

VAYU

A modern tower cooler concept
Group project
5 weeks | 2021

Designed By
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YD
YANKO DESIGN



VAYU is a modern tower cooler designed for urban spaces.

It has a compact monolithic form with carefully packed components which enables it to purify the air and even cools it efficiently through evaporative cooling.

With its simple geometrical and subtle design language, it blends into the home decor without compromising on cooling.

The approach

Based on user observation, tests and product reviews, we have solved different problems related to experience using the complex interfaces, assembling of parts, materials and the lack of coherence within the range.

We also focused on the way it is produced and how to optimize the manufacturing part, turning constraints into a

durable and affordable approach optimizing the number of parts. A range of innovative and connected products that we had the chance to create from the first research until the final stage.



Target Customer

Context	People who can't afford to buy AC for every room
Pool of audience	Family Members
Area	200 sq feet
	<p>The target audience lives in an urban area and is a part of a nuclear family that has a purchasing power to buy an AC for one-third the footprint of his residential area.</p> <p>He wants a portable but permanent cooling solution for the rest of the leftover living space.</p>

Pain Points



Entanglement of wire



Grill Safety



Problems with the instructions



Less mobility

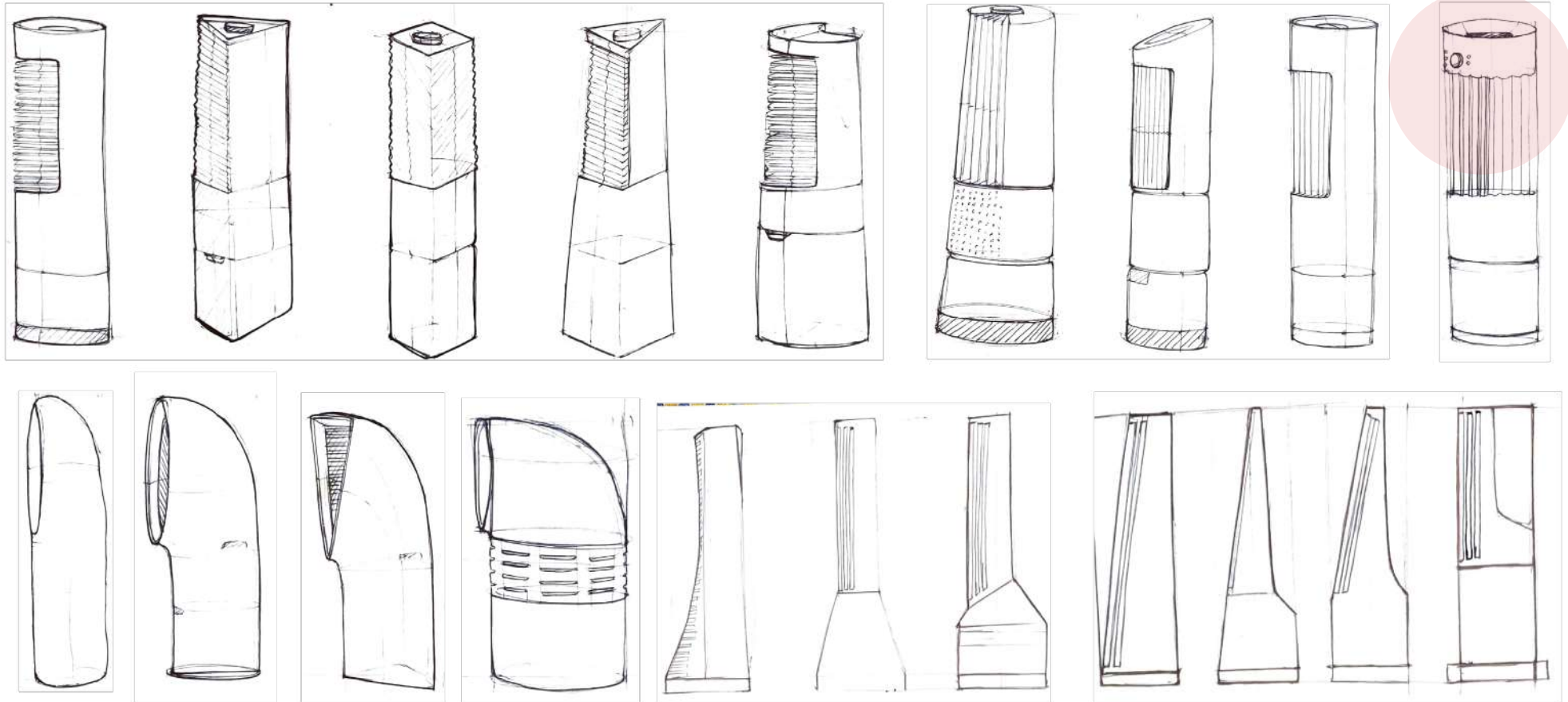


Sound and the vibration

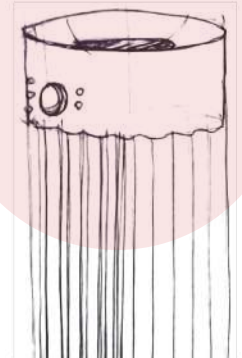
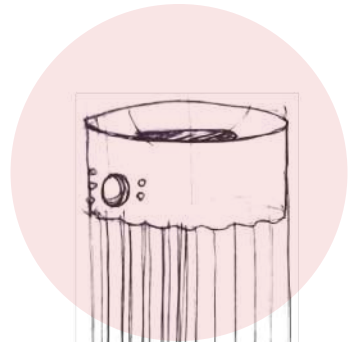
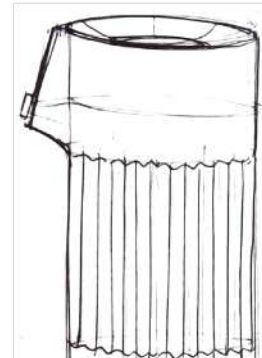
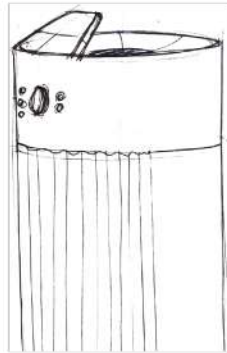
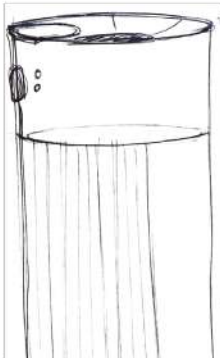
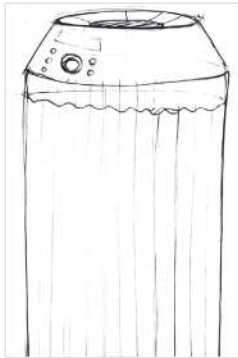
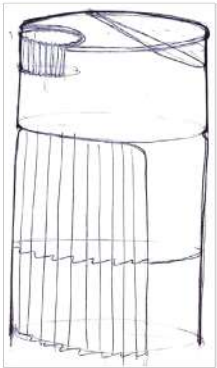
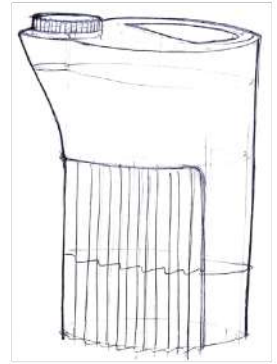
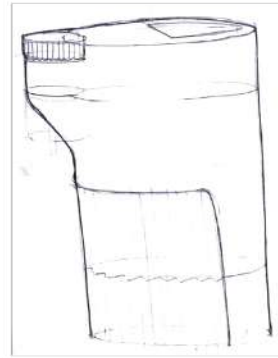
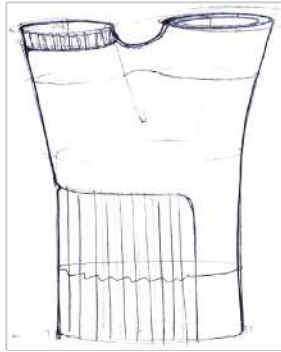
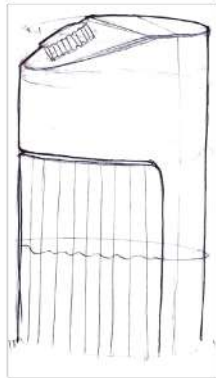
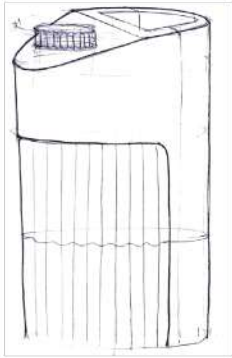
Design Brief

**To design a cooling solution for a
compact urban environment.**

Form Ideation
Sketching



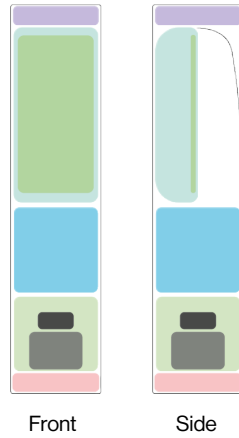
Form Exploration
Sketching



Technical Component Layout

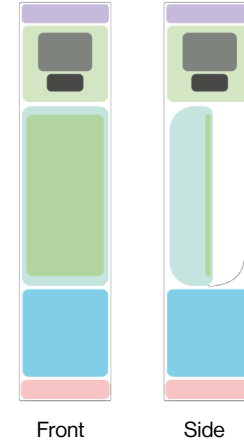
Layout 1

Suck air from **bottom**, which goes through the rectangular mesh and out through the outlet.



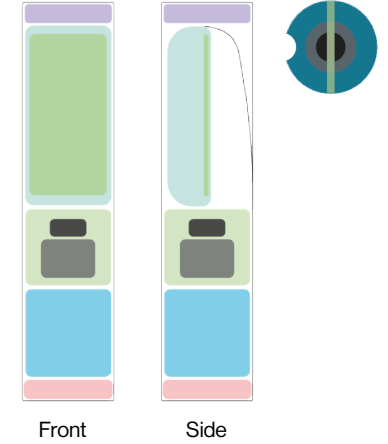
Layout 2

Suck air from **top** where there is more hot air, which goes through the rectangular mesh and out through the outlet.



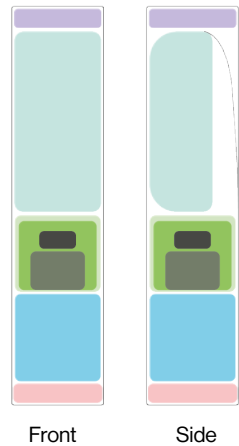
Layout 3

Suck air from **mid section**, which goes through the rectangular mesh and out through the outlet.



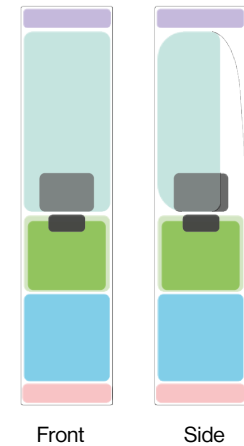
Layout 4

Suck air from **mid section**, which goes through the **semi cylindrical** mesh and out through the outlet which has **180 deg** plus coverage oscillation.



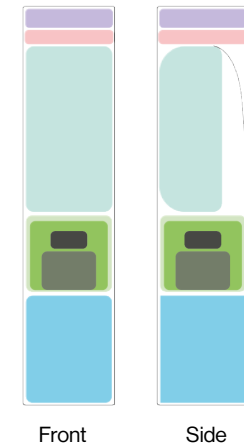
Layout 5

Suck air from **mid section**, and **motor is mounted upside down**.



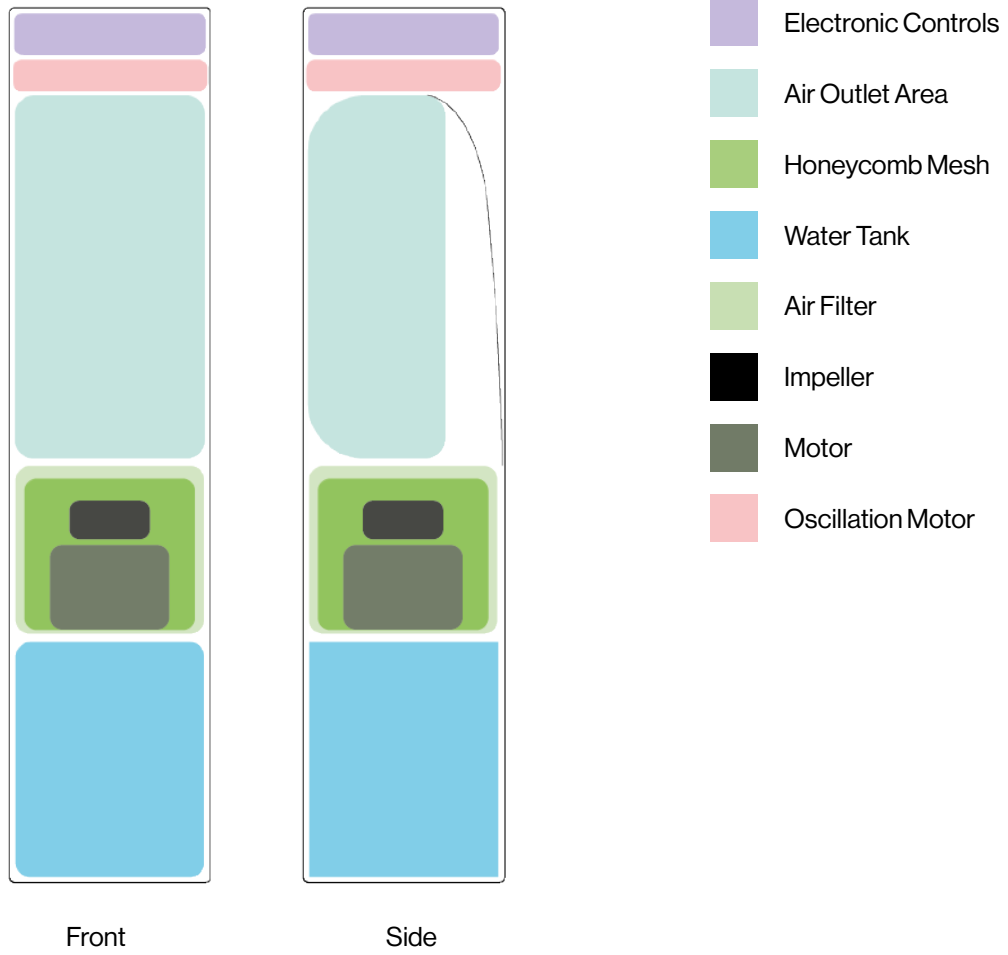
Layout 6

Suck air from **mid section**, and the oscillation module is located at the **top which rotates the air outlet**.



Final Layout
Proposed Design

Suck air from **mid section**, and the oscillation module is located at the **top** which **rotates the air outlet**.



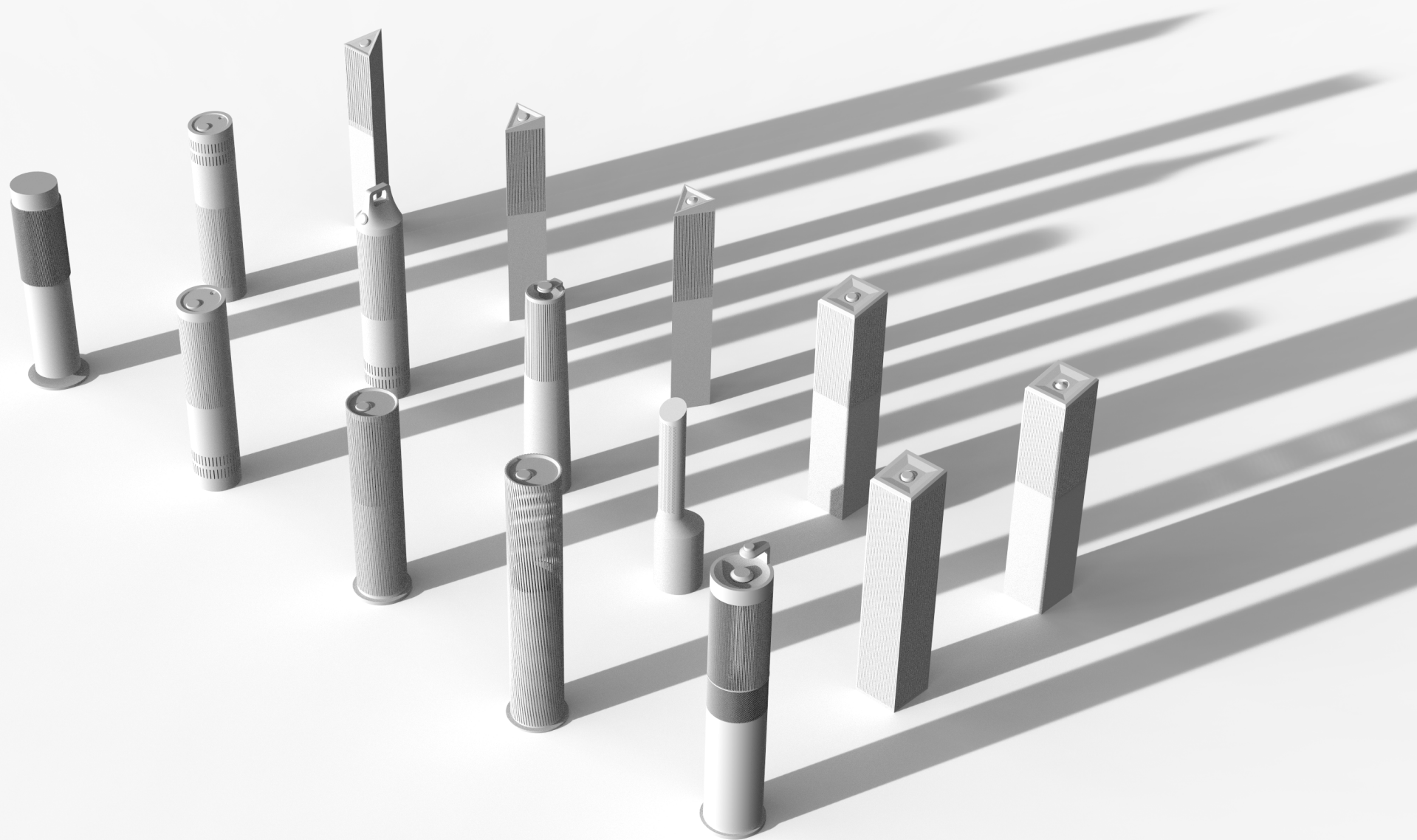
FORM

GRILL

IN-LET

PRAMETRIC

3D Model
Exploration



Proposed Concept

Easy pourability

In the dry season, the water tank is used even 2-3 times a day to keep ideal humidity. It's very annoying work which is repeated every day.

So we focused on improving the usability of the water tank and how people could use it more easily. When the light on the front display panel blinks, it means you have to refill water. The water can be poured from the top of the machine in one simple action, and hence resolves the problem of bending and pouring.



Final Concept



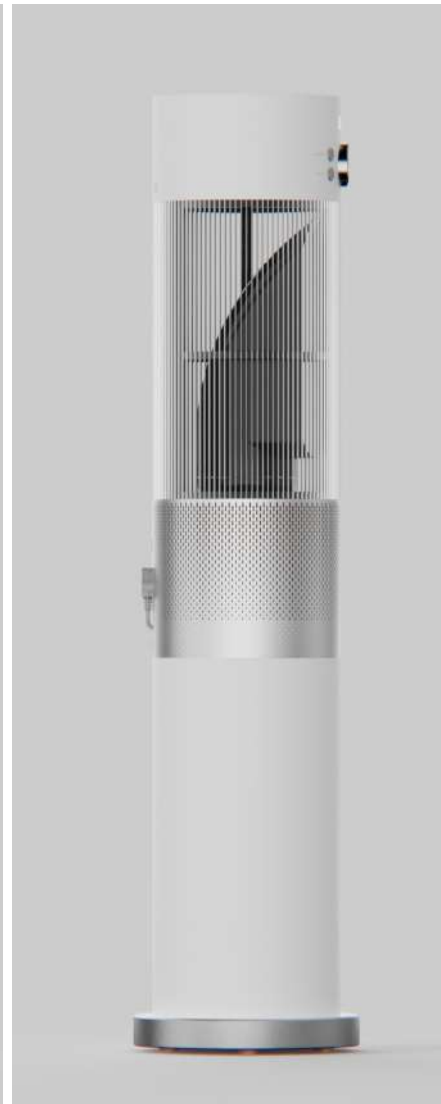
VAYU
tower cooler

The VAYU tower cooler offers a premium experience thanks to its 5 progressive speeds and its silent performances. It adapts perfectly to each of your moments of life. Featured with its 2 modes - Eco and Night, it offers a pleasant night

experience using a impeller and DC brush less motor which reduces wind resistance and creates an efficient airflow. Additionally it has a humidifier which can be adjusted and displayed on the product.



Front



Side



Back

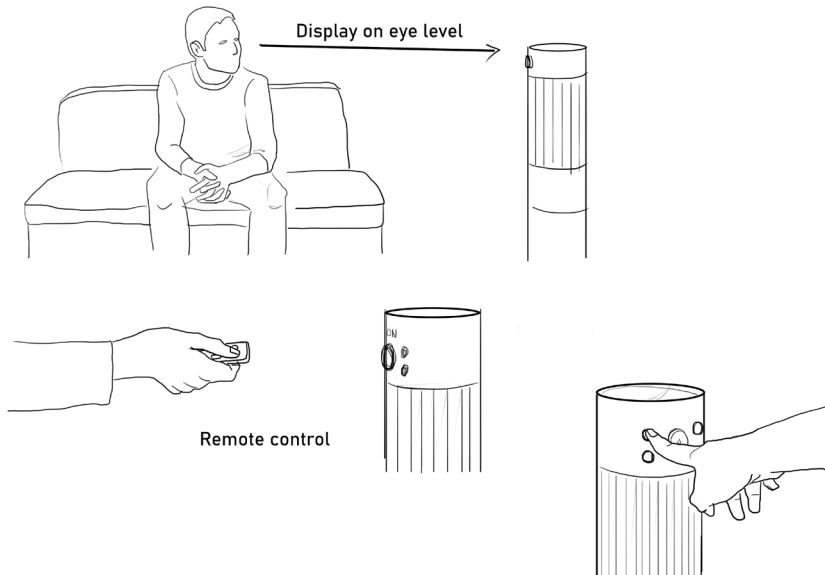
**Dimensions
(H x W x L)**

Height	130 cm
Width	30 cm
Weight	9 kg approx.

Specifications

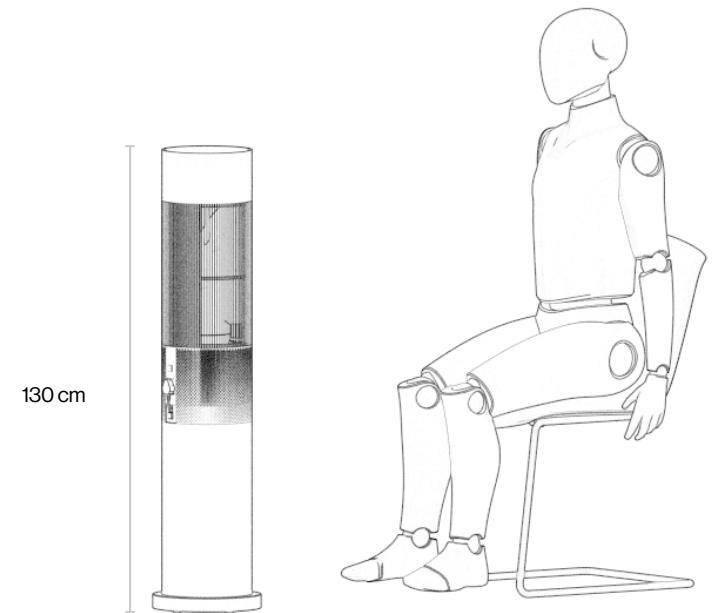
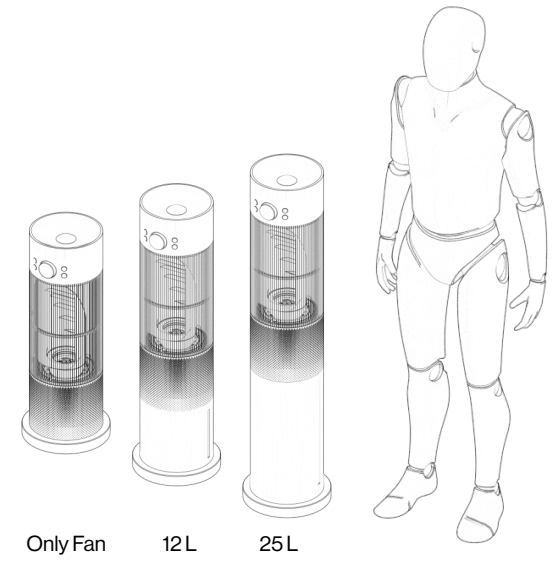
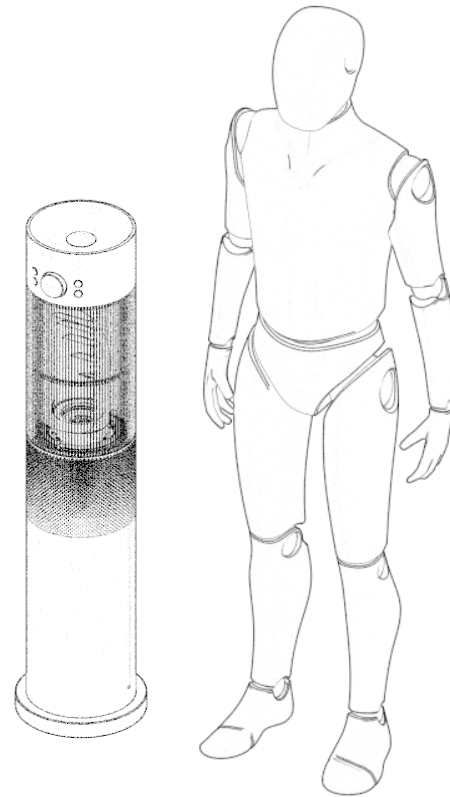
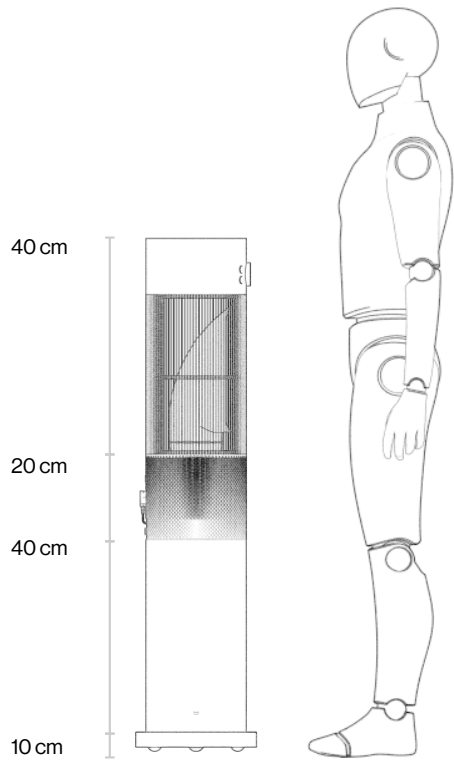
Fan Speed	Fan Speed
Finish Type	Glossy
Oscillation	250 degree
Water capacity	12L, 25L
Controller Type	Button control
Display	Dot Matrix

Product Interaction

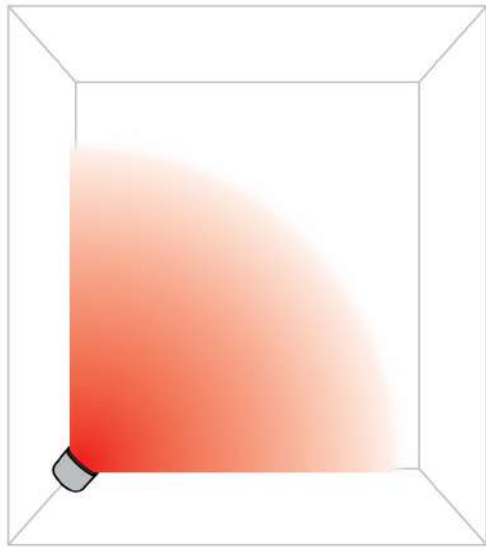


Human Proportions

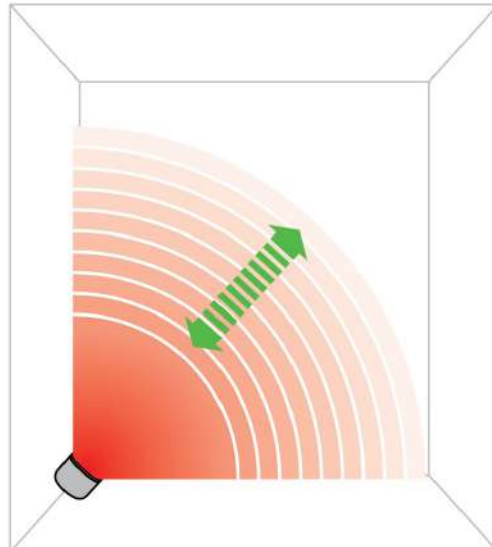
This illustration shows the proportions and height of the product with reference to average Indian male. VAYU can be placed on a coffee table or kept on floor as per user's desired needs.



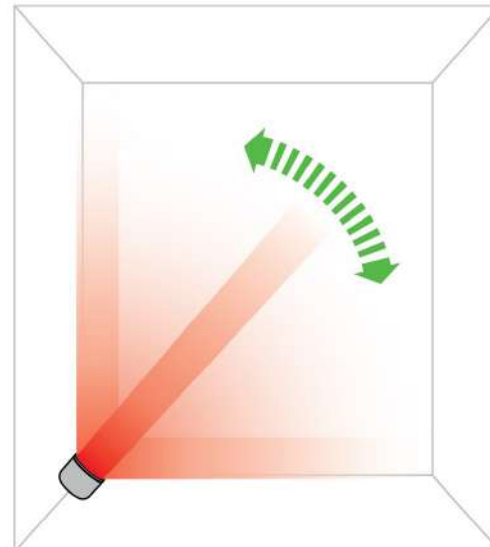
Airflow Modes



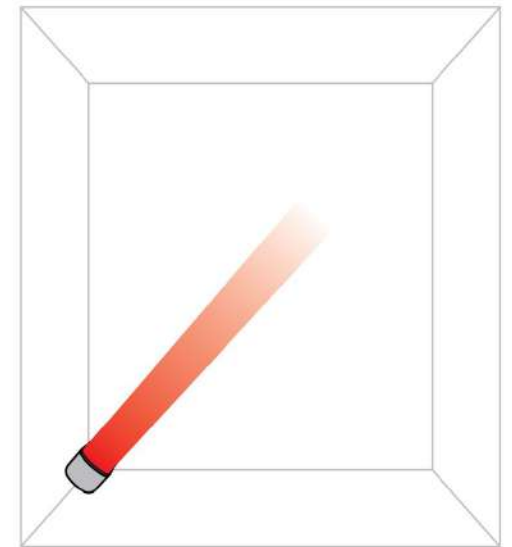
Airflow



Speed Control

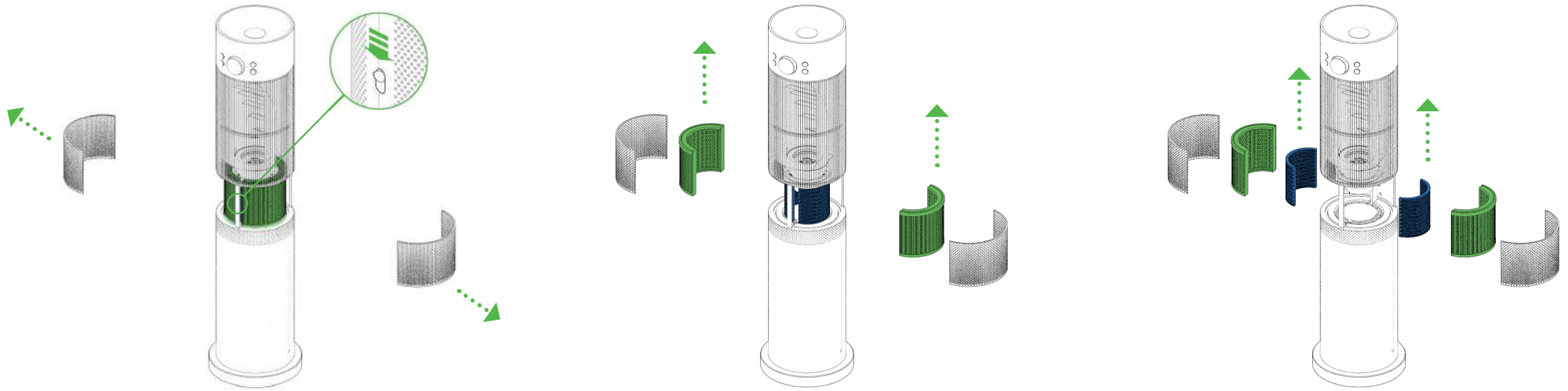


Oscillation



Persona Cooling

How to replace filters?



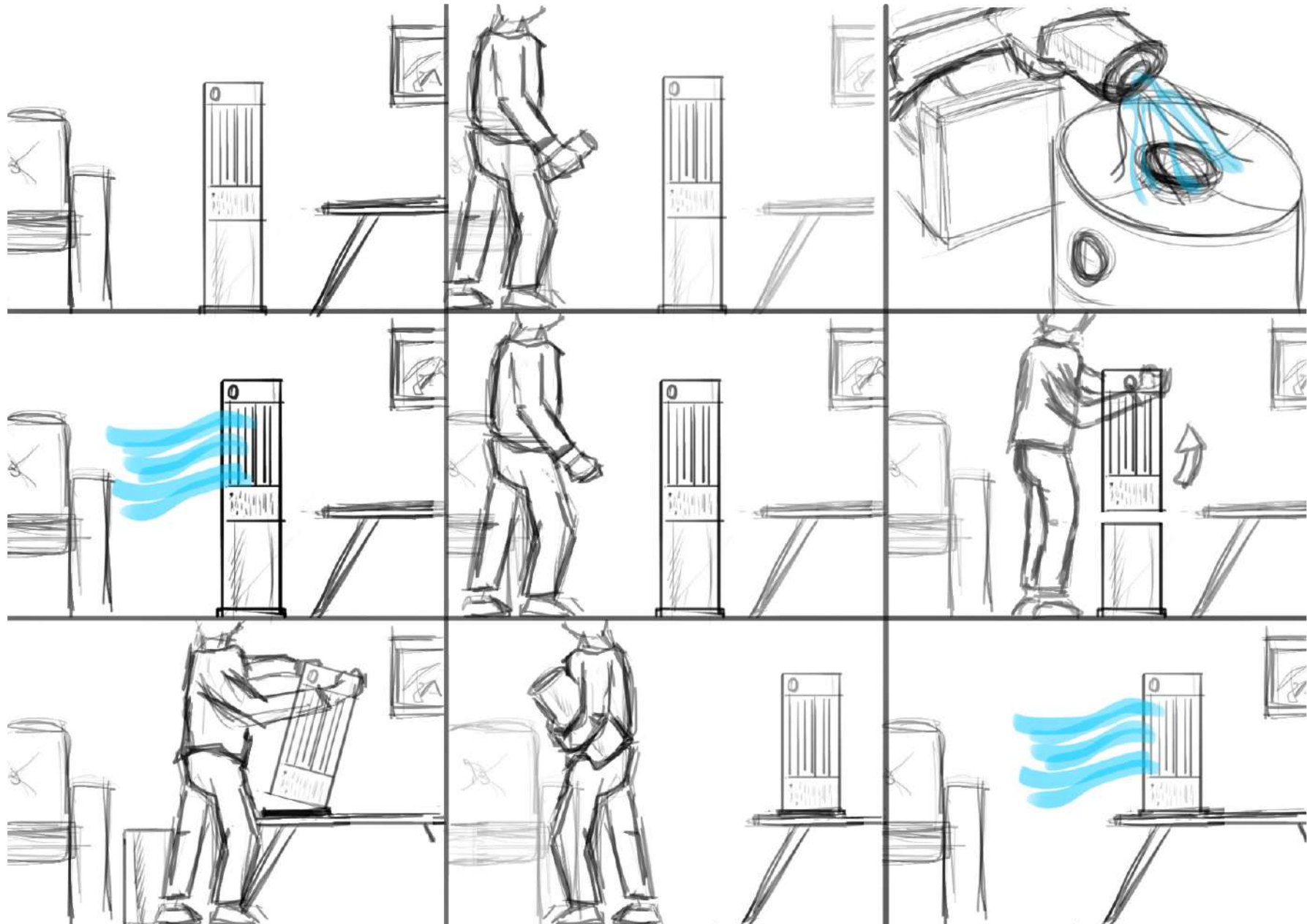
1. Press the buttons down on both sides of the shrouds to release the outer covering.

2. Apply a little force to snap the HEPA filters out and to release from the base.

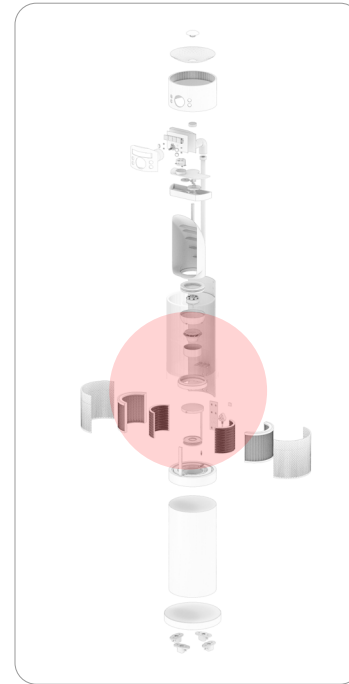
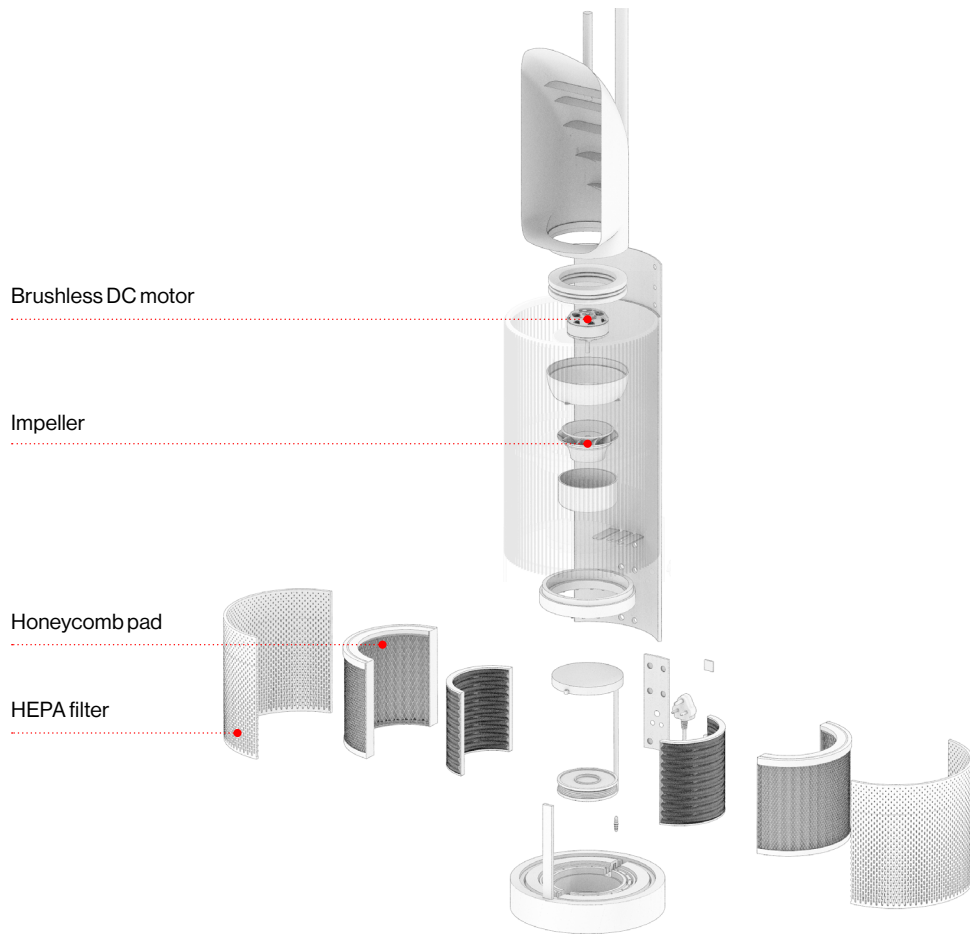
3. Apply a little force to snap the Honeycomb mesh out and to release from the base.

Position both the filters onto the base and push gently until they click securely into place.

Usability Mapping
Task flow



Component Selection DFMA



Brushless DC motor

Brushless DC motors is chosen to minimize the noise of the motor so it does not generate any fricative.

Impeller

The twelve wings minimize the noise while creating the maximum amount of wind, and the wings that are angled at 37 degrees can bring the air to the maximum.

Bio HEPA Filter

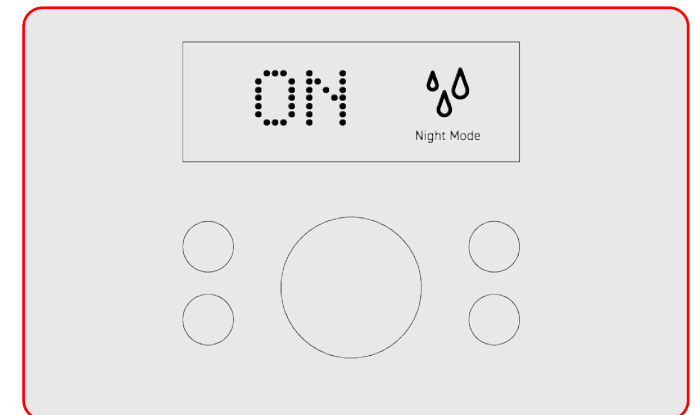
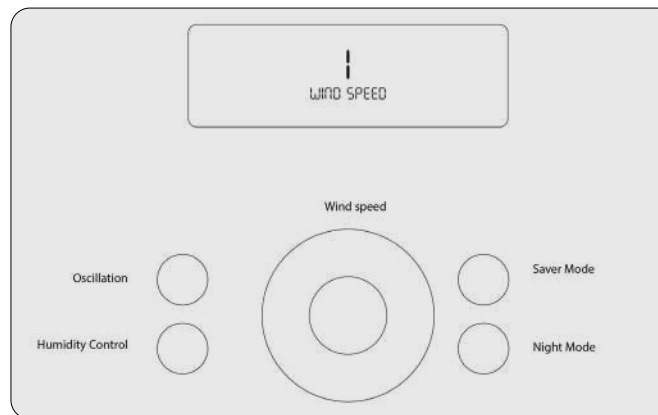
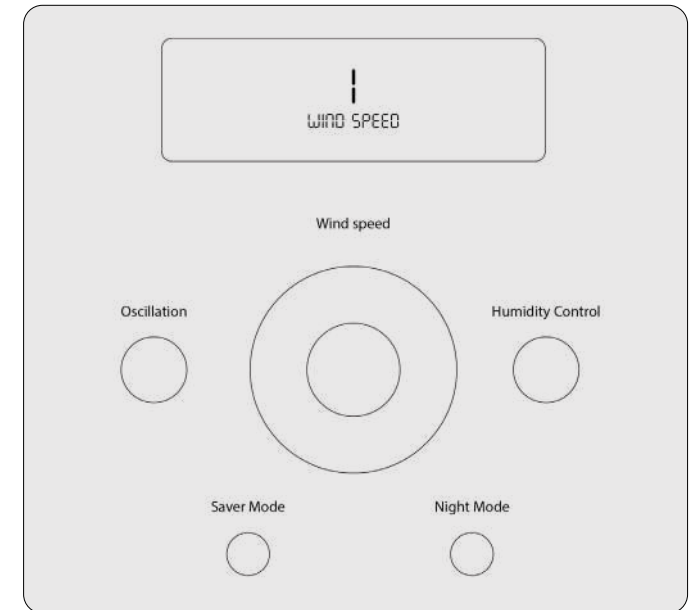
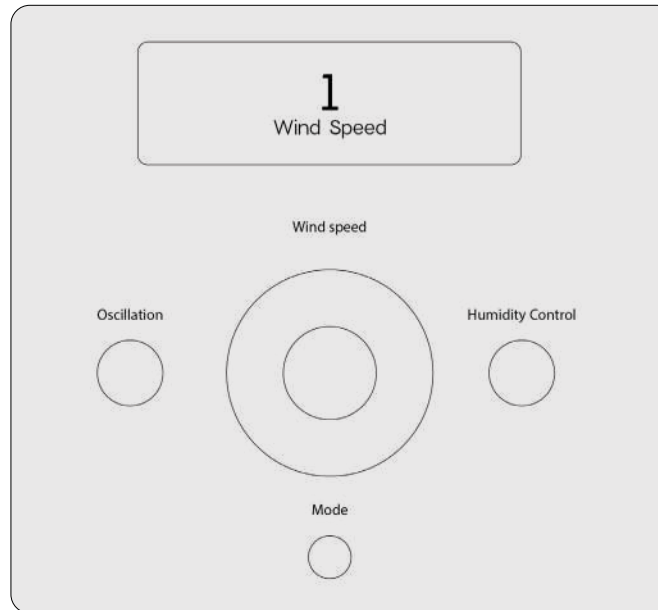
The Bio HEPA filter can absorb 99.9% of fine dust, and good ingredients for the body are released into the air to improve the user's skin, improve concentration and prevent aging.

Honeycomb pad

The air coolers with honeycomb cooling pads are preferred as these need less maintenance and are highly efficient with higher durability.

Concept Interface

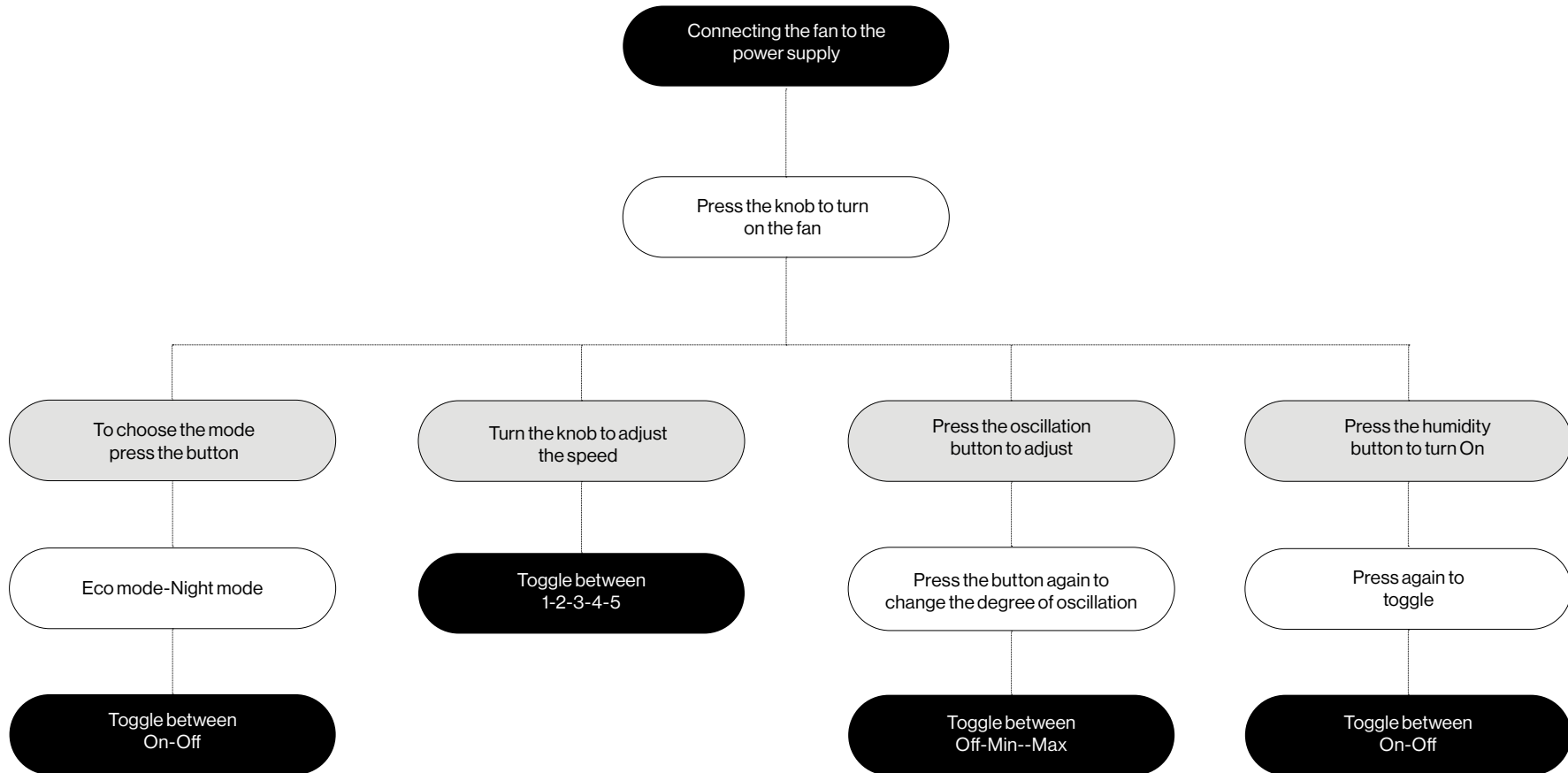
Each screen prototype was created with annotations and rationale behind with feature.



Selected Concept

Product Interface





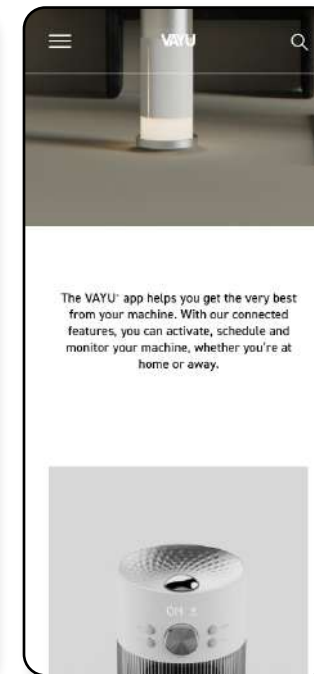
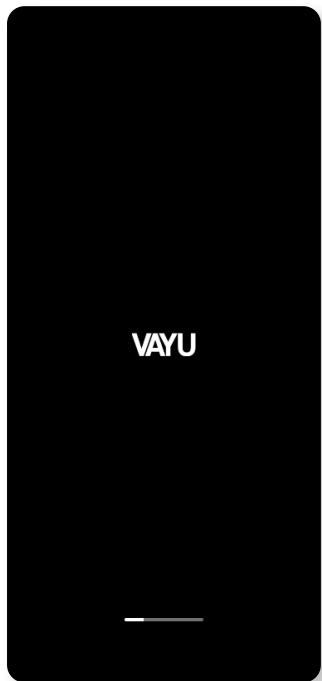


This “VAYU+ plus” app provides users to manage, change and monitor the VAYU machine from a smartphone.

The VAYU+ plus app helps you get the very best from your machine. With our connected features, you can activate, schedule and monitor your machine, whether you're at home or away.

By connecting to your VAYU Tower fan, you can:

- Change Wind speed
- Change Mode of the fan
- Set the swing of the fan
- Switch On or Off the humidifier mode of the fan
- Check filter lifetime and order new filters
- Remote steering and directing the flow

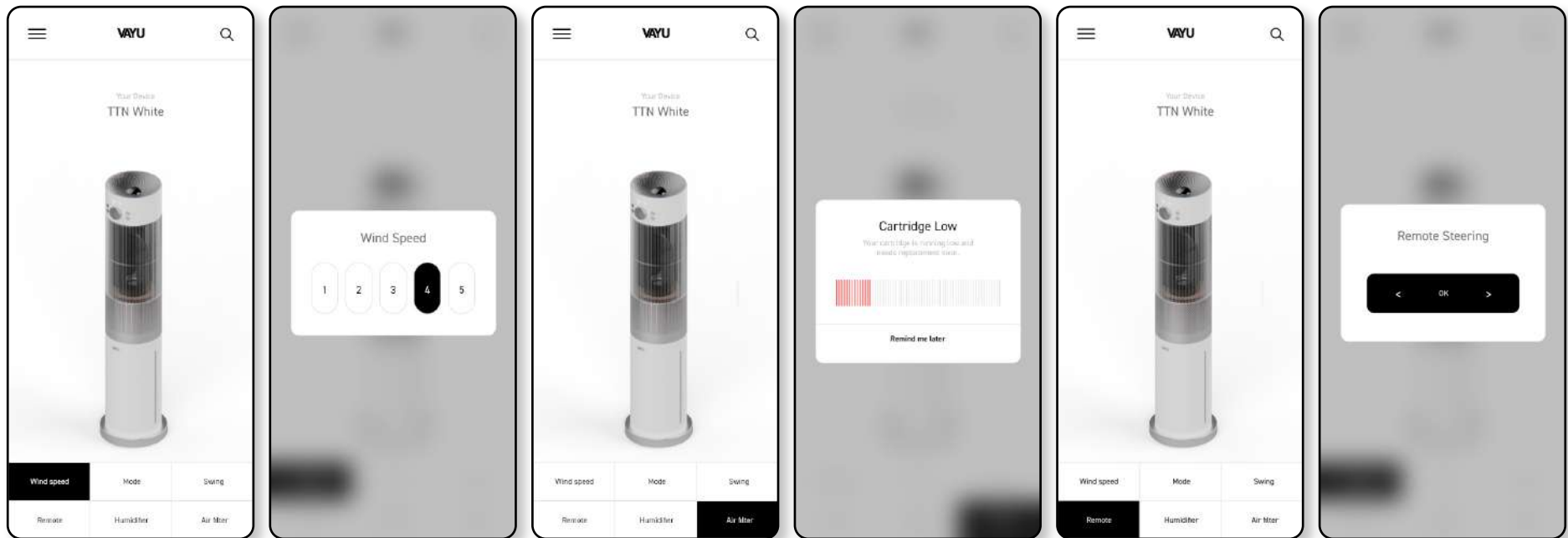


Complete control, wherever you are.

Control your purifier from anywhere, whether you're traveling, at work, or simply on the sofa.

Check your filter. Without lifting a finger.

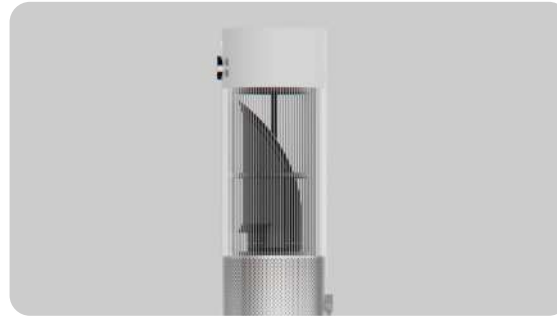
There's no need to inspect your filter, to see if it needs replacing. Your app will let you know when it's time for a new one.



Design Intervention



Easy pourability



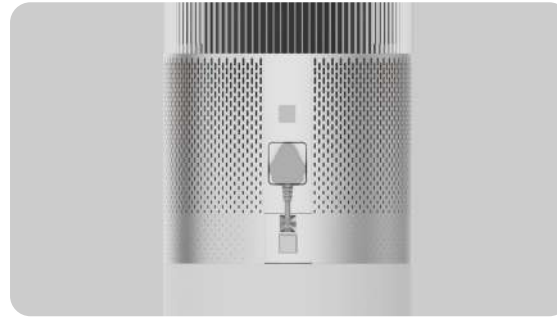
Oscillating vent instead of oscillating body



Detachable water tank



Easy mobility:
Four ball castor wheels



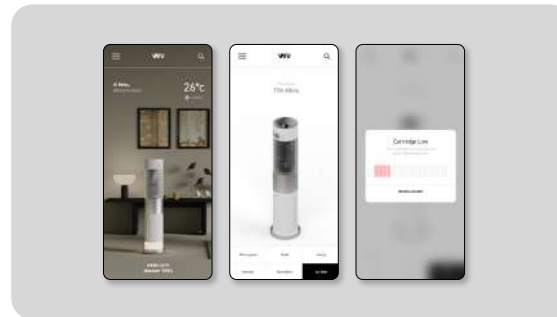
Retractable wire: Ease of approachability
to all heights of plug points



Easy replaceability of filters



Intuitive UI



IoT



Details





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