maximilian münster

industrial & transportationdesign

arbeitsproben
worksamples

2011-16

2011	water
2012	honda one
2013	honda internship
2014/15	the architecture of mobility
2015/16	adaptive city mobility
2016	WIP personal 2W project

2011 water

2011 water

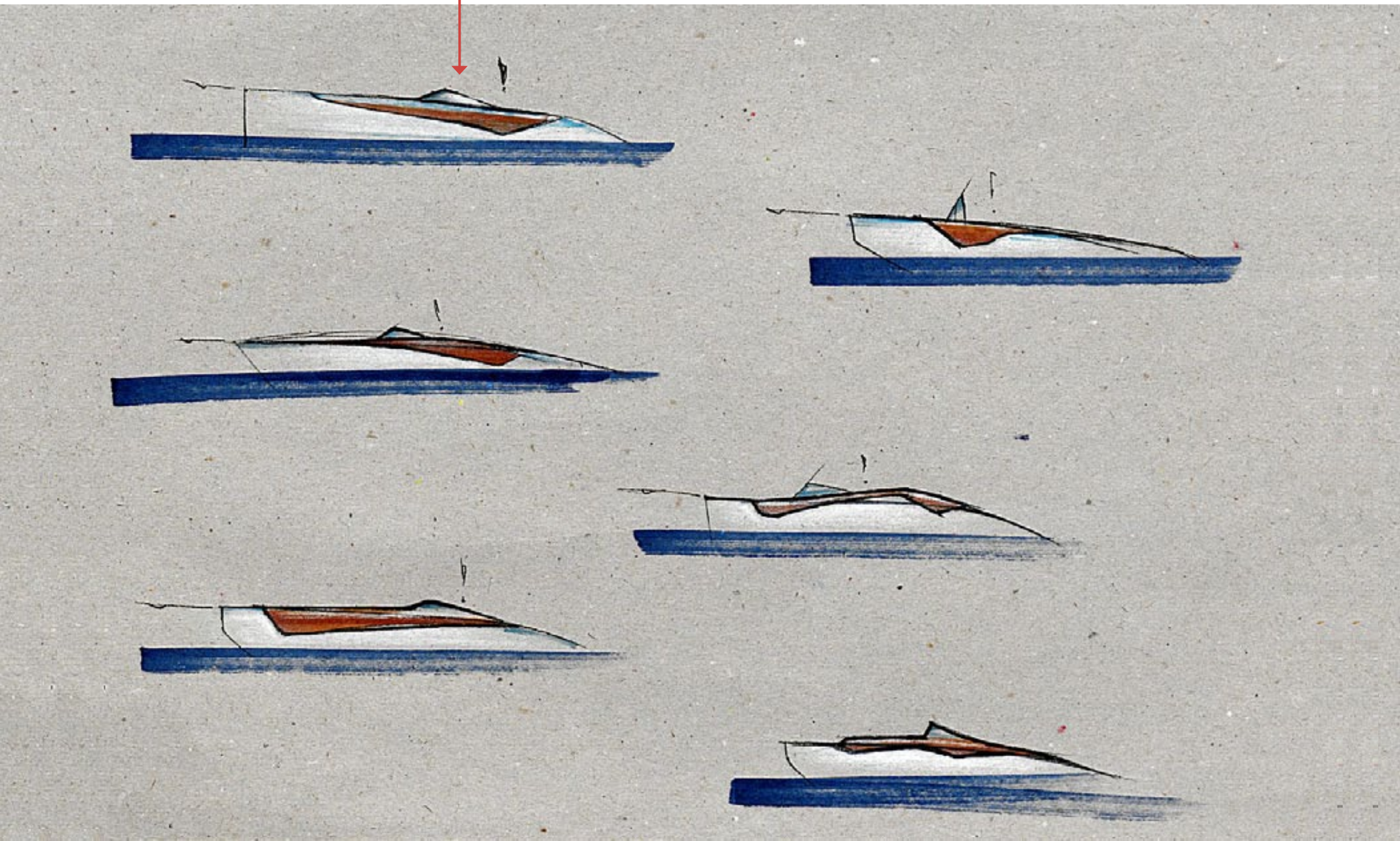
2nd term
university project
prof. dr. othmar wickenheiser

Starting from the Package of a 7m lightweight all-carbonfibre electric motorboat, the task was to produce a design for medium-scaled enterprise Avantgarde Technologies from Munich.

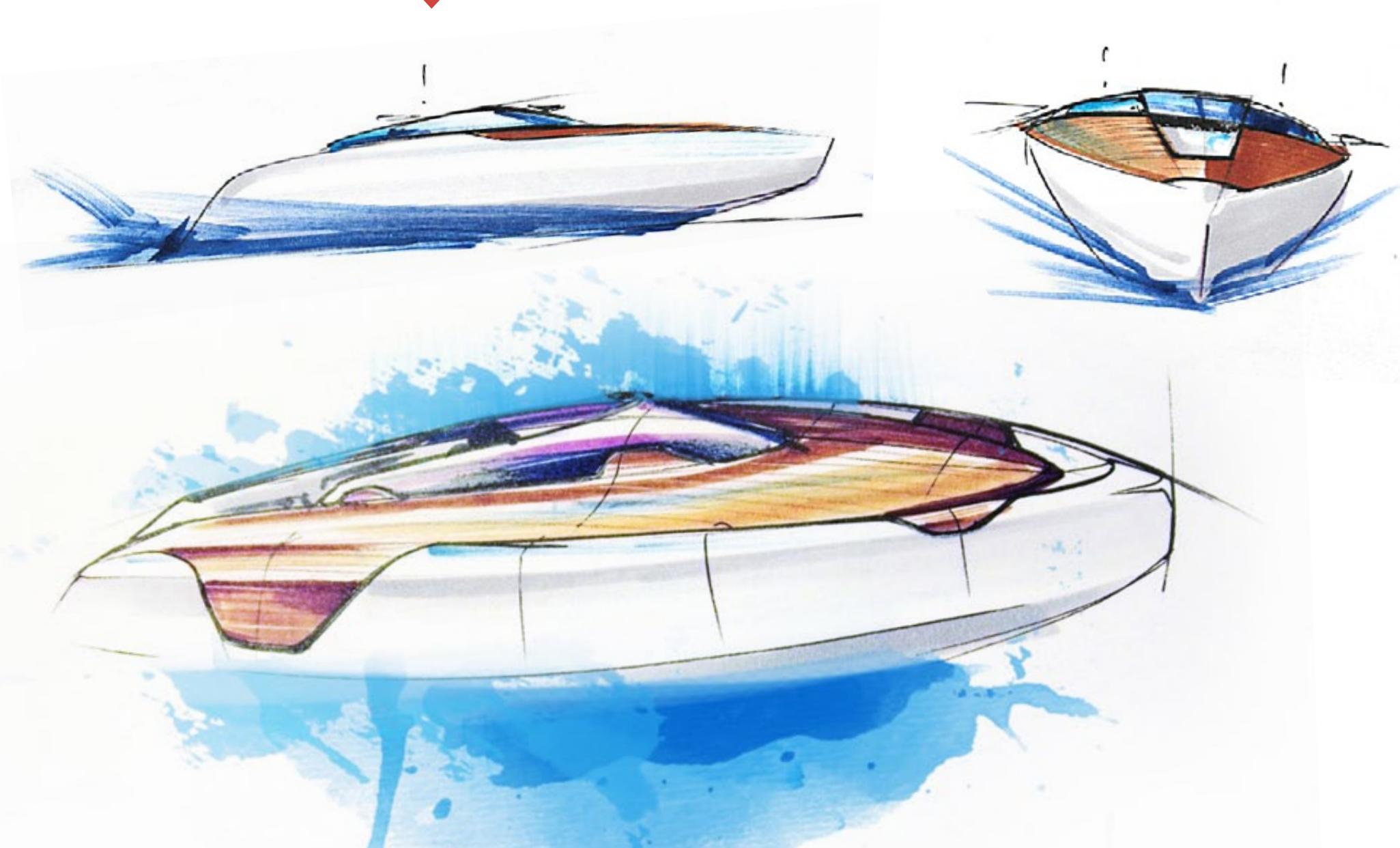
My goal was to make this new inevitable hardware on the way to sustainable mobility (ultralightweight materials and electric drive) visible in a realisable design - but not by applying importtuner-looks for carbonfibre parts and „green-leaves-and-blue-water-bubbles“-symbolic for electric energy.

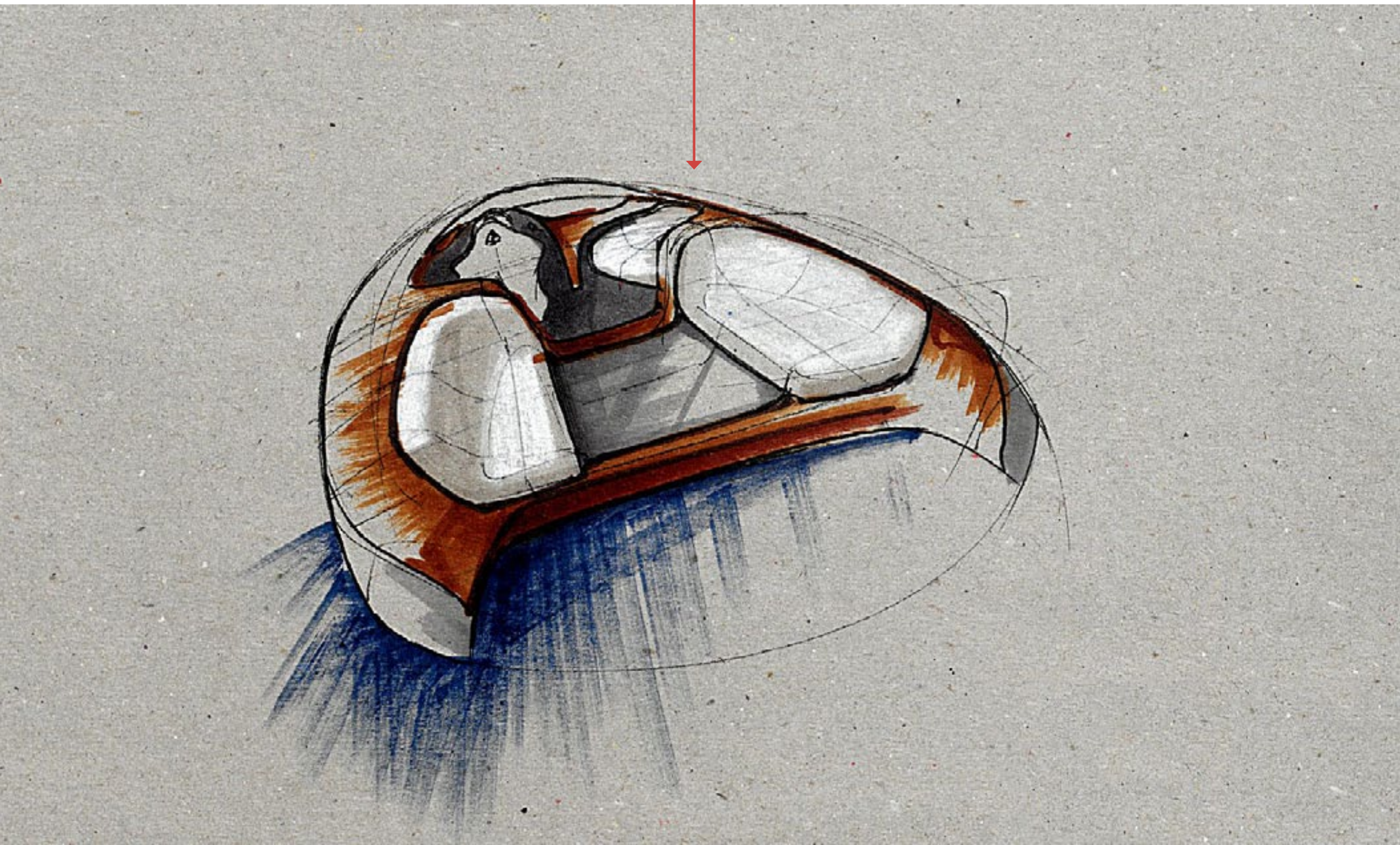
Inspired by the bent plywood of Ray and Charles Eames‘ furniture and the organic form of cloth flowing the wind, I designed the wooden planking to flow into the interior and split into individual ribs, generating seating and lying surfaces with a lightweight look and low structural complexity, yet high functional durability, much like parkbenches.

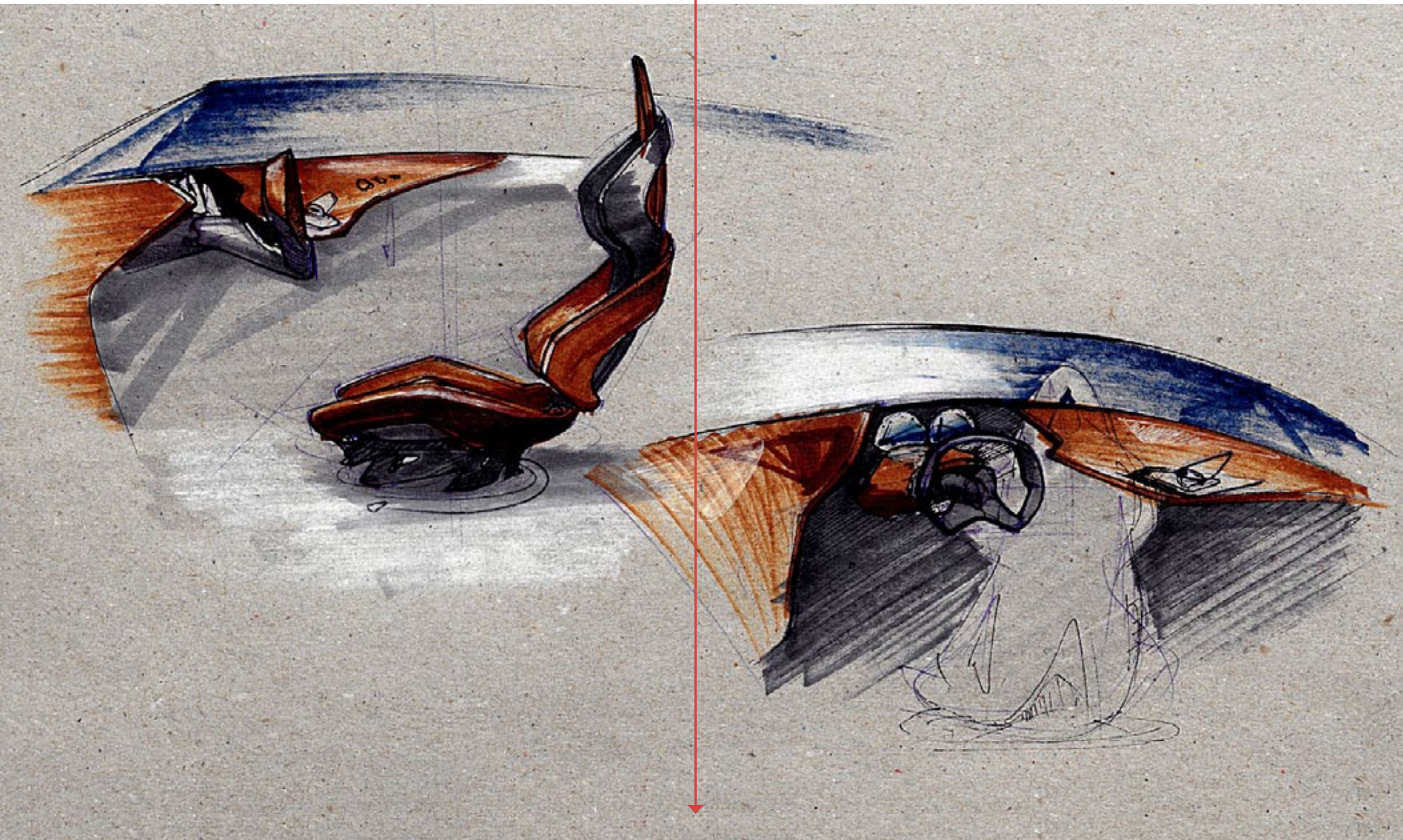
technical package supplied by avantgarde technologies



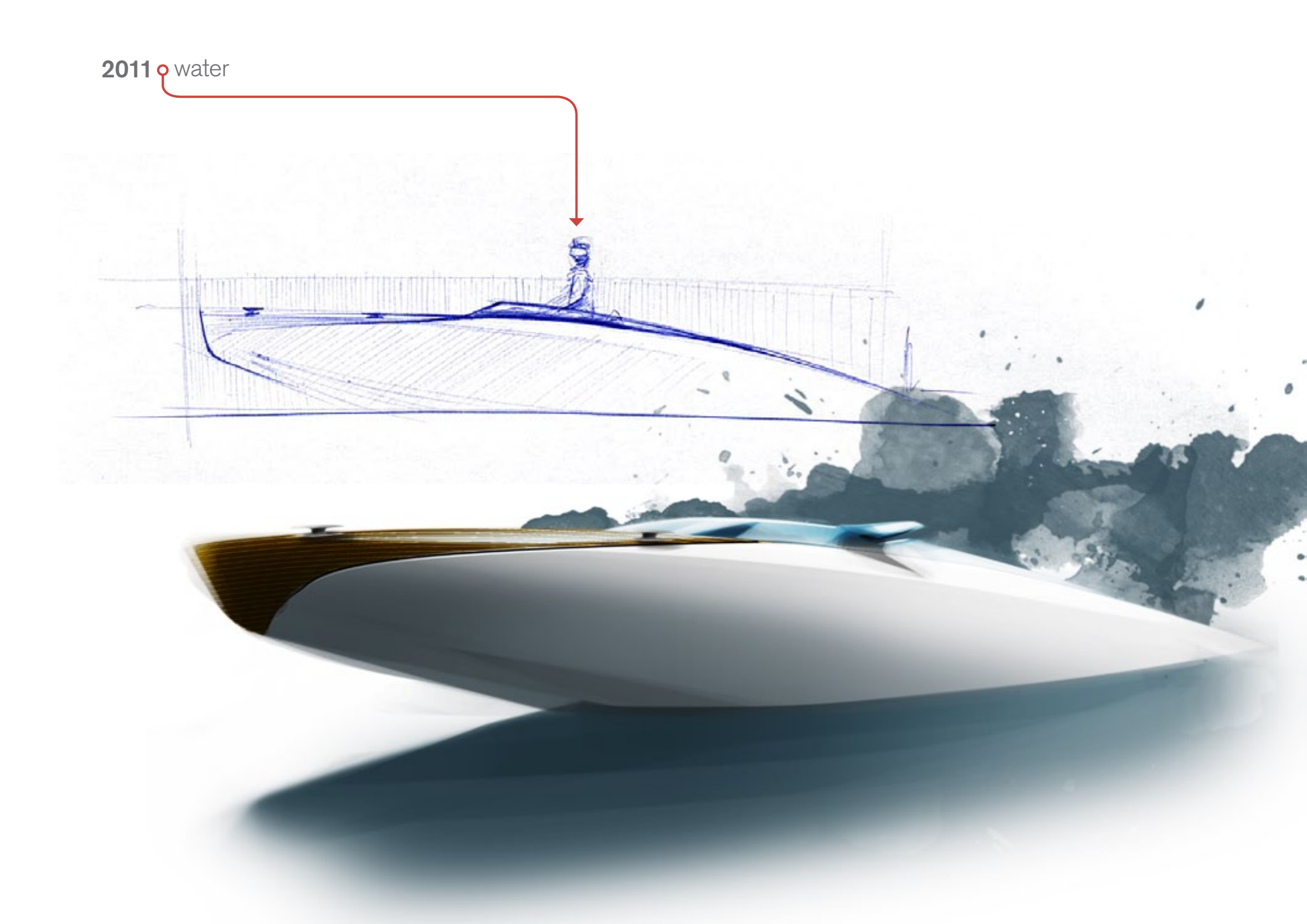
2011 water

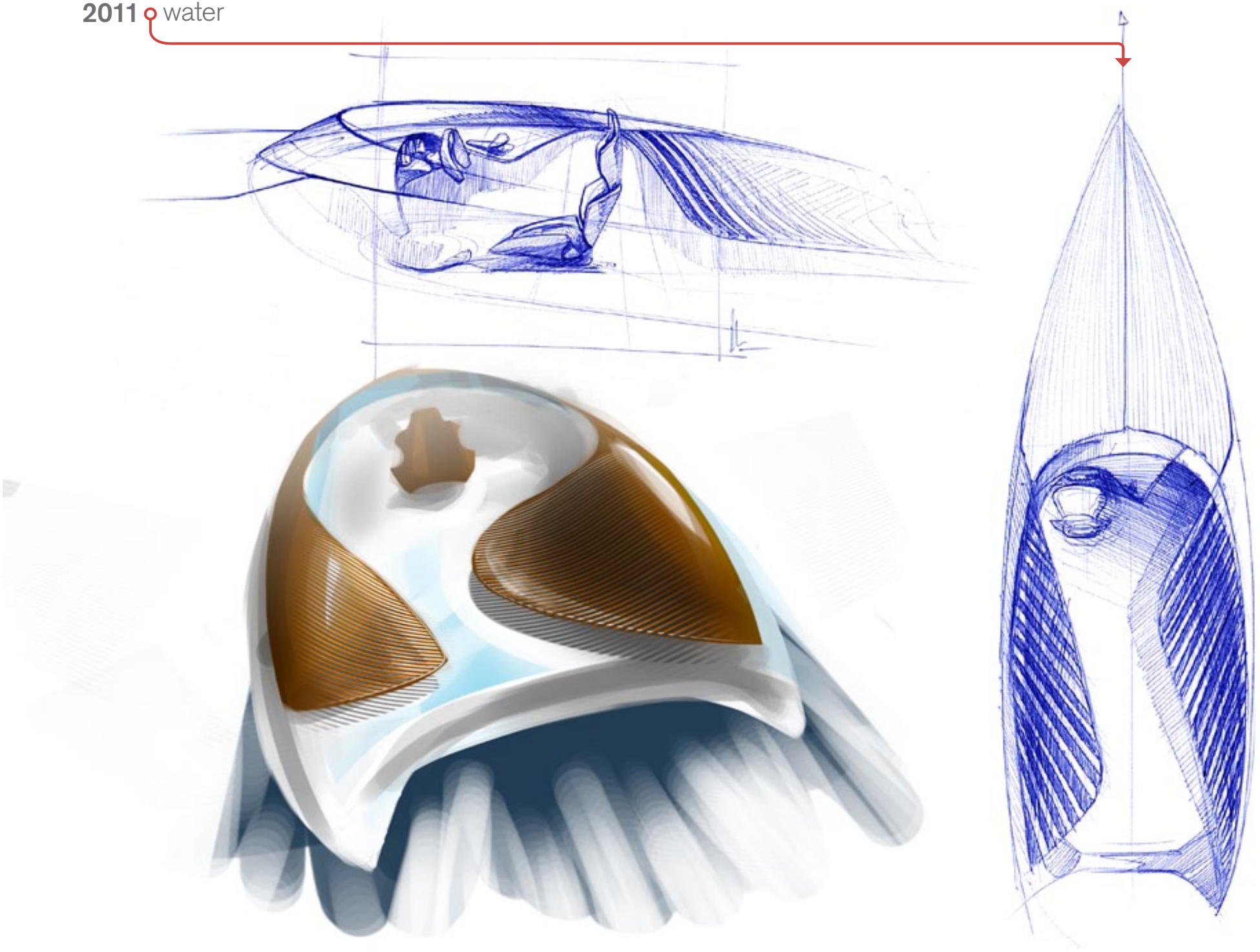






2011 water



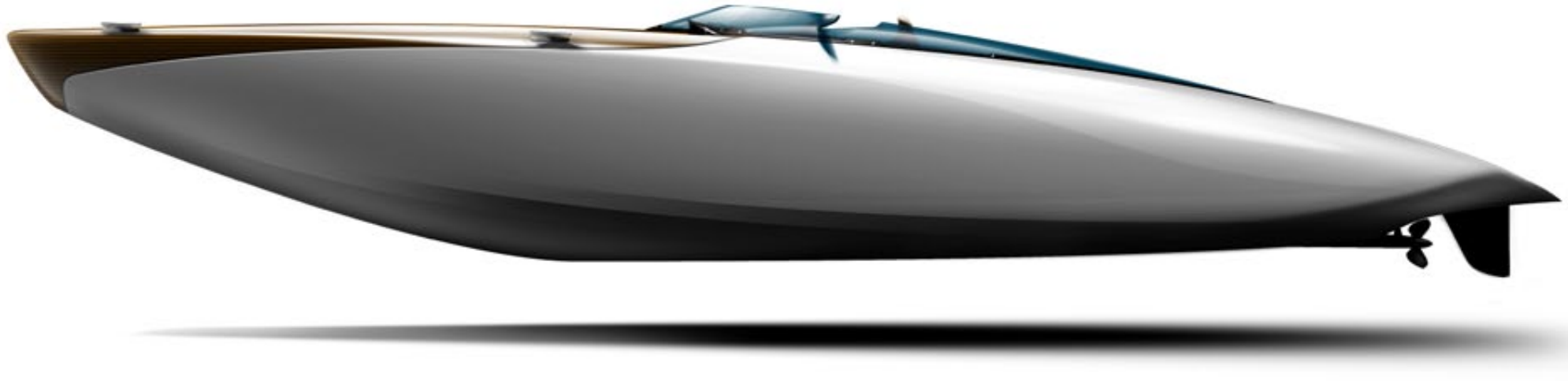


2011 water

final render

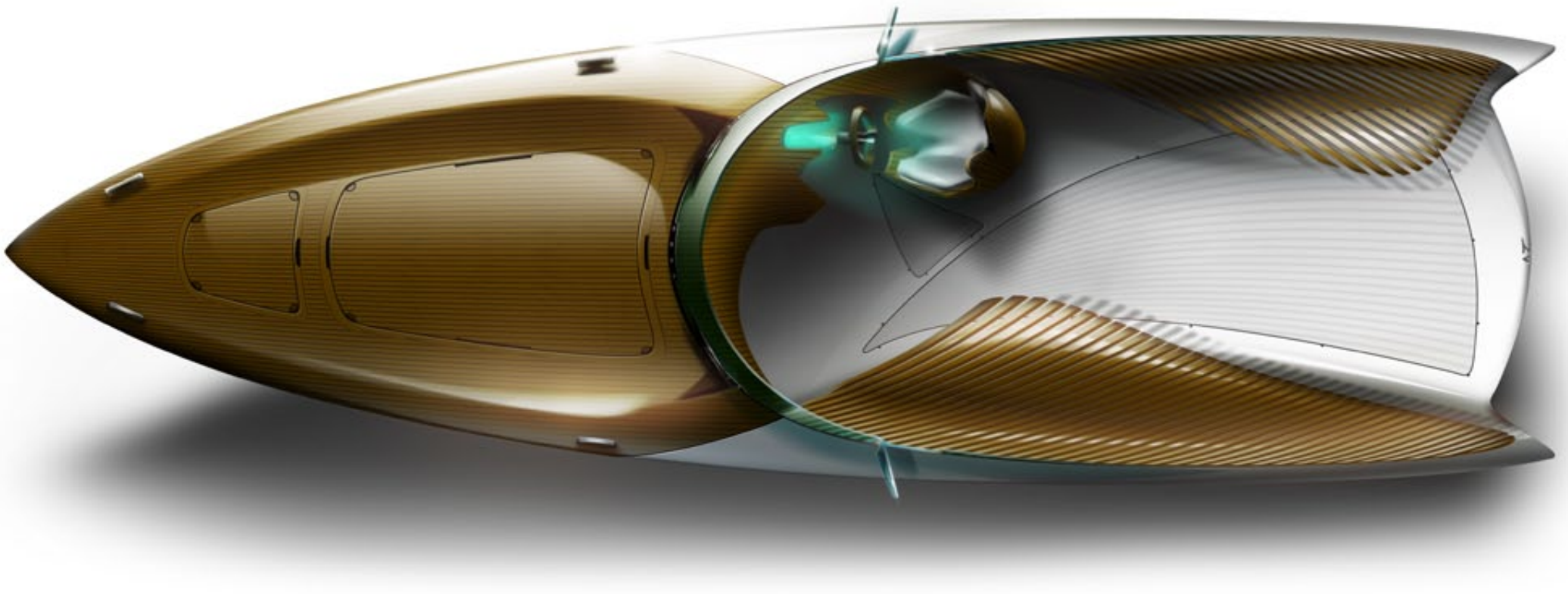
2011 water

final render



2011 water

final render



2012 honda one

2012 honda one

‚the future of the motorcycle'

5th term
university project

prof. peter naumann
hs munich

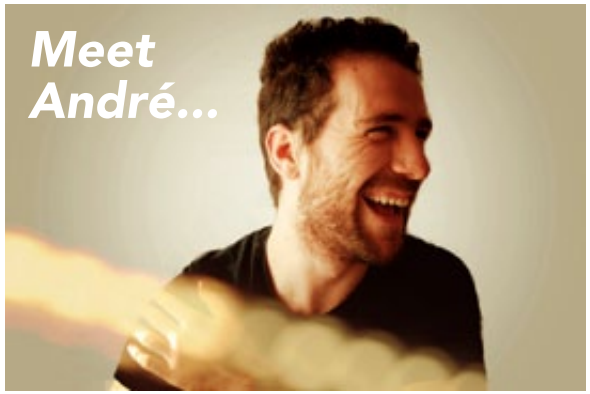
paolo cuccagna
honda r&d europe

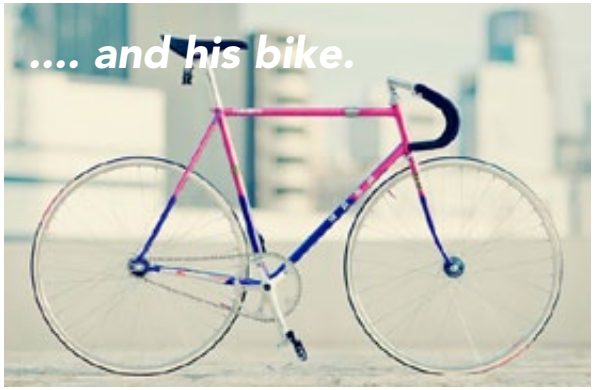
teofilo plaza garcia
honda r&d europe

Conceptual design of a 2wheel that attracts younger demographics to the market of aging motorcycle customers.

A BIKE FOR A YOUNG, URBAN MARKET HAS THE FOLLOWING...

CUSTOMER PROFILES.





André is 26 years old and lives in Paris. Coming from the countryside he can't stand public transportation and after 2 years of working as an Engineer, he finally has saved enough money to start searching for a serious alternative.

As an Engineer he likes Technics - but also thrives to make things as simple as possible.

So, André's biggest hobby is photography - analog photography, to be exact. While he is mostly concerned about the results, he still is fascinated by the fact how seemingly restrictive tools, like disposable, or toy cameras and analog film in general, without much possibility for adjustment, can be the most intense and fun experience in usage.

Phil lives in London. He's an average 23-year old dude, currently working on his diploma in management studies at a consultant firm.

To avoid the congestion charge while commuting to work or university he is looking for a neat 2-wheeled way to get into the city everyday.

His bike's materials - steel, chrome, leather - and the purism of the fixie approach - no brakes, no gears, fixed drive - just you and your legs - are what make it such a special driving experience for him.

Martin is 21 and currently in education to become a bank clerk in Berlin.

He already had a look at bicycles, but could not afford the risk of appearing at the bank, covered in sweat. But he doesn't want to spend his money on a lame scooter either. Using a car would be idiotic, regarding traffic (plus he could never afford the one he'd like) so he's searching for a smarter alternative which conveys both the ease of use of scooters and the strong statement of a wholesome motorcycle.

He likes them for their Usability - and is thoroughly convinced that less features, although they might appear inferior to competitive products on the data sheet, are the reason for their undisputed ease of use.

COMPETITORS.

125cc.

_good size vs sophistication ratio.

_either old machines.

_or new ones, that want to look like kawa ninjas.

Scooters.

_ease of use.

_small but limited driving experience.

_teenager image.

E-Bikes.

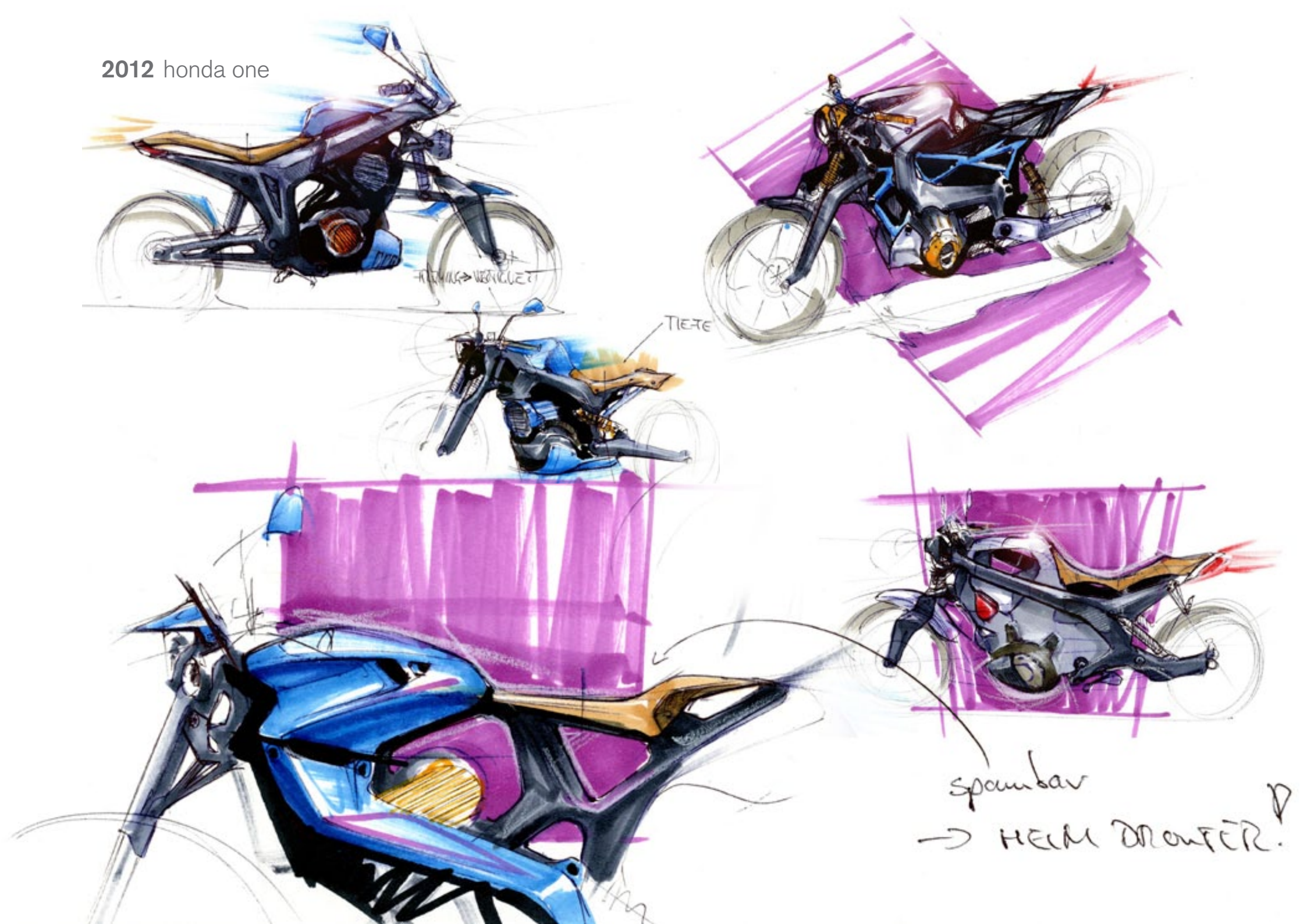
_benefit from electric drive performance.

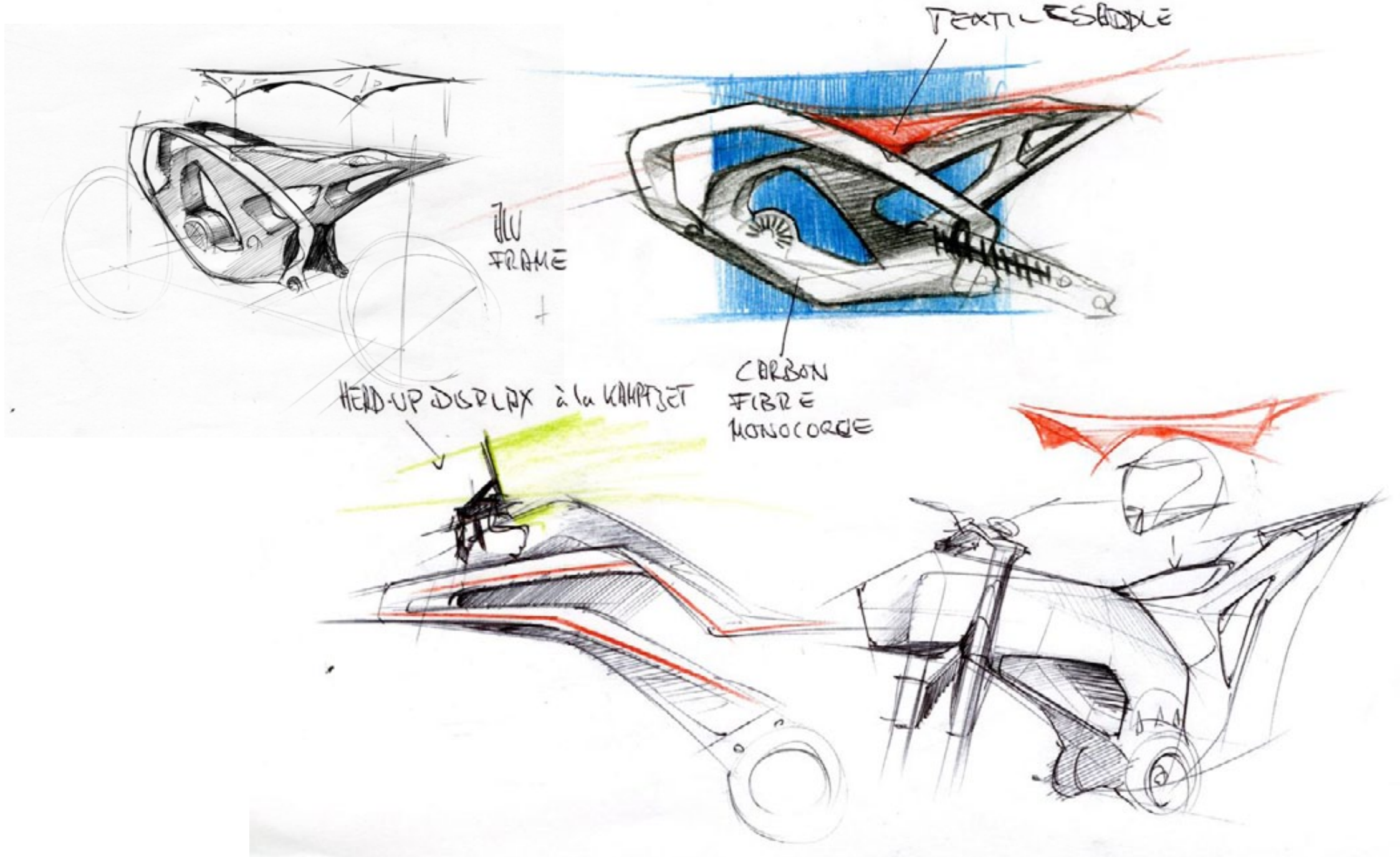
_suffer from limited development budgets in terms of design and marketpenetration.

CONTEXT.


HERITAGE
RACING
TECHNICS
Harley-Davidson
DUCATI
Amarillas
H9936
BBB

2012 honda one




TEXTILE SHELL
ALU
FRAME
CARBON
FIBRE
MONOCOQUE
HEAD-UP DISPLAY à la KAWASAKI

HONESTY.

_No molded Plastic Styling- and Coverelements

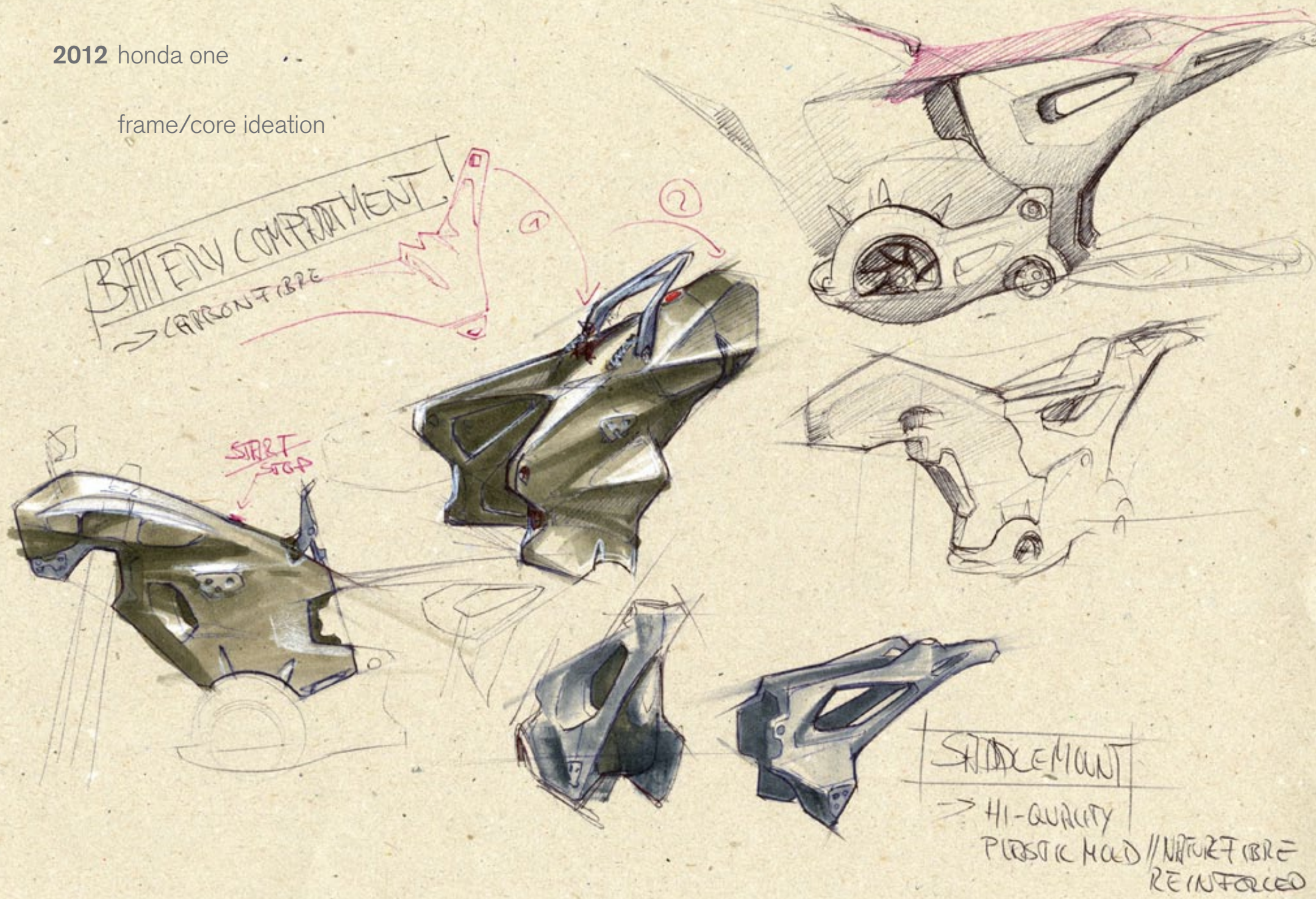
_Appearance derives from functional requirements of the different components

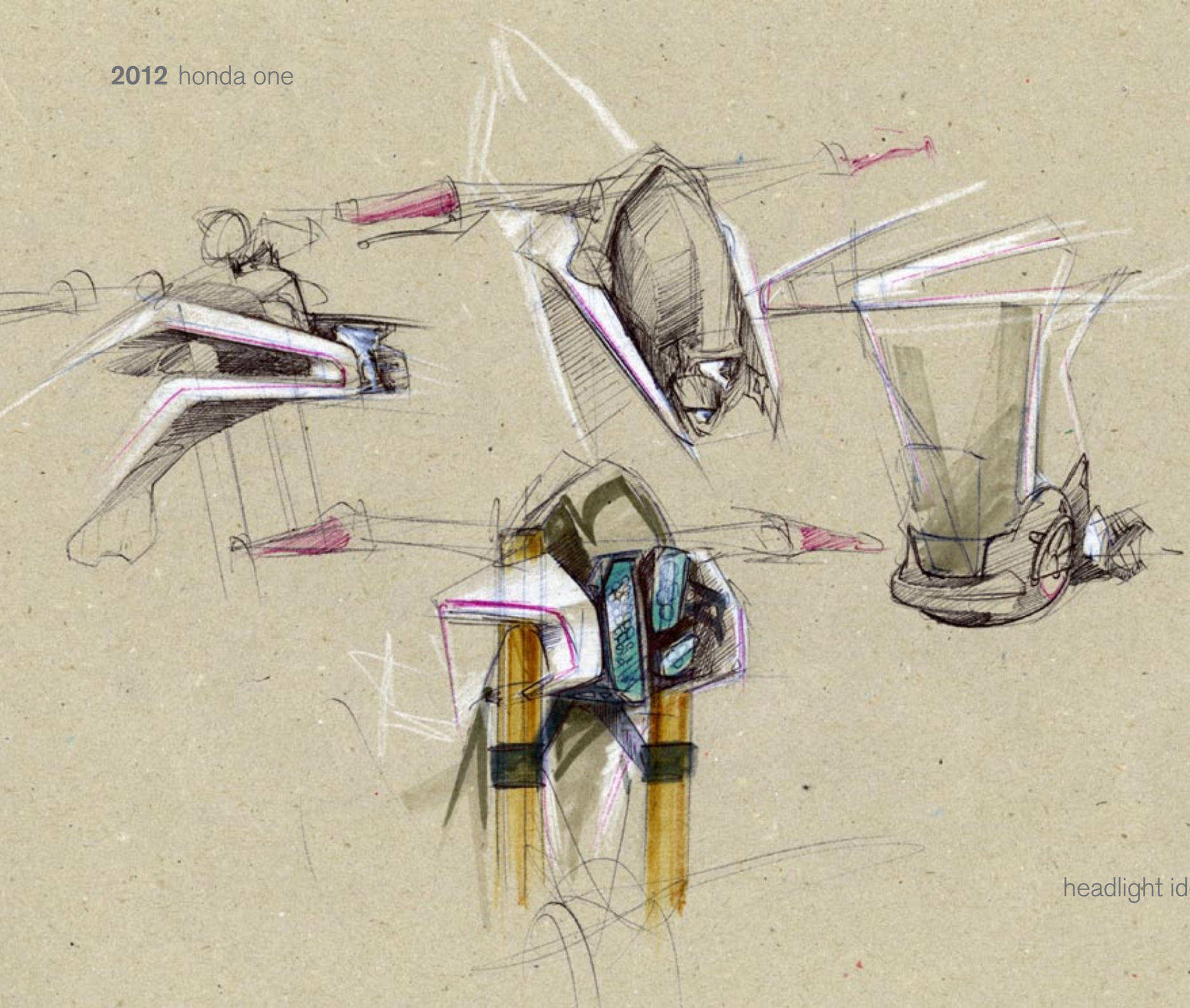
_Compactness (125/250cc equiv.) serves Ease of Use and Urban Maneuverability

keysketch
exoskeleton + core + saddle

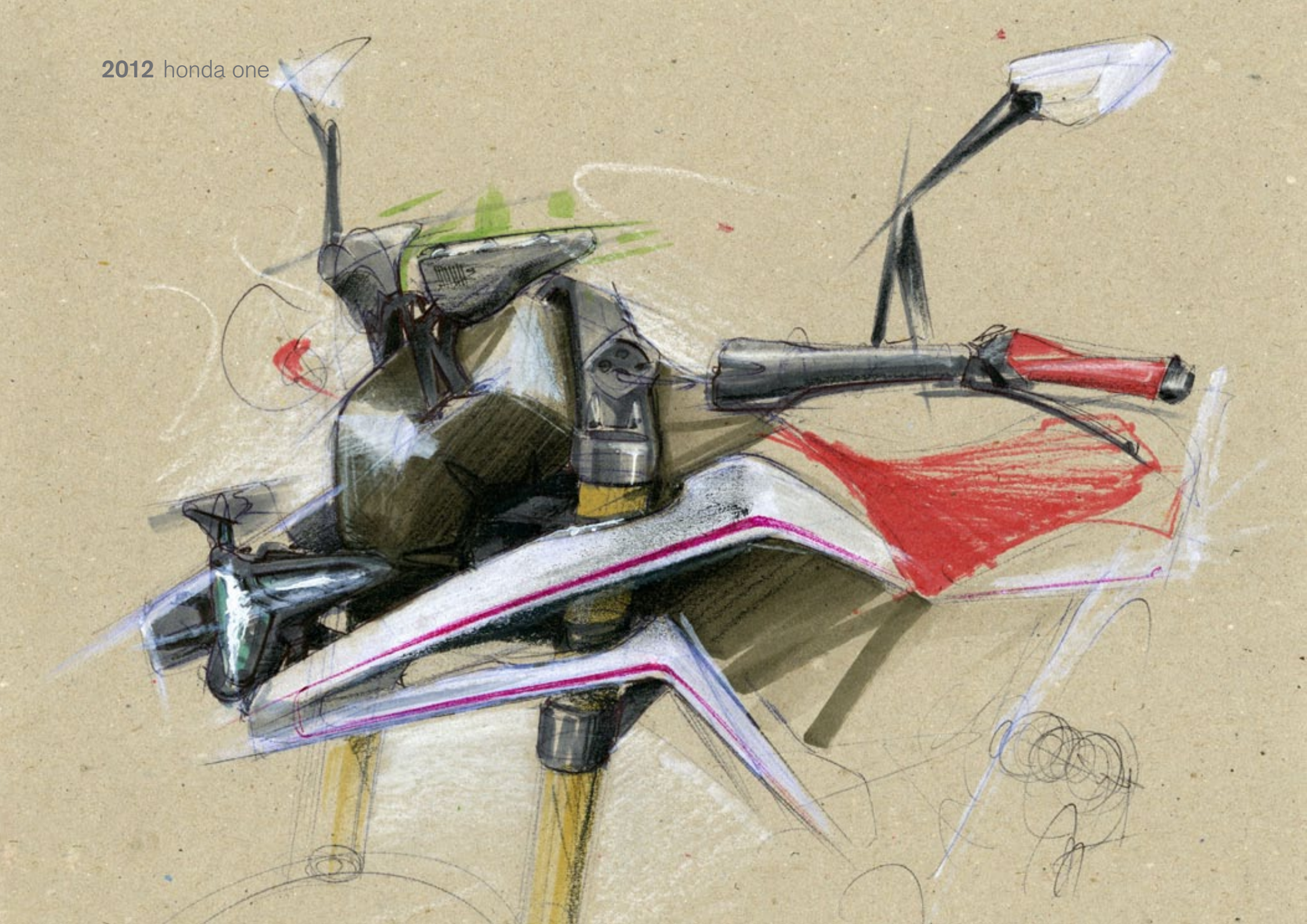
2012 honda one

frame/core ideation





headlight ideation

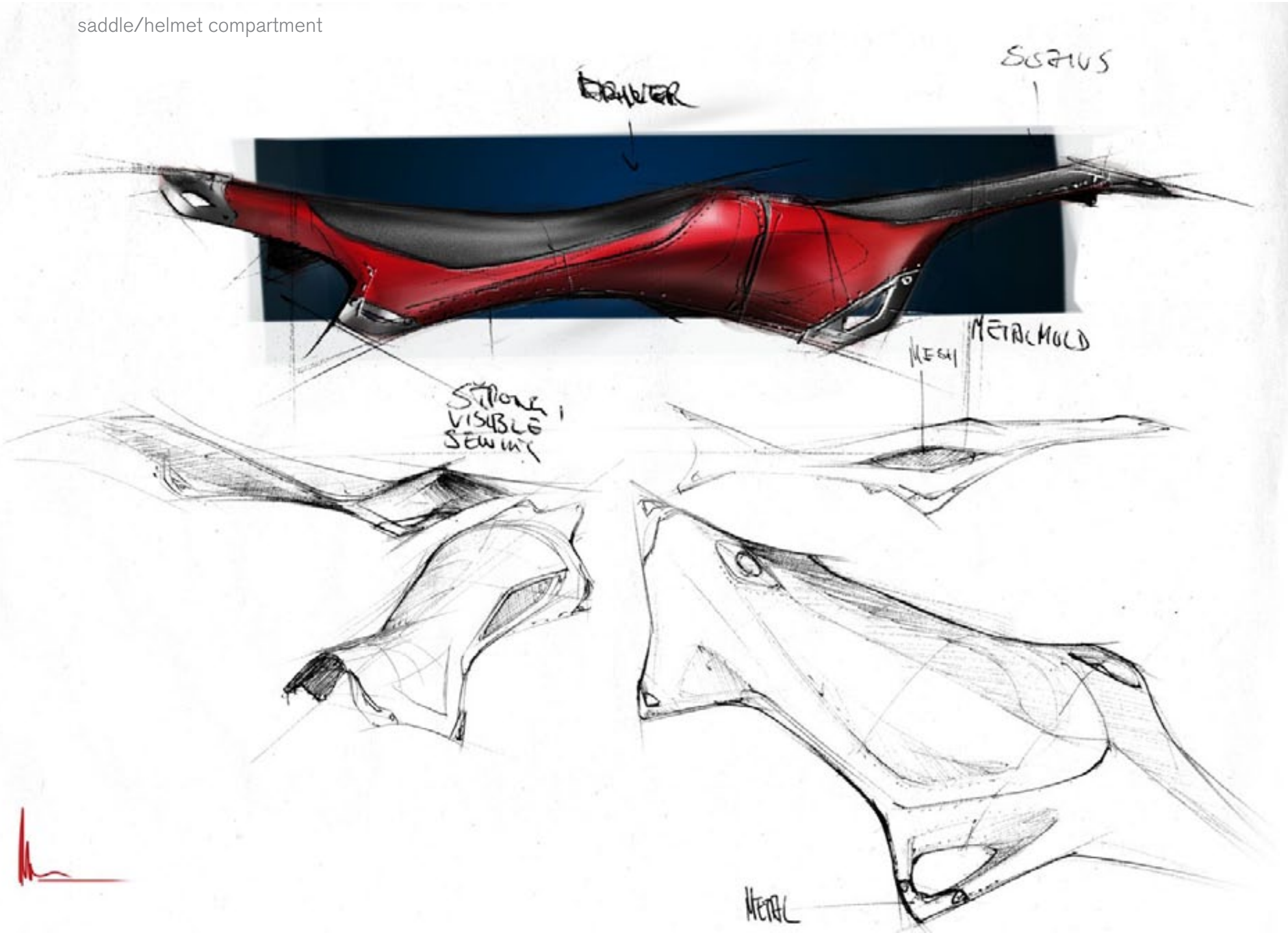


QUALITY.

_visible technical parts
strengthen the trust in the vehicle
_traditional and state-of-the-art
materials

2012 honda one

saddle/helmet compartment

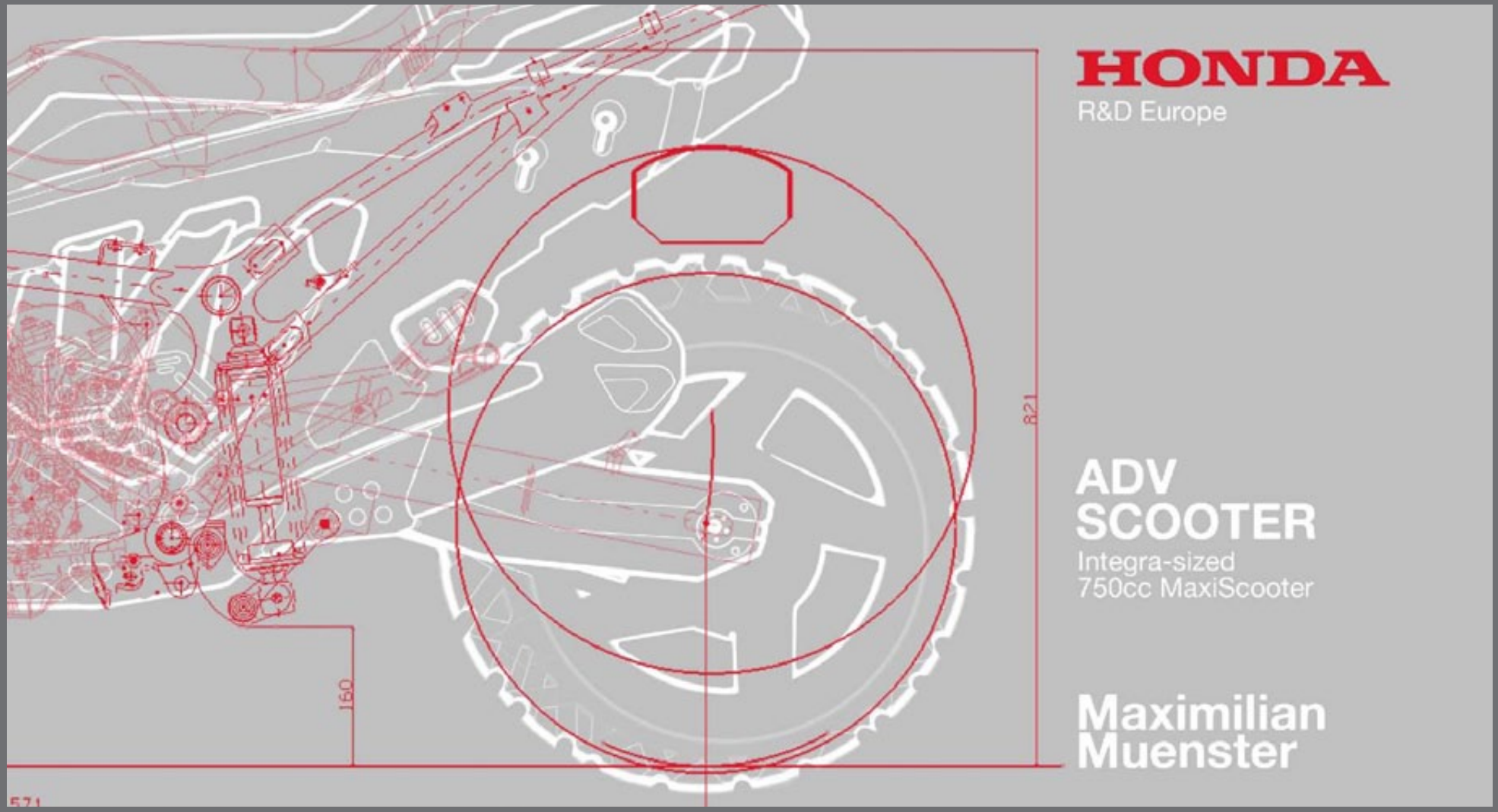


2012 honda one

2012 honda one

2012 honda one

2013/14 honda internship



2013/14 honda internship

second internship
7 months
rome, italy

paolo cuccagna
honda r&d europe

teofilo plaza garcia
honda r&d europe

This is an excerpt of my final internship presentation at the Honda R&D Europe in Rome.

Together with a colleague intern from india, we were tasked to individually produce a design for a „adventure scooter“ on the 750cc platform and provide designinput for the resident design team at Honda.

HONDA

R&D Europe

ADV SCOOTER

Hobby

Needed Outdoor functionality.

Lifestyle

Looking for Representation of lifestyle in Commutersegment.

Aspiration

Desired adventurous Attitude&Experience.

HONDA

R&D Europe

ADV
SCOOTER

Customers already customize their Commuting Vehicles for enhanced OUTDOOR & ADVENTURE functionality.

HONDA

R&D Europe

ADV
SCOOTER

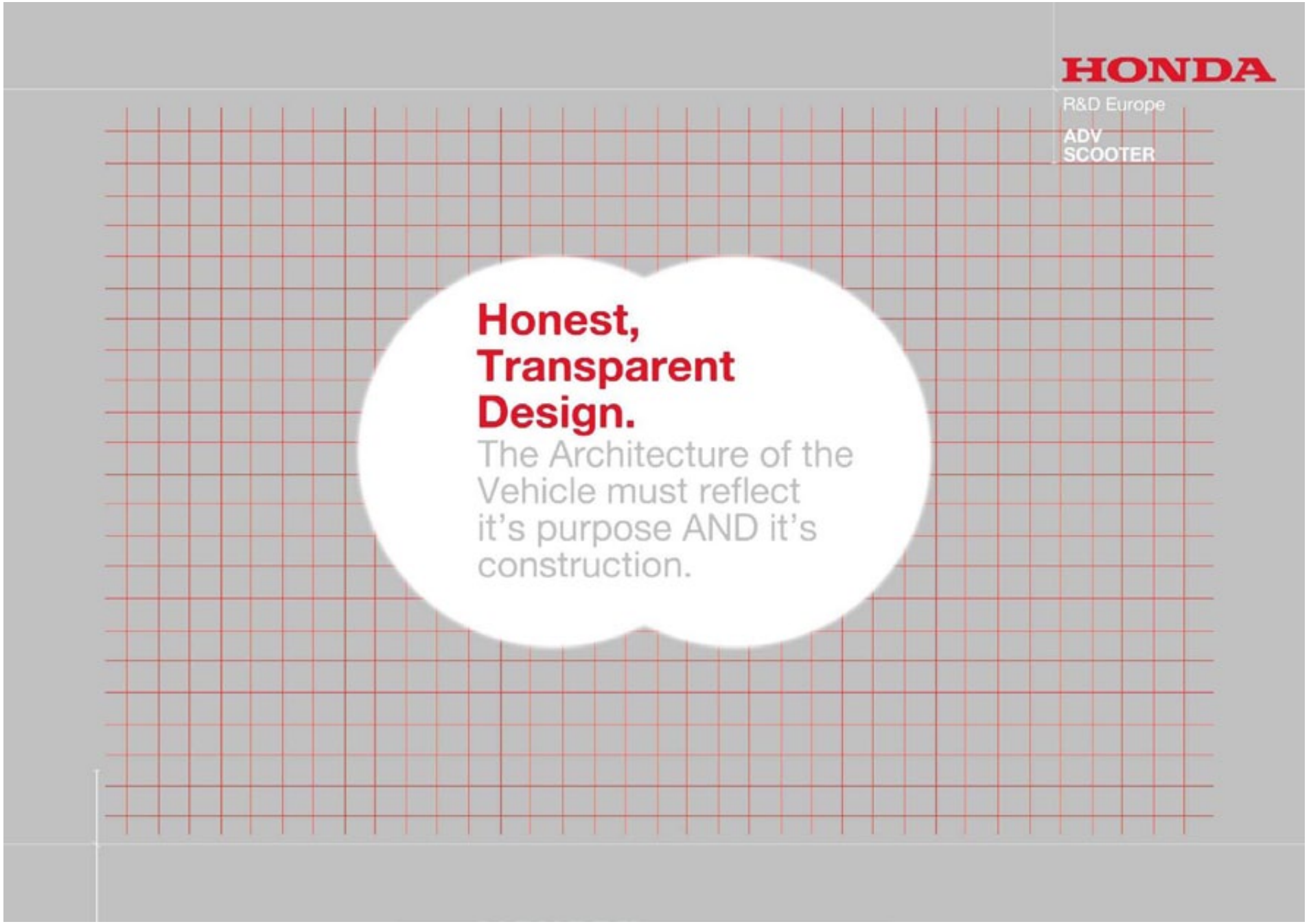
DESIGN CONCEPT

Flexible Cargosolutions & Customizability for better ADVENTURE capability.

Thus increase suitability for daily use and consequently become more attractive as COMMUTER vehicle in the MaxiScooter-segment.


HONDA
R&D Europe
ADV
SCOOTER
Inspiration from
Outdoorsports &
Utilityequipment:
Functional Materials,
Mechanical Toughness
and precise Graphics.
SALOMON
LEATHERMAN
LEATHERMAN® MUT™

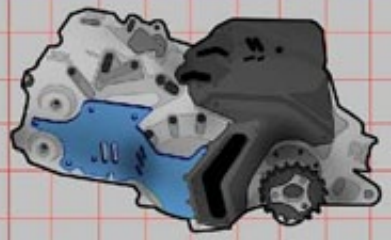

HONDA
R&D Europe
ADV
SCOOTER
Chassis
Frame, Engine,
Cooling, etc.
=
Weight, Cost,
Ressources
+
Covers
Styling, some
Functionality, etc.
=
Weight, Cost,
Ressources
=
Heavy
Expensive,
Dishonest,
Irresponsible
Vehicle.


HONDA
R&D Europe
ADV
SCOOTER
Honest,
Transparent
Design.
The Architecture of the
Vehicle must reflect
it's purpose AND it's
construction.

HONDA

R&D Europe

ADV
SCOOTER



Drivetrain

Central and heaviest part of the vehicle.

HONDA

R&D Europe

ADV
SCOOTER

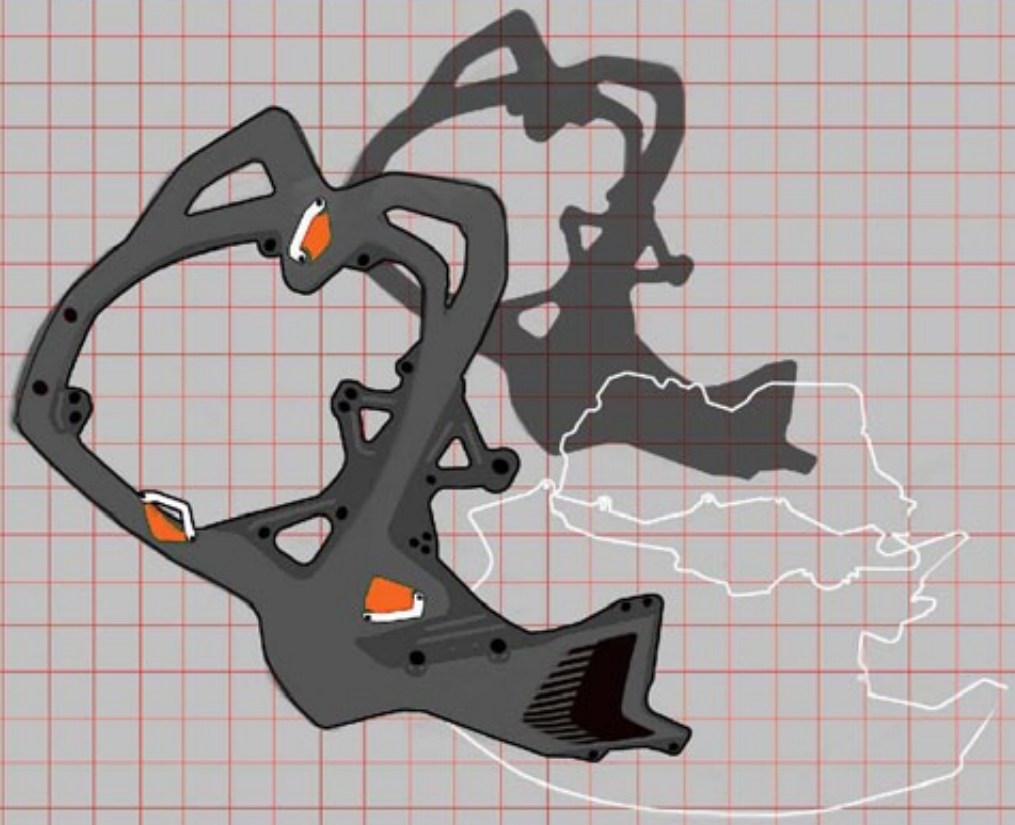
Base

Structural part of the Framework, serves as engineguard, footrest, passive cooling and offers lugs for fastening cargo.

HONDA

R&D Europe

ADV
SCOOTER



Frontframe

&

Frame is a structural part of the vehicle, serves as bumper, holds the fork, can be part of the passive cooling and has added carabiners for flexible storage.

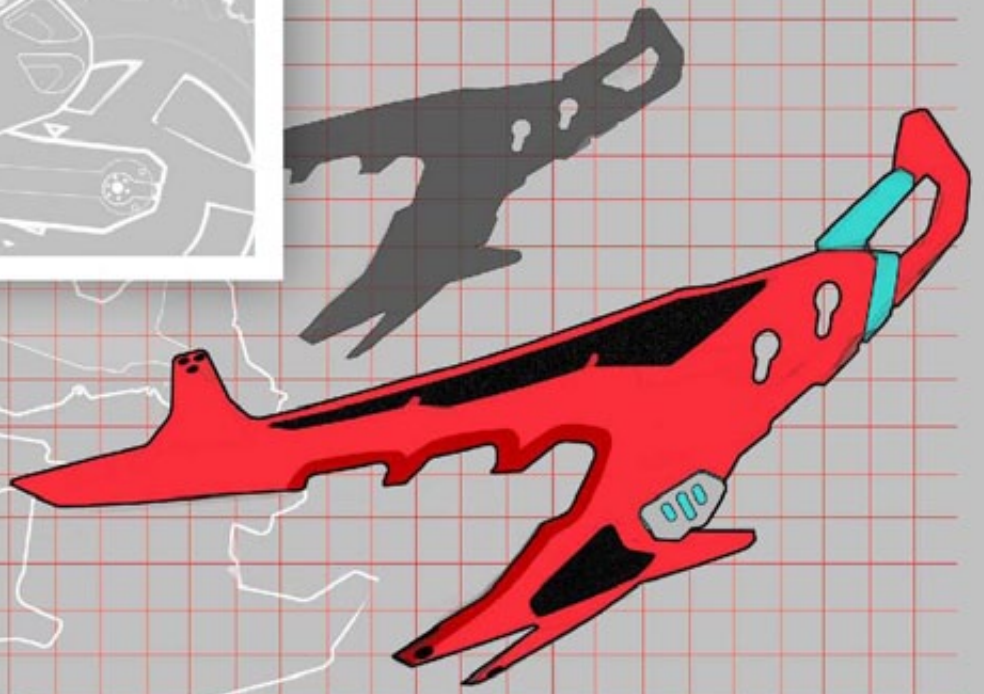
Rearframe

Is a structural part of the architecture while combining Integrated passenger footrest and -grips ...

HONDA

R&D Europe

ADV SCOOTER



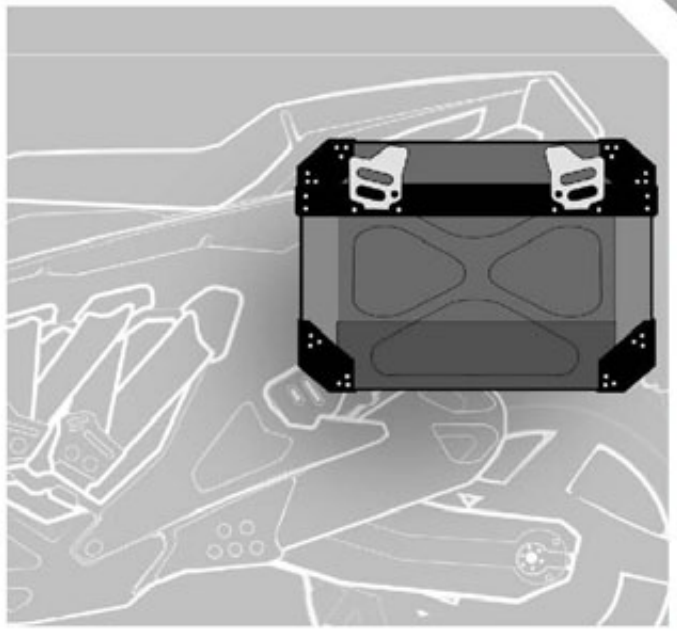
HONDA

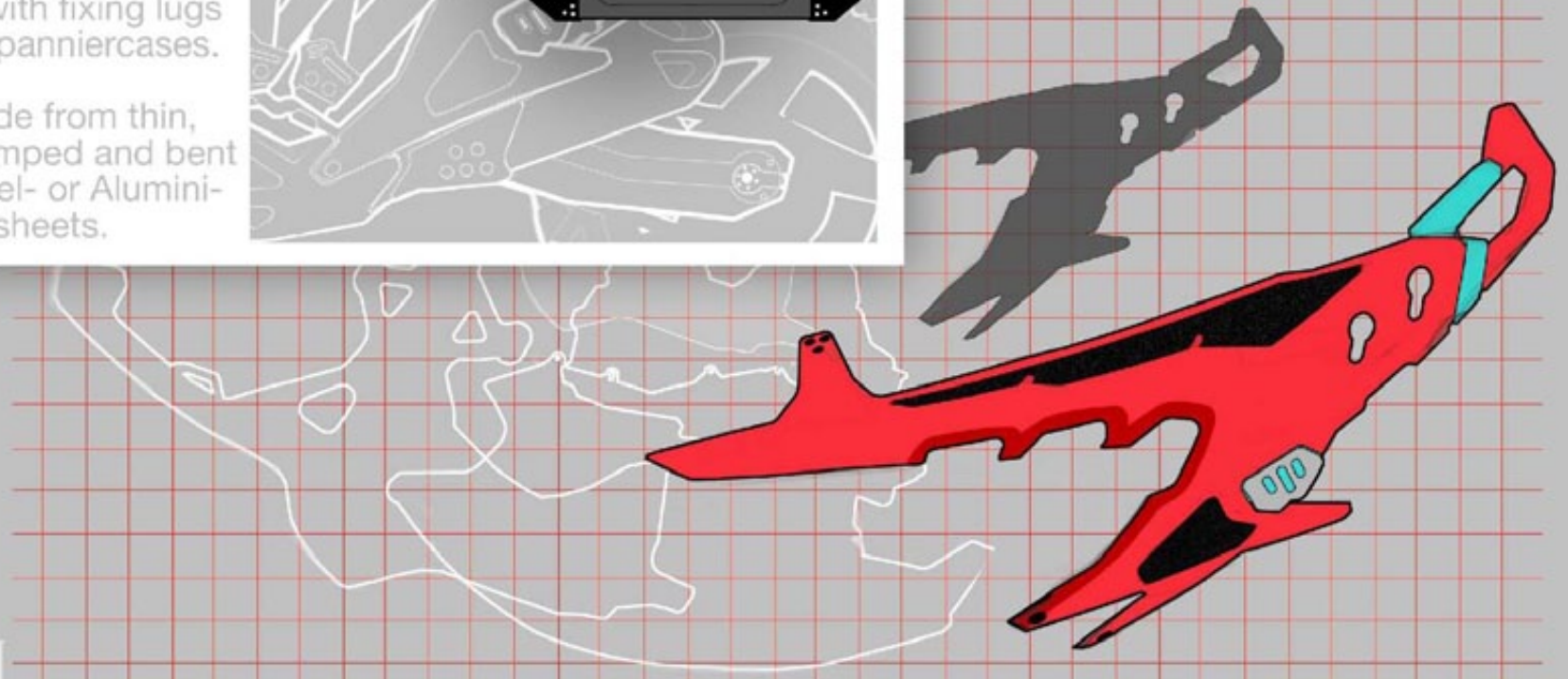
R&D Europe

ADV
SCOOTER

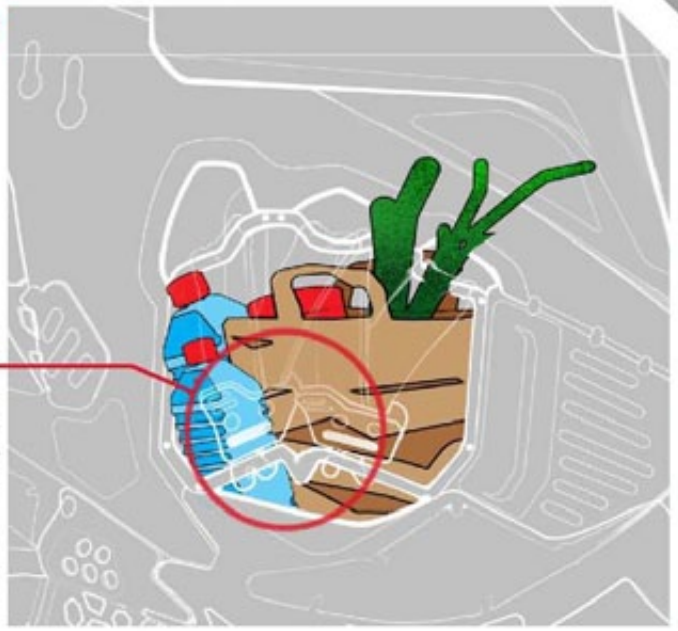
... with fixing lugs
for panniercases.

Made from thin,
stamped and bent
Steel- or Alumini-
umsheets.





Easily accessible storage comp-artments.



Textile straps add tactile sensation, introduce materials from outdoor gear and can be used for attaching things onto other parts of the vehicle.

HONDA

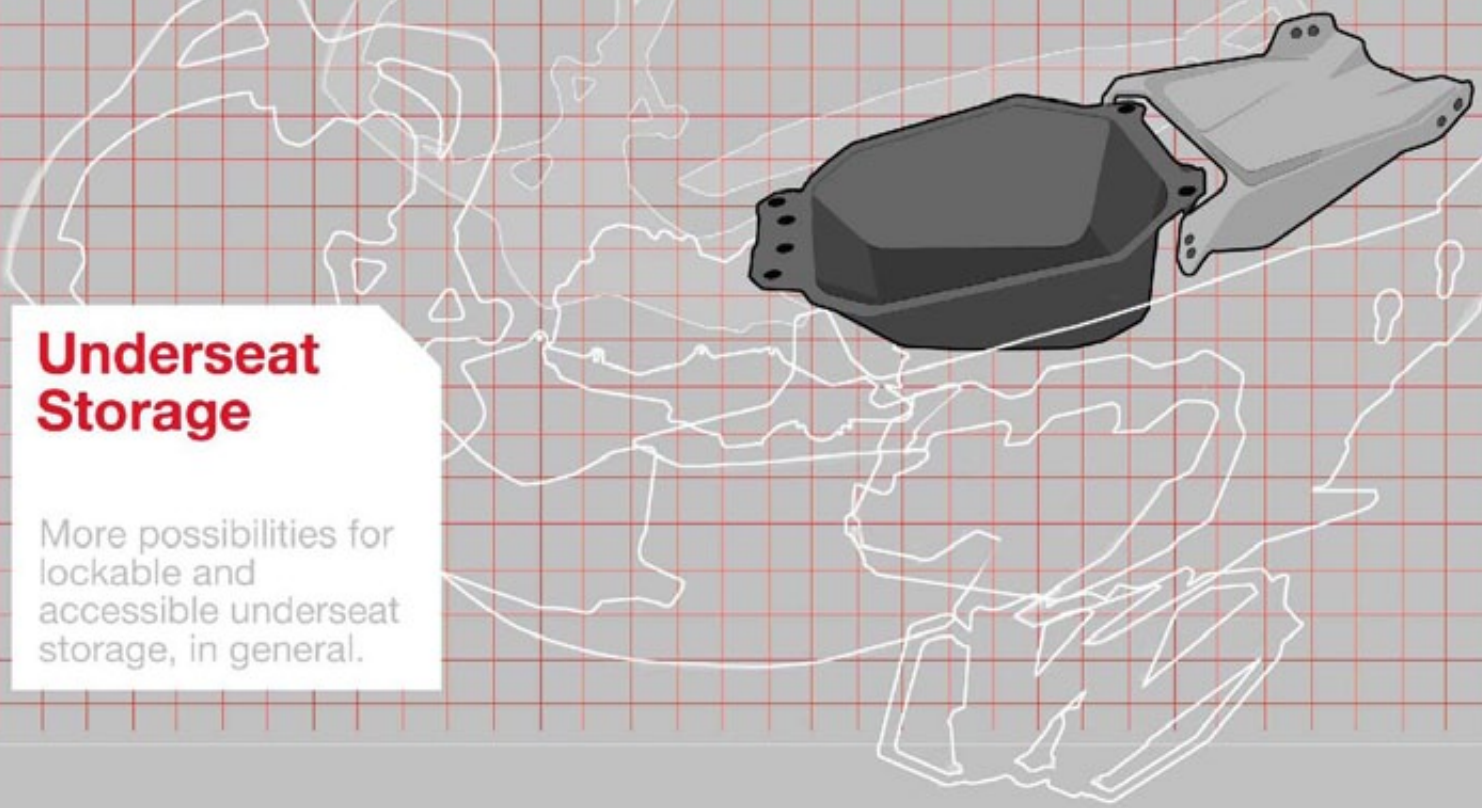
R&D Europe

ADV SCOOTER

HONDA

R&D Europe

ADV
SCOOTER



Underseat Storage

More possibilities for lockable and accessible underseat storage, in general.

HONDA

R&D Europe

ADV
SCOOTER

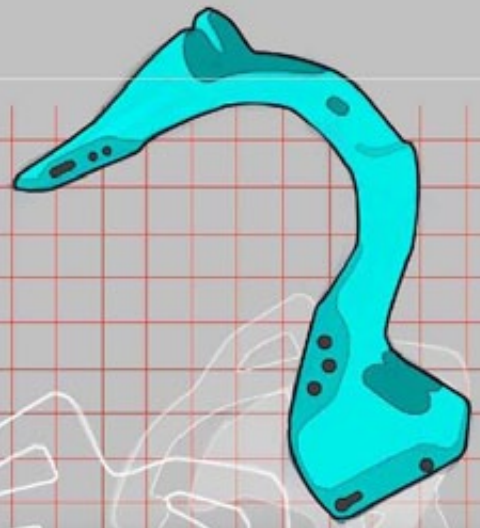
Rubberized Cover.

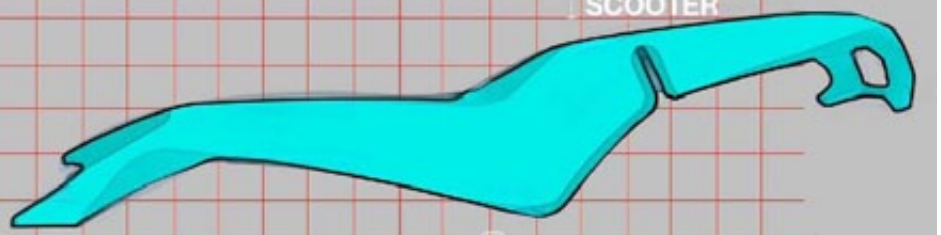
To restrict moving luggage while driving.

HONDA

R&D Europe

ADV
SCOOTER





Polyurethan Seat&Dashboard

Flexible, weather-proof PU material. Seating area structurally reinforced.

Seat&Dashboard can be molded in each one piece ...

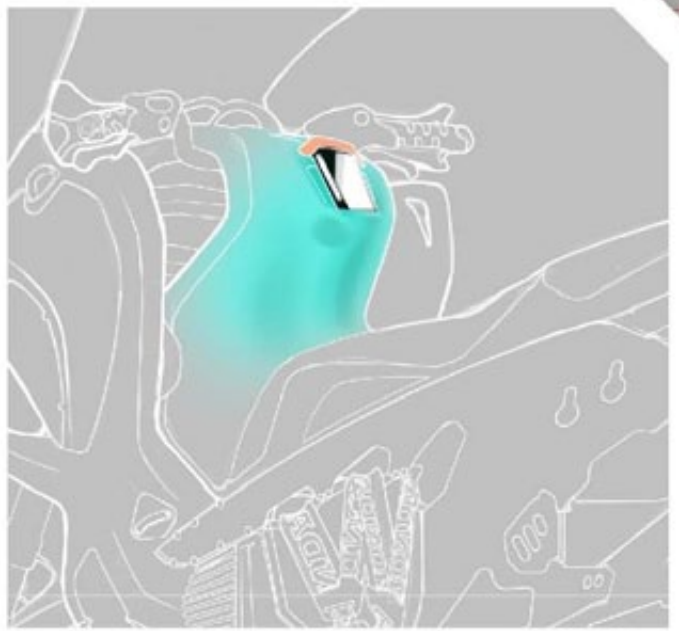
Inspiration:
chair 03
by Maarten van Severen
for VITRA

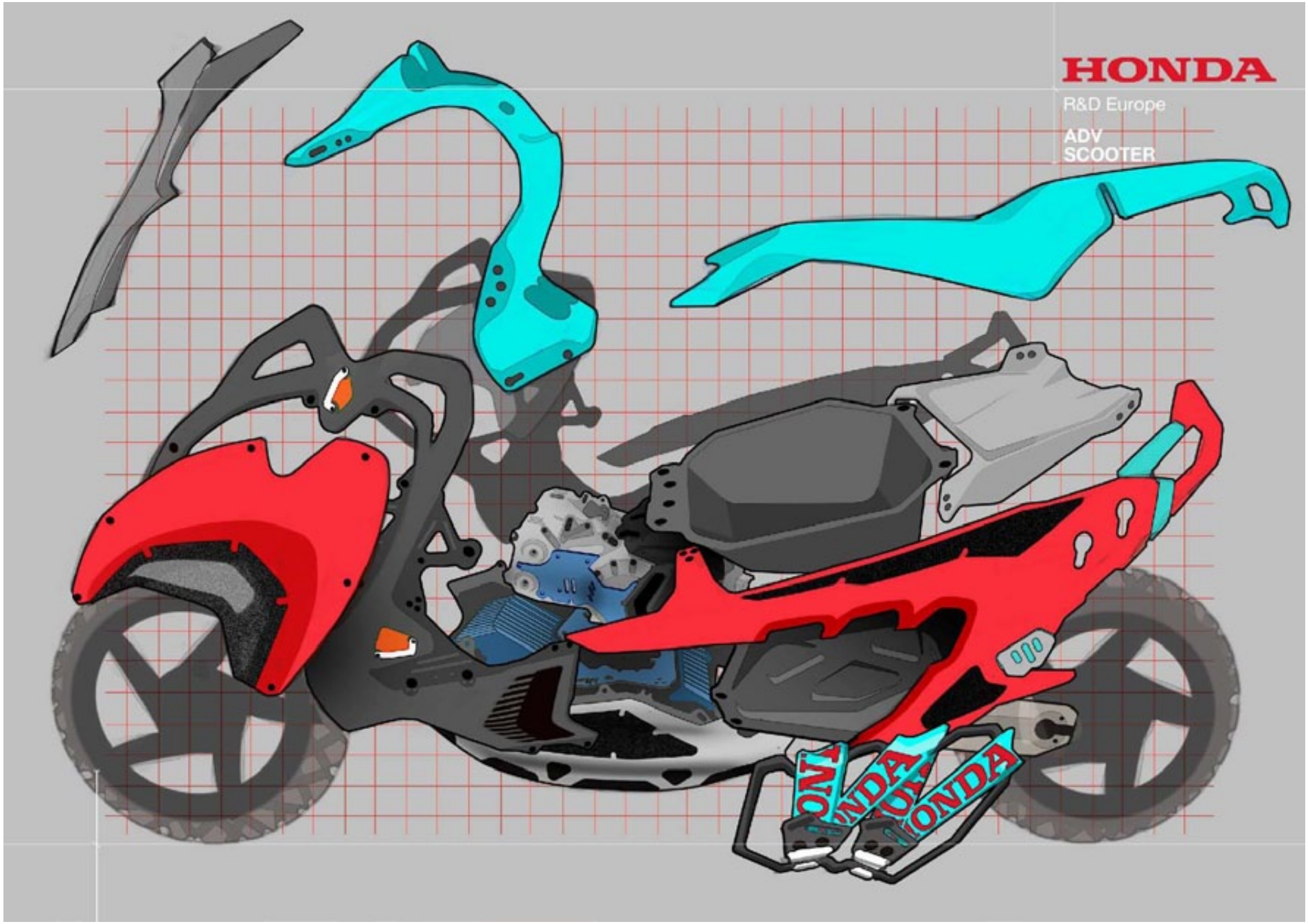
HONDA

R&D Europe

ADV
SCOOTER

... and fix Smart-phones or GPS-Devices in the Rider's view on the Dashboard.




HONDA
R&D Europe
ADV
SCOOTER


HONDA
R&D Europe
ADV
SCOOTER

final renders on package

final renders on package

2014/15 the architecture of mobility

2014/15 the architecture of mobility

9th/10th term
bachelor thesis
prof. peter naumann

This is just a short excerpt, for the full context of my bachelor thesis visit the infosite: www.thearchitectureofmobility.com

After 4 years of studying design and 2 internships with a focus on transportation, i felt the need to reassess my original motivation „to design cars" fundamentally.

The result was a personal questioning of our current concept of mobility in sociocultural, ecological, economical and also moral aspects in the discipline of design.

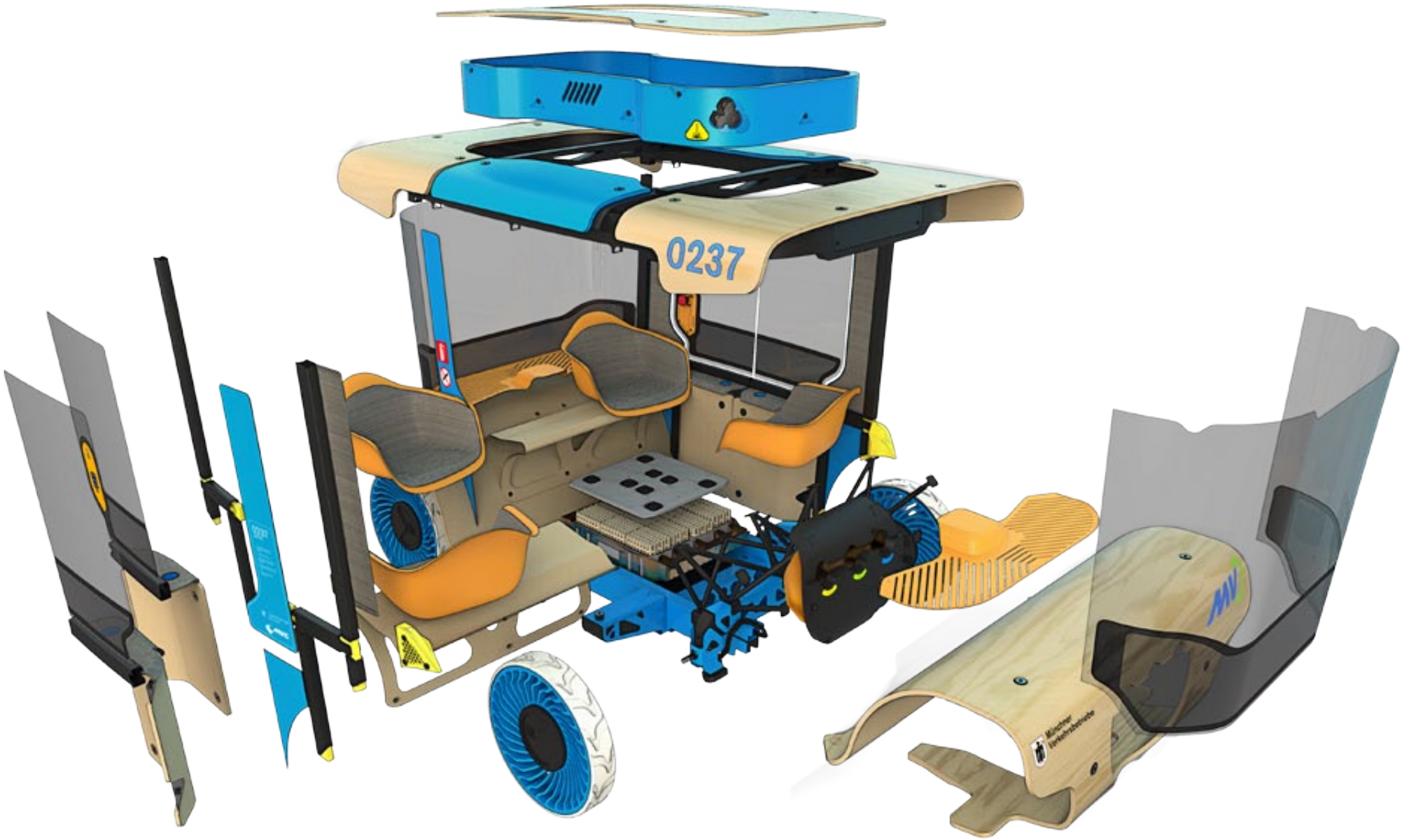
„Design" in transportation is mainly about styling, styling is not part of solving mobility issues, it is even part of creating them.

Thus, i wanted to examine which paradigm shifts in design moral, product lifecycles and sociocultural impact need to be considered for designing a sustainable mobility revolution in the upcoming age of the autonomous car.

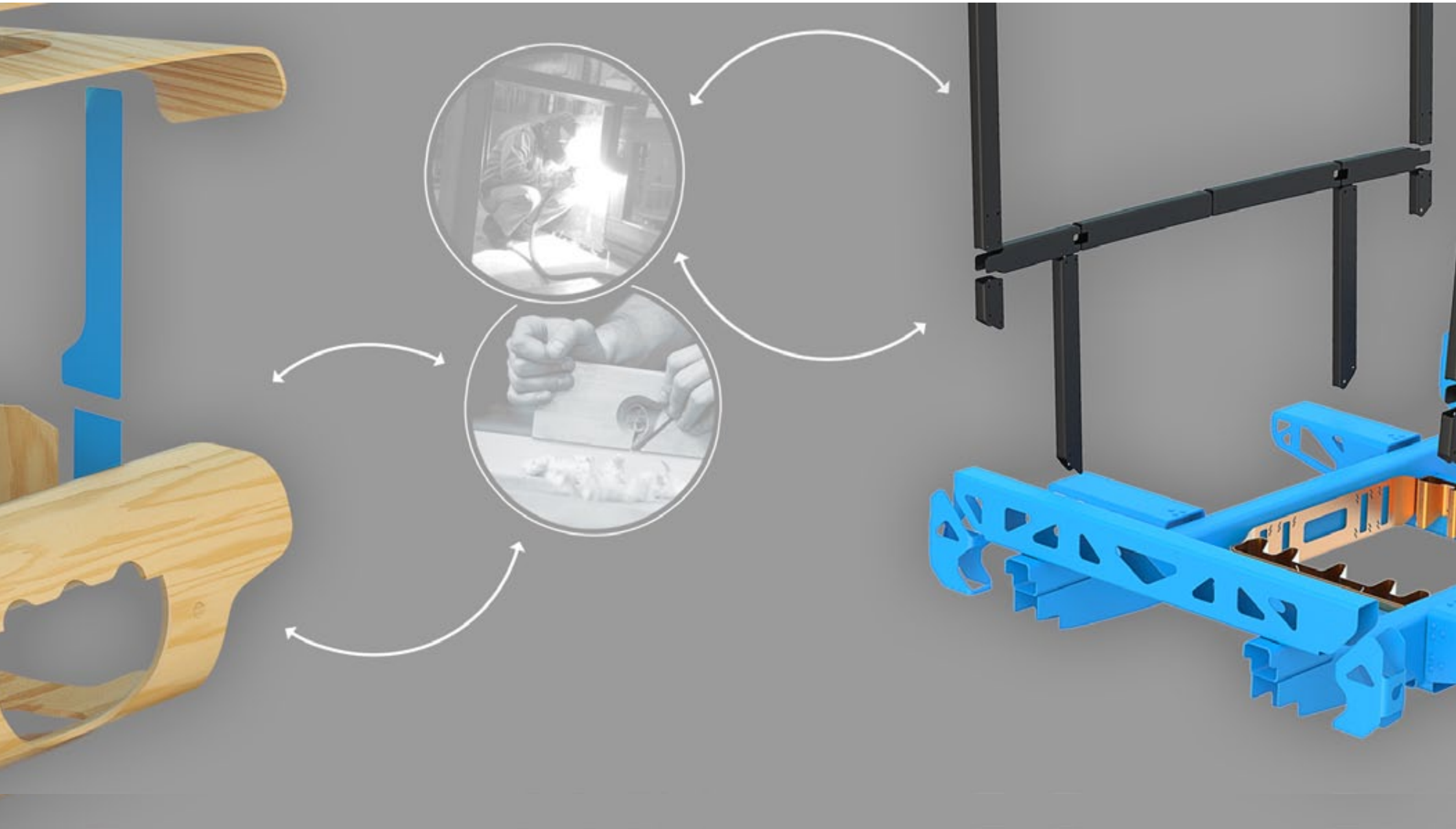
1. Think simple. Abstract.

2. Make it tangible.

3. Architecture equals Design.



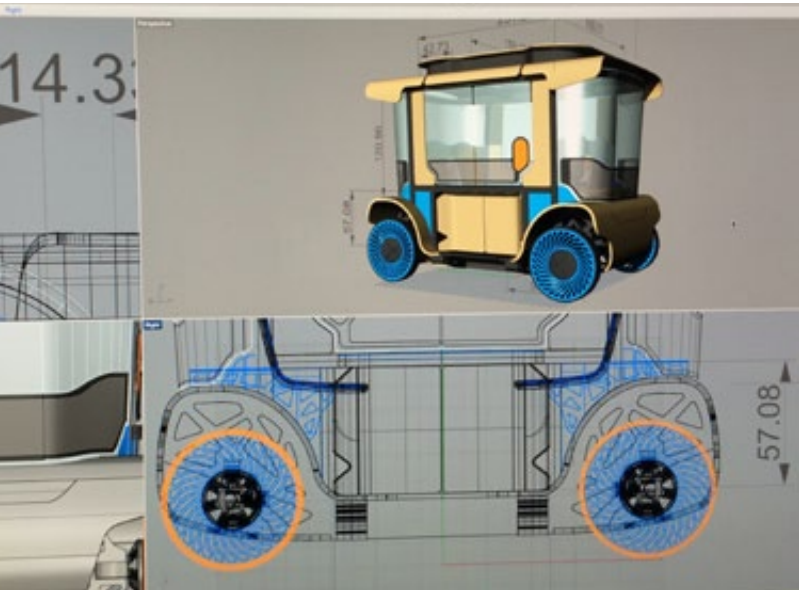
4. Consider lifecycles and economical context.



5. Design for Demographics, not markets.

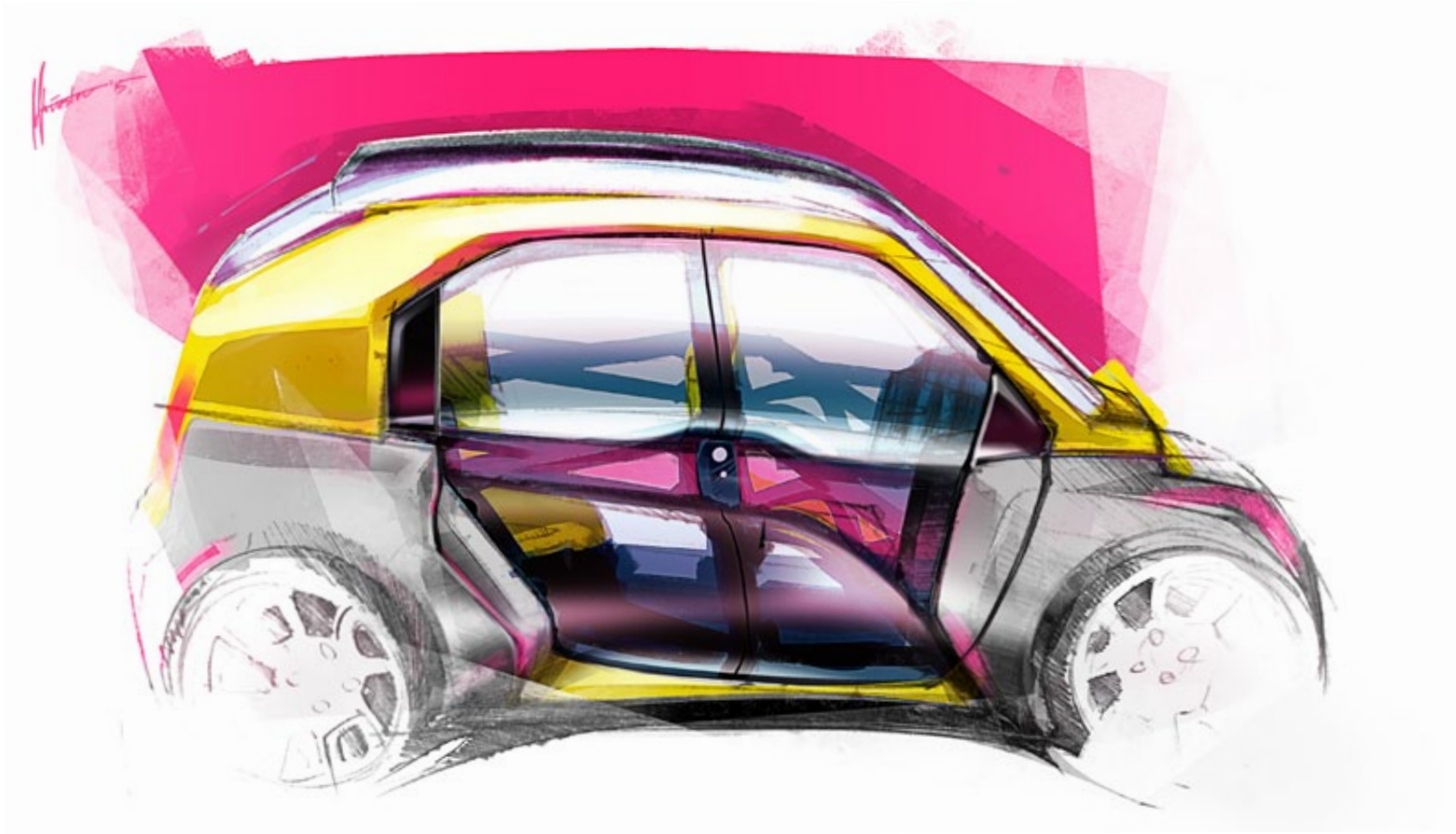
7. Make it social to avoid mere consumption.

8. Build.



9. Show & Tell.

2015/16 adaptive city mobility ©



2015/16 adaptive city mobility ©

2nd design loop for „acm 2“ freelance project support for **naumann design**

Government funded Lighthouse Research Project on a small, lightweight multipurpose electromobility ecosystem.

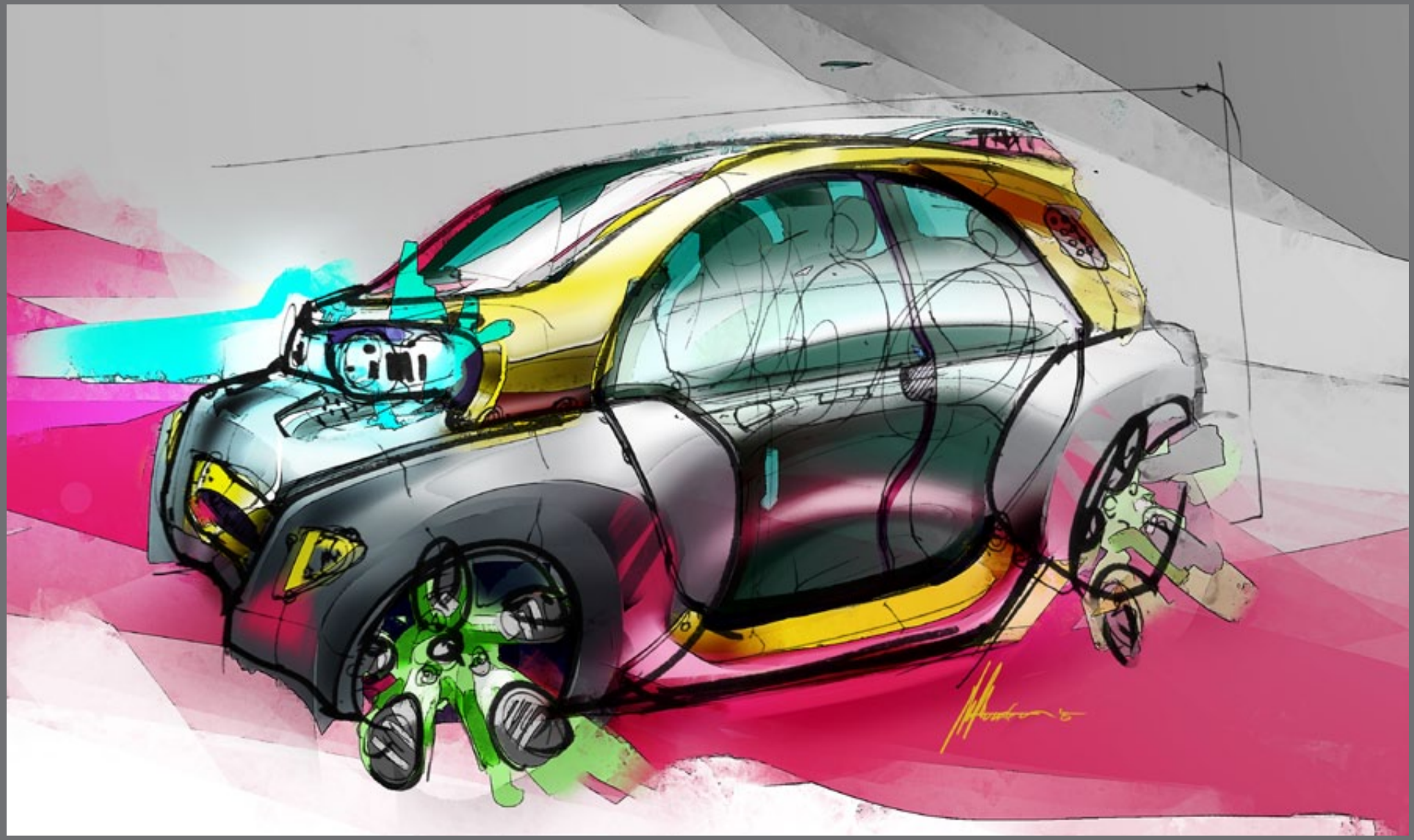
_Vehicleclass - L7e
_450kg (without batteries)
_Taxi version for 2 Passengers
_Interchangeable Batteries
_cargo/commercial versions available

Fully digitally embedded for dynamic advertisement, fleet management and mobility services.

All following pictures are copyrighted to the adaptive city mobility project and naumann design.

1st design loop „acm 1“

2015/16 adaptive city mobility ©



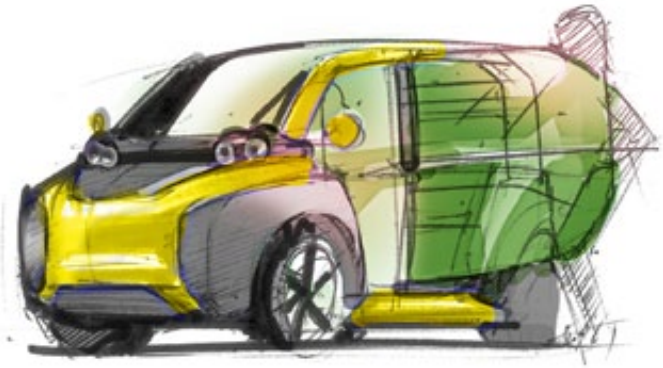
Design of the overall architecture and parts was strongly oriented on design-to-cost and the lowest possible vehicle weight.

Challenges were providing a juxtaposed approach to vehicular aesthetics, with strong character for such a small vehicle - while considering legislative regulations and favourable insurancecosts to attract commercial fleet operators to the idea of a dynamic e-fleet of lightweight urban vehicles.

The exterior is dominated by a CFK frame that encloses the passengers.

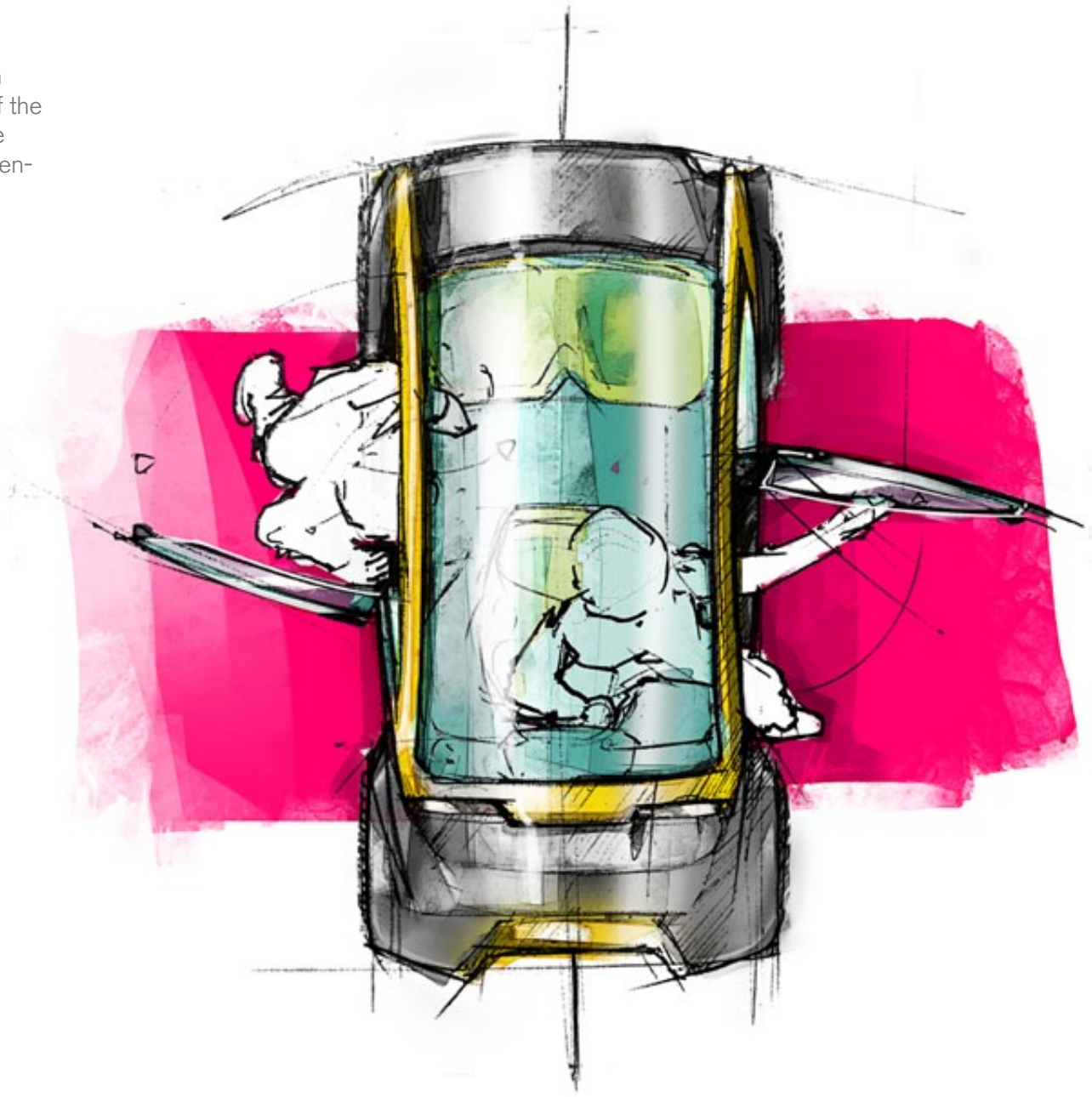
The groundfloor holds the batteries and is equipped with a lightweight boatster frame and crashmodules.

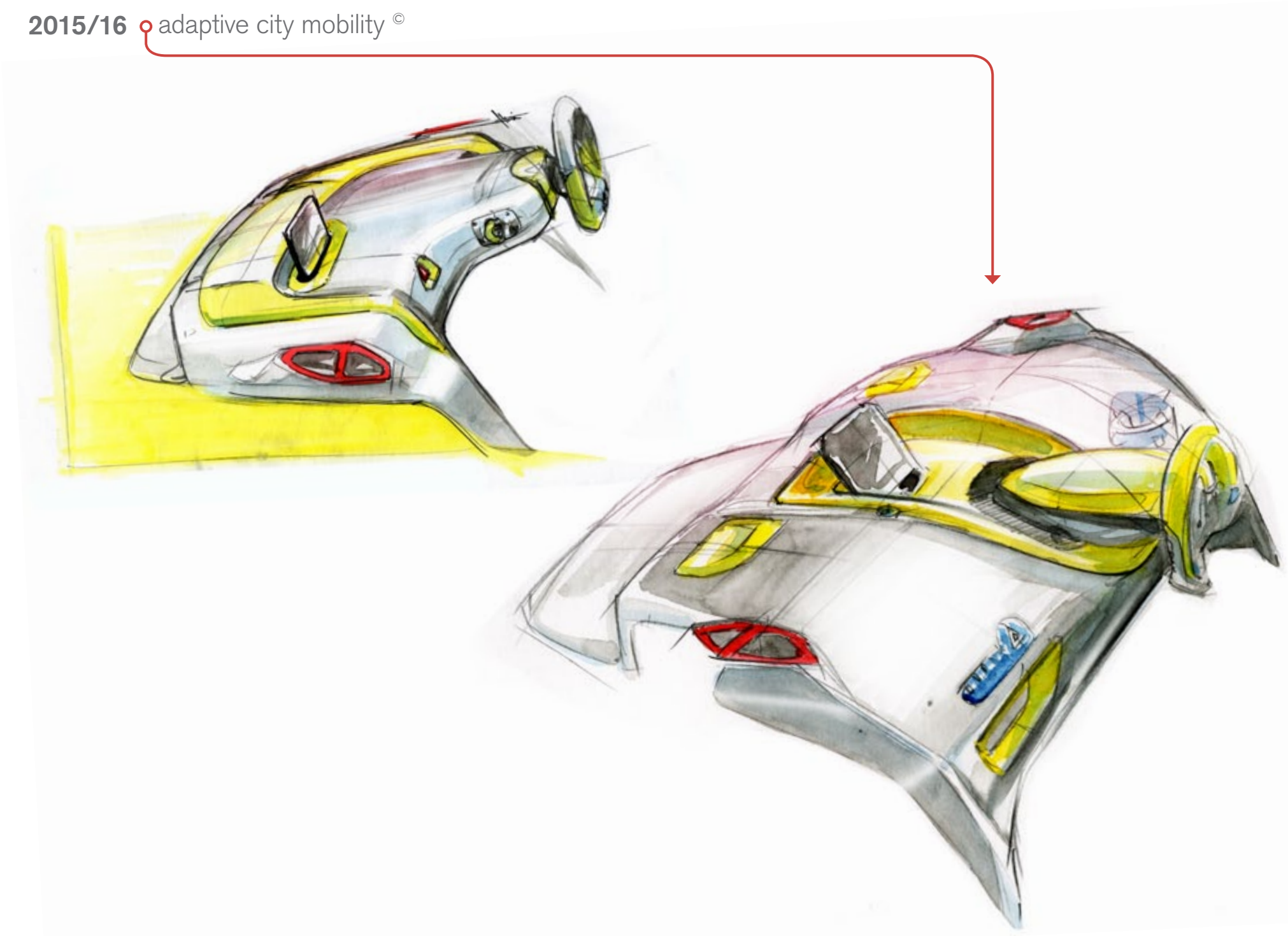
To achieve low insurance cost throughout trifle damages, these modules are generously covered by lowcost thermo-formed bumpers that also provide a stronger character for the vehicle, and, along with the uniform frame make the exterior functianally transparent.

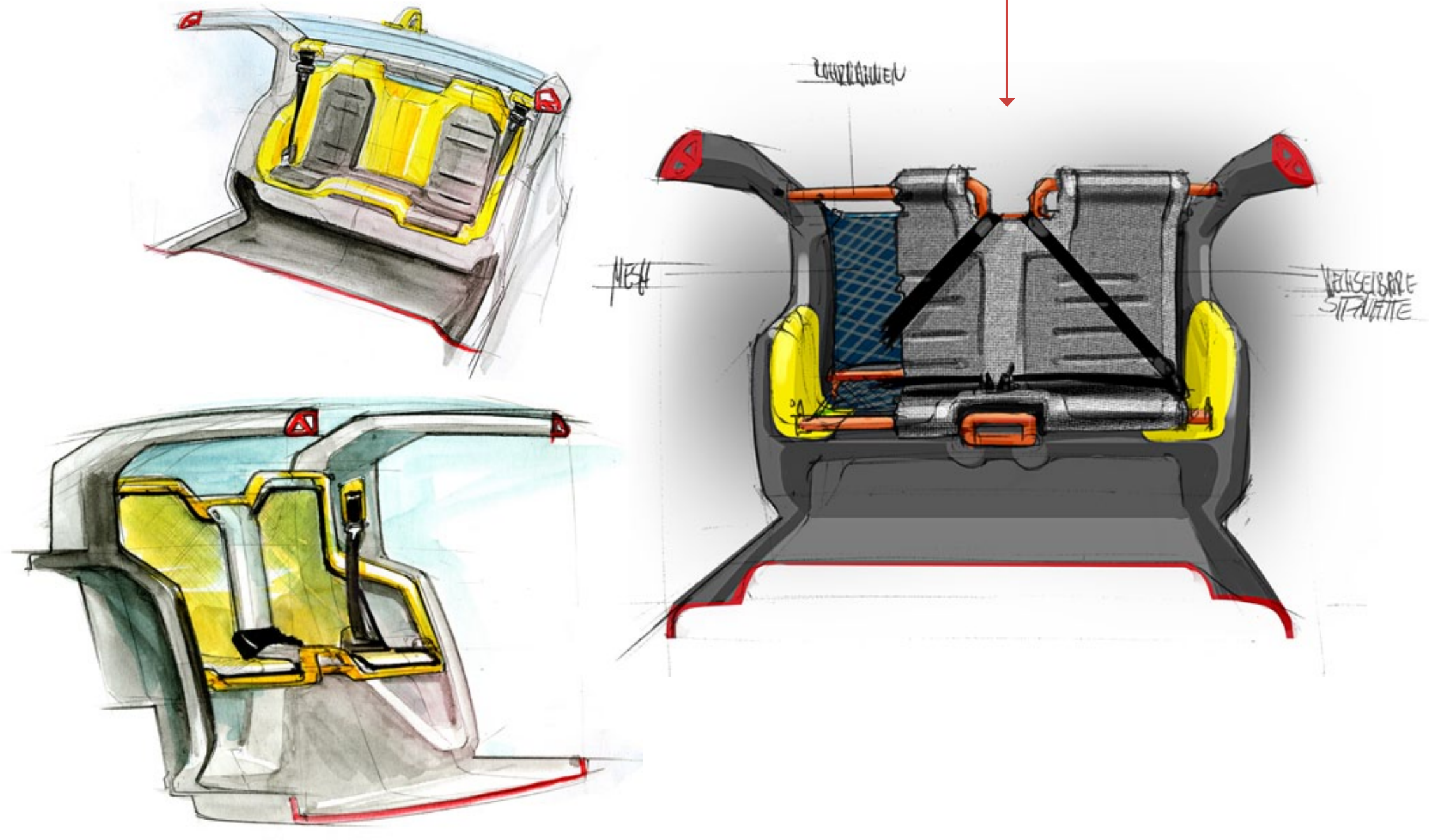


2015/16 adaptive city mobility ©

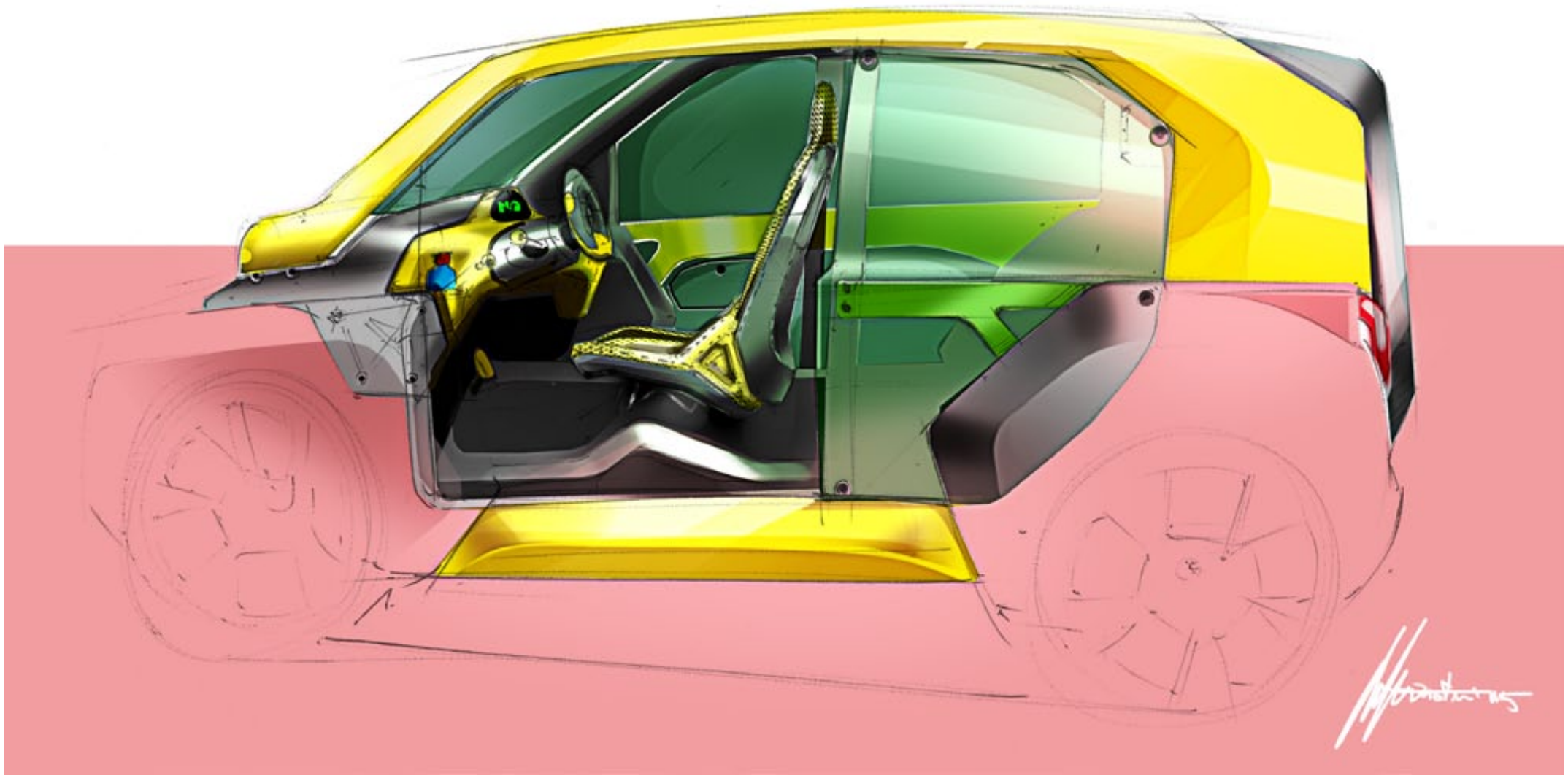
The 3-seat interior for the taxi-version went through a thorough evaluation of the driver‘s „office“ situation as well as the passengers‘ bench-solution and their entertainment opportunities.







2015/16 adaptive city mobility ©



2015/16 adaptive city mobility ©

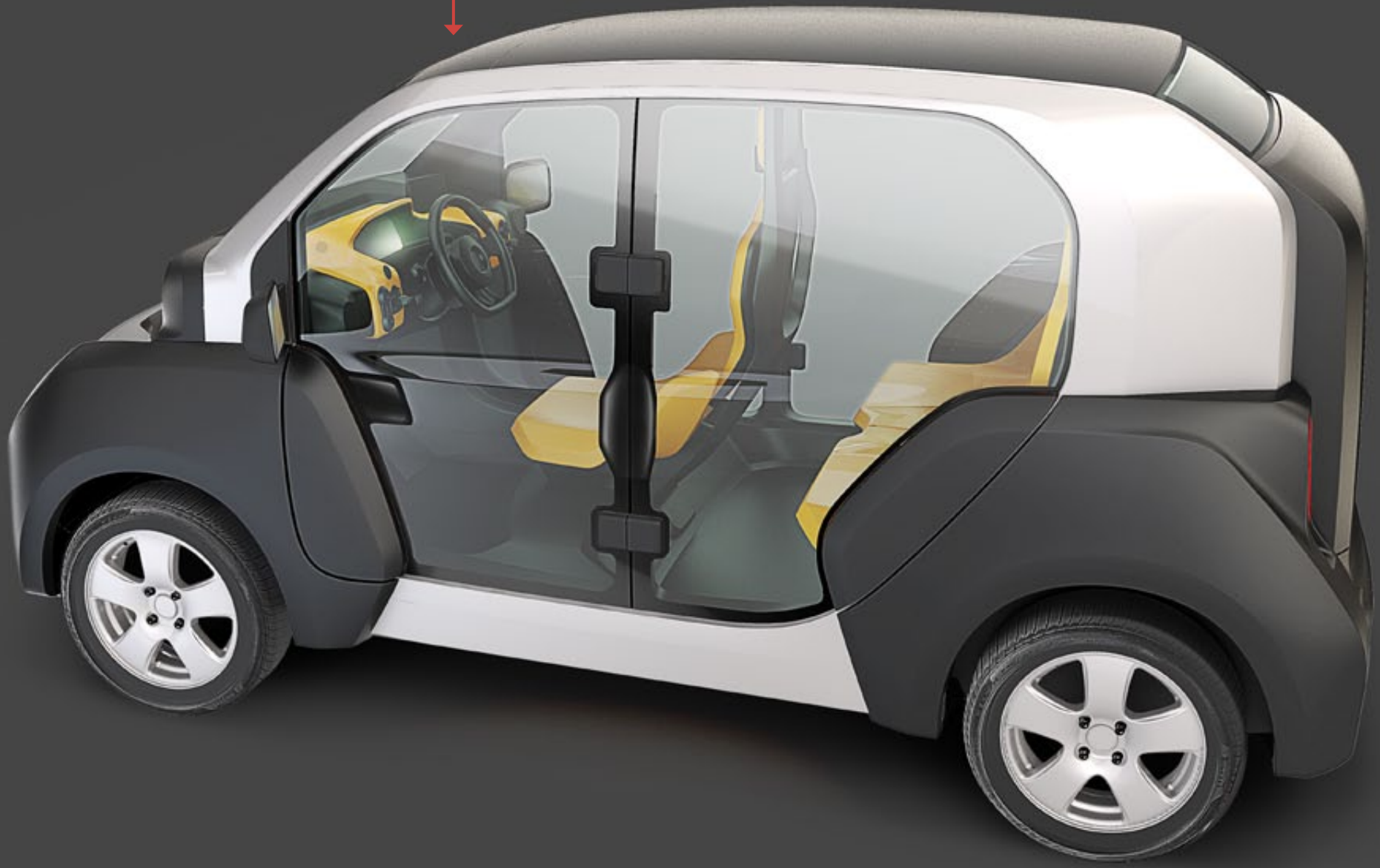
The exterior & exterior were presented on June 1st, 2016 in a 1:1 scale designprototype.

2015/16 adaptive city mobility ©

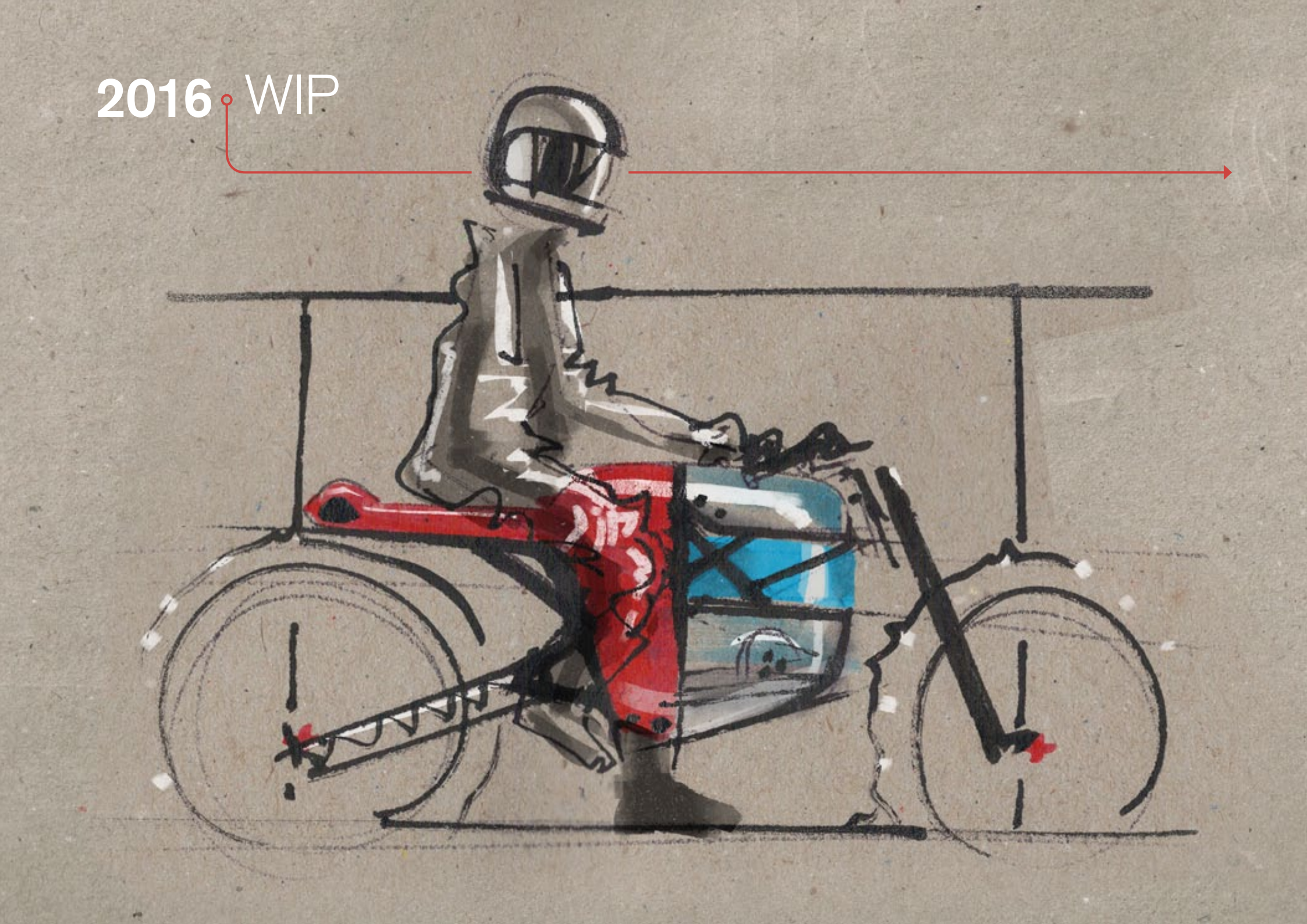
Final Press & Presentation renders from
Alias data in Keyshot 5.

2015/16 adaptive city mobility ©

Final Press & Presentation renders from Alias data in Keyshot 5.



2016 WIP



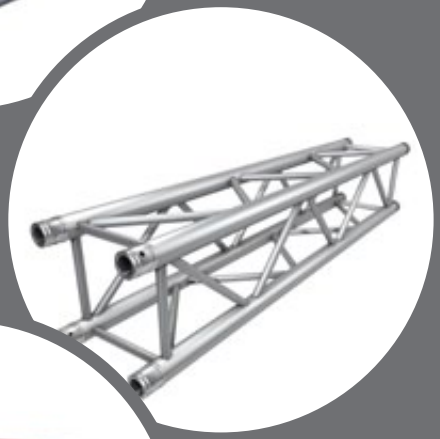
2016 WIP - personal project

approx. 1 week‘s work so far.

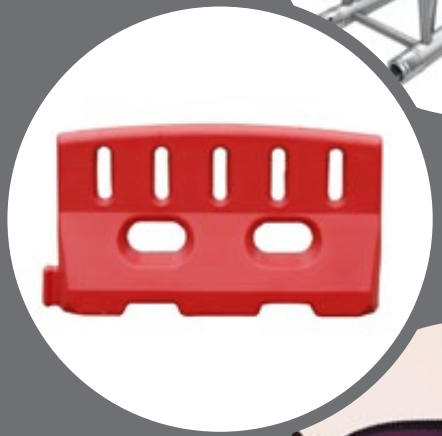
Batteries make electric mobility expensive and thus still hinder broad acceptance - to reduce cost and improve attraction: how could a manufacture-driven, low-invest, design-to-cost approach to a 250cc-equivalent bike design look like?

Leaving styling aside:
What effect does using only simple manufacturing techniqes and looking beyond the scope of cluttering designs with injection molded parts have?

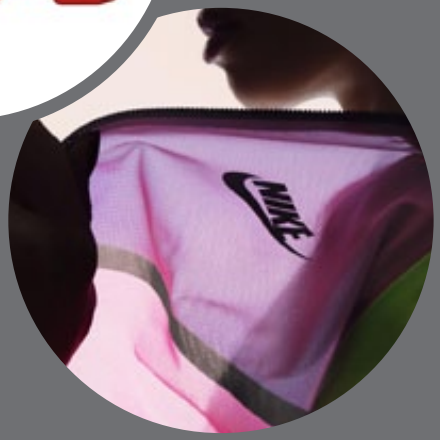
bent sheet metal



tubular framing



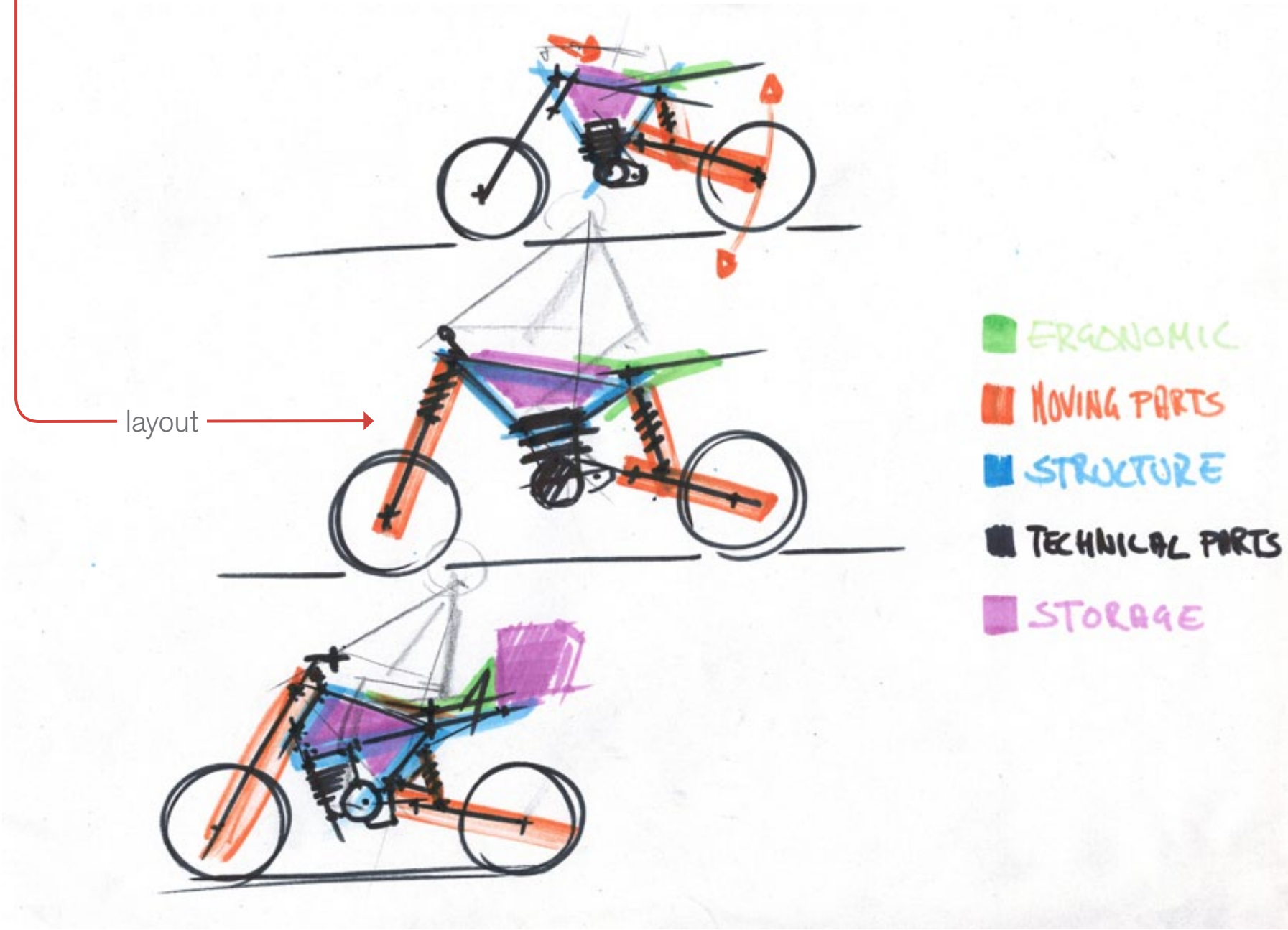
rotational molding



functional textiles

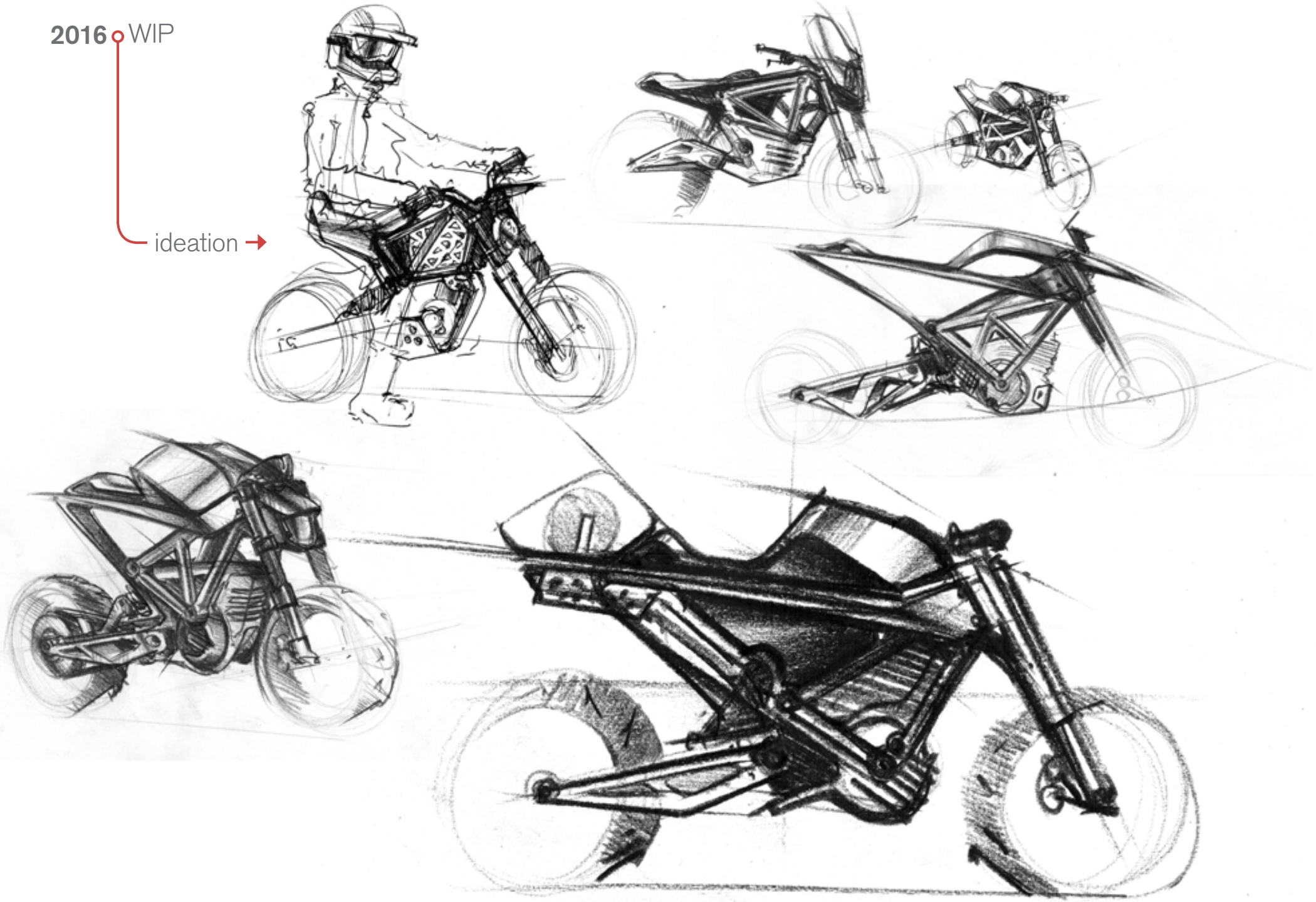
2016 WIP

layout



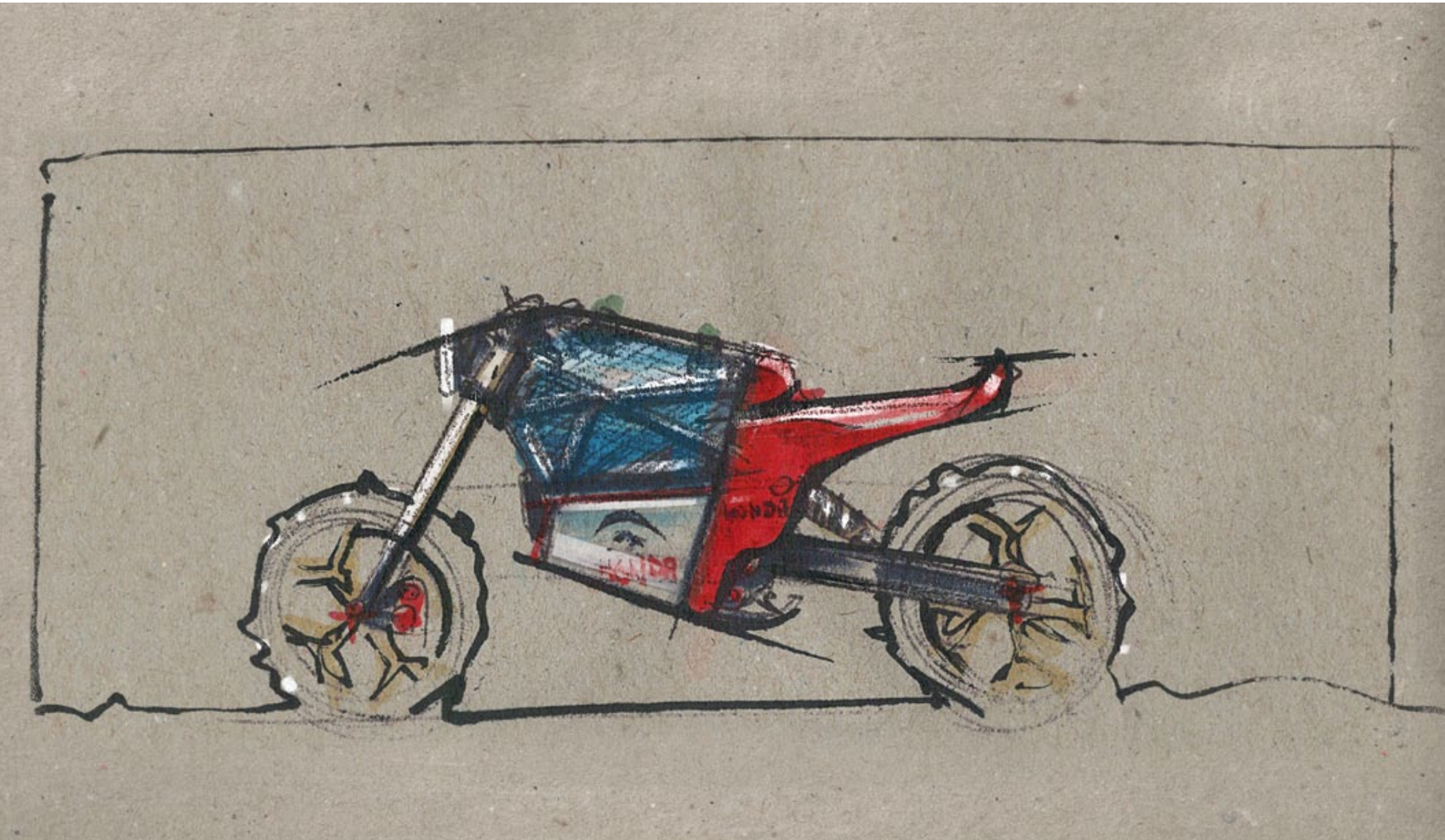
2016 WIP

ideation →

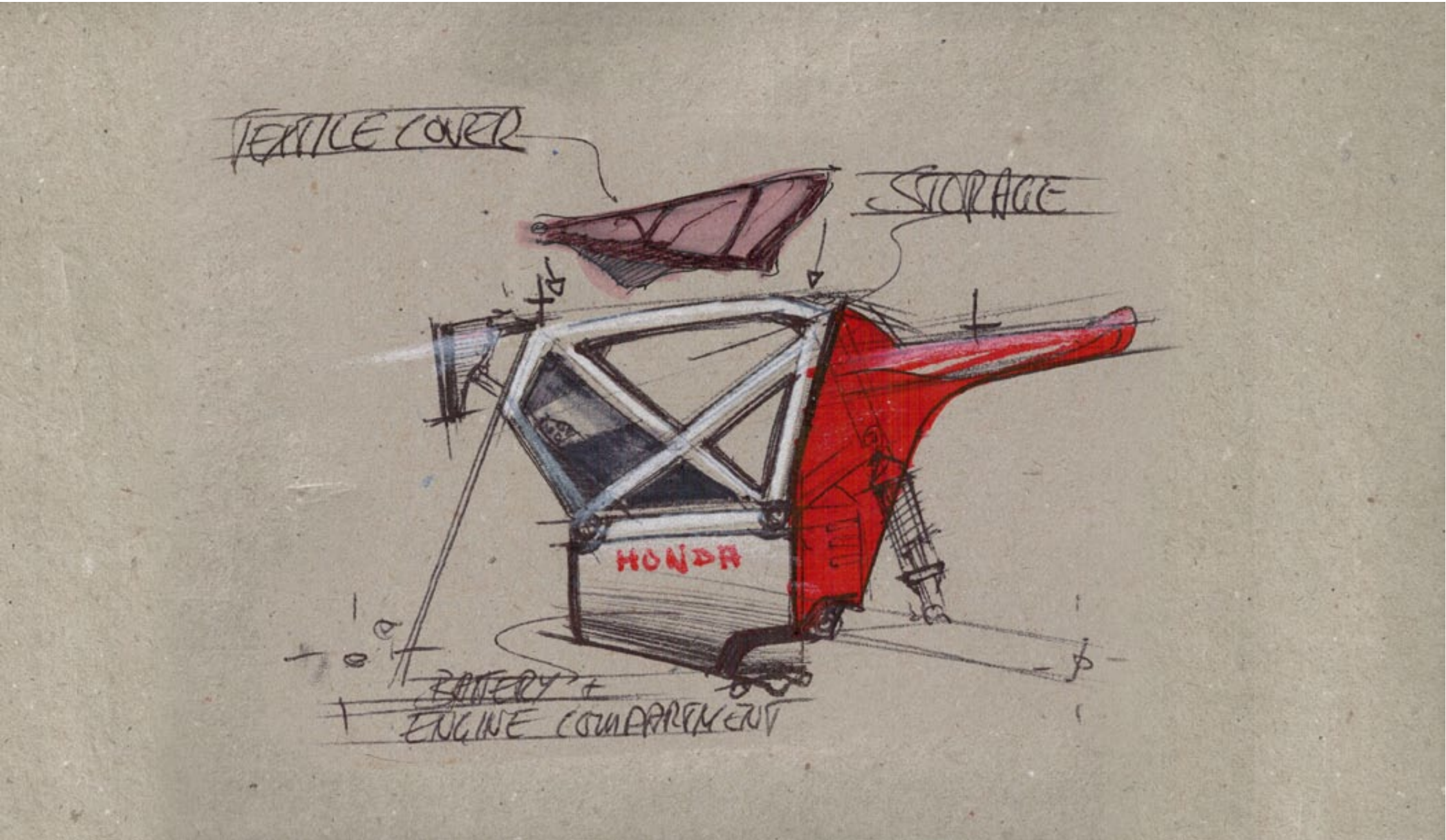


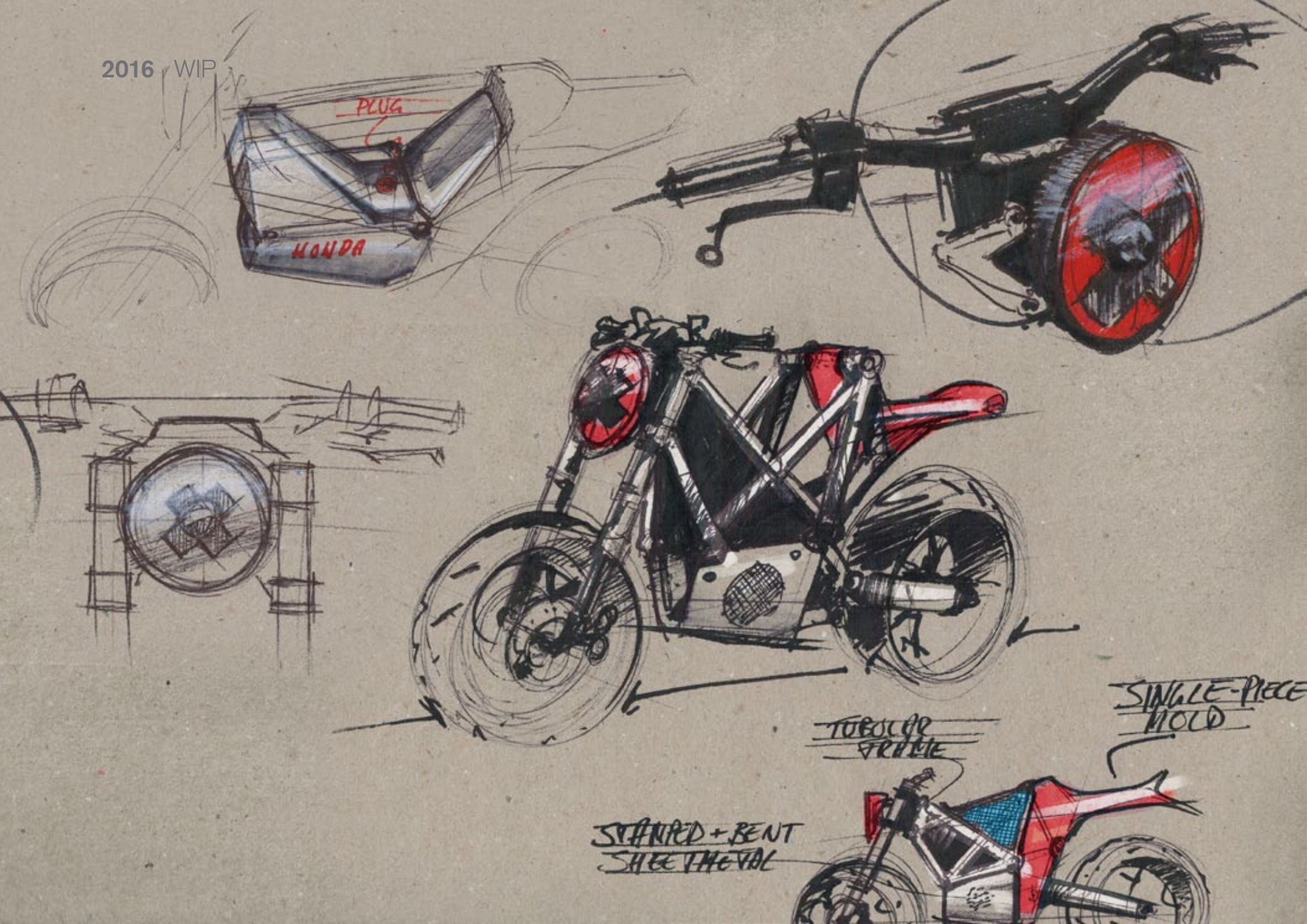
2016 WIP

keysketch



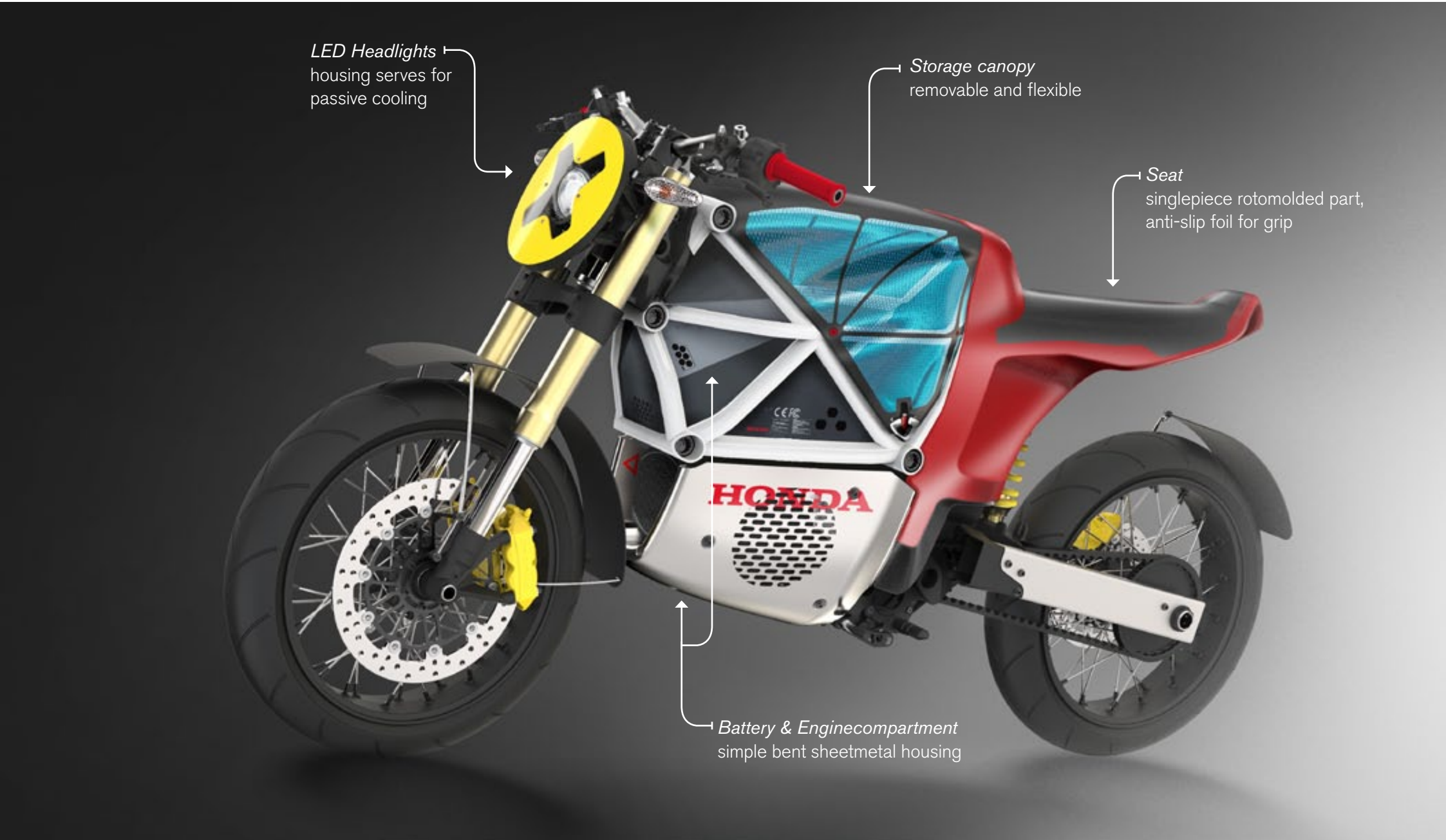
keysketch/layout




PLUG
HONDA
SINGLE-PIECE MOLD
STAMPED + BENT SHEET METAL


HONDA

3D Model / Rhino / current WIP status



Visit www.maxmuenster.de for a CV!

Thanks!