

Yusuf Amir Hussein

Portfolio

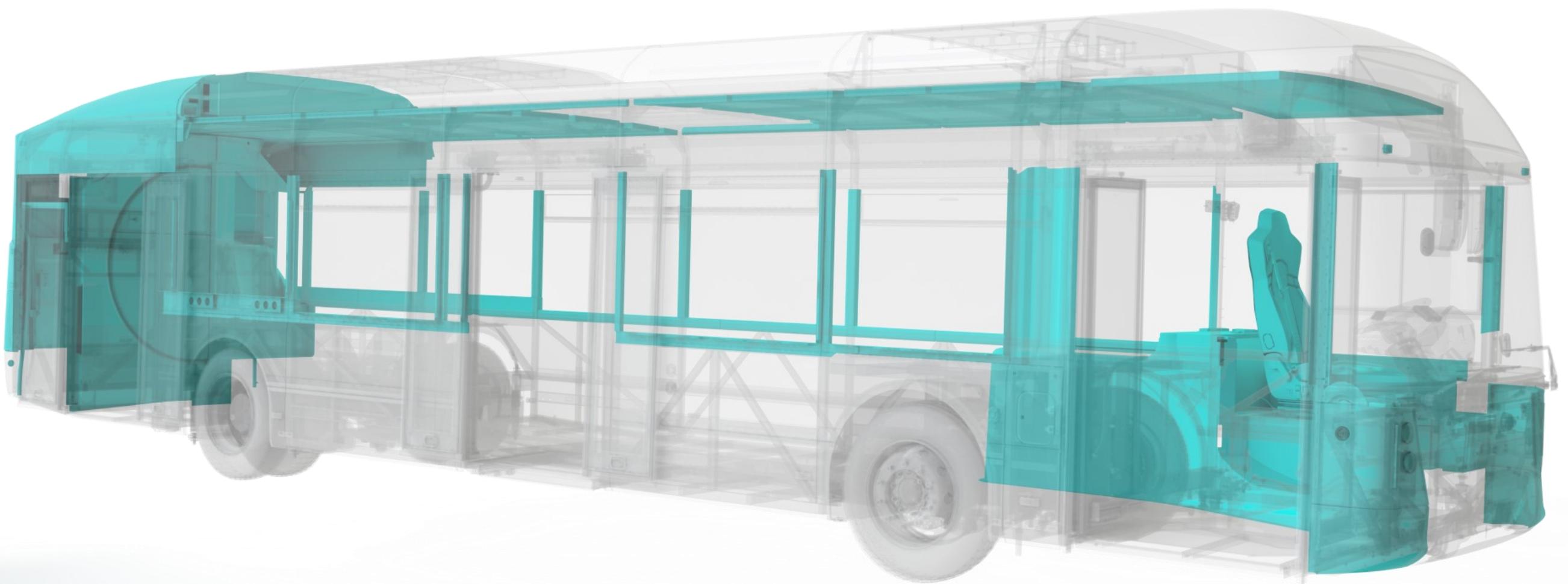
E1 R&D

Switch Mobility

2022

In my first year at Switch mobility I was in the body design team where we were tasked with the design of a new product the E1, I was full and partial owners of the parts in blue. These parts are a mixture of GRP, ABS, sheet metal, insulation and supplier parts. Modelled using a mixture of solid body and surfacing in Solidworks with use of PDM.

This included working with Mechanical and electrical engineers, package and platform teams to produce robust engineering releases. Working with buyers and suppliers on manufacturing feasibility. As well as providing production support for the E1 prototypes. I also got the opportunity to work with the paint to team to bring the livery design onto the show vehicle for its debut in 2022.



Metrodecker/Metrocity Product improvement

Switch Mobility

2023—present

In my second year at Switch Mobility I had the opportunity to join the current vehicle team, a cross departmental role between the whole of engineering and aftermarket. Where I am tasked with solving the main issues our current vehicles face in service, I am tasked on focusing mainly improving our vehicles in the UK. I work with all major stakeholders in engineering and aftermarket to produce design engineering solutions, with a focus mainly on mechanical and body. My main accomplishments so far have seeing through the product improvement campaign of the Metrodecker, including a complete overhaul of the suspension levelling system and underside protection. Also taking on our highest priority failures of this year.



Solo EV Front end Facelift

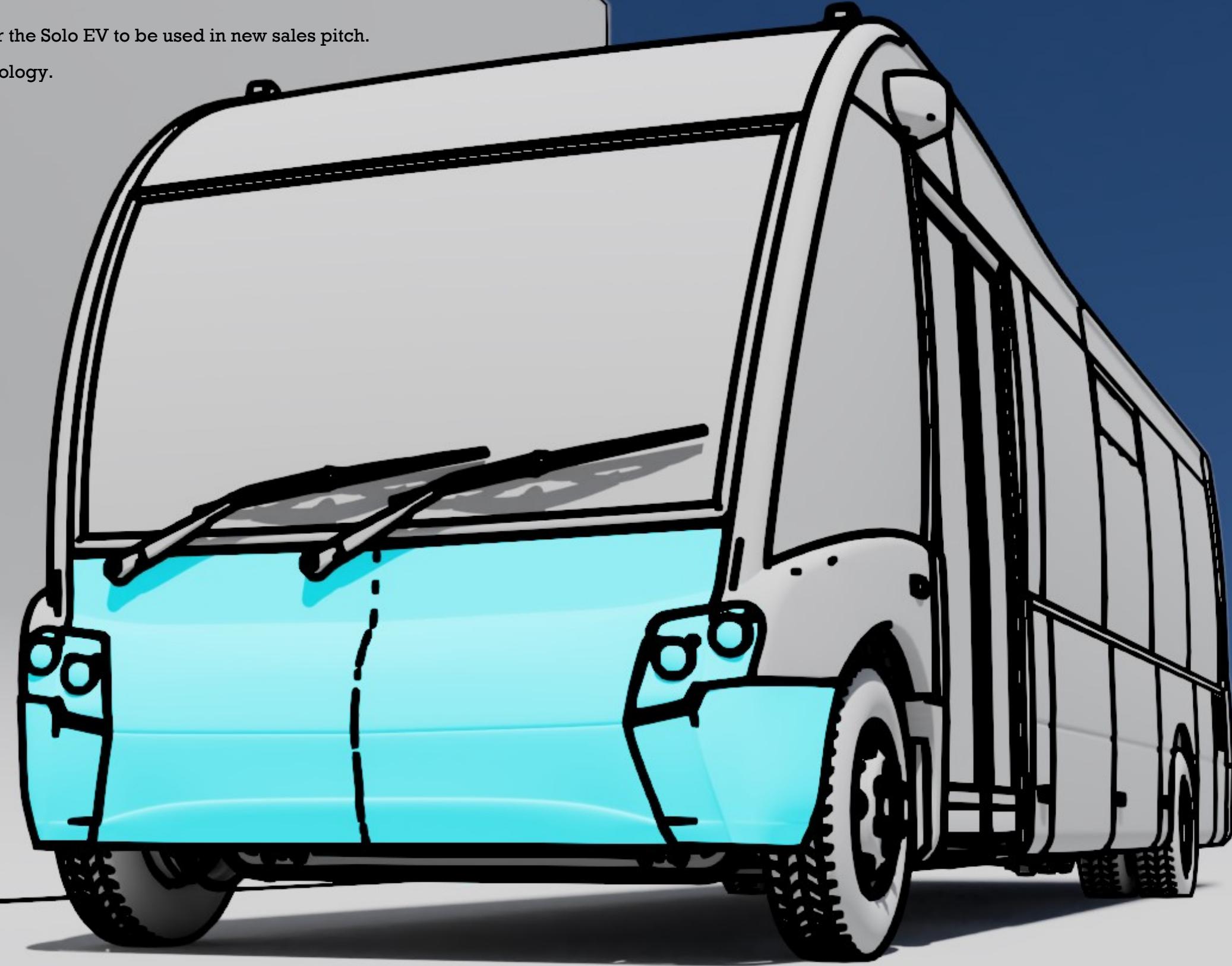
Switch Mobility

2024

Used surface modelling to provide facelift concepts for the Solo EV to be used in new sales pitch.

Showcases new headlight arrangement and DRL technology.

Modelled and rendered in Blender.



Components to change:

Front Bonnet

Front Bumpers

Front Headlight Housing

Front Headlights

Front DRL's

SWITCH



S24 Ultra Case + Stand

Personal Project

2024

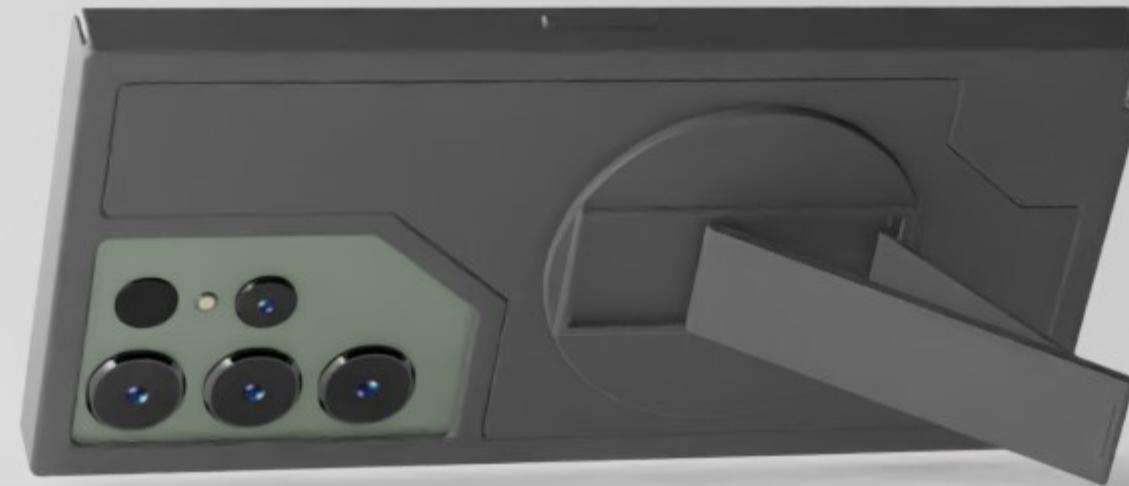
Developed a sleek case for the S24 ultra. Utilizing mag safe technology a foldable stand has been developed that is detachable. Stand can be used for leisure, watching entertainment from the phone, taking facetime calls and used as a stand to take pictures.

Project has been designed in Solidworks and rendered in Blender Cycles.

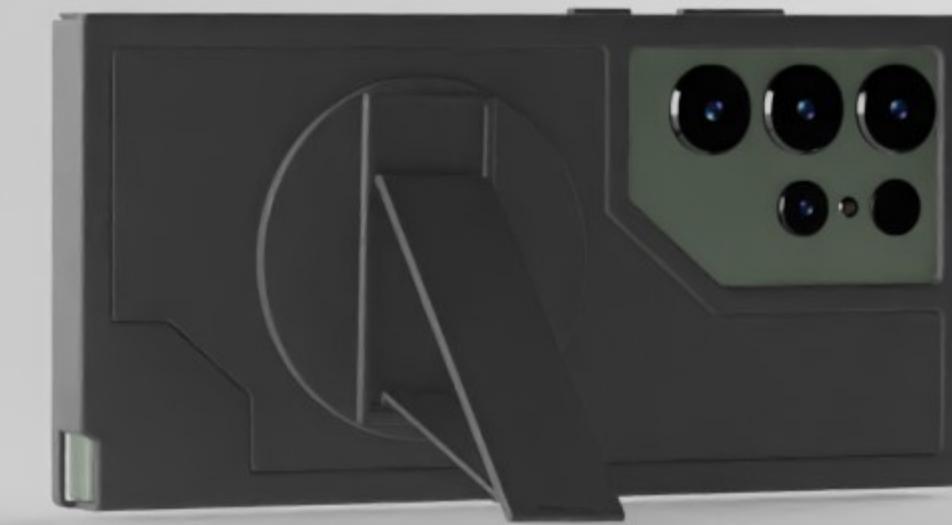


Scrolling through social media

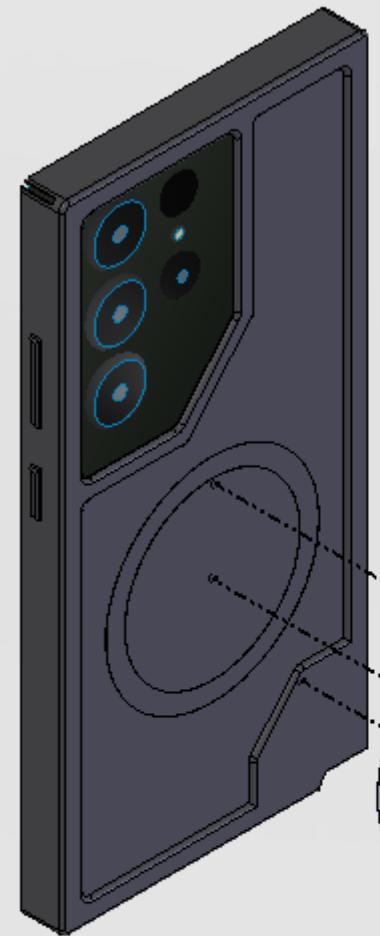
Facetime calls



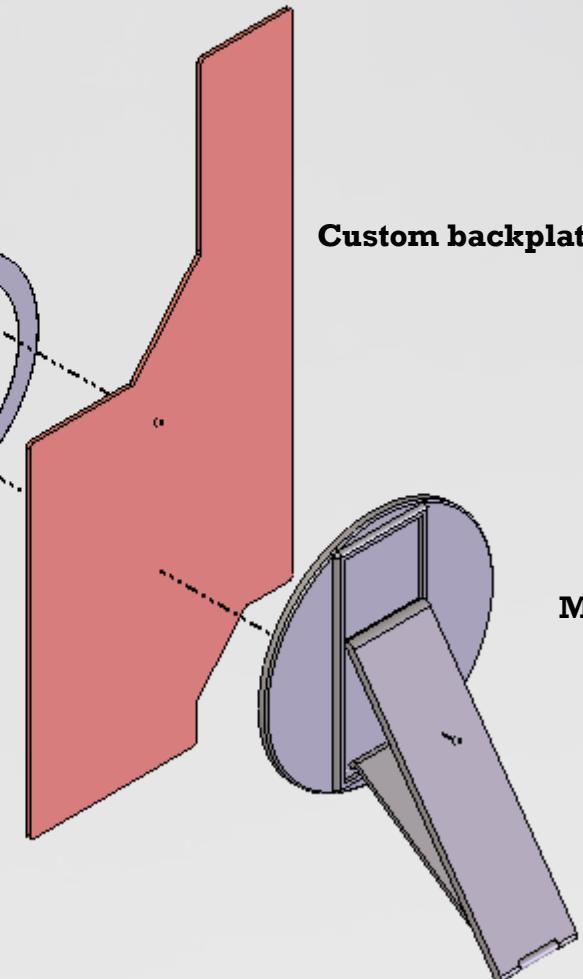
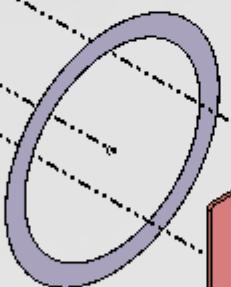
**Entertainment watching: Netflix,
YouTube**



Stand for taking landscape photos

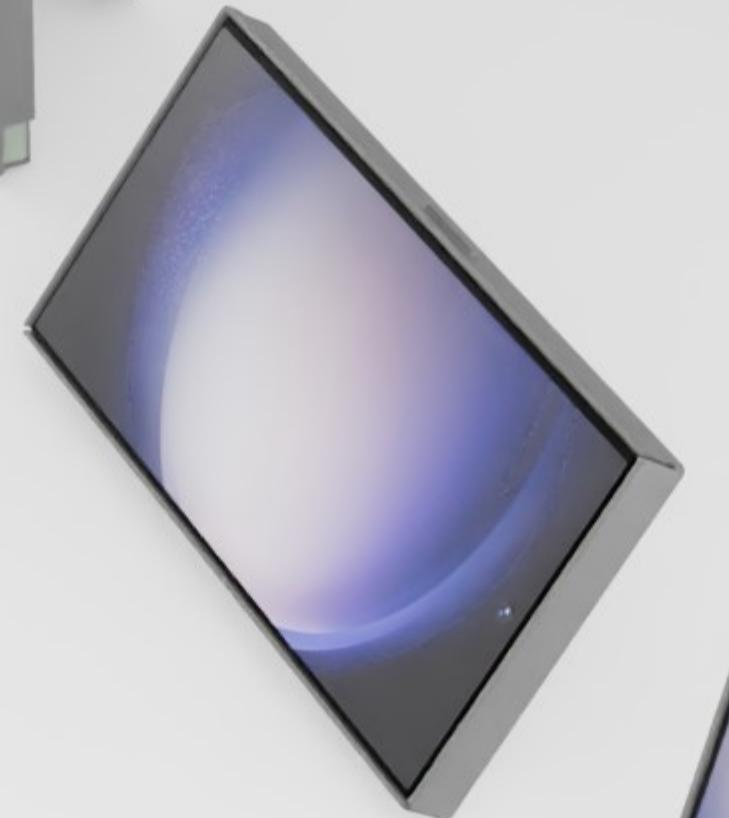


Utilizing MagSafe technology



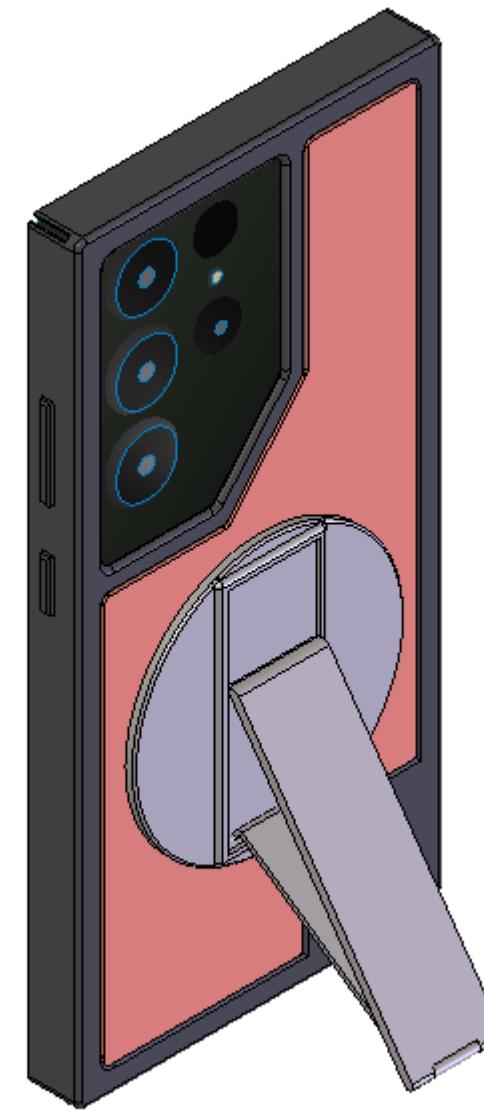
Custom backplate

Magnetic foldable stand

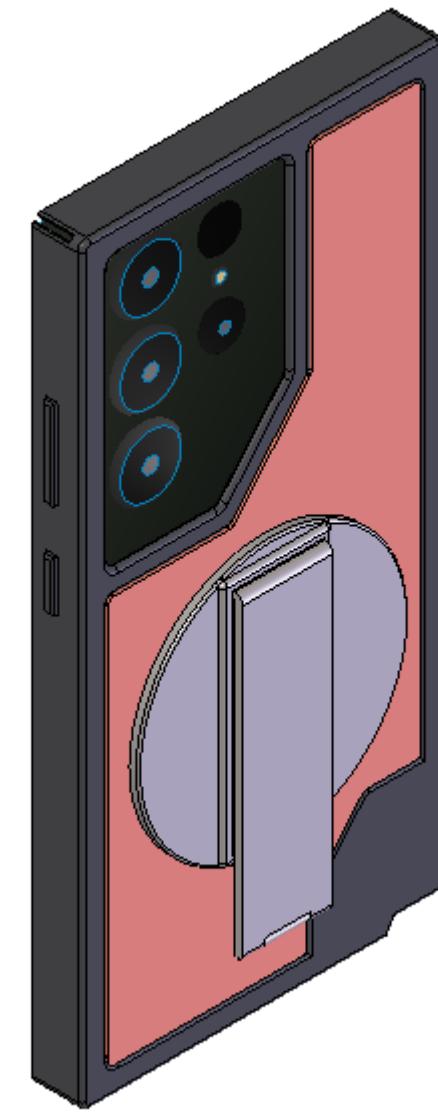




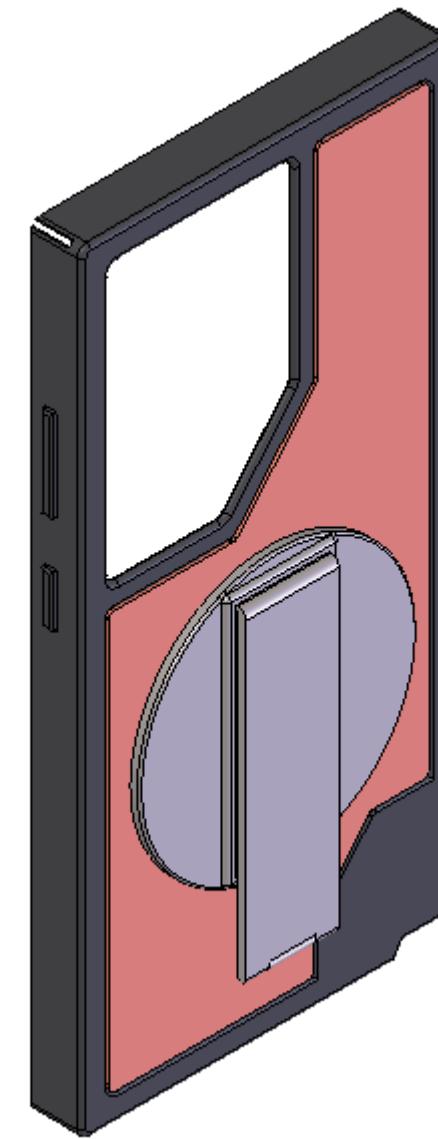
Foldable stand can lock out into different positions for a better viewing experience.



Foldable stand can be locked away and removed when not in use. And can be completely removed.



Case design is minimalist, with a minimum wall thickness of 1.2mm and reliefs in the corners.

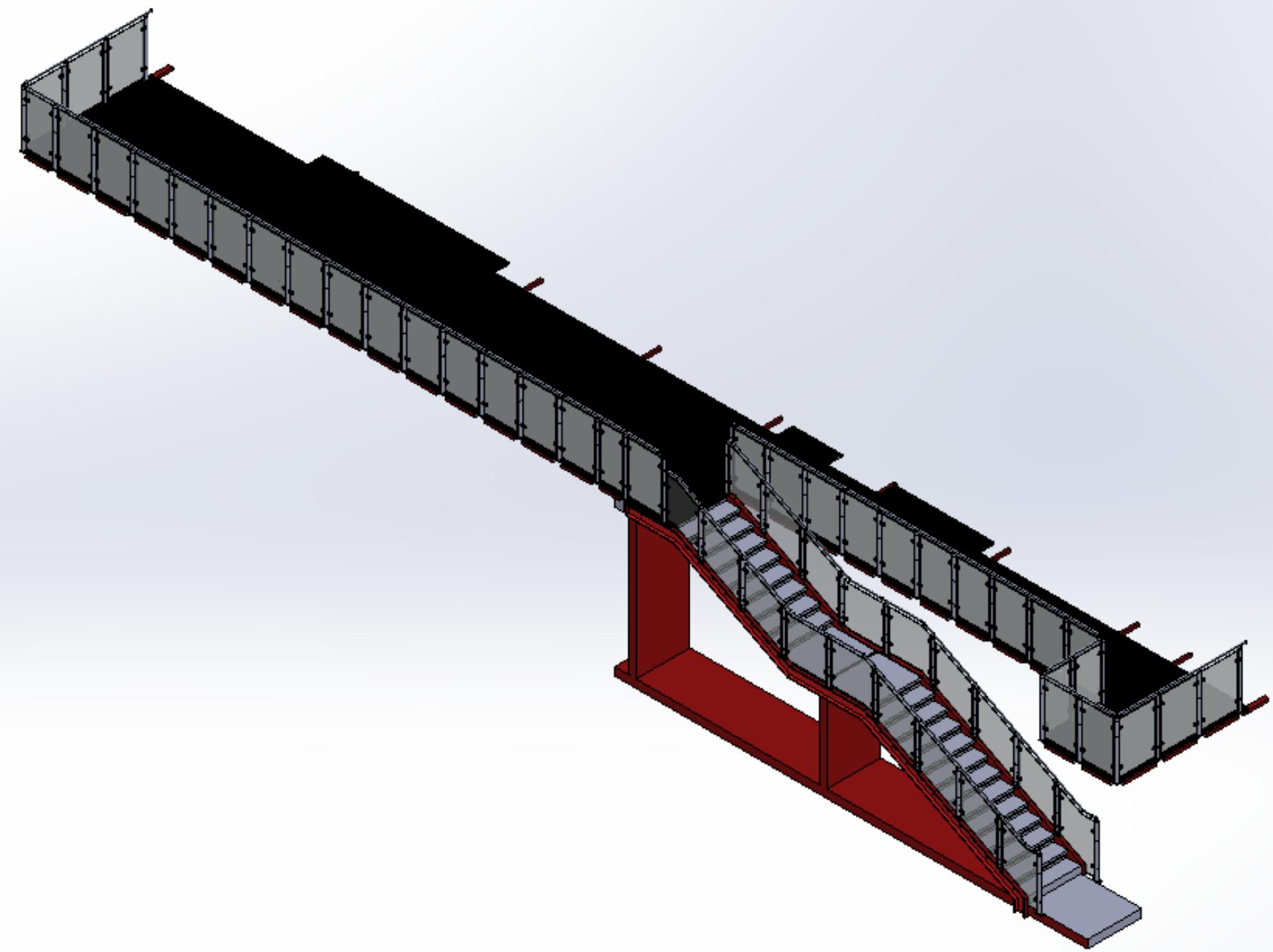
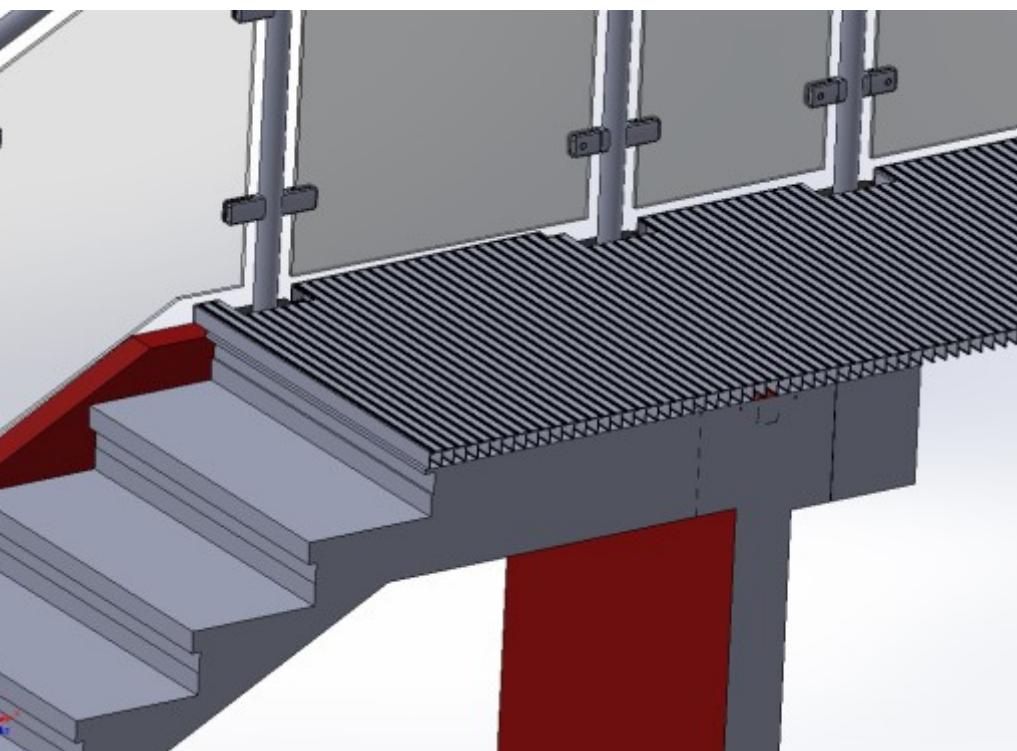
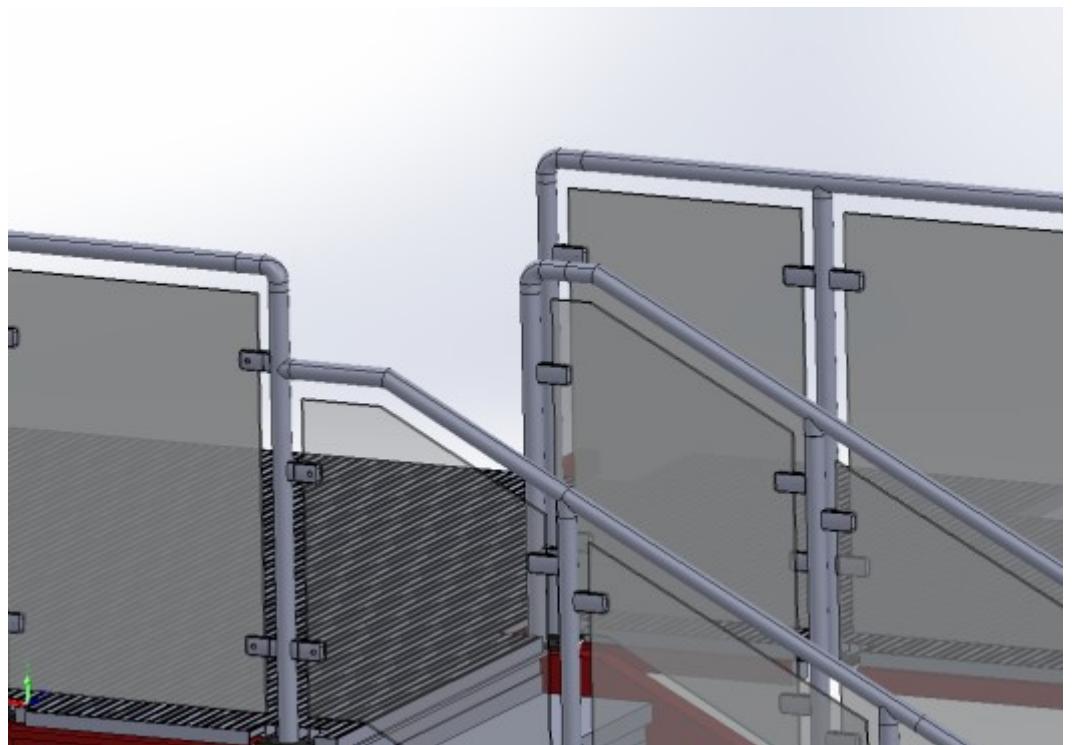


Haughton & Randall School

Neaco

2021

Created an external walkway with read Construction with the use of most of the product range including flooring, balustrade and glazing. This included site visits and surveys conducted by myself.

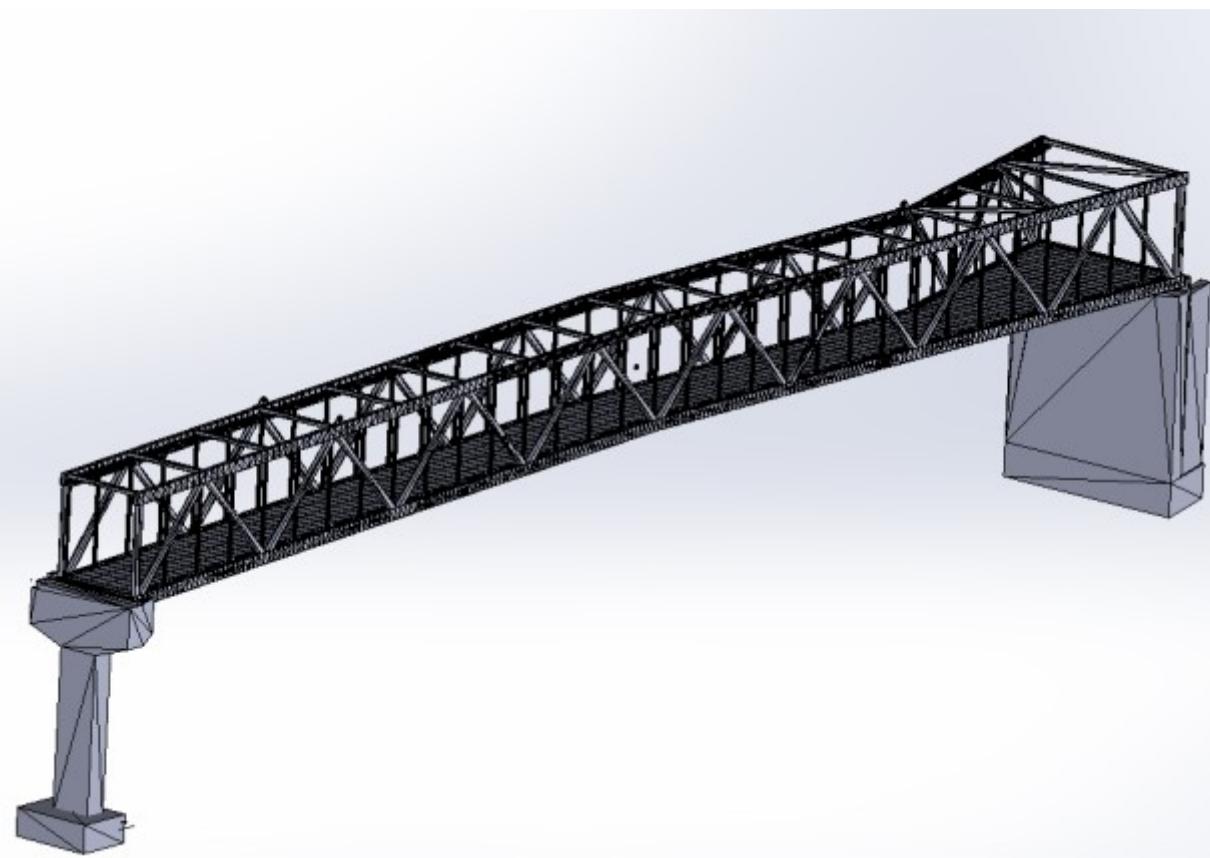
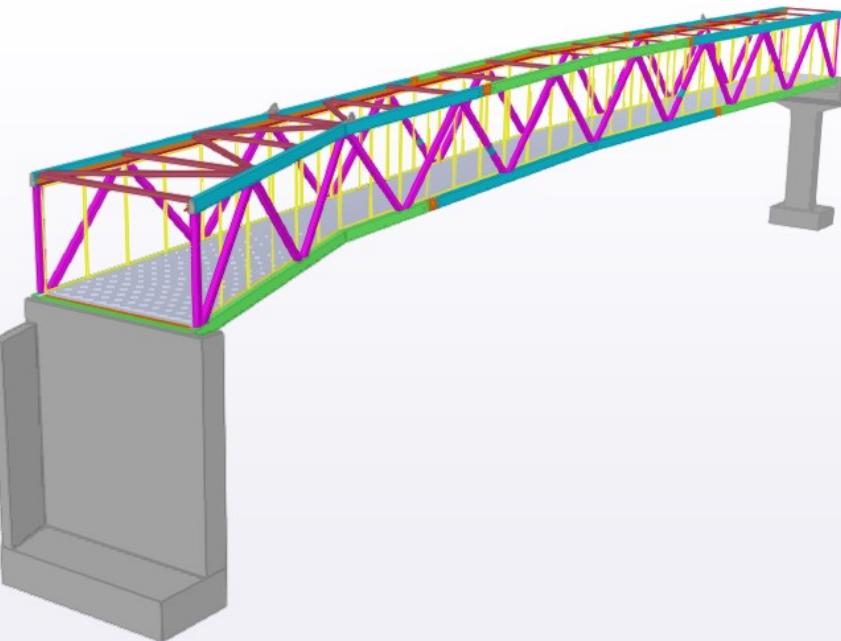


West Ham Station Bridge

Neaco

2021

The technical team had never done a bridge of this size in 3D before, so I optimised the flooring models to be able to use the full assembly efficiently. I had also learned Tekla in order to work with the other contractors on the bridge including Atkins, John Sisk & Son and Carver Engineering to come to an overall design solution.



Electric Powertrain

SHU Racing

2019-2020

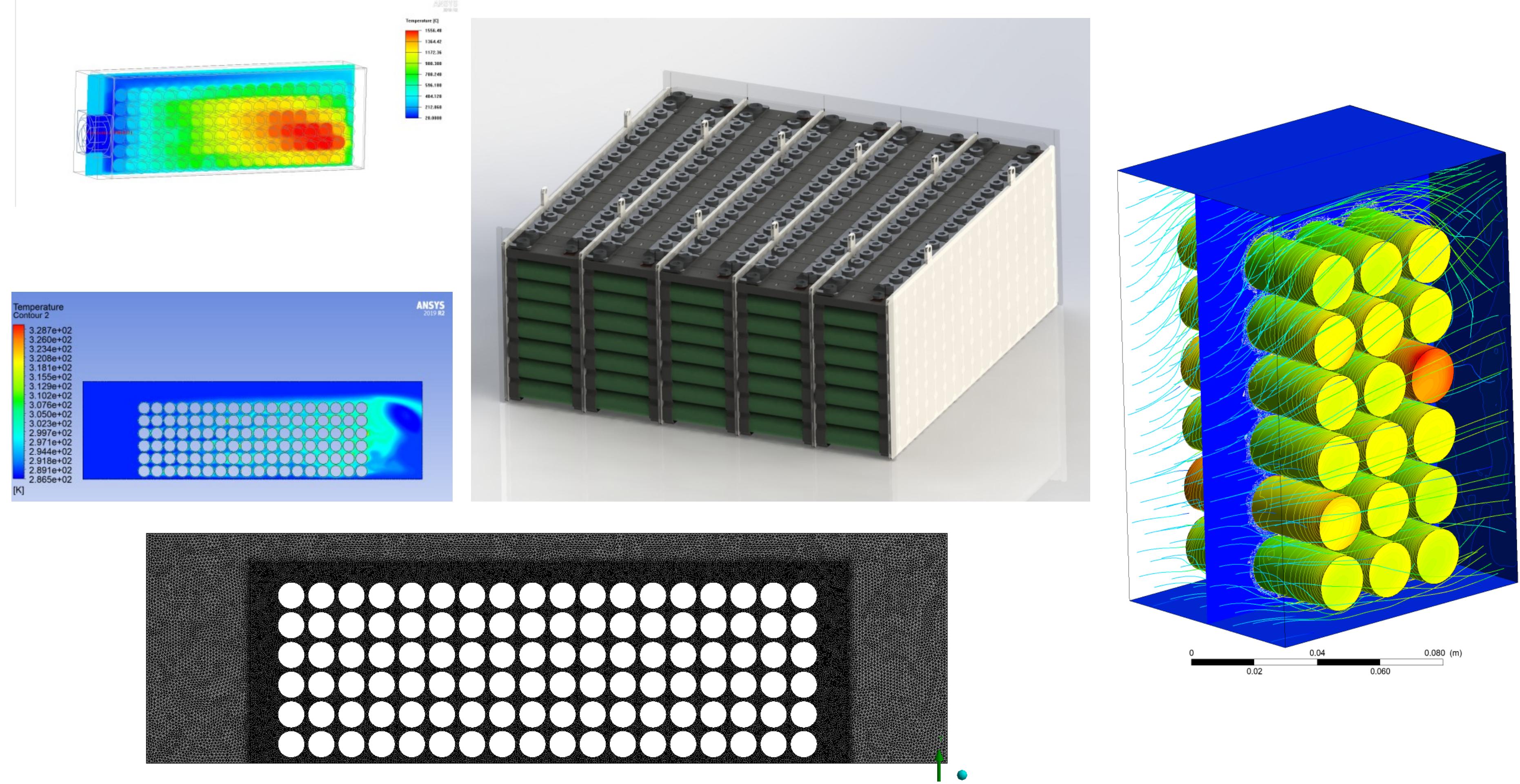
During my masters year studying Automotive Engineering I pursued the role of Future Development Manager for the Universities Formula Student team. The main project was to design and develop a fully electric powertrain for the 2020 car.

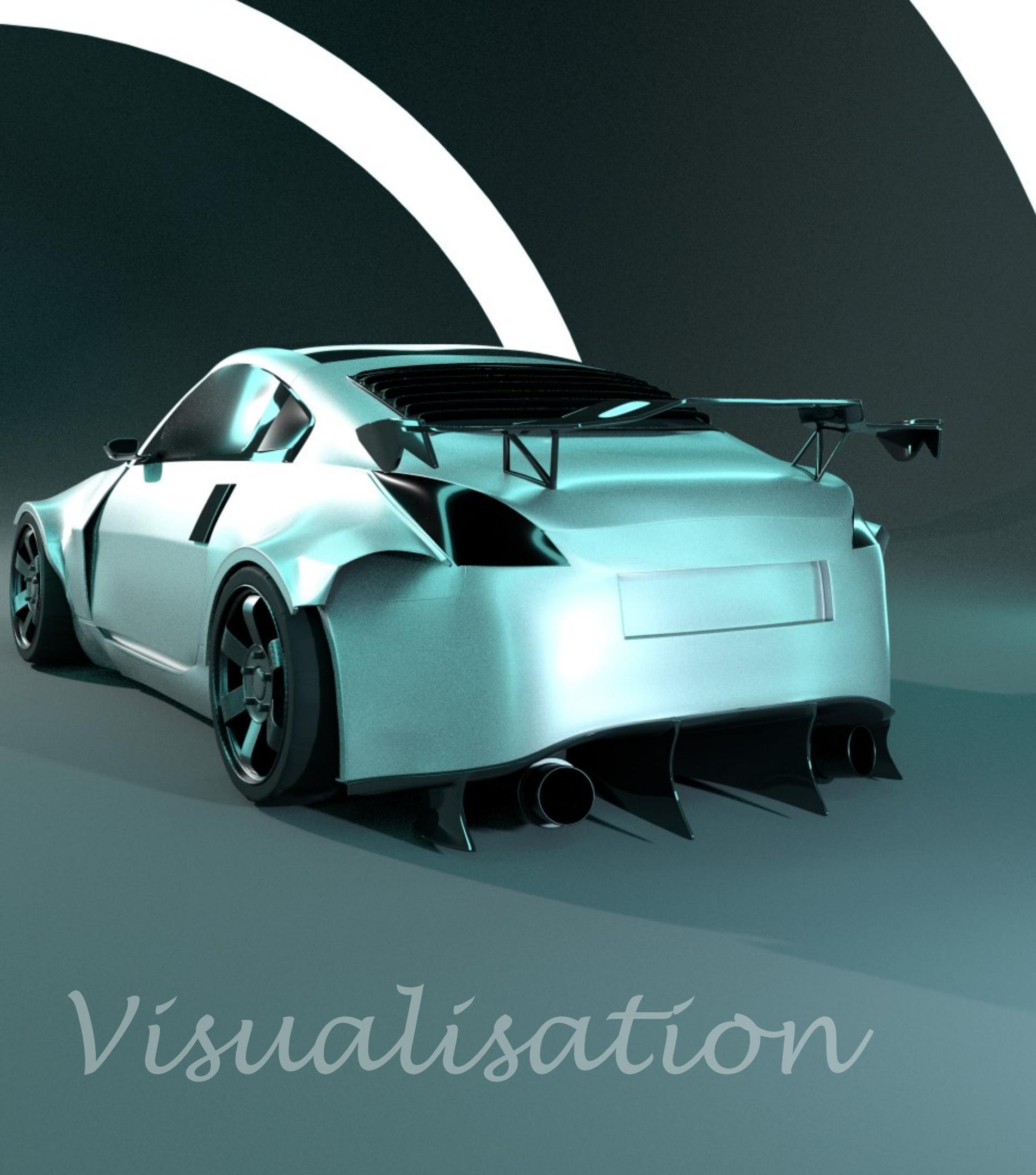
This included designing the components of the powertrain using CAD on Solidworks, based upon fundamental principles. The powertrain includes an accumulator, BMS, Motor Controller, Motor and Drivetrain. Each component had to be tested in order to be suitable for the team to build in the future and be competitive.

To optimize the powertrain, the parts were developed using analysis tools on specialist software's, including; Solidworks, Ansys, Matlab, LT Spice. These tools were used to conduct different testing procedures, including; FEA, CFD, powertrain simulation, circuit testing and general thermal analysis.

The project achieved a 1st and was further worked on by 3 new master students, for the 2021 year.

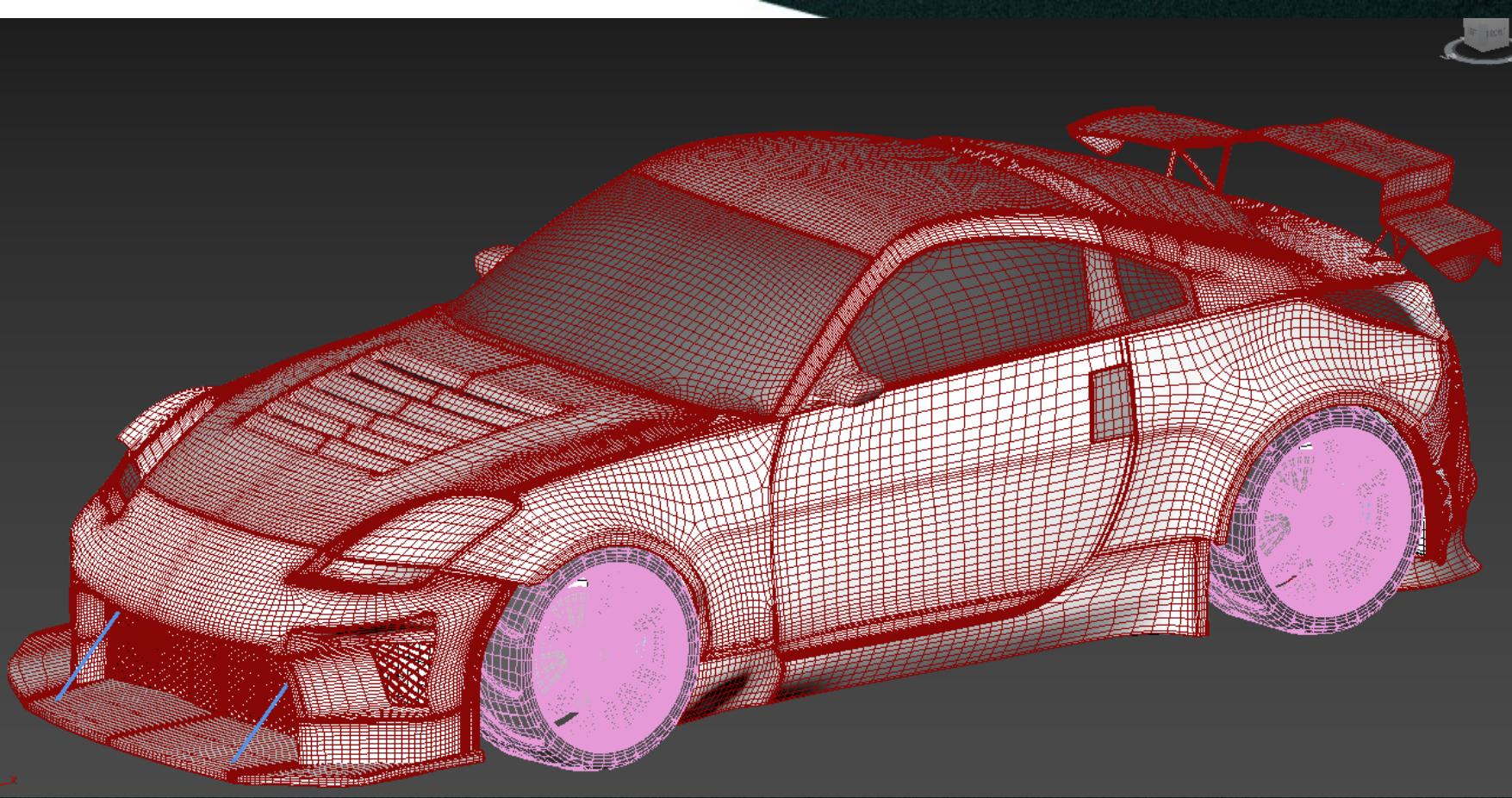






Visualisation





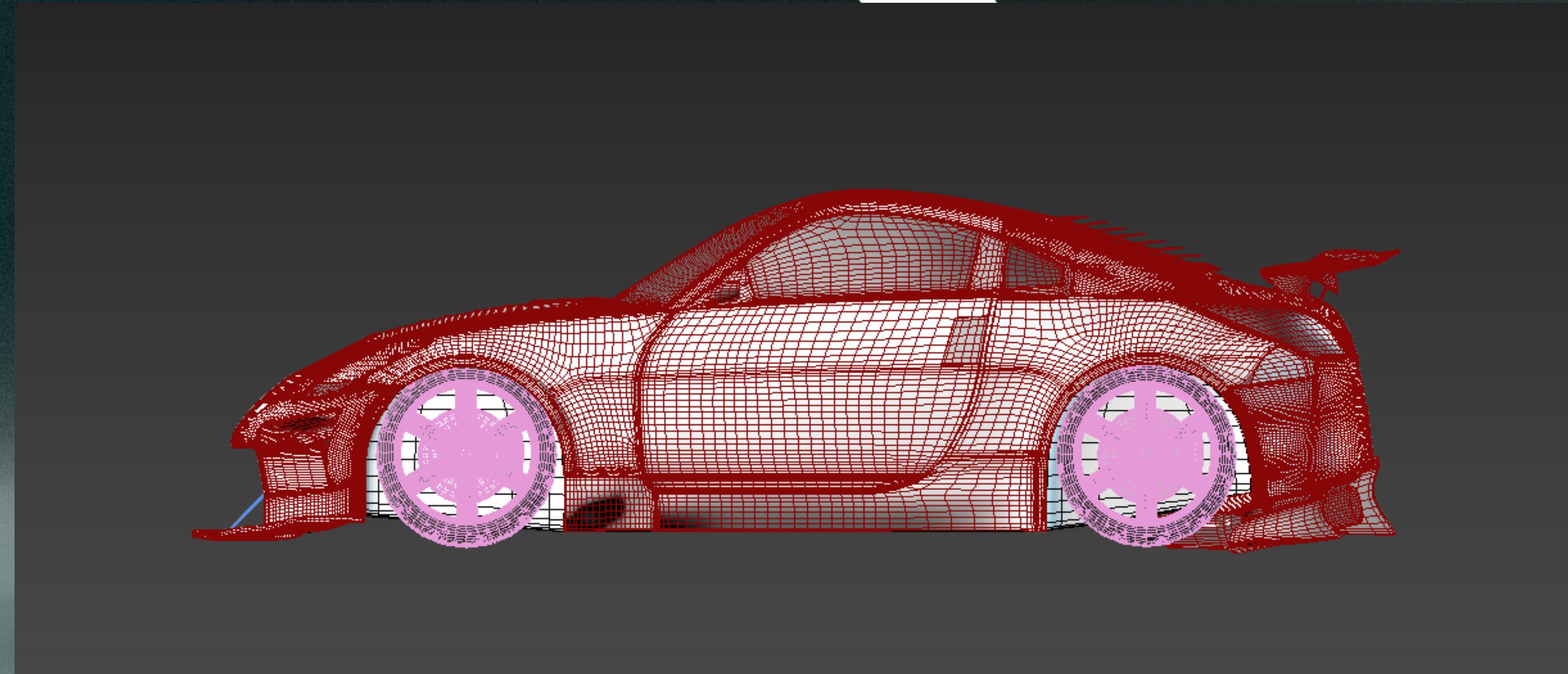
350Z Surface Model Concept

Personal Project

2020

First time using 3DS max and investigating the surface modelling potentials. The design is a concept version of the existing Nissan 350z, also this is my existing project car.

The process used reference images and blueprints in order to achieve the original car shape and a custom model has been developed from it. Surfacing completed in 3DS Max, rendering in Arnold and edited Photoshop.



Automotive/Product visualisation:

Personal project

2021-2022

Exploring the use of different modelling techniques, shading, texturing and post editing to achieve 3D visualisation. Surfacing done in blender and rendered in cycles and keyshot, edited in photoshop.





Photography





