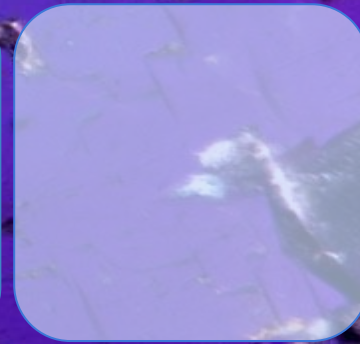
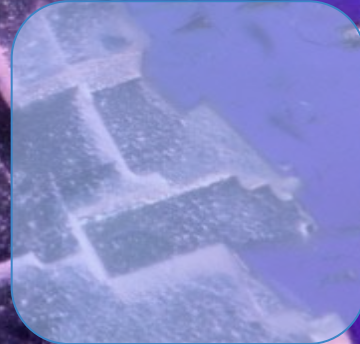
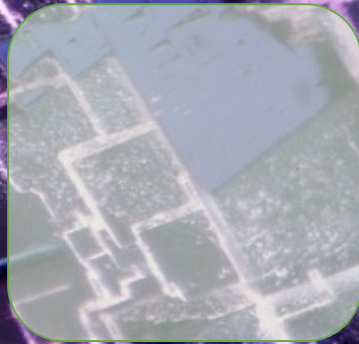


# Richard Weston Inspired Lighting Project

Cerys Searle

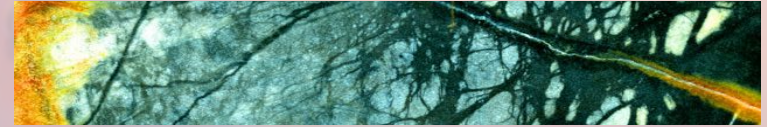




# Richard Weston



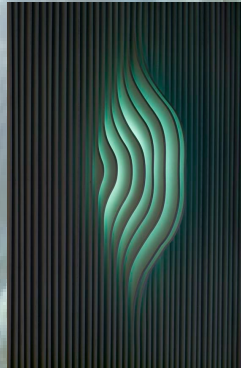
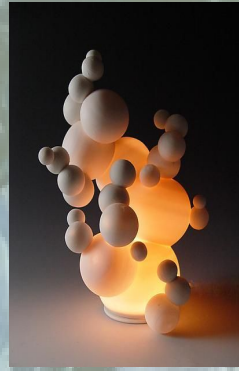
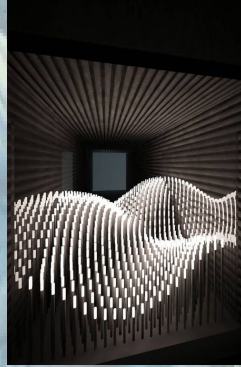
Richard Weston Studio creates high-resolution digital images and 3D models for innovative applications in architecture, urban spaces and gardens. Using microscopes to zoom into minerals and rock Weston found beautiful hidden patterns that are not visible to the eye, this is what makes his work so captivating and different.



Professor Richard Weston is an architect, landscape architect, author and is also the Chair of Architecture at Cardiff University. He is Director of Richard Weston Studio Ltd and Earth Images Ltd







Using the internet I found inspiration and other lighting ideas that I really liked, secondary research helped me find lights that I liked and that also correlated with Richard Watson's work. The Internet also provides tutorials on how I would manufacture the products whereas primary research would be less detailed and very time consuming.

Lights that relate to Watson's work were very effective and created effects that would look incredible in a bedroom, hallway or any room of the house. The most attractive lights are original, different, and would be very difficult to design and make, however, would look extraordinary in any home. Richard Watson's architecture and photography skills are very inspirational when I'm looking at other lighting ideas.

# Lighting Inspiration



This lamp is for the outdoors and is extremely elegant and very nature related, I will definitely be researching this pattern and form.

I really like this lamp fixture because it is very creative and has a clear target market.

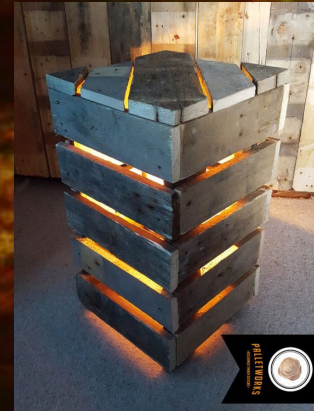


In correlation with Watson's work, lava lamps reflect his photography beautifully and almost create a live version display.

Simple yet very effective multifunctional lighting. Very eye catchy and simplistic made for a living room.



This lamp is very elegant and simple, it is made of one material and would most likely be placed in a bedroom or living room

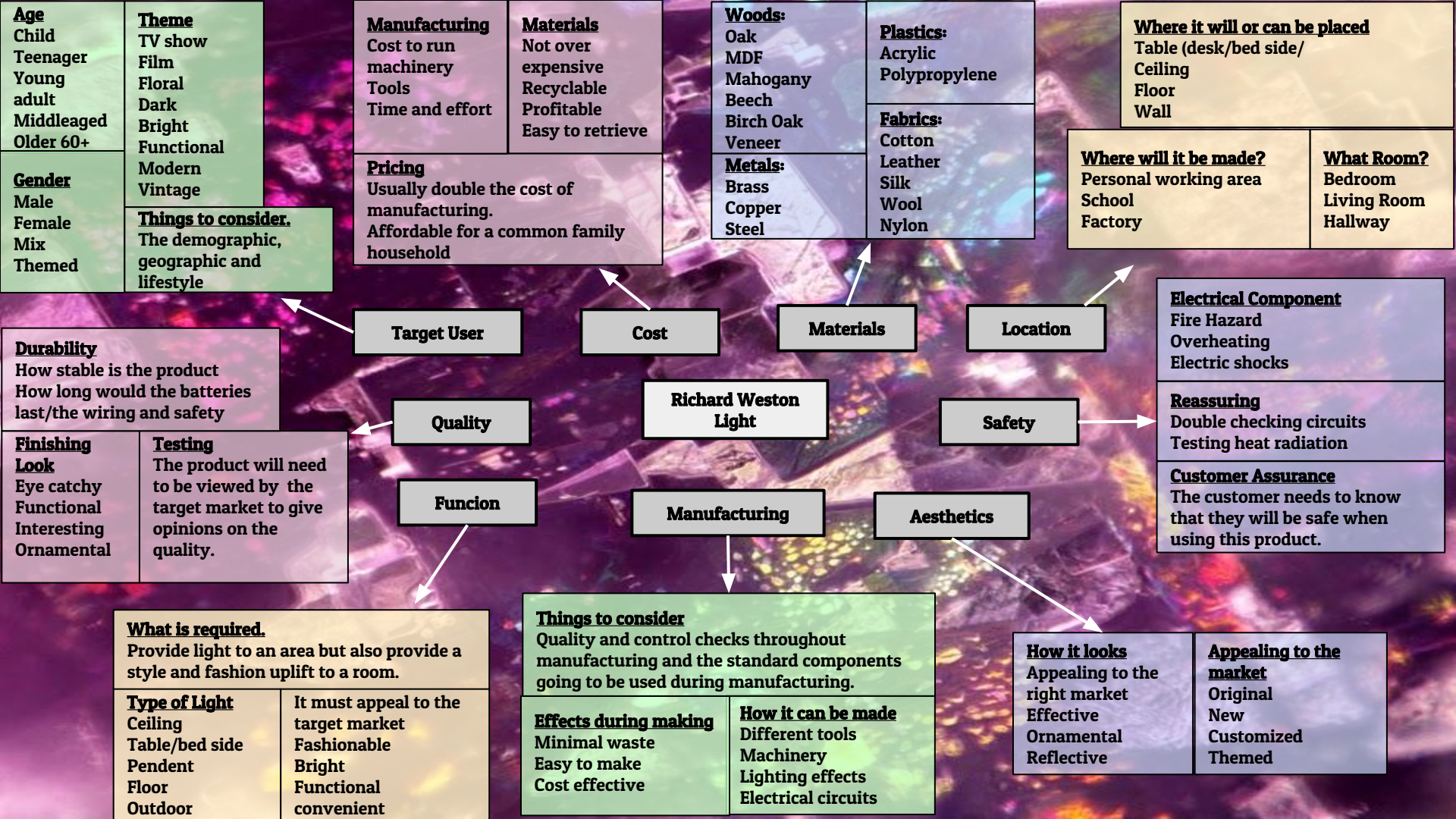


This is an upcycled lamp using old crates. It would look effective in a themed living room or a boys bedroom, or even a 'man cave'



This is a very simplistic design that could not be displayed on its own, it would be part of the extra effects, however it is pretty.





**Age**  
 Child  
 Teenager  
 Young adult  
 Middleaged  
 Older 60+

**Gender**  
 Male  
 Female  
 Mix  
 Themed

**Theme**  
 TV show  
 Film  
 Floral  
 Dark  
 Bright  
 Functional  
 Modern  
 Vintage

**Things to consider.**  
 The demographic, geographic and lifestyle

**Manufacturing**  
 Cost to run machinery  
 Tools  
 Time and effort

**Materials**  
 Not over expensive  
 Recyclable  
 Profitable  
 Easy to retrieve

**Woods:**  
 Oak  
 MDF  
 Mahogany  
 Beech  
 Birch Oak  
 Veneer

**Plastics:**  
 Acrylic  
 Polypropylene

**Fabrics:**  
 Cotton  
 Leather  
 Silk  
 Wool  
 Nylon

**Where it will or can be placed**  
 Table (desk/bed side/  
 Ceiling  
 Floor  
 Wall

**Pricing**  
 Usually double the cost of manufacturing.  
 Affordable for a common family household

**Where will it be made?**  
 Personal working area  
 School  
 Factory

**What Room?**  
 Bedroom  
 Living Room  
 Hallway

**Durability**  
 How stable is the product  
 How long would the batteries last/the wiring and safety

**Finishing Look**  
 Eye catchy  
 Functional  
 Interesting  
 Ornamental

**Testing**  
 The product will need to be viewed by the target market to give opinions on the quality.

**Target User**

**Cost**

**Materials**

**Location**

**Quality**

**Richard Weston Light**

**Safety**

**Function**

**Manufacturing**

**Aesthetics**

**Electrical Component**  
 Fire Hazard  
 Overheating  
 Electric shocks

**Reassuring**  
 Double checking circuits  
 Testing heat radiation

**Customer Assurance**  
 The customer needs to know that they will be safe when using this product.

**What is required.**  
 Provide light to an area but also provide a style and fashion uplift to a room.

**Type of Light**  
 Ceiling  
 Table/bed side  
 Pendant  
 Floor  
 Outdoor

It must appeal to the target market  
 Fashionable  
 Bright  
 Functional  
 convenient

**Things to consider**  
 Quality and control checks throughout manufacturing and the standard components going to be used during manufacturing.

**Effects during making**  
 Minimal waste  
 Easy to make  
 Cost effective

**How it can be made**  
 Different tools  
 Machinery  
 Lighting effects  
 Electrical circuits

**How it looks**  
 Appealing to the right market  
 Effective  
 Ornamental  
 Reflective

**Appealing to the market**  
 Original  
 New  
 Customized  
 Themed

# Initial Brief and Specifications

**Initial Brief:** The overall brief is to design and create a light that is inspired by Richard Weston's photography and architecture.

**Design Brief:** A more indepth description of the brief world be to carefully take into consideration all the specifications and design an effective lamp that suits the target market and manufacture it using tools, other resources and computer aided manufacturing, the light will also be in the style of Richard Weston's detailed photography and cleverly designed architecture. The light will not only provide light to a room it will inspire consumers and have an ornamental effect to it too, this way the product will look fashionable in any location. The product will need to be extremely sustainable and the materials used should always be recyclable and cost effective. If the light is going to be centerpiece then it must be very detailed and easily accessible to turn it on and off again. The light cannot be blindingly bright however it cannot be too dark that it's ineffective, therefore there should be careful consideration on whether this is a mood light or a general table lamp.

## 1. Safety

Safety is extremely important, particularly with this project due to working with electric and making it myself, this could be hazardous to myself and the consumer.

## 2. Function

I need to ensure the bulbs work and any mechanisms of design are functioning and working too.

## 3. Manufacturing

I will need to make sure that the manufacturing will not be too costly and will be completely ethical. I will also need to ensure minimal waste and an elementary manufacturing process.

## 4. Aesthetics

The design needs to ornamental as well as functional. The product will need to be original, customized and themed.

## 5. Cost

Affordable to the general market. It will be a reasonable price with an effective design. Yet profitable.

## 6. Target User

The target user is an important part of the lighting project as it will change the design and style of the lamp.

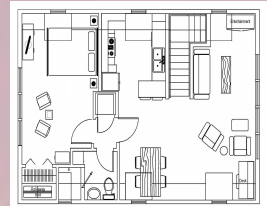
## 7. Materials

The materials will affect the quality of the light. Important to consider the cost of materials.

## 8. Location

Living room, bedroom, or a hallway, and what type of light, floor, ceiling, table lamp, and also where

the product will be manufactured and sold.





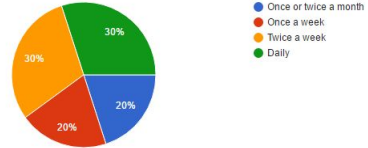
# Target Market

With the target market there is a lot to take into consideration, for example the demographic qualities, geographic points and the lifestyle. All of these variables can change the style, design and effect of the light.

A typical consumer for my light is a female called Elizabeth that's aged 18 and studies journalism in University, she is smart and enjoys going out with friends, usually she eats out a lot in order to celebrate occasions or just to have a good time. Elizabeth has travelled around Europe in order to observe all the various cultures and study them to write about. Living in a student accommodation with three classmates, she isn't allowed to personalise the flat a lot however really enjoys art and producing acrylic pieces and giving them away as gifts. As well as art her hobbies include writing, cycling, and photography. She produces artwork to put up around her room.



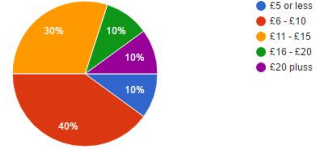
How often would you use a lamp? (20 responses)



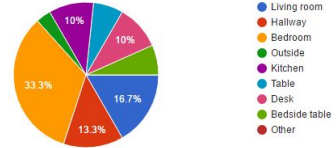
Looking into how often the consumer will use the lamp is important because it will determine whether it will be battery powered or through a plug/USB, also gives an average life expectancy

The two most common here are £6 - £10 and £11 - £15. This information informs me that I should sell my light for £7-£13 and manufacturing should cost no more than £5..

How much are you willing to spend on a light? (20 responses)



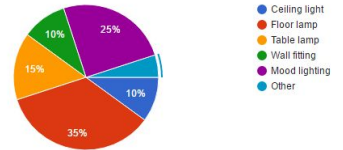
Where are you most likely to put a lamp? (20 responses)



Location is vital to my design because it could completely alter the design. A clear dominator here is that people require lighting in their bedroom. This is extremely useful.

Seeing what type of light my target market appeal to most will determine the light i manufacture, here we see majority want a floor lamp and close behind is mood lighting.

What type of lights appeal to you? (20 responses)





# Lighting Inspiration - Recycled



Recycling old products that we no longer use is extremely beneficial towards the environment and it can benefit the economy in many other factors too. For example, if the amount of rubbish is reduced there would be less landfill and less crimes such as fly tipping and rubbish thrown into the sea and other wildlife territories. Another benefit of recycling products we no longer use is the design and style will not be found anywhere else. However the overall benefit is for the environment, with the current situation of the World there needs to be a reduction on the environmental impact.

These are ceiling lights, one is made from a paper plate and forks, the other is made from Coca Cola pull tabs creating a sphere around a bulb. I not only like these ideas because they have recycled old products I like them because of the effect they would create on the wall and the fact that the manufacturing and quality is so good you can't even tell they are recycled materials.





# Lighting Inspiration- Seasonal

Halloween is a really big event and it's celebrated across the UK the main market at halloween is young children however the lighting could be for any age, for example adults having a party or young adults celebrating by having a sleepover.



Looking at seasonal lighting is not just about the fact they can only be used on certain occasions, it's about the effects they create and how effective mood lighting is. Here the light is projecting images onto the ceiling creating a romantic effect for valentines.

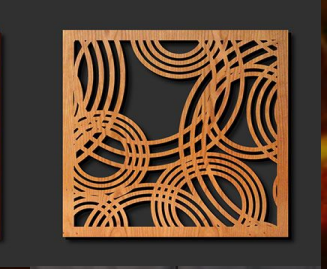
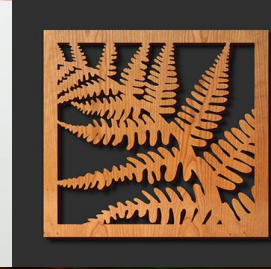
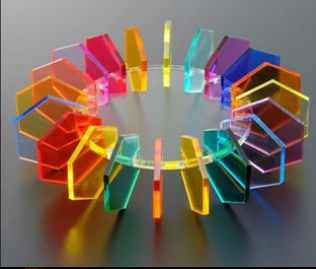


Seasonal lighting is about manipulating an original idea and turning it into the theme you require, for example here what would normally be a fibre optic light has been altered to look like a christmas tree.





# Materials and Effects



I will be looking into the detail and effects created by different materials, shapes and types of lights. Wood blocks light and creates shadows and effects that could easily be manufactured using CAM. Acrylic on the other hand carries light and it can reflect from engraving giving a beautiful 3D effect that other materials could not. Fabrics such as thin cotton and silk do not carry light nor do they block it, they dim the light but allow the effect of the pattern to be clarified. For example if you printed a pattern onto cotton or tie dyed it, it would be enhanced as a lamp shade or covering a light.

Opaque, translucent and transparent materials also have many effects, opaque materials can create shadows and create patterns on the floor, walls and ceiling. Translucent materials can hold some of the light but some travels through, thus creating a glowing effect. Finally transparent materials do not hold any light however it can carry it therefore if there was an engraving on a transparent material the light would illuminate the pattern and leave it standing alone. A quick manufacturing process that gives stunning effects can be created by the laser cutter or CNC lighting.





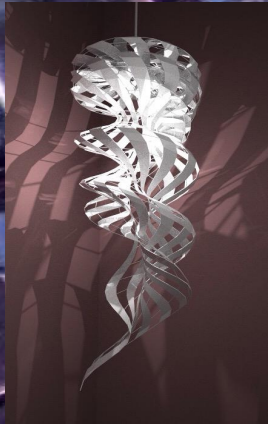
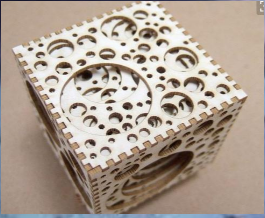
# CNC Lighting

CNC means Computer Numerical Control. This means a computer converts the design produced by Computer Aided Design software into a cut out pattern, creating cool and exciting effects.

It creates effective patterns and is a lot quicker in manufacturing. Furthermore this technology is extremely useful due to the fact this cannot be handmade, or it can just less accurately.

The patterns we see here allow the light to create a shadow that gives a positive visual effect, you are only limited to your CAD skills.

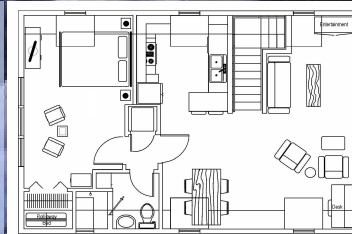
I am really inspired by CNC effects and would like to somehow incorporate it into my light. Many designs have used thin and flexible wood such as veneer and have curved them into a circle to create the shade which is a very effective design.





# Location Specifications

If the light is going to be located in either the garden or the bathroom then the light will need to include a lot more design specifications, for example in the garden the light will need to be water resistant and anticorrosive so that the style of light can remain. Similarly in the lavatory the light will need to be waterproof and either a wall lamp or a ceiling fixture.



The location of the lamp is very important because it will determine the style and fashion of it. Location could be what room; for example the living room, bedroom, hallway, laboratory or even in the garden. The other design specification of location is the type of light; is it a ceiling fixture, wall, floor or table lamp. All these variables will need to be accounted for and looked at carefully. After assessing these, the designing process can begin



Bedroom lights have a wider range of design ideas, for example it could be a desk lamp, bedside table, floor, ceiling wall and even an ornamental centerpiece, however there will need to be a clear theme.



These are living room pieces, one is a table lamp the other is a tall floor lamp, both are providing a decent amount of light and are also very ornamental looking. The floor lamp would be easy to move around and suit any part of a room, whereas the table lamp would only look good on a table in the room.

Ceiling lights can often be the centerpiece of a room but they are very location specific. They need to work as the primary light.



These are living room pieces, one is a table lamp the other is a tall floor lamp, both are providing a decent amount of light and are also very ornamental looking. The floor lamp would be easy to move around and suit any part of a room, whereas the table lamp would only look good on a table in the room.





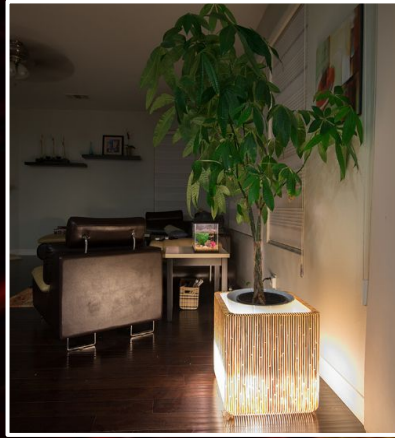
# Product analysis

## Construction

This lamp looks as though it would be complicated to manufacture due to the fact it's made out of wood wicker, it would have to shape around a cube with space in the center for the plant pot. Computer aided manufacturing would not have been able to be used, this type of light would need to be handmade. Even though this is a time consuming process it ensures quality control and could satisfy customers.

## Target User

The target user would be someone that lives in an apartment with style and fashion, they would probably be middle aged and quite wealthy. I expect someone between the age range of twenty to thirty to have this as an ornamental light, even though I wouldn't consider myself a target market for this light, I really like the form and function of this product and the multifunctional purpose it has.



## Estimated cost

This item on the market costs £30 to £50 depending on where you order it from and the retailer however, I would expect an item such as this would be in the bracket of £25 to £30 to produce, due to the fact it's not difficult to manufacture and there aren't many materials. The target market would be willing to pay for this item and expect a durable, long lasting, and high quality lamp.

## Light specifications:

- Material: Fiberglass with Wicker decoration
- Bulb Base: E26/E27
- Max. Watts: 60 Watts
- Bulb Type: Regular or Standard E27 base light bulb
- Weight: 11 Lbs
- Dimension: 17.7" x 17.7" x 17.7"

## Function

The function of this light is to illuminate an area or an entire room, it's a very ornamental product and is very fashionable and could be used to display items other than a plant. This is advertised in a living room and a bedroom, however this would be really conventional in a conservatory meaning the designer and manufacturer most likely considered waterproofing it.

## Materials

The materials used here are wood wicker and fiberglass to construct the shape of the lamp. The manufacturer could have considered using other woods or even metals, however the wood wicker creates a beautiful effect and carries the light through effectively.

## Location

The location of this type of lighting would be a living room or a sitting room, this light would definitely be on display so that everyone can see it. It would also be convenient in an office, or secretary. However this light is very flexible and would be convenient in any space or area and would look beautiful.



# Specifications

Hierarchy of Criteria	Initial brief	Detailed brief	Tested in design	Tested in manufacturing	Completion
Function 1	<p>Very important that the light works.</p> <p>If it doesn't work it cannot be sold or even used.</p> <p>Has to work well as a feature as well as a lamp.</p> <p>Provides enough light but not too much.</p>	<p>The function of the light is extremely significant in this lighting product, that is why it is first. The reason for this is if it doesn't work then it's useless. I need to ensure the bulbs work and any mechanisms of design are functioning and working too.</p> <p>It will be a mood floor lamp for maybe a bedroom or dining room, it will incorporate Richard Weston's photography.</p>	<p>In order to ensure the light functions I will be making test models that would accurately represent the original light design, this way I will be able to have an understanding of the mechanisms I intend to include and see how Richard Weston's work enhances the design.</p>	<p>When the product is going to be manufactured I will need to ensure that it fits onto the machinery I intend to use and that the materials are workable and allow light to work with the materials.</p>	<p>Arrange for the bulb to be tested many times along with each individual LED switching the light on and off 5 times a day for 3 days and see if the wiring works correctly. Allow the light to be left on for up to an hour and see if the materials hold.</p>
Safety 2	<p>The circuits must be checked.</p> <p>It must be stable enough to stand on its own.</p> <p>All sharp edges must be filed or sanded down.</p>	<p>Safety is extremely important, particularly with this project due to the fact that I will be working with electric and making it myself, this could be hazardous to myself and the consumer therefore I need to ensure the safety of everybody and check the circuits.</p> <p>Fire hazards are probably a major safety risk</p>	<p>During the design process I checked how sharp edges would be and considered if the joints would be secure and if any screws would cause problems</p>	<p>When manufacturing the product I will need to check for sharp edges and sand them down if necessary also check if the bulb and wiring is safely protected. Joints will need to be thoroughly checked to make sure they're secure.</p>	<p>Allow various people to inspect the product and retrieve reviews on the product. Then ask the target market to test the products components and allow them to use it consistently.</p>



# Specifications

<p>Aesthetics</p> <p>3</p>	<p>Eye catching to my target market. Has to be an ornamental feature. Effects of Richard Weston's work. Mood lighting. Can advertise itself.</p>	<p>The product needs to be appealing to the market and eye-catching for a range of people not just for my target market. Furthermore, the design needs to be ornamental as well as functional. The product will need to be original, customized and themed with Richard Weston's patterns</p>	<p>Aesthetics can be tested in design by asking my peers their opinions, as well as asking my teachers and a potential target user if they like the designs. Also creating miniature models to see if designs and patterns work.</p>	<p>By printing Richard Weston's design onto acrylic and wood I can compare the effects and further using light to see the effects I can test this in manufacture.</p>	<p>Ask 20 people that are within the target market range and ask them to rate the design and aesthetics of the light and where there is need for possible improvement.</p>
<p>Location</p> <p>4</p>	<p>What room the light is going to be in, such as a bedroom, living room or a hallway.  What type of light, floor, ceiling or a table lamp.</p>	<p>Location is quite important in this product because it can alter the style of the lamp and maybe the secondary function,</p>	<p>I will need to carefully consider where my target market would place their light and therefore will carry out market research and secondary research on shops such as Iconic Lights to see what majority of consumers purchase. Lastly producing a 3D model will help with the decision.</p>	<p>While manufacturing the product I will consistently need to put the product in the environment and location I want it to be in to ensure it matches.</p>	<p>Place the product in the location and photograph it, then place in a different location and compare the images, ask target markets opinion .</p>
<p>Sustainability</p> <p>5</p>	<p>Reduce the carbon footprint. Try to use recycled materials or reuse old wood. Can not cause pollution during manufacturing. Has to last long after purchase.</p>	<p>The product will need to be sustainable because manufacturing machinery and the materials I use will contribute to the carbon footprint and if this product were to continue on the market it would need to be ethical.</p>	<p>Before officially choosing a material I will consider the recyclability of it and test different materials in sketchup to see if they are just as effective.</p>	<p>I can test the sustainability in manufacture by reusing scraps of material and using the machinery for a minimal amount of time.</p>	<p>Ask for an evaluation from the FSC and BSI to get an official certificate of sustainability.</p>



# Specifications

<p>Quality</p> <p>6</p>	<p>The light will have to be durable.</p> <p>The finish will be clean and safe with an effective ornamental design.</p> <p>Manufacturing will be accurate.</p>	<p>The Quality of my light will need to be substantial and durable for the consumer to use for a long time. The base of the light will need to be strong in order to hold the entire feature. It must be made from good quality materials too, this will help the manufacturing process so that it can be at it's highest quality.</p>	<p>This can be tested in design by researching various materials and reviews of them and researching their top qualities such as strength, durability and finish. Designing the light in sketchup will also help get a clear view.</p>	<p>Ensuring the product is manufactured to a high quality is essential in this project. Each component will need to be reviewed and checked to see if all the components are assembled correctly and at a high standard.</p>	<p>Run your hand over the surfaces and feel if they are at a high enough quality to be sold, i.e if they are smooth enough, whether the consumer would get splinters. Secondly ask a few people within the target market their opinion.</p>
<p>Materials</p> <p>7</p>	<p>Consider the cost of materials.</p> <p>As the price decreases the quality reduces.</p> <p>Sustainability.</p>	<p>The materials will affect the quality of the light, for example during manufacturing if the material is difficult to work with it will take a lot more time and effort to get a good enough quality furthermore I will need to consider the cost of materials, durability and sustainability.</p>	<p>Materials can be tested in design by evaluating various factors about each material, for example the durability, strength cost, and sustainability. I can test these accurately using google sketchup.</p>	<p>I can test materials in manufacture by constantly evaluating the strength and quality of the parts and testing colours against it.</p>	<p>Feel each separate component to test for roughness or a bad finish, hopefully all the components have a clean and effective finish.</p>
<p>Manufact- Uring</p> <p>8</p>	<p>Can not be costly and will be completely ethical.</p> <p>Minimal waste and an elementary manufacturing process.</p>	<p>The process will need to be cost effective.. I will need to look into the tools, machinery and electrical circuits to use, also need to ensure minimal waste and an elementary manufacturing process.</p>	<p>When designing I will need to consider the joints and how I plan on connecting each component testing all the variables.</p>	<p>It can be tested by being checked thoroughly each time the product is altered to check if it's manuf-actured correctly.</p>	<p>Test the final product by pushing it with different amount of force and test the stability proving the quality of manufacture.</p>

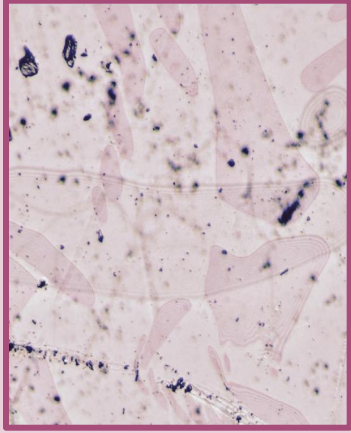


# Specifications

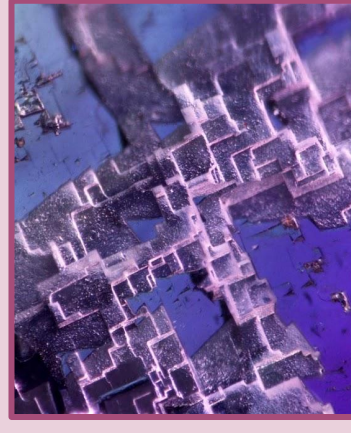
<p>Target User</p> <p>9</p>	<p>Has to be a large market in order for the product to sell.</p> <p>Appealing to the target market so they purchase it.</p> <p>Considering this factor before manufacturing.</p>	<p>The target user is important as it will change the design and style of the lamp, for example the gender is a major factor as well as the age group a 5 year old girl is going to have a completely different design compared to a 17 year old male.</p>	<p>The target user can be tested in design by questioning them on the various designs and whether they like the product and ways in which it can improve. Asking questions such as is the material effective, is the form and shape used appealing.</p>	<p>The target user can observe the process and see whether they approve of the processes and the overall creation of the product.</p>	<p>Place the light in the correct location and alternate between using it as a primary and a secondary light and ask whether they approve and ask them if they like the finishing design and style.</p>
<p>Cost</p> <p>10</p>	<p>The cost will need to ensure a profit.</p> <p>It will need to be affordable to someone with an average wage.</p> <p>Reasonable price with an effective design.</p>	<p>The cost of the light includes the materials, manufacturing and time and effort put into it, therefore I will need to conduct market research in order to find a suitable price the satisfies both. It has to be affordable for my target market and profitable for the manufacturer.</p>	<p>By estimating the total cost of materials and then considering the machinery that will be used and the man labour, I can total the costs and see how much I would need to sell it for to make a profit, also taking into consideration the target markets salary and how much they would be willing to spend on the light from the design.</p>	<p>By using cost effective materials I can maximise profit and reduce the cost to manufacture, also I could use offcuts and reuse old materials. Maximising the amount of material will reduce waste which is sustainable and cost effective.</p>	<p>Compare the light to similar models and how much they are priced at in comparison, ask a sample of the target market what they would price it at and then reveal the actual price to them and ask them to evaluate.</p>
<p>Size and form</p> <p>11</p>	<p>Cannot be too small but cannot be too big either.</p> <p>Depending on the location and secondary feature.</p>	<p>The target user would place this light in their bedroom in university which are quite small and narrow, therefore the light needs to fit and be a reasonable shape that won't make it awkward to walk in and out of the room.</p>	<p>Designing the light in various sizes and altering shaping I can test various versions in development to see how effective the size, form and secondary function would be.</p>	<p>Producing the light in Sketch-Up and making miniature models I can evaluate the form.</p>	<p>Place the completed model in a small but reasonably sized dorm room and ask the target market how they would find owning a light like this.</p>



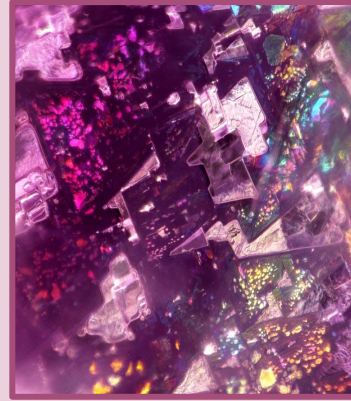
# Richard Weston Patterns



My chosen Richard Weston patterns are mostly pink and purple with shades of blue and green, the reason for this is I want my light to be a mood light and after research I found that warm colours such as pink and purple give an ambience of love and calming.



My target market are females between the ages of 16 and 22 and with the versatility of blue and purple males would also find the light appealing also, furthermore anyone with an eye for pattern or design would desire the light featuring these.





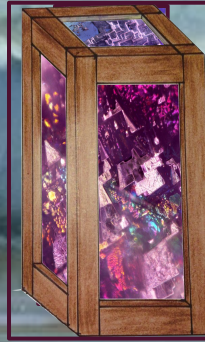
# Design Ideas



Drawing

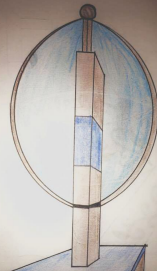
This design was inspired by Paul Hemsworth Artichoke Style pendant light, using CNC I could manufacture this quickly and easily, however the design is extremely simplistic and does not consist of any other materials, I would have to develop this and induce Weston's photography somewhere on the light. On the other hand, would this be appealing to my target market?

Drawing  
photoshopped



**Moody Mood:**  
This light would have a large bulb that could be controlled by a remote, the laminated acrylic would glow and light up the room creating a beautiful atmosphere, it would cost approximately £20. The stable plywood frame would hold the acrylic in place. Therefore it's completely recyclable and sustainable.

This light would be a floor lamp, the fabric shade could be twisted around the light and be used as a shade to dim the light, on the fabric would be Richard Weston's patterns that would be lit up by the main light. This light would be a secondary light however could be used daily, mostly in the evening as it makes a beautiful mood light. The user could twist the ball on the top to move the fabric around, meaning the light can be easily folded away and stored.



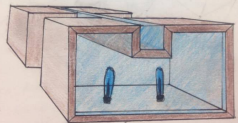
Drawing

The effect I wanted to create here was a floating style where the idea is all about perspective, this delightful table lamp would be perfect for any student or my target market generally, it would only cost approximately £8, however after developing this further using Sketchup, I found that the design was too simple and not necessarily something my target market requires. Therefore I will not be developing a table lamp or small style of light due to the fact table lamps just aren't as appealing.

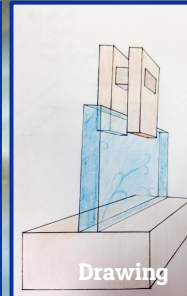
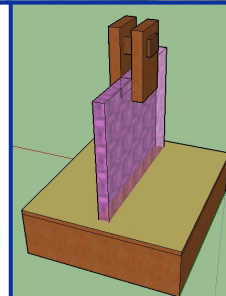
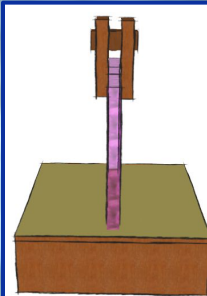


Drawing

This model is actually quite small, it has multiple components that can be fixed together and altered by the consumer, each box would have between 1 and 3 LEDs and could be used as a 'fidget' light, the consumer would be able to buy more and more pieces to build themselves a bigger light in the shape they want.



Drawing



Drawing

**Di-Vine Lighting:**  
This light would be the centerpiece of a room and would be a main attraction, the aluminium wire would be tinted and curled into a vine like design, the leaves would be engraved and attached to the wire. Bulbs would be large and individually dim, but together give an effective and convenient glow.



# Design Ideas & Development

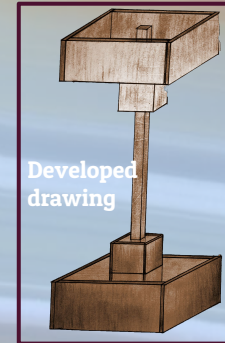
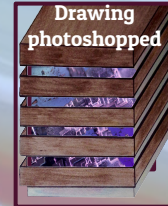
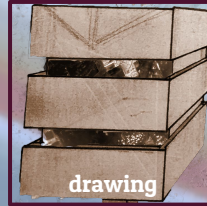
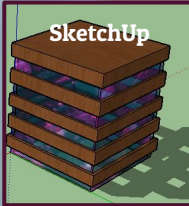
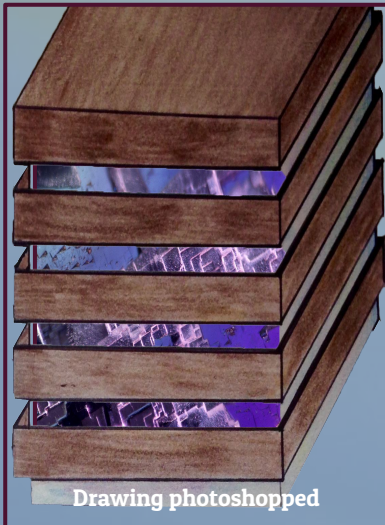
## The Floating Box:

This would be eliminated acrylic in a shelving format that gives it a floating effect, each section would have its own set of LEDs so that you can choose how dim or bright you want your light to be. The secondary function of this mood light could be as a table. Each layer of acrylic would be slotted into a block of plywood and would cost £25. Laminated acrylic would be slotted into place, meaning that there would be no need for glue that's harmful to the environment, therefore if the consumer was to dispose of this light they could remove the acrylic pieces and recycle the wood. This design is perfect for my target market and is reasonably priced too.



## ätherisch glühe (Ethereal Glow)

Personally I admire the style and design of this light and furthermore the effect it creates. It's perfect to be used as a mood light and conveys Richard Weston's work beautifully through the laminated acrylic. The base will be able to light up individually and be altered by a controller meaning the consumer can create the perfect ambience, I considered what my target market requires, height, width and functionality wise and considered how they could use this as a side table as well as a light, I wanted to design this light to be as functional as possible and multipurpose for convenience to the target market and indulge them in the effects of this floor lamp.



## Incorporating 'The Floating Box' and 'Ethereal Glow'

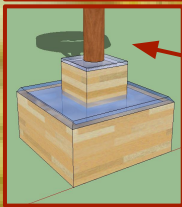
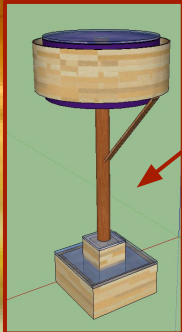
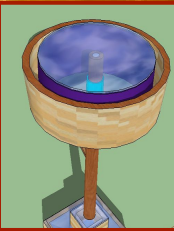
My 2 favourite designs can be altered and incorporated together. Scaling of this model be the main concern of developing this design, and considering my target market, the colours used throughout will need to be altered. By using photoshop and sketchup I can easily edit and change the style, form, colour and layers when I develop it.



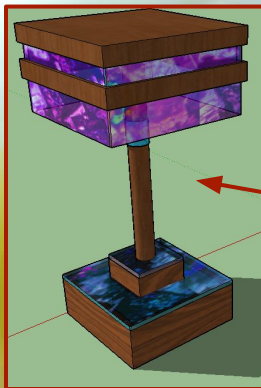
The design idea of traditional conventional lighting originates from old fashioned candle light stick holders, essentially a shade is to dim the brightness of the light however with modern day electronic components that can be done manually, however after conducting market research, I believe my target market would prefer a conventional style lamp, therefore I will continue to develop a light with a fixture on top to either dim the light or to be used on a permanent ornamental feature, this will also allow me to increase the price and gain more profit.



# SketchUp Designs

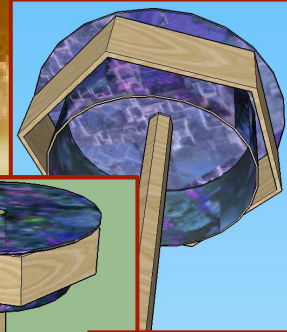
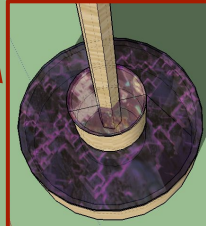
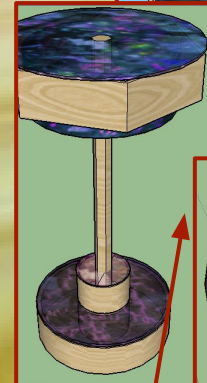


This is very similar to the original, however I have used inspiration from my CNC lighting research and echoed the main shade. On the inside a fabric with Richard Weston's printed photography, around the outside a laser cut and engraved piece of plywood. Furthermore acrylic on the top allows the light to be used as a table too. Suitable for my target market.

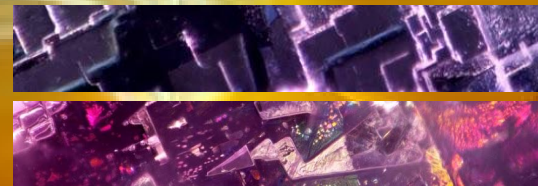


The development of the two highest rated designs, assessed by peers and various people within my target market, the laminated acrylic helps with the mood setting and ambience I would like this light to have, other ways I could incorporate this would be on printed fabric, however that's costly, time consuming, and simply wouldn't be as effective. I considered the stability of this light and in sketchup I altered the base to make it larger and reduced the length of the centre pole. I would like to develop this to incorporate other shapes.

The repeated hexagon idea. I really like this idea because it's aesthetically pleasing in its own simplistic way, the only issue with this would be making all the hexagons extremely accurate so the angles work and fit together for a quality finish. However I will be developing the hexagon idea.

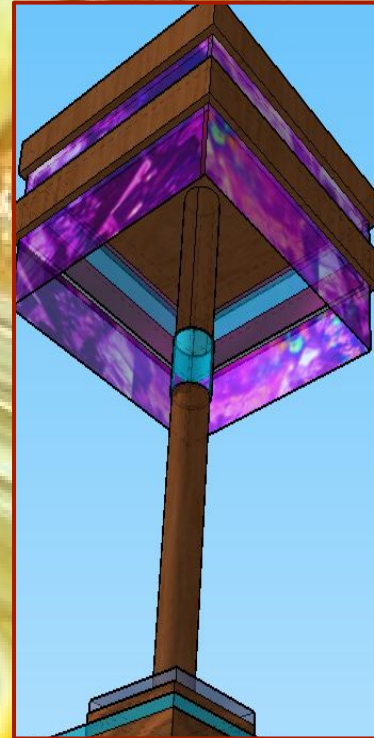
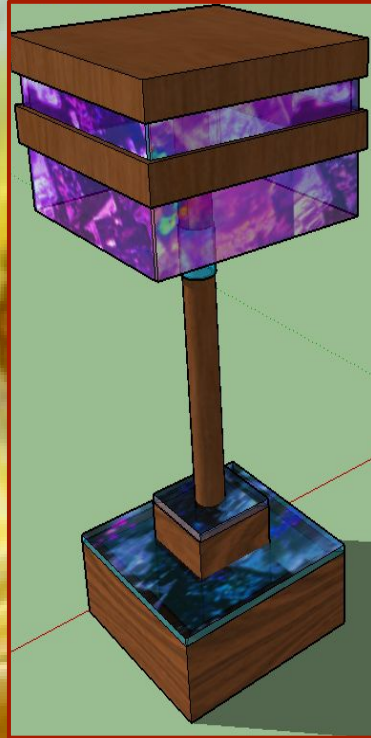


This light emphasises Richard Weston's photography throughout and this light would be a very loud centerpiece. This light would create a really calming ambience to a bedroom or living room. It would provide a substantial amount of light to read a book without straining eyes but not too bright that it's suitable as the primary lighting of the room. Lastly the combination of shapes is an effective design.





## SketchUp Designs - Final Ideas



Personally, these are my favorite developments and I really like the hexagon design in the first one and then the separation between acrylic and wood in the second one, the tower base idea is continuous and I would definitely like to include this in my final product. I really like these designs and believe that I could combine both products to produce a final idea that satisfies these designs as well as my target market and after asking my peers they all agreed and supported the final developments. In effect therefore I will conduct further research and development to conclude how I would manufacture this product.



# Prototype

Prototyping is important because it's a crucial part to developing the design and allows the manufacturer to see where the design needs to be altered in order to make the finishing product functional and aesthetically pleasing.

Firstly, I made a miniature, simple model out of card and masking tape, this helped me retain the image of the design and scale it effectively. I considered the scale and how each component could be altered for improvement, from previous designs and Sketch-Up ideas I eventually decided to incorporate the hexagon design.

After modeling a scale size hexagon, showing width, depth, and thickness of wood, there were a total of 19 parts that were glued together and it was very complicated and unstable, I came to the conclusion that it would be easier to manufacture a net and cut it out using the laser cutter, this way, angles would be accurate and to scale. Furthermore, using the laser cutter was a much quicker process.

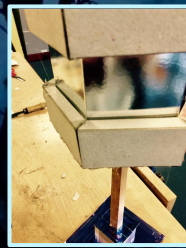
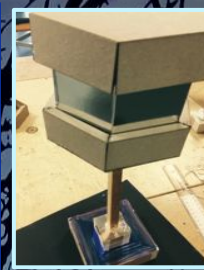
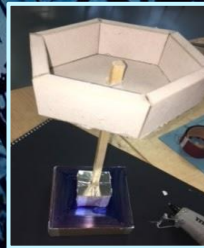
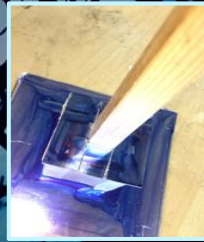
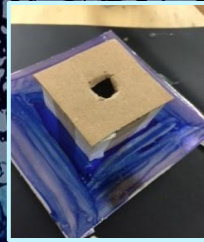
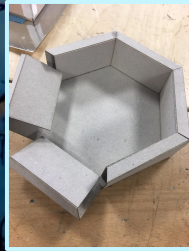
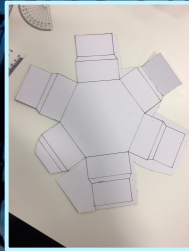
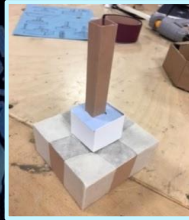
The first issue that occurred with the laser cutter was, underneath the design on '2D Design' there was a repeated hexagon in blue, meaning the laser cutter cut out the central piece, after fixing this issue I duplicated the net and fixed them together. After finding the measurements I used reflective card that represents the laminated acrylic, which slots the two hexagons together.

I then continued to manufacture the base, the main issue here was stability, using weak cardboard meant the towered affect was too heavy upon itself, therefore I used peg like stands in the centre of the cubes, however in the final model I will not be able to do this because of the LEDs and wiring, therefore I will need to use a strong material.

Lastly, fixing it all together. This was a simple process of slotting the components together and applying hot glue to secure it. The only issue right at the end was getting the prototype to stand straight and not fall over, the only way I could have completely prevented this would have been to manufacture the base from a stronger material.

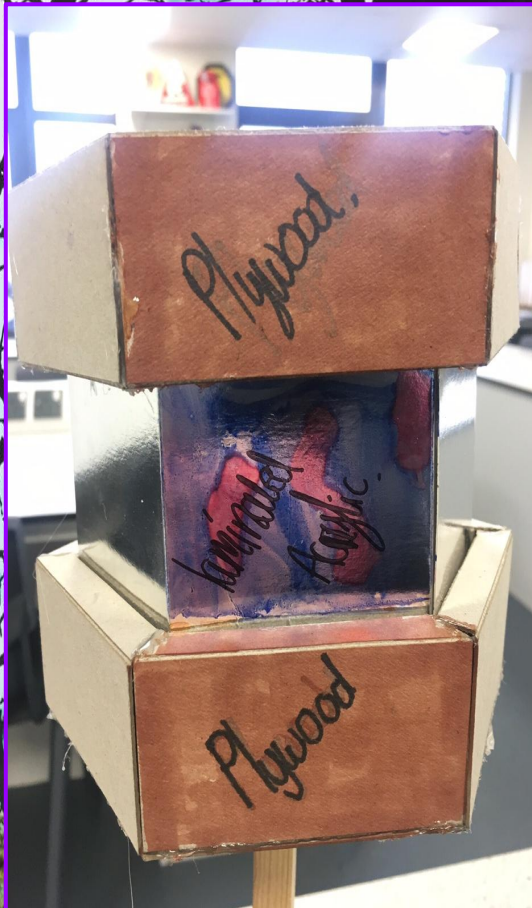
## How Could I Develop it Further Using the Prototype?

A main problem that occurred that I will definitely need to consider, is the stability of the light. The base will need to be made of a strong and cost effective material whereas the main feature, the shade, will need to be light, it doesn't necessarily need to be strong however that would be beneficial. I considered using Balsa wood due to it being extremely light and cost effective however due to the intricate and accurate cutting this wood splits easily and may cause the market to obtain splinters or other injuries. On the other hand, I could alter the design so that there are planks from the post to hold the main piece up. I could also alter the main piece of the design back to my original idea, this would be easier to manufacturer, simpler and a lot more cost effective. I will need to consider what my target market would find more aesthetically pleasing.

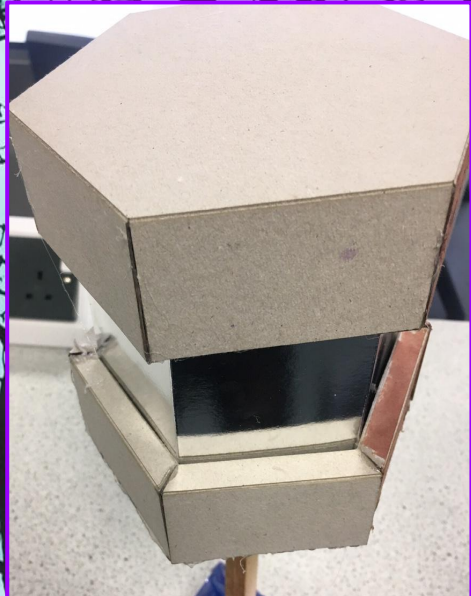
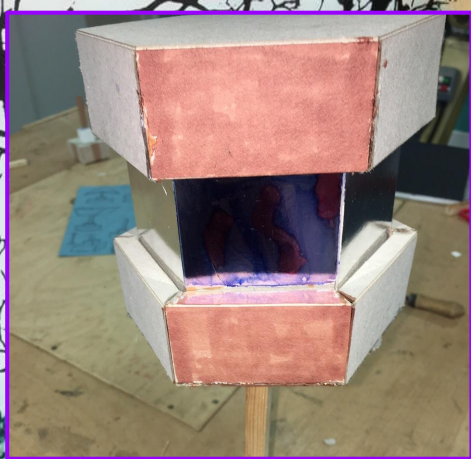




# Prototype

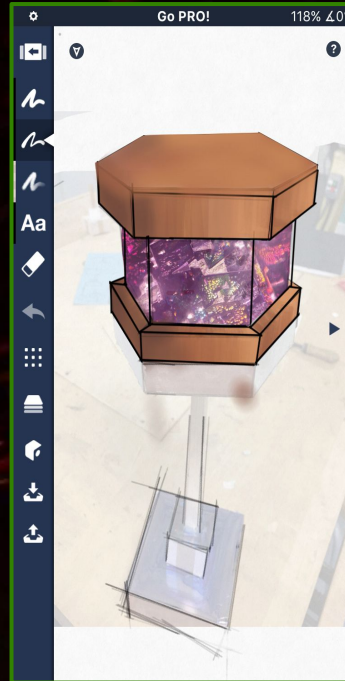
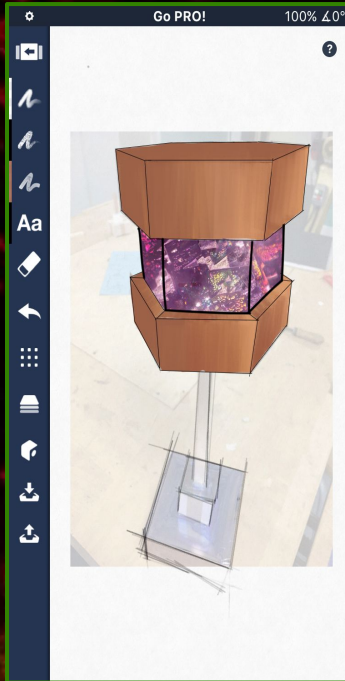
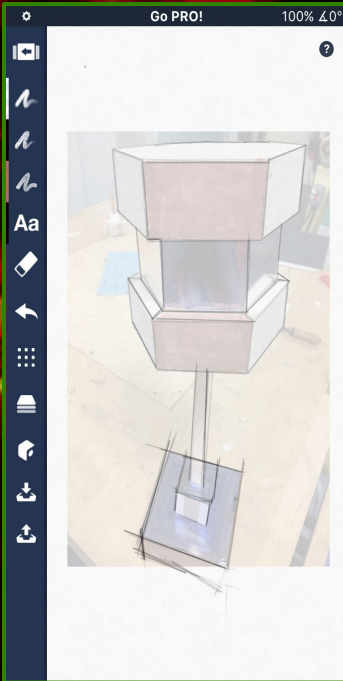


This is my final prototype, and the making process has been discussed previously however the location of this product is still a bedroom, however for my target market

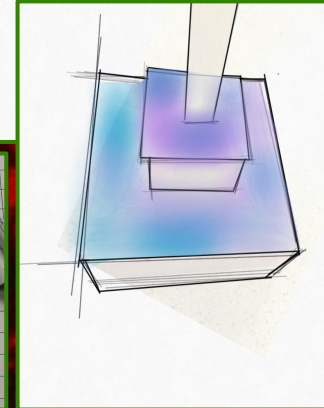
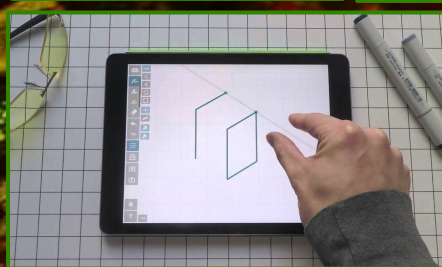
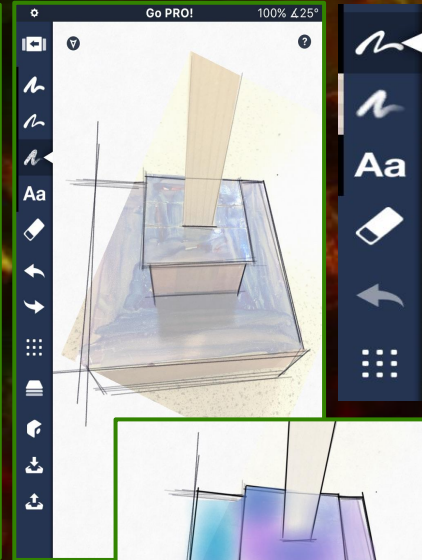




# Concepts Development



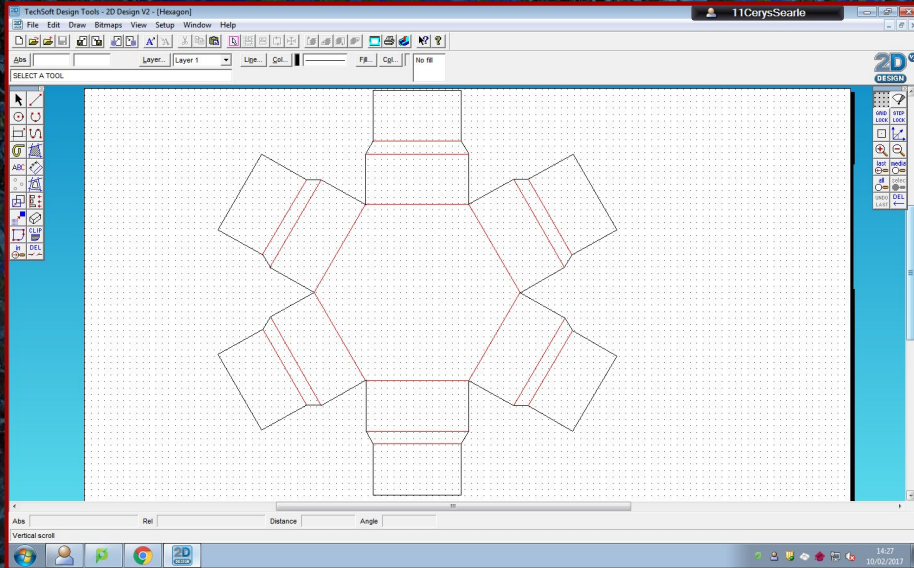
The base didn't require much development as this was the main part of the original design that I liked and therefore I was not planning on making alterations to this, however the way in which it's manufactured could alter how it looks on the final product. Whilst producing this in concepts I changed the idea of using Richard Weston's work on the base as well as the feature and will instead use a translucent or clouded acrylic to create a nicer effect.



Firstly I imported an image of my prototype to trace a brief pencil line over and get an understanding of the dimensions and shape, I then imported an image of Richard Weston's work that I am going to use in my final design, I then finalised the shape with a dark outline and shaded it in, this provides me with a clear understanding of the main feature of my light. I liked the original trace of the prototype as it was evenly distributed however I developed it to decrease the size of wood and keep the acrylic quite large, personally I didn't like this development and after asking peers their opinion I came to the decision that this wasn't effective. Furthermore it wouldn't be as stable and secure as the original design/prototype. Even though the final concept is messy or untidy, it still displays the idea clearly. After assessing the idea the first fully developed concept idea will be the closest concept sketch to my final product.

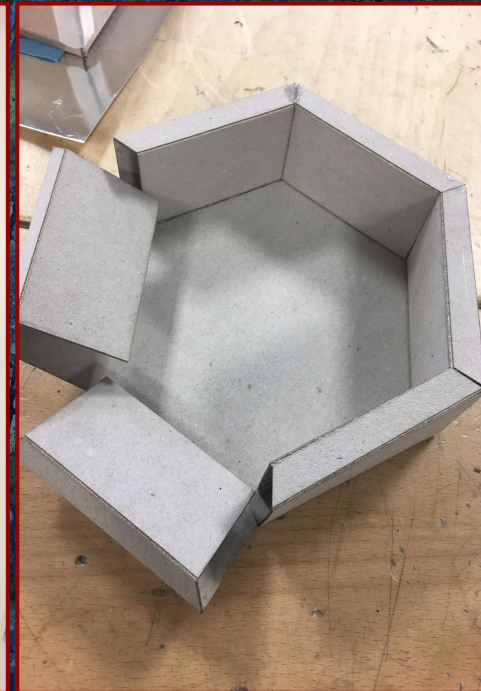
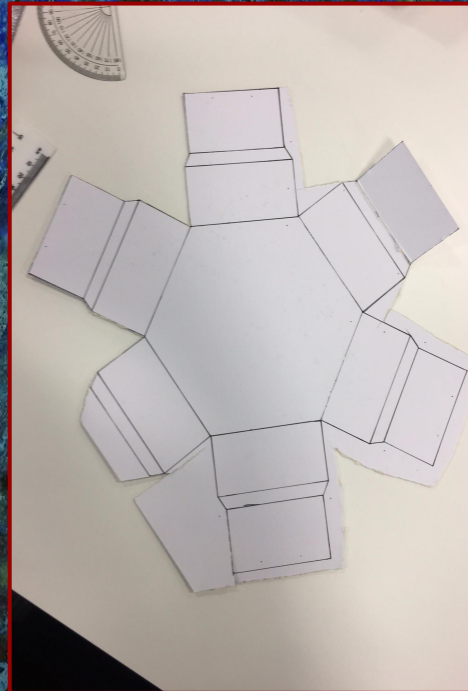


# 2D Design (prototype)



In order to achieve the depth detail I needed in my prototype I began with a drawn out version that I was planning on cutting out with a stanley knife

Originally, I began with a handmade version however once I began cutting this out with a crafting knife I realised how incredibly difficult it was to cut out the intricate details and corners. My first idea to solve this issue was to simply make the prototype larger however it was already to scale and that would be a large waste of resources. Then I decided to use CAM to produce a template, this not only reduced the time spent on the prototype it sped up the entire manufacturing process and accuracy of it.





# Lighting Types



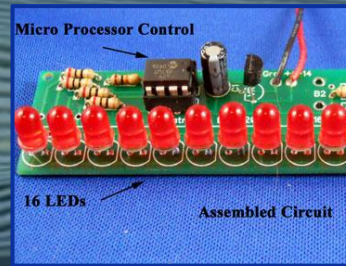
## LED Strip

The LED strip can be bought in various shops and over the internet, such as Amazon and Ebay, this lighting fixture is perfect for my design because I need a continuous light to flow through from the base up to the main hexagon feature, they range in length and vary on price depending on the outlet, a 2m colour changing USB cabled LED strip is £15.60, this is the higher bracket of prices and it would affect the selling price however it is perfect for my light and therefore I need to disburse from the profit.



## Wired Boards

Even though these are extremely pretty, they can only be purchased in 10cm lengths and this would mean that I would have to solder maybe 5 or 6 strips together and at £8 each this would total to £40 to £48 and a lot of effort to solder. The outlet for this is batteries and therefore I would then need an accessible space for a battery box to be placed. Overall, even though these lights are bright and appealing they are too unconventional and not suited well enough for my light and the design of it.



## Mini Board

These can be manufactured in the tech department, however online they are £1.50 for one and I would require a minimum of 10 which totals at £15. They aren't colour changing and are inconveniently battery powered.



## LED Light Bulb

At a low cost of £5 this light is really effective and can alternate between colours, however I cannot use this in my project due to the fact I cannot fit that style of light fitting into my design. On the contrary this is a very conventional light that I would use if I could. I could possibly alter y design however it would make it extremely complex.



## Large LED Board

These come 5cm X 5cm and they only provide white glow, however they are extremely bright and would shine through the polypropylene of Richard Weston's print making it clearer and a lot more vibrant to the consumer. They range from £2.50 to £4 however I would need 4 due to the different components



# Joinery woodwork

## Through housing joint

In effect this is a slot cut out of a piece of wood that's the same thickness of another piece that you want to join together. I will use this joining effect throughout my project, in the base squares and the main feature, not only wood to wood but also wood to acrylic, it works just as efficiently and the trench will only need to be 3mm thick.



Through housing joint

## Dowelled joint

Dowel joints are very strong and attractive if they are, like all other joints constructive well. Dowel is also very useful for greatly increasing the strength of weaker woodwork joints such as the butt joint. I will not be using this joint in my project, simply because it doesn't match my design and doesn't work with any of the angles.



Dowelled joint

## Box joint

As beautiful as the box joint is, it does have its downsides: These consist of it only thoroughly working for hardwoods such as oak, with soft wood there's a possibility that it can deform and fail the construction of the rest of the project. Furthermore this is a very intricate manufacturing process and is very difficult to perfect.



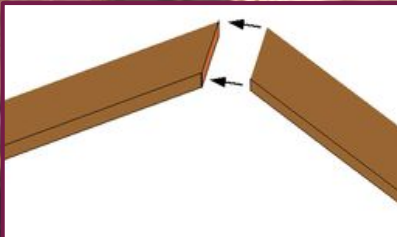
Box joint

## Mortise and Tenon

A mortise and tenon joint is one in which the rectangular end (the tenon) of one piece fits into a rectangular hole (the mortise) of the same size, in the other piece. Personally I don't like this joint and wouldn't use it in my project, on the contrary this joint doesn't work with my design and I don't need to use it anyway.



Mortise and tenon



## Mitre joint

This type of joint is stronger and more appealing than a butt joint is because the ends are cut at a 45° angle and then glued together, this creates better surface area for adhesive to be applied while also concealing the end grain giving it a nice flush look.

The best results for these joints are achieved by cutting the angle of the joint with a drop saw instead of a hand saw, this creates very straight and neat edges.







The mitre joint is very common on picture frames because there is no end grain showing and they don't require much holding strength. Sometimes a frame made from this type of joint is used to attach or cover the edges of wood panelling. The angle doesn't necessarily have to be 45 degrees, I will be using this joint on my main feature with the hexagon, this means that the wood will be cut at a 60 degree angle as opposed to the base which requires a 45 degree jig.

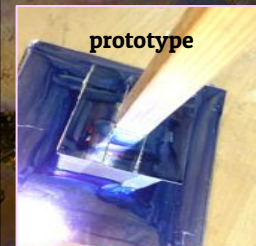
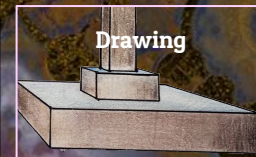
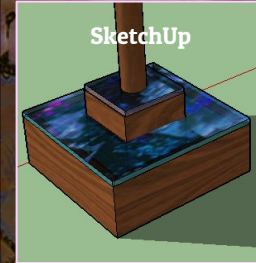
The finish of this joint is in fact extremely difficult to achieve and majority of my manufacturing time will be spent sanding and filling gaps if the edges don't match up, this can be caused by a lot of things and there are too many variables.





# Materials - Base

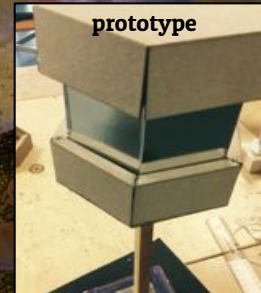
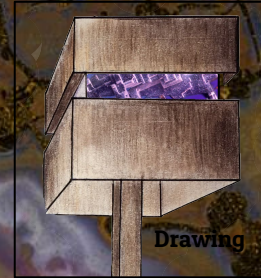
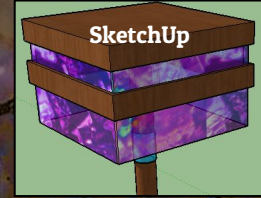
Material	Advantages	Disadvantages	Cost	Workability/ Stability	Chosen Material
 <p><b>Plywood</b></p>	<p>Plywood is often used in construction. Hardwood plywood, it is strong, has a hard surface, and resistance to wear and tear. Tropical plywood is higher quality, density, and strength.</p>	<p>Plywood can sometimes obtain 'voids'. They reduce the ability of the nail to hold properly in the plywood. Plywood can be heavy depending on the amount of layers. Plywood is also prone to water damage.</p>	<p>Mid</p>	<p>Issues that would interfere with me using plywood in my final product conclude of the aesthetic appeal, however if I were to veneer it I could possibly use it.</p>	 <p>Oak</p> 
 <p><b>Veneer</b></p>	<p>Veneer is an eco friendly, cost effective wood that is effective and is very beautiful, also does to it being manufactured to stronger woods with adhesive it is very durable. It adds to the quality of the finished product.</p>	<p>Extremely thin and more susceptible to water damage. Generally, high quality wood veneers are more costly. Wood veneers require more maintenance and they need to be polished from time to time.</p>	<p>Low</p>	<p>Veneer is inexpensive and very appealing however this is the base of my light needs to have a lot of stability and strength, veneer would provide this.</p>	
 <p><b>Oak</b></p>	<p>It is very durable and often cut in a way that makes it resistant to warping. It's not too expensive and is easy to obtain. Oak takes varnish well, resulting in a beautiful finish that will last a long time.</p>	<p>Stain can overly darken, can make it look two toned. Oak can be very heavy, the effect it has upon a room can be overwhelming. Oak can also have serious problems such as blight, which can affect the appearance of the wood.</p>	<p>High</p>	<p>Even though oak wood is costly it provides all of the essentials that I require in the base, which is: strength, aesthetic appeal and ease to work with. The extra cost would make it expensive.</p>	
 <p><b>Beech</b></p>	<p>Beech is very hard and tough, it is also strong, with a close straight grain. Beech polishes well and withstands shocks and wear. Meaning overall it's extremely durable.</p>	<p>It is not suitable for permanent outdoor use because it is not durable when exposed to changes in moisture. It can be heavy because it is so dense and may be difficult to work with. Low cost however reserving costs are high.</p>	<p>Mid/ High</p>	<p>Beech would require a lot of treatment in order to keep the form and grain of wood healthy which is a costly process in which is not covered in the budget.</p>	





# Materials - Main Feature (wood)

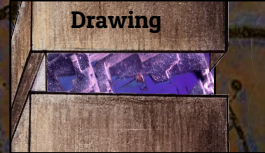
Material	Advantages	Disadvantages	Cost	Workability/ Stability	Chosen Material
 <p><b>Plywood</b></p>	<p>Plywood is often used in construction. Hardwood plywood, it is strong, has a hard surface, and resistance to wear and tear. Tropical plywood is higher quality, density, and strength.</p>	<p>Plywood can sometimes obtain 'voids'. They reduce the ability of the nail to hold properly in the plywood. Plywood can be heavy depending on the amount of layers. Plywood is also prone to water damage.</p>	<p>Mid</p>	<p>Plywood is layers of scrap wood and is incredibly unappealing, even though it has a lot of strength, I cannot use this in my main feature.</p>	
 <p><b>Ash</b></p>	<p>Has a very strong grain for a beautiful wood effect but is also soft and has a graceful light wood colour. Ideal for machinery work such as drills and saw. You can also purchase ash wood in fire resistant form.</p>	<p>Not water resistant and can easily be affected by surrounding conditions due to it being a softwood. Requires more maintenance after production. High cost on frequent maintenance fixtures.</p>	<p>Low</p>	<p>Even though this wood is low costing and has an aesthetic appeal it requires treatment regularly and my target market would not have the free time to do so.</p>	
 <p><b>Veneer</b></p>	<p>It resists warping and fragmentation. It increases the strength of the product. It is an eco-friendly material and can be easily recycled. It is generally non-toxic. It helps to achieve edge and surface finishes with uniformity.</p>	<p>Extremely thin and more prone to water damage. For installation of wood veneer, skilled workers are required. High quality wood veneers are more costly. Wood veneers require more maintenance and they need to be polished</p>	<p>Low</p>	<p>Even though this is has a beautiful effect and would look extraordinary as the main feature, it is not strong enough for the other components.</p>	
 <p><b>Spruce</b></p>	<p>Spruce is light of colour and really easy to deal and manufacture with, it has a light colour due to how its farmed and its absorbent of light.</p>	<p>It's a softwood, so it's prone to scratches and dents easily and often warps in humid conditions as it absorbs moisture.</p>	<p>Mid</p>	<p>This wood is actually perfect for the main feature as it's attractive and easy to work with furthermore it's not too expensive.</p>	





# Materials - Richard Weston's Feature

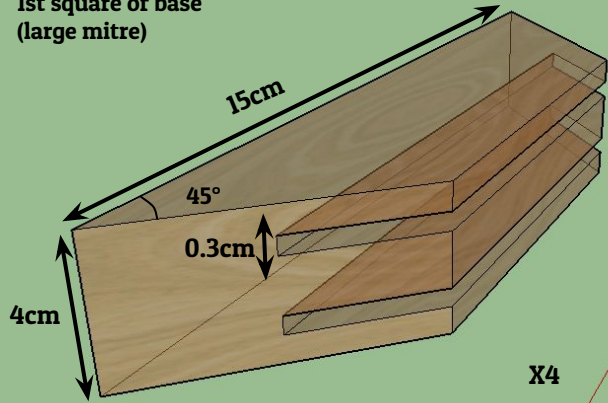
Material	Advantages	Disadvantages	Cost	Workability/ Stability	Chosen Material
 <p>Acrylic</p>	<p>Weather resistant and long lasting. Acrylic sheets are also non toxic. It is really light in weight and easy to find in various colours and even translucent, you can also engrave, cut, bend and print onto acrylic sheets.</p>	<p>It is very easy to scratch, therefore precautions must be taken during manufacturing. Acrylic isn't the strongest plastic and can snap. Can sometimes look cheap and tacky.</p>	<p><b>Low</b></p>	<p>In relation to myproject acrylic is perfect, I have worked with acrylic before and it's really easy to construct with, the disadvantages are irrelevant to my project as I don't need strength.</p>	 <p>Acrylic</p>
 <p>Stainless Steel</p>	<p>All stainless steels have a high resistance to corrosion. It has high and low temperature resistance. The majority of stainless steels can be cut, welded, formed, machined and fabricated readily. It's also strong.</p>	<p>It has a high initial cost and it is not as malleable as other metals, say iron, and hence if not fabricated properly, results in costly re-work. High cost of finishing touches for the market.</p>	<p><b>High</b></p>	<p>Stainless steel has an appealing aesthetic to it however for my target market it is costly and could possibly turn the market away. It also isn't translucent therefore it would need to be laser cut allowing the consumer to see inside</p>	
 <p>Cotton</p>	<p>Cotton is actually a strong fabric and is easy to construct with, you can obtain cotton in various sizes, colour, styles and thickness. You can tie dye fabric and print onto it to get the desired pattern.</p>	<p>Could tear easily during manufacturing and finishing quality might not be of high standard.</p>	<p><b>Mid</b></p>	<p>Printing Richard Weston's design onto this is essential however onto cotton the design wouldn't be very durable and cotton is a fire hazard therefore it would require another layer of material resulting in a higher cost.</p>	
 <p>Frosted glass</p>	<p>Easy to clean and it has an aesthetic appeal too, comes in a variety of colours, and even though it's opaque it allows light to travel through.</p>	<p>Needs to be taken care of and manufactured gently to avoid breakage however durable once the final piece is made. Can hold heat and therefore could make a product a fire hazard.</p>	<p><b>High</b></p>	<p>Frosted glass is a lot heavier in comparison to other available materials and therefore wouldn't help the stability of the light, even though it's aesthetically beautiful it is also extremely costly.</p>	



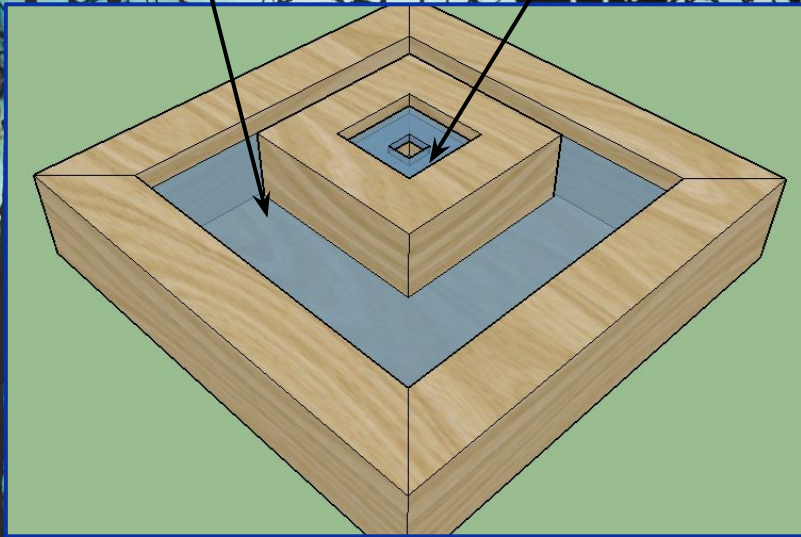
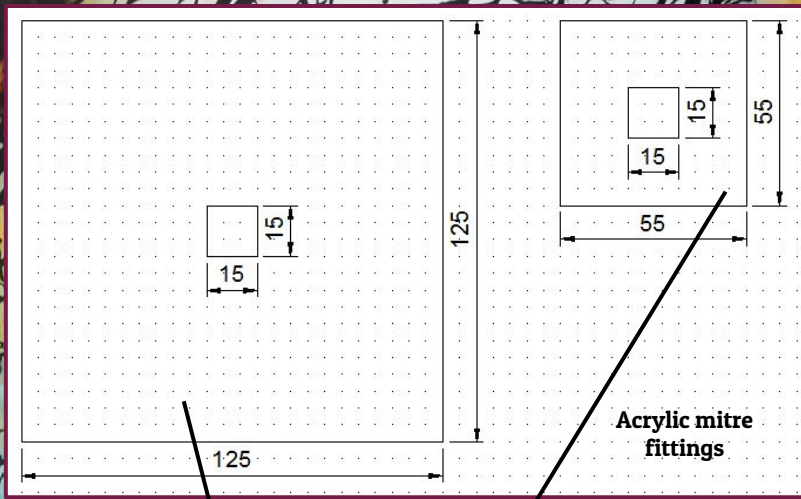
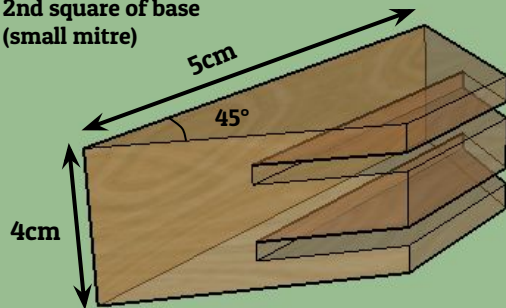


# Dimensions: Base

1st square of base  
(large mitre)

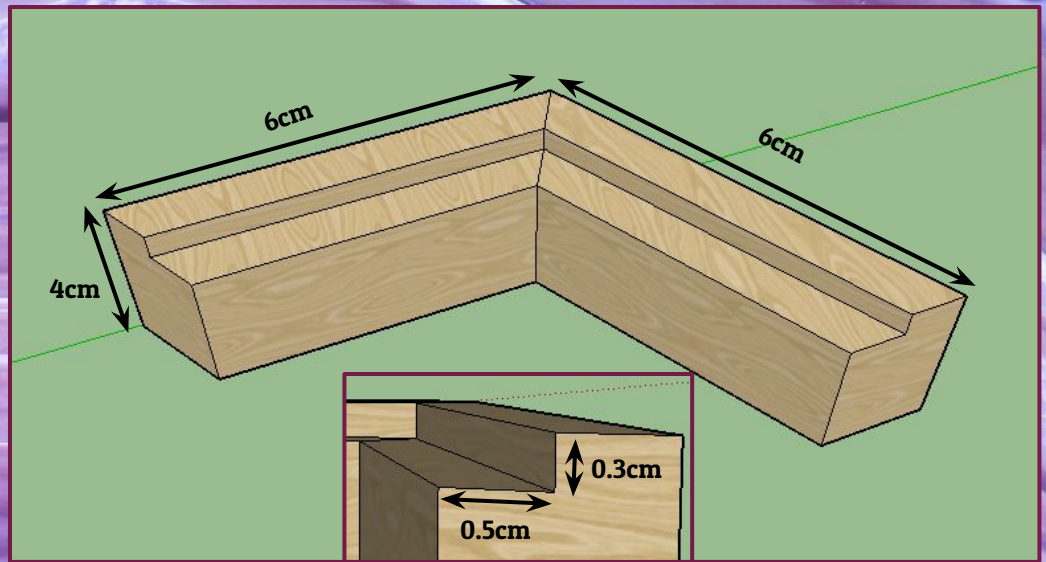
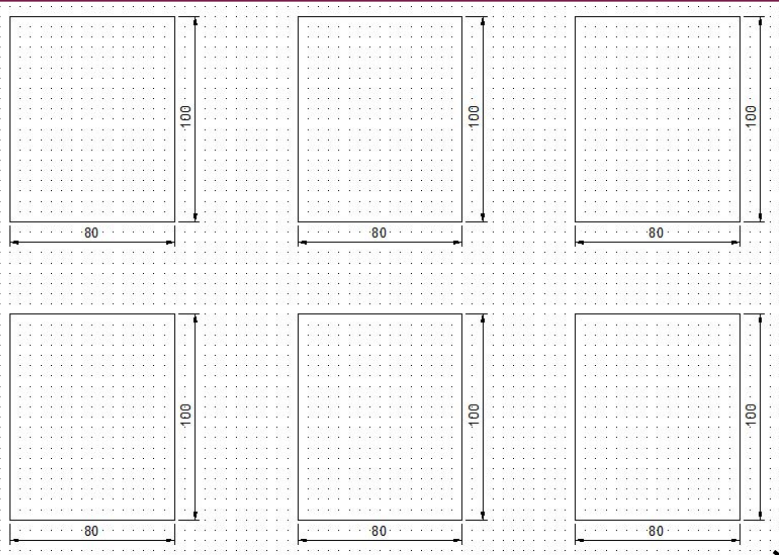


2nd square of base  
(small mitre)



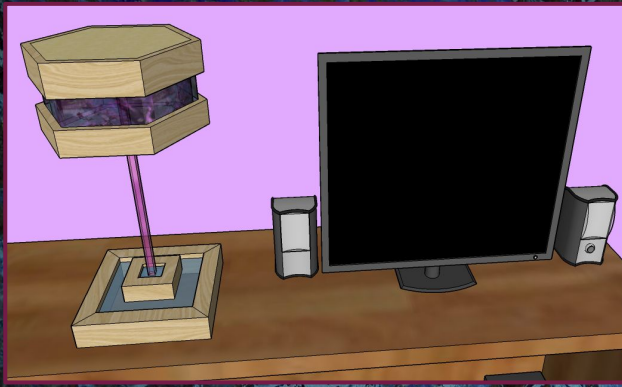


# Dimensions: Feature

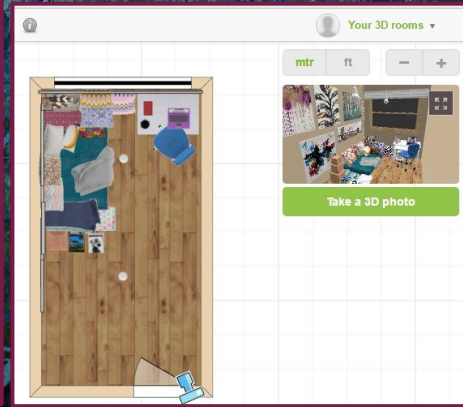




# Lighting Placement



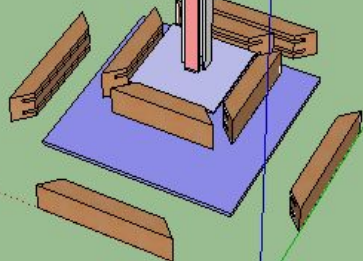
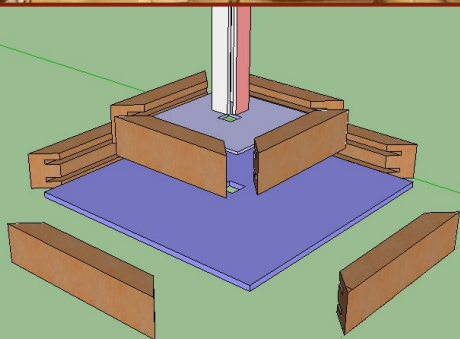
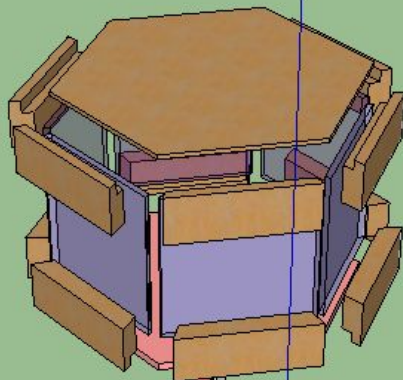
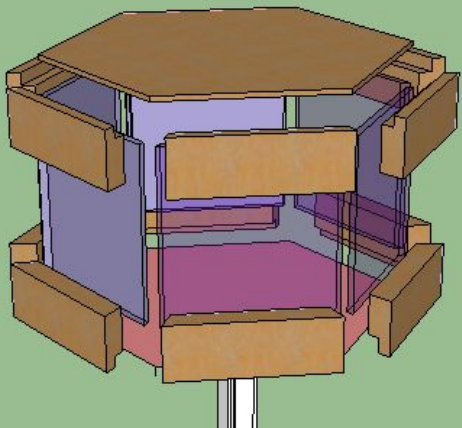
This is the light in comparison to the height of a computer screen (left), it is perfect to be placed on any desk and can add personality to a room and create a mood changing atmosphere with the colour changing effects. My target market was a female in university that enjoyed art, and to follow my specifications I have designed a room using RoomStyler that my light would typically be put in. The paintings would have been painted by my target market and look a lot like Richard Weston's work and my target market could hopefully be inspired by his work on the light.



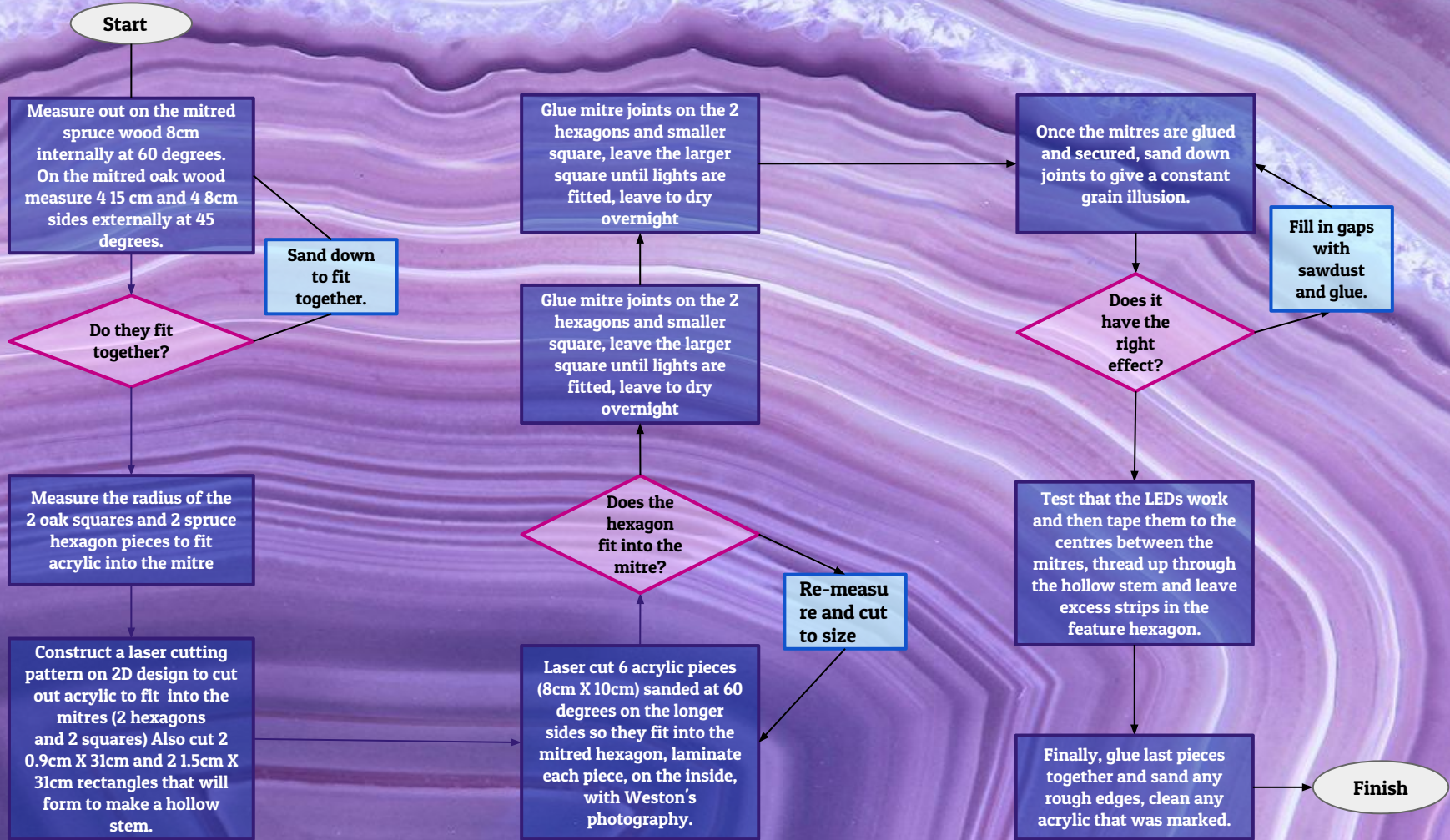
RoomStyler helped me create a typical room that I would expect a person within my target market to own and then preview it as if it was real, this is called 3D view, I could then use this to place my light and see if it fits in with the atmosphere and theme of the room. This room is a typical university dorm room for an artistic 18 - 22 year old. The range of patterns and geometric design compliments Richard Weston's photography that is on the lamp which is the reason this is my target market.



# Exploded View









Tasks	Predicted / Actual	Feb 13th	Feb 20th	Feb 27th	March 6th	March 13th	March 20th	March 27th	Comments
<b>Clear Planning:</b> 1. Detailed drawings 2. Accurate measurement 3. Discussed the manufacturing process	Predicted								<b>Measurements and material specifications made here in order to plan clearly the making process.</b>
	Actual								
<b>Finalise Design</b> 1. Ask opinion of peers 2. Question target market 3. Self assess against specifications	Predicted								<b>Getting peers to evaluate my final design meant I could improve it and finalise the design.</b>
	Actual								
<b>Materials:</b> 1. Chose materials 2. Order in & cut to size 3. Check quality before beginning	Predicted								<b>Ensuring materials were at the highest quality before beginning the manufacturing process meant I wouldn't have cracks, scratches, or splits in the wood to worry about later in the project. Choosing the right material is important.</b>
	Actual								
<b>Measurements:</b> 1. Spruce wood: 12 pieces 8cm externally at 60 degrees 2. Oak wood: 4 pieces 15cm externally at 45 degrees	Predicted								<b>2 metres of spruce and 2 metres of oak wood measurements had to be accurate ensuring jig was inside and the angles were 60 and 45 degree</b>
	Actual								



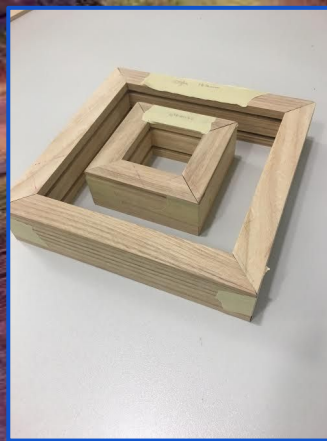
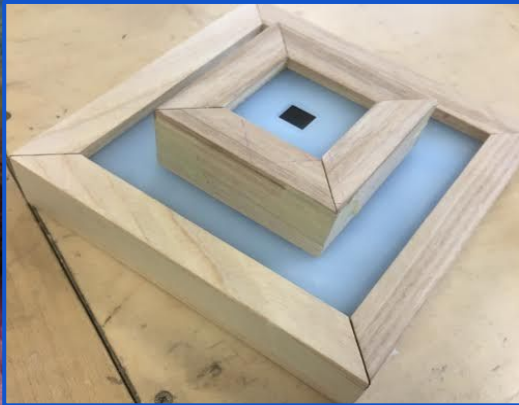
Tasks	Predicted / Actual	Feb 13th	Feb 20th	Feb 27th	March 6th	March 13th	March 20th	March 27th	Comments
<b>Cutting Wood</b> 1. With help use bandsaw cut the measurements 2. Use a 45° and 60° jig 3. Check they fit	Predicted								This was an extremely quick process but there were many health and safety risks that needed to be checked such as the use of goggles.
	Actual								
<b>The Mitres:</b> 1. Find radius of 2 oak squares 2. Find radius of spruce hexagons	Predicted								This was the radius of the large oak square, smaller oak square, for the base and the radius of the two spruce hexagons as the feature. I had to include the 0.5cm ridge.
	Actual								
<b>CAD/CAM Mitres</b> 1. Using the radius's construct a 2D laser cut pattern 2. Transfer to the laser cutter 3. Ensure fitting	Predicted								Using 2D design was quick and easy however the process took longer to complete this task due to the queue for the laser cutter.
	Actual								
<b>Involving Richard Weston</b> 1. Sand at 60° and ensure they fit the hexagon 2. Use polypropylene to print Weston's work 3. Test opacity of light	Predicted								Sanding six pieces of acrylic at two sides at 60 degrees was an extremely long winded process and obtaining the polypropylene also took longer than expected.
	Actual								



Tasks	Predicted / Actual	Feb 13th	Feb 20th	Feb 27th	March 6th	March 13th	March 20th	March 27th	Comments
<b>Finalising:</b> 1. Fill gaps 2. Sand any rough, sharp, or uneven edges 3. Glue mitres together	Predicted								Before gluing and finalising the product all edges needed to be of highest quality with no rough or sharp edges as stated in specifications. Some of the mitre joints needed to be filled with glue and sawdust and sanded in order to achieve the best quality edges and joints.
	Actual								
<b>Lights, camera, action.</b> 1. Drill hole to thread wires through 2. Stick LED strip throughout light 3. Solder wires and cover 4. Check to ensure they work	Predicted								This is an extremely quick process and quite a simple task, using the drill to drill a 3mm hole in the center of one of the base mitres involved many safety hazards. Soldering the wires back together is really simple and they need to be covered for safety.
	Actual								
<b>Finish</b> 1. Sand wood with a less dense sander 2. Check edges 3. Clean acrylic to remove scratches 4. Plug in light for the last time and gather opinions	Predicted								The better the quality of the product the higher price I can charge as the designer/manufacturer and therefore higher profit and improved consumer reviews.
	Actual								

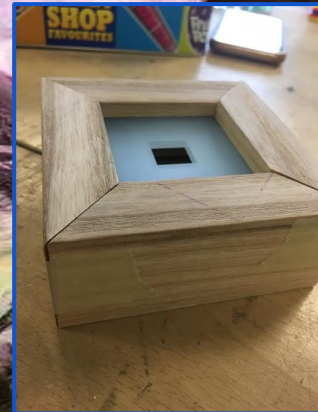
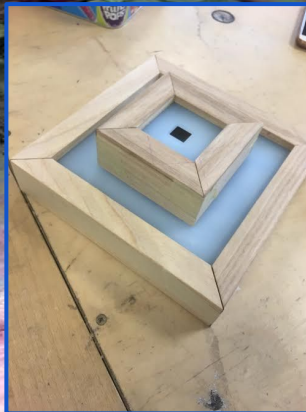


# Base - Construction



1 metre of oak wood was mitred on the top and bottom of one side, then I measured 4 pieces at 8cm internally and 4 pieces at 5.5cm internally at a 45 degree angle. The 45 degree angle allows the separate pieces to be made into a square, one larger one and one smaller one, which later was towered. The diameter had to be measured including the depth of the mitre, which was 17.9cm for the larger square and 7.9cm for the smaller square, these were then drawn on 2D design with a 1.5cm X 1.5cm square in the centre.

The edges had to be sanded to get a nice quality grain before inserting and gluing the acrylic metres in, the smaller square was okay to be glued after testing that a 1.5cm X 1.5cm pole fit through the centre of the square and the edges met up perfectly. After this was all approved I glued the joints with the acrylic in and left to dry over night, I couldn't complete the larger square until the LEDs were stuck in. This was an issue because it meant that there could be no progress on the base until the feature and stem were complete, however I could check that the edges fit together and could sand them down if they didn't, most of the edges had a ridge which altered the angles and made the shape uneven.





# Feature

## Health and Safety:

When using heavy machinery major health and safety risks had to be implemented, for example, when using the bandsaw or the sander my hair had to be tucked in or tied up in case it got tangled in the machinery.

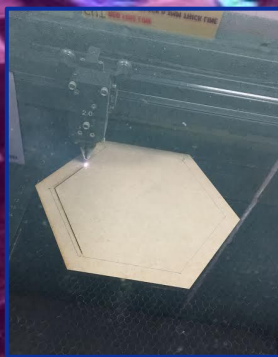
Secondly I had to wear goggles for majority of the time, obviously this was to protect my eyes from any excess sawdust or grains that would be emitted from the machinery.

Teachers had to observe when using the heavier duty materials and I could only operate them whilst they were in the room, they taught me how to efficiently use the sander in an effective way.

This isn't health and safety as such, however it was a precaution I had to take; when using the laser cutter a teacher had to approve and press start in order for the machine to start cutting to ensure all the measurements were correct.



1). With teachers assistance, we used a 60 degree band saw to cut 12 hexagon pieces.



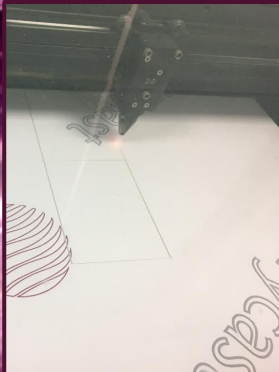
2). Using the laser cutter to produce an inner hexagon to ensure the pieces fit.



3). After duct taping the pieces around the hexagon to make sure they fit, I painted glue between each joint and fixed it together around the hexagon again.



4). After leaving overnight the final piece looked like this, however this whole procedure was done again for the mirror half.



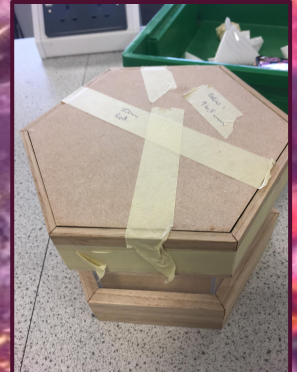
5). Once again I used the laser cutter, this time to cut out 6 identical acrylic rectangles.



6). Each of these needed to be sanded at 60 degrees to fit into the hexagon.



7). I then duct taped the acrylic pieces to ensure they slotted into the hexagon.



8). After ensuring it all fit together I could glue the remaining parts of the feature.



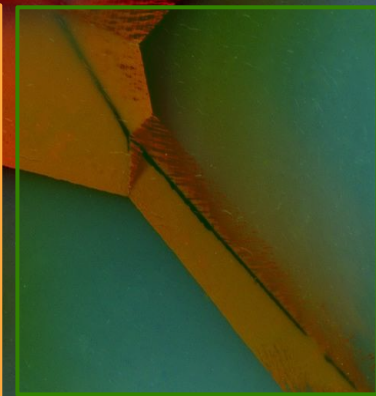
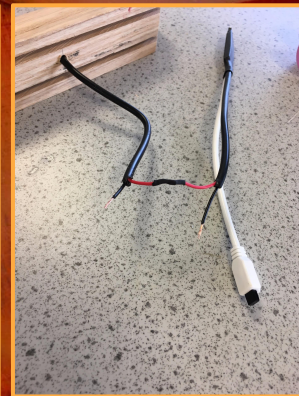
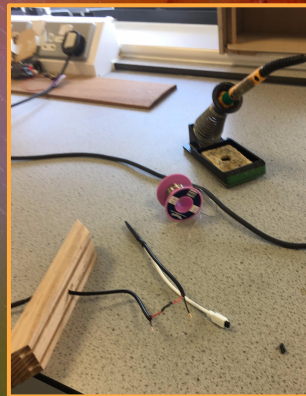
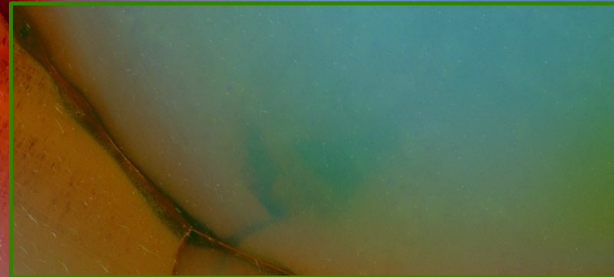
9). This isn't the finished feature however it gives a clear view of what it will look like.



# Last Production Process



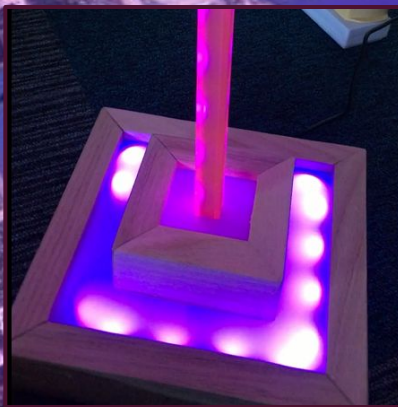
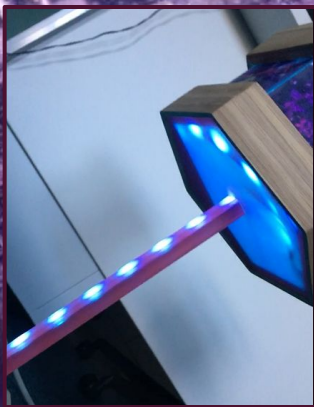
Using spray adhesive to attach a polypropylene that has Richard Weston's photography was a simple yet essential process to my project. The quality of printing had to be checked in order to ensure the colours had not run however, unfortunately the printer was leaving black marks on the polypropylene and this is a major quality control issue that had to be accounted for. Eventually I came to the conclusion that it would just be better to use paper and spray mount that to the inner acrylic sides, the only downfall to this was the amount of light was reduced.



After completing all the separate components I could finally slot them all together to see the height, strength and stability, furthermore to simply see if it matched the original design. Once this was completed I compared it to the specifications, and asked my peers their opinions on the form of the lamp. This way I could see where there needed to be improvements or alterations to fittings. An issue that did occur was the lamp was not standing straight, the main feature was too heavy causing the stem to fall and slide between the two base slots, I figured that once the stem was glued and the base was secure the structure of the lamp would come together.



# Final Product





# Evaluation

## Design Brief

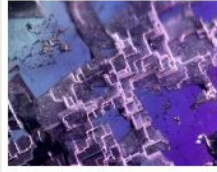
My design brief was to take into consideration all the specifications and design an effective lamp that suited the target market and manufacture it using tools, other resources and computer aided manufacturing, the light also had to be in the style of Richard Weston's detailed photography and cleverly designed architecture. The light should provide light to a room and have ornamental effect to it too, this way the product can look fashionable in any location. It is important that it's extremely sustainable and the materials used should be recyclable and cost effective, also the toggle should be easily accessible to turn it on and off again.

After evaluating my initial design brief I could start planning ideas for my light and initially I wanted to manufacture a wall fitting for a living room as I had not seen a wall fitting that you could alter as a mood light, however I knew that my target market would be someone in university and wouldn't be allowed to have a wall fitting, therefore I decided on a table lamp, but I was willing to explore beyond this.

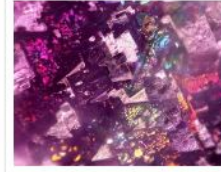
Coincidentally I knew who Richard Weston was before starting this project and I had seen his work before and already knew a colour scheme I wanted to convey across to my target user, which was warm pink and purple, as these are typically 'girly' colours I chose a female target user.

Lastly following the design brief was an easy task and I believe I did this successfully and efficiently.

Choose your favourite picture \*



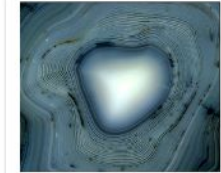
Option 1



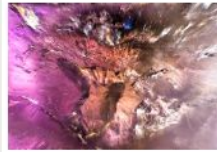
Option 2



Option 3



Option 4

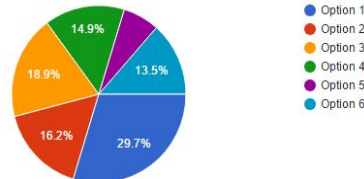


Option 5



Option 6

Choose your favourite picture (74 responses)



## Richard Weston

Potentially it goes without saying, my main concern was the way in which I involved and presented his work using my light, using someone else's work was a lot of pressure to ensure that I use the right perspective and present it in a way that represents the photographers emotions behind it, and Richard Weston shows a lot of pride and enthusiasm in his work and I wanted to use as much of his work as I could in the centrepiece along with making an aesthetically pleasing light that would satisfy my target market, this was stated in my specifications.

Richard Weston's photography was not entirely to my taste, however my project brief was to involve his work and architecture, therefore I had to find a photograph that I believed would intrigue my target market as opposed to satisfying my personal taste and use it as the focal point of my lamp. Using market research and test marketing I discovered what the most popular pattern was out of 6 pictures that fitted to a certain colour scheme.



Safety was extremely important, particularly with this project due to the fact that I was working with electric and constructing it myself, this could of been potentially hazardous to myself and the consumer therefore I needed to ensure the safety of everybody and check the circuits.

During the design process I checked how sharp edges would be and considered if the joints would be secure and if any screws would cause problems, however I had no major concerns with the design.

Safety during the manufacturing process was inact easy to control, by sanding down sharp edges and ensuring the security of the joints the light was stable and safe enough to be sold.

Aesthetics was a main concern for this lighting project. It was a necessity that the lamp was appealing to the market and eye-catching for a range of people not just for my target market. Furthermore, I desired an ornamental and mood light as well as functional lamp. I desired for my light to be original, customized and themed with Richard Weston's pattern. In conjunction with aesthetics, materials were a major factor of how the lamp finally looked, however materials are seventh in hierarchy, the reason for this is there are many ways to improve the look of wood even plywood.

Fourth in hierarchy is location and unfortunately I hadn't decided where I wanted my light to be placed until the manufacturing process however I did know my target market, even though I knew my light was a table lamp for someone in university I was undecided on where it could be placed, this made it very difficult to decide on the height, width and stages (base, feature, stem etc.)

Sustainability was seventh and I stated that I needed to ensure all materials were to be recyclable, unfortunately the acrylic I used cannot be recycled and this could be an issue for the environment however the lamp is durable and will last a long time therefore the user won't have to dispose of the light until it is damaged, even the LEDs are replaceable. On the contrary all the wood used is recyclable any way and therefore this isn't a major issue or concern.

For the specification of quality i stated that "the finish will be clean and safe with an effective ornamental design" personally I believe that I successfully followed this and produced a high quality lamp, in order to test this I had to feel the surfaces of the various parts and place it in a suitable location, it looked effective and even after asking the opinion of my peers and a sample group from my target market they agreed that the lamp was effective and high quality.

I understood that altering my target user would change the design and style of the lamp, for example the gender was a major factor as well as the age group, therefore I remained true to the specification and final decision that my target user was a female student in university, this meant choosing the target user was also finalising the location, style, and cost. Finding a test market group was quite easy using social media and contacting universities, also with family and close relatives that fit the target market I had a large sum of people to conduct market research on.

Personally I believe that cost shouldn't be an important factor due to the quality and durability, however this is from a design point of view. From a business point of view this could be considered one of the top 5 specifications. The cost of the prototype will far exceed the cost of a mass produced product and to finalise the cost I would need to see if there is a high enough demand to order materials in batch or mass, these factors would all alter the final price.

The cost is also dependent on my target market, someone in university doesn't have a substantial amount of money to spend on a lamp, therefore I would hope to market my product at £50 which covers the cost of materials and production, with a profit, however my target user, from market research, would pay £35 - £40 and I would therefore have to reduce the amount of profit I make, in my opinion this is a reasonable price with a substantial profit that covers the materials and labour.