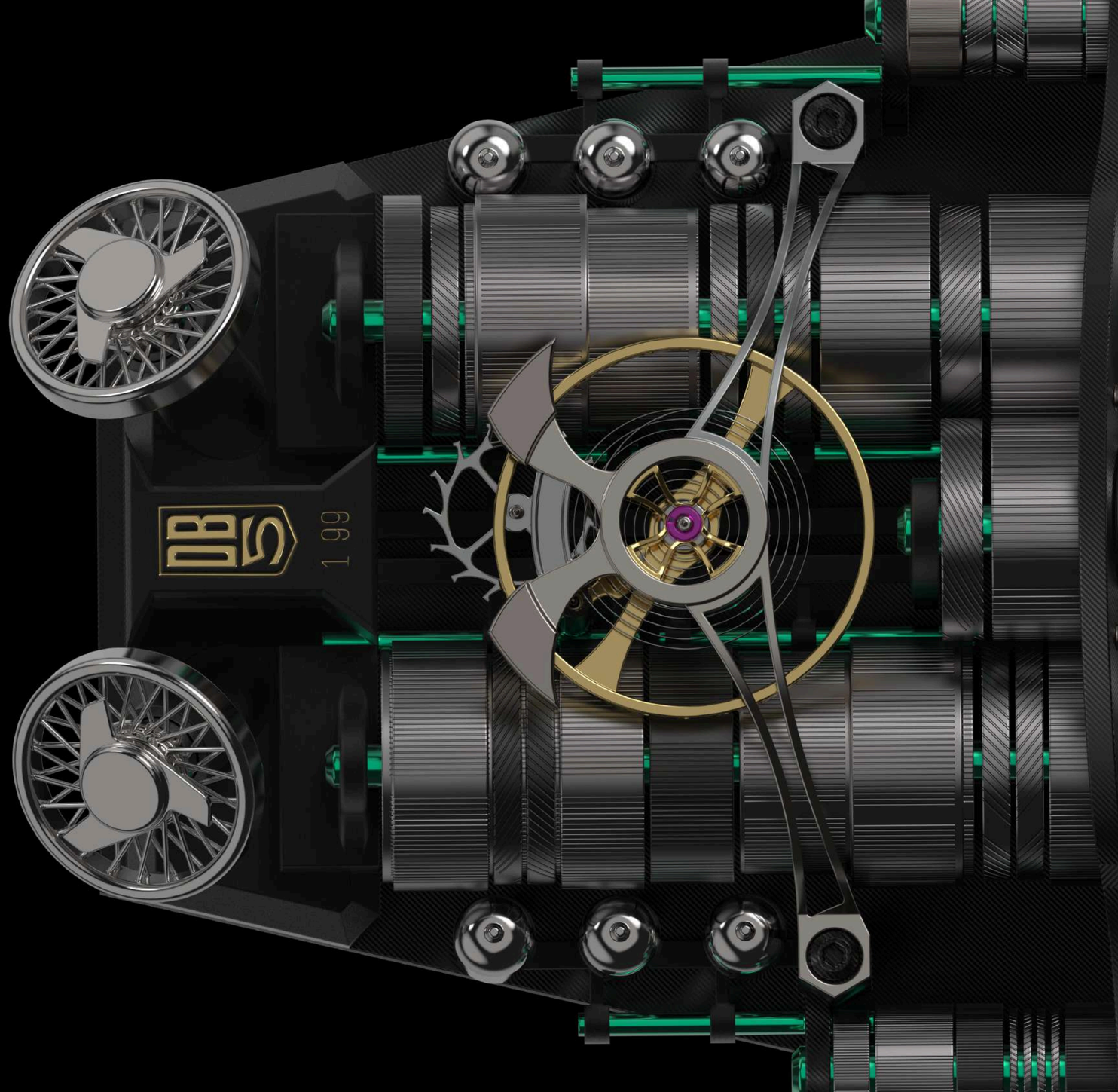
Vaibhav Chawla

Design Portfolio

2025



ABOUT ME

where should we start?!

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@the.prototyper (Instagram)
www.linkedin.com/in/vaibhav-chawla-998335197

+91 96342 36605

Education

2019-23
Bachelors of Design, Fashion & Lifestyle Accessory Design
National Institute of Fashion & Technology, Mumbai

2023-2025
Masters of Design, Mobility & Vehicle Design
Industrial Design Center, IIT Bombay

Recent Works

Cockpit Design (June, 2023 - present)
Guided Project, Prof. Nishant Sharma, IDC IITB

3D Artist (Aug, 2021 - Aug, 2023)
VIGA Entertainment Technologies, Bangalore

Industrial Designer (Jan, 2023 - April, 2023)
TATA ELXSI LTD., Bangalore

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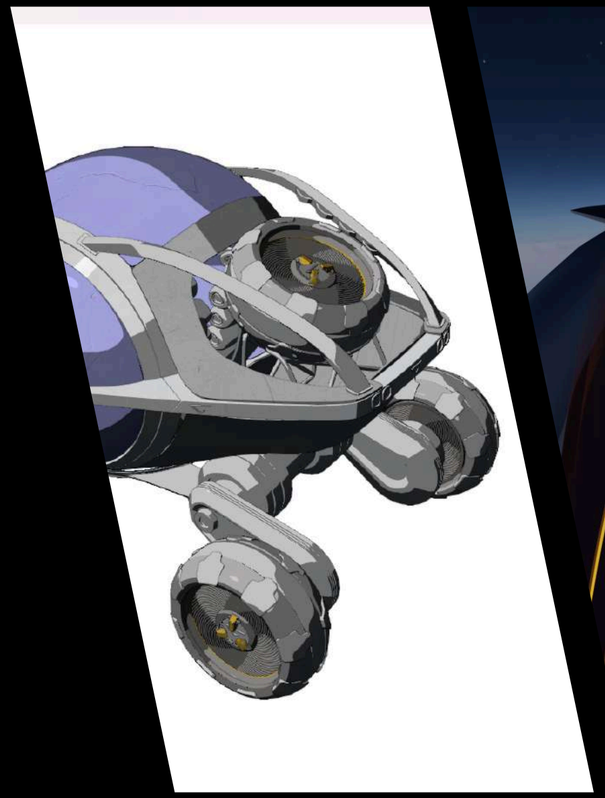
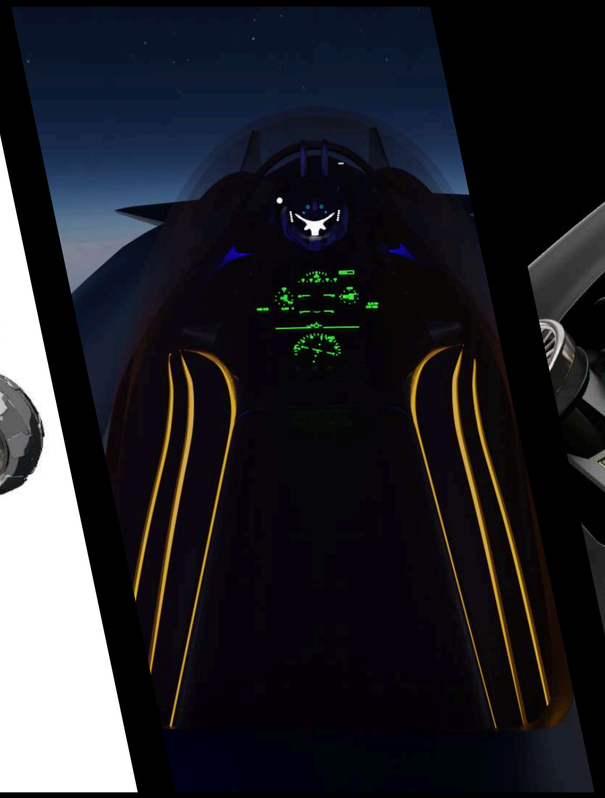


NXT GEN ADV TOURER



COCKPIT DESIGN

WATCH DESIGN X JAMES BOND

HI.VI

CLAY SCULPTING

01

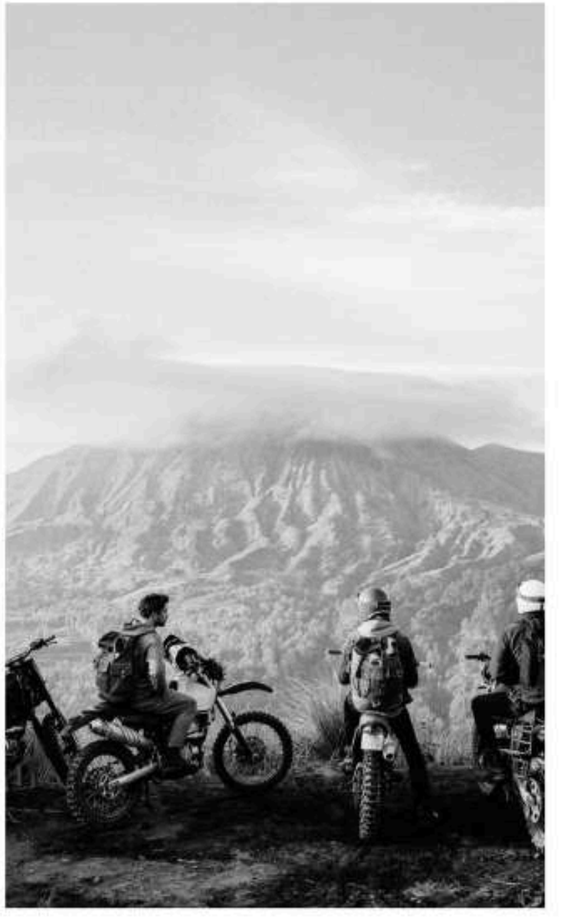
NXT-GEN ADV TOURER

DESIGN BRIEF

Design an innovative 4 wheeled Adventure Tourer for year 2040 that seamlessly integrates urban practicality with off-terrain capabilities, creating a vehicle that embodies a lifestyle of both everyday convenience and spontaneous exploration. Targeted at urban dwellers with an adventurous spirit.

Free-Spirit

Wanderlust



Rebel

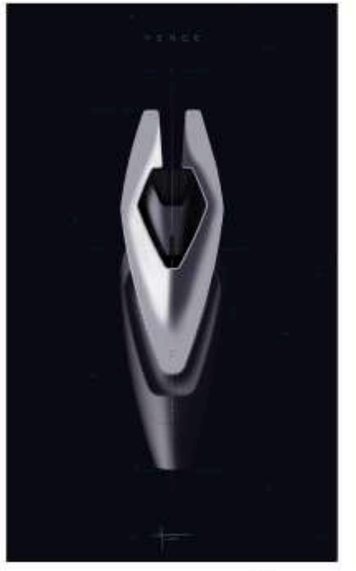
Urban-Explorer

Mood Board

Inspiration Board

Chiseled

Robust



Resilient

Organic

Minimal

Interview Insights?

To deep dive into the needs and aspirations of the users, interviews of existing and future owners of Adventure tourer along were conducted.

from questions like

Why did they chose Adventure Tourer

1. Long distance touring
2. Best for Indian roads, best posture, overall an all-rounder bike, I'm tall so can ride that easily, best for touring and mounting **luggage**

Type of terrain they are exposed to on daily basis

1. Highways
2. City Roads
3. Mountains
4. **Kaccha Rasta**

Longest Single Journey

1. **560+Kms**
2. 350+Kms
3. 550+Kms

What Excites them?

1. **Sense of freedom and peace**
2. Don’t have to worry about potholes and speedbraker, use it rough without much maintainace even after a fall

Do they Daily the bike?

1. no 1 preferred bike Ps. Indian road
2. easy to handle
3. **I will use. Today's road conditions and traffic are no less than an adventure!**

Problems during long rides?

1. **Heating, wrist pain due to frequent clutch,**
2. **less pillion comfort, very less luggage**
3. Weight, and Handling

Some In-person Insights

Apart from form Submissions, some in-person interviews were taken, leaving with some great insights.

Why bikes?

We are the Rebels.

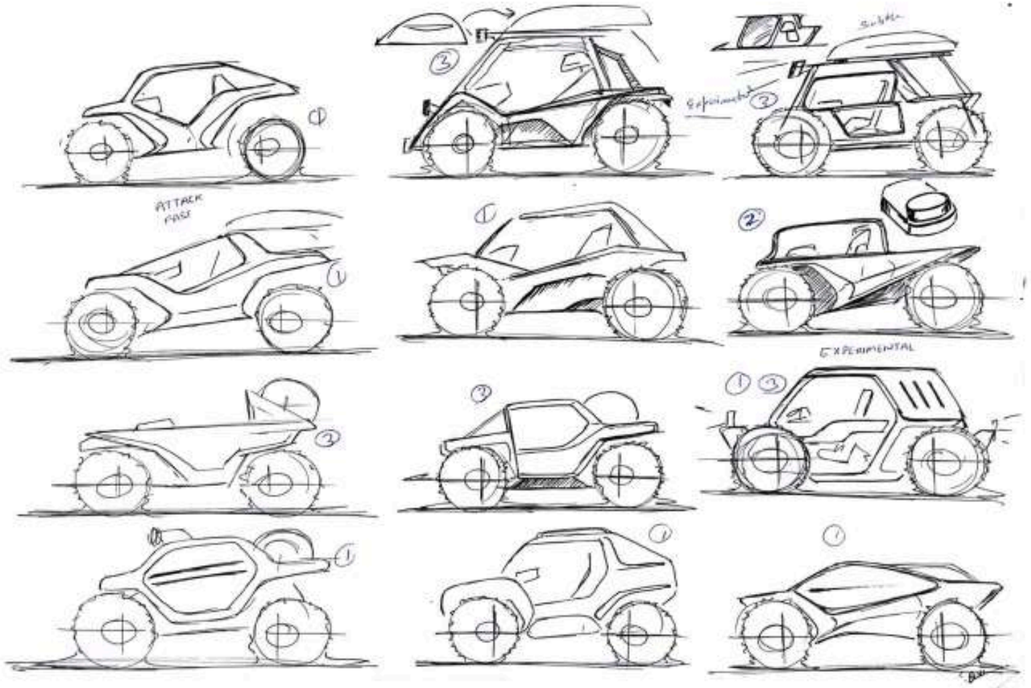
Adventure riders aren't just rebels against society-**we're rebels against limitations, chasing freedom beyond the horizon**

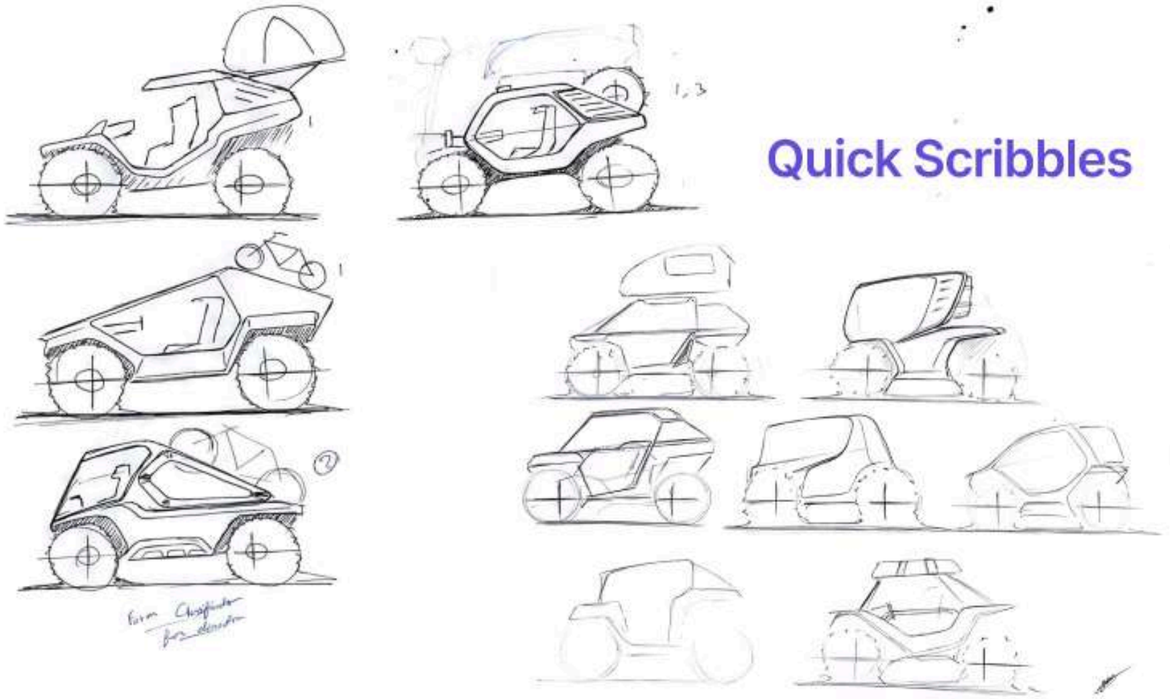
All in for adrenaline!

Exposed to environment and danger creates a **sense of fear that gives them adrenaline rush!**

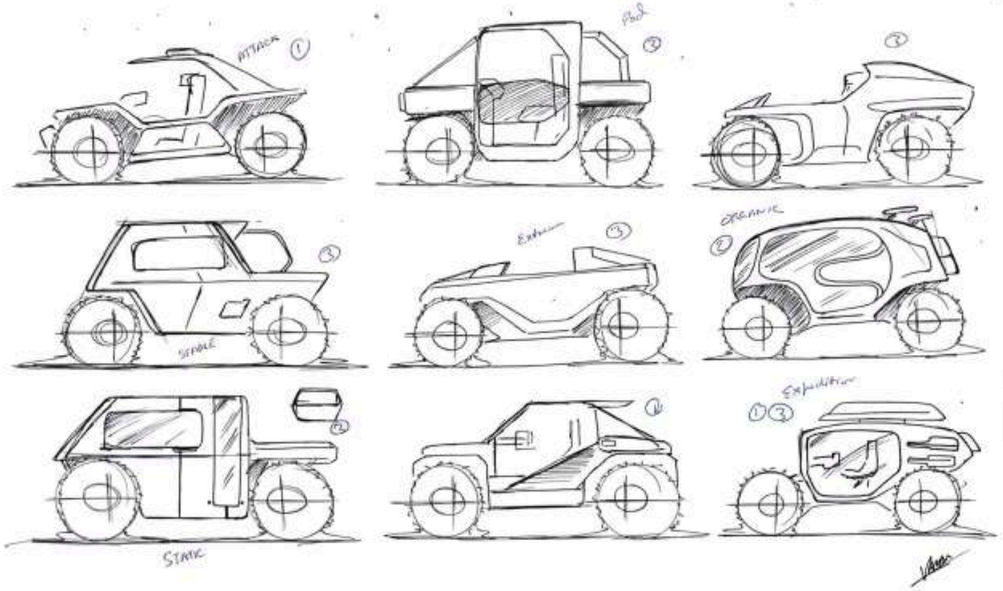
Their Child/Companion

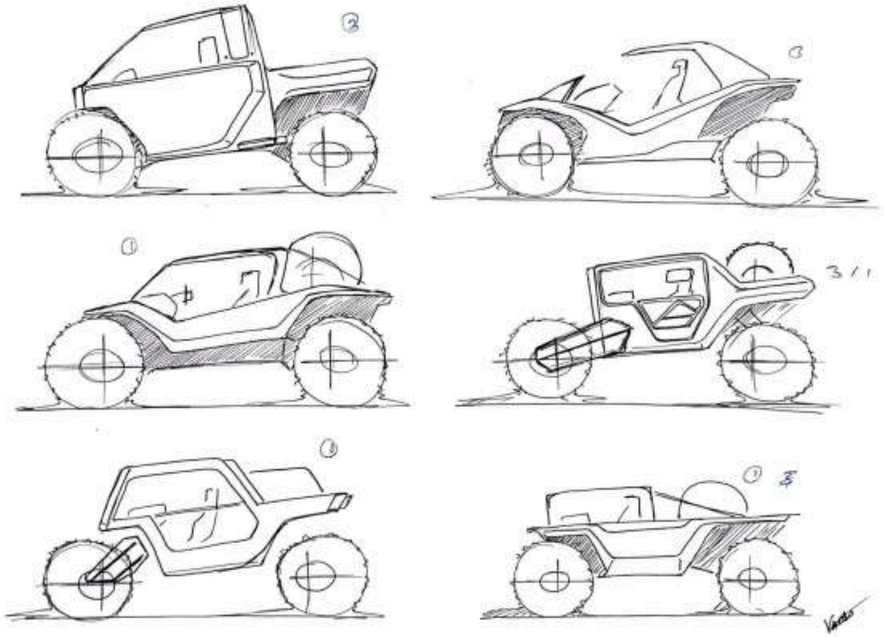
A true adventure rider doesn't just own a bike-**they nurture it, name it, and trust it like family.**



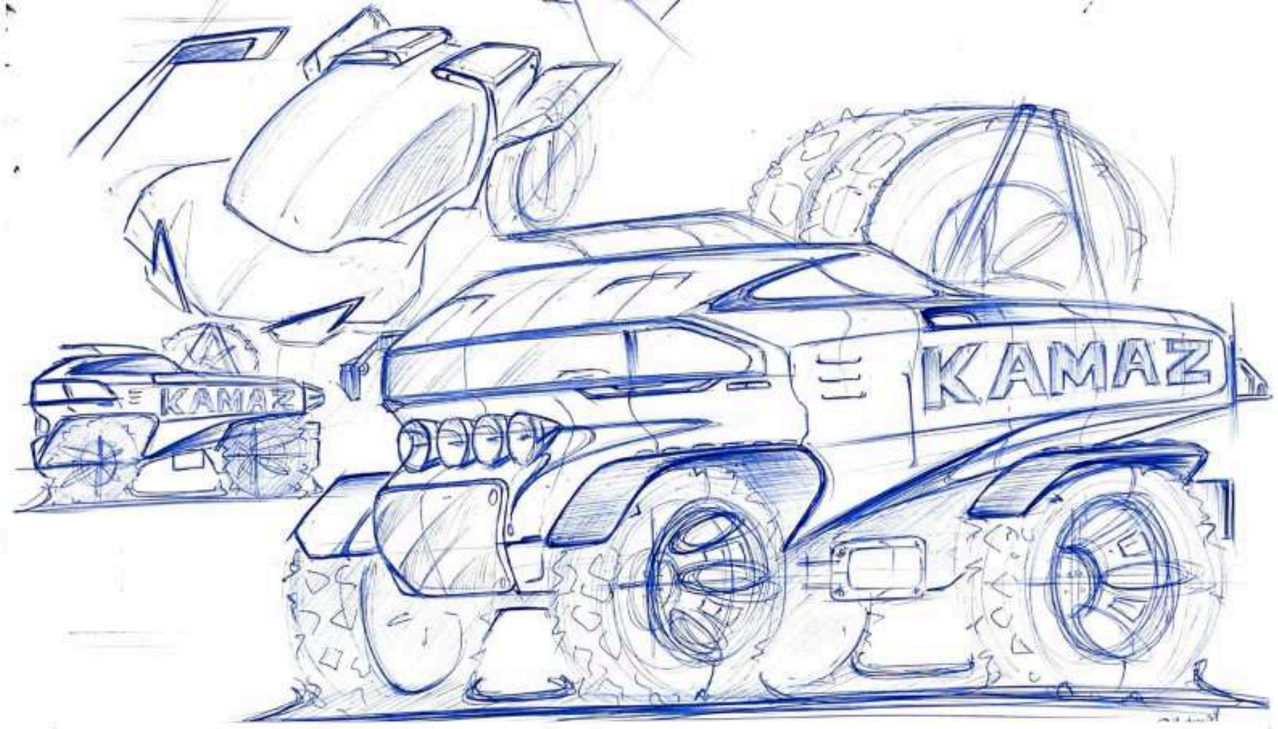


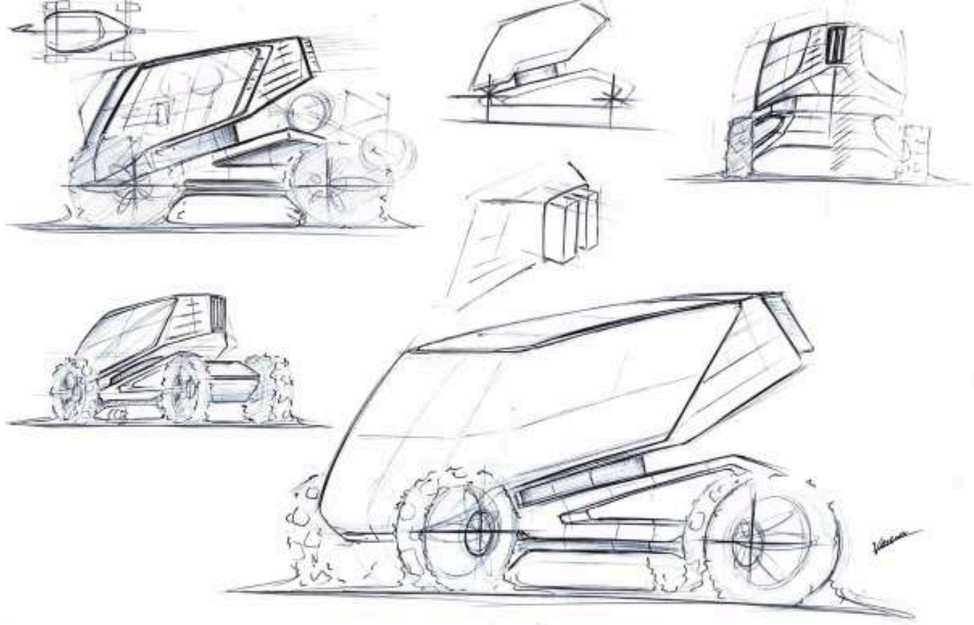
Quick Scribbles

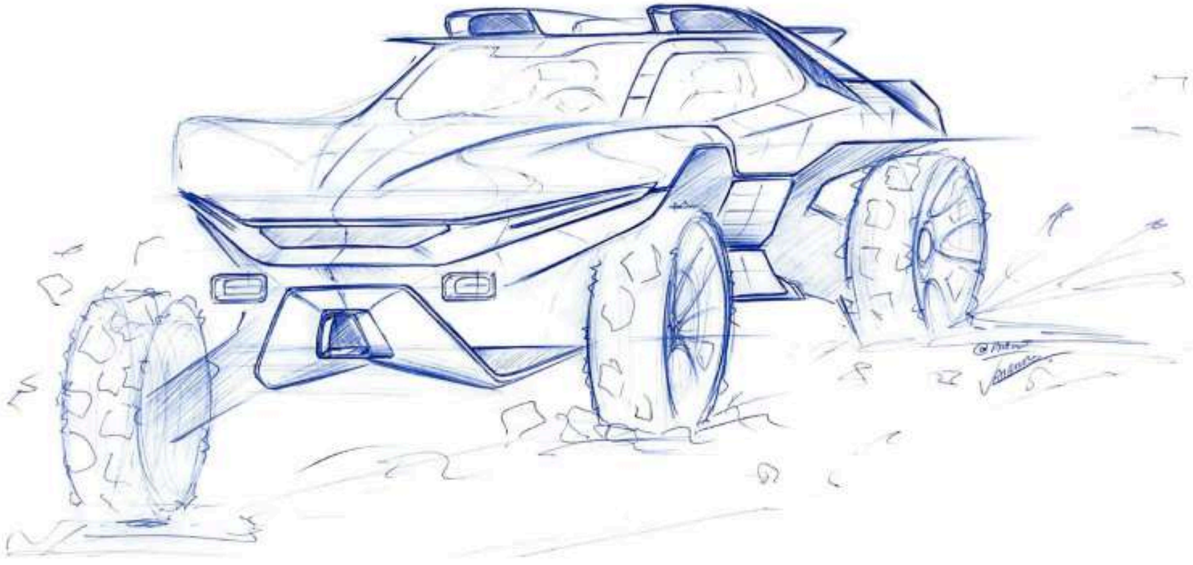


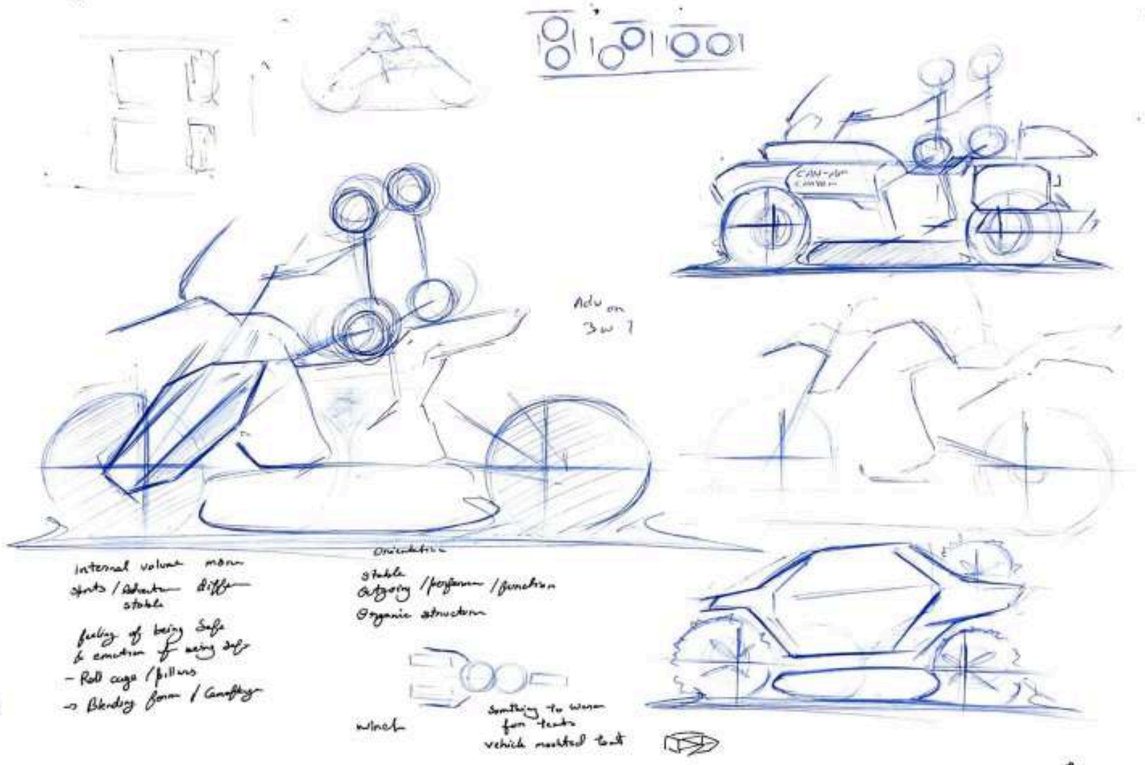


proportions
wheelbase
layout
form
stance

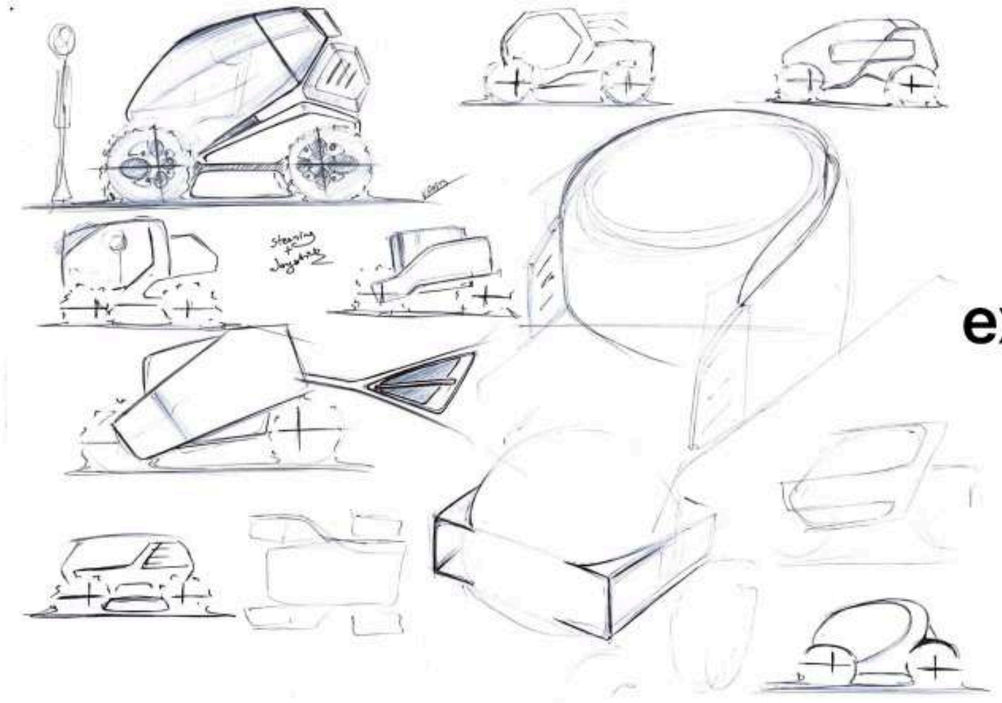

KAMAZ
KAMAZ

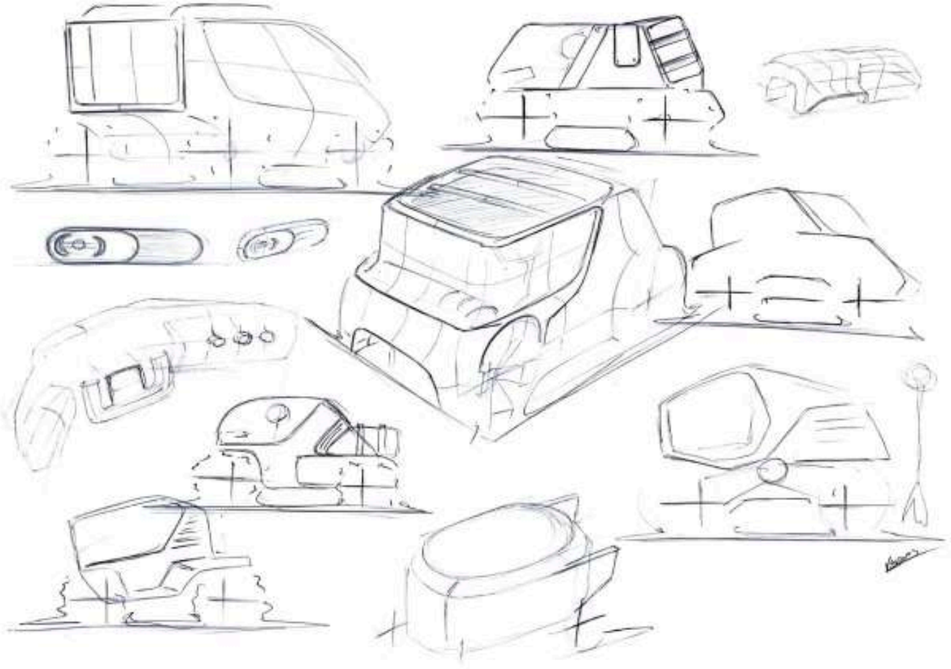


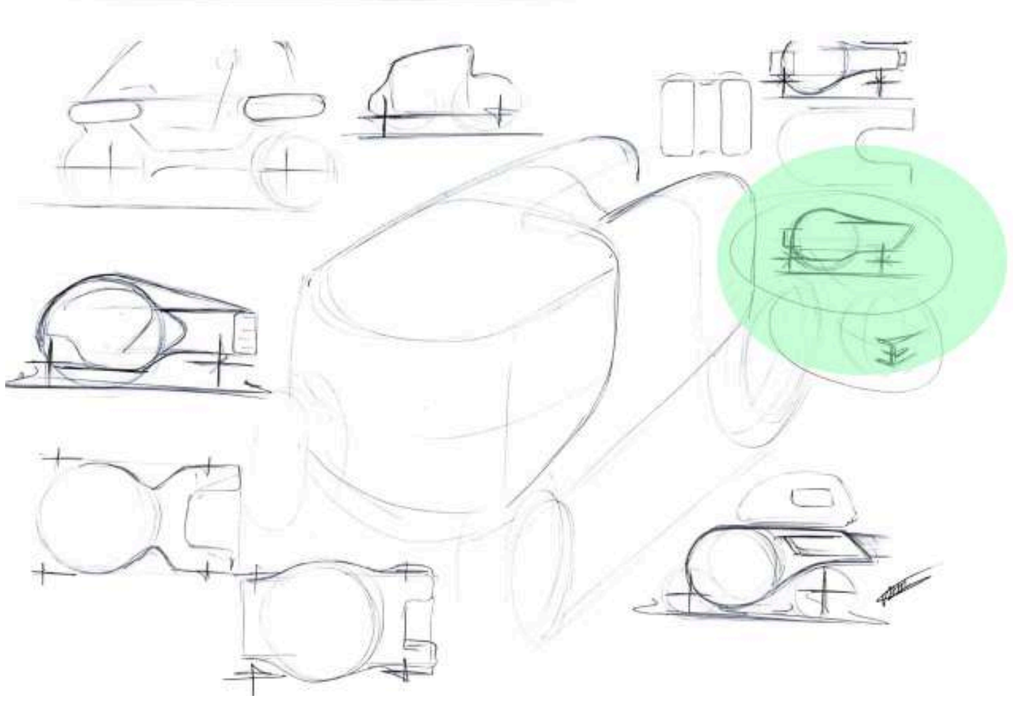


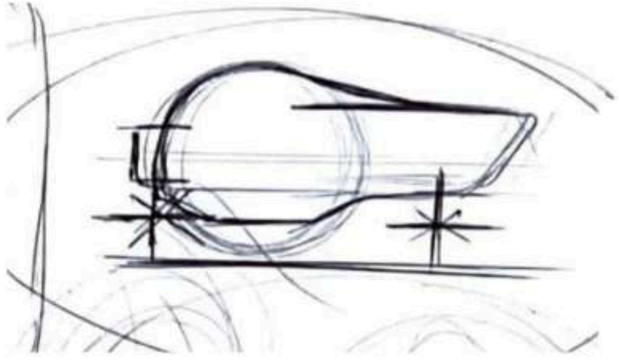

internal volume more
stable
feeling of being safe
& emotion of being safe
- Roll cage / pillars
winch
stable
Organic structure
winch

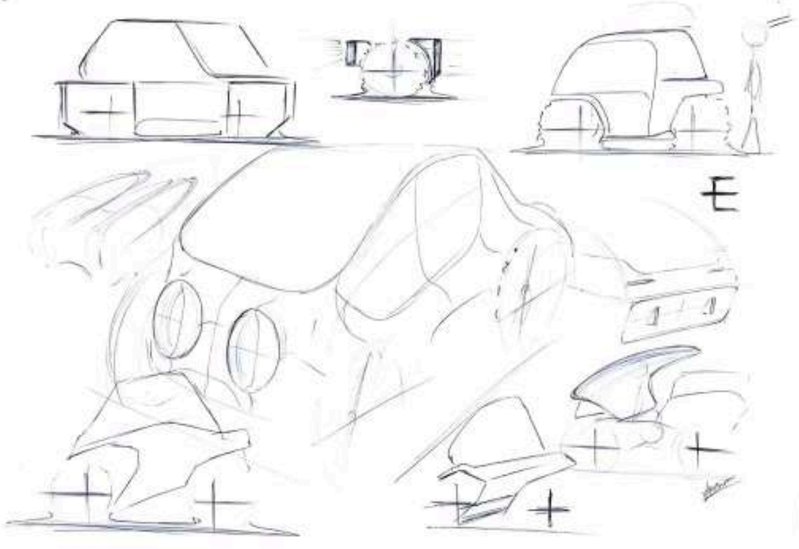
Organic explorations



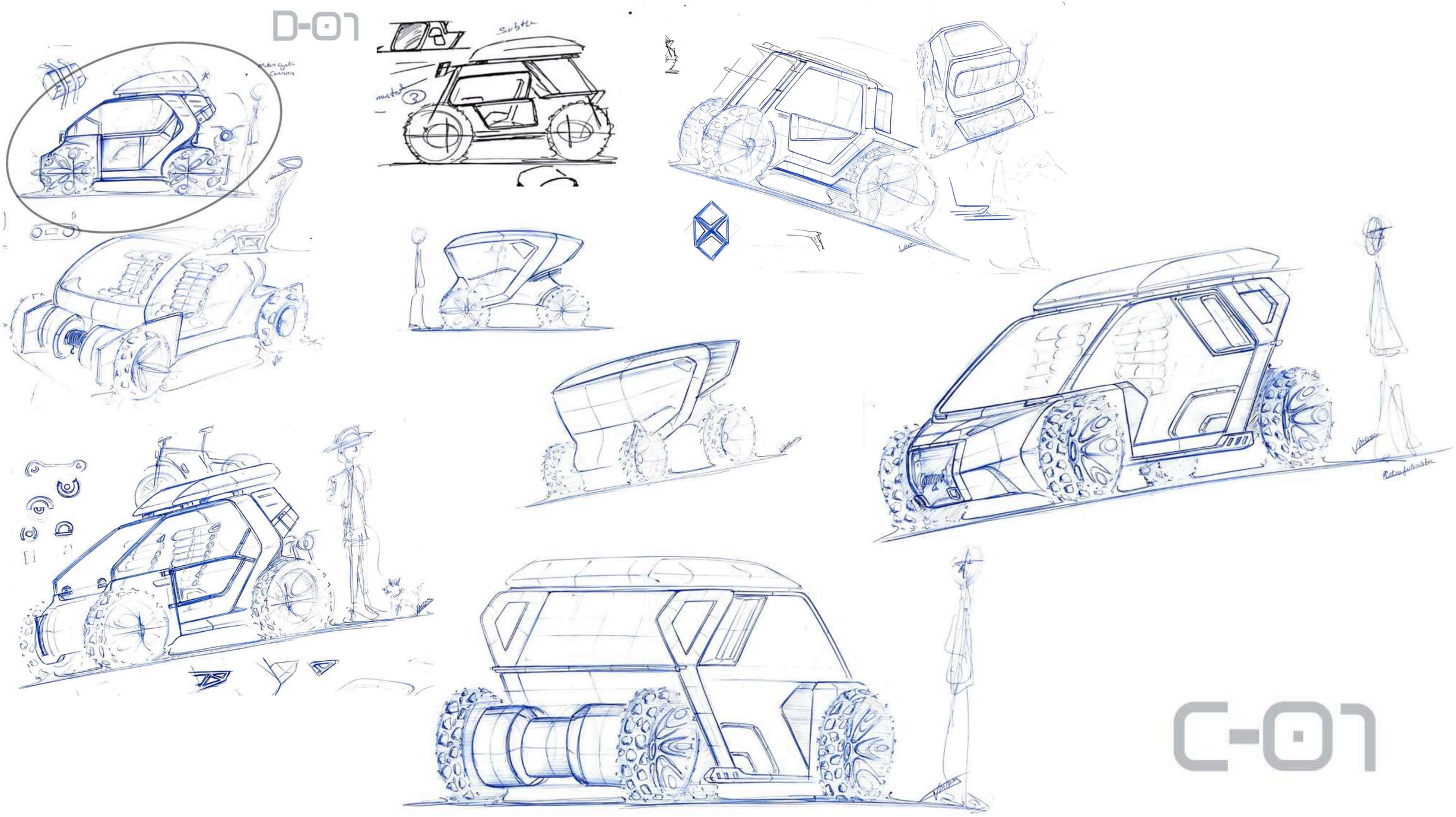






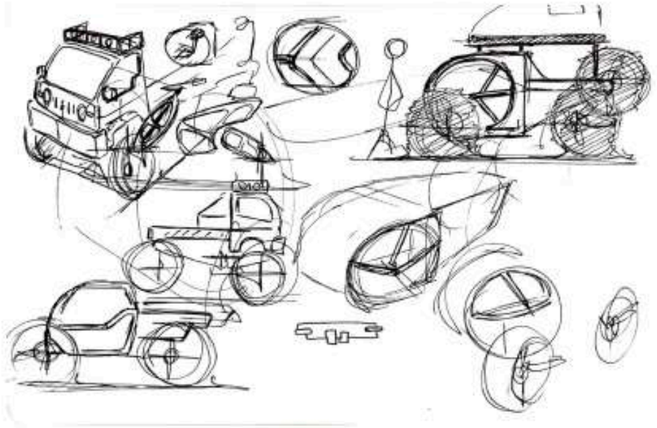


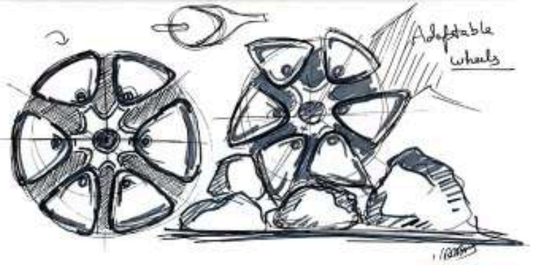
D-01

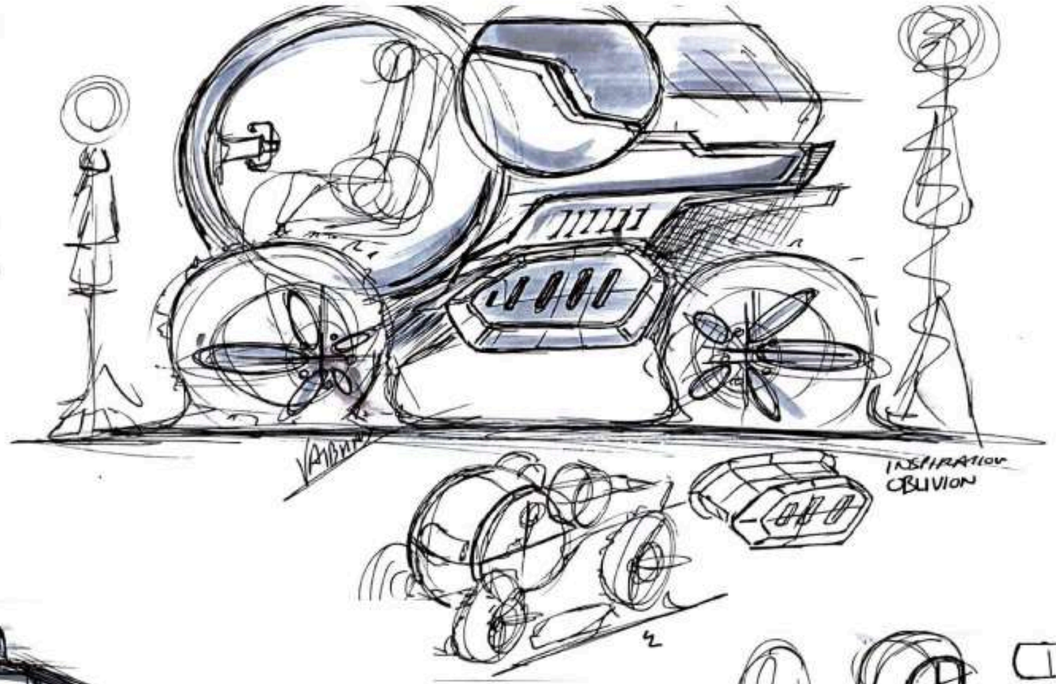


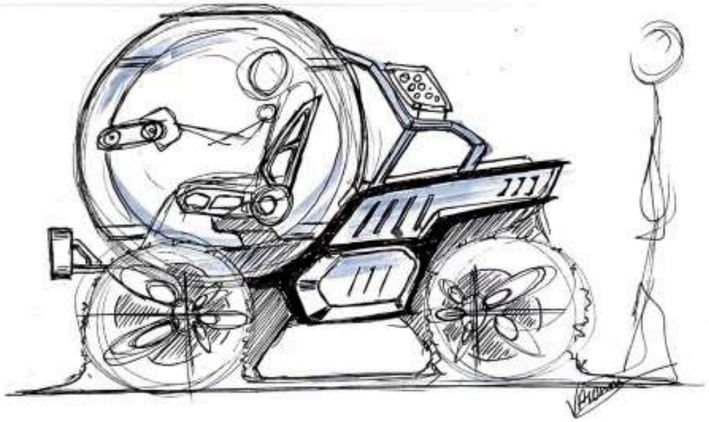
C-01

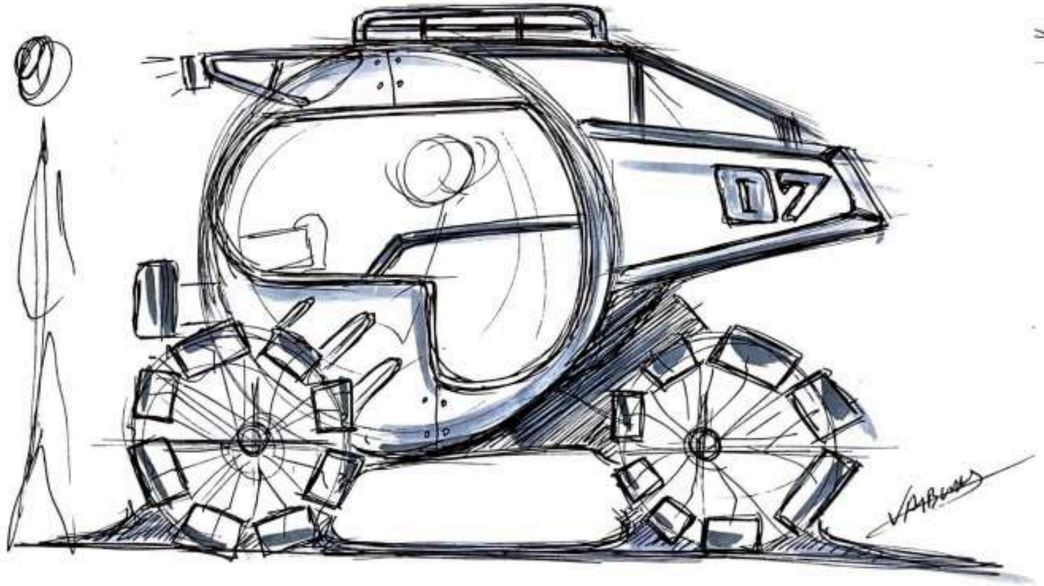
Potential to explore

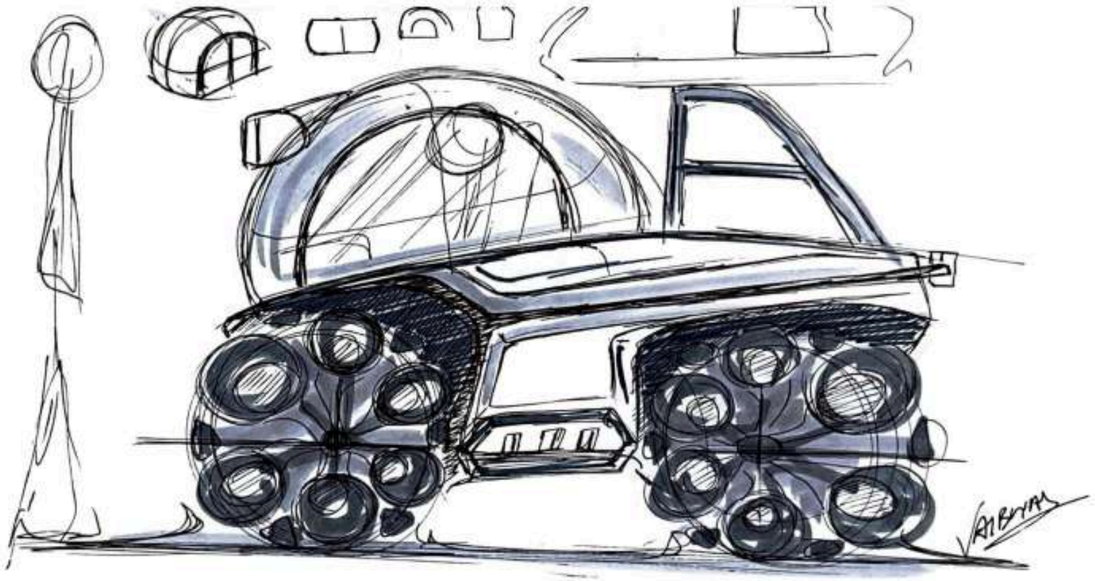


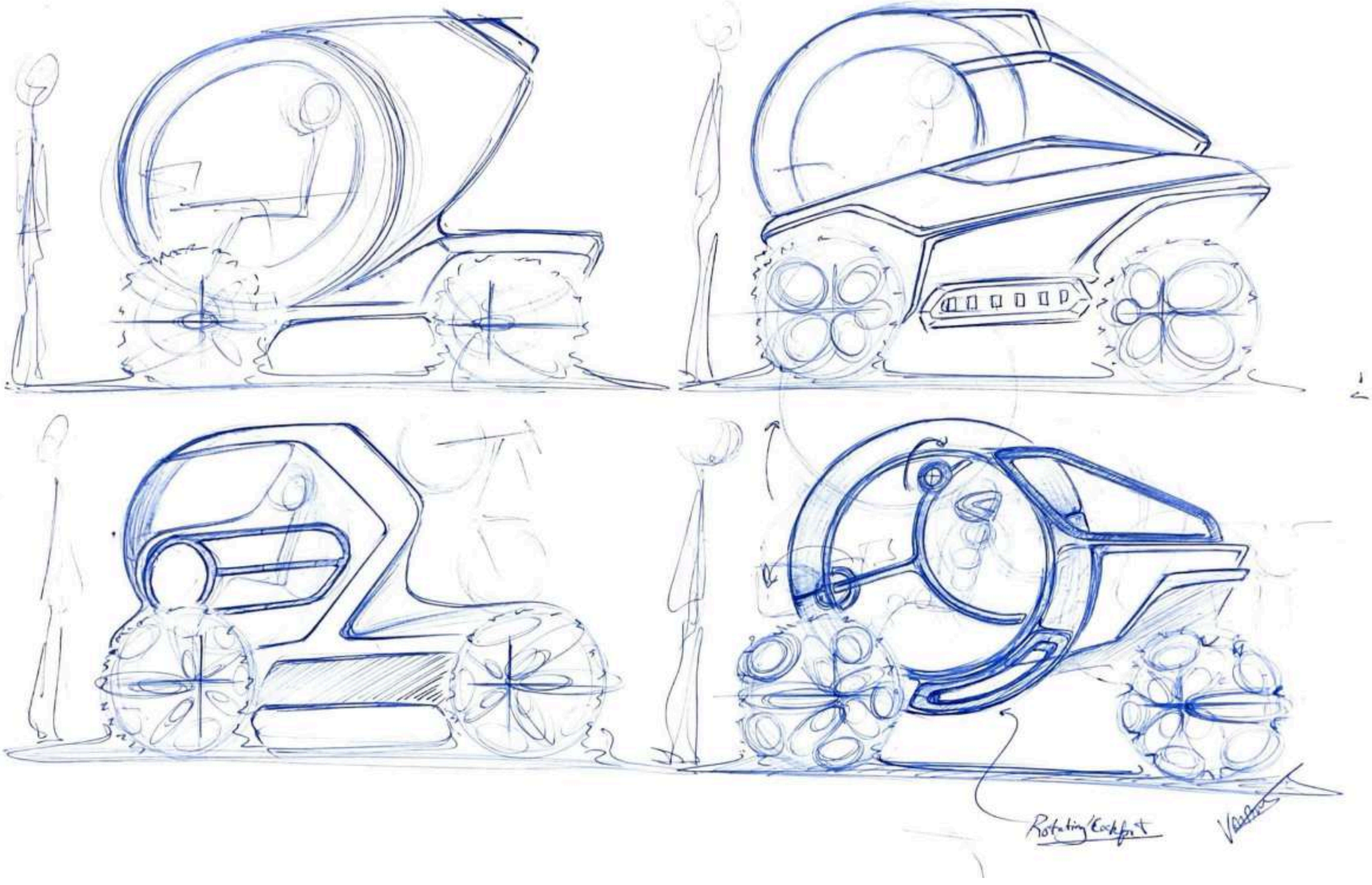


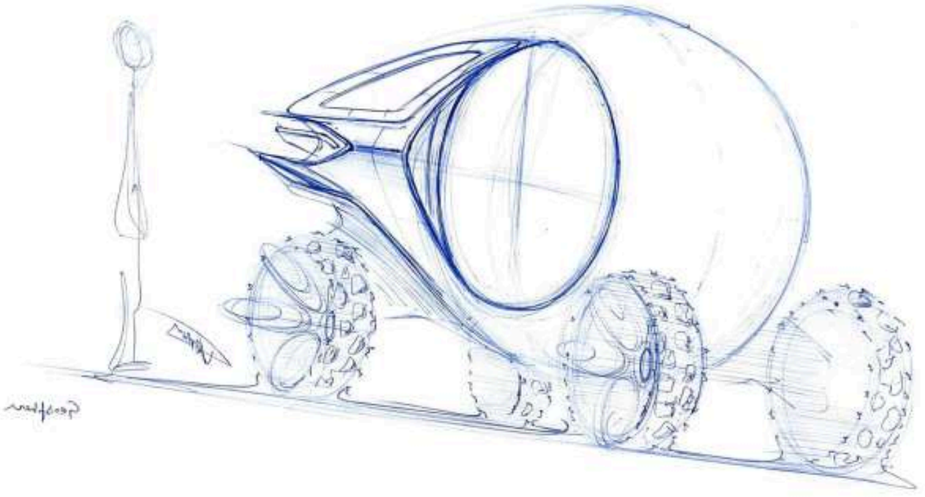


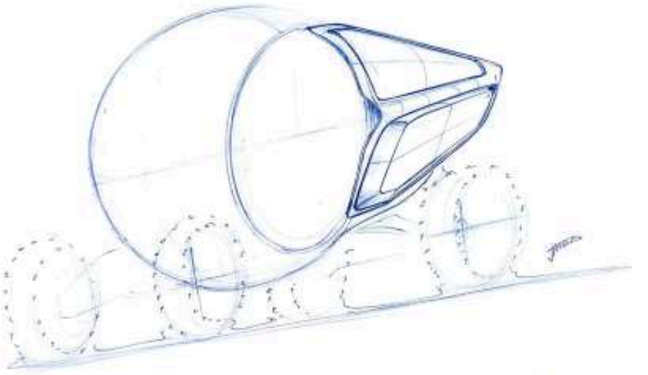


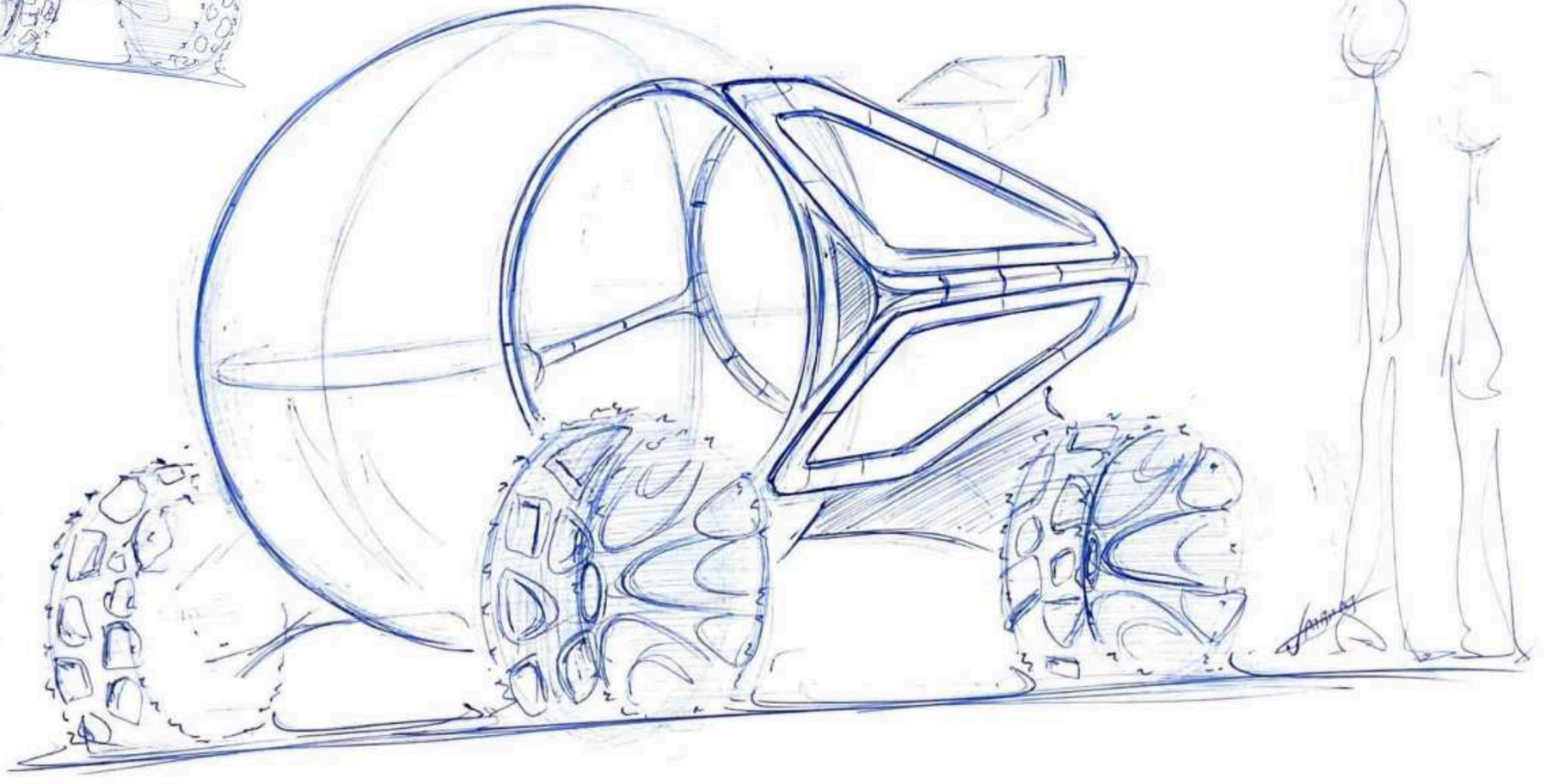





Rotating Cockpit

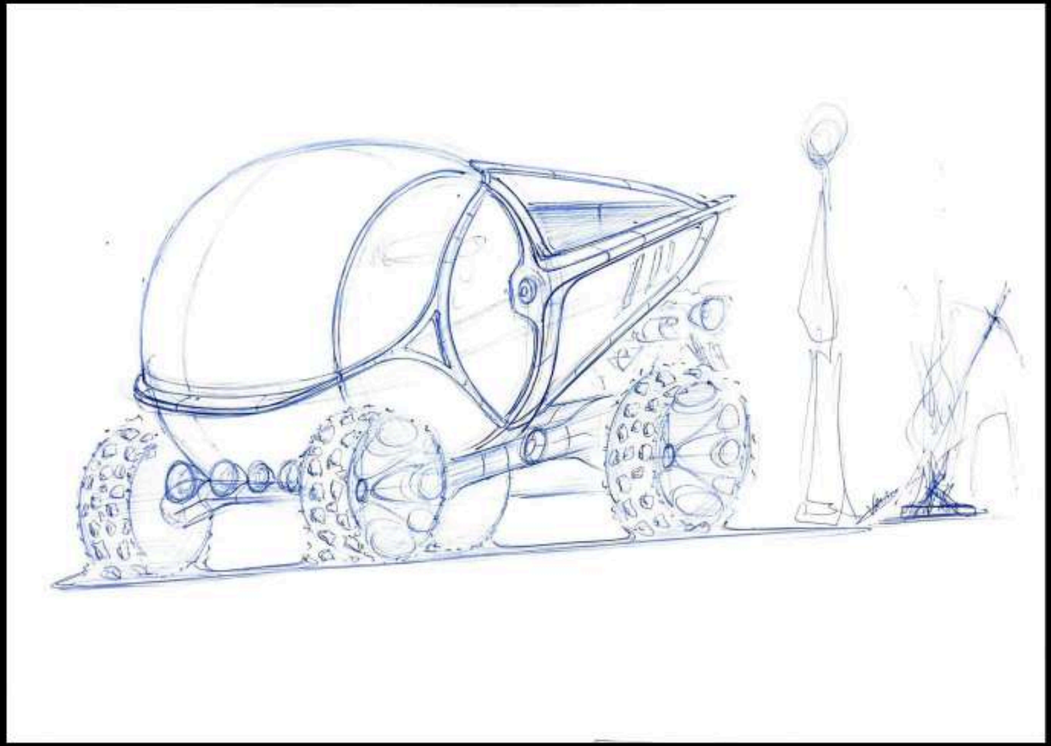


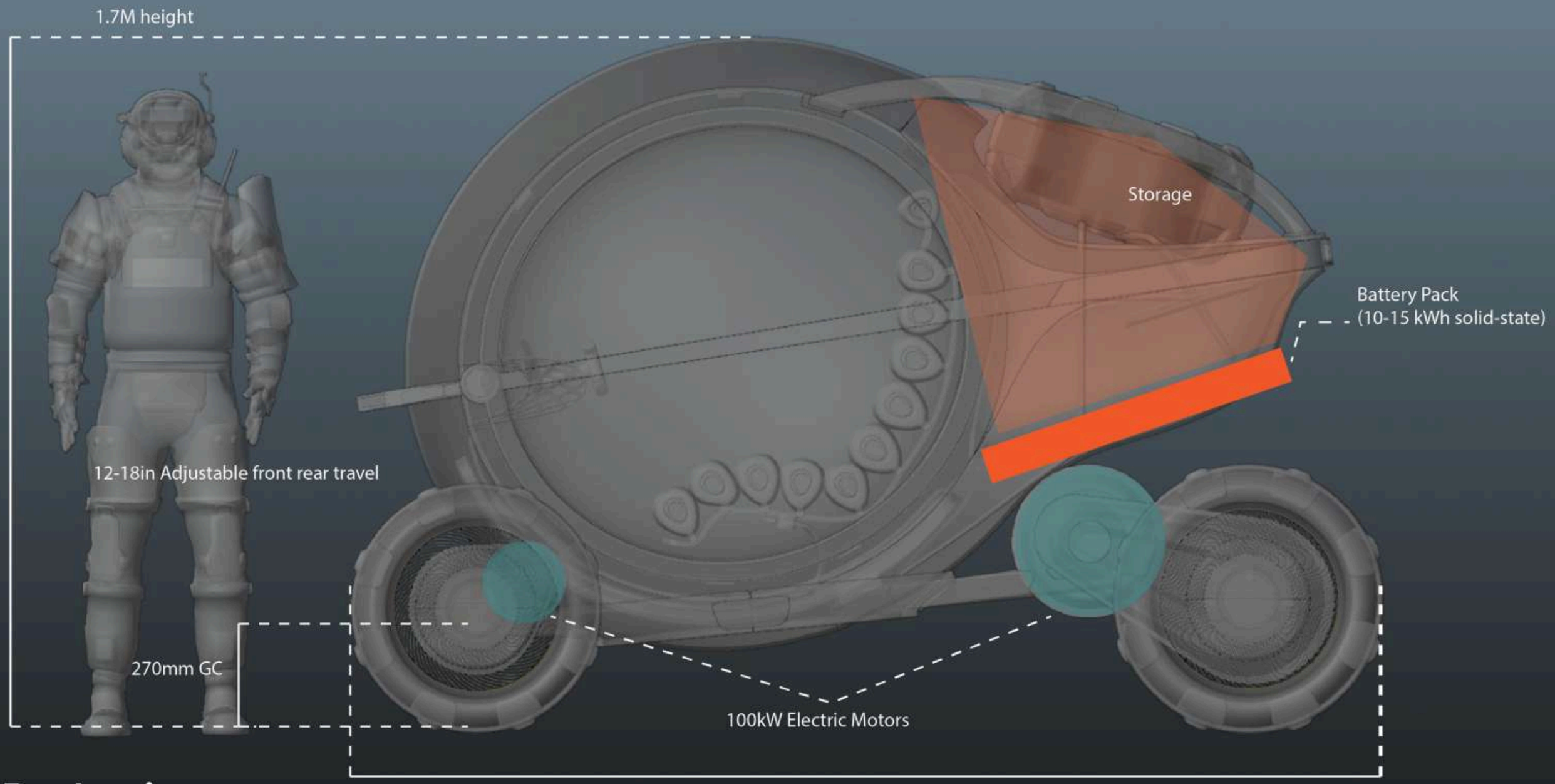




Final Concept

Inspired from the Spherical form of Gyrosphere and Bubble ship, This form maximises the experience of being one with the nature and adds a layer of safety to it with the help of the exoskeleton.
The design features a bold design direction that is ready to tackle any sort of challenge while still being cpable of use in Day-to-Day life.
The footprint of the car is kept small and yet spacious enough to house two people with all their essentials including the travel gear to camping gear all together.



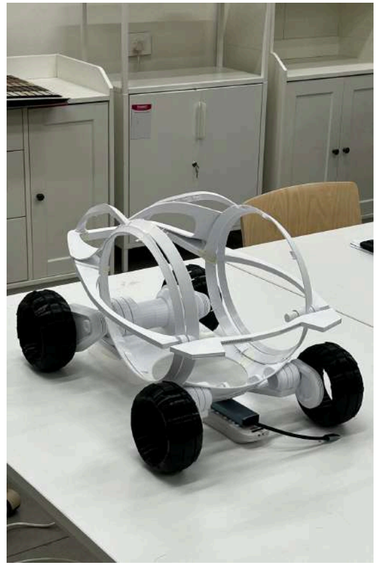

1.7M height
Storage
Battery Pack
(10-15 kWh solid-state)
12-18in Adjustable front rear travel
270mm GC
100kW Electric Motors
3.3m wheel base

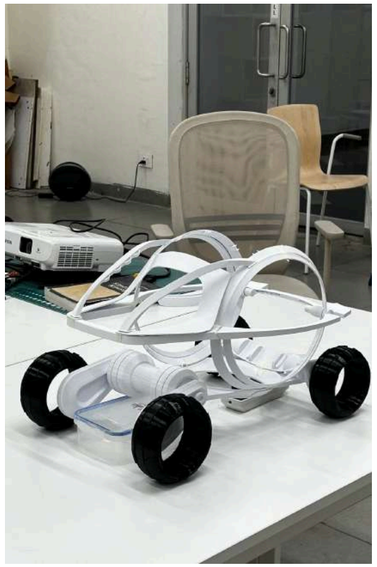
Packaging

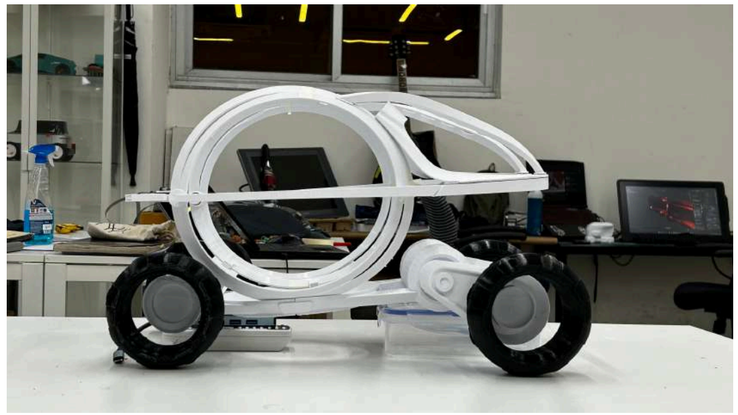
Final Renders

00
00

Prototyping







EPSON
COSMIC MOTORS

Thank you

02

COCKPIT INTERIOR DESIGN

Design Brief

Objective

The primary objective of this project is to **design and implement a state of the art and aesthetically enhanced cockpit for the Advanced Medium Combat Aircraft (AMCA)** that integrates **next generation technology along with ergonomic design principles** to **enhance Pilot performance** and comfort, and reduce cognitive load and fatigue.

Approach

Small Changes for **Big Impacts.** Apply component level changes as an aircraft already is modular and working at smaller levels is more suitable for a cluster of components.

Design Methodology (How?)

1

Design Workshops

Conduct interactive workshops with Pilots, ADA, Design engineering Team, and IDC Design Team to understand the constrains.

2

Technical Packaging

To study the actual available space in AMCA Cockpit.

3

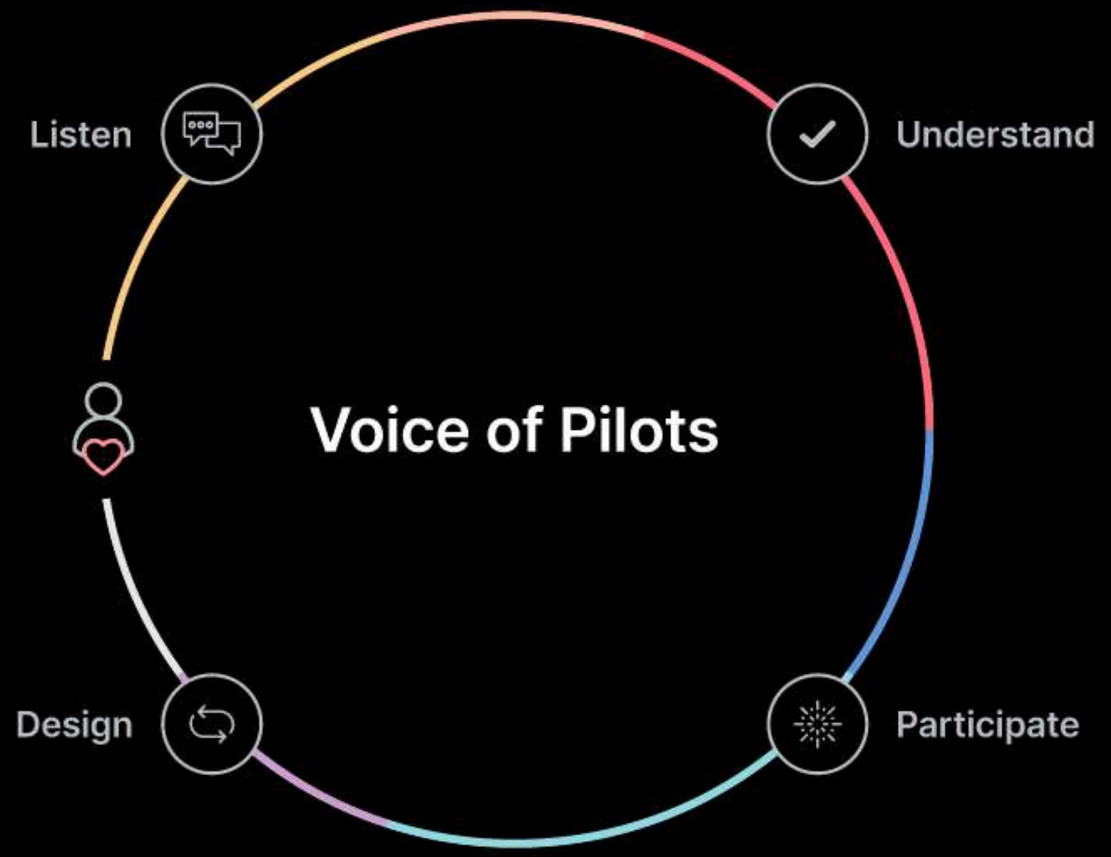
Ergonomic Assessment

Detailed analysis of current cockpit ergonomics and identification of areas of improvement.

4

Aesthetic Judgement

In depth analysis, user research with the Pilots to understand the deeper needs and aspirations of the Pilots.



METHODOLOGY

Participatory Design

Participatory design is an approach that actively involves stakeholders, especially users, in the design process to ensure their needs and perspectives are integrated. This collaborative method fosters a sense of ownership and leads to more effective and relevant design outcomes.

FUTURE OF FIGHTER JETS

Overview

Current Advancements

The Current 4.5th & 5th generation fighter jets are defined by stealth, advanced sensors, and network-centric capabilities. These aircraft, like the US' F-22, F-35, China's J-20, and Russian Su-57, prioritize low observability and integrated systems for enhanced situational awareness and combat effectiveness.

Lockheed Martin F22 Raptor

Dassault Aviation Rafale

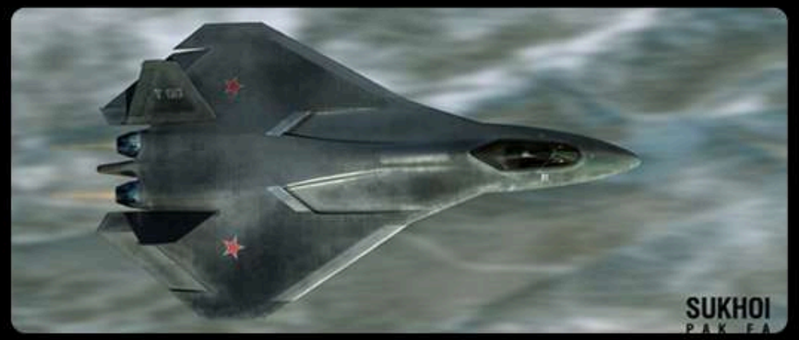
Lockheed Martin F35 Lightning II

FUTURE OF FIGHTER JETS

Next-Gen Fighters

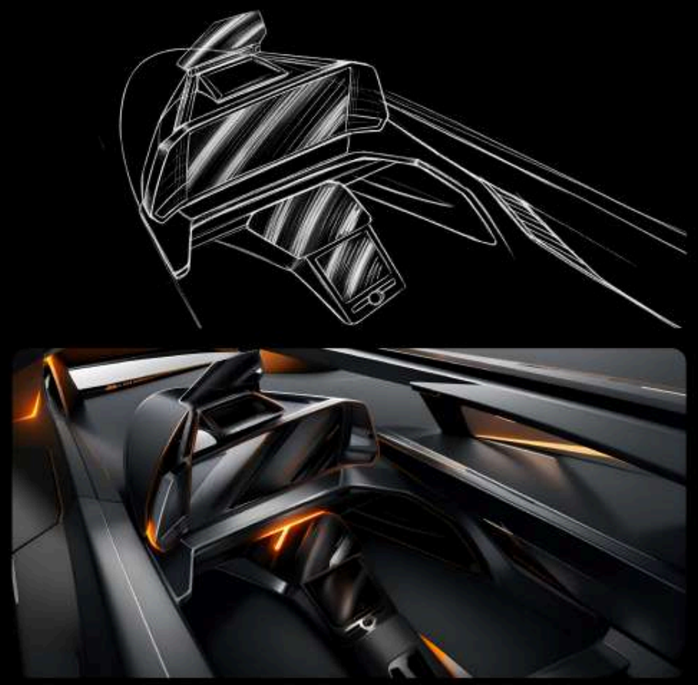
The Next Generation Fighters

The concept of sixth-generation fighter jets emerged in the late 2000s as fifth-generation fighters like the F-22 and F-35 entered service, aiming to push the boundaries of aerial warfare technology even further. Various nations initiated research and development programs for sixth-generation fighters, aiming to achieve operational status by the 2030s.

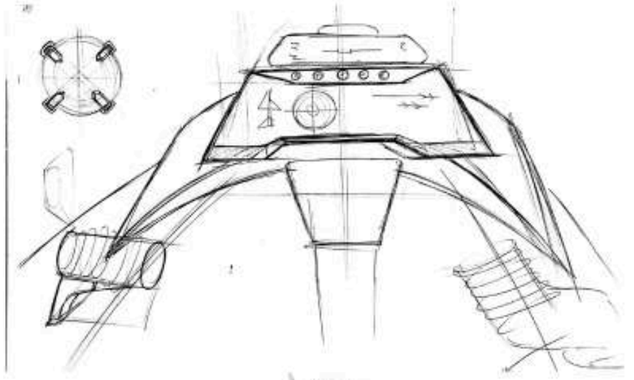


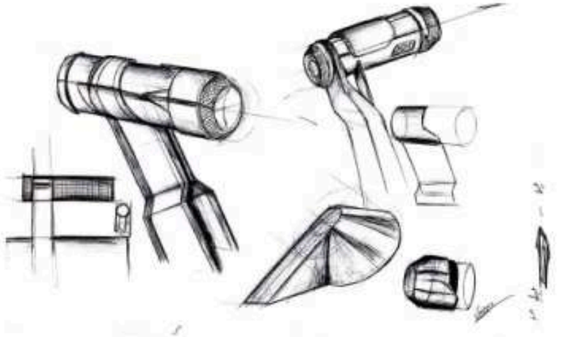
Concept Development

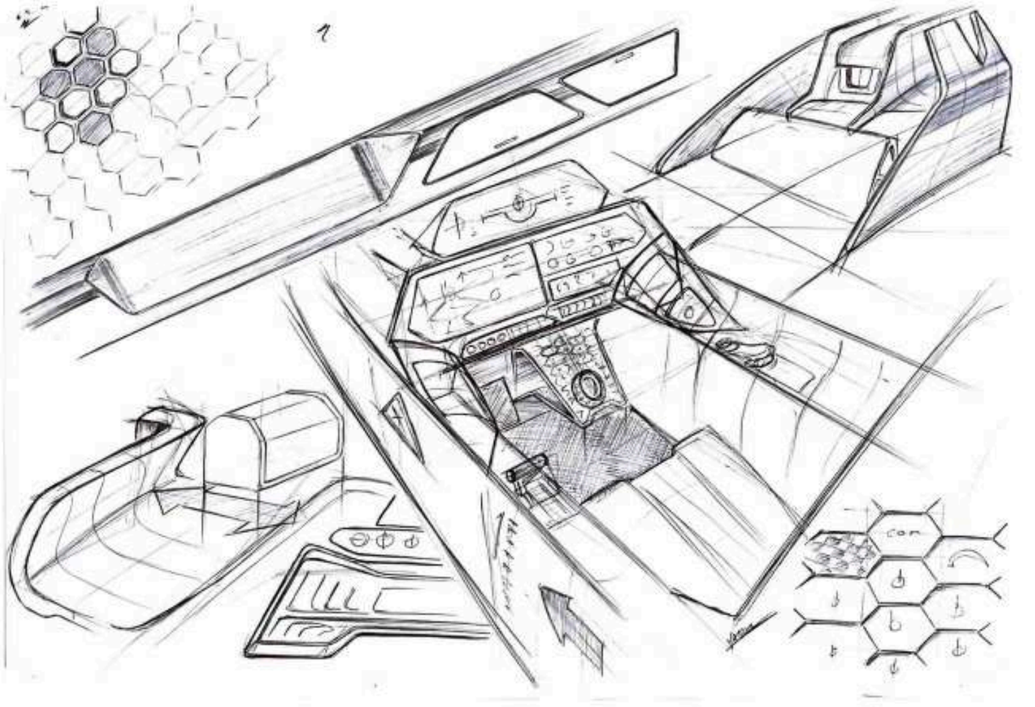
- Creation of Image Boards that captures the aspirations of the Pilots.
- Creative ideation by large number of ideation sketches, (manual/digital) & renderings.
- Faired up Concept renders of the selected key concept sketch based on the feedback from pilots and the team.
- 3-4 Thematic renders that broadly highlight the shape, form color, and aesthetics of the cockpit. This stage will set the ground work for Virtual Mock-Ups.
- Detailed Design, design bezels of switches, controls and displays,
- Color and Graphics, Color schemes and graphics for interiors, switches, and switch clusters.

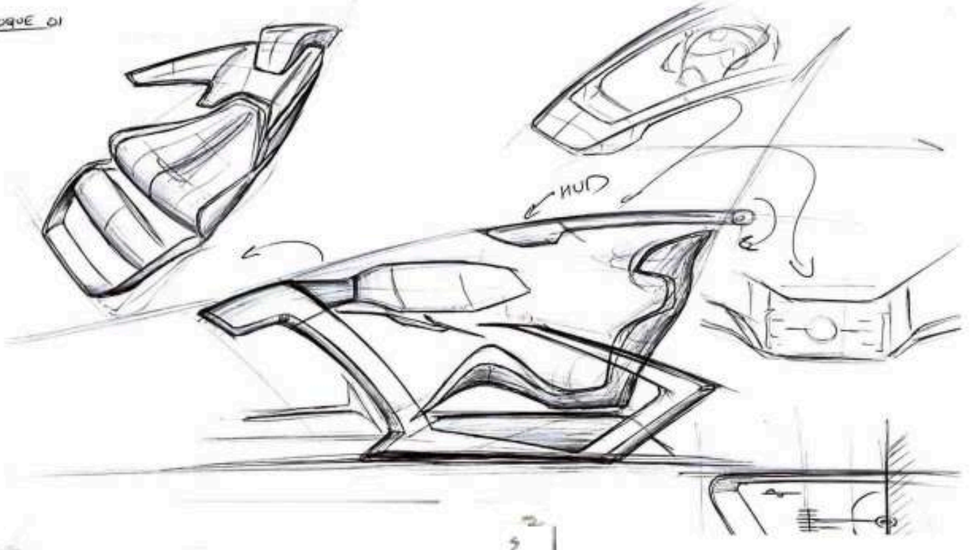


CONCEPT VECTOR

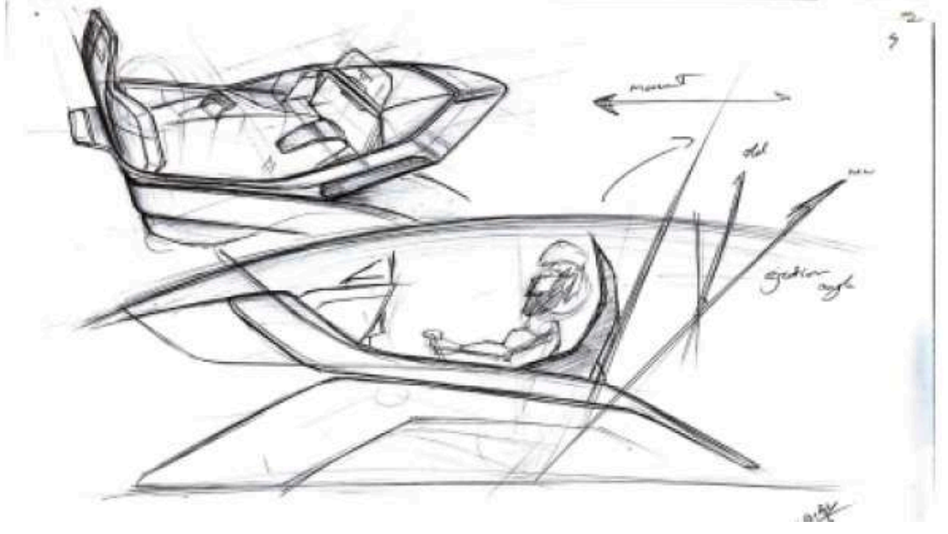


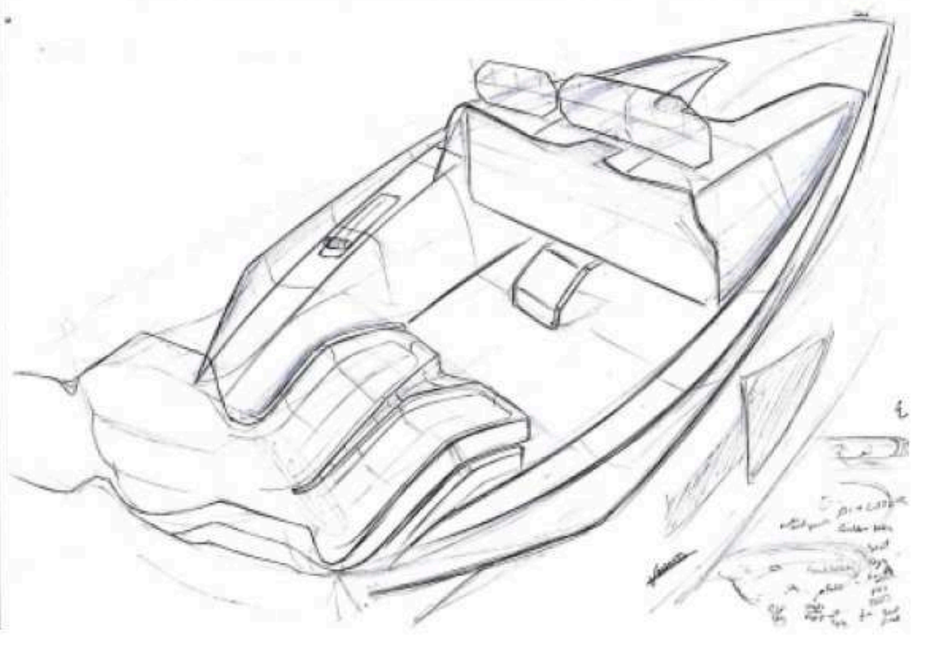


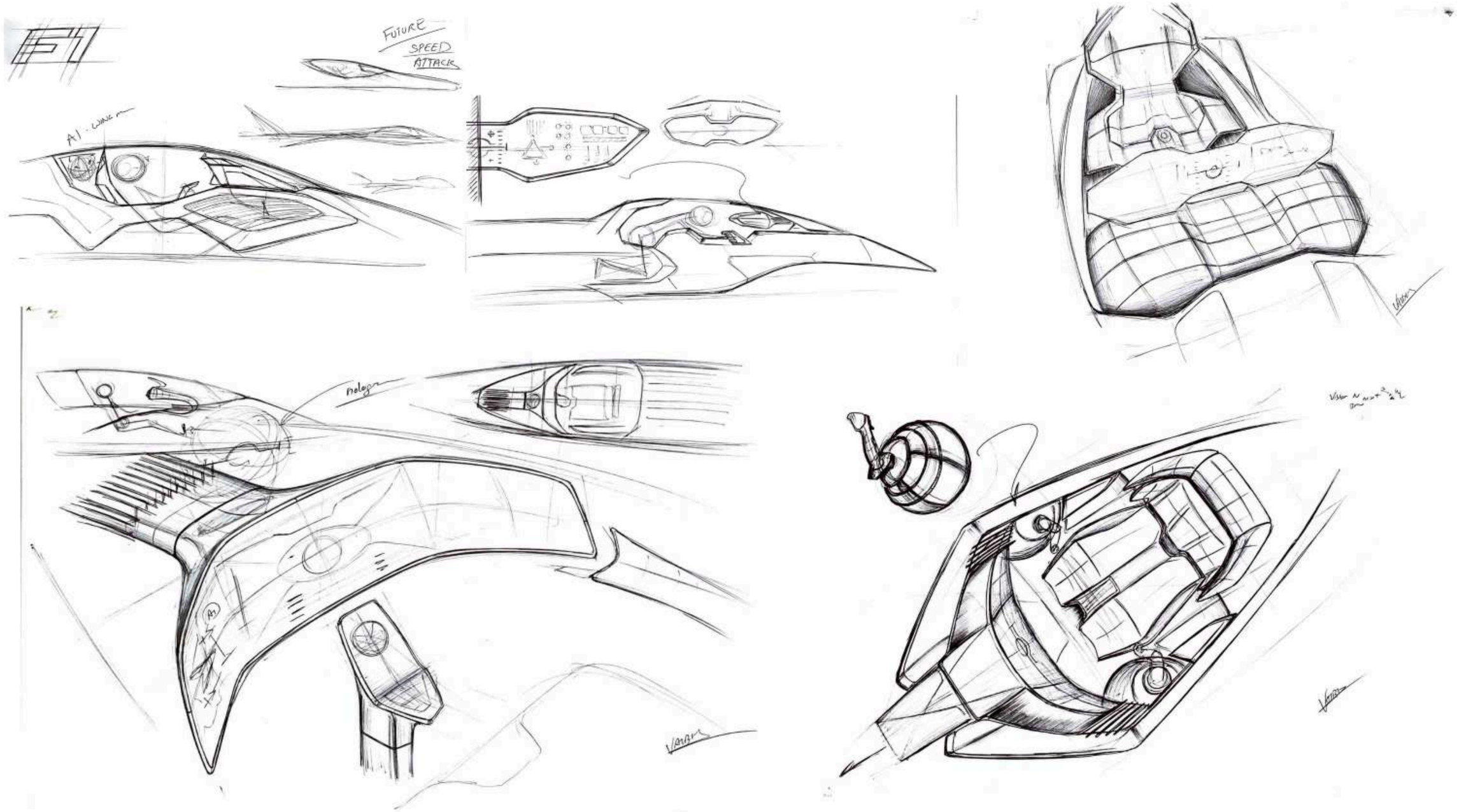


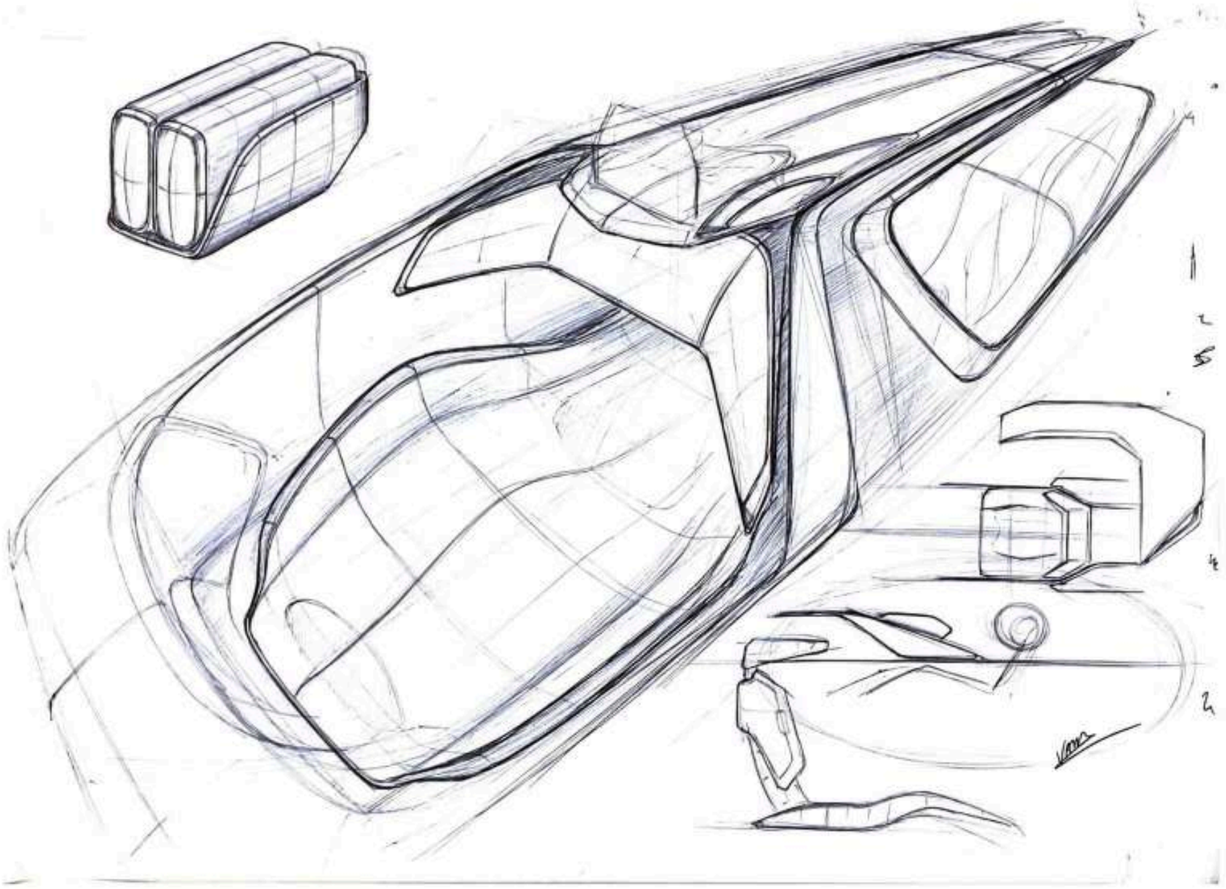


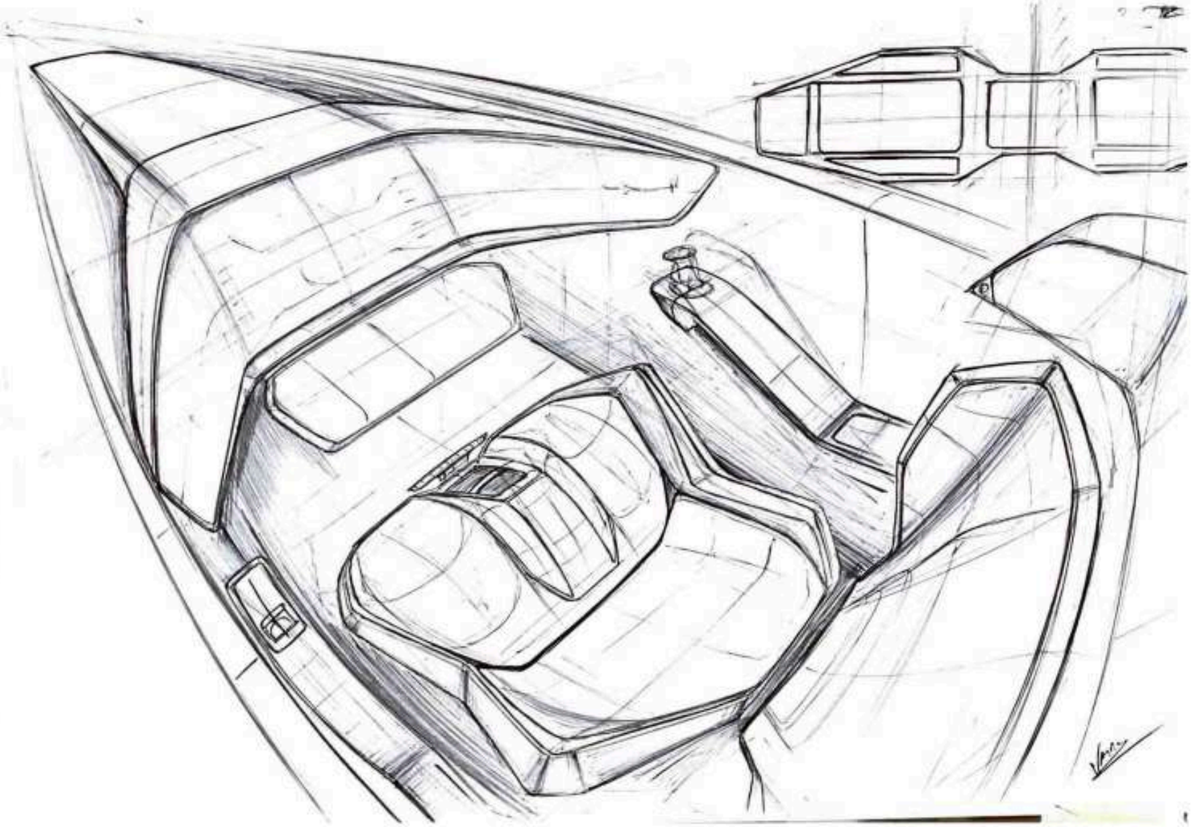
Initial Concepts



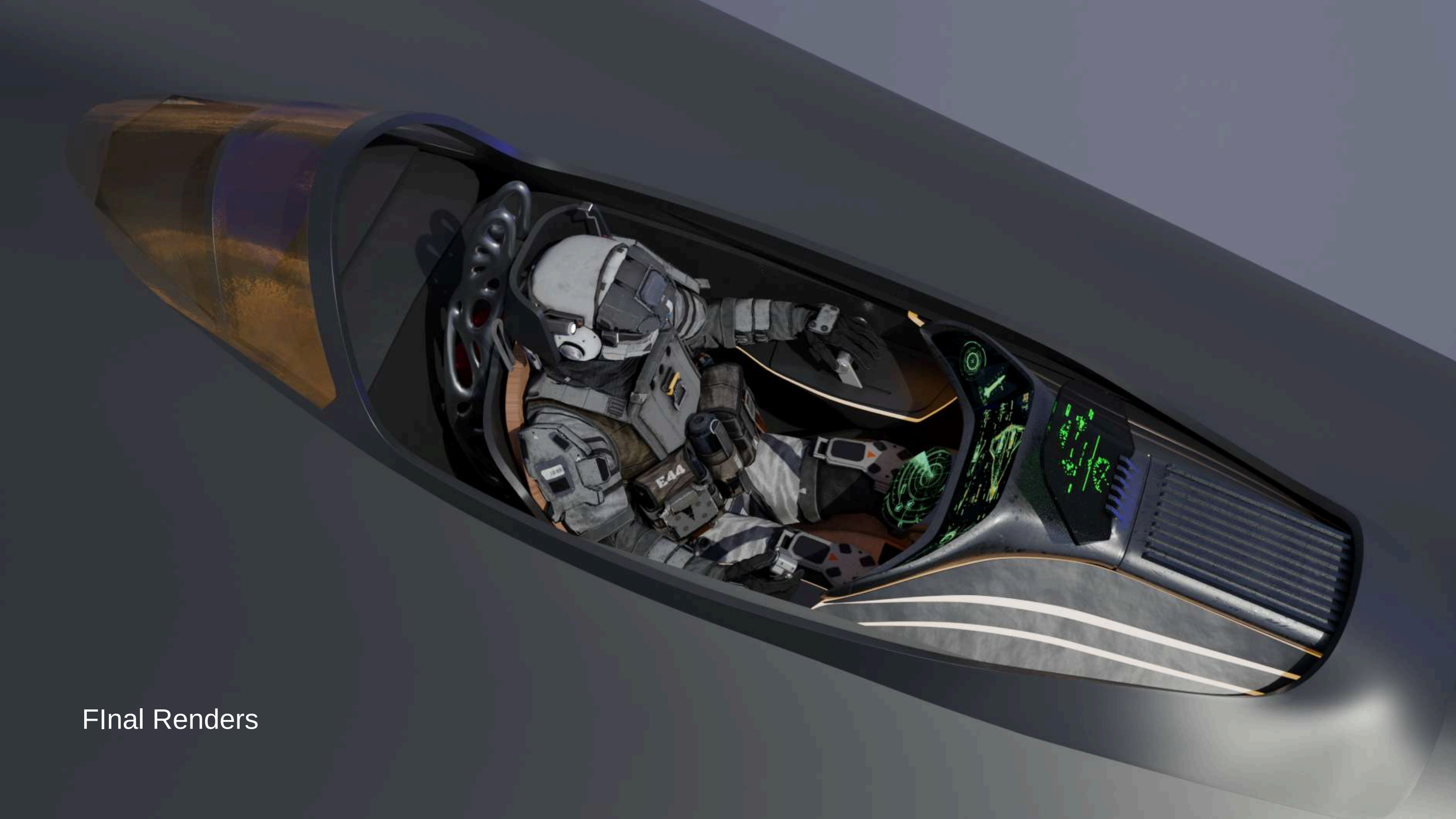



F1
FUTURE
SPEED
ATTACK
A1 - CONCEPT
Hologram



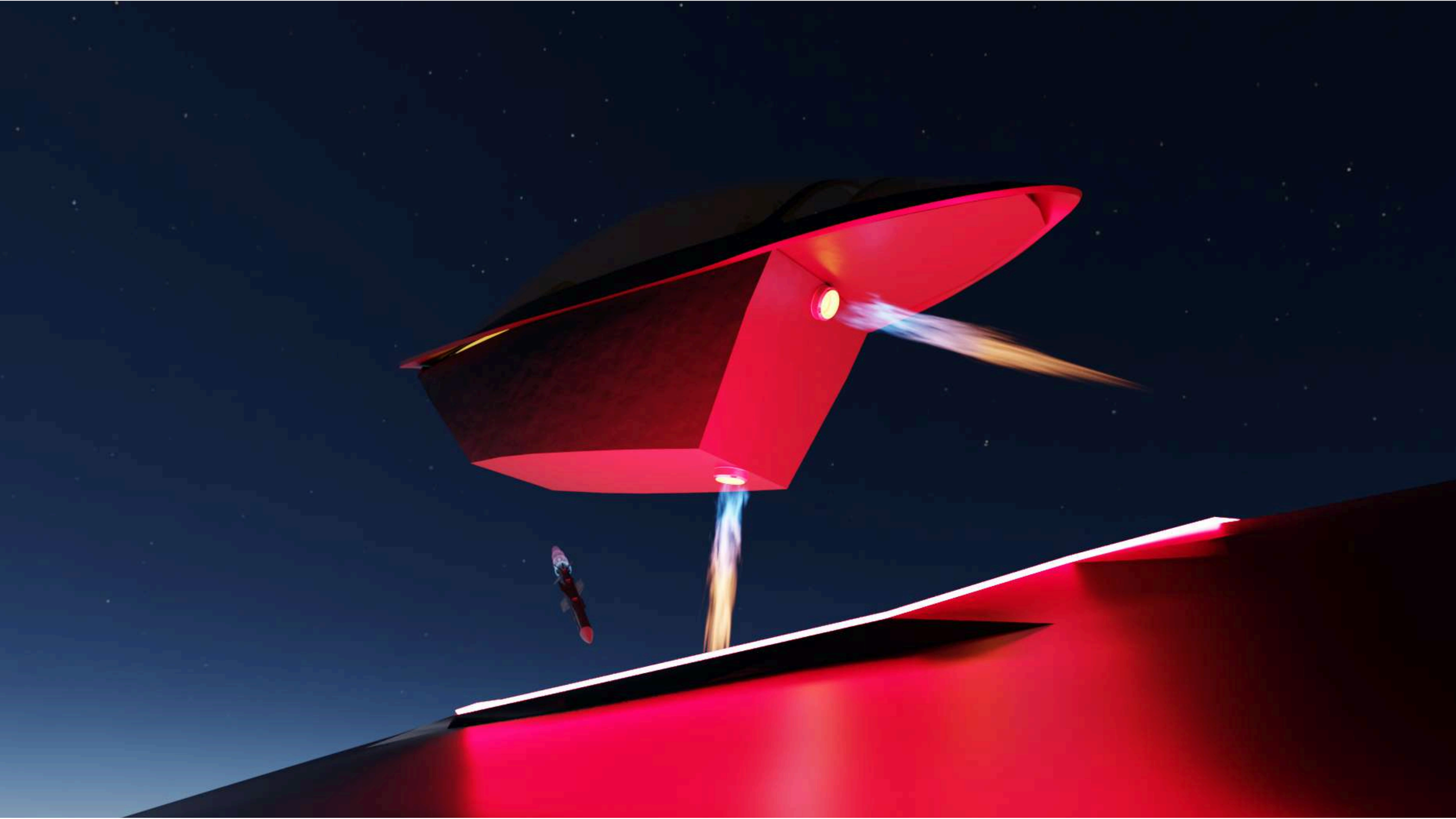


Finalized Directions



FInal Renders

DRDO
INDIA
INDIA
DRDO
INDIA



Thank you

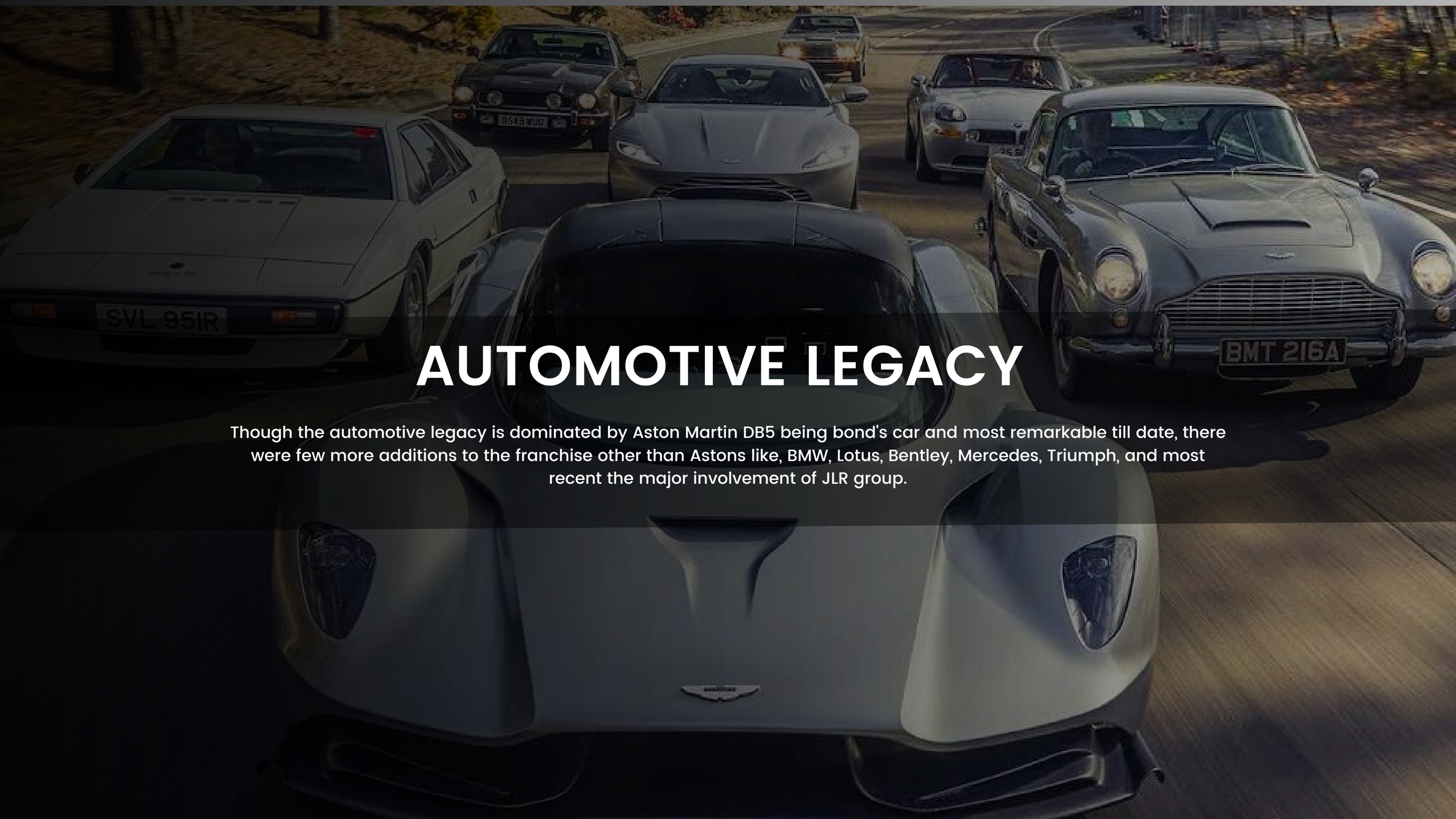
03

WATCH DESIGN X JAMES BOND

Overview

James Bond is a fictional character created by novelist Ian Fleming in 1953.
A British secret agent working for **MI6** under the codename **007.**
He is often depicted as a **peerless spy**, **notorious womanizer**, and **masculine icon.**

Ian Fleming, likely drew his inspiration from more than one secret agent he learned of from his experience working with **British naval intelligence**. **Potential real-life inspirations** for Bond included **World War II secret agent F.F.E. Yeo-Thomas** and **Serbian double agent Dusko Popov**.



AUTOMOTIVE LEGACY

Though the automotive legacy is dominated by Aston Martin DB5 being bond's car and most remarkable till date, there were few more additions to the franchise other than Astons like, BMW, Lotus, Bentley, Mercedes, Triumph, and most recent the major involvement of JLR group.

Aston Martin DB5

First debut in 1964 in Goldfinger, DB5 is one of the most iconic and important part for both James bond as well as Aston Martin franchise by saving a brand and marking a historic car all together, It was the first car to be packed with tons of spy gadgets, and has been favourite since day one of the debut, this one has been featured in almost 7 bond films including the latest "no time to die" with an opening stunt scene.

Idea

The Idea was to develop a limited edition watch collection for marking the success and impact of James Bond as a character as well as a blockbuster franchise in history of cinema.

The lineup will be created for the year 2023, to celebrate 70 years of creation of James bond as a character, created by novelist "Ian Fleming" in 1953.

Target Market

- A potential watch collector
- A person who is into movies and collects memorabilias
- James Bond fans
- age group 30+
- entepreneur

Has a good taste in
Luxurious/premium lifestyle
Houses
Cars

Trend Takeaways

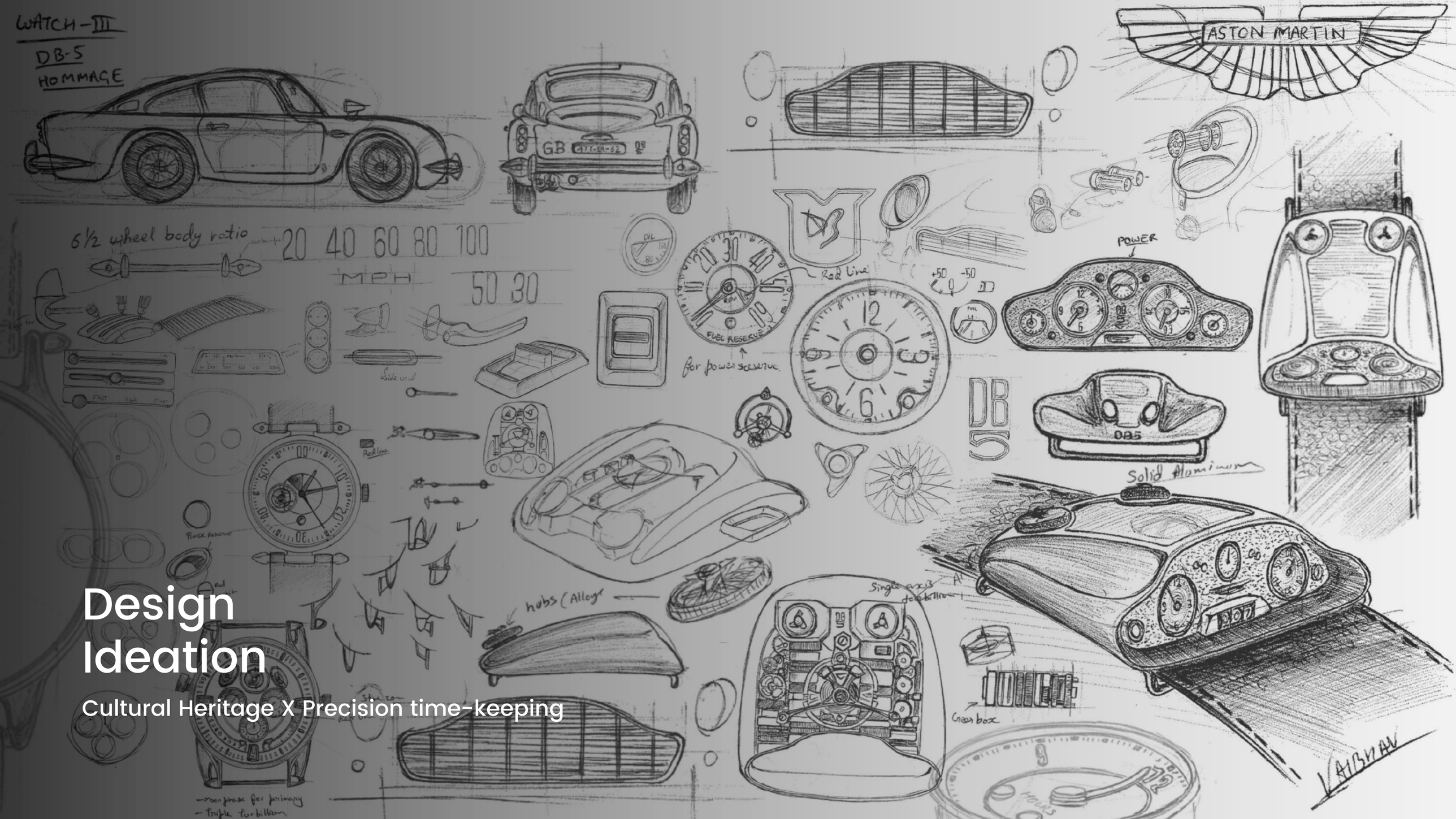
Collabs
greens and greys
divers
retro
Car collabs
skeletons

Timepiece

Aston Martin DB5

A hommage design for the DB5

Design Inspiration Board



Design Ideation

Cultural Heritage X Precision time-keeping

FINAL DESIGNS AND RESIN PRINT PROTOYPES

ASTON MARTIN DB5 LIVERY

symbol of timeless elegance and sophistication. Its sleek design and powerful engine made it the perfect car for high-speed chases and daring escapes. The iconic car has become synonymous with the James Bond franchise and continues to capture the hearts of fans worldwide.

OPEN HEART MOVEMENT

Resembling the DOHC of DB5's straight 6 with a fusion of Cabestan and Jacob&Co's inspired movement, The open heart mechanism is designed with cylindrical gears and hanging tourbillion in the center.

THE CROWNS

Inspired from the spoked wheels, which were a popular design element in the 1960s when the car was first introduced. The spoked wheels on the Aston Martin DB5 are a unique and recognizable feature that adds to the car's overall aesthetic appeal.

CROWN

OPEN HEART/ENGINE

GRILLE IDENTITY

SPOKE WHEELS

DASHBOARD STYLED

RESIN PRINTED PROTOTYPES

Quick prototyping of the collection of four 007 themed watches consisting of pocket watch, divers watch, a movie memorabilia and the DB5.

A quick visualization of the timepiece and how it'll reflect it's elegance and culture in real life.

With the open heart movement and front dash dial representation, DB5 is a perfect livery for the legacy of 007.

Complete collection showcased on the website.

04

HI.VI

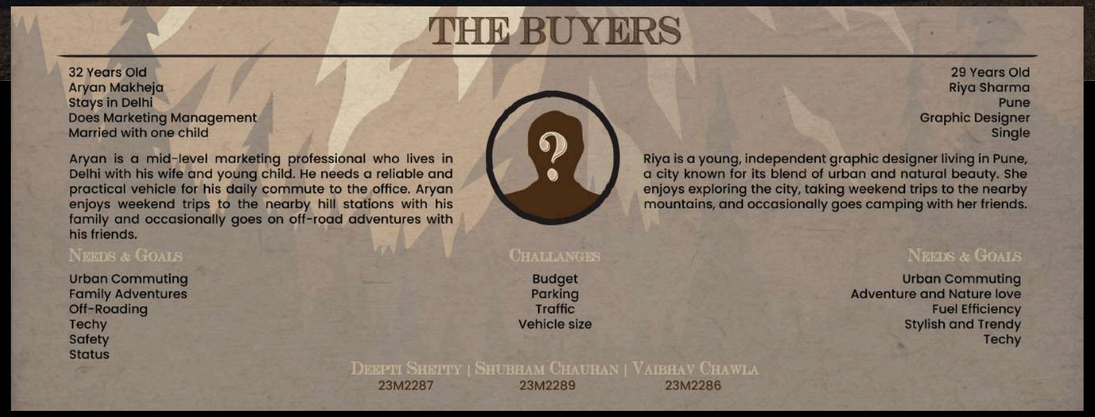
Sub-4M SUV Design Project

A collaborative group project with the help of Deepti Shetty and Shubham Chauhan.

The project is about empowering and enriching the lives of women in India, celebrating their values, and delivering a driving experience that's journey of self-discovery. In every detail, from its style and functionality to its unwavering focus on well-being, this SUV is more than a vehicle – it's a companion, a confidant, and a true reflection of your desires.

Market Understanding

Here we tried to understand on what market we'll be working, what is the audience, what are their needs, what are the current trends, and what is going to be the future prediction for the area we are working in.



Study done to understand the market conditions and future options in the market presented in a poster format.

User needs after the interview stage

Most of the people out of survey aspires to take their SUVs on mountains and hills, followed by riverbeds, snow region and complete offroading capabilities.

Following up with the the future of automotive interiors, minimalism yet futuristic was the most picked choice of the scenario.

Interviewees chose experimental yet premium materials for the interiors, like marble, wood, resin composite, along with raw carbon fibre feel to it.

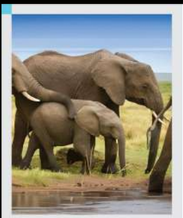
Lastly for the color schemes, exterior revolved more towards shades of Blues, white and blacks, followed by orange, sap green and Dual tone electric finish.

Majority of people percieves SUV with character like, Power, Pride, Trust and Strength.

Majority of people percieves themselves to have a fun experimental personality, with a formalness in it, and on weekends which switches to adventurous, outgoing person.

Talking about technology, the reviews were more focused on safety aspects of the vehicle, yet there were a few cosmetic updates that also grabbed attention of the users like ambient lighting, active ground clearance, etc.

Pride



Trust

Strong

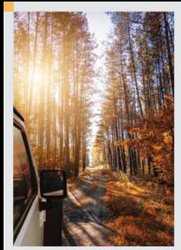
THE TAKEAWAYS

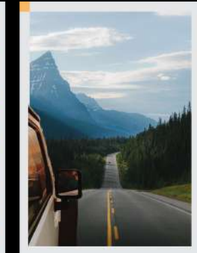
Adjustable vehicle height and wheelbase

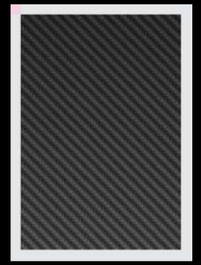
Immersive Touch and Lighting

AI HUD, Frosted Glass Display

Holographic/Curved HMI





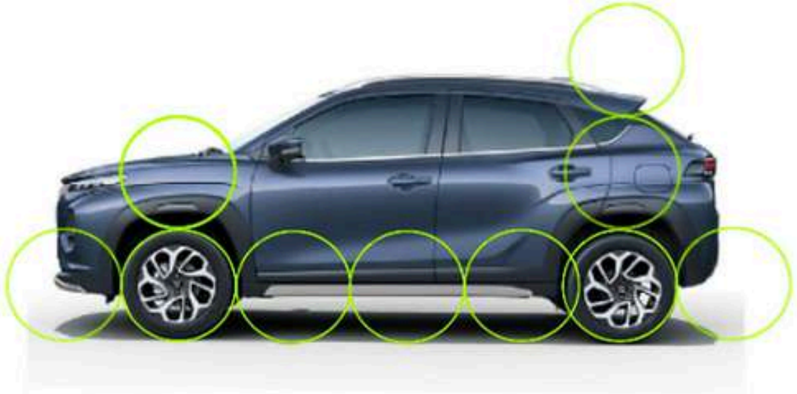


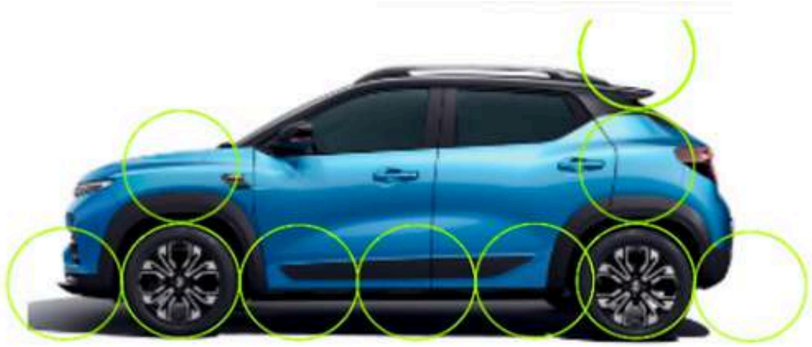
Dual tone

Card Sorting Exercise was conducted to better assess the aspirations, needs, and wants of the user byt giving them an option to choose what reflects best for them.

Ratios & Proportions

2.8 wheel, wheelbase was fixed

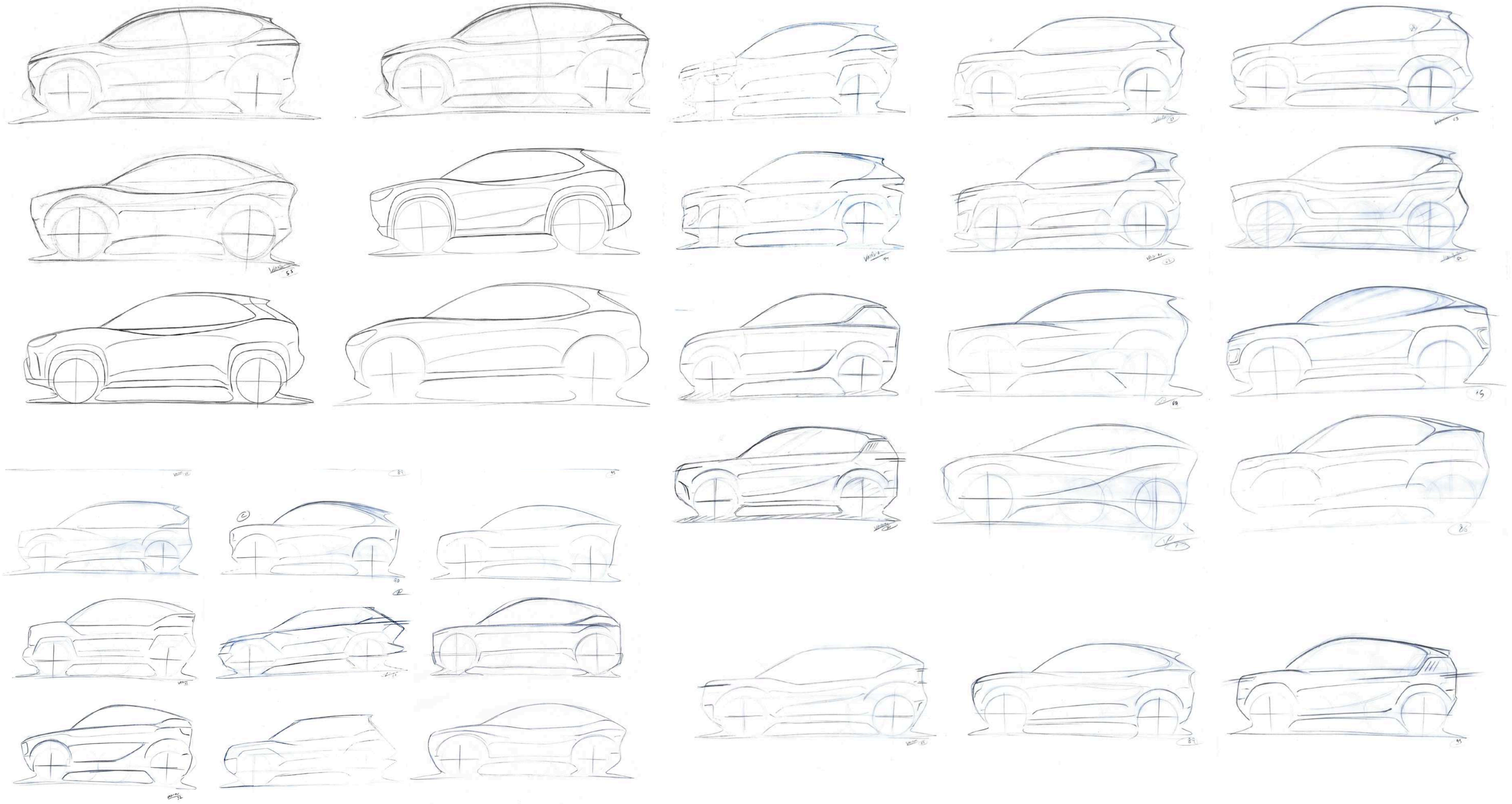


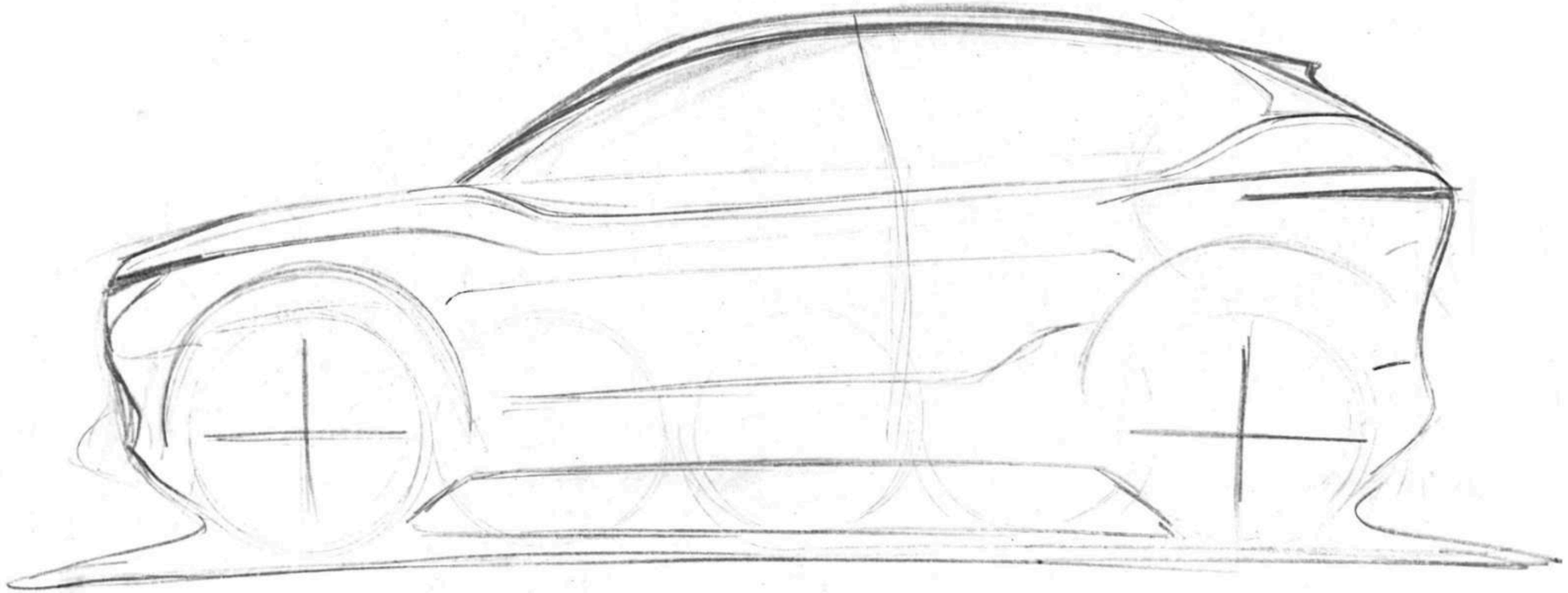


2.8 wheel

2.8-3

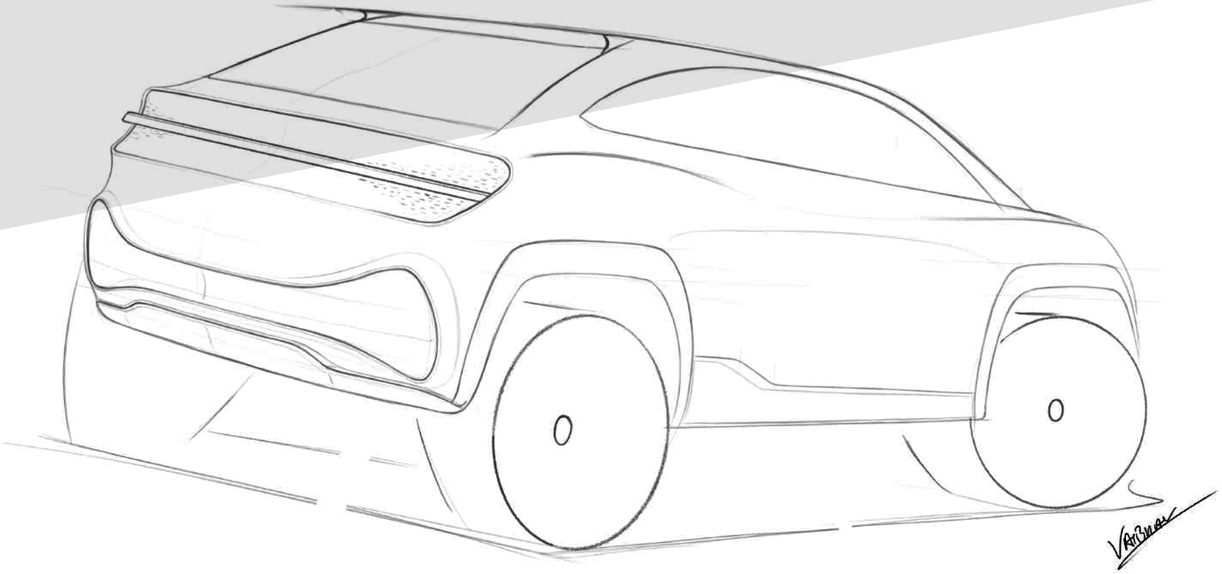
IDEATIONS

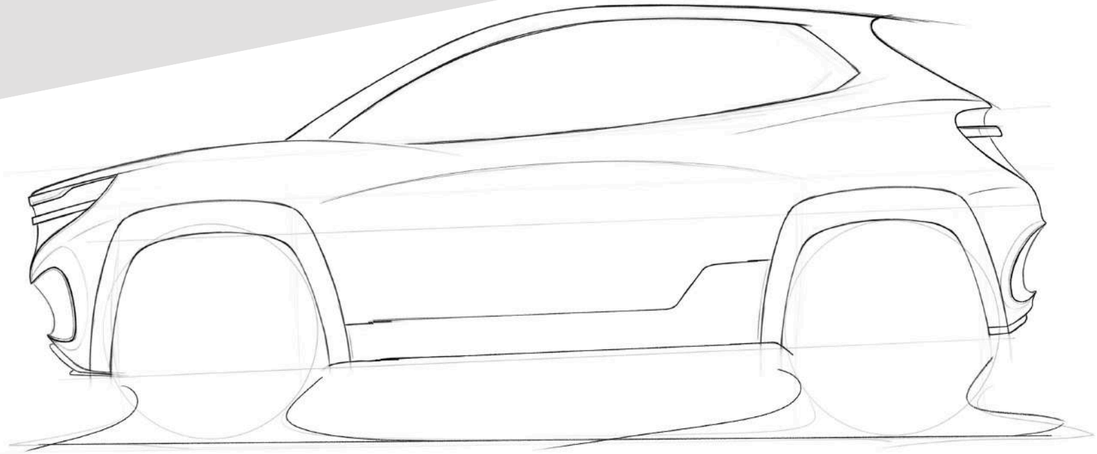


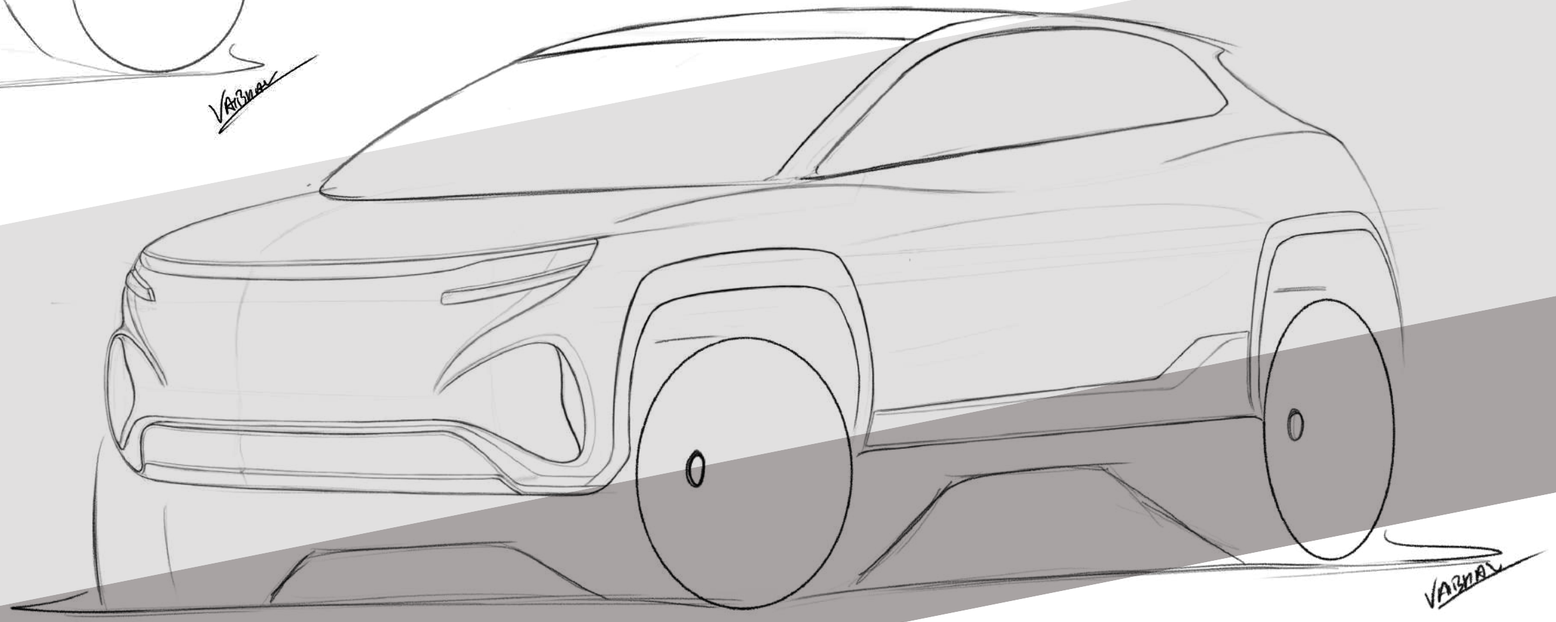


Final Direction to further develop the concept

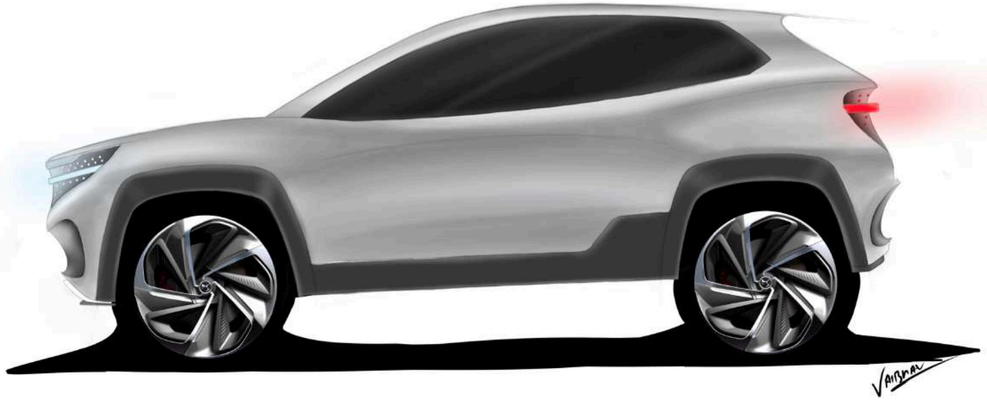
Final Form







VARNAV

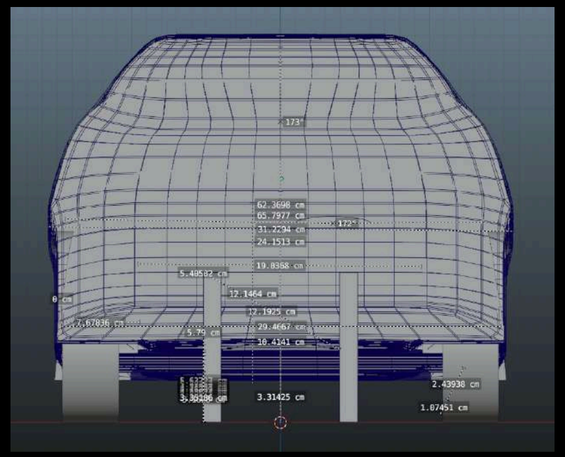

VARNAV

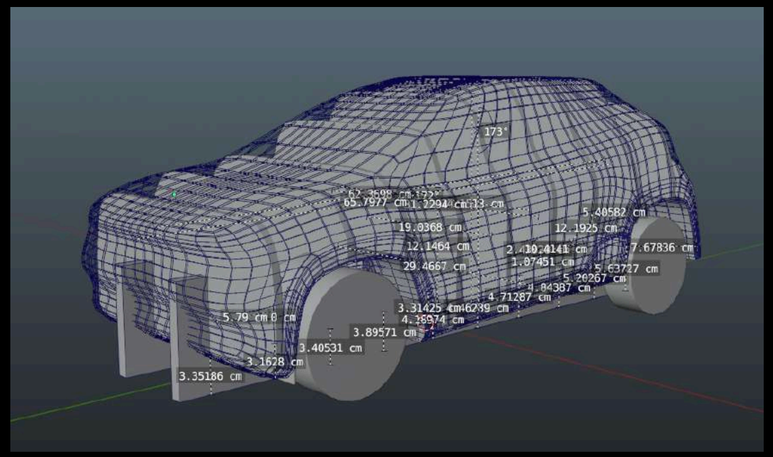
VARNAV

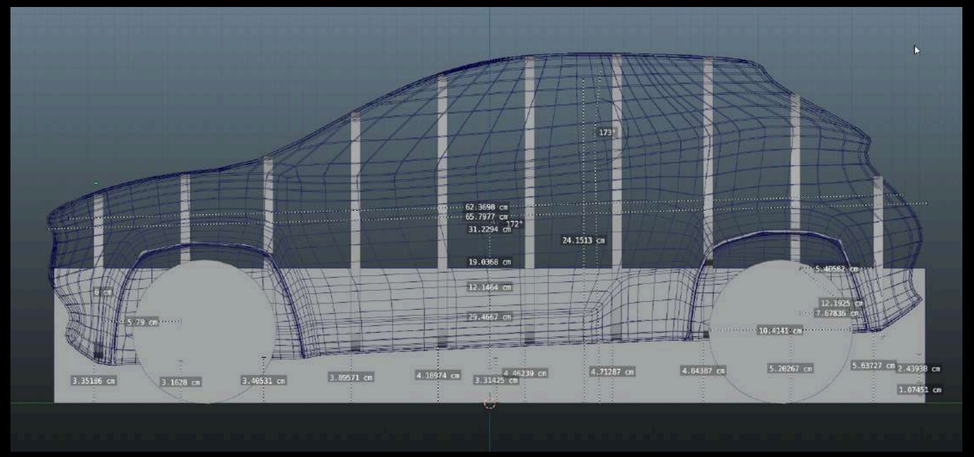
03

CLAY SCULPTING

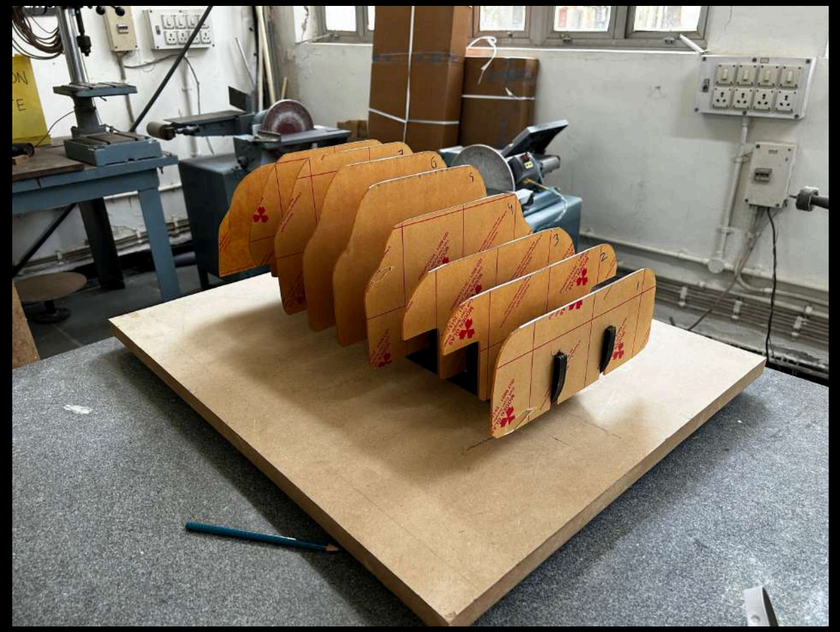
A Work in progress for the SUV design done in an earlier project.
A group project backed up by Deepti Shetty and Shubham Chauhan.

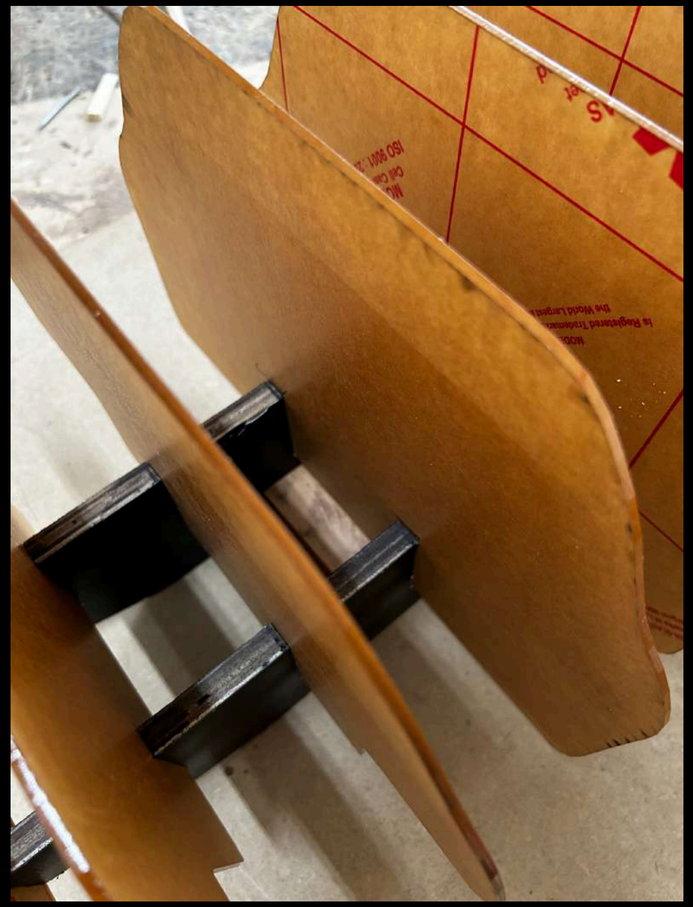


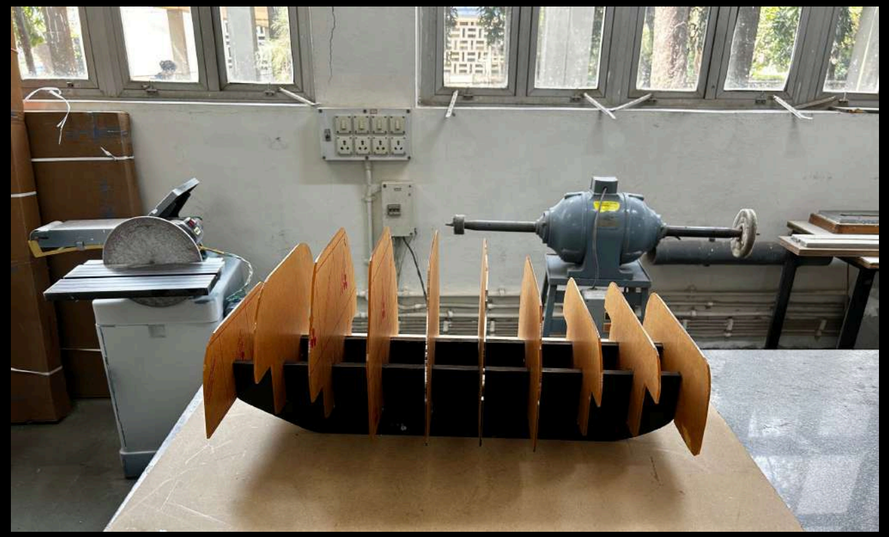




Preparing armature for lazer cutting using Blender





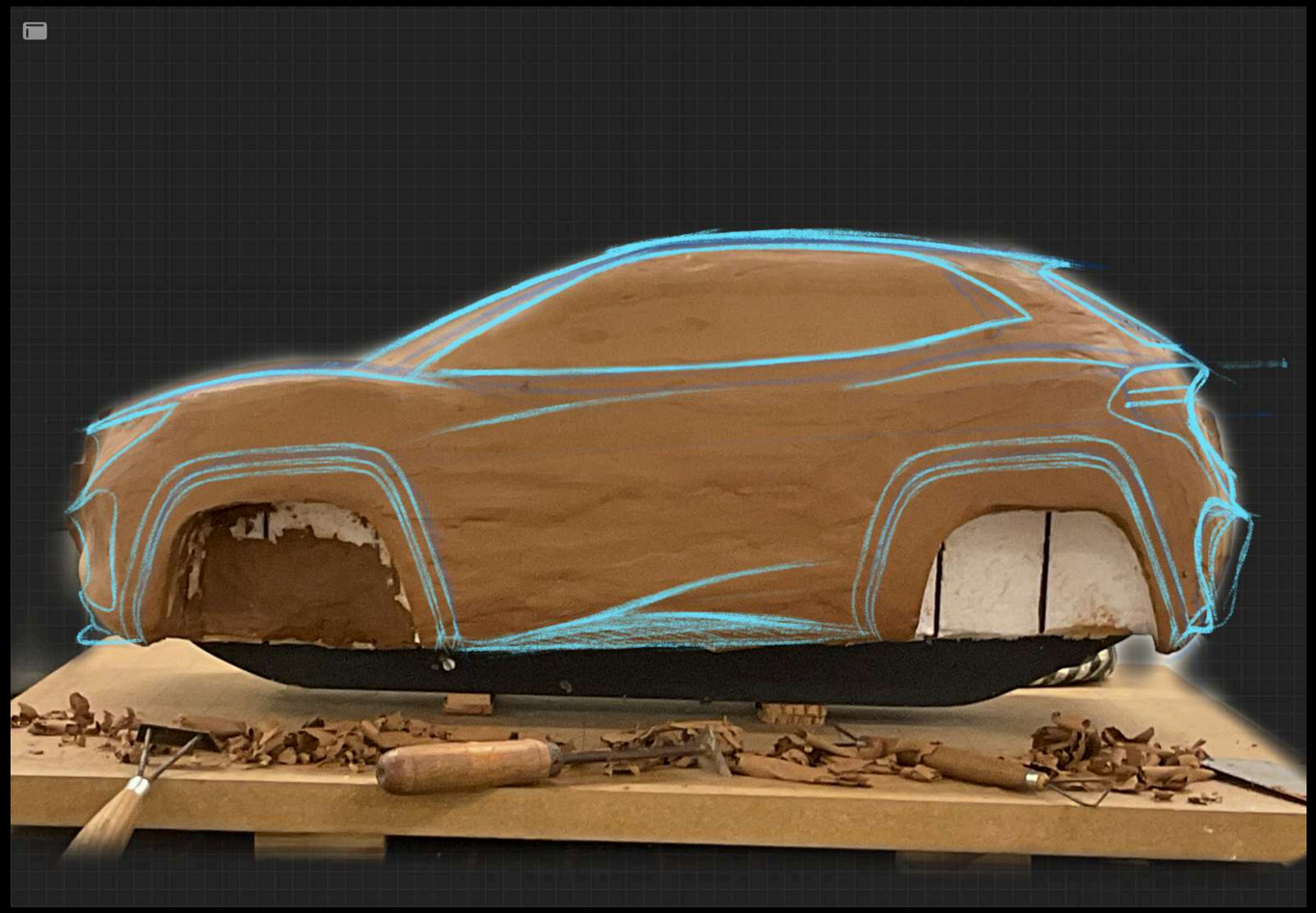


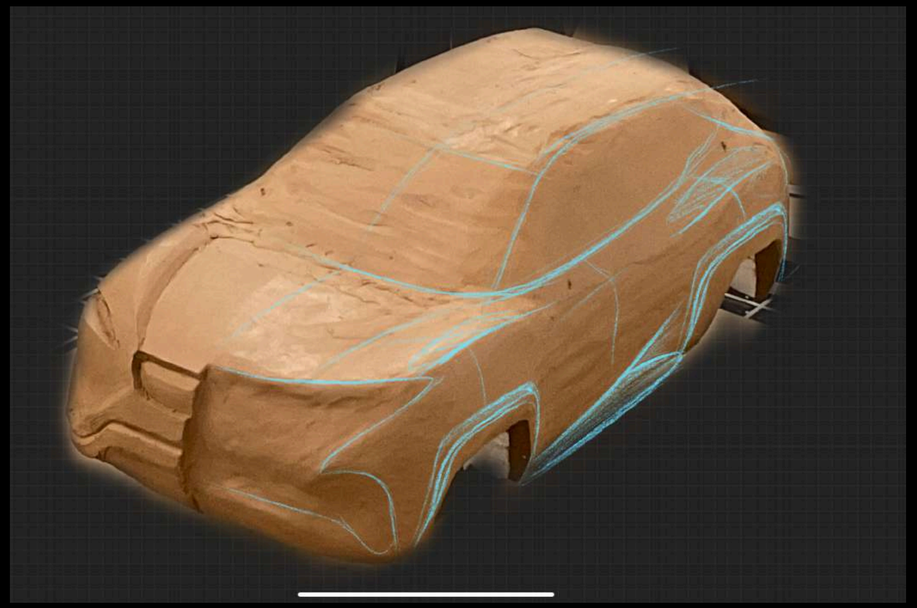
Prepare lazer cut armature and a solid base to work for further stages like thermocol sections and clay deposition.

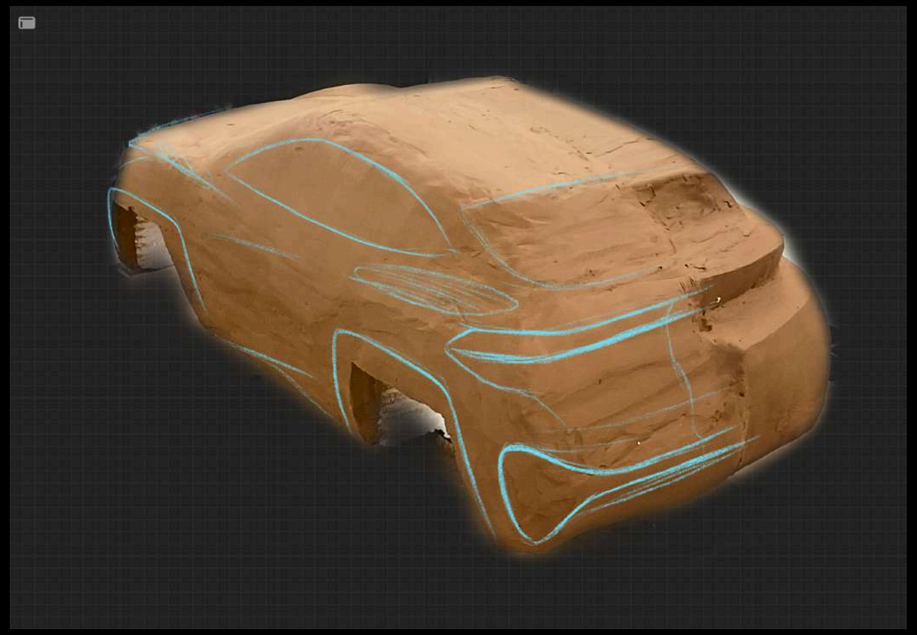
STAGE 01

STAGE 02

CLAY
SKETCHOVERS





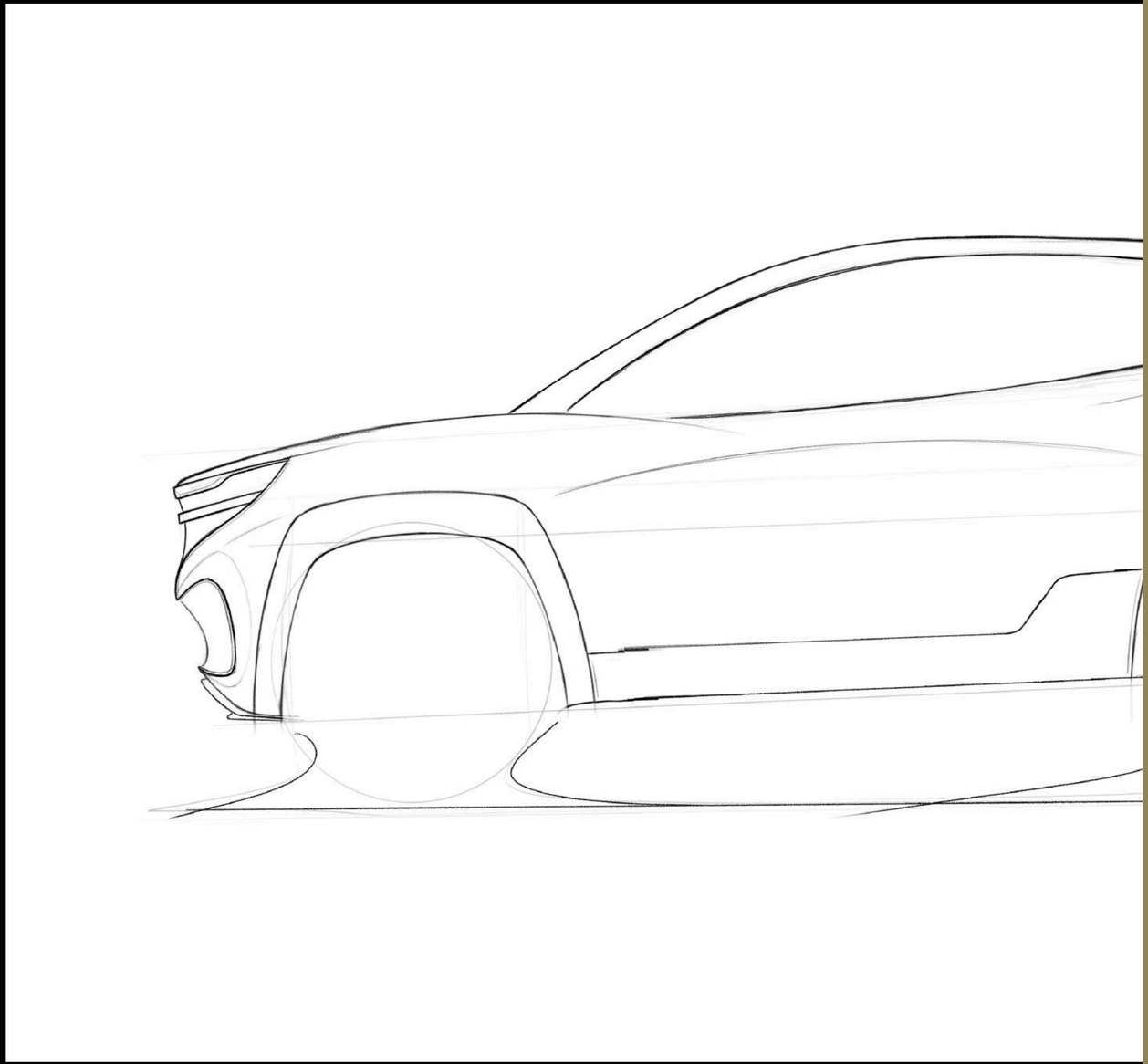


W.I.P.

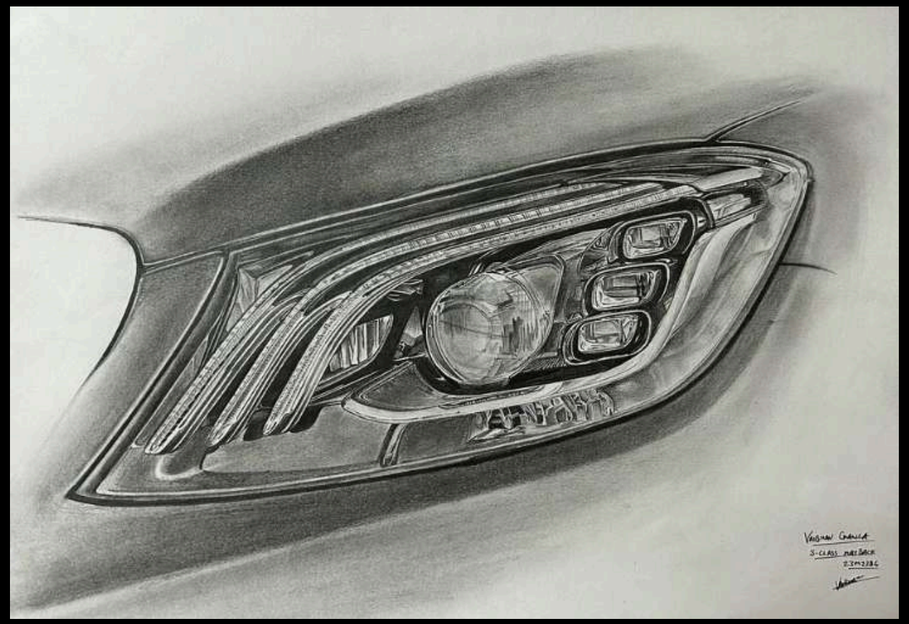
12 IW C
13 Wash Basin
14 Soap dispenser
15 Towel Rail/wallmixer/shower
16 Roor Holder
17 D-Handel/FRD/open
18 Door closer/FRD/Hinged
19 Flush Bolt
20 Tower Bolt
21 Deal Lock / FRD/ Nm
22 Hinges
23 Window Nib lock
24 window Handle lock
25 window Hinges
26 L- Drop for Duct Door
27 Magnet Lock
4 6mx1200 Mirror Fiber → 1526 Sqm
3 6mx600 Metal Tiles → 3068 Sqm
4 6x1200 Metal Tiles →
5 C cum Bond
2
3
Oil Paint
Vinyl Flooring
IPS Flooring / Room / Duct / window
Flush Door with Hardware Filling
11 Otic Door / Gold / Frame / Hardware Fittings
12 Gypsum Plaster
13 AC Block – 7", 6", 5", 4" & Terrace floor
14 All Types of Glass / 6mm Window / Laminated Glass / 8mm Door vision / 10 mm ofc ofc
Seagull

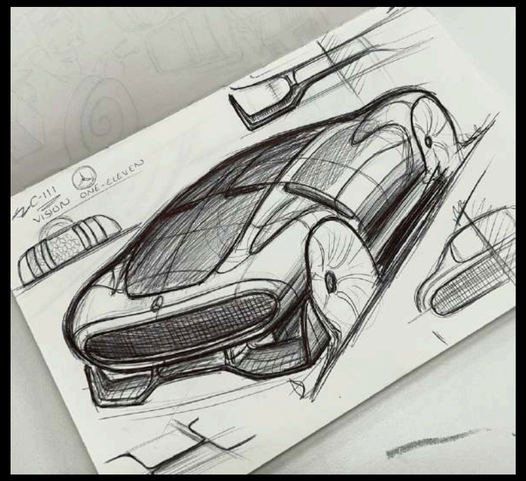
06

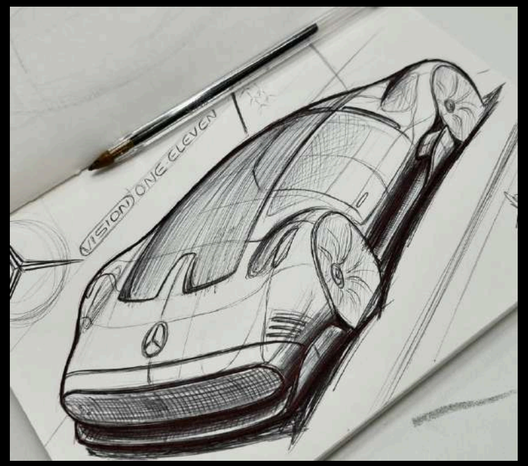
Sketching & Rendering

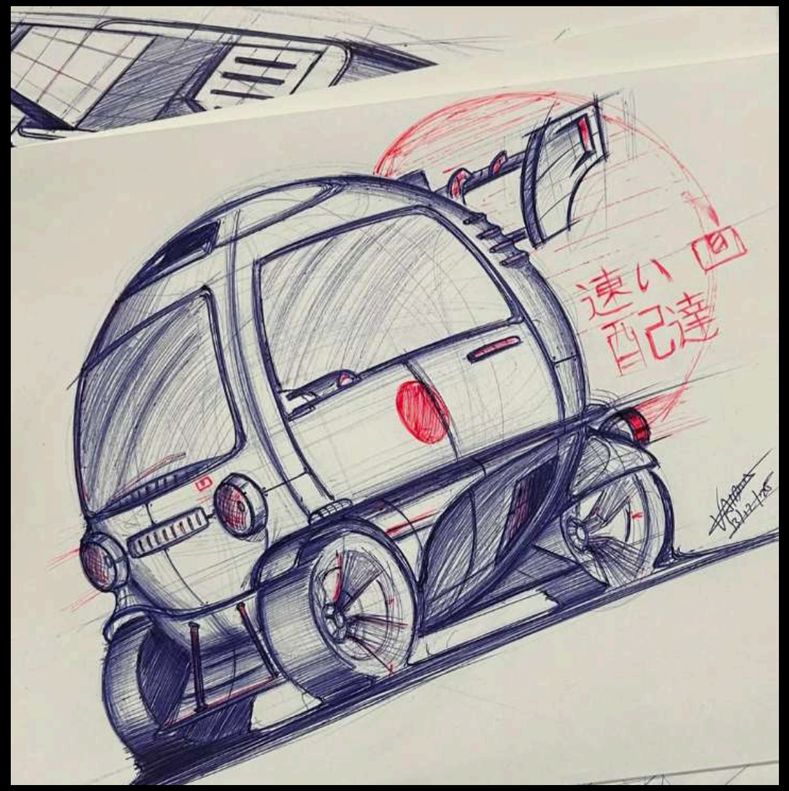


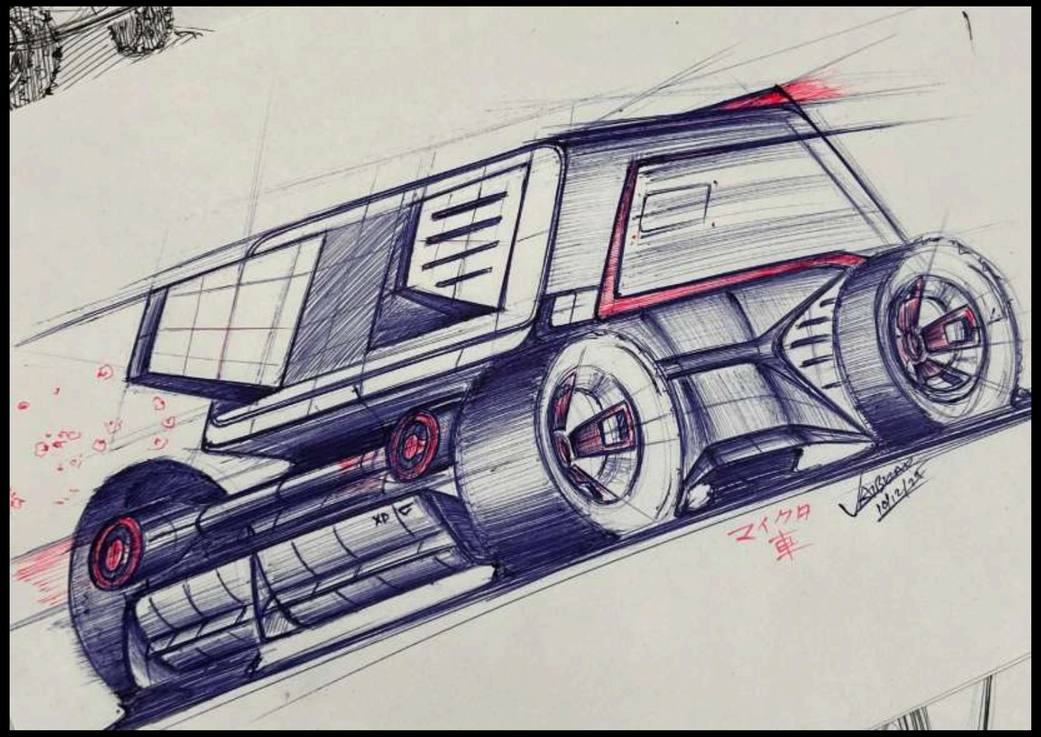
VAIBHAV

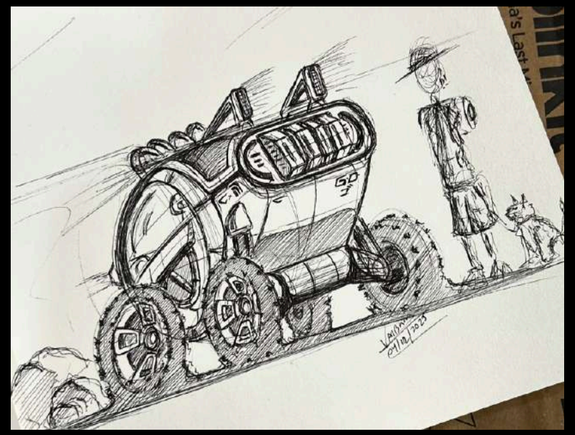


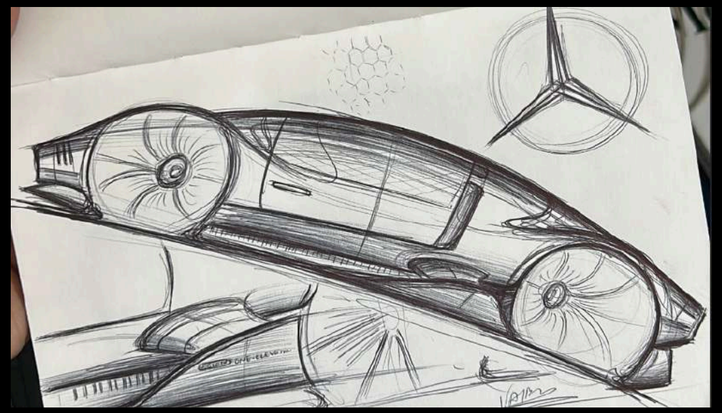

C-111
VISION ONE-ELEVEN


VISION ONE ELEVEN

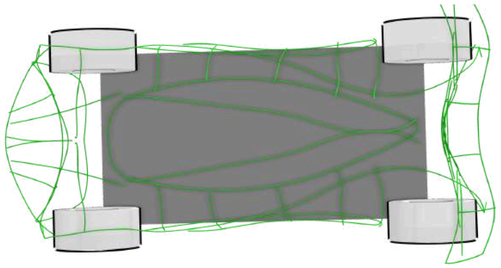

速い
配達

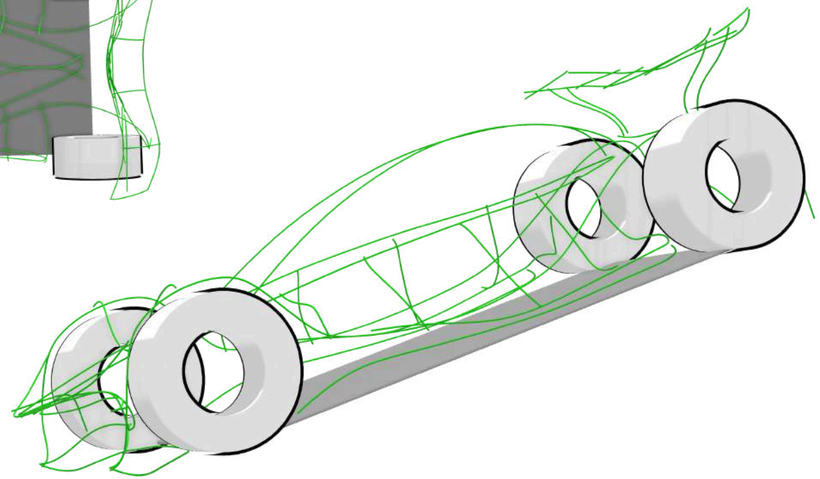

マイクロ
車

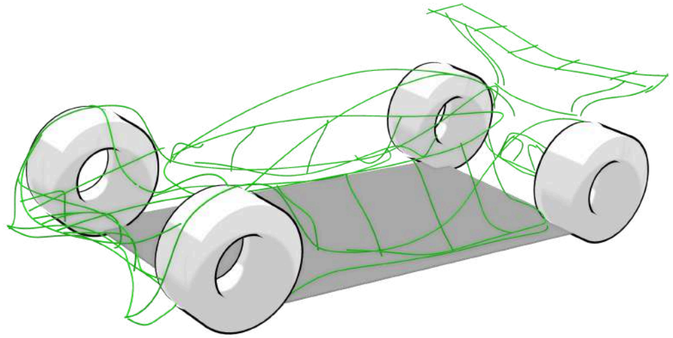




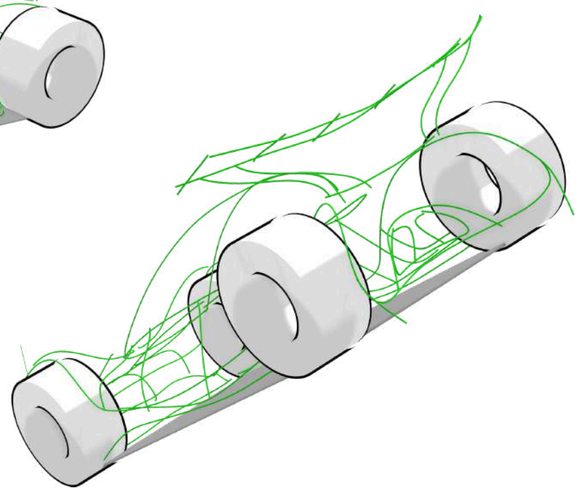
Gravity Sketch Explorations

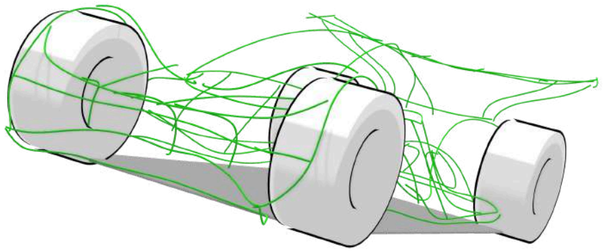


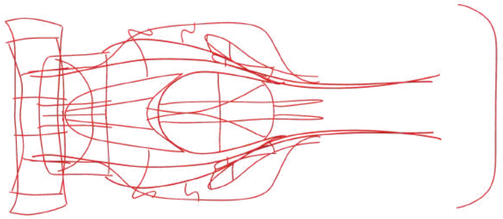


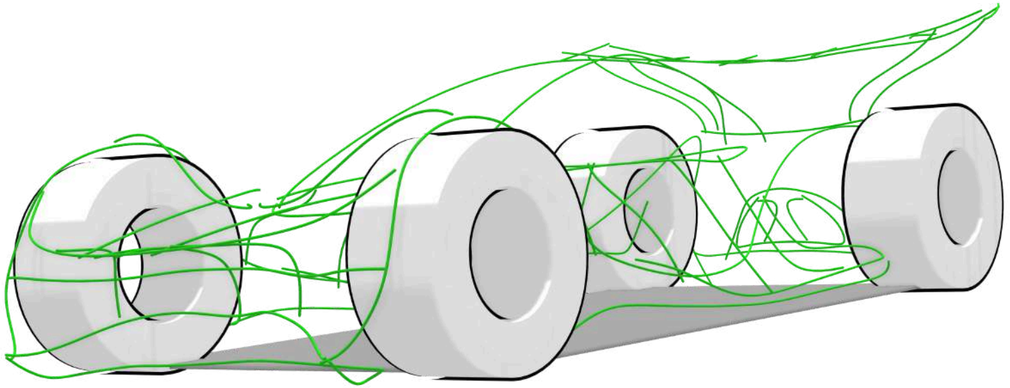


gravity sketch



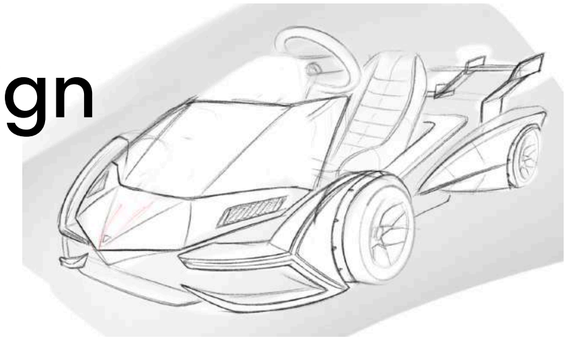






gravity sketch

Go-Kart Design



07

3D Modelling & Rendering

85610

2626
62

Cockpit modelling & rendering

Thank You