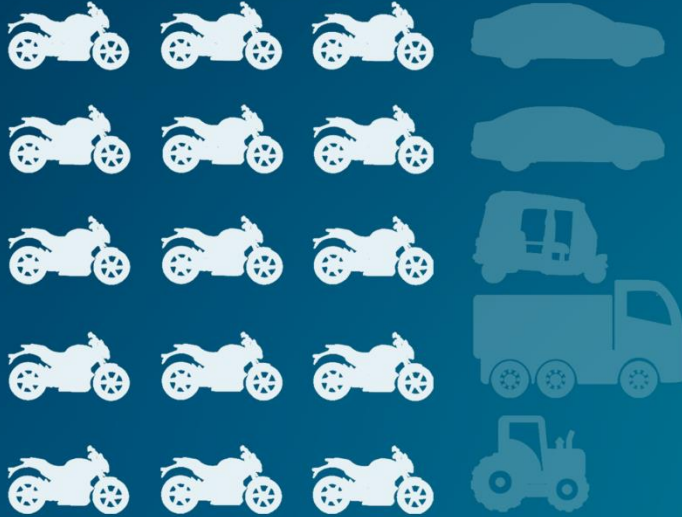


Design of Urban Commuter

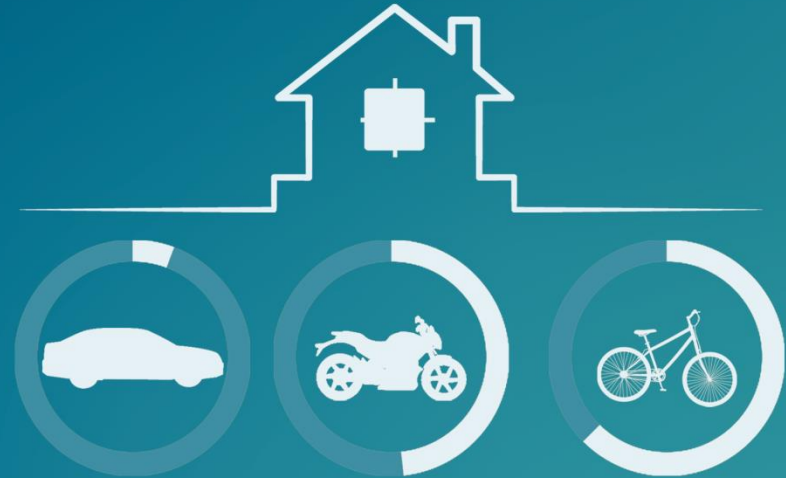
to bridge gap between two wheeler and four wheeler

PRE RESEARCH ON AUTOMOTIVE INDUSTRY IN INDIA

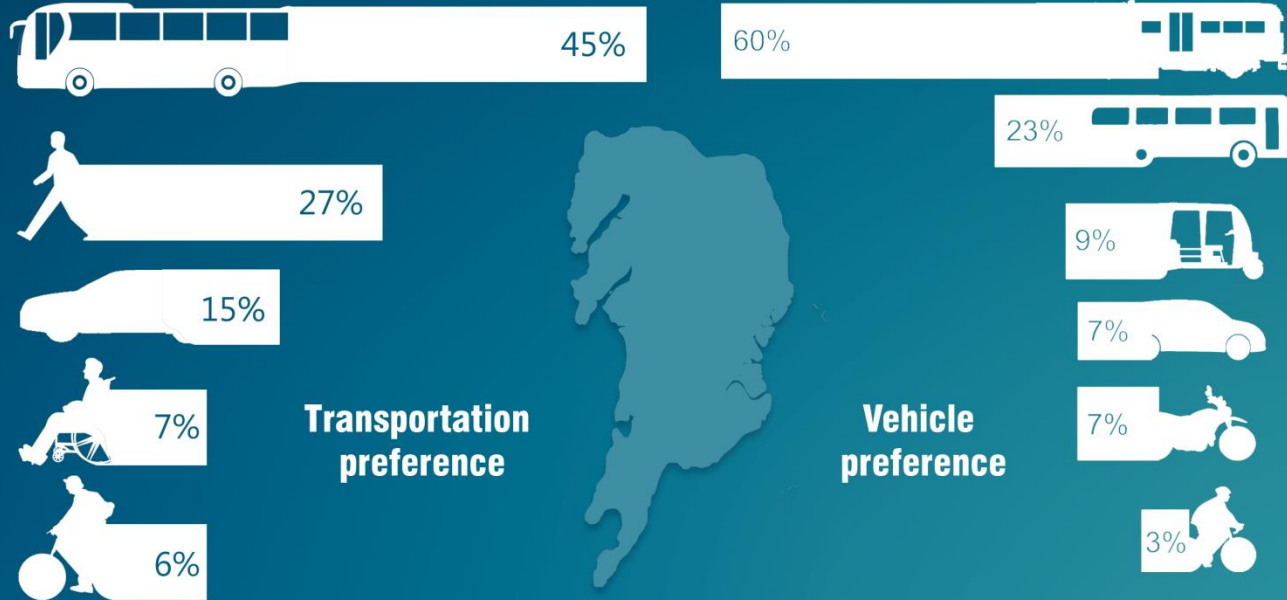


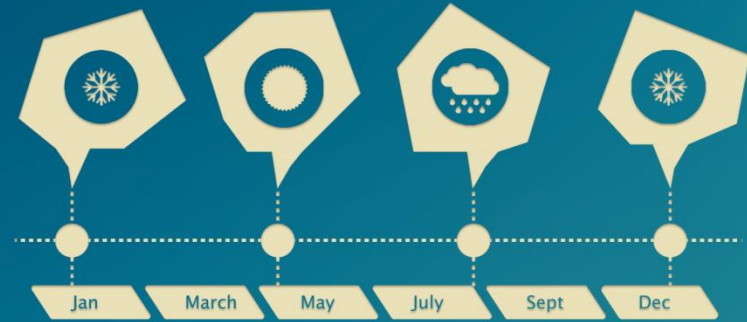
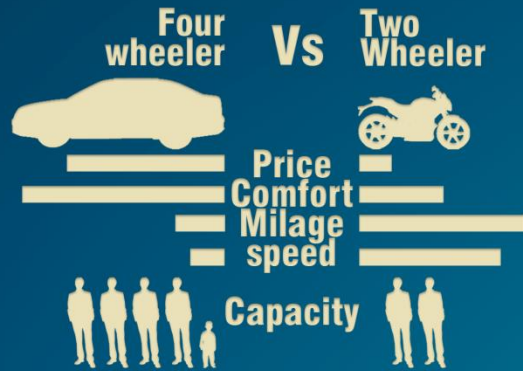
Two wheeler cover 80% market share

Percentage of household that have vehicle

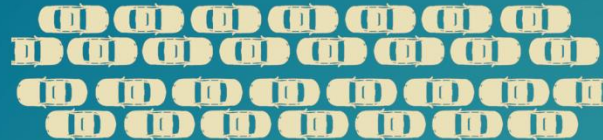


How People commute in Mumbai





**Air pollution
due to vehicle**



430 Vehicle / km in Mumbai

**INDIA LOSES ₹60,000 CR
DUE TO TRAFFIC CONGESTION**

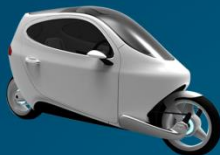


Lit C-1

₹16 Lakh 

200 Km 

363 KG 



GOLD WING F6B

₹14 Lakh 

225 Km 

369 KG 



BMW C1-E

 ₹??

 250 Km

 185 KG



Icona E3WM

₹?? 

150 Km 

400 KG 



Peraves monotracer ecomobile

 ₹70 Lakh

 290 Km

 550 KG



Renault twizy

 ₹5 Lakh

 84 Km

 474 KG

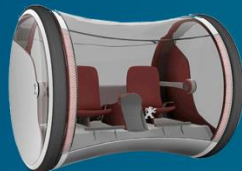


ozone peugeot

 ₹??



 ?? KG



SIMILAR VEHICLES

Honda 3R-C

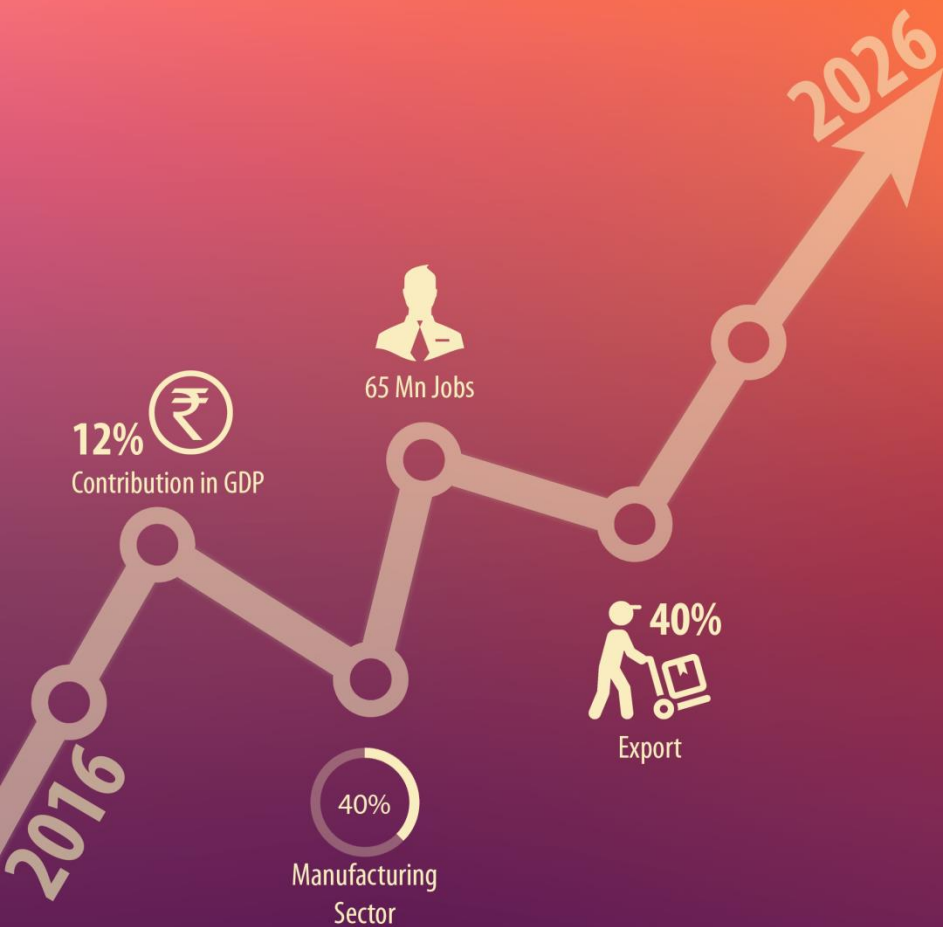
 ₹??

 ?? Km

 ?? KG



SECONDARY MARKET SURVEY



Vision statement of Automotive Mission Plan 2016-26

“By 2026 the Indian Automotive Industry will be the among top 3 of the world in engineering, manufacturing & export of vehicle & auto components, & will encompass safe, efficient & environment friendly condition for affordable mobility of people & transportation of goods. In India comparable with global standards, growing in value over 12% of India’s GDP & generating an additional 65 Million jobs”.



VS



Maneuverability
Lower price
Practical
Cheaper maintenance
Adventure
Enjoyment
Easy
Parking
Traffic cutter

Stable
Road grip
Status Symbol
Social money
Togetherness
Safe
Weather proof
Luggage



Bajaj CT 100

₹36,000



Hero MotoCorp
Splendor PRO

₹43,000

ECONOMY SEGMENT



Bajaj Pulsar
135 LS

₹57,000



Yamaha Fazer

₹83,000

EXECUTIVE SEGMENT



Royal Enfield
Bullet 350

₹86,500

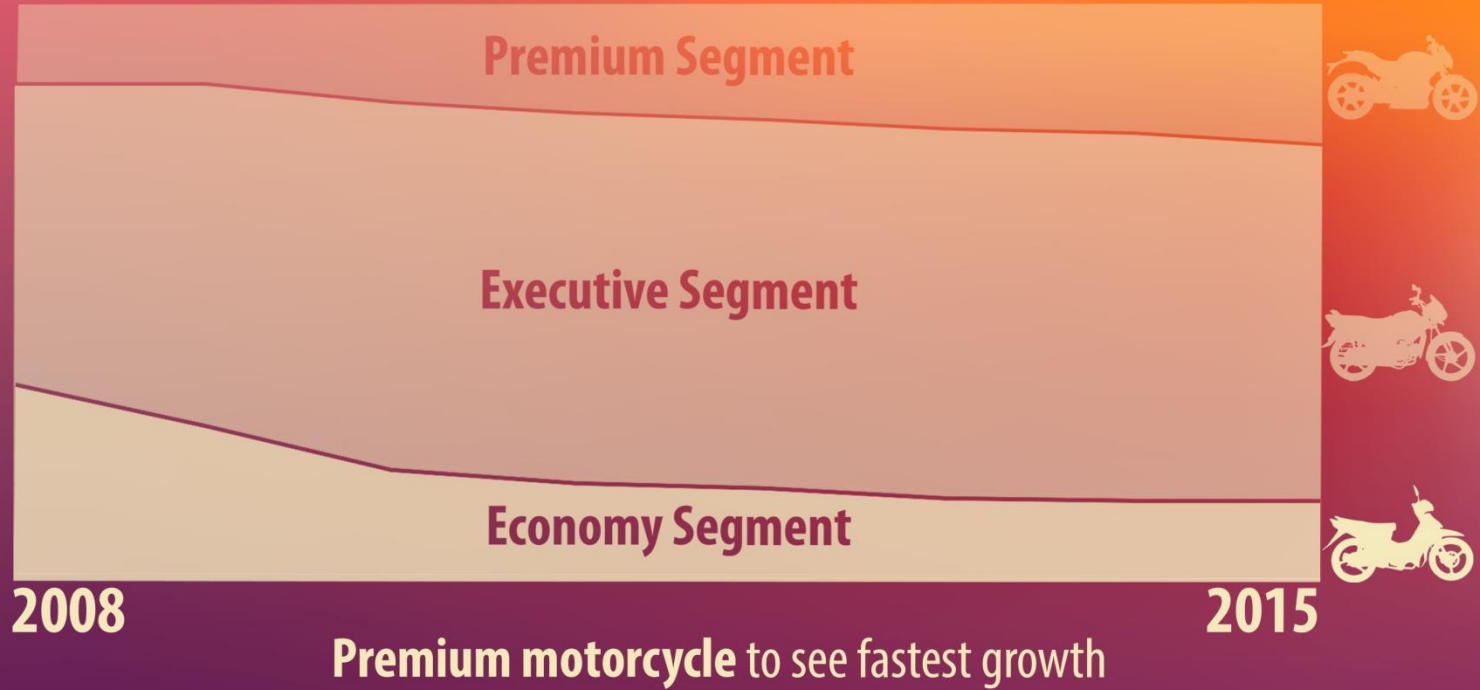


Royal Enfield
Thunder bird

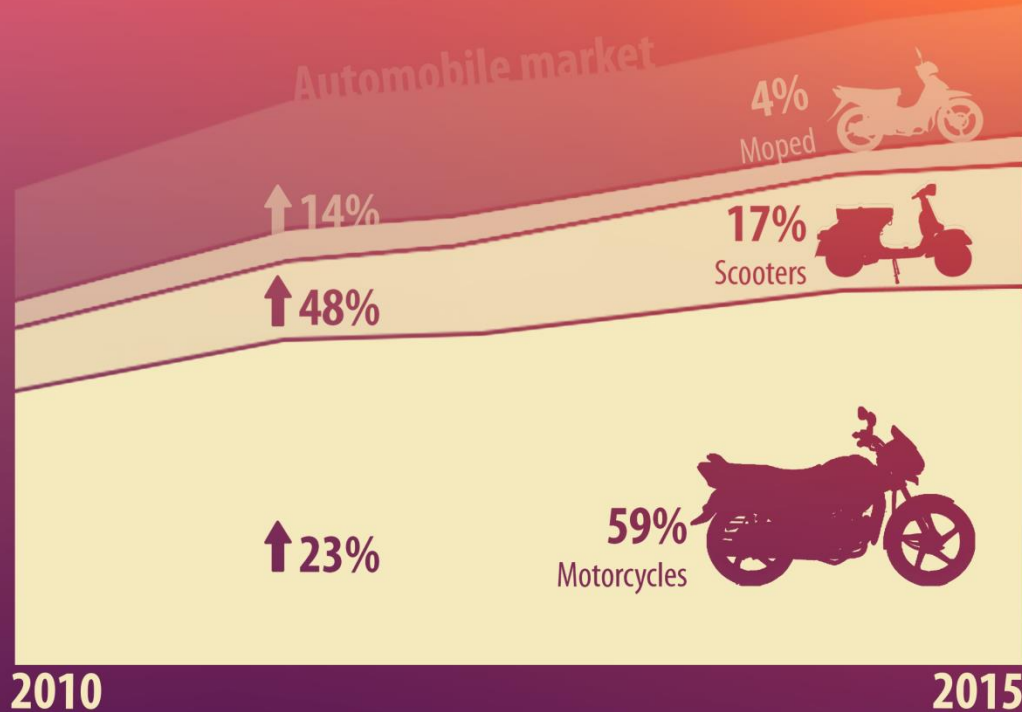
₹1,66,000

PREMIUM SEGMENT

IMPACT OF AFFORDABILITY ON TWO WHEELER MARKET



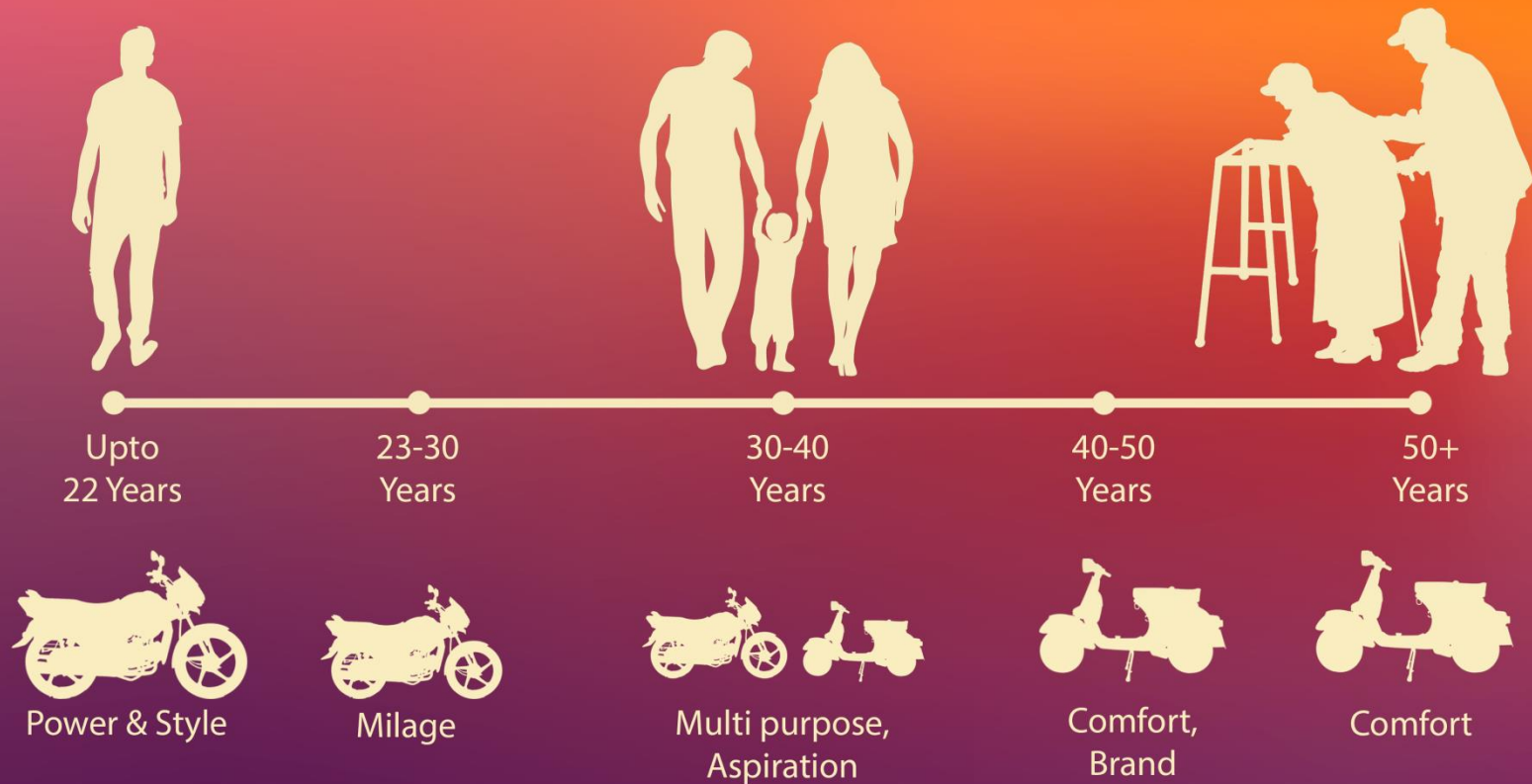
INDIAN TWO WHEELER MARKET AND GROWTH PATTERN



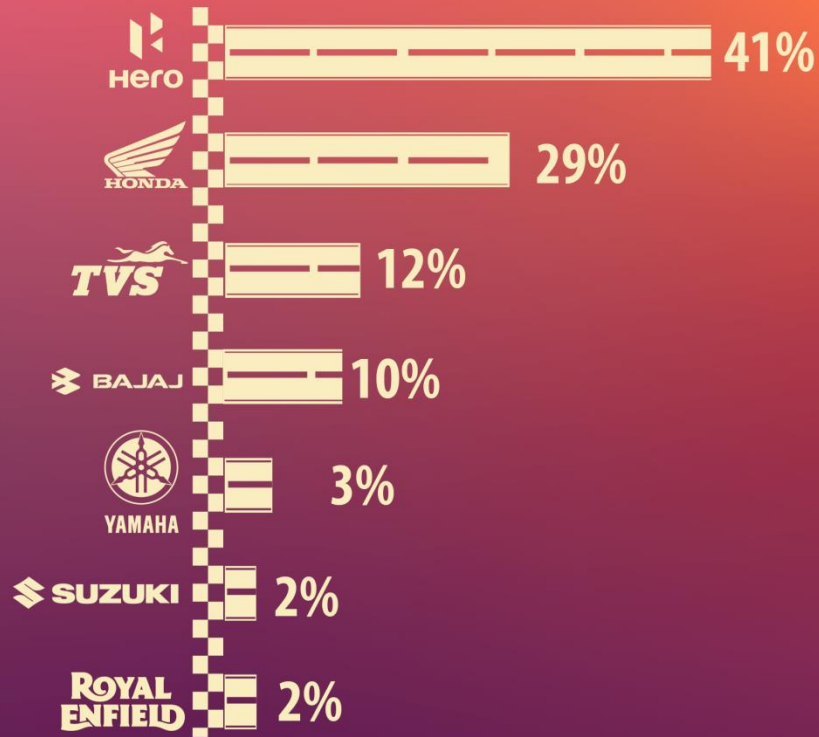
INDIA is second largest two wheeler manufacturer.

Scooters to outperform industry & lead growth

Buying Behavior Analysis



MARKET ANALYSIS



2,26,668 units



2,04,609 units



76,693 units

June 2016 Sales

TAKEAWAY

Two wheeler is **economical, practical** and more **manoeuvrable** vehicle in urban area.

Premium motorcycle to see fastest growth

Scooters to outperform industry and **lead growth**

Buying Behavior varies according to age group

Fresh product like Activa can clock **highest sales**

OBSERVATIONAL RESEARCH

CHILDRENS ON TWO WHEELER





EXPRESSIONS



CUSTOMIZING VEHICLE





HELMET SPACE



INDIAN WOMAN ON TWO WHEELER



LUGUAGE ON TWO WHEELER

OVERSEATING





**WEATHER
PROOFING**

TAKEAWAY

Carrying **kids** on two wheeler is big concern for parents or guardian.

Owner tries to **personalize** their vehicle

owner tries to showcase their **social status** through their vehicle

User feel **uneasy to use helmets**

Two wheelers are uncomfortable for **Indian women**

User want to carry **luggage** on their vehicle

Overseating is common in Mumbai.

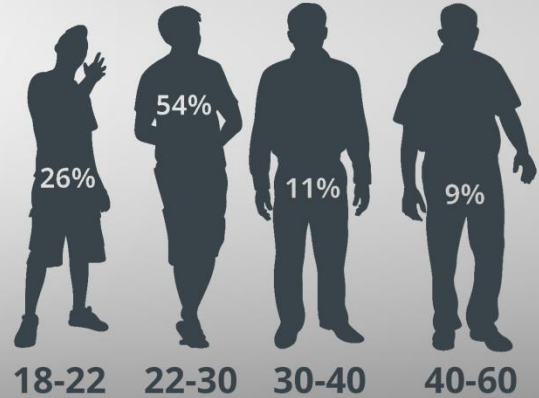


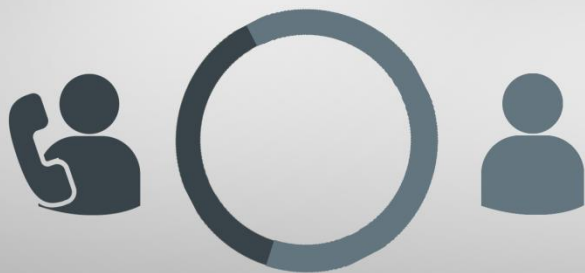
USER STUDY

69 USERS



60 Male 9 Female





30% PEOPLE USE MOBILE PHONE
WHILE RIDING



MOST OF THE PEOPLE PREFER
PARK THEIR VEHICLE **NEAR HOME**

BUYING DECISION



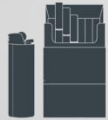
What do people carry stuff while riding?



Shoes



Wallet



Cigaret pack



Note book



100 kg
Wheat bag



Vejitables



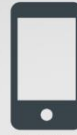
Mobile charger



Laptop



Helmet



Mobile



Rain coat



LPG Cylinder



Water bottle



Back pack



Lipstick



Pepper
spray



Perfume



Comb



Formal shoes



Purse



Scarf

COMMENTS



Amol (25) Honda Dazzler
Parking issue, Helmet got stolen



Kale (42) HONDA ACTIVA
Bike should be skidproof



Prakash Gaikwad (32) Yamaha FZ16R
No family bike comes with style



Sanket Chavan (21) Bajaj Pulsar 220
Inbuild speaker & Cruiser bike sitting



Mohit Shirsath (22) Honda Dio
Need onboard Mobile charging



Sagar (24) CBR 250
More heat is thrown out in traffic



Prashant (19) Splendor
Vehicle should be ready to use



Manoj Gupta (34) Honda Activa
Need more luggage space

USER PROFILE



Yogesh

Age : 19 years

Occupation: Student

Place: Tunga Village, Powai

Vehicle: Duke 200

Buying Decision: Looks, Power, Style

Travel Distance: 20Km

Aspiration: Look different

Attract girls

Look stylish & Cool

Habits: Long distance riding

Smoking



Manoj Gupta

Age : 34 years

Occupation: Vegetable seller

Place: Uttar Pradesh

Vehicle: Honda Activa

Buying Decision: Looks, Luggage Capacity

Travel Distance: 60Km

Aspiration: Maximum utility
Cofortable ride quality

Duties: Deliver vegetable to home



Sheetal

Age : 34 years

Occupation: House wife

Place: Mumbai

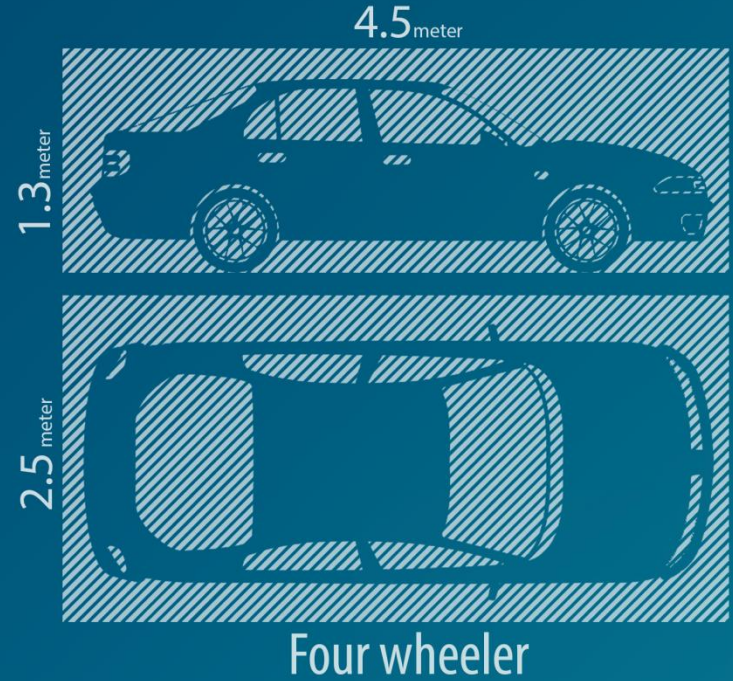
Vehicle: Honda Activa

Buying Decision: Economical ride

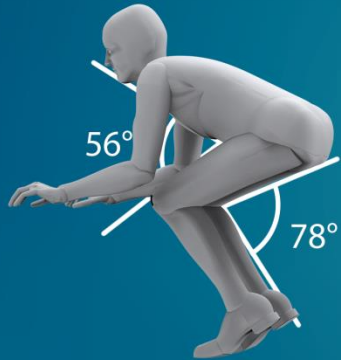
Travel Distance: 15Km

Responsibilities: Commute to children school
Grossary shopping

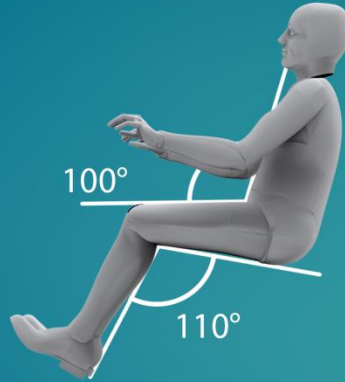
Dimension study



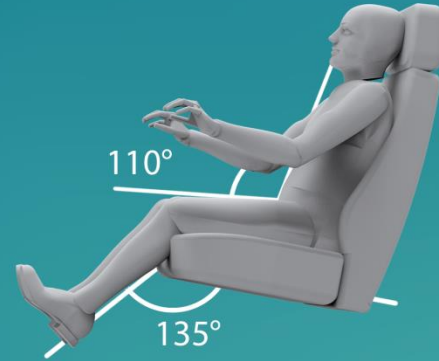
Sitting posture



Attack posture



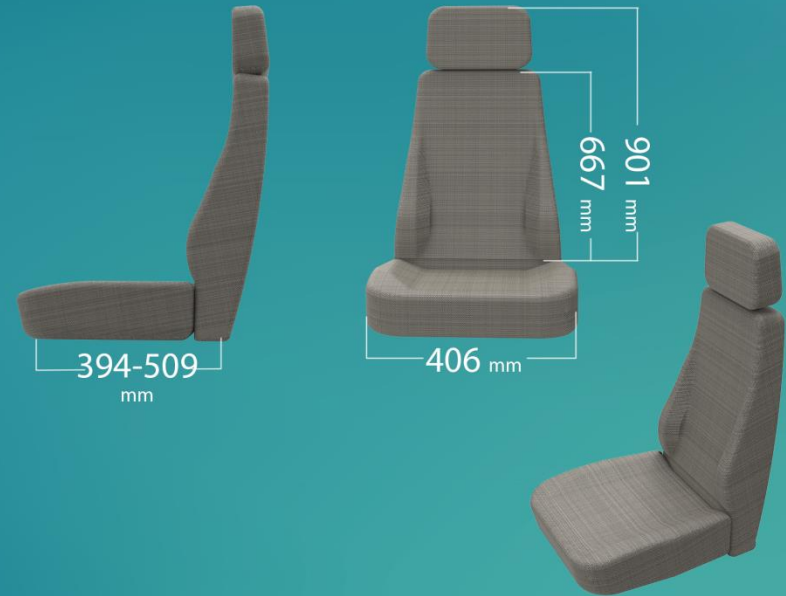
Relax posture



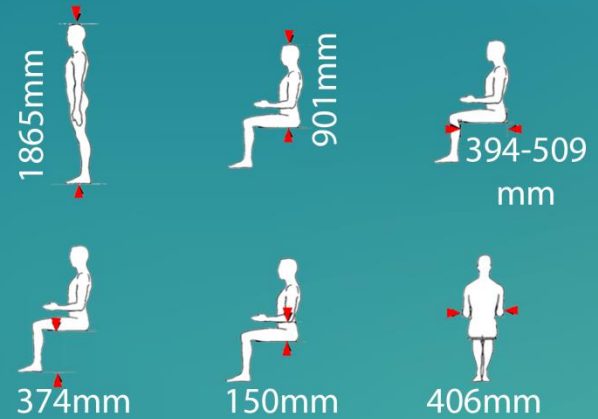
Resting posture

Seat Dimensions

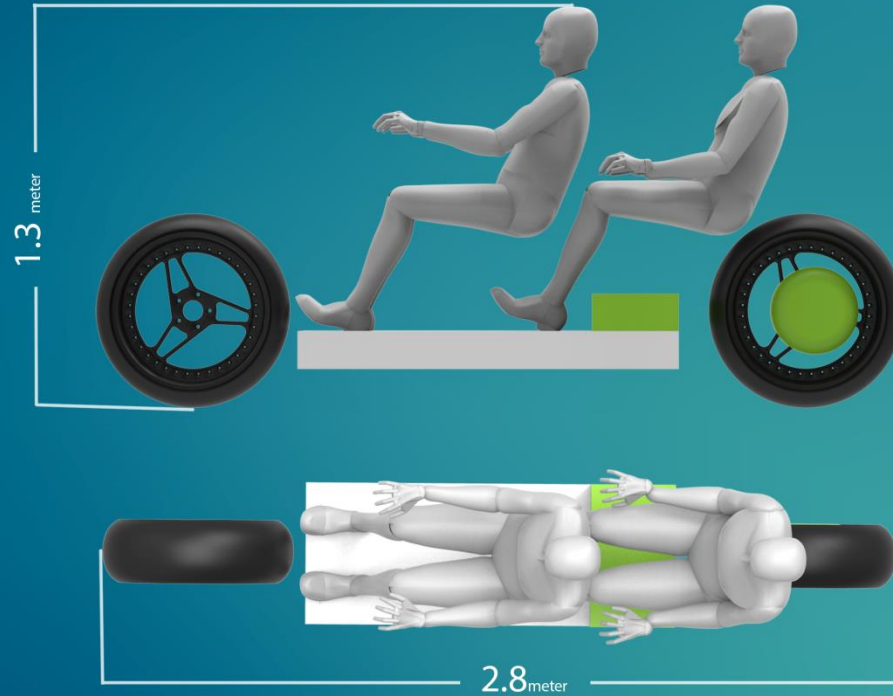
Measurements (in mm)	5th	50th	95th	SD	MIN.	MAX.
Sitting height	738	824	901	51	679	983
Cervical trunk	531	605	667	46	489	887
Mid shoulder	499	566	630	42	408	691
Shoulder breadth	349	417	479	41	276	672
Hip breadth	269	326	406	45	209	550
Buttock to popliteal	394	451	509	35	340	595
Popliteal	374	419	466	33	305	540
Elbow height	150	210	268	36	102	335



INDIAN ANTHROPOMETRIC DATA



REFERENCE VEHICLE DIMENSIONS



Design of Urban Commuter

to bridge gap between two wheeler and four wheeler

Vehicle must have maneuverability of two wheeler and comfort of four wheeler.

To design a new segment which takes into consideration the following requirement

i) Exterior

Should show high perceived value

Should exhibit extension of owners personality.

Vehicle must have new identity in its class

Vehicle should be covered either hard top or convertible

Dimension: 2800mm Length X 1300mm Height X 900mm Width

ii) Interior

Should provide good climate protection

Capacity: 2 adults with bags.

Vehicle should allow easy ingress egress even in tight parking

iii) Cost: below 1 lakh

Design of Urban Commuter

to bridge gap between two wheeler and four wheeler

Vehicle must have maneuverability of two wheeler and comfort of four wheeler.

To design a new segment which takes into consideration the following requirement

i) Exterior

Should show high perceived value

Should exhibit extension of owners personality.

Vehicle must have new identity in its class

Vehicle should be covered either hard top or convertible

Dimension: 2800mm Length X 1300mm Height X 900mm Width

ii) Interior

Should provide good climate protection

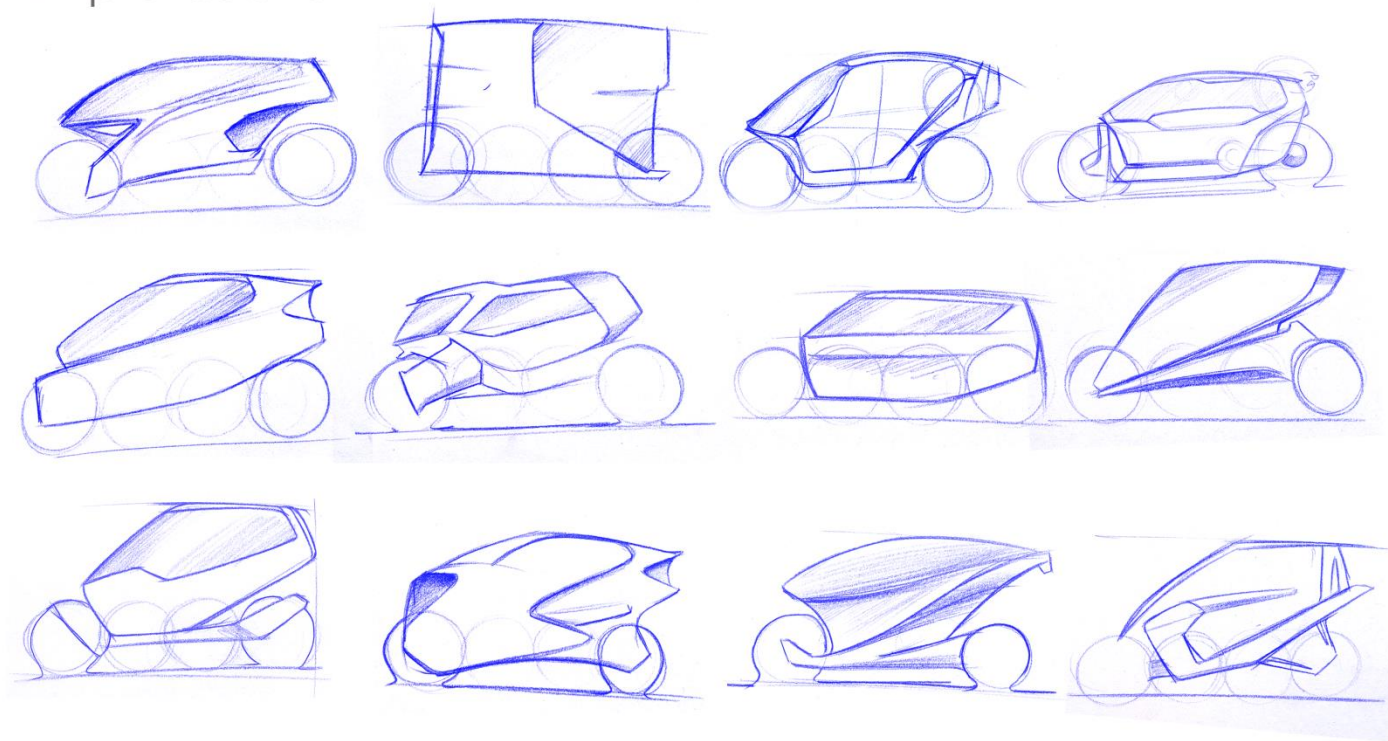
Capacity: 2 adults with bags.

Vehicle should allow easy ingress egress even in tight parking

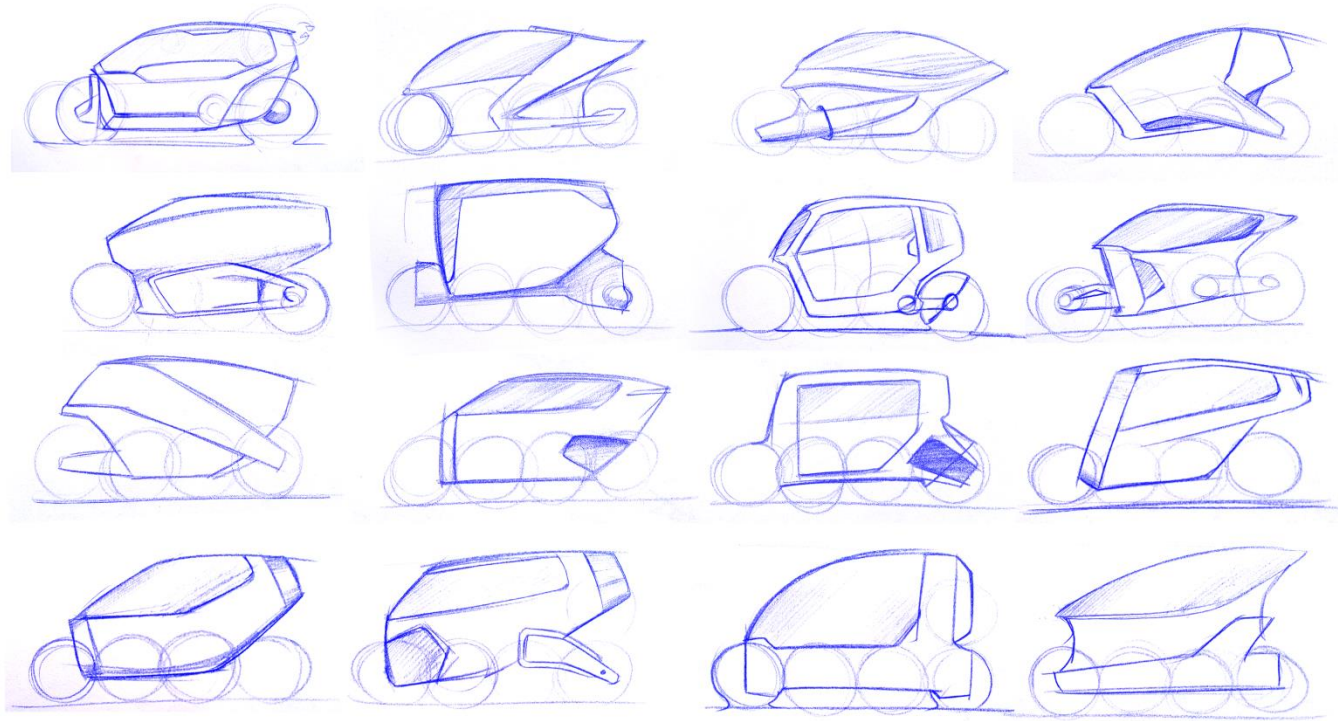
iii) Cost: below 1 lakh

IDEATION

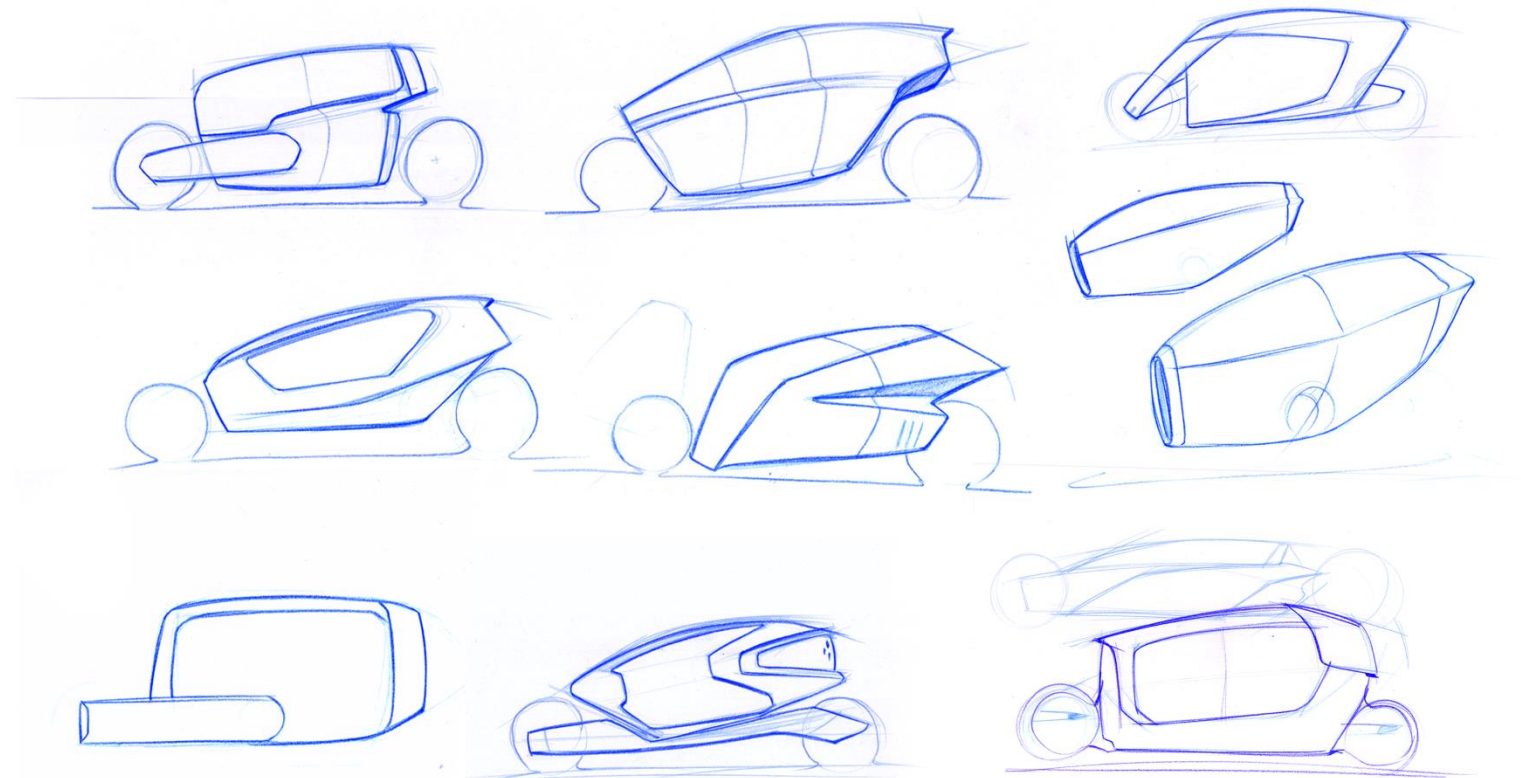
Explorations



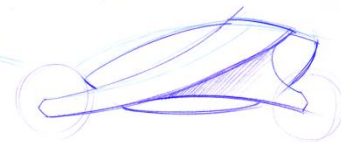
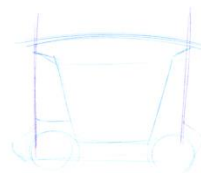
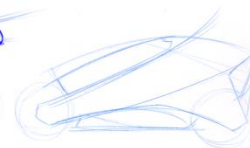
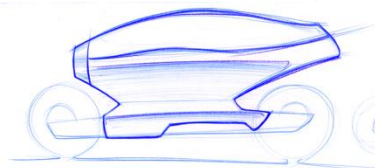
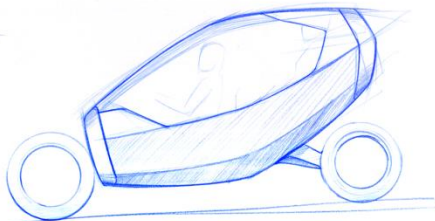
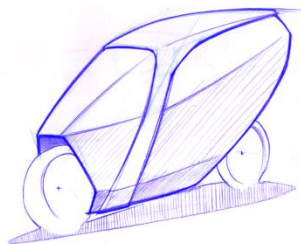
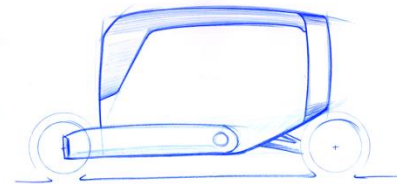
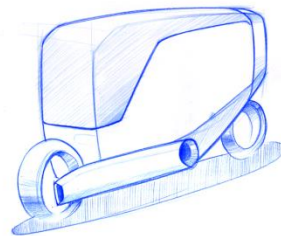
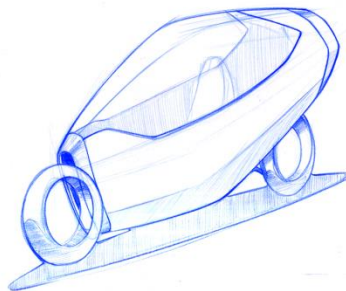
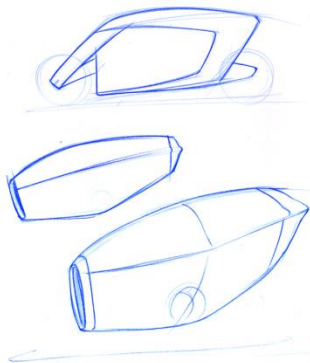
Explorations



Explorations



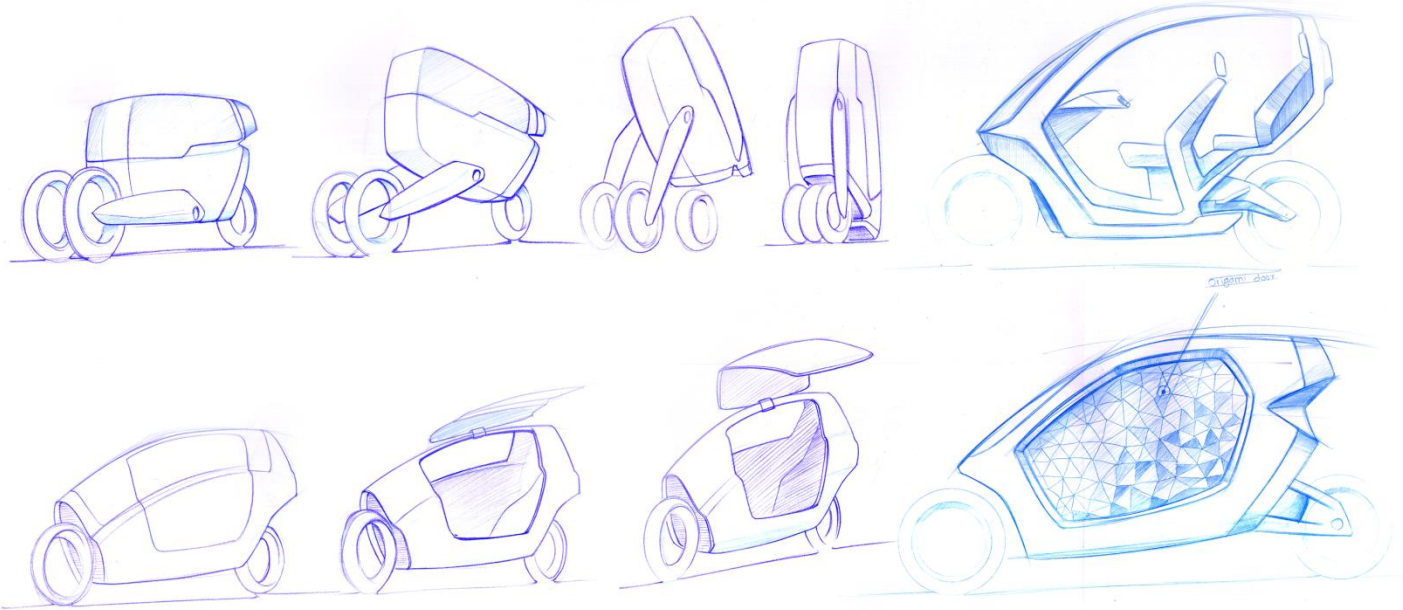
Explorations



Explorations

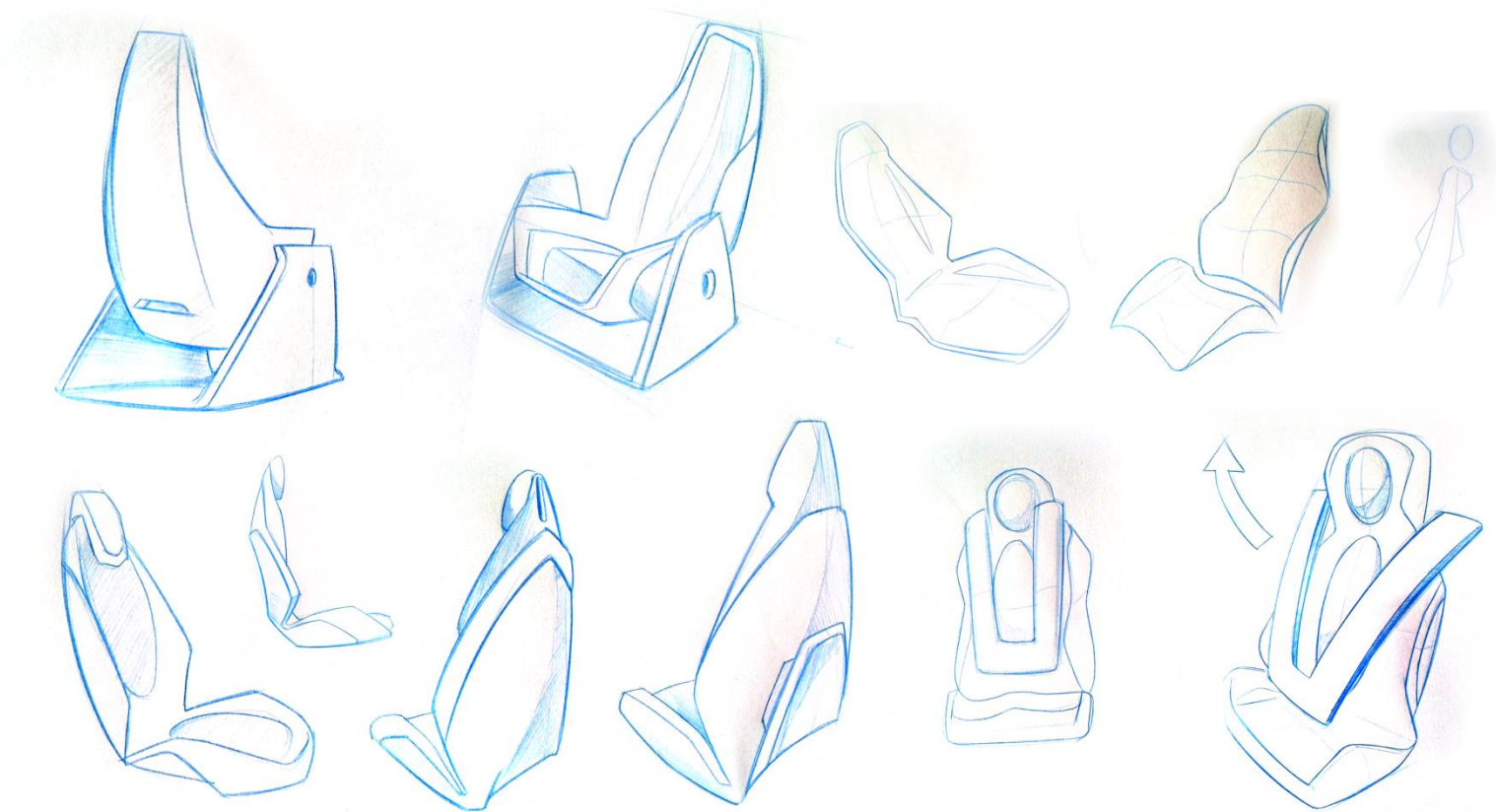


Parking in small space

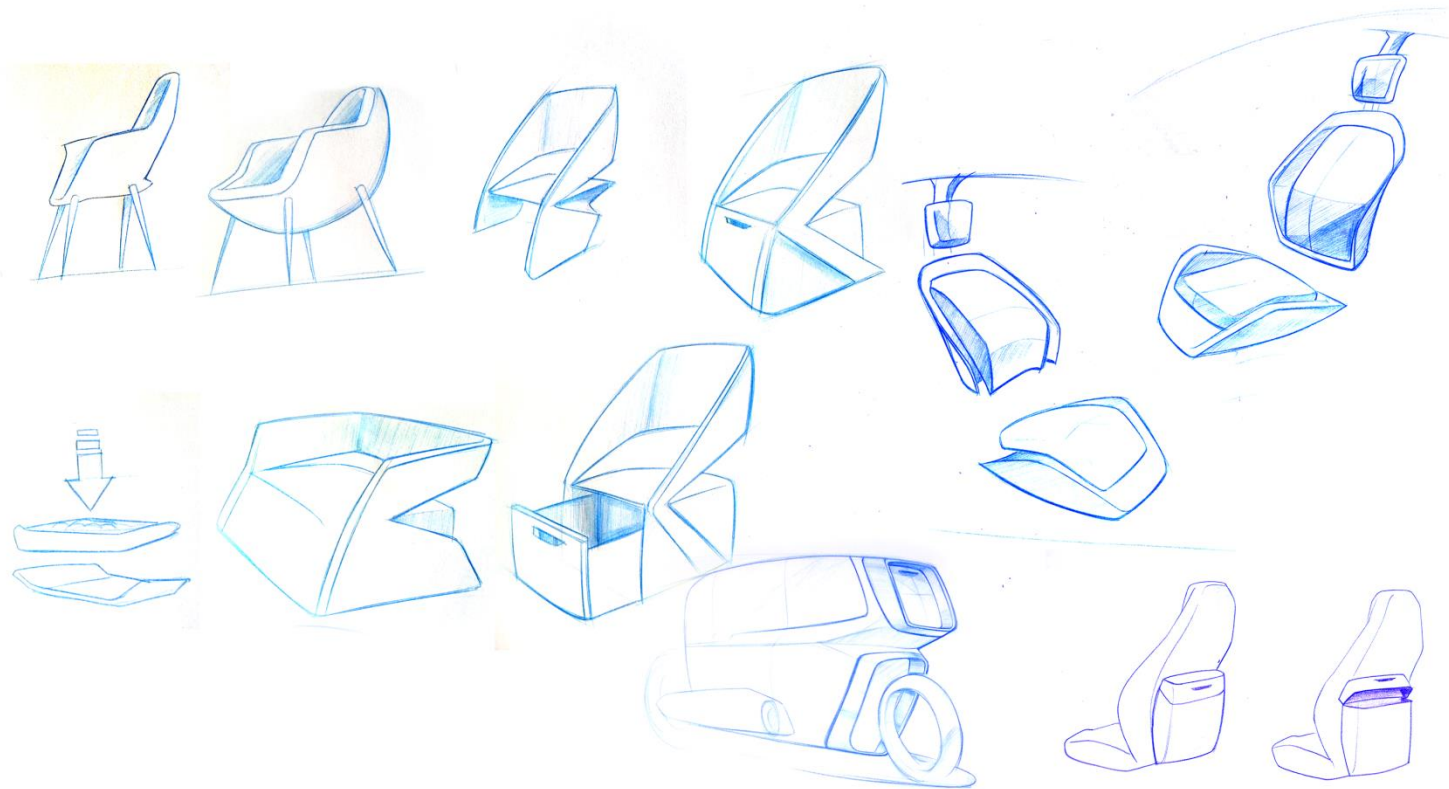


Falcon Wing Door

Explorations



Explorations



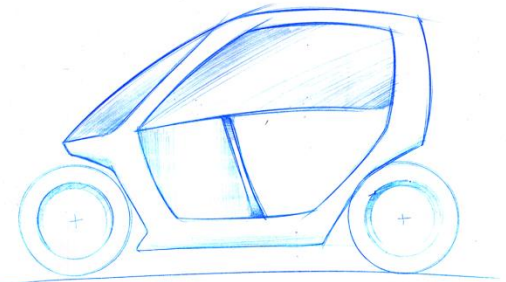
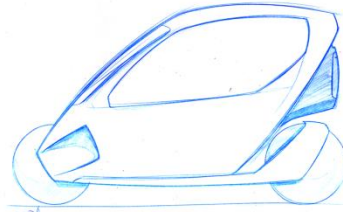
Rear storage space

Storage space behind seat

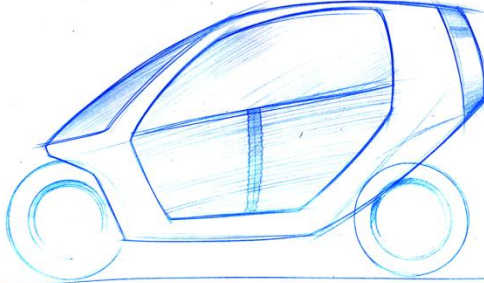
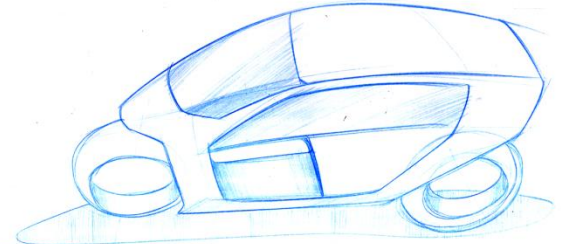
Explorations



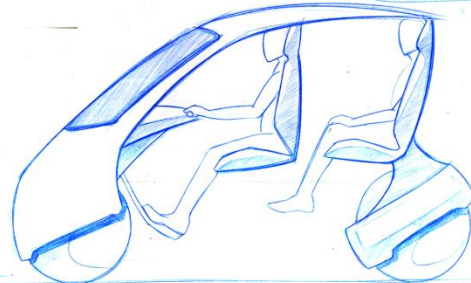
Spherical wheels



Open leg space for better control

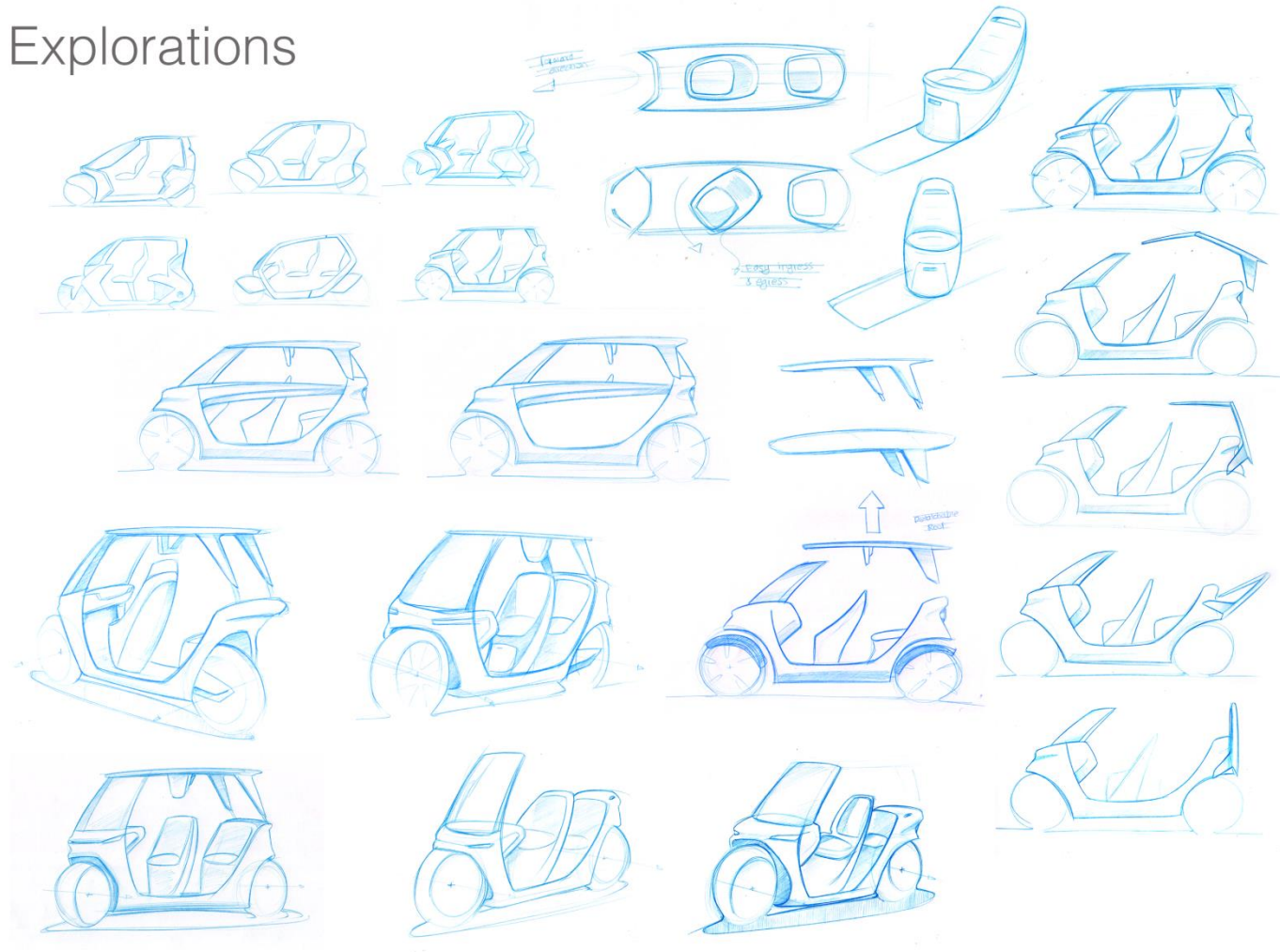


Bamboo weaved door

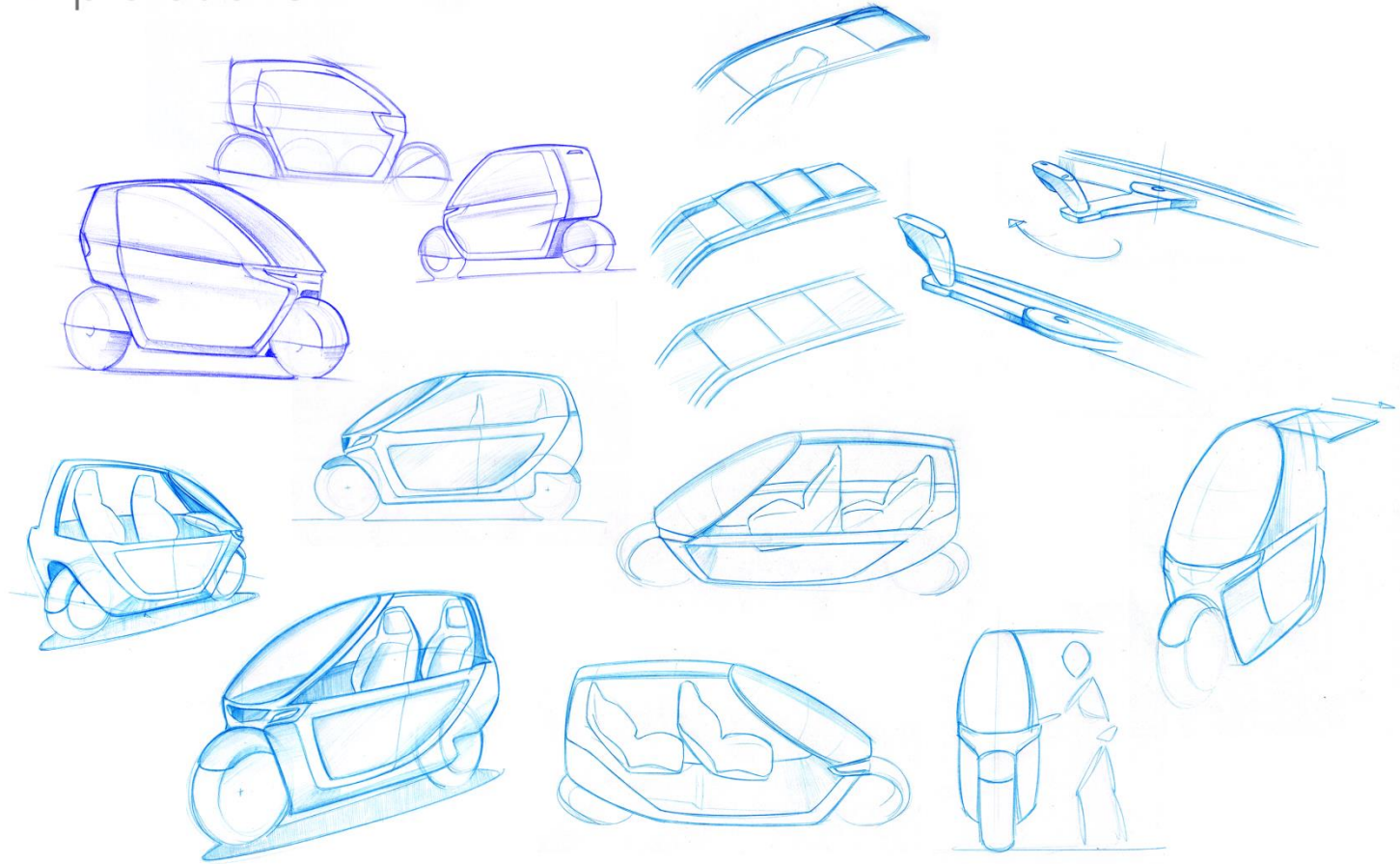


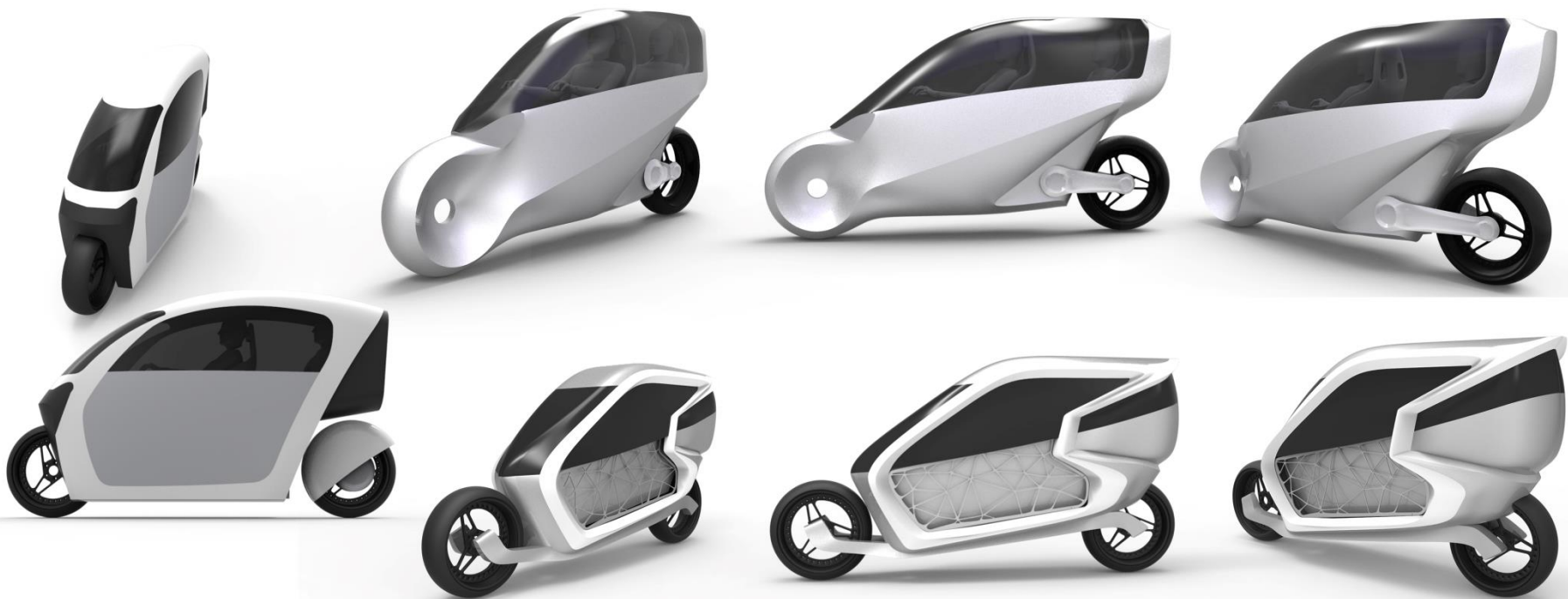
Open floor experience

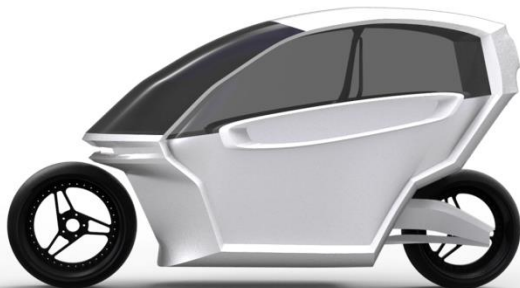
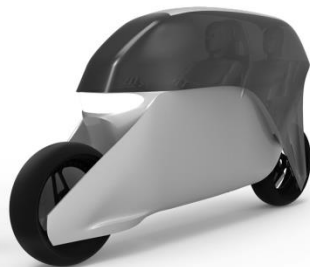
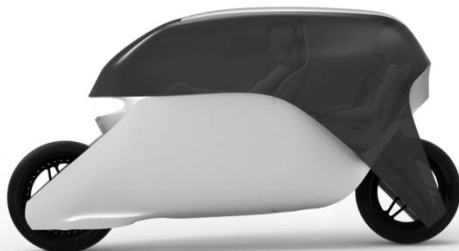
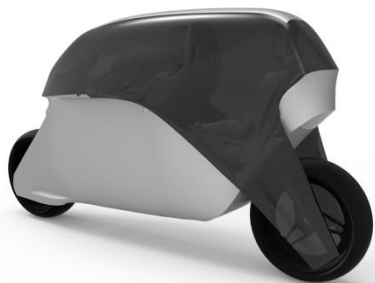
Explorations



Explorations







VEHICLE PACKAGING

Direction 1

Luggage space



30°

2000mm

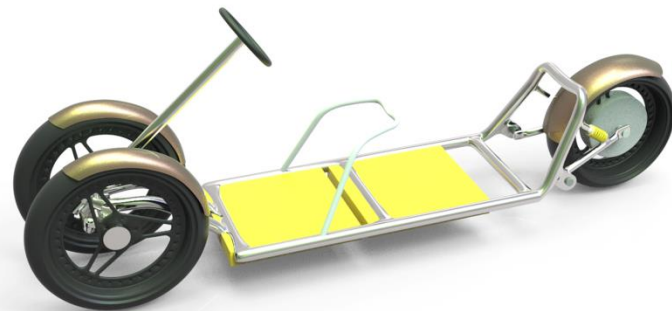
Two wheeler posture



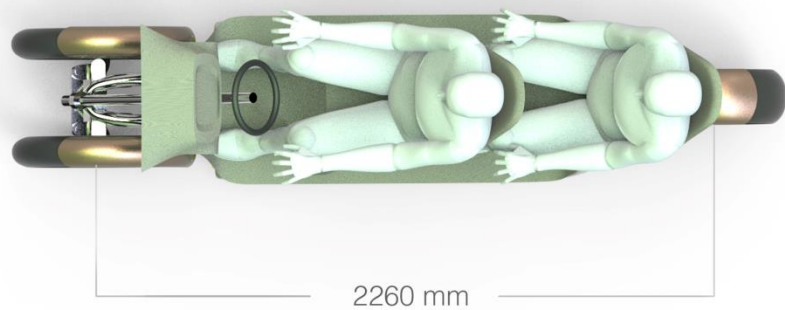


Direction 2

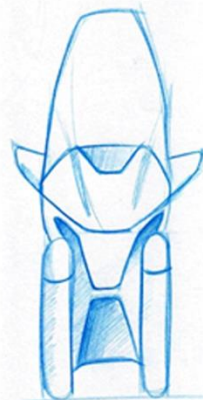
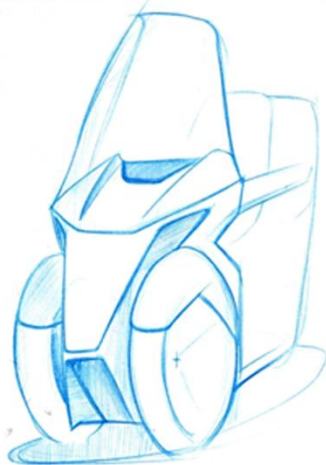
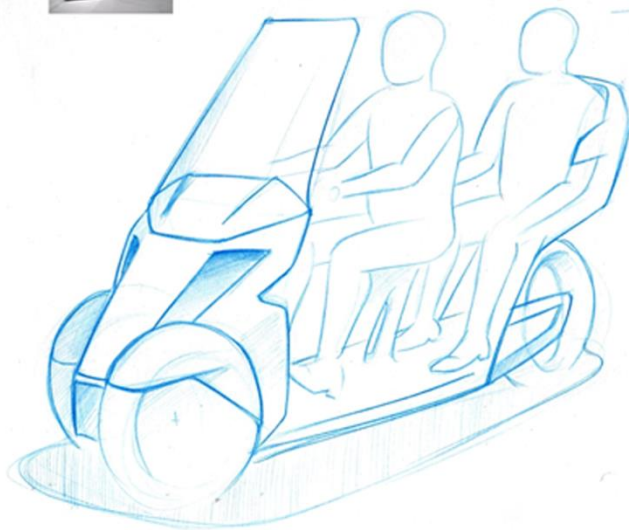
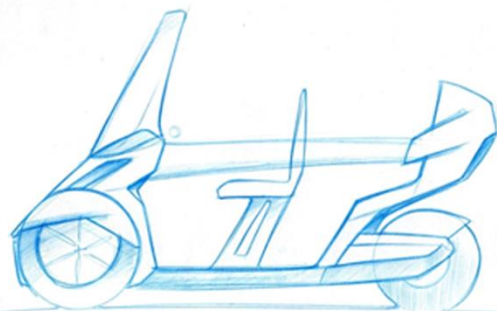
95th percentile male

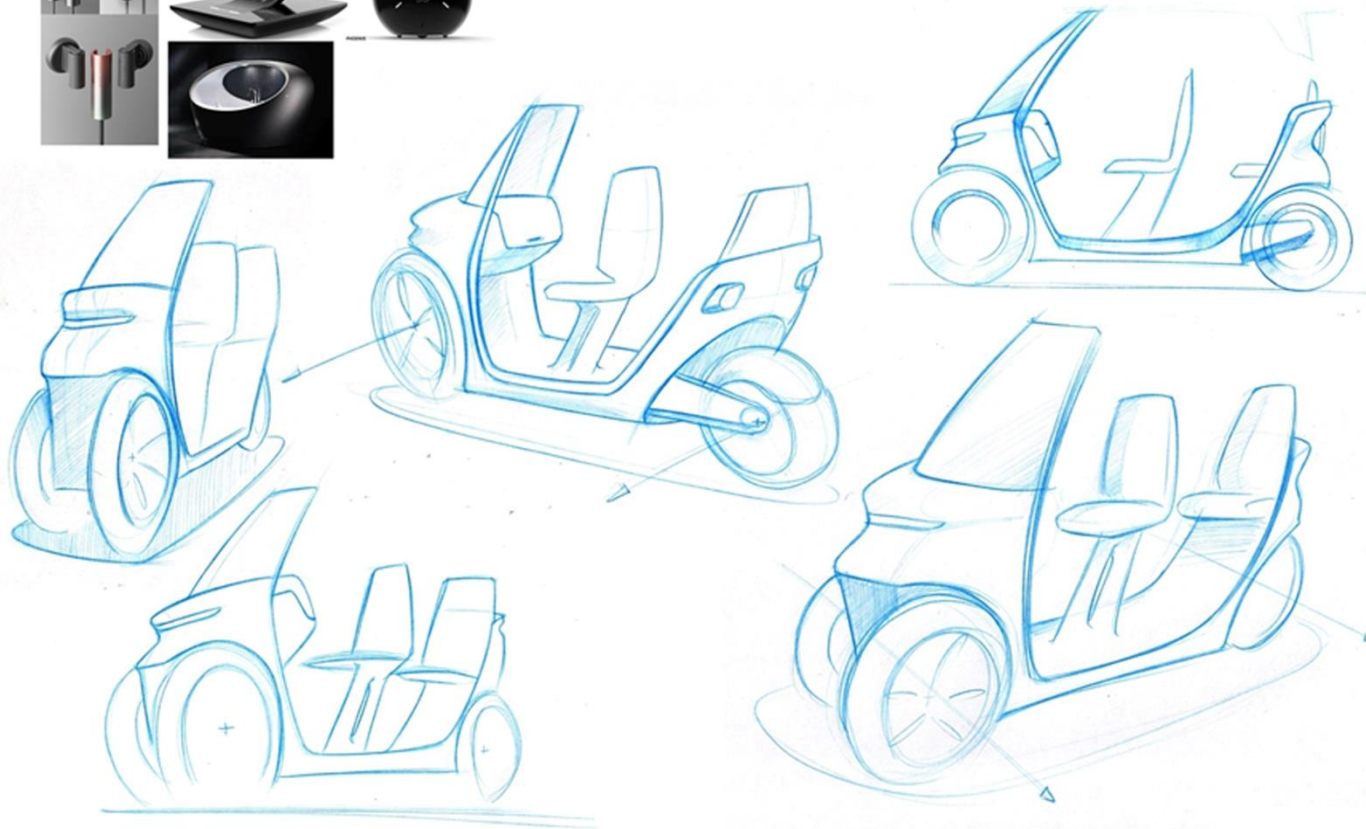


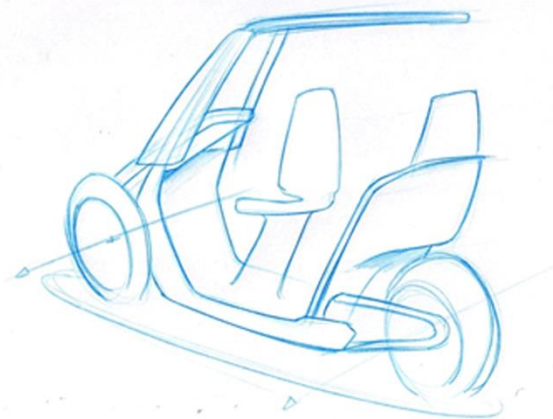
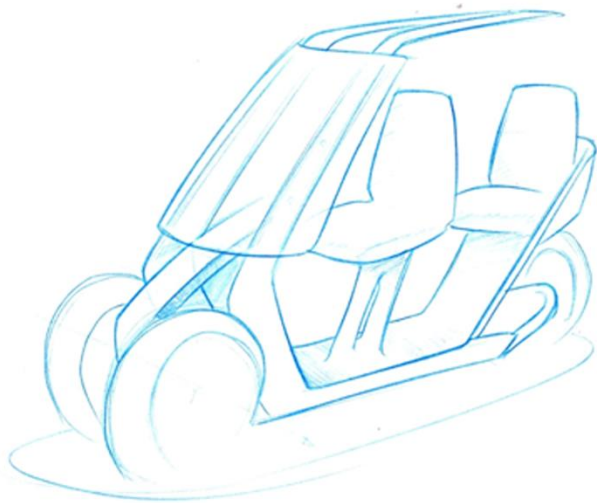
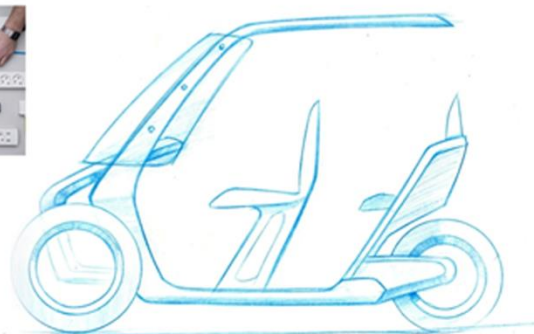
Luggage space

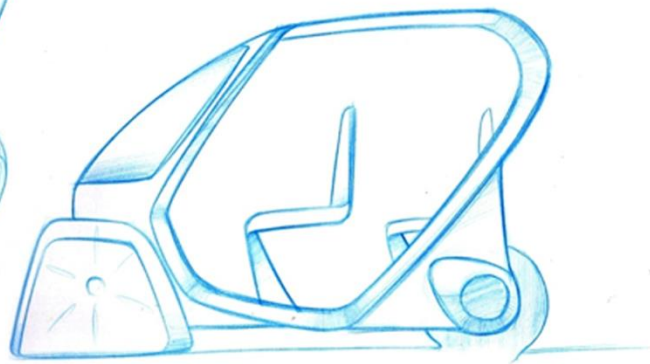
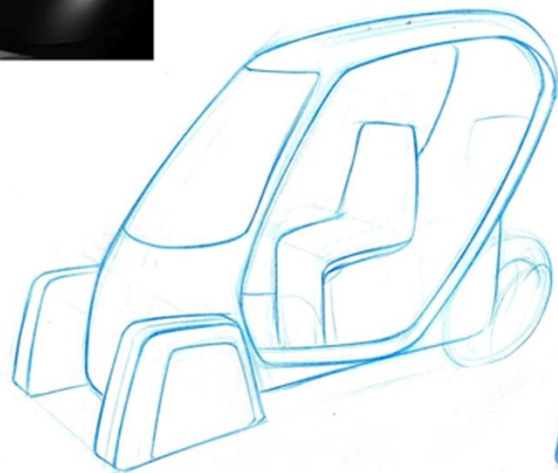
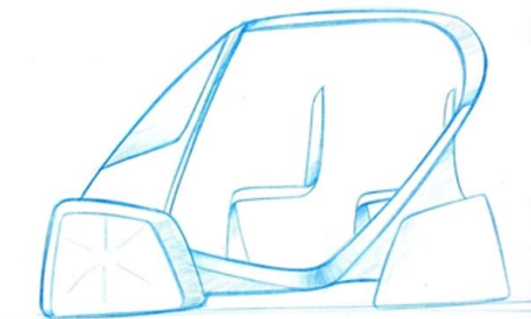






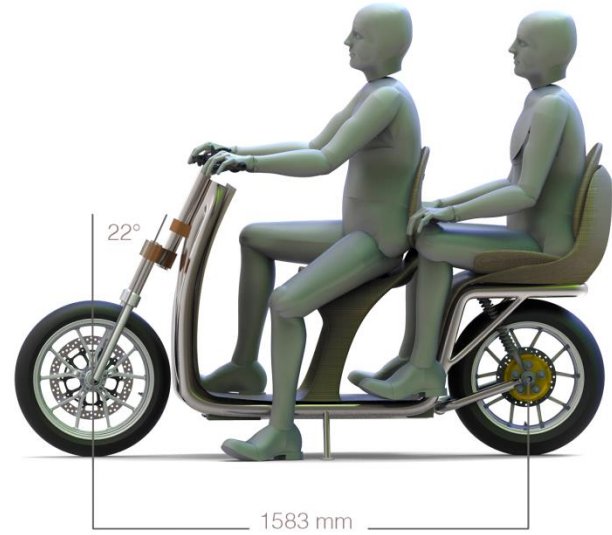
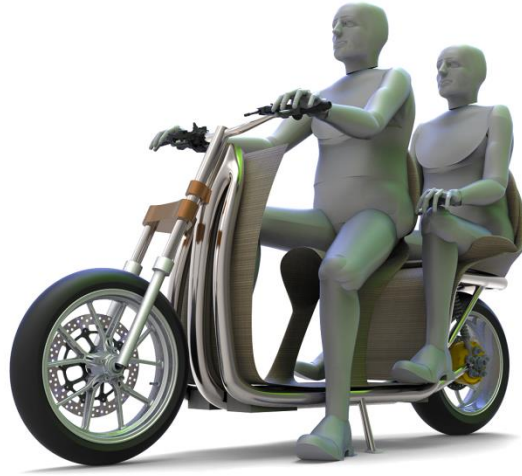






Direction 3

PACKAGING DETAILS



Human mannequin size is
95th percentile as per Indian
anthropometric data



● Storage space



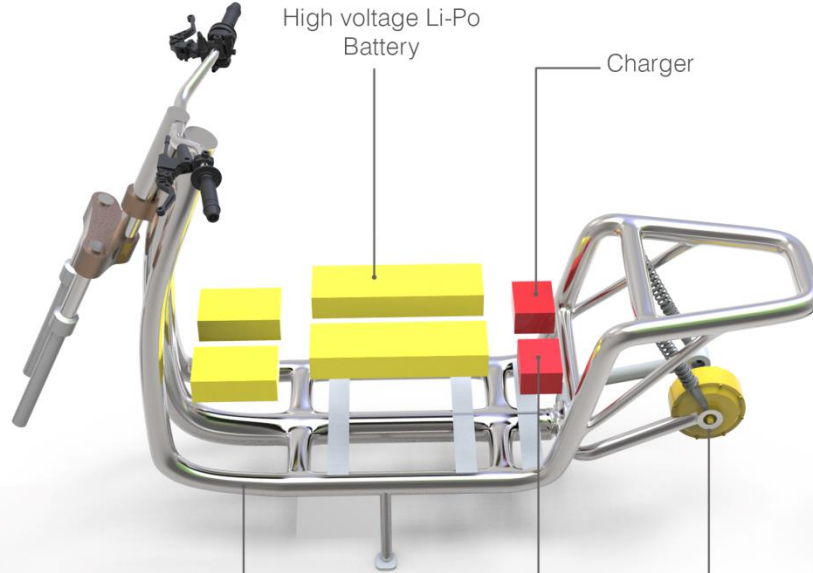
EXPLODED VIEW

Tyre
120/70 R17



10KWh
High voltage Li-Po
Battery

Charger



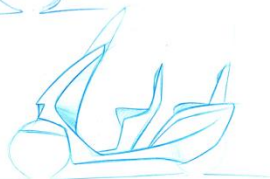
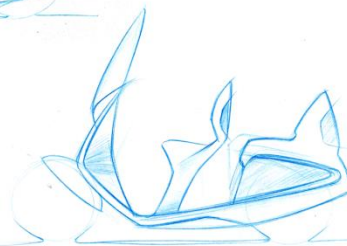
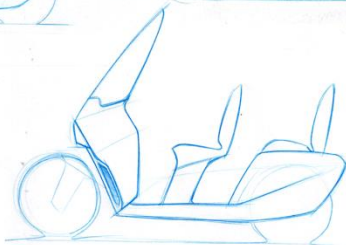
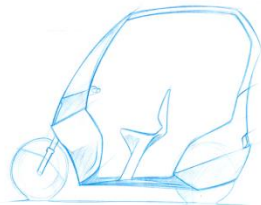
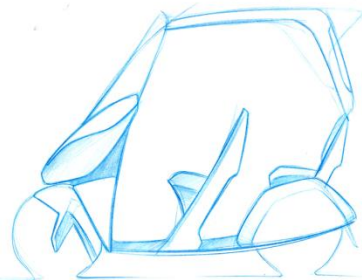
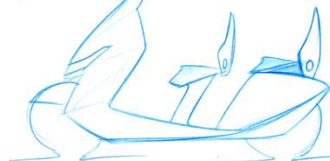
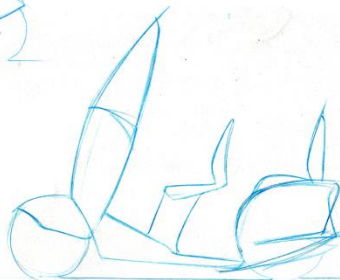
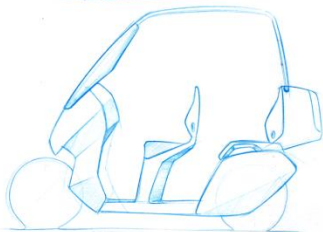
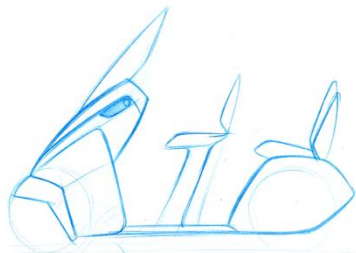
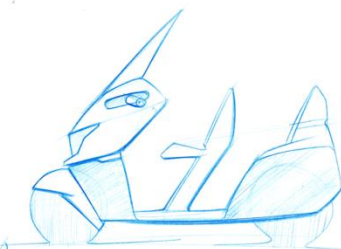
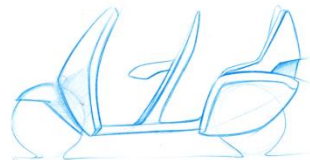
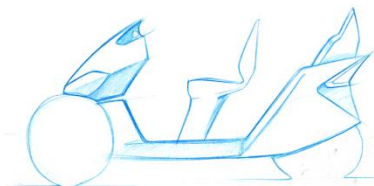
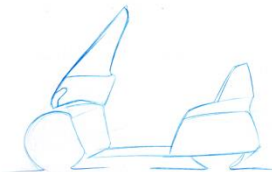
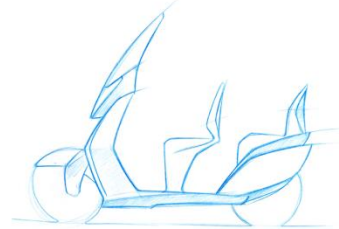
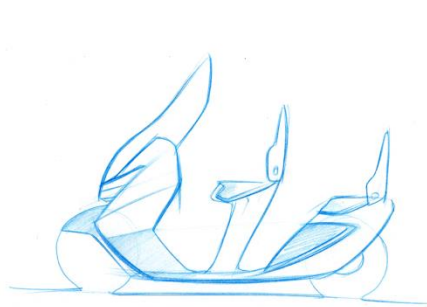
Tyre
180/60 R17

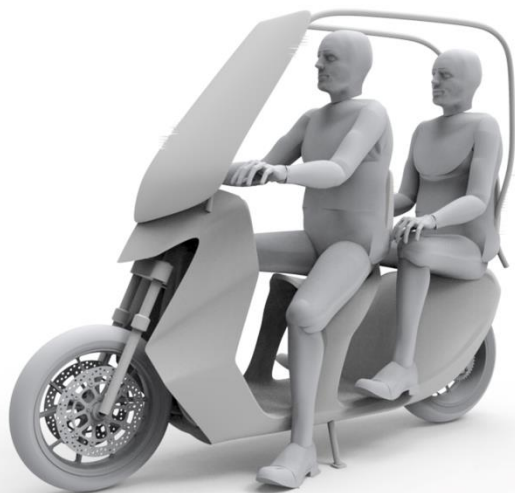


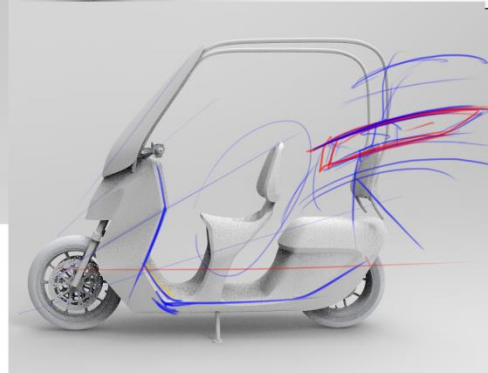
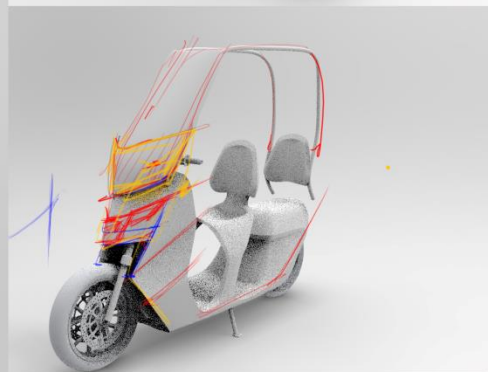
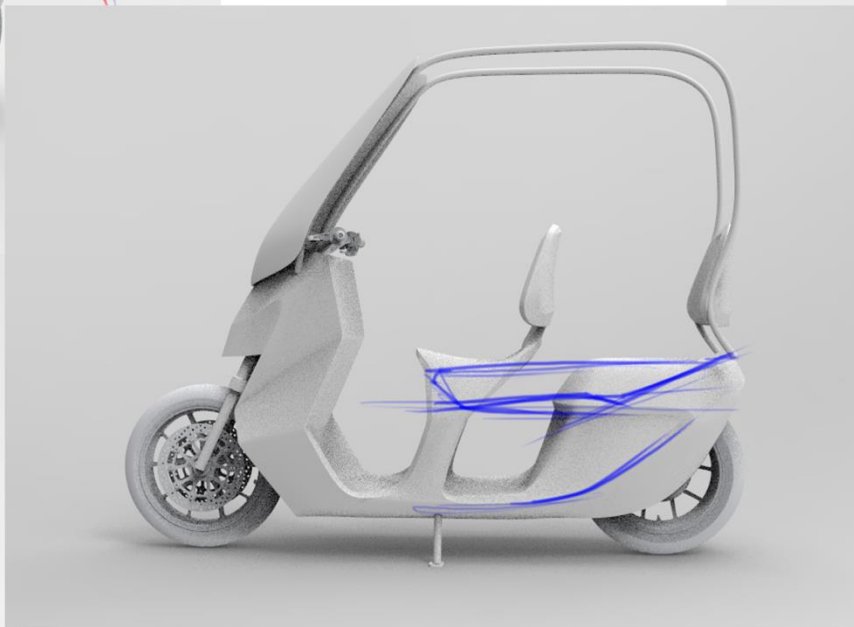
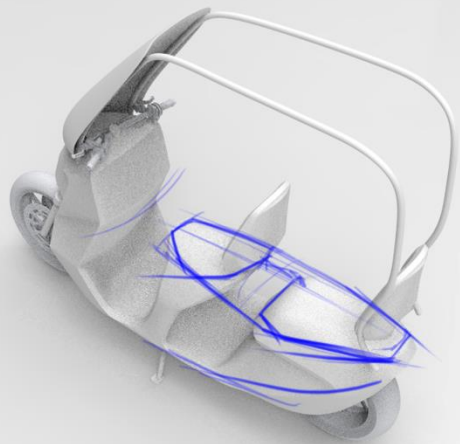
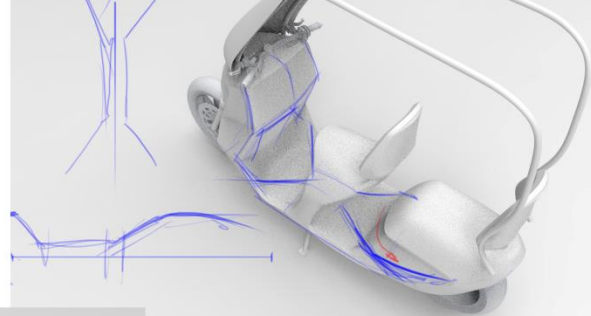
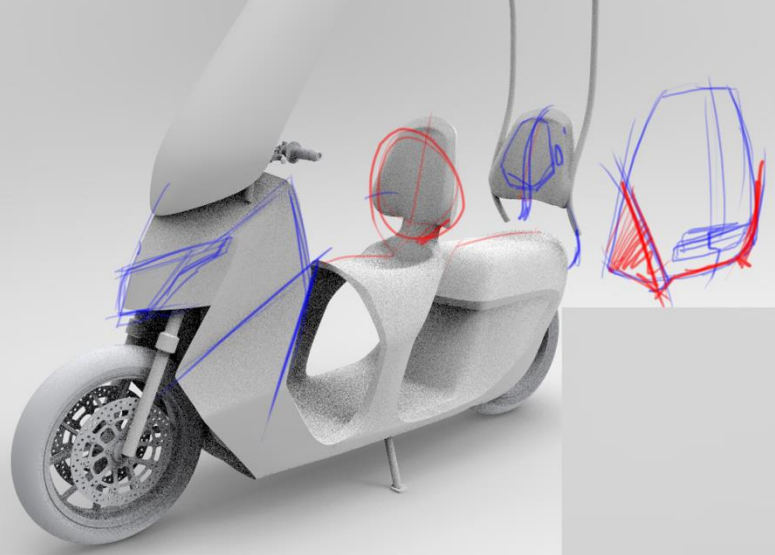
Chassis
1018 Mid carbon steel

AC-DC converter
+
High voltage junction box

Hub Motor







Key
sketch

