

Evaluative Report (M6X01244-CW2)

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Table of Contents:

- Introduction
- Design Developments
- Alias Modelling
- VRED Rendering
- Product Design Specification
- Conclusion
- List of Figures
- Bibliography

Introduction

My project is a way to bring back the design language from the 1950's and 1960's into the year 2050. The reason for choosing 1950's and 1960's is because of my survey which I conducted. The response for the question which decade had the best looking cars resulted with 1960's finishing top and the 1950's finishing second. I then wanted to try and fit this design language into the year 2050 where design restrictions could be relaxed more due to advances to the technology. One method being use of sensors and cameras being able to talk to other cars, the roads and traffic lights. This will enable a safer road by cars communicating to each other. If the driver cannot respond to risks fast enough the car will be able to do so for them and be able to reduce the risk of accidents massively. The engine choice will hydrogen due to what the advances in 30 years time could be and with it being researched to be better than electricity power in the future, especially in the sustainably area. My designs need to be safe for the driver and passenger while also giving the euphoric experience.

Design Developments

My design has gone through many developments to both try and give an original look to the car while also trying to make it fit into the year 2050. It has been a challenging task trying to fit a car into the future while trying to keep the old school 1960's design language as much as possible. I wanted people to be able to see the car and see that link to classic car design language link but see the car as being out of place either.

The start of the developing stage was slow, I felt like I restricted myself too much with trying to keep the design as a modern classic and not tailoring it too much towards the future.

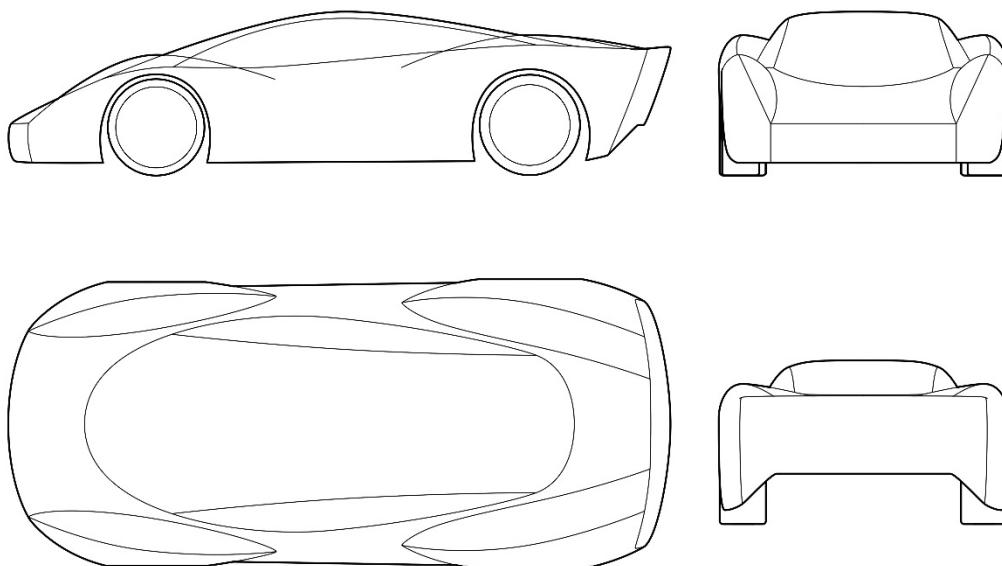


Figure 1: *Orthographic View V1* (Skinner, 2021)

This was the first orthographic view design which has been the base idea for developing my design. It was very basic at this moment which made it not fit the project as even though I do want my design to be fairly simple on the design features, I also want it to match the year 2050.

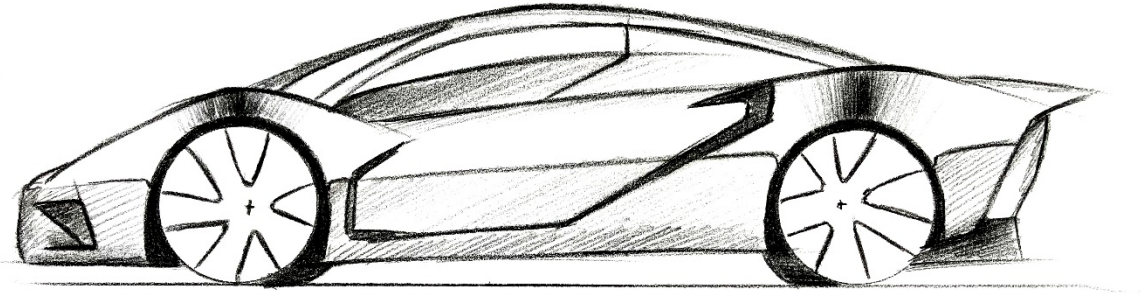


Figure 2: *Key Sketch* (Skinner, 2021)

This was the key sketch that really showed where my initial set of ideas could be expanded further to develop my design to be the best it can be and best to fit my project. With this I saw where I was limiting myself and where my design could be taken to be able to show off the classic design language in a future setting. Especially with the design of the side intake and that rear design showed where I can have a unique look in my design, but it still needed to be pushed further. Overall this gave a good example of having simple fundamentals in my design but being able to design them to look futuristic.

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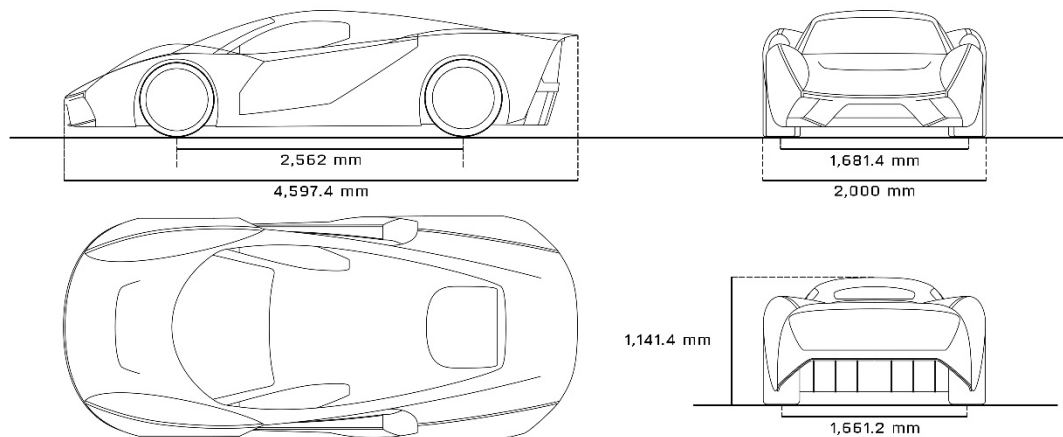


Figure 3: *Orthographic View V2* (Skinner, 2021)

This is the orthographic I developed after that key sketch trying to improve the look of my design. With the tweaks adjusted to the first orthographic, there is a big improvement all round. There were

still things wrong with this design, most to do with how basic a lot of design looked still. I see nothing wrong with having simplicity but a few of the features, mainly around the greenhouse area just did not match the rest of the design which needed to be adjusted. But to begin with, it was a good start with getting an overall feel for how my design was going to develop further.

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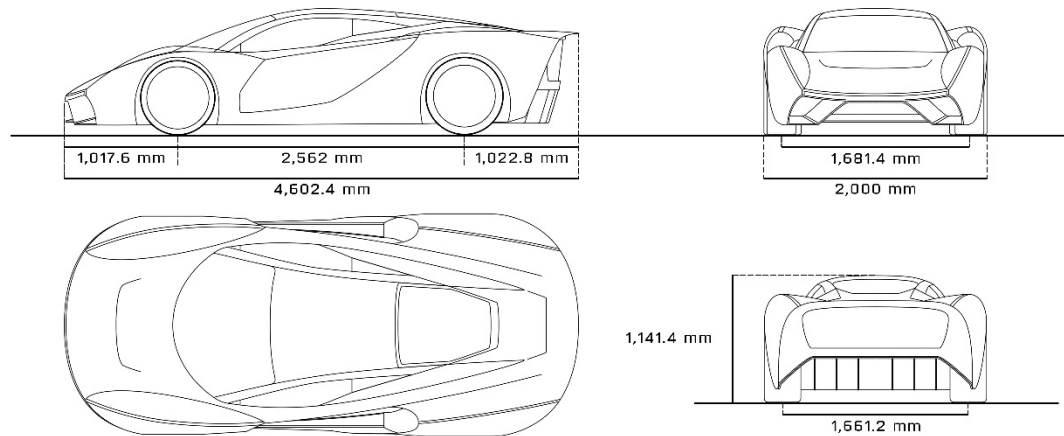


Figure 4: *Orthographic View V3* (Skinner, 2021)

This was the developed greenhouse to have it have some design to it rather than the basic window placements I had previously. The design still had some issues, the rear was now undefined and looked too bare to the rest of the car. Also even with the greenhouse development, it still needed further design changes to make even better. The rear lights and front headlights also needed to be added along with shut lines. Final looks on this orthographic make it look like the design is not all connected to each other effectively and even some parts are disconnected together. So my final set of developments will have a design that will flow from start to finish.

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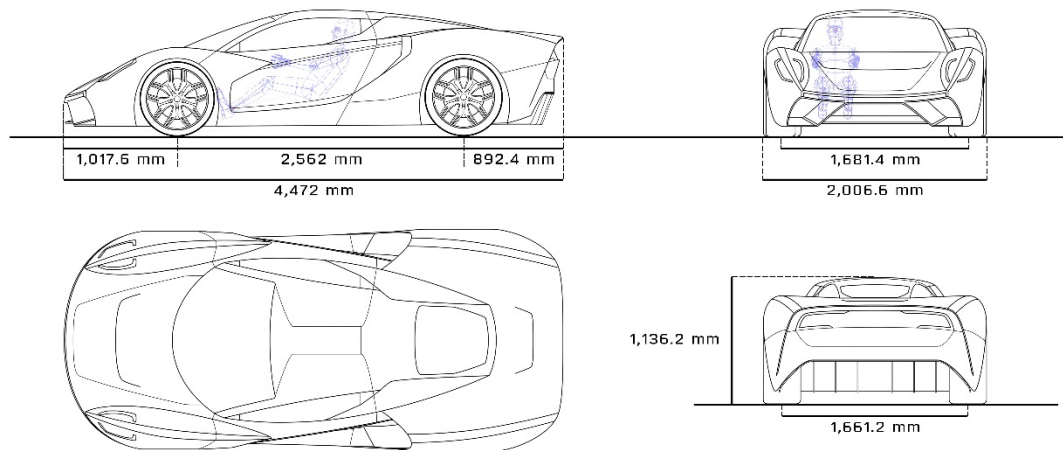


Figure 5: *Orthographic View V4* (Skinner, 2021)

This is the final design orthographic; it features a more detailed rear which also has an added feature, so it is not too simple and undefined. The greenhouse has been changed to be a bit simpler and more fitting to the rest of the car's design language. The headlight design was a tribute to the classic cars with their circular design, but I have decided to only section the two sides and have them as LED's. It adds to my design in such a way that it fits better to the year 2050 now and has a unique design to it. One thing that this new design also has from previous designs is the light catcher has been moved up so that it is visible on the side view and just generally better. It really did not do much for the design when the light catcher was out of sight, this change improves the design visually.

Alias Modelling

Alias modelling is not my strong suit but it is something I really wanted to try and do fairly well with. The start of my modelling was slow and was a process of getting back to grips with the software while getting in the block surfaces in so I can improve the surfaces after. I was just trying to get the basic shape in. This did allow for seeing any early mistakes and also getting to get a good wireframe for the block surfacing.

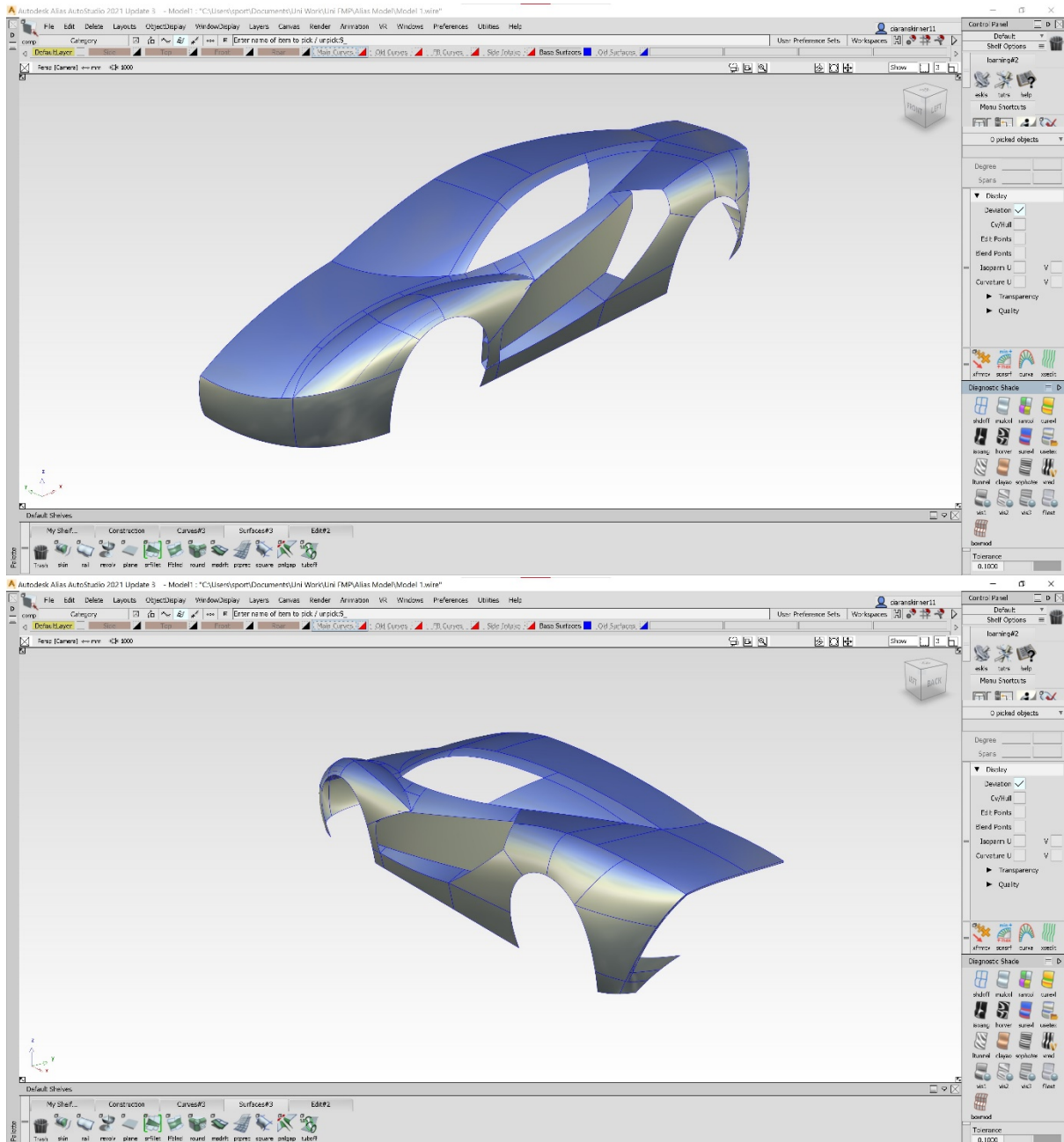


Figure 6 & 7: Alias Modelling - Front & Rear Perspective Views V1 (Skinner, 2021)

From looking at the design, you can easily see all the issues with the surfaces and the issues are kind of all over the car for the time being. But, since I am trying to just get in the main surfaces to see how it looks, it is not a bad start, but I do have areas to work on. My first aim will be trying to get curvature on the fenders so that they are lined up and that will help with developing the side of the car.

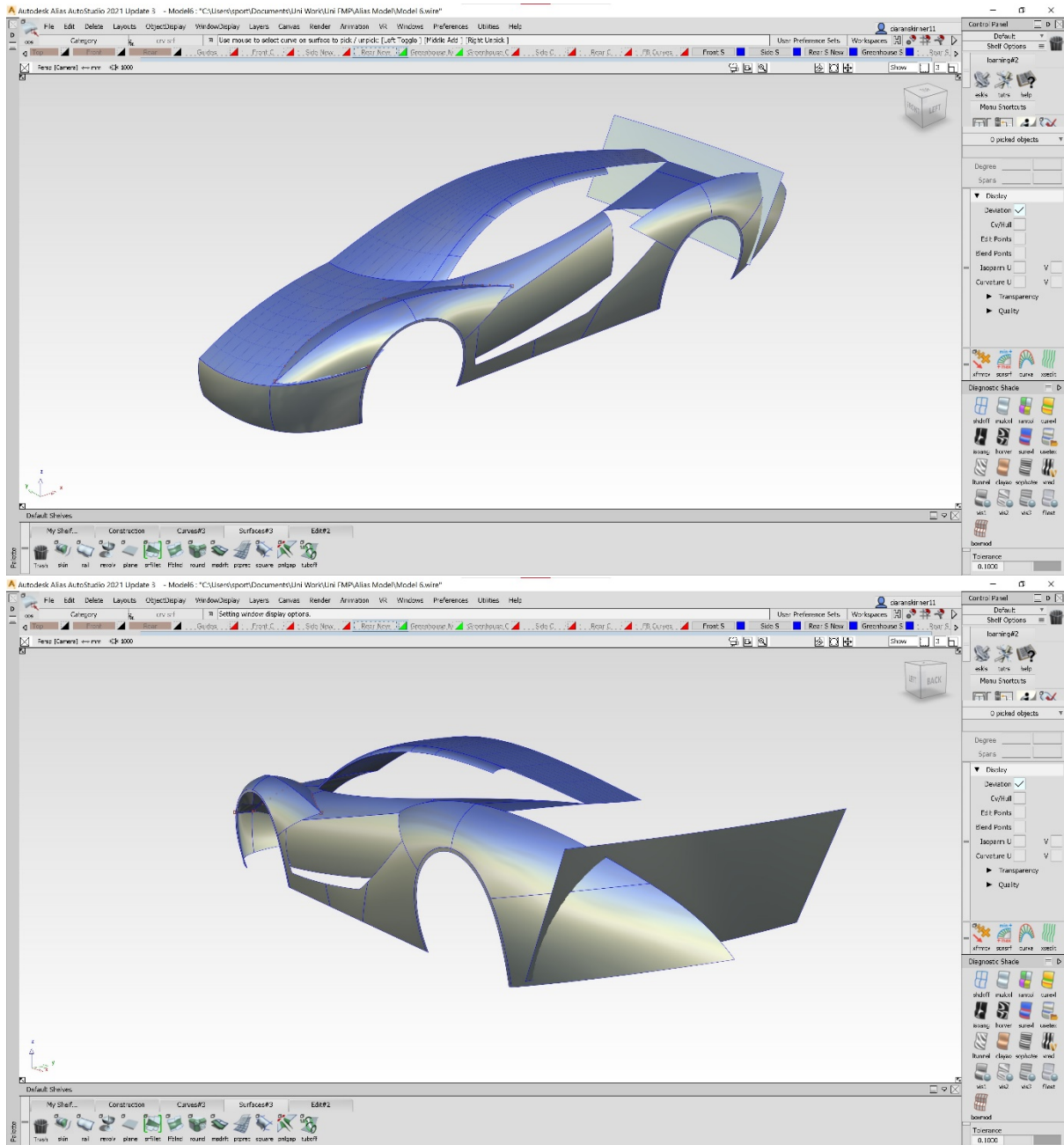


Figure 8 & 9: Alias Modelling - Front & Rear Perspective Views V2 (Skinner, 2021)

So, these images show the developed surfaces that are all over the car and my attempt to try and get curvature on them, mainly on the fenders. Getting curvature on the fenders allowed me to be able to develop the side surfaces to link better to the fenders. When looking at the zebra, the curvature continuity between the lower side surfaces and fenders are not great and will need to be adjusted. That plane surface at the rear was to get the edge of the rear lip to be all linked from the start rather than building separate surfaces and linking them through curvature. However, there was a problem with the front fender and how it connected to the bonnet/front bumper. It was just not in a place where it was going to be able to be filleted. So, I did need to figure out a way in which I can get the front fender and front bumper both filleted without issues.

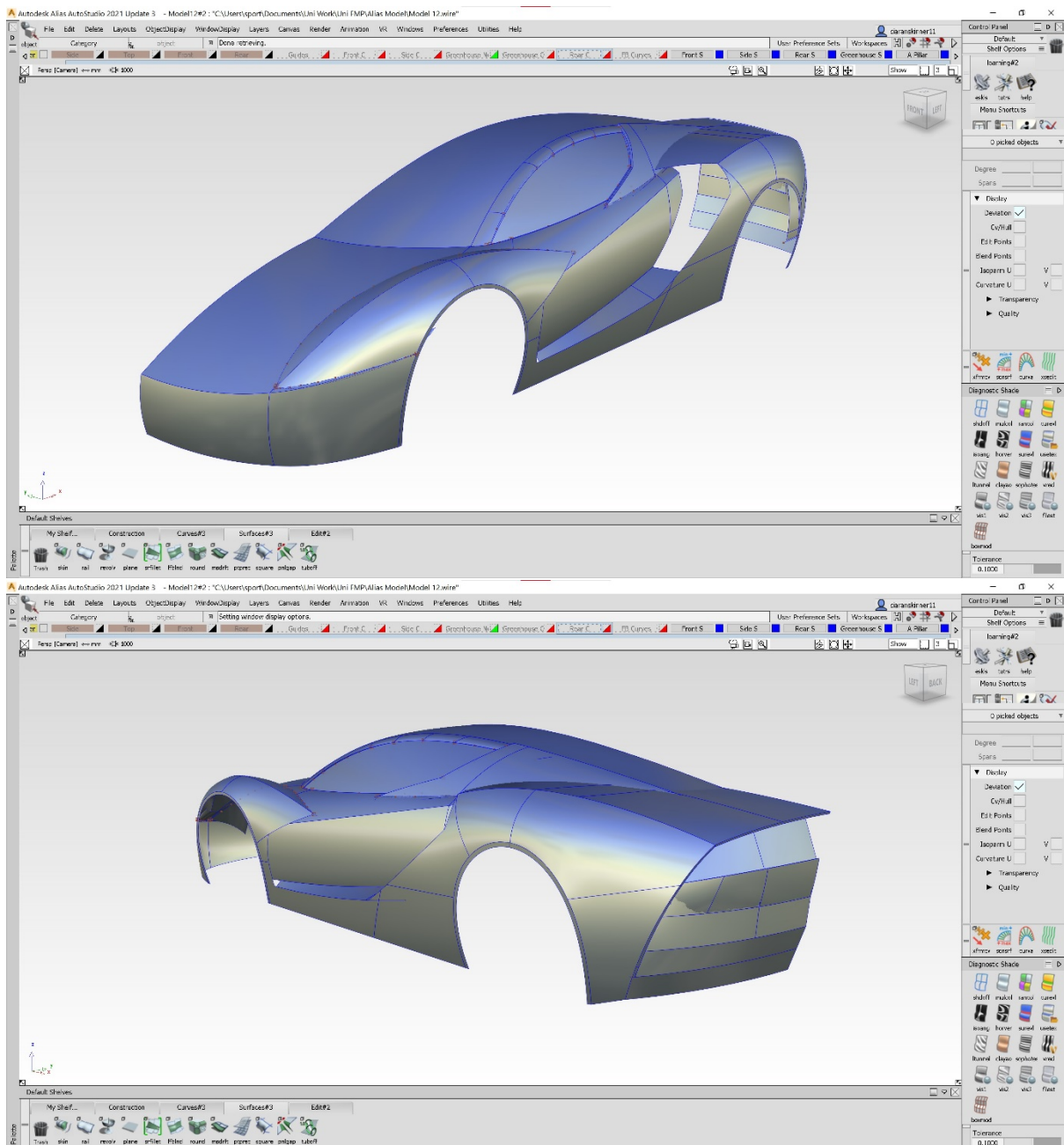


Figure 10 & 11: Alias Modelling - Front & Rear Perspective Views V3 (Skinner, 2021)

This the progression on the whole car, the front is pretty much the same as before, but the rest of the car had slowly been put together. The greenhouse had been added with the windows with basic intersection trims to connect them all. The rear has been blocked in very roughly which hopefully I can fix and make much better continuity between the surfaces. I blocked in a few surfaces on the rear to be able to match my design as I have the rear lip blending in with the rear bumper and it isn't the neatest of blends at the moment, but I can try to fix that when I try to fix the rear bumper in general.

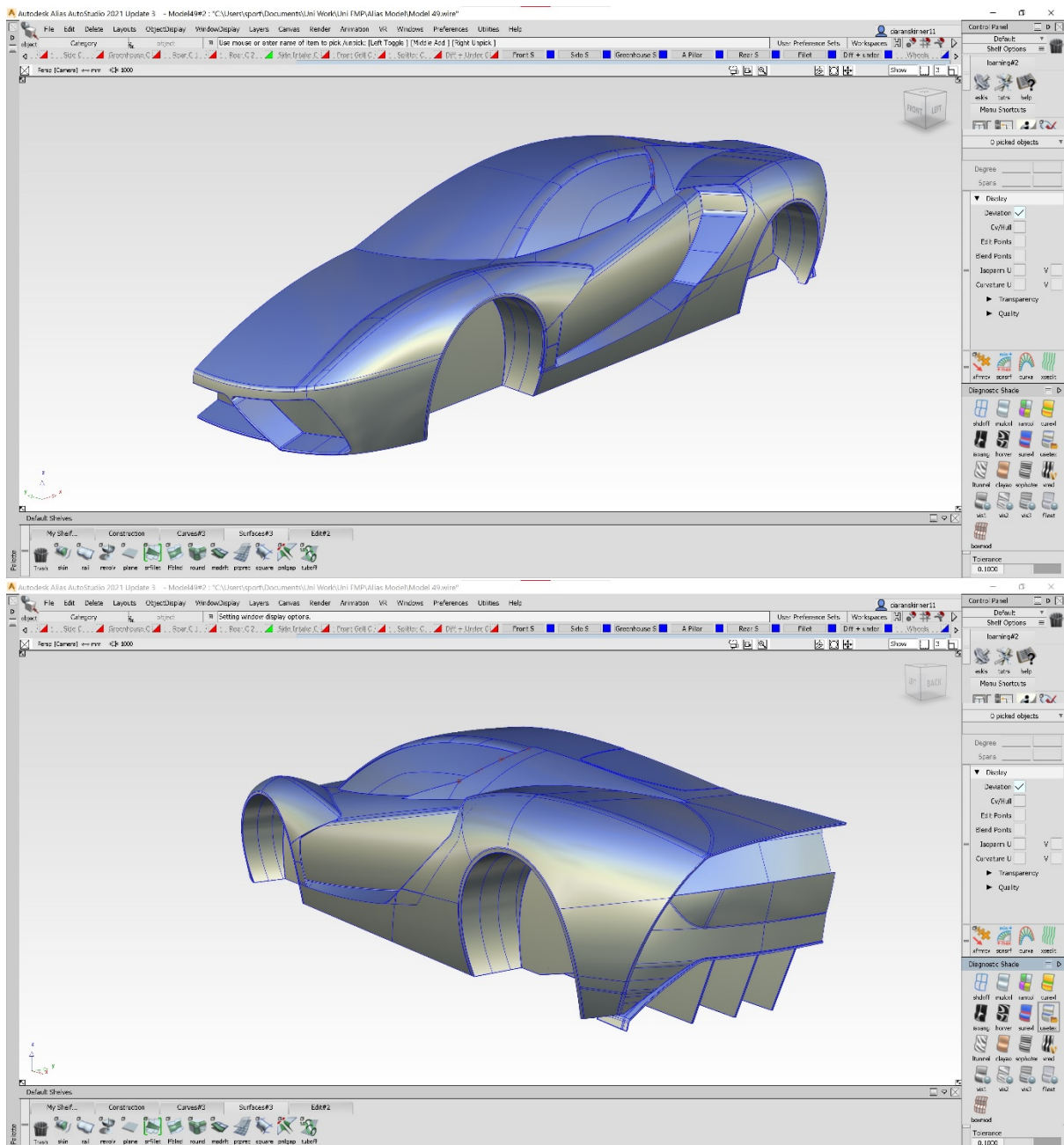


Figure 12 & 13: Alias Modelling - Front & Rear Perspective Views V4 (Skinner, 2021)

With a lot of tweaking and a lot of progression, the car really started to get put together. The front bumper had the intakes and was filleted to the front fender perfectly which was an issue before. The rear had been created and had a good amount of fillet added to it. Looking at it there are still issues with the rear being that in the bottom corners of the rear bumper there was bad curvature continuity due to my rear design and the number of surfaces I had created there. This is something that I would have to adjust when I next could to improve the look of my design. I was happy with the progress I had made with my design and on Alias as a whole, but there were design issues which was preventing some fillets and, I just did not like how the rear looked both design wise and also with the curvature continuity at the bottom. With this, I decided to start again with the surfaces to try and

improve the issues and, I did develop the design of the rear to both improve the aesthetics and better link it to the rest of the car.

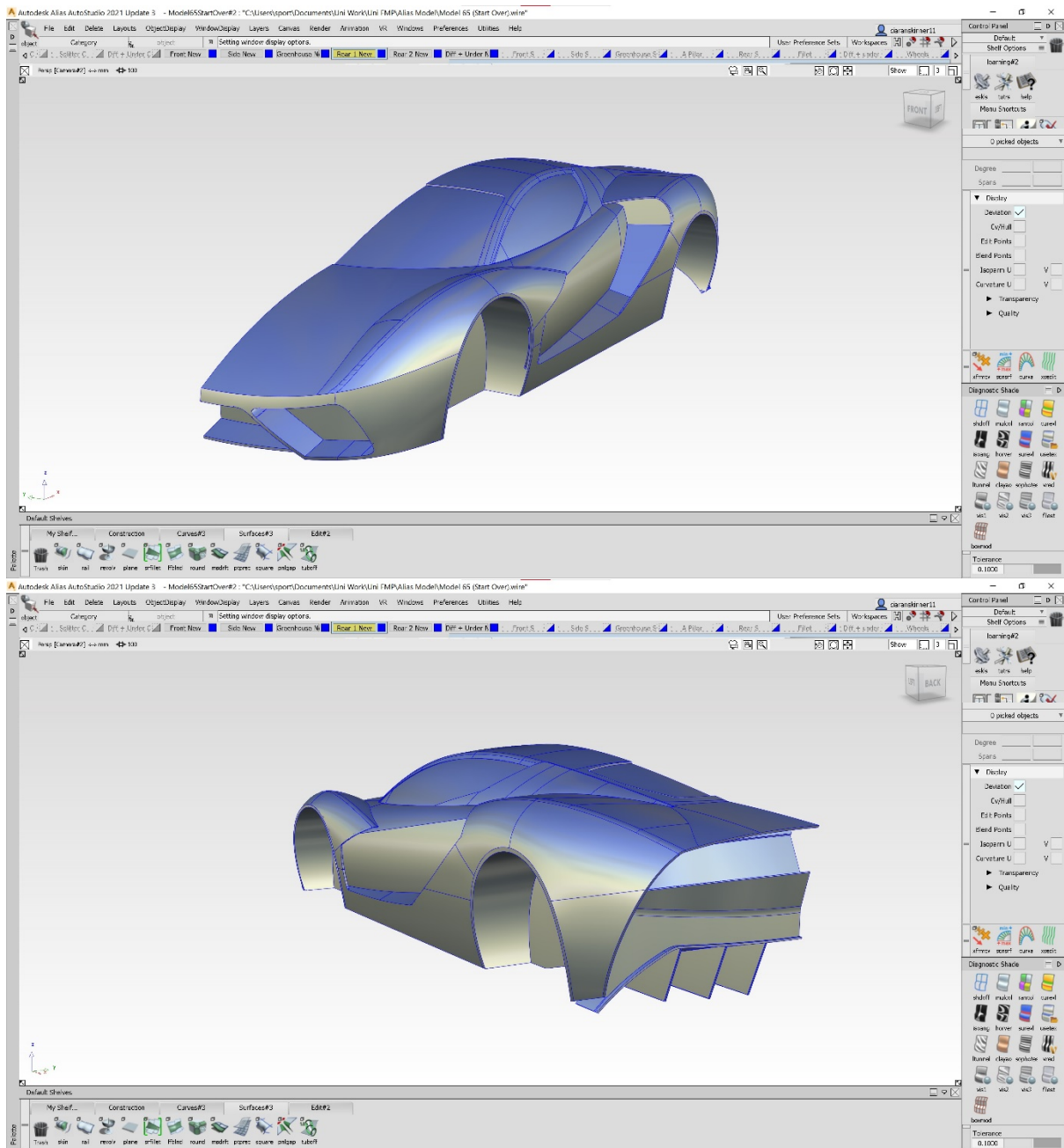


Figure 14 & 15: Alias Modelling - Front & Rear Perspective Views V5 (Skinner, 2021)

This is the result of starting the surfacing again on the model. My plan was to try and make it less complicated by using less surfaces where possible. So, all round it looks tidier with the surface layout, the curvature continuity is still there where needed also. With the design of the rear, I decided to not have it linked to the rear fender or have the rear lip transitioned into it like before. So, this design is much simpler, in addition to having less surfacing there in general. So, for the rear design feature I have decided to extend it to each edge of the rear and have a nice curve underneath that can be filleted. This design I think is much better than what I had planned before.

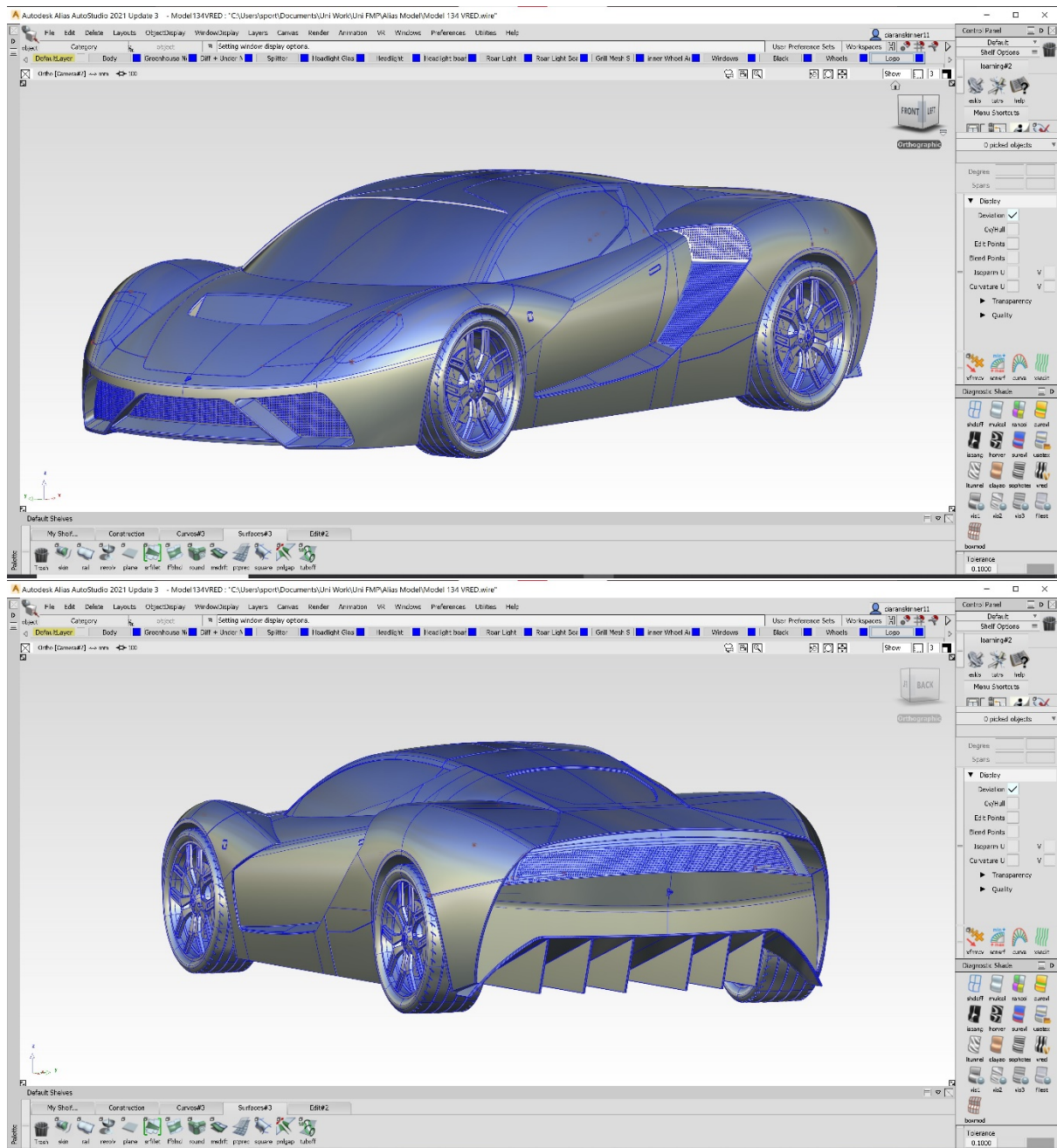


Figure 16 & 17: Alias Modelling - Front & Rear Perspective Views V6 (Skinner, 2021)

This is the result of my model. I got as many fillets in as I possibly could and got in as many details as I could also. I am happy with the result even though it can still be made even better. The grill mesh is an idea I got from seeing examples of classic cars from the 1960's era. No hexagon design just a simple grid of squares which added to the aesthetics of my design.

VRED Rendering

VRED was fun to use and get back into as you are able to appreciate your work better when you can start to see it in realistic environments. The environment I mainly used was the top of a car park

which had a good source of lighting from the HDRI for the selection of back plates that I had to choose from. I did have some other HDRI's to use as well but the end results did not seem to give off the same results as the ones from the car park, so I did decide to stick to them for the majority of the renders. I did use the studio lighting for some basic renders and also one which was in a dark city scene which came off pretty well also.



Figure 18: *VRED Render 1* (Skinner, 2021)

This is possibly my favourite render from the selection that I produced. It caught the lighting very well and just all round gives off a good realistic look of my car in an environment. The only issue with having an image like this is that even though it does look good, the light is behind the car, so all of the car you can see is darkened by the shadows. Beside that I was very happy with this image, but I did have to make some from the other side so that the light was behind the camera for a better look at the design.



Figure 19: *VRED Render 2* (Skinner, 2021)

This is a render from the other side showcasing the design under the light in comparison to the other image. I went for a low down angle to give off the low super car atmosphere and something of luxury about the car. The lights at both the front and rear of the car glow and allow for reflections around the car and potential glares. The diffuser is a bit dark and does blend in with the shadow a bit but then the diffuser is a dark colour to begin with since the material is carbon fibre. It also appears dark due to the HDRI background being the beginning of a sunset, so a lot of the light is from a lower angle. All round I am also happy with this outcome and making the car white helped with seeing how the car looked in different colours. I also used the colour red for some renders, mainly the studio lighting as I had a large influence in this design from the Ferrari P4 and Alfa Romeo 33 Stradale. Both of those cars are icons and they're best known in the colour red, so it seemed fitting to try some of my renders in a metallic red.

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 hydrogen powered supercar.

Size: Height: 1144.6mm, width: 2002mm, length: 4477mm.

Performance: Hydrogen powertrain.

Sustainability: Reusable/recyclable batteries, hydrogen fuel and zero emissions.

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

Launch Date: 2050.

I have chosen a hydrogen powertrain mainly because in 30 years time the hydrogen powered infrastructure will increase in size. In addition to this, hydrogen can be fully made sustainably and with renewable sources in comparison to electricity. In 30 years time hydrogen powered technology will be much more evolved also so they will be able to deliver more power to the car and have the hydrogen last much longer on a car's journey.

The dimensions have changed from before because in the manifesto they were a rough guide and now they are accurate to the alias model. So, the measurements have not changed a drastic amount but they had still changed, so it is now 400mm longer, 100mm taller and 200mm wider than the previously specified PDS.

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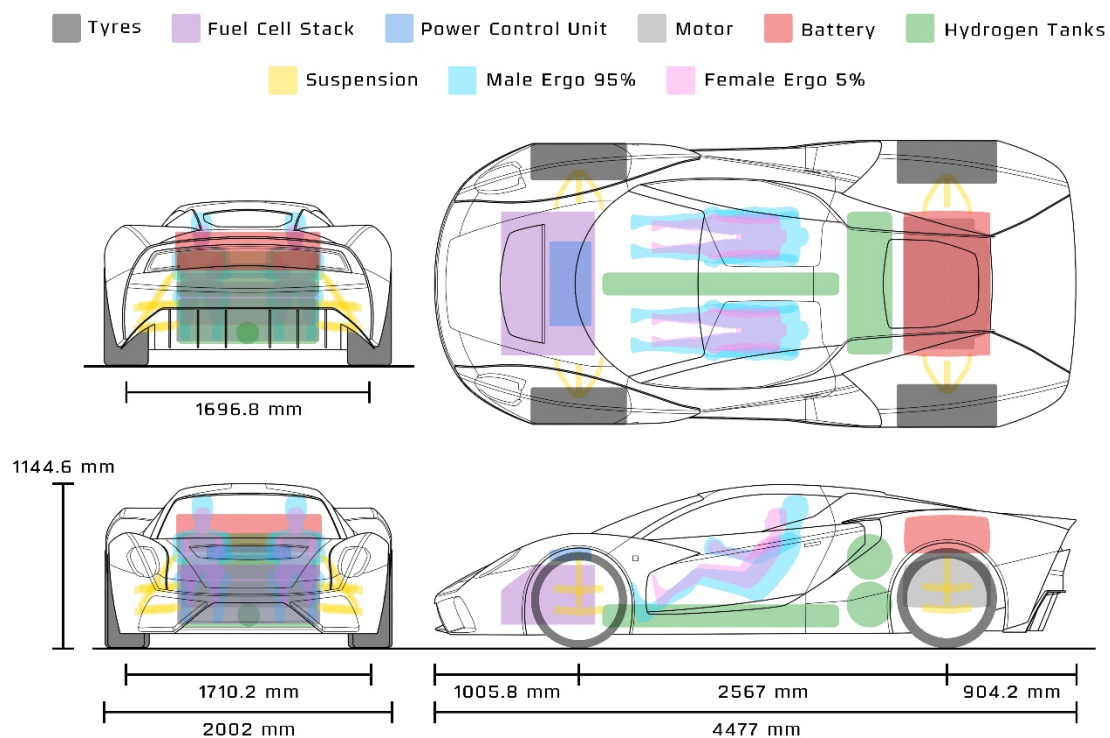


Figure 20: Package Drawing (Skinner, 2021)

Conclusion

My project this year has been fun, and I have created a design which I feel has a nostalgic feeling to it along with showcasing a future development of classic cars design language. I have been happy with the developments to try and push further the design possibility and keeping it unique while

keeping an old school feel. I feel as though I creativity within the design could have pushed further but on the other hand, I also did want to keep it fairly simple so you could recognise the classic car influence.

Creating the model on Alias Autostudio felt a bit easier than previous years by having a better understanding of the software. In addition to this, I did spend a lot of time on the program just trying to get the best model outcome as possible. Which even included restarting the model halfway through the modelling process to rethink and rework areas of the model which needed both design and surface improvement. After a lot of hard work being put into the 3D model, I got to the final model which I am happy with and I feel like my skill level with Alias has improved even if I do not think I am still the best at using the software yet.

As for the VRED renders, I am confident using this software as I have previously stated and find it quite fun to use. Being able visualise digitally the final model in a realistic environment is great. The final renders came out great especially by downloading some good HDRI's and backplates in preparation for those renders.

List of Figures

Skinner, C (2021). (Figure 1) *Orthographic View V1*.

Skinner, C (2021). (Figure 2) *Key Sketch*.

Skinner, C (2021). (Figure 3) *Orthographic View V2*.

Skinner, C (2021). (Figure 4) *Orthographic View V3*.

Skinner, C (2021). (Figure 5) *Orthographic View V4*.

Skinner, C (2021). (Figure 6 & 7) *Alias Modelling - Front & Rear Perspective Views V1*.

Skinner, C (2021). (Figure 8 & 9) *Alias Modelling - Front & Rear Perspective Views V2*.

Skinner, C (2021). (Figure 10 & 11) *Alias Modelling - Front & Rear Perspective Views V3*.

Skinner, C (2021). (Figure 12 & 13) *Alias Modelling - Front & Rear Perspective Views V4*.

Skinner, C (2021). (Figure 14 & 15) *Alias Modelling - Front & Rear Perspective Views V5*.

Skinner, C (2021). (Figure 16 & 17) *Alias Modelling - Front & Rear Perspective Views V6*.

Skinner, C (2021). (Figure 18) *VRED Render 1*.

Skinner, C (2021). (Figure 19) *VRED Render 2*.

Skinner, C (2021). (Figure 20) *Package Drawing*.

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