

# *Wine Rack*

*Anysia Hopkins 1203*

## Context:

### Who am I targeting?

My target market is males and females from the age of 18 upwards. Anyone below the age of 18 wouldn't be able to purchase alcohol and so the product wouldn't be suitable for that age group.

### What's the problem?

Current wine racks which are available aren't very aesthetically pleasing and are made just to do the job. I want to create a product which is also a piece of art and is something to look at as well as function as a wine rack. This means the product is multi-functional and becomes a statement piece for the buyer that guests will comment on when it's seen.

### What does it need?

It needs to be able to hold at least 4 bottles of wine, if not more. It needs to be innovative and original in its design so that it's eye-catching to users. It needs to be anthropometrically suitable to the majority of users so that it's comfortable to use and suitable for the widest target market possible. Anthropometric and ergonomic data will be key in designing this product so that it's functional to use as well as being aesthetically pleasing. One of the most important requirements for the product is that it's safe for users to use without risk of injury or harm.

### Key Issues:

The main key issue with the production of this product will be getting it made cheaply without exploiting labour and with as little environmental issues.

# Product Brief

### Brief:

I'm going to be designing a Wine Rack which can hold at least 4 bottles of wine if not more. The design should be unusual and eye-catching and form as a multi-functional product, both as a wine rack and piece of artwork.



### Manufacturing Process:

The product needs to be made with as little impact on the environment as possible, this means using recycled or low carbon materials. Preferably, if it's possible, I would try to make the product within the UK meaning there would be a lower impact on the environment due to the reduced carbon footprint because of less transport.

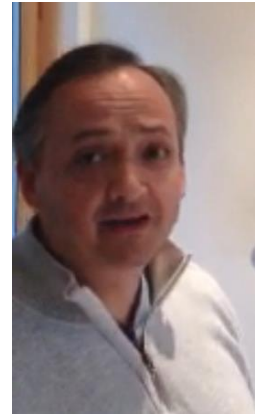
The product also needs to be viable to produce and sell. It needs to be relatively cheap to produce in order to sell it at a reasonable cost to my target market whilst still making a profit.

### Client:



Name: Linda Hopkins  
Occupation: PA  
Hobbies: Entertaining

### Expert:



Name: Ric Galvez  
Occupation: Business owner

### Research:

In order to gather the appropriate information to produce my product I will need to conduct some research into existing products and also manufacturing techniques. Visiting shops which stock wine racks to view them first hand might also provide some valuable insight.

### Marketing:

Throughout my project I am going to have to consider the marketing aspects on my design. Including details such as; a name for the product, its brand image, how I'm going to make consumers aware of my product and where the best place to advertise my product effectively would be. These marketing considerations could potentially affect the successfulness of my product as it may determine how many of the product are sold. Therefore it is key to get the marketing for the product right.

# Information, Inspiration and Influences



“Slimline wine rack” £26.95 – Amazon.

This product is good as it's not a bulky object and holds a large amount of bottles.

The downside is that it's not very eye-catching or interesting to look at.



“Vineyard wine rack” £90 – pack & rack.

This product is much more eye-catching although I believe this could still be improved as there isn't much to look at. It's also very highly priced for something which could be similarly replicated at home.



“6 bottle aluminium wine rack” £49.99 – Amazon.

This product is good as it can be fixed to a wall and so doesn't take up floor space within a kitchen. The downside is that again it's a rather simple design.



“Rotatable wine rack” £12.99 – Amazon.

This product is eye-catching and is almost like a work of art at the same time. The downside I would say is that it looks a little over clustered.



“Bamboo 3 bottle wine rack” £8.00 – Tesco.

I like this product as it's something unusual yet simple. It's not really that eye-catching too look at but it's cheap to produce and sell on.



“Techstyle wall wine rack” £19.99 – Tesco.

I like the fact this wine holder can be fixed to the wall according to the users height and that it incorporates the glasses into it as well. The negative is that it only holds one bottle.



# Information, Inspiration and Influences

## Analysis of existing products;



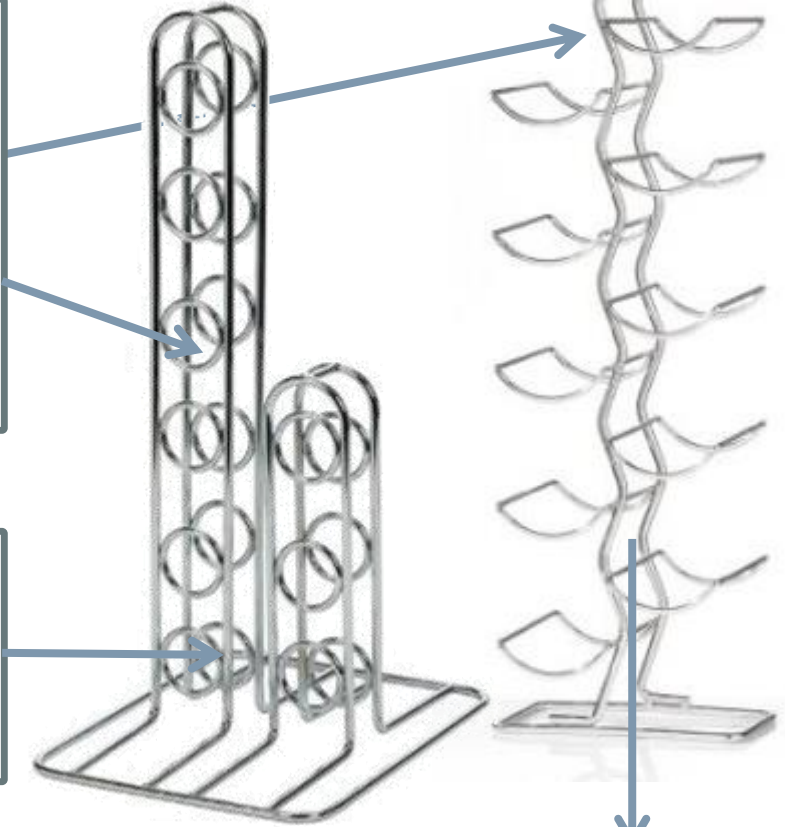
Holds a decent amount.

Unique to look at.

Easy to produce.



Unusual but still stores a large amount of bottles. Would take up a lot of room however.



Different in its design and easy to make due to one material.

Easy to manufacture. Low environmental impact.



Holds a large amount of wine bottles.

Unusual and innovative.

Simplistic yet eye-catching. Not complicated.

Could be made from recycled materials.



Easy to produce and holds a lot of wine bottles. Not eye-catching though.

Expensive to produce out of solid aluminium. Funky design though.





# Information, Inspiration and Influences

## Detailed first hand product analysis;



This is a wine rack which we currently have at home. It is able to hold up to 4 bottles of wine and is a free-standing product.

The video below shows my analysis of the product and where it is in need of some improvements.



Click to Play

Strengths	Weaknesses
The product is able to hold 4 bottles of wine which is a decent amount for a wine rack intended for home use.	The wine rack would benefit from being able to hold more than 4 bottles of wine ideally.
The product holds the bottles in an unusual and unique way which is more eye-catching to the user.	The product is rather boring to look at except for the spindles around the wine. Incorporating these into another design might create a better solution.
The product is strong and durable and would securely hold the bottles of wine.	The product is free-standing and so takes up a lot of floor space or kitchen unit space. It would be better if it were able to be fixed onto a wall to reduce this problem.

## Product Summary;

Overall the product is reasonably effective and is a viable product in order to produce profit. The design itself is quite simple and the main feature is the spindles around the wine bottles. I really like this design feature and may incorporate it into part of my own design. However, apart from that one feature the rest of the product is very boring and not very eye-catching. It's also designed to be a free-standing product which takes up a lot of floor space. I would have developed this product to be fitted onto a wall instead and then it would reach a wider target audience for people with smaller kitchens/ dining rooms, such as people who live in flats.

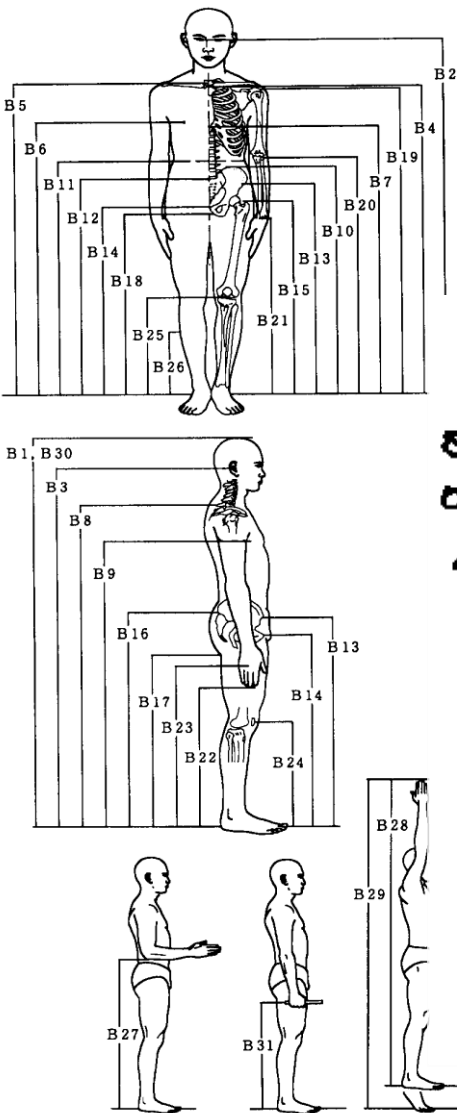


# Information, Inspiration and Influences

## Anthropometrics:

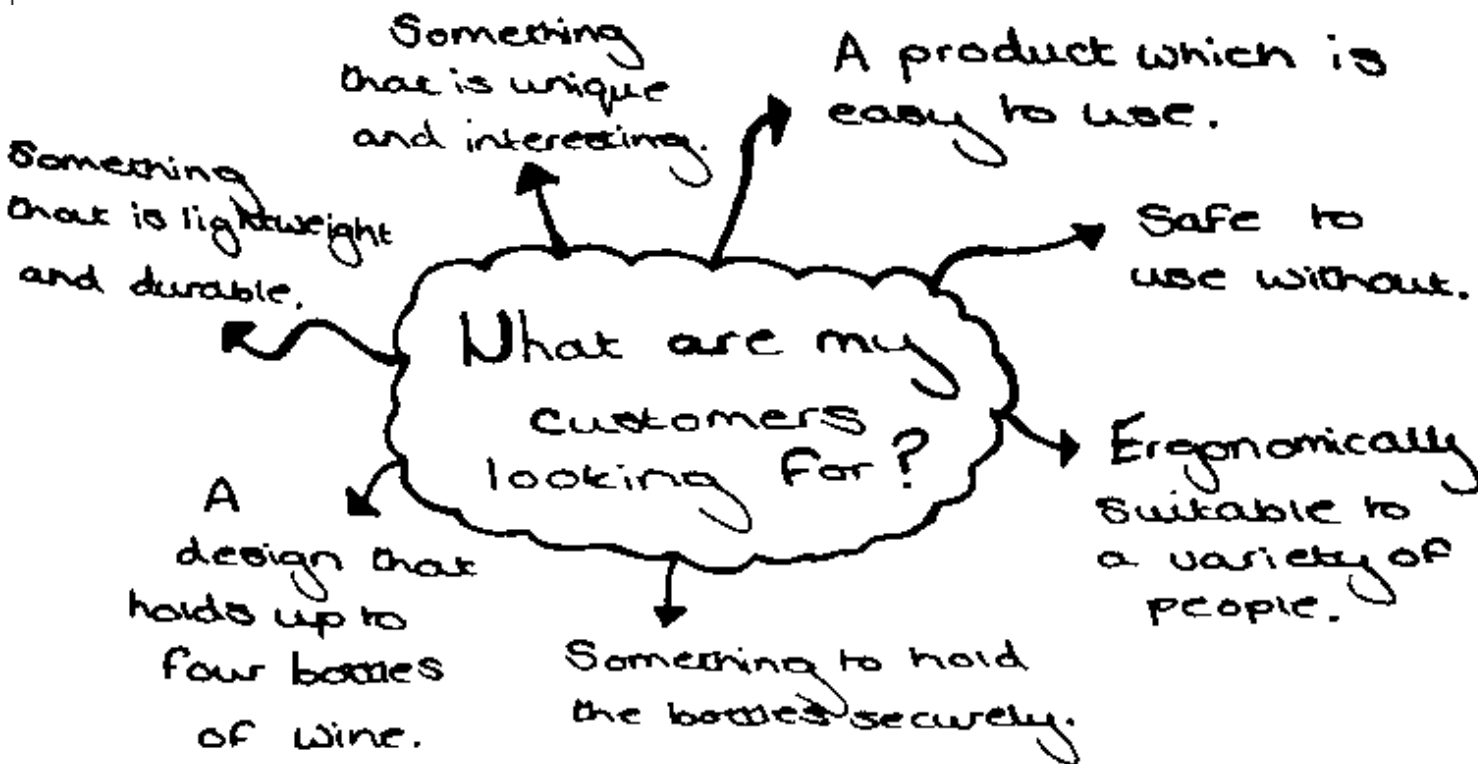
Depending on the design of my wine rack I may need to take into consideration a persons height, for example, If the wine rack was designed to be fixed to a wall. This data would also be needed if it was a free standing product on the floor.

Anthropometric data uses percentiles, data within the 50<sup>th</sup> percentile is the average and so for my product I will be using data from the 50<sup>th</sup> percentile in order for the product to be suitable to majority of people.



## Customer Needs:

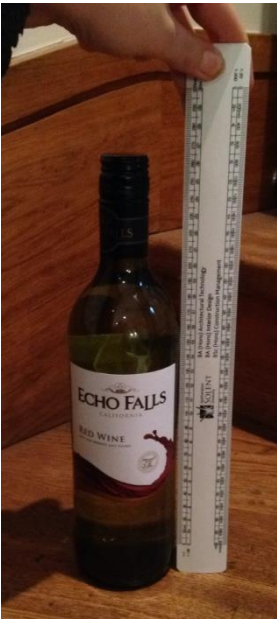
I asked my client what were the most important things my product needs to be/have and a basic summary of the points raised can be see below. I will then incorporate these into my specification;



## Material Research:

From the research I have conducted on existing products and from talking to potential buyers, I have found that my product needs to include the following. It needs to be relatively light weight and easy to maintain. It needs to be strong and lasting

The images below show me measuring a wine bottle to find out the minimum measurements I'll need for my designs.



Persons Name	Shoulder height (cm)
Tessa Brown	135
Harry Castle	154
Alice Walker	147
Kate Wise	143
Average Height:	144.75

Click to Play



# Design Specification

## Aesthetics:

- The design should be attractive and eye-catching to my target user so that they will purchase my product. This will involve selecting appropriate colours for the design and bearing in mind the appeal to both genders.
- The product should fit in with current style trends whilst still being a unique product in some way.

## Cost:

- The product should be made as cost effective as possible. Current prices for wine racks vary considerably in price depending on materials, style and size. Usually between £10–300. I would aim for my product to be priced at towards the middle part of the scale so that my product isn't deemed as “cheap” but doesn't limit my target market. Cost will inevitably depend on the selection of materials and design.
- If the product were to be made it should be made as locally as possible in order to keep costs reduced and also to have a lower environmental impact.

## Weight and Size:

- The product should meet a set size throughout the project which is suitable for my target client and the majority of other users.
- The product should be able to hold standard sized bottles of wine and so will have to meet this measurement.
- The product shouldnt be too heavy as it could be fixed to a wall. This means a certain weight will have to be decided on.

## Environmental Issues:

- The product should have as little impact on the environment as possible. To do this as few materials should be used in the production of the product as possible and during the manufacturing process waste should be kept to a minimum and what's left should be put into recycling.

## Function:

- The product must meet its function in being able to hold bottles of wine within the design.
- It must have a purpose other than just holding bottles of wine – Multifunctional.

## Materials:

- The materials used should be durable so that product is long lasting.
- The materials will also need to be strong enough to hold a set number of bottles of wine.
- The material should be

## Target Market:

- This product must be suitable for a variety of users, both genders etc.. In order to get a large target market and make my product more commercially viable.

## Anthropometrics & Ergonomics:

- The product needs to fit into the 50<sup>th</sup> percentile of any data used in order for it to be suitable for the majority of people.
- As for Ergonomics, the product mustn't cause strain to the user and must be comfortable for them to use/ access.

## Manufacturing:

- The product needs to be able to be locally manufactured in order to have a low carbon footprint.
- The product should have as little impact on the environment and use recycled or sustainable materials when possible.
- Manufacturing processes should be kept to a minimum to keep a low coast and reduce environmental impact.

## Safety:

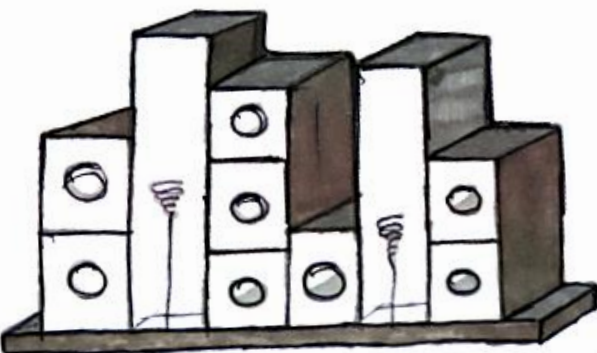
- The product should be safe for users to use so that avoidable injuries are prevented.
- The product shouldn't contain any loose screws or parts that could fall off and children could get hold off.

## Commercial Viability:

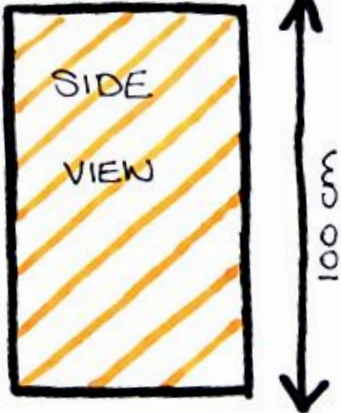
- The product must me manufactured at a cost which makes it viable for it then to be sold retail at a reasonable price to consumers.
- The product needs to have a unique selling point in order for it to be marketable and for it to be commercially viable to make over products which already exist and are on the market.



# Design and Development

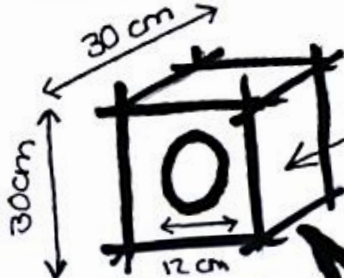


Different view points of the design;



- This is my first initial rough design sketch for my wine rack. It's capable of holding up to 10 bottles of wine.
- 8 of the bottles sit in the enclosed shelves and the other 2 bottles sit in the spindles.

## MEASUREMENTS:



- Close up view of the individual cube.

## DEVELOPMENT:

- Rather than having a fixed design the cubes could be moveable to become unique to that person.



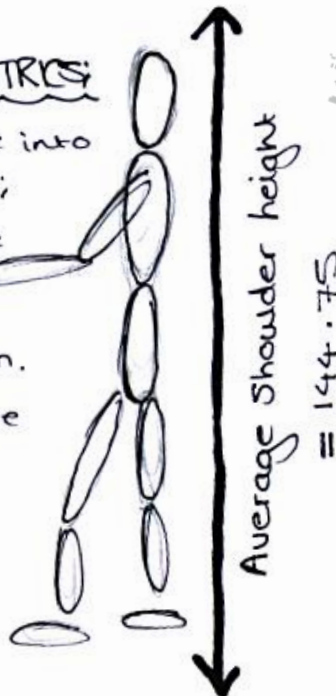
## FIXINGS:

- The product will need hooks to attach it into the walls.

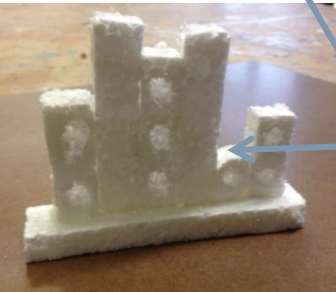
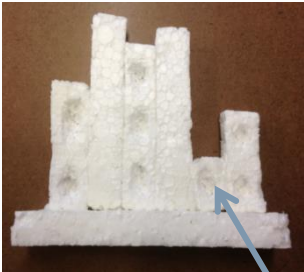


## ANTHROPOMETRICS:

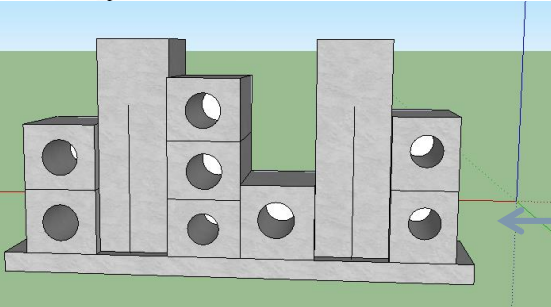
- I need to take into consideration;
- The average users height.
- Wrist strain.
- Size of the overall product.



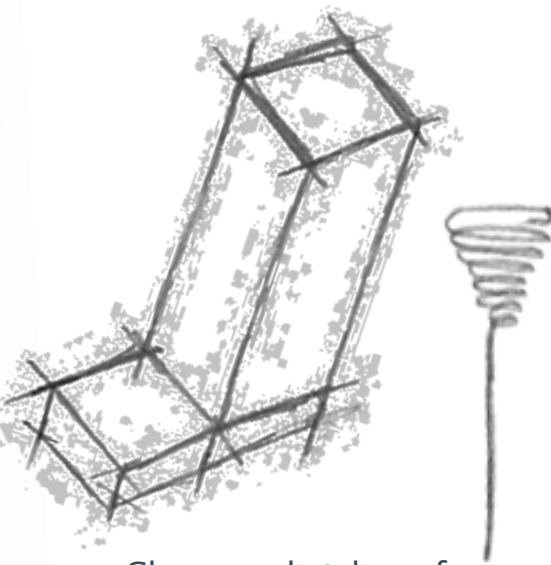
The design is fixable to a wall and so makes the product more versatile and suitable to a larger amount of people as it can be fixed at a variety of heights.



As well as modelling the design quickly in person, I decided to model in on sketch up to get a better and more accurate view of what they product would look like if it were to be produced.



Design inspiration



Close up sketches of parts of the design.

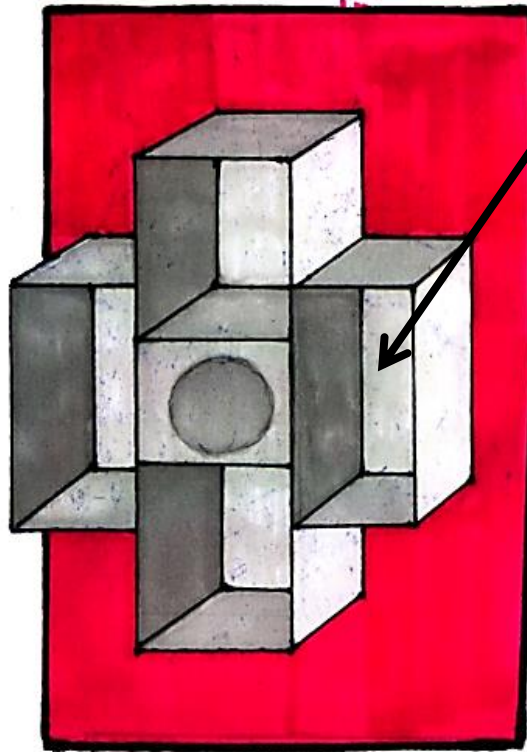


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These are some rough models which I produced to see whether the product would be feasible to produce and to see how it looks in a 3D model. The concern which has been highlighted from modelling is that the design is very top heavy and might cause issues when it needs to be fixed to a wall. Weight consideration would have to be taken into account

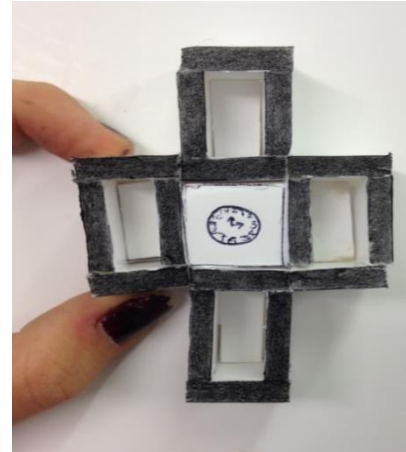


# Design and Development



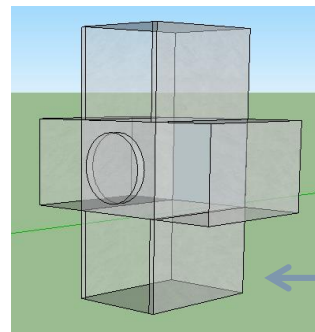
This design is capable of holding up to four bottles of wine. As well as being functional it's unusual and aesthetically pleasing by featuring a clock in the middle.

The bottles of wine sit in the four shelved sections around the clock. The areas are enclosed, apart from the opening at the front, so that the wine bottles are sat securely.

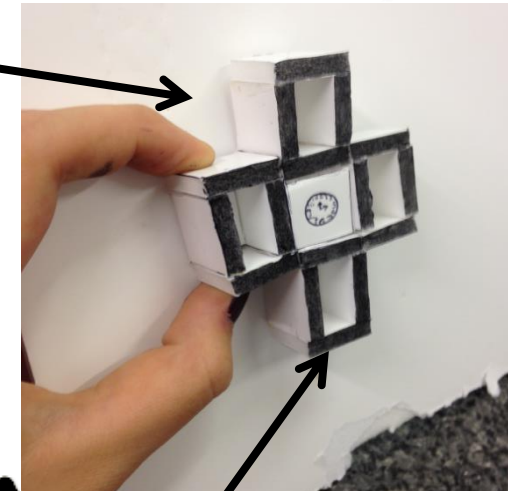
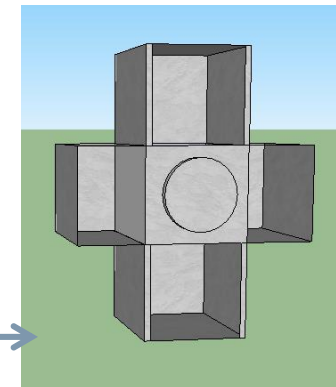


This is a quick model of my design. I modelled it using cardboard foam as this was the quickest and simplest way to check whether my would be feasible.

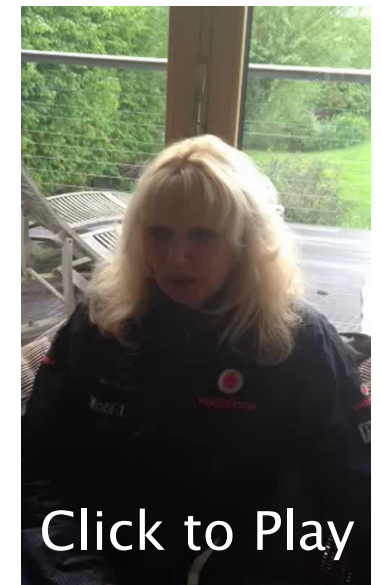
The modelling highlighted that, depending on the materials chosen, probably pine, it could potentially end up quite a bulky product.



CAD modelling using Google sketch up.

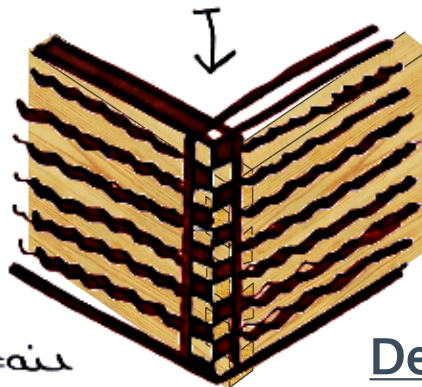


How the product will look sat/positioned on a wall.

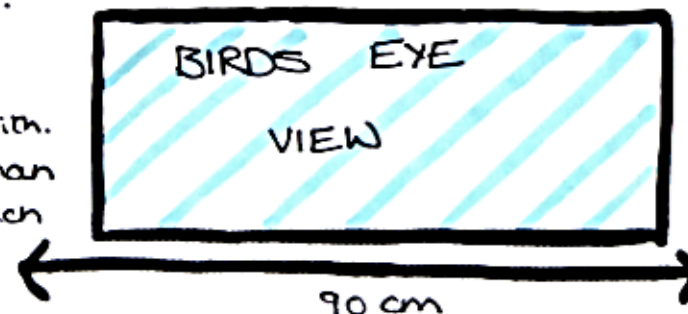


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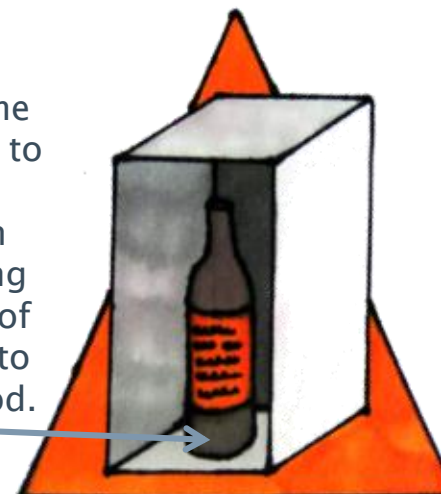
Dovetail Joint



The wine rack would be made from pine. This material is readily available and easy to work with. It's also cheaper than using a wood such as oak.



60 cm



## Development of design:

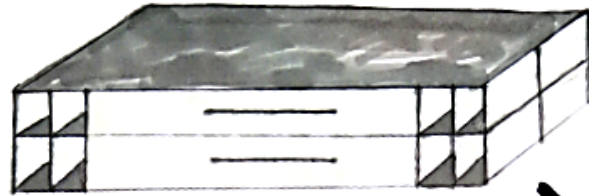
To develop this design I would consider changing the material it was made from. I would want the bottles to be visible so perhaps using a material like acrylic which can be seen through might be a better option for my product. I would have to make sure that using acrylic would be equally as strong as pine. The use of acrylic also has a higher environmental impact due to the use of oil compared to the sustainable pine wood.

Dovetail joints are very strong and neat looking.

In terms of ergonomics and anthropometrics, the design is ergonomically suited to a variety of people. This is because the design can be placed on the wall at the desired height for the user and so in turn won't cause any stretching or straining to the user as it will be fitted to their own requirements.

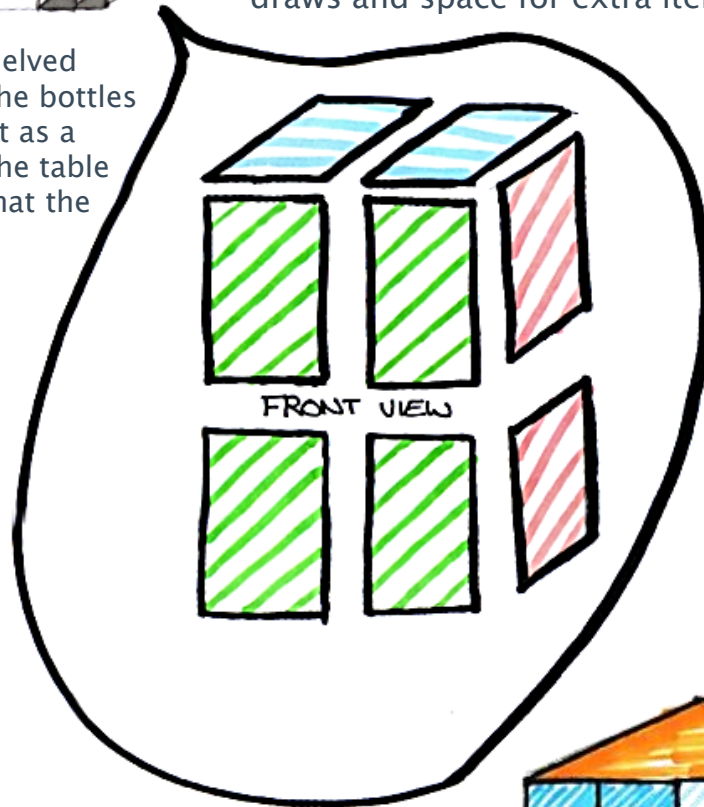
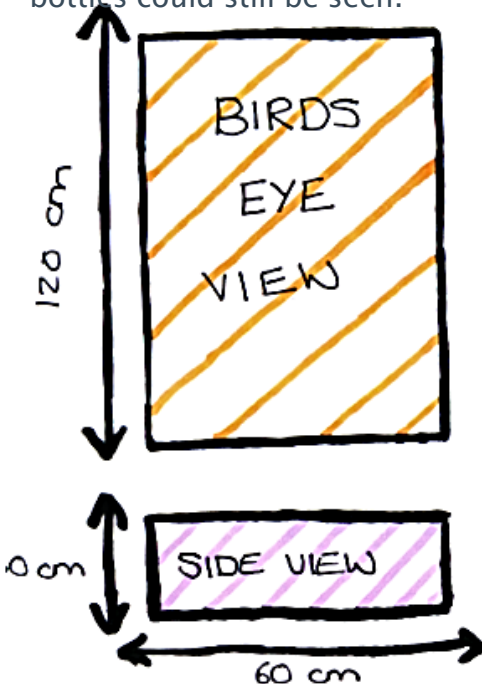


# Design and Development

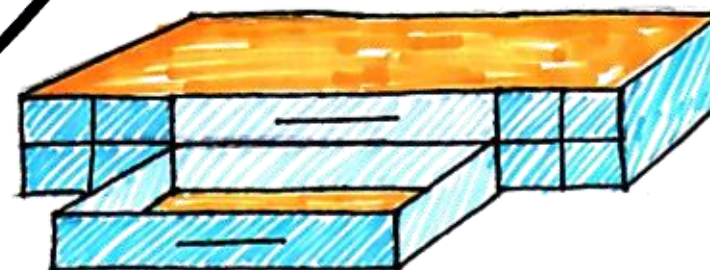


This is my third design for a wine rack. This idea combines a wine rack with a coffee table and so has two functions as well as being almost like a piece of art to look at. This product is capable of holding up to 16 bottles of wine as well as having draws and space for extra items.

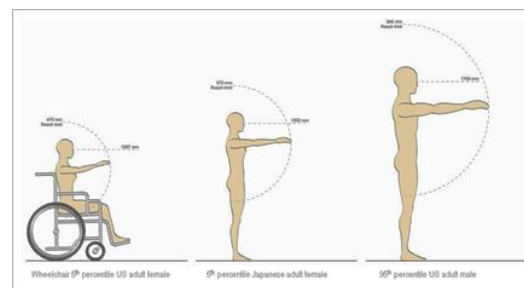
The bottles of wine would sit in the shelved sections laying down on their sides. The bottles would be enclosed to protect them but as a development to my previous design, the table would be made from clear acrylic so that the bottles could still be seen.



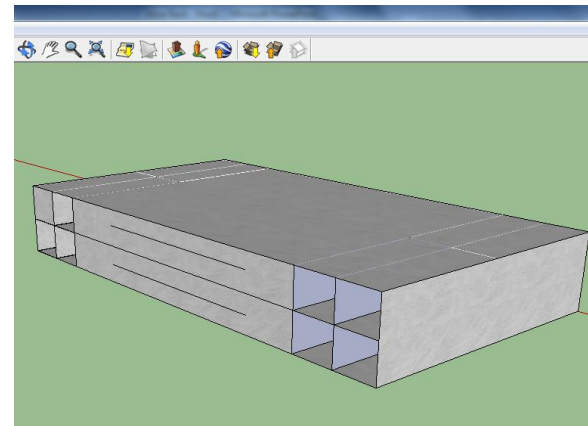
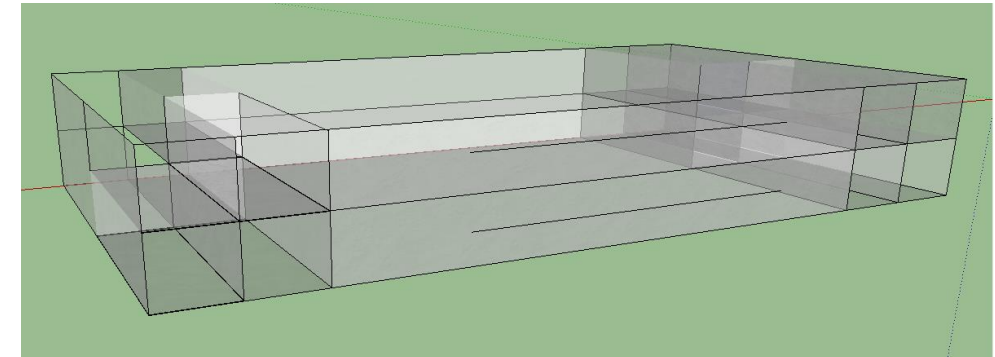
As the product would be made from acrylic this has a negative impact on the environment. The use of crude oil to make it and the waste produced from it make it waste a large amount of energy. To try and minimise the products carbon footprint I would have to make sure it was made locally and try to keep transportation to a minimum.



→ • Two large draws allow for storage of other items.



## CAD modelling;



I found the best way to model this design to be able to see what it would look like and see how the drawers and shelves and work properly was to use CAD and draw it up on SketchUp. This allowed me to see the outside as well as what the inside of the model would look like if it were to be made.

Client Feedback:  
Again, I've gotten extra feedback on my designs to get a larger idea of how my product would do. They like the fact that I have improved upon the amount of bottles it can hold from my last design, however they still don't think it's an overly eye-catching product which they would want to buy.

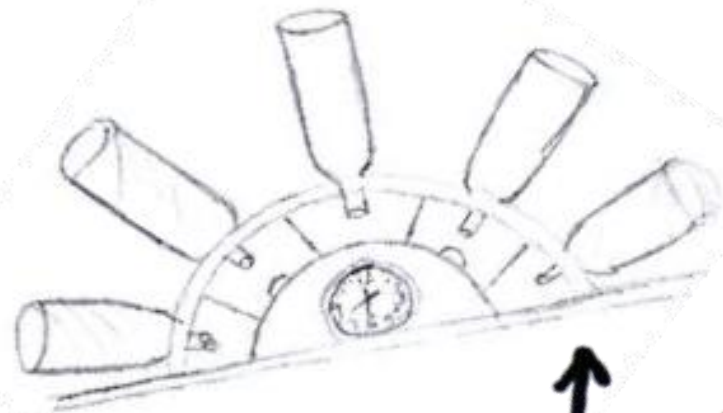


[Click to Play](#)

This product would need to take into account data from anthropometrics to get the coffee table to be at the right height for the majority of people to be able to use comfortably. Ergonomics would also have to be considered to make sure that too much strain isn't put on the body when bending down to reach the bottles of wine.



# Design and Development;

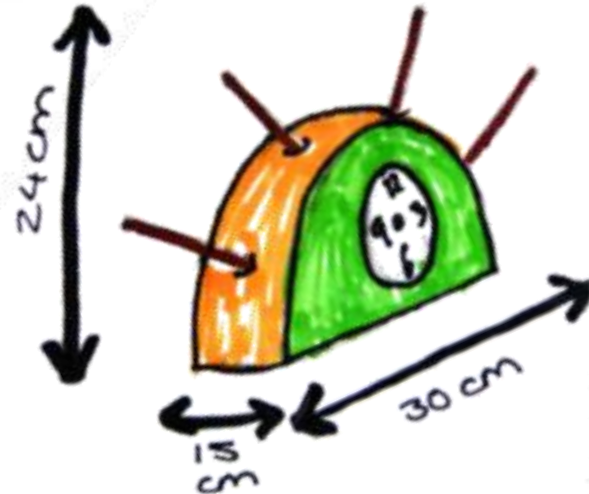
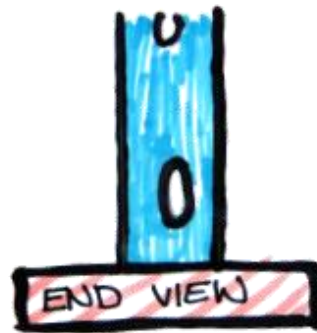


The product will be made from a pine and metal wire. The pine part being the bottom plank and the clock section and the arched bit for the bottles. The wire metal would be the spokes joining the two pieces of pine together.

This product will have a relatively low environmental impact as it will be made predominantly from pine which is a renewable resource and is easy to work into the desired product.

## Client Feedback:

The most positive feedback I got from this design is that they like the fact that it can be fitted to a wall. This doesn't take up any extra floor space or get in the way which is a bonus. The design still has room for development in terms of design and styling. The majority of people asked preferred my developed design and so I'm going to keep developing from this idea.

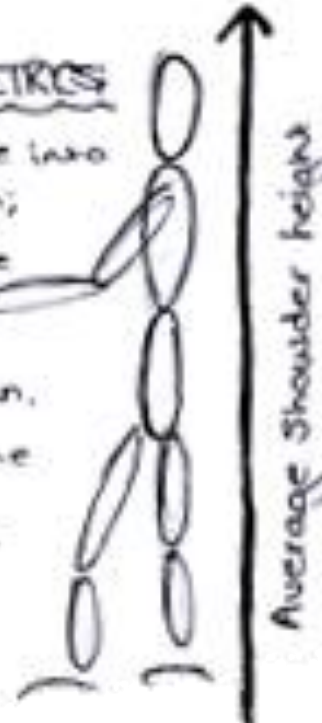


The drawings to the left show the design from different angles. This allows for getting a better idea of how the product would fit together if it were to be made and produced.

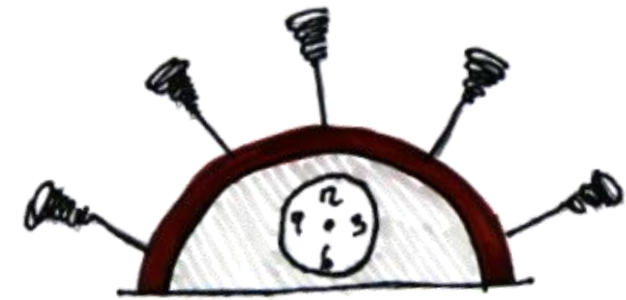
## ANTHROPOMETRICS

I need to take into consideration;

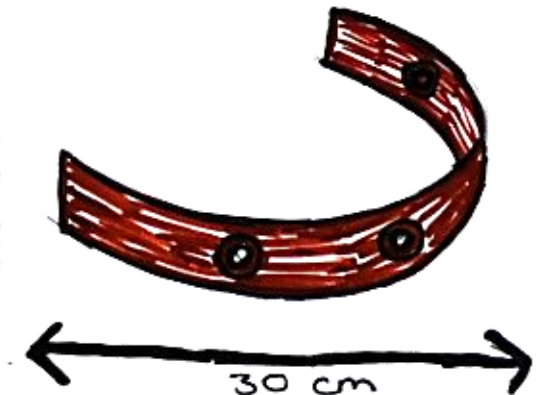
- The average users height.
- Wrist strain.
- Size of the overall product.



## Development;

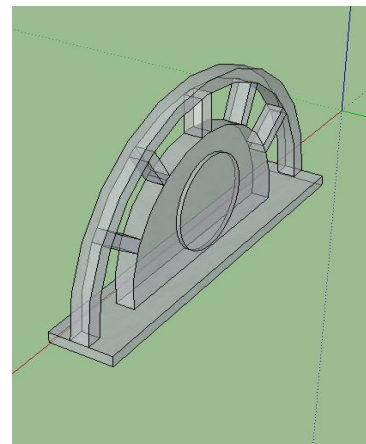


I tried to develop the design by making more of a feature out of the spindle / spoke parts. This made the design more eye-catching to look at.



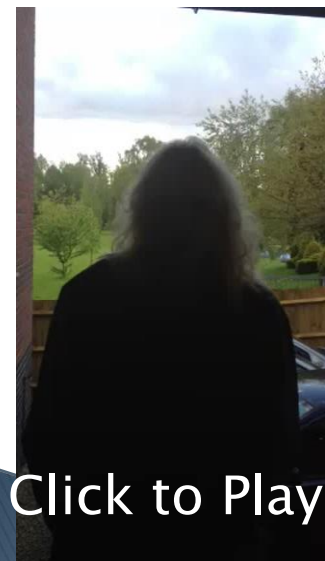
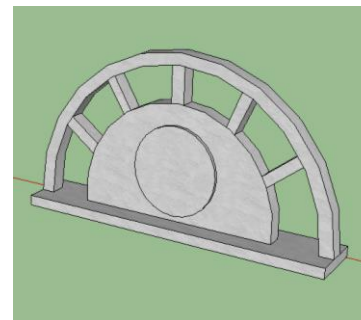
This product is completely different from my previous designs and developments. I wanted to try and create something more eye-catching.

Having wine bottles at a variety of different angles created something unique to look at and made the product more original.



## CAD modelling;

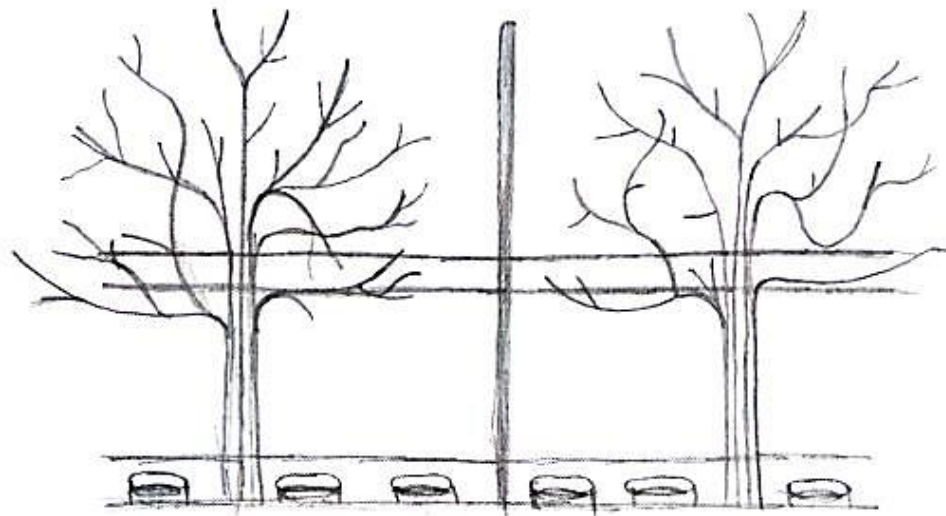
These are my sketch up drawings for these designs. They give a better representation of what the product would actually look like. It highlights the product would actually be quite bulky on the wall.



Click to Play



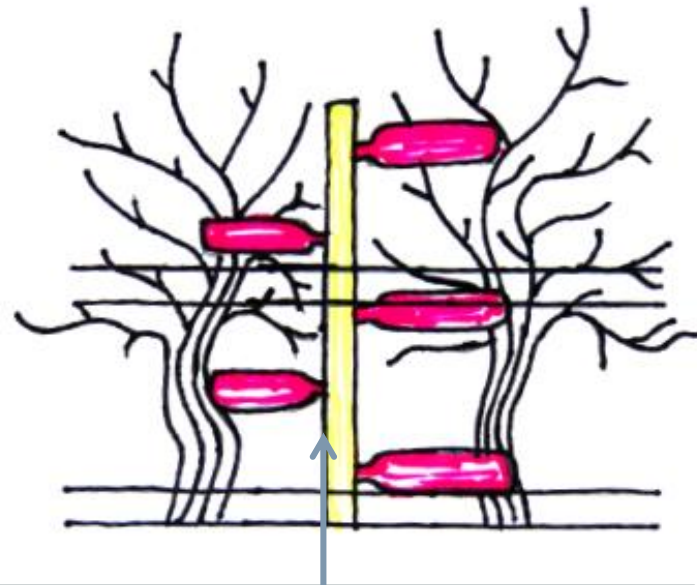
# Design and Development



This design is a development from my previous design. I wanted to play around with the metal wire more and inspiration from metal wire art which is very popular at the moment gave me the idea to combine a piece of metal wire art whilst making it a wine rack. This means people will appreciate the product as a work of art as well as something functional.

The product has a low environmental impact as it uses a relatively small amount of material to produce whilst still being strong enough to hold 6 bottles of wine.

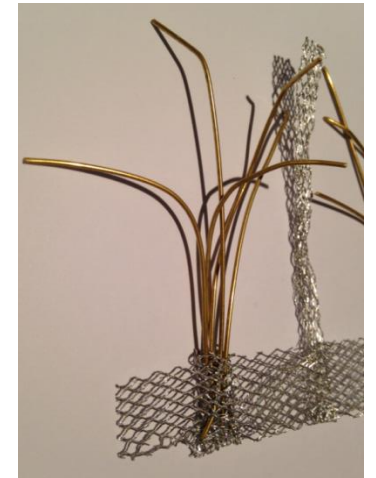
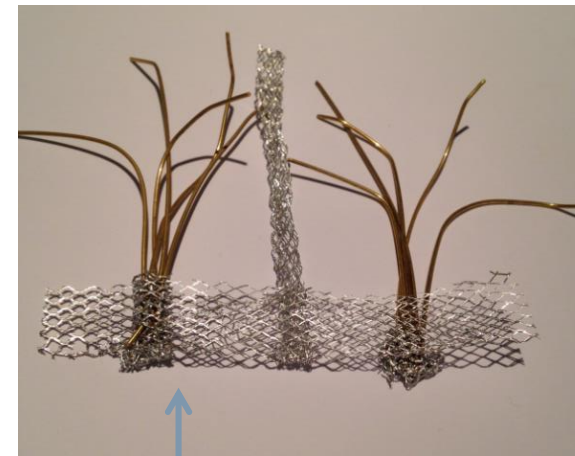
The product is able to be hung up on the wall which was something that my users pointed out as being a useful feature. It's also useful for the ergonomics as, like previously mentioned, it can allow anyone to buy the product and fit it to the height they want it. This flexibility reduces strain on the body and likelihood of injury.



For the development of this design I tried to play around with the way in which the bottles sited in the product. Rather than have the all in a straight line facing down I decided to try and put them along the middle column on opposite sides. This was inspired from an image on page 3.

This made the product more interesting to look at but it didn't necessarily fit perfectly with the picture of the wire background. More research into a better design might be needed.

## Modelling;



The images above are of my model for this design. I played around with wire and mesh to try and see whether a similar material for the real thing would be a good option. The material was easy to work with and wasn't too complicated and so would be a good option for the real product. The only thing I found with modelling this design and the choice of material (metal wire) is that it's very time consuming to do and so if the product were to be made it wouldn't be able to be batch produced easily or for all of them to be identical.

## Client Feedback:

My users have said they much prefer this design to any of my previous ones because it's something very different to what's available on the market. They would like to see some more designs using the material. The design also meets most of my customers needs (page 4) and so is successful in terms of requirements.



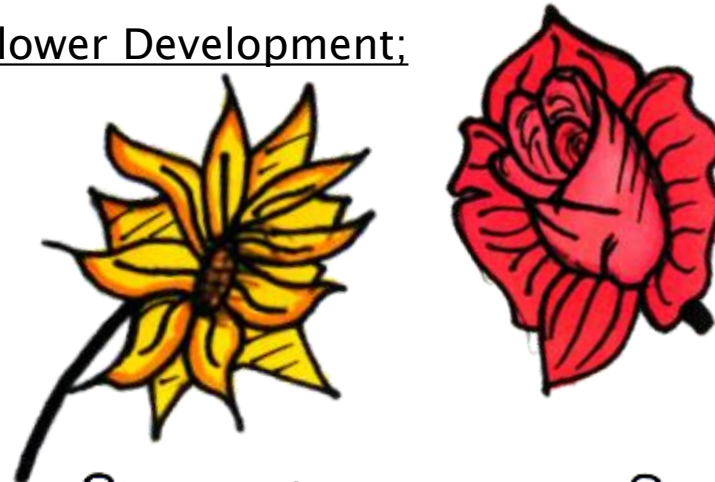


# Design and Development



After my previous design I decided to have a think about what image would be good for a wine rack that could incorporate an effective way to hold the bottles. I liked from the design I analysed and my development designs the idea of spindles. I then thought the spirals looked like a plant and came up with the idea to incorporate it into a floral background. This image worked much better with the spirals and it fitted together as a work of art much better, even with empty of any bottles of wine.

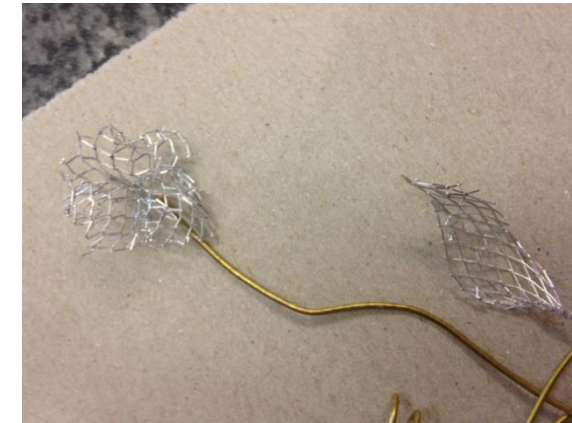
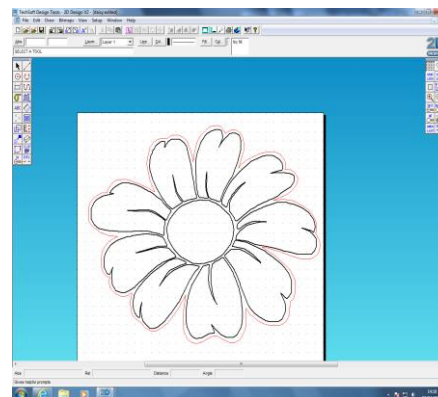
## Flower Development;



Possible developments for this design could be altering the flowers on the design and seeing whether there is one which is more effective. The sketches above show variation in the style and colour of the flowers.

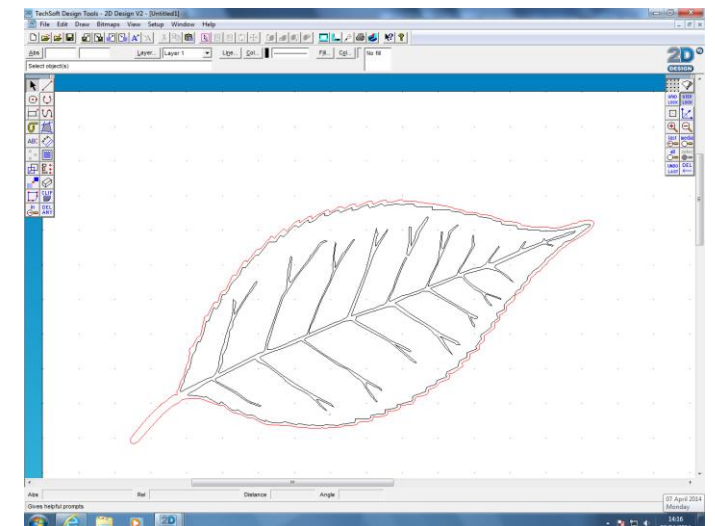


The design like the previous one would again be made of metal wire. This is reasonably good for the environment as it's the only material needed, except for perhaps the flowers and also doesn't require large amounts. It's also recyclable and so would be able to be used again and reshaped when it is no longer needed.

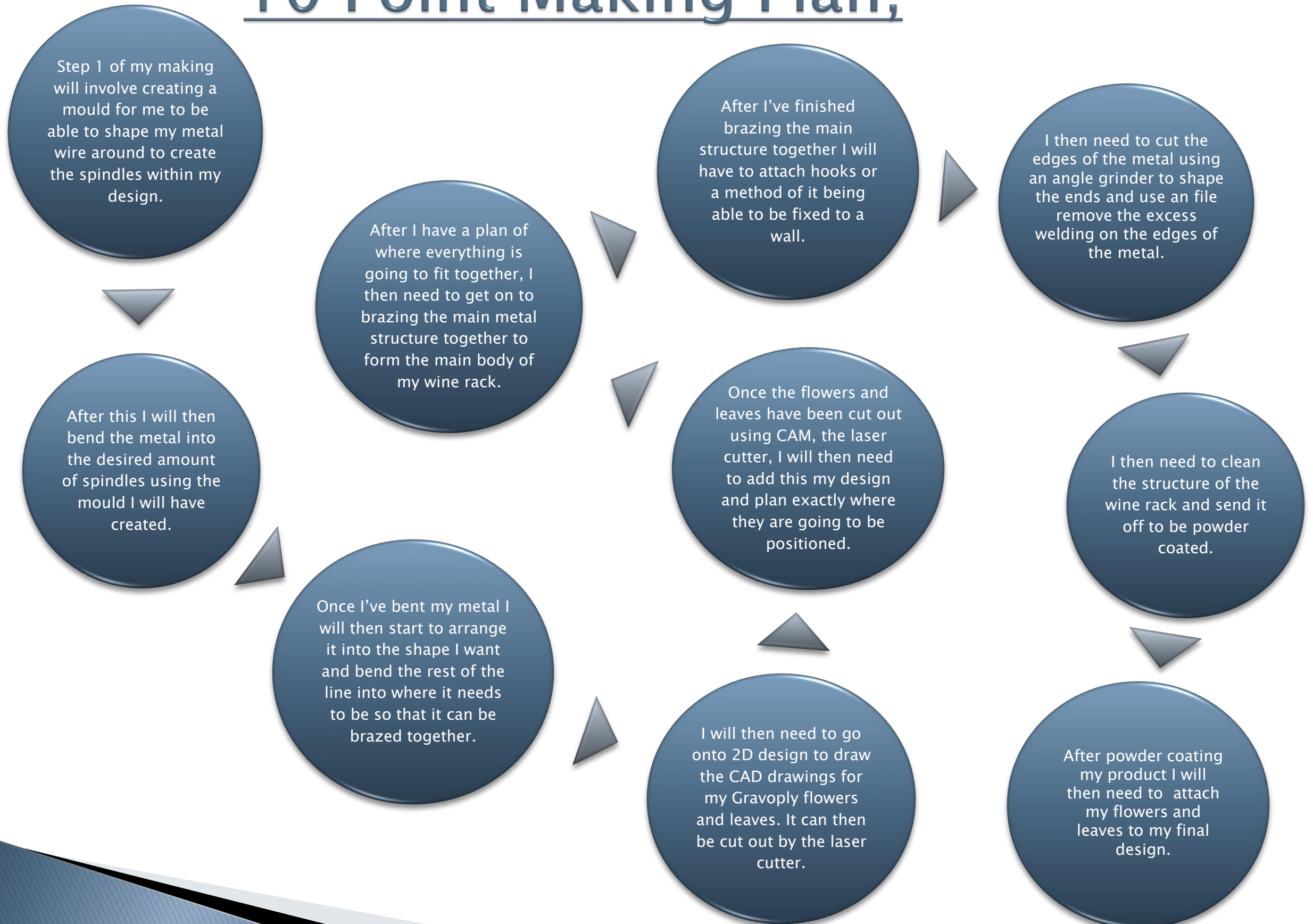


The images above show my modelling for the final developed design. I used the same method as I had previously as it allowed me to get a close replica of what it would look like when finished. The modelling highlighted that the main complication of the design would be getting the flowers right and also the leaves.

The images to either side show my sketch up of the flowers and leaves to get a better idea of what they would look like and how complicated they would be to produce.

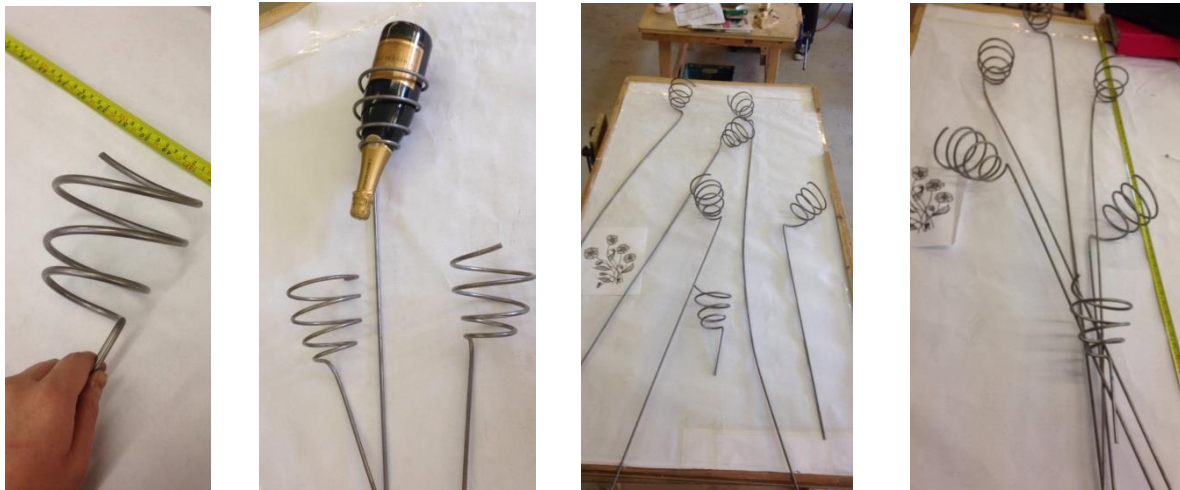


# 10 Point Making Plan;





# Making and Manufacturing – Final Design



I started my manufacturing process for my final design by creating a wooden mould on the lathe of a champagne bottle shape. This allowed me to be able to bend my metal around in the spindle shape whilst getting the correct size for the largest bottle which would need to go into the design.

After trial, I bent the remaining 6 spindles of my design by placing the mould into a vice to hold it steady and then inserted a piece of the metal into a hole in the mould (designed to stop the metal from slipping) . I then bent the metal around the mould creating the spindle shapes.

Following this, I then got a piece of paper attached to a board to start working out the layout for my design and also working out the lengths for each piece of metal.

I then adjusted each of the metal rods into their required heights and cut them using a saw. I then re-arranged them back into the shape of my design so that I could get an idea of what it would look like and whether any adjustments would be needed.

Once I had an idea of where the main metal structure was going to be I then needed to work out where I was going to position my flowers and leaves and how large or small they needed to be for the design.

I did this by cutting out card flowers and leaves and adding them onto my design board. This allowed me to adjust where I wanted them to be positioned and also to get an idea of what size I would want them.



Once I had worked out how many flowers and leaves I needed and what size I would want them, so that they looked best on my design, I then had to draw them up onto 2D design so that they could then be produced using CAM.

We had some trouble in that my original flower design was too complicated and didn't work out very well. I then had to adjust my flower design to make it more simple so that it would work on the laser cutter and look better for my finished product.

Once I had the correct drawings I was then able to send them to the laser cutter using the required settings to cut out my flowers and leaves. Once cut out I was then able to take them back to my design board and make sure they looked right on my design and where the correct size so that they fitted where I wanted them.



# Making and Manufacturing – Final Design

I then had to get some more metal rod and produce the branches which would be attached to my flowers and leaves in order for them to be able to be fixed onto my design. I had to quickly work out the sizes for these and bend them into the required shape using the vice.

After this I now had everything arranged on my design board and so I needed to start brazing it altogether to create a solid structure for my wine rack. I started by lifting the design up using fire resistant bricks and adding flux onto the joints where I was going to braze my pieces of metal. I then proceeded to braze the metal together until it was securely attached.

During the brazing, I had to add some more metal support pieces within the design to make sure the main structure would be strong enough to hold the 6 bottles of wine securely and not fall off of the wall.



When brazing the branches on to the main structure I realised that then end of the branch would need a flat surface for the flower or leaves to be able to be attached to securely.

So I then had to heat up the ends of the branches and hammer them into a flat shape that would be easier for me to later attach the leaves and flowers which are part of my design.

After this I needed to attach my hooks onto my design so that it could be fitted to the wall, I did this by cutting some hooks in half and brazed them into 4 positions where the most strain would be on the design.



Now that I had finished brazing my design together, I needed to trim off some of the metal at the end of the design into an angle. I did this using an angle grinder and then got a file to try and smooth the rough edges.

After this, the whole structure needed to be cleaned and the remaining flux removed so that it could be sent to the powder coaters ready for the next stage of my design.



The images above show my final completed product after the manufacturing process. The original design sketch can also be seen as a comparison to what the design originally started out like and what adjustments have had to have been made throughout the manufacturing process.

I am very pleased with the outcome of the product and now need to move on to testing it with my client and target market to evaluate its overall effectiveness as a product.





# Testing & Evaluation



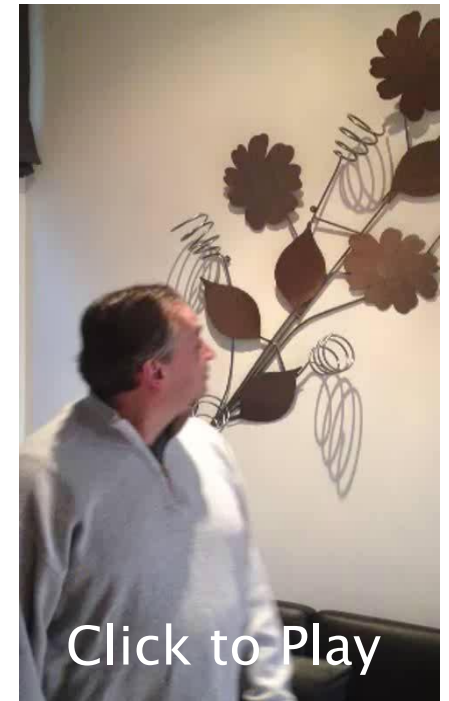
To test my product effectively I needed to a variety of things; firstly I needed to put it up on the wall empty and see whether it would hold it's weight and not have any of the flowers/leaves fall off the design.

After this I then needed to test whether my product was actually "multi-functional" like I wanted it to be. To do this I first started by testing it as a wine rack, I filled the wine rack with bottles of wine to see whether they would hold in place and not fall out and to see whether the whole structure was still strong and fixed securely to the wall with the added wait. The outcome of this was very successful, the main structure was securely fixed to the wall using the 4 hooks I attached during making. It remained as secure when the added wait of the filled wine bottles was added. This means that my product is successful as a wine rack.

I also tested it with larger champagne bottles to see if it still functioned properly.



## Client Feedback:



Above is the feedback from my client but also an expert. Ric is a business and shop owner who provided me with his thoughts on my product and also what I'd need to consider to see if it's a viable product commercially. My client also expressed their thoughts and opinions on the final product and what they thought about it now that it's finished.



# Testing & Evaluation

The second part to test was whether it succeeded at being a piece of artwork that draws attention when placed in a room. To do this, I gathered data on what people thought about the piece as a piece of artwork and also what strengths and weaknesses there were to the design.

Name	Thoughts	+	-
Tessa	"Unusual and eye-catching"	Tessa said that she thought my design was unusual and eye-catching and aesthetically pleasing. She liked that it was suitable for 6 bottles of wine and thought the outcome was successful.	The only thing she said could have been improved was the flowers. She wasn't sure how durable they would be and as a result how long they would last as a product.
Alice	"Pretty but very big"	Alice said that she really liked the design and the fact it was nature inspired. It's very different to what's on the market currently.	Alice's concern was the size of the product. It is quite large and as a result takes up a lot of wall space. This might limit the amount of people who buy it I should consider a smaller version.
Harry	"Immediately draws attention and makes it a statement wall"	Harry liked the fact that it was a large piece and took up a large amount of wall space like an art sculpture. He said this added to the overall effect of the design and if it was smaller it might not have the same outcome.	His main concern was accessibility. The very top wine holder is quite high and for some shorter people it might not be very comfortable to use.
Kate	"Breaks the normal look of a wine rack"	Kate mentioned that it broke the normal view of what people think a wine rack should look like. People pay a lot of money for some bottles of wine and champagne and deserve to have a product where they can show them off to guests. She liked that the wine rack itself could also be shown off to guests.	Her main negative point was that a lot of the bottles stick out from the wall and may fall out if knocked. This could be a problem for families and people with young children. As a result this could limit my target market.

Overall people thought that my product was really successful and was very eye-catching. In terms of testing it met both of my requirements; to be a functional wine rack and to be a piece of artwork which drew attention. There were a few improvements suggested which could make the product even better if I were to spend time developing it further.





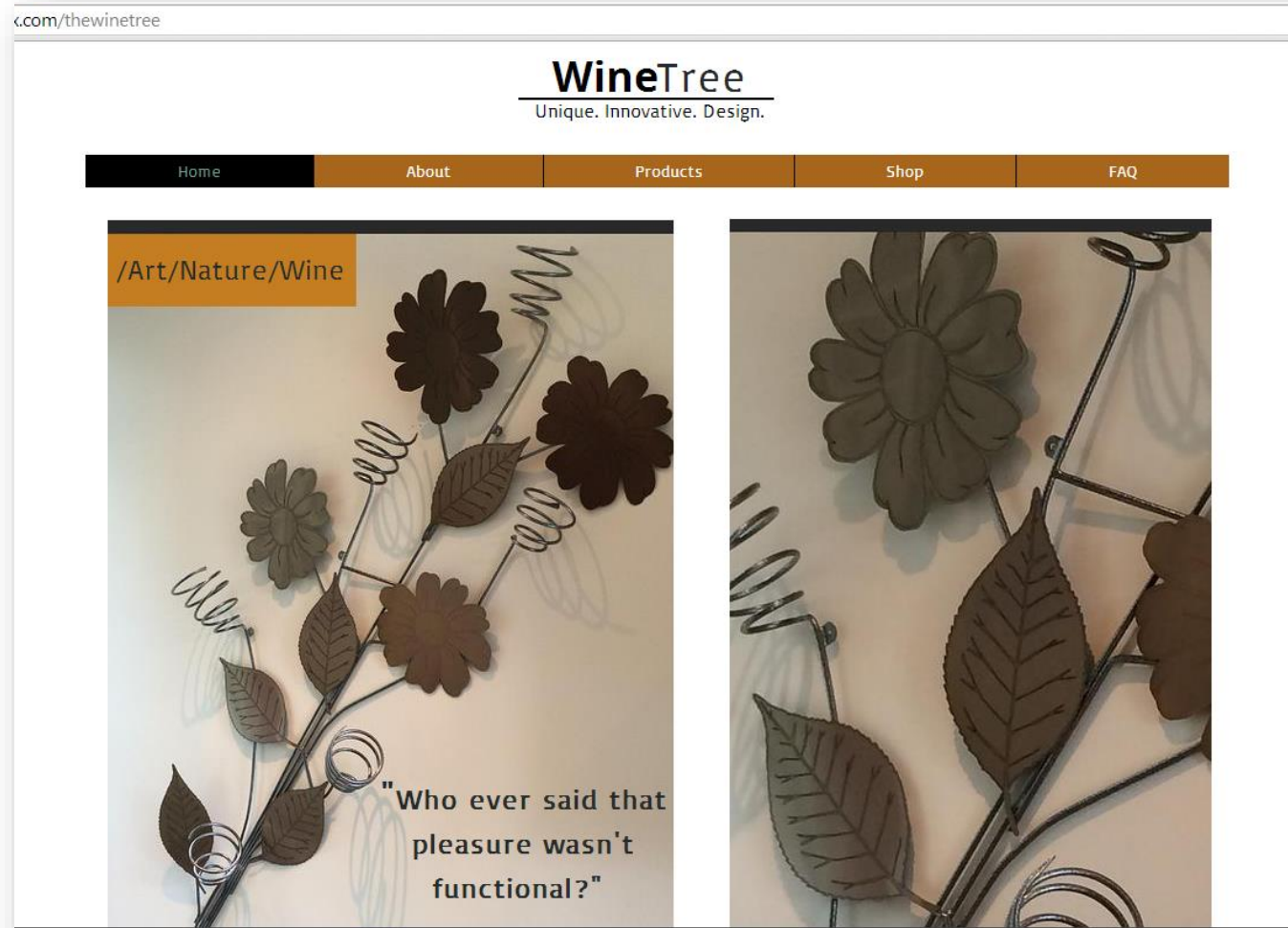
# Testing & Evaluation

The final part of my testing and evaluating is seeing how it compares with my original specification and whether I met the key requirement which are highlighted in blue on my original specification page;

Key Requirement within Specification	Did it meet this point?
Is the design aesthetically pleasing and eye-catching?	Yes, from the previous testing I found that all my clients thought the design was unique, unusual and very eye-catching. So it does meet this requirement from my original specification.
Is the design able to be priced towards the middle section of wine racks? (£100–£180)	Yes, my product should be able to be marketed at around £100 depending on manufacturing costs. This means I will be able to market in the middle section of available wine racks and hopefully target a large amount of people.
Is the size of the product suitable to my target market?	Yes and No, the product is suitable to my target market because I measured their shoulder height and made the product on the average measurement. However, for those who aren't average height the product may be more challenging. You can put the product on the wall wherever is comfortable but the design is quite large. Improvements could be made to this section.
Does the product have as little impact on the environment as possible?	No, although the product doesn't massively impact on the environment there are other materials I could have used, such as recycled ones, which would have had an even lower impact on the environment.
Is the product multi-functional?	Yes, the product is multi-functional as from my previous testing pages it has been tested as a wine rack but also as a piece of art work. Both were successful and so yes it is a multi-functional product.
Are the materials long-lasting and durable?	Yes and No. Part of the design, the main structure is very durable and will last a long time before anything happens to it. The second part of the design are the flowers and leaves made out of Gavoply. I'm not sure how long they will last and how durable they may be. It may have been better to try and use a different material for them next time.
Is the product suited to my target market?	Yes, the product is suitable for a variety of users above the age of 18 and can appeal to both genders.
Is my design suitable for the 50 <sup>th</sup> percentile of people?	Yes, my design was based on the 50 <sup>th</sup> percentile of people so that it would appeal to the largest amount of people. I also took measurements of a few people to base my design on those heights.
Are manufacturing costs kept to a minimum?	Manufacturing costs are hard to calculate in real life. Within my school production, yes the manufacturing costs were kept to a minimum.
Is the product safe for my users to use?	Yes, my product is safe for users to use. There are no sharp edges. However, things to stick out from the wall as part of the design and people should be aware of that.
Is the products USP marketable?	Yes, the wine rack acts as a piece of art work as well as its main function. This is its unique selling point and is very marketable for home owners.



# Marketing & Presentation;

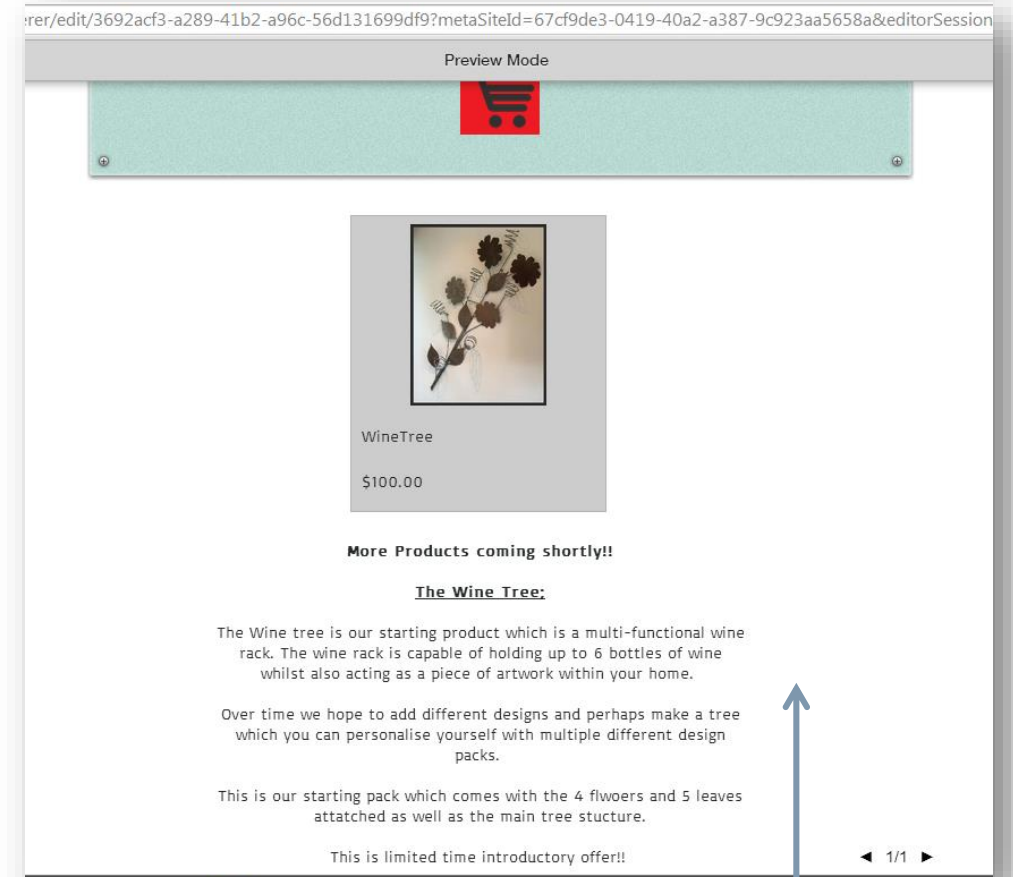


These images show the design for my products website as part of my marketing strategy. I think my product having it's own website will allow for the brand to grow if more products were to be made. Having it's own website also allows customers to be able to contact the company directly with questions about the product. Buying the item through a secondary company might mean they don't know as much about the product and service to the customer might be affected because of that.

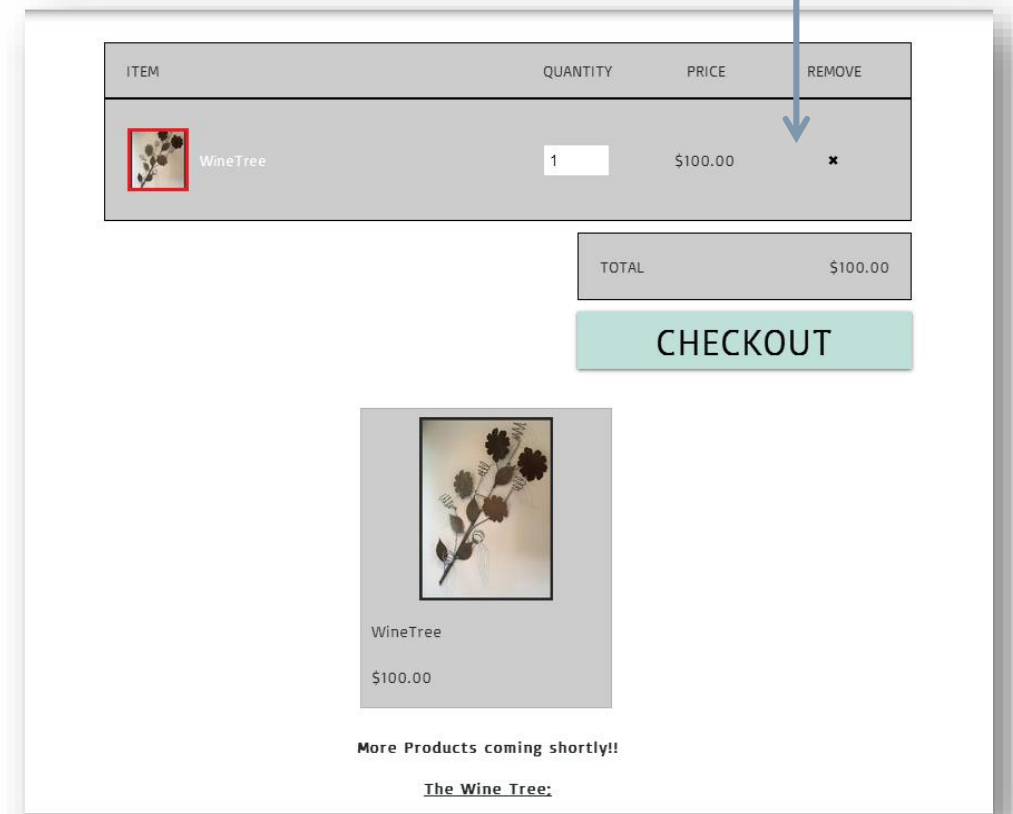
Also, customers will be able to share the link of the website among family and friends and if other products were to be produced, such as wine racks but with different designs, then people will be able to browse them all on one page and not miss out.

For my home page I put the images of the wine tree up straight away to stand out and catch anyone's attention who clicks on the page.

I also added a quote from Charles Eames as I think it fits with my product perfectly. A piece of art isn't usually functional as well as being something to look at.



The images above and below show what the shop page of the website looks like and what happens when you want to purchase a product. I kept the layout simple as not to draw away from the product.





# Marketing & Presentation;

In order for my product to be manufactured and sold to consumers it needs to be marketed properly. This could include presenting the marketing strategy to companies who may want to invest or purchase a certain amount of the product. As well as having a decent product that consumers will want, you also need to have a good marketing strategy.

## Unique Selling Point;

For a product to really attract consumers, or companies who may want to invest, it needs to have a unique selling point. A unique selling point is something that makes it different to anything else already available.

•The unique selling point of my product is that it's multi-functional. Rather than just having a wine rack which functions only as a wine rack it also features as a piece of art work on your wall. Even without any wine in the product it still creates a feature within your home. Combining the two creates something different to the standard wine rack and creates a statement piece that guests will talk about it.

## Product name and logo;

A product will also need to have a logo and a name in order for it to be marketed effectively. Without a product name people won't know the name of the product and what to search for and therefore it isn't marketed very effectively.

The logo allows customers to recognise the brand and if any further products were to be made then they'd associate them with the other available products. The logo can also be put onto other marketing material such as posters and leaflets to create a link between all the marketing material .



This logo will be put onto all associated marketing material to do with my product and will form a recognisable symbol that customers will learn to know.

## Price;

The price of I market my product is also a very important factor when it comes to my marketing strategy. The price I would sell my product to companies for would be quite a bit less than if I were to sell it straight to the consumer. This is because the companies selling the product on also want to make some profit out of the product and so need to be able to then market the product for more money than they paid, the retail price rather than the wholesale price.

I would be looking to make at least 50% profit on this product in order for it to then be viable to produce. Companies who then purchase this from me would be looking to double what they paid in order to generate a decent amount of profit.

The cost of manufacturing this product roughly comes to £50 including all the materials and manufacturing costs. Within industry this should be a lot cheaper to produce as it would be produced in batches and at a faster rate with less waste materials. If we stick with the figure of £50, I would then be looking to sell my product to companies for £100 in order for me to generate profit. They would then want to double that and sell it for around £200.

## Packaging;

One of the most overlooked aspects of marketing is the packaging. Packaging is key in promoting your product further and appealing to consumers. My product is quite difficult to package in that it can't really have a see-through packaging and because it's quite large it will need to be something quite big. Due to this my product will have to be packaged using a traditional box which means the product can be wrapped in bubbled wrap for protection and sealed up for delivery.

Despite the rather boring packaging the outside can still have display the brand name and logo which will make people aware of what is inside the box or perhaps Google it if they don't know. Cardboard boxes can also be re-used and recycled which makes a good packaging method over using a plastic which would have a negative environmental affect and be quite costly. This method of packaging is suitable for my product, has a low environmental impact and isn't going to be too costly and reduce the potential profits.





# Review & Reflection

## Approach to the overall production of the product;

Looking back over the whole project and at my overall approach to the design and production, I can say on the whole it was largely successful.

- In the beginning stages of my project I conducted research into existing products, I also gathered anthropometric data of peoples shoulder heights which was extremely beneficial to me when it came to designing and making my product. However, some of the other research such as the pictorial inspiration and brief analysis of some products wasn't quite as useful as it could have been if they were more in depth.

- When it came to designing my wine rack and trying to make it multi-functional I realised that this would be more tricky than it would initially seem. It's quite hard to alter the basic shape of a wine rack to include something different whilst maintaining its main function. I also found during this process, it was very difficult for me to model my designs effectively, especially the last few where they were based around a wire product. Due to this I modelled a lot of them using CAD software rather than physical models as it enabled me to get a better picture of what the end product would look like. Although there were parts which were more complicated than I initially thought, the overall design process worked well and I think I managed to develop an innovative product which met my brief.

- The making of my final chosen design also had some complications along the way. The main problem was being able to manufacture the spindles which would hold the wine bottles using the equipment we had in school, In the end we had to create a wooden mould in the shape of a champagne bottle on the lathe to bend the metal rods around to get the desired shape. After solving this problem the rest of the design was much more straight forward. I believe I selected the right materials to work with and the final outcome of the product is successful and looks good.

- To test that my product would work and function as a wine rack as well as looking like a piece of art work. I fixed it to a wall in the kitchen and filled the wine rack with bottles of wine to see if the product would hold the bottles and remain on the wall. The main purpose was to test the structure of the wine rack to see how strong it would be and whether the overall product worked. The outcome of testing was that it did in fact work holding multiple bottles of wine whilst remaining on the wall.

- I chose to market my product online using a website to advertise to a large audience. I believe a website enables my product to be searched and ordered by large amounts of people globally and therefore it was a good marketing strategy as it potentially increases the amount of my product ordered. I also created some posters advertising the product which could be placed in towns and cities and also in places such as bus stops. This creates awareness of my product and also provides links to my website where the customer can then go on to purchase the item. Using this marketing method in conjunction with the website enables a wide target market to be reached and for an increase in potential profits.

## Production of my product;

If I were to actually start manufacturing my product I would have it produced using batch production. Splitting up the manufacture into the main structure of the design and then the flowers and leaves as secondary production. A batch production would allow for a set amount to be made at once this would avoid waste from mass production and reduces the amount of time the customer would have to wait if it was a one-off product each time.

The hardest part of the manufacture would be the metal work but within industry there are a lot of CAM machines which would make it easier to make than what I had available to me within school. Similarly, industries have much larger and more sophisticated laser cutters which would make the production of my leaves and flowers much quicker and more accurate whilst reducing waste.

The reduction of waste using these machines would also reduce the environmental impact my product has and therefore make it more viable to make and produce. To improve this aspect of my design, using recycled materials may be a future development.

Batch production is the most viable in terms of profit and cost as, like previously mentioned, it alleviates a lot of unnecessary waste., it's faster to produce which keeps costs low and it can be made using machines which reduces having to pay individual people to work on a part of the design.



# Review & Reflection

## Possible future developments;

- In the future, if I were to continue making developments to this product, I would start by looking into what other materials are available to try and reduce the impact on the environment and keep costs as low as possible. Currently within the contemporary UK is a fashion trend to have products which are “eco-friendly” or “green”. By altering my product to be made from materials which are easier to recycle or be produced from already recycled materials I would be entering my product into another part of the market. It would then appeal to consumers who are environmentally conscious. This could widen my target audience whilst also reducing manufacturing costs dependent on the recycled material.
- Another development I would explore is seeing if there was a way to make the design changeable. Making a product where customers could change the flowers or leaves for other objects and completely be able to customise their product into what they want. Changing seasons for example, consumers might not want a certain type of flower all year around. This development could also produce and opportunity to sell packs of flowers and designs and make more profit from the product.

## Wider Implications of my product;

- As well as making a profit from the product I need to consider all of the wider implications my product could possibly have. First of all, I need to consider where the product would be manufactured. If it was manufactured within the UK it is likely to be more costly. However, having it made within the UK would reduce transport which would in turn reduce the carbon footprint of the product which is highly beneficial. If the product were to be made outside of the UK, say in China for instance, the manufacturing costs out there are much cheaper. However, it then needs to be transported all the way back to the UK which will have costs and also it will make the overall carbon footprint of the product much larger. So, if I were to manufacture the product I would have to consider this very carefully but I’d try to keep the manufacturing to being within the UK. This also appeals to consumers if anything was faulty and if they needed to contact someone about the product.
- As for the lifespan of my product I would expect it to last a long time if it is looked after properly. The main structure more so than the flowers and leaves. As the metal is powder coated it shouldn’t rust and the whole design is very strong and shouldn’t be broken easily. If for whatever reason, it did break or was no longer needed then the metal from the design can be re-used which is better for the environment. The flowers and leaves do have a greater environmental impact and another material (if it were to be developed) could be explored for these rather than using Gravoply which involves heating plastic to make and having a negative impact on the environment.

