

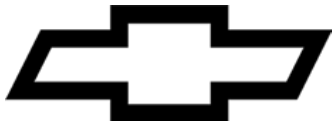


ALEX SCERBA

design engineering portfolio.



2026 SHELBY F250



CHEVROLET CONCEPT RC



HUSQVARNA VAL



L.E.N.S.S. ENCLOSURE



2026 SHELBY F250

production hood and fender flares.

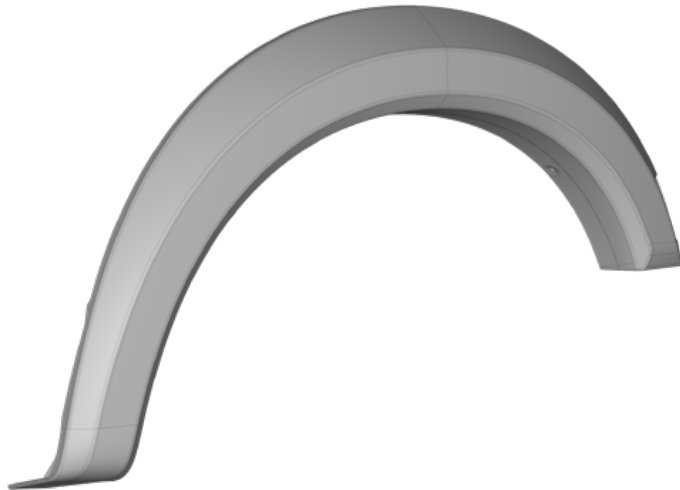
HOOD-INNER PRODUCTION TOOLING

FENDER FLARES w/ SIDE MARKERS

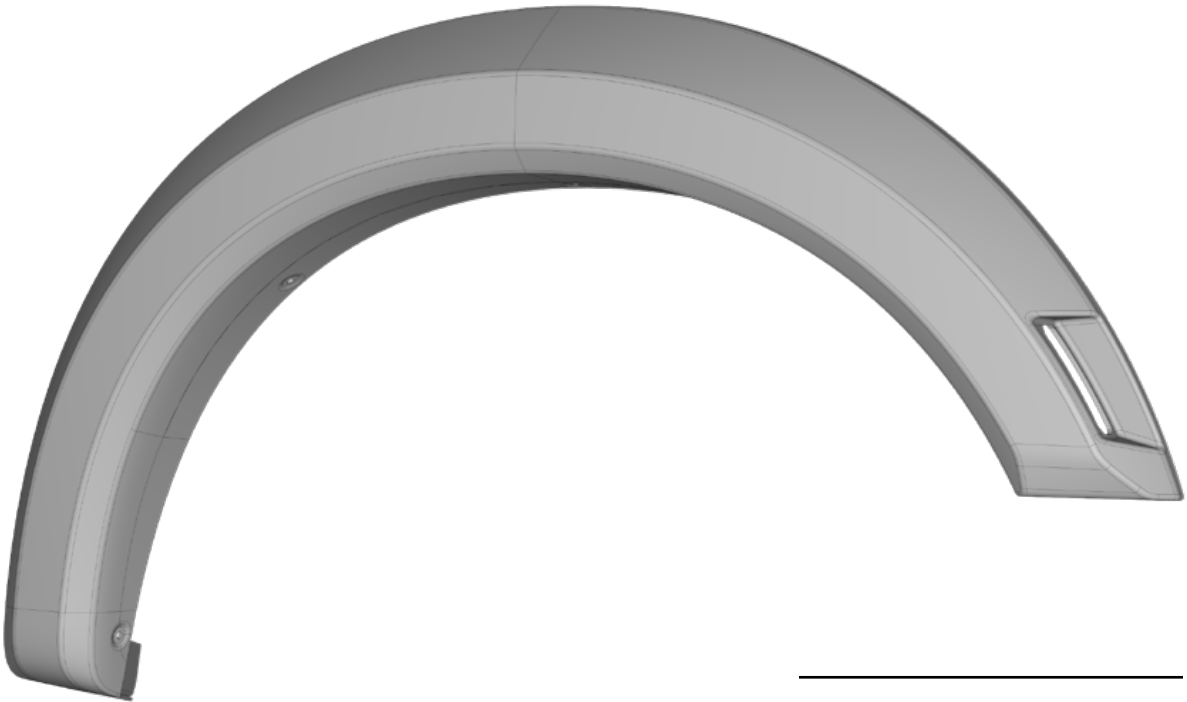


Meeting Regulation

For the 2026 model, marker lights were required for the increased vehicle width. The new flare design accommodates existing lights for a shortened production timeline.



FRONT FLARE

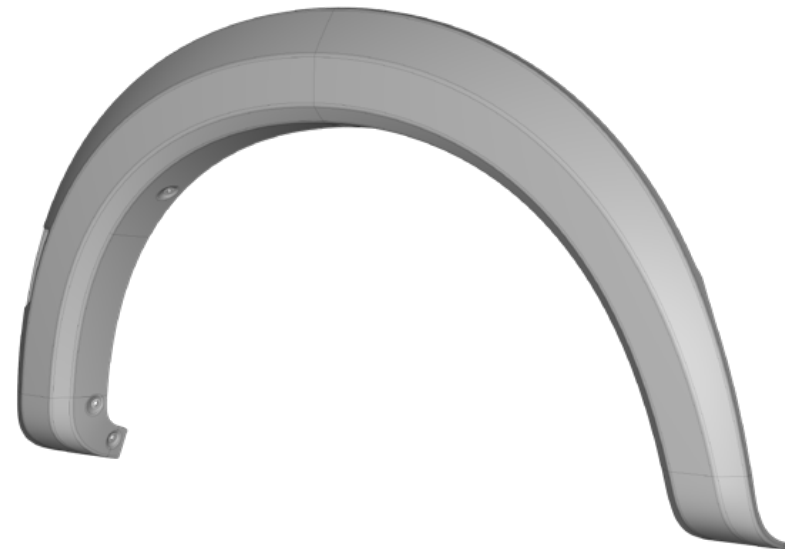


Front thermoform fender flare with marker light integration pocket.

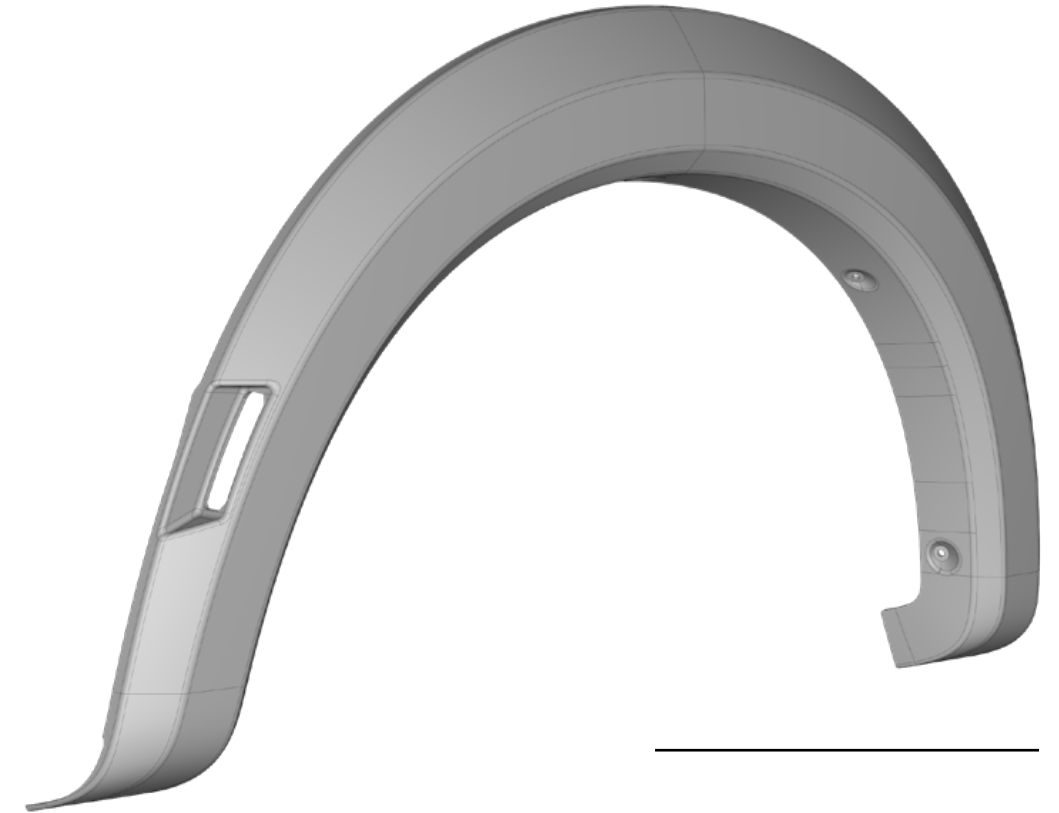


Rear Light Integration

The rear fender flares received the same treatment as the front. Integrated marker light pockets modeled with NURBS.



REAR FLARE

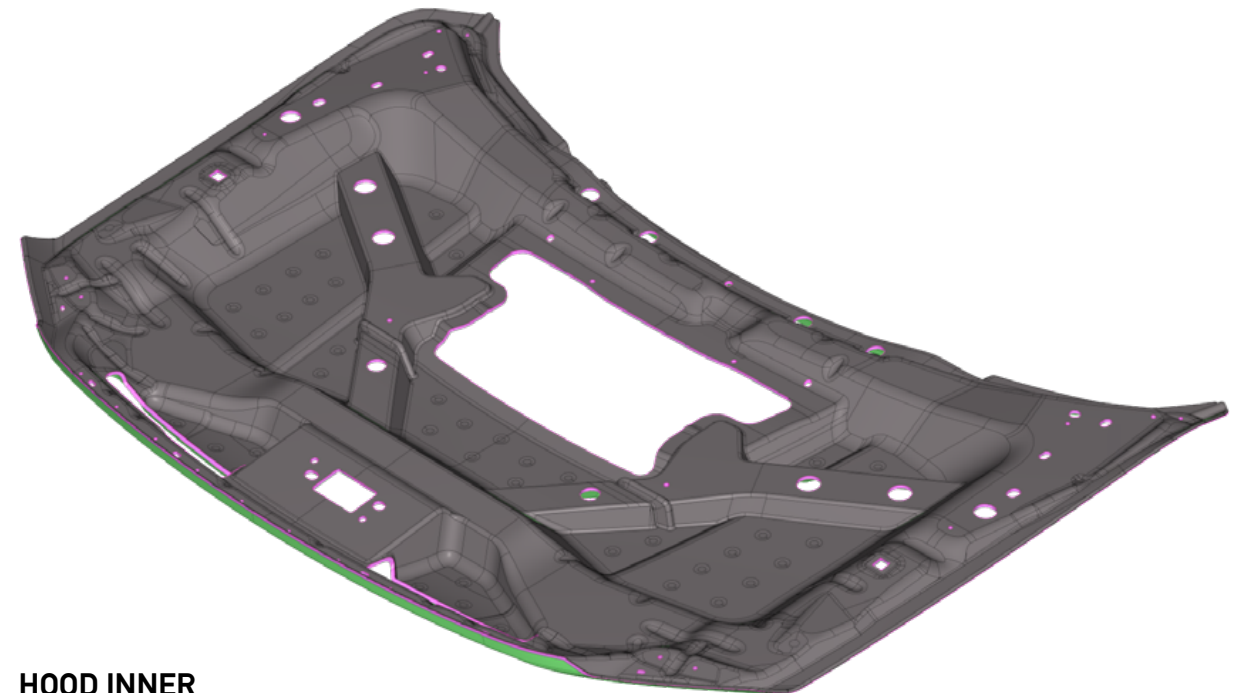


Rear flare with marker light integration pocket.

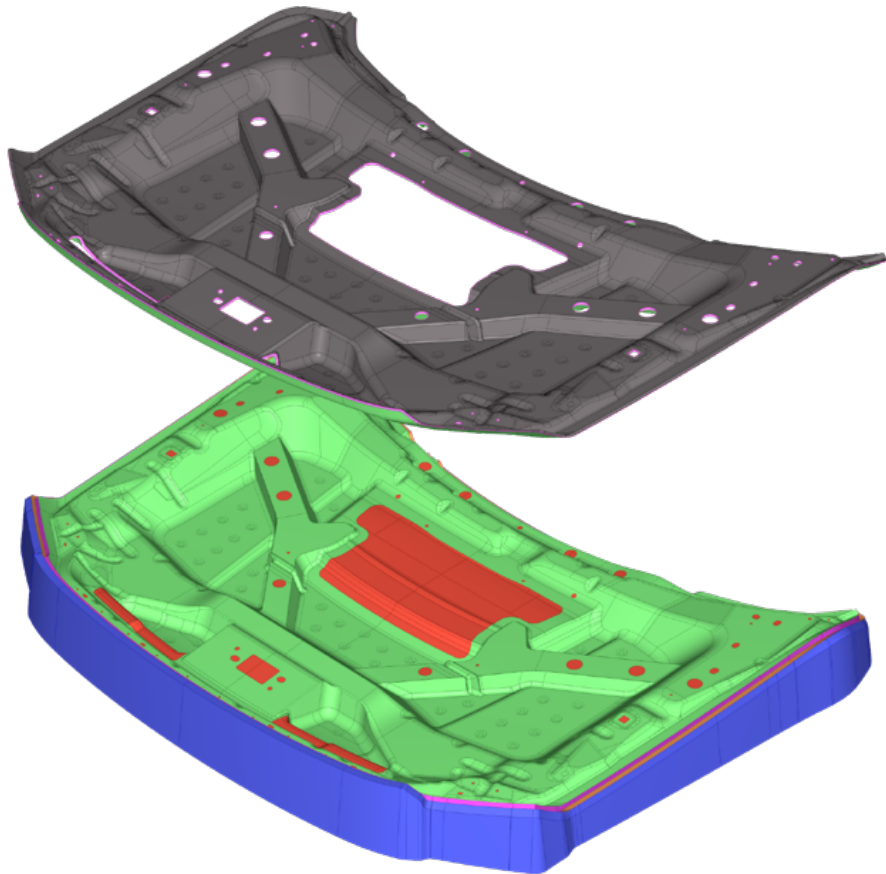


OEM Surface Integration

Working with OEM surface allows for hard point clearance and reduced modeling time.

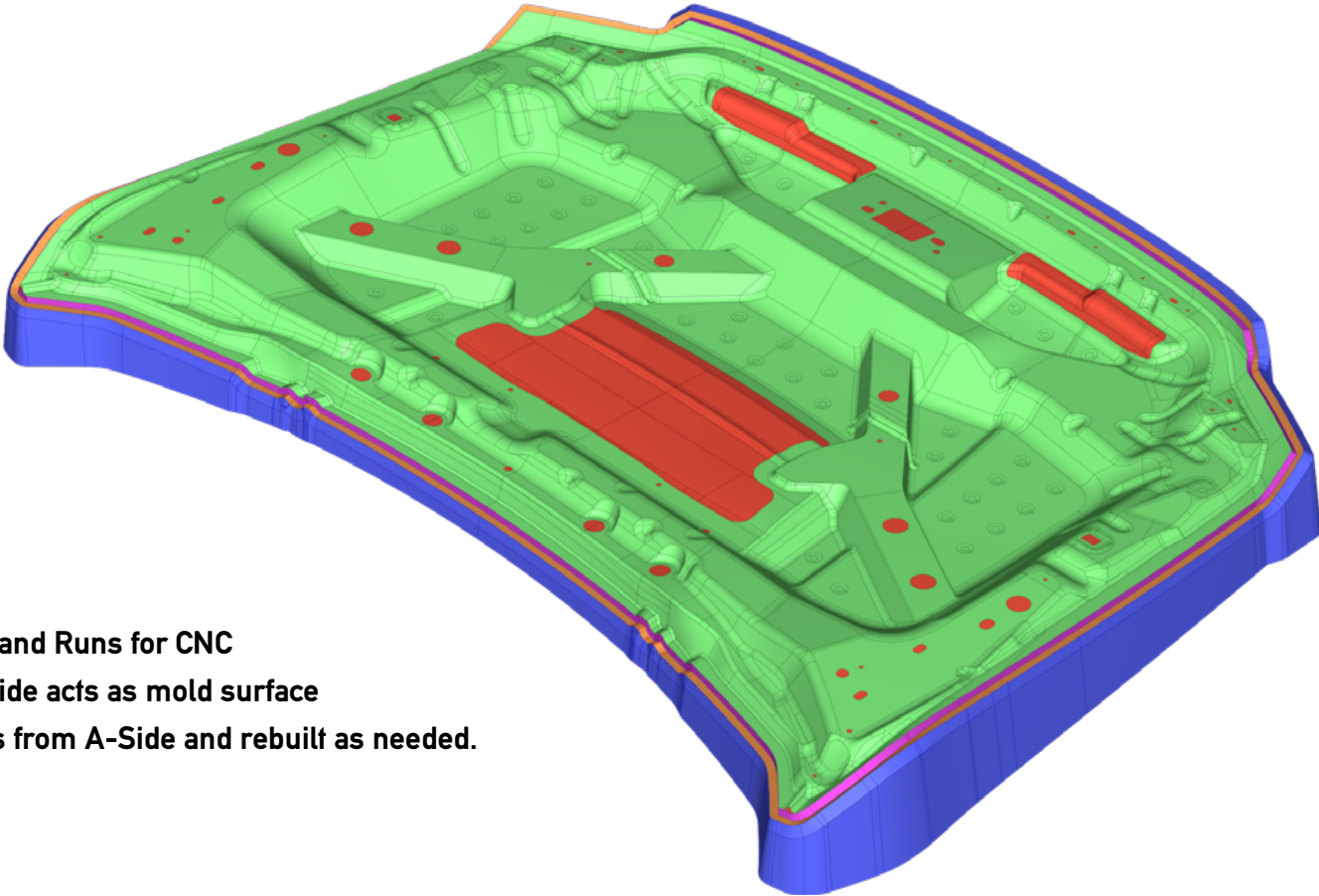


HOOD INNER

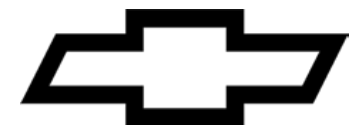


PART/TOOL RELATIONSHIP

Thermoform Tooling



Parts divided into Trims, Guides, and Runs for CNC routing operation post-mold. B-Side acts as mold surface
Offset nominal material thickness from A-Side and rebuilt as needed.



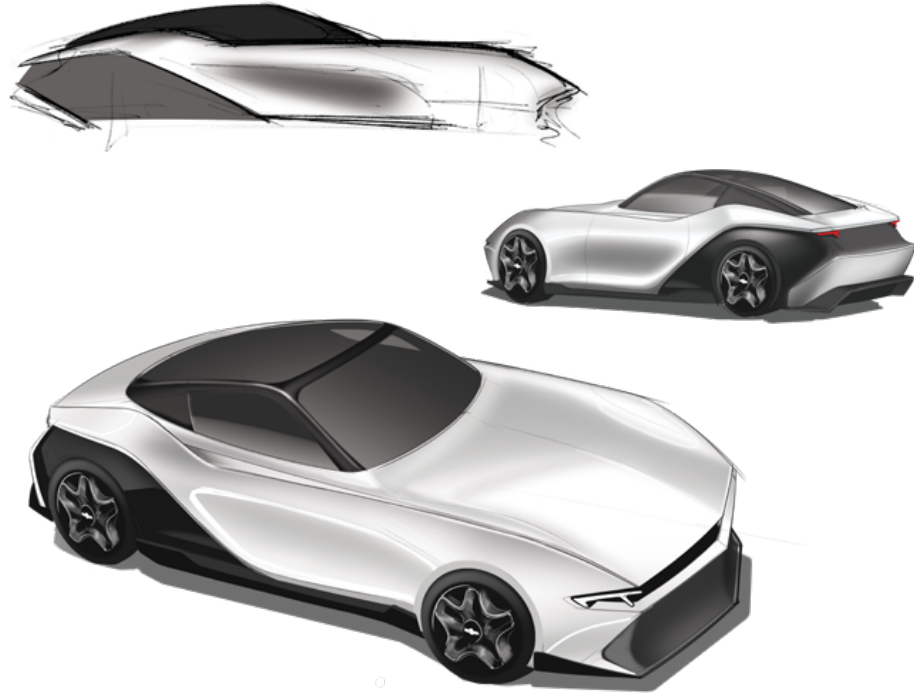
CHEVROLET CONCEPT RC

3D print RC car scale model.



SKETCH TO MODEL

CHEVROLET CONCEPT RC

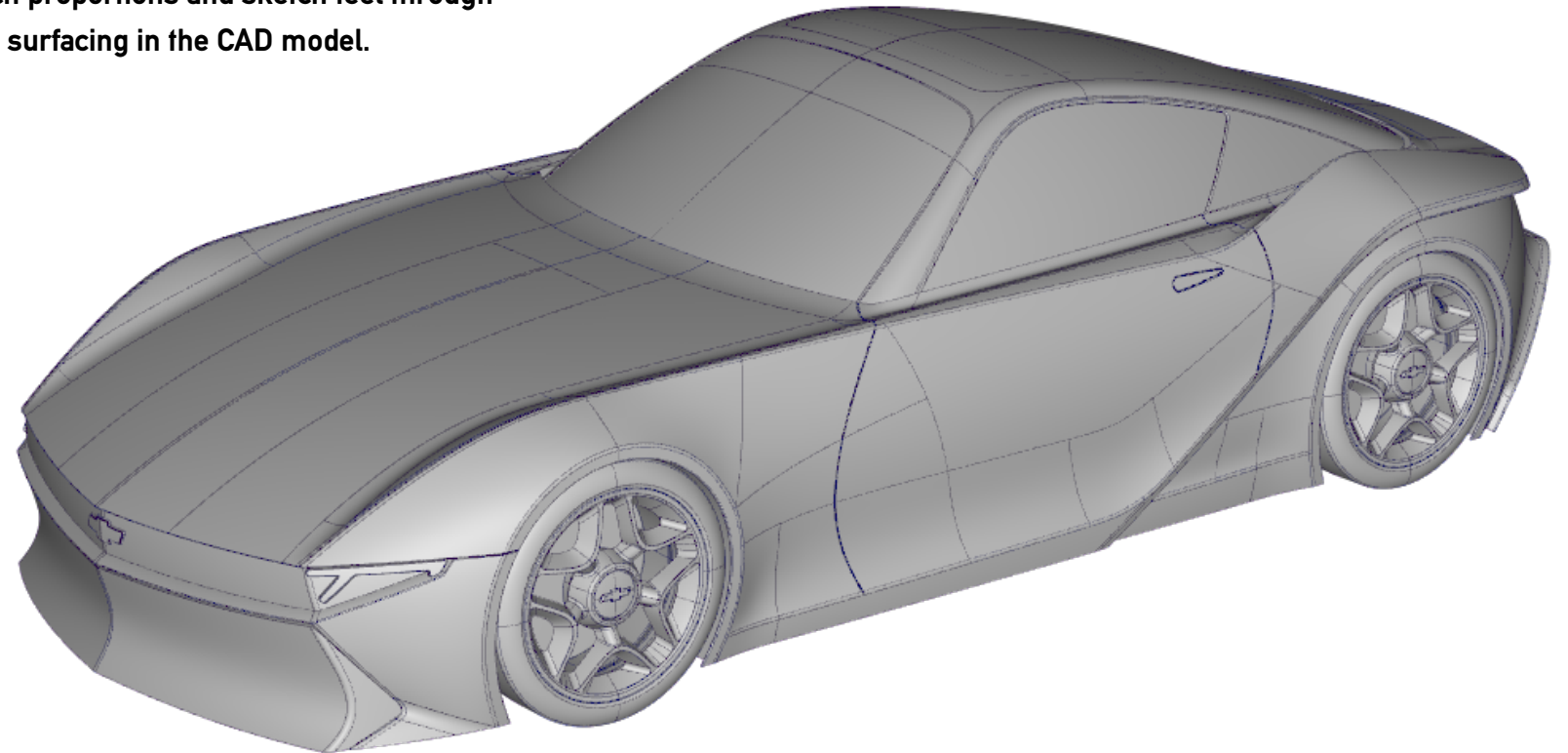


Sketch Reference

2-door compact sport coupe design. Distinctive rear graphic breakup adds modeling complexity and visual interest.

CAD Model

Concept model based on design reference sketches. Worked to match proportions and sketch feel through organic NURBS surfacing in the CAD model.



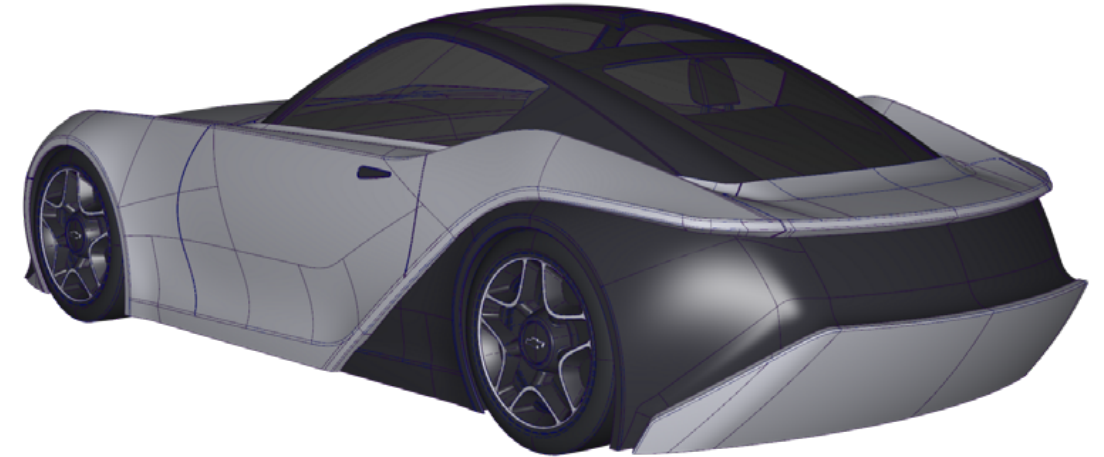
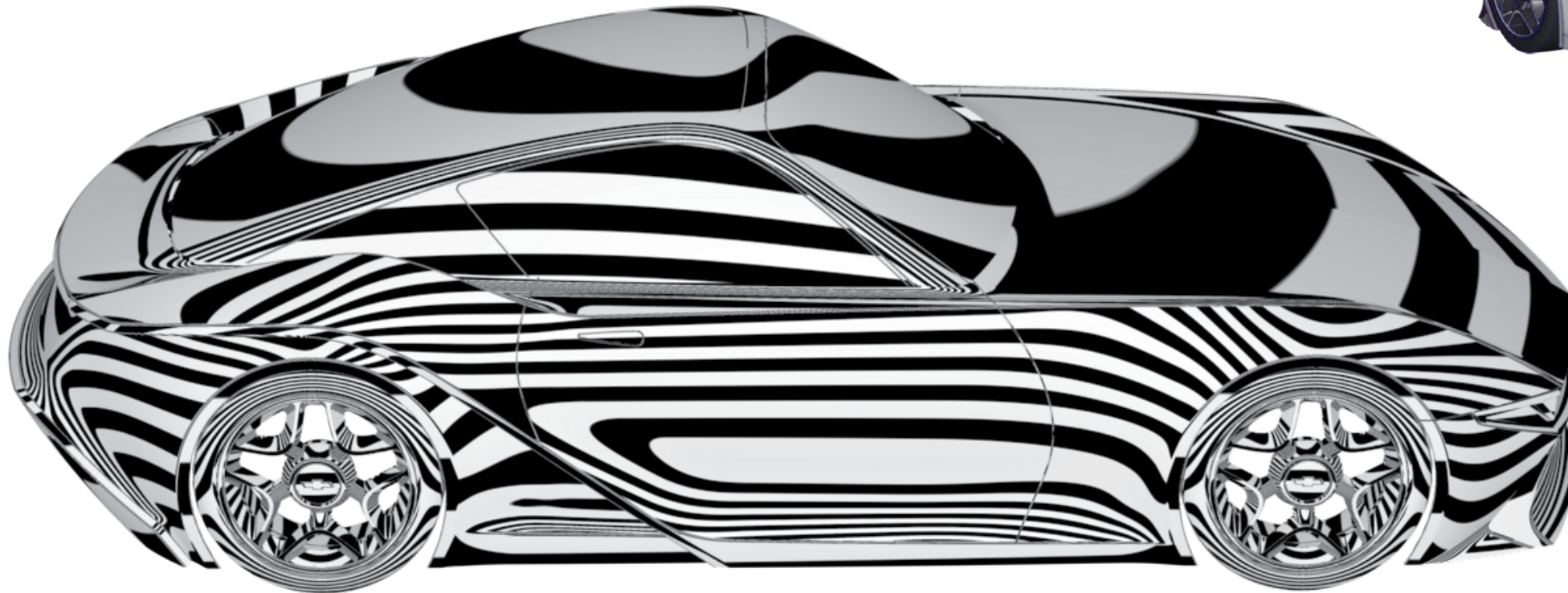


SURFACE FLOW

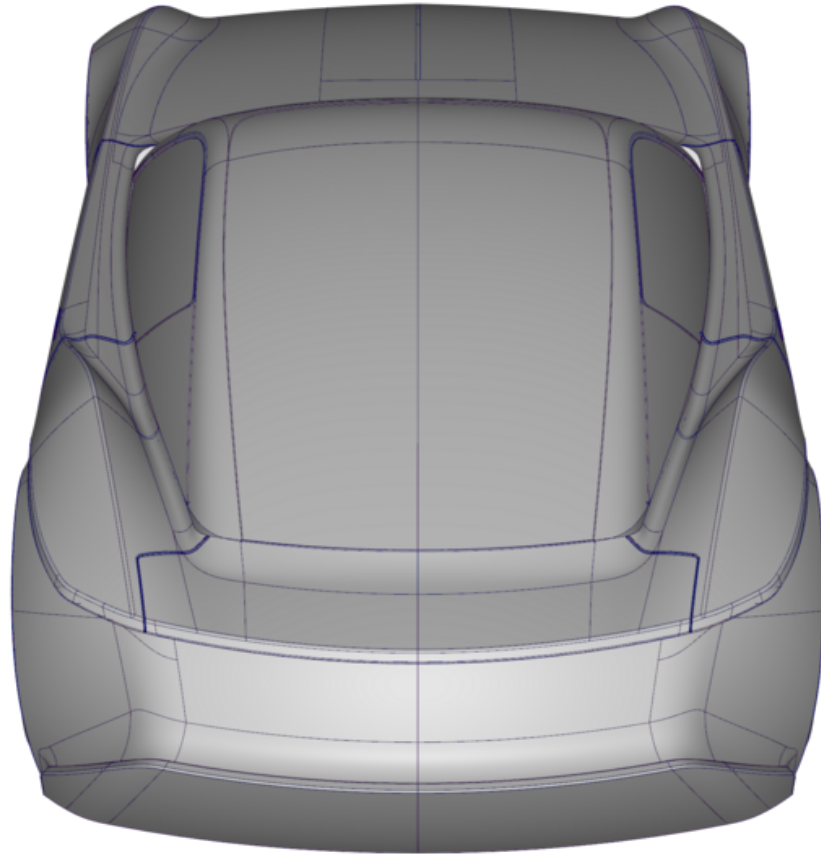
CHEVROLET CONCEPT RC

Surface Refinement And Flow

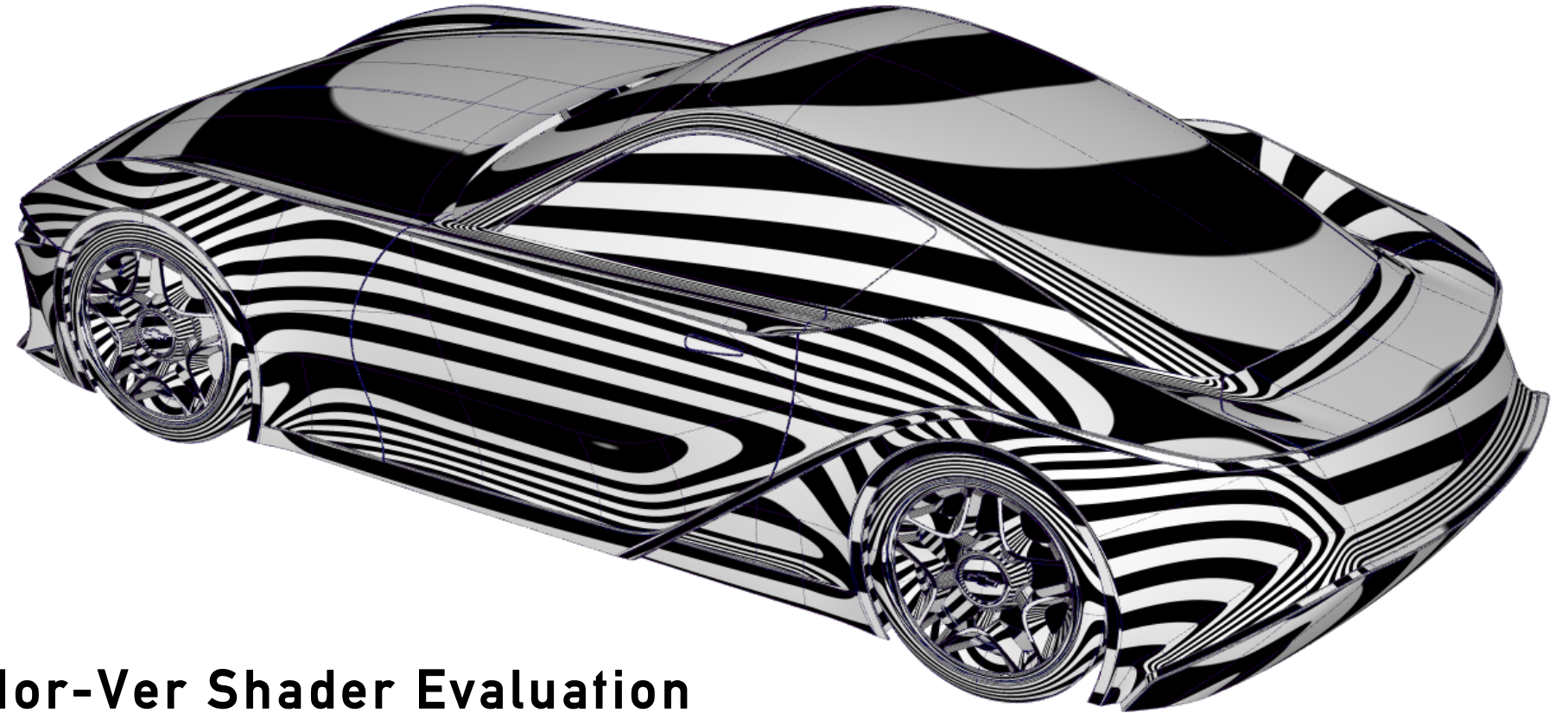
Autodesk Alias Auto Studio surfacing tools allow for clean surface flow and highlights.



HARDWARE SHADE COLOR BREAK



REAR EVALUATION



Hor-Ver Shader Evaluation

Horizontal/Vertical map highlights and surface flow to accurately evaluate surface quality.



VISUALIZATION

CHEVROLET CONCEPT RC





WHEEL BADGE INTEGRATION

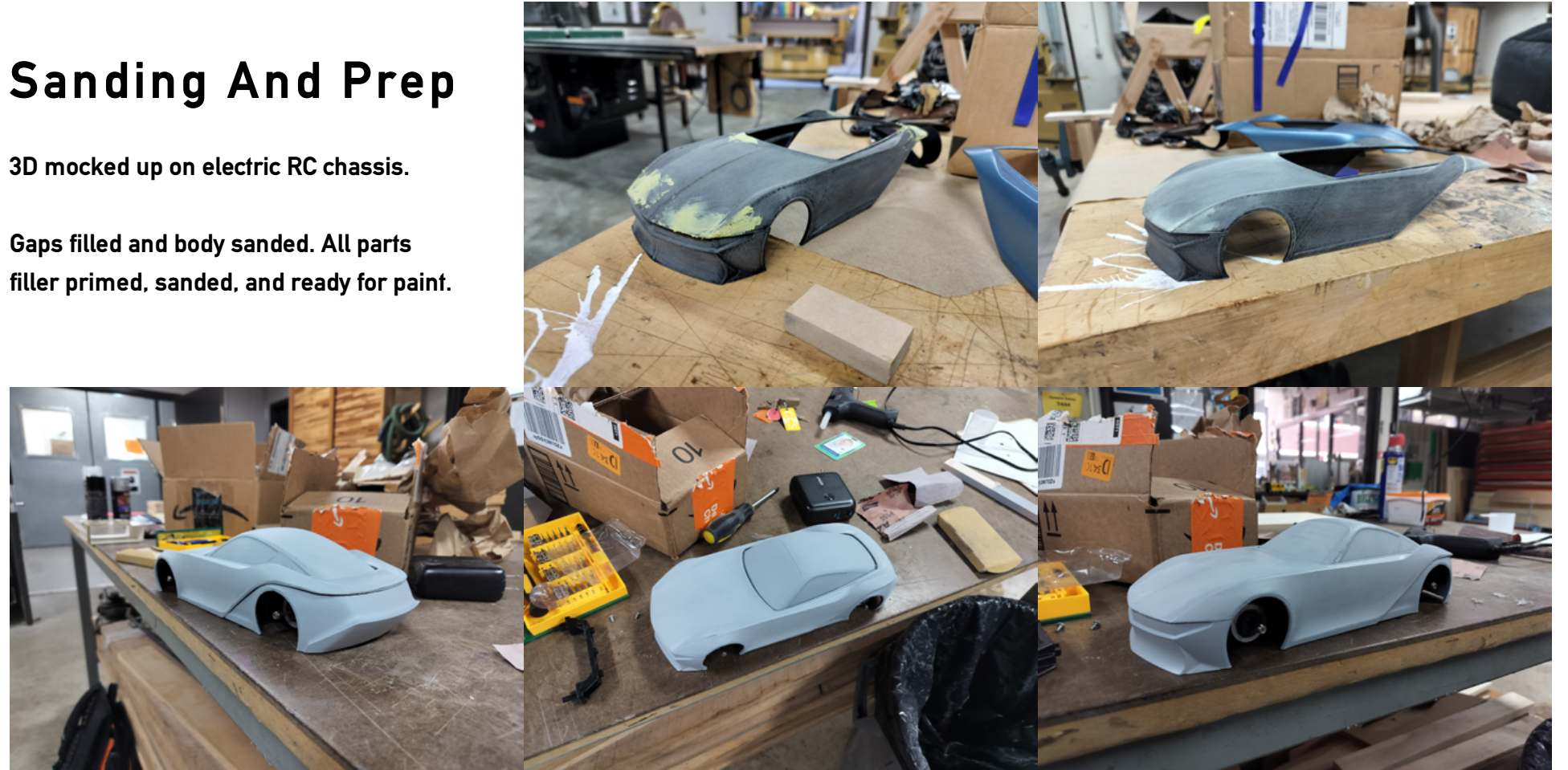




Sanding And Prep

3D mocked up on electric RC chassis.

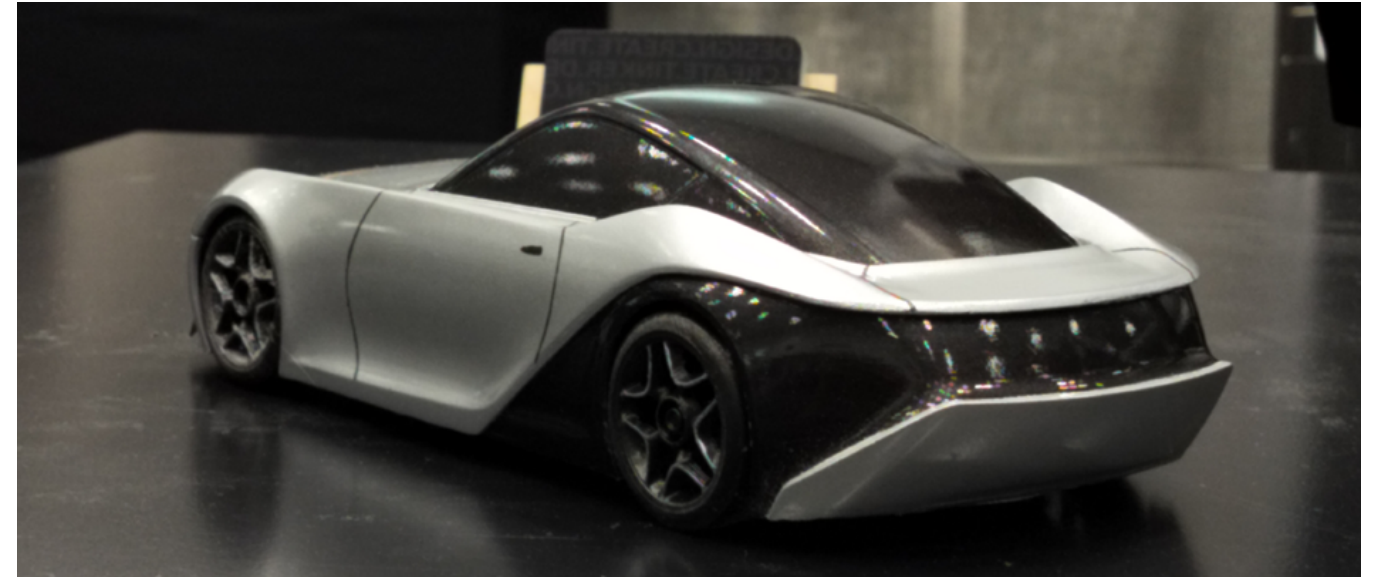
Gaps filled and body sanded. All parts filler primed, sanded, and ready for paint.





FINAL MODEL

CHEVROLET CONCEPT RC



1/16th Scale

Fully drivable RC model.
Hand-painted DRL & lines.





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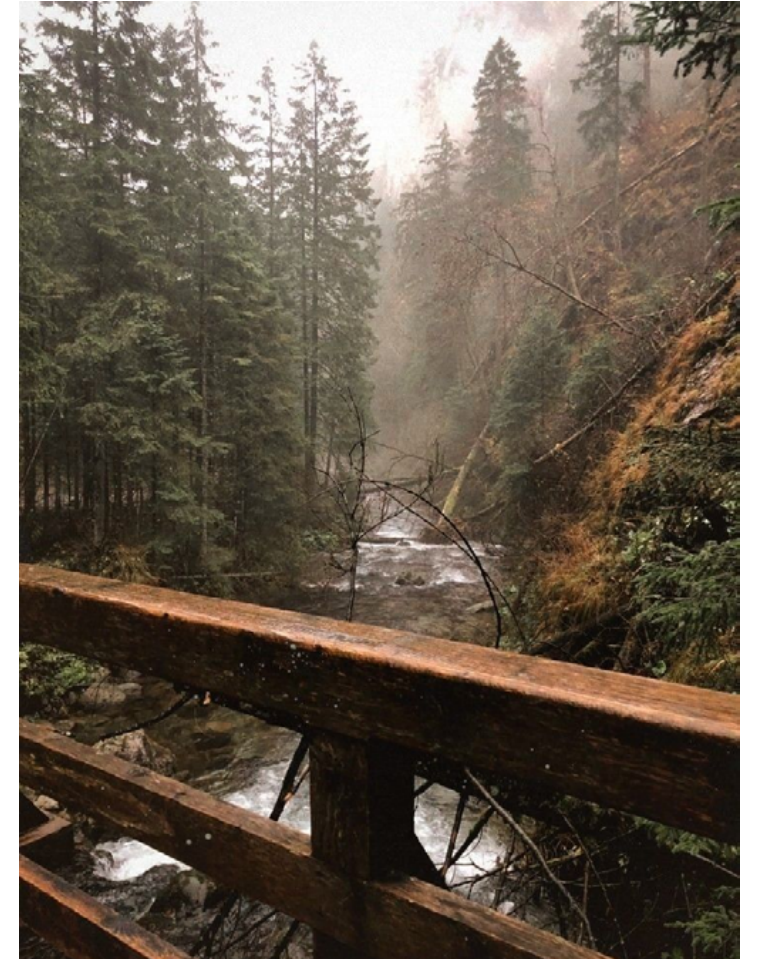
off-road how you choose.



Electric Off-Road Adventure

Adventure riders of the future need maximum range and storage while benefiting from electric silence and simplicity to keep them more connected to nature.

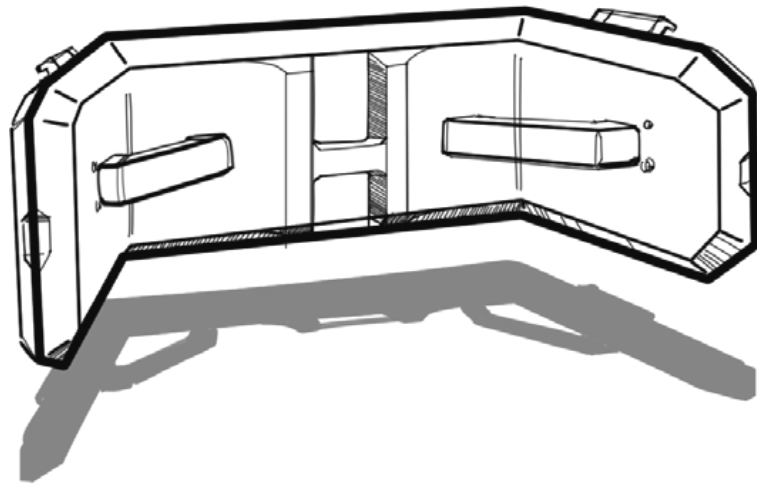
Sidecar technology allows for greater range and cargo capacity for the future of electric off-road adventure riding.





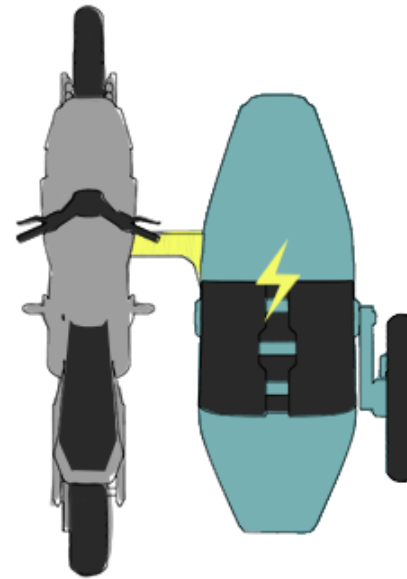
Multi-Use

Through the modular beam, the sidecar acts as a range extender, cargo storage, and/or passenger seat. Quickly detach sidecar for scouting ahead or easily switch to other side for more comfortable driving in varying regions/terrain.

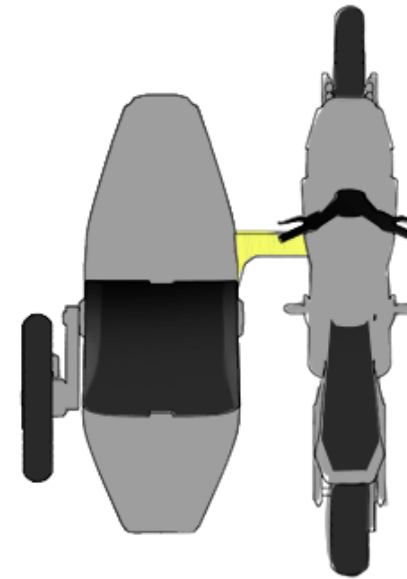


Modular Sidecar Beam

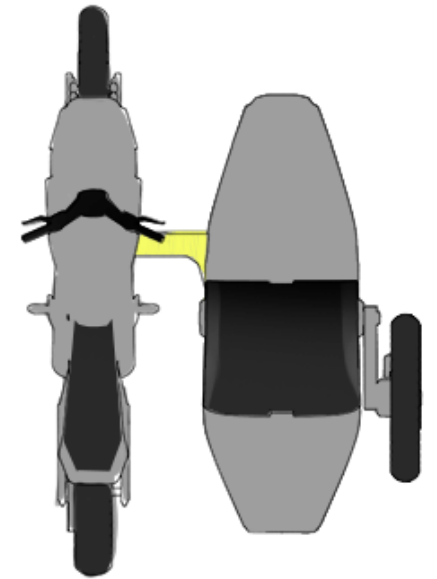
Robust, tech-packed beam houses the key sidecar electronics while structurally attaching it and the motorcycle.



RANGE EXTENDER



RIGHT-HAND DRIVE



PASSENGER/GEAR



INSPIRATION



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Form Language

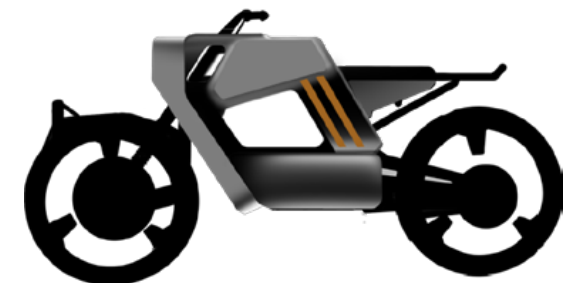
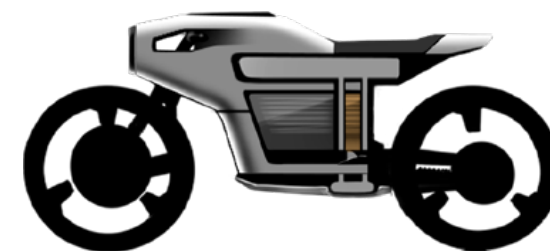
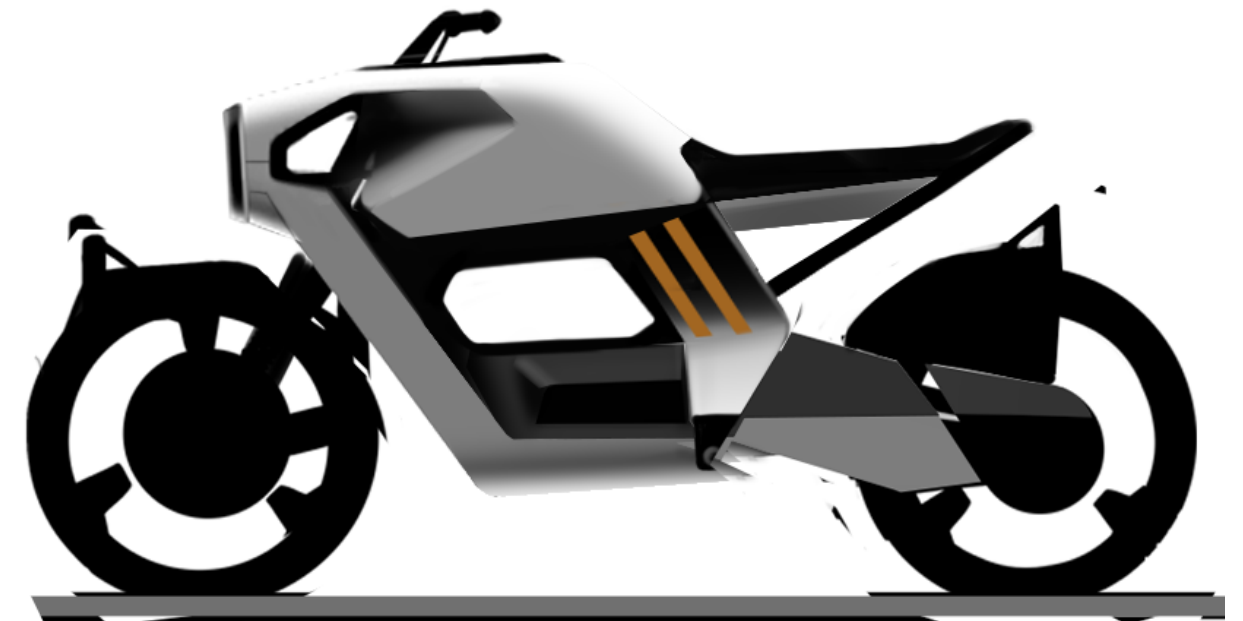
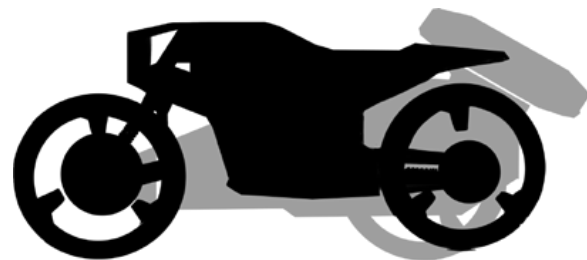
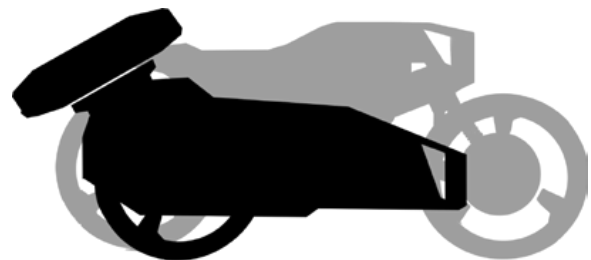
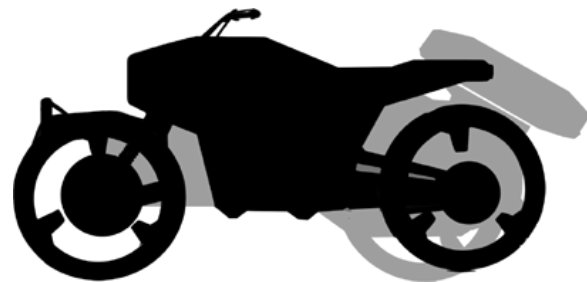
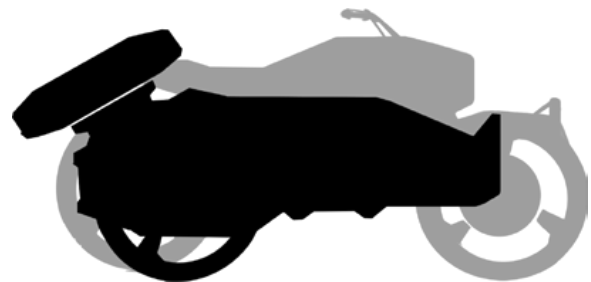
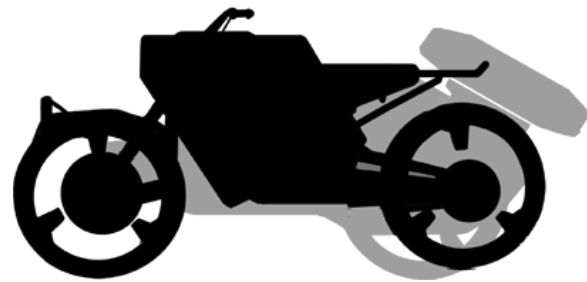
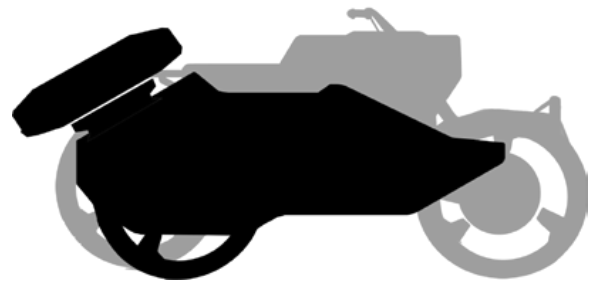
Soft yet refined surfaces for touch points and interaction areas.

Robust, technical forms for structural and driving components.



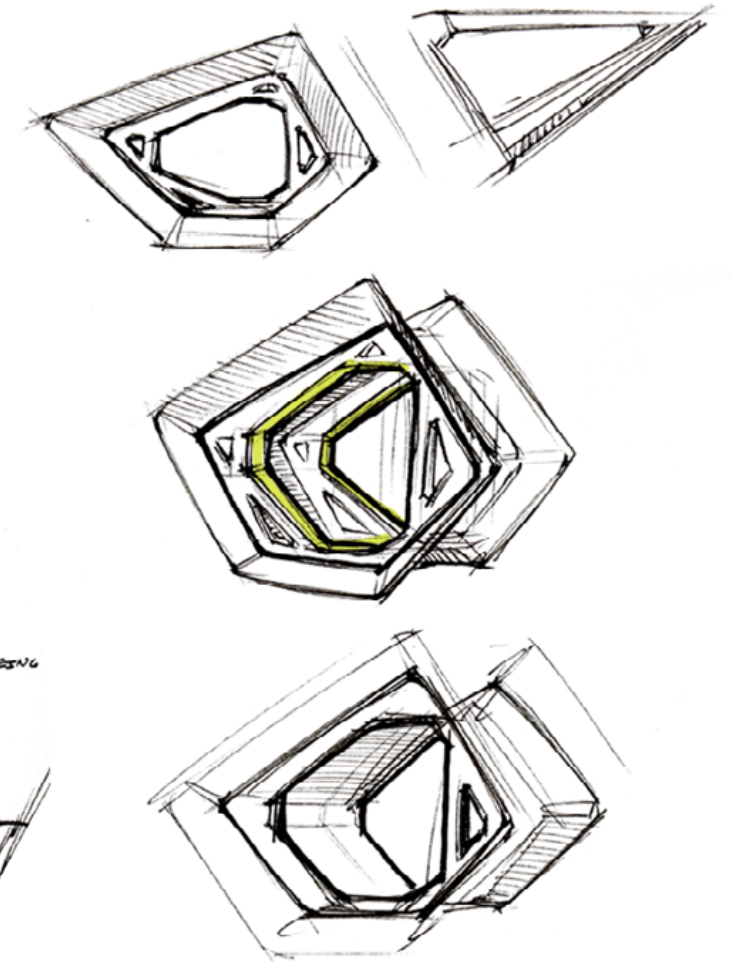
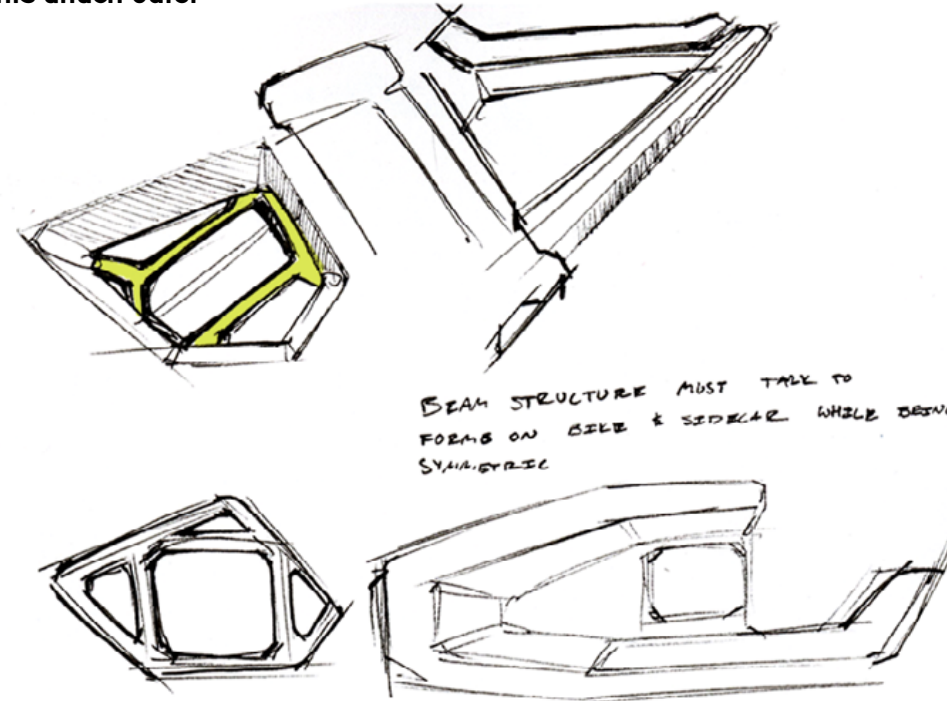
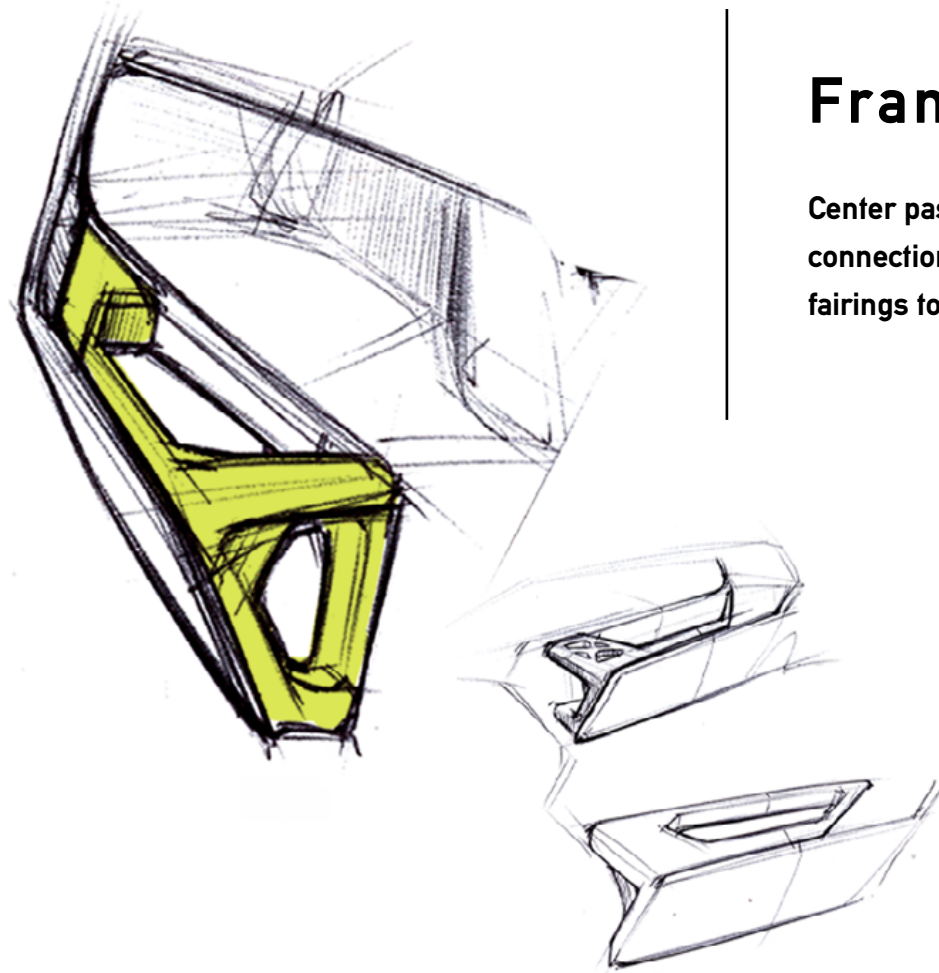
IDEATION

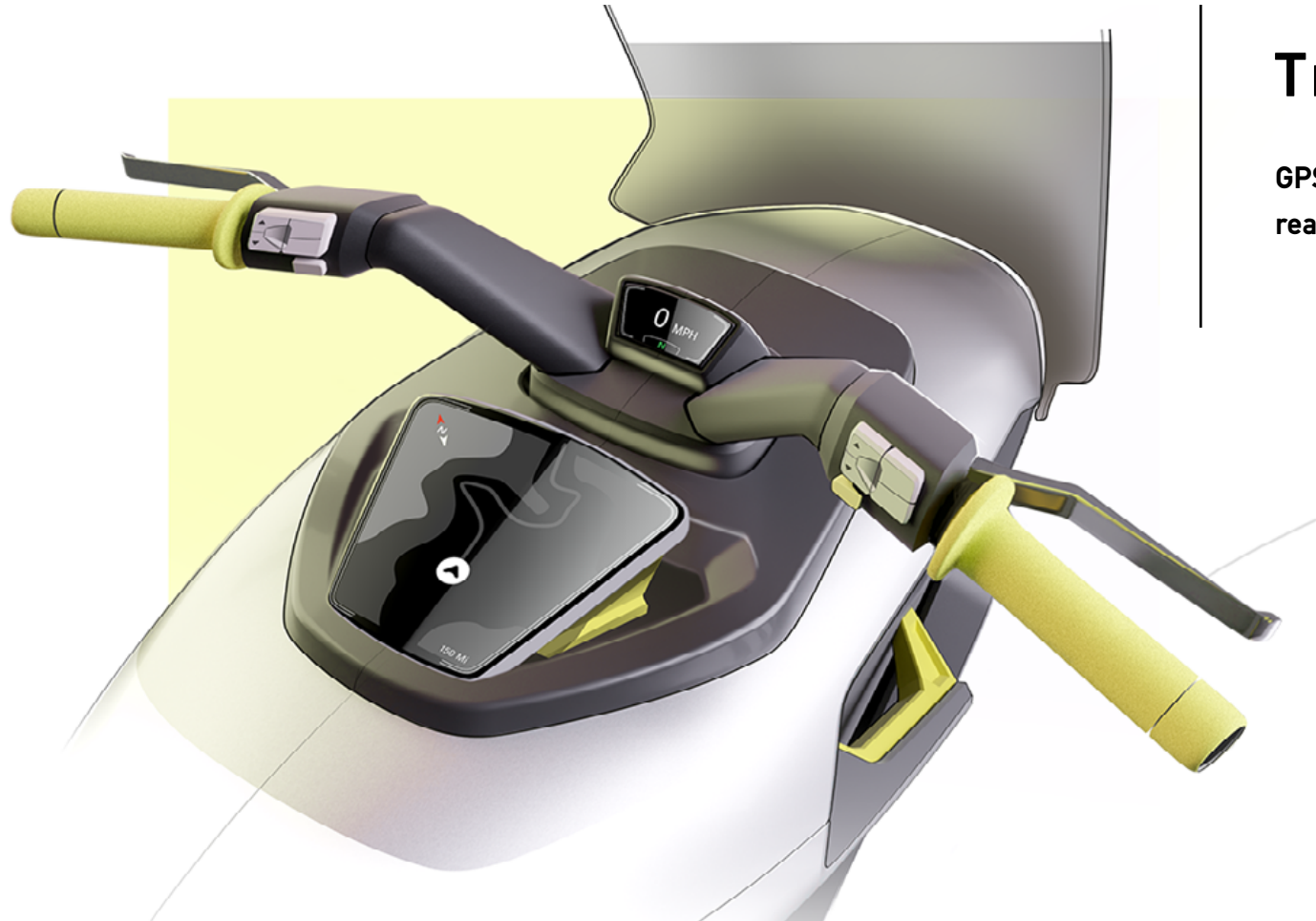
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Frame Details

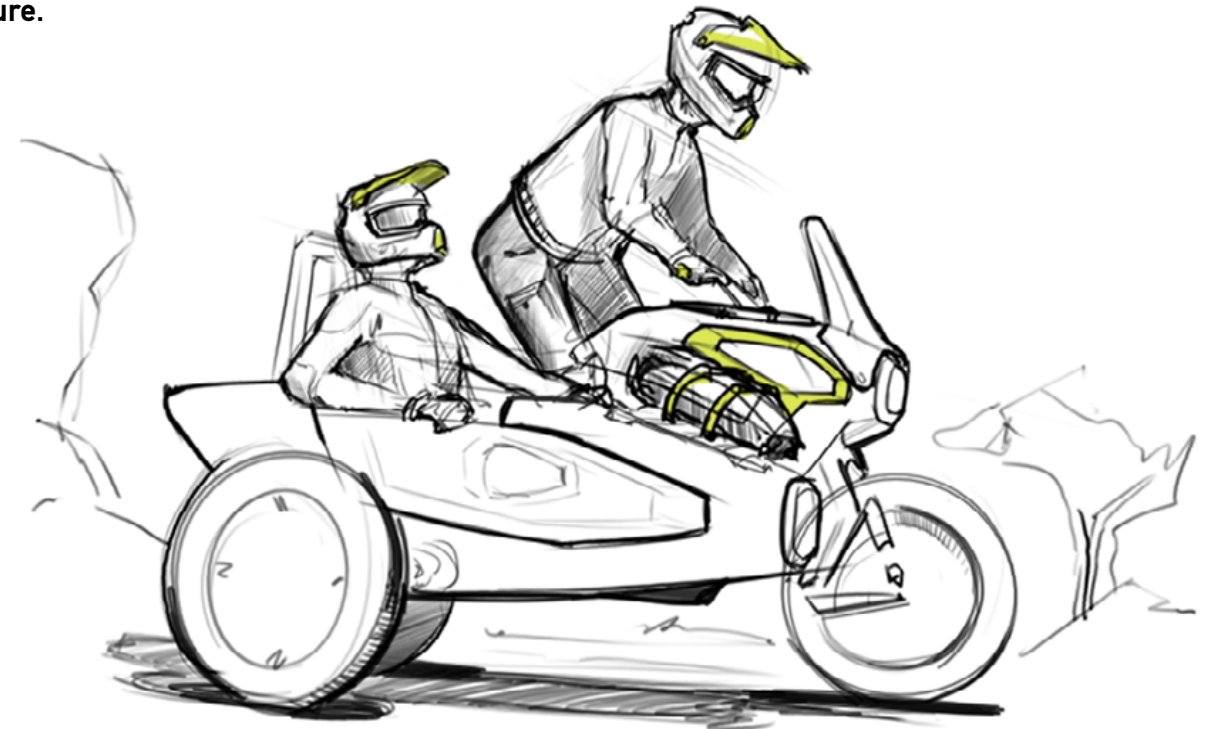
Center pass-through allows for sidecar beam connection, and structural elements attach outer fairings to motorcycle.

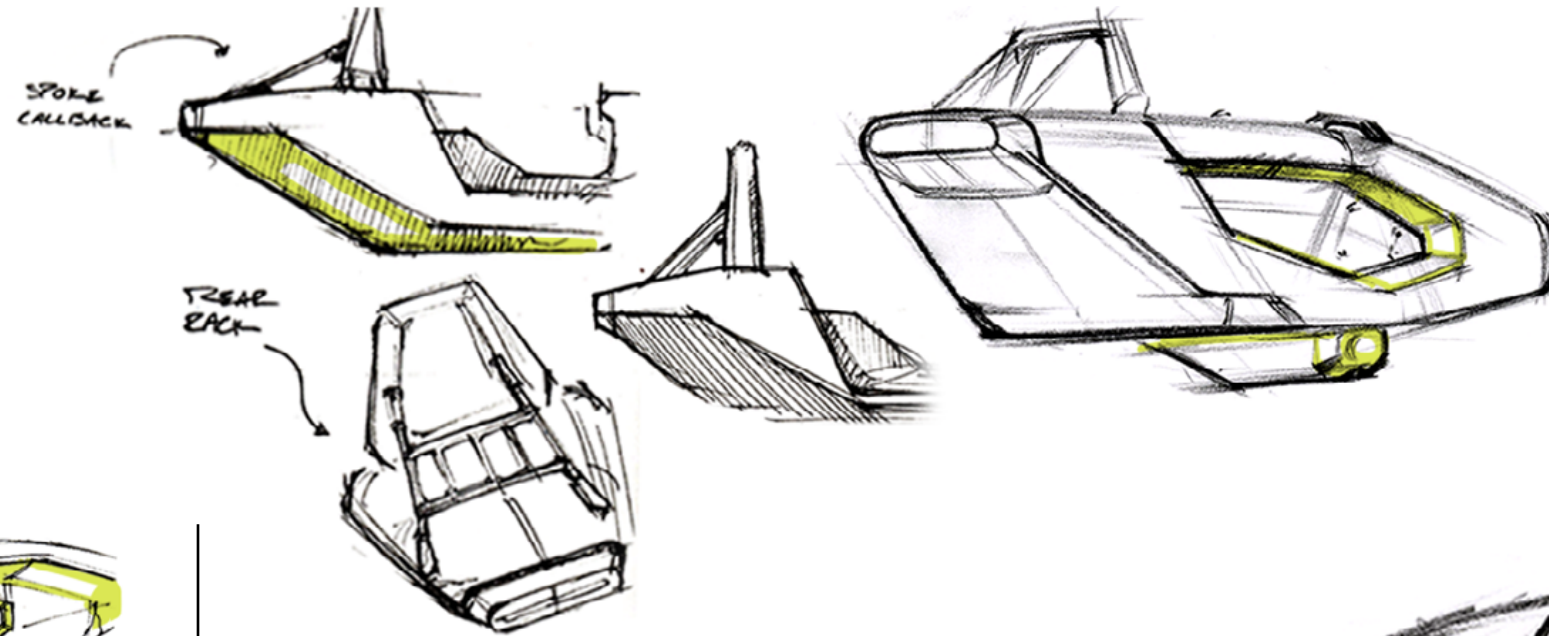




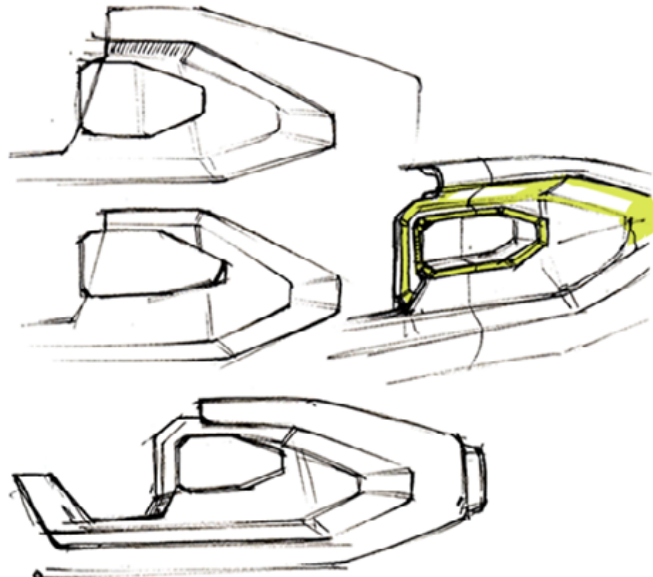
Trail Nav. System

GPS navigation system pre-loaded with popular off-road trails ready for adventure.



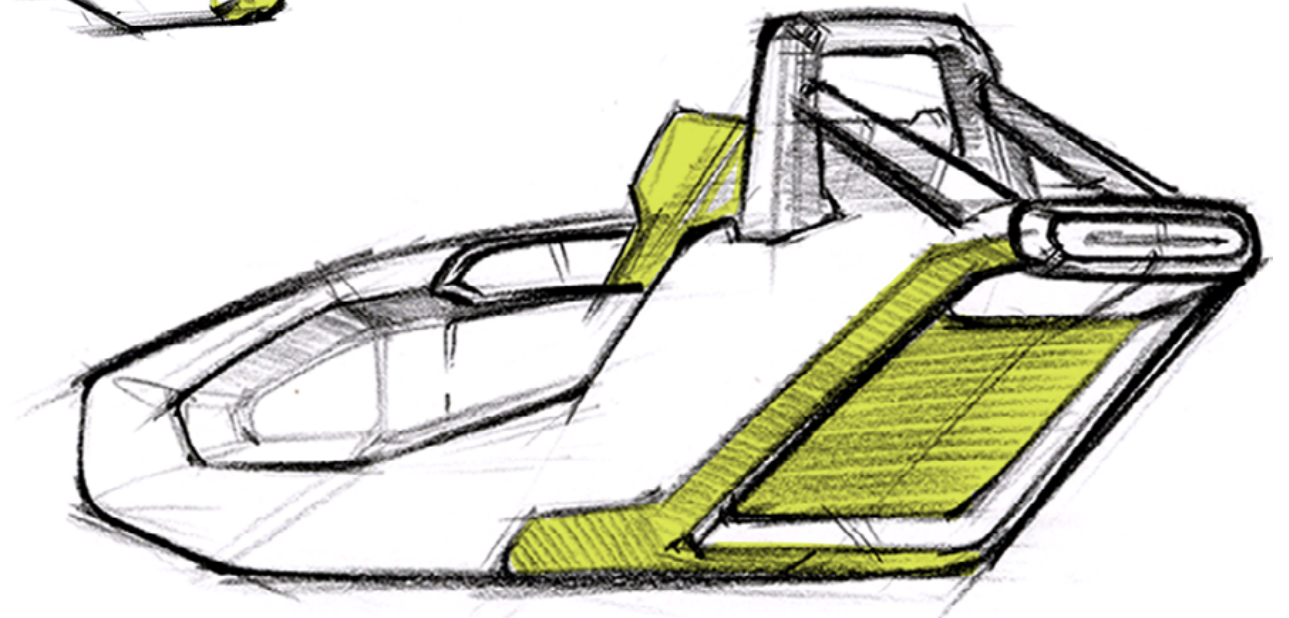


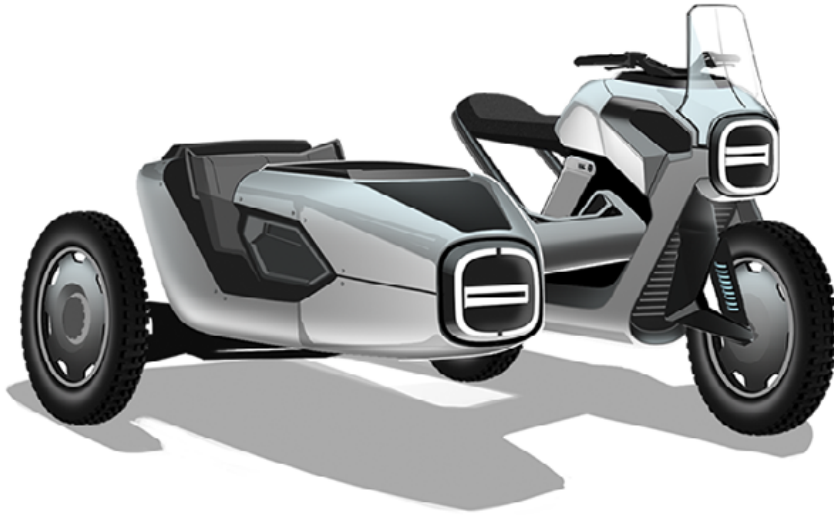
Roll beam and external mount points for gear.



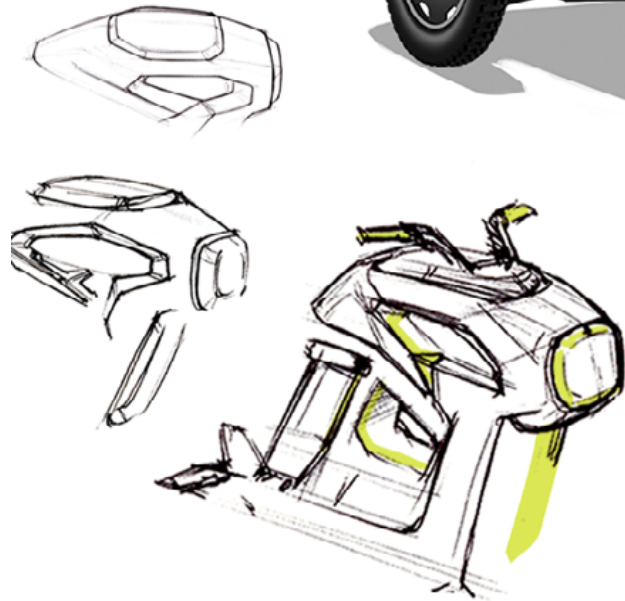
Sidecar

Side shapes allow interface with attachment beam and rear area houses range extending batteries.





Robust features and upright stance provides confidence in off-road handling characteristics.



Final Theme

Windscreen addition for added protection from the elements.





FINAL RENDERS

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FINAL RENDERS

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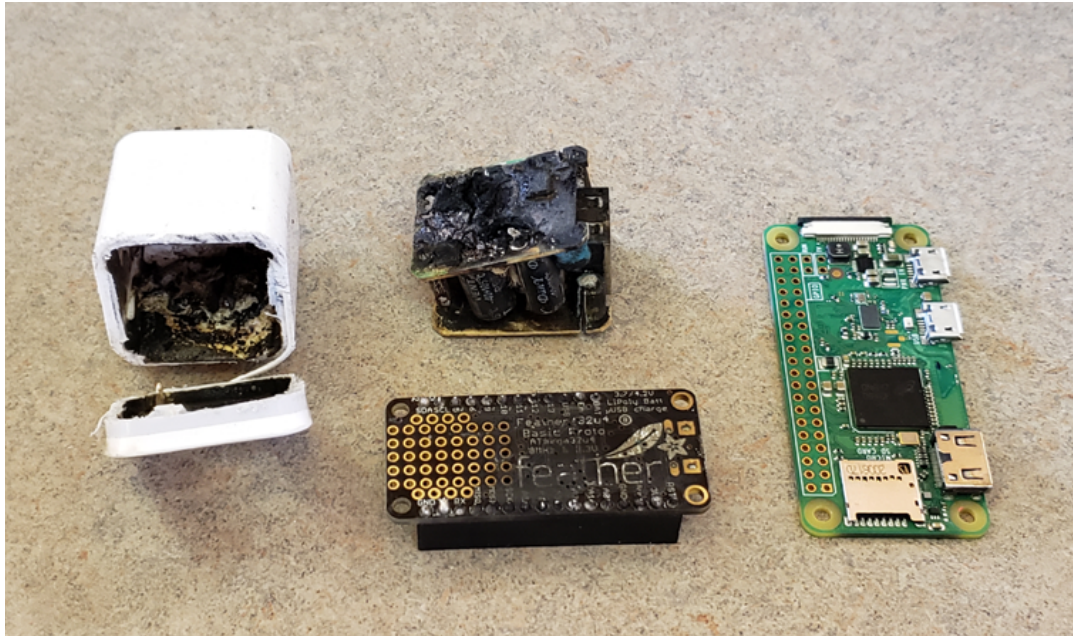


L.E.N.S.S. ENCLOSURE

GLAS Education intern project.

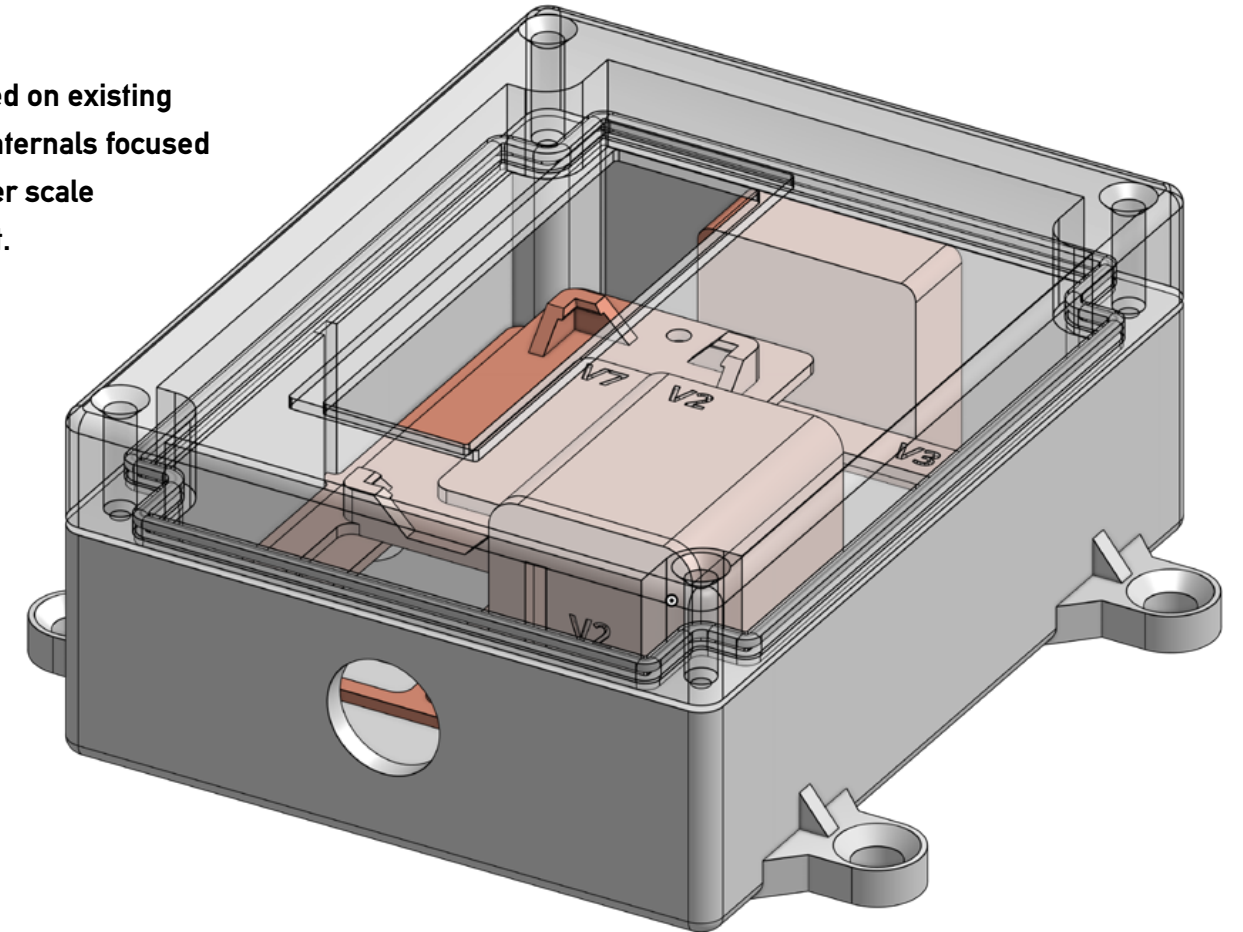
Problem

Prior prototype enclosures were prone to water ingress and presented a fire hazard for sensitive electronics. Lack of inner structure meant loose fitting PCBs and tangled wires.



Solution

Design a new enclosure based on existing water-tight enclosures and internals focused on ease of assembly for larger scale manufacture and deployment.

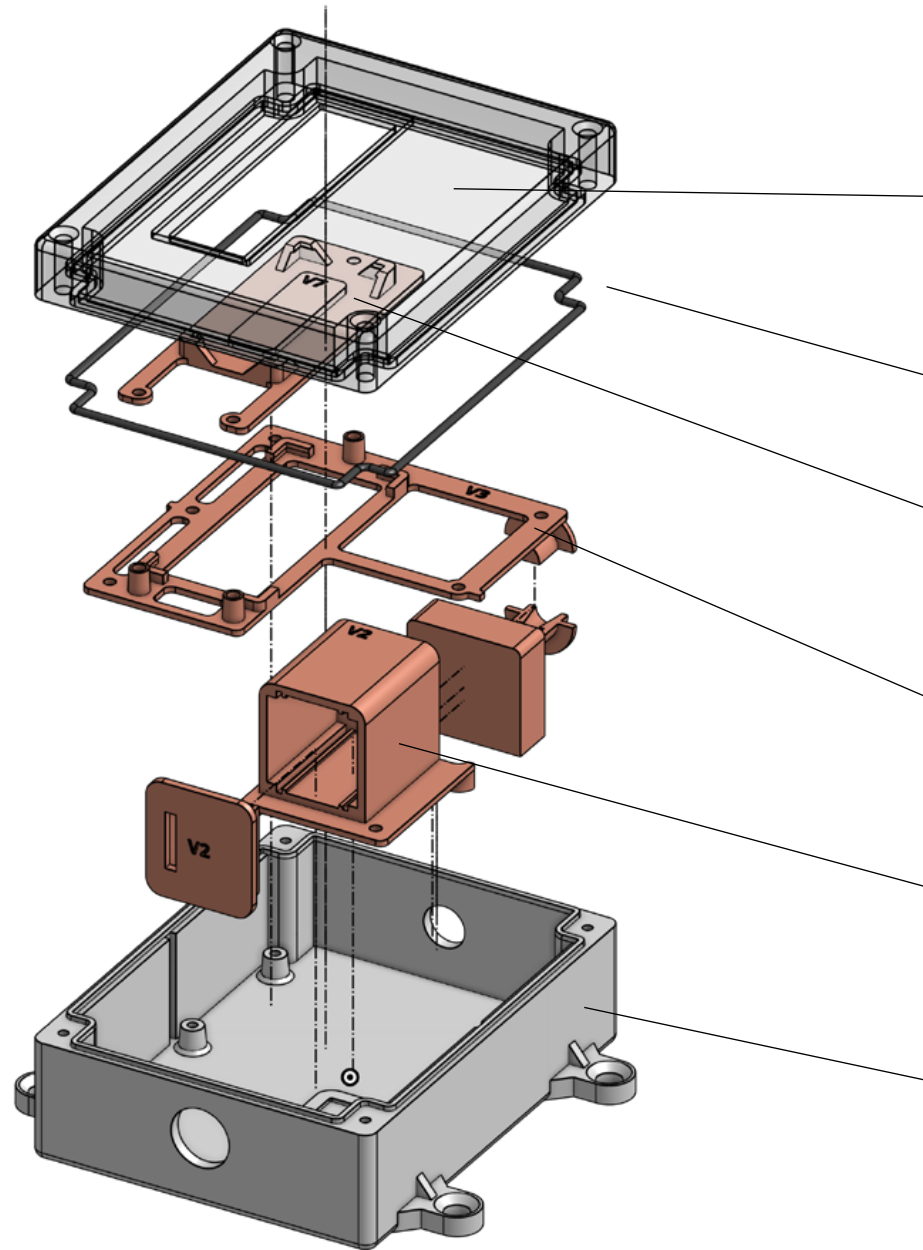
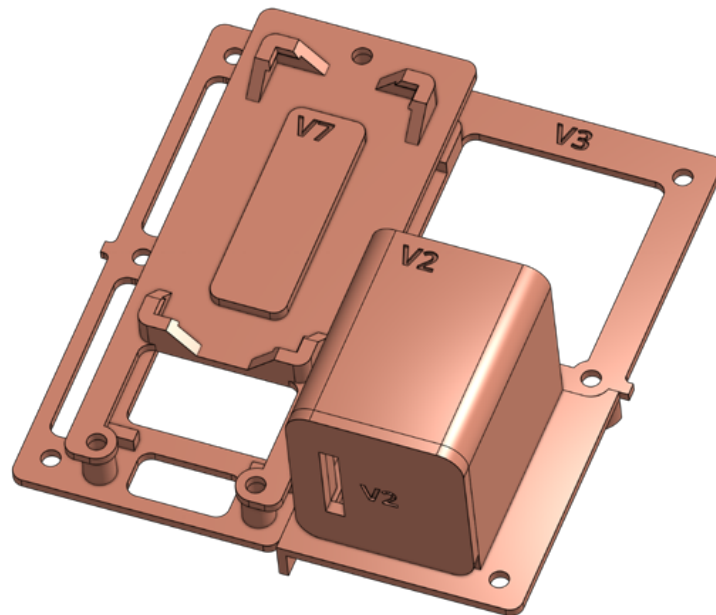


L.E.N.S.S. ENCLOSURE



Layered Structure

Modular sections allow upgrades to hardware and pre-assembly of the electronics before insertion into the enclosure, reducing assembly time and increasing serviceability.



L.E.N.S.S. ENCLOSURE

LID - Cutout with pass-through for ambient light sensor on opaque model variant.

GASKET - Neoprene round gasket keeps out moisture.

ARDUINO MOUNT - Holds sensor equipment for taking ambient light readings.

PI ZERO MOUNT - Holds onboard computer that keeps data logs and transmits back to main server.

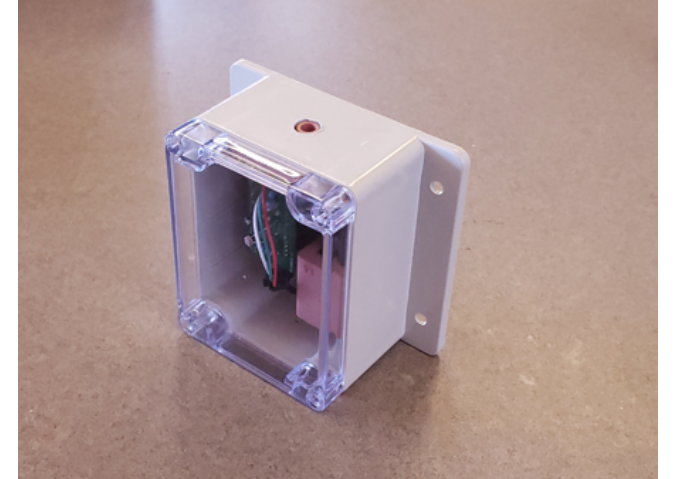
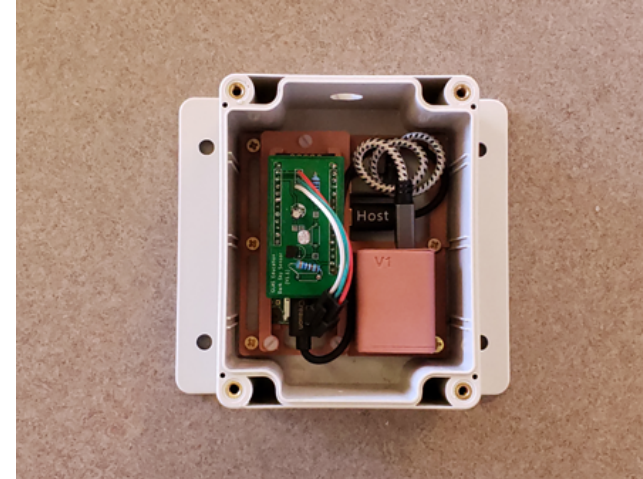
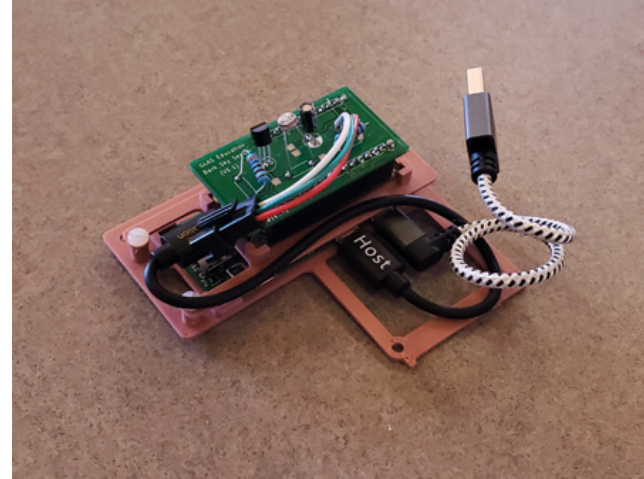
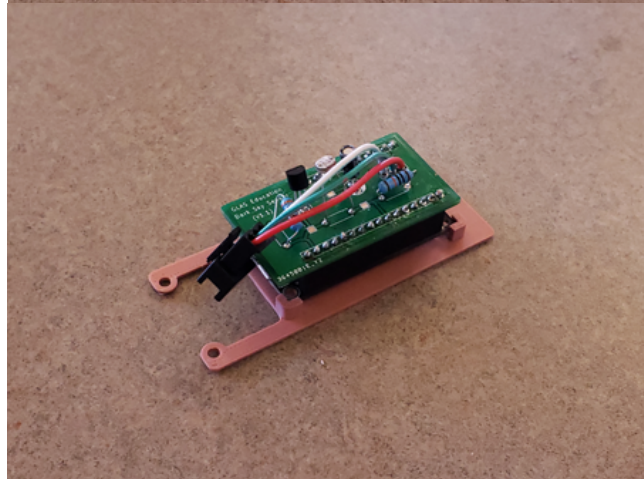
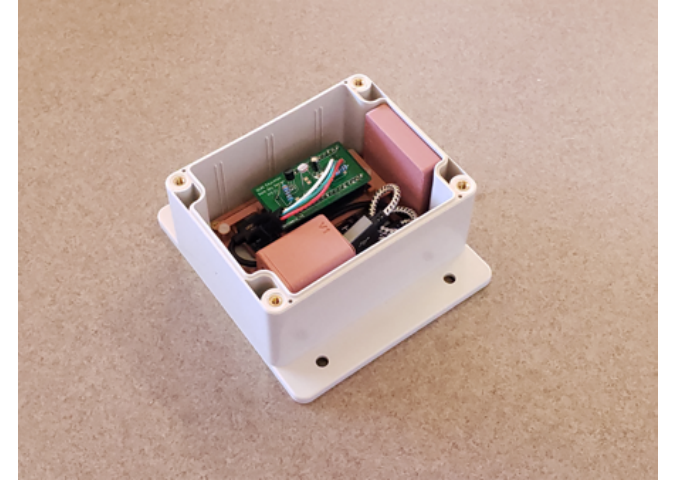
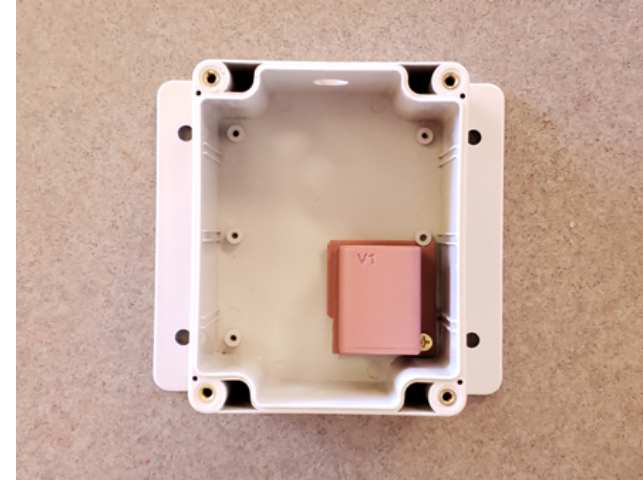
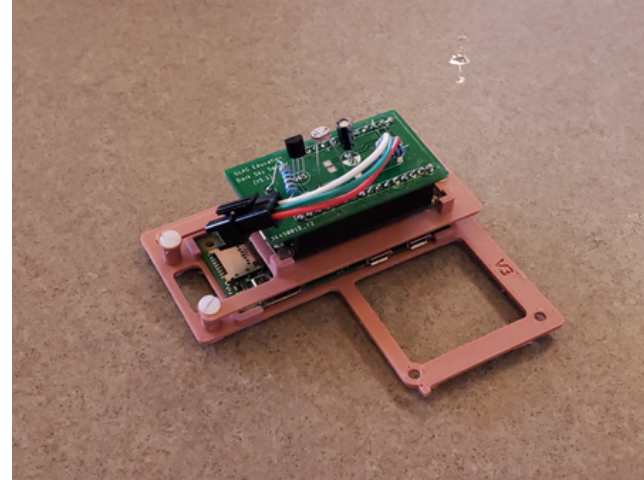
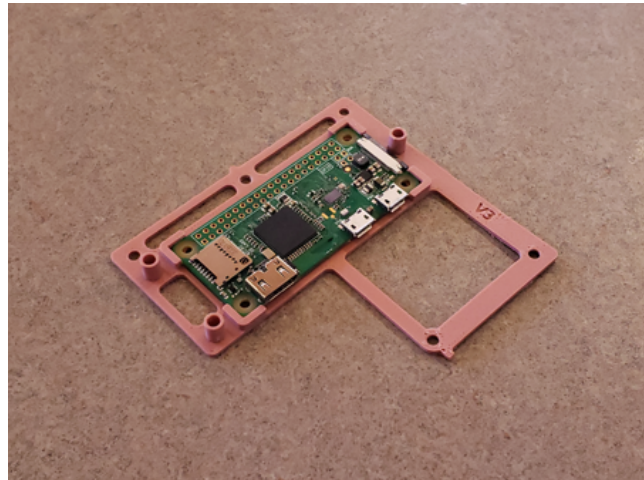
AC-DC CONVERTER - Fits internals of existing power bricks. New wiring soldered directly to pins.

BOX - Pass-through for watertight cable grommet and viewport for main light sensor.



ASSEMBLY

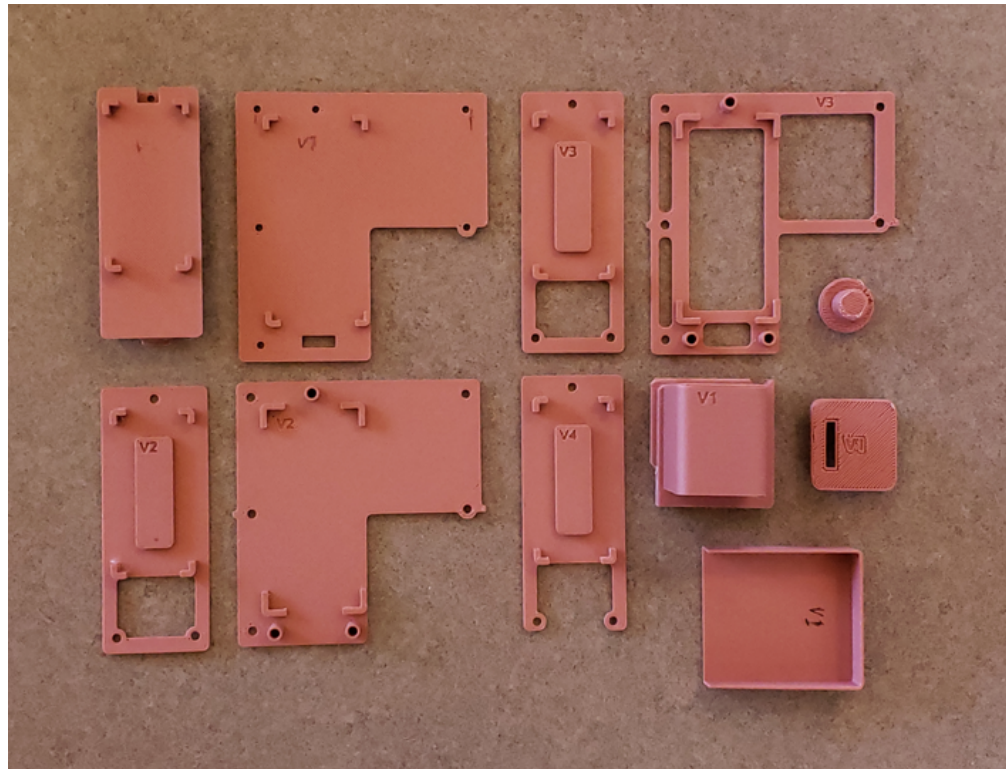
L.E.N.S.S. ENCLOSURE





Iteration

Rapid prototyping and testing for streamlined development.



Field Testing

Real-world tests validated design goals.

No water ingress in inclement weather, and assembly time reduced dramatically.

L.E.N.S.S. ENCLOSURE





THANK YOU

visit <https://www.alexscerba.com> for more.