

# BENJAMIN NOSKE

*product design engineer*

2019

*PORTFOLIO*

## A device to improve sleep quality and quantity within the Intensive care unit.

**PROJECT:**

### SLEEP-AID

**NEED:**

The Intensive Care Unit (ICU) is the one place patients need sleep the most, and the one place that restorative sleep is near impossible.

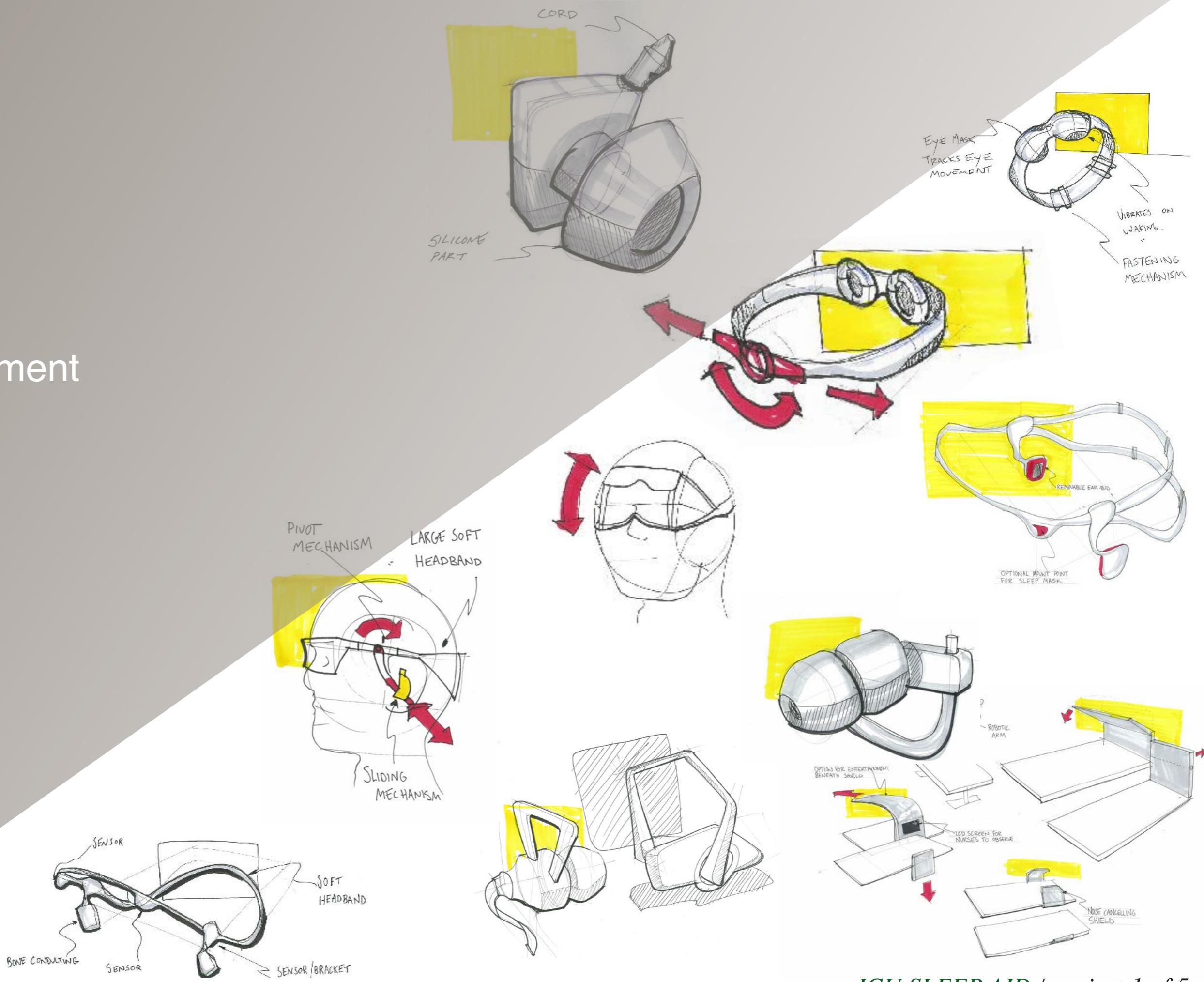
**DESCRIPTION:**

Constant beeping, sporadic alarms and frequent patient observations cause patients sleep to become fragmented, compounded by pain and anxiety.

Improving sleep has the potential to reduce a patient's sensitivity to pain, boost the immune system and prevent complications such as delirium.



## development



*ICU SLEEP AID / project 1 of 5*



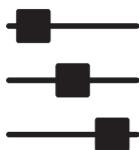
ICU

Sleep-Aid



#### Designed for Comfort.

Circumaural cups conform to the shape of the head, offering comfort for all sleeping positions.



#### One size fits all.

Soft adjustable straps are breathable and hyperallergenic.



#### Influence patient observations.

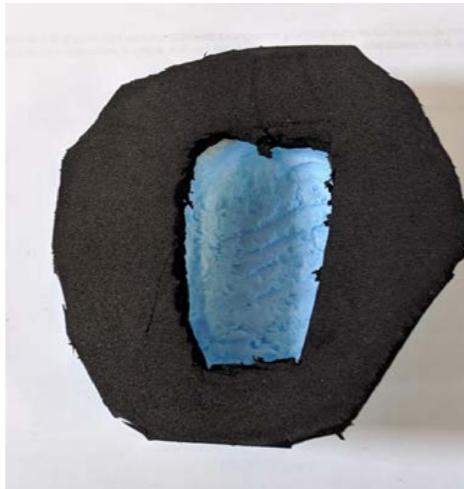
Patients sleep cycle is optimised by the wireless transmission of algorithm engineered sleep data to the nurses station.



#### Reduce patient distress.

Active noise cancellation and passive noise reduction blocks irritating noise, while ambience programs guide the patient to sleep.

## Prototyping



## Final Design Outcome



### Product Description:

EEG technology and actigraphy monitor a patient's sleep stages and movement in real time and transmit the data wirelessly to the nurse's station, enabling medical staff to be more aware of a patients natural sleep cycle.

Active and passive noise reduction technology reduce the patient's exposure to ambient noise, while providing soothing sleep stimulation direct to the patients ears.

The result is faster initiation of sleep, reduced awakenings, increased sleep depth and greater overall REM sleep. This could lead to improved recovery rates, reduced time in ICU, lower healthcare costs and improved patient outcomes.

## A jewlery box to improve life on the go.



**PROJECT:**

**Corportate professionals *on the go***

**NEED:**

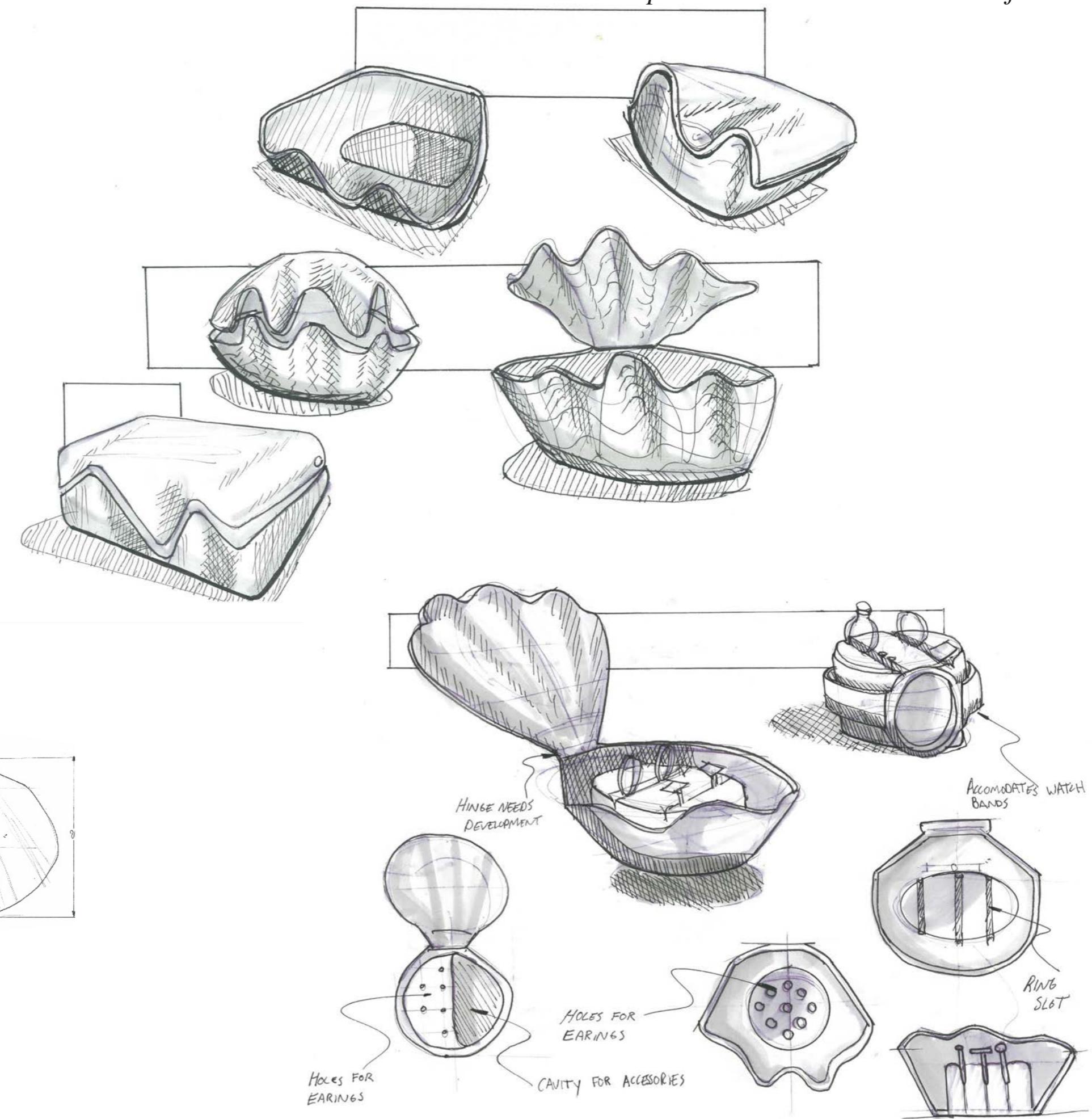
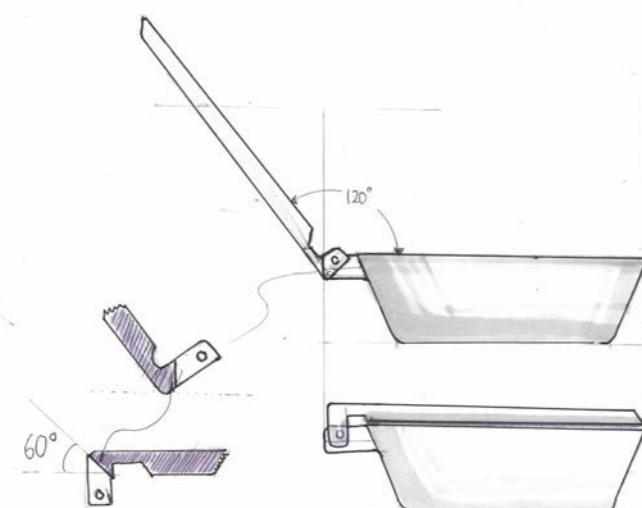
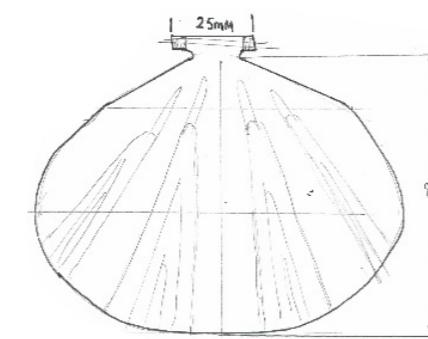
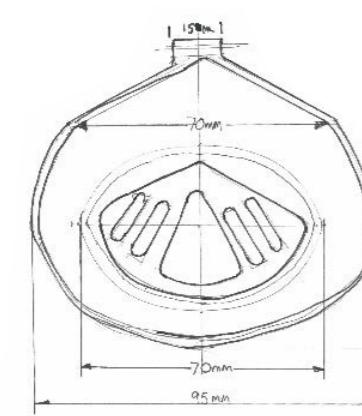
Busy corporate professionals need products that compliment their accesories.

**DESCRIPTION:**

This piece was styled to meet the Alessi 'identity', offering corporate professionals a fun way to securly store jewelry while 'on the go'.



## Development





## Mollusk

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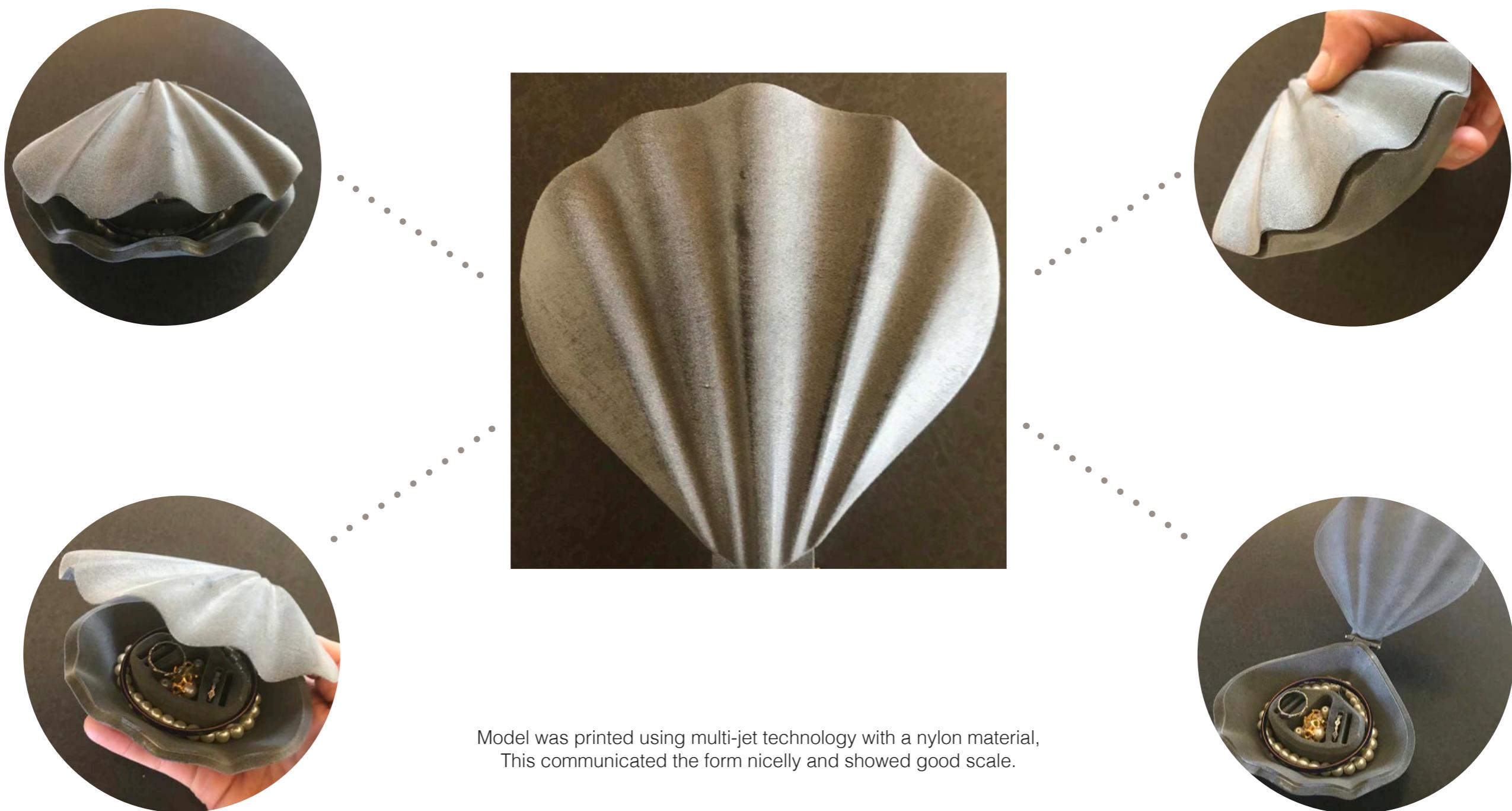
Inspired by a love for the ocean, this design piece offers a fun and playful way of getting ready for a formal event, while 'on the go'.

The form was created to be as natural as possible, with asymmetrical curves giving an essence of unobtrusive beauty.

A high gloss finish communicates the form like ripples in the ocean.



## Prototyping



Model was printed using multi-jet technology with a nylon material,  
This communicated the form nicely and showed good scale.



# MOLLUSK

Jewelry Storage,  
ON THE GO

Securely holds bracelets,  
small watches and necklaces.

Holds up to four rings.

Padded compartment for storage of  
accessories.

# A revenue generating human waste processor.

**PROJECT:**

## Waste to Wealth

**NEED:**

Improved sanitation in developing countries.

**DESCRIPTION:**

Waste 2 wealth provides a closed loop solution where users safely dispose of their human waste, where it is heated via concentrated solar energy to a point where all pathogens are destroyed, converting the waste into a resource.

The end product is rich in minerals and can be sold as a fertilizer, generating a revenue stream for poor communities.





*final design outcome/ WASTE to WEALTH / project 3 of 6*



# A system to transport commercial drone equipment and provide sustainable charging in rural areas.

## *PROJECT:*

### Trailer

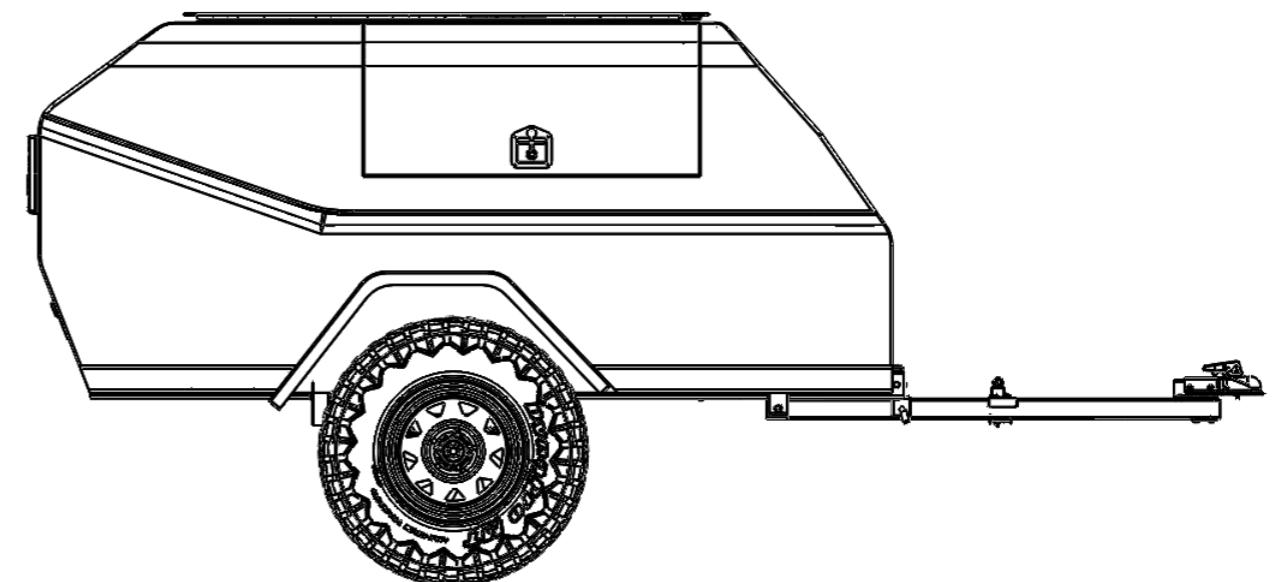
## *NEED:*

Safe transport of drone equipment and battery systems, with integrated seamless power delivery.

## *DESCRIPTION:*

Rugged offroad Transport system that improves productivity through better workflow, and safety of co-workers and clients, through the replacement of the fuel generator with clean solar energy.

This enables reduced running costs and reduces insurance premiums.



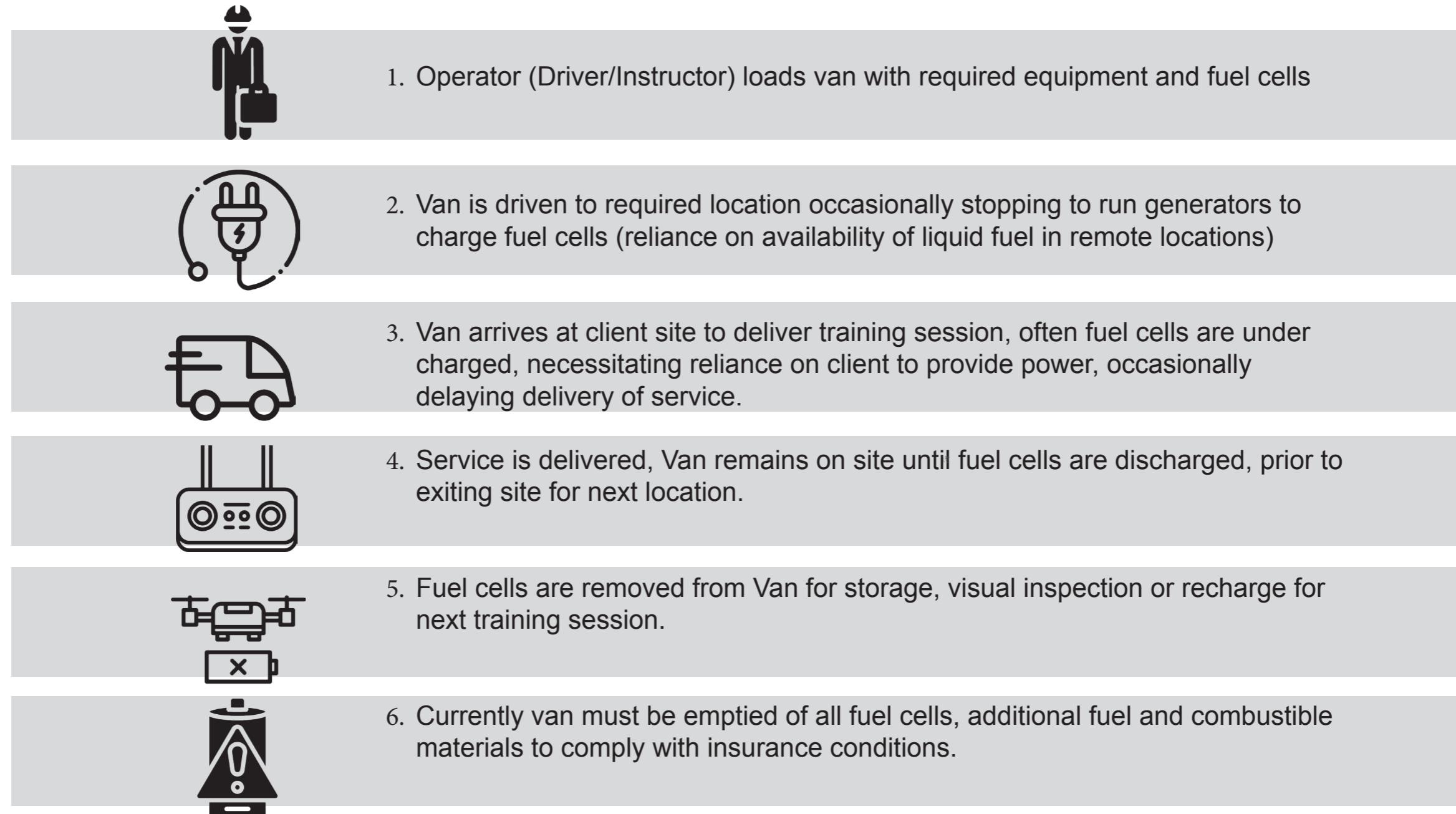
## Vehicles:

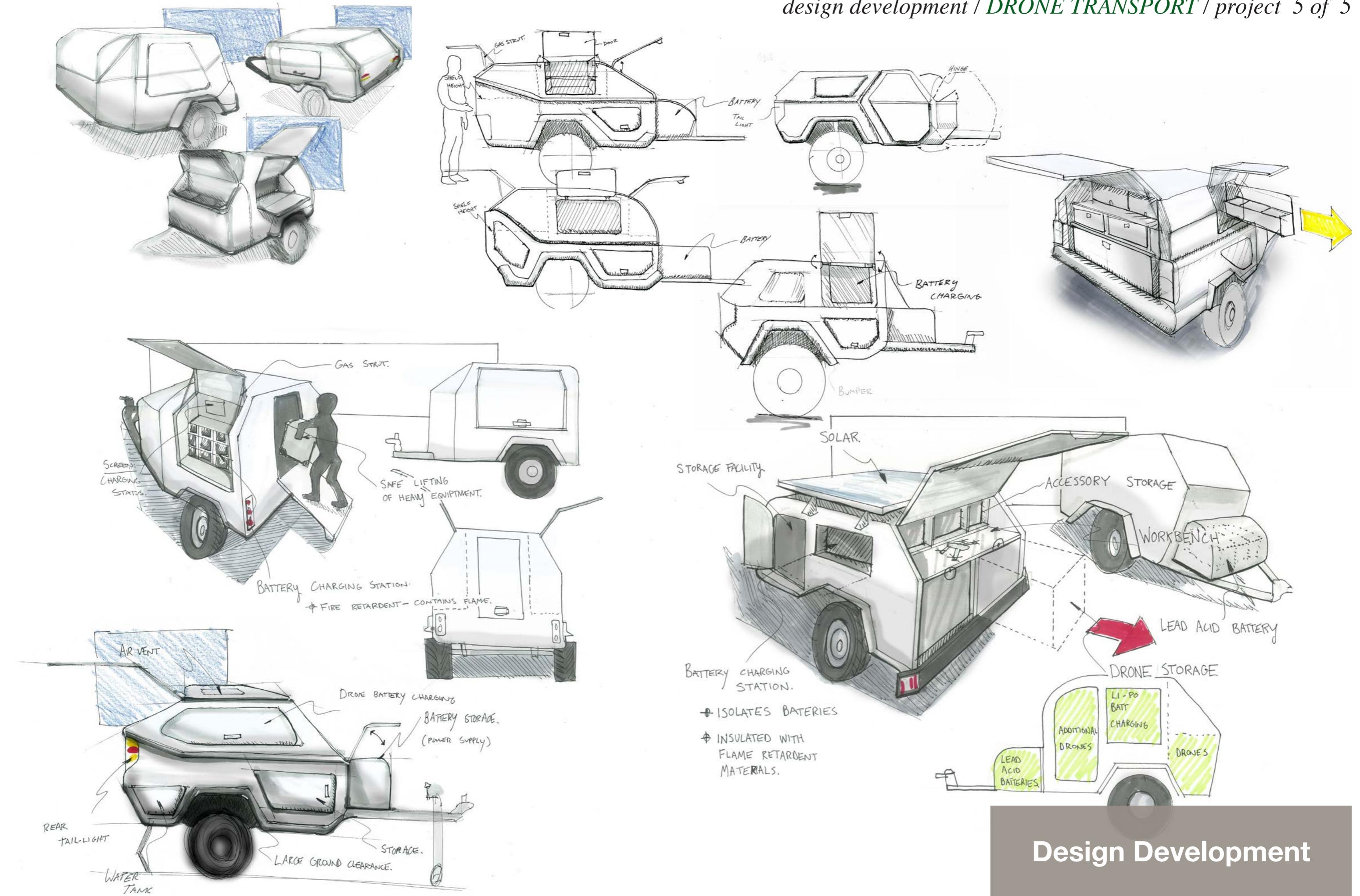


## Trailers:



## Brief WORKFLOW





Design Development

## Final Design Outcome



### Sliding draw

Facilitates drone landing and easy access to equipment.

### Solar Power

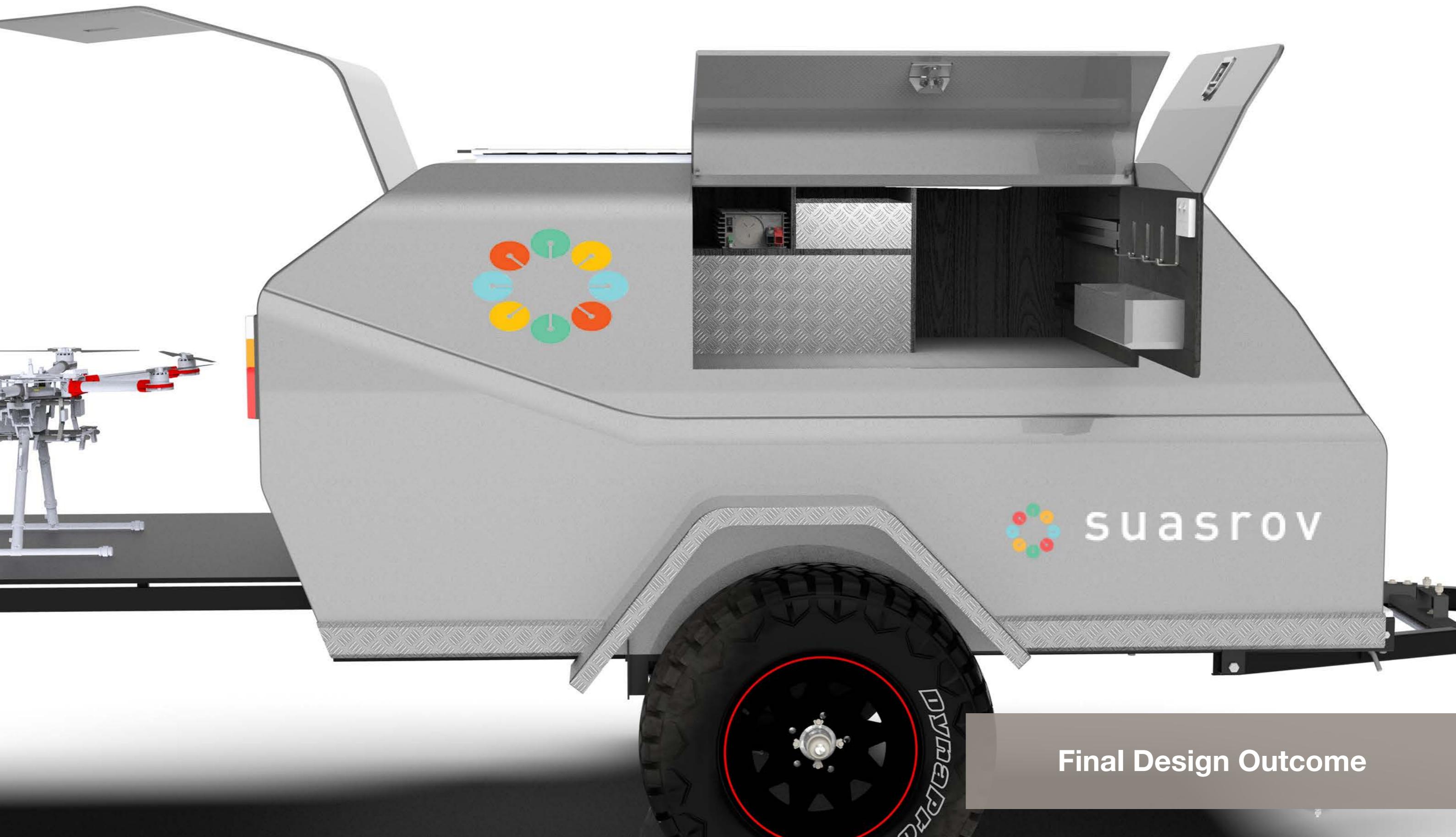
300W panel charges lead acid batteries to ensure power is always available.

### Charging bay

Access to 240v power outlet to charge drone batteries on demand.

### Offroad Capable

Designed for rough terrain, enabling access to remote areas with ease.



Final Design Outcome

# Contact:

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