



Final Degree Project

Diseño, reinterpretación y adaptación de elementos del icónico modelo de la marca (Ford Thunderbird) como alternativa eléctrica para competir con nombres consagrados en el segmento deportivo premium



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POLITÈCNICA
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PROJECT OBJECTIVES

1. Project Scope

The scope of the project is the reinterpretation and adaptation of elements of the brand's iconic model (Ford Thunderbird) as an electric alternative to compete with established names in the premium sports segment. The aim of the model is to present a sporty and exciting drive while offering everyday utility not historically available in vehicles of this nature: more luggage space, better fuel economy, stylish but not overdone design, plus a lower environmental impact perfect for the conscientious user.

This project will focus mainly on the exterior design of the concept as well as it's possible location in the current market, while briefly discussing some technical information related to the materials and powertrain.



CONCEPT DEVELOPMENT

1. Background

The Thunderbird was a model name used by the Ford Motor Company starting in 1955. Through its eleven generations, the Thunderbird was an icon of the American automotive world, being conceived as a personal luxury car in the F segment and retaining that mission through multiple body configurations (coupe, convertible and sedan, with two, four, five and even six seats). Competing originally with Chevrolet's Corvette, the Thunderbird focused more on luxury than performance, although always retaining a "American Muscle DNA".

Today, the personal luxury car segment doesn't exist any longer, with buyers preferring luxury grand tourers and sports cars instead. That's why it seems fitting to bring the new era of Thunderbird with new goals: speed, dynamics, luxury and comfort, slotting itself in the competitive Premium Sports Car segment, being a halo car for the electrification of Ford's lineup.



CLEARANCE 7'-6"

SELF SERVE

Esso

Esso

Thunderbird

Ford logo

FORD
U.S.

CONCEPT DEVELOPMENT

2. Market Research

As previously stated, the segment in which Ford's Thunderbird used to compete no longer exists, as buyers have migrated to Grand Tourers and Premium Sport cars. We'll be looking into these markets to find out what the current trends and needs the car will need to solve.

The car that currently better illustrates what the market demands in this segment is the recently released eighth generation Chevrolet Corvette. It's marketed as a premium sports car with supercar performance and a level of comfort and practicality that allow it to be used for both daily chores as well weekend fun, while undercutting most of its competitors in price. A look at its market share (51% in the US Market) tells a clear story about how much demand is for a vehicle with its capabilities and how well priced it is.

CONCEPT DEVELOPMENT

2. Market Research

As our fight against climate change moves everyone to more sustainable and cleaner practices, the automotive industry brings new models with alternatives to the internal combustion engine. These models include hybrid-electric cars and full electric cars, as well as hydrogen powered ones. Most of these are focused on efficiency, as it is the biggest appeal in comparison to ICE powered vehicles as well as being one of the most important factors for consumers at the time of buying a new car.

To see the sales benefits of an electric alternative to the combustion engine offerings we can investigate the premium sedan market and analyze the Tesla Model 3 performance against its peers. It outsells all other small to midsize premium sedans with a market share of 21%. Only by combining all models from each brand can we start seeing some similar numbers, but only in a few brands, while Tesla retains the top spot.

CONCEPT DEVELOPMENT

2. Market Research

Sales Numbers - Premium Sports Cars - Q1 2021 - USA

MODEL	Q1 21 / Q1 20	Q1 21	Q1 20	Q1 21 SHARE	Q1 20 SHARE
CHEVROLET CORVETTE	+73.06%	6,611	3,820	51%	43%
PORSCHE 911	+7.41%	2,782	2,590	22%	29%
PORSCHE 718	+276.51%	1,506	400	12%	4%
MERCEDES-BENZ AMG GT	+25.34%	1,212	967	9%	11%
MERCEDES-BENZ SL-CLASS	-22.44%	311	401	2%	4%
MERCEDES-BENZ SLC-CLASS	-52.75%	198	419	2%	5%
AUDI R8	+52.58%	148	97	1%	1%
NISSAN GT-R	-13.76%	50	58	0%	1%
FORD GT	-58.23%	33	79	0%	1%
ACURA NSX	-50.00%	17	34	0%	0%
BMW I8	-87.86%	8	66	0%	1%
TOTAL	+44.17%	12,876	8,931		

Small + Midsize Luxury Cars — Jan–Nov 2019 (USA Sales)

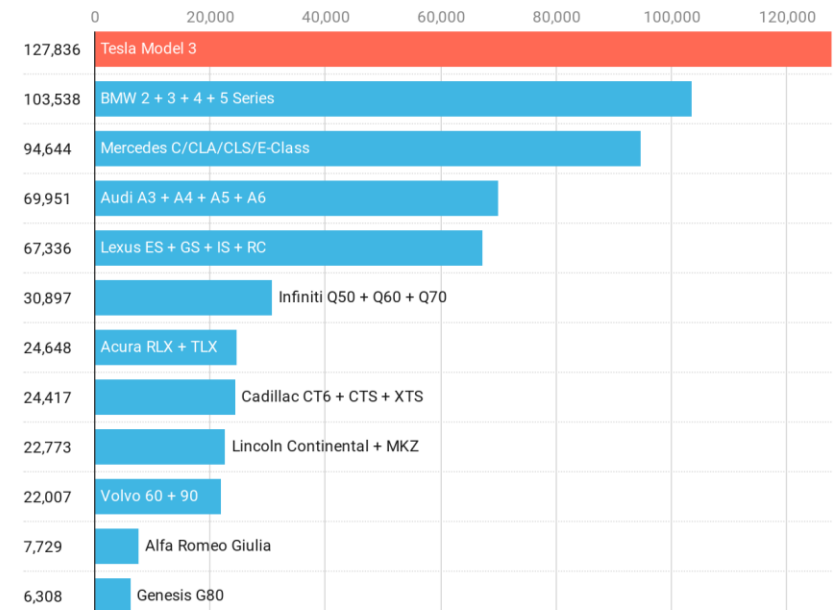


Chart: CleanTechnica • Source: Automakers, CleanTechnica • Created with Datawrapper



CONCEPT DEVELOPMENT

3. Buyer Profile

The buyer of the new Thunderbird is somewhat younger, between 30 to 40 years old, with a profitable career that allows them to spend good money on a fun car. Someone looking for a thrilling experience without sacrificing luxury or comfort. This is probably not their only car. They're tech-savvy and like to be at the forefront of innovation. Concerned about global warming, they prefer an electric alternative to the traditional combustion engine.

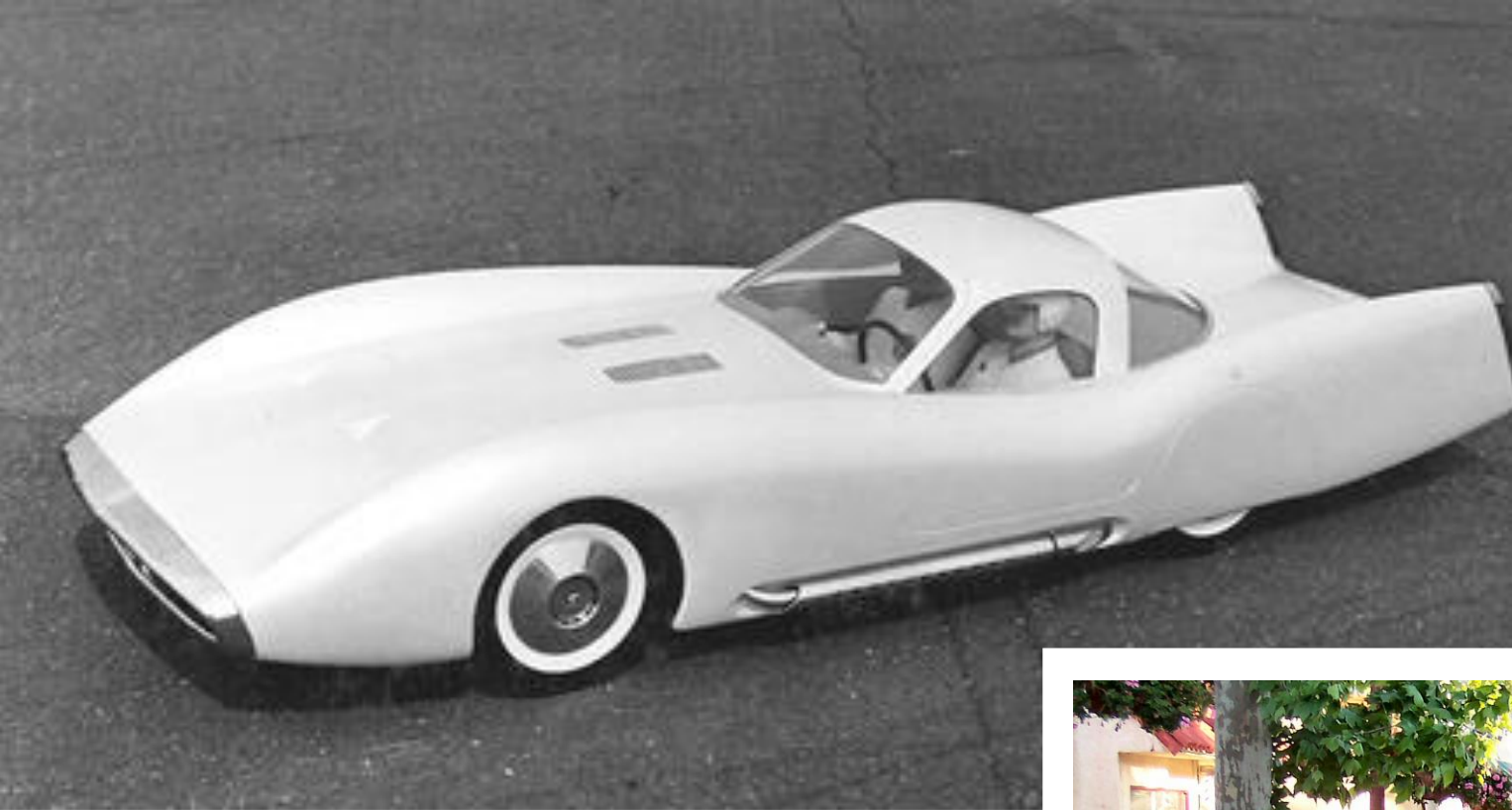


DESIGN DEVELOPMENT

1. Inspiration

The main inspiration for the project has been the first generation of Thunderbird, trying to bring elements of the styling era of design into a modern “mid-engined” layout. A 1956 concept called *Thunderbird Mexico* was used as inspiration for the curvy-aerodynamic shape. Modern Ford models were used as reference as well to tie it to the current design language, like the second-generation *Ford GT* as well as the *Team Fordzilla P1 Concept*.

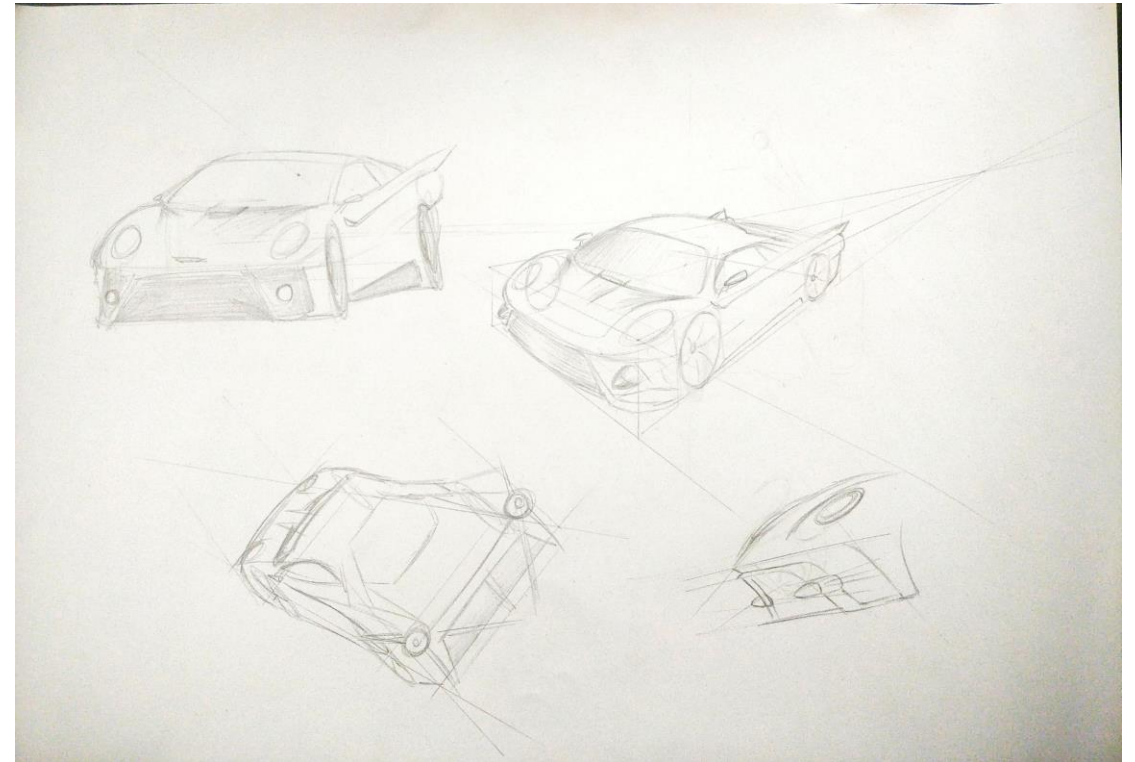
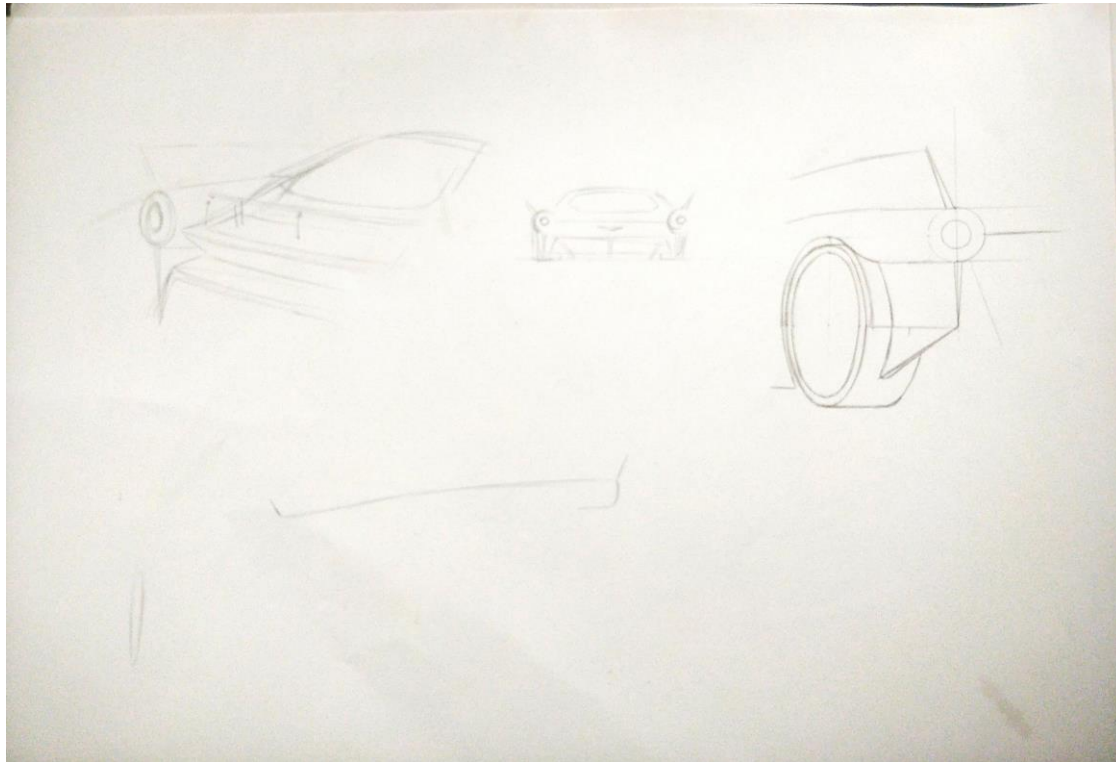
The chassis of the *Rimac Nevera* (formerly known as *Concept_Two*) was used as heavy reference for the proportions of the car, as it is one of the only high performance electric hypercars in the market. While being in a different price bracket and category to the proposed Thunderbird, the technology and knowledge used in that car could potentially be used for the creation of cheaper models, as Rimac already produces technology for other major manufacturers.





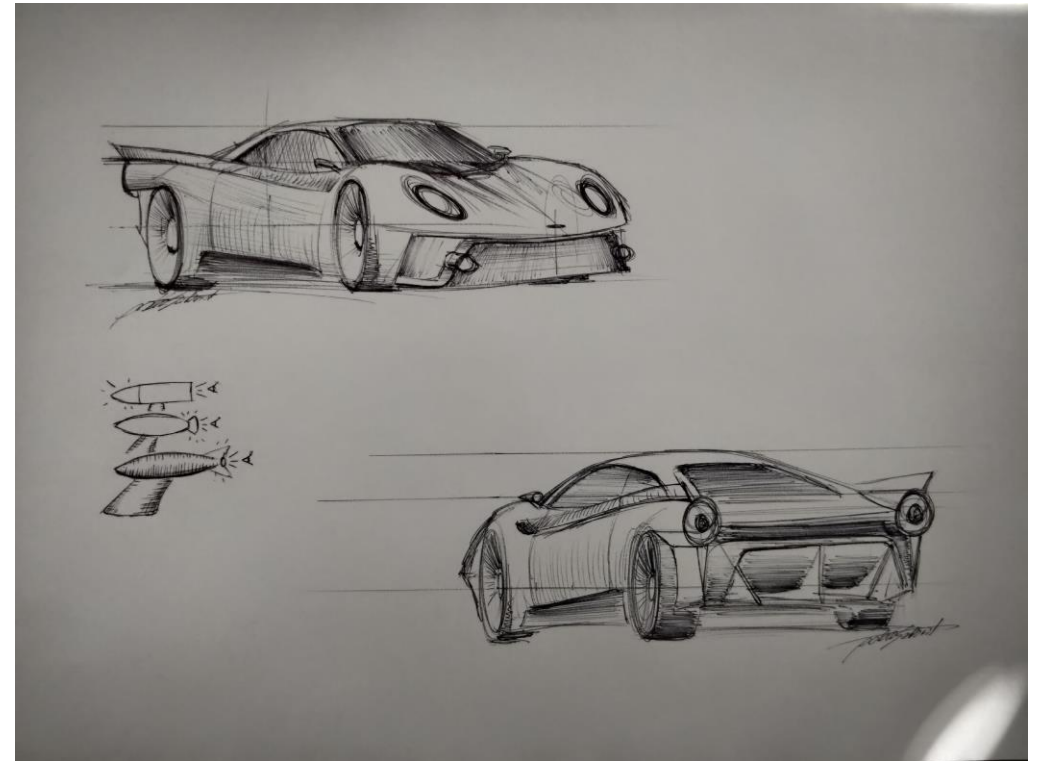
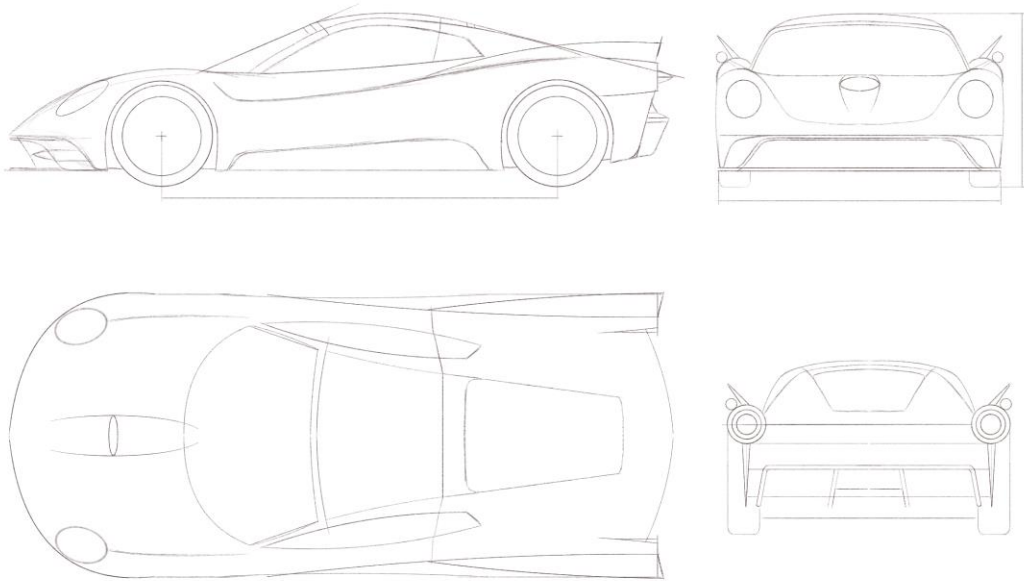
DESIGN DEVELOPMENT

2. First Sketches



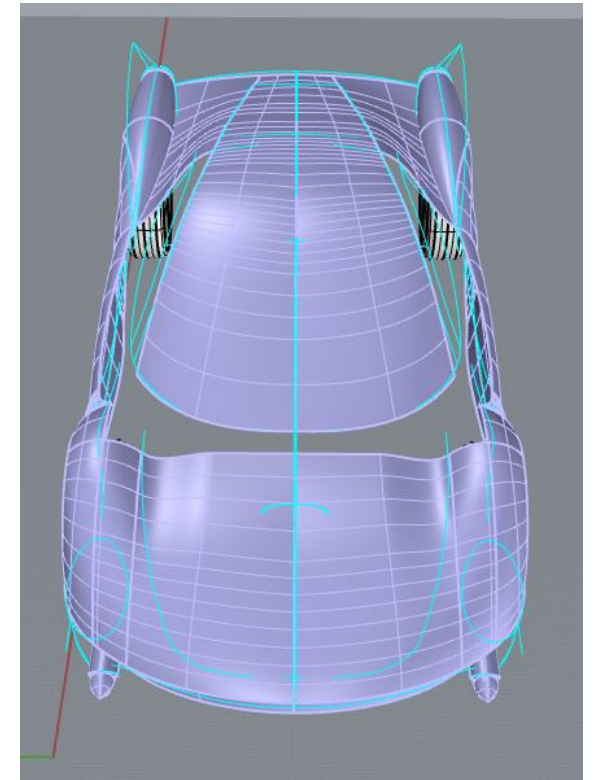
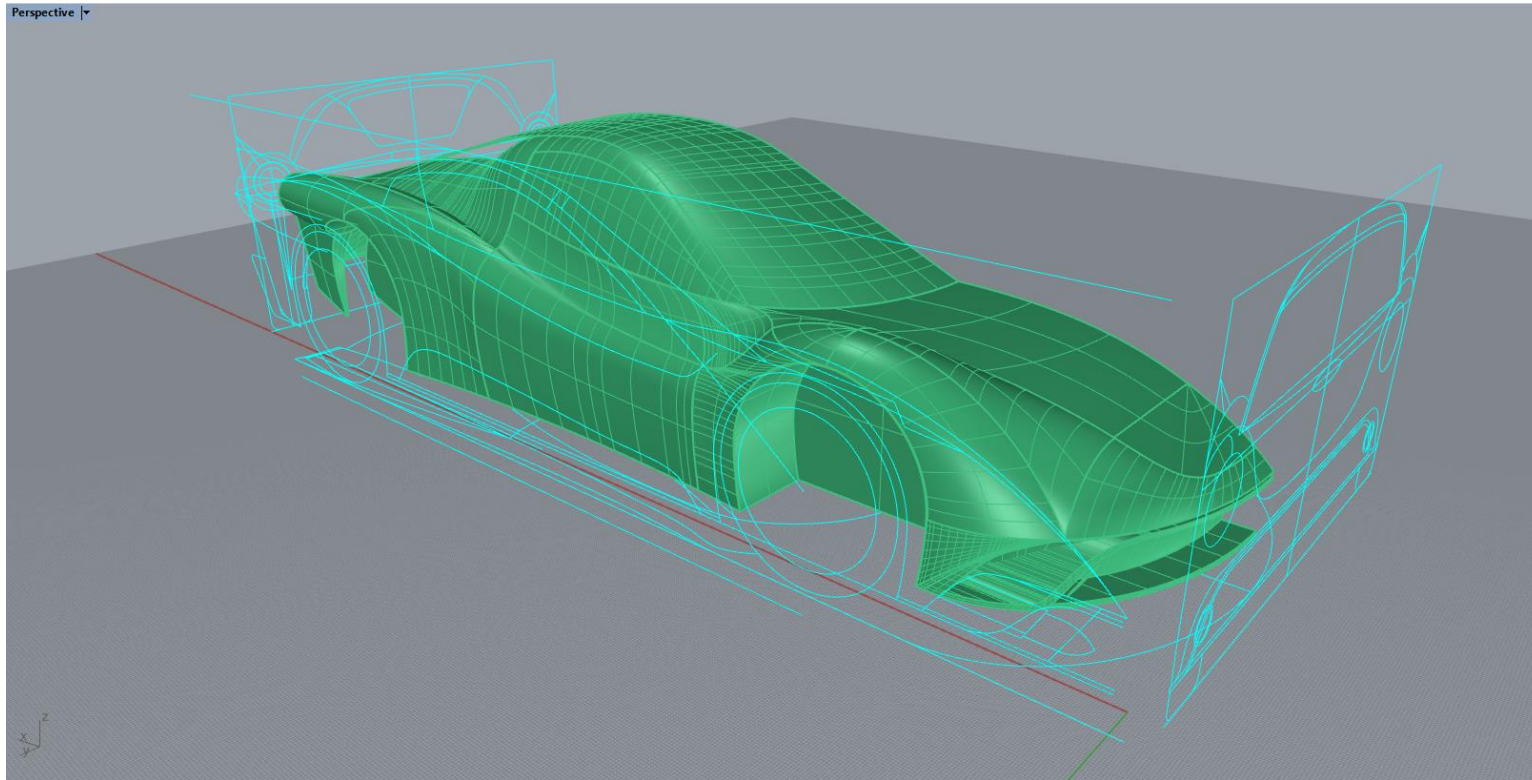
DESIGN DEVELOPMENT

2. First Sketches

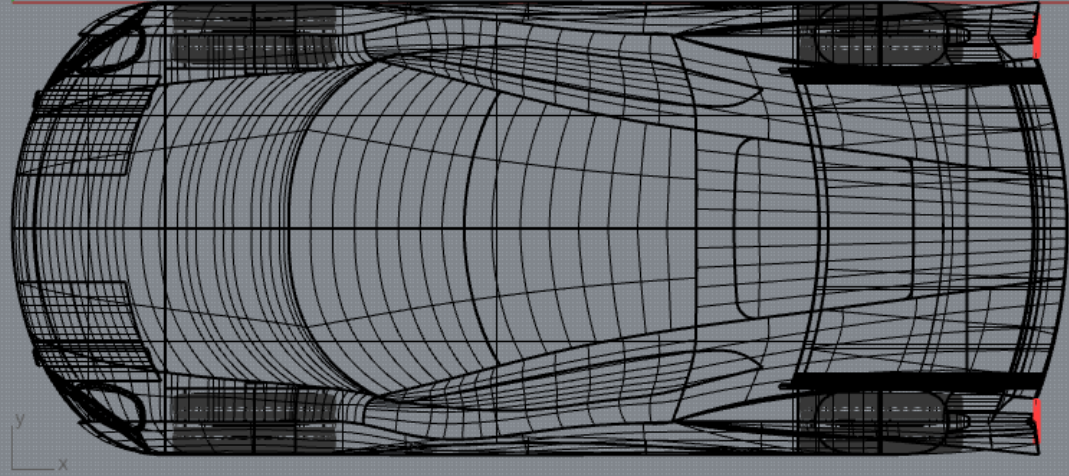


DESIGN DEVELOPMENT

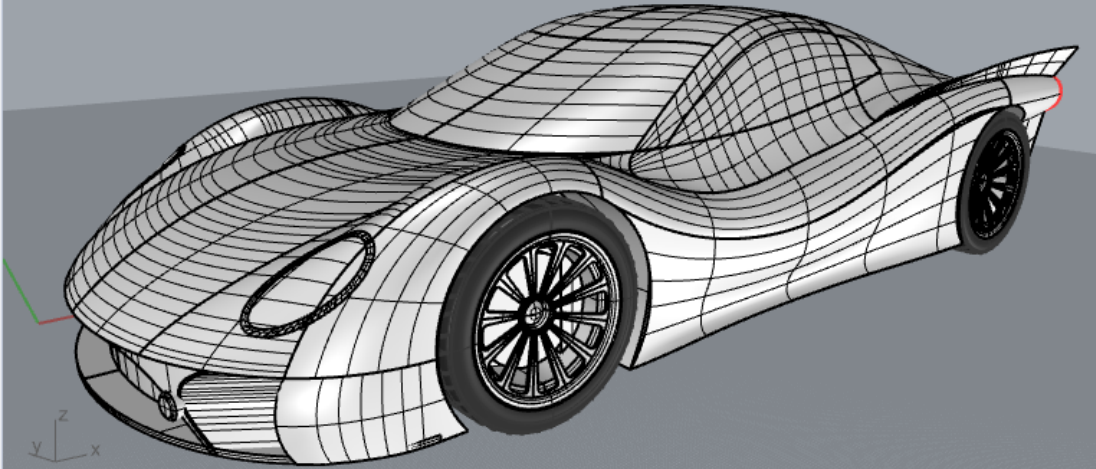
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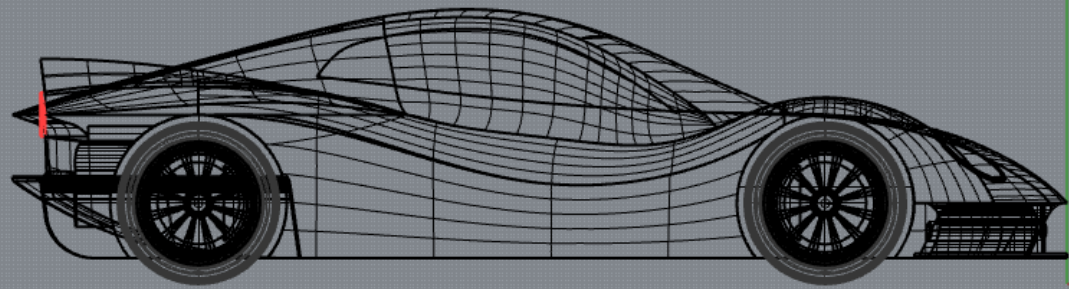
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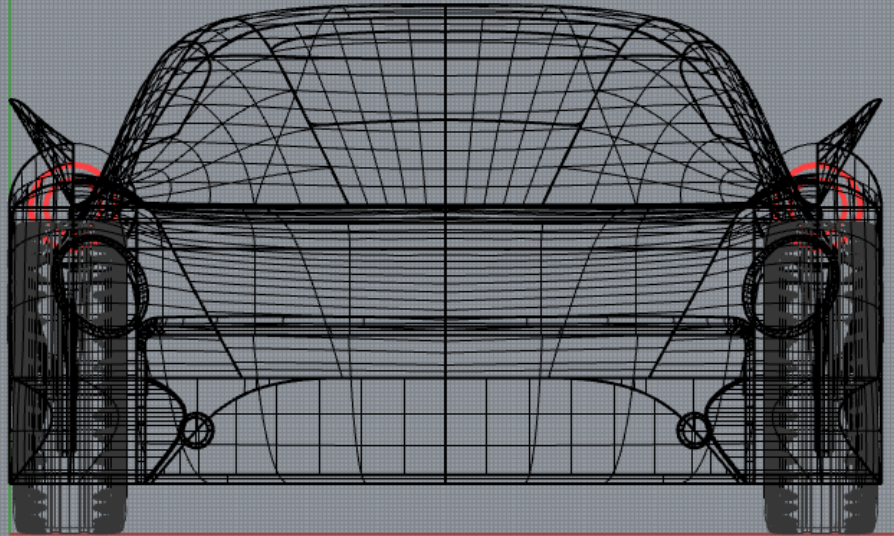
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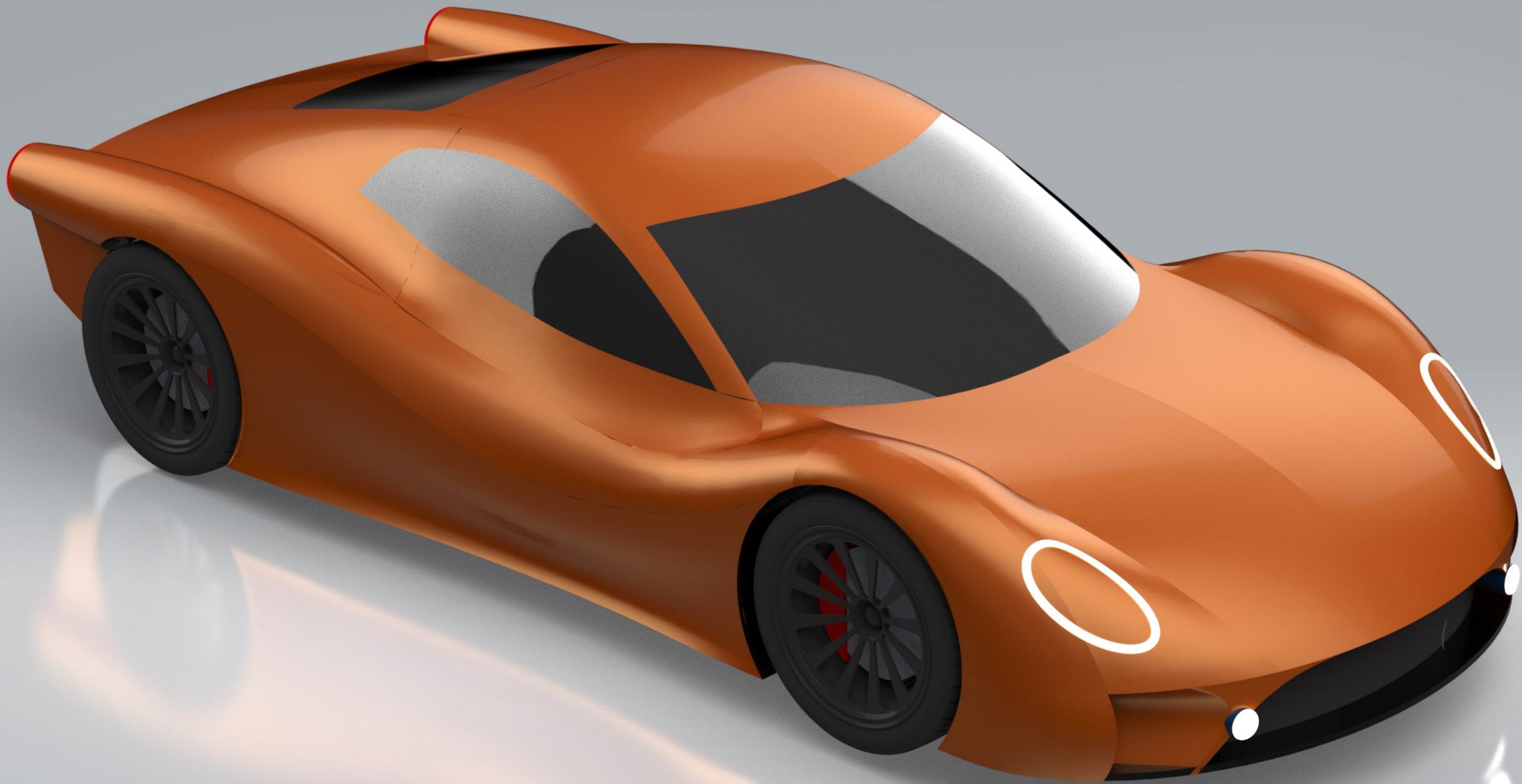


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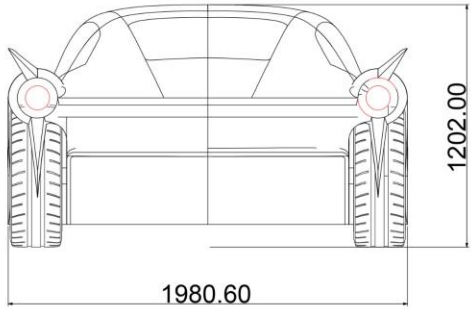
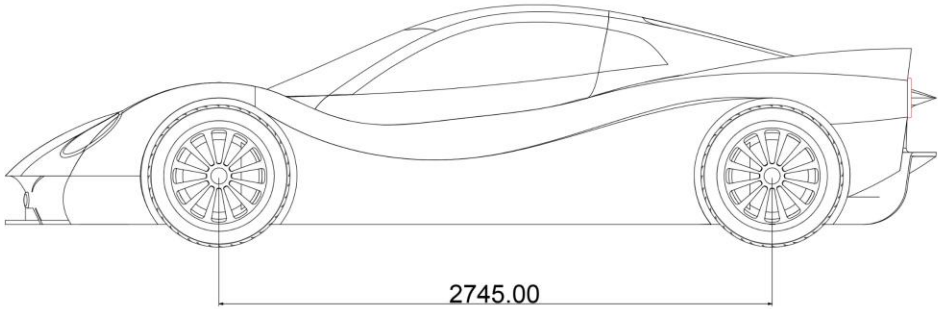
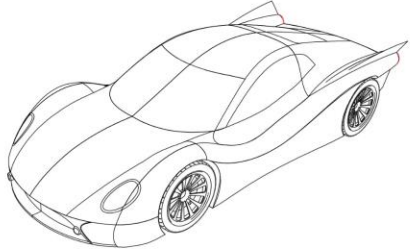
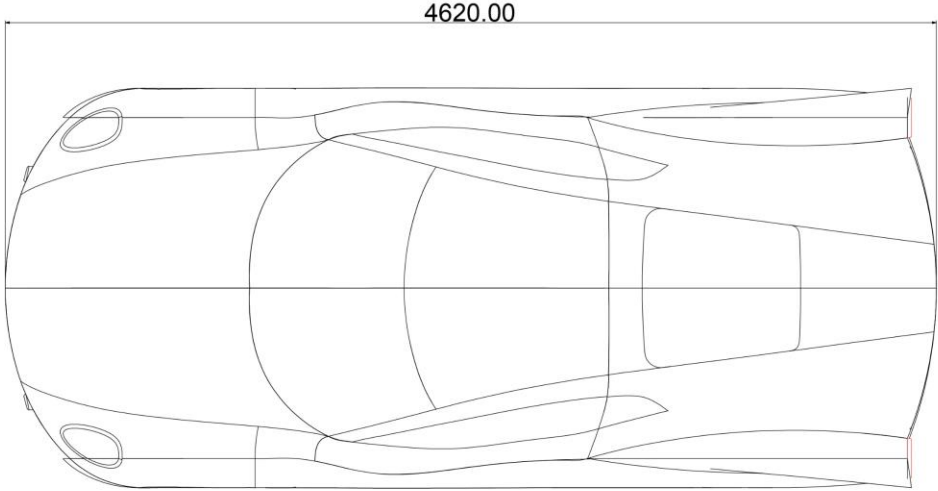


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TECHNICAL DRAWINGS



Final Design



Final Design



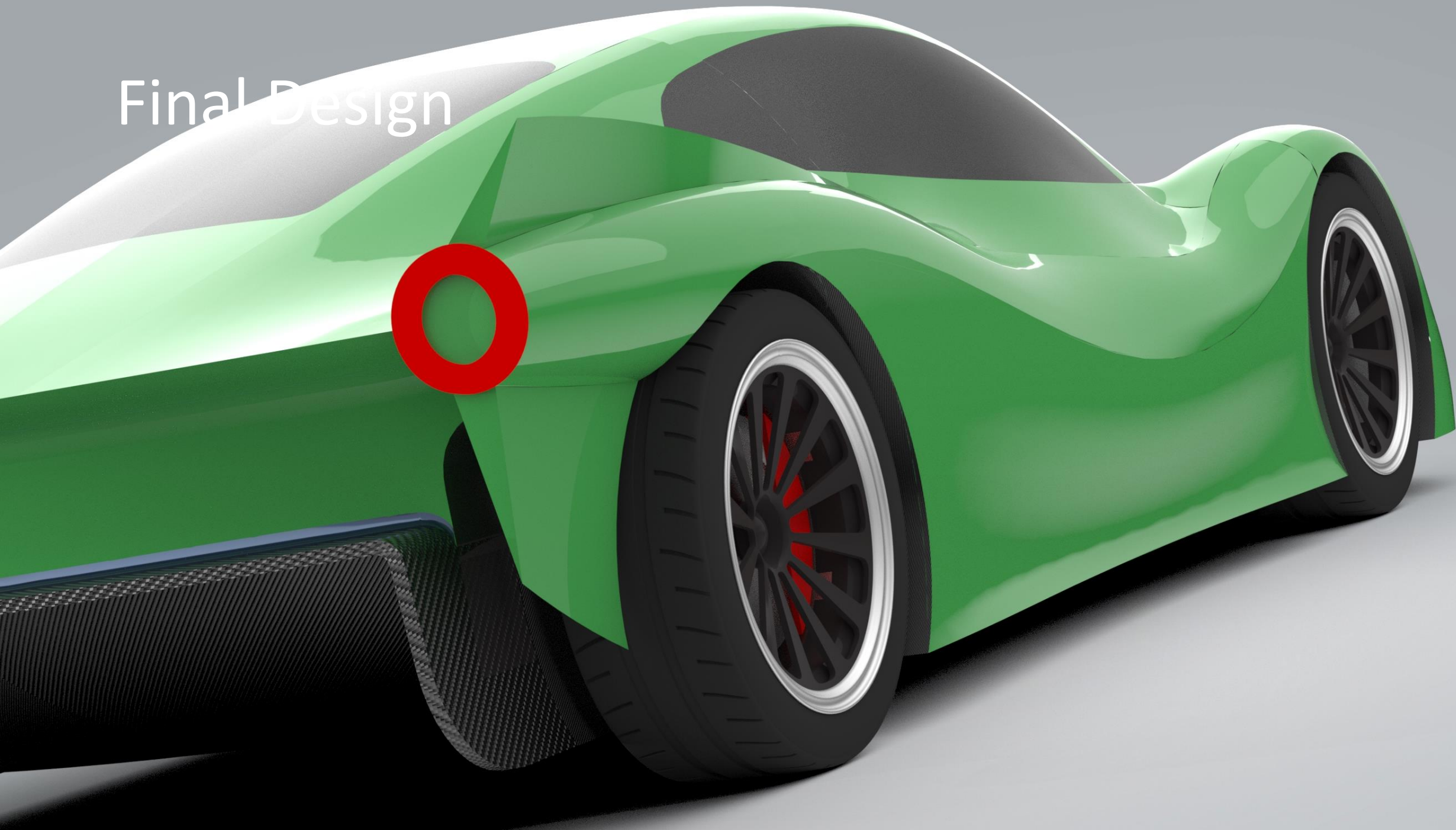
Final Design



Final Design



Final Design



FINAL DESIGN

1. Overview

The Ford Thunderbird has always signaled the marque's best effort at a personal luxury car. Now, in this era of change, it could lead the way into a future with beautiful design and uncompromised performance, bonding the daily drivability of an electric car with the sex appeal of a luxurious sports car.

Standing apart from its competitors, it is the ideal choice for modern car enthusiast looking to drive the way into a new frontier in technology, performance and style.

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