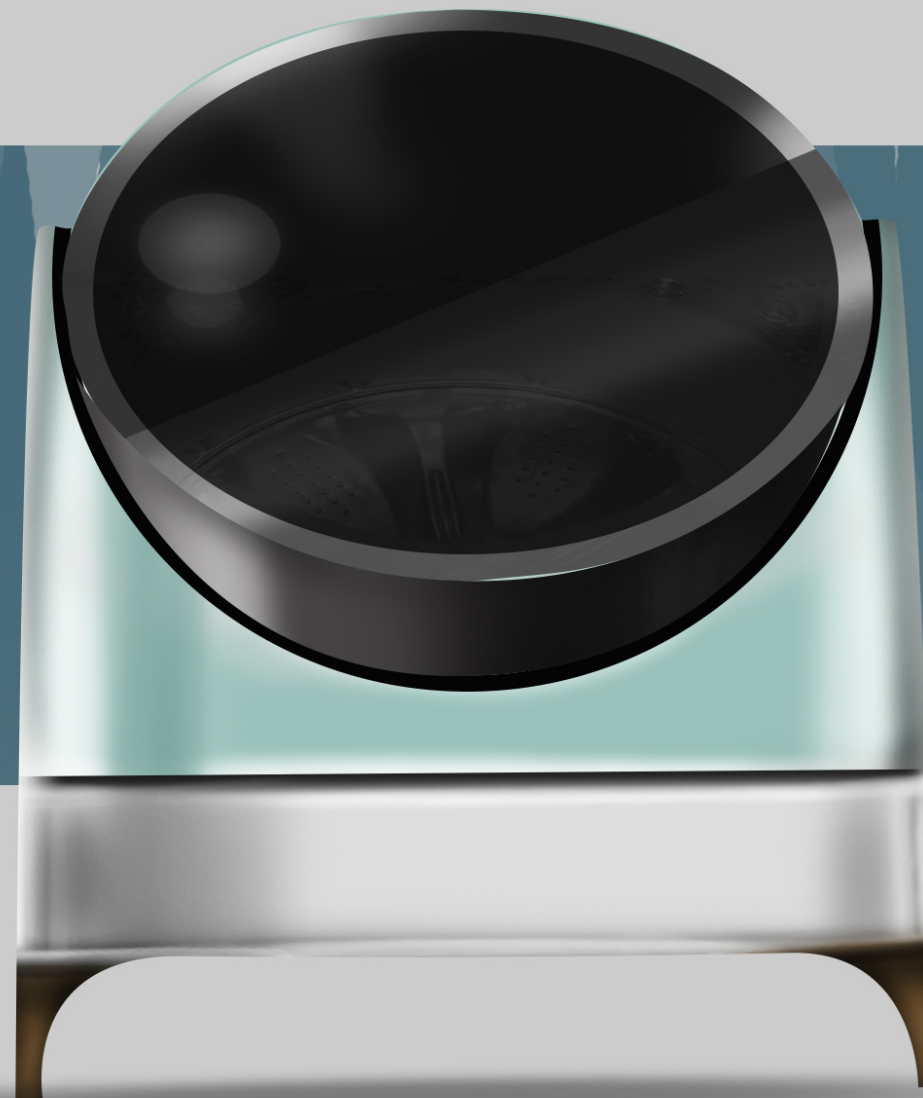
Smart living

Concepts

CONCEPT 1



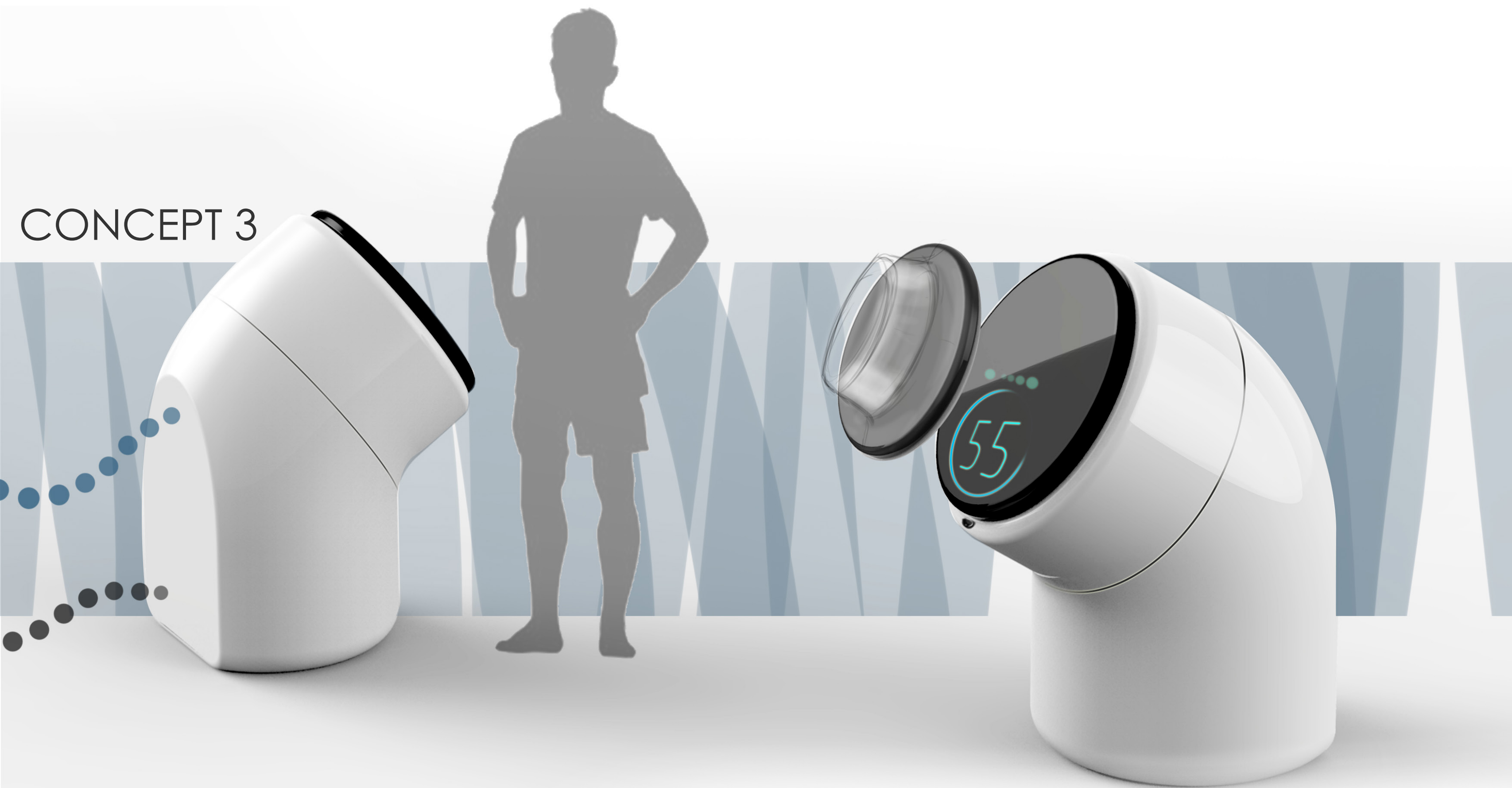
CONCEPT 2



CONCEPT 2



CONCEPT 3



CONCEPT 4



Concept Selection

Criteria	Weightage	Concept 1		Concept 2		Concept 3		Concept 4	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Form	40%	2	0.8	4	1.6	4	1.6	1	0.4
Usability	30%	3	0.9	2	0.4	2	0.4	2	0.6
Interface	20%	2	0.4	3	0.6	3	0.6	2	0.4
Manufactura- bility	10%	1	0.1	2	0.2	2	0.2	2	0.2
		2.2		2.9		2.8		1.6	



Final Concept

W A F F Y



A washing machine with the drum tilted at an angle of 45 degrees to have the opening at the top, to eliminate the task of bending down to load and unload the clothes.





The machine washes small loads, perfect for daily washes upto 4 kgs.

Shorter wash cycles, so one can wash the clothes quickly and get them wadrobe ready.

It is a complete solution for the laundry requirements of a small family.



Provides wash more efficient than top loading machine, and helps in a better quality wash.

Silicone lining on the opening helps in an air tight door. Once the door is closed, the locking mechanism completes the circuit to switch on the machine.

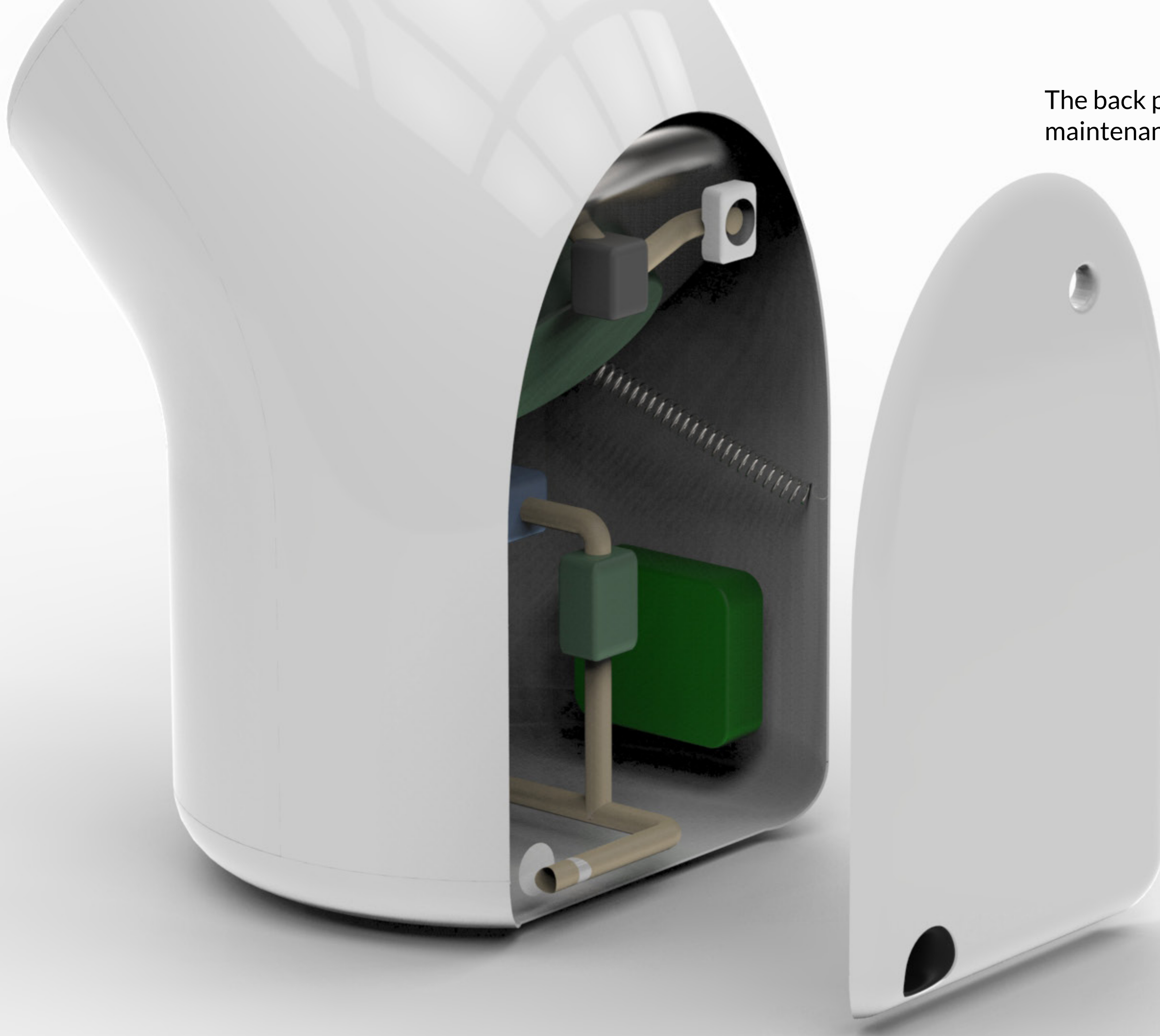
Smart Glass technology allows a display on the top of the glass. The centre of the door is transparent to allow the user to look inside the drum during an ongoing wash.

A small storage space at the bottom for storage.





The back panel is detachable to allow easy maintenance and access to the interior.



The flat edge at the back, aligns itself to the wall hence occupies less space as compared to a cylinder.



A chrome finish on the curve of the cover. A glossy smooth white finish for the body which gives a clean classic appearance to the product.



Microprocessors at the back of the door, the bottom curve turns to form a handle for the door.





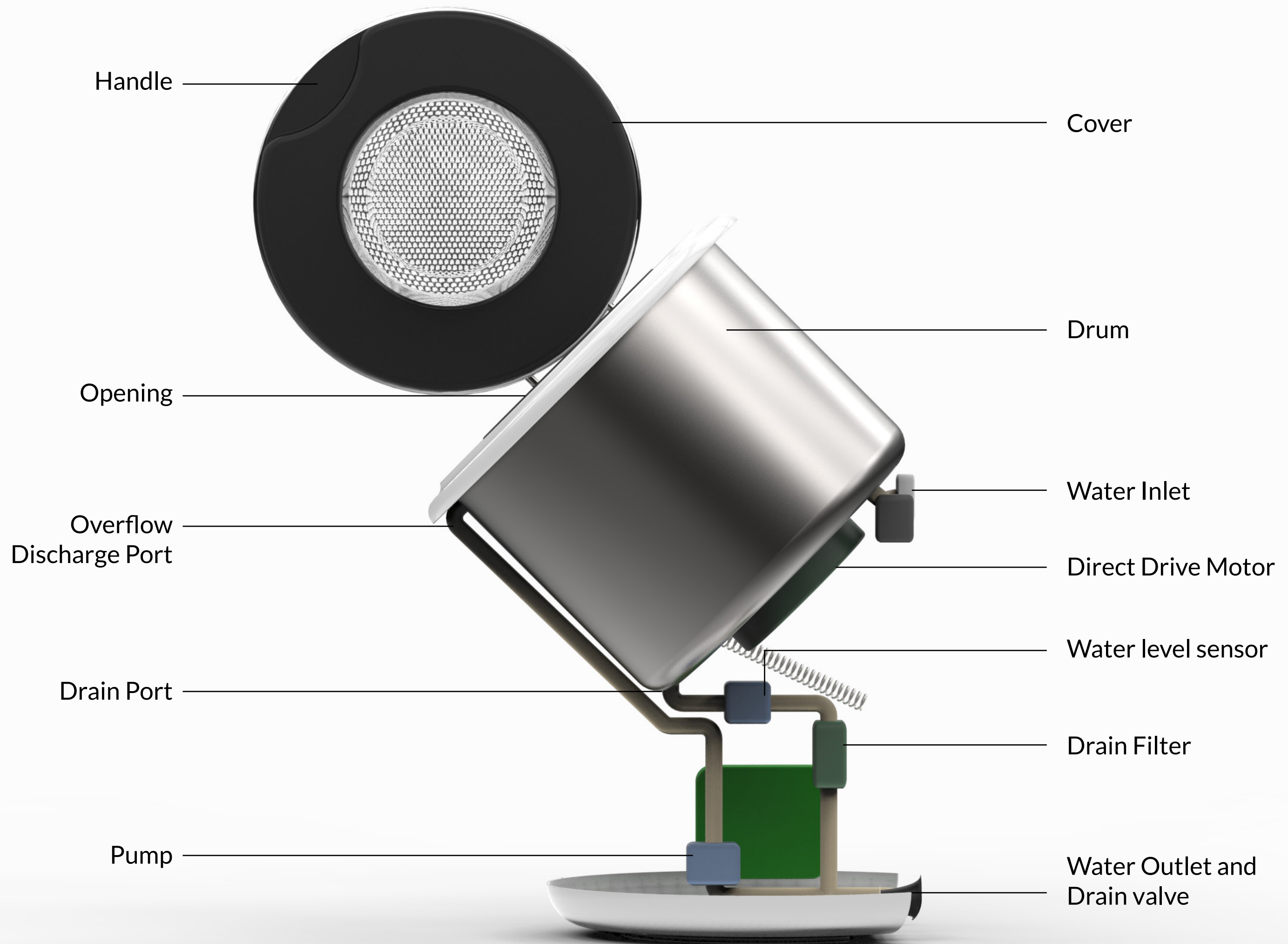
To balance the cantilevered load of the drum, counterweight shall be provided at the bottom of the body of the machine.

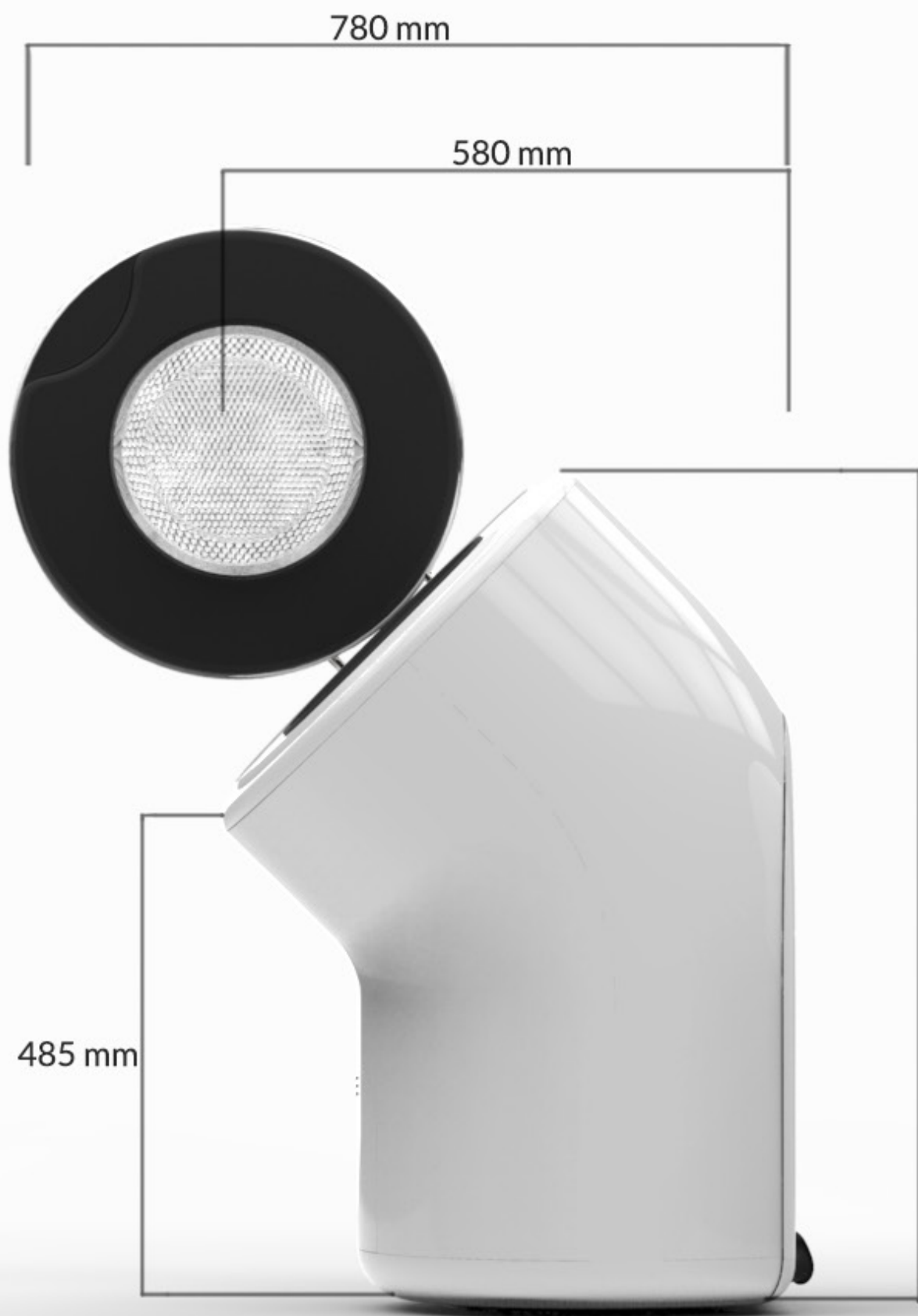


A small machine which fits in your house without being an eyesore. It will become an essential part of your lifestyle and will help you cope with the hectic routine.



The door rotates softly about two L- hinges











Interface

Survey

37 % people said that it has too many options.

34 % people said that they were Unable to understand the meaning of each icon.

41% state that the terms are not self explanatory.

28% felt the need to refer to the manual before using a washing machine.

BASIC SCREEN

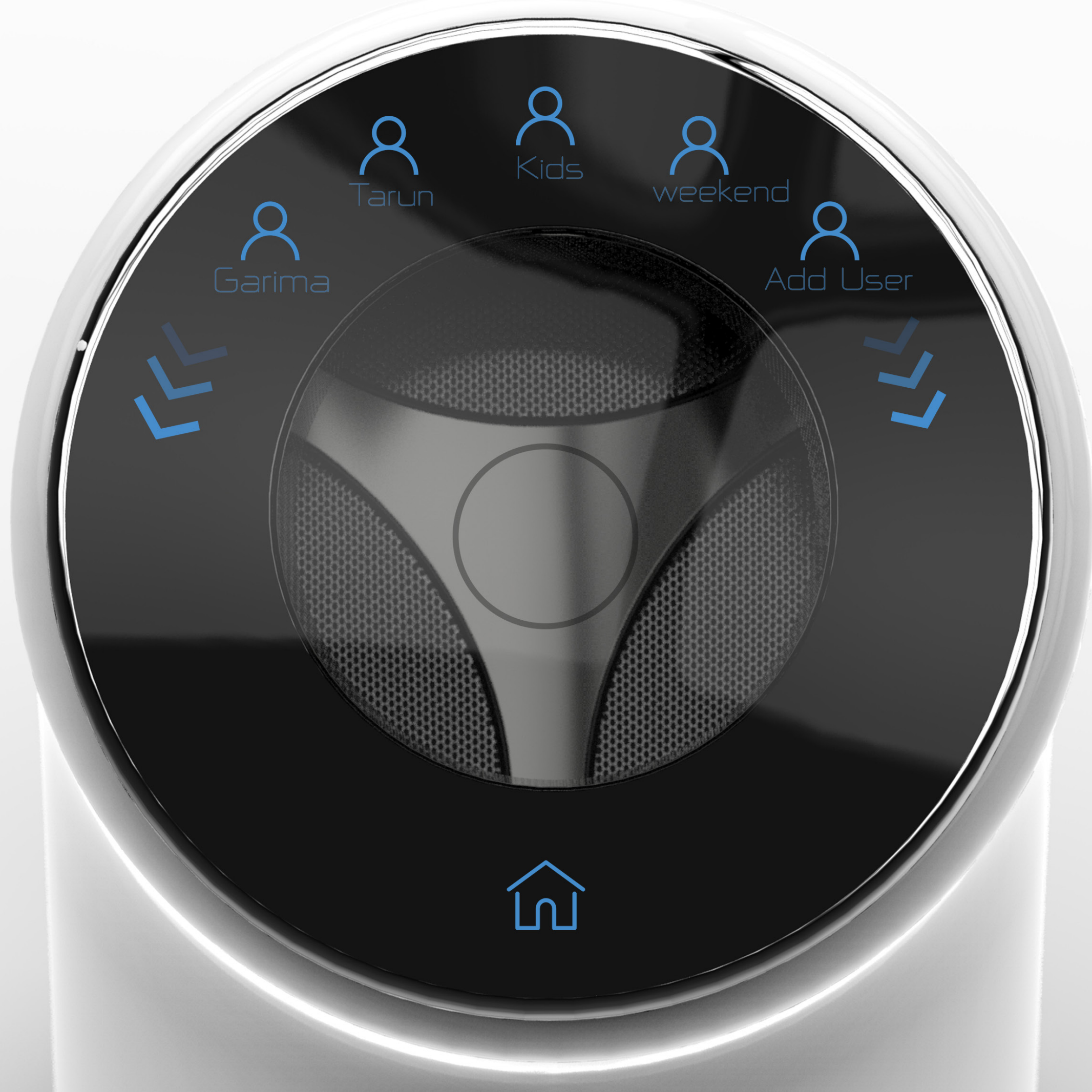
Customised washes,
according to the user

Humanising the interface

Voice Input

Smart glass technology

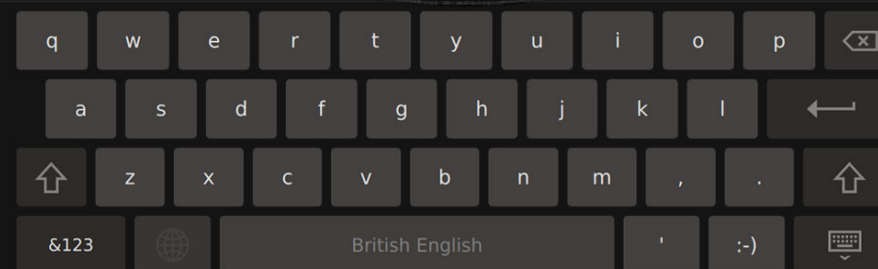






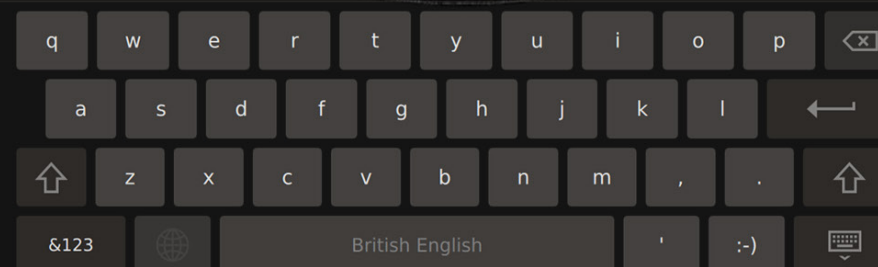


Hi! What is your name?



What fabrics do you want to wash?

—



What fabrics do you want to wash?

Cotton

Kids

Sports Wear

Silk

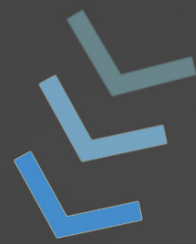
Woolen

Bedsheets

q	w	e	r	t	y	u	i	o	p	⌫
a	s	d	f	g	h	j	k	l	⌵	
⌆	z	x	c	v	b	n	m	,	.	⌆
&123	🌐	British English					'	:-)	📄	

How dry do you want your clothes?

00 %



Do you want to link to your online
account?



Thank you