

# SOLEX 2021



Solex

# PHASE 0 | EXPLORATION

SoleX

Solex

# THE HISTORY

# HISTORY



Monarc 1949

- Bigger
- Heavier
- Complicated
- Expensive
- Not for everybody
- Affordable
- Motorcycle feeling



*Solex* 1949

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling

# HISTORY



Kreidler 1973

- Bigger
- Heavier
- Complicated
- Expensive
- Not for everybody
- Affordable
- Motorcycle feeling



Solex 1973

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling
- 19" wheels

# HISTORY



Tamas 1978

- Bigger
- Heavier
- Complicated
- Expensive
- Not for everybody
- Affordable
- Motorcycle feeling



*Solex* 1978

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling
- 19" wheels

# HISTORY



Puch Monza 1988

- Bigger
- Heavier
- Complicated
- Expensive
- Not for everybody
- Affordable
- Motorcycle feeling



*Solex* 1988

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling
- 19" wheels

# HISTORY

- The Solex has always been the smartbuy
- The Moped for many people
- It has always been affordable
- It has always been a simple construction
- It has always been very easy to drive
- It has always been with some kind of bicycle feeling
- It has always been to choice of many people
- It has always been easy to operate
- No specific target group – The Solex was for everybody
- It has always been a smaller vehicle than other mopeds



*Solex* 1988

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling
- 19" wheels

Solex

THE FUTURE

# FUTURE



Traditional Ebikes 2021

- Bigger
- Heavier
- Complicated
- Expensive
- Not for everybody
- Expensive
- Clumsy feeling



Solex 2021

- Smaller
- Lighter
- Smarter
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# FUTURE



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Solex 2021

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# FUTURE



Traditional Ebikes 2021

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Solex 2021

- Smaller
- Lighter
- Smarter
- Simpler
- Cheaper
- Peoples choice
- Affordable for all
- Bicycle feeling

# The Future

- The Solex will always been the smartbuy (Leasing options)
- The ebike for many people
- It will always been affordable
- It will always been a simple construction
- It will always be very easy to drive
- It will always be with some kind of bicycle feeling
- It will always be to choice of many people
- It will always be easy to operate (automatic gear hubs)
- No specific target group – The Solex is for everybody
- It will always be a smaller vehicle than other ebikes



*Solex* 2021

# SoleX

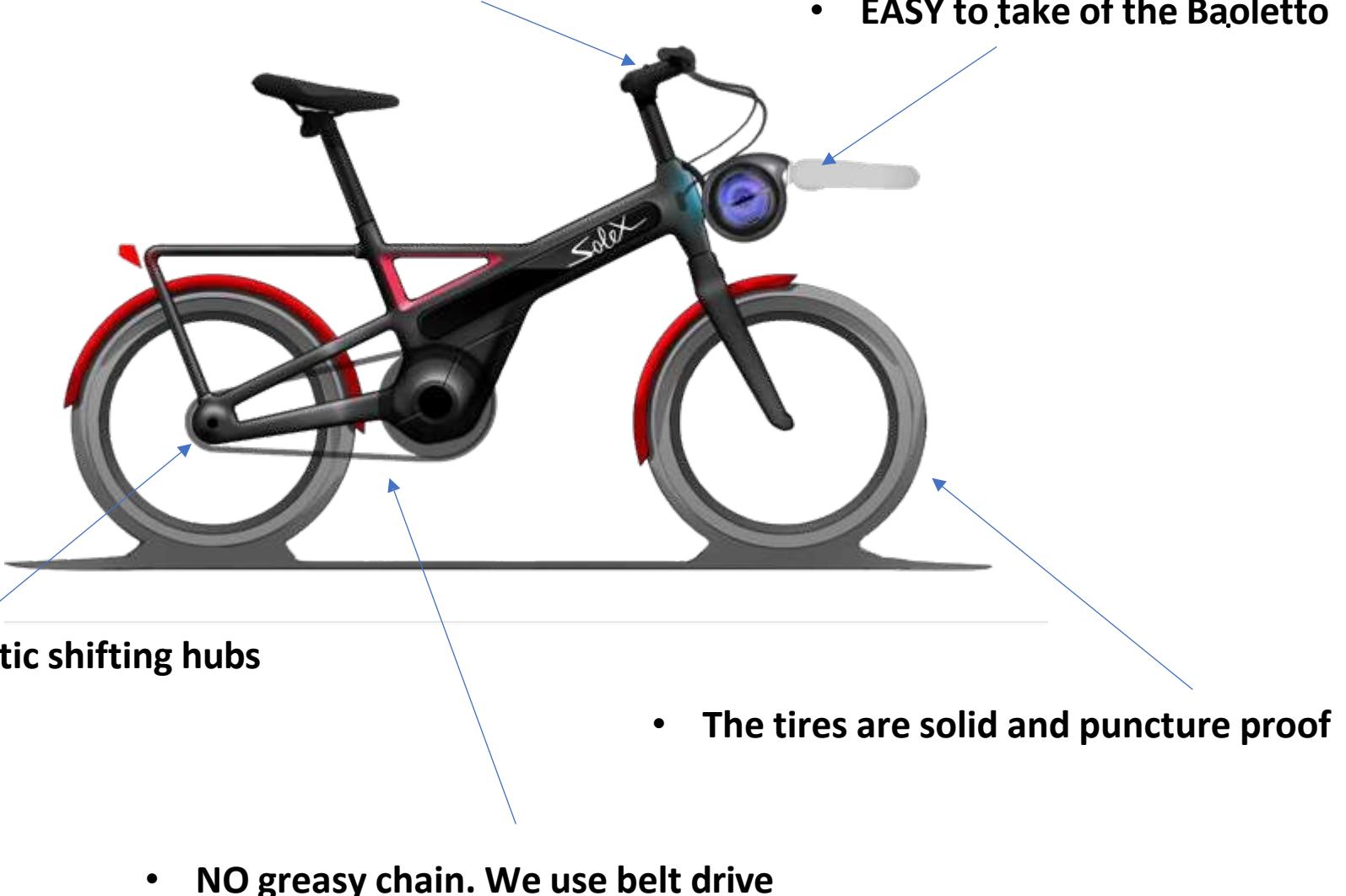
From 2021 we only do 20" and 24" wheels for Solex

- 
- **Lighter** means a lighter construction
  - **Smarter** means IOS and bluetooth
  - **Smaller** means smaller wheels
  - **Peoples choice** means it is the natural choice
  - **Bicycle feeling** means we offer good geometry
  - **Affordable** for all means we offer a leasing concept
  - **Cheaper** means new production methods for the frame
  - **Simpler** means lower capacity in terms of Kw

# Solex

The new Solex is  
easy to use for the  
endconsumer  
No skills needed

- NO display. Controlled by APP



# PHASE 1 | DESIGN IDEATION

SoleX

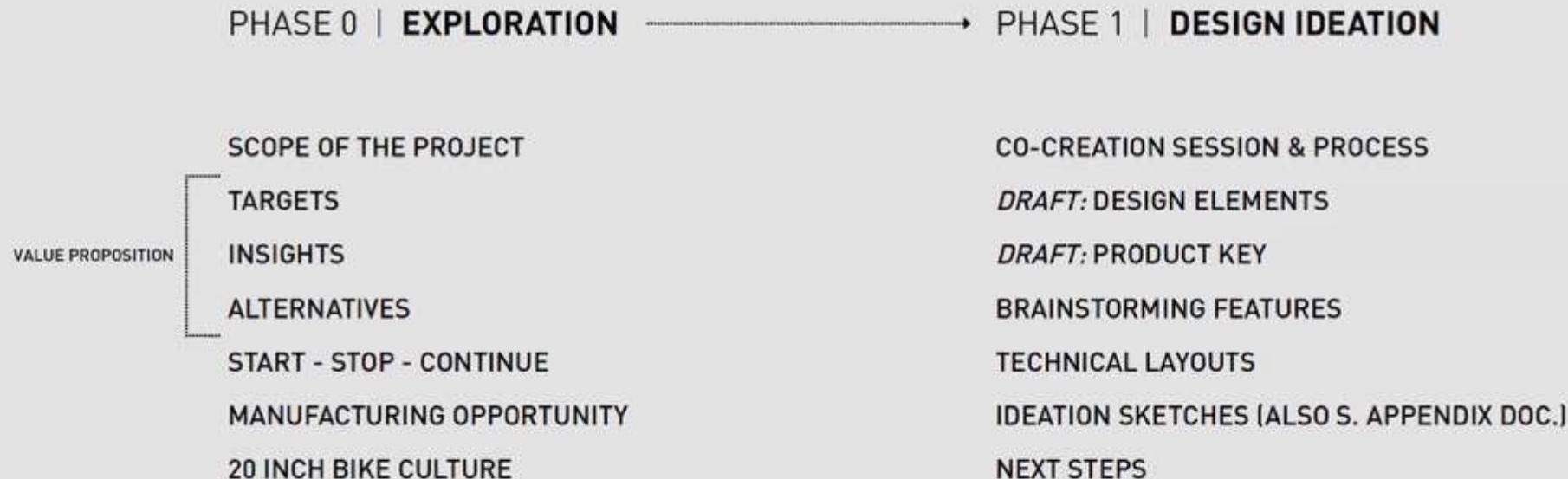
# ID PROCESS STAGE

SoleX



# CONTENT

Solex

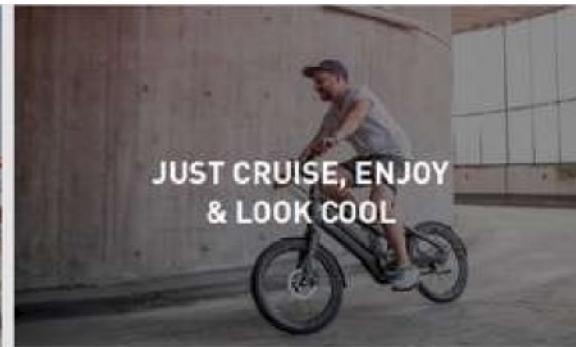


# INSIGHTS | OBSERVATIONS IN USECASES

Solex

A set of useCases which more or less all prevent you from choosing the eBike over alternative [& very often less sustainable] options.

The deep-dive into these useCases will lead to specific solutions to still choose the eBike over any other option.





## THE TARGET AUDIENCE

# TARGET | WHO IS THE AUDIENCE

Solex



PATRICK, 32, DESIGNER,



NICHELLE & LANE, 38, TRAVELLING EUROPE



NATHAN, 31, BANKER,

# TARGET | PATRICK

Solex



“

Hi, I'm Patrick, 32, and I'm currently working as a Graphic Designer in PARIS  
I use my eBike every day to commute from home to work - if it's not raining -  
which is 14 km per day. Additionally, I ride the bike to meet friends at night and use  
it for my grocery shopping on the weekend as well, as I don't have a car.

”



# TARGET | PASCALINE & GEORGE

Solex



“

We are Pascaline & George. We live in our house in Bretagne. We love to cycle but we need a little assistance. Therefor we the electric bicycle. We remember the Velo Solex brand from when we where young. This is why we still choose to buy the Velo Solex brand

”



# TARGET | MICHELLE & ARNE

Solex



Hi, we're Michelle and Arne, we are both 28 years young, and we're currently travelling europe with our van. We use our eBike when we have decided to stay at a nice place for a few days, and we want to explore the area. It's super handy because we can easily fit it into the back of our van.

# TARGET | NATHAN

Solex



Hi, my name is Nathan and I am 31 years old. I work as a banker in **GRENOBLE**. I live in a small suburb 25 minutes by train outside the city centre, and I use my eBike for the way from the Hauptbahnhof to the office. I love the breeze of fresh air in the morning before having a long office day, and to take the bike on the train works pretty well.



# TARGET | CLAUDETTE

Solex



Claudette is a student at the university in Paris. She is a trendsetter. She needs to have a bicycle inside the Paris area. And why not choose from the best options. She loves to go to a cafe. She is a bit of a show off. She feels she needs to be trendy. She is one of the new urban types. Driving around the city in full speed.



# TARGET | RENAUD



“

Renaud is working at Easybike in Paris. Every morning he is driving 30 to 40 minutes on his bike through the dense traffic of Paris. Renaud relies on his ebike. With such a distance there is no room for errors on his ebike. For Renaud his bike is as important as his car.



”

Solex



# INSIGHTS ABOUT USECASES AND COMPETITOR LANDSCAPE

# INSIGHTS / OBSERVATIONS IN USECASES

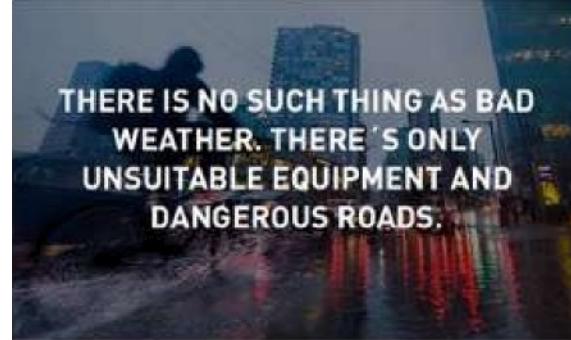
Solex

A set of usecases which more or less all prevent you from choosing the eBike over alternative (& very often less sustainable) options.

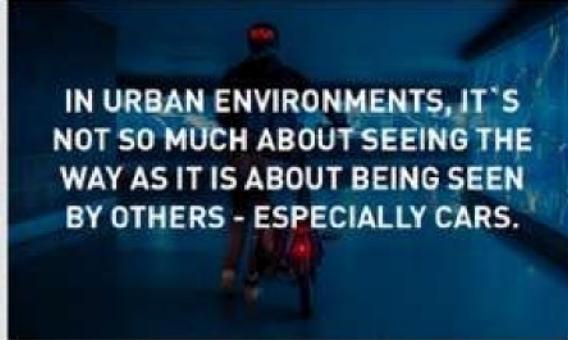
The deep-dive into these usecases will lead to specific solutions to still choose the eBike over any other option.



ITS NOT ONLY TRICKY TO LIFT THE  
eBIKE ON THE PUBLIC  
TRANSPORT - VERY OFTEN  
THERE'S NO SPACE LEFT INSIDE.



THERE IS NO SUCH THING AS BAD  
WEATHER. THERE'S ONLY  
UNSUITABLE EQUIPMENT AND  
DANGEROUS ROADS.



IN URBAN ENVIRONMENTS, IT'S  
NOT SO MUCH ABOUT SEEING THE  
WAY AS IT IS ABOUT BEING SEEN  
BY OTHERS - ESPECIALLY CARS.



NOBODY WANTS TO CARRY A  
BIKE AROUND. PEOPLE WANT TO  
STORE AND TRANSPORT THEIR  
BIKE SAFELY.



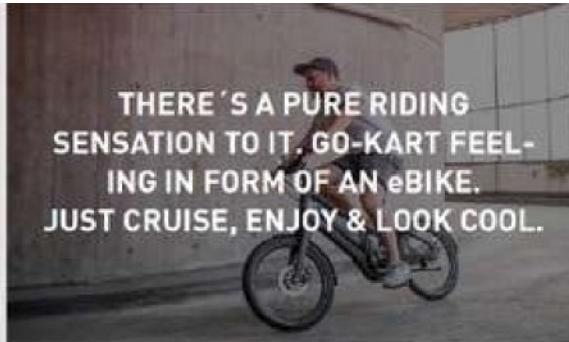
THE LAST-MILE-MOBILITY DOES  
NOT STOP OUTSIDE THE OFFICE.  
EVER TRIED TO CARRY A eBIKE IN  
THE ELEVATOR ?



CARRYING THE KIDS SAFELY WILL  
BE A MAJOR LEAP TOWARDS  
MOVING AWAY FROM CAR USAGE  
FOR THE LAST MILE.



THE DAILY / WEEKLY REOCCUR-  
ING NEED TO SHOP & TRANSPORT  
GROCERIES OFFERS ENORMOUS  
POTENTIAL TO REPLACE THE CAR.



THERE'S A PURE RIDING  
SENSATION TO IT. GO-KART FEEL-  
ING IN FORM OF AN eBIKE.  
JUST CRUISE, ENJOY & LOOK COOL.

# 20 INCH CULTURE | INSPIRING ARCHETYPES

*Solex*

20 inch (more or less) bikes are cult. The scene offers a huge variety of non-electric, iconic archetypes and functional solutions for the urban application.



# OPPORTUNITY | MANUFACTURING PROCESS

SoleX

As the frame will come in one size only, there's an opportunity to produce the frame from left and right "shells", which are then welded with a centre seam. This process provides advantages in more refined surface transitions, faster production cycles and less parts = less tolerances.



## Advantages

- Low cost production
- Frames always uniform
- No weldings (smooth)
- Very light

## Disadvantages

- High tooling cost

# OPPORTUNITY | Manufacturing processes

## Water Injection Technique Used to Mold Carbon-Composite Bike Frame

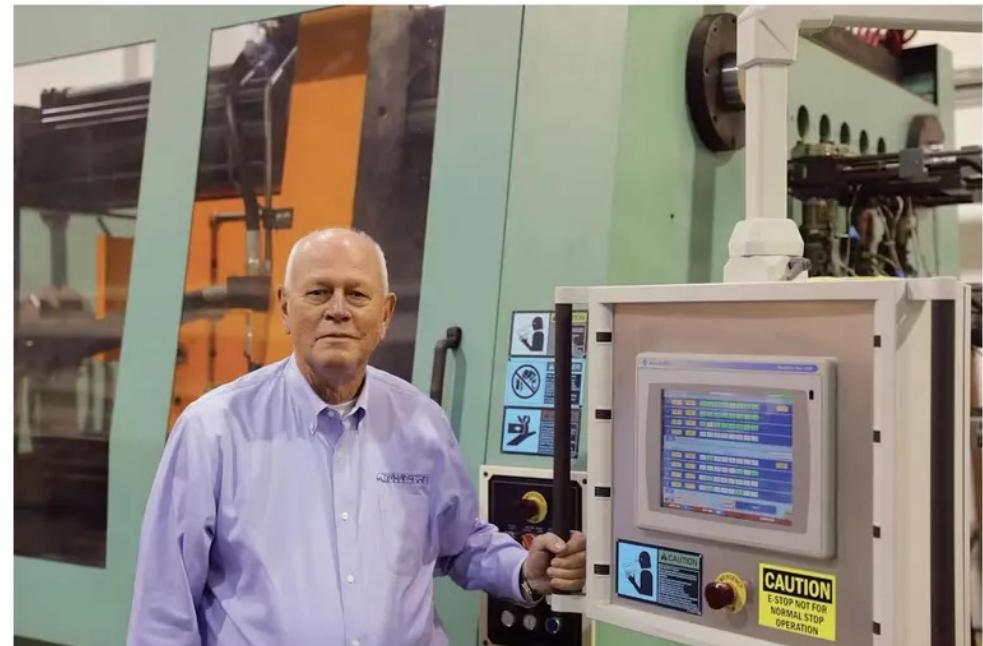


### Advantages

- Low cost production
- Frames always uniform
- No weldings
- Very light
- Resuable

### Disadvantages

- High tooling cost



# OPPORTUNITY | MANUFACTURING PROCESS

Solex

**V FRAMES**

About us    Process    Zero Waste    Emissions    Performance    References&Awards    Press    Your project    in

The website features a navigation bar with links to About us, Process (underlined), Zero Waste, Emissions, Performance, References&Awards, Press, Your project, and an 'in' link. The main content area displays a grid of nine images of bicycles, likely from the V Frames product line, set against various urban and industrial backdrops. A detailed view of a bicycle's frame is visible on the right side of the grid.

# ALTERNATIVES | DIRECT

Solex

PREMIUM



GOCYCLE ca. 2800 - 4500€



KTM ca. 3500 €



RIESE & MÜLLER ca. 4300 €



RIESE & MÜLLER ca. 4300 €



FLYER ca. 3400 €



HERKULES ca. 2900€



VICTORIA ca. 2900€



ISY ca. 2700 - 3600€



CORRATEC ca. 2500€



FALTER ca. 2200€



QWIC ca. 1400€



KALKHOFF ca. 2300€

ENTRY LEVEL

INTEGRATED / SIMPLE

→ TECHNICAL / COMPLEX

BRAINSTORMING

PAIN POINTS IN CUSTOMER

JOURNEY



Solex

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# IDEAS FEATURES BRAINSTORMING

A faint, yellow-tinted background image of a Solex motorized bicycle, showing its frame, seat, and handlebars.

Solex

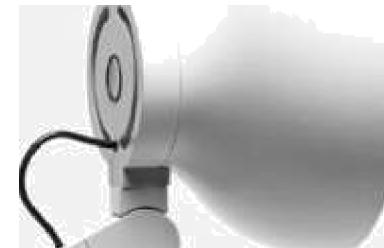
***"SUSTAINABLE MOBILITY FOR ALL"***

MEANS FOR US: WE WANT TO  
DIMINISH EVERY REASON *NOT* TO  
CHOOSE THE eBIKE OVER A LESS  
SUSTAINABLE ALTERNATIVE.

Solex

# DESIGN ORIENTATION

# ICONIC | NARRATIVE ROOTED



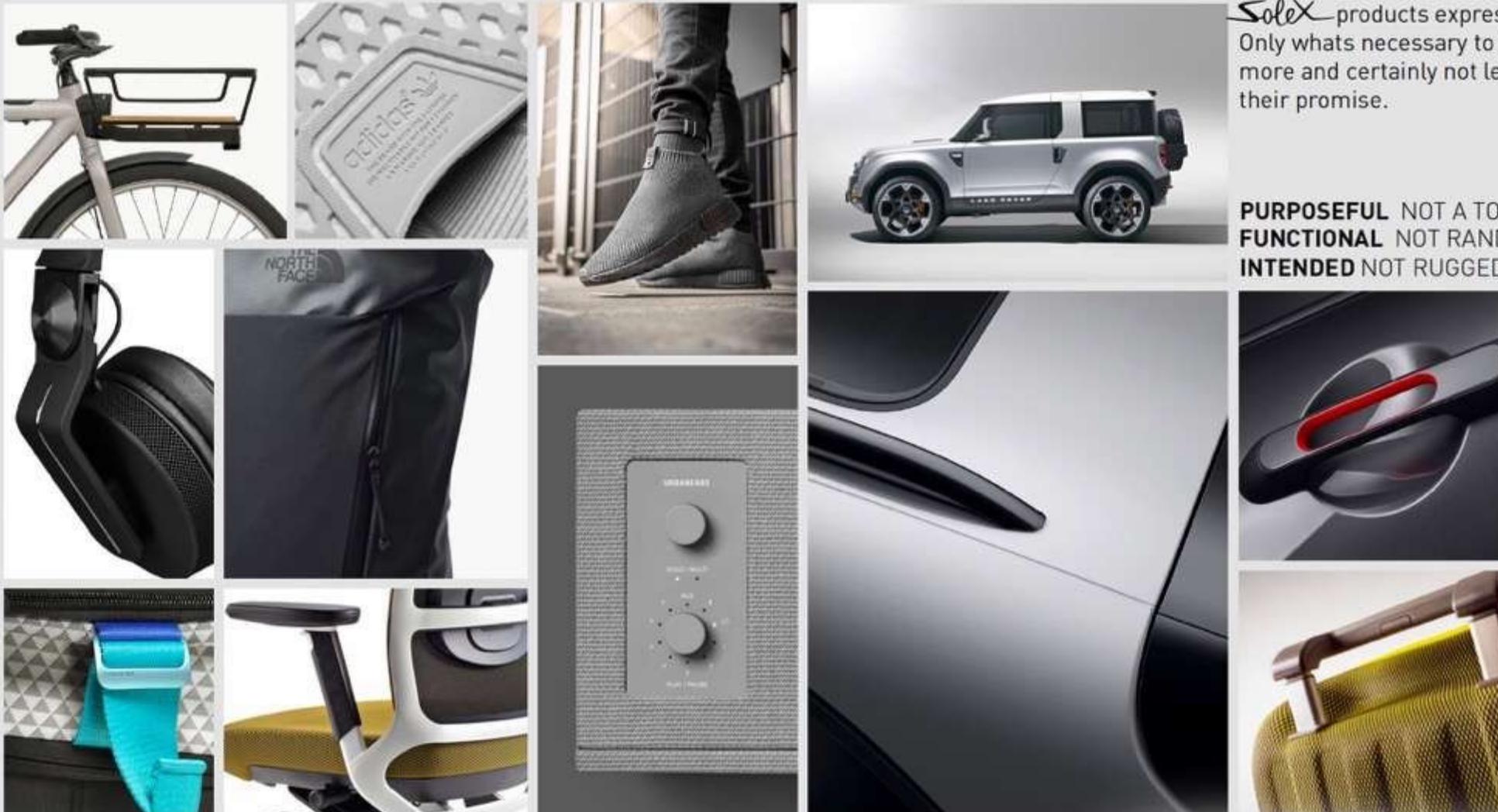
ICONIC NOT TRADITIONAL  
NARRATIVE NOT PLAYFUL  
ROOTED NOT RETRO

products are the modern interpretation of iconic products. The products clearly and only communicate what they do. Their 'first read' is rooted in human perception, you instantly recognize them.

Solex

# PURPOSEFUL | FUNCTIONAL | INTENDED

Solex

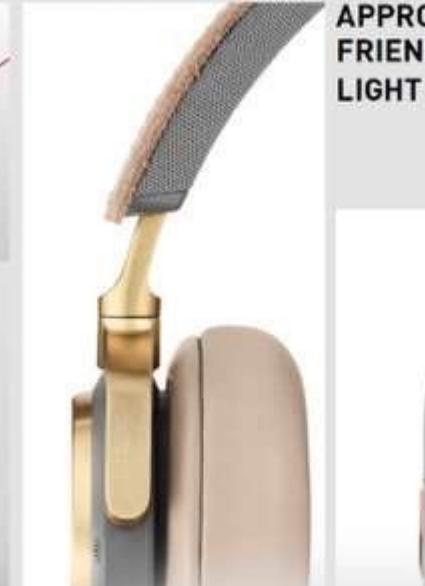


*Solex* products express urban functionalism. Only what's necessary to keep you moving. Not more and certainly not less. The products hold their promise.

**PURPOSEFUL NOT A TOOL  
FUNCTIONAL NOT RANDOM  
INTENDED NOT RUGGED**

# APPROACHABLE | FRIENDLY | LIGHT

Solex



Solex products express positivity and engage the consumer to interact. They invite people to use the product and want to do no harm. The products seem to be light and handle effortlessly. They are very uncomplicated in their usage.

**APPROACHABLE NOT SOFT  
FRIENDLY NOT TOYLIKE  
LIGHT NOT LIGHTWEIGHT**

# MOVING | ACTIVE | EMPOWERING

Solex



*Solex* products enable the customer to move, and they shall reflect this movement without getting into the foreground. The products express an active lifestyle with a human touch, without looking intimidating or aggressive. Technology is an enabler, but hidden below the surface. Textures and transparencies make for very lively, dynamic products with sensorial depth.

**MOVING NOT USING  
ACTIVE NOT AGGRESSIVE  
EMPOWERING NOT POWERFUL**



Solex

# THE PRODUCT KEY

# *Solex* PRODUCT KEY | FIRST DRAFT

*Solex*

*How can we translate the brand key into a sustainable product language?*

The foundation are **4 design components** which function as aesthetical benchmarks to our product design language.

The components contain imagery and words that comprise an emotional essence to our design approach. They all need to occur in a product but not necessarily be equally present.



**SUSTAINABLE  
MOBILITY FOR ALL**

BRAND PURPOSE

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EVERY SoleX PRODUCT IS...



# ALTERNATIVES I INDIRECT LAST—MILE MOBILITY OPTIONS

PUBLIC TRANSPORT - I4ETRO & BUS



CARSHARING



(ELECTRIC-) SCOOTER



RENTAL E-SCOOTER



## PRO - COIHPARED TO eBIKE

- fast for first mile
- available all year
- safe (in theory) to accidents
- rain friendly

## CON - COI4PARED TO eBIKE

- expensive - on the long run
- less flexible
- packed with plastic
- no fresh air

## PRO - COMPARED TO eBIKE

- super flexible
- "bus slide smoothly"
- weatherproof all year
- no need for maintenance
- suitable for shopping & transport

## CON - CON PARED TO eBIKE

- expensive - in the long run
- parking / traffic issues
- no fresh air

## PRO - COIHPARED TO eBIKE

- fast for last mile
- super flexible
- let fun riding
- individual infrastructure
- no communication

## CON - COFIPARED TO eBIKE

- exposed to weather
- expensive to purchase
- dangerous
- little storage

## PRO - COIPARED TO eBIKE

- super flexible
- lots of fun riding
- mating of freedom
- many options

## CON - COT4PARED TO eBIKE

- exposed to weather
- very fragile
- no storage
- looks "weird"



# CO-CREATION SESSION | 4-DIRECTIONAL APPROACH



# CO-CREATION SESSION | 4-DIRECTIONAL APPROACH



**Solex**

# CO-CREATION SESSION | 4-DIRECTIONAL APPROACH

PRODUCT FEATURES

## BRAINSTORMING SESSION 1:

USP's & DISCRIMINATORS  
FEATURES WHICH MAKE PEOPLE CHOSE THE BIKE  
FUNCTIONAL BENEFITS OVER ALTERNATIVES  
SOLUTIONS TO "PAIN POINTS"



PRODUCT GESTURE

## BRAINSTORMING SESSION 2:

ICONIC GESTURE & FIRST READ ("100M READ")  
OVERALL PRODUCT "STANCE" AND "SEXINESS"  
VISUAL BRAND FIT AND DESIGN LANGUAGE

REVIEW THE GIVEN:  
CUSTOMER EXPECTATIONS WHICH HAVE TO BE MET:  
COMFORT, SAFETY & STABILITY  
TECHNICAL PACKAGE & GEOMETRY FRAMEWORK

HYGIENE FACTORS



# CO-CREATION SESSION | 4-DIRECTIONAL APPROACH



Solex

# **TECHNICAL LAYOUTS & IDEATION SKETCHES**

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# LAYOUT 1 LOW STEP-IN

Solex

## PRO

- Very low step-in possible
- Low center-of-gravity
- MR' on down tube possible
- handle possible

## CON

- "hanging belly"
- looks unsporty
- check FLYOh! removal
- tight package
- downwards battery removal



# LAYOUT 2 | ROTATED ENGINE

Solex

## PRO

- Compact
- MRS on downtube possible
- Handle possible

## CON

- engine mount
- downwards battery removal



# LAYOUT 3 | SIMILAR TO RADIUS 1

Solex

## PRO

- engine mount / exchange
- similar layout like Radius 1
- MRS on downtube possible
- handle possible

## CON

- tight package
- downwards battery removal



# LAYOUT 4 | UPWARDS BATTERY REMOVAL

Solex

## PRO

- engine mount & exchange
- convenient upwards battery removal
- possibly less front-heavy

## CON

- handle not so easily possible
- no MRS on DT possible
- engine like a "gondola"



# LAYOUT5 | SEATPOST8ATTERY

*Solex*

## PRO

- Convenient battery removal
- Very low step-in possible
- MBS possible
- handle possible

## CON

- new construction and "silhouette"
- might be unbalanced while carrying
- longer chainstays needed



# LAYOUT 6 | BATTERY SIDE REMOVAL

Solex

## PRO

- convenient battery removal & lock position
- mass centralization
- MRS possible
- handle possible

## CON

- frame stiffness - needs evaluation
- engine like "gondola"



Solex

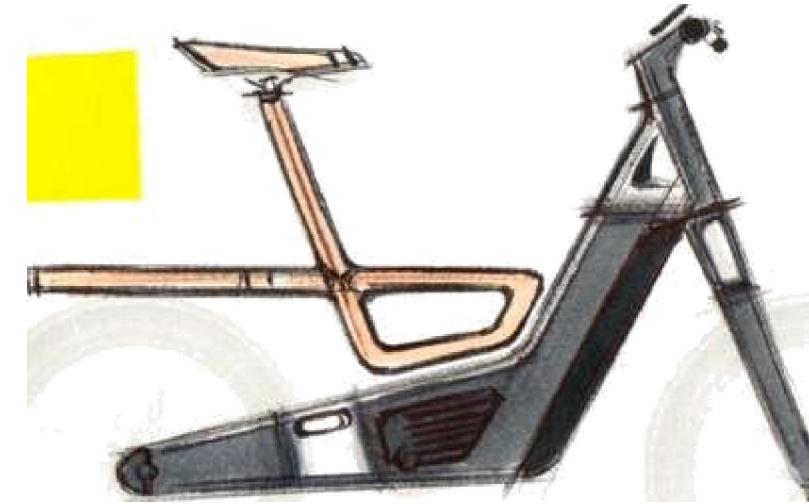
# LAYOUT SKETCHES

# MYOUT 1 | SELECTED SKETCHES

STANCE

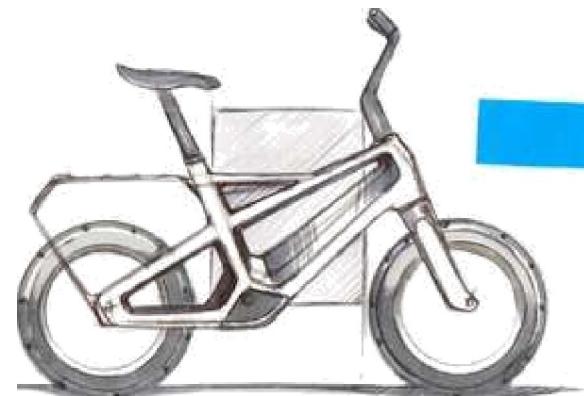
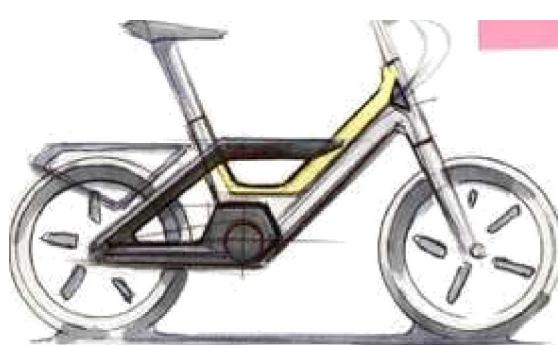


STANCE & SWERVE



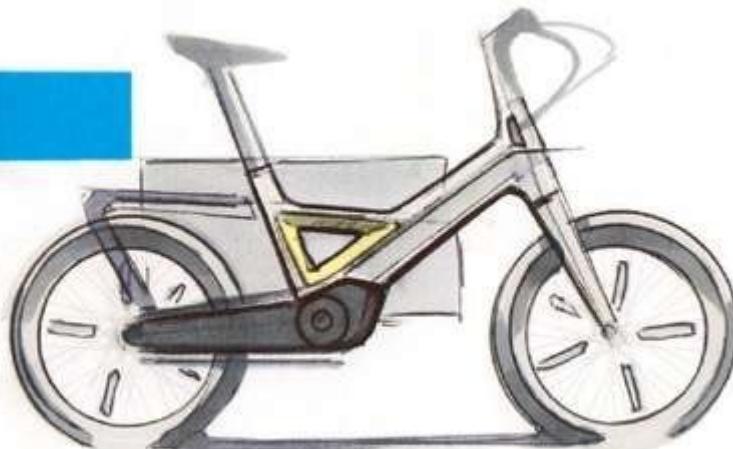
SoleX

# LAYOUT 2 | SELECTED IMCH9S



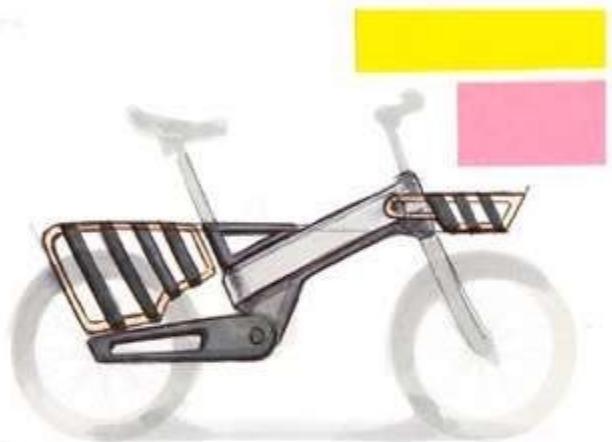
*Solex*

# LAYOUT 3 | SELECTED SKETCHES



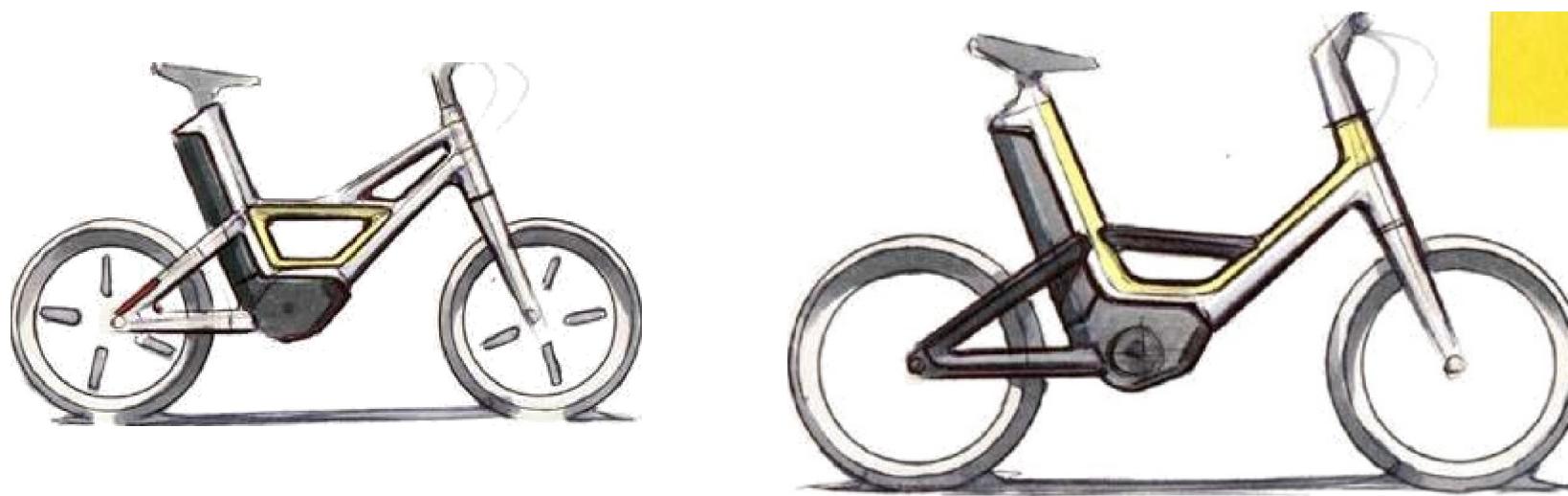
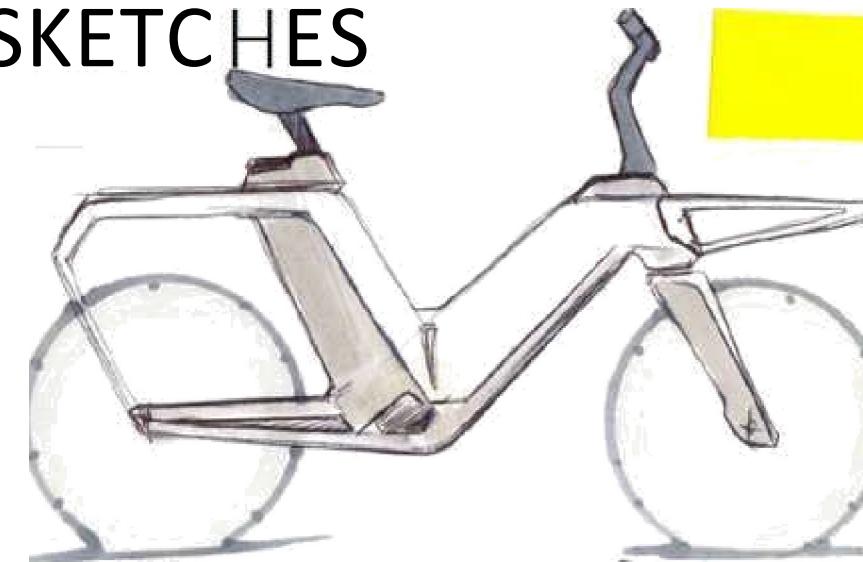
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## LAYOUT 4 | SELECTED SKETCHES



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# LAYOUT 5 SELECTED SKETCHES



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## LAYOUT 6 | SELECTED SKETCHES



*Solex*

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# BRAINSTORMING IDEAS

# BRAINSTORMIhG | WALL



# BRAINSTORMING | MAINTENANCE



SoleX

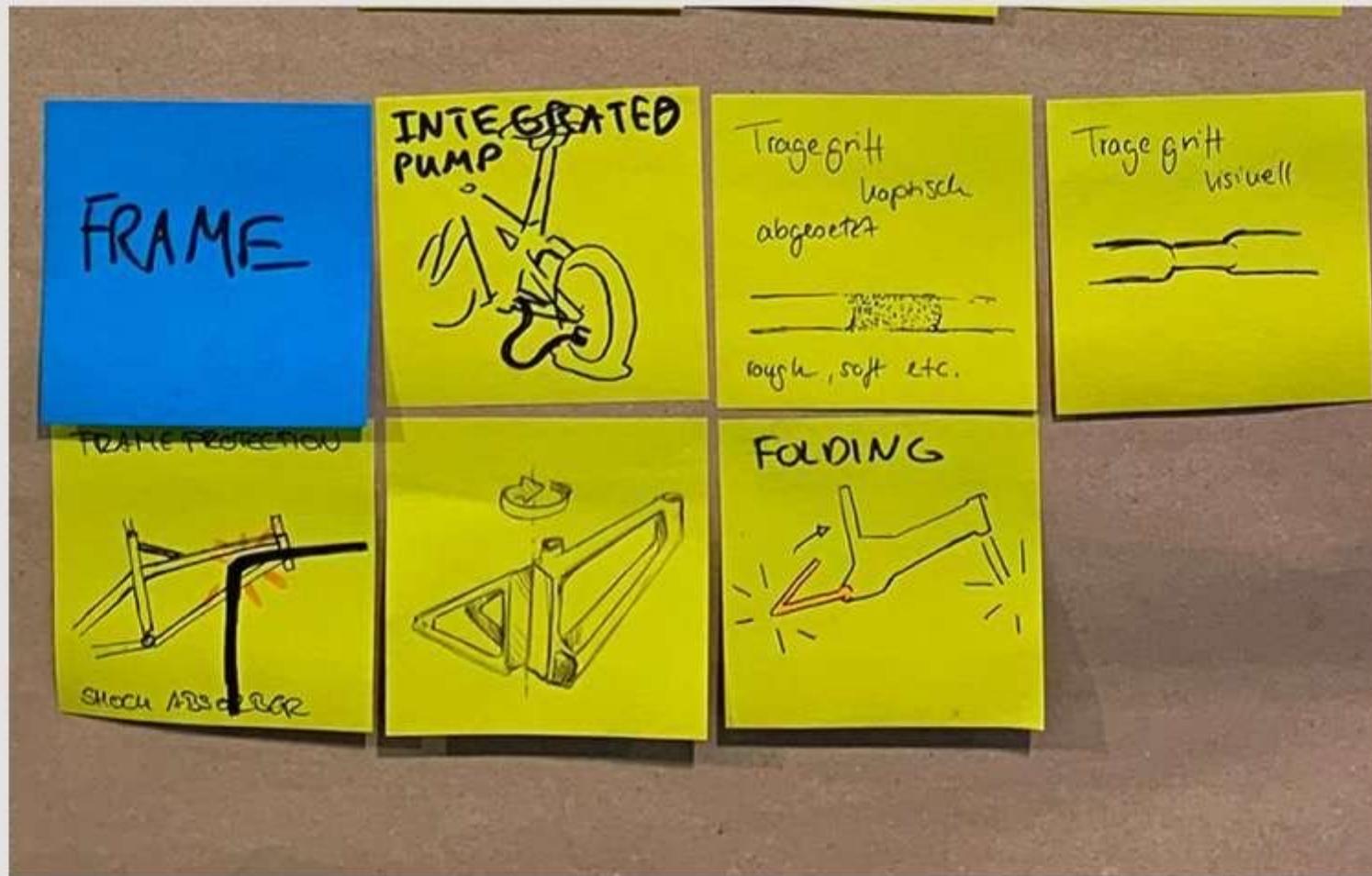
# BRAINSTORMING | CONNECTIVITY



# BRAINSTORMINC | ADAPTIVITY

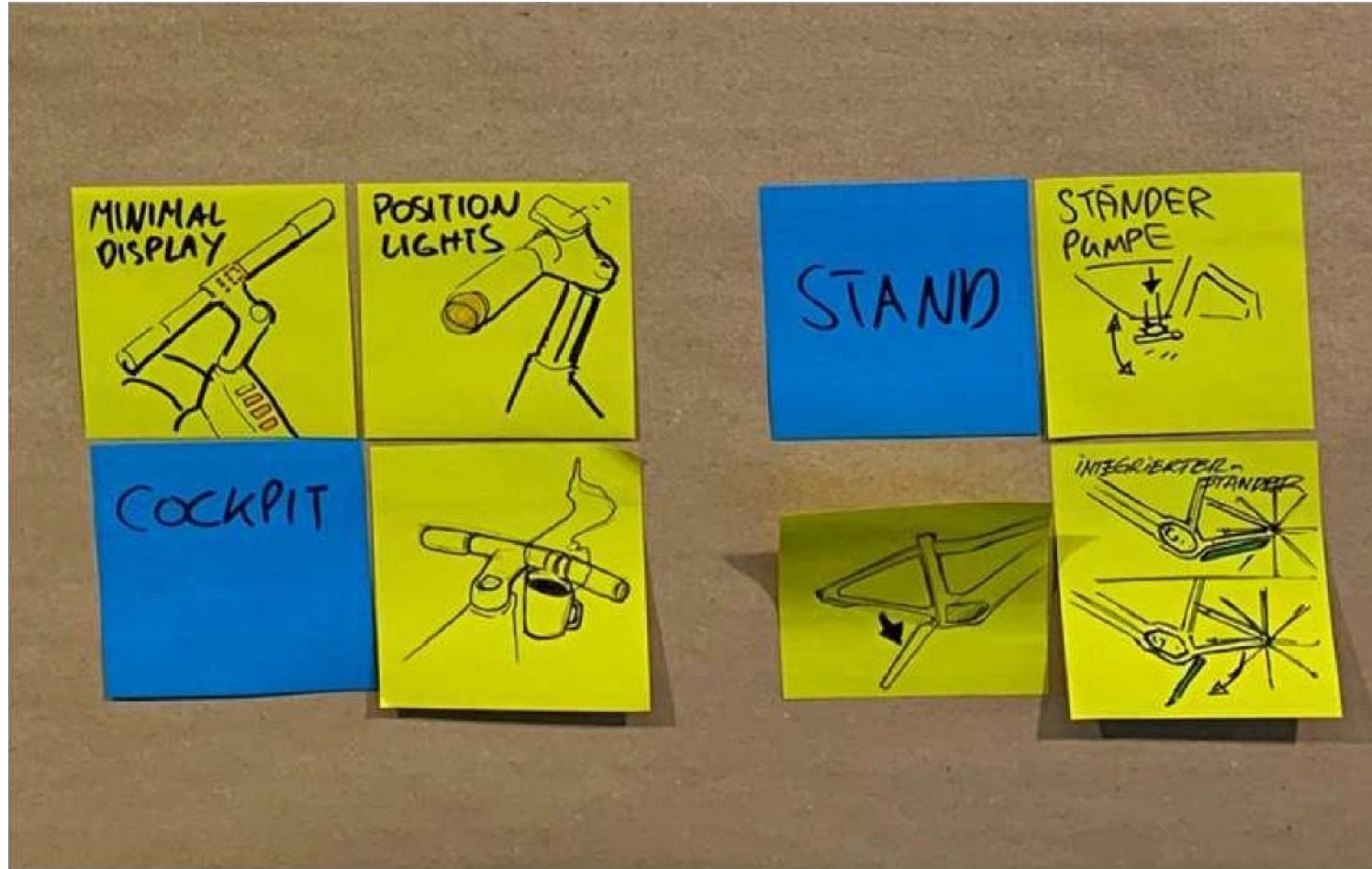


# BRAINSTORMING | FRAME

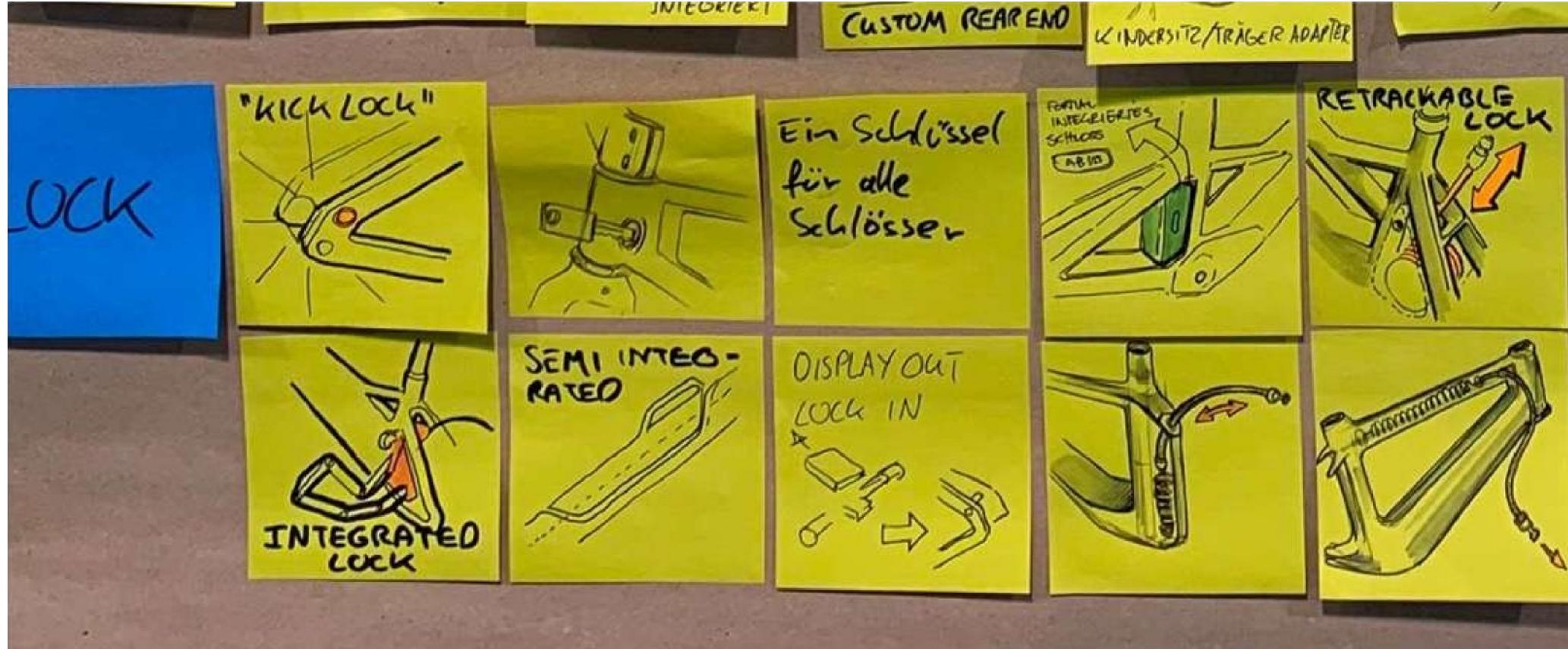


Solex

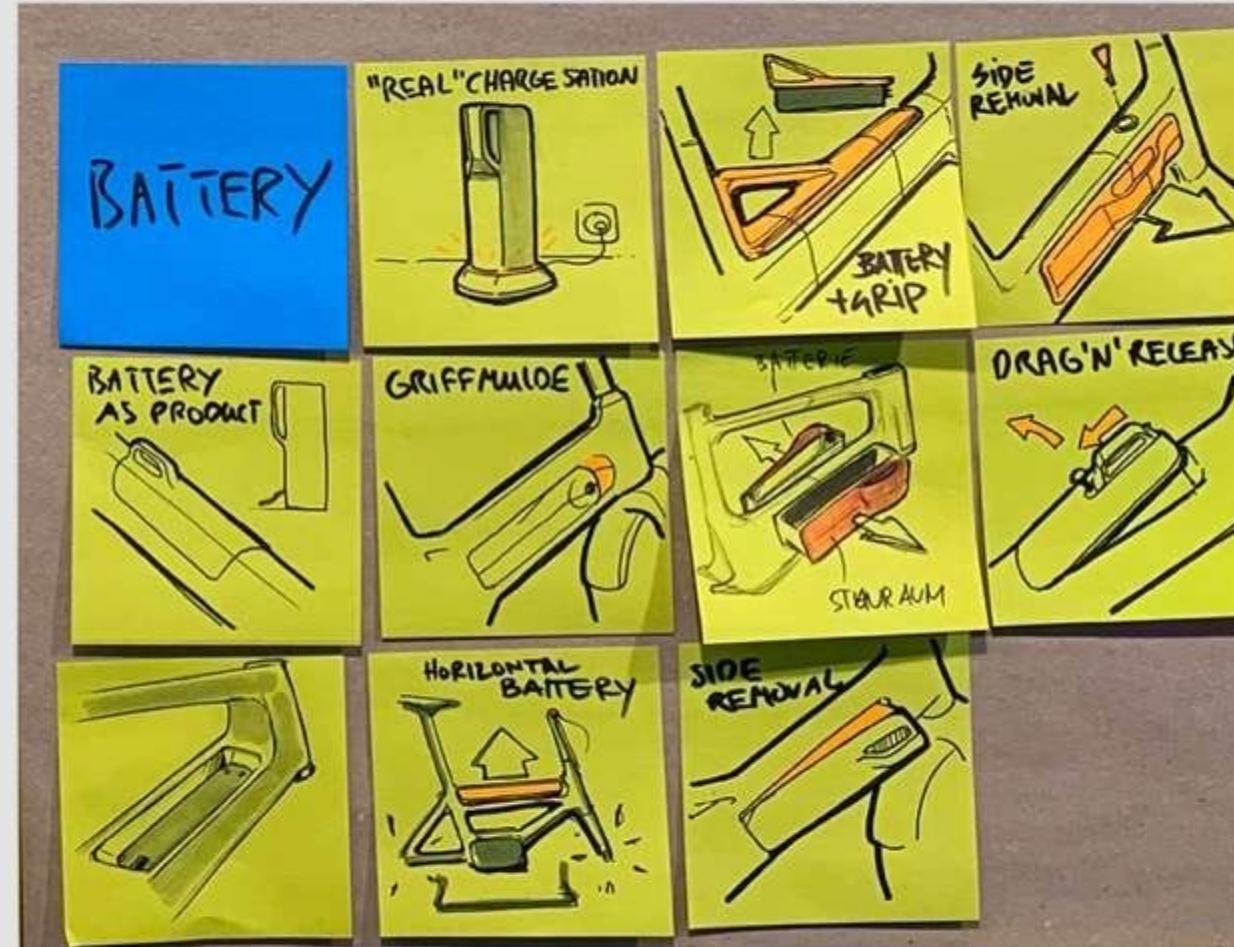
# BRAINSTORMING COCKPIT & STAND



# BRAINSTORMING | LOCK

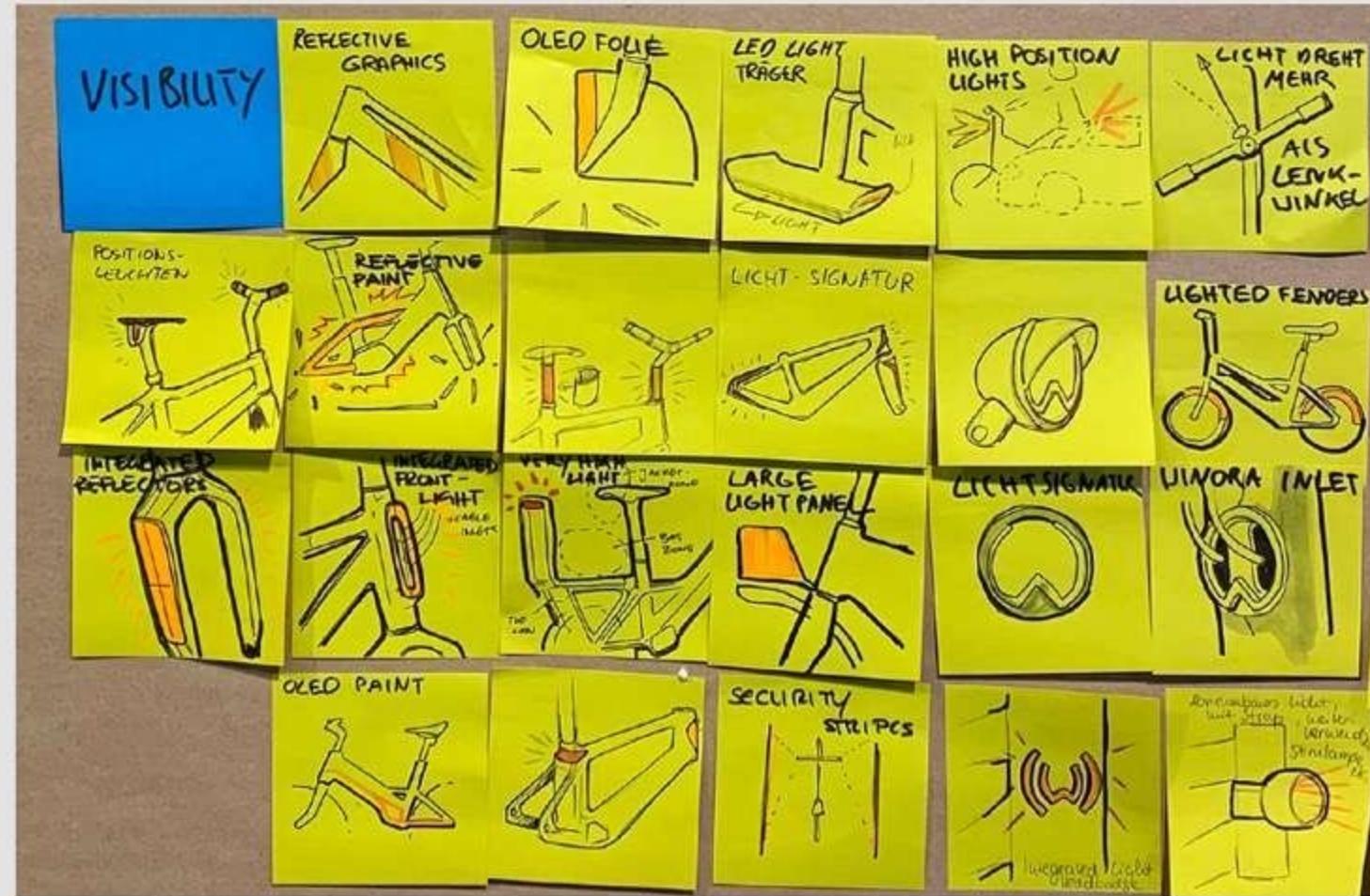


# BRAINSTORMING | BATTERY



SoleX

# BRAINSTORMING | VISIBILITY



Solex

# BRAINSTORMING | INTERACTION



SoleX

# BRAINSTORMING | WEATHER

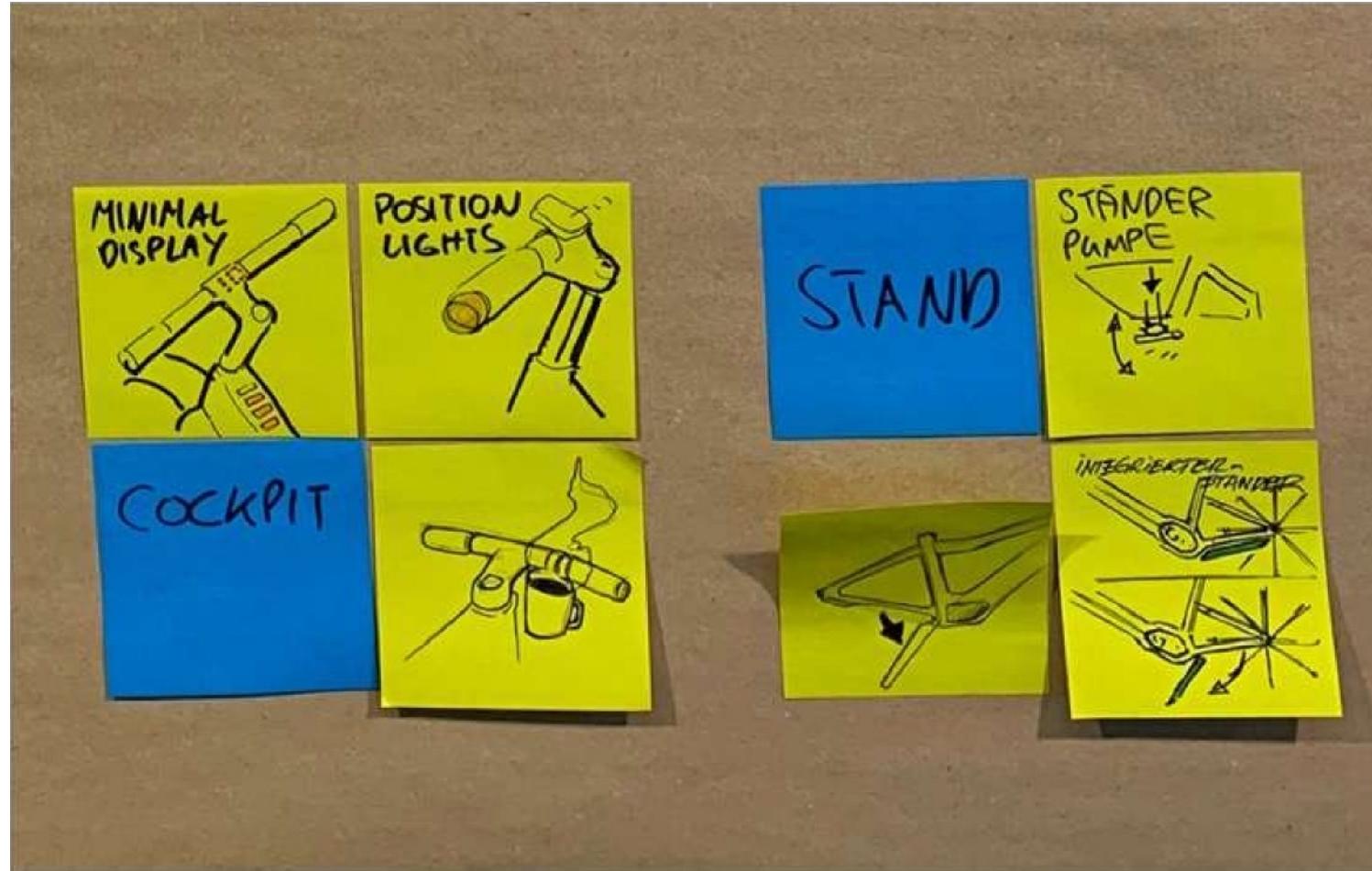


SoleX

# BRAINSTORMING | STORAGE



# BRAINSTORMING COCKPIT & STAND



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*Solex*

# BAOLETTO POSSIBILITIES

Detachable Baoletto proposal 1  
Can be used as a table speaker as well



Detachable Baoletto proposal 2  
The basket solution



Solex

# REFINED LAYOUTS

# LAYOUT

1:1 Copy of the original Solex frame but in a modern version



# LAYOUT

Solex



# LAYOUT

Solex



# LAYOUT

Solex



# LAYOUT 1

Solex



# LAYOUT

Solex



# LAYOUT

Solex



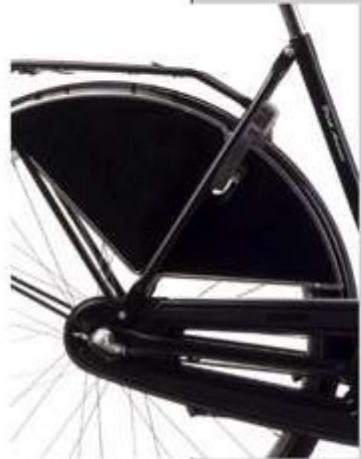
# LAYOUT

Solex



# LAYOUT

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# LAYOUT

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Solex



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Solex

# LAYOUT



Solex

# LAYOUT



# LAYOUT

Solex



LAYOUT 1

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# LAYOUT 1



- NO display. Controlled by APP
  - We use enViolo automatic shifting hubs
  - NO greasy chain. We use belt drive
  - Grip. For carrying
  - The tires are solid and puncture proof
  - EASY to take off the Baoletto
- 

Solex

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## COMPLETE ACCESORISE PROGRAMME

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THE NEXT STEP

# NEXT STEPS



## 1ASKS

- Each presentation attendant sends favourite 3 ideas and favourite features per mail, including clear reasons why
- Definition of technical packages) with engineering
- Design creates 3-5 design concepts in Phase 2 - Design Conception
- Design refines the verbal & visual product key
- Defining the Phase 2 presentation date

# PROTOTYPE

Solex

By the same team in Croatia who did the Haibike Flyon, The Maserati eBike, The Pininfarina Evoluzion and the carbon

**Price estimation 12.000 Euro incl. 3D drawings**



Solex

3D design

1946 - 2023



Solex

Solex

Final prototype

SoleX



SoleX



Solex

The soundbox





SoleX



SoleX













*SoleX*

®Brian Kenneth Høhl/Asbjoerk Stanly Mogensen