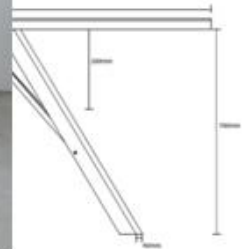
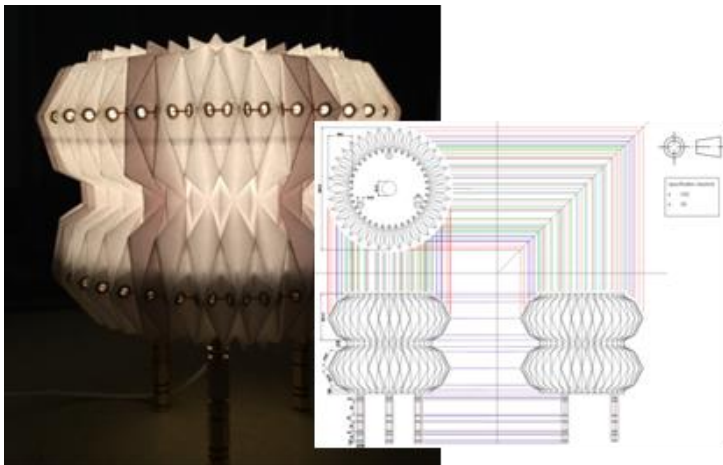


Design & Technology @fortismere



Course elements

A - Level Course Title	Unit Code	Awarding Body
DESIGN AND TECHNOLOGY: PRODUCT DESIGN	7552	AQA
A-Level Units:		
Paper 1 What's assessed <ul style="list-style-type: none"> • Technical principles 	How it's assessed <ul style="list-style-type: none"> • Written exam: 2 hrs 30 mins • 120 marks • 30% of A-level 	Questions <ul style="list-style-type: none"> • Short answer • Extended response
Paper 2 What's assessed <ul style="list-style-type: none"> • Designing and making principles 	How it's assessed <ul style="list-style-type: none"> • Written exam: 1 hour and 30 minutes • 80 marks • 20% of A-level 	Questions Mixture of short answer and extended response questions. Section A: <ul style="list-style-type: none"> • Product Analysis: 30 marks • Up to 6 short answer questions based on visual stimulus of product(s). Section B: <ul style="list-style-type: none"> • Commercial manufacture: 50 marks • Mixture of short and extended response questions
Non-exam assessment (NEA) What's assessed <ul style="list-style-type: none"> • Practical application of technical principles, designing and making principles and specialist knowledge 	How it's assessed <ul style="list-style-type: none"> • Substantial design and make project • 100 marks • 50% of A-level 	Evidence <ul style="list-style-type: none"> • Written or digital design portfolio and photographic evidence of final prototype

Why choose A-level Design and Technology: Product Design?

This creative and thought-provoking qualification gives students the practical skills, theoretical knowledge and confidence to succeed in a number of careers, especially those in the creative industries. They will investigate historical, social, cultural, environmental and economic influences on design and technology, whilst enjoying opportunities to put their learning in to practice by producing products of their choice. Students will gain a real understanding of what it means to be a designer, alongside the knowledge and skills sought by higher education and employers.

What do I need to get on the course?

A grade 6 or above in one of the GCSE Design & Technology subjects is desirable.

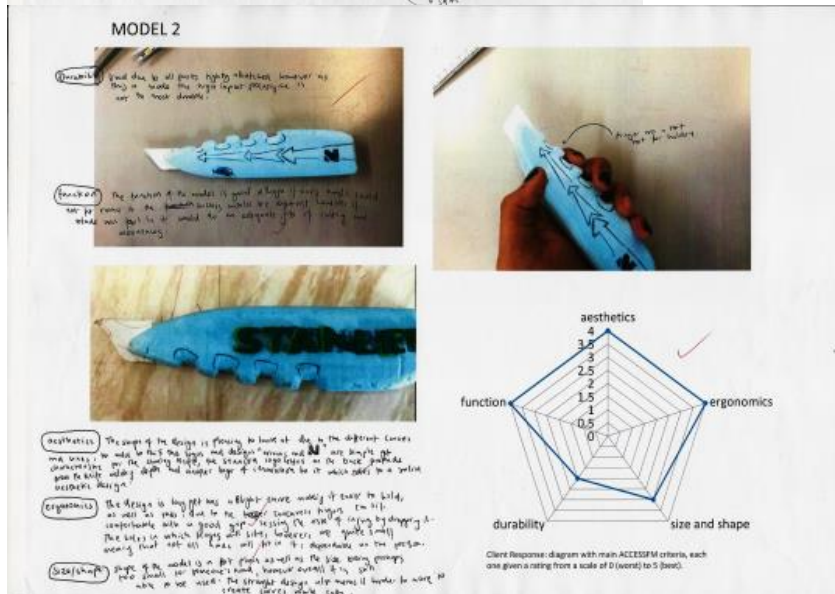
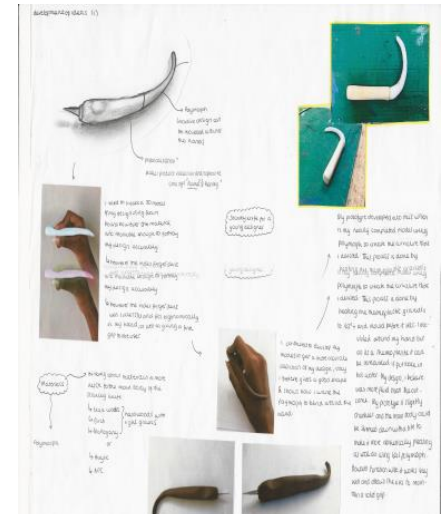
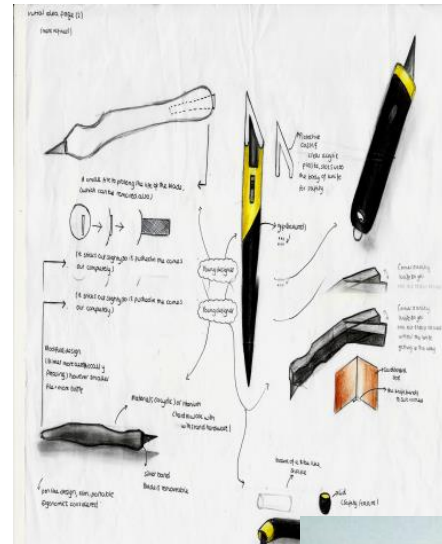
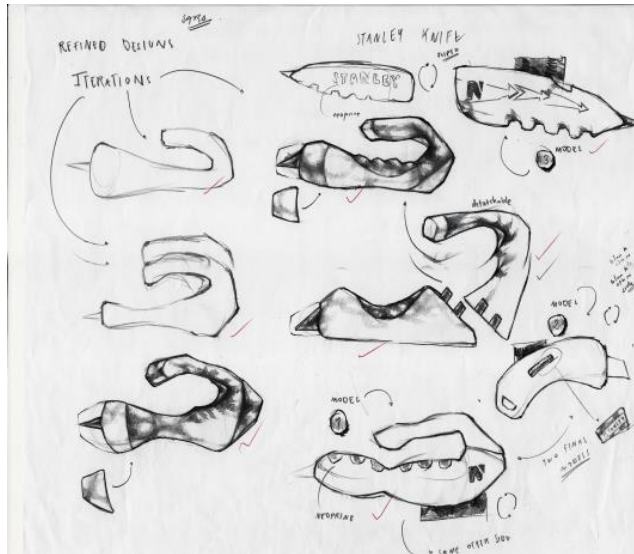
What will I be able to progress to?

The study of Product Design will provide a useful foundation for a variety of degree courses including Architecture, Engineering, Product Design and Industrial Design.

Year 12 Indicative delivery plan

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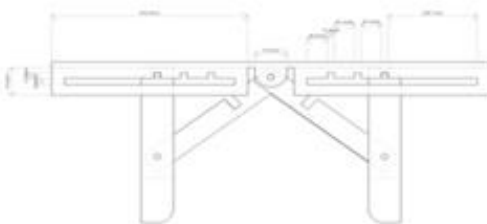
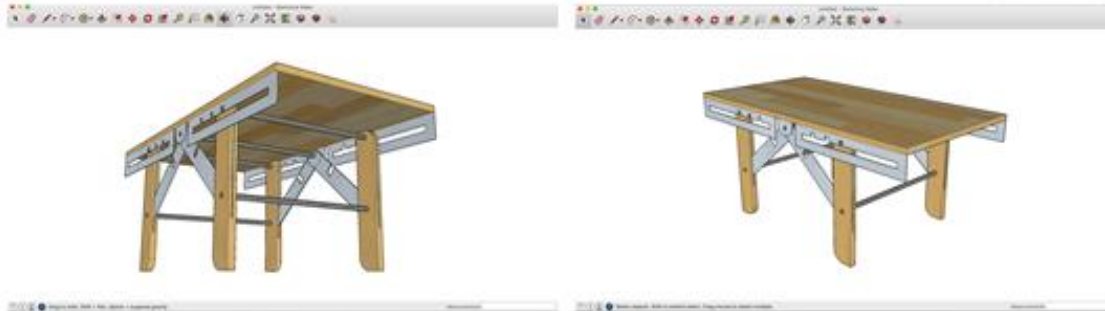
Year 12 Design & Make short project



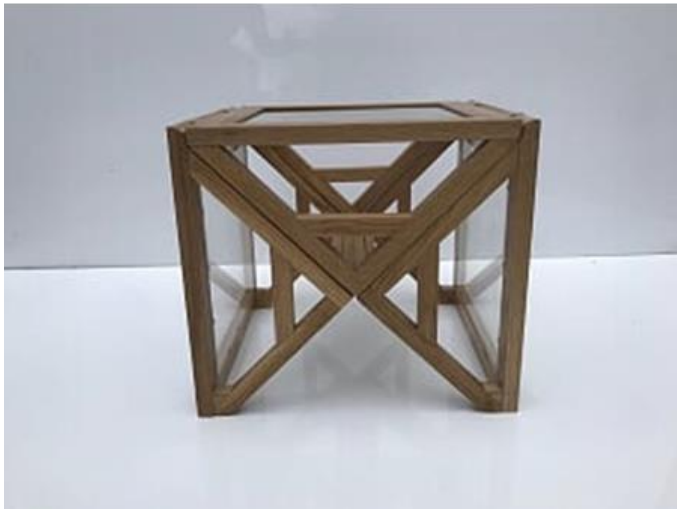
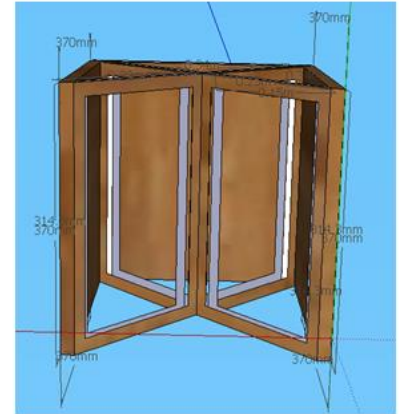
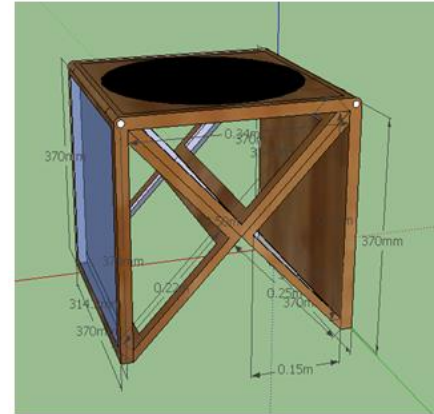
Year 12 Design & Make NEA style project – moving furniture

Coffee Table – Google SketchUp CAD and Working Drawing

Using Google SketchUp I made a CAD model with the dimensions of the final prototype for reference when manufacturing. I used textures similar to those that would be used in the prototype to get an idea of how it would look aesthetically.



Year 13 NEA – moving furniture



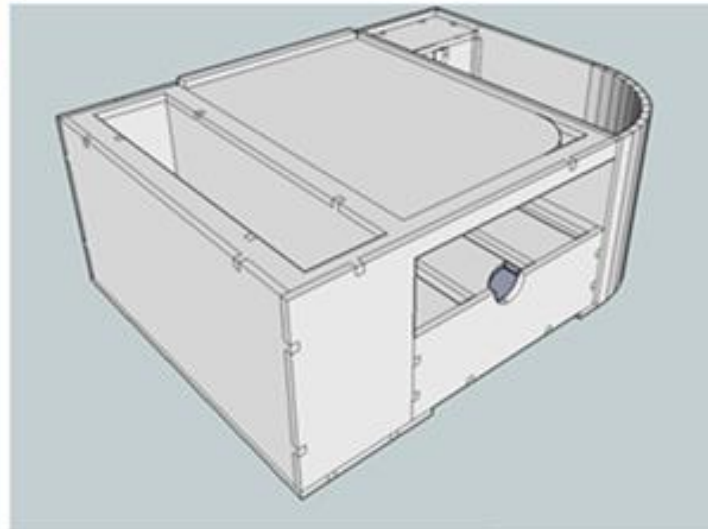
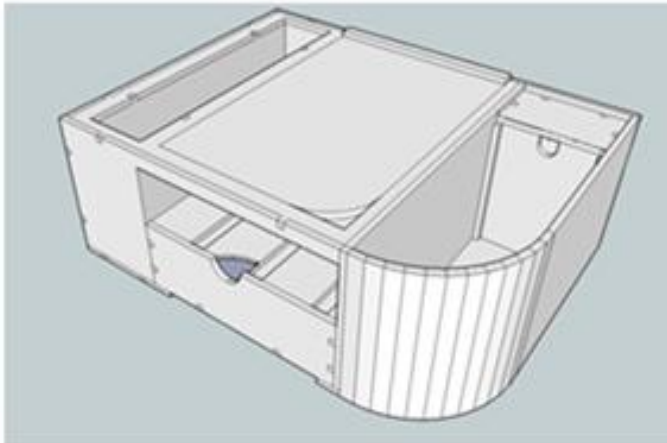
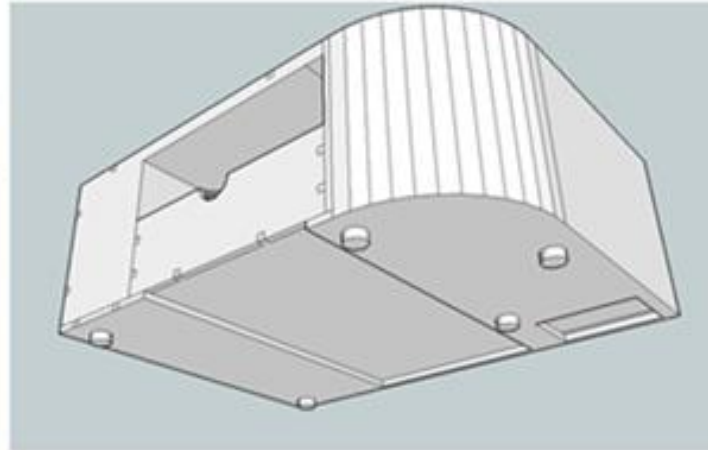
These are photos of my final product when it is finally finished, and all of the vinyl were put into the coffee table. These were also the first photos I took of my final product in the room that my client wanted to make it for. As you can see I have not modelled it with the actual client, and that is because my client has gone on holiday, so instead it is being modelled by his father. However this is not that bad because I have interviewed his father Marios during this process. And at least it gives you an idea of what the coffee table looks like in the space, and with the 'client' using it.



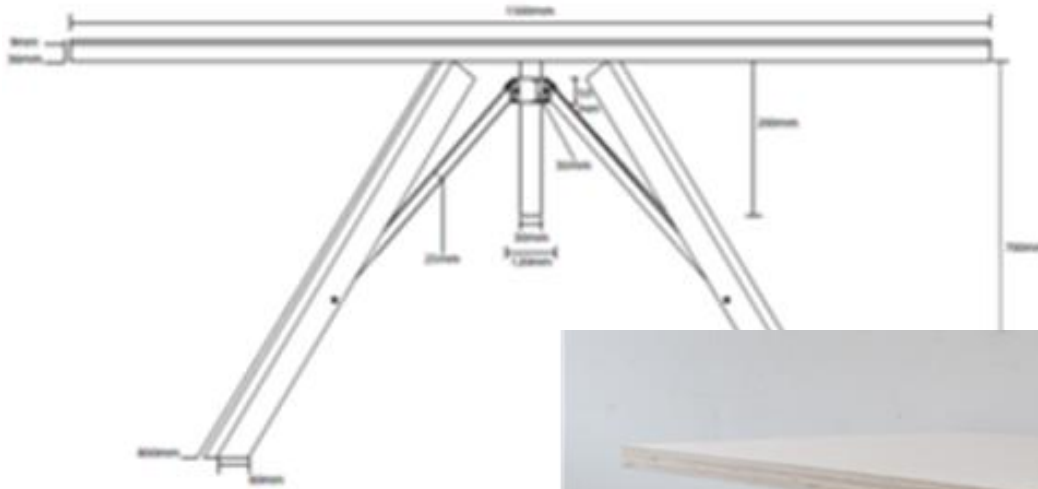
Year 13 NEA – moving furniture

Final Product

I wanted to express my final product with all modifications included as a three point perspective on CAD, in order to show the newly improved product in a simple yet detailed form so that any potential recreations can follow an accurate model of the unit once it has been changed. Unlike my previous drawings I decided to include even the comb joints.

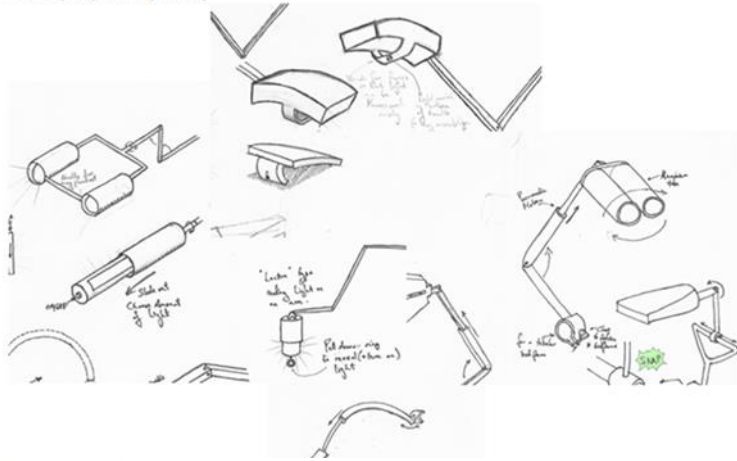


Year 13 NEA – moving furniture



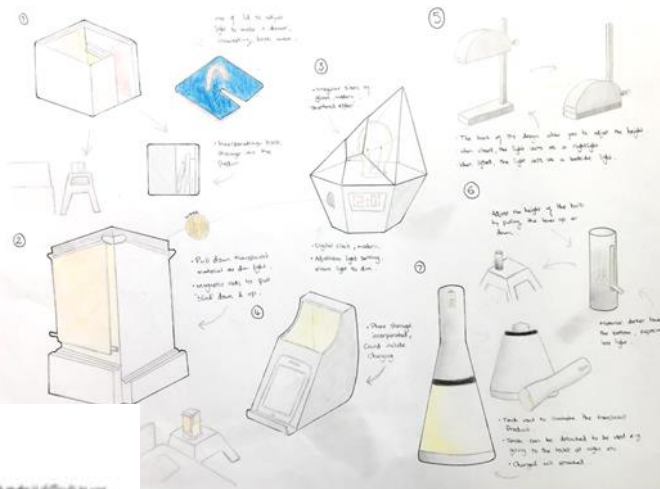
Year 13 NEA – Lighting – Development of Design Proposals

First concepts (Blue sky Ideas)



Blue Sky Ideas

After the majority of my research, I began to sketch my initial ideas for my product. I made sure to have a variety of different designs instead of concentrating on one specific concept. After my sheet of ideas, I then consulted with my client to receive her feedback about her likes, dislikes & any personal amendments she would make to the designs...



"I like the idea of number 1 because having book storage as well as the light would be very handy for me. I do feel like the product is too clunky & would take up the majority of my bedside table. I'm not sure about using a lid, seems like effort to me..."

"Number 7 has a really cool concept. This would probably be a product that would be out of my price range as I assume the production costs will be high..."

"Number 2 & 5 are my favourite designs. I like an element of interaction that I would really enjoy, and would allow me to control my lighting easily. 5 is the most suitable for both a bedside light and a nightlight. If multiple movement mechanisms is considered, this would be my favourite concept by far..."

"My client gave me mixed feedback, which has encouraged me to further research out more ideas to make sure I am able to further develop a range of designs..."

Developing ideas (Sketching & Modelling)

Blue sky idea 9



In reaction to my client feedback about this design, I decided to model it to see if the overall function and design would actually work and to further see if my client is attracted to a 3D model of this concept.



"This concept of having a light which can be used for both a lamp and a nightlight is something that really attracts me, and the use of using different materials for different elements of light is an idea I am intrigued by..."

"From this model, the wires are too strong and can't support the weight of the light, and the function of moving the light down is quite fiddly to work with..."

After modelling and receiving feedback, I came to the conclusion that there are several aspects of the model which make it difficult to use (such as the wires, which would need extra support to allow the light to be supported). However, as a concept, I feel confident that the idea is admired by my client, which I am contemplating developing through a different design.

Blue sky idea 20



I decided to model this blue sky idea to get a sense of the scale of the design and to put the function in action to see if it would really work as a developed product. Additionally, my client has liked the models with concepts of a way to have the product variable as a nightlight and a bedside table light.



1. When fully down, the light is in line with the outer casing of the design, giving it a minimalist rectangular shape. If developed, the outer light material will be opaque, so there is no light will be able to escape.
2. When the light is pushed down, it leaves a gap allowing the light to glow. (2% nightlight effect)
3. I decided that from my blue sky sketch, having a caped look would create many shadows with the light, so I reduced it to each corner to allow enough support for the light to function. (5% the light at it's maximum height level)



"The minimalist design would fit into my situation quite well, and the mechanism is very efficient. I like the idea of having the small gap initially which would be perfect to sleep with at night..."

"Even though it is minimalist, it is still a bit bulky for a design item that isn't a box of the inner light design, yet that could definitely be developed..."

To perform this mechanism, I took three 'push in, push out' components often used in submersibles and fitted them in at the bottom of the model. The dimensions of the model had to fit around these to allow space at the bottom of the model as well as keeping that alignment at the top, hence the rectangular shape instead of it being a square.

From my sketches, these models and the receiving client feedback about these designs, I feel confident I have gained an idea of what my client wants, which will fit the specification of this product and I'm ready to develop my designs further...

Lighting Design



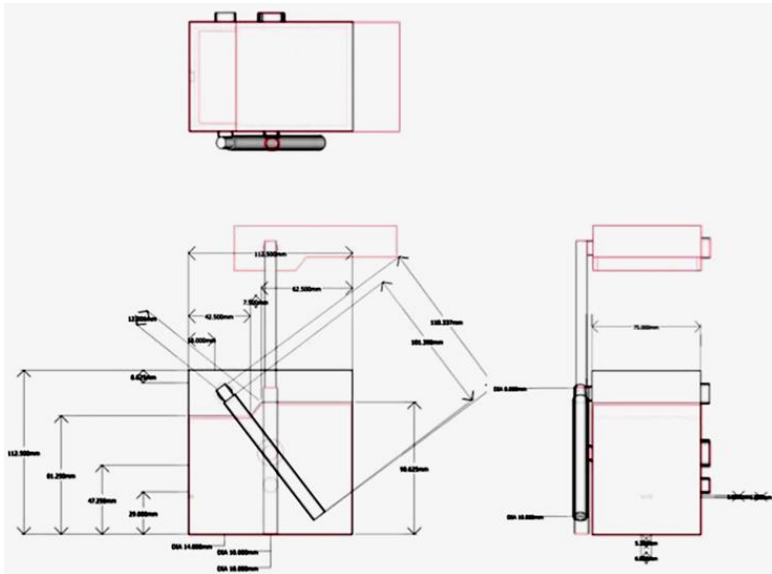
The shades when added after I made the first model. I thought added some kind of shading could dim the light can change the harshness of the light output. And make it more relaxing. As the client liked this shape a lot I'm going to experiment more with geometric shapes and smart design.



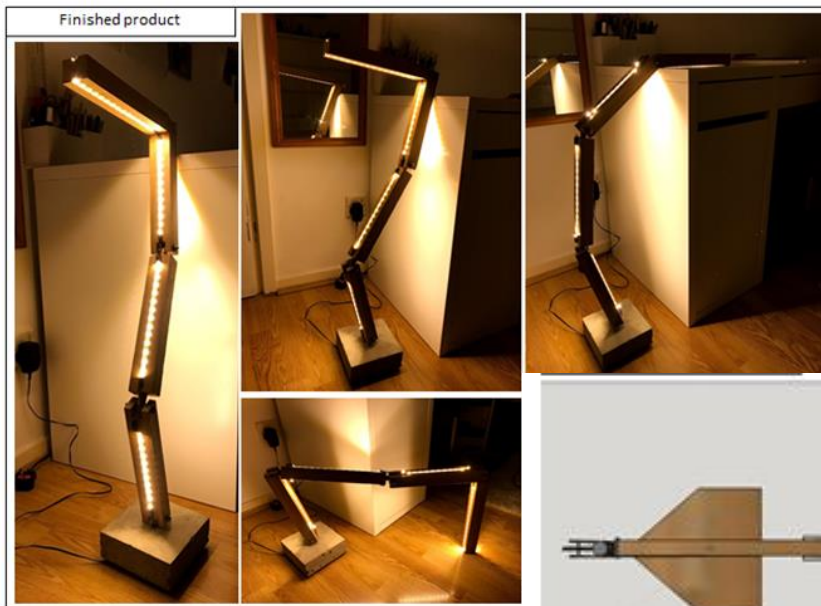
I like this design a lot because the movement in it is manual but effective. The direction of light can be shifted easily. As time, the client mentioned I would change the wooden framing to more of an interesting materials like a silver or copper framing. The light casing would need to be laser cut and glued together using a translucent acrylic.

In this design our well it would portability within use to house.

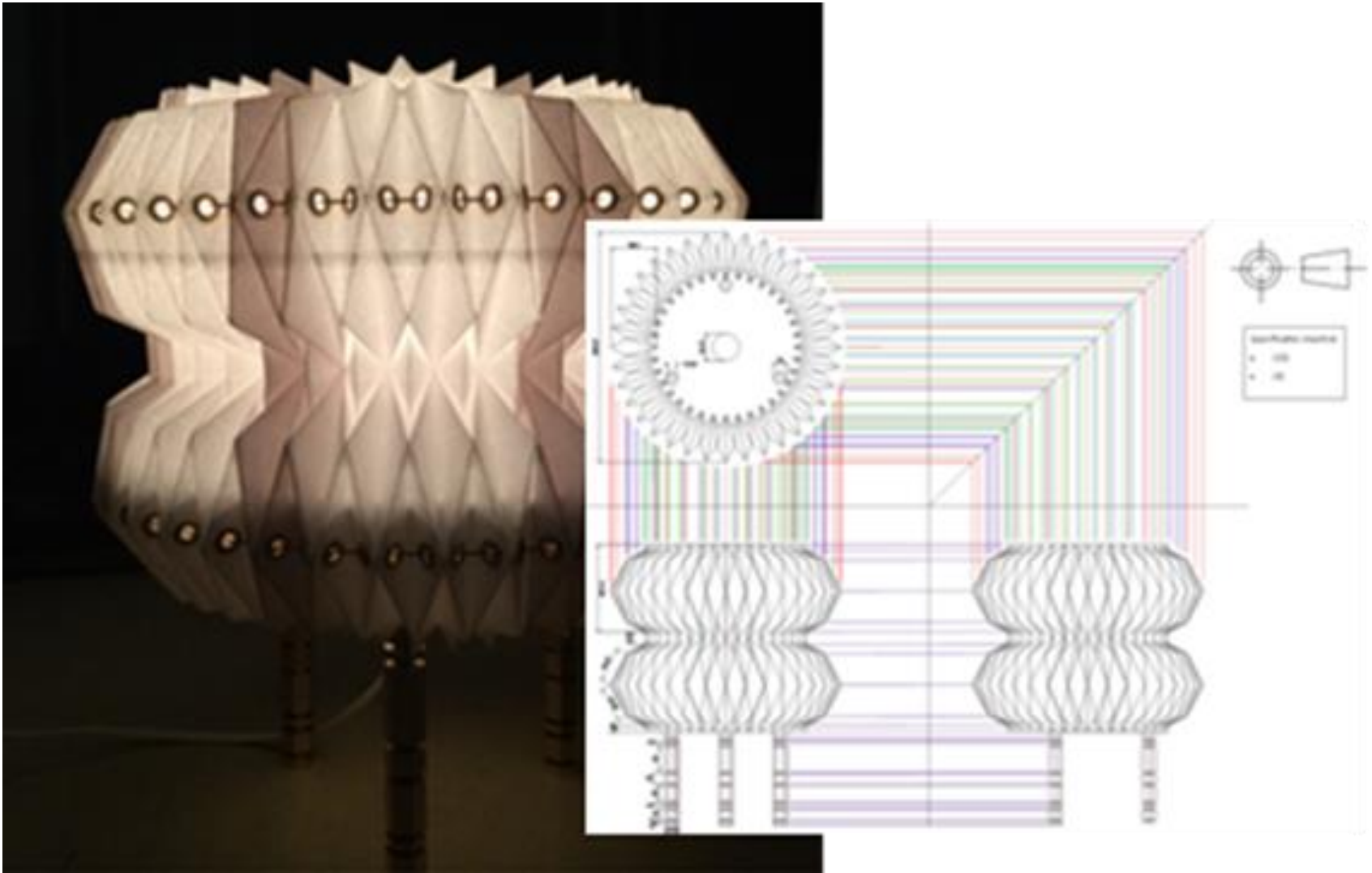
Year 13 NEA – Lighting – Development of design prototypes



Year 13 NEA – Lighting – Development of design prototypes



Year 13 NEA – Lighting – Development of design prototypes



Books & resources

