

Manifesto,

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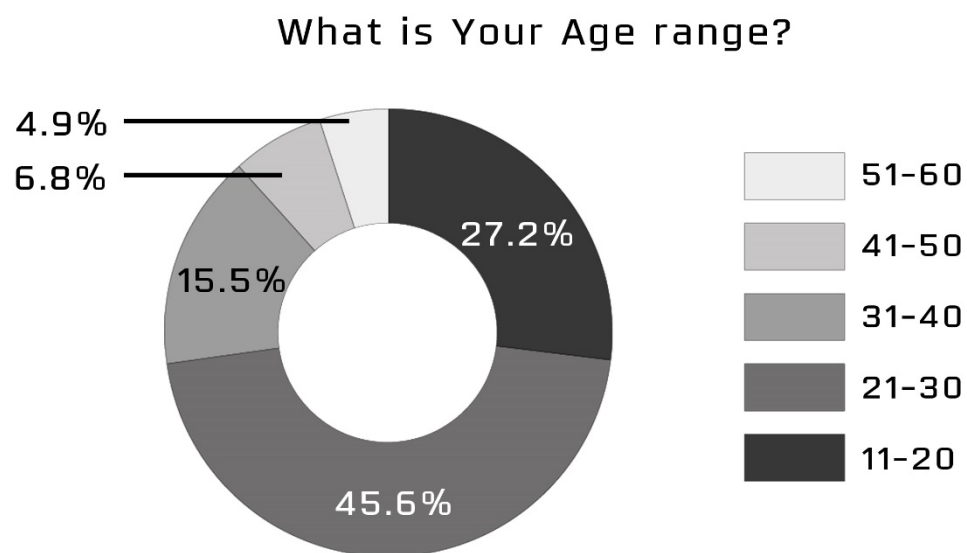
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Concept

A lot of people admire and reflect on the past, and each person admires the past differently. Cars in the past are considered icons, what is it about classic cars that make them desirable among car enthusiasts and could the design language be brought back into the future of car design?

Design Language

The concept is to bring classic car design language from the 1950's – 1960's to the year 2050. Classic cars are still wanted among and admired by people today, so I created a survey to ask people what they think. My survey received 129 responses which will allow for a good range of results from a range of ages.



Survey Results - 103 Responses

Figure 1: *Automotive Design Survey Question 1 Results* (Skinner, 2020)

With that the age range of my survey is a mix but mainly between the ages of 11-20 and 21-30 with some from 31-60 responding as well. This only had 103 responses since I had to add this question after some responses had come already in.

Would You Consider Buying a Classic Car?

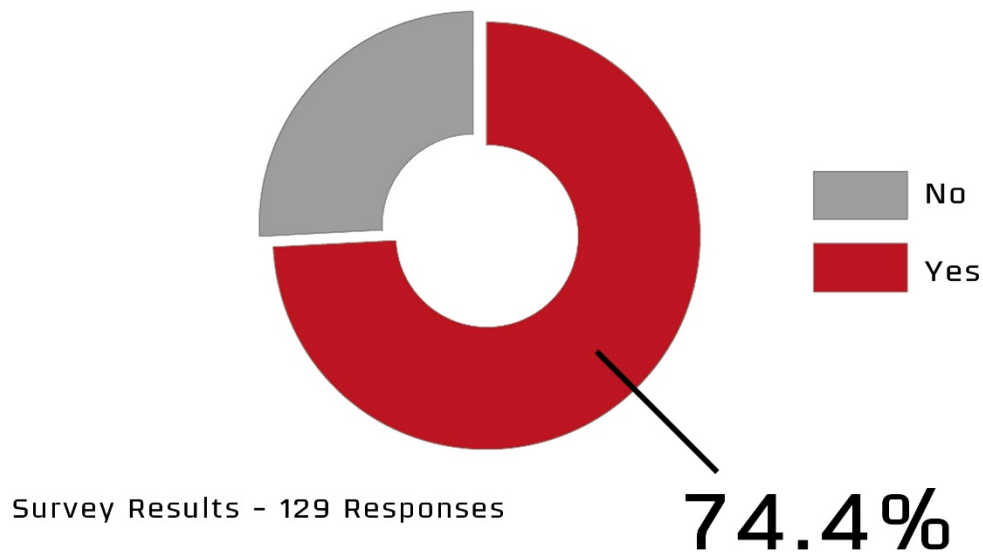


Figure 2: *Automotive Design Survey Question 3 Results* (Skinner, 2020)

Starting with why I plan to bring back classic car design language, I asked whether people would consider buying a classic car, with 74.4% said yes. The people who said no was because of the cost, the maintenance and the eco-friendly status.

Estimated Classic Car Sales Worldwide

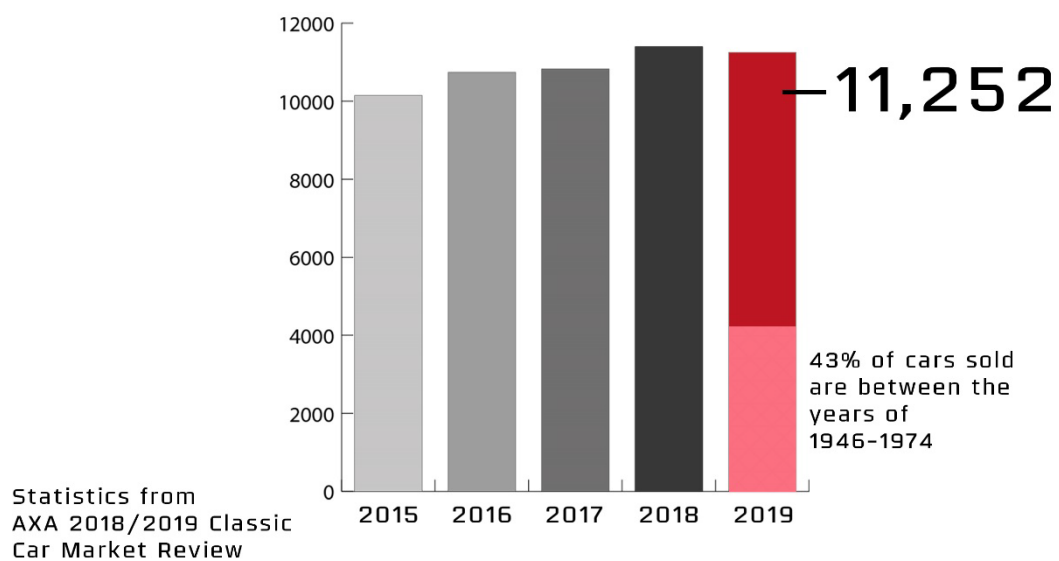


Figure 3: *Classic Car Market Review 2019* (2019)

From there I decided to look at classic car sales worldwide, and I found that there were an estimated 11,252 classic car sales last year worldwide according to the insurance company AXA in their 2018/2019 classic car market review. 43% of those cars sold were in the years between 1946-1974. Classic cars are still popular and loved by many today but not many people can have the car they dream of because the limitations being the cost of some classic cars and the rarity which are factors to consider. If I can design a car for the year 2050 which has classic car design language at the heart of the design while also designing it to fit into the year 2050 at a reasonable price, people would want to get it.

Would You Want the Design Style of Classic Cars to Come Back?

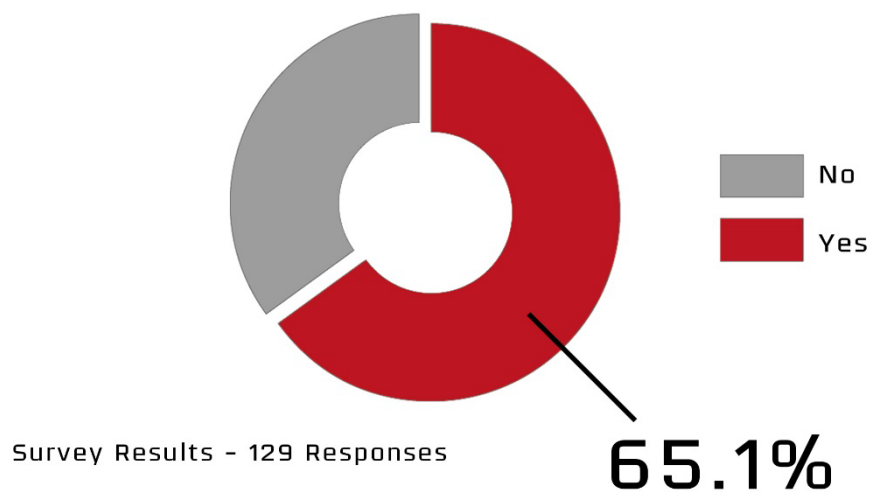


Figure 4: *Automotive Design Survey Question 6 Results* (Skinner, 2020)

Now, 65.1% of my responses to my survey said they would want the design style to come back, some saying they love the style, it is simple and elegant. But not everyone agrees, for example, other people have said they prefer modern designs, and it has been done already and therefore designers should look for future design style. But a still large amount of people say they do in fact want it to come back. So, trying to get a base design language of 1950's - 1960's then evolving it for 2050 is going to be a task that could pull of a great looking design.

Would You Consider Buying Electric and/or Hydrogen cars in the Future?

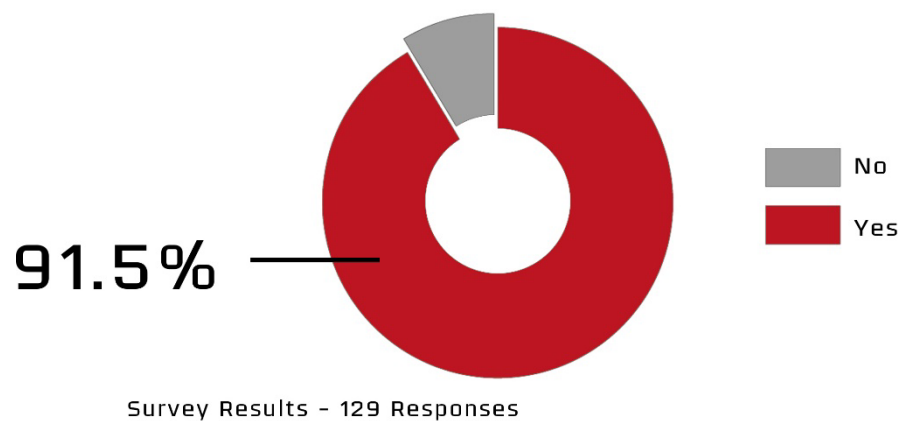


Figure 5: Automotive Design Survey Question 10 Results (Skinner, 2020)

In the future we are going to have to change fuel options for cars away from fossil fuels, I asked whether people would buy hydrogen or electric powered cars and 91.5% said yes which only meant 11 people said no. They prefer the sound of petrol engines whereas people who would, would buy them for the environment and all the benefits they have today, but note they say they are a little expensive as of right now which is why they have not got one yet.

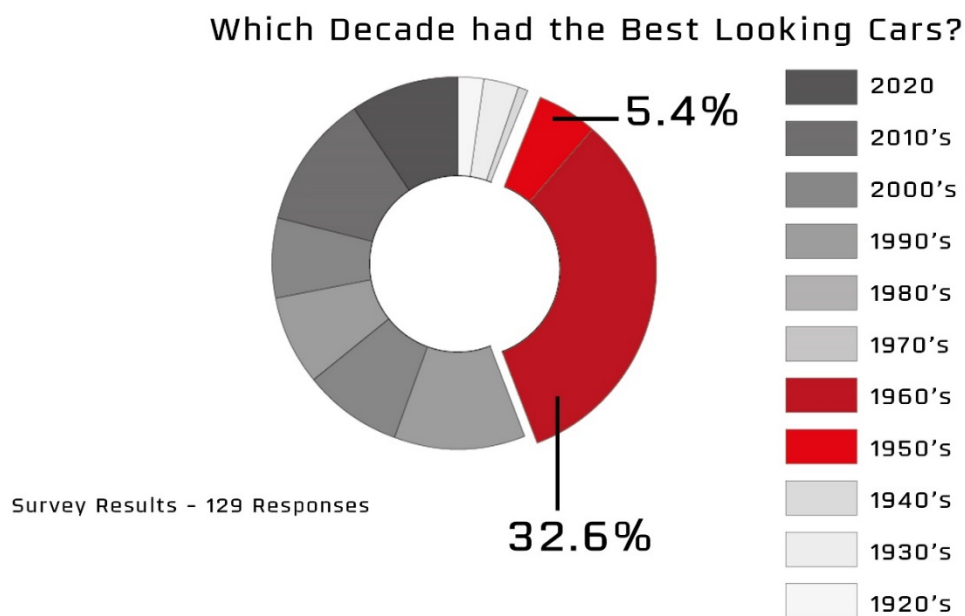


Figure 6: Automotive Design Survey Question 2 Results (Skinner, 2020)

So why the 1950's-1960's? This is because of my first question, what decade had the best-looking cars? 38% of the responses said 1950's-1960's with 32.6% being specifically the 1960's.

Why the Design Language Changed - Safety

The design language has had to change from the past to what it is today, and it's all down to the safety regulations. The cars were not safe back then in comparison to modern day cars which are made with loads of technology improvements and have many more safety regulations that make today's cars much safer.

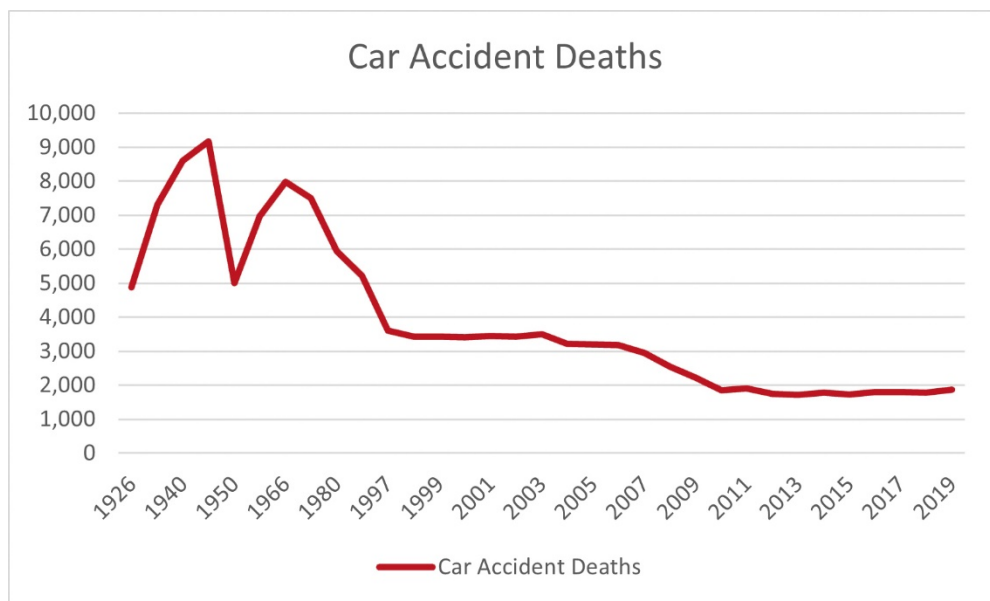


Figure 7: *People Killed in Road Accidents in Great Britain between 1926 - 2019 (2020.)*

According to police STATS19 data (collection of road traffic incidents recorded), people killed on British roads have declined quite a bit since 1966 which had a total of 7,985 total deaths that year. 2019 only recorded 1,870 total deaths which is a massive decline.

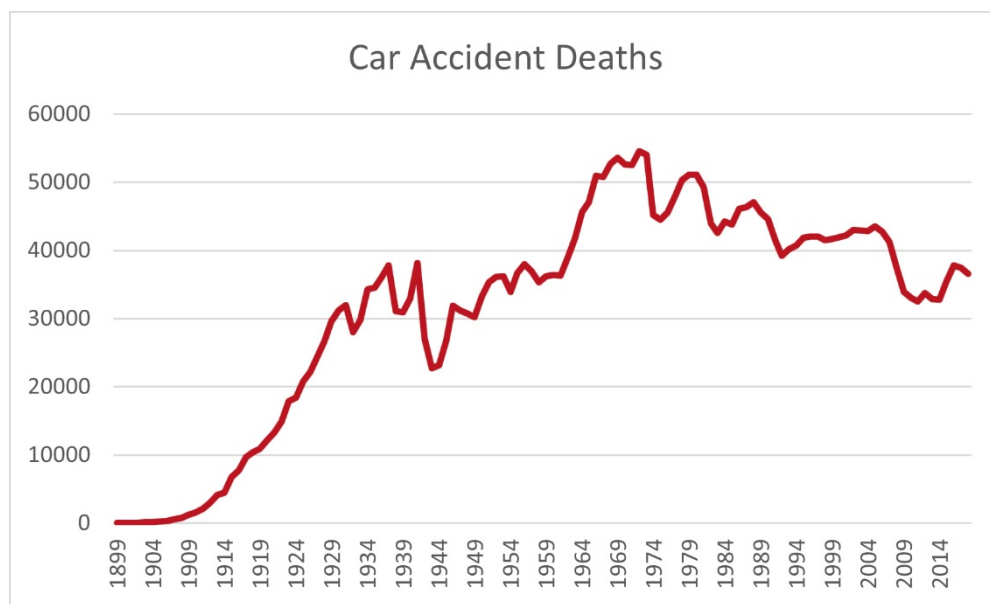


Figure 8: *People Killed in Road Accidents in the U.S. between 1899 - 2019 (2020.)*

For the US it is more up and down however in 1970 there were a total of 52,627 deaths compared to in 2018 where there were 36,560 total deaths from car accidents. A main factor to also notice is the population change along with the deaths going down, the population was 205,052,174 in 1970 and was 327,096,265 in 2018. And with that increase in population and more cars being used on the roads, the deaths did still go down.

So, cars today are significantly safer than those from the past with the improved safety features and higher safety regulations.

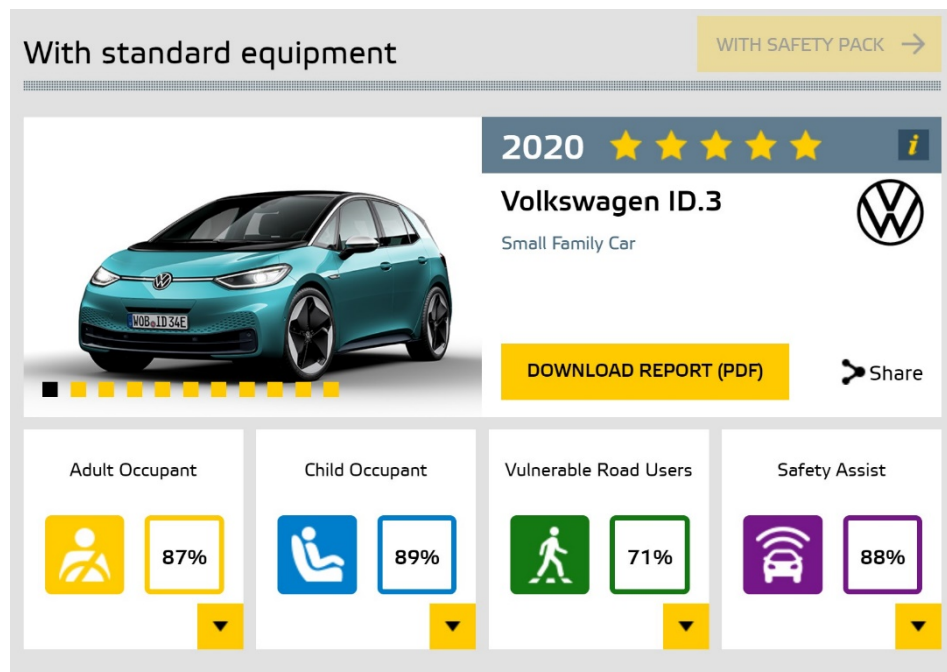


Figure 9: VW ID.3 Crash Test Results (Euro NCAP, 2020.)



Figure 10: VW ID.3 Crash Test (Euro NCAP, 2020.)

People who crash test cars, for example, Euro NCAP, they test new cars in four areas and give a percentage rating for each section and an overall star rating out of five. The four areas they test in includes: adult occupation protection, child occupant protection, pedestrian protection and safety

assist. The tests can include frontal and side impact tests, whiplash tests, child restraint system tests, pedestrian and other vulnerable road users' tests, and driver assist technology tests. If the cars have autonomous emergency braking and other bonus safety driver assist features, they can gain additional bonus points. All these tests have been developed over the years and have helped influence the designs of cars as they must pass these tests to be allowed to be sold to consumers.

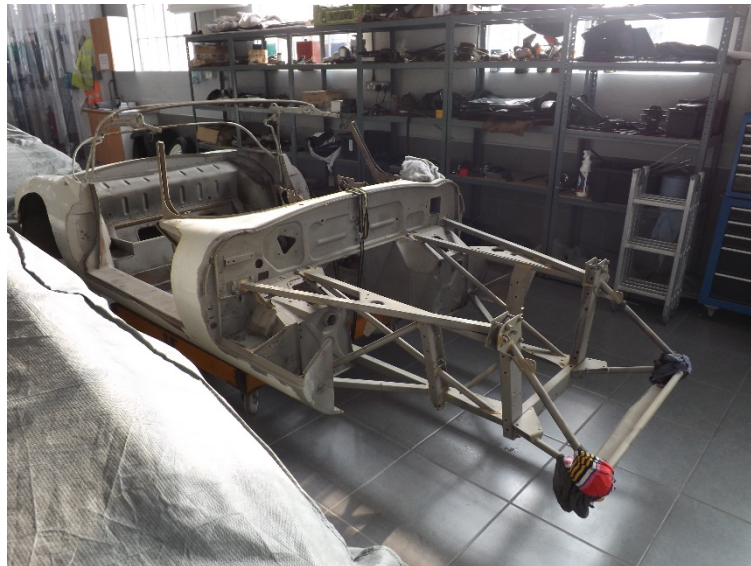


Figure 11: *Jaguar E-Type 1971 Chassis* (Bridge Classic Cars, 2016.)



Figure 12: *Jaguar F-Type 2014 Chassis* (Ireson, 2013.)

I had a look between an old and new version of a car, the Jaguar E-Type and F-Type, the difference between an F-Type chassis and an E-Type chassis is something to really consider with how much safer today's cars are.



Figure 13: 1959 Chevrolet Bel Air vs. 2009 Chevrolet Malibu (Stewart, 2015.)



Figure 14: 1959 Chevrolet Bel Air vs. 2009 Chevrolet Malibu (AWolf Illustrations, 2014.)

If you look at the crash test from 2014 between a 2009 Chevrolet Malibu and a 1959 Chevrolet Bel Air, the result shows how much car safety has improved. The driver in the Bel Air might not have made it out of the crash but the Malibu driver would have been able to get out but possibly have injuries.

Why the Design Language Changed - Manufacturing

Manufacturing cars has also been required to change over the years for a more efficient and cheaper process so car manufacturers can build more cars in one day. BMW today make around 1,100 cars per workday per BMW Group plant, compared to Ferrari which is approximately around 9,000 per

year. This is due to having a lot of the car still made by hand for example their engines, to make their cars perfect in every detail they spend more time on them.

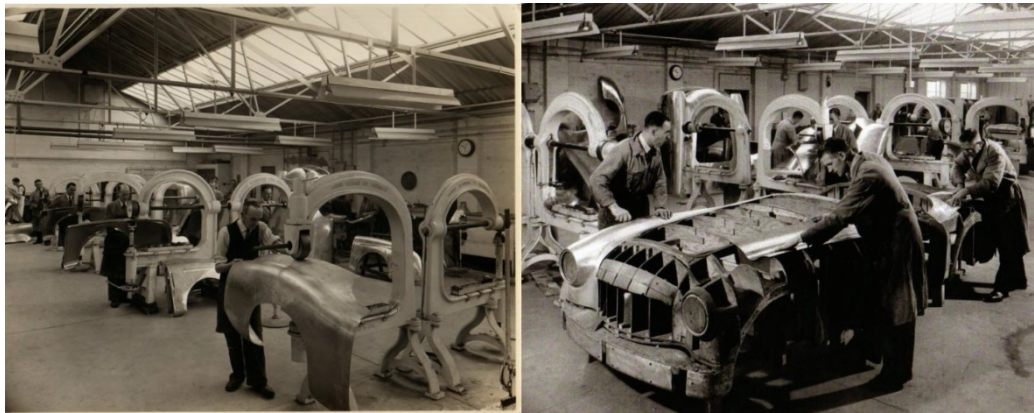


Figure 15: *English Wheel Manufacturing* (Hume, n.d.)

A main change for the sports cars in the era were the use of an 'English Wheel' which was used by workers to hand craft the curvature of the metal bodywork of cars. The 'English Wheel' is now not used so much within the automotive industry but more in the car restoration industry since the automotive industry have evolved their manufacturing processes. A mix of AI robots and workers do the automotive production today, and different car companies use AI more than others. The body panels of cars are made from car body panel press machines which are faster and more efficient. The 'English Wheel' is no longer required in today's manufacturing world and is now used to restore classic car body work instead. 'English Wheels' are expensive to use as the body panel must look perfect first time, the process takes time to make so it slows production and requires paid workers.



Figure 16: *Tesla Body Panel Press Machine* (Lambert, 2017.)

So, a lot of car companies today rely a lot on AI robots and heavy machinery to do a lot of the work for them. This helps the production for cars since they can build more cars in a shorter amount of time which means having more cars ready to be sold as well. This may make it cheaper in the long run to make cars because you are mainly paying for machine maintenance and operating costs. With the addition of the fact, it is quicker and gets the results first time, it is a major boost to the automotive industry to use AI technology and machinery.

Engine Choices

The battery infrastructure is much larger worldwide in comparison to hydrogen fuel cells as it has been around for longer and it is becoming increasingly popular. The infrastructure for hydrogen fuel cells is growing, but only slowly, in time it might grow to be a worthy contender against battery power.

The Amount of Electric Cars Sold Each Year

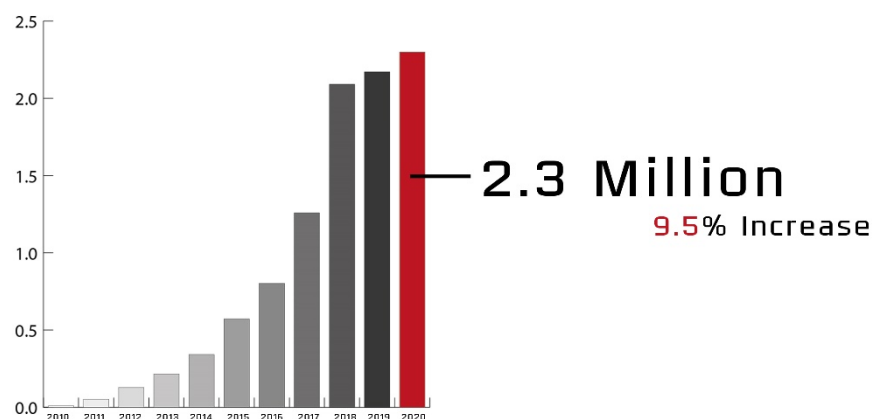


Figure 17: *Global electric car sales by key markets, 2010-2020* (Iea, 2020.)

This year so far there have been 2.3 million electric cars sold which is a 9.5% from 2019.

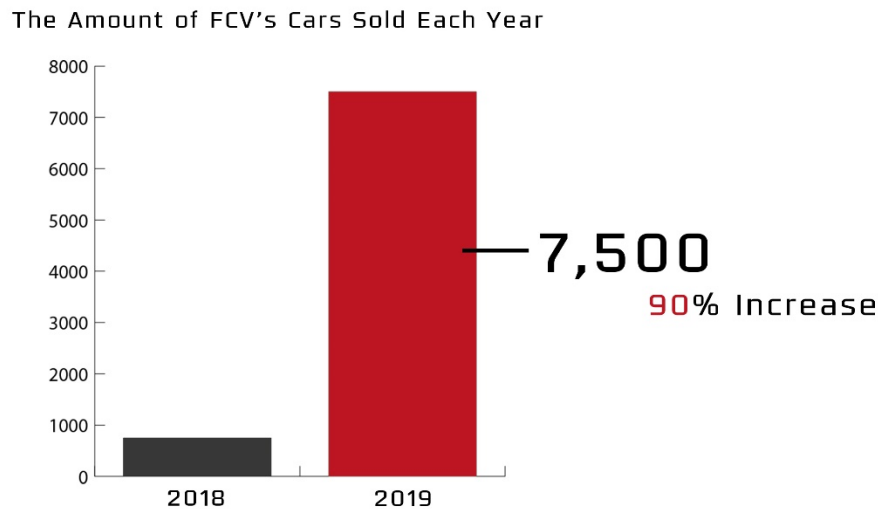


Figure 18: *Hydrogen Fuel Cell Car Sales In 2019 Improved To 7,500 Globally (Kane, 2020.)*

Hydrogen has only sold 7,500 on the other hand which may be a 90% increase since 2018 but their infrastructure is still trying to be built up so that is why there are not any records for before 2018.

Both engine options are eco-friendly as they release no harmful emissions. The only harmful emissions that the car will emit will come from the brake disks and the tyres.

Hydrogen cars can go more average miles than an electric car on a single charge. Electric cars can go around 100-200 miles on average compared to a hydrogen car which can do on average 300 miles. There are a lot of variables to consider when using this information since weight inside the car, if the car is in traffic, air con being on, etc.

Batteries from electric cars are hard to recycle when they are not needed anymore, so if there are a lot more electric cars in the future then there may be a lot of batteries being left around in garbage dumps.

Hydrogen cars must produce the electricity for the car it can show a potential 45%-75% loss of efficiency compared to battery powered cars that take electricity straight from the power grid.

However, in the future both technologies would have improved, and they are in the process of making both hydrogen and electric powered cars better. So, some of these issues may not be there in 2050.

Communications & Protection (2050 Concept)

Connectivity in the future is going to be even larger, I predict that everything will be interconnected with each other. Cars will be able to communicate with every part of the car along with other cars and the road itself. The interconnected world will help to prevent accidents with the fact the car can see what is happening possibly before the driver does. By having a safer driving environment, it

might enable cars to be made with less safety regulations on them, therefore, more design options and styles for cars.

Proposals

The idea behind my design is to make it smooth, simple and to have a reminiscence look to it therefore, I am using soft curves as my inspiration. Then the task is to then make the design more futuristic with some of the key lines and details to fit the year 2050.

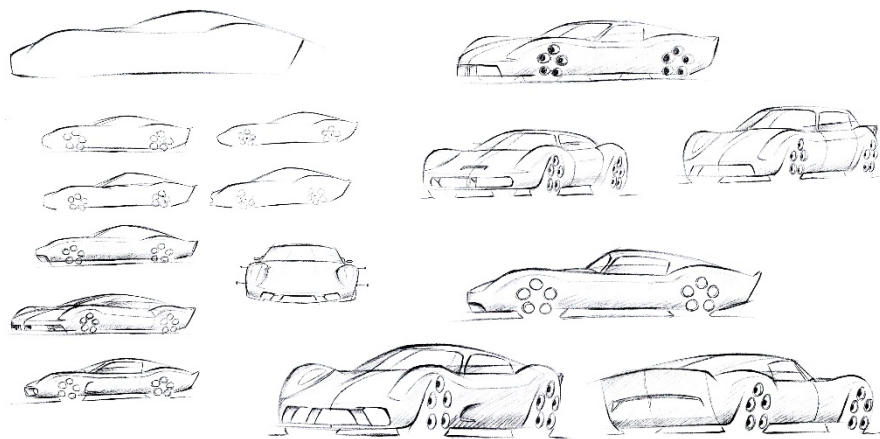


Figure 19: *Proposal 1 Sketches* (Skinner, 2020.)

This first proposal is a front engine sports car, and as you can see in the top left corner the key sketch to base this idea around. I took some inspiration from the Ferrari 250 GTO and tried to evolve the base shape of it so that the greenhouse flows more into the main body of the car.

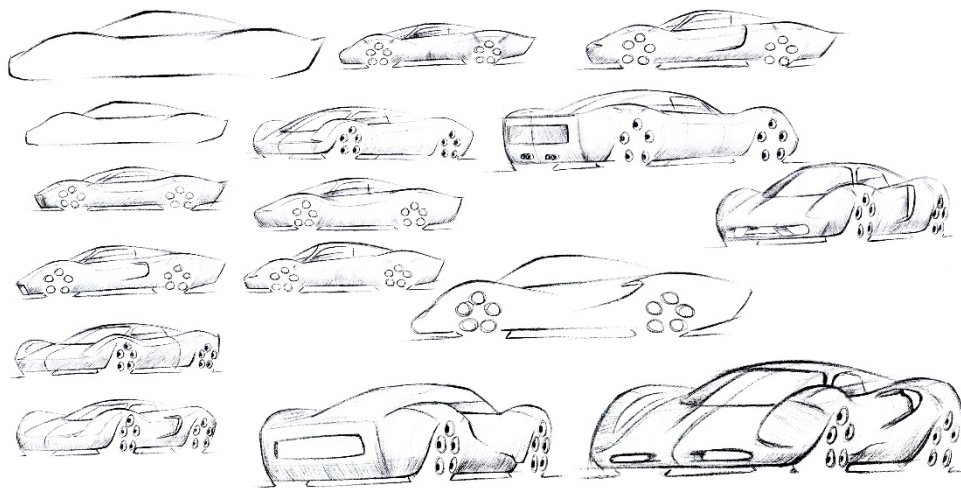


Figure 20: *Proposal 2 Sketches* (Skinner, 2020.)

This second proposal is a mid-engine supercar which again I have focused on using a lot of soft curves. I took some inspiration from the Ferrari 330 P4 which is an icon from the 1960's from the battles between Ferrari and Ford at Le Mans. I also looked at the Alfa Romeo 33 Stradale to get inspiration on the base shape of the design.

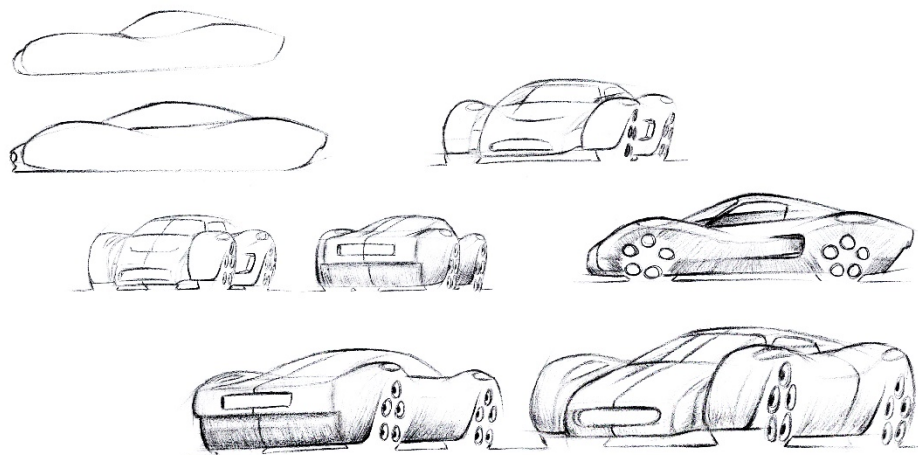


Figure 21: *Proposal 3 Sketches* (Skinner, 2020.)

For my final proposal I have looked at using the Maserati A6GCS from 1953 and the Shelby Cobra from 1962 as inspiration for the front end of this design. The main thing to note is that it is not a

front engine car and is in fact a mid-engine sports car. This is something that I think will stand out from all the other sport cars out there.

Proposal 2 Developments

Developing the design, I focused on the body language of the car and left the details out so the shape can be developed.

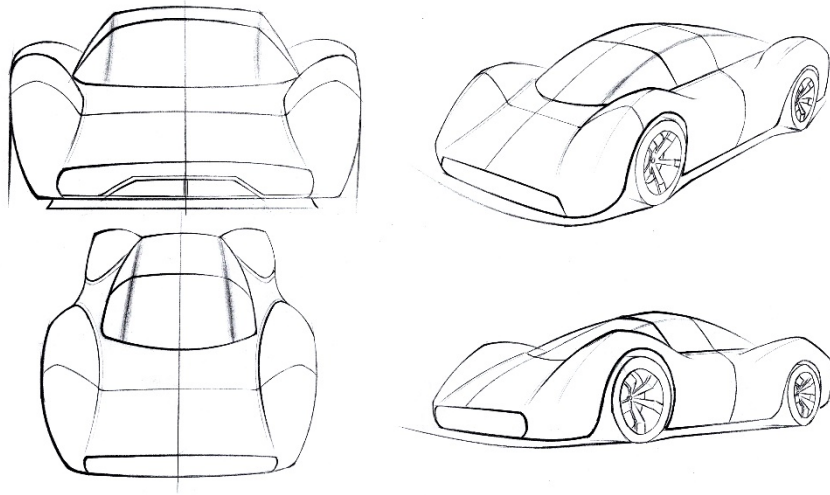


Figure 22: *Proposal 2 Development Sketches* (Skinner, 2020.)

Looking at the front of the car I will still need to do some futuristic styling using a new inspiration board to get some ideas. This will make the car more fitting for the year it will be released and yet still see the 1950's – 1960's inspiration in the design language.

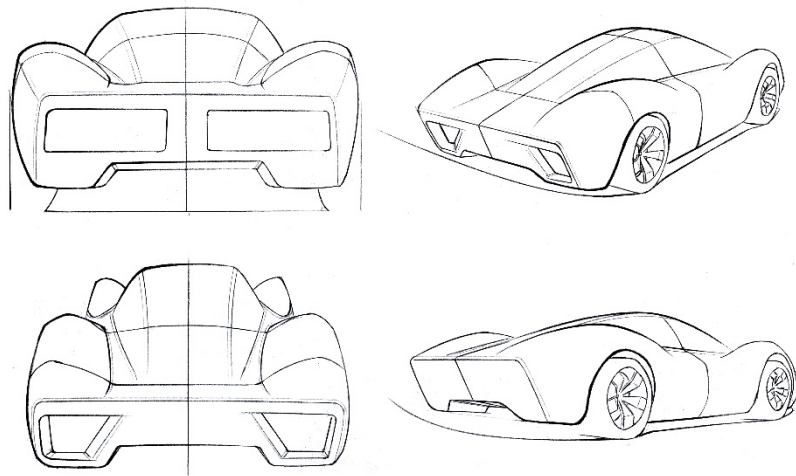


Figure 23: *Proposal 2 Development Sketches* (Skinner, 2020.)

In terms of the rear of the design, it is very similar with what I have said about the front, I still need to develop it further, still probably leaving out the details for now. Eventually being able to add the details in when I have a good base design language for the car.

Product Design Specification

Target Customer: Aimed towards people who admire classic cars, especially from the 1950's – 1960's.

Aesthetics: Design inspiration is based on 1950's – 1960's cars.

Ergonomics: 2-Seater mid-engine supercar.

Size: Height: 1024.4 mm, width: 1969.4 mm, length: 4086 mm.

Performance: Electric powertrain, 2200 HP from 4 electric motors (2 front, 2 rear).

Sustainability: Reusable/recyclable batteries.

Technology: Interconnected world created from advanced sensors, camera technology and being able to connect to the cloud.

Launch Date: 2050.

List of Figures

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