

ALL  
THESE  
HORRIBLE  
THINGS.

VOL. 2

JESSIE HILLS







# CONTENTS

THE ORIGINS	4-7
PRIMARY RESEARCH	8-9
SECONDARY RESEARCH	10-11
MATERIAL RESEARCH	12-17
PATTERN MAKING	18-21
DESIGNING	22- 23
MODEL MAKING	24-25
MODULAR DESIGN	26-27
PROCESSES	28-43
THE STOOLS	44-57
THE DESK	58-67
FINAL THOUGHTS	68-69
APPENDICES	73-80
- What can we learn from the emergence of unustainable plastic consumption, Post War, to bolster sustainable design?	81-83
BIBLIOGRAPHY	

# THE ORIGINS

The idea for this project arose from noticing the amount of waste that is generated from low grade furniture production, Particularly laminated or veneered chip board. This material is especially problematic due to its non-recyclable nature, The Urea Formaldehyde resin adhesives are toxic to burn and degrade into micro-plastics. This material is generally incinerated with biomass to produce electricity and the toxic residual, in it most sustainable end of life, is buried. How can we extend the life of this material? In the same way trees lock carbon, objects can lock waste. While noticing


this type of waste, I also noticed the amount of polystyrene that is lumped in with it. Dissolved polystyrene releases the air and forms a new plastic material. It is brittle and bubbly. I see it with strong aesthetic value as well as adhesive properties. And so the idea of creating with 'All These Horrible Things' sparked.











“Though we try to imagine otherwise, waste is every object, plus time”

-Brian Thrill

Though the recyclable nature of polystyrene does not change within the dissolving process, it locks the material into a usable form, keeping it out of our natural habitats and ecosystems where it will cause environmental damage.

# PRIMARY RESEARCH

In order to understand the impact of recycling waste wood materials, I interviewed Pete West, Director of The Wood Store, Brighton and Hove Wood Recycling Centre. Through this, the notion of material life extension was emphasised. The social aspect of the charity, whereby volunteers learn wood working skills, was highlighted for an equally environmentally positive outcome. By expanding the understanding of materials and processes, **the connection between user and object is fostered.** A 'repair' culture

has the ability to be expanded upon. A trip to Hove Recycling Centre (Bottom image) Emphasised the magnitude of the availability of this material, much of which is in fine quality. Veneer, as a principle is taking one lump of material and making it go further. **This is inherently sustainable.** Why cant this material be given a new face? Can this face foster the message of topics of sustainability?





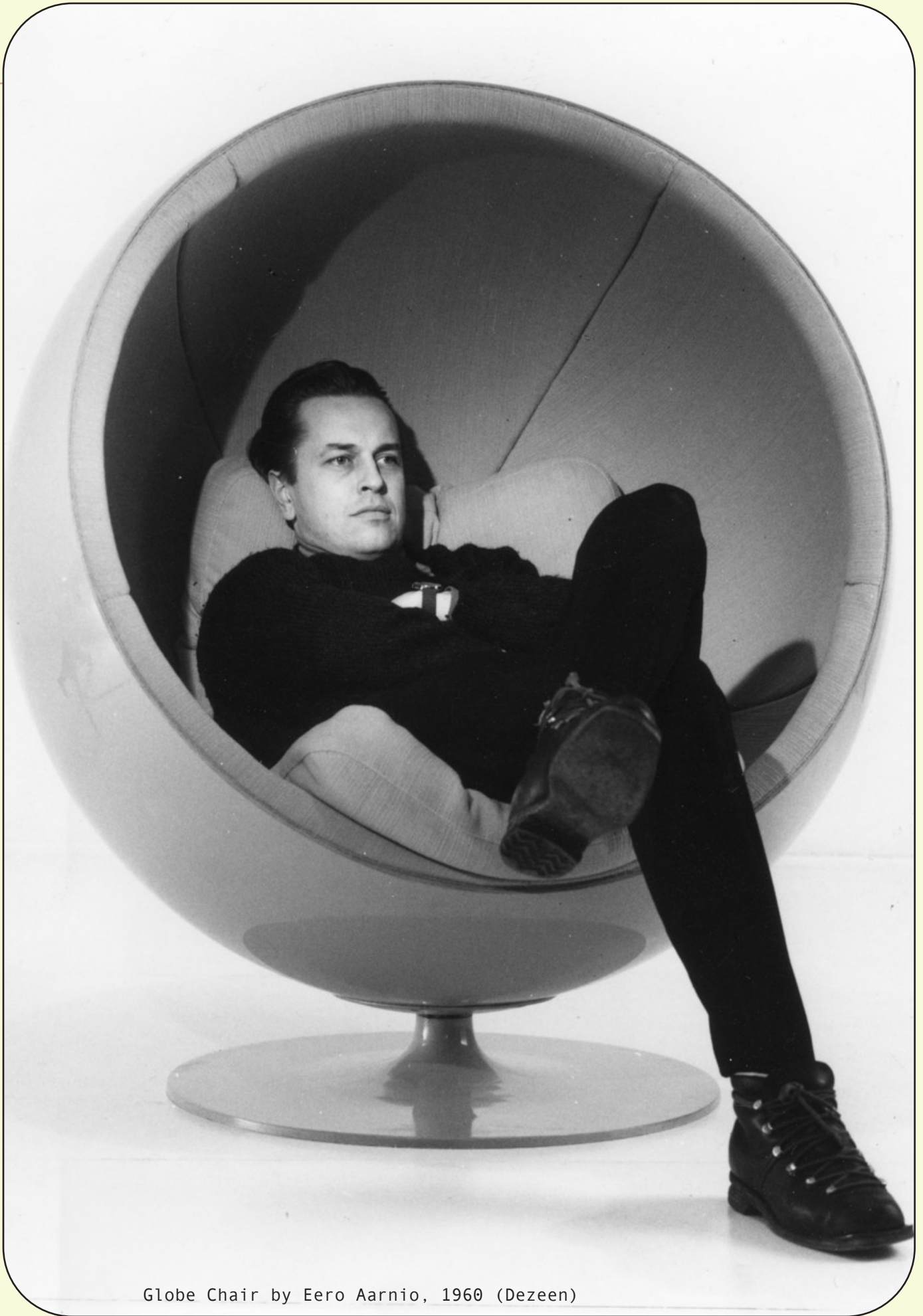
# SECONDARY RESEARCH

To design in accordance to sustainable design principles, it is important to understand why we have unsustainable practices. By examining the Post war Design era, key features are highlighted. We saw an enthusiasm for the future and design became more speculative, a rise in plastics also made high-style design assessable for the first time. A shift in way of living i.e. temporary and high rise living bought about a need for cheap, flat pack furniture. **‘Made to last’ was out.**

Both the accessibility of products and style bridged the class divide for the first time. Through this,

unsustainable design became necessary and ‘made to last’ inadvertently became more and more unattainable for the working class. And so a throw away loop (culture) was born. **Turning away from these materials is avoiding the whole picture.** Instead, reusing these materials, within the parameters of why we have them in the first place seems more logical.





Globe Chair by Eero Aarnio, 1960 (Dezeen)

# MATERIAL RESEARCH

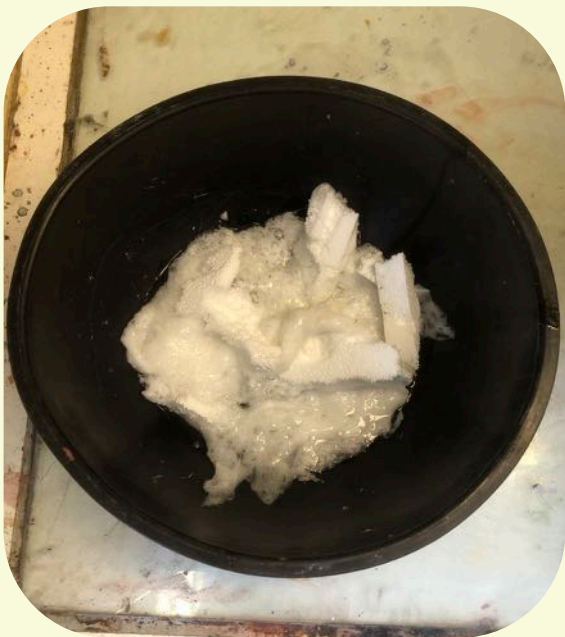
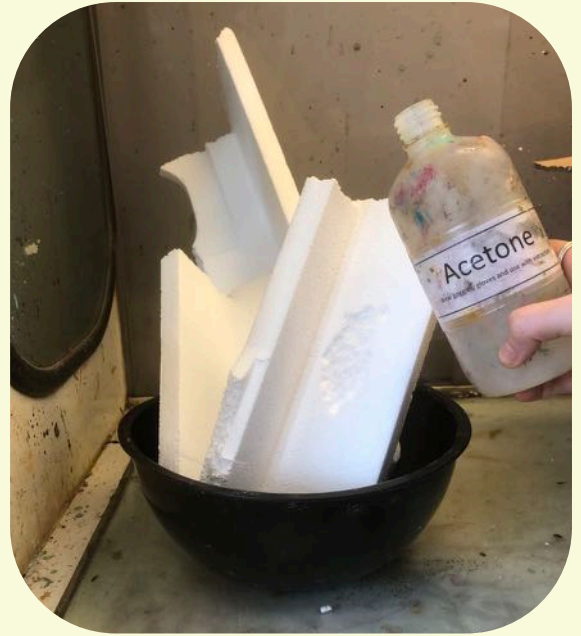


Polystyrene is non recyclable and UK recycling centres do not facilitate proper disposal of the material. Meaning it is often fly tipped, finding its way into natural habitats.

By pouring acetone on polystyrene, a reaction occurs that releases the air from the material, producing a white, gloopy material. This process is non toxic. It can act as an adhesive with porous materials as well as having aesthetic value.

- Pressure effects density and size of bubbles.
- Aerobic or anaerobic drying effects colour.
- Thickness effects colour and bubble density.
- Room temperature effects crackle effect.

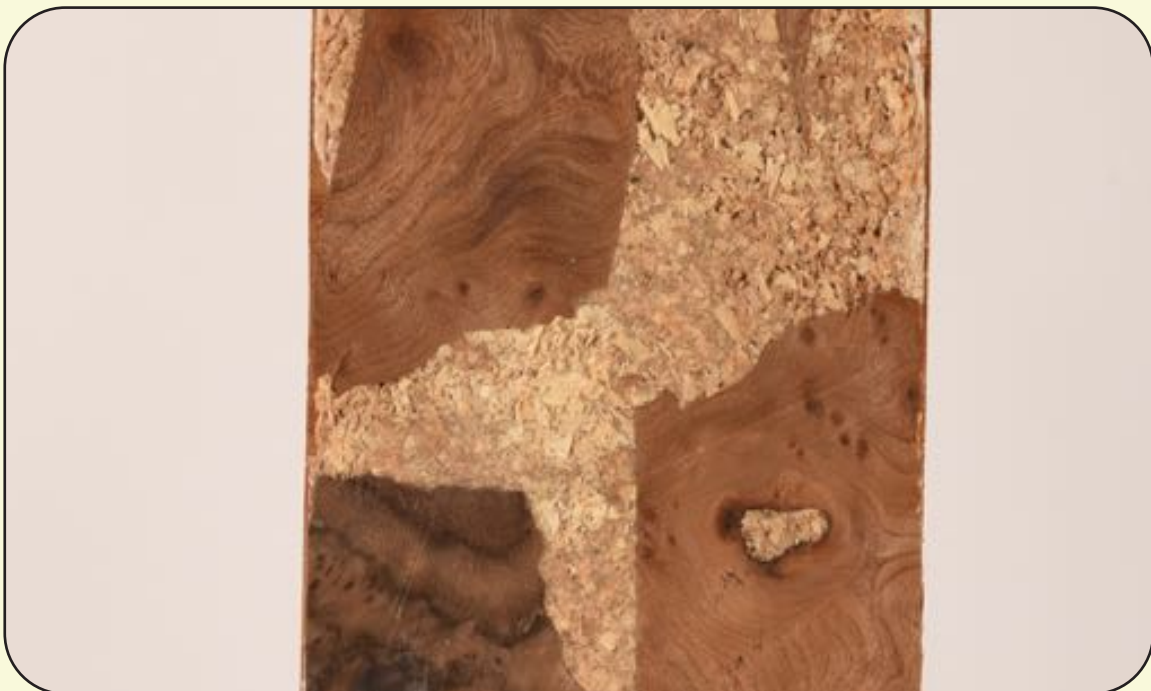
The material also sticks to itself, providing a medium for easy fixing, unlike usual veneer processes.



# MATERIAL RESEARCH





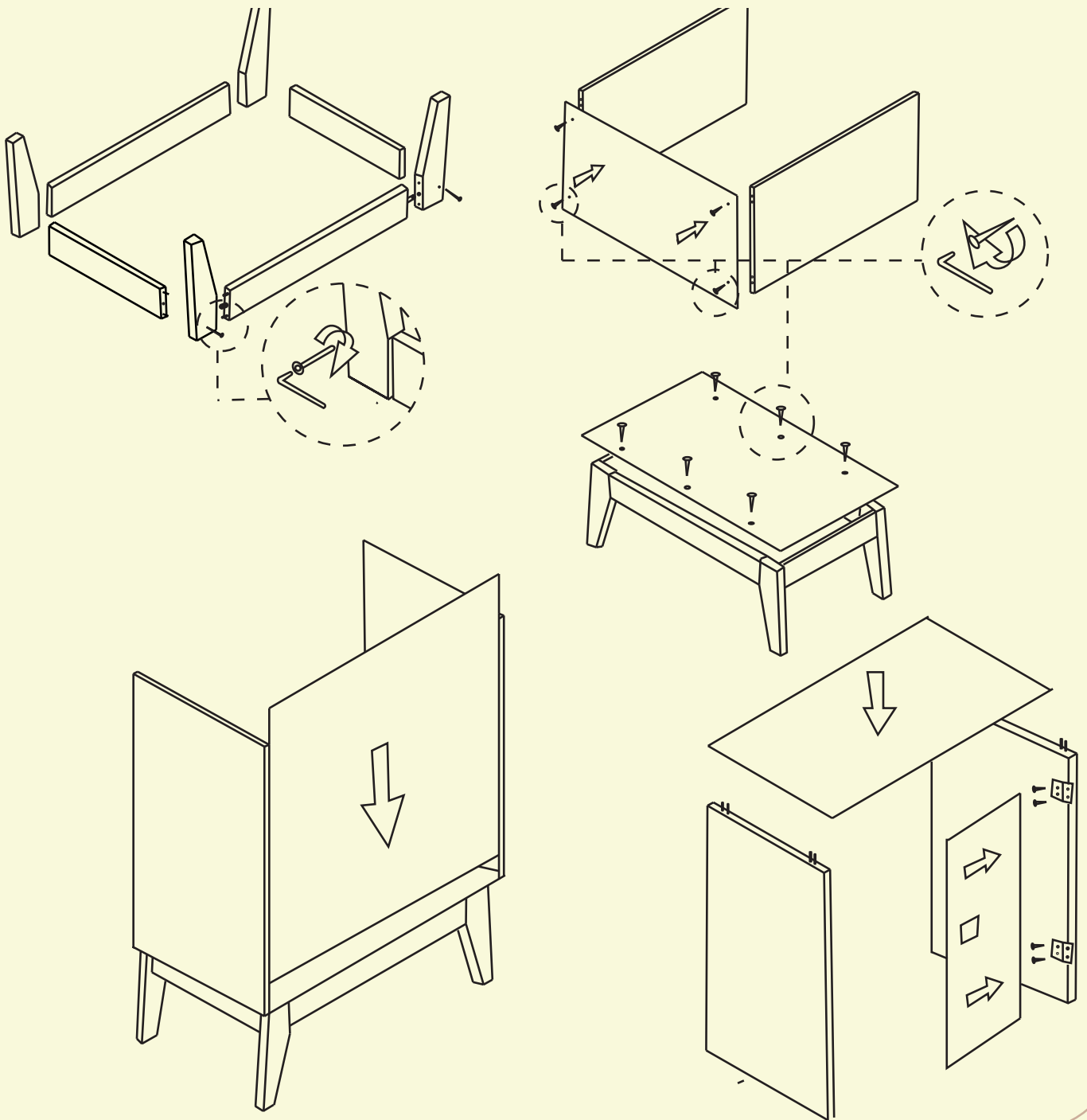


Wanting to avoid using first hand materials and adhesives, I looked to incorporate waste veneer leaves with the polystyrene, to create a new surface material for recycled laminated ply or chip boards. Wanting to stay away from an obviously plastic aesthetic, I looked at incorporating ripped veneer as well as reusing extraction waste

which can not be composted due to MDF and other sheet material contamination. This bridges a gap between our visceral aspirations for a 'natural aesthetic' and plastics.

# MATERIAL RESEARCH





Product life extension goes beyond the first point of reusing. How long will the new product be durable for? To further extend the life of these materials they must be usable and accessible. Incorporating graphics through laser cutting opens up avenues for relaying the project ethos as

well as fostering a better understanding of products. By simplifying designs, making them easy to understand and as well as easily moveable, the product gains more value.

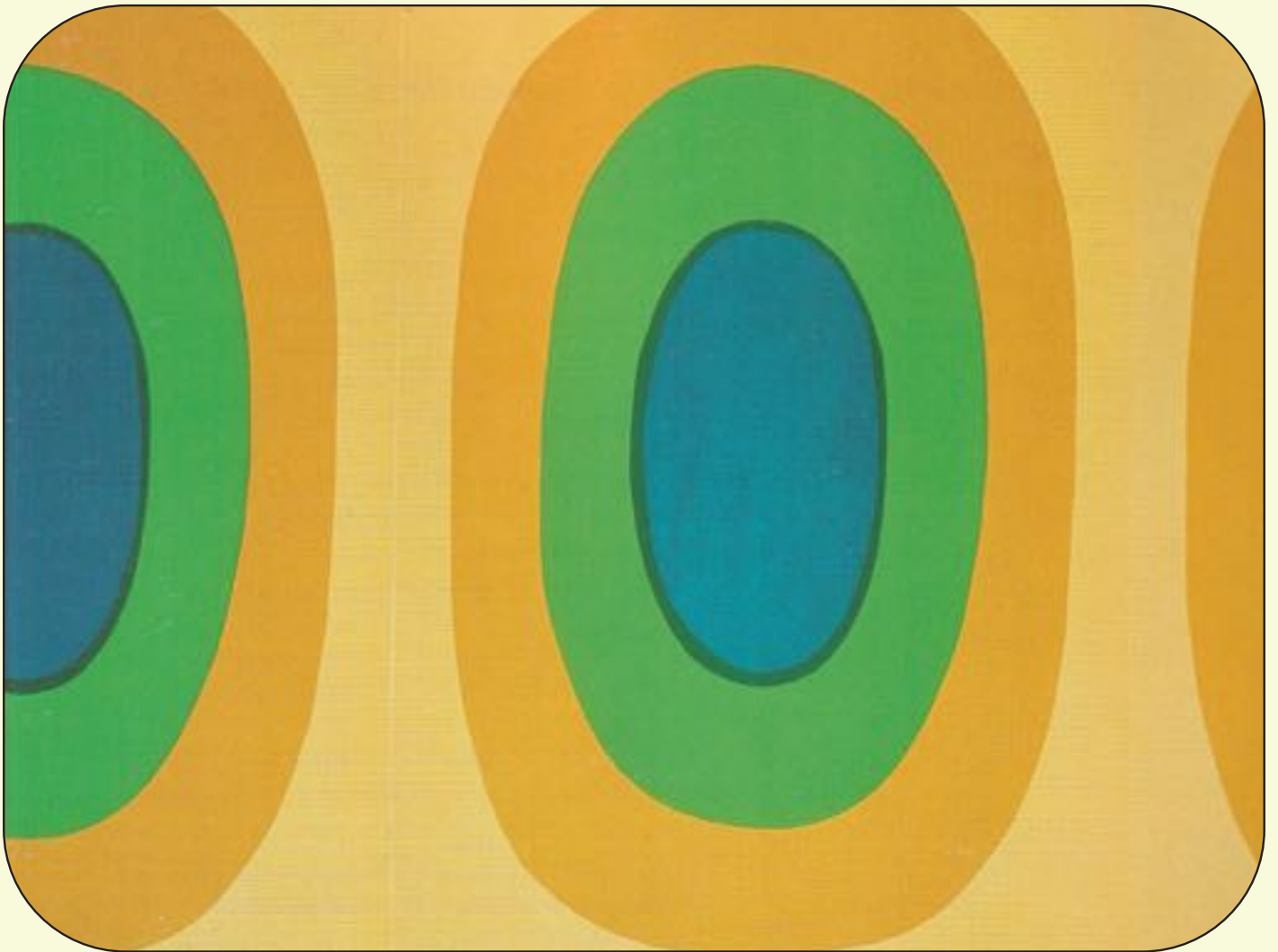
# PATTERN MAKING



left  
Frequency, a psychedelic  
Op Art fabric designed by  
Barbara Brown for Hearst,  
1969. Pattern design was  
one of the most dynamic  
fields of British creativity  
during the 1960s. Towards  
the end of the decade tex-  
tile and wallpaper designers  
freely mixed ultra-modern  
and retro sources to pro-  
duce a rich and complex  
mélange of styles.

Extract images from 'the sixties:  
A decade of design revolution' by  
Lesley Jackson.





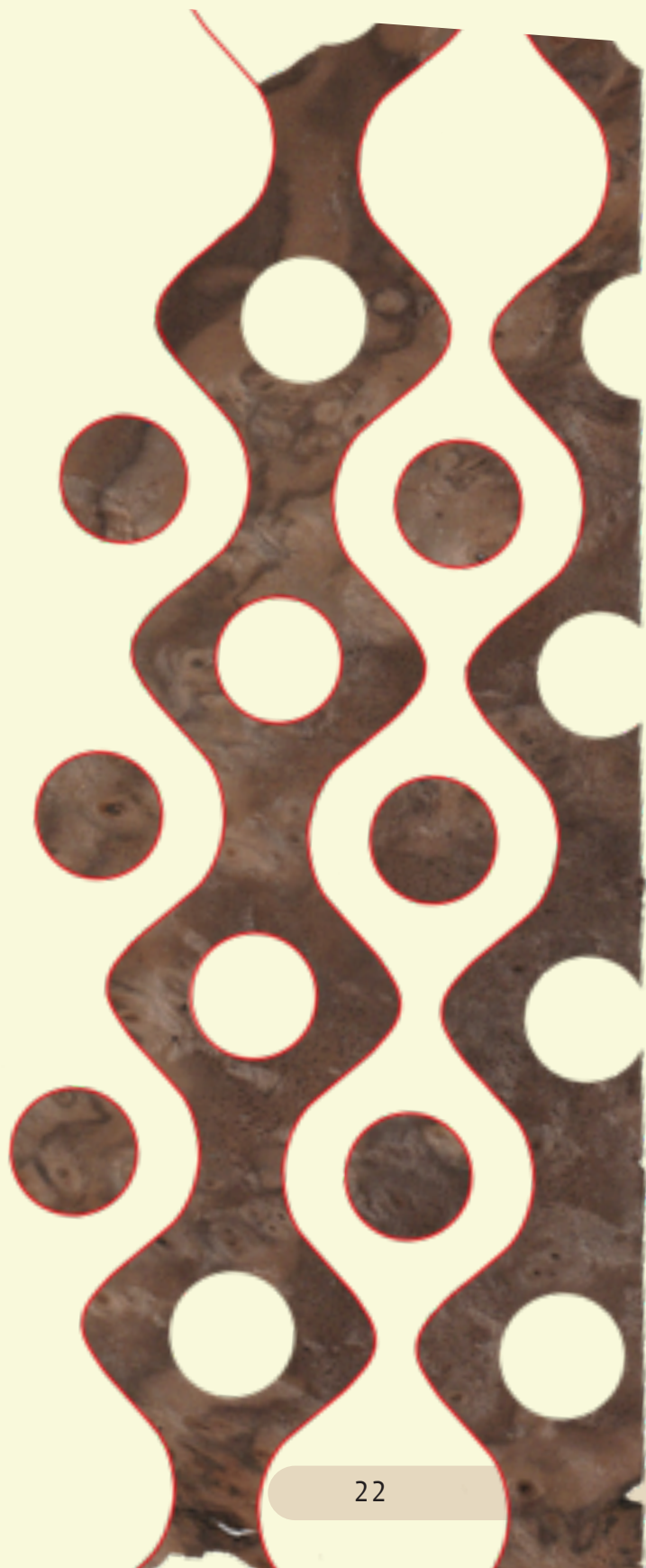
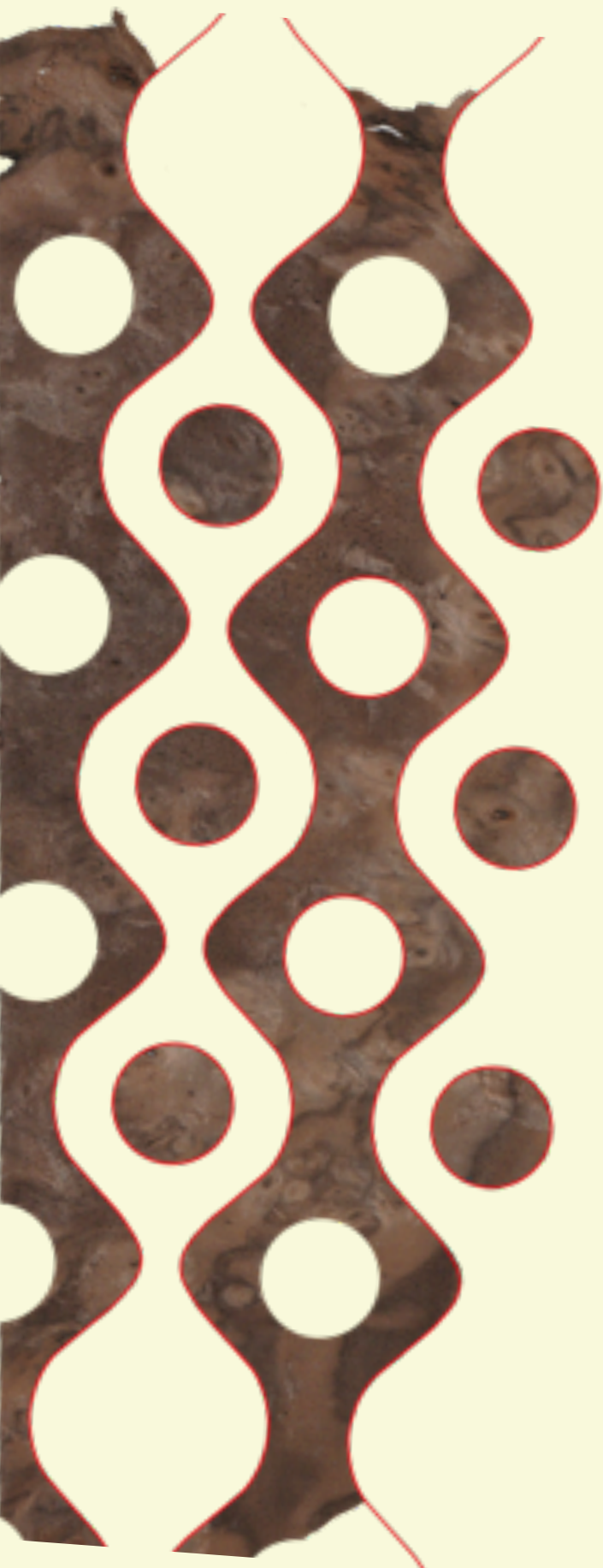
The 60's saw the rise of plastics into our every day lives. Designer Home ware and appliances became accessible to the working class for the first time through the uptake of plastics in design. "Eighty percent of poor households in the US have air conditioning, not because welfare benefits have become

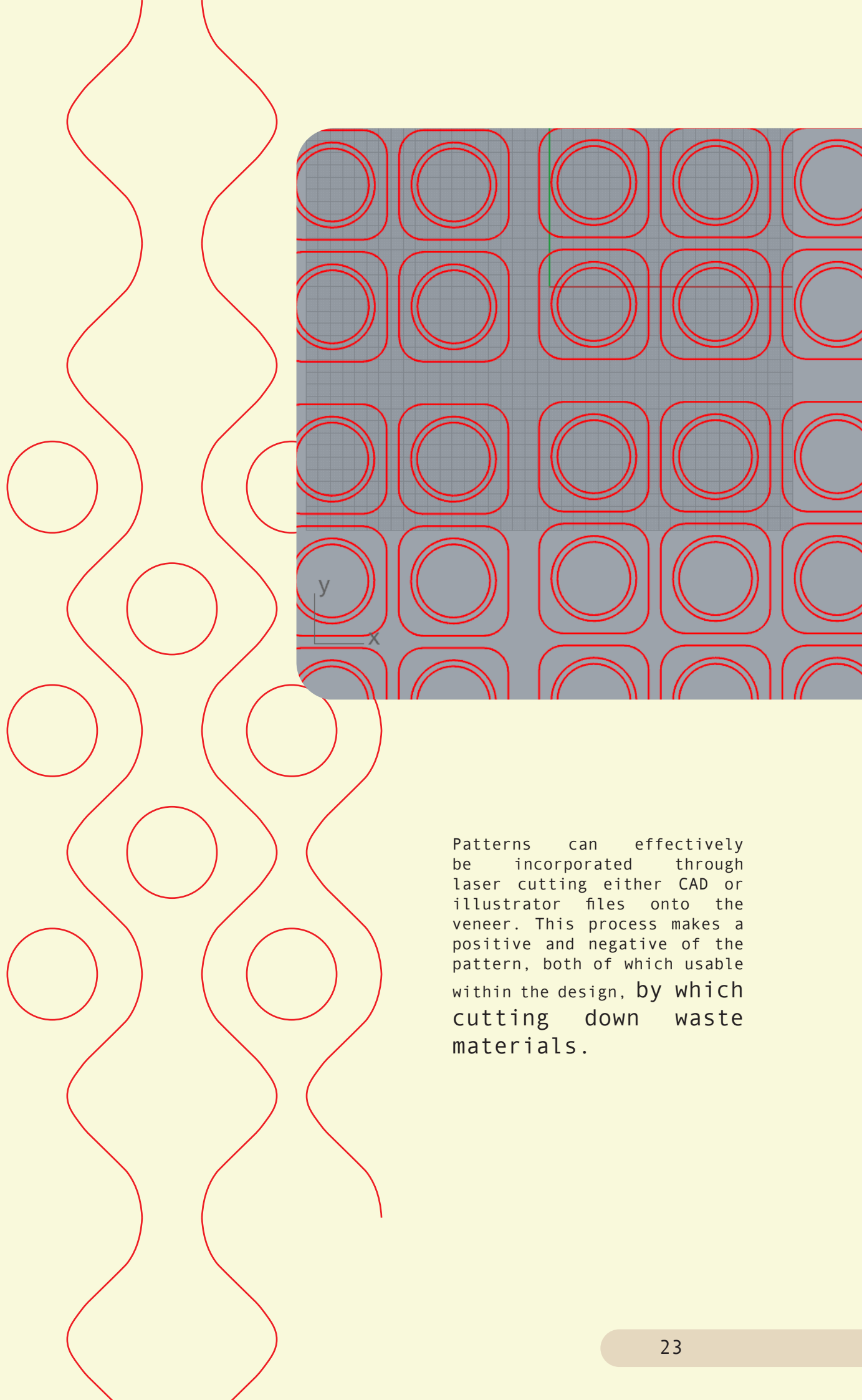
more generous (they have not) but because the machines have become so inexpensive."

-Lee Vinsel. In homage to these decades, and how plastics informed design history, 60s patterns can be incorporated into the design.

# PATTERN MAKING

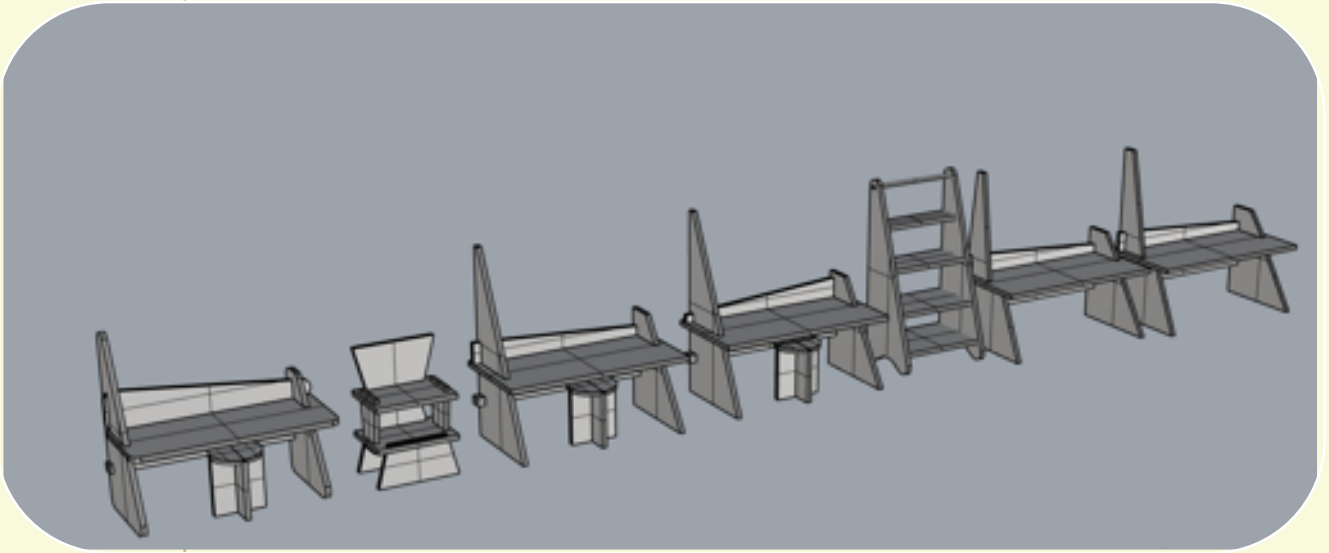
Patterns can be tailored to the available veneer waste. Laser cutting over cracks and mixed with the polystyrene gives an aged, aesthetic look.





Patterns can effectively be incorporated through laser cutting either CAD or illustrator files onto the veneer. This process makes a positive and negative of the pattern, both of which usable within the design, by which cutting down waste materials.

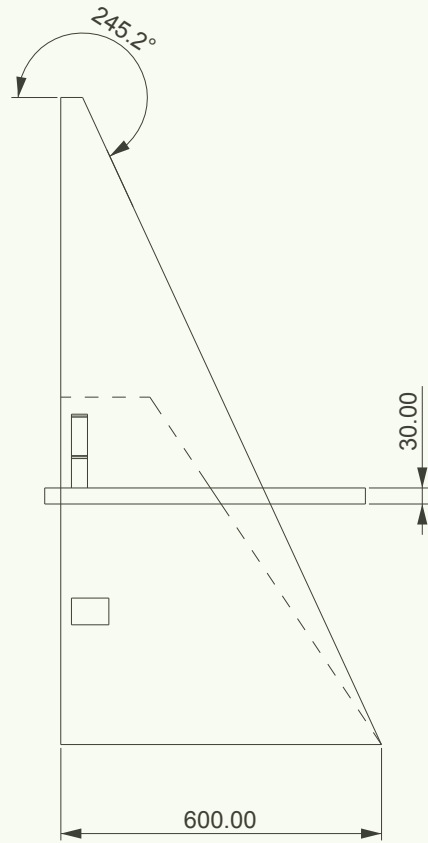
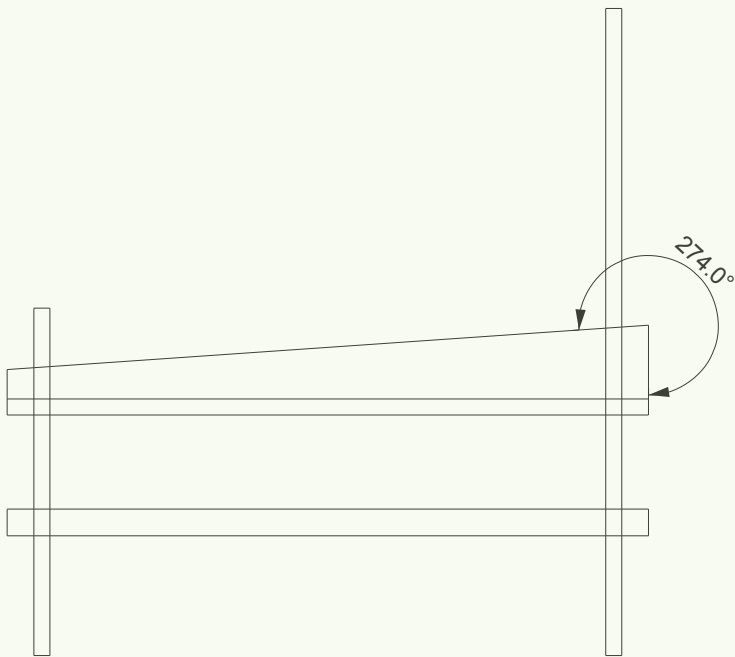
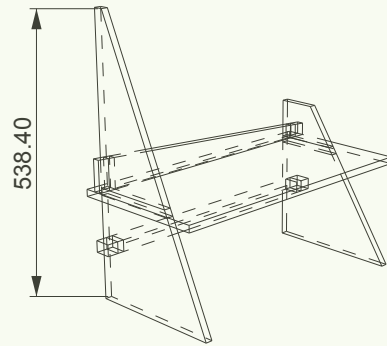
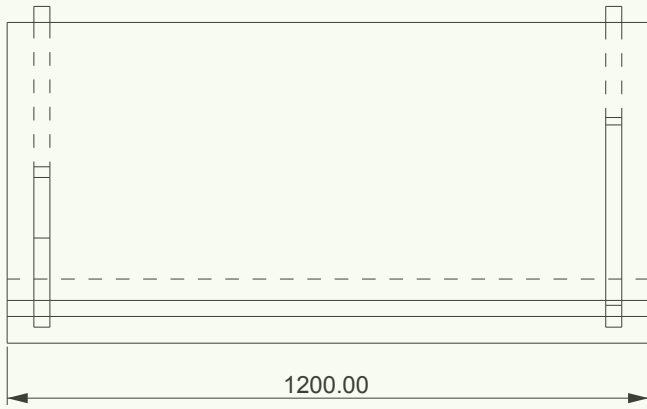
# DESIGNING



The object the surface material should be designed onto must **continue to be sustainable in nature**. I.e. functional, practical and long lasting. To achieve this the piece should be simple to understand, dismantle able with

minimal pieces. All while maintaining the project ethos within the reflective chosen aesthetic by showcasing the faces of the sheet materials.





# MODEL MAKING





### 1:5 Scale models

Exploring application choices. In order to create the right emphasis on the new material.



# MODULAR DESIGN





How can these desks be arranged? The modular value to the design creates room dividers and extensions, perfect for home office spaces or work environments.

A visual representation of how much polystyrene is locked into the new surface material.







Machining



Laser cutting





Spacing



CNC Milling

# PROCESSES



template making for routing



Veneering



Vacuum Pressing

# PROCESSES



Further exploration , enhancing aesthetic value of bubbles could be taken forward.



A second layer, filling the larger spaces pre sanding.



# PROCESSES

**Sanding** is the main process that brings out the aesthetic value of the polystyrene. As polystyrene has a low melting value, the sanding process grits and sanding speeds directly impact the look of the polystyrene.

Low grit, High speed: Heating up and expanding resulting in a more white, denser texture. Can cause browning of polystyrene.

Low grit, Low speed: Good for sanding down high points. Can create balling of denser areas, resulting in patchier colours.

Mid grit, High speed: Breaking surface bubbles and creating white mottled look.

High grit, Low speed: Good for getting rid of any browning. Heats and compacts polystyrene in short bursts.

High Grit, High Speed: Finishing and evening out a board by sweeping over, not staying in any section too long as not to heat polystyrene.

A thin layer of polystyrene can be massaged into exposed bubbles after sanding. This fills and seals bubbles. When air dried, it dries as a glossy film. By then sanding this, a satin finish is produced. (Image below)











Routing veneer edges.

# PROCESSES

template routing to shape boards.



The edges of the board are an important finishing detail. They could be left bare, showing the inside material. Traditionally lipped or edged with polytyrene and/or veneer. The benefit of lipping with polytyrene means it is easily fixable as it sticks to itself and camouflages in after sanding back. Overcoming the main issue with veneered materials.





ALL THESE HORR



**SIBBLE THINGS.**

# STOOL 01



This design, inspired by 60s pattern making, is a contemporary form with notions of European aged city tiles through the crackle and off-alignment placements. Through this, imperfection is appreciated instead of found as diminishing.

Within furniture design, this is rare due to imperfection being linked to functionality. Imperfection is only appreciated through aging i.e. antiques, when a story is being told. Through the use of polystyrene, this appreciation is incorporated into a new design.

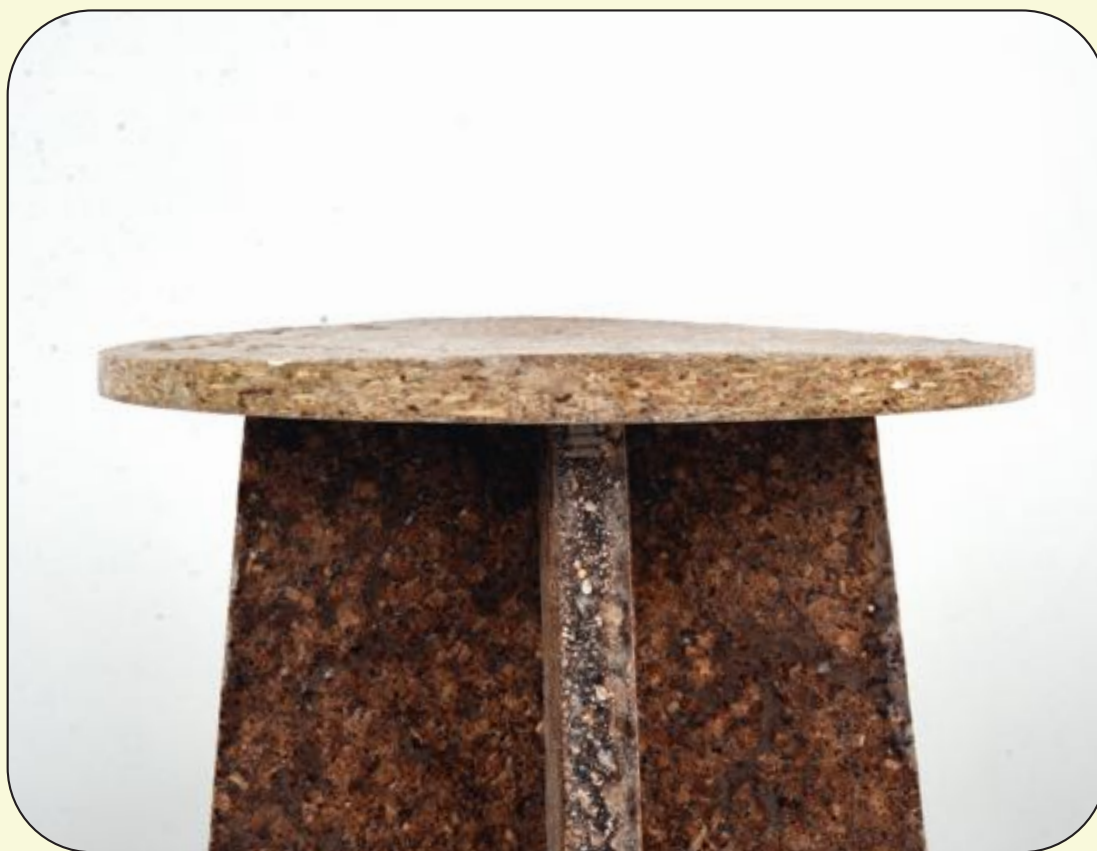








# STOOL 02





This second variation of stool incorporates further waste. Reintroducing the extraction back into the make up of the material. While this project has centres around 'disguise', this stool is transparent about what it is; Chipboard. The extraction finish in itself is a variation of chipboard and polystyrene

is pressed into the top with a male, female mould as well as two sides in order to seal and give a satin finish to the chipboard. The reused chipboards original laminated finish can be seen on the underside of the milled stool top.







Simple.

Functional.









# DESK 01



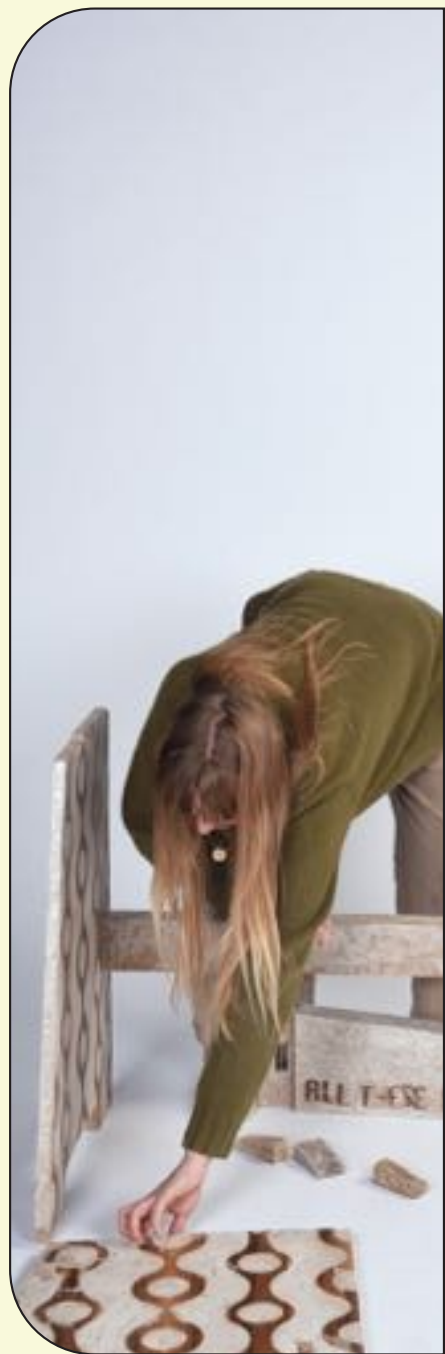
Wedges made from dissolved polystyrene and extraction.



By using a chisel, instead of sanding, the extraction fibres and dark colour are more vibrant.









Assembly .





E HORRIBLE THING.







# FINAL THOUGHTS

The premise of the project is clear within the objects and at this stage, I am happy with the results. The finished objects reveal an Ad Hoc style as the mesh of materials come together. The white casing of the top of the desk is connotative of the packaging material that polystyrene is usually in the form of. And the exaggerated slot and peg design is suggestive of how we understand objects. With a larger workshop and pressing system, these pieces would be made in one section. Moving on from this project, I would develop the use of polystyrene as a surface

material by refining and honing in on its major advantages, being the aesthetic value. For it to be very long lasting it would work best as panelling, not as a structural material. I would like to refine my wood working skills, creating pieces to last, and then use the refined polystyrene application as door panels or through slots.











# APPENDICES

What can we learn from the emergence of unsustainable plastic consumption, Post War, to bolster sustainable design?

In this Essay, the Post War Era from 1953 to the mid-1980s will be examined to determine critical themes in the rise of plastic use. Both positive and negative effects of the increase in plastics will be compared to determine what we can learn to establish a more sustainable set of design guides. How can we continue to benefit from plastics in a social and economic sense while not misusing plastics? The throw-away culture we reside in is informed of the post-war era, where innovation and newness were celebrated in a fast passed and changing environment. However, we soon realised these practices were unsustainable but difficult, once established, to turn away from.



As we moved into the industrial revolution, the emergence of new technologies shaped society with a new design category. This relationship is undoubtedly free flowing; how we live informs what we have in the same way what we have informs how we live. This give- and-take morphs how society perceives and interacts with objects. We quickly learnt that this new wave of design that met the demands of society while profiting from the capitalist system was not environmentally friendly, and sustainability has been at the forefront of discussions since the early 70s. But the optimisation of supply and demand was not something we could turn back from. In this essay, I will examine why this is and what we can take away from the emergence of unsustainable practices to complement sustainable design. Through looking at what we gained from mass production and new technology, key themes emerge that identify what we need from products in the present day. It is also essential to look at the change in consumers' relationship with products. Socio-political factors inform design trends, implicating how we perceive objects and, therefore, are intertwined with the sustainability movement. Marketing has a huge part to play in this due to how companies relay a green message. The recent push from consumers for sustainable design has led to a new emergence of materials and corporate responsibility for the environmental impact they cause. However, a profit-driven, capitalist society sees this as a marketing opportunity, and a wave of greenwashed marketing campaigns has flooded through advertisement. While legislation has been introduced to combat this, it remains an issue and has huge ramifications for the sustainability movement. This wave of conflict is underpinned by the pivotal point in history where unsustainable practices entirely arose; rather than fighting these practices, can we marry the ideals in a way where there is no loss of benefits? I will break this essay into two categories: The rise in plastics and the implications of this in the present day.

## Part 1 - The rise in plastics.

The rise of plastics came hand in hand with the Post-war era of technological advancements. "mass production stands as one of the fundamental technological turning points in human history" (Vinsel 77). Post-war, there was a boom in the industry. Factories expanded, allowing for investment in machinery and manufacturing

processes. This meant that plastics had the capacity to boom. Unlike other materials like wood and metals, which can be utilised in small workshops by craftspeople, plastics need specialised equipment and work most effectively where investments can be made so a product can be produced on a large scale through, for example, injection moulding. This post-war boom can be broken down into two parts: society needing to rebuild, literally and economically, and the Post-war social shift in the way of living. Plastics have so many different applications. "In enabling the performance of everyday life, plastic materially enables flexibility, transmissivity, protection, and conveyance, to name a few." (Ralph 568) Through this, an array of different applications could utilise plastics. It could be small or large scale, ridged and shiny or flexible and soft. "War nurtured the idea of plastics as 'wonder materials', capable of solving all our problems." (Katz 8) As plastics were cheap to manufacture and quick to distribute, they were exactly what the industry needed as they could meet every demand. Aside from this clear A to B reasoning for the rise in plastics, what society was changing can also be examined.

Moving into the 1960s, there was excitement within Western society. Britain came through the War united, and as we moved away from the War years, we began to see economic prosperity return. On July 20th, 1957, Prime minister Harold Macmillan said the British people 'had never had it so good'. (Jackson, 14) Two years later, On September 13th, 1959, we had man landing on the moon. For the British people, during these few years, anything seemed possible. There was excitement and buzz about the future, and this general collective of prosperity gave designers and entrepreneurs the confidence to break the mould, make investments and start something new. Through this, we saw the rise in postmodernist design. It has the boldness and simplicity of Modernist design, which was first seen through the war period and a few years after, But Postmodernism was more abstract, more fun, and playful with bright colours. "While Modernism was based on realism and reason, postmodernism was born of scepticism and suspicion of reason." (Postmodernism Tate Modern) Postmodernist design harmonised greatly with the new technologies and materials the rise in Plastics brought. The uptake of the rise in plastics and The Postmodernist design aesthetic was symbiotic, complimenting and pushing each other further.

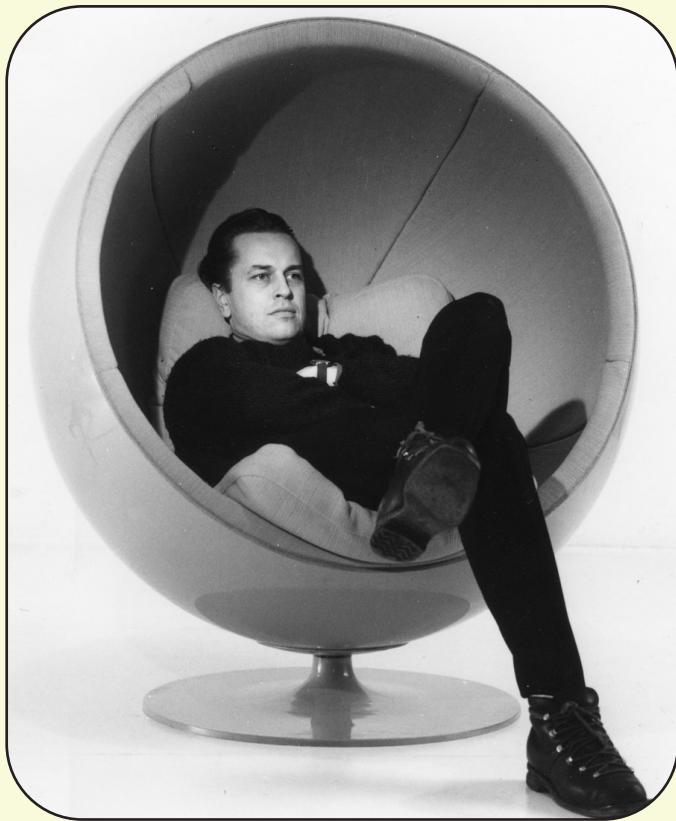


Fig.1 Aarnio sitting inside in his iconic 1963 Ball Chair, Dezeen

To look at this point further, Fig.1 can be examined. The globe chair was designed by Eero Aarnio in 1965 and became a “pop culture design icon almost instantly” (Mull, Dezeen). Though Aarnio disagrees with his space-age label, this chair design is a prime example of plastics’ creative and relaxed application in the sixties. The chair is designed for comfort and relaxation and, at the same time, is sculptural and playful. It is not the most practical lounge chair option as its shell nature makes it bad for conversation and is not space-saving. The shiny nature of the material and bold, colourful upholstery make it a prime example of post-modernist design. “The business community soon understood that composites did not have the proper qualities for imitation by innovation. They realised that they could make a suitable mould and develop a simple production process for any fanciful design. In the euphoria of the 50s and 60s and under the pretext that plastics were cheap, democratic, and non-conformist by nature, composites were associated with everything young and dynamic. (Colombo, 149) The globe chair is precisely that, and the plastic nature of the chair is this key feature. This was a period of Playfulness within materials. Big-name designers created a new set of rules,

carrying forward a trendiness and vibrancy to these materials.

At the same time, these processes and materials were quickly advancing the everyday lives of the working class. The economic benefit of mass production of products meant that items became more accessible. For example, home appliances boomed. The plastic elements of fridges, washing machines and automobiles meant that things that were only available for the upper classes became more accessible. “eighty per cent of poor households in the US have air conditioning, not because welfare benefits have become more generous (they have not) but because the machines have become so inexpensive.” (Vinsel 77) It can be argued that by reducing household chores, women had more time to advance their interests, and by transportation becoming accessible to the working class, their opportunities grew.

However, there was a more subtle evening out of the class divide. “Crucially, the use of plastics democratised this flowering of progressive design, making it available to a mass market for the first time in Europe. Instead of being sold in deluxe shops to wealthy clients, the high-style design was now being mass produced and then being bought off the shelf by young consumers” (Fiell 23). This means that on top of the practical ways in which the rise in plastics softened the class divide, there was a social shift in taste which also caused a change to the class dynamic. With ‘Desired’ items becoming more assessable, a bridge is formed. For example, the ‘high-style’ aesthetics pre-war were not accessible to the working class. Fig.2, A Chippendale chair would not have been present in a working-class home, but with the rise in plastics taking hold in furniture design, both an upper and working-class home may have a post-modernist aesthetic. This opening of a conversation socially and subtly changes the perception of class.

However, moving into the 70s, the prosperity of the post-war boom began to dwindle. Unemployment rates rose as the economy was hit from multiple avenues. The global ripple effects of the Vietnam war, In 1973, there was the oil crisis, and British industry was hurt by increasing international competition. This culminated in Margret Thatcher’s conservative policies to tame inflation which saw interest rates rise and stagflation occurs. (Tomlinson, Vol 67) However, the capitalist drive to meet consumer demands had been established, and

it did not want to stop. So the quality of plastic items decreased, and worse quality and single-use items became increasingly used. “The asset in plastics is that, unlike precious metals and stones, it is a universal material, available to everyone. Synthetic resin is transformed into articles that can be exclusive and expensive or cheap rubbish. Plastics can also be superfluously decorative, but at the same time, according to Charles spencer, can fill a social need.” (Sylvia, 34) Though Sylvia is correct in that plastics can fill a social need, she neglects the Capitalist manipulation that creates a consumer culture. Fig. 3 and Fig. 4 can be compared to show the misuse of plastics.



Fig.3 1980s Mc Donald’s Food Packaging



Fig.2 Chippendale Chair.



Fig.4 Arne Jacobsen Egg Chair

Both objects are made with polystyrene. Fig. 4 shows Arne Jacobsen’s Egg chair, which was first developed in 1958. It was first made from shaved polystyrene that was padded and upholstered—Fig. 3 Shows 1980s McDonald’s fast-food packaging. Though polystyrene was first invented in 1941 (Sylvia, Early Plastics), the mainstream use for polystyrene did not come until later. McDonald’s introduced polystyrene packaging in the early eighties. As the main internationally growing fast food chain (Phyllis Vol 147), their use of packaging informed what the rest of the industry did too. An original antique Egg chair today is highly sought after, and the design’s structural integrity will still be intact and useable. Polystyrene disposable food containers will have been thrown away immediately after use; though broken and considered waste, the material, even the first polystyrene cup, will still be around today. “Though plastic bottles generally degrade in approximately 450 years, polystyrene is so chemically stable it is estimated to never degrade” (ACE, action for climate change). Fast Food arguably is not for filling a social need. The uptake of disposable items in this way is pushed by a profit-driven industry. Comparably to the Egg chair, which, though stylistic, has function and longevity, it is a much better use of plastic. To summarise, as we moved forward in history, plastics increasingly became utilised for their cheap, easy, and quick-to-manufacture nature. This, in turn, morphed the societal perception of plastic materials.



Fig.5 Throwaway Living, Wasted, Treggiden

Marketing campaigns for single-use plastics further morphed the societal perception of plastics. Fig 5. Shows a 1960s advertisement campaign for single-use plastics. In the image, a group of people joyfully throw disposable plastic items into the air. The article is captioned 'Throwaway living - disposable items cut down household chores'. (Treggiden, 10) With the re-establishing of society post-war, a new way of living arose. We saw the mass introduction of high-rise living, the workforce becoming streamlined, and more women in the workplace than ever before. The ideals of a traditional lifestyle had shifted. Manufacturers took advantage of this and pushed products that made life easier. Due to the lifestyle change, consumers readily took on what these companies sold. Plastics became more viewed as cheap and disposable as a 'wonder material'. Don Norman speaks about different principles of design, one being reflective design. (Norman, Emotional Design) This values what an object makes us feel or what owning it shows about it. For example, Gold is societally perceived as a rare and valued metal. It is an indicator of wealth and status across societies. However, Gold is not the rarest metal or structurally the most valuable as it is a soft metal. The value of Gold is more a subconscious ideal that is part of the archetype of Gold. In this way, how we perceive materials affects our value of

them. The perceived value of plastics was tainted through the early misuse of plastics for instant gratification and money-making benefits.

## Part 2- What can we learn from the rise in plastics?

To summarise part 1, Plastics boomed post-war due to their inherent advantages of being a versatile material and its economic benefits. From this, a new design wave boomed, effectively filling social needs. Through doing this, a softening of the class divide took place. Objects became more accessible. Following this, a social bridge was created. Not only were practical items more available, but trendiness and 'high style' aesthetics were accessible to the working class. Socially, this would have influenced how different classes perceived each other. The regression of the 70s made room for the decrease in the quality of plastic things. Corners were cut, and the drive to sell more paved the way for today's trend-focused consumer culture. What can we learn from this to establish better sustainable design parameters?

Firstly, for the proper uptake of sustainable design, it must work for the general population's lifestyle. City life includes a majority of high-rise living situations "20% of UK residents live in flat blocks" (English Housing Survey), and UK residents live in more temporary living situations. Through this lifestyle, we choose temporary objects over an investment, as it is harder to commit to the future, both in terms of where we will be and what we want. It should also be noted that investment options are not always available to the broader society. Post-war, we developed a consumer culture; this becoming the norm means that a working-class person will struggle to break free from this cycle as the ability to save is impacted. Instead of making a trend from sustainability, we should design in harmony with this lifestyle. Furniture that is moveable and affordable. Modular and multipurpose. In the same way, the postmodernist design aesthetic shaped the perception of plastic materials; designing for function and uniformity can be classic and universally appreciated.



Fig. 6 shows Thomas Thwaites Toaster project.

Following this, reuniting consumers with an understanding of objects will mean extended product life. Fig. 6 The Toaster Project, Thomas Thwaite. In this project, Thwaites examines how a classic toaster is made and attempts to build one without all the specialist and industrial equipment a factory would have. He concludes that we need to gain touch with the everyday objects we use. Product design has become so streamlined that it is a mystery to us. In doing so, we lose connection with these objects. (Thwaites 16) They are a means to an end; therefore, when they do not meet our needs, they are easy to throw away. However, as these everyday objects fill a social need, they should not be dismissed. The economic benefit of mass-produced objects allows for accessibility. This is not something we can turn back from. Instead, how can we foster better emotional connections with these cheap (and disposable) items? Making simpler designs that come apart quickly is a starting point. Increased product life extension can be witnessed by understanding how they are made and how to fix them. PLE is a fundamental building block for sustainable design practices. These changes to the design plan significantly make objects more sustainable. Designers generally develop design manifestos or principles for good design, like Dieter Ram's ten principles. They will lay out general parameters to work towards for successful designs. Some specific design parameters can be put into place to learn from the emergence of unsustainable practices. These include the points above. Designs should be able to be disassembled and moved easily. Designs should fill a social need. Designs should be fixable. Designs should be understandable on a consumer level. By achieving these points, which do not call for inaccessible

sustainable standards, I.e. up, priced 'sustainable' alternatives which promote an elitist monopoly on living sustainably, connection to products is retained, and therefore they live longer in the home and challenge our throw-away culture.

From the rise in plastics, we can learn about the influence of marketing. As the rise in plastics moved towards class equality, the rise in the sustainability movement has the power to create a social divide. Madge argues that sustainability can become a marketing opportunity, "traditionally, design has committed itself to provide solutions by producing more things. Thus, if one of the problems facing us today is climate change, and one of the explanations for this is to see it as caused by carbon emissions, then a design solution would be to produce new cars with considerably reduced carbon emissions, or even zero carbon emissions. In this, environmentalism (from one perspective) becomes another marketing opportunity." (Madge 44) For a genuinely sustainable way of living, it must be accessible. The capitalist system is embedded, but by creating better legislation to combat corporations greenwashing and neglecting environmental responsibilities, the capitalist drive for profit can be curbed. It is important to note that by positive marketing and activism spreading correct information, platforms like social media have the power to inform and give a voice to consumers. From the post-war era, we learnt about the power of marketing to convey the message of plastics as a 'wonder material' in the present day; it can be used to relay a green message and inform consumers.



Fig. 7 Smile Plastics Sheet material



Fig. 8 IKEA composite range

Smile plastics and IKEA can be compared and contrasted further to evaluate the classist implications towards the sustainability movement. Smile plastics recycles plastics into sheet materials. Their low energy pressure heat method creates a speckled material that has elements of the original plastic left behind, like bar codes. (Smile Plastics) Their material is used as an application for work surfaces and in interior spaces. The colours and unique ethos of the brand are trendy, and the sustainable spin of the company means these sheet materials have comparatively high price tags. Though the graphic nature of smile plastics promotes adding value to waste materials, it could be an inaccessible sustainable option for the general public. Perhaps surprisingly, IKEA's new implementations of sustainable guides have the grounds to be a sustainable and accessible option. Recently, IKEA has been developing and expanding its composite range, mixing extraction with recycled plastics to use waste in their designs. They have also been simplifying their flat pack furniture to reduce complicated builds so that pieces are easier to dismantle and require fewer pieces (less hard to lose), increasing Product Life Extension. (IKEA) The expansive nature of IKEA means that costs can be kept low, making more sustainable options available to the mass market. Though IKEA was founded and runs on many unsustainable practices, brand ambitions to become greener seem genuine and, from what we have learnt from the rise in plastics, have realistic design ambitions.

To conclude, Plastics are versatile, robust, and accessible. The boom in mass production post-war led to the wider uptake of plastic objects. This transformed society. Many benefits followed, and the plastic industry created opportunities and improved the cost of living. In doing so, the class divide

was softened. From this, we can learn that products must work for the public to properly uptake sustainable items. As a society, we do not settle in the same way, so we need objects to have longevity; they must be transportable, understandable, and fixable. This can counteract the Items that have become too quickly throwaway, as Thomas Thwaite shows in the toaster project. At the same time, a change in attitudes towards materials must take place. As the misuse of plastics from the 80s to the present day has warped the societal perception of the material, the context of materiality must be expanded. As we see with smile plastics, by reusing plastics with a hint of their former life in the new material, we see the material differently in a sustainable way. Sustainable design cannot cause a class divide. As the rise in plastics allowed for more accessibility, sustainability must work within these parameters. Trends are profit driven and do not work for a sustainable system. Understanding the implications of greenwashed advertisement campaigns is equally essential. The basic premise of what we can take from the emergence of unsustainable plastic consumption is not to turn our backs on the past and dismiss the systems already in place. It is more important to look at how our actions can be done better. Increasing product life extension and working with sustainable and recycled materials to continue to fill a social need can allow for a more sustainable future.



## ESSAY REFERENCE IMAGES

Fig.1 Eero Aarnio. “Globe Chair .” Dezeen, <https://www.dezeen.com/2016/04/17/eero-aarnio-retrospective-helsinki-design-museum-curator-suvi-saloniemi-interview/>. Accessed 8 Feb. 2023.

Fig.2 Chippendale Chair . [https://www.1stdibs.com/en-gb/furniture/seating/armchairs/fine-georgian-giltwood-armchair-style-thomas-chippendale/id-f\\_31017712/?qcy=gbp&allowUniversalLink=no&gclid=CjwKCAiA85efBhBbEiwAD7oLQA\\_jgSwTphfTk\\_qKtZzixzXu7aJ5uEHCTET5CbLdc-m70hc-pZZsGIIBoCnGEQAvD\\_BwE&gclidsrc=aw.ds](https://www.1stdibs.com/en-gb/furniture/seating/armchairs/fine-georgian-giltwood-armchair-style-thomas-chippendale/id-f_31017712/?qcy=gbp&allowUniversalLink=no&gclid=CjwKCAiA85efBhBbEiwAD7oLQA_jgSwTphfTk_qKtZzixzXu7aJ5uEHCTET5CbLdc-m70hc-pZZsGIIBoCnGEQAvD_BwE&gclidsrc=aw.ds). Accessed 8 Feb. 2023.

Fig.3 1980s Mc Donalds Food Packaging. <https://bioplasticsnews.com/2018/12/23/mcdonalds-and-the-polystyrene-connections/>. Accessed 8 Feb. 2023.

Fig.4 Arne Jacobsen Egg Chair . <https://www.thespruce.com/how-to-identify-a-genuine-arne-jacobsen-egg-chair-4136162>. Accessed 8 Feb. 2023.

Fig.5 “Throwaway Living .” Wasted, Katie Treggiden, page 10.

Fig.6 Thwaite, Thomas. The Toaster Project . <https://www.thomas-thwaites.com/the-toaster-project/>. Accessed 8 Feb. 2023.

Fig.7 “Recycled Plastic Materials Design.” Smile Plastics, 5 Nov. 2021, <https://smile-plastics.com/>. ©10 Publishers, 2011.

Fig.8 IKEA composite range “Being Smarter by Being Circular - Ikea Today.” About IKEA, 10 Mar. 2017, <https://about.ikea.com/en/sustainability/a-world-without-waste/being-smarter-by-being-circular>.

# ESSAY BIBLIOGRAPHY

- Jackson, Lesley. *The Sixties: Decade of Design Revolution*. Phaidon, 2004.
- McGuirk, Justin, and Lee Vinsel. "Repair Culture." *Waste Age: What Can Design Do?: Exhibition*, London, Design Museum, October 23, 2021-February 20, 2022, The Design Museum, London, 2021.
- Horne, Ralph, Louise Dorignon, and Bhavna Middha. "High-rise Plastic: Socio-material Entanglements in Apartments." *The Geographical Journal*, vol. 188, no. 4, 2022, pp. 571-584
- Katz, Sylvia. *Plastics: Designs and Materials*. Studio Vista, 1978.
- Katz, Sylvia. *Early Plastics*. Shire, 1994.
- Tate. "Postmodernism." Tate, 1 Jan. 1963, <https://www.tate.org.uk/art/art-terms/p/postmodernism>.
- Olivia Mull |17 April 2016 Leave a comment. "Helsinki Design Museum Hosts Eero Aarnio Retrospective." *Dezeen*, 29 Nov. 2022 <https://www.dezeen.com/2016/04/17/eero-aarnio-retrospective-helsinki-design-museum-curator-suvi-saloniemi-interview/>.
- Tomlinson, Jim. "British Government and Popular Understanding of Inflation in the Mid-1970s." *The Economic History Review*, vol. 67, no. 3, 2014, pp. 750-768.
- Berman, Phyllis. "McDonald's Caves in." *Forbes*, vol. 147, no. 3, 1991, pp. 73.
- Alumni, ACE. "Styrofoam Is Forever." *Action for the Climate Emergency*, 7 Apr. 2019, <https://acespace.org/2011/08/05/styrofoam-is-forever/>.
- Treggiden, Katie. *Wasted: When Trash Becomes Treasure*. Ludion, 2020.
- Norman, Donald A. *Emotional Design: Why We Love (or Hate) Everyday Things*. Basic Books, 2007.
- Thwaites, Thomas. *The Toaster Project: Or a Heroic Attempt to Build a Simple Electric Appliance from Scratch*. Princeton Architectural Press, 2011.
- Jong, Cees de, et al. *Ten Principles for Good Design: Dieter Rams: The Jorrit Maan Collection*. Prestel, 2017.
- *Design Issues*, vol 13, no. 2,
- "Recycled Plastic Materials Design." *Smile Plastics*, 5 Nov. 2021, <https://smileplastics.com/>.
- "Being Smarter by Being Circular - Ikea Today." *About IKEA*, 10 Mar. 2017, <https://about.ikea.com/en/sustainability/a-world-without-waste/being-smarter-by-being-circular>.

## Other relevant References

- Sabel, Charles F. *World of Possibilities: Flexibility and Mass Production in Western Industrialization*. Cambridge Univ. Press, 2002.
- Greenwood, D. P. *Modern Design in Plastics*. Murray, 1983.
- Gloag, John, and Grace Lovat Fraser. *Plastics and Industrial Design / with a Section on the Different Types of Plastics Their Properties and Uses ; by Grace Lovat Fraser*. The Scientific Book Club, 1946.
- Dubois, Harry. J. *Plastics History U.S.A*, Cahners Books 1903
- Bucquoye, Moniek E. *From Bakelite to Composite: Design in New Materials*. Stichting Kunstboek, 2003.
- Mossman, Susan. *Early Plastics: Perspectives, 1850-1950*. Leicester University Press in Association with Science Museum, London, 1997.
- Fiell, Charlotte, and Peter M. Fiell. *Plastic Dreams: Synthetic Visions in Design*. Fiell Publishing, 2010.
- Sparke, Penny. *An Introduction To Design And Culture*. 3rd ed, Routledge.
- Hagejård, Sofie, et al. "Designing for Circularity—Addressing Product Design, Consumption Practices and Resource Flows in Domestic Kitchens." *Sustainability (Basel, Switzerland)*, vol. 12, no. 3, 2020, pp. 1006.
- Bhamra, Tracy, and Vicky Lofthouse. *Design for Sustainability: A Practical Approach*. Gower, Aldershot, 2007.
- Minney, Safa. *Slow Fashion*. *New Internationalist*. 2016
- Sterling, Bruce. *The future of making, The power of making*. V&A Publishing, 2011
- Solanki, Seetal. *Why Materials Matter*. Prestel Verlag, 2021.
- Regan, Stephen. *The Politics Of Pleasure*. Open University Press, 1992.
- Hosey, Lance. *The Shape Of Green*. Island Press. 2012
- Lee, Sang et al. *Aesthetics Of Sustainable Architecture*. 010 Publishers, 2011

# IMAGE REFERENCES

Eero Aarnio. "Globe Chair ." Dezeen, <https://www.dezeen.com/2016/04/17/eero-aarnio-retrospective-helsinki-design-museum-curator-suvi-saloniemi-interview/>. Accessed 8 Feb. 2023.

Jackson, Lesley. *The Sixties: Decade of Design Revolution*. Phaidon, 2004.

All other images are my own.

# KEY BIBLIOGRAPHY

Jackson, Lesley. *The Sixties: Decade of Design Revolution*. Phaidon, 2004.

Madge, Pauline. "Ecological Design: A New Critique". *Design Issues*, vol 13, no. 2, 1997, p. 44-45

Cheshire, D. (2021). *The Handbook to Building a Circular Economy* (2nd ed.). RIBA Publishing. <https://doi-org.ezproxy.brighton.ac.uk/10.4324/9781003212775>

Thwaites, Thomas. *The Toaster Project : Or a Heroic Attempt to Build a Simple Electric Appliance from Scratch*. Princeton Architectural Press, 2011.

Chapman, Jonathan. *Emotionally Durable Design*. Routledge, 2015.

Dieter Rams, et al. *Less and More : The Design Ethos of Dieter Rams*. Gestalten, 2009.

Norman, Don. *Emotional Design : Why We Love (or Hate) Everyday Things*. Basic Books, 2003.

Madge, Pauline. "Ecological Design: A New Critique". *Design Issues*, vol 13, no. 2, 1997, p. 44-45

Sparke, Penny. *An Introduction To Design And Culture*. 3rd ed, Routledge.

Bhamra, Tracy, and Vicky Lofthouse. *Design for Sustainability: A Practical Approach*. Gower, Aldershot, 2007.

Minney, Safia. *Slow Fashion*. New Internationalist, 2016.

Lee, Sang et al. *Aesthetics Of Sustainable Architecture*. 010 Publishers, 2011.

Hosey, Lance. *The Shape Of Green*. Island Press, 2012.

Regan, Stephen. *The Politics Of Pleasure*. Open University Press, 1992.

Sterling, Bruce. *The future of making, The power of making*. V&A Publishing, 2011

Solanki, Seetal. *Why Materials Matter*. Prestel Verlag, 2021.

Katz, Sylvia. *Plastics: Designs and Materials*. Studio Vista, 1978.









Brighton University

3D Design and Craft

AGP6422 Expansion and resolution of practice.

'All These Horrible Things'

By Jessie Hills

2023