Pearson

GCE A Level Advanced Art and Design

Art, Craft and Design Component 1

TABLE

Total Mark 58 (48+PS10)

	AO1 Develop	AO2 Explore and Select	AO3 Record	AO4 Realise	Personal Study
Mark	12	12	12	12	10
Performance Level	4	4	4	4	4
				Total out of 90	58

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PERFORMANCE CALCULATOR	Level 1			Level 2			Level 3			Level 4			Level 5			Level 6			
A LEVEL PRACTICAL – SEPT 2016	LIMITED ABILITY			BASIC ABILITY			EMERGING COMPETENT ABILITY			COMPETENT AND CONSISTENT ABILITY			CONFIDENT AND ASSURED ABILITY			EXCEPTIONAL ABILITY			
Taxonomy	partial, inconsistent, literal, elementary, minimal, rushed, sporadic, naïve, little creative intent, disjointed, pedestrian, credible, lacks control over the formal elements, vague aims			straightforward, deliberate, just adequate, methodical, superficial, unrefined, crude visual language, simplistic reflection, plays safe, unresolved, contextual references explored but lack relevance, defines aims with some understanding, developing control over the formal elements			predictable, broadening, makes progress, relevant, description not explanation, demonstrates intentions, appropriate, sufficient control, emerging individuality, thorough, adequate control over the formal elements, contextual references inform journey, pursues aims with understanding			diverse, effective, purposeful, consistent, skillful, coherent, imaginative, informed, some perception, satisfies creative intent, engaged, consistent control over the formal elements, contextual references inspire creativity, realises some aims,			independent, realised, sensitive, creative, sustained, highly inventive, critical, perceptive, comprehensive, in-depth, insightful, original, genuine creative journey, refined, in-depth reflection, exciting, comprehensive control over the formal elements, contextual references shows some personal insight, fully realises all aims and objectives			inspired, surprising, unique, authoritative, genuine discovery, adventurous, accepting of the unexpected, challenging, fully informed, questioning, dexterous, erudite, highly intuitive, daring, insightful and comprehensive exploration of contextual references, ideas synthesised into highly sophisticated realisations, goes beyond aims to produce surprising realisations, control over the formal elements demonstrate fluent sensitivity and understanding			
AO1 Develop ideas through sustained and focused investigations informed by contextual and other sources, demonstrating analytical and critical understanding	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	AO1 total: 12
	LIMITED			BASIC			EMERGING COMPETENT			COMPETENT AND CONSISTENT Imaginative Some perception Consistent control over the formal elements			CONFIDENT AND ASSURED			EXCEPTIONAL			
AO2 Explore and select appropriate resources, media, materials, techniques and processes, reviewing and refining ideas as work develops	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	AO2 total: 12
	LIMITED			BASIC			EMERGING COMPETENT			COMPETENT AND CONSISTENT Purposeful Engaged			CONFIDENT AND ASSURED Inventive			EXCEPTIONAL			
AO3 Record ideas, observations and insights relevant to intentions, reflecting critically on work and progress	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	AO3 total: 12
	LIMITED			BASIC			EMERGING COMPETENT			COMPETENT AND CONSISTENT Consistent control over the formal elements Skillful			CONFIDENT AND ASSURED			EXCEPTIONAL			
AO4 Present a personal and meaningful response that realises intentions and, where appropriate, makes connections between visual and other elements	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	AO4 total: 12
	LIMITED			BASIC			EMERGING COMPETENT			COMPETENT AND CONSISTENT Realises some aims			CONFIDENT AND ASSURED			EXCEPTIONAL			
																			Total mark: 48

PERFORMANCE CALCULATOR	Level 1			Level 2			Level 3			Level 4			Level 5			Level 6			
A LEVEL PERSONAL STUDY – SEPT 2016	LIMITED ABILITY			BASIC ABILITY			EMERGING COMPETENT ABILITY			COMPETENT AND CONSISTENT ABILITY			CONFIDENT AND ASSURED ABILITY			EXCEPTIONAL ABILITY			
Taxonomy	partial, inconsistent, literal, elementary, minimal, rushed, sporadic, naïve, lacking, disjointed, pedestrian, credible, study naively informs practical work, elementary use of written language			straightforward, deliberate, methodical, superficial, unrefined, simplistic reflection, plays safe, unresolved, study adequately informs practical work, adequate use of written language			predictable, makes progress, relevant, description not explanation, demonstrates intentions, appropriate, sufficient, control, thorough, adequate, signs of understanding, developing analytical skills, study consistently informs practical work, developing and broadening use of written language			diverse, effective, purposeful, consistent, coherent, imaginative, informed, some perception, engaged, fulfils intended aims, study perceptively informs practical work, consistent and effect use of written language			independent, realised, sensitive, creative, sustained, critical, perceptive, comprehensive, insightful, original, genuine creative journey, refined, in-depth reflection, exciting, genuine personal investigation, study authoritatively informs practical work, articulate and highly effective use of written language			inspired, surprising, unique, authoritative, genuine discovery, adventurous, accepting of the unexpected, challenging, synthesis of ideas, fully informed, questioning, dexterous, erudite, intuitive, daring, study informs practical work with sophisticated insight, highly articulate and sophisticated use of written language			
Personal study (AO1/A02/ A03/AO4) Develop ideas through sustained and focused investigations informed by contextual and other sources, demonstrating analytical and critical understanding Explore and select appropriate resources, media, materials, techniques and processes, reviewing and refining ideas as work develops Record ideas, observations and insights relevant to intentions, reflecting critically on work and progress Present a personal and meaningful response that realises intentions and, where appropriate, makes connections between visual and other elements	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total mark for the Personal Study (part of A level Component 1): 10
	LIMITED ability in the use of written communication and specialist terminology and LIMITED ability across the Assessment Objectives in the personal study			BASIC ability in the use of written communication and specialist terminology and BASIC ability across the Assessment Objectives in the personal study			EMERGING COMPETENT ability in the use of written communication and specialist terminology and EMERGING COMPETENT ability across the Assessment Objectives in the personal study description not explanation			COMPETENT AND CONSISTENT ability in the use of written communication and specialist terminology and COMPETENT AND CONSISTENT ability in the Assessment Objectives in the personal study Purposeful Diverse Coherent Consistent and effect use of written language Some perception Fulfils intended aims			CONFIDENT AND ASSURED ability in the use of written communication and specialist terminology and CONFIDENT AND ASSURED ability in the Assessment Objectives in the personal study			EXCEPTIONAL ability in the use of written communication and specialist terminology and EXCEPTIONAL ability in the Assessment Objectives in the personal study			

Examiner commentary

This Art, Craft and Design submission is a purposeful body of work, in which diverse design ideas and principles are consistently explored. The submission demonstrates a consistent study of Jewellery, Furniture and Graphic Design, and the candidate imaginatively explores form and function with some perception. There is consistent control of visual language, and this is skilfully used to record. Later in the project, CAD drawing aids the realisation of some aims. There is a sense of the candidate reaching towards Performance Level 5, Confident and Assured Ability, in their inventive exploration of kinetic furniture, but they have yet to develop a critical and perceptive understanding or sensitivity in their designs, and so are marked at the top of Performance Level 4, Competent and Consistent Ability.

AO1: The candidate moves through an initial engagement with design principles of Form and Function to develop imaginative typographic design. This is followed by a consistent and purposeful development of designs for a chair, jewellery and then a table, where the candidate becomes absorbed by a study of fluid, kinetic form. This work is placed in context by the study of modernist designers, which has clearly inspired creative development.

AO2: Designs are explored through skilful drawings, and this process-led submission is diverse in the way it explores of a number of different design contexts. There are imaginative trials in paper and card, which are supported by an informed commentary and review of progress.

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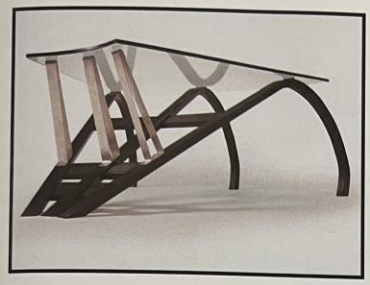
Examiner commentary continued

AO3: There is consistent recording from sources, as the candidate responds to the work of designers and develops their process with consistent control of the linear and flowing movement observed in kinetic furniture design. There is some perception, (but not an in-depth insight) present in the annotations and visual refinements, which place this objective at the top of Performance Level 4.

AO4: The candidate has completed a body of work that realises some of its initial aims. They have shown that contextual references have inspired the creative journey, which is moving towards the Confident and Assured level. However, there is a reliance on existing designers' ideas as the main driver of the project, and a consistently technical approach, which limits highly inventive and perceptive ideas from emerging, confirming a position at the top of Competent and Consistent Ability Level.

Personal Study: The study clearly articulates the candidate's interest in Kinetic furniture design. There is a purposeful, if literal, description of the sources of inspiration of, for example, the Kamijiya table design based on Japanese fans. The study is consistent in its use of written language and is effective in its comparison of designers' work. There is some perception of the understanding of the main aim of the study, which has clearly informed the practical investigation.

Form and Function



FORM : definition

Form refers to the shape, visual appearance, or configuration of an object

FUNCTION : definition

The importance of **function** is that it can repetitively perform its task and it is also safe, easy to use and it has durability to sustain its function.

FORM AND FUNCTION : definition

The shape of a building or object should primarily relate to its intended function or purpose.

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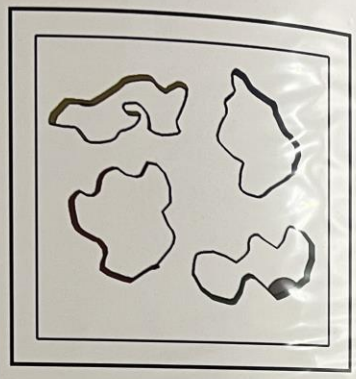
Initial Idea 1

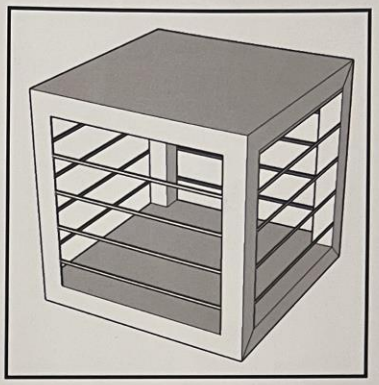
For my first idea I wanted to keep the original format of the table but bring another material into the top of the table to give an eclectic feel.



The inspiration for my idea was the River Table designed by Greg Kassen, who has won design awards and featured in national magazines for his designs with wood.

To create this vision fluid shapes would be cut into the tope of the table and then these spaces would be filled with coloured glass to add colour and provide a view through the table. This would change the visual aspect of the design as the coloured shapes would create disorder in the rigid structure of the table. It would also change the feel due to the contrast between the grain of the wood and the smooth texture of the glass

Initial Idea 3



This design idea was developed from walking along the Thames River and I saw the chair which had been designed to fit into an ever changing weather environment. This expanded an idea I had of changing the original table design into an outdoor design using naturally formed objects. This design would fit into a garden, balcony or outside area. I was also wanted to build on this idea by using natural materials, as shown by the stones. I do not like the use of metal for the table legs or wire to contain the stones as it did not fit into the visual balance of my design as I wanted this to be organic.

To adapt the table in this design, I would keep the shape and scale of the Lack table but change the shape by fitting wood horizontally between the four legs which would also add balance to the structure and create a space for the stones to be placed.

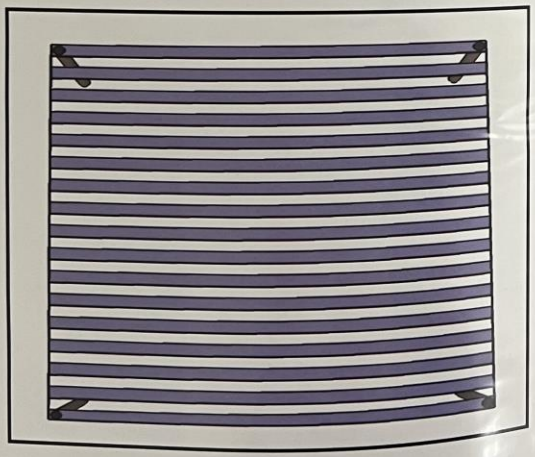
Stones of different textures, shapes and sizes would be placed in the table structure, creating pattern and emphasise the use of the raw materials. By using the different types of stones, it will create different shadows when light hits them. The stones and wood also show uniformity and create stability.
The table and added pieces of wood would be painted chestnut brown to empathise the clear texture and grain of the wood.

Initial Idea 2

This idea was inspired by Poul Kjaerholm, a Danish Designer who has pieces in the permanent collections of museums including MoMA in New York and London's Victoria and Albert.

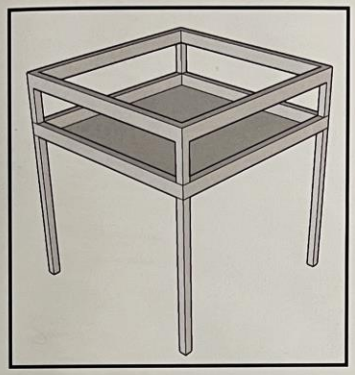
Kjaeholm's interest was in the refraction of light on the surface of his designs. Kjaerholm's furniture designs have clean and precise lines whatever material he is using and his designs are simplistic.

For this design idea I would cut thin lines in the top of the wood, which would ensure the table was functional to place objects on. Each strip would create a shadow under the table and along the line of the strips of wood, thereby bringing tone and shadow to the simplistic table design. This would change the line and pattern of the material and different tone of the wood from the light

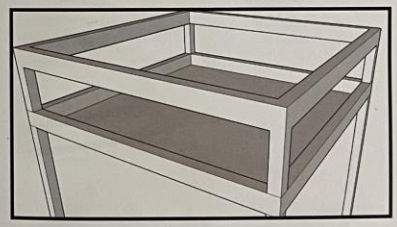


For this design I wanted to change the construction on the top of the table to show how materials could be manipulated to change the form of the design.

Initial Idea 4



The idea and design for this table was based on a botanical coffee table which was designed by Hackney Botanical who created a plant filled coffee table. I discovered the designers when exploring ideas to change the form and function of the table by moving it from an inanimate object to a living, sensory object.



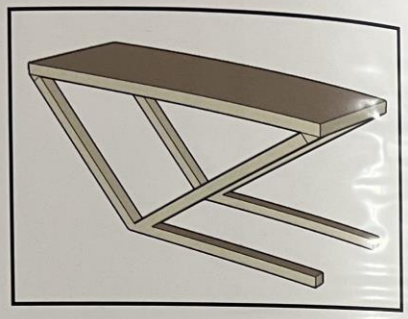
I would replace the plants with cactus, (to reduce maintenance) potted in different sized, coloured pots, as they have different patterns and shapes, colours and textures. The pots can be flued and moved around in different patterns to stop the monotony of colour, tone and pattern.

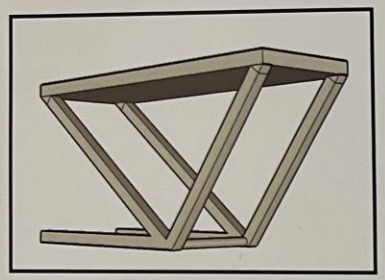
To expand on this idea would involve changing the proportion of the table and extending it upwards to create a space for the plants to be placed in.

The top of the table would be developed by adding wood of equal measurements to each side of the table top to provide a space inside for the cactus. As the table is symmetrical and the colour at odds with the organic feel I wanted to achieve, the table would be painted a tawny brown colour to bring a natural colour to the design and a visual base for the colours of the cactus and coloured pots. To enable the table to be functioning, a glass partition would be placed on top of the wood and the cactus to provide a top to the table.

Initial Idea 5

For this design I will change the size, structure and line of the table by extending the use of the table into a table/tray, making my design multi functional. To achieve this I will change the four straight wooden legs to metal legs which can become detachable from the rectangle top of the table thereby making it a tray.



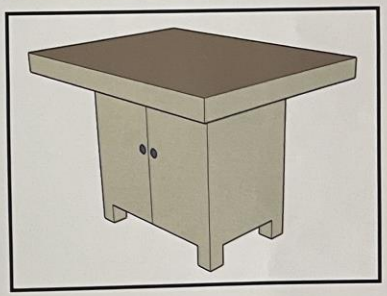


For this idea I wanted to explore using different materials to change the function of the table so it can be adaptable for other uses. I was inspired by Eileen Gray, (1878 - 1876) a furniture designer, making furnishing that were adaptable. Her designs were simple but had an industrial feel. She also used different materials in her designs.

Initial Idea 6

For this idea I wanted to change the function of the table by adding a cupboard under the top of the table to create storage space thereby changing the table to a storage unit

The inspiration for this design was from the simple and elegant shaped furniture that is designed by Jason Lewis. Lewis is a woodworker and designer from Chicago who designs and makes custom made furniture



To incorporate the change would involve changing the formal elements of the original table to produce the finished idea. Four wooden strips of wood would be fitted into the legs of the table, with wood also fitted under the strips of wood to produce a storage space. On the front panels, recessed pulls would be cut to enable the doors to open. To add texture to the material, paint would be stippled and and the storage unit would be painted white to fit into any coloured surrounding. The main elements of this design would be the simplicity and proportion of the cupboard.

Comparing function and form in table design

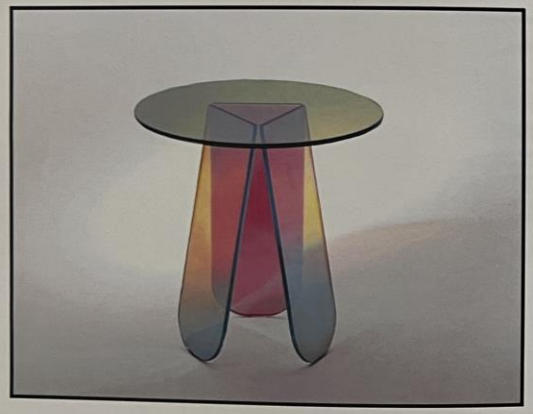
Extra light transparent or opaque.

The glass is finished with a highly specialised polychromatic coating.

Reflectivity and huminosity is made through diluted silvering mix finish with bi-chromatic geometric particles.

Different sizes were created to ensure that the table will fit into different sized rooms with different aspects.

The glass is laminated and attached at intersecting planes.



The ranges price ranges from £1,500 to over £3,000 depending on the size.

The table is reminiscent of a prism which is a glass triangle which causes light of different colours to be refracted.

The table is a shape that can easily fit into many different shaped rooms because of the different shapes.

The target audience for the table is those who love and van afford designer tables.

The smaller table has 3 legs and the longer table has 4 which helps provide stability.

The designers artistic vision was to combine aesthetics with everyday function.

The table is constructed with a mixture of the man – made and natural resources. However some tables were built using solid oak and stained glass.

The materials were chosen as Alber's principle was to use available resources economically.

Albers used the materials as he wanted to think about the function of the table not just the aesthetics.

The colours used on the table were used because Alber's had a passion for interesting colours.

The table has a simple geometric shape of the table and the smooth texture of the glass.

This product is defined by its function as a group of tables that save space.

The product from all angles is simple and aesthetical.

The table costs £1,600 and the target audience us not fixed to a certain category

This product is good value for money as the amount of space it takes up compared to the amount of uses is endless

Form and function Essay

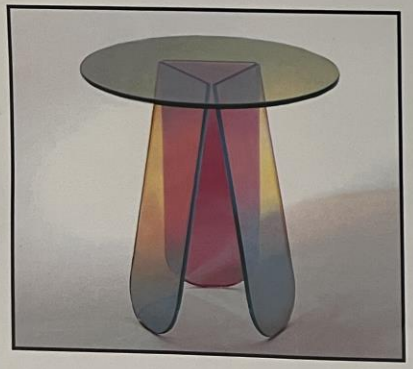
In this essay I will be exploring how Form and Function is used by two designers in the creation of their table. From this I want to be able to identify if form and function can work in harmony and how each designer was influenced in their table design.

Patricia Urquiola is a Spanish designer born in 1961. Urquiola studied architecture in Madrid before graduating from Milan Politecnico, in Italy. From 2003 to present day Urquiola has had many exhibits in Museums and was named in 2019 as one of the 10 pioneering and legendary women in architecture and design. Urquiola's is known for experimenting with form and material and her designs are contemporary but reflect her Spanish and Italian heritage. One of her designs is the Shimmer Table, which is a family of tables that transform when exposed to different light sources or viewed from different angles.

The table was commissioned by Glas Italia,(world renowned glass innovators) as they wished to create new glass furniture which married progressive design with the heritage and tradition of glass craftsmanship whilst involving new techniques. Urquiola designed the table in 2015 and it comprised extra light-transparent or opaque glass, which is finished with a highly specialised polychromatic coating. The glass is laminated and attached at intersecting planes. The shimmer is achieved through reflectivity and luminosity from the blended, diluted silvering mix finish with bi-chromatic geometric particles. The hues and tones are refracted when exposed to different angles and light which gives the impression of transparency and density. As each process generates a variation in colour and texture each piece is individual. As the glass has been introduced to other man-made materials this does not make it recyclable should it no longer be viable.

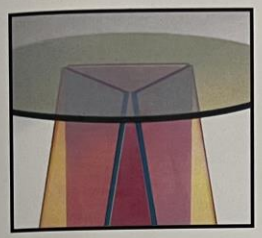
As a number of different sized tables were designed, it is able to fit into the proportion of the room to ensure that they do not overwhelm or alternatively get lost in the space. The tables are round and oblong in shape and range in sizes. The round tables have three legs and the oblong has four, which provide stability and aesthetics. The table legs are made of the same glass as the table top which provide fluidity and uniformity whilst the reflected light is shown in different colours and tones and creates patterns in the surrounding area.

The glass table colours remind me of a prism which is a piece of glass in the shape of a triangle. The prism is specially shaped so that the light passing through them bends. Some colours bend more than others as they pass through the prism so they are split apart. The light going into a prism comes out as a spectrum of different colours.



The overall composition of the table is balanced as the materials used throughout the design are the same, whist the weight of the glass table provides stability. The colour that emits from the table creates variety in each table and a visual interest. Although the table has a Function, it is defined by its Form due to the colour and illusion of light which is created by the tables placement in a room and the angle of light on the table.

Eileen Gray, an architect and furniture designer, incorporated glass in her furniture but Urquiola was pioneering in using glass to create colour in a table.



The tables range in price from £1,500 to over £3,000 depending on the size and shape. The targeted audience will be those who have a modern room with a light source to ensure the nuances of the table are enjoyed. I believe the table is successful as each table is built to customer specifications and each table is individual as the placement of the table and the light in each room will determine the colour omitted.

I like this product because of its individuality, shape and the colour and tones that are emitted from the table from different lights perspectives.

From my research and analysis of the table, I have been influenced in my design by the use of one material to create different elements.

By contrast Josef Albers Nest of tables is defined by Function.

Josef Albers was a German born artist who was part of the Bauhaus German art school. He designed his Nest of tables in 1929 and incorporated four tables graduating in size from large to small in yellow, red, blue and white and the materials used were wood and glass. The Nest of Tables was designed during Albers time as artistic director of the furniture workshop at Bauhaus and the tables are now available for mass production. This is because the Bauhaus principle was to involve mass production with individual artistic vision and to combine aesthetics with everyday function. Albers has his work shown in the Guggenheim Museum in New York.

The table is a mixed media of man made and natural materials comprising of two/three materials. Originally the tables were built using solid oak and coloured glass however some of the table designs now comprise of solid oak for the legs and solid beech for the frame. The top of the series of tables is predominately primary coloured glass The materials were selected as Albers' principle was to use available resources economically and then use the materials skilfully and to think about the construction of the design and not just an aesthetic result.

The colours on the table tops were chosen as part of Alber's passion for colour and using colour in different way. In this design he used colour for their brightness. In this design depending on whether the tables are shown separately or together, the viewer perceives the colours differently and therefore a different perspective is gained from the tables. The simple geometric shape of the table design and the smooth texture of the glass and the wood brings unity to the design. Although the primary colours and white contrast with the natural colour of the wood there is a harmony with the two materials as they are designed and constructed to appear as if the wood is holding the coloured glass up and draws the eye to the glass first, giving it optimal position.

This product is defined by its function. It is multi-functional as the group of tables not only provides a space saving solution but all the tables can be used individually or together. The tables can be stacked or pulled into interesting configurations which also change the Form of the design. Although I have not used Alber's nest of tables, I do have a nest of tables in my home and the tables fit the Function of their design. There is also a playful element to the design as by having a different colour on different sized tables, it allows the tables to be used together or separately.

From all angles, Joseph Albers tables are simplicity. This simplicity was influenced by the Bauhaus movement (1919 to 1933). Albers was part of this movement which favoured linear and geometrical forms where only line, shape and colour was important. Alberts was also influenced by their approach to design which unified the principles of mass production with individual artistic vision.

The Albers' Nest of Tables costs approximately £1,600 and the target audience for the design is for those who require a table that is multi- functional but is not drab due to the colour configuration. The product is value for money as you can use four different sized tables in different parts of a room or house depending on the size of table needed however when not in use the tables can be be placed in size order under the largest table to save space. The tables are still in demand since their original design as the function and use of the table is still as relevant now as it was when Alber's designed the table.

I enjoy all aspects of this table design, from the multi-function of the tables to the use of the materials and colour which add vibrancy due to the use of the cf the three primary colours.

Based on my research on both tables I would incorporate colour into my designs used on Alber's 'Interaction of Colour'. I have gained insight that colour evokes different feelings, be it harmony or discord and that by using colour in design it can capture the eye and the mind and make a functional table unique. I have also explored how Form and Function can work together in designs. Urquiola's table design was based on Form as light is needed for the tables to achieve the design criteria however the tables can be used. From this I believe that form and function can work in harmony. A table has to be functional by its definition - providing a level surface for eating, writing or working - however form allows the table to be unique.

Initial Maquette 1

Duffy London's design

For this table I wanted to explore form and function. For this development, I explored the idea of the table being rigid in design with sharp corners and straight lines to create the illusion that the table top was a ledge that was balancing on the base. However the function of the table was compromised by this design as when an object was placed at the furthest end of the table, it caused the table to tip due to the weight distribution on the base of the design. To counteract this I looked at various table designs and in particular Duffy London.

By researching the designs of Duffy London, and re-assessing the design of my table, I was able to make the necessary changes to provide stability to the table. This ensured that the Function element of the table was not lost

Initial Maquette 2

The intention for this design was to create a table based on form but a form that moved, changed shape and developed as time passed. This table was designed for a home or outside area. The plants and different hues of green would be integrated into the specific design. My idea moving forward would be that the form of the table would be rigid and straight but that the plants contained in the structure would be a contrast by growing and creating different organic shapes thereby creating a moveable form in an inflexible form.

To develop this I linked this idea to Hackney Botanicals who design coffee tables that double up as 'indoor gardens'. Their designs are derived from recyclable items and the form of the design is eclectic. I was able to use the idea of greenery and plants to see how the they change shape and composition which would affect the form of my design.

Hackney Botanical

Initial Maquette 3

For this design I wanted a table that would be functional in or outside the home. To do this I had to create a sturdy table which would encompass naturally formed objects. The table had to be able to adapt to different weather conditions.

By creating a strong base and filling it with naturally formed large stones, I was able to create a robust composition which is functional in an inside or outside space.

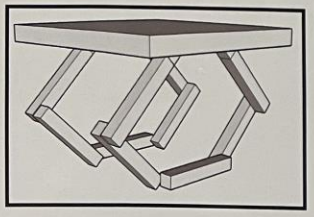
The development of this idea was inspired by the Gabion box which is used in civil engineering as it is a durable and effective in all climates. I used the wire mesh, as it is strong and durable, to keep the stones in place and it also allowed the stones to be seen.

Design development

As this table is designed to be functional and save space, the main element of this design was that the structure not be rigid and that the legs should be moveable to enable the table to collapse down. The table should also be lightweight so that it could be moved around a room or office and placed where it was needed.

In this development I had glued the table to the legs but this stopped the table from collapsing so I need to continue developing this aspect of the design. The changes however should not affect the aesthetic of the design. The other design aspect that needed development was the weight of the table as the table has to be moveable. I therefore need to re-think the materials that are used in the design

When looking at inspiration for this design, I found Robert Van Emricas' rising table. The formation of the legs inspired the leg design of my table.

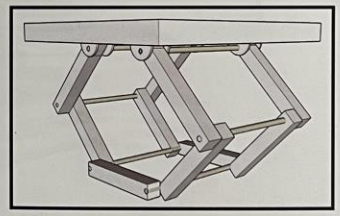


Robert Van Emricqs – Rising table

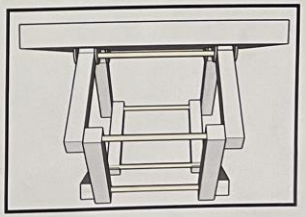
Modification to design development

There were two modifications to the development of this design.

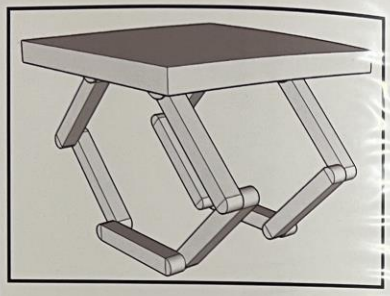
To ensure the functionality of the table, it needed to collapse to fit my design aspiration of a moveable table. To achieve this I created brackets under the table and attached the legs to the brackets. This then allowed the table to fold down. As the modification to the design was under the table it did not affect the aesthetic of the design.

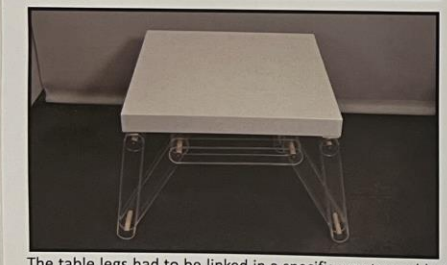


To ensure the table was lightweight and moveable, the legs and support under the table were created using square acrylic pipe instead of wood. To ensure that one element of the lack table was still part of the design, the original table top was kept.



Final model





During this project I wanted to design and develop a table based on functionality but with form as an intrinsic element of the design. I researched different designers and used my analysis of Form and Function to create a table based on the design brief of adding value to an existing product, which in this project was an IKEA Lack Table.

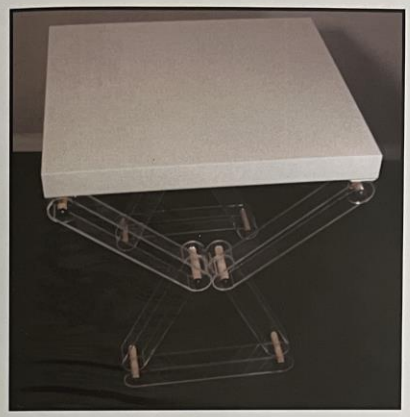
The final table design was a multi-functional table that is collapsible, lightweight and moveable. This was developed from one of my initial ideas and has challenged my creative skills in both the design and development of this table. During this process I had to re-think the design and materials I originally envisaged.

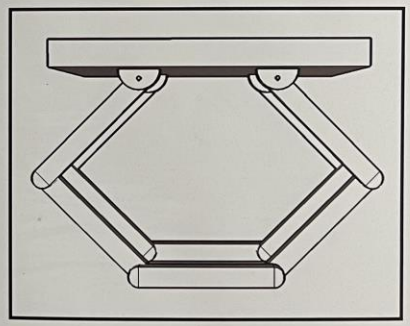
The table legs had to be linked in a specific way to enable the table to collapse and the materials in the design had to be lightweight for it to be moveable. The design was also challenging as although the materials had to be lightweight, they also had to be robust to hold the wooden table top and any items placed on it.

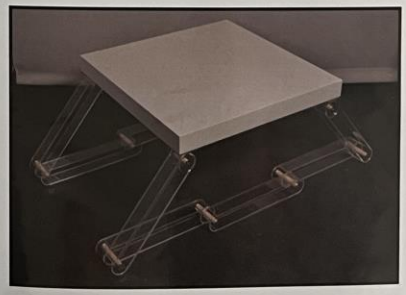
During the development of my ideas I kept the original table top of the Lack Table and experimented with different materials to provide the stability required whilst ensuring that visually it was solid and strong. During this process I was inspired by Eileen Grey who designed furnishings that were based on function and Robert Van Emricas whose rising table was linked to form.

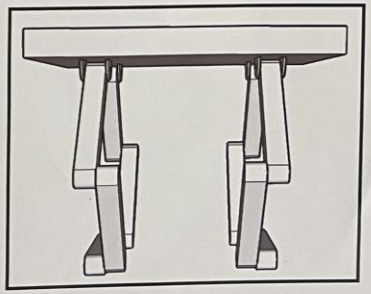
The final design incorporates lightweight retractable legs in acrylic which are at odds with the stable wooden top but this enhances the form of the design. The table underwent several modifications and change of material but the constant design features of a multi-functional moveable lightweight table stayed the same.

I have created a functional table which incorporates the design features that have been developed over the project. The changing form of the table supports the function of the table.









Typography:
The style and appearance of printed matter. The art or procedure of arranging type or processing data and print from

Typography is an art.
Good typography is Art
Paul Rand

Formand function together create typographic excellence.
Roger Remington

Type is a designer's best friend.

Lester Beall

Type is what meaning looks like
Max Phillips

TYPE IS A DANCE AND THE DESIGNER IS THE CHOREOGRAPHER
RICHARD LIPTON

Your choice of typeface is as important as what you do with it.
Bonnie Siegler

Typeface development is the most artcstic science and the most scientific art there is
David Marshall

Someone asked "Do we need so many typefaces?" I replied, Do we need so many books?
Do we need so many songs?
Do we need another move?
Bill Dawson

Typography is the craft of endowing human language with a durable visual form
Robert Bringhurst

Type is branding.
More desingers should understand why an an opportunity that is.
Elizabeth Carey Smith

WORDS HAVE MEANING. TYPE HAS SPIRIT. THE COMINBATION IS SPECTATUCLAR
PAULA SCHER

Typography is two-dimensional architecture, based on experience and imagination and guided by rules and readability
Hermann Zapf

Building a good font collection is like populating ones's wardrobe. It requires a balance between versatility and expressivity.
Everyday accessories and special outfits for special occasions.
Jean-Baptiste Levee

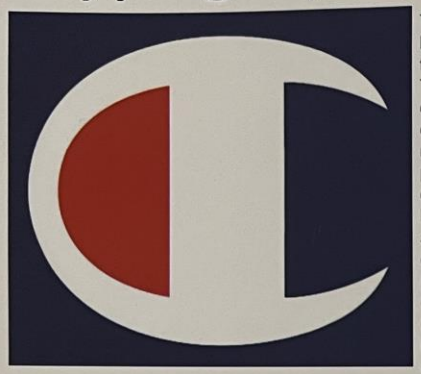
Typefaces are not only there to be read, you also see them
Hans Peter Willberg

Type and typograpjy – what you do and how you do it – are both science and art
James Felici

Perfect typography is certainly the most elusive of all arts. Sculpture in stone alone comes near it in obstinacy
Jan Tschichold

Typography Alphabet

Typography Analysis



The Champion logo is derived from the knockout font which is a Sans – Serif type face designed by Jonathon Hoefler and Tobias Fere–Jones. The knockout font contains 9 different widths, all individually designed to include subtle variations which makes this font unique. The C is the primary brand mark for Champion and 3 distinctive colours are used: champion blue, red and white. The white and red appear to sit in front of the blue. A blue colour scheme evokes a feeling of professionalism and loyalty and is the dominant colour. Red, one of the primary colours, is used to appeal to the young brand image whilst white is a secondary colour to provide contrast and is a clean simple colour.

The K in this font is used in the logo of Kellogg's. The Kellogg's logo is in a brush style red. The type is customised and there is no single font that matches its lettering but a similar font would be Ballpark Weiner designed by Mickey Rossi. The logo was designed by Ferris Crane. The use of red in the 'K' is simple and bold and contrasts with the white background. The font of the K is distinctive and cursive and so the use of one colour ensures the font is not detracted from and provides a bold image.

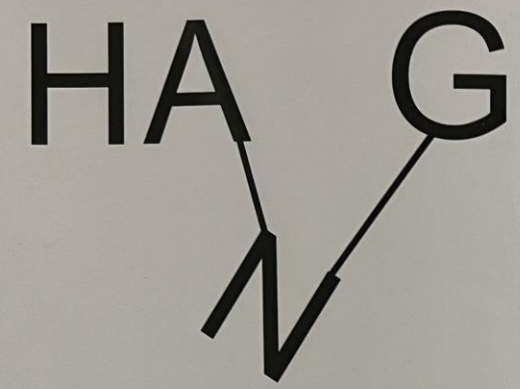
Harrods have used many typographies. The current type has been used since 1967 and is synonymous with quality and luxury. Harrods typography appears in either Adobe Caslon Pro (designed by Carol Twombly) or Caslon Egyptian (designed by Caslon foundry of Salisbury Square around 1816). The typography is used in different communications, eg Caslon Pro is used for corporate communications and signs. It can also be used for headlines but only under the size of 20pt. The typography can be used in 1 of 3 colours which forms the brand identity.

Typography

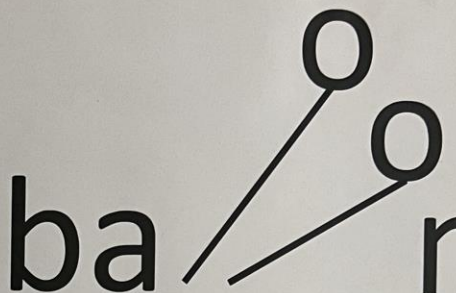
HEAVY

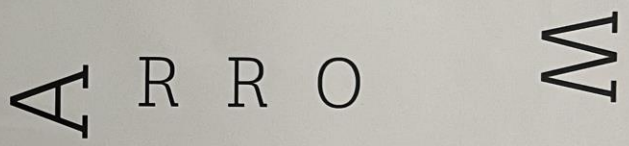
compression

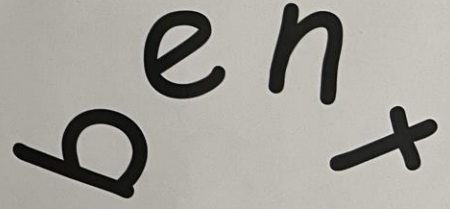
bounce



mirror







ARROW

ARROW

ARROW

Eliminate

Fliminate

el m nate

ELIMINATE

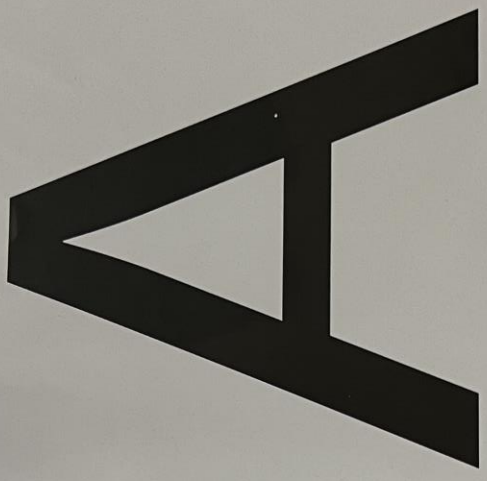
BIT

Bite

bite

Bite

Bite



RROW

ELIMINATE

Bite

I have used Arial Bold font as it makes the letters of the font thicker so that when pieces of the font are taken out, as if they were bitten, the word is still easily identifiable. I have chosen the colour green as I wanted the word 'bite' to evoke the image of an apple and biting into this.

For this typography I have used the Impact font as it is used mainly for headlines and displays and this font fitted the visual I wanted for this word. I used the colour red on the font as this evokes passion and love as well as anger and danger and 'crash' could be associated with all of these emotions. I have mashed the 'r' and the 'a' together as they are the letters that have impacted, which caused the remainder of the letters to break and move as part of the fallout of the crash.

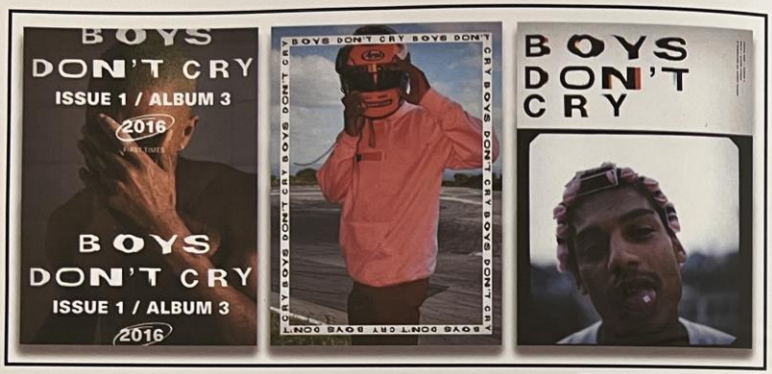
I used the Times font for the word 'arrow' as it is narrow and this font fitted the image I wanted to create using the letters of the word. I enlarged and darkened the font on the letter 'A' to represent the arrowhead and then placed a horizontal line above and below the remaining letters to draw the eye along the letters and to depict the shaft of the arrow.

I have used the Helvetica font again for 'elimination'. For this wordplay I wanted to fade the letters away as if the word was being eliminated. To do this I shaded the letters from black to light grey and as Helvetica font is visually very clear, this was the best font to show the shading.

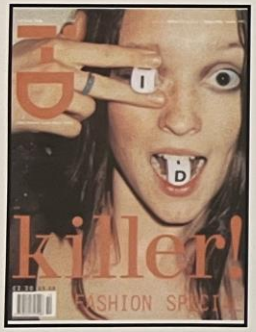
I used the Helvetica font for the word 'compression' as I have squashed the words together as if they were compressed and the font, which is clean and bold, creates a contrast.

For the wordplay 'stolen' I used Cochin font as it is wide and large. This makes the lettering very clear and enables the reader to easily identify that a letter is missing or has been taken from the word. I have used white for the font, with a black background, to focus the attention on the word.

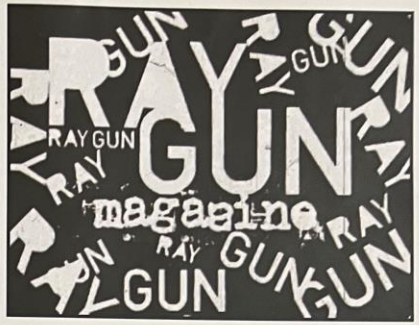
Biography / Reference List



Frank Ocean –
Visual artist, singer/songwriter and record producer and photographer.
'Boys don't cry' magazine – limited edition published in 2016
https://hypebeast.com/2019/2/frank-ocean-boys-dont-cry-reissue-release
Date accessed - 28/10/20



Terry Jones –
Art director
I-D magazine, British by monthly magazine, fashion, music, art and youth culture
The magazine is know for its innovative photography and typography
https://i-d.vice.com/en_uk/topic/magazine
27/10/20



David Carson –
Graphic designer, art director and surfer
Ray Gun magazine is an alternative music magazine first published in 1992 in California. It is best known for the use of experimental typography. His magazine over laps photographs and mixes and alters type fonts. Carson's radical design tripled the circulation of Ray Gun which indicated the typography and pictures appealed to a younger readership. From this he was commissioned to design advertising for Nike and Levi Strouss.

Vogue magazine (23/5/19) journalist Cory Seymour stated 'David Carson took font and destressed type treatments and disintegrated, dystopian layouts to a kind of far – flung devolution'.
In one text Carson used Zapf Dingbats making the article completely illegible.
https://www.vogue.com/article/ray-gun-magazine-anthology
May 21st 2009

Carson's work made designers realise that editorial layouts didn't have to stick to the rules around image placement, consistent typography, or doggedly flowing copy issue after issue.
https://eyeondesign.aiga.org/anti-grid-icon-david-carson-on-why-computers-make-you-lazy-and-indie-mag-design-needs-to-liven-up/
Words by Emily Gosling, August 12th 2009

Magazine Cover Analysis

Traditional Magazine Covers

The traditional concepts of a magazine design follow a design structure and to understand David Carson's unique design strategies we must first understand the traditional rules.

The same font and font size is used for the title in all the magazine covers. However the colour of the font will differ to either dominate or compliment the colour scheme of the main picture.

The word 'house' in the main heading uses a bold type face for impact and to emphasise the issue is predominantly about the home.

The brand name is highlighted with colour with the subheading and information text is in various tones of black, with the exception of the script text which is white which adds definition

The sub-heading is placed under the brand heading providing insight into the magazine issue. White is used as the background to this typeface.

The red text stands out on the page. The room colour is muted with accents of colour from from various pieces of furniture n the room.

The tag line advises the viewer of the main story line to create interest and impact.

There are 4 fonts used, in different sizes, which compliment each other and provide fluidity on the page.

The barcode is put in the bottom corner so it will not be a distraction and does not affect the aesthetics of the design cover.

The main texts are centralised under the brand title with the exception of a 'bubble' which provides further information and is introduced by a script font. This feature is used on all the magazine covers to tempt the viewer with more highlights of the magazine. The wallpaper colour is used as a backdrop to the supporting texts, which gives the impression the text is part of the room.

Brief descriptions of articles and information are provided on the front cover without elaboration or explanation to tempt the viewer.

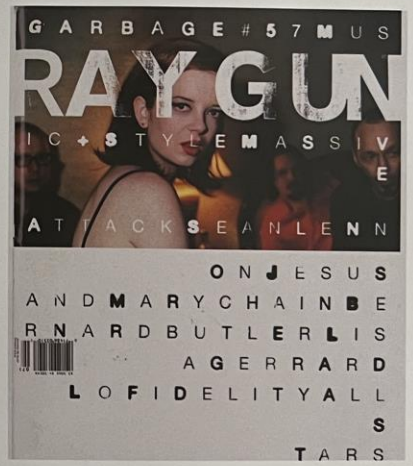
Magazine Cover By David Carson

David Carson is a Graphic designer, art director. He is known for his unconventional and experimental graphic style and he has introduced both innovative typographies and layouts to magazines. His magazine covers do not follow a brand or visual format.

The main title text is the brand name and is large and distinctive. The colour of this font is reflected in the remaining text.

The brand of the magazine, the images and typographic depict who the demographic of the magazine relates to.

The orange tones in the background of the main image draws the eye behind the main figure and text.



There is no heading or sub heading giving information to the viewer. Instead the information is provided as part of the main text and runs before and after the main brand title.

The image visually reinforces the main subject of the magazine edition. The image is obscured by the text however the spaces between each letter allow the viewer to see the image.

One font in various depths is used. Black tones and white are used to simplify the running text.

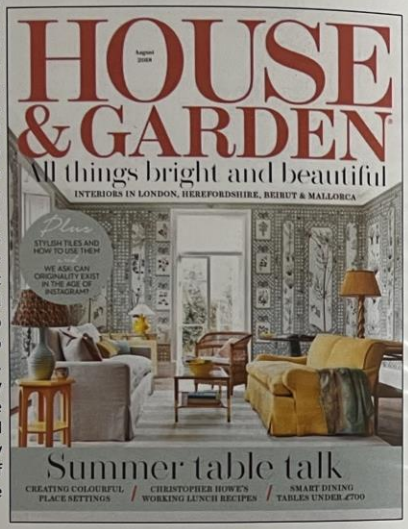
The barcode is used as part of the imagery and not placed out of the way of the main image and article.

The text is unconventional as there are no spaces between each word. This is to draw the viewer's attention continuously down the page. It is a distinctive layout. Letters are highlighted at the beginning of some words and randomly on others making the words on the page challenging to read. Each magazine cover has a different format making them unique and do not follow a format.

Magazine Design Analysis Essay

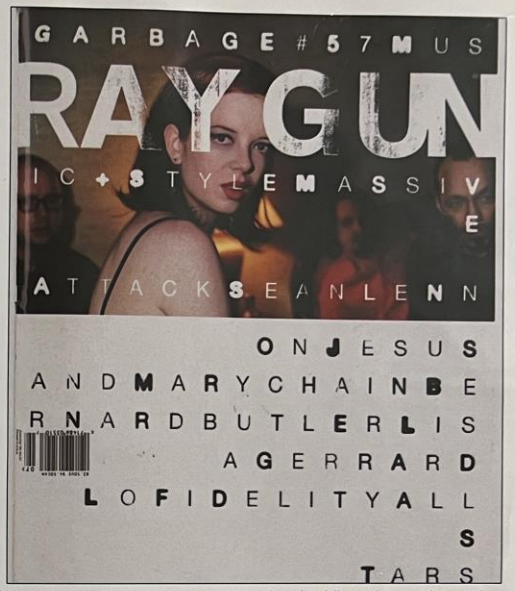
David Carson's magazine design style does not follow the rules for a traditional magazine where image placement, consistent typography or visual aesthetics are used in a set format. To understand how different his style is, it is better to understand the rules of a conventional magazine cover first.

This magazine cover is called House and Garden which focuses on interior design, entertaining and gardening. This magazine cover would be depicted as a traditional magazine cover. The magazine cover is split vertically into three columns to provide order and uniformity. The Masthead is the brand name of the magazine and this is in capital letters and a bold type face which is clear and bright to provide impact. The word 'house' is in a slightly bigger font to advise the viewer that although the issue contains information about gardens, it is predominately about the house. The same font and font size are used in all the House & Garden magazines so that viewer knows what the brand depicts, and the viewer knows what type of information they will be reading and the format that it is written in. The sub-heading is placed under the brand name in lower case black font and gives an insight into the magazine issue. A white background is used to highlight these typefaces and make them stand out, whilst the tag line advises the viewer of the main story line which creates interest to continue reading. The magazine uses the same fonts; narziss, ampersand, bold serif and Austin semi bold. The fonts are predominately black except for a 'bubble' which is placed to the left of the main picture and here a script font is used to change the uniformity and to provide a contrast.



The main image on the cover is a living room in an affluent home. The wallpaper and flooring in the room is muted however the furniture in the room have bolded colours which draw the viewer's eye to different parts of the picture and provide a depth of colour to the composition. At the back of the picture is a large window/door which is predominately in white and this colour links to the background of the main headings. The wallpaper colours are used as a backdrop to the text that promotes different articles in the magazine and by doing this it provides fluidity to the cover. The barcode is placed in the right bottom corner, so it does not affect the visual design of the magazine. The formal elements of magazine design are followed and there is a set formula for the layout; the same fonts, font sizes and information placed on the page which is easy to read and understand. This magazine is a well-established high end design magazine with a strong subscriber base, and it has its consumer base is predominately in the middle age range.

This cover is from Ray Gun which is an American alternative rock and roll magazine. It is designed by David Carson, a graphic designer who is known for his innovative typography and distinctive layouts. Carson broke the convention of magazine design as he believed that "just because something is legible does not mean that it communicates as something difficult to read may be very easily communicated". Carson's designs have a chaotic typography with a disarray of photographs overlapping each other. This design cover is the 57th issue of Ray Gun. It breaks the rules of conventional graphic design as a set formula for structure is not followed and it shows his chaotic style including text which obscures the pictures on the design. The only coherent text on the cover is the Masthead which is the brand name, and this is easily read although some of the letters are fading out and may have been done with block printing. The information regarding this edition is before and after the title and the text runs concurrently with no spaces between each word. This is unconventional and makes it challenging to read. The main picture is of the band Garbage but they are obscured by the text. The viewer's eye is drawn to Shirley Manson, who is the main focus in the picture as she is the lead singer, however the orange tones in the dark background draw the eye behind Shirley Manson to the remaining band members. There are also spaces between each letter which enable the viewer to see the picture and again block printing may have been used. The barcode is also visual, which is unusual. In this design it is placed slightly to the side of the text but appears to be incorporated into the article as it is alongside the text. Due to the text being difficult to read, Carson has used one type of font throughout and the font is in black and white tones which does not visually overwhelm and adds balance to the chaotic information that is being given. Each Ray Gun magazine layout is diverse and unique.



The information is not clear as the words have no spacing between, sentences, break oddly to the next line and there is no paragraphs or separation between topics. Carson does not always provide details about the edition, leaving the viewer to imagine what they will read in the magazine as no information is provided.

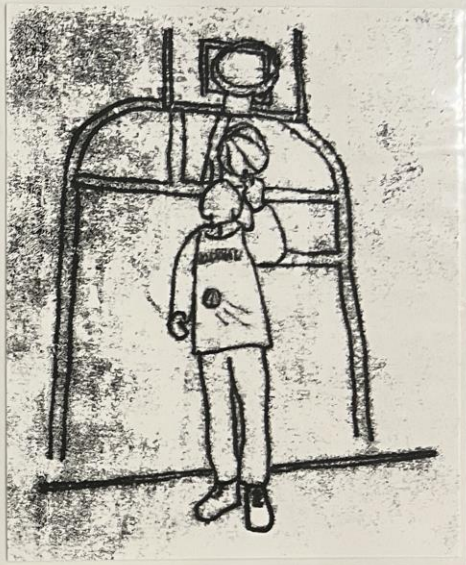
David Carson's work is avant-garde, and he uses photographic images with typographic experimentation. The layout goes against a set of preconceived notions about how communication is passed to the viewer. The magazine cover disprove the stereotypical display of the traditional magazine and by doing this it allows it to stand out from other music magazines and be known as innovative as well as visually appealing to a specific target audience that has a connection with rock-and roll-punk rock and urban culture in general. . The style of Carson's design appeals to a younger demographic and their home and lifestyle choices. This demographic is progressive and want to experiment and look at new ideas and ways of communicating and David Carson's typography and design provide this in his publications. Whilst Carson's designs have a function, in that he is providing information about music, fashion and lifestyle choices in his magazines, they are predominately about form as the creative design is paramount. An example of this is when Carson once thought that an interview with Bryan Ferry (a singer/songwriter) was boring so wrote the transcript of the interview in symbols font, rendering the article useless.

Whilst I enjoy David Carson's work, including the use of different typographies in a text and the layering of text and pictures which bring a unique quality to his work. I find the use of typography in some of his work too chaotic for my design preference. When I see a magazine, I want to be able to see clear information on what the magazine will provide but with a unique design layout. In essence I want the uniformity and chaos designs to work alongside one another and this is what I want to move forward with in my designs.

Magazine Cover Photography

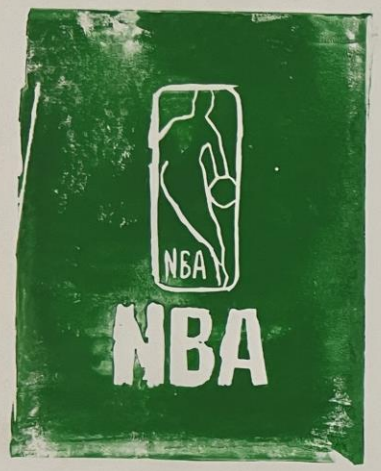
Mono Printing

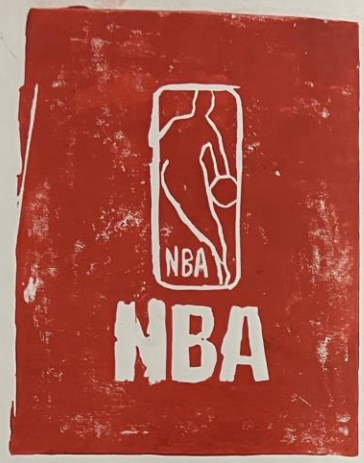
By creating a mono print it brings uniqueness to the magazine as only a limited amount of prints can be created as each print is made by hand which is difficult to replicate. This technique also provides a textured effect which brings depth and detail and it provides a tactile quality to the print which can appeal to an emotional response for example the viewer may want to touch the magazine.

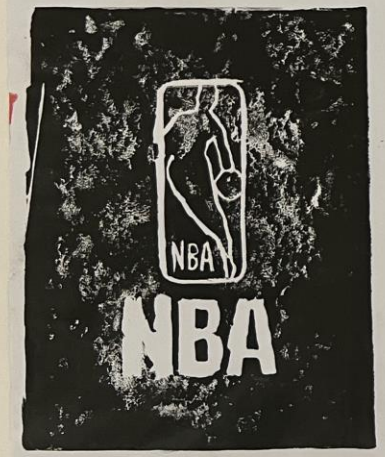


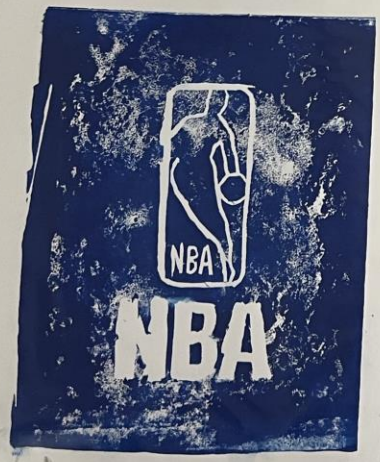
Lino Printing

I wanted to create an NBA 'seal of approval' to add credence to my design and this was achieved by using lino print. This technique aloud me to achieve bold hard lines and colour contrast in the shading of the ink against the paper which created a destressed look giving the appearance of age and wear









Magazine Titles

BENCH
WARMER

BUZZER
BEATER

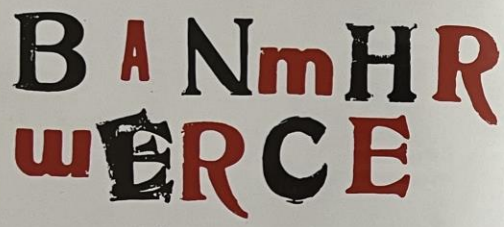
LOCKER
ROOM

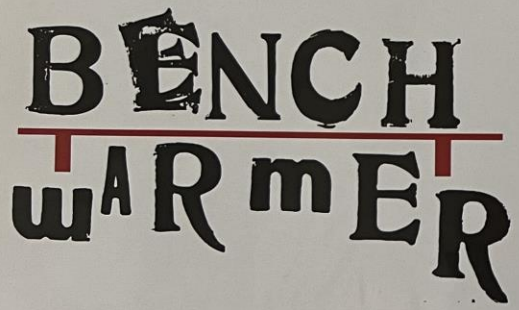
THREE

Magazine Title Development

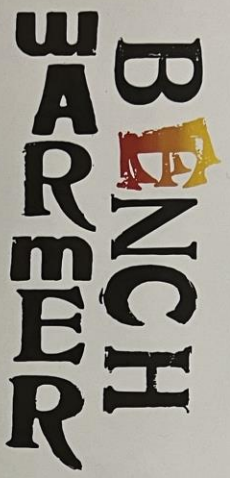
During the masthead development, I wanted the magazine title to evoke intrigue and be a play on words. A bench warmer in basketball is an athlete who does not get much playing time. He sits on the bench at the side of the court in case one of the main players is unable to play. The presumption is that the player is on the bench because they are not very good or skilled. The bench warmer does however hasve a part to play in the game, as otherwise why would they just be sat on the side of the court? The benchwarmer takes note of what is happening in the game; is able to see the game unfolding and can judge what 'plays' have worked and what areas need focus. They are there to encourage and bring energy from the side-lines. This got me thinking that this is what fans of the game also provide during a match and this word could be used to incorporate all those that love and are fans of the game. This led to my designing a masthead where this negative connotation was turned on its head to become positive.

This is a potential final masthead. My aim is for it to be unconventional and challenging, so that the reader has to make an effort to read the title and define what it means To create this, I block printed the words in different colours and mixed a letter from each word which would be like breaking a code - a code that would allow you to read the magazine. The letters from the word 'warmer' were printed in red as this colour is synonymous with being hot or warm. The letter 'E' was overprinted on an angle to provide texture and to imply that the word had been individually printed and not mass printed by a machine to evoke exclusivity.



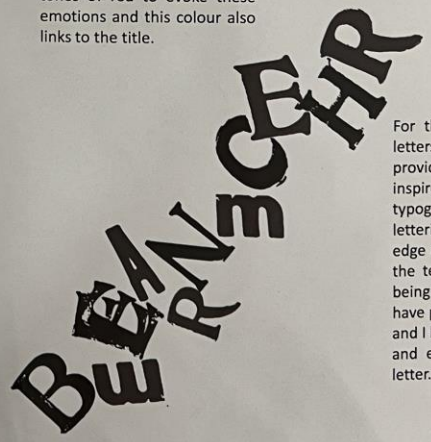


For this idea I separated the words with a horizontal line and two short vertical lines. The lines depict a visual of a 'bench'. I have used red for the lines to make this visual stand out against the black printing of the letters. The words are sitting on and under the bench. Carson uses pictures and links in his magazine titles to distract the reader and create interest.



Carson's use of colour in his designs was the inspiration for this print. Carson uses colours that link to the title of each design. As red is associated with passion and heat, I have used various tones of red to evoke these emotions and this colour also links to the title.

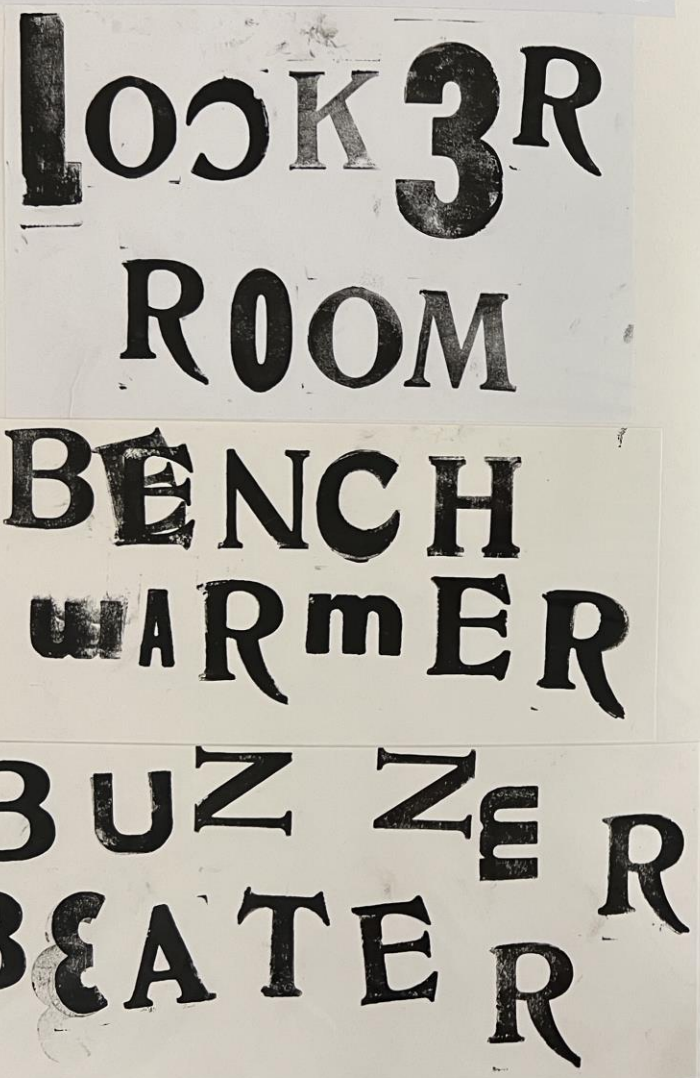
This development is also a potential and for this masthead I wanted to experiment with over-laying print and also changing the direction of the print, so it did not follow a set structure. This was to draw the reader's eye across the page but at different angles. I wanted to create balance by using the same font, but I did not want the masthead to be staid, so I incorporated the overlaying of the letter 'E' to create disruption. To create another visual impact I have used red in different tones for the letter 'E' to imply it was getting warmer and link this to the word 'warmer'.

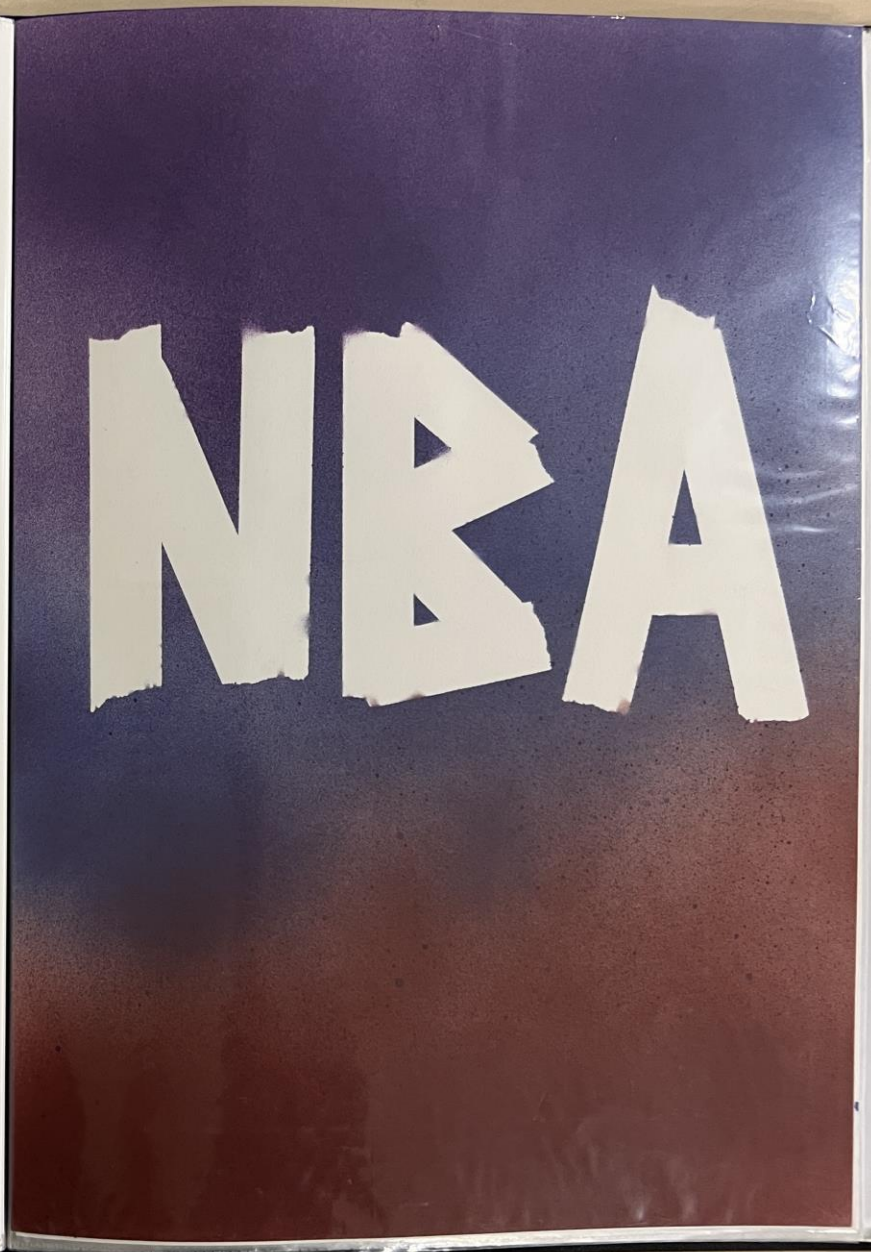


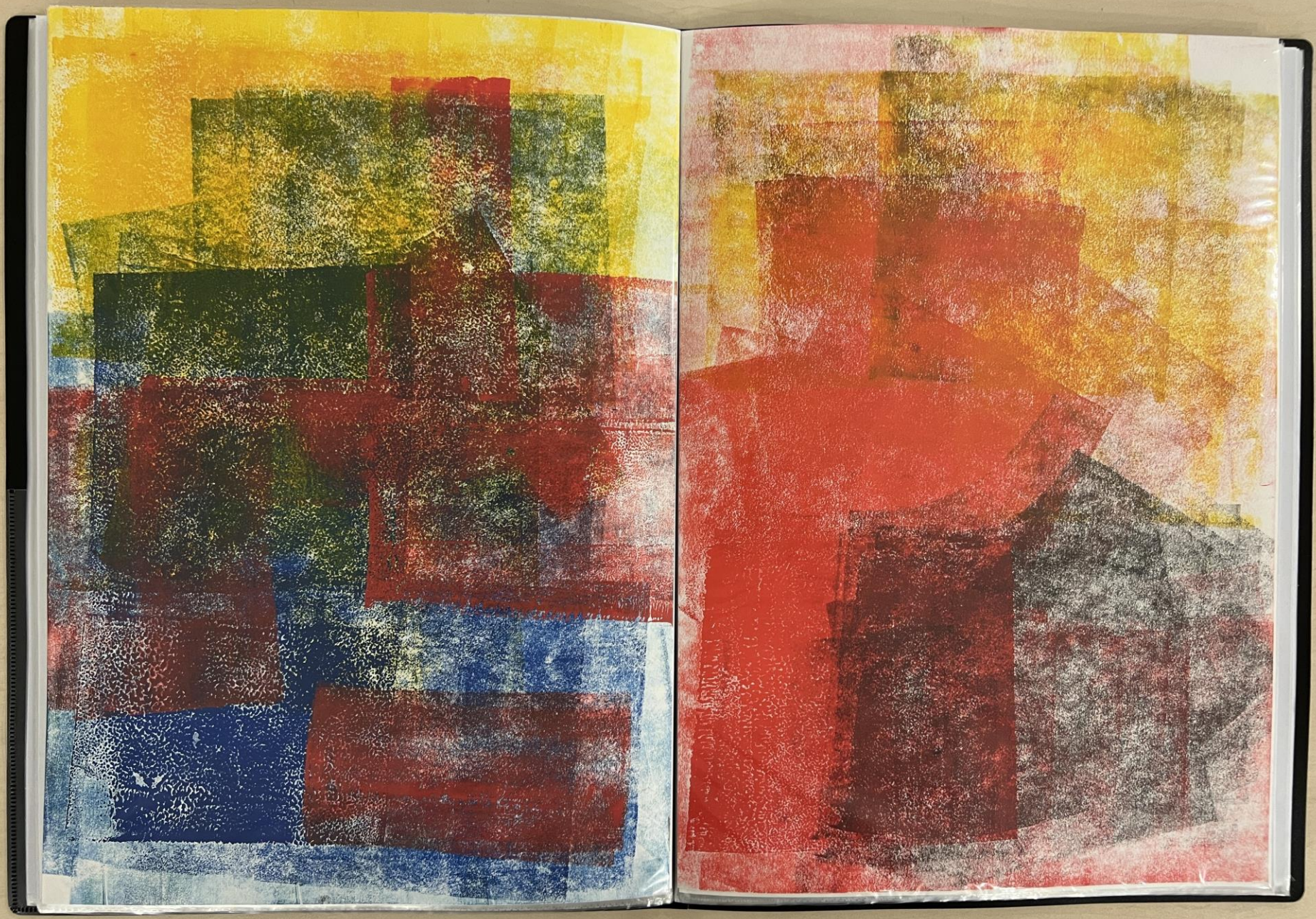
For this potential final development, I arranged the letters in the block print to make them illegible and provide a challenge for those that wanted to be inspired to read the heading. To achieve this the typography is in black tones but the edges of the lettering are not perfectly printed, giving the title an edge and individuality. I could use different colours in the text but by using black it stops the reader from being distracted by colour from decoding the word. I have printed the letters out of order, at different angles and I have overlapped some of the type to create havoc and ensure the reader's attention is drawn to each letter.

Magazine Titles

Experimenting with block printing







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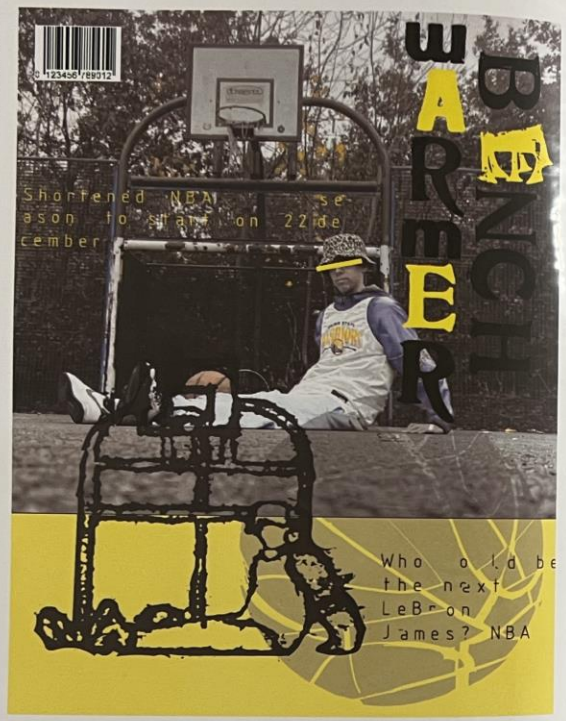
Initial Idea 1

The intention of my magazine cover was for it to be innovative and appealing to a specific target audience. The magazine readership would be aimed at those who are interested in fashion and basketball but want a magazine that differs from the traditional basketball magazines.



The layout of the magazine is distinctive and does not follow a traditional magazine layout The background of the cover is in muted tones of black and grey and is a backdrop to the main subject who is sitting on a court. It is left for the reader to guess who and why they are sitting on a basketball court which adds intrigue to the magazine edition. This is at odds with the traditional basketball cover where there is a visual of a famous basketball player in action on a court. This image would be the main focus and it would be centralised and in bright colours.

The masthead is not centred at the top of the page but runs vertically down the right-hand side of the page. The type is block printed with letters highlighted and overlayed to change the direction of the reader's eye horizontally and vertically. The masthead also draws the reader's eye down the page to the cover line which is placed at the bottom of the page, where part of the type is erased. The sub-heading is on the opposite side of the page and the same typography is used as in the cover line. The magazine is broken into two sections and I have also used yellow on parts of the main character, various letters in the masthead, the sub heading and along the bottom of the cover to bring uniformity into the chaotic imagery.

The barcode is placed in the top corner as I wanted it to be part of the magazine visuals. A faded image of a basketball and a small mono print of the main picture brings the two sections of the magazine together. By bringing different typographies and images, I believe I have designed a magazine cover that attracts the target demographic and moves away from the stereotypical basketball magazine.

Initial Idea 2

Initial Idea 3

Final Evaluation

Idea or Concept

For this design my intention was to create an innovative and appealing magazine with distinctive typography. To achieve this, I wanted to explore the use of different typography and printing styles and use them in a non-conventional style but did not detract from the main image. I also wanted to explore how positive and negative space can support typography.

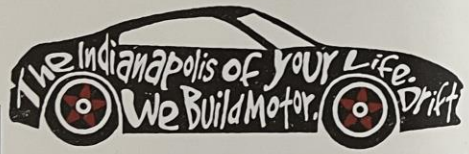
Inspiration

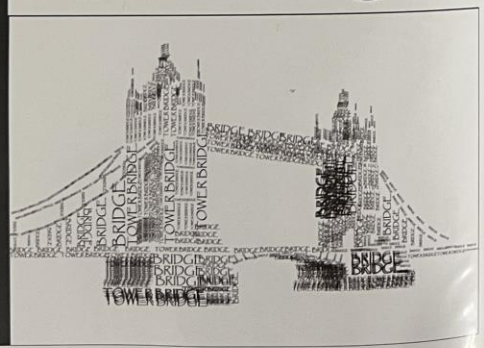
David Carson was inspirational in the development of my designs. David Carson uses innovative typographies and distinctive layouts in his designs, including the Ray Gun magazine. Carson's style of photographs, overlapping images, and unconventional typography, creates a visual communication where the reader has to decipher the information presented.

Evaluation

My final design has satisfied my original intention. My reasoning for this is that I have used mono printing and lino printing as part of my design and used non-conventional typography and layouts to create an individual and innovative design. By using muted black/grey tones in the backdrop and white and purple for main subject I provided balance between the positive and negative space. I believe this was a successful element of my design as this stopped the typography overwhelming the visual image.

Typographic illustration





RESEARCH into TYPOGRAPHIC ILLUSTRATION

LINO

A design is cut into the linoleum surface with a gouge, with the raised (uncarved) areas representing a reversal (mirror image) of the parts to show printed. The linoleum sheet is inked with a roller (called a brayer) and then impressed onto paper or fabric. The actual printing can be done by hand or with a press. The linocut printing technique was used first by the artists of Die Bruke in Germany 1905.

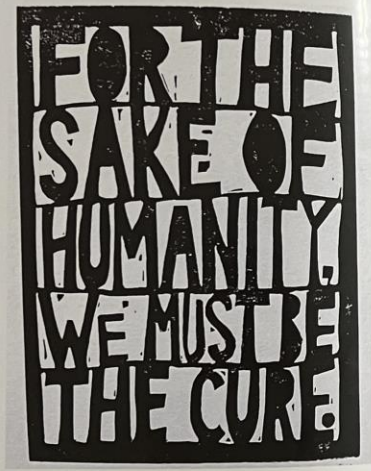
MONO

Mono printing is a form of printing that has images or lines that can only be made once, unlike most printmaking, where there are multiple originals. There are many techniques of mono printing. I am using a technique where a piece of paper or fabric is placed onto a sheet of ink. Then the desired image or lines are drawn onto the paper for a mirror image as the ink is transferred.

Still Life Under the Lamp. Pablo Picasso (Lino Printing)

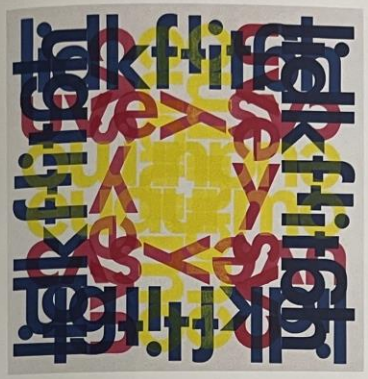
Picasso developed a new method for creating prints from a single block. Although this saves time, you are required to visualise your completed image at an early stage and it makes it difficult to reverse any mistakes that may be made during the cutting process. This type of printing requires a great deal of complex cutting and printing, if a mistake is made at the end of the process then the entire print may be ruined.

From the Front. Georg Baselitz
(Mono Printing)
This link print is by Baselitz who is a German painter, sculptor and graphic artist. He is known for his upside down prints. In this print I like the way Baselitz uses colour, in this case red, to draw the viewer's attention to the negative space and then to the main image. The main image would have been created with deep lines cut to various lengths and depths. The lines are drawn at various widths and both horizontally and vertically. By doing this the definition of the face is created.



Inspiration quotes by Neil deGrasse Tyson - Unknown
(Lino Printing)
The typography varies in width and it is not uniform but the message is clear. The negative space between the letters is white whilst the positive space, which depicts the message, is black and this creates a strong visual contrast. Horizontal lines, also in black, highlight the words on each line. The quote is outlined in a thick black line creating a frame around the message. I believe the quote has been cut out of a lino block as a whole and then printed which gives the impression that it is not mass produced.

Letters of t)he Alphabet. James Brown
(Lino print)
James Brown creates limited edition screen prints and linocuts using traditional typesetting techniques. In this print the combines typography and colourful inks. Each letter is lino printed by hand in two colours. The first colour is applied and then the lino block is rotated and the second colour is overlaid. The ampersand type is used in these alphabet designs which can be seen individually or together. In the majority of these designs the negative space and positive space are interlinked adding contrast when the images are placed together. This design is a good example of how line and pattern can be created on lino print.



Alphabet Square Hansjorg Mayer
(Monoprint)
This is a mono print by Hansjorg Mayer. It is a square grid of overlapping lower case letters printed in yellow, pink and blue The blue letters form a square and overlap in the corners. The typography runs both vertically and horizontally. The white negative space acts as both background and frame to the layering of the typography. In this design Mayer experiments with the shapes and the individual character of the alphabet in Futura typeface and has not included capital letters and punctuation marks. He uses four sizes of typeface in bold and semi-bold and this provides a clear, concise and simple use of letter form. During the time of the print, Mayer was experimenting with form and presentation of individual letters at this time and uses emphasis on different ways in which a letter could be printed, for example size and weight.

National Theatre Poster. Alan Kitching
(Mono print)
The type surface is hand inked and provides a unique and tactile appearance to the design The use of red and orange in the 'R' are applied unevenly to depict flames rising. The use of black against the red/orange colours gives depth to the design. The bold and thick typography and the use of space conveys strength and impact of the composition. This, together with the plain negative space, bring the word to the forefront of the poster. I think the use of typography, colour and space creates a powerful image.

Letter Block Printing

Block printing

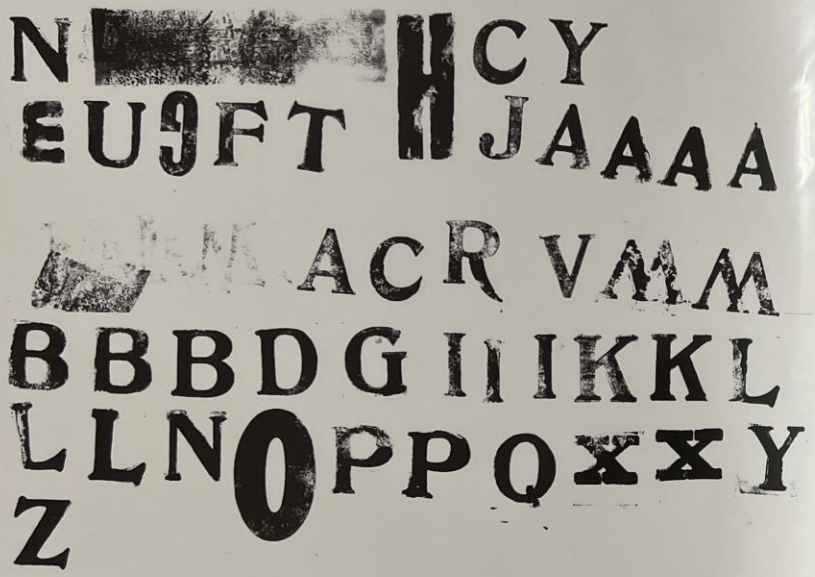
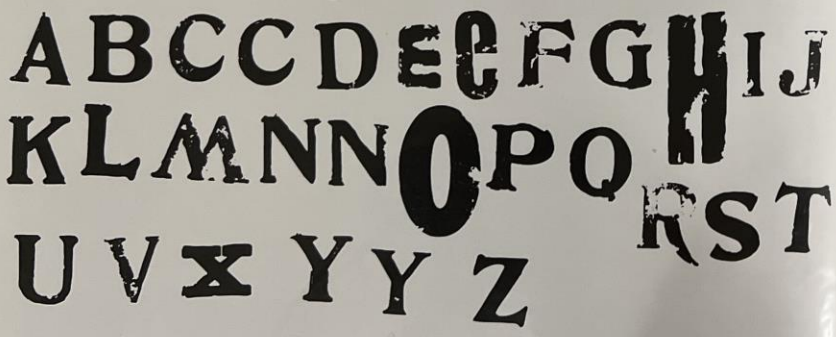
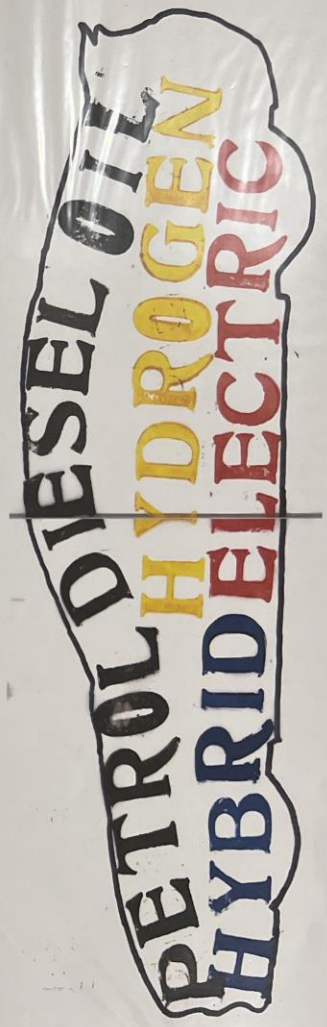


Illustration of block printing



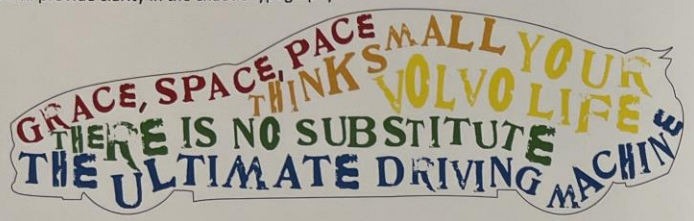


Initially I focused on using block printing to create my design but in this piece I used an A2 outline of a car and put a piece of A2 tracing paper over it. Using this I was able to use block printing but without going outside of the lines to create the outline of the car. This created a unique look as each letter was printed separate to the other therefore none of the letters are the same.

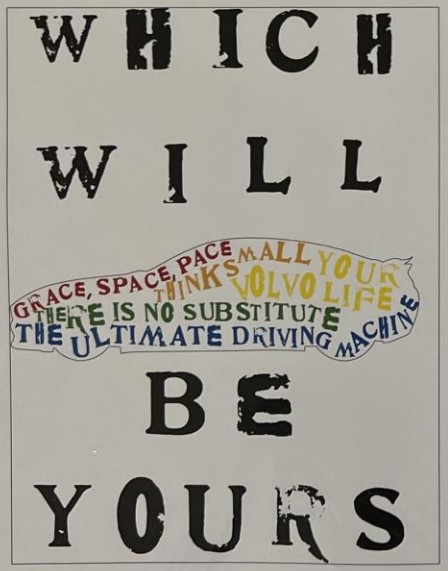
In addition to this each of the words are in a different, vibrant colour except for the fossil fuels which are in black. This is because in colour phycology black evokes sadness and anger thus displaying that these ways of fuelling a car is damaging our planet so we must look at 'what will power our future.'

INITIAL IDEAS

In this idea I used the outline of the car as the frame for the message which is linked to car brand slogans. The typography bends and moves in line with the shape of the car. The colours define each brand and provide clarity in the chaotic typography.

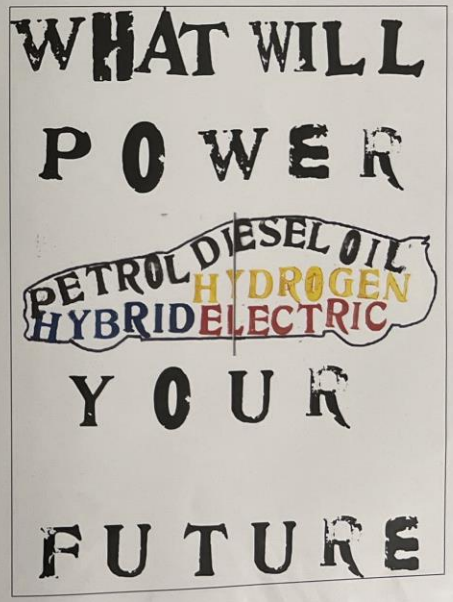


The block printing for the main slogan is black and the use of white negative space provides a strong visual message. This is at odds with the outline of a car in which the typography is disorderly and where the vibrant colours distinguish the brand in outline. The use of white as a negative space which unites the two images.

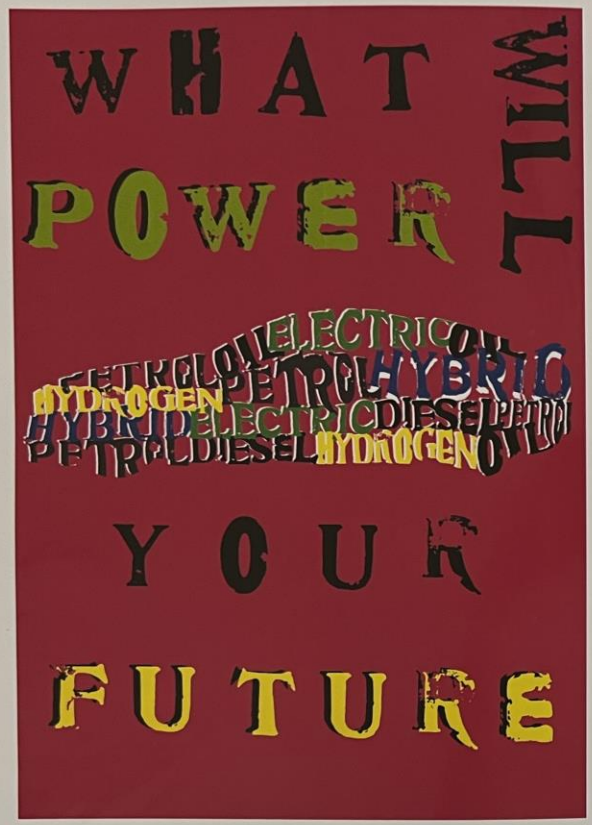


For this development I continued the idea of the car as a frame for the typography. However I did not want the words to appear chaotic but to be easily identified and highlighted by the use of colour in the print. This allowed the positive space to be the main focus with the black outline creating a frame for the type.

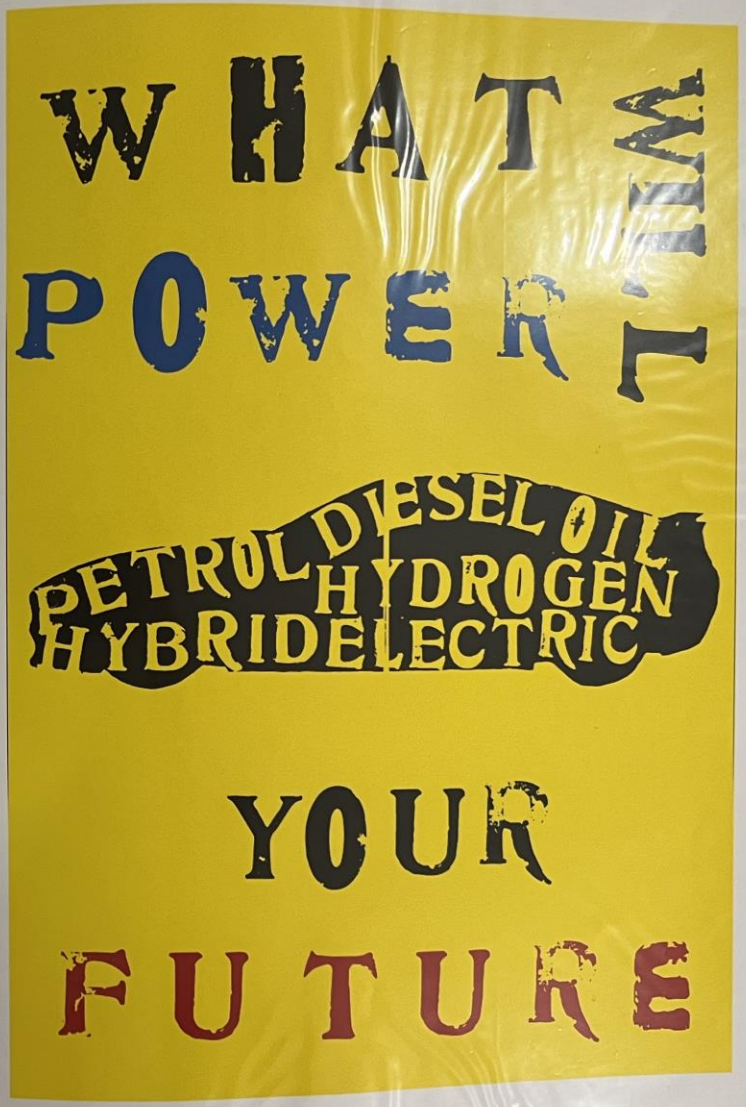
As the wording in the image is colourful and draws the viewer's eye I wanted to create a visual contrast with the slogan. For this I varied the size of the typography and used black which created two visual images. The use of white for the negative space in both images provides uniformity and a composite design.

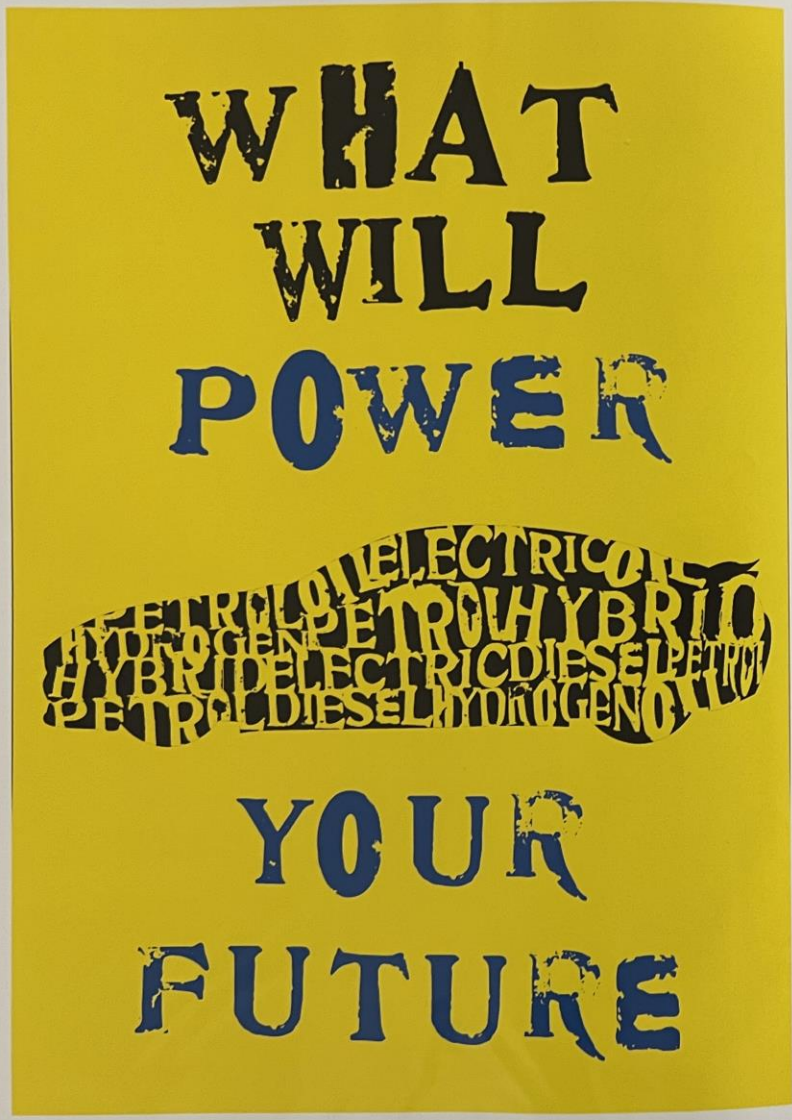


Developments



This is my preferred development. I have used colours which are not normally associated with car designs. I wanted to create an image that would draw the viewer's eye with the use of vibrant colours in both the negative and positive space. The typography for the statement is clear but unique. This is at odds with the image, in which the viewer has to decipher the typography, supported by colour, which would provide information to answer the question in the main text.

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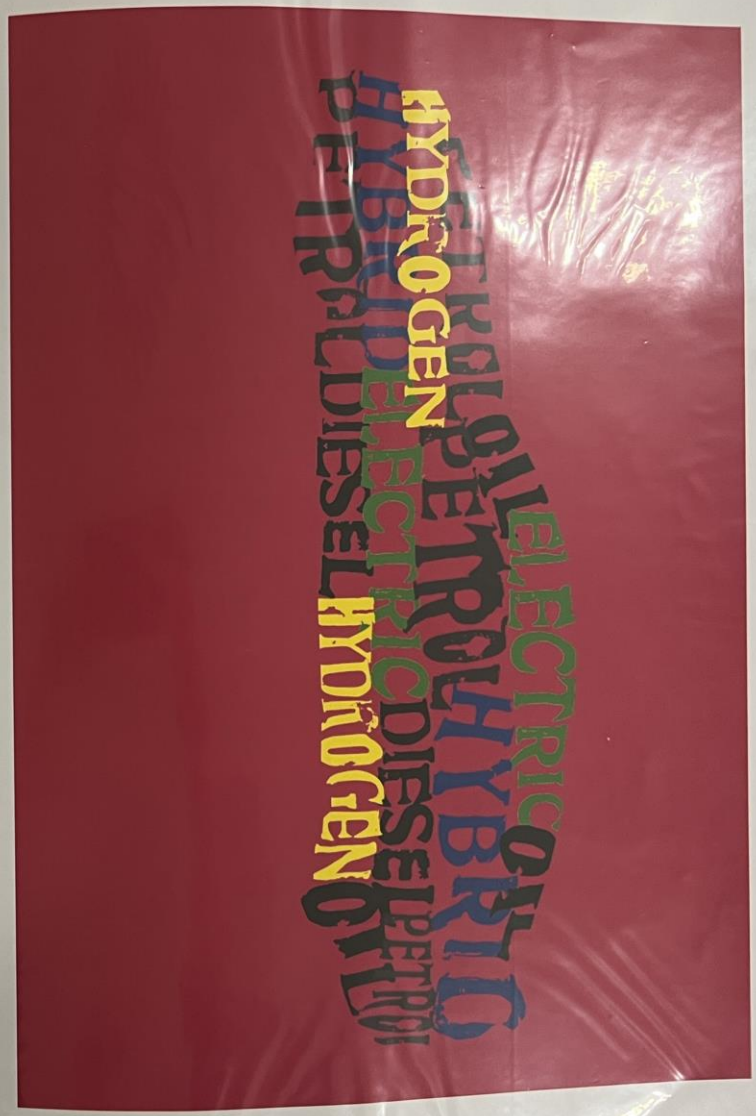
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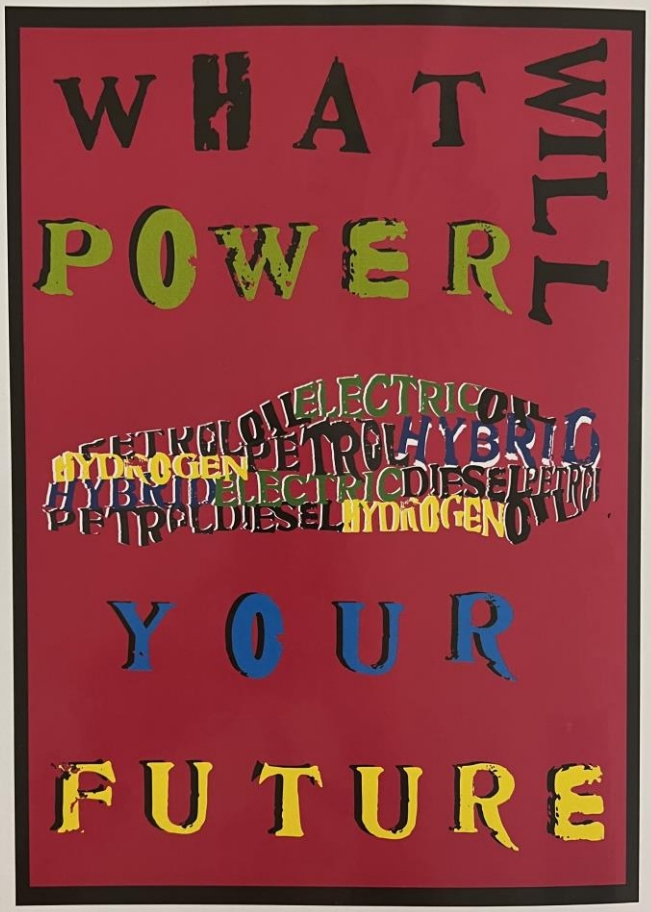
Final Illustration



In this final development, I have emphasised the message in vibrant colours as colour attracts attention and adds definition and clarity to the design. I have also used black to shadow the type which provides a 3D illusion. I have created a thick black line around the design which acts as a border and creates a visual balance and unity within the composition and draws the attention to the focal points.

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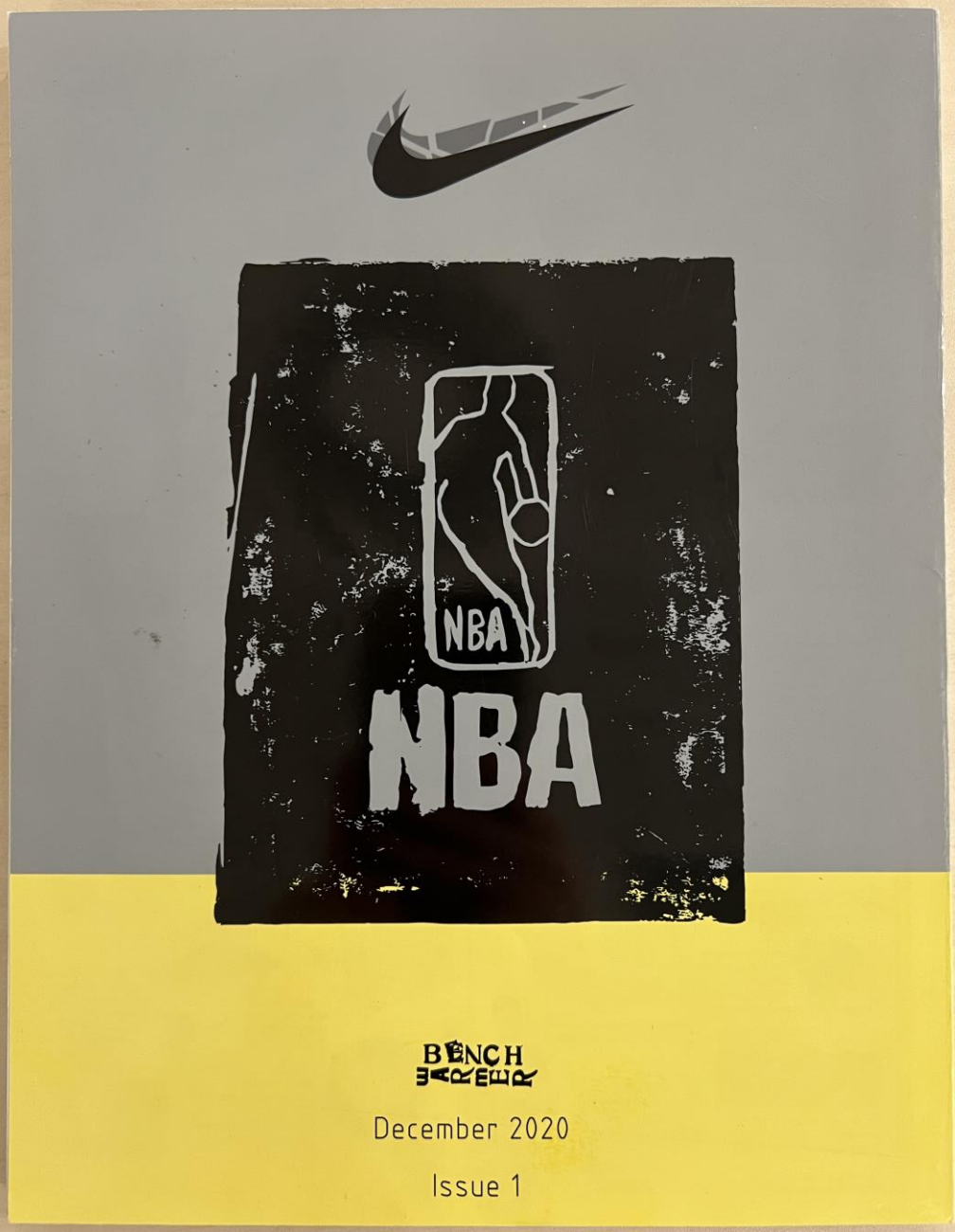
BENCH WARMER
Shortened NBA season to start on 22 december
Who could be the next LeBron James? NBA


NBA
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BENCH
WARRIOR
December 2020
Issue 1

PETROL DIESEL OIL
HYDROGEN
HYBRID ELECTRIC

C.A.D. TO C.A.M.

CHAIR

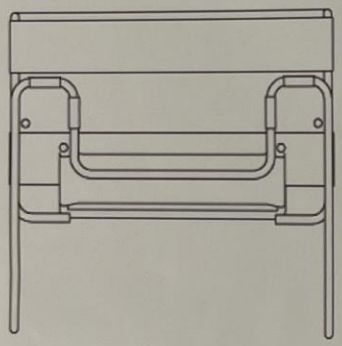
DESIGN

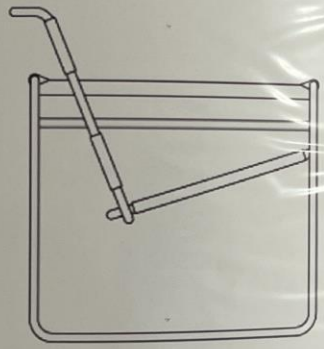
FLAT – PACK
LASER CUTTING

The Wassily Chair

Designer

This chair was designed by Marcel Bruer in 1925 whilst he was at the Bauhaus Art School in Germany. Bruer was a Hungarian-born modernist, architect and furniture designer. Bruer was initially a student at the Bauhaus Art School between 1920–1924 and then became a junior master between 1925–1928 where he directed the furniture workshop. The designers at the Bauhaus moved away from ornately designed furniture and designed with the ethos of function before form. The designers looked at new ways to reconcile art and industry whilst incorporating design for mass production. Bruer was inspired in this design by his metal bicycle handlebars and used this inspiration to incorporate this in the manufacture of his chair design. This innovation was to be one of the single most important innovations in furniture design. Tubular steel is not only a light material but it can also be processed by machine which supported the industrialisation of chair manufacturing and embodied the progressive designs of the 1920s.





The Wassily Chair

This chair was revolutionary as it was designed using bent tubular steel and this had not been used in furniture design. The design of the chair - and all future steel tubing furniture - was only technologically feasible because Mannesmann, a German steel manufacturer, had at the time perfected a process for making seamless steel tubing. Steel tubing up to this time had to have a welded seam but this caused the tube to collapse when the tubing was bent.

The metal tube is created without grafts or interruptions and is unique and sinuous in shape. This combined with the leather upholstery that forms the seat and backrest connects aesthetics and function in a unique and ingenious way.

The chair is based on the form of a traditional stuffed club chair however the Wassily chair uses only the essential elements of the chair; the frame and the support for the sitter.

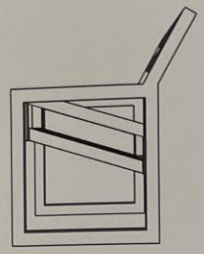
The arms and legs form the armature of a cube, whilst the seat and back indicate a second cube within this which is titled backwards at an angle and appears to float. The areas that make contact with the human body are created from a soft fabric. This is ergonomic and provides an interesting contrast between hard and soft and rigid and shiny.

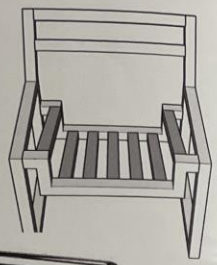
The chair won The Museum of Modern Art Award in 1968.

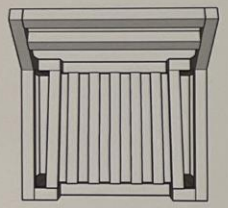
Manufacturing

Due to the regularity and simplicity of the Wassily chair it made it both affordable and easy to reproduce in large quantitates. The original colour was black but is now available in eight colours.

Initial Idea 1





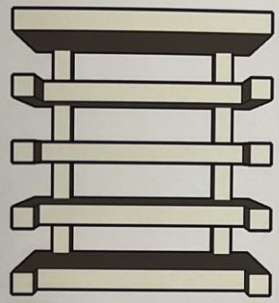


This chair is an innovation of the Wassily chair. The design of this chair has been manipulated so that the chair is now a flat pack chair.

The two main structural elements that support the chair are the sides of the chair. The chair has two horizontal rails which form the top rials and these are sloped at an angle to provide comfort, support and strength to the shoulders and spine. This design feature also changes the aesthetics and rigidity of the shape. The seat of the chair is composed of multiple repeated beams for a robust construction.

To improve this idea, I would change the width of the seat as the side construction is impacting on the width of the seat. By making this change it will enable the seat to provide greater support to the legs and allow the chair to be used by wider demographic. I would also add a lower rail to back of the chair to support the spine and lower back.

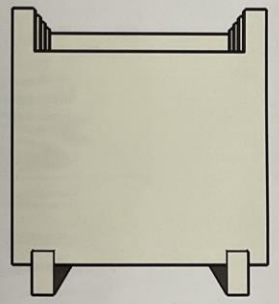
Initial Idea 2

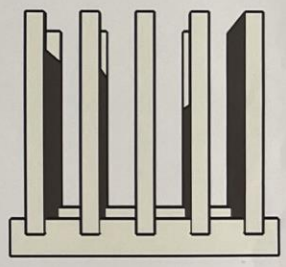


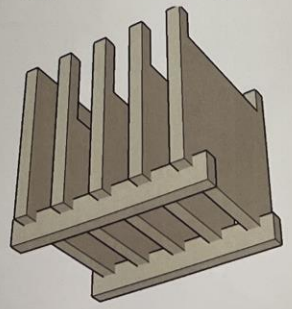
This design is based on functionality and not form as the design is simplistic and easy to assemble and use due to a small number of elements needed to put this design together.

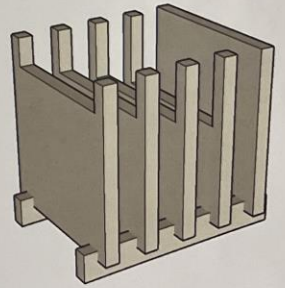
The chair is composed of seven different parts. The base of the chair consists of two rectangles with identical incisions cut into them. This allows a repeated pattern of squares to be uniformly placed into the incisions on the rectangles. The incisions are cut lower as the squares get closer to the back. By doing this it creates the seat and armrests.

This design is simplistic however the chair may be uncomfortable due its rigidity and the gaps between each square. Therefore to development this design, the distance between each section will be reduced to increase the angle between the seat and the backrest.

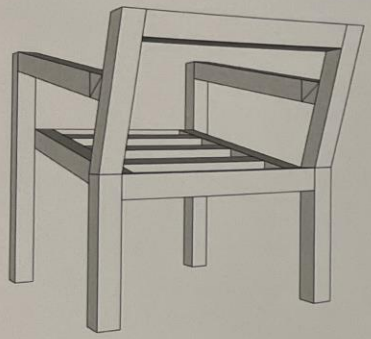


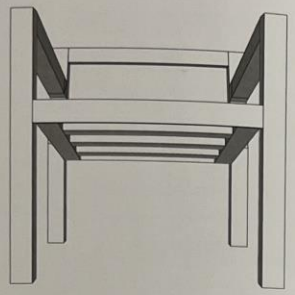






Initial Idea 3

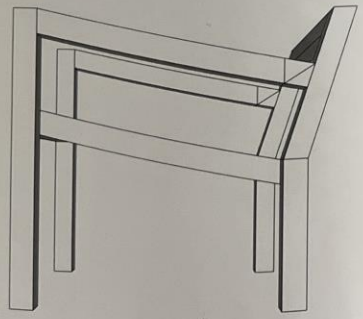




The structural necessities in this design are the front legs and apron and the rear legs and lower rail of the chair. This allows the chair to be constructed easily.

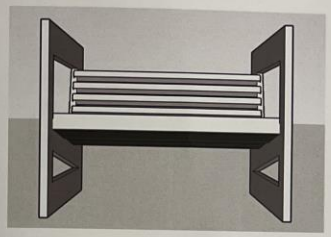
The seat is created by horizontal cross beams to make the seat strong and comfortable for the user. The backrest is angled at the seat to provide comfort and lumbar support.

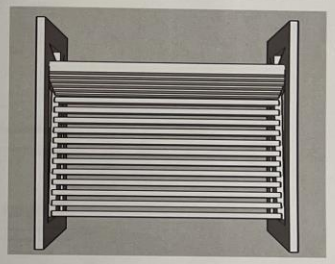
Arm rests provide support for the shoulders and arms.

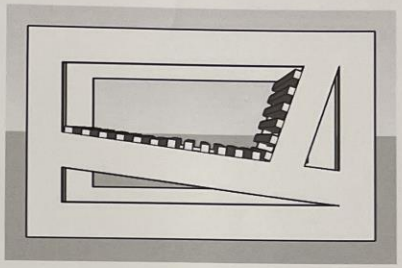


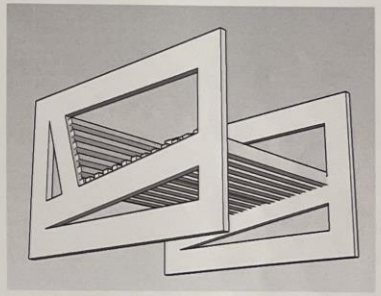
To improve this design I would add a mid rail between the stiles to provide further structural support together with support to the spine, This will enrich the experience of the user.

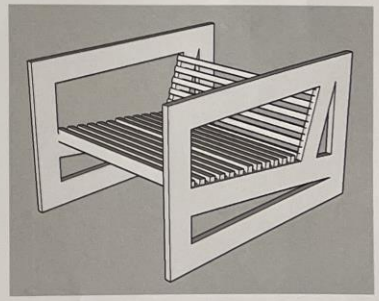
Initial Idea 4







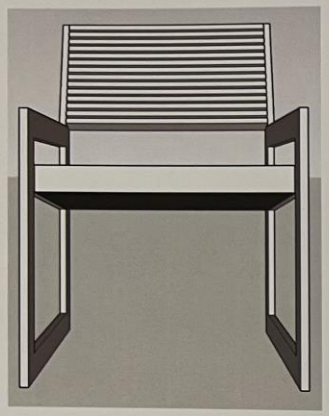


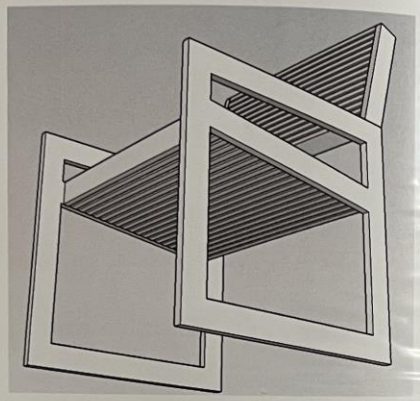


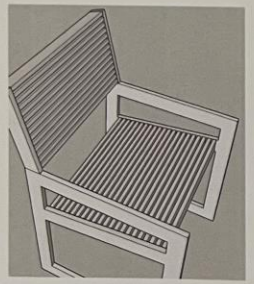
For this idea I have experimented with the height of the chair. It is half the height of my previous designs. The two side panels are identical with indentations cut at regular intervals. This allows the multiple horizontal beams, which form the seat and backrest, to slot in with ease and provides stability to the design. Sections have been cut into the side panels and spaces between the beams to allow air to circulate. The idea for this chair came from researching beach chairs. This style of chair allows the user to put their legs out at an angle as the chair is not high. The tilted back also allows the user to lean back and provide comfort and support.

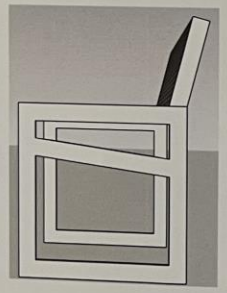
To develop this design I would curve the seat and backrest beams to provide additional comfort.

Initial Idea 5







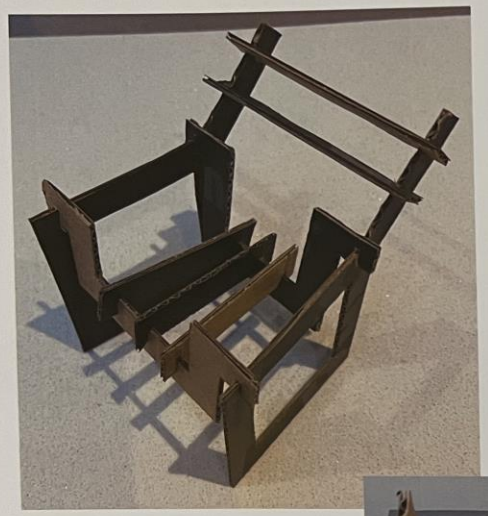


This design is based on the function of a chair rather than form. The foundation of the design is based on structural strength and durability. This is gives the chair longevity and it is therefore environmentally friendly.

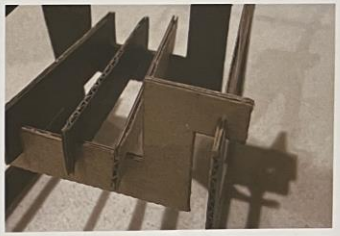
This idea is flawed as although it is simple to construct, a large amount of wood is needed to formulate this design. To develop this idea I would decrease the number of horizontal beams which would in turn decrease the amount of wood needed for the design.

Development of Flat pack chair

Development Idea 1



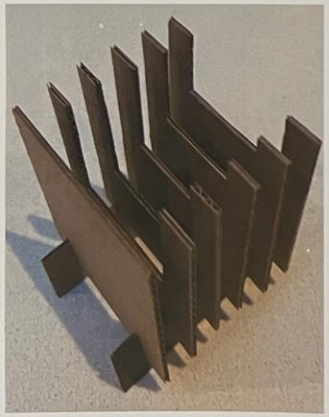
In this development the front apron and seat area of the chair is wider than the back of the chair. This provides comfort to the legs and pelvis and also broadens the demographic who would use the chair. To achieve this the front apron was widened to increase the distance between the two side components and the rear apron was narrowed.

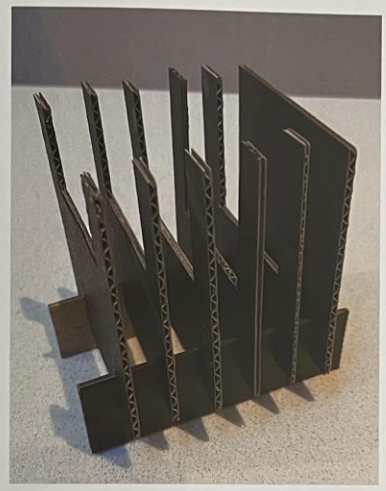


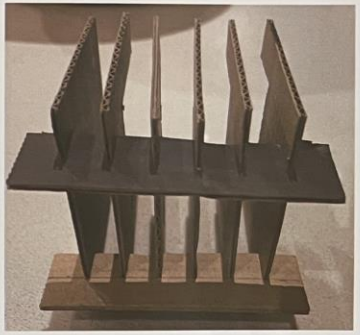
Development Idea 2

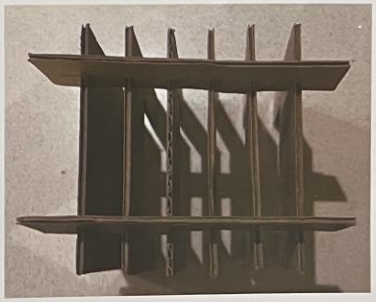
For this development I reduced the angle between the seat and the backrest to enhance the comfort of the seating position. In addition to this I added another shorter length slat at the back of the seat to ensure a lower incline on the seat.

To improve this design I would introduce an angled backrest to refine the rigid seating position and provide comfort and the correct positioning of the pelvis.





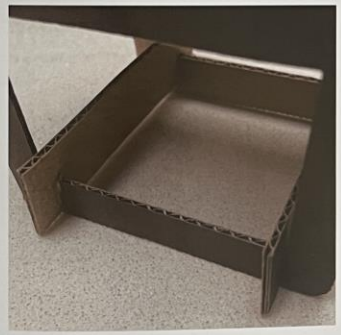




Development Idea 3

In this development I took aspects from the initial ideas I designed. I have used the multiple slits in the chair to establish a strong seat and backrest for the user. Furthermore I reduced the bulk of the development by taking out the middle of the side pieces of the chair.

In order to improve this design I would construct a contoured seat to make the user more comfortable. In addition this I would produce a piece that would be able to hold together the backrest and the seat as the dowels that currently maintain the structure does not meet the criteria of a flat pack chair design (ie. The use of dowels to connect the seat of the chair)



Research On

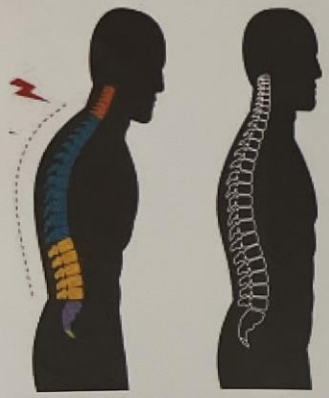
Ergonomics

Ergonomics Background

Ergonomics is a science which is based on research carried out in established scientific areas including engineering, physiology and psychology. It looks at human abilities and limitations and applies this to the design of products, systems and environment to improve the product and minimise risk of injury or harm. It also looks at how objects can be designed and built to optimise human well being and overall performance. There are five aspects of ergonomics; safety, comfort, ease of use, productivity/performance and aesthetics.

To achieve the best Ergonomic design, information is used from various sources as follows:
Anthropometry: body sizes, shapes, populations and variation
Biomechanics: muscles, levers, forces, strength
Environmental: physics: noise, light , heat, cold radiation and hearing, vision, sensations
Applied psychology: skill, learning, errors, differences
Social psychology: groups, communication, learning, behaviors.

Ergonomics applied to Chair Design



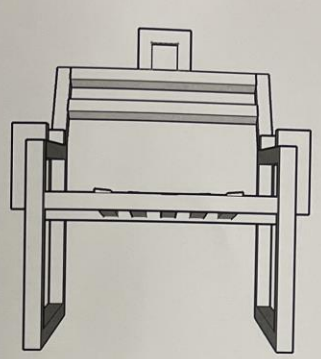
Chairs are an essential part of today's society with a wide variety of chairs available to use in different situations; chairs to relax, work and eat. An ergonomic chair is a chair that has been designed to improve efficiency and safety.

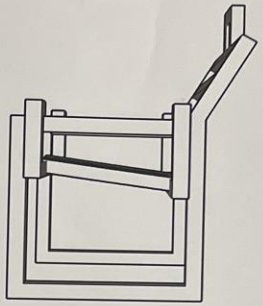
Whilst sitting might appear to require little effort, it can put strain on the lower back and cause other physical difficulties. The use of anthropometry (measurements of the human body to capture data) in chair design helps the designer to fit their design around the measurements of the human body and improve the experience of the chair without causing discomfort or pain. When designing a chair for mass production, anthropometry is based on the measurements of the majority of the population,

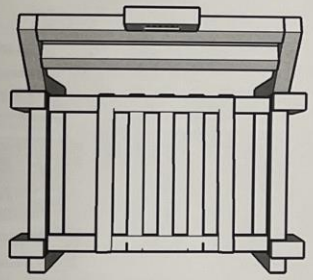
When designing an ergonomic chair there are considerations that need to be taken into account, including:

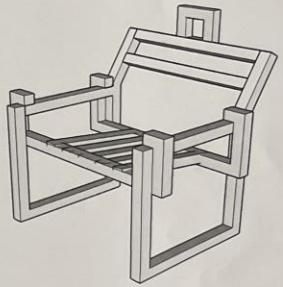
- Does the chair require maneuverability, which would allow the chair to reach different points of a desk without putting strain on a body.
- Will the chair be used by multiple people and therefore does it need to be adjustable in height to fit different lengths of torsos and legs. Consideration needs to be given to the chair height and should allow the feet to be placed flat on the floor.
- Does the chair require armrests to reduce tension in the upper body and allow the shoulders to relax or a headrest to support the back of the head and upper neck to reduce tension and pain.
- Will the chair provide backrest lumbar support. Ergonomic chairs support the natural 'S' shape of the spine and prevents the body from slumping. thereby reducing stress on the spine and pelvis. By adapting the chair with an adjustable backrest, this will allow the user to align the curve of the chair and the curve of the spine which will provide optimal support.

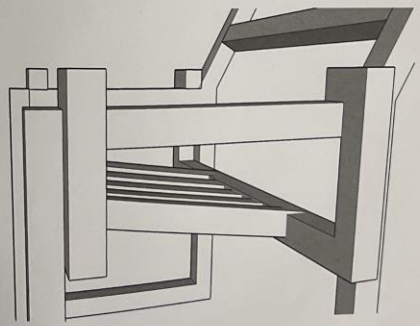
It is therefore essential that the five aspects of ergonomics are incorporated to identify which characteristics should be taken in account during the chair design.







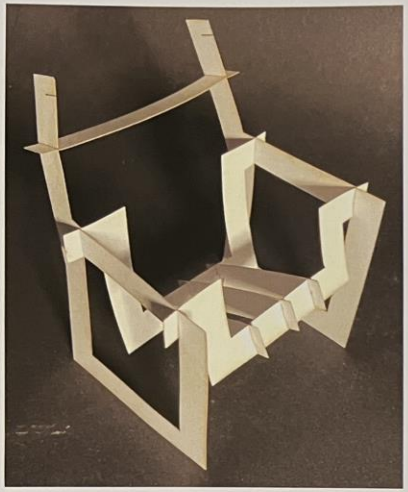


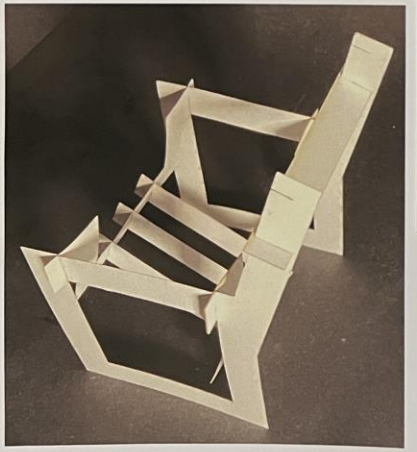


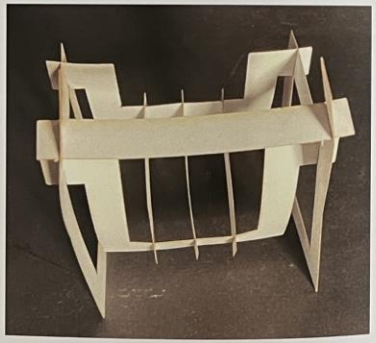
To improve my design ergonomically I decreased the angle of the seat This helps to decrease the tension in the back and provides a better ergonomic experience when sitting. In addition to this I also added a headrest which will support the neck and head. The connectors on both sides of the chair where also changed to create more space in the seating area to ensure undue pressure is not put on the back of the knees.

A curve to the slats on the seating area was also added to improve the user's comfort and satisfaction.

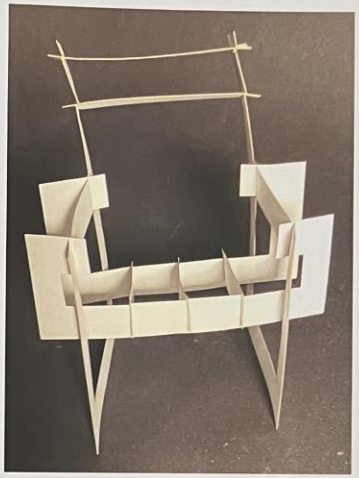
Further Development Using The Laser Cutter



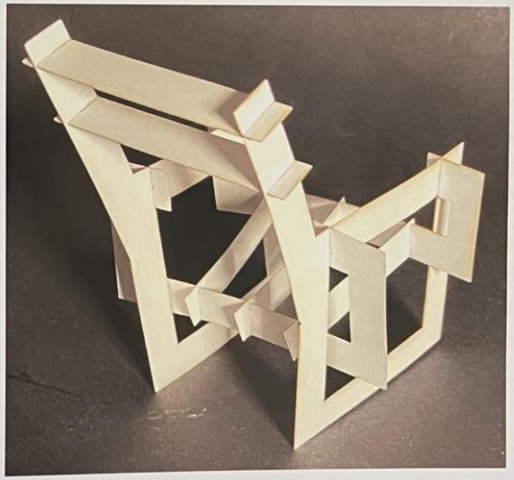


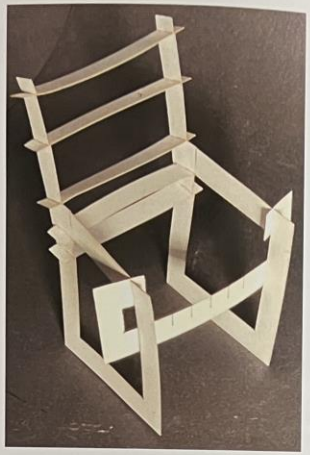


In the first model, I made I noticed some important points in which I needed to make corrections. Firstly the backrest was too small and did not fit in the frame of the chair. As well as this the inclination the seat need to be less steep in order to sustain a more comfortable experience. Finally the supporting pieces that held the seat together would need to be routed around the armrest rather that inside

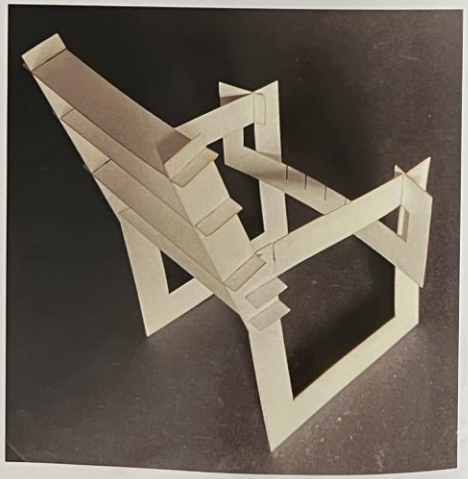


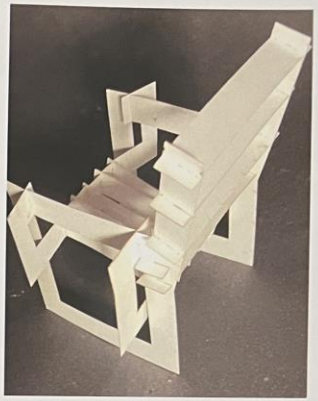
In this model I corrected the supports of seat which opened up more space for the user but the gap between the seat and the backrest is still to large. In addition to this, the gaps between each seat panel is too far apart. Therefore more panels for the seating will need to be added.



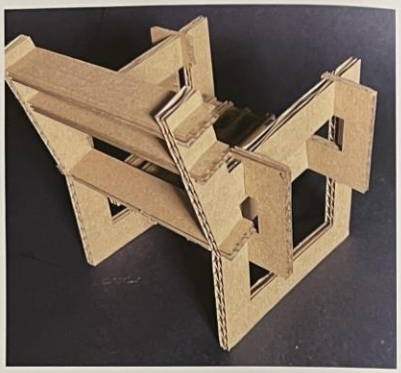


The development in this design was the extended backrest to support the user as they are sitting. Also, I added more seat panel slots but they did not line up therefore making them unable to fit, this is something that will have to mend the flaw in the design.

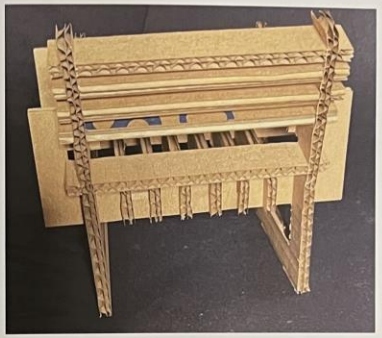




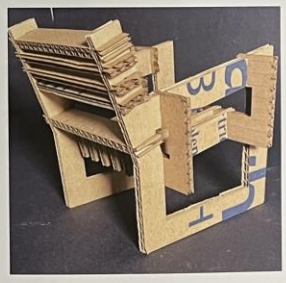
This is the final card model that I made as I all the corrections that I wanted to make from the start where completed. The chair now has a backrest that is evenly spaced going down the back of the chair

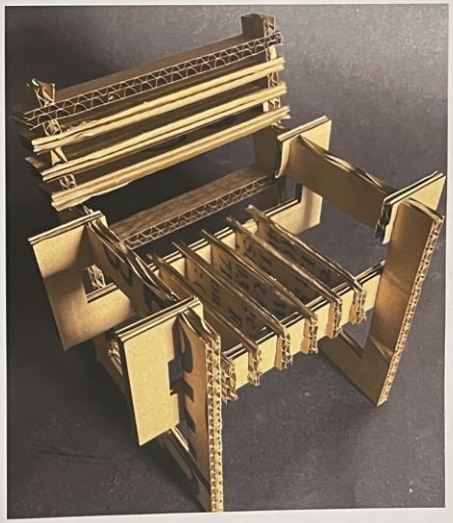


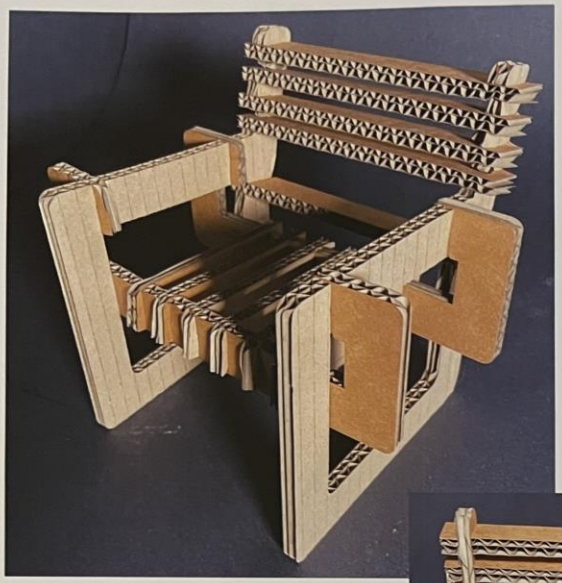
In this design, I transitioning from card to cardboard and noticed that there needs to be more slots for the backrest as they need to be closer together to compose a more complete chair.



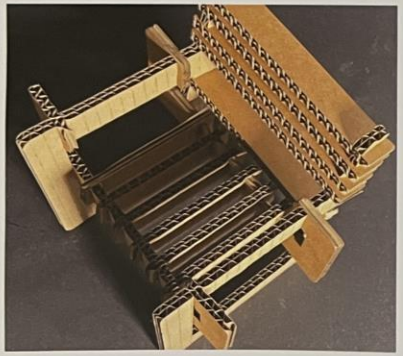
My design has the additions of more backrest lasts to complete the design. To improve my design I will round the edges to make them less sharp and more user friendly. For example at the end of the arm rest so that people using the chair do not have to worry about getting hurt

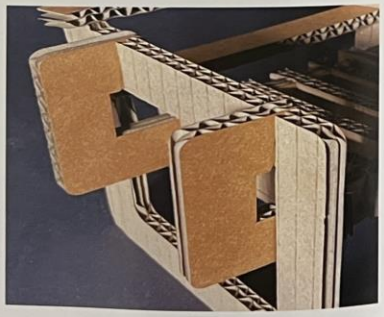




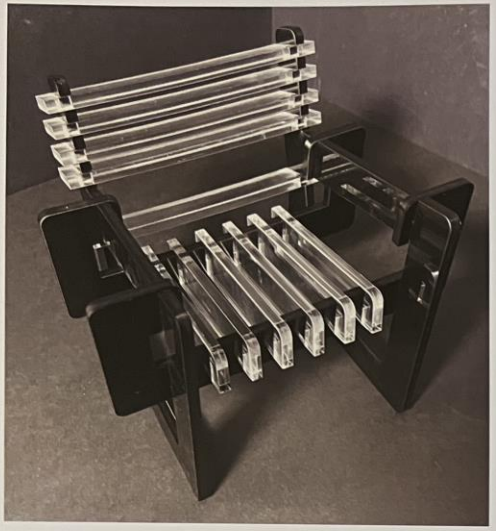


This is the final cardboard model that I will construct as all the corrections that I intended to make have been added to conclude the development of my chair design. The final improvement that I am going to make to my design is to elongate the seating pieces outward as the are too short and need to be extended so that they are more prominent.

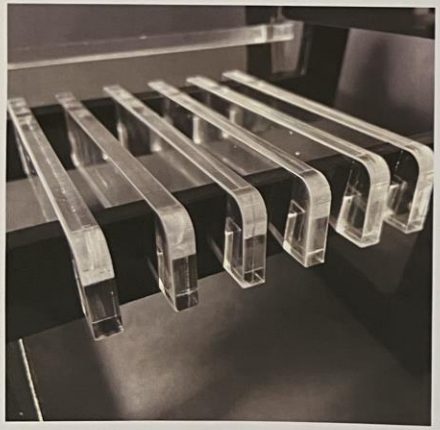


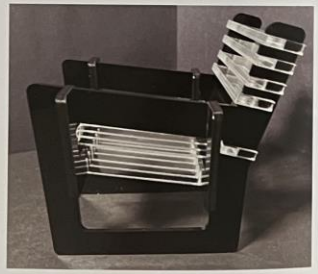


Final Evaluation

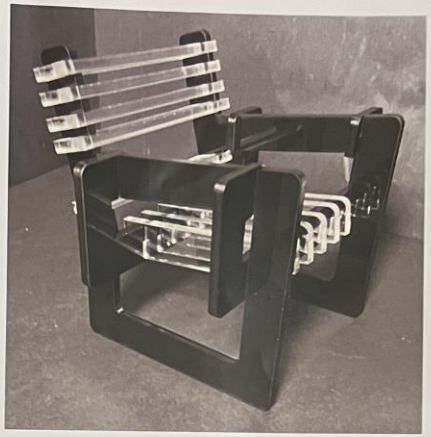


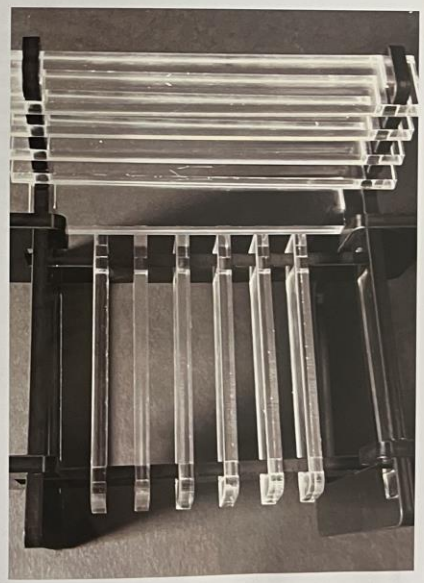
For this design project I had to design and develop a flat pack chair that had to be assembled by the buyer. My chair is based on function but form has been included as I wanted the chair to also provide comfort. For the design, each section of the chair had to be constructed without the use of glue, screws. Each section of the chair had to be able to slot together, similar to a jigsaw. The chair also had to incorporate ergonomics.

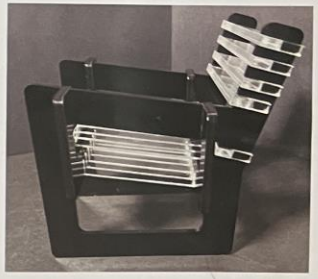




The Bauhaus Art and Design movement was a crucial influence on my design as Bauhaus instigated minimalism and helped move chair design away from being ornate and with the emphasis on function before form. The Bauhaus movement saw mass production as something that could be incorporated into design and that this could be achieved through simplicity and usefulness. During my research, I was inspired by the Wassily Chair, which was designed by Marcel Breuer. The chair is iconic as it maintains a progressive look, even in today's designs and is a simple design but is comfortable.







The final chair is designed using acrylic as this is durable material. It also provides comfort, (one of the main points of an ergonomic chair), is not heavy and is easy to clean. There are 15 sections to the chair and each section of the chair slots into one another..

During the development of my design, I wanted to provide further ergonomic elements. To support this I have tilted the back of the chair and lowered the seat height at the back to prevent forward sliding and to keep the front edge of the seat from contacting the back of the legs.

C.A.D to C.A.M

Jewellery Design

Camel in rhythmic landscape with trees

By Paul Klee

Paul Klee was a German artist who taught at the Bauhaus school of art, design and architecture.

Materials

The camel in this painting was made in 1920 and the materials used are [redacted].

Klee's work was influenced by the Bauhaus, especially how he used colour in his art and with his experimentation of different materials on which he painted.

Klee used oil paint to create a wide range of tonal transitions and shades

The Guardian
https://www.theguardian.com/artanddesign/2013/oct/14/paul-klee-tate-modern-review
10/2/21

Process and techniques

Affable, harmonious, playful and benign, Klee's art was also – perhaps excessively – open. One day he might be arranging a composition of fish and flowers and clocks, the next little coloured rectangles that come and go with a wonderful musicality, and never quite settle down. Another drawing shows a blotchy, fraught, imaginary man; then a swooning, net-like grid. Klee can lose himself in a repetitive rhythm of arches, or plant fir trees all over the painting. One day it is overlapping curves, the next [illegible]. There are about 50 artists in there [illegible]dee.

[illegible]iety of materials as shown in this [illegible]materials including gauze on cardboard.

Personal comment

Paul Klee Essay

Paul Klee
1879 - 1940

In this essay I have analysed a painting called 'Camel in rhythmic landscape with trees' from the works of artist, Paul Klee. Klee was a Swiss born German artist whose highly individual style was influenced by art movements that included Expressionism, Cubism and Surrealism. 'Camel in rhythmic landscape' with trees was painted in 1920 and is part of a series of paintings by Klee entitled 'Rhythmic Landscapes with trees. These pieces of art were painted at the time when Klee first became involved

Paul Klee - 'Camel in rhythmic landscape with trees' 1920

with the Bauhaus and its art movement. Klee was a teacher and master at the famous Bauhaus art and architecture school in Germany from 1920 – 1931.

A collection of Klee's drawings and paintings are displayed at the Kunstsammlung, Nordrhein-Westfalen in Germany. This museum for art has an international reputation for displaying art of the 20th century and holds major works from Pablo Picasso and Henri Matisse.

[illegible]es/Lot-4-Expert-view-Paul-Klee-10921-

[illegible] one of a small group of colourful [illegible]during the opening months of 1920, in [illegible] patterns, tensions and rhythms that [illegible]ding the picture plane into a series of [illegible] bands, Klee pictorially suggests an [illegible] harmony that courses through the [illegible]e landscape together with an assured [illegible]tion, the artist trains his eye on a grove [illegible]o a simplified geometric language of [illegible] across the composition in an irregular, [illegible] in colour and size, they appear as [illegible]own unique character, and yet remain [illegible]e wooded landscape.

Process and technique

Paul Klee Biography, paintings and quotes
https://www.paulklee.net
10/2/21

Klee's influence with abstract art and his use of different canvases and his approach to art is inspirational.

Personal comment

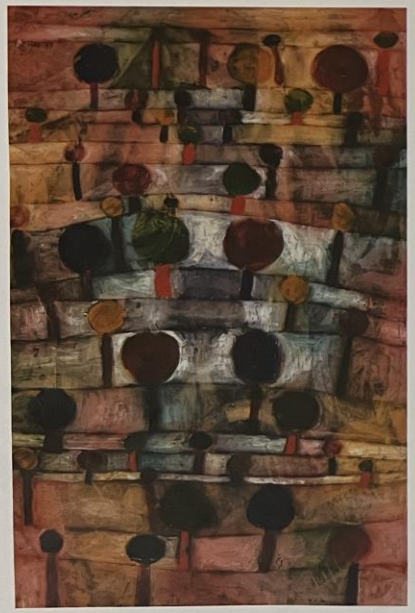
Biography

Paul Klee (18 December 1879 - 29 June 1940) was born in Munchenbuchsee, Switzerland and is considered both a German and a Swiss painter. His highly individual style was influenced by movements in art that included expressionism, cubism, and surrealism. He was also a student of orientalism. Klee was a natural draftsman who experimented with and eventually mastered colour theory, and wrote extensively about it; his lectures Writings on Form and Design Theory (Schriften zur Form und Gestaltungslehre), published in English as the Paul Klee Notebooks, are considered so important for modern art that they are compared to the importance that Leonardo da Vinci's Treatise on Painting had for Renaissance. He and his colleague, the Russian painter Wassily Kandisky, both taught at the German Bauhaus school of art, design and architecture. His works reflect his dry humuor and his sometimes childlike perspective, his personal moods and beliefs, and his musicality.

Klee's experimentation with colour showed the importance of using complementary colour to balance each other

Form

Klee's simpler and larger designs enabled him to keep up his output in his final years, and in 1939 he created over 1,200 works, a career high for one year. He used heavier lines and mainly geometric forms with fewer but larger blocks of colour. His varied colour palettes, some with bright colours and others sober, perhaps reflected his alternating moods of optimism and pessimism.



Artsy
https://www.artsy.net/article/artsy-editorial-what-you-need-to-know-about-paul-klee
10/2/21

Biography

In the early 1900s, Klee radically broke with a millennia-old tradition in art, the faithful representation of objects and environments from the real world. Along with Picasso and other turn-of-the-century, avant-garde artists, he jettisoned recognizable content, contributing to a form of art that would come to be known as "abstraction." Klee was an early adopter of this movement and a member of one of German Expressionism's regional factions, Der Blaue Reiter, a Munich-based group of artists founded by Wassily Kandinsky and Franz Marc, and bound together by the belief that art should express the metaphysical realm.

Klee's work cannot be labelled into a single category.

Wikipedia
https://en.wikipedia.org/wiki/Paul_Klee
10/2/21

Materials

Klee worked in many different media— and others. He often combined them into one work.

The art story
https://www.theartstory.org/artist/klee-paul/
10/2/21

Processes and techniques

Klee constantly experimented with artistic techniques and the expressive power of colour, in the process often breaking traditional or "academic" rules of . Klee also applied paint in unusual ways, such as spraying and stamping, during his years at the Bauhaus. Keeping his work within the realm of the "ordinary," Klee also painted on a variety of everyday materials, such as burlap, cardboard panel, and muslin.

Europeana
https://www.europeana.eu/en/item/2063623/GER_280_002
10/2/21

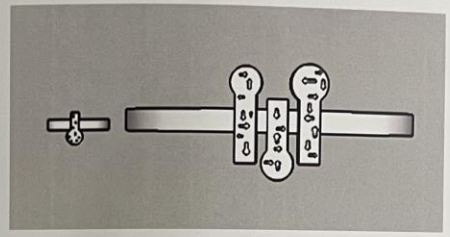
Context

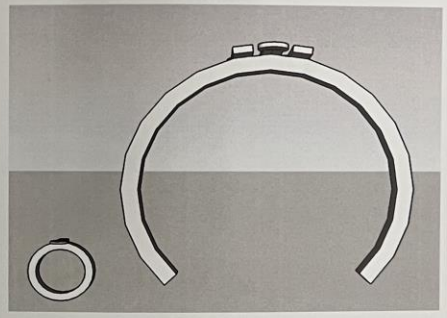
Post-first-world-war tableaux mark a qualitative highlight in Klee's work at the outset of the middle of his creative period. The "rhythmic landscapes with trees" group emerged from the years 1919-1820. In addition to "Camel (in Rhythmic Landscape with Trees)" are: "Rhythm of Windows and Trees" 1919.204, "Rhythm of Trees in Autumn" 1920.40, "Rhythmic Landscape"1920.41 as well as a proportion of variously titled works in this group.

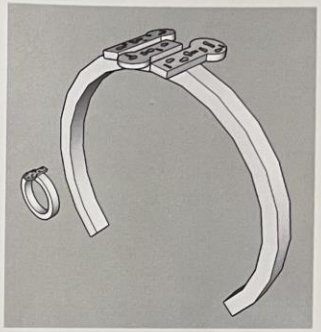
This painting shows the originality of Klee and his use of colour theory which is a reflection of his time at the Bauhouse.

Personal comment

Initial ideas

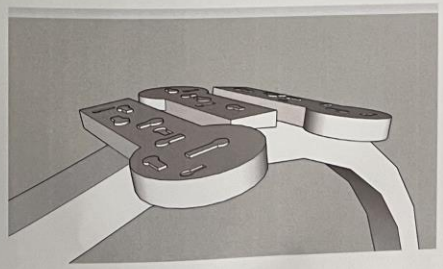


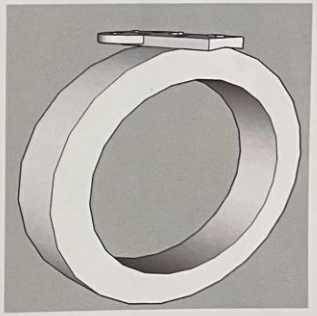


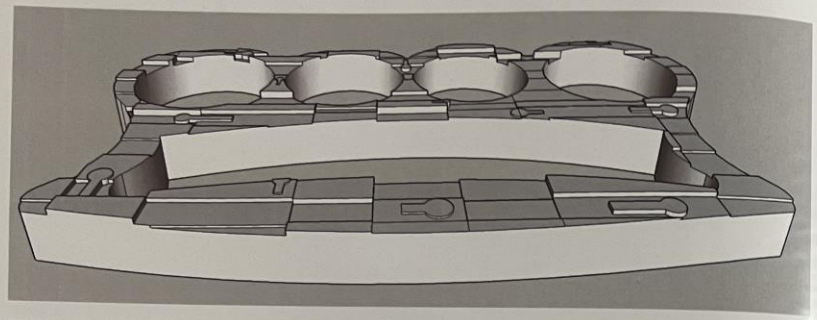


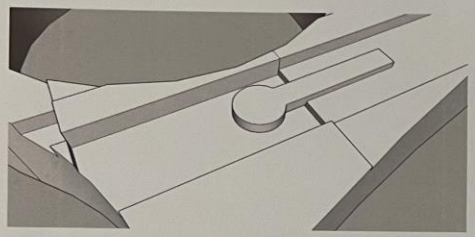
In this design I used the tree shape from Paul Klee's painting as inspiration to create metal patterns that sit on the band of the bracelet and ring. The pattern design was then replicated and indented into the tree shapes to provide pattern and texture. I used the same design on both pieces of jewellery to provide unity and allow the jewellery to be worn together or separately.

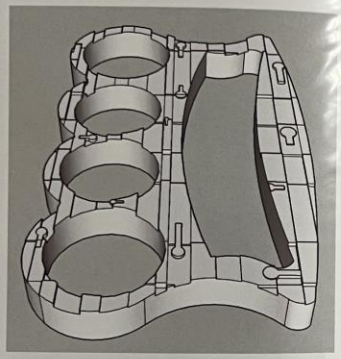
To develop this idea further, when the jewellery is worn together I would link the pieces using a thin chain. This would connect the two designs and add intricacy to the designs.







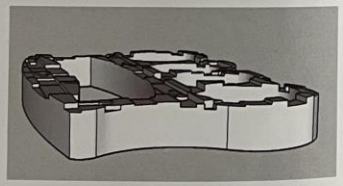


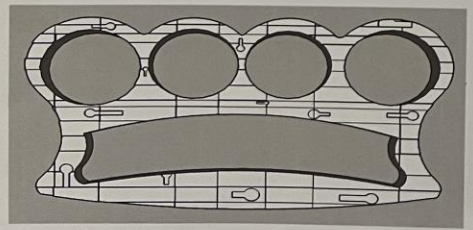


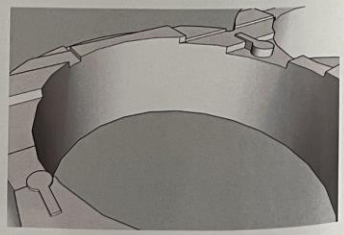
This design is based on a knuckle duster and is a ring that sits across a number of fingers. I have used an aggressive metal weapon and incorporated abstr,act forms which represent trees and therefore nature, which is the antithesis of the origins of the ring.

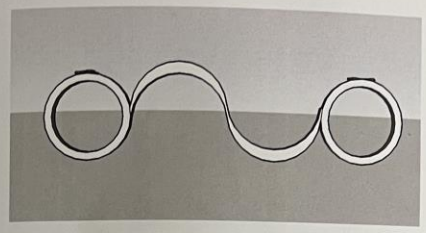
The use of geometric shapes to soften the hard aesthetics of the ring was inspired by my research of Klee's use of shapes and lines.

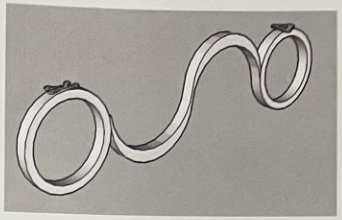
I have also incorporated horizontal lines, which are not uniform and cut the lines into the material at different depths, to add texture and pattern. This provides the owner with a piece of jewellery that is distinctive and original.

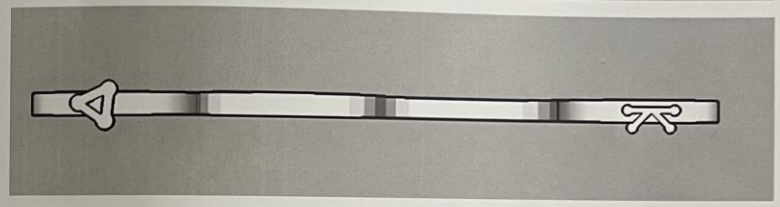


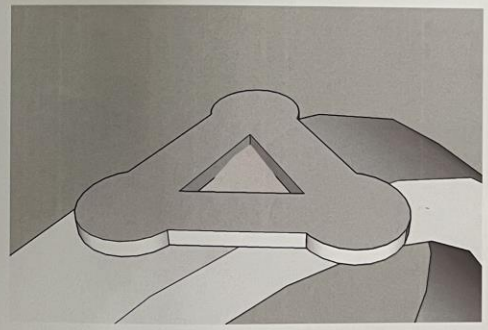








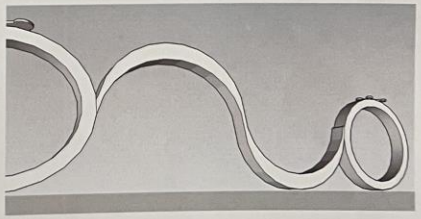




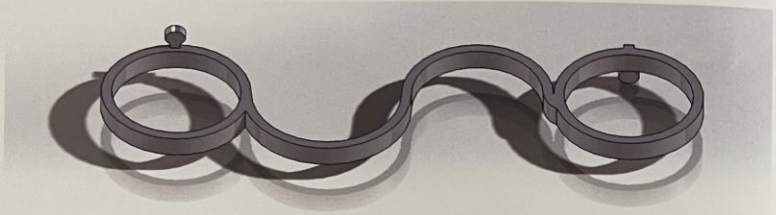
In this design I have developed a ring that flows across four fingers.

For this design the rings sit on the index finger and little finger but not on the index, middle and ring fingers. On these fingers the ring flows under and over. This is unique in shape and pattern and creates fluidity across the design.

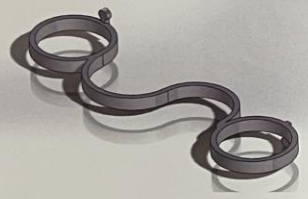
The symbols sitting on the end rings add another visual element to the aesthetics of the design and draws the eye to each end of the ring.

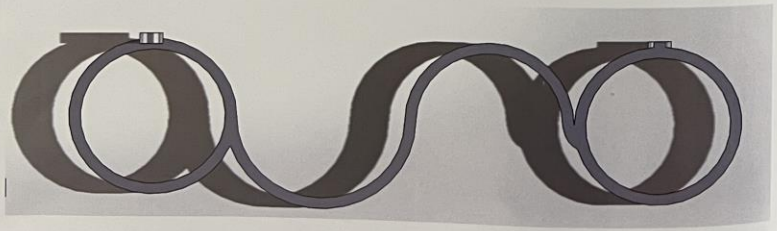


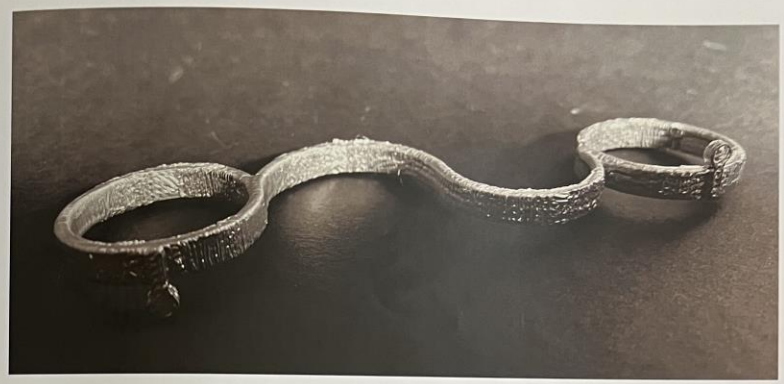
Development Using Solidworks

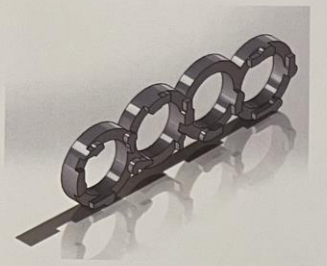


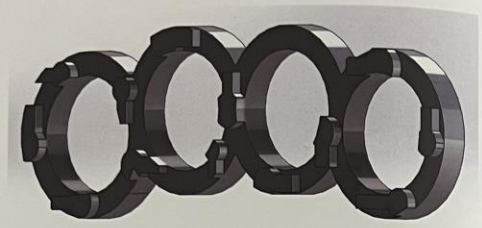
In this development I have improved the free flowing design. This has been achieved by making the thickness of the ring uniform throughout the design. This was implemented to establish a sturdy design and ensure that the ring would be less likely to break. In order to improve this design further I would create a complex arrangement of the trees shapes on top of the ring to add another visual feature.

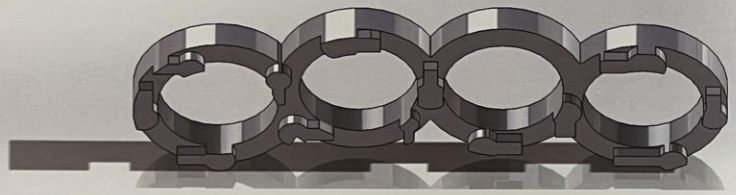


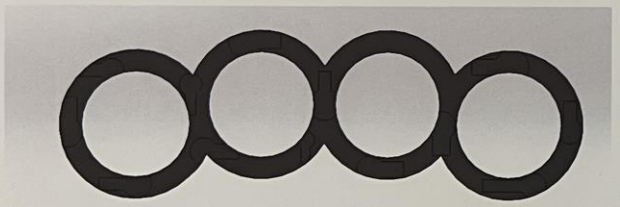




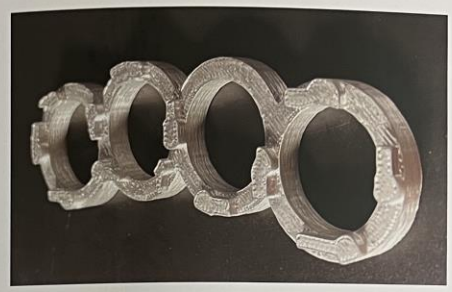






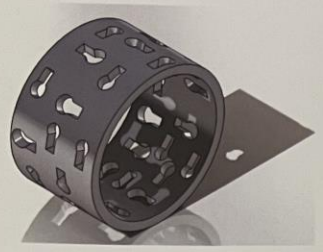


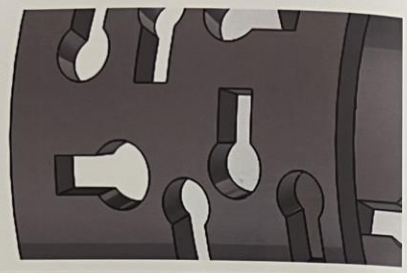
In this design I have used the knuckle duster concept to create a four finger ring which I have developed to be more practical to wear. I have also changed the design to make it smaller and compact to provide comfort for the user. In addition to this I have curved the ring to take into account the natural shape of a hand.



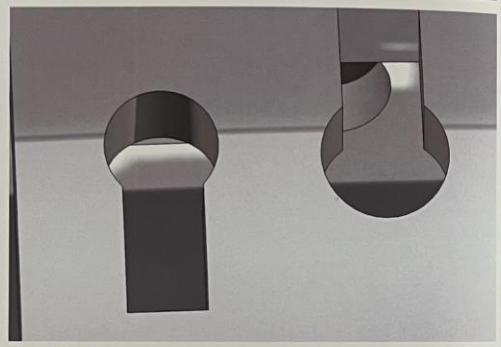
The first print of this design has been completed with a chrome finish to replicate the appearance of a metal ring.

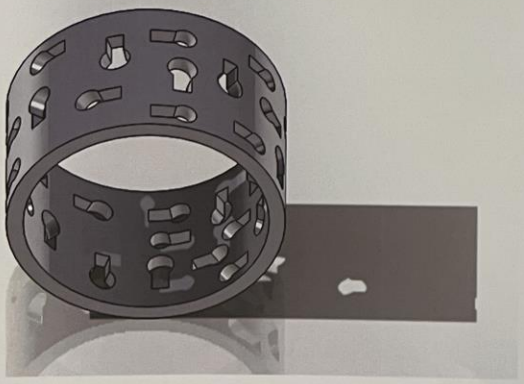
To further develop this idea I would add a design to decorate the ring. This would be achieved by adding lines which would run horizontally across the ring.





In this design, I have developed the single ring by increasing the width of the band as well as decreasing the thickness. This gives prominence to the ornate decoration and improves the visual aspect of the design. This will allow the ring to appeal to a wider clientele.



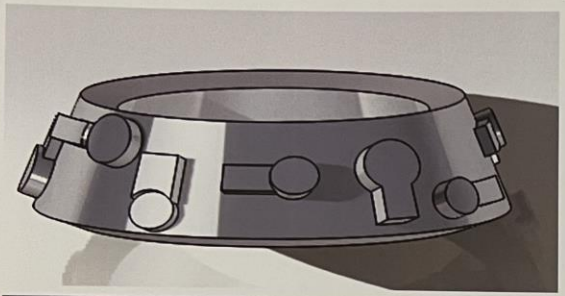


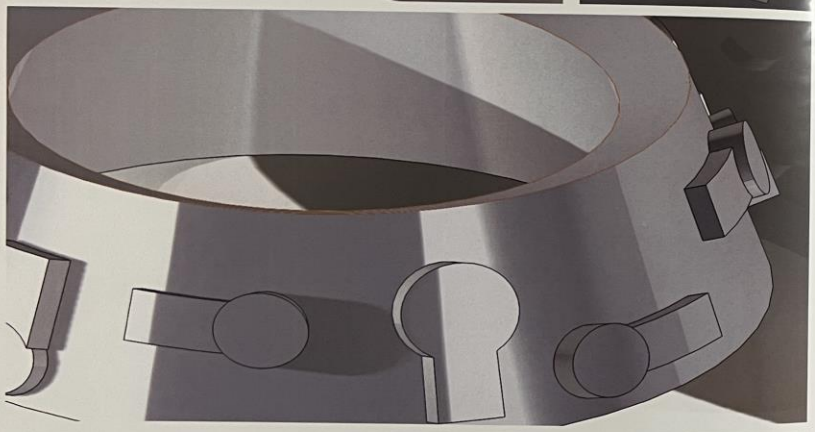
For this ring, the 3D printer was unable to reproduce the level of detail I wanted to achieve.

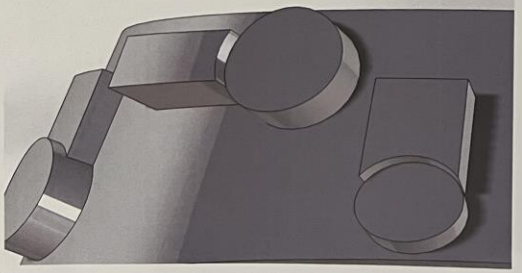
This design would appeal to a buyer with an environmentalist bias because of the geometric shapes that are depicting trees. The inspiration for this being the geometric shapes in the painting 'Camel in rhythmic landscape with trees'.

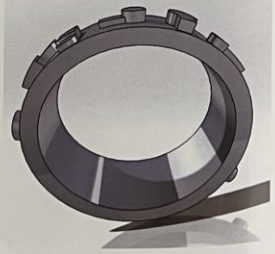
To improve this development further I would add more complexity to the overall design of the ring. This would provide the intricacy this design requires and make it aesthetically pleasing. An example of this would be to extrude the trees so that I can add more detail through varying the heights of the extruded pieces.

Further Development

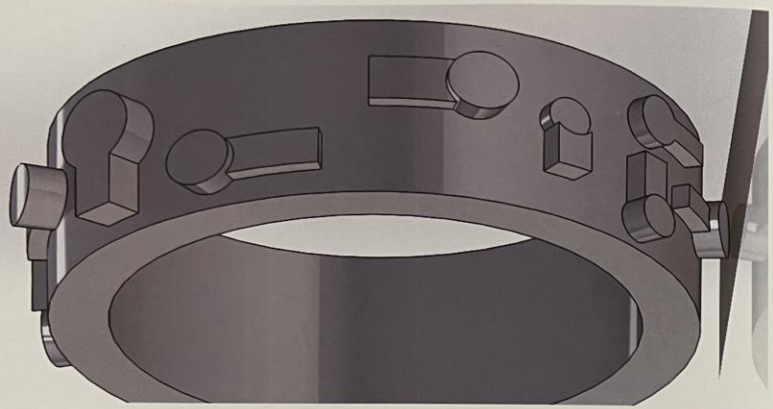


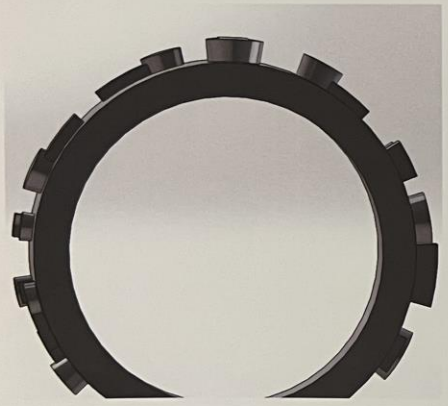


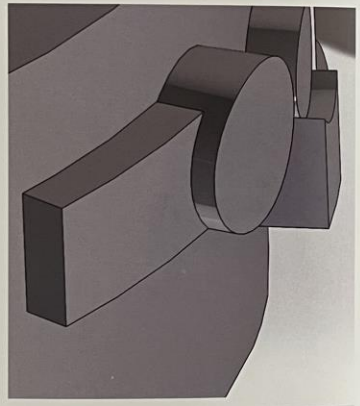


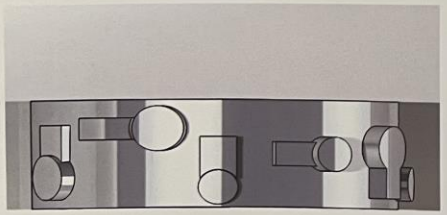


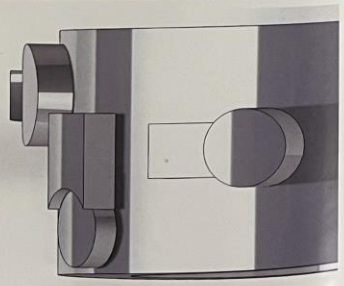
To develop this idea further I designed the ring shape to be more accommodating to a finger which will provide comfort and therefore be ergonomic. The trees on the ring are extruded at different heights to add complexity to the ring.



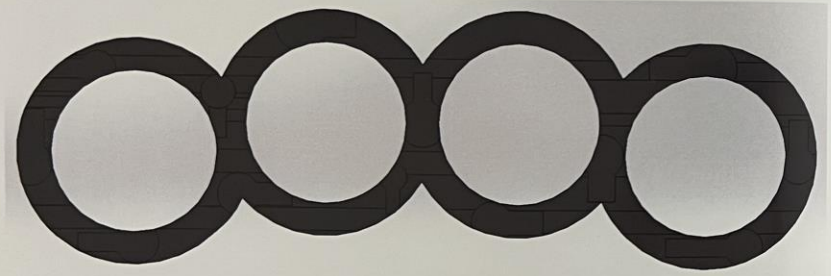


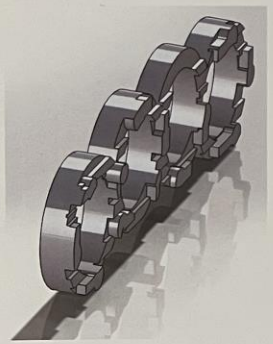


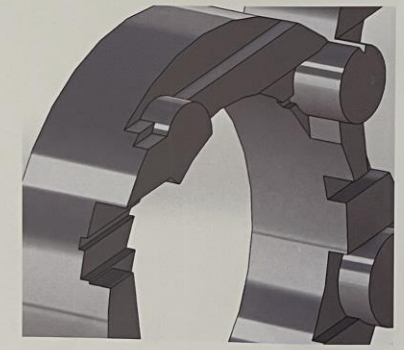


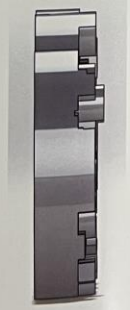


This design is similar to my previous developments however I have simplified the design to meet my criteria for a minamalistic traditional ring. This ring would appeal to a buyer who wants a timeless ring that is not defined by fashion.



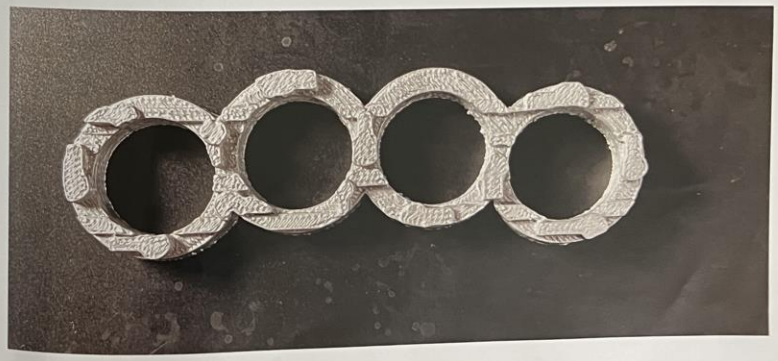




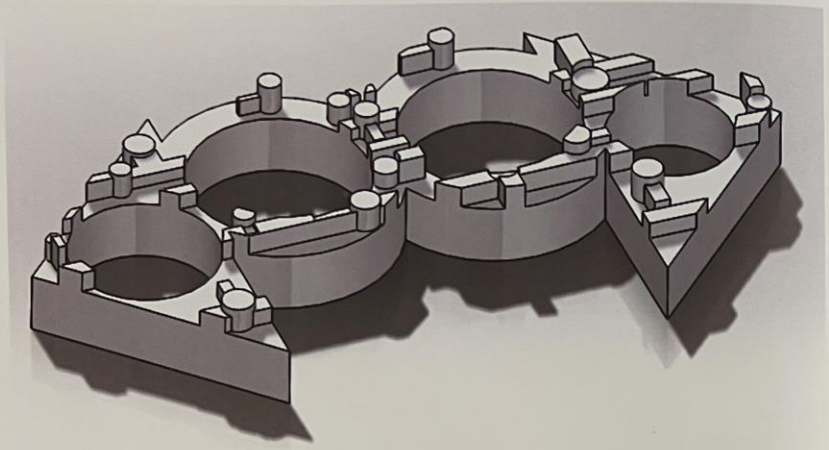


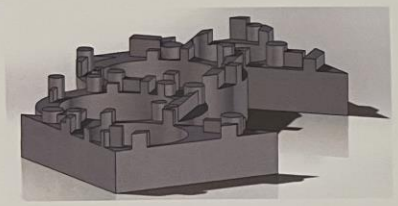
In this design I used the horizonal lines from the Paul Klee painting as inspiration. I have incorporate geometric lines into the ring which develops the design to be more ornate and visually appealing.

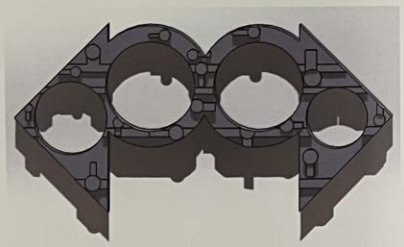
To develop this design to the final stage, I would incorporate additional geometric forms to achieve a statement ring that is unique and bold.

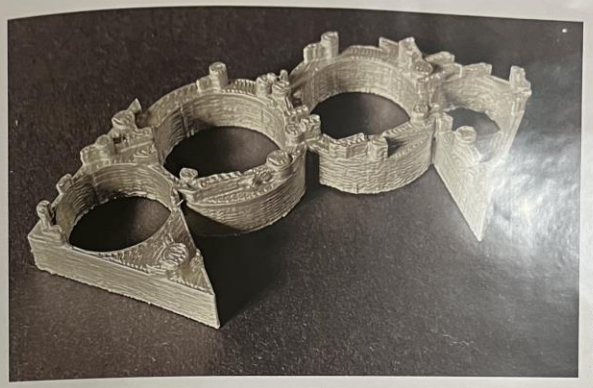


Final Development



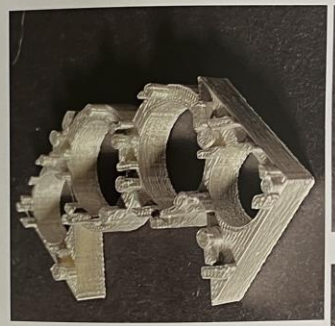




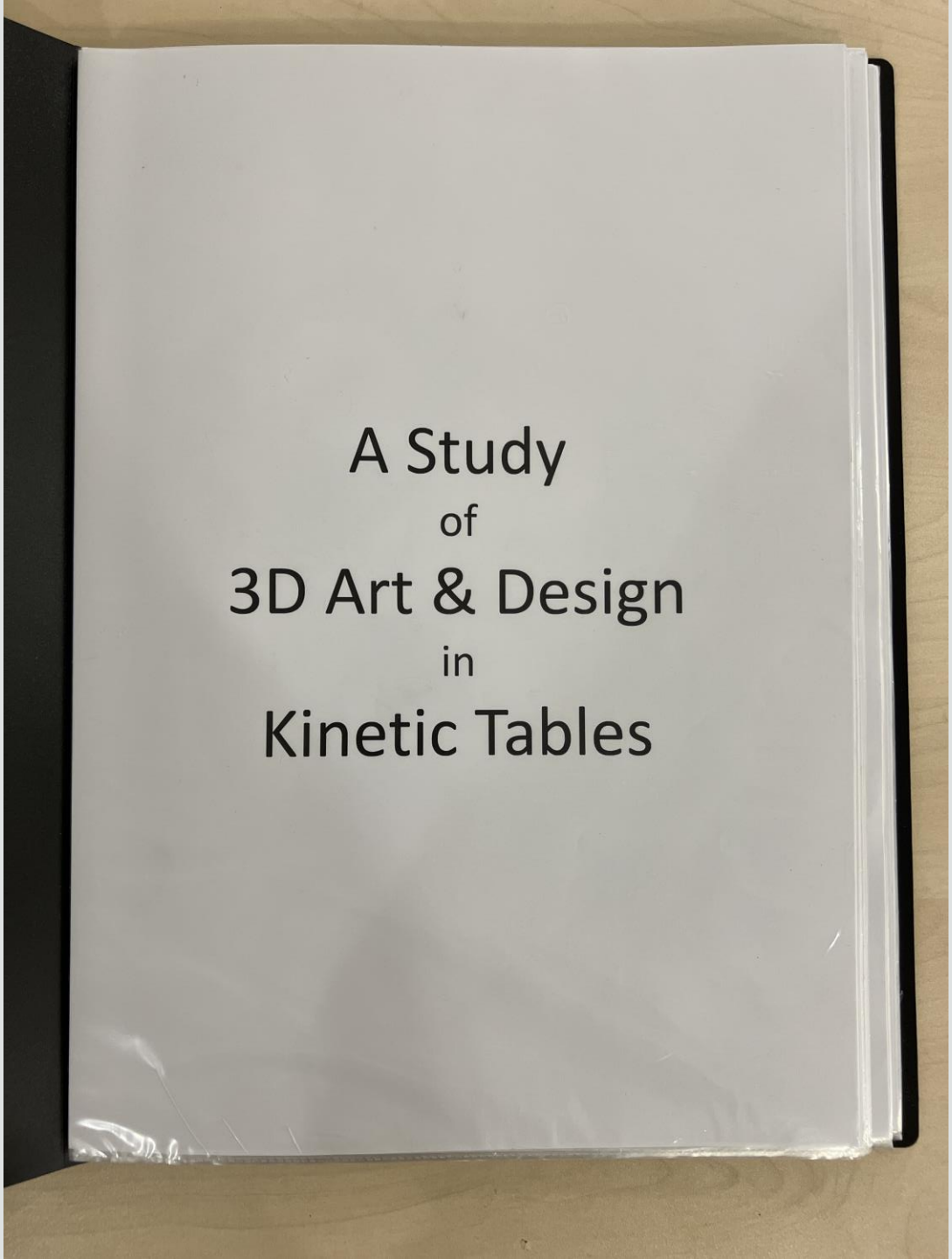


In my final development I have designed a statement unisex ring with abstract shapes that have been meticulously placed to add profile detail to my unique ring design.

The band of the ring encompasses the index, middle, ring and little fingers which I believe adds a quirky and innovative design element. The rings flow across these fingers. At the both ends of the ring, the shape changes and becomes rigid as it leads to a triangle with a sharp point, which is at odds with the aesthetics of the ring.



The inspiration for the geometric shapes are from the painting, 'Camel in rhythmic landscape with trees' by Paul Klee. The triangles are arranged in the painting to depict a camel that is hidden within the geometric shapes. I have used the geometric shapes on the rings to deflect and hide the history of the ring which hails back to being a knuckle duster. This is what my original design idea was based on. I wanted to take an item that was depicted as ugly and change it into a piece of jewellery that I believe is a captivating and achieves my design brief.


A Study
of
3D Art & Design
in
Kinetic Tables

Contextual research

Nesting Table by Marcel Breuer

Marcel Breuer was an architect and designer and is one of the most influential exponents from the Bauhaus Art and Design school. Breuer considered balance, harmony and proportion coupled with simple, functional forms to be the basis for design.

Breuer created table designs which were simple and used materials that were standard sizes, lengths and shapes so that he could produce reasonable priced furniture. Breuer used tubular steel in a number of innovative furniture designs which were easy to purchase and easy to mass produce and therefore affordable. Bauhaus's table designs have become icons of 20th century furniture design.

Breuer used tubular steel in his iconic nest of coloured tables in 1925/26. The tables feature four side tables of different heights, which can be stored interlaced or used separately. Furthermore, their surfaces combine easy care with aesthetic styling and colour design.

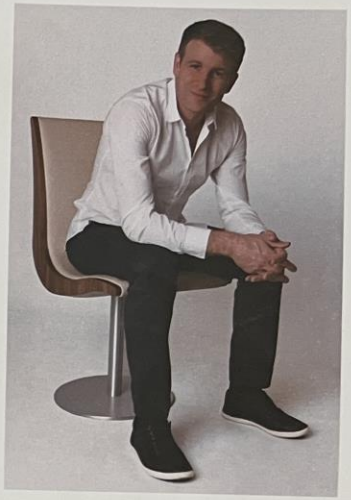
The curved legs on the table flow around the rigid wooden table top, providing softness and balance to the straight lines. The curved lines provide an organic element to the design. I would use the curved lines as they are associated with nature.

Crest Coffee Table by Tom Schnieder

Tom Schneider's designs are characterised by the shape and flow of the furniture. His tables are curvaceous and have a soft flowing sense of movement and smooth swirling shapes, which are created without losing functionality. This provides an iconic shape to practical tables.

When Schneider designs, he does not allow himself to be constrained by mass production and machines but uses a jig or a former to bend the natural wood veneers he uses in his table designs into distinctive curved shapes. Due to this his tables are part of small collections or are bespoke.

This design depicts a symbol of the power of the ocean. This has been achieved by bending the wood along the grain of the wood so that it flows along the shape. The curved lines are organic and provide fluidity whilst the straight lines provide stability and strength. The use of a natural occurring event in nature can be recreated is an inspiration to take forward for a design in the future.

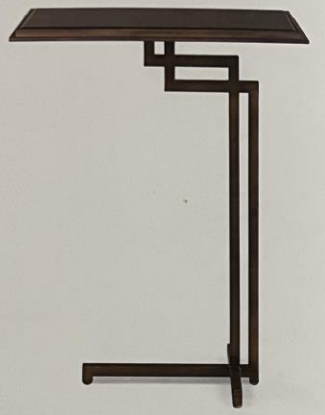


Schneider focuses his creativity on designing individual, iconic tables that are distinctive.

The Crest table is an excellent example of Schneider's use of curves. The table is inspired by the shape of a cresting wave. The design tapers to a narrow anchor point which creates a gravity defying look. It is constructed from one piece of wood so the grain flows uninterrupted from one end of the table to the other. The table is available in a number wood colours to suit its surroundings.

Voltaire Coffee table by Christopher Guy Harrison

Harrison was a British luxury furniture designer who was the founder and head designer of his international furnishings brand. Harrison designed and built a one million square foot workshop complex in Java to accommodate the 1,400 carvers, woodcarvers and specialist finishers that craft his designs with the aim of producing luxury furnishings and revolutionising the furnishings industry.



Harrison, who grew up on the French Riviera, was inspired by French design and he described it as "an effortless form that is beyond beauty". Harrison continually redefined the aesthetics of his designs. He was one of the top ten designers of coffee tables.

The Voltaire coffee table is one of Harrison's unique designs. It is a coffee table that is forged in steel with a veneered top. It is designed as a linear slip over table to push under her a sofa seat cushion and combines form and function in an art-deco style.

Harrison has based this design on the art deco period which encompasses sleek linear lines and geometrification of natural forms. On this table we can see the intention of the lines on the base, almost as a representation of a vine.

Noguchi Table by Noguchi

Noguchi was a Japanese American artist, sculpture, designer and landscape architect whose artistic career spanned six decades from 1920. Noguchi's works are displayed in the Noguchi Museum in New York City and his design belief was "sculpture is sculpture". In 1947 Noguchi began a collaboration with the Herman Miller Company. This American company worked with important designers to produce high quality ergonomic furniture, including the Equa chair and Eames Lounge Chair. Whilst working for Herman Miller, Noguchi also worked with other designers, including George Nelson and Charles Eames to produce catalogue of what is considered to be the most influential body of modern furniture ever produced. One of these pieces was Noguchi's iconic Noguchi table.

The distinctive table has a unique curved triangular shape with two wooden supports providing a self-supporting and stable base, allowing the heavy plate glass top to be placed without the use of connectors. The table is praised as cultural art and a function table. Noguchi described the table as his best furniture design due to its biomorphic shape. The table became one of Herman Miller's most iconic and successful designs and despite the table's status as a modern classic, Noguchi's tables are widely available and relatively affordable.

This tables use biomorphism provides flow and balance to the design and by using natural wood it provides symmetry. Biomorphic shapes are often rounded and irregular, unlike most geometric shapes. For my design I would like to look at the possibilities of mixing geometric and biomorphic shapes and exploring different biomorphic shapes.

Extruded table by Marc Newson

Mark Newson was born in Sydney and presently resides in London. Newson has been described as one of the most influential designers of his generation and has been included in TIME magazine's 100 most influential people and has received numerous awards and distinctions for his designs. His work spans different sectors from manufacturing and technology to fashion and furniture, including collaborations with many luxury brands. Newson's work is featured in many museums including the San Francisco Museum of Modern Art.

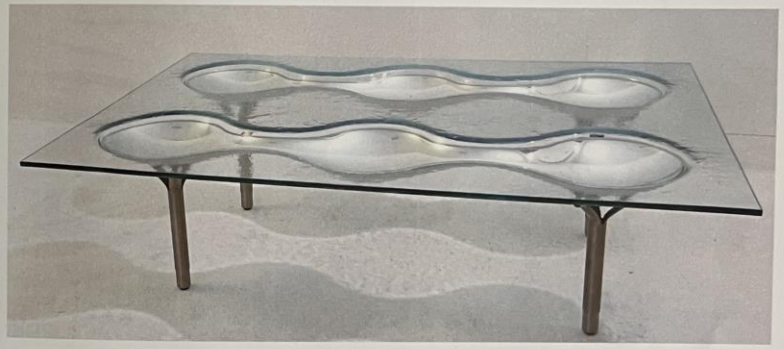
Newson's philosophy centres around an intrinsic understanding of materials and their potential in creating high-quality designs and coming up with new ways to use the materials in his designs.

Newson's Extruded table is an example of this. For this design, Newson milled a table from a solid seamless piece of marble. The use of White Carrara C marble, with its detailed veining, adds texture and depth to the table. It is an experimental exercise in extreme structure as he creates a ribbonlike form from a dense material, creating an unbroken line with no beginning and no end giving the impression that the table is light and fluid.

The streemline silhouette of this design is emphasized by the natural grey/white striations of the marble. The shape of the design provides fluidity whilst the material provides strength.

Knox table by Ron Arad

Ron Arad was born in Israel but now resides in London. He is an Architect and designer. Arad has received many design awards for different aspects of his design work and his work is also displayed in museums including the Metropolitan Museum of Art, New York and the Victoria & Albert Museum in London. He has also collaborated with different companies including Swarovski and Kenzo.



One of Arad's distinctive table designs from the 1990s is a unique coffee table. The KNOX table is designed with thick fused glass and hollowed-out back silvered parts. It is an intriguing visual design and has adjustable feet in glazed stainless steel. This design is a combination of craftsmanship and industrial processes which encompasses traditional and innovation.

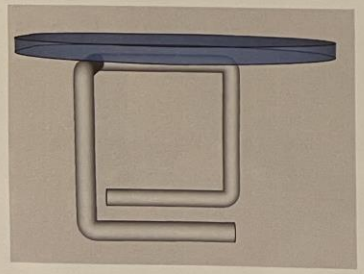
Arad experiments with the boundaries of natural form by manipulating natural materials. His designs are fluid and curved and also incorporate linear lines as shown in the Knox table.

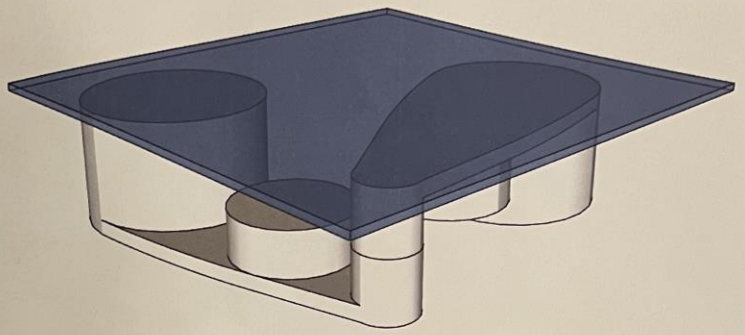
Initial Ideas

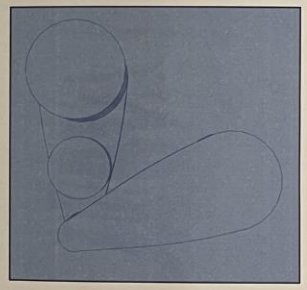
In Response To The Noguchi Table

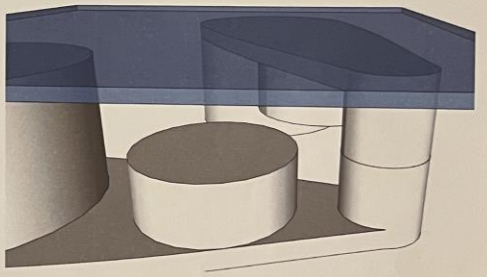
In this design I have created a simple table structure. The majority of the table is constructed with cuboids in order to add stability. The piece of the table that holds the table top is made with the idea of function as well as form and the form is shown through the exaggerated repetition which is taken from the Noguchi table as well as ensuring that the table to top will not be unstable and hard for the consumer to use.

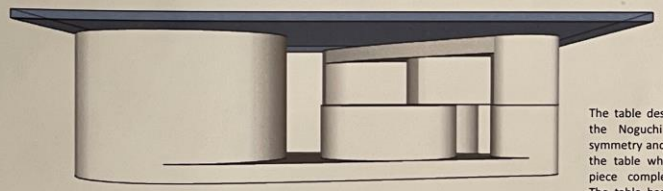
I constructed a second design similar to the table above but it is made with the form of the table as the priority. This is shown through the dowels making the structure of the table as it gives more fluidity to the piece. However the function of the table is limited due to the fragile properties of the piece.









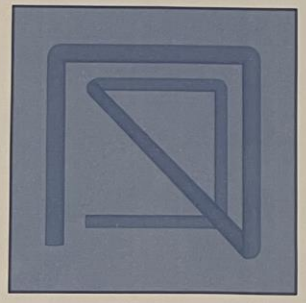


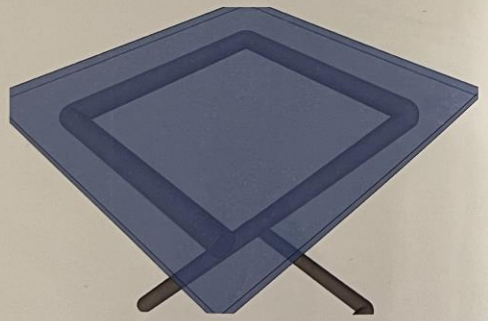
The table design is inspired by the the Noguchi table through the symmetry and the repetitive look of the table which is the makes the piece complex and functionable. The table has the ability to rotate where the two main components of the table meet in order to add more function to the table.

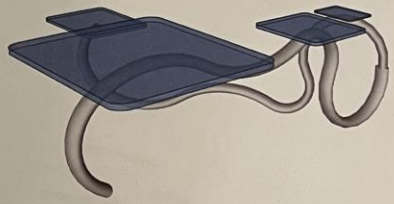
In order to improve this design I would make one side of the table higher than the other. This is to make it so that the table will have two tabletops so that they will overlap each other to be more functionable.

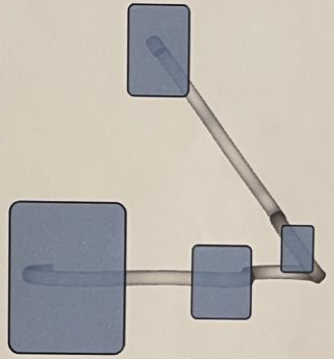
In this design I incorporated the symmetry of the Noguchi table. This is shown through the repeated pattern in the table. The design also displays some characteristics through being able to rotate at the centre point of the table which makes the table unique and more functionable.

To improve this design I would add more tabletops by branching out from the tubular structure to make the table more functionable. In addition to this, I would make the tubes that make the structure thicker in order to bring more strength to the table and add more stability.

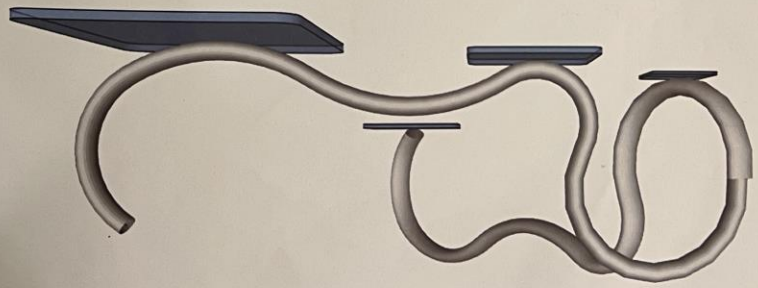




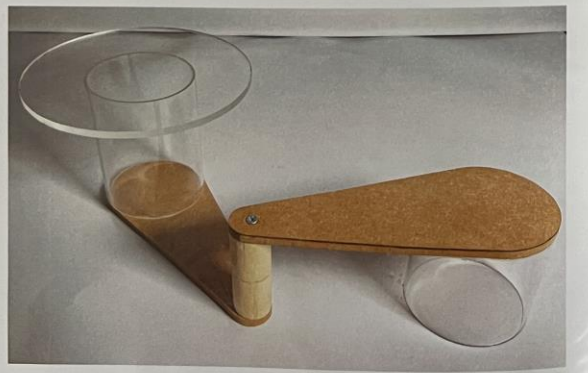




This design is constructed with both function and form embedded within the table. The table has four table tops in order to improve the function of the table. In addition to this the piece also has form which is shown through the curvature of the pipes. In addition to this the Noguchi table is shown through the part of the table where both of the main structures of the table balance on each other. As well as this, the table is made of the same two pieces that are the same and positioned so that the table is the same whether it is upside down or the right way up which brings character to the table.



Development

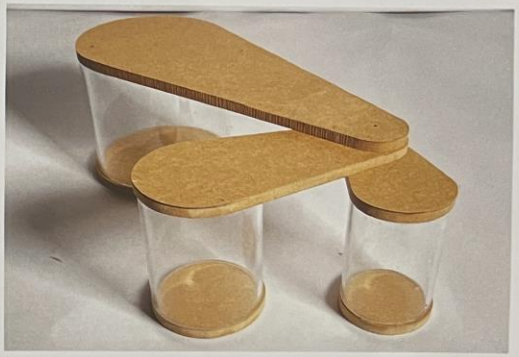


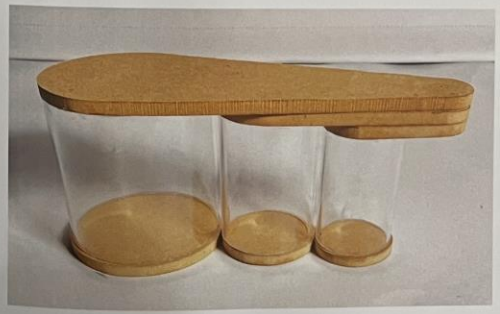
This design is simple and is a starting point of the other tables that I have constructed in the development stage of my project. The main objective of this design is to take inspiration from the Noguchi table which is shown at the pivotal point of the tables.

In this design I constructed a versatile table that is able to undertake different functions. The table is able to change its function and move into different positions in order to entice the user as a kinetic table.

To develop this table further I would compose a way for the table to collapse so that is in a sleek structure that takes up minimum space in order to maintain the criteria of a Kinetic table.

In this development I designed an abstract kinetic table that is able to rotate to expand upon the functionality of it. In addition to this, the table is able to fold together due to the hole that is cut in the bottom piece of the design which manipulates the structure of the table through using the unnecessary parts of the table

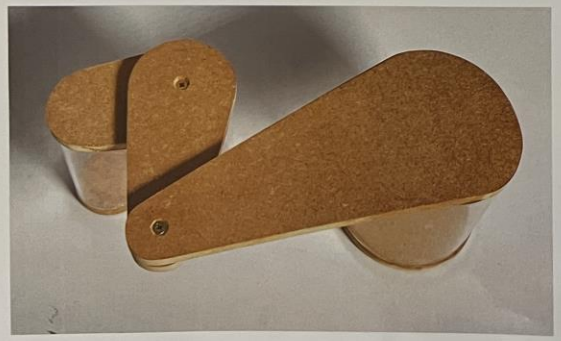




In this design I used the pipes to exaggerate the sizes getting smaller which shows fluidity in my design. As well as this the design is highly functionable due to the varied table tops that are able to fold in and out of a slender table design. The narrow design allows the table to be used in various situations.

This table is abstract as it is able to recede to a small compact design as well as being able to extend to become more functionable. The design is able to supply the user with various table lengths through the use of the unique pivotal points on structure.

To develop this design further I would provide more functionality to the table through a storage system within the table. For example this would be achieved by changing the use of the pipe as a support to a place to be used for storage.



Final Design

In my final design I have been inspired by The Noguchi Table as I have included a pivotal point where the structure of the table is connected together to maintain balance and strength throughout the design.

I have designed the table so that it can rotate in different directions as this allows the user to use the extra table space in a number of positions and in the direction that they require it.

In addition to this I have placed a large spherical table top, which is elevated above the main table structure, which provides a larger space for the user to take advantage.

Under the smallest tabletop there is a storage system which can be assessed by rotating the top and moving it under another section of the table. This allows items to be stored and retrieved with ease and this adds another functionality to the table.

The tables can be folded into each other which manipulates the negative space under the table.

In my opinion this table completes my design specifications for a Kinetic table which can be adapted to the user's specifications and environment.

Robert Van Embricqs

The Rising Table

Van Embricqs became fascinated by the aesthetically pleasing, yet intricate complexity of the natural form.Finding inspiration for his designs in bone structure, plant life and movement, one question remained ever present: 'To what degree is the object you're creating capable of dictating its own design?'
https://archello.com/brand/robert-van-embricqs

Personal comment: Van Embricqs uses the natural patterns, colours and movement of nature to create and design this table.

An important aspect of his design process is Van Embricqs' conscious focus on marrying function-ality with an aesthetically pleasing look.
https://archello.com/brand/robert-van-embricqs

Personal comment: Although Van Embricqs wants the table to have a purpose, he does not want that to be at the expense of the beauty of the design. Van Embricqs wants function and beauty to work together.

'To what degree is the object you're creating capable of dictating its own design?'
https://www.robertvanembricqs.com/about

Personal comment: I believe that Van Embricqs's 'Rising' designs are created with this philosophy as he lets the wood command the shape from the precise cuts that he makes in the wood.

Embricqs' chairs, tables, and bowls start life as flat, single pieces of bamboo. The designer then carves incision patterns to create woven" bamboo beams that elegantly transform into unique, functional pieces of furniture. Each piece then opens up to find its final form, like a flower in bloom
https://mymodernmet.com/furniture-design-robert-van-embricqs/

Personal comment: I believe Van Embricqs uses bamboo as it is strong and durable but it is also versatile and lightweight. Bamboo also has a natural smooth feel and glossy look. The smooth wood would enhance the feel of the design and make it easy to expand and contract when used by the consumer and the glossy look would enhance the natural beauty of the wood. By making patterned incisions into the wood, Van Embricqs has developed a technique which allows the wood he is using to move slowly and naturally into the design he visions.

By emphasising nature's logic, a seemingly random collection of wooden beams organically merges to form the figuratively beating heart of the Rising Table.
https://www.contemporist.com/rising-table-by-robert-van-embricqs/

Personal comment: By using nature to support the processes and techniques he has developed, the bamboo is allowed to naturally move into the shape that Van Embricqs directs.

A conscious choice for functionality in design, doesn't necessarily mean one has to be burdened by conformity, let alone predictability. The Rising Table ignores the cliched notion that a table is little more than a flat surface that is held up by four separate legs. The result is a surprising mixture of fluid design that blends the multifaceted tabletop with the latticework of wooden beams that function as the centre of the construct. From there, the table sprouts four wooden beams that hold up the entire construct.
Not only does this design approach rid itself of every single predictable feature when one imagines a table, it also emphasises that the Rising Table is indeed made from a single piece of wood.
This proves the Rising Table isn't merely an eye catcher when it comes to design, it can also hold its own as a functional piece of furniture, albeit with a twist.
https://www.contemporist.com/rising-table-by-robert-van-embricqs/

Personal comment: The comments above show that Van Umbricqs' mission is for his table designs to have a distinctive organic shape but which has both form and function which work together. I believe that he has achieved this with his design techniques and skills.

The applied construction techniques to create both the Rising Chair and the Rising Table emphasis on its relative applicable ease for production on a mass scale.
https://www.contemporist.com/rising-table-by-robert-van-embricqs/
and
The designer was clear that it must function well, and be able to be produced on a mass scale.
https://www.detail-online.com/blog-article/rising-table-by-robert-van-embricqs-24841/

Personal comment: I believe Van Umbricqs has achieved his intention for the Rising table to be mass produced. Van Umbricqs has devised simple cutting techniques which can be replicated and

he is only using one piece of wood which would be an advantage for the cost of mass production..
.

I felt it was of paramount importance that the source materials both dictated and guided the ultimate design, while ensuring practical appliance and usability.
https://www.contemporist.com/rising-table-by-robert-van-embricqs/
and
When not in use, they can be seamlessly folded back up again along barely visible hinges, concealing their secret structure.
https://mymodernmet.com/furniture-design-robert-van-embricqs/

Personal comment: As the table is able to be moved back to a flatpack when not needed, this provides a functional space saving feature. The table also has a multi-functional use as it can be moved to different spaces and be used outside and inside.

His design approach gave him several awards for its Rising Collection including the Red Dot Design Award for Best Concept and Wood challenge in the Netherlands, both Audience & Jury price. The Rising Chair became part o the National Centre for Visual Art in France and the Rising Table has been awarded the Fubiz award 3rd prize.
https://covetedition.com/interior-designers/designer-week-robert-van-embricqs/

Personal comment: Van Umbricqs's design methods and techniques have been recognised by a number of prestigious design competitions, in a number of countries, for its innovation with the use of wood.

Key
Factual Information
Response/Opinion
Process and techniques
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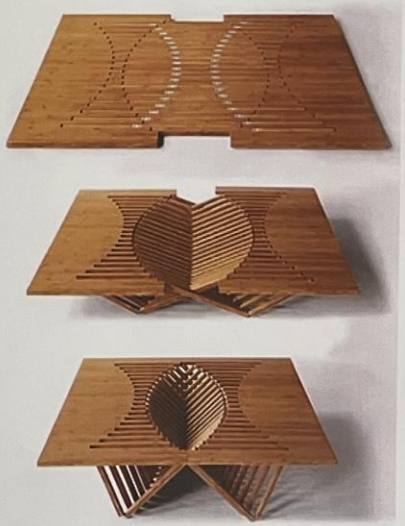
Further Development Inspired By Robert van Embricqs

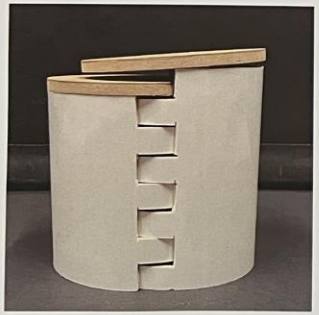


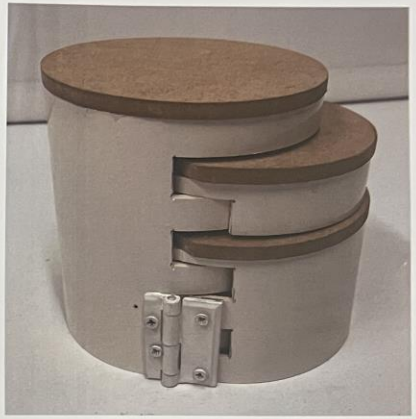
In this design I used cardboard pipe in order to reduce the stress on the pipes as there would be less resistance compared to a stronger material such as plastic.

I created an interlocking design that us able to rotate allowing the user to decide the amount of tabletop space that the table take up. As well as this, The table is able to close within itself so that it can reduce the space and so that it can be stored.

In this design I used a similar mechanism that Robert van Embricq used in his 'Rising Table'. The cuts in the plastic pipe allow them to rotate into each other to reduce the space that it takes up. This also reduces the risk of the slits breaking as they are cut into the pipe rather than being glued on.

I used a dowel within the centre of the pipe to restrict the range of motion of the table. This was to also stop the table from over rotating and disconnecting from each other. I also shortened the lower tabletop in order to allow it to be able to fit under the other pipe.





In this design I used a similar mechanism that Robert van Embricq used in his 'Rising Table'. The cuts in the plastic pipe allow them to rotate into each other to reduce the space that it takes up.

I developed this design further by incorporating hinges which allowed me to incorporate multiple tabletops to fold out. This increased the tabletop space whilst maintaining the collapsibility of the design.

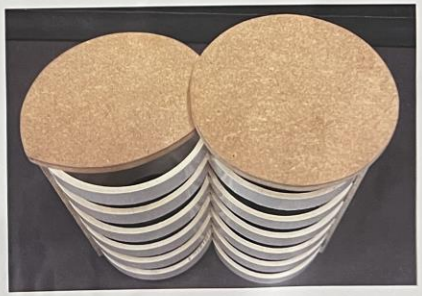
In my final table I have designed a compact but functionable piece which has a large target audience. The table is aimed at people with limited space in their home as the table is able to contract if it is required.

Also, the table is able to extend outward by rotating one of the two pieces which will displays another table top. This increases tabletop space therefore improving the function of the table making it more appealing to users.

In addition to this, I changed the mechanism which allows the table to collapse into each other. I changed the slits in the table to fit onto the inside as this allows the table to take up less space by being able to collapse further into each other while still maintaining the objective of the design.

This table is linked to the design of The Rising Table as the function of the two tables are the same. Both tables are able to collapse for a user that requires more space in their home.

In conclusion I believe that I have made a functional table that reflects aspects of The Rising Table whilst maintaining form in order to achieve a piece that attracts users.



IAN STELL - AUSTRIAN LOOP CHAIR

Only available in an edition of five, the piece has been constructed using 800 pieces of maple wood and 200 brass pivots that allow it to concertina in and out.

The seat is made from sections of wood placed lengthways, while shorter pieces placed at right angles form legs, arms and a slanted back which changes angle as the seat is moved. Typically this rotated symmetrical seating configuration is intended to encourage social interaction, but it does so in a fixed manner."
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

Personal comment: By using the materials in conjunction with Stell's design techniques, the chair is able to close and open - which is similar to a concertina - to produce a functioning chair with a specific purpose.

The movement in this piece serves a practical purpose, but the kinetic means by which it assumes different forms
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

Personal comment: The function of the chair allows it to be moved but it also moves into different shapes to create different forms.

The chair was assembled in Stell's studio in Red Hook, New York, using a process that brings together beading, basket-weaving and bridge-building techniques in miniature
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

Personal comment: By using this intricate process the patterns in the wood create a design that is aesthetically pleasing

.

I lived and worked in small, oddly shaped spaces in Lower Manhattan and Brooklyn for years, and the challenges of maximising function within limited confines was always on my mind," explains the designer. "With time, I began to think of designing folding furniture less as fulfilling a binary program and more as a kind of choreography to be enacted both by the user and the object itself."
https://architizer.com/blog/practice/materials/ian-stell-transformer/

Personal comment: I believe this shows that Ian Stell has an understanding of the needs of his target audience as he has lived in confined spaces where kinetic and expanding and contracting furniture were needed.

To create the chair, the designer referred back to the pantograph – a 16th century invention of expanding, hinged parallelograms that was used to copy and scale documents and drawings.
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

Personal comment: Stell uses historical techniques in his design ideas to achieve a modern functioning chair.

Ian Stell holds a BFA from The School of the Art Institute of Chicago and an MFA from the Rhode Island School of Design.
https://www.ianstell.com/About

Personal Opinion : Snell attended prestigious design institutes which provided the basis for his innovative furniture.

the dyed maple seating system
https://www.designboom.com/design/ian-stell-collective-design-fair-new-york-design-week-patrick-parrish-gallery-05-08-2016/

Personal comment: I believe Snell has used this wood as it is a durable strong and long lasting wood and has a straight wood grain and uniform colour. This wood would not detract from the patterns created by the movement of the wood into the different positions.

Mutability in a piece of furniture should serve a purpose," explains Ian on his website, "but the act of transformation should be a kind of dance."
https://visi.co.za/flexible-furniture-designs-by-ian-stell/

Personal comment: I believe Stell has achieved his intention of designing a changeable piece of furniture that involves the user moving and arranging it to achieve its desired shape. I also believe that Stell is saying that when transforming his furniture it should move fluidly and gracefully.

The seat is made from sections of wood placed lengthways, while shorter pieces placed at right angles form legs, arms and a slanted back which changes angle as the seat is moved.
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

Personal Opinion: By providing a slanted back the chair offers the user another dynamic to the chair as the slanted back offers a more relaxed sitting position, when the user is engaged in social conversations.

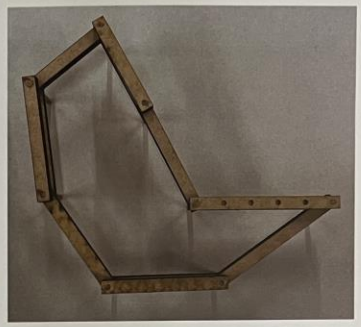
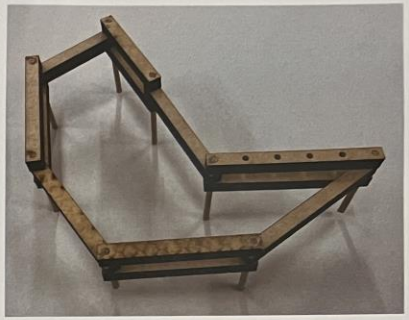
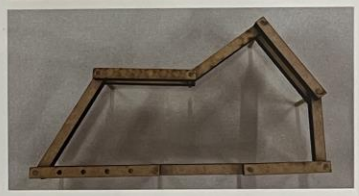
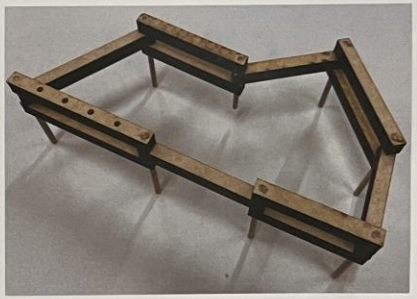
The piece can be extended up to seven feet, allowing two or more occupants to sit either at a distance from one another, or very close together when it is fully contracted.
https://www.dezeen.com/2015/12/09/ian-stell-austrian-loop-bench-chair-maple-wood-expandable/

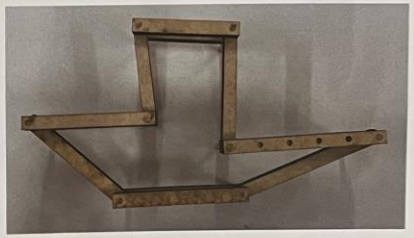
Personal Opinion : The original design concept of the chair was for two people to enjoy intimate conversations without physical contact due to society constraints on romance. Stell has modernised this design and developed a chair where the user has the ability to have a social sitting area for two or more people which can then be contracted when not needed. This is vital to those living in modern smaller abodes, who do not have the space for this size of seating on a full time basis.

Key

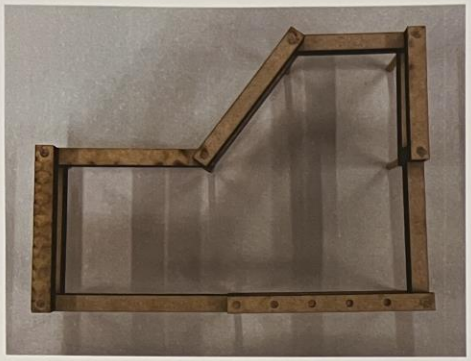
Factual information
Materials
Process and techniques
Form
Function
Context
Response/Opinion

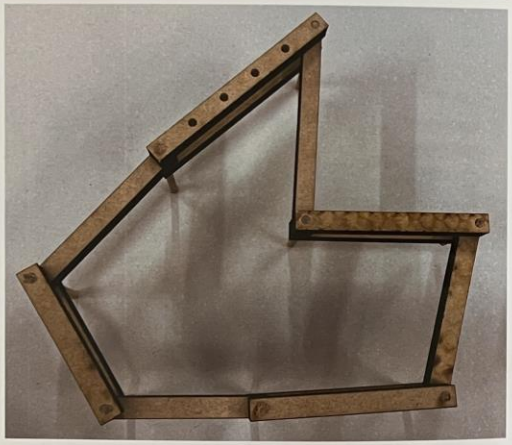
Initial Kinetic Table Design Mechanism

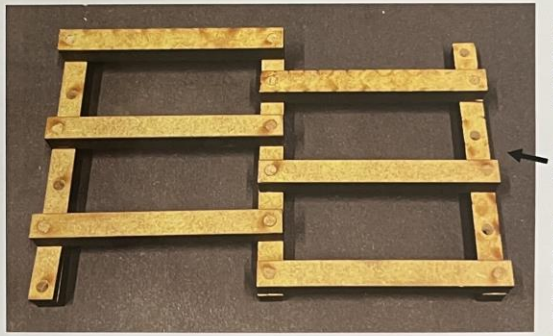


These designs are concepts for tabletop shapes and where made in order to test the manoeuvrability of the mechanics that Stell has used.



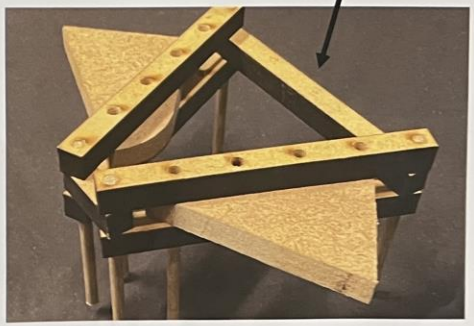


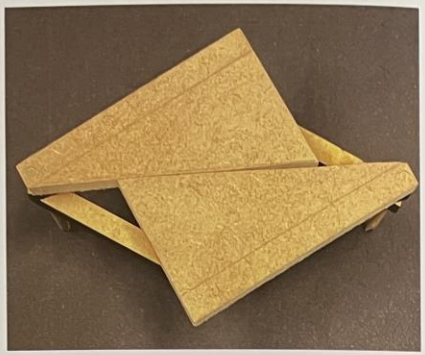
This design is in order to understand the mechanics of the Austrian loop that Ian Stell constructed. This helped to be able to design more complex models and to take my work further using the inspiration of Stell.



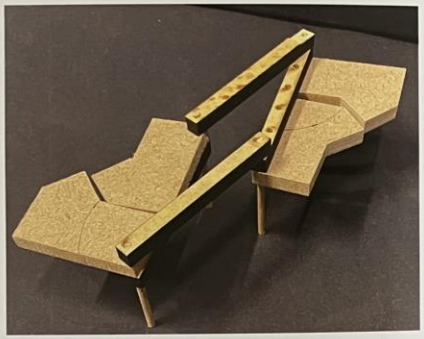
This design was to experiment with the mechanics of Stell's work and to further develop the ability of the table.

In this design I used a triangular shape in order to take Ian stells design further. The design has 2 pieces to fold out in order provide more space for the user. This makes the piece more functionable as the table is able to be manipulated into different shapes that the user desires.

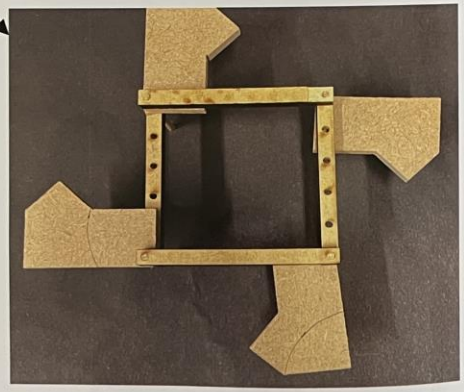


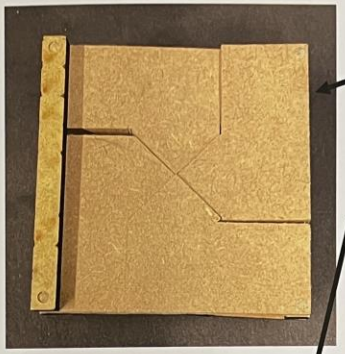


In this development I used the same concept of the triangular chair. This design worked better as the pieces that fold out do not block each other from folding out like in the triangular table.



In this design I experimented with the shape of the tabletop in order make the table more functionable. In order to do this the table top is ay 2 different heights so that the table is able to fold outwards. To improve this table I would introduce more table top space as there is a small amount for the user in the current designs.

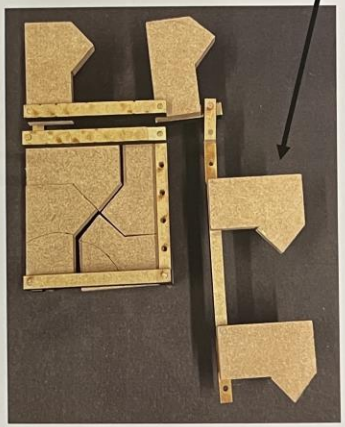


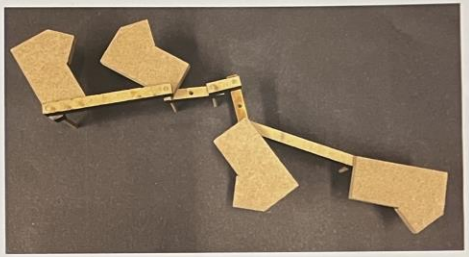


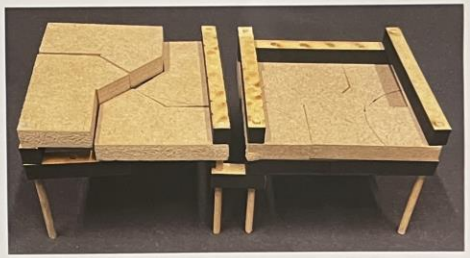
In this design I further developed on the previous tables in order to produce a more complex model with form whilst maintaining the functionality of the piece. The table us able to fold out as it provides more space or less for the user.

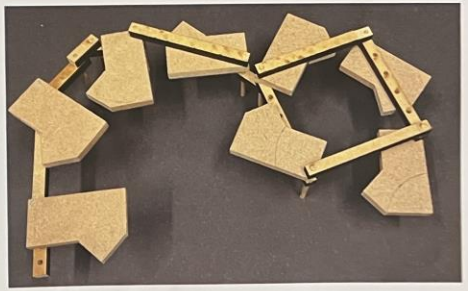
This design is very functionable due to the large amount of table top space. As well as this, the table is able to be changed in order to suit the space that the user has.

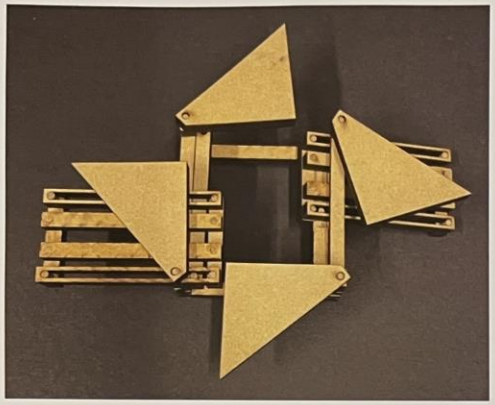
To improve this design further I would improve the stability on the talbe by introducing thicker legs.

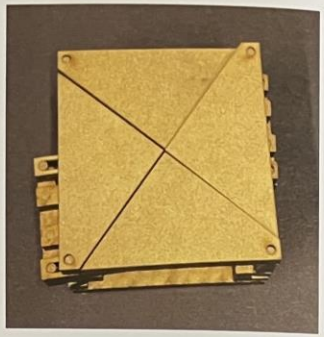






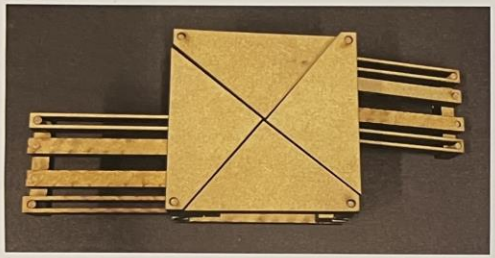




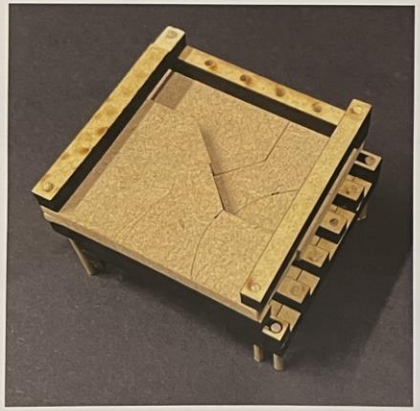


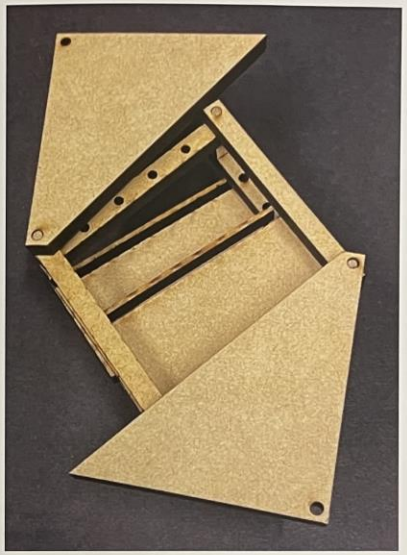
In this design I have used the triangular table top in order to maintain the manoeuvrability of the piece. This allows the table to be more practical for the user. As well as this, I have introduced tabletops that can slide out from within which decreases the overall size of the table so that the user is able to store it in a small room whilst sustaining its functionality.

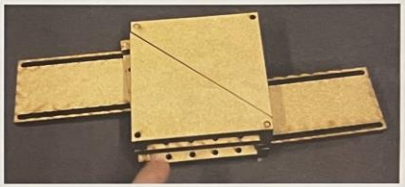
However the design was flawed due to the stability of the table. This was because the parts that slid out in order to increase table surface space collapsed and could not perform as a functioning table.



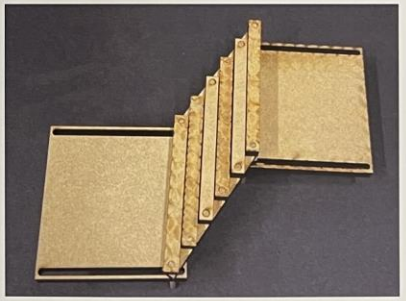
This table has a large piece underneath the main tabletop which is bigger than the last which helped to reduce the size of the overall table. As well as this I have added dowels to the end of the tabletop that slides out which helps to maintain the structure.



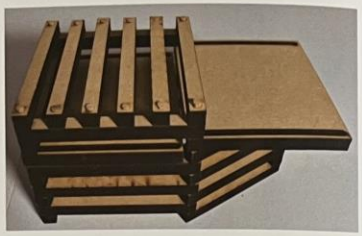


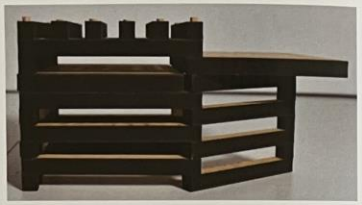


To take the last designs further I used solid pieces that slide out rather than slatted pieces which improves the stability of the piece.



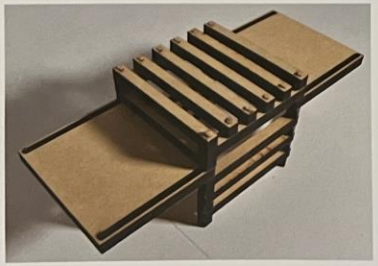
In this design I have used the slated tabletop in order to allow the table to twist which allows the table to be manipulated into different shapes. In addition to this the sliding pieces are full size to increase tabletop space for the user to increase the functionality of the table.

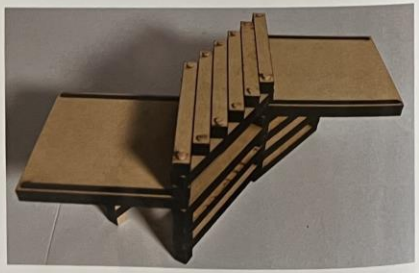




In this final development I have addressed the design issue where the sliding tabletops where unstable by introducing a pivot to support the piece but it can also slide back into the main table without taking up extra space or making the table bigger.

To improve this design to the final I would introduce a method to tighten the joints in the piece in order to make the piece more rigid so that the piece foes not fall apart.



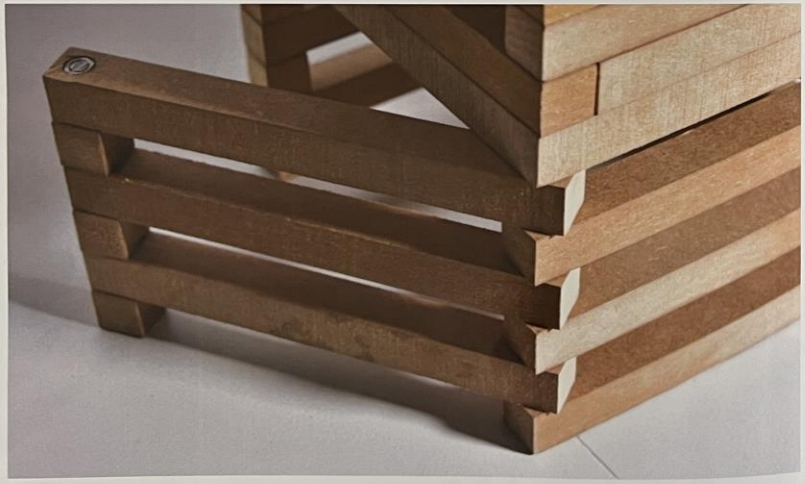


Evaluation of Kinetic Table

In my final table design I have accomplished strong elements of a functional kinetic design piece. The table is aimed at users who have limited space within their home or workplace and require a table that is adaptable, dynamic and can be closed down and stored away when not required.

The table is also able to extend outwards in order to increase the table top workspace for the user which provides a functional enhancement of the table design and my original criteria for the concept. Additionally the table is able to pivot into several different shapes and configurations which increases the tables practicality and appeal.

In conclusion, I achieved a practical and functioning kinetic table design which is possible to be used in many different environments and can adapt easily to its surroundings. In addition, the table is easy to manufacture and assemble therefore making it an ideal design for mass production. Ultimately this design has the potential to reach a large target audience at an affordable price point. To improve the design further I would consider introducing colour which would increase the appeal to a consumer audience.



Research Of Kinetic Tables In The Noguchi Exhibition And Design Museum

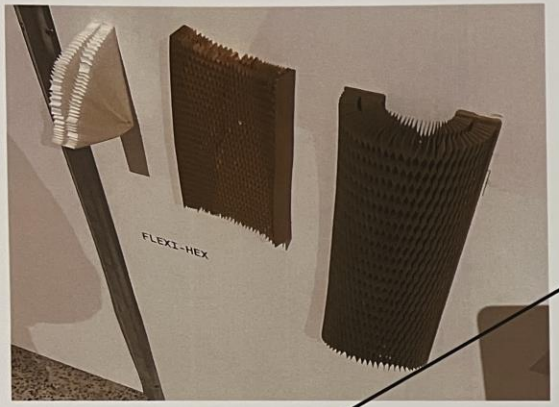
Noguchi was a Japanese American artist, sculpture, designer and landscape architect whose active career spanned six decades from the 1920's. Noguchi's work is displayed in the Noguchi Museum in New York City and his design belief was that "everything is sculpture".

In 1947 Noguchi began a collaboration with an American company, Herman Miller. They employed prestigious designers to produce high quality ergonomic furniture which included the Equa chair and the Eames Lounge Chair.

Whilst working for Herman Miller, Noguchi worked with other designers including George Nelson and Charles Eames to produce a catalogue of what is considered to be the most influential body of modern furniture ever to be produced. One such piece was the iconic Noguchi table.

This distinctive table has a unique triangular curved shape within the two wooden supports providing a stable self-supporting base. This allows a heavy plate glass top to be positioned on top without the use of connectors. The table is viewed as cultural art and a functional piece. Noguchi referred to the table as his best furniture design due to its biomorphic shape. The table became one of Herman Miller's most iconic and successful designs. Despite the table's status as a modern classic, Noguchi's tables remain widely available and relatively affordable.

Materials From 'The Waste Age' Exhibition And A Quote From Noguchi

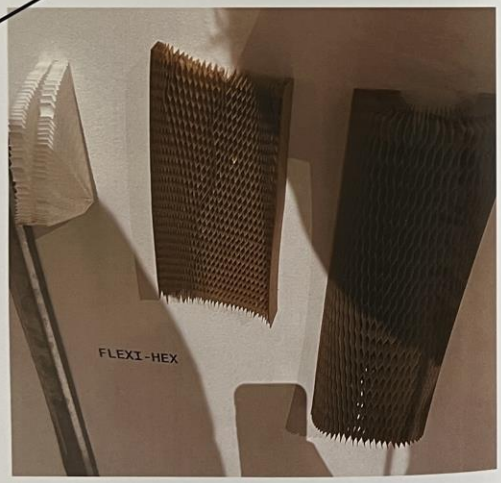


At this exhibition I discovered that I could broaden my design ideas by using waste or re-usable materials.

The Noguchi exhibit expanded my thinking to consider incorporating reusable lightweight materials that can be used to create large designs. And heavy materials that can be use to create small objects.

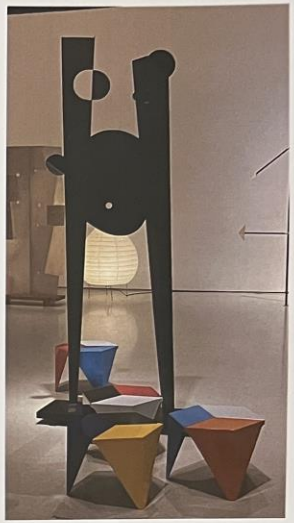
GRAVITY

'But what is the point of soft without hard, or weight without lightness? In Japan the philosophy of the relative value of things is carried so far that in ceremonial tea-making there's a little cloth they use, which they handle as if it were the weightiest thing in the world. Light things are handled as if they're heavy, heavy things as if they're weightless —in this way one finds an almost complete control over nature instead of being dominated by it'



Considering the incorporation of this concept into my work has provoked much thinking. Through the use of cardboard as a lightweight material, I have considered the construct such that the material retains or provides strength so that a large structure can be assembled with the right design.

Noguchi Exhibition



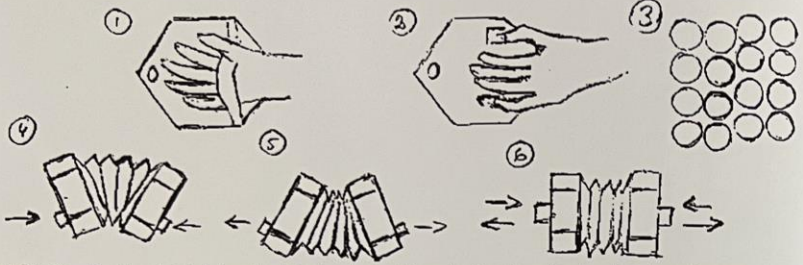
These designs use kinetics to expand the functional range of the objects. In particular the image above shows a coffee table that when all the red pieces are folded closed, it provides the standard functionality of a lounge table.
However, fanning the pieces out increases the tables surface space and thus extending its functional use to hold more drinks or other items.

Justin Dehner
Zen | 2003
(71½ X 54 X 24 INCHES (44.5 X 1372 X 61 CM)
Baltic birch plywood, aluminum
PHOTOS BY ARTIST

The image to the left shows a design by Justin Dehner that allows the table to transform its shape in order to better suit the user or to better suit the room it is in.

However, whilst having functional merit, the table lacks form as it consist of sharp linear lines and a plain block colour.

Research On Concertina Mechanism



Practicality - Furniture that is designed and developed using this mechanism allows it to have function and purpose as it can be closed away easily and used when needed. The mechanism provides the design with versatility as it can be moved and adapted to different areas of the home or business and used both inside and outside due to it being moveable when closed. The mechanism provides functionality and practicality.

Design - The concertina mechanism allows the form of the furniture to have movement and therefore provides functionality. to the design. T

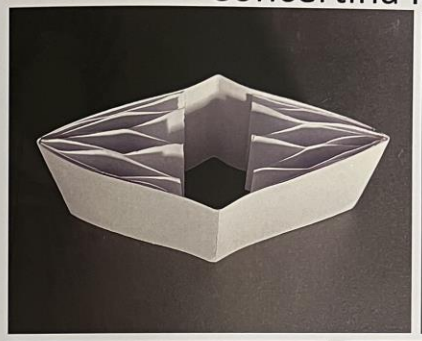
Movement - the concertina mechanism provides easy movement of furniture from closed to open.

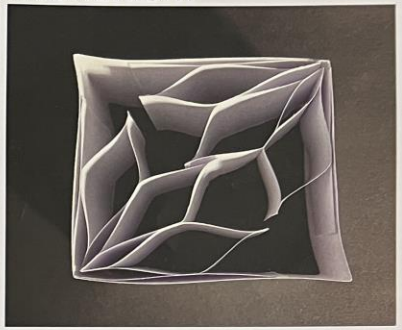
When paper and the concertina method are used simultaneously in a table design, the furniture becomes a light weight, foldable and a very easily moveable form. The use of the honeycomb patterned structure together with the paper and concertina mechanism allows the design to be sturdy and have a high load capacity and tensile strength which provides function.

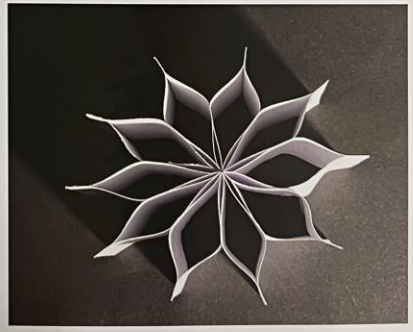
The weight and thickness of the paper material allow the concertina mechanism to open and close easily.

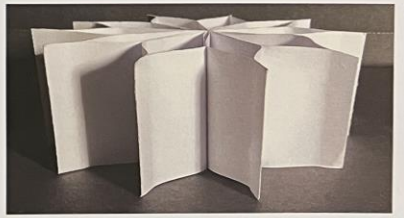
By using the concertina method in the table allows the user to interact with the furniture by encouraging them to configure the table to meet the demands of their space and use.

Initial Foldable Table Designs Utilising The Concertina Mechanism

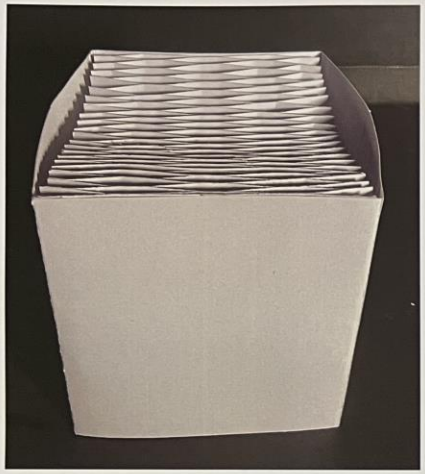








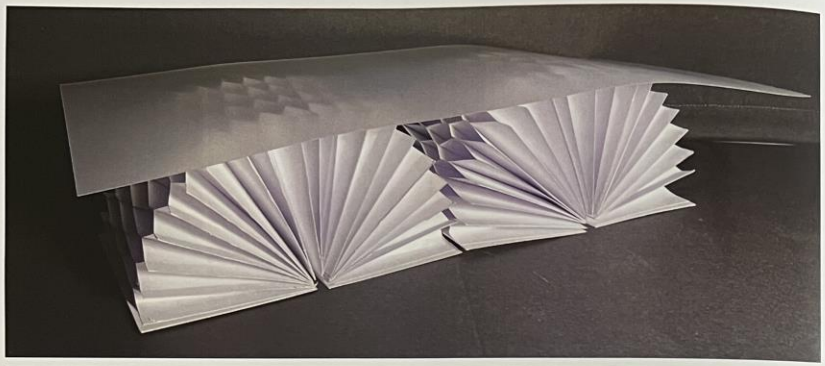
These designs show the concertina mechanism and its ability to create a decorative form whilst also providing a lightweight yet strong base for a functional table. As paper or card materials are reasonably cheap it offers an affordable design option for a kinetic table.

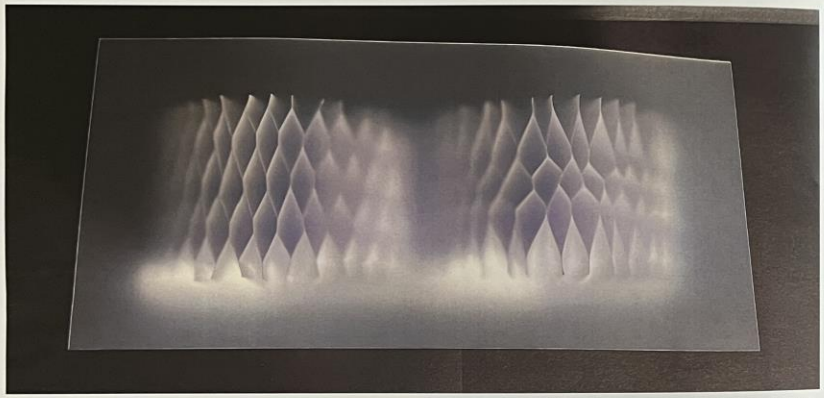


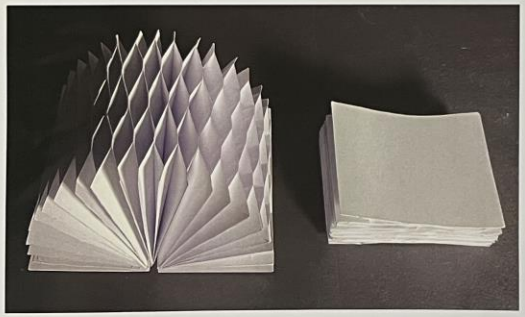
In this concept I used the concertina construct in a configuration extending vertically. This design concept proved unsuccessful as the extending concertina was placed in tension and could hold little weight, relying on the supports holding the model in position. Whilst the form had some appeal, the functionality of the piece did not meet the load bearing criteria and was thus not acceptable.

In some respects this table meets the collapsible functional aspects of the design criteria. This table could be used as a high table when extended and collapsed to the flat plane when finished with.

However, this design does not use the strength of the concertina mechanism in this table which is in the horizontal direction. The strength lies in the multiple layers of card of the concertina which is at 90 degree to its orientation in the design. Using the concertina pattern facing upward could offer a design that could hold 100 times its own weight.

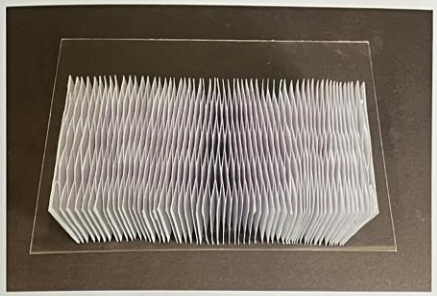


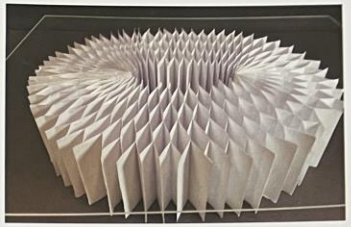


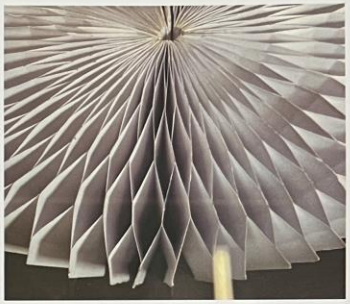


This design development shows the use of two concertina structures for the supporting elements of a table design. This configuration increases the table strength and subsequently the size of the table could be increased. The table is also able to fold down and collapse flat for easy transportation and storage thus meeting key elements of the functional specification.

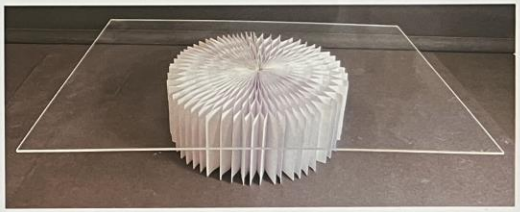
However, this design also fails to fully utilise the strength created by the concertina mechanism and requires the addition of a separate table top to complete the design, important elements of the functionality and form of the design requirements.

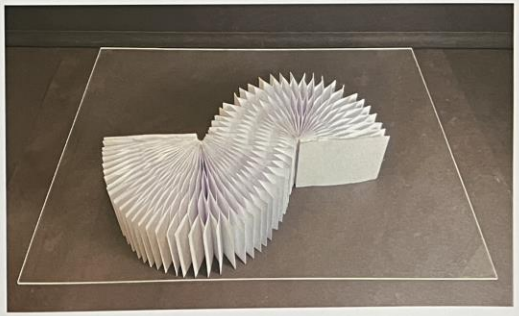






In this design I used the concertina mechanism to manipulate the table into different forms to better suit its function. The table is able to morph into different shapes. This allows the table to change to be able to apply a better function according to the setting its in. The tensile strength within the table is strong due to the long concertina pattern which is closely packed together.





Research On Kamijiya Table by

Hiromitsu Konish

Konishi is an interior designer based in Kyoto, Japan
He designs for Miso Studios and Konishi also co-leads the Source Organisation Network, (S.O.N),
https://www.interiorholic.com/news/kamijiya-paper-table-by-miso-and-s-o-n

Personal Comment. Konishi can draw design inspiration from different sources.

In 2011 Miso Studios were commissioned to create display furniture for a traditional Japanese paper store
https://wearemiso.com

Personal Comment: Konishi designs for a highly regarded design studio and will be a superior designer.

Konishi also co-leads the Source Organisation Network
https://www.sourceorganizationnetwork.com/about.html

Personal Comment: Konishi, in partnership with So Sugita (Architect) has formed an organisation for different designers to work in collaboration to explore and create new design approaches and techniques
The theme of the furniture was to use only paper for the frame
https://www.interiorholic.com/news/kamijiya-paper-table-by-miso-and-s-o-n/
https://www.sourceorganizationnetwork.com/about.html

Personal Comment: The design concept by Konishi had already been dictated so he had to investigate how he could use the material to achieve the client's design brief.

Acrylic plastic on top of the paper structure allowed the folding design of the paper table to be seen and created a flat surface for Shofudo's products to be displayed
https://www.sourceorganizationnetwork.com/about.html

Personal Comment: By using the acrylic plastic, Konishi used a material that would enhance the design of the table base as you can see through acrylic, whilst providing strength and a flat surface for the client's products to be placed on.

Inspiration was taken from two sources, The first was the Sense, a Japanese folding fan, which can expand and close back to its original shape. The second inspiration was the honeycomb shape for the framework of the table.
https://www.designboom.com/readers/miso-son-kamijiya-paper-table/
https://architizer.com/projects/kamijiya-paper-table/

Personal Comment: Konishi has used the technique of a folding traditional Japanese fan to create a table that could closed and opened and therefore allowed the furniture to have versatility as it is able to be moved to different locations in the client's shop and closed and stored when not in use. He then investigated and used different processes with the paper to create a shape and pattern with the paper that would allow it to have strength and be durable.

Konishi glued each piece of paper to each other in the shape of a corolla.
https://za.pinterest.com/pin/110056784620927936/

Personal Comment: By using this process, Konishi is creating a shape and pattern that will bring strength to the design and provide a simple yet beautiful pattern, based on nature.

The unique shape and pattern created by the paper on the base of the table, provides the main focal point
https://sourceorganizationnetwork-blogspot-com.translate.goog/2012/02/paper-table-kamijiya.html?_x_tr_sch=http&_x_tr_sl=ja&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc

Personal Comment: Konishi uses the formal elements of design to ensure that the display table is aesthetically pleasing.

The use of white paper allows the pattern to be the dominate visual aspect of the table
https://sourceorganizationnetwork-blogspot-com.translate.goog/2012/02/paper-table-kamijiya.html?_x_tr_sch=http&_x_tr_sl=ja&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc

Personal Comment: By using a neutral colour in the design, I believe the pattern created with the paper allows it to be the dominant feature

The two influences are evident in Konishi's exploration of the paper's properties to provide the strength to the table and the formal elements of design to enhance the visual aesthetics and physical attributes of the table
https://www.sourceorganizationnetwork.com/about.html
https://wearemiso.com

Personal Comment: By using design principles; contrast, balance, emphasis, proportion, repetition, rhythm and pattern, Konishi has designed a table that has visual appeal whilst providing a function.

The table is also lightweight and collapsible

https://www.designboom.com/readers/miso-son-kamijiya-paper-table/

Personal Comment: This design feature allows the table to be closed and moved. This allows the user to save space when it is not needed and for it to be moved to different areas of the shop with ease.

Influenced by the Western influence of simplicity and structure and Eastern design elements of colour, texture, pattern and form.
https://wearemiso.com
https://www.sourceorganizationnetwork.com/about.html

Personal Comment: Konishi has used the influences of his design influences (the Miso Studios and S.O.N to provide a structure that is simple to use and used Easter design to provide the design elements to create the form of the table.

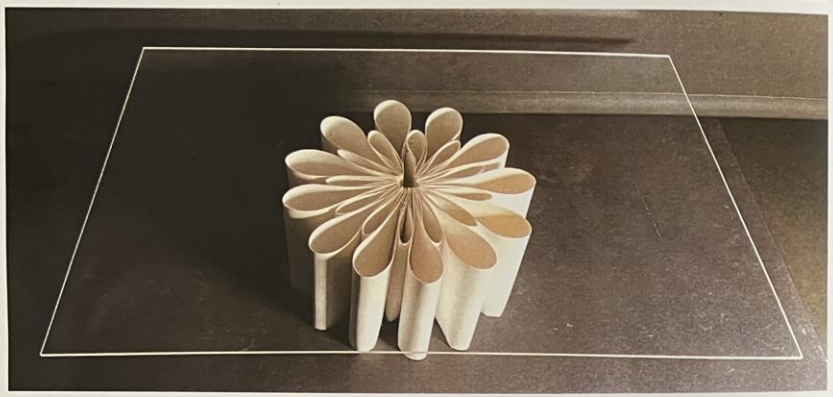
Two other designers who have also used paper's characteristics in their design are Vadim Kibardin and Ying Chang. Both designers use recycled paper to design and create sustainable furniture
https://www.kibardindesign.com/products/special-project/black-paper-37/
https://www.designandpaper.com/ying-changs-malleable-state-collection-challenges-our-perception-of-paper-as-a-material/

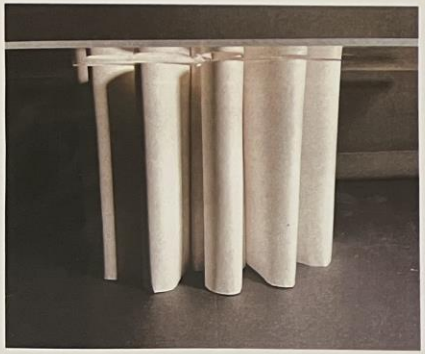
Personal Comment: Although both designers are using paper to design their furniture, their pieces are created by layering the paper together with glue to create strength. Konishi has used a pattern to create the strength and allows the table to have movement.

KEY
Form
Context
Factual Information
Materials
Process and techniques
Function

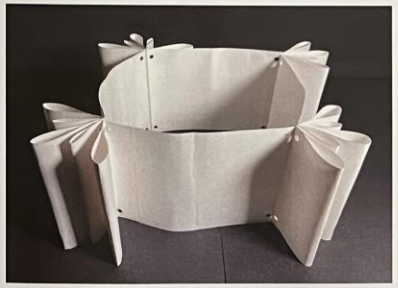
Structural Paper Engineering Inspired By Konishi

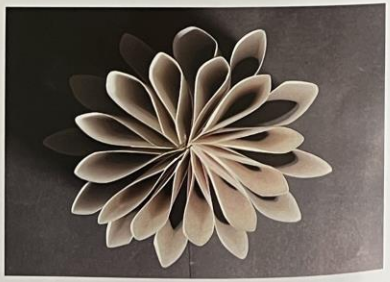
In this design exploration I experimented with the size of the paper loops to maximise the strength and aesthetic beauty of the piece. This maquette concept has a high compressive strength built up from the multiple loops of paper which enables it to withstand heavy loads.
The concept was inspired by the Kamijiya Table as it uses paper in a continuous length that folds, curls and loops to create a strong structure.



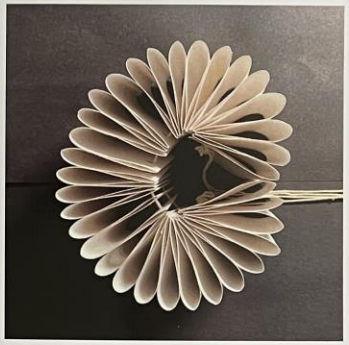


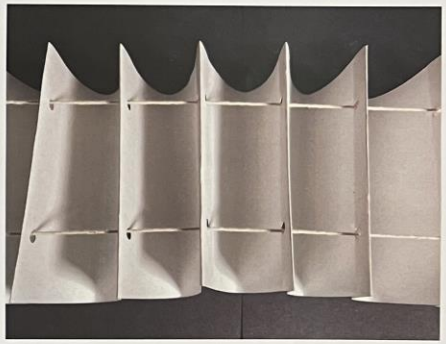
In this design I built the looping structure split in four parts or quadrants. This provided stability and an alternative visual aesthetic.
This table has the benefit of being able to adapt its shape by forming multiple configurations.
To develop this idea further I would need to make the transition from one shape to the next easier for the user.

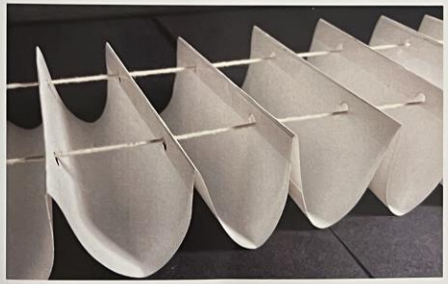




In this development I continued to experiment with the size of the loops to see if this affected the compressive strength the table structure could withstand. I did this by varying the height of the loops to form two different levels so that it created a layering effect. Unfortunately by changing the form of the structure, it was unable to fold flat, therefore, not meeting the design requirements for a foldable kinetic table.

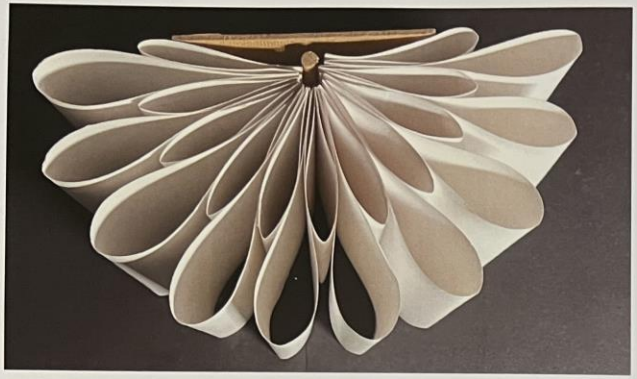






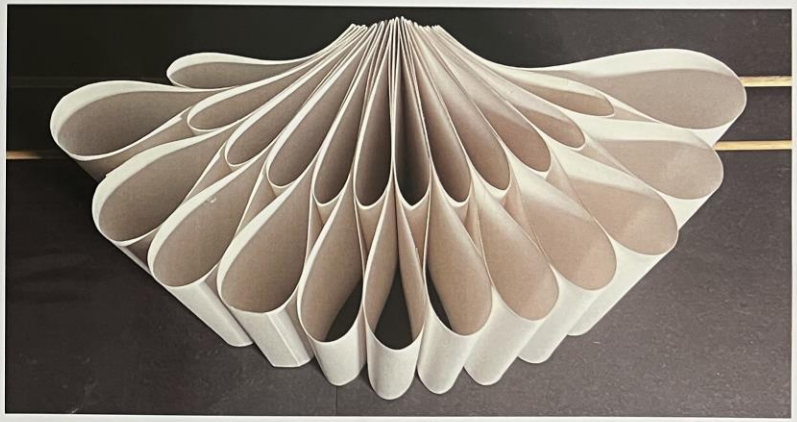
This maquette was inspired by the mechanism of a Roman blind to produce the base table structure. It was able to expand and also contract into a series of loops or small oval shapes with a variety of diameters. When not in use the structure could be completely released (via the string that runs through the structure) to allow it to fold almost flat. This allows it to be easily transported and stored when not in use.

To develop this design further I would need to create a mechanism that holds the large amount of string that becomes visible when the table is erected. Also the mechanism would need to hold the string in tension to avoid the table opening.



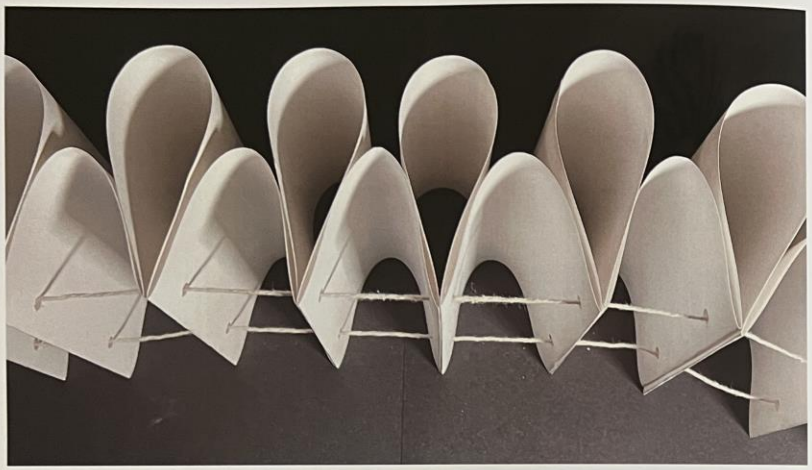
For this development I used wood and a dowel to control the size of the table design, thus limiting its extension to a half or three quarters. This allows the user to decide to what extent the dimensions of the table structure will be unfolded.

This design element uses key rings style loops to hold the mechanism together so that the form and compressive strength are maintained.



I took a different design approach to this development and introduced two parallel wooden dowels to guide the opening and closing mechanism of the table. This gave another option for consideration during my design development.

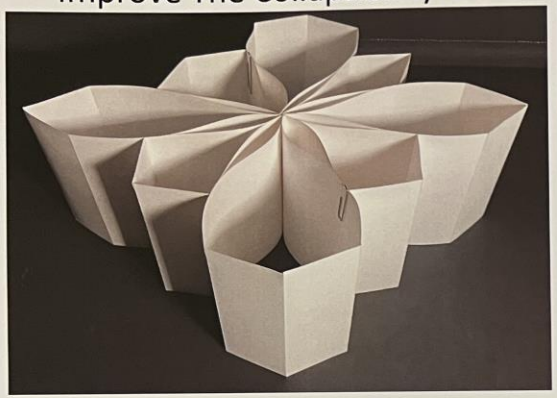
To improve this design I would need to find a way to seamlessly hold the table in the formation position. The use of the dowels guided the structure reasonably well but holding the position was far too fiddley to secure.



In this development I have incorporated elements of my previous designs in an attempt to improve the folding and collapsibility of the table. I decreased the number of loops and changed the loop dimensions to form two different sizes which was to help form a more cyclical shape when opened. The roman blind mechanism again works well and allows the table to fold up and then flat by pulling and releasing the strings. The lack of a mechanism to control and store the string remains a problem.

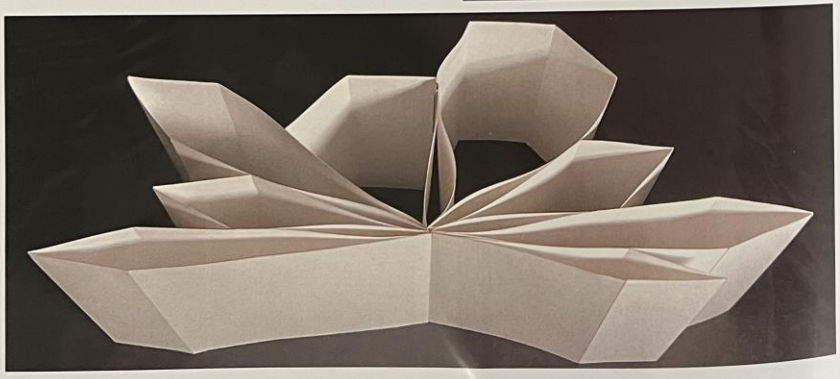
In this design I attached key rings to four sides of the paper structure and attached the string to a freestanding pipe in the centre of the base. This enabled the string to be pulled into the pipe to enable the structure to expand and contract.
The mechanism needed further development as the tube was higher than the base and needed to be below so that the table top could be positioned. The string storage solution within the pipe was a step forward but it was far from perfected at this stage.
To develop my design to the next level I changed another element and introduced folds in the paper. The aim was to assist the collapsibility and shape memory when erected. I began experimenting with various fold patterns to find the optimum configuration for my design.

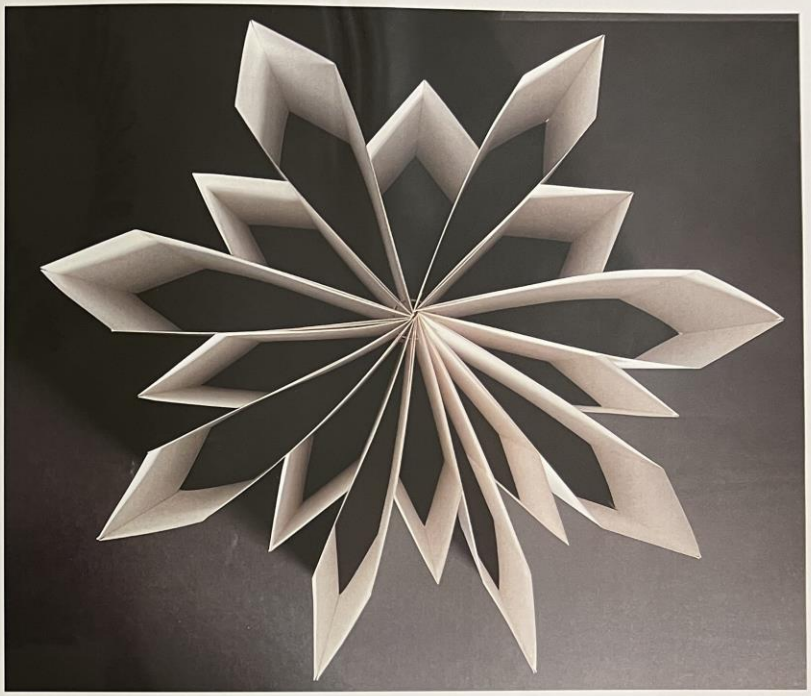
Experimenting With Sharp Folded Segments To Improve The Collapsibility Of The Paper Structure

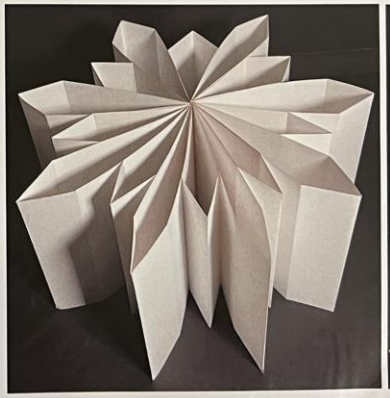


With this maquette I wanted to create an angular design with an overall square pattern which is practical to erect whilst being able to fully collapse flat. The design uses a number kite or diamond shapes to form angular compartments which improved the form of the structure and offered a more visually intriguing and interesting design.

The structures or compartments where taped together using double sided sticky. However, I identified a design development to improve the construct further by using glue instead of tape for the assembly. Gluing the kite shapes together would ensure a stronger build and without gaps in between each compartment when being stretched. I would also need to develop a way to ensure each segment opened more evenly with a max set point to avoid bunching and distortion at the 360 degrees expansion point.







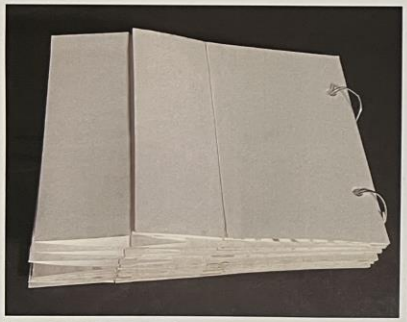
This design is crisp, uniform and continues the angular design development. It uses key rings at the centre of the table in order to allow it to pivot round.

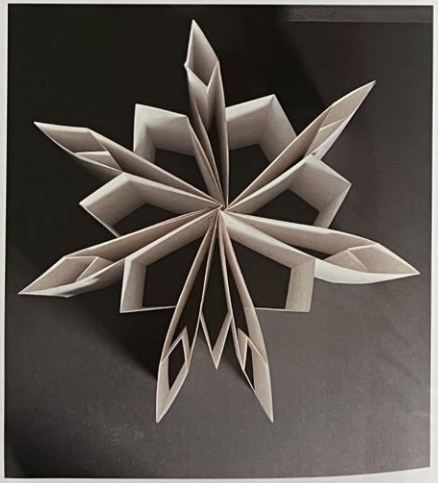
However as seen previously the segments do not spread out evenly and they became bunched up and distorted when being pulled out.

A repeat of the need for a solution that regulates the shape.

Restricting The Width Of The Segments To Stop Distortion And Ensure Visual Uniformity

In this design I continued to develop my angular kite shape method of folding the paper into compartments. However, I still used double sided tape to hold the structure together which didn't work. The forces on opening exceeded the strength of the tape to hold the paper together correctly. Therefore, it did not allow the shape to open the way that I intended it to. It was less of an issue with the design and more of an issue with the build quality.

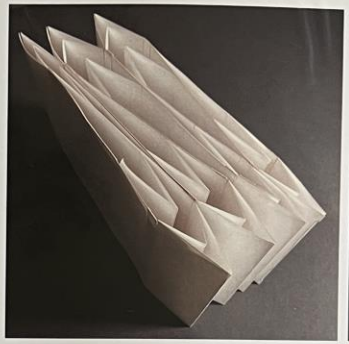




To stop the triangular segments from over extending I designed a restrictor or max extension limiters. I also added an additional arch detail which all adds to the structures compressive strength.

This piece has 2 key rings in the middle in order to allow it to pivot from the centre of the structure. The table has restrictors on it in order to allow the compartments to be more equally spaced out and the final extended result more aesthetically pleasing.

Developing A Final Square And Circular Maquette

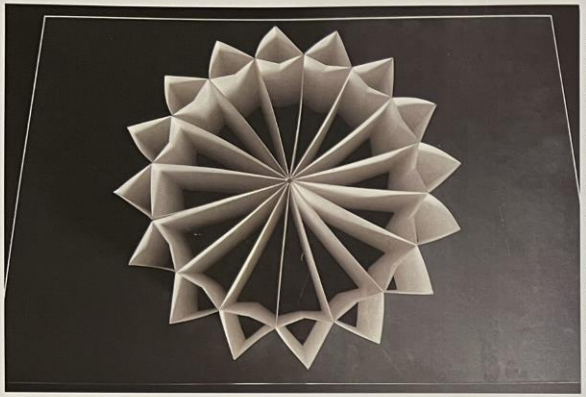


Unfortunately this design didn't work as the tape holding the pieces together wasn't strong enough to withstand the tensile force required to pull the table out without the structure coming apart.

To improve the design further I would change the angular kite shaped compartment and restrictor to be assembled as one piece. Thus improving the structure, strength and alignment.

In this design I used the angular kite shaped components to create a functioning collapsible table which is able to fold flat.
The compressive strength inherent in the design is very high, as one triangular piece is cut so that the card folds on itself in order to double the thickness of the paper used in each compartment. This allows the table to be light whilst remaining strong to hold extremely heavy loads.
The piece has foam board on each end of the structure to make it easier for the user to pull out and at the same time making it stronger.
Finally, I added a half a compartment to either end of the design to make it rectangular and balanced when fully extended.

This table is easy to collapse into a flat plane whilst being able to open into a functionable coffee table for everyday use.

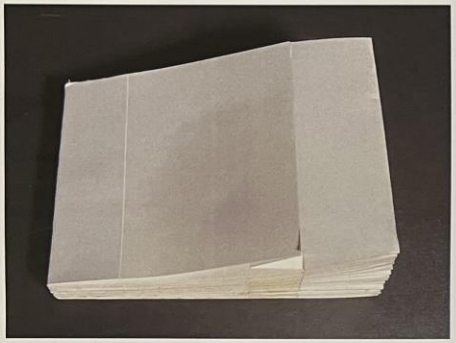


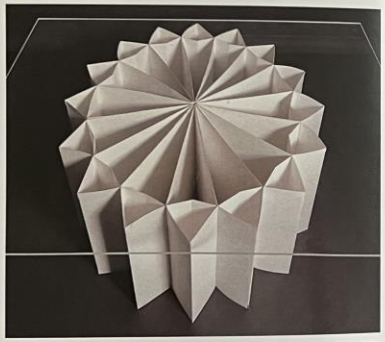
This design uses a single piece of 130 gsm cartridge paper to construct each triangular compartment which increases the overall compressive strength significantly.

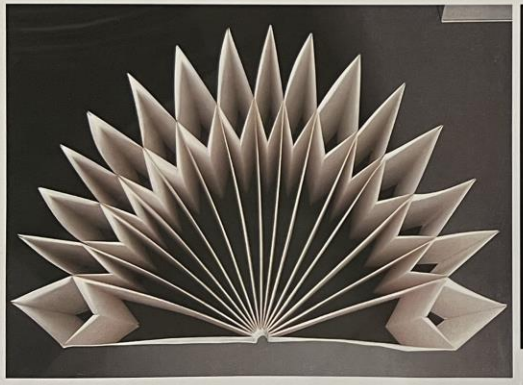
The table is now able to fully pivot about the middle and no longer uses tape or key rings at the centre. The construct is now fully glued which improves the built quality and overall strength of the design.

The piece has built-in restrictors (Figure 1) that guide and regulate the opening process and size of each compartment as the structure extends. The restrictors allow it to spread evenly without distortion.

Additionally the structure can fully collapse to a flat form to be stored using minimal space.







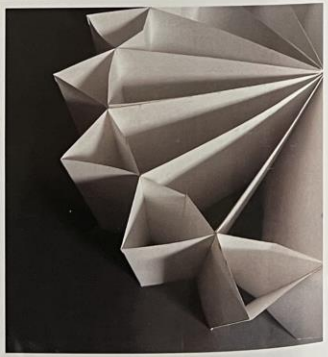
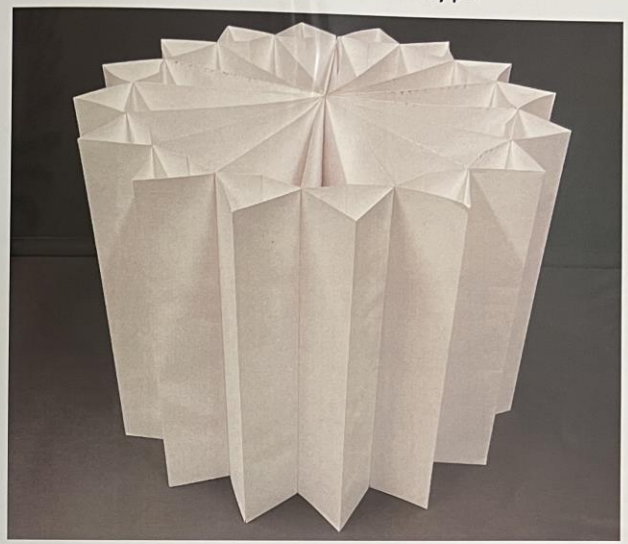


Figure 1

Final Full Size Prototype



In this design I scaled the model by 300% vertically and 150% horizontally. This transformed my work into a full size coffee table with the overall dimensions 450mm high by 600mm diameter. I load tested the table in order to confirm the integrity of the structure and just how much the 130 gsm cartridge paper model could withstand. The results demonstrated it was at least 100kg which confirms it can hold over 80 times its own weight (Figure 2). The table is fully collapsible into a rectangular book like shape (Figure 3) which is extremely efficient and allows it to be transported easily and safely, courtesy of the light weight design. This design also introduce the closure tabs which locate like the end of a belt (Figure 3 & 4)

To the develop this design I would introduce colour for two reasons. The first reason is aesthetics, to add vibrancy to the structure. The second reason is to hide the slight scoring that in a result of the laser cutting process.

Figure 2

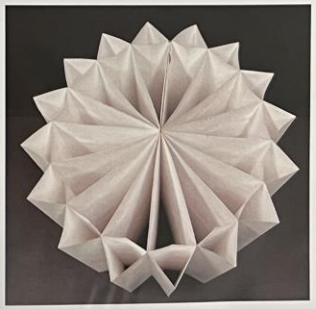


Figure 4

Figure 3

Experimenting With Colour Combinations

This design shows the colour wheel creating a smooth gradient between primary, secondary and tertiary colours. The colours will soothe the user and make them more relaxed.

The alternating blue and white forms a crisp colour combination that creates a clean feel and a sharp contrast which works really well.

Black and white naturally compliment each other, creating such a strong contrast. This table is able to fit into many different surroundings because of the simple tones used.

Yellow is a bright, creative colour associated with the ability to promote clear thinking and quick decision making. It is also linked with happiness and positive energy

Blue is perceived as being calm and relaxing.

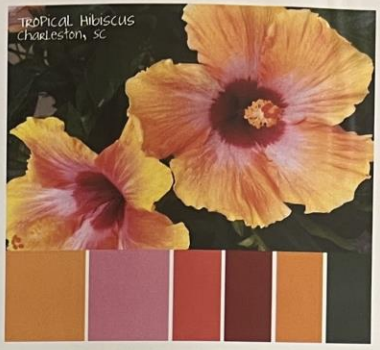
Green is associated with feeling restful and secure.

(P) Pacific Blue
(E) Emerald
(M) Mango
(V) Vermilion
(OU) Ultramarine
(K) Kiwi
(OR) Orange
(BG) Bougainvillea
(T) Earth brown
(C) Citron

(S) Light Sand
(A) Slate Blue
(SC) Greystone
(AM) Amazon
(PA) Burgundy
(AB) Deep Sea
(G) Sandstone
(TO) Brown
(PE) Pearl Grey
(N) Black

A totally black table would allow the piece to suit most surroundings. In addition, the card will not show any burn marks and thus improves the finish of the design.

In this design I have sampled the range of colours available for me to from the supplier and aligned them with photoshop. This allowed me to pre-judge the colour wheel options on offer for my build. This design does not flow as well as the previous colour wheel test due to the supply restrictions .

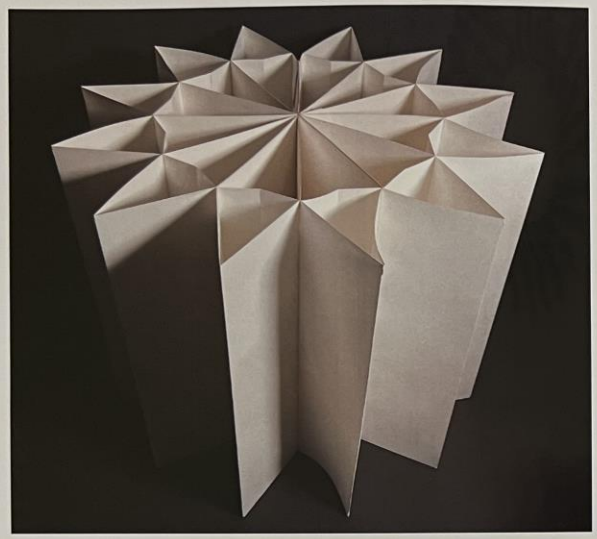


For this design I used a colour palette associated with tropical flowers which shows the vibrancy of nature.

For this palette I used green and blue to create tonal contrast with colours that compliment one another.

The colour combinations for this design work well together, as the reds add sharpness and strength whilst the pink brings a softness.

Full Size 12 Segment Prototype

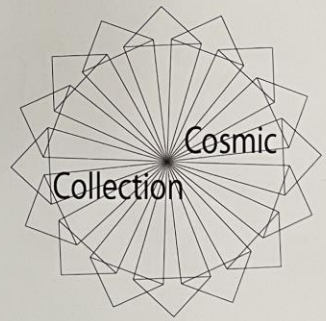


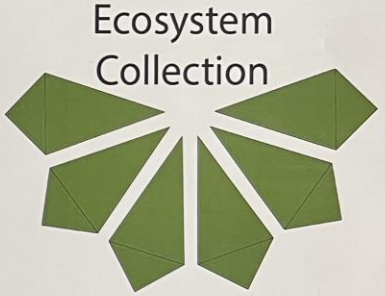
In this design I reduced the amount of segments from 16 to 12 to accommodate the colour palette I wanted to incorporate at the next stage. By reducing the segments it also decreased the build time needed to construct the table and the paper and materials needed to make the structure. However, this did not appear to negatively impact on the ability of the structure to hold significant weight under test, 100kg (Figure 5) similarly to the 16 pieces design. The same closure tabs were incorporated which were a development from a previous design (Figure 6).

Figure 5

Figure 6

Creating a Product Identity: Initial Ideas





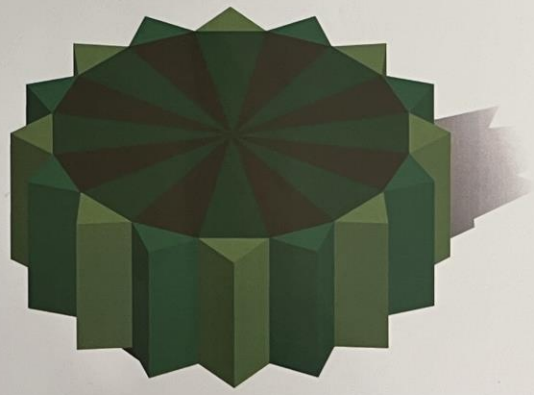
Research On Table Collections

Table collections often consist of three different sizes of table. The common sizes are a tall narrow table, a short wide table and a table that falls somewhere between the two.
Although I would have wanted to implement this sizing structure through my design concept. I was restricted due to the size of the paper available and shared access time to the laser cutter.
Therefore, given these constraints I have adapted the sizes of my collection accordingly.

Dimensions of the tables:

- Width: 150mm Height: 800mm
- Width: 800mm Height: 150mm
- Width: 600mm Height: 450mm

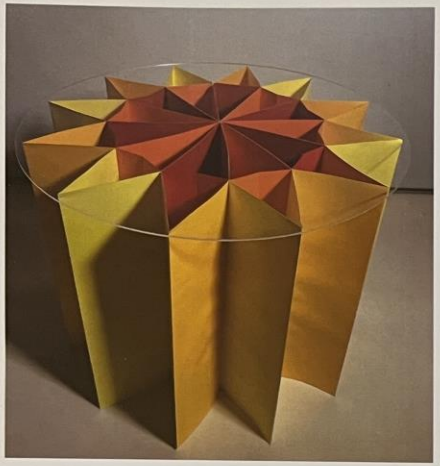
Research On Table Collections



I used Adobe Illustrator to create a preview of how the tables would conceptually appear in the different sizes and colour combinations I had selected from those available to me for my final build.
The colours form a table collection which represents Tropical plants (Flora).
The blue and pink table represents the Passiflora species known as the passion flower which is a genus of over 550 plants and vines.
The yellow and orange depicts Hibiscus which is also a genus of flowering and decorative plants, many of which have medicinal properties.
Finally, the green table represents the Fern which is a diverse and abundant range of vascular plants.
Collectively the tables come together to make the:

Tropical Collection

Final Evaluation – Tropical Collection

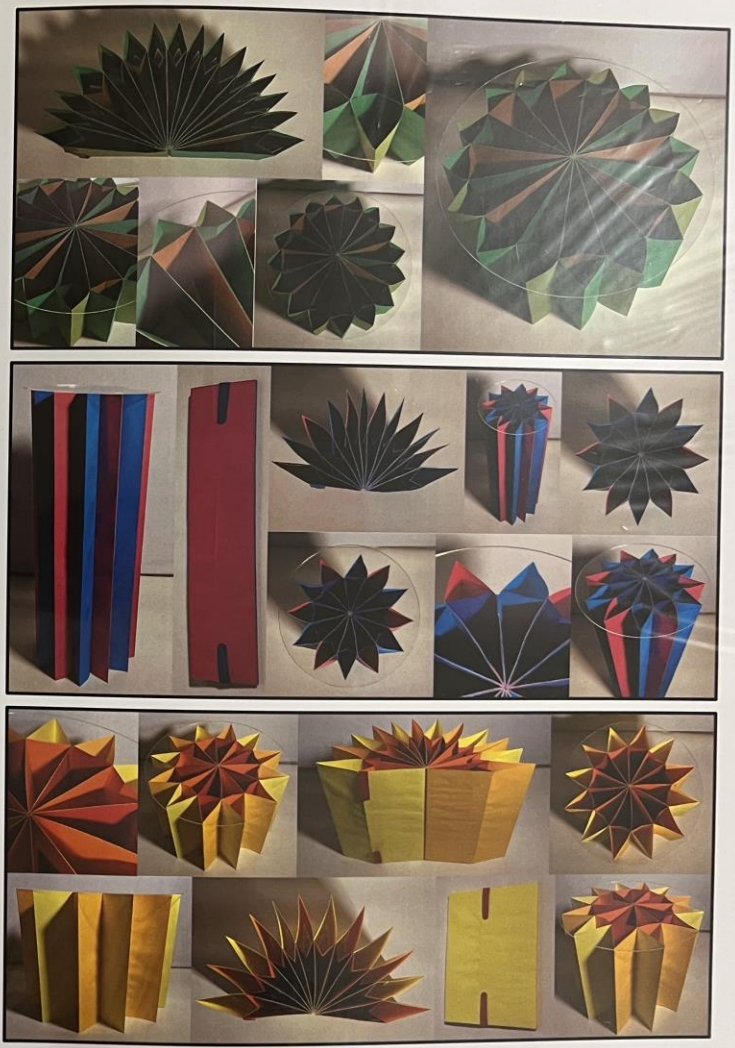


I wanted to use kinetics with the intent of designing a table with motion that drew parallels from the organic movement seen in nature. My design had to be fully collapsible whilst ensuring it could change shape in response to a change of environment. I wanted the movement of the table to be an intrinsic part of the user experience, it had to be effortless, elegant and captivating.

My final design has been inspired by all three of the designers I researched. Konishi's use of paper and his innovative paper folding concertina technique. The technical brilliance of van Embricqs *Rising Table* design, moving from the flat plane to 3D form. Finally, Ian Stell's pantograph mechanism inspired the development of my folding modular compartments.

I believe I have realised the design intention for my kinetic table by creating a form that is easy to erect by the user. The functional merit of the concertina structure is extremely strong, able to hold over 100Kg. My final table folds completely flat and opens to the 3D form in a singular 360-degree rotation which is both seamless and graceful. The inspiration for tropical was taken from the colour wheel palette associated with tropical flowers.

Ultimately, I believe I have created a product that has delivered both **function and form**.



Personal Study

KINETIC DESIGN

By Nathan Roberts

Everything in this world is subject to constant development and adaptation to its surroundings. Kinetic design tries to find answers and ways for products to adapt to these changes and user needs. Kinetic designs can change the appearance of a product, change their function, and meet the evolving requirements and demands of a modern world.

In this study I have analysed kinetic design, focusing on three designers that have used kinetics to intrinsically involve the user. I have also discussed how these innovative designers develop kinetic ideas, techniques, and processes to deliver solutions that have influenced my own designs and studio practices.

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Chapter One

1.1 Robert van Embricqs: *Rising Table*

Robert van Embricqs (Fig. 1) is a Dutch designer and architect based in Amsterdam. He is known for his *Rising Series* which is a range of innovative furniture. Van Embricqs' style brings poetic form to function, as he finds design inspiration in bone structure, plant life and movement.

Figure 1
Robert van Embricqs

The *Rising Table,* (Fig. 2) was designed in 2012 and is unconventional compared to traditional tables, flat top and legs. This groundbreaking design is made from a single wooden board. The table starts out flat but due to the latticework of beams, it has the capacity to intricately unfold itself into a functioning table. Likewise, it can seamlessly reverse back to its original flat shape thus allowing for easy transportation. Moveable furniture is becoming increasingly popular, and the *Rising Table* addresses this need whilst adding the mesmerising and pleasurable experience of opening and closing.

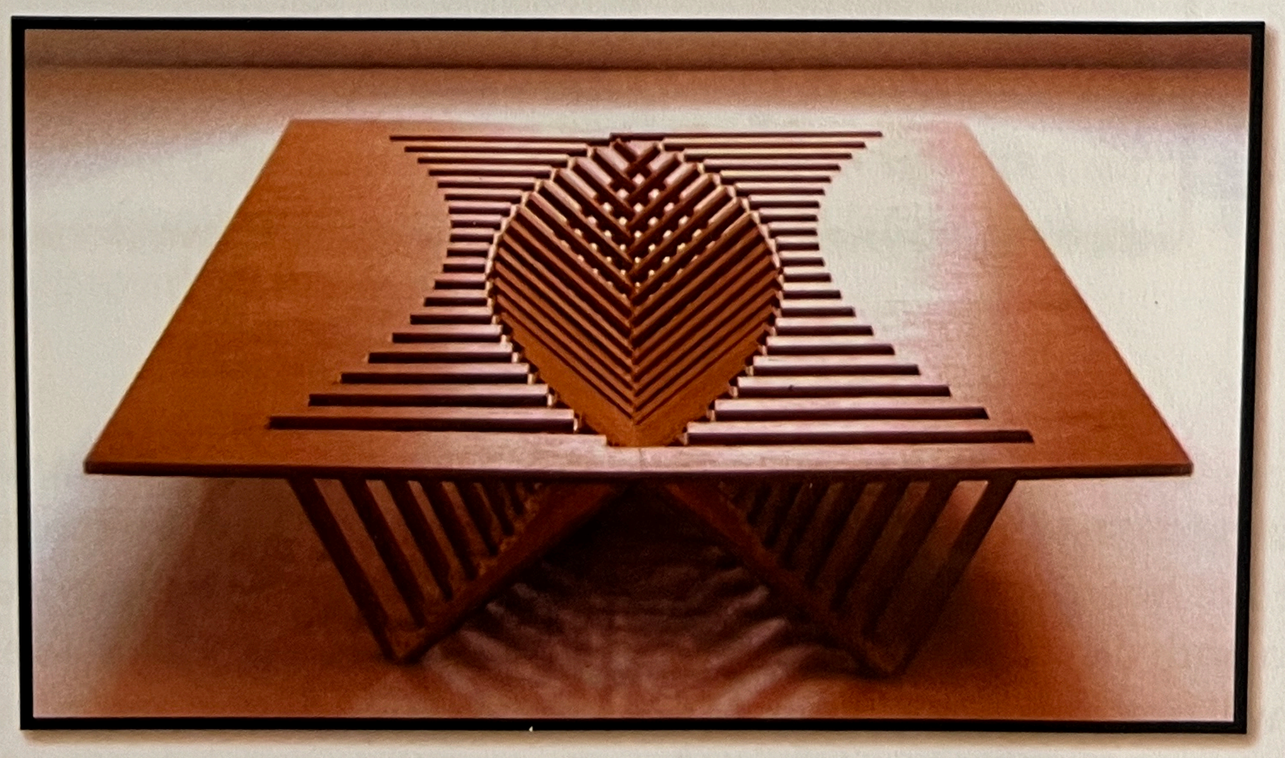

Figure 2
Rising Table

The *Rising Table* was awarded 3rd prize in the Fubiz Awards in 2013.

Van Embricqs commented, "Flat-pack furniture is functional, however, designers do not look to form" (Ted Talk, 2018). In my opinion, this is due to flat-pack furniture being designed for mass production thus functionality is the primary consideration. Therefore, designs remain simple for mass production by machines and the assembly kept easy for the consumer.

Van Embricqs added, "I want to produce designs that function in nature with a designer's perspective of beauty" (Ted Talk 2018). I understand '*function in nature*' as van Embricqs use of biomimicry to inspire the functional element of his designs. Biomimicry is taking learning from nature and emulating the form, process, and ecosystems of the natural environment to create sustainable designs.

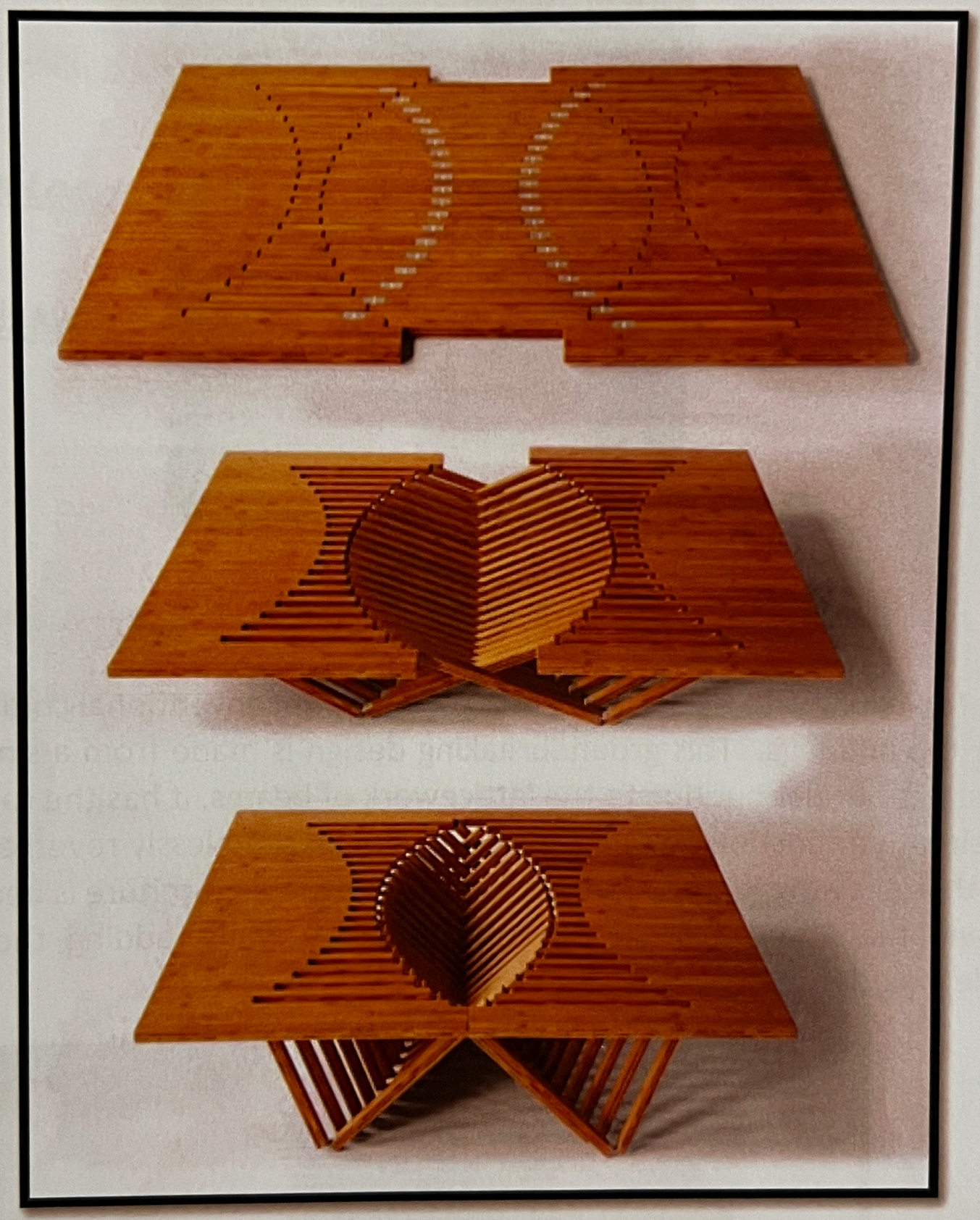

Figure 3
The *Rising Table,* Flat to Fully Extended

The *Rising Table* contains an innovative kinetic transformation mechanism, achieved by cutting a single flat board into a precision set of components. Van Embricqs stated, "I want the materials to both dictate and guide the design" (Archilovers). He realises this by studying how the wood will react to each cut, observing the optimum design and allowing the material to dictate how the table shape evolves. When the cutting process is complete, the intricate latticework pattern is revealed (Fig. 3). The table can be elevated to full height and lower back to the flat position.

Van Embricqs uses high quality materials, and in particular caramel bamboo, known for its strength, durability, and versatility. Each table is created from a single piece of board.

The cuts in the wood naturally create patterns in the top of the table, complemented by the fine grain and rich brown of the bamboo. The latticework is symmetrically balanced, however, the design retains an organic aesthetic courtesy to it opening akin to a blossoming flower.

Van Embricqs collaborates the board cutting process with following the natural properties of the material to bring a natural organic motion that realises his design vision. He stated that "he is not the only designer who uses this philosophy (using nature) and that a great number of designers and artists, including Leonardo Da Vinci, have been inspired by nature" (van Embricqs Website). I believe this is because nature brings its own form and function which creates natural beauty through an evolving design process. The evolution of the giraffe demonstrates how the graceful beauty of the long neck, its form, allows the giraffe to eat high leaves in trees, its function.

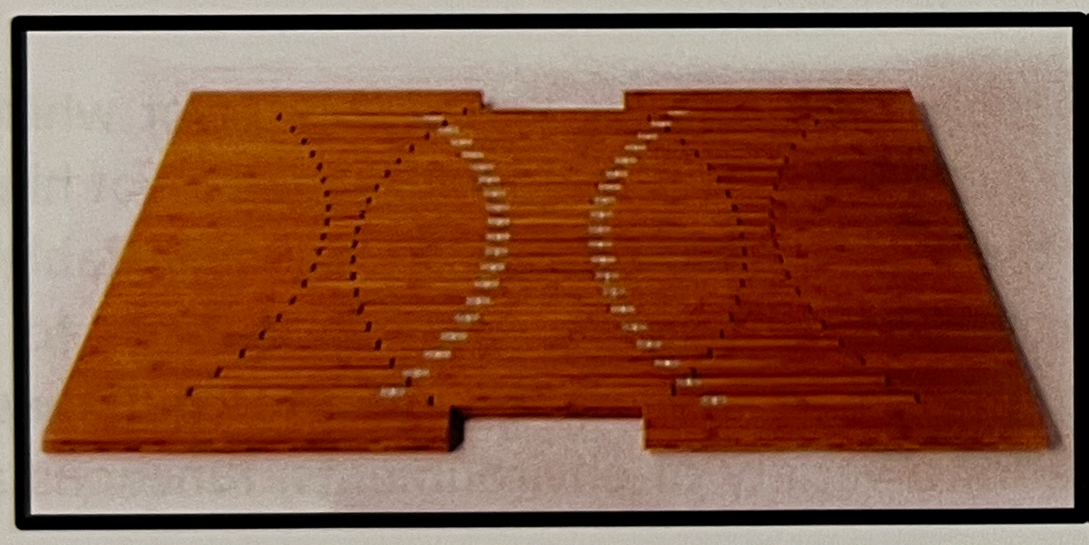

Figure 4
Flat Lattice &
Brass Hinge Assembly

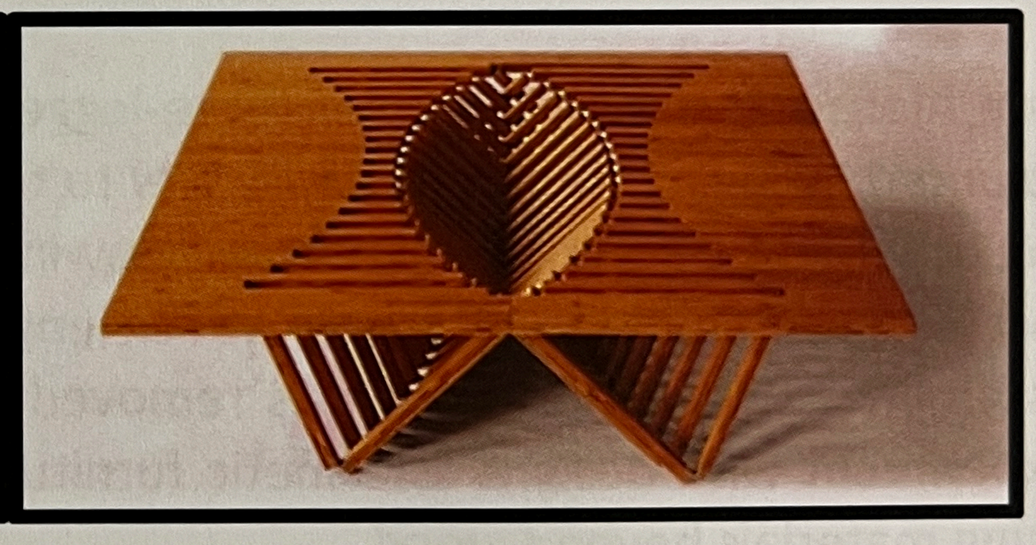

Figure 5
Extended Kinetic Transformation
Demonstrating Lattice

The table lays completely flat (Fig. 4) and by lifting each side, the support structure unfolds below (Fig. 5). This reveals the beauty of the precision latticework as the mechanism pivots on the brass joints providing the legs.

The key to this design is the pivot and hinge detail which enables the table to move from flat pack to fully extended with a V-shaped support structure below, providing stability.

In other furniture designs van Embricqs uses comparable folding techniques including the very similar design for the *Rising Chair* (Fig. 6).

Figure 6
The *Rising Chair*

Another designer using wood to create kinetic furniture is London based designer, Tomas Alonso. Alonso creates tables with minimalist lines that are based on a simple trestle concept. Similarly, Alonso explores how different materials can be used to structure designs that fold flat for storage or transportation.

One Alonso design is a circular three-legged table, with one leg acting as a pivot which is coloured, bringing a contemporary feel to the piece (Fig. 7). The dowel shaped pivot hinges the other legs via horizontal braces, allowing them to open and close. The circular tabletop locates position through a hole which engages with all the legs bringing stability to the assembly. When the tabletop is removed the legs fold flat (Fig. 8). Alonso continues to experiment with designs for kinetic furniture for a variety of environments, functions and using materials beyond wood.

Ultimately it is acknowledged that van Embricqs' furniture moves with fluidity and grace when opening and closing. Whereas Alonso's designs require parts to be removed and added to achieve this which render them more clunky.

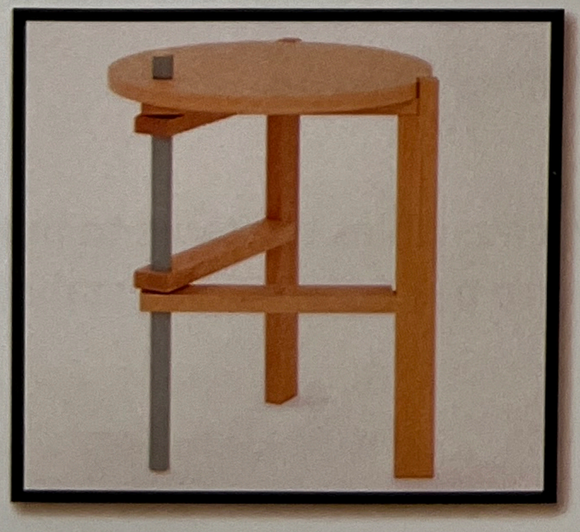

Figure 7
Alonso's Kinetic Table Design
Extended

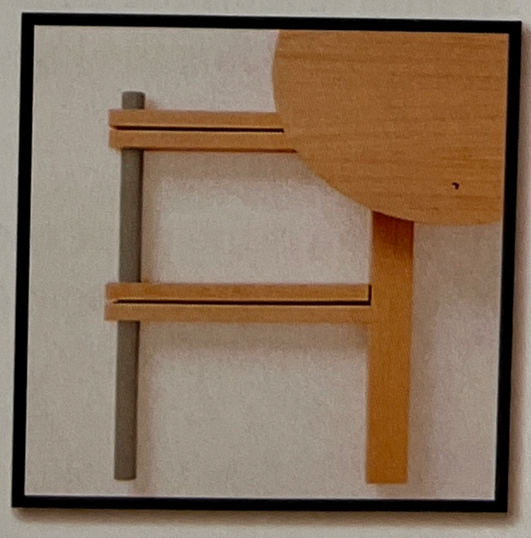

Figure 8
Alonso's Kinetic Table Design
Folded Flat

In my opinion, van Embricqs has achieved the intent of his design that is to function well whilst also being aesthetically pleasing. The *Rising Table* moves with fluidity and grace whilst the overall shape and lattice pattern of his creation, with the cutting techniques used, renders his design unique. The organic shape and the distinctive pattern created by the folding mechanism underpin this distinctive design which is the antithesis of a traditional table.

However, I do not believe that he has achieved his intention for this table to be mass produced given that each piece requires precision cutting and skilled assembly to move naturally and to achieve the organic shape. It is a true quality piece, requiring a top-quality build.

My conclusion is that van Embricqs has designed a functional table with the inspiration for its form taken from the natural characteristics of the wood from which it is carved. He has created an elegant and aesthetically pleasing table which moves gracefully when it extends up and contracts down.

I have been inspired by the vision of van Embricqs in his use of nature as his inspiration for overcoming design constraints.

1.2 Ian Stell: *Austrian Loop Chair*

Ian Stell is a highly regarded artist and designer from New York (Fig. 9). He attended the Art Institute of Chicago, graduating with a BA in sculpture and painting. His focus has developed over the years and now includes furniture and lighting designs that lie at the intersection between art, engineering, and functional objects.

Figure 9
Ian Stell
Artist & Designer
At Home & At Work

The *Austrian Loop Chair* (Fig. 10 & Fig. 11) is in the form of two conjoined chairs with a mechanism that allows them to expand and change shape. For the design of the chair construct to work, Stell used a system based on the concept of an artist's pantograph which made the design kinetic.

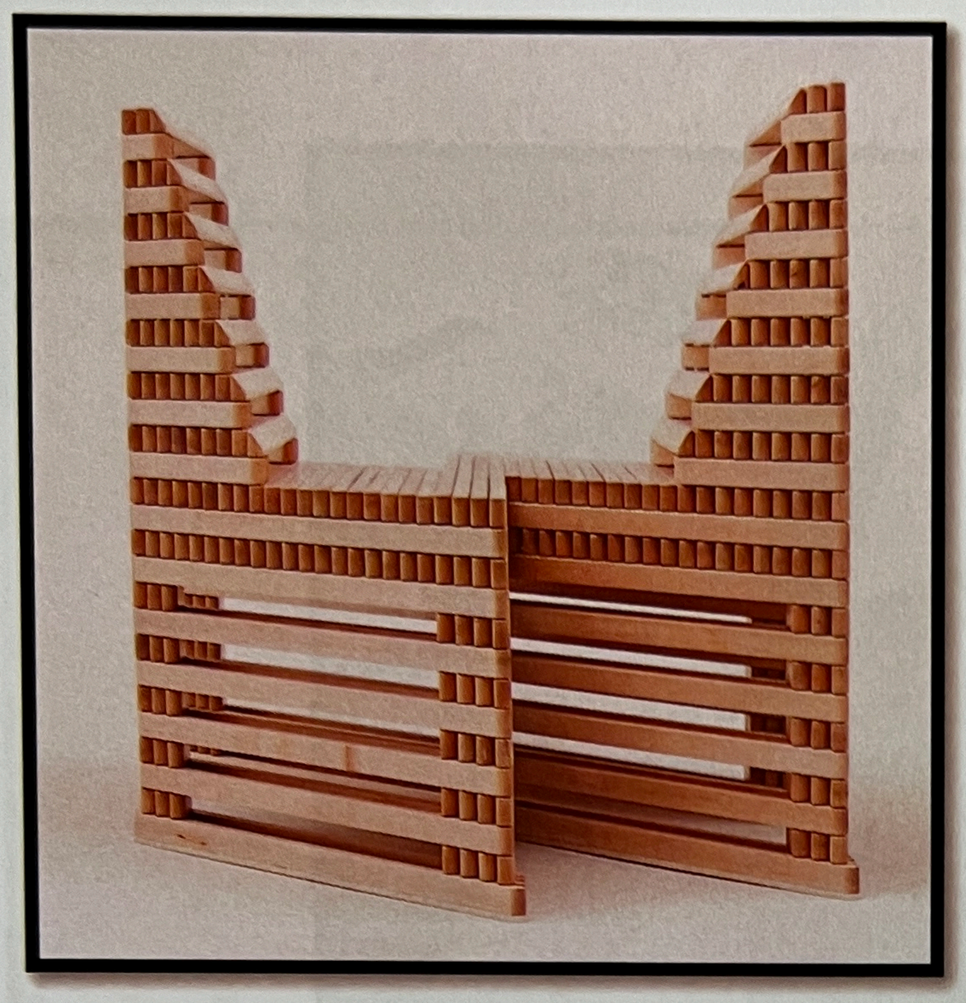

Figure 10
Australian Loop Chair
Contracted

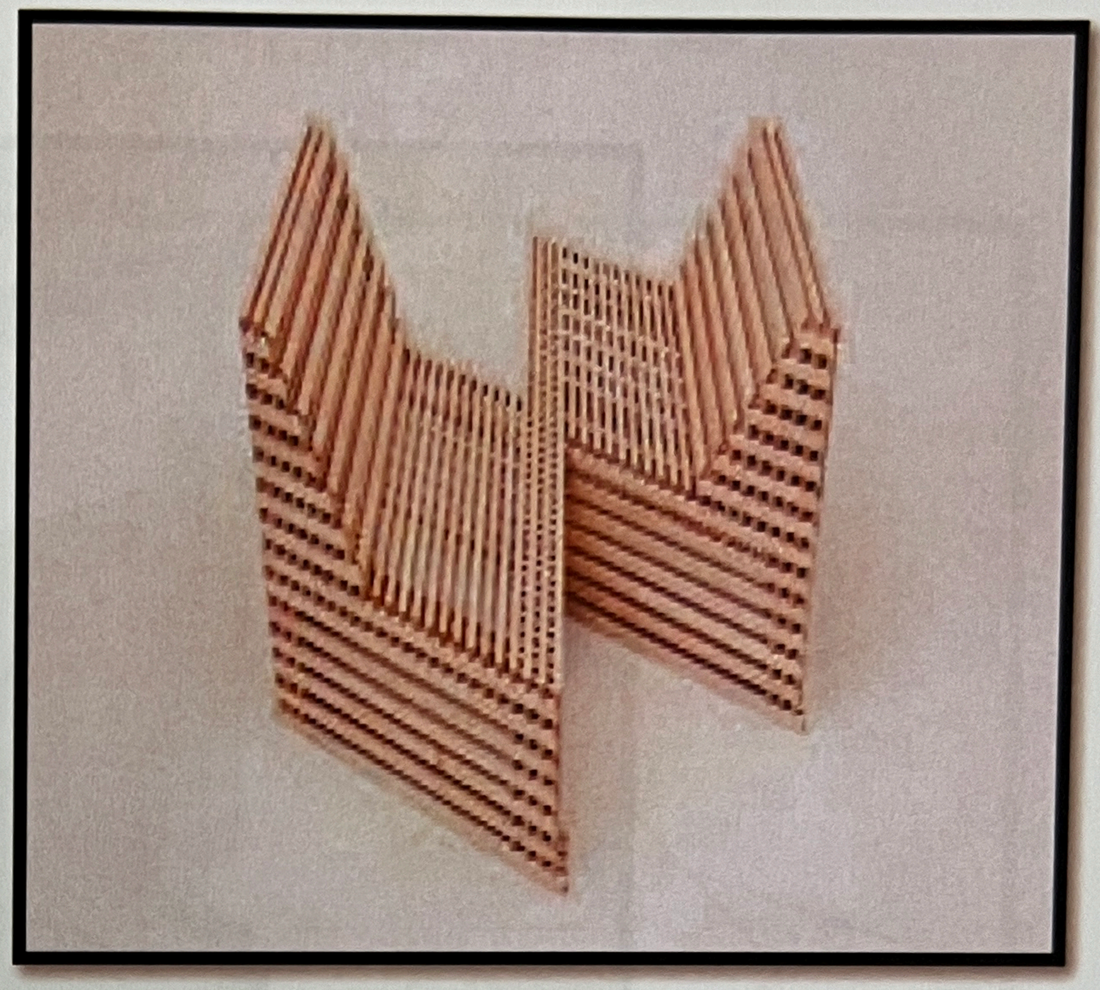

Figure 11
Australian Loop Chair
Expanded

The chair is constructed from approximately eight hundred individual pieces of maple wood and around two hundred brass pivots which enable its movement. I believe that maple was used in the design as it is known for its durability and strength which is often favoured in furniture making. Together with the brass fittings for the pivots (also hard-wearing), the construct of the chair offers longevity.

Maple is a sustainable material which will resonate with the modern consumer. I believe sustainability is now a consumer priority and demonstrating this furniture has been sourced and manufactured with minimum impact on the environment will enhance its appeal.

Maple is also able to take a variety of wood stains which allows it to be toned to fit easily into different design schemes. The only notable downside to using maple is its natural light colour and dense grain structure render it susceptible to marks and scratches against its characteristically smooth surface.

Stell's inspiration for the *Austrian Loop Chair* was a sixteenth century instrument called the pantograph (Fig. 12) which was designed by Christopher Scheiner. The working principle of the pantograph is based on a four-bar mechanism in which one link is fixed and other links are pivoted which allows movement according to the tracing point. The principle of the pantograph has been incorporated in Stell's design to create the kinetic motion of the *Austrian Loop Chair*.

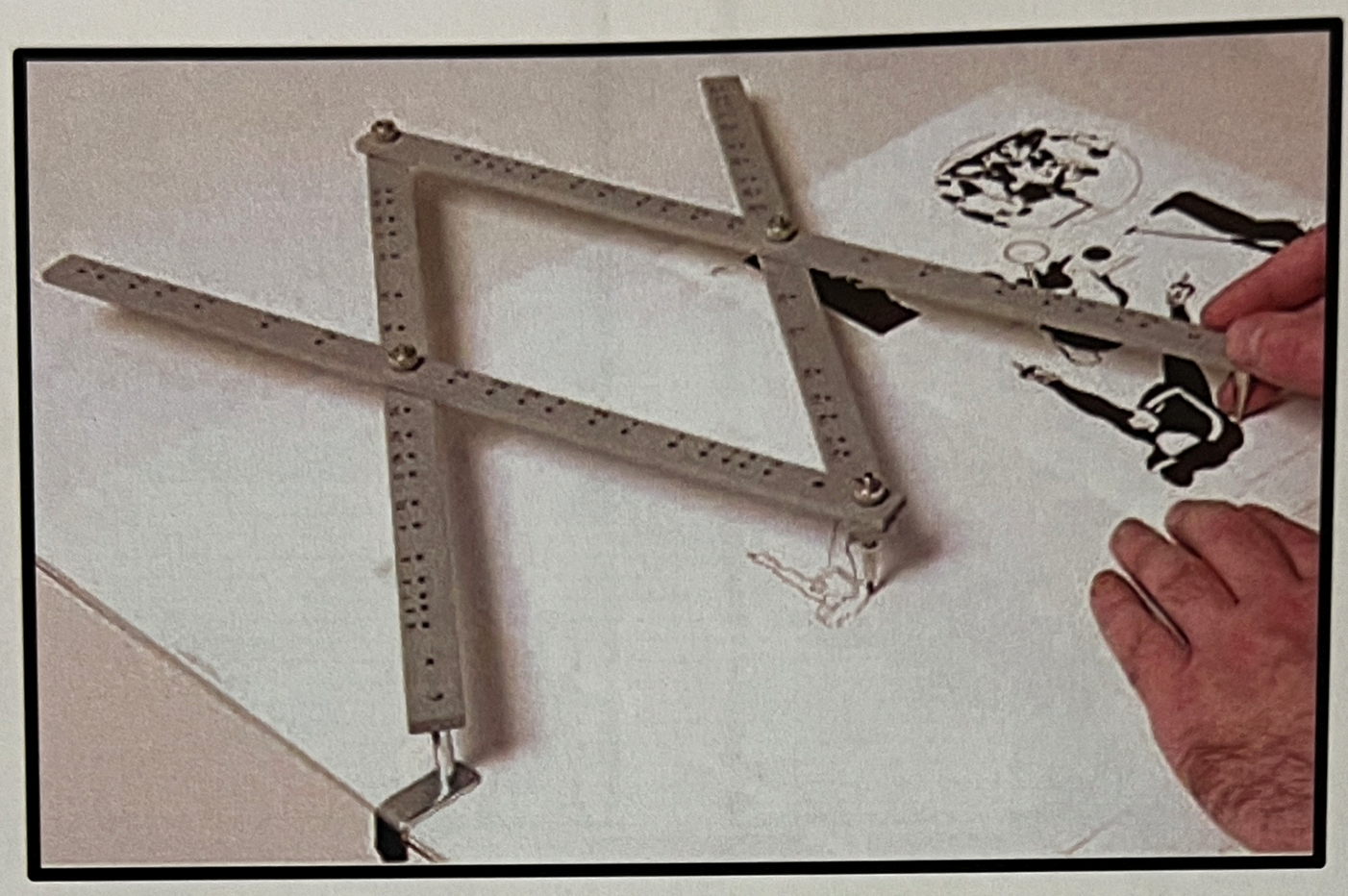

Figure 12
Pantograph

By using this method, the table can compress or extend like an accordion (Fig. 13), forming a characteristic rhomboidal pattern. This system is also found in other everyday items, for example the scissor extension mechanism of a wall mounted mirror (Fig. 14).

Figure 13
Picture of an Accordion

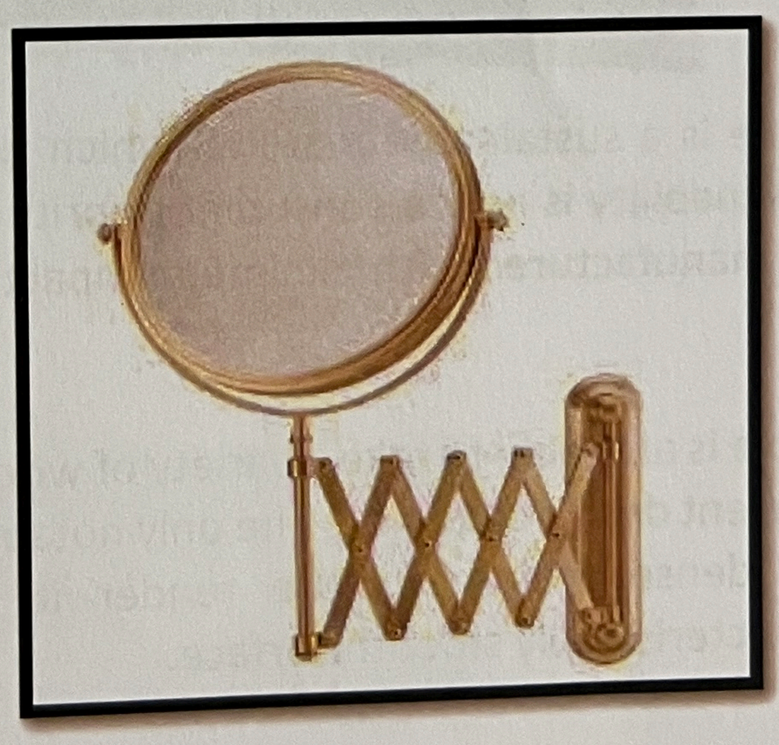

Figure 14
Mirror Scissor Mechanism

Stell developed his design for the *Austrian Loop Chair* on the pantograph's mechanical principle, creating a hinged lattice system. Stell used 3D digital modeling to simulate the lattice pattern in its full range of motion (Fig. 15). The model provides precision drawings for each component of machined maple and interlocking hinges. The long pieces of wood were then placed lengthways with the shorter lengths placed at right angles before inserting the brass joins. Each joint acts as a guide for the chairs motion providing a subtle hidden mechanical system.

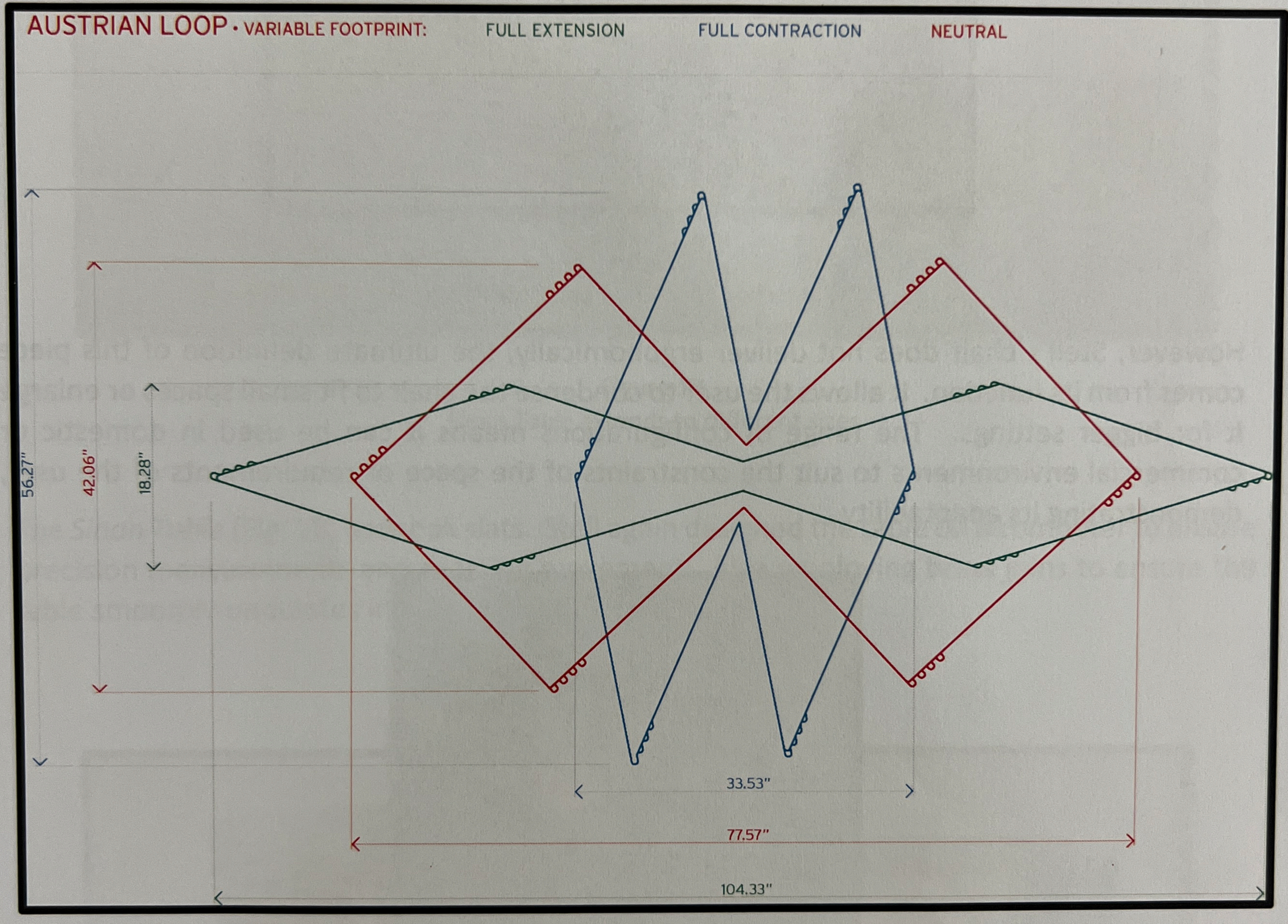

Figure 15
Austrian Loop Chair in 3D Modelling Diagram
Detailing Precision Dimensions

The lattice pattern of the design and the pivot system allows for the natural expansion and contraction of the material and accommodates its use in different climates or room conditions.

The *Austrian Loop Chair* is geometric and angular, moving from cuboid to flat, expanding and contracting, creating lattice patterns. The fine grain runs in a singular direction with few curls or waves, providing a uniform, sleek pattern with a smooth texture (Fig. 16). Maple is a light creamy colour when new which will naturally darken when exposed to oxygen and UV light. Thus, Maple furniture always evolves naturally and changes hue over time.

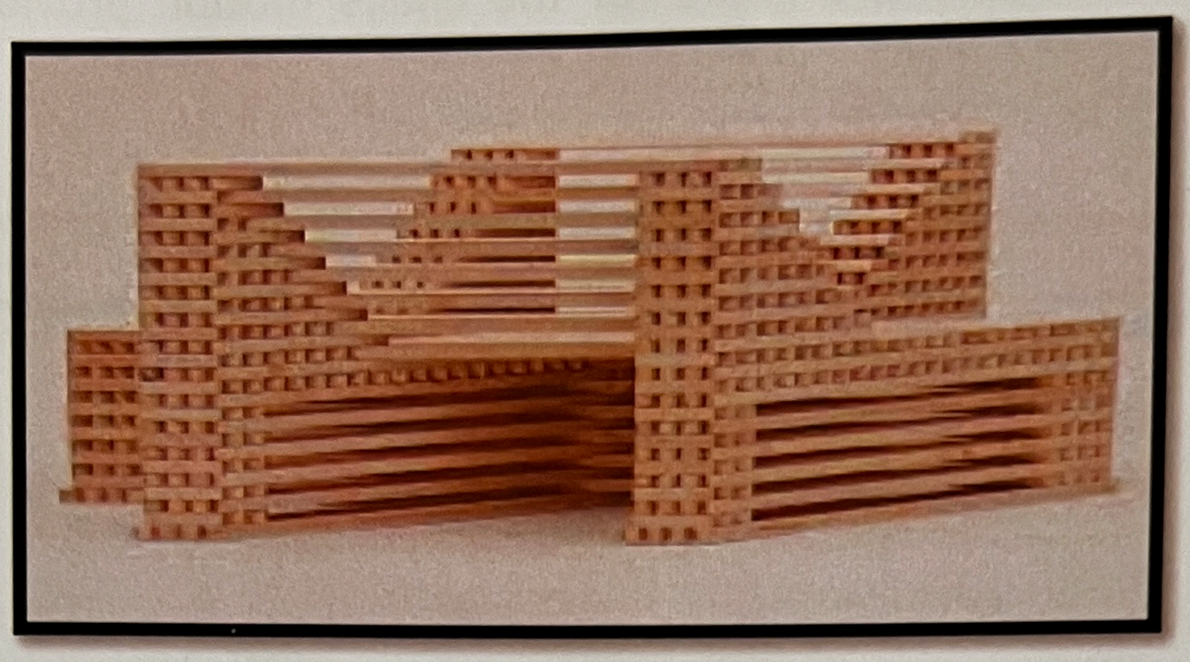

Figure 16
Austrian Loop Chair Lattice Pattern

However, Stell's chair does not deliver ergonomically, the ultimate definition of this piece comes from its function. It allows the user to condense the chair to fit small spaces or enlarge it for bigger settings. The range of configurations means it can be used in domestic or commercial environments to suit the constraints of the space or requirements of the user, demonstrating its adaptability.

Figure 17
Victorian Conversation Chair

Stell's chair echo's the *Victorian Conversation Chair* popular in the 1800's (Fig. 17). A piece of furniture with two seats arranged in an S-configuration. Enabling two people to converse whilst maintaining modesty and propriety, prominent social rules of the period.

Stell has modernised the concept, providing the opportunity for two or more people to enjoy conversation close-up or at distance, encouraging social interaction.

Stell often employs the pantograph principle in his designs which has become a trademark or signature style. In Stell's table designs he uses this trait, enabling users to configure the table to fit their personal needs.

Two specific examples of Stell using this principle are the *Sinan Table* and the *Sidewinder Table*.

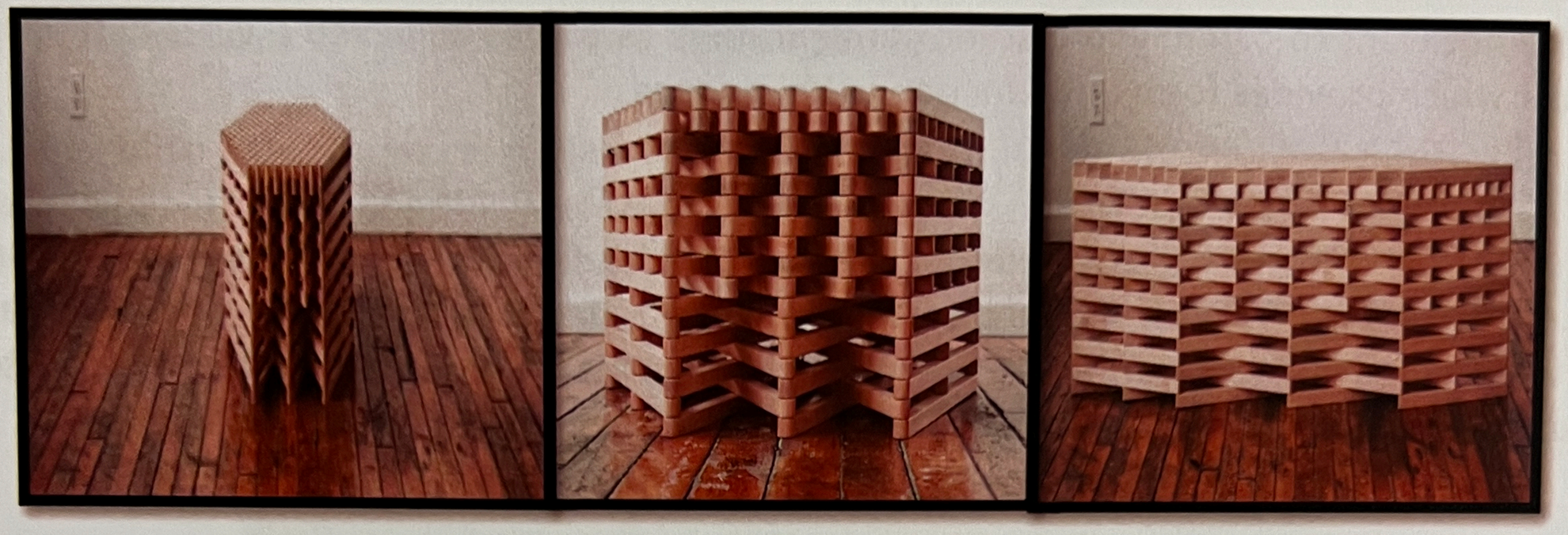

Figure 18
Sinan Table extends to different sizes

The *Sinan Table* (Fig. 18) uses oak slats. Stell again designed the table on a computer to ensure precision measurements and exacting movement. Also employing brass joins to ensure the table smoothly undulates into position.

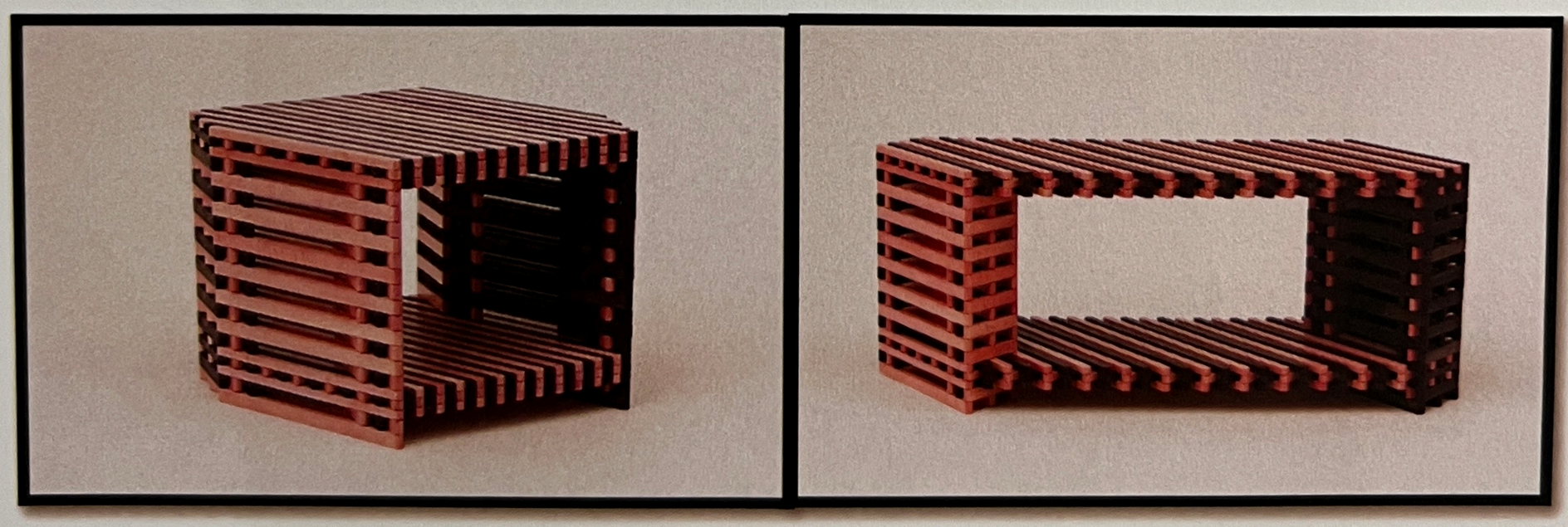

Figure 19
Sidewinder Table moves in multiple dimensions

The *Sidewinder Table* (Fig. 19) uses ebony-stained white oak and maple. The maple's unique wavy grain creating the illusion of depth in this piece as the grain curl along the wood. Again, brass pivots provide smooth motion.

I find Stell's kinetic design of the *Austrian Loop Chair* visually intriguing. I am fascinated by the way his furniture can transform a space by transforming in a space. Stell's designs provoked me to explore how materials can influence the feel and the movement elements of a design.

By incorporating the pantograph principle, Stell has taken the simple core concept of seating and created a modern adaptable kinetic furniture solution. The *Austrian Loop Chair* meets the needs of modern domestic and commercial buildings either lacking in space or the user does not want to commit to a static configuration. Stell has achieved a visually fascinating chair which provides form and function in abundance.

Stell shared "the mutability (tendency to change) of his furniture should serve a purpose but the act of transformation should be a kind of dance" (Designboom, 2016). I believe that the intent behind Stell's statement is to highlight that whilst his furniture should have functional purpose, it should move with grace and fluidity. In my opinion Stell fulfills this intent.

1.3 Hiromitsu Konishi: *Kamijiya Table*

Konishi is an interior designer based in Kyoto, Japan. He designs for Miso Studios, a design company in New York and Tokyo, whose design philosophy and style are described as "an Eastern soul with a Western aptitude" (Miso Studio website). Konishi also co-leads the Source Organisation Network, (S.O.N), a design research unit where architects and designers explore new methodologies in architecture and interior design.

In 2011, Miso Studios were commissioned to create display furniture for a traditional Japanese paper store. Konishi, in collaboration with S.O.N, designed the *Kamijiya Table* (Fig. 20); a collapsible, portable table made from folded paper with a round clear acrylic top.

It won the 2011 Kyoto Design Award.

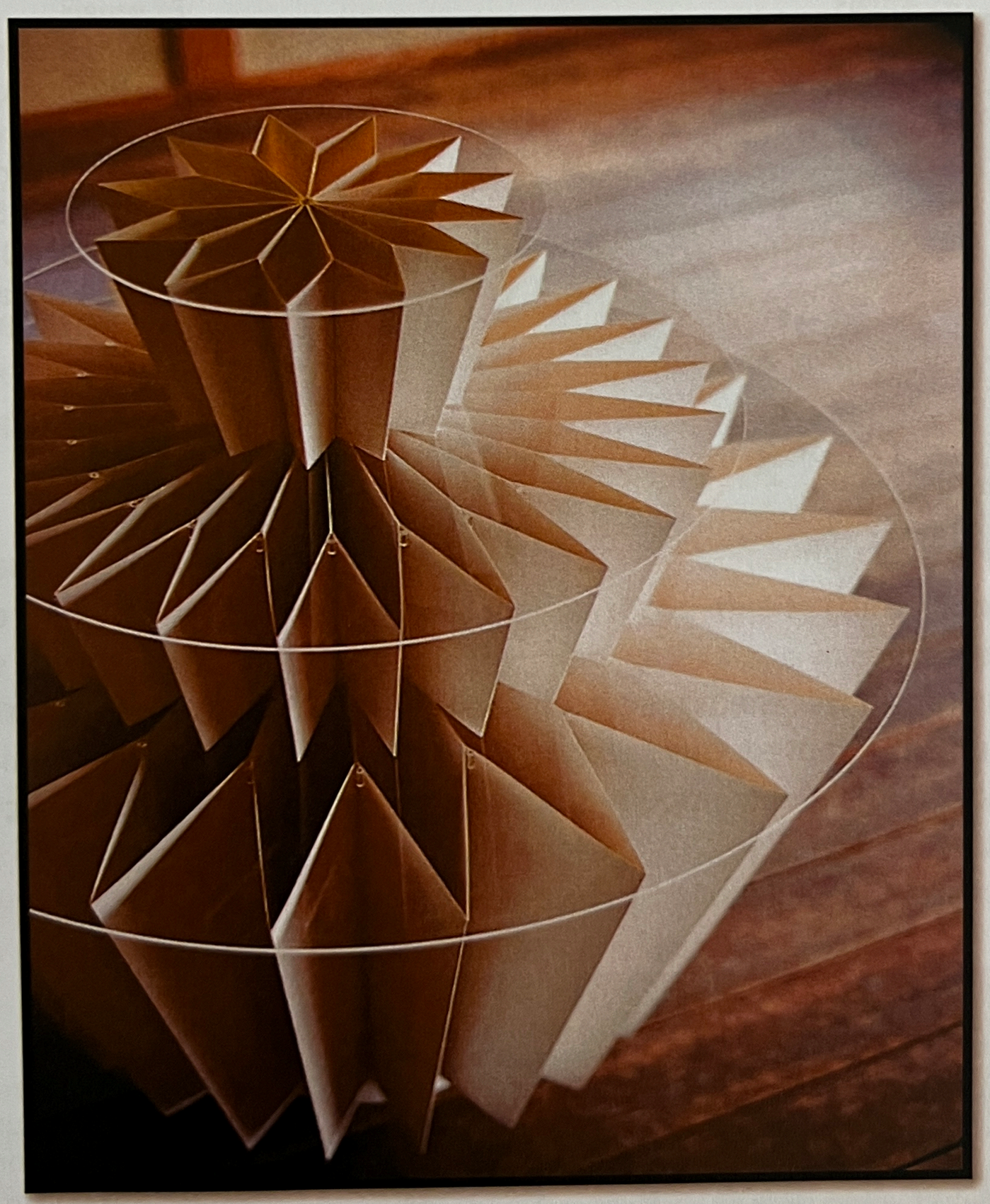

Figure 20
Kamijiya Table
Designed by Hiromitsu Konishi

The design was commissioned by Suzuki Shofudo, a distinguished retailer of goods made from traditional Japanese paper, Washi. As such, the design brief for the furniture was to use only paper for the structure on which the retailer's products would be placed. The use of acrylic plastic on top of the structure allowed the foldable paper base to be seen and created a flat surface for products to be displayed. I believe that acrylic plastic was used as it weighs fifty percent less than glass and would not compromise the stability of the paper structure. In addition, it offers a safer option in a retail outlet as it is more durable and safer than glass.

Konishi used paper's natural characteristics of being portable (light weight), foldable and flexible to explore, experiment and develop different techniques, including ways to strengthen the paper and reinforce the structure of the table. Inspiration was taken from two sources. The first being the Sense, a Japanese folding fan (Fig. 21), which can expand and contract back to its original shape, a design feature to enable the table to be movable and foldable.

Figure 21
Japanese Sense Fan
Used by Samurai & Japanese Aristocrats
Typically Made of Bamboo Ribs & Paper

The second inspiration was the honeycomb shape (Fig. 22) for the framework of the table. In my opinion, Konishi adopted the geometry of this shape as it uses minimal amounts of material to hold the maximum amount of weight which is an extremely effective and efficient design feature.

Figure 22
Honeycomb Shape
Found in Beehives
Limited Materials Yet Extremely Strong

Konishi glued each piece of paper in the form of a corolla, outer petals on a flower (Fig. 23), to create three different sized modules. The modules were then stacked on top of each other to form a multi-layer display table (Fig. 24).

Figure 23
White Corolla of a Daisy
Forms the Floral Envelope
Providing Shape & Pattern

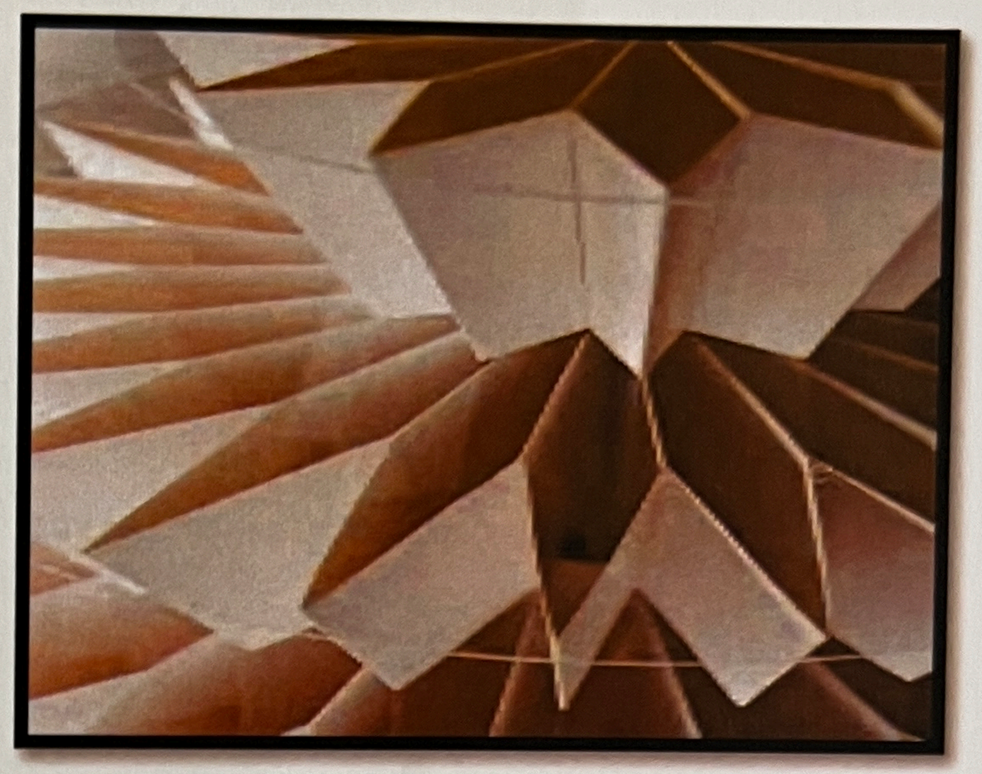

Figure 24
Kamijiya Table with Clear Circular Top
Demonstrates the Corolla Incorporated
In the Design

Konishi developed the design for the *Kamijiya Table* "working on the paper's workability and levity" (Architizer website, article 2014). Konishi used the versatility and light weight properties of paper to explore and manipulate it into a unique three-dimensional form.

The unique shape and pattern of the table base provides the main focal point. By placing the modules on top of each other and aligning the patterns, this feature ultimately provides uniformity. The white/cream colour of the structure unifies and accentuates the form and provides a tone that is seen clearly without becoming overpowering.

The rim of each clear circular top follows the outer line of the paper structure at each level and complements the overall shape of the table, adding balance to the design. The table has a contemporary style but pays homage to the history of Japan.

The neutral tone of each tier allows the client's brightly coloured and contemporary patterned merchandise to be prominently displayed. The table is lightweight and collapsible so it can be moved around different parts of the shop with ease which allows the displays to change regularly (Fig. 25). The bottom module of the table can also act as a standalone table which increases its functionality.

Figure 25
Suzuki Shofudo's Colourful Paper Products
On a *Kaijilya Table*

The *Kamijiya Table* is the result of Konishi's collaborations with the Miso Studio and parties from S.O.N. The Miso Studio design team are influenced by Western simplicity and structure and the Eastern elements of colour, texture, pattern, and form. The designers and architects from S.O.N bring original thought and thinking. These collaborations have allowed him to explore new concepts and are evident in Konishi's development of designs that provide structures with physical strength, visual aesthetics, and the functional attributes of the *Kamijiya Table*.

Vadim Kibardin (based in Prague) and Ying Chang (based in London) are two designers who have also utilised paper in furniture design. The *Black Paper 37 Chair* (Fig. 26) and the *Malleable State Collection* (Fig. 27) are two examples of their designs. Both designers use the concept of layering paper to create viable furniture concepts, however, the furniture does not collapse and remains static. Kibardin and Chang produce their design pieces by using a form of papier-mache construct technique. They layer and glue sheets of paper together which provides strength and renders the paper malleable. It can then be crumpled, shaped, moulded and chopped to create three-dimensional furniture forms.

Figure 26
Black Paper 37 Chair
Designed by Vadim Kibardin
Date 2012

Figure 27
Table from *Malleable State Collection*
Designed by Ying Chang
Date 2013

The Victoria and Albert Museum (London) currently has an iconic paper chair design on display called *Chair Thing* (Fig. 28) which captures the ethos of the Pop Art movement of the 1960's. It was designed by Peter Murdoch in 1967 as part of his collection of furniture for the younger person. This simple form is folded from a single piece of card with flaps that slot into each other. This chair was supplied flat pack to assemble at home and was moveable and foldable for easy storage.

Figure 28
Chair Thing
Designed by Peter Murdoch
Date 1967

The *Kamijiya Table* was designed primarily for its function, but the form was also important due to the specific requirements of the company that commissioned the design. Konishi developed a series of beautiful and delicate patterns using folded paper and through research and experimentation with the honeycomb concept he managed to design a strong yet lightweight and portable structure. The *Kamijiya Table* is able to expand and contract like a concertina to create an easy folding, light weight and transportable table design.

In my opinion Konishi's *Kimijiya Table* is an innovative and unique display concept that is strong and collapsible despite being made from thin sheet material that is not recognised for its strength or durability.

Chapter Two

2.1 Development of Ideas

In the exploration of my 3D Art & Design major project, I wanted to use kinetics with the intent of designing a table with motion that drew parallels from organic movement seen in nature. My design had to be fully collapsible for transportation or storage whilst also ensuring it could respond to the ever-changing demands of space and the environment. Finally, I wanted the movement of the table to be an intrinsic part of the user experience, it had to be effortless, elegant and captivating.

With new technologies and materials constantly being adapted in the domain of kinetic table design, three designers came to prominence. Each emerged as an inspiring influence on my design concepts, development process and ultimately my final design. I researched a range of work from each designer before honing my analyse to a particular piece:

- Robert van Embricqs: *Rising Table*
- Ian Stell: *Austrian Loop Table*
- Hiromitsu Konishi: *Kamijiya Table*

These designers also stimulated my thoughts and understanding with respect to the selection of the materials for a design. In addition, their ideas and work extended my appreciation of how kinetics can influence the form and function of a design.

2.1.1 Robert van Embricqs

Robert van Embricqs used only two materials in his design for the *Rising Table*, a wooden bamboo board and brass joints. The table expands from a completely flat form into a functional piece of furniture (Fig. 29). Most impressively, this was achieved in a single fluid motion as the table lifts and the leg supports intricately unfold below. The user can similarly reverse the motion to contract the piece back to the fold flat position.

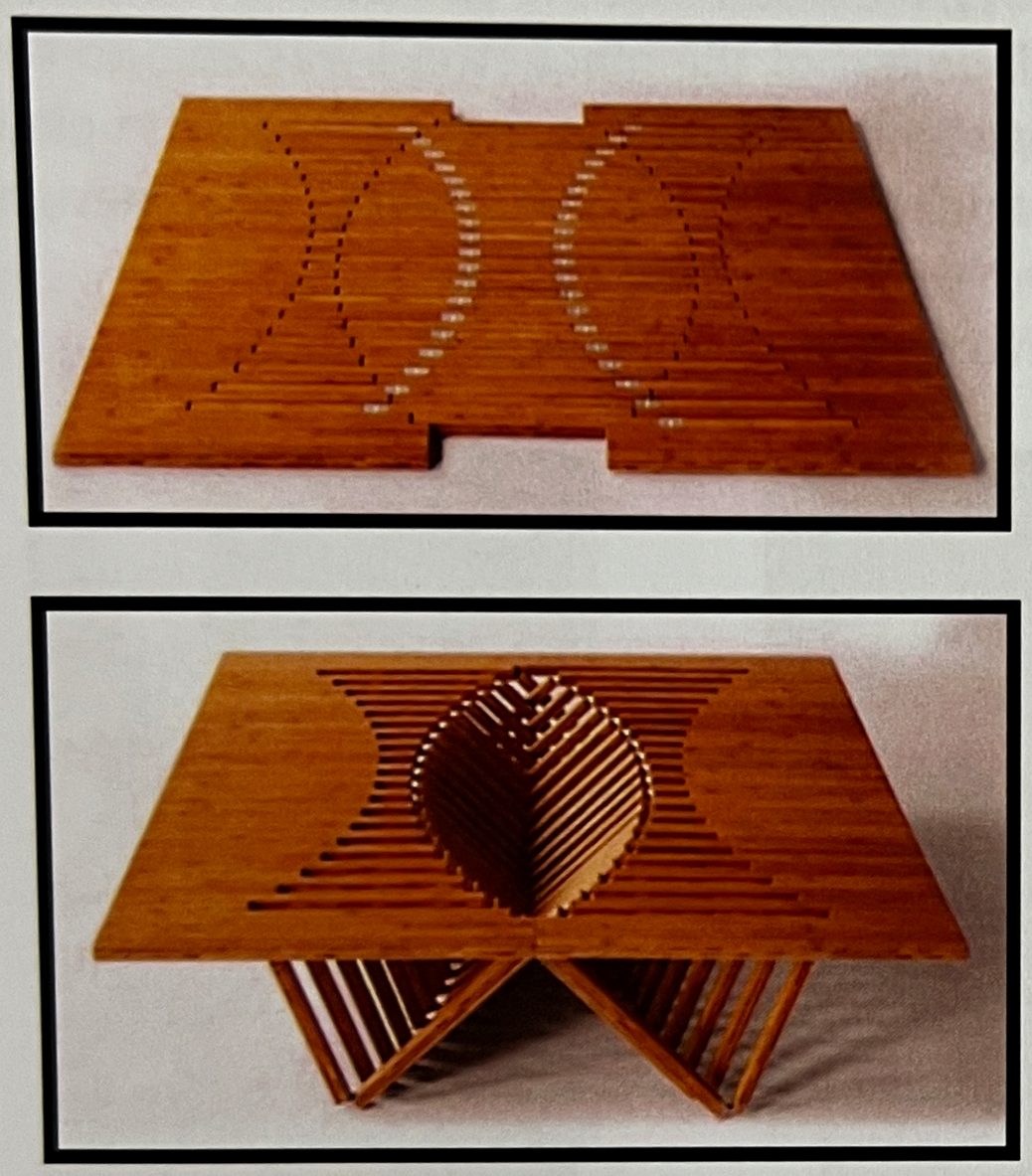

Figure 29
The *Rising Table* by Robert van Embricqs
Flat & Erected

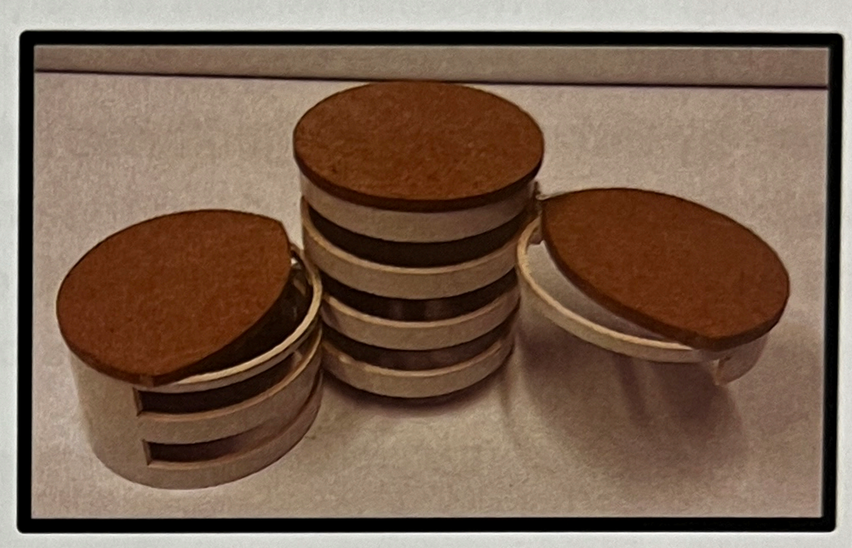

Figure 30
Folding Pipe Table Design Development
Inspired by van Embricqs

During the development of my design, I was influenced by the interlocking concept of the *Rising Table* being able to fold from the flat to erect in a fluid motion. My pipe table design can fold from a single pipe table, opening into multiple tubular pods via the interlocking element of the design (Fig. 30). This feature of the concept was inspired by the interlocking lattice of the van Embricqs *Rising Table*. The pipe table transforms by opening the interlocking hinged leaves of the model in a fluid 180-degree rotational motion of each pod. The development of the design considered different combinations of the number of interlocking table elements which altered the tables functional characteristic by increasing the available table surface.

2.1.2 Ian Stell

Stell's chair design uses the pentagram method to compress and extend his chair into different forms (Fig. 31). I was able to initiate kinetic motion in my concepts by introducing and experimenting with movement through my maquette building. By being able to handle and manipulate the maquettes, I was able to clearly analyse and overcome problems that would not have been possible to understand fully by designing in 2D CAD. Even generating 3D models or working in a virtual environment still has limitations verses a touchable model.

In my design for a wooden kinetic table (Fig. 32), I realised that the two pull out tables lacked support when extended. Through the development of the maquette, I was able to correct this flaw by introducing the pull out supports underneath that are visible in the pictures. Through my work I now recognise the limitations of drawings or computer aided design and the additional benefits of using maquettes.

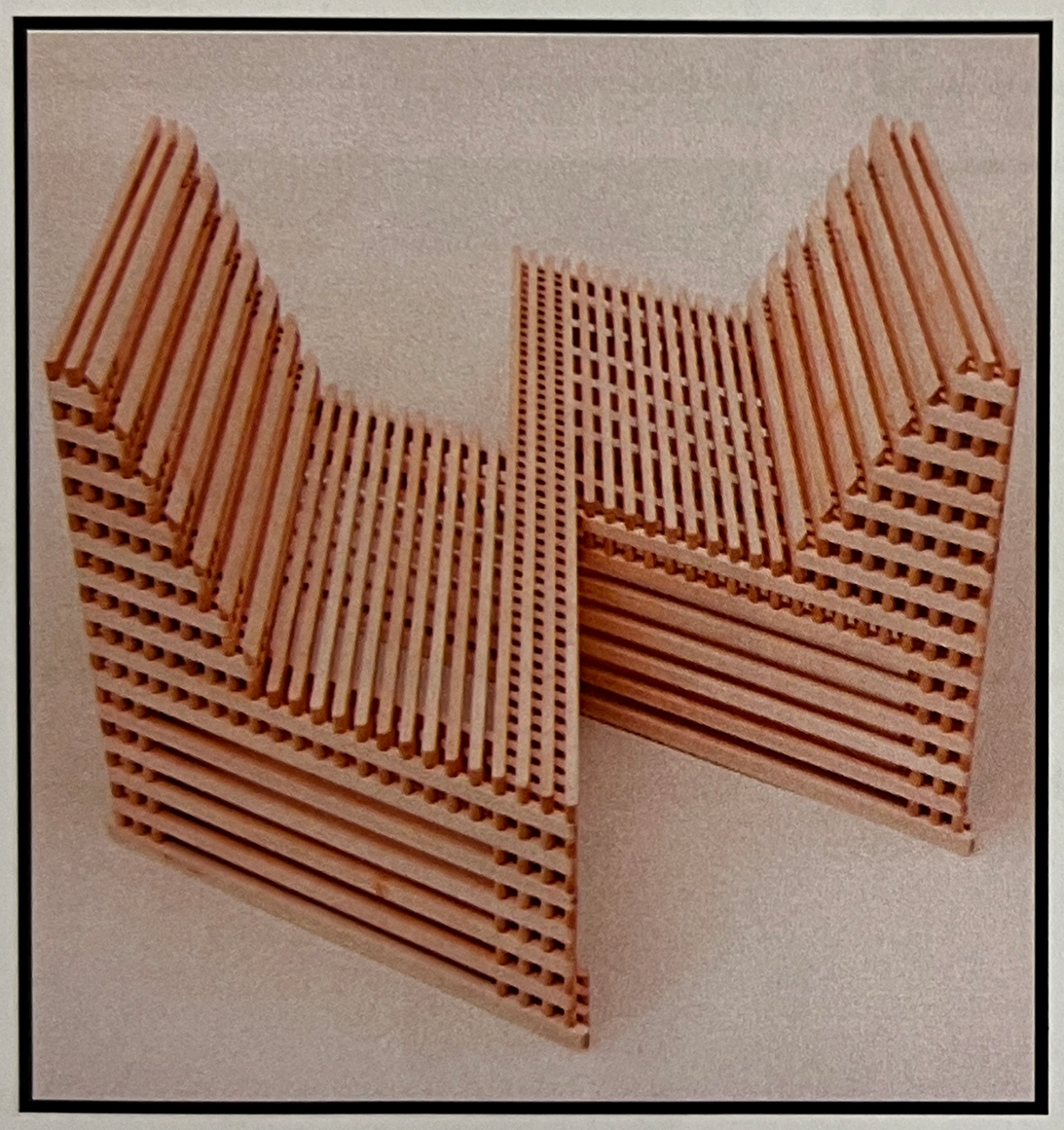

Figure 31
Austrian Loop Chair
Designed by Ian Stell

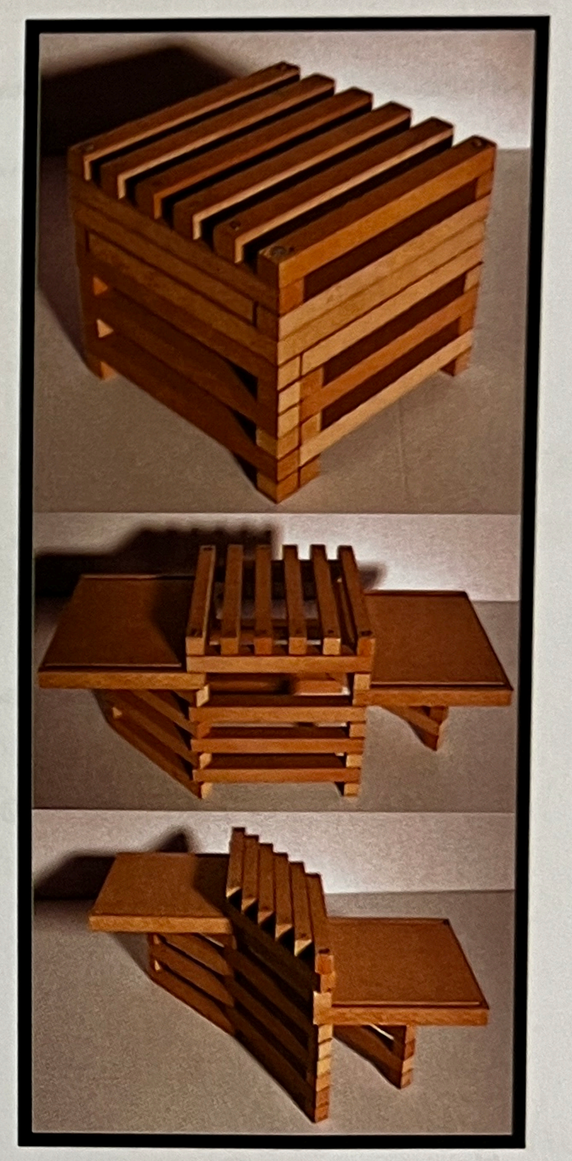

Figure 32
Early Wooden Table
Design Development

Stell's mechanism provided inspiration in the development of the kinetic element of my table concept which added functionality to my design. This aspect caused me to consider how movement was introduced to assist the user to change the shape or erect the table and how this all came together to form the kinetic experience.

2.1.3 Hiromitsu Konishi

The development of my concepts were enhanced by design features I observed during my analysis of the *Kamijiya Table* (Fig. 33). The first was Konishi's use of the concertina or folded paper mechanism. This allowed me to extend my design ideas beyond the maquette concepts I had reached to this point. The Konishi stimulus helped me to improve the construct and physical movement of my design, influencing both the form and function of the table.

The second significant influence was Konishi's limitation of materials to paper for the table. Thus, the use of paper as the main build material for my design became a major change during the development process and a significant Konishi influence over the design of my table. The benefit of using paper was that it is extremely light weight when compared to other more typical table materials, for example wood. Also, when fashioned in the right construct, paper offers a significantly high weight to strength ratio. This offered particular beneficial features for my kinetic table designs that aimed to provide durability and ease of transportation.

Figure 33
Kamijiya Table
Designed by Hiromitsu Konishi

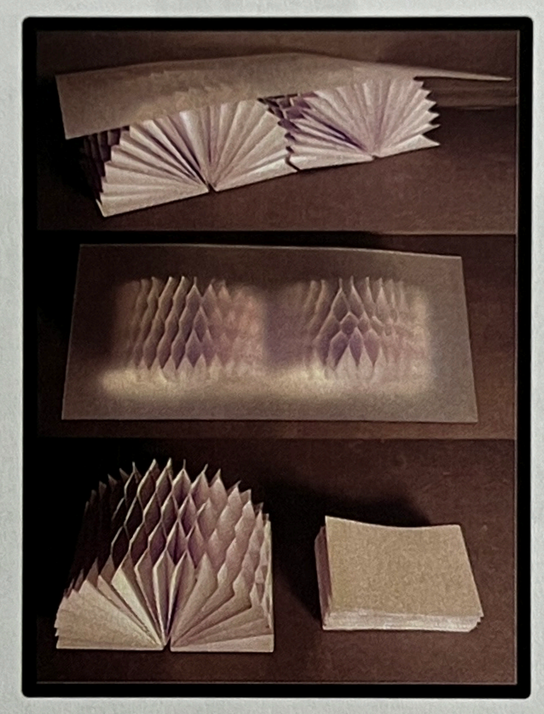

Figure 34
Early Concertina Paper
Design Concept

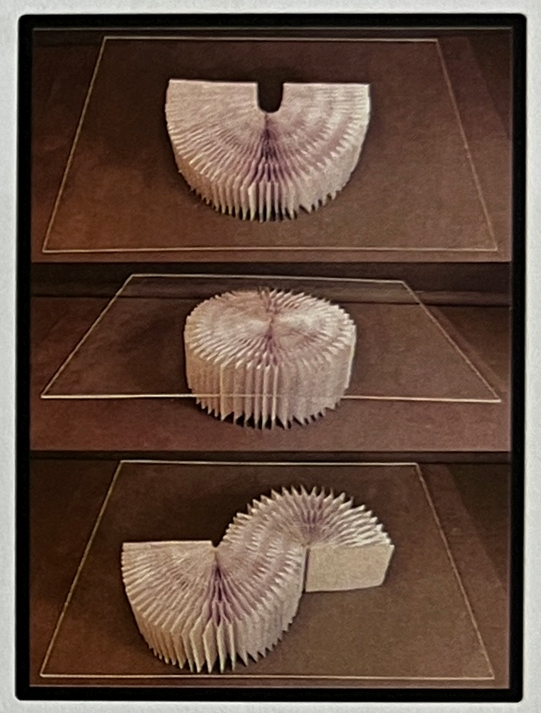

Figure 35
Maturing Concertina
Design Development

At the early stage of my design development, I explored the use of paper and the concertina mechanism in several combinations (Fig. 34 & Fig. 35). Ultimately, this later developed to a design approaching my final concept (Fig. 36). Konishi considered nature as the inspiration for his table and similarly I considered the strength of the honeycomb shape which influenced the structure of my own kite like and compartmentalised design.

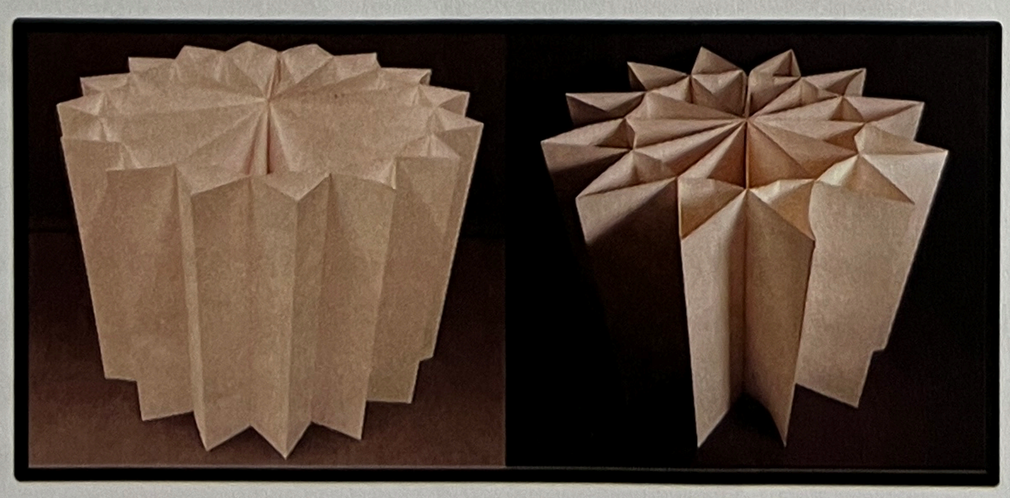

Figure 36
Maturing Paper Design Development

2.2 Conclusion

My final design has been created from an amalgamation of the design features and inspiration drawn from all three of the designers I researched; namely Robert van Embricqs, Ian Stell and Hiromitsu Konishi.

Visually, Konishi may appear as the most influential and inspiring for my final table designs (Fig. 37 & Fig. 38). Konishi's use of paper and his innovative paper folding concertina technique brought a step change to my thinking and design parameters. Drawing parallels from nature, the honeycomb shape, to inspire the design allowed me to push the boundaries of my kinetic ideas.

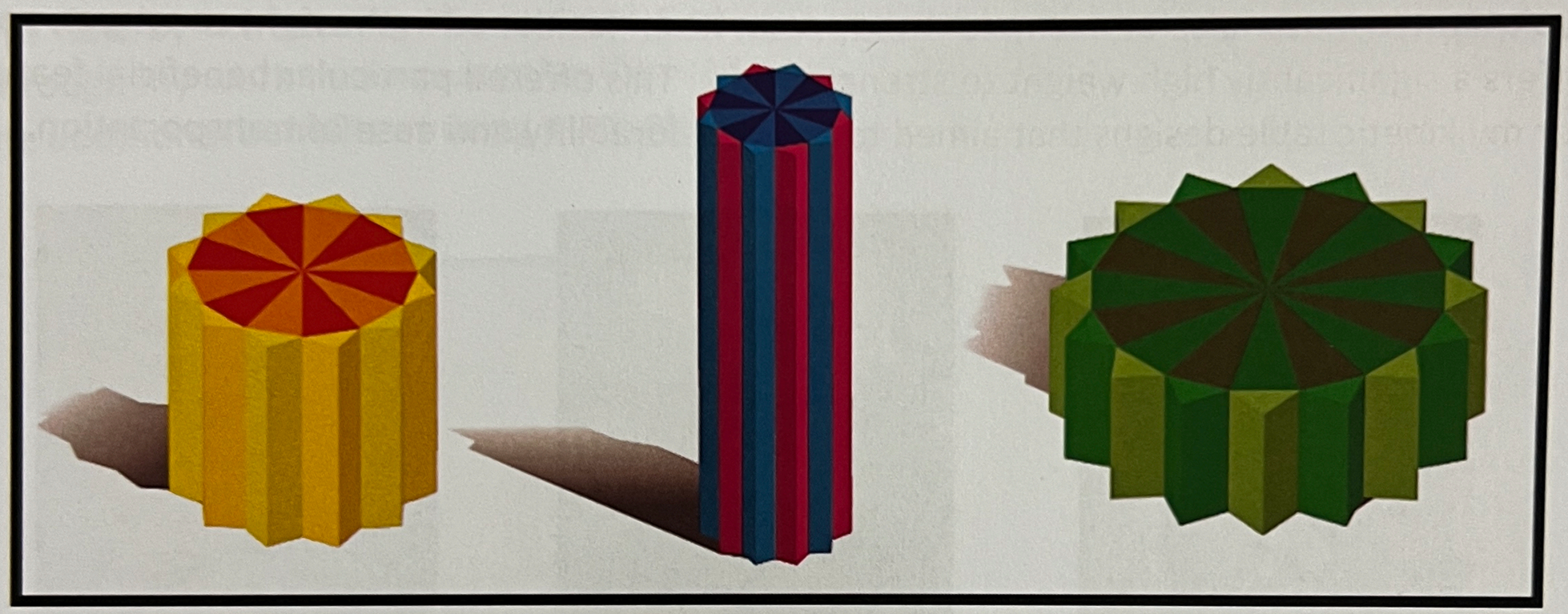

Figure 37
Tropical Collection Final CAD Drawings

Figure 38
Tropical Collection Final Maquettes

However, the technical brilliance of van Embricqs *Rising Table* design, moving from the flat plane to 3D form, was significantly influential on the kinetic motion of my design. My final table folds completely flat and opens to the 3D form in a singular 360-degree rotational movement (Fig. 39) which is both a seamless and graceful transformation.

Figure 39
Final Kinetic Motion from Flat to 3D Form

The influence of Stell is similarly recognisable, the pantograph mechanism from the *Austrian Loop Chair* inspired the development of the folding modular compartments and restrictor detail of my design (Fig. 40). This provides the basis for the reliable and regulated opening and closing mechanism, enabling kinetic 3D motion. In addition, this feature adds considerable strength to the construct of my design.

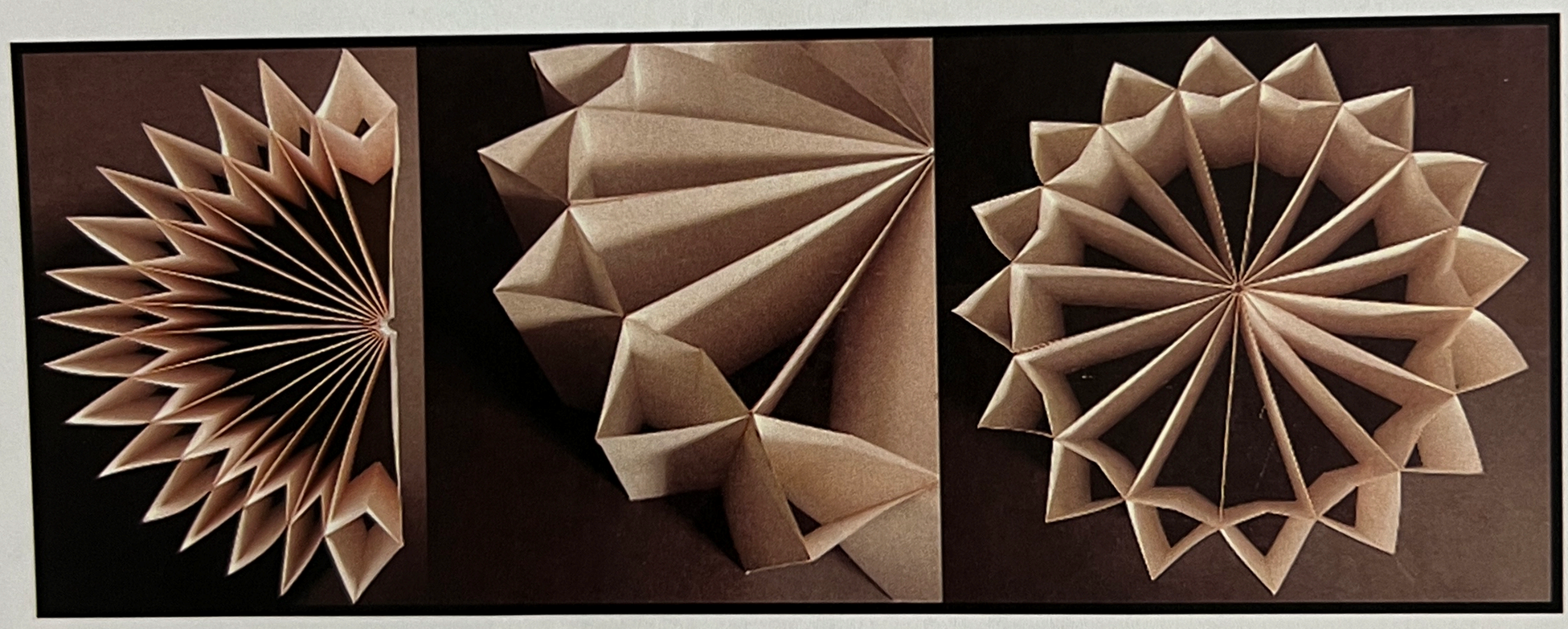

Figure 40
Pantograph Inspired Maquette Development

I believe I have realised the design intention for my kinetic table by creating a form that is easy to erect by the user. Ultimately it is a lightweight functional table that can be collapsed when not required. Equally the functional merit of the fold flat concertina structure is extremely strong and able to hold over 100 times its own weight.

The final stages of my design process focussed on the aesthetic beauty and the development of a table range, culminating in the Tropical Collection. However, throughout the design process the aesthetics of the table design focussed on maintain simplicity of design, grace of motion and visual appeal of the final form. The inspiration for tropical was taken from the colour wheel palette associated with tropical flowers used in the final maquettes. Each table has a colour combination associated with a particular tropical flower; Passiflora, Hibiscus and Fern.

Ultimately, I believe I have created a product that has both function and form.

Appendix I

Paper Maquette Development Montage

References

Author	Media	Reference	Title	Publisher/ Producer	Date
Robert van Embricqs	Robert van Embricqs Website	Robert van Embricqs	Combing Functionality & Art	Robert van Embricqs	Unknown
Archilovers	International Social Network Platform & Designers	Robert van Embricqs	Robert van Embricqs Interior Designer	Archilovers	Unknown
TED Talk	Online Conference	Robert van Embricqs	Bringing Creativity to Life	YouTube	2018
Unknown	Designboom Internet Magazine	Ian Stell	Ian Stell forms flexible furniture that expands & contracts for countless configurations	Designboom	2016
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Charmaine Li	Online Magazine	Robert van Embricqs	A Rising Furniture Series by Robert van Embricqs	Ignant	2015
Unknown	Alonso Website	Tomas Alonso	Design Studio	Alonso	Unknown
Dan Howarth	Dezeen Online Showroom for Designers & Projects	Tomas Alonso, Cos & Hay Collaboration	Cos, Hay and Thomas Alonso Team Up To Launch Folding Wooden Tables	Dezeen	28.08.15
Unknown	Connections by Finsa eMagazine for Trends & Lifestyle	Tomas Alonso	Tomas Alonso Between Art & Design	Connections by Finsa	Unknown
Sheila Kim	Architizer Internet Magazine	Ian Stell	Home Choreography: Ian Stell's Ingenious Transforming Designs	Architizer	Unknown
Lindi Brownell Meiring	Visi internet Magazine	Ian Stell	Flexible Furniture: Designs by Ian Stell	Visi	11.05.16
Monica Khemsurov	Sight Unseen Design Website	Ian Stell	Ian Stell Shot by Rob Howard	Sight Unseen	30.05.14
Unknown	Prodeez Product Design Website	Ian Stell	Epandable Furniture Series by Ian Stell	Prodeez	31.07.16 updated on 25.01.20

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Carly Ayres	Core 77 Industrial Design Magazine	Ian Stell	In the Details: Ian Stell's Pantograph Inspired Pivoting Tables	Core 77	11.7.14
Meg Miller	Fat Company Magazine	Ian Stell	A Shape Shifting Desk That Hides Your Chair Until It Is Needed	Fast Company	26.05.16
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Unknown	Victoria and Albert Museum Website	Chair Thing	Explore the Collections	Victoria and Albert Museum	2022