

A S T H E I M E R



Volta Zero case study

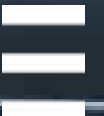
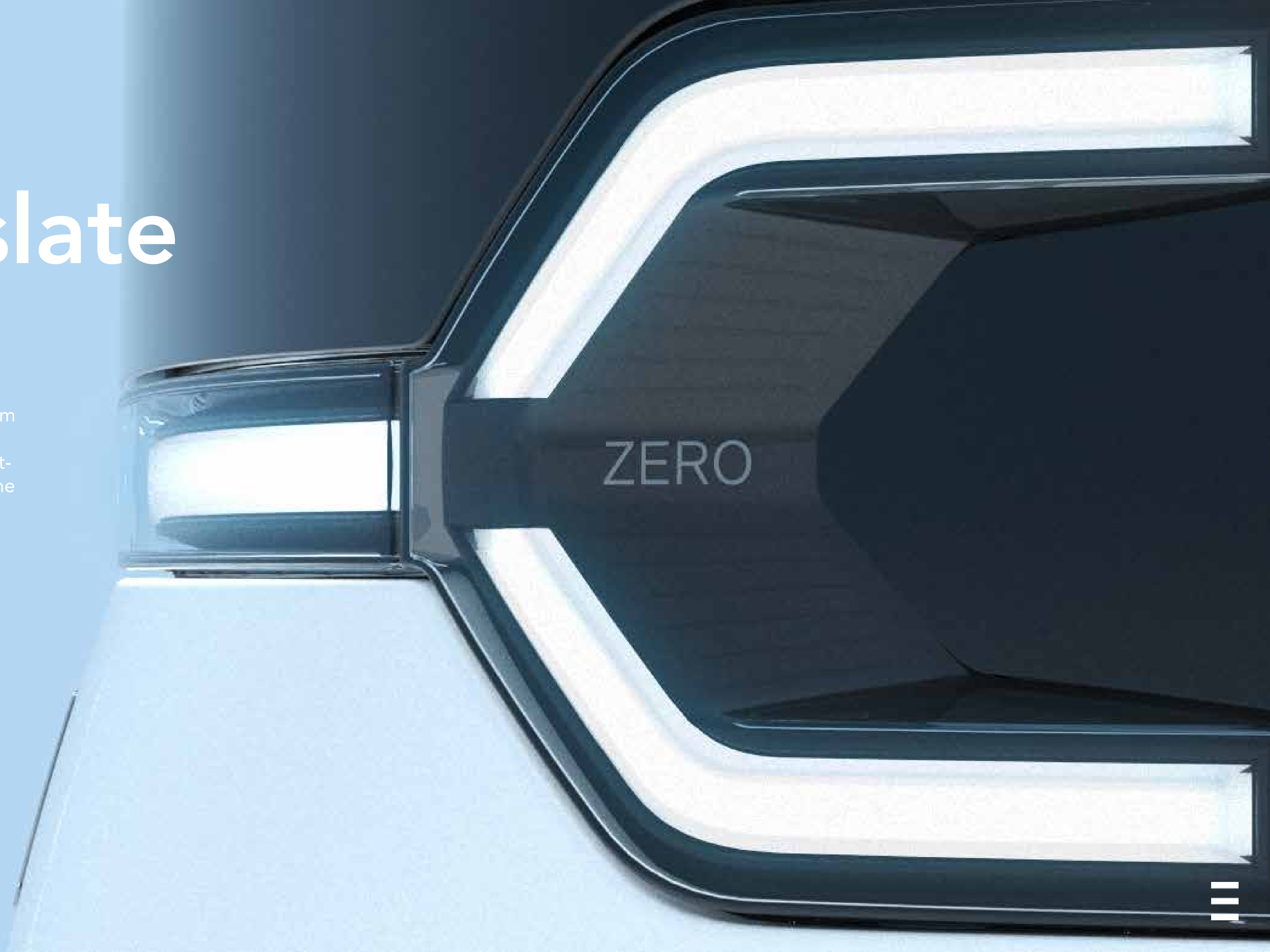
Kjell Walöen, Co-founder and Chief Technology Officer of Volta Trucks

“We are super happy with the design - it speaks for itself! But we were also super happy with the cooperation with Astheimer. A very dedicated team, really going the extra mile - and some - and delivering both on your design skills and your hands-on project management and problem solving capabilities. I am really looking forward to the continuation!”

A clean slate

It's a rare occurrence to get the opportunity to rethink and develop an all new vehicle from the ground up, but that's what happened when we joined forces with the Swedish start-up Volta Trucks, designing the Volta Zero - the world's first, purpose built, full electric truck.

Being fully electric, we were able to completely rethink how the truck was designed. Placing the batteries and powertrain in the ladder chassis underneath the body, gave us a clean sheet of paper for the layout and design of the cabin.



End-to-End Service

At Astheimer we pride ourselves on developing strong collaborative partnerships with our clients and that's what we did with Volta Trucks. We worked with Volta from start to finish during the vehicle development process. We started by understanding the founder's vision and objectives, guiding them through the product development process, understanding the market, positioning the brand and creating the design language for Volta. We designed the vehicle architecture, the exterior and interior, and made the cabin prototype in our studio at Warwick.

Kjell Walöen, Co-founder and Chief Technology Officer of Volta Trucks said "We are delighted to be working with the team at Astheimer Design. Volta Trucks is developing a unique vehicle, experience and service for its customers. The team at Astheimer worked closely with us to create the Volta Zero - a futuristic yet relevant design that meets a wide range of ergonomic, engineering, and functional requirements."



Positioning

Where technology meets nature

We developed the overall design philosophy for Volta Zero - where technology meets nature - which is in harmony with the brand, giving the vehicle a friendly and approachable character. To create the most sustainable vehicle possible, we made the body panels from natural flax fibre infused with a biodegradable resin. The result is a fully natural, extremely lightweight, high-performance fibre composite that is almost CO2 neutral over its lifecycle.

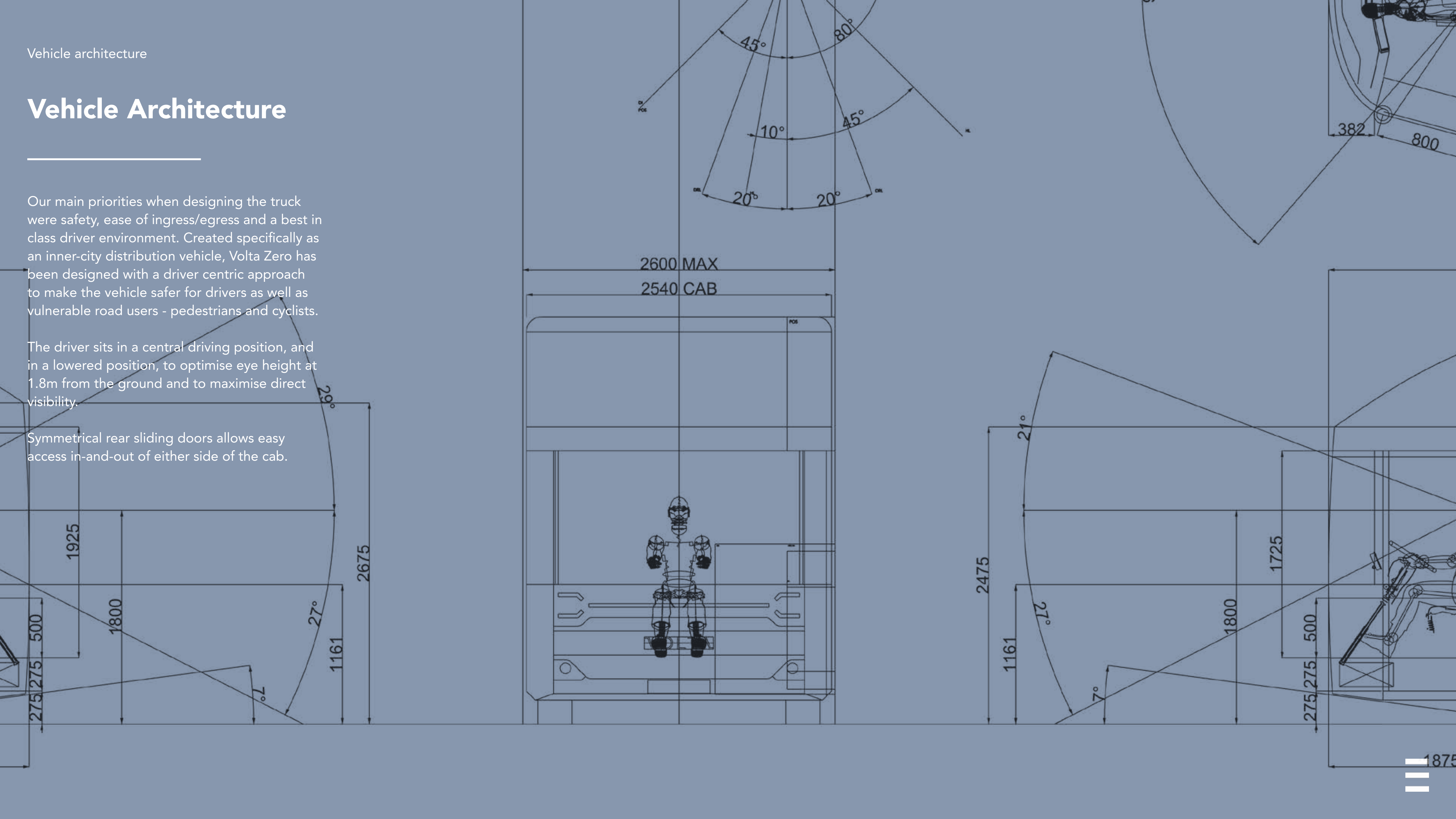


Vehicle Architecture

Our main priorities when designing the truck were safety, ease of ingress/egress and a best in class driver environment. Created specifically as an inner-city distribution vehicle, Volta Zero has been designed with a driver centric approach to make the vehicle safer for drivers as well as vulnerable road users - pedestrians and cyclists.

The driver sits in a central driving position, and in a lowered position, to optimise eye height at 1.8m from the ground and to maximise direct visibility.

Symmetrical rear sliding doors allows easy access in-and-out of either side of the cab.



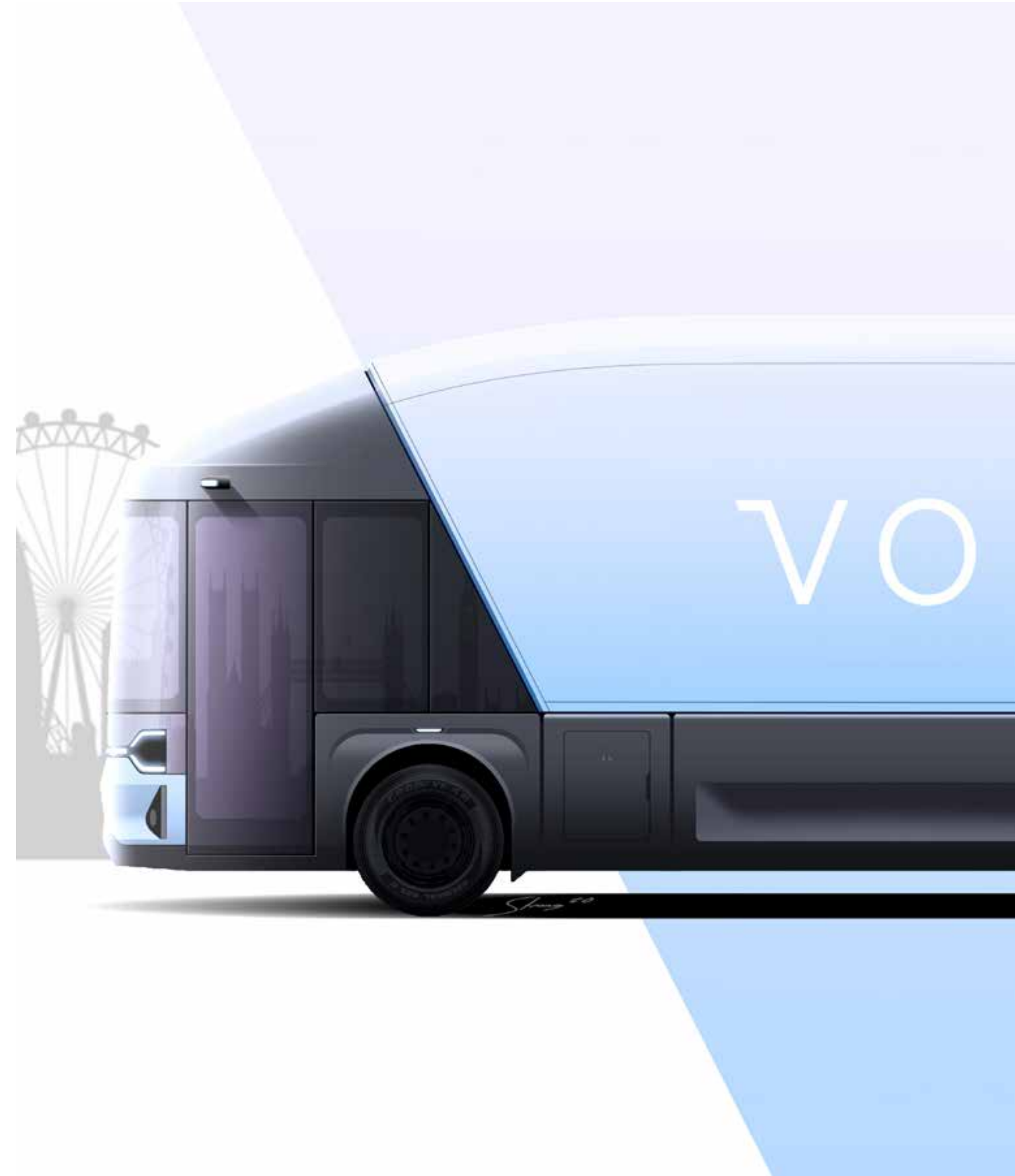
Exterior design

As a part of the urban environment it was important to give the Volta Zero a friendly and approachable character.

The unique V shape DRL light signature being a key feature.

The aerodynamic and iconic silhouette, simplicity of the overall volume, combined with clean, sculptural surfaces and precise details emphasise the trucks futuristic design.

The dynamic angle between cab and body helps to visually communicate a large payload but also allows for maximum direct visibility for the driver.





Interior design

We developed the interior design around a highly functional, central driver-centric layout, with 3 touchscreens combined with an integral steering wheel HMI.

Nothing is arbitrary; the uncluttered IP allows excellent ergonomic access to all the controls. The screens only display the information needed at any one time, reducing cognitive overload for the driver.

The design is simple and bold, to aid ease of cleanliness surfaces are seamless and essential.

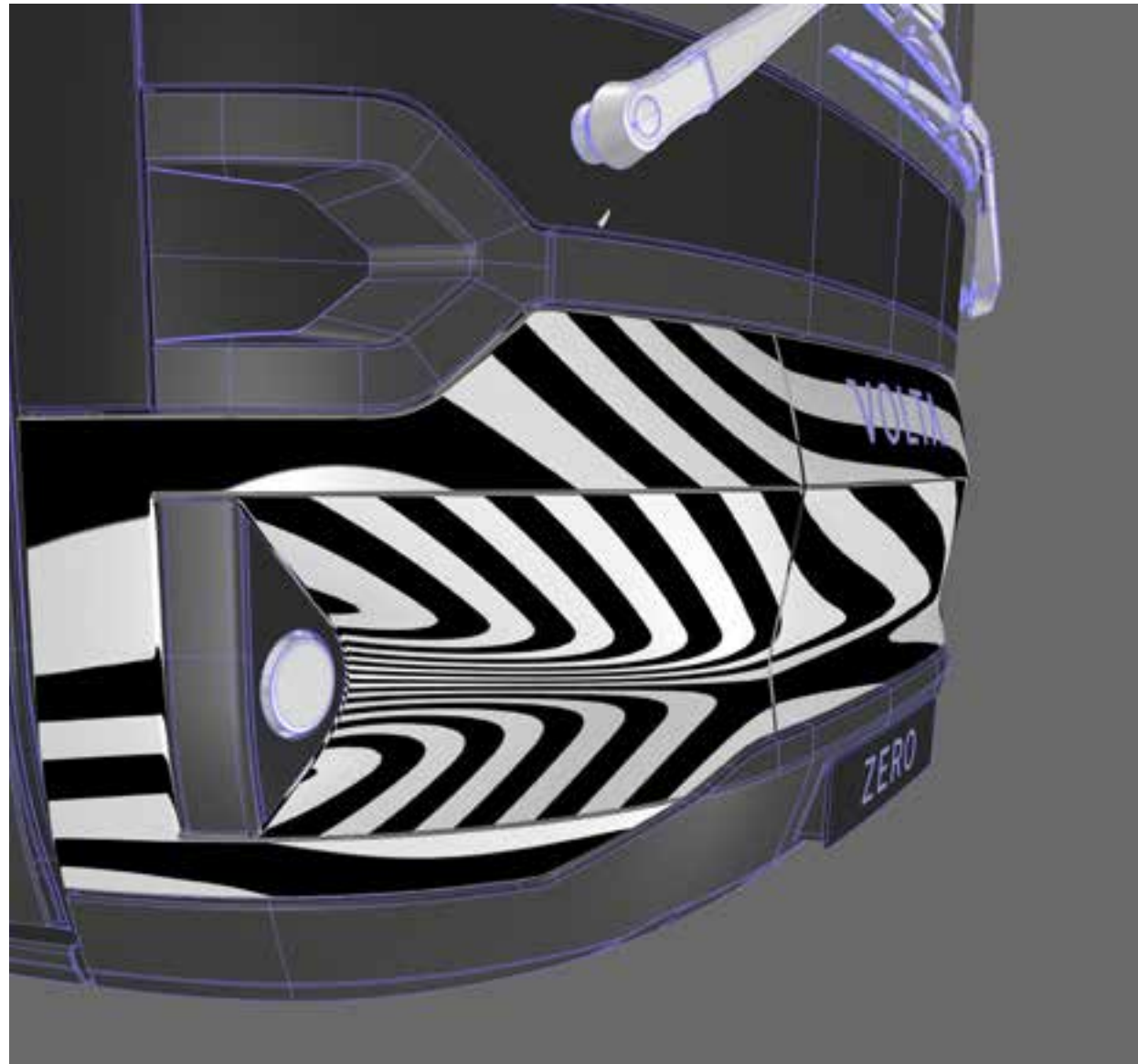
'Where technology meets nature' was also our guiding principle inside the cabin; natural materials including wool and natural fibre sit alongside the technological touchscreen displays.

Development

The design of the truck was refined through a thorough design process, starting from 2D sketches and renderings, 3D CAD models evaluated in VR, full scale ergonomic mock-ups, and a final class A surface model for the design freeze.

Subsequently we worked through the engineering phase, parts split plus defining all the B surface and attachment strategies for all the visible parts.

We then co-ordinated with suppliers and manufacturers to get the parts made.



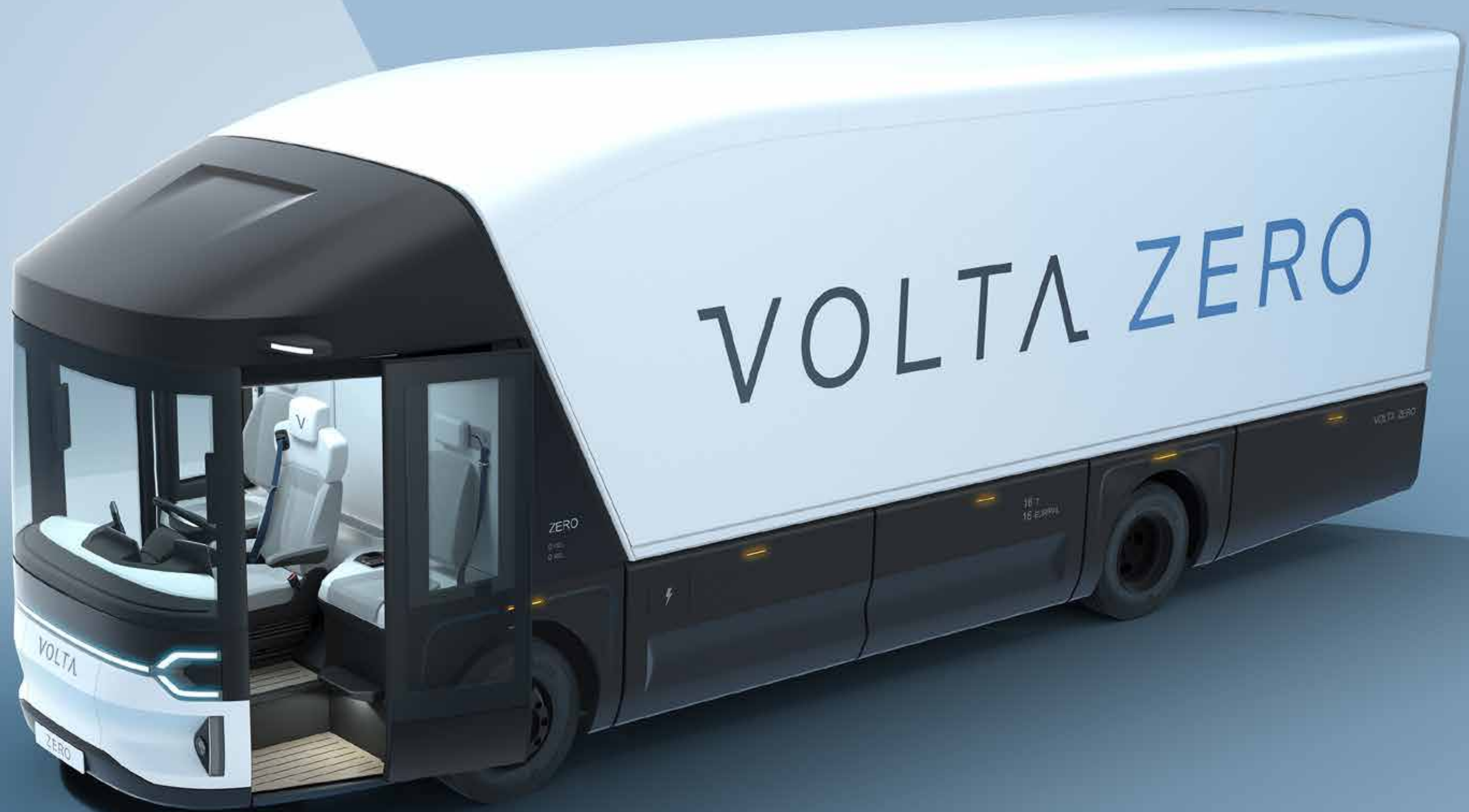


CMF



The natural palette of colours, materials and finishes are calming and create a light and spacious interior space.







Visualisation

On completion of the demonstrator vehicle, we helped with the production of imagery and vehicle renderings for use in the launch communications.



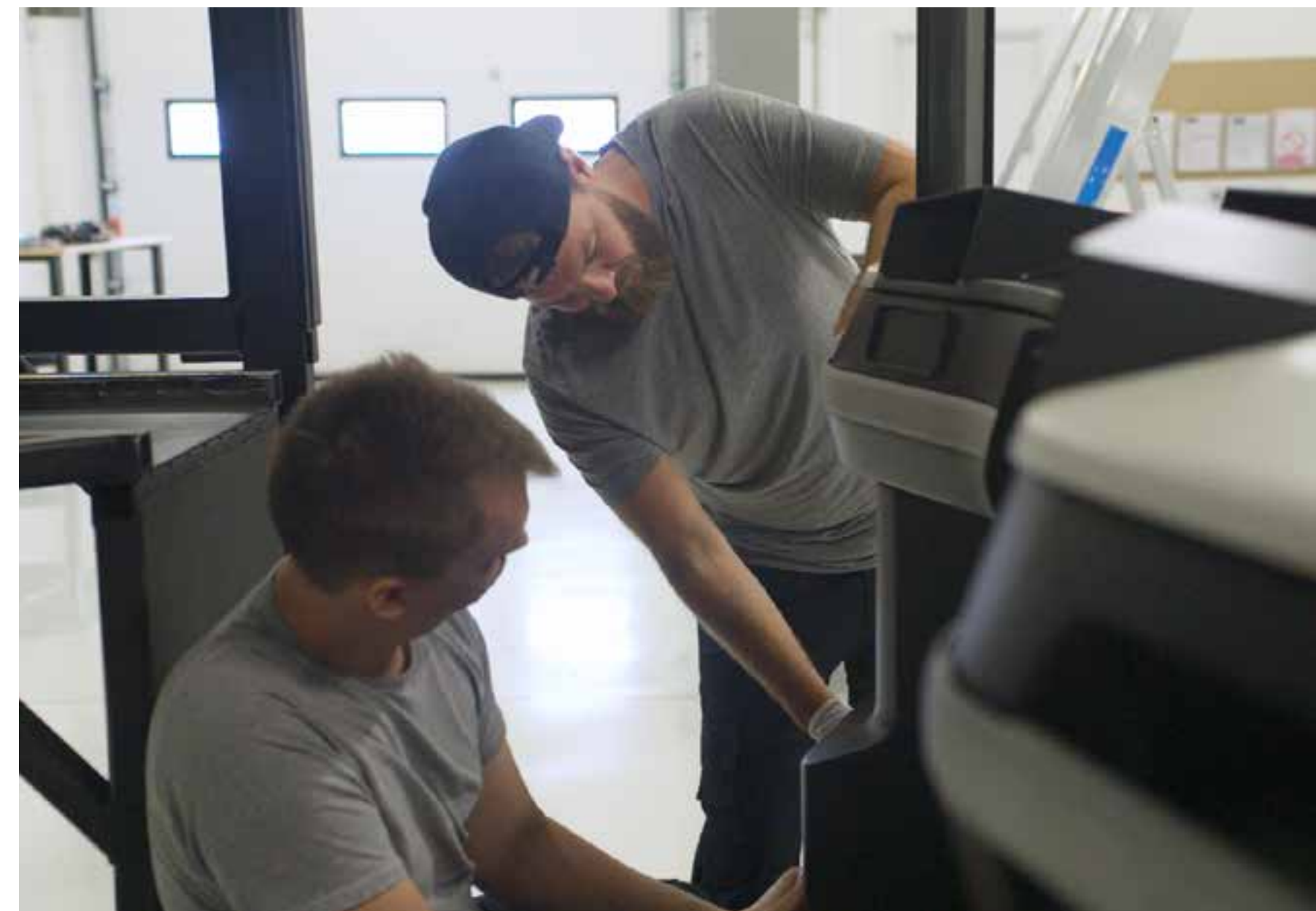
Prototype



We go the extra mile in designing each and every detail of the prototype to ensure the ease and efficiency of the vehicle build. This requires a thorough build strategy where each part's fixing strategy, material, and manufacturing process is carefully considered.







Bespoke electrical prototype design

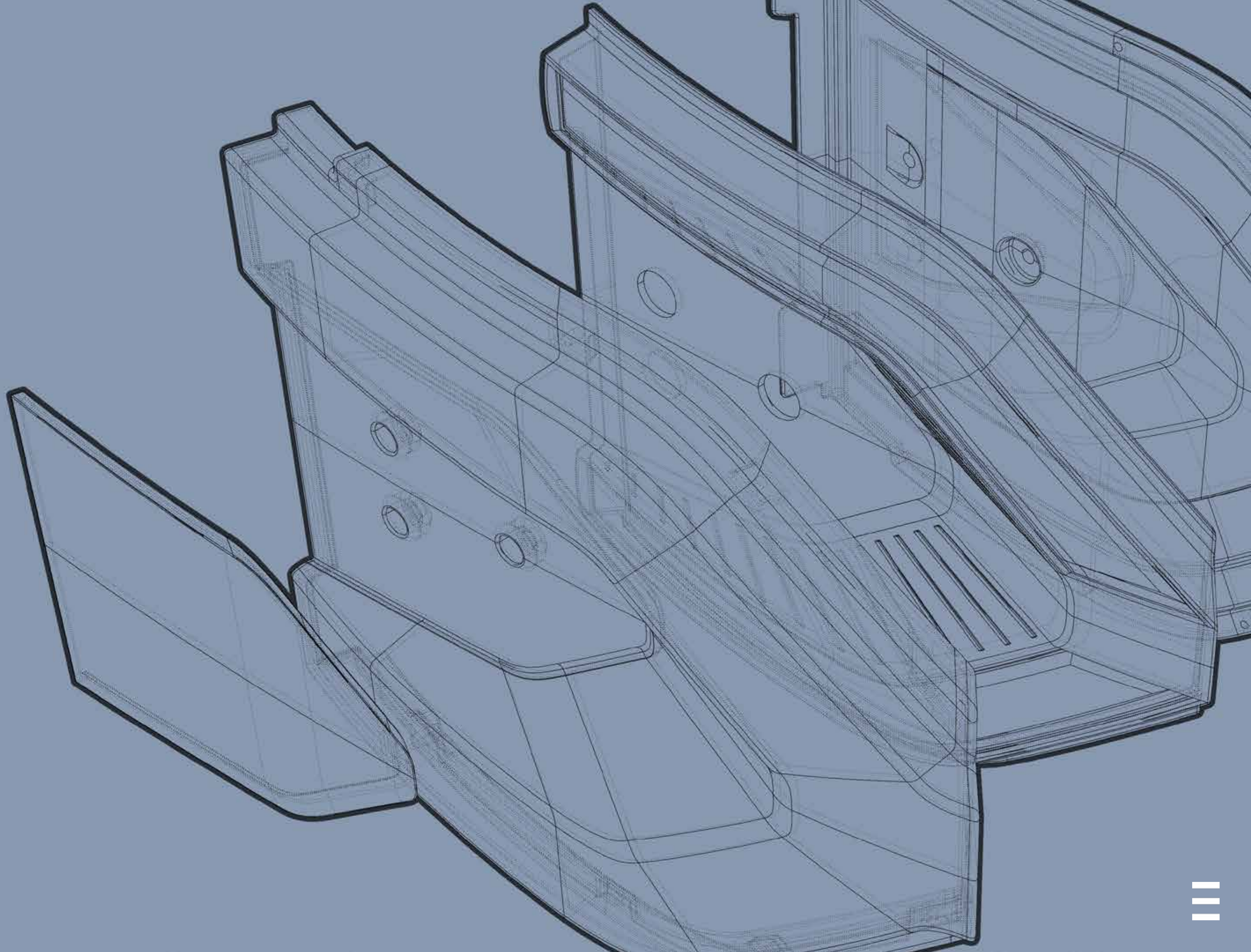


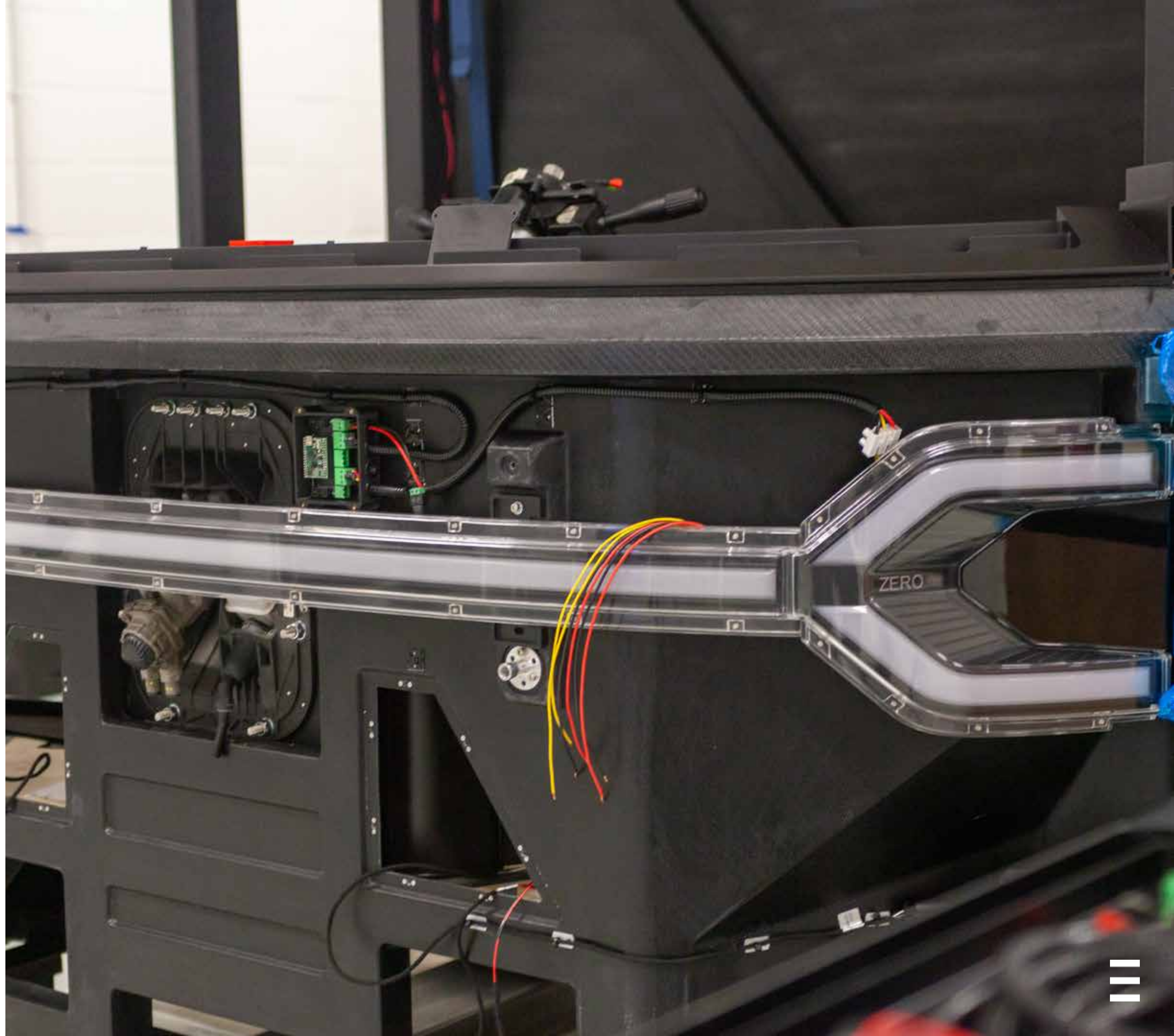
To deliver the functionality of the custom lighting and HMI, we designed and produced our own bespoke code, electronics and circuit boards which were integrated into the main electrical architecture.



DRL production

The bespoke DRL signature lighting was sub-assembled, programmed and tested before being assembled to the vehicle.

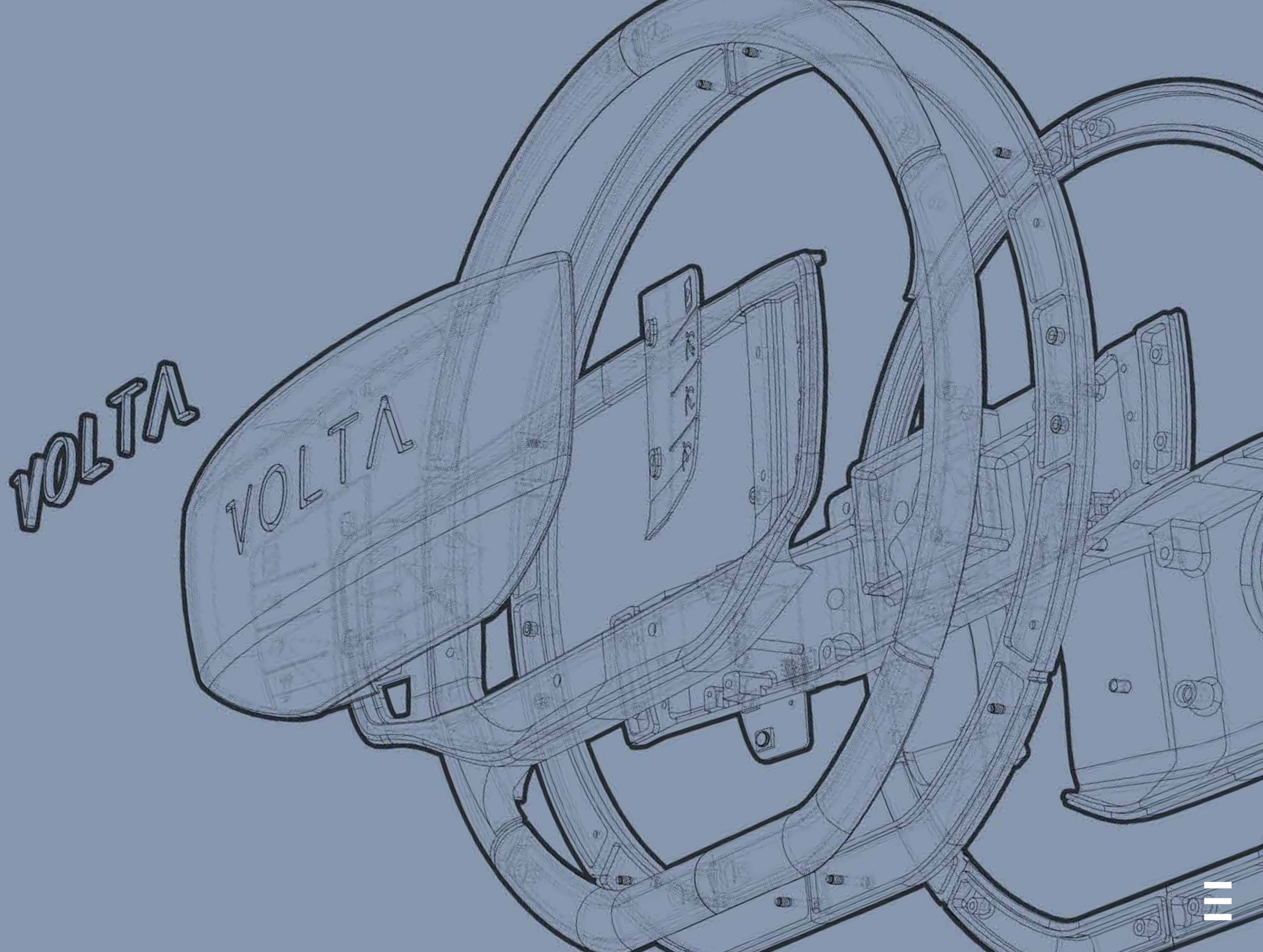


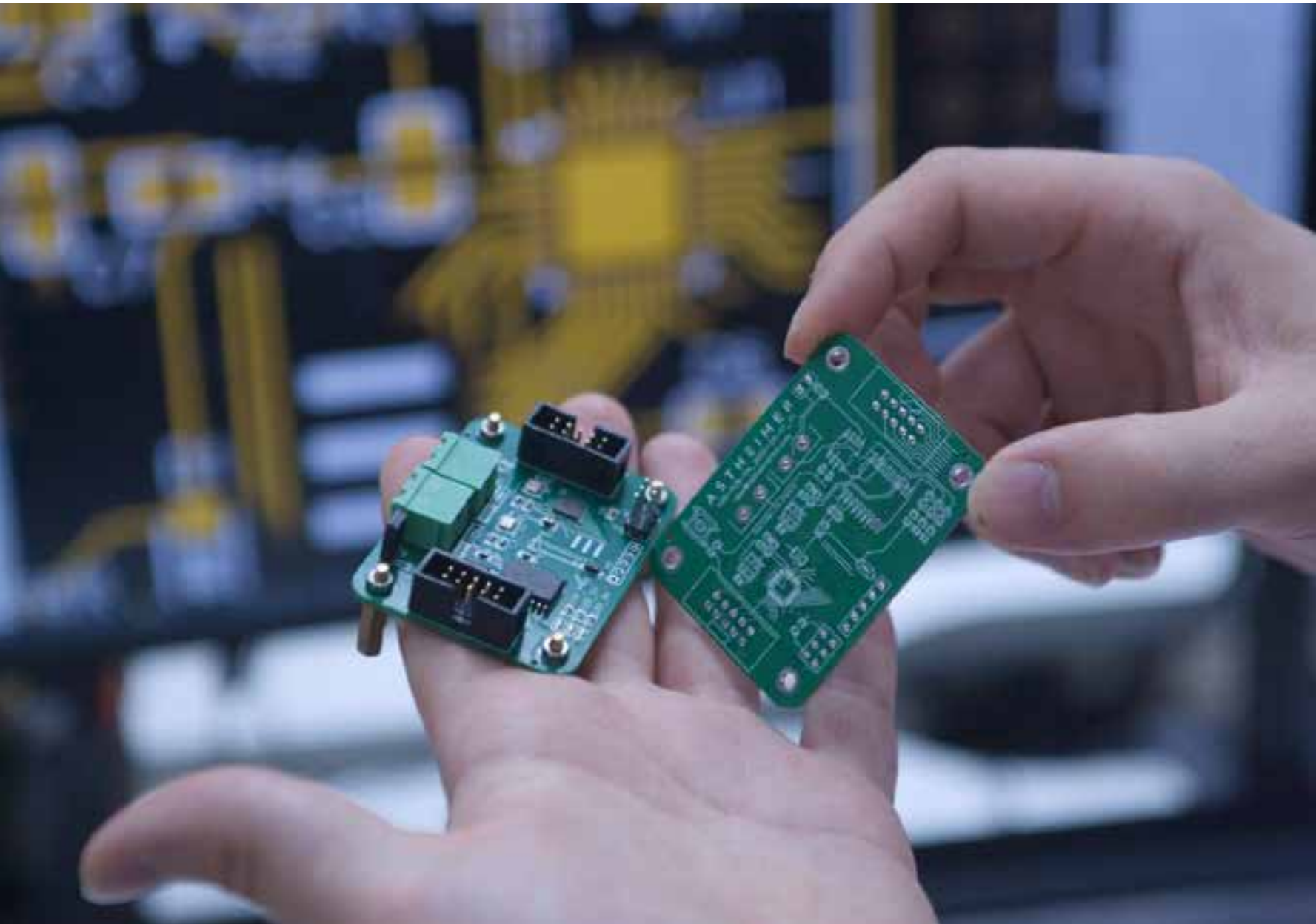


Steering wheel

The custom steering wheel was prototyped and built to include the bespoke electronics and buttons to ensure functionality with the HMI system.

A key feature of the design, the flat bottom was designed to aide ergonomic ingress and egress into the central driving seat.





Delivery of Zero

The Volta Zero project was realised through collaboration with other world class partners; Prodrive on chassis and electrical systems, Magtec on drivetrain and Conure for UX design.

We look forward to continuing our partnership with Volta Trucks in bringing the Volta Zero into volume production.





VOLTA ZERO

ZERO
100
100

VOLTA

VZ70 ZRO







100% wool / RV
Antimicrobial
EU / KOSHER
Greenguard

7390







Who we are

We are a boutique design studio in Warwick, the automotive hub of the UK.

Founded in 2009 by Carsten Astheimer (having previously run a studio at Pininfarina, Turin) we are a multi talented team with state of the art facilities developing future mobility solutions.

We pride ourselves on delivering world class projects - on brief, on time and on budget - and as a result we strive to develop long lasting client relationships.



A close-up photograph of a car's headlight assembly. The headlight is illuminated, showing a bright white glow. The word "ZERO" is printed in a light, sans-serif font on the dark, reflective surface of the headlight lens. The background is a soft, out-of-focus blue.

ZERO

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