

# BROKEN...



Dissertation Magazine exploring wastefulness and recycling in furniture design



**Cover**

*Broken Plastic Chair, picked up on the Street. Small crack makes the chair unusable. The plastic is nonrepairable and the tubular steel frame now useless, both to be discarded.*

**Above**

*Project work 2022/23 for Domestic Object module, [REDACTED] Me sitting on hardwood and recycled plastic bottle top chair in 2023.*

Dear Reader,

In a rapidly changing world, a world where catastrophic news stories are dominating most of our information intake every day, good news stories are exemptions and when stumbling upon, somewhat of a surprise. I find it extremely important to always find the positive stories next to all the terrible things that are happening. When we are only consuming apocalyptic news 24/7, we become blunt, stop listening and pay attention, as our brains are overstimulated. We can feel helpless and small and the pressing issues too big for us to tackle alone. If, on the other hand, we are escaping reality and ignoring what is actually happening in the world today and stop any acknowledgement of news altogether, we risk losing our empathy for others and become disconnected from our community around us, who are aware of the events that are currently going on.

This means that now it is more important than ever, to inform and get informed in a balanced way, staying in the centre between both extremes. Studies such as 'Negativity drives online news consumption' by Nature Human Behavior (2023) have shown that news headlines with a negative trigger word, are more likely to be clicked on. This leads media and newspapers to create more clickable headlines and can threaten journalistic impartiality.

This magazine explores a theme and subtopics through various articles, hoping to inform in a balanced way.

'Plastic pollution' has been a trigger word for more than three decades. I have personal childhood memories of news coverage in 2010 on plastic waste in our oceans similar and the Great Pacific Garbage Patch (BBC, 2010).

Reusing materials, or waste as most call it, has been something I have been experimenting with for over 10 years. When I was younger I designed and built tables out of old bicycle wheels and car tyres.

I remember my older sister telling me stories about how she was dumpster diving to save perfectly good food from supermarket bins. For her, this was a form of activism and challenging the system, but also feeding herself whilst on a student loan.

For the past two years, during my second and third year of studying

I have been exploring single-use plastics in combination with wood to create sculptural furniture.

I have been collecting single-use plastic in my neighbourhood, cleaning it and then creating a new material, that I could mould and shape using woodworking tools. The discoveries I made using this highly versatile material, and the response I received led me to delve deeper into the topic for the purpose of this dissertation.

What do reused materials communicate? Have they been misused for green marketing strategies and greenwashing or have they become part of an honest attempt to change the way we design and make things?

In the first part, three articles explore the birth of plastic and what it meant to the furniture industry, planned obsolescence (the method of intentionally designing something of short life span, leading to be replaced frequently) and green marketing. In the second part, two articles will question consumer priorities in this matter and the chance for designers and makers to create sustainable furniture on a small scale, including two interviews with three designer-makers based in Dundee and Glasgow.

I hope you find these stories interesting, informative and engaging. Maybe even leading to giving more thought to our built environment and interiors.

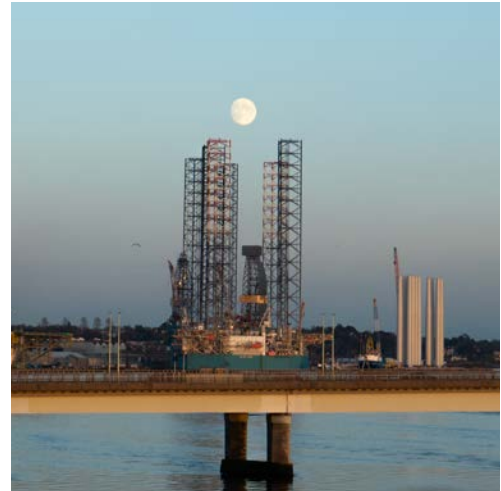
Camillo Feuchter 2024

**I hope you find these stories interesting, informative and engaging.  
Maybe even leading to giving more thought to our built environment and interiors.**

# INTRODUCTION

### 3 Introduction

### 8 **The Birth of Plastic** The beginnings of 'democratic' Furniture



### 16 **Planned Obsolescence** Unsustainable design methods

### 20 **Green Marketing Strategies** Is it all Greenwashing?



**26 The Consumer View**

Different priorities

**28 Eco Furniture and Makers**

Chances for small sustainable businesses



**30 Interview with  
Aymeric Renoud**

Draff Studios



**34 Interview with  
Aaron Cork &  
Will Jenkinson**

Still Life

**40 Circular Economy**

A closed loop

**42 Conclusion**

*Vitra. 2022, Plastic: Remaking  
our World Exhibition  
The visit inspired me to  
experiment with recycled plastics  
myself.*







# The Birth of Plastic

The beginnings of  
'democratic' furniture



In the ever-evolving world of design and manufacturing, materials have always played a pivotal role in shaping the industry's direction. Among these materials, plastics have risen to prominence as a versatile and at the time innovative option for furniture, product and interior design. Plastic moulded furniture pieces have become design icons, others the embodiment of poor design although selling with great success.

But let's start at the beginning.

The history of plastics dates back to the 19th century when John Wesley Hyatt developed the first synthetic plastic, celluloid, in 1869 (Rhodes, 2019). Initially created as a substitute for ivory in billiard balls, celluloid soon found applications in a wide range of products, including combs, photographic film, and buttons. In the mid-1900s Werner von Siemens found that the rubber gutta-percha, a natural plastic, could be used to insulate undersea telegraph cables (Picker, 2008). This marked the beginning of a new era in material innovation, where man-made substances could mimic natural materials and due to precision production and creation, even perform better in some ways than natural materials.

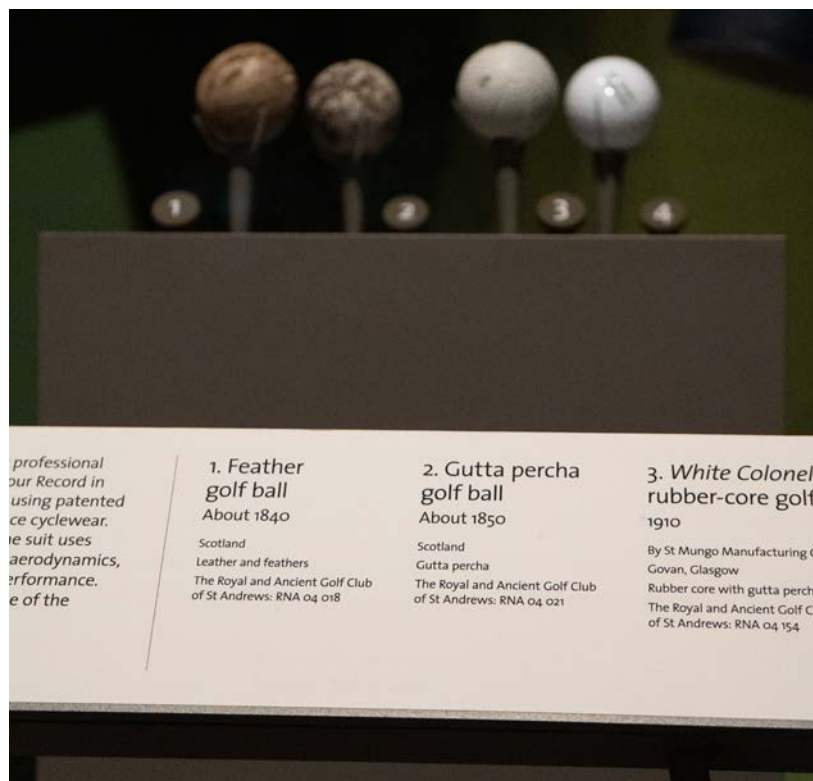
But what exactly is plastic? The word plastic originally described something that is pliable. Only a few decades ago it became the term describing a category of materials, which are

called polymers. Polymers exist all around us in the natural world, such as cellulose which makes up the walls of plant cells. Polymers consist of monomers, the smallest molecular building blocks. Molecules of the same type can be added to more polymers infinitely, like a chain-link in a chain (Olatunji, O. 2022). When heated, the string-like structure is malleable, changing shape and once cooled retaining it. This meant that opportunities suddenly became almost infinite, as this new material could be shaped in almost every way possible.

In the early 20th century, plastics began to make their mark in the world of design. Bakelite, developed by Leo Bakeland in 1907, was a ground-breaking discovery (Karraker, 2022). This thermosetting plastic could be moulded into various forms and colours, making it a favourite choice for many designers. Bakelite's use extended to radios, telephones, and kitchen appliances, transforming both product and interior design.

The aftermath of World War II witnessed a significant boom in plastic production. This period saw the emergence of new plastics

like polyethylene and polypropylene, which were inexpensive to produce and highly adaptable. A change of direction to the mass consumer market was bringing Tupperware and PET bottles, which could hold pressure from carbonated drinks and were virtually unbreakable. Today, every minute around one million plastic bottles are purchased, globally (Scarr & Hernandez, 2019).



V&A Dundee, permanent collection.  
Gutta Percha golf ball, ca. 1850.

### Left Page

Recycled plastic swirl (detail).



**Above**

*Replica of Eames Plastic Chair*

## 'to make best for the most for the least' Cook (2017) about Ray and Charles Eames

Plastics are everywhere and we come in contact with it in almost every daily life situation. The 1940s-50s plastic euphoria spilled over to furniture designers, such as American designers Charles and Ray Eames, who are seen as some of the most influential designers of the 20th century. They capitalised on these developments, creating iconic furniture pieces such as the Eames Plastic Chair. These innovations revolutionised furniture design until today. (Icon, 2023). Their approach was utilitarian and their maxim was 'to make the best for the most for the least' (Cook, 2017). This became most true for the Plastic Moulded chairs as they

became the 'first mass-produced plastic chairs in the history of furniture' according to Vitra (2023). Another widely recognized symbol of utilitarian furniture design is the Monobloc chair; a single-piece, mass-produced, affordable and therefore democratic plastic chair that is the most sold and some say the most hated chair in the world. While it is affordable, making it available to the masses, it is made from virgin plastic and is unsustainable. It lacks durability and longevity, leading to frequent replacement, which is a trend across product and furniture design to keep the consumer buying the same

product perpetually (Kullmann, 2020). This approach to designing furniture, objects and products has revealed itself to be highly problematic in terms of resource and energy consumption.

Plastic has many advantages and has led to massive leaps in medical advancements. After working with the material for the past couple of years and looking at the material's properties objectively, I could identify **three** positive attributes that make plastics such an appealing material for designers to work with.

**1** Plastics are extremely versatile as they can be moulded into an endless array of shapes, sizes, and textures. This flexibility allowed designers to push their creative versatility, producing unique and innovative pieces that were previously unthinkable.

**2** Plastics can offer exceptional durability, ensuring that furniture and products are made for a lifetime. This longevity could reduce the need for frequent replacements and even minimise waste but is more often contributing to the opposite and creating long-lasting environmental damage.

**3** Plastics remain a cost-effective choice (I am collecting plastics in the community and therefore free), making well-designed and functional pieces accessible to a wider audience. This affordability can democratise design, allowing more people to use products and furniture.

As plastics became more ubiquitous, environmental concerns began to surface. The durability and longevity of plastics, once celebrated, became a drawback as they contributed to pollution and waste. 'Plastic waste can take anywhere from 20 to 500 years to decompose, and even then, it never fully disappears; it just gets smaller and smaller' (UN, 2021). The design industry began to re-evaluate its choices and seek sustainable alternatives.

This led to a renewed focus on biodegradable and recyclable plastics, of-

fering hope for a greener future (Al-Salem, 2019).

The beginnings of plastics in the furniture, product, and interior design industry were marked by innovation and creativity. From early pioneers like Bakelite to the designers Eames', plastics have played an essential role in shaping the design landscape. While environmental concerns have prompted a re-evaluation, plastics continue to be necessary in certain aspects

of life. Modern medicine advancements are closely linked to the material.

But there has been a move away from virgin plastics in areas where there are other options, using recycled plastic, bio-plastics or a different material altogether, mainly due to a public push and pressure for greener, more sustainable products.

**'Plastic waste can take anywhere from 20 to 500 years to decompose, and even then, it never fully disappears; it just gets smaller and smaller' (UN, 2021)**



*Replica of Eames Plastic Rocking Chair*



*Replica of Eames Plastic Chair*





*unsustainable design methods*





# Planned Obsolescence

Planned obsolescence is a deliberate strategy employed by manufacturers and designers to ensure that products have a limited lifespan. This practice ensures that consumers will need to replace their items sooner, driving demand for new products and boosting profits for manufacturers and playing an important role in damaging our environment through overconsumption on the other hand. Writing this is realising that we as designers carry huge responsibilities to not follow this highly questionable ethos.

In our consumer-driven society, we have become accustomed to replacing our gadgets, appliances, and clothing far more frequently than previous generations. While technological advancements have undoubtedly improved our lives, a concerning trend has emerged: designers creating single-use products and practising planned obsolescence. This article

delves into the issue of these unsustainable design practices, their impact on the environment and society, and the potential to foster more responsible design.

The term 'single-use' has become omnipresent in our daily lives. From disposable razors and coffee cups to cheaply made toys, the market is flooded with products that are designed to be used once and then discarded. This throwaway culture is not only wasteful but also detrimental to the environment (Chanda, 2017). Single-use products contribute significantly to the growing problem of plastic pollution. Items like single-use plastics, which include bags and packaging, end up in landfills and oceans, harming wildlife and ecosystems (Xanthos and Walker, 2017). Additionally, the production of these items depletes finite resources, further accelerating environmental degradation. In previous generations, products

would only be bought if they were of good quality and repairable as one wouldn't have enough money for a second one, along the lines of the saying 'too poor to buy cheap'. This mentality has changed, as we moved to buying cheap things and replacing them if necessary. While single-use products may appear affordable upfront, their overall cost to consumers over time is substantial, trapping socio-economically weaker parts of a community in a perpetual cycle, as only the wealthier can afford the initial investment in longer-lasting quality products and furniture.

There are two main types of planned obsolescence; functional obsolescence and technological obsolescence.

Functional obsolescence means that products are designed with parts that are intentionally difficult or expensive to repair or replace, forcing consumers to buy new items (Satyro, 2018).

Technological Obsolescence means, that new versions of products with minor improvements or changes are released that make older models seem outdated or incompatible with new technology. Both have far-reaching consequences for consumers, the environment, and society as a whole (Pope, 2017).

The Environmental Impact of this is huge, the continuous production and disposal of short-lived products contribute to resource depletion, increased waste, and energy consumption. This not only harms the environment but according to Gaultinan (2009) also exacerbates climate change.

Planned obsolescence can trap consumers in a cycle of constant consumption, as they are forced to replace products prematurely. This can perpetuate a culture of debt (Bulow, 1986). This design and marketing practice has many faces all of which are very problematic for consumers, society and the environment.

The constant pursuit of the latest gadgets and fashion trends driven by planned obsolescence fosters a culture of consumerism. This emphasis on materialism can lead to feelings of inadequacy, promoting an unsustainable and unfulfilling way of life (Hellmann and Luedicke, 2018).

To address the problems associated with single-use products and planned obsolescence, a shift towards responsible design needs to happen. From the issues of planned obsolescence to economic, societal and environmental factors, some things can be done to tackle the problem. If one were to flip the issue on its head, conclusions for solutions could be drawn.

**Designers could prioritize the use of sustainable and biodegradable materials, reducing the environmental impact of products from production to disposal.**

**Products could be designed with longevity in mind, featuring easily replaceable parts and accessible repair options, allowing consumers to extend the lifespan of their possessions.**

**Manufacturers could be transparent about a product's expected lifespan and provide information on how to care for and repair it.**

**Governments and industry bodies could implement regulations to discourage planned obsolescence, such as requiring manufacturers to provide longer warranties or imposing penalties for unsustainable design practices.**

In a small survey conducted among 15 Design Students (age 18-25) at the ██████████ in November 2023, 71% found the environmental impact an important factor when designing (Survey 1, 2023). The question is, why not everyone would see this to be important? This survey is too small to be representative across all design practices and disciplines but shows a trend of the majority of design students showing awareness around the topic, but also a conflict of interest in terms of costs versus environmental impact. The affordability was what brought success to the Eames Plastic Chair which allowed for a distribution to the masses.

In the same survey 80%, stated that longevity and durability are important to their design. This can be seen as a crucial part of sustainable design (Survey 1, 2023).

The prevalence of single-use products and planned obsolescence represents a significant challenge for our society and planet. It is on designers and manufacturers, but also governments and consumers to create a culture of responsible design and consumption. Sustainability, durability and longevity should be a priority when it comes to designing.



**Above**  
*W Stark Upholsterer, Peddie St Dundee*  
*Repairing furniture has become out of trend*



**Right**  
*Timpson watch repair, High St Dundee*  
*Watches are one of the few consumer products people are still getting repaired*



**Green**  
**Marketing**  
**Strategies**

Is it all greenwashing?

In recent years, there has been a growing global concern about environmental sustainability and the impact of consumerism on the planet. As consumers, we become more conscious of our choices. Big companies have jumped on the 'green/eco' bandwagon, claiming to use recycled materials in their products, using green energy for production and reducing packaging waste. If this involves companies exaggerating or misleading consumers about their environmental efforts, it would be described as 'greenwashing'.

The term greenwashing was coined by New York environmentalist Jay Westerveld. After staying in a hotel, which promoted reusing towels to save the environment, even though the incentive for the hotel was to save costs on washing towels. He wrote about this in a later essay and described this behaviour as 'greenwashing' (Motavalli, 2016).

Recycled materials, and above all 'recycled plastic' have become buzzwords. These materials are often hailed as an eco-friendly alternative to virgin resources, as they reduce the strain on natural ecosystems and minimise waste. Companies have eagerly adopted recycled materials as a way to appeal to environmentally conscious consumers and improve their public image (Szabo and Webster, 2021). On labels, websites and marketing campaigns, appearing sustainable as a company has become ever-important.

However, the reality behind the use of recycled materials in the furniture industry is more complex than it appears. According to Siano (2017), 'greenwashing has usually been defined as a gap between symbolic and substantive actions'. In an ideal world, companies would manufacture responsibly and cost-effectively. Many big design/manufacturing companies however use this trend as a marketing ploy, engaging in greenwashing tactics to give the illusion of environmental responsibility

while continuing to prioritise profit over sustainability.

Big furniture companies often label their products as 'made from/with recycled materials' without providing detailed information about the percentage of recycled content. In some cases, a product may contain only a small fraction of recycled materials, while the majority is still derived from virgin resources. This is misleading consumers to buy products which they think are ecologically responsible but in reality aren't.

Companies may use vague terminology such as 'eco-friendly,' 'sustainable,' or 'green' without defining what these terms mean in the context of their products. This ambiguity allows them to manipulate consumer perception without making concrete sustainability commitments. While recycled materials may save on raw resources, their manufacturing process can still be energy-intensive. Equally important to sustainable materials is renewable energy for a sustainable production process.

Consumers deserve transparency from big furniture companies when it comes to their environmental claims (Mukonza, 2021). True sustainability involves more than just using recycled materials; it encompasses the entire product lifecycle, from sourcing to manufacturing and disposal. In a perfect world, a world in which a circular economy would be practised, disposal wouldn't need to be an option.

Ideally, companies would create transparency by providing clear and verifiable information about the percentage of recycled content in their products and their overall carbon footprint.

Companies started conducting lifecycle assessments to evaluate the environmental impact of their products, from raw materials to disposal. Why not make this process transparent and consider factors like energy consumption, emissions and waste generation?

Companies could commit to reducing their reliance on virgin resources

and prioritise the use of recycled and sustainable materials wherever possible. This commitment should extend beyond marketing slogans to concrete actions.

Third-party certifications such as the Forest Stewardship Council (FSC) or Cradle to Cradle (C2C) can validate a company's sustainable practices. These certifications should provide consumers with confidence that a company's environmental claims are legitimate.

And last but not least encourage products designed for durability and longevity rather than planned obsolescence. Longer-lasting products reduce the need for replacements and minimise waste. However, all of the above are in most cases not implemented, because they stand fundamentally against a capitalist-consumerist economy where growth is existential to secure jobs and maintain a solid social welfare system.

The greenwashing of big design and manufacturing companies through the use of recycled materials is a concerning trend that undermines genuine efforts towards sustainability. As consumers become increasingly environmentally conscious, it would be crucial for companies to adopt transparent and responsible practices. This is not a priority for everyone as the increase in low-income households in this country are struggling to keep their heads over water.

To combat greenwashing, companies should prioritise transparency, reduce their reliance on virgin resources, and genuinely commit to eco-friendly practices throughout their product lifecycles. By holding companies accountable and making informed purchasing decisions, consumers could drive positive change in the industry, encouraging furniture companies to embrace true sustainability rather than mere marketing.

### **Right Page**

*Primark advertisement on High Street, Dundee.*

*'Planet, single-use plastic, Primark-cares and a green leaf'. Green Marketing?*

**Removing  
single-use  
plastic.**

**For our  
single planet.**

Search  
'Primark Cares'



We're removing all  
single-use plastic from  
our business by 2027.





**Left**

Recycled Plastic frog keyring. Recycled material but still short life span and high potential of ending up in the environment

**Right Page**

Fleece label. Made from plastic bottles. 100%? 1%? How many bottles? No answer to be found anywhere on the label or product





**REGATTA**  <sup>TM</sup>  
**GREAT OUTDOORS** <sup>®</sup>



**Above**

LEGO Harry Potter. Made entirely from plastic.  
Made to keep and passed along. Many LEGO sets  
have reached collectable value.

# The Consumer View

## Different priorities

From a consumer perspective, the sustainability aspects of products have become more important than ever. Mostly in the younger generations, the awareness of global environmental issues has increased and led to making more conscious everyday decisions to participate in demonstrations and activism. The global movement of Fridays for Future has real effects on stakeholders such as politicians and Sommer and Haunss (2020) even say in that context that 'there has rarely been such a confident young generation'.

Even among conservative and religious groups a change in direction can be found. What used to be an almost exclusively, some would say 'hippie' topic, found its way into the mainstream across the socio-political spectrum. Some say that Pope Francis's encyclical 'Laudato Si' (2015) played a significant role in Religious Environmentalism, as 'religions could make a difference given their massive number of followers, their public

visibility and credibility, and their impact on the worldviews, values, and lifestyles of their adherents' (Koehrsen, 2023). Conservative groups and politicians should make environmental protection priorities on their agendas, again. The word conservative after all derives from 'conservare' (lat.), meaning to conserve (verb), conservation (noun).

Today, in a world with multiple crises, frequent disasters and war across the globe, inflation and a cost of living crisis in many countries has forced consumers to make difficult choices. For many, their monthly wages are not keeping up with the increase of inflation, mirrored in higher costs of rent, energy and food (Neil, 2022). As sustainable products are more expensive in most cases than their 'standard' counterpart, for most it is not even a question of which one to choose as only one of them, the cheaper one, is a realistic option. From hygiene products and cosmetics, (non-) organic food and drinks, and clothes to furniture and other

objects of the domestic, the eco-option is not an actual option. This has created a two-class society in which only the wealthier are able to afford sustainability.

This conflict of interests and the different priorities between being environmentally conscious and being able to afford 'eco', has struck me as the hardest equation to solve. Change is necessary to decrease the degradation of our planet across the board; from energy to transport, from agriculture to housing, from construction to products. But in democratic countries, this change needs to be supported by a majority of its population. This is exactly where the problem lies that seems almost impossible to solve, as an already struggling population is not going to actively support legislation that might increase their cost of living even further. But it also should not be decided behind their backs, as this could lead to conflicts and even further division in the socio-political spectrum. We need 'green' change, that is socially tolerable, but how?



*Recycled plastic and ply/valchromat offcut chair.*

# Eco Furniture and Makers

## Chances for small sustainable businesses

Over the past months, I have been fortunate to meet some amazing makers and designers. During a design sprint at the V&A Dundee at the beginning of 2023 I spoke to the founders of the design initiative Thing Thing from Seattle, USA. Their studio creates colourful sculptures from single-use plastic and also educates people about plastic waste through workshops. On the same occasion, I attended an inspirational talk

by Ally Mitchell, founder of Ocean Plastic Pots who creates flower pots from Ocean Waste. During the Plastic: Remaking Our World exhibition at the V&A Dundee I came into contact with Will Jenkinson and Aaron Cork, founders of Still Life, who create handcrafted furniture using local hardwood and single-use plastic. I met Aymeric Renoud who founded Draff Studios and is creating unique furniture using waste from the brewing and distilling process (called Draff).

All of the above use waste materials, trying to make... better. Their sustainable products are not sustainable for marketing purposes, but because it is essential to who they are and what they make. For this dissertation, I had the pleasure of interviewing both Aymeric from Draff Studio and Will and Aaron from Still Life. I was interested; what drives Aymeric, Aaron and Will? What does sustainability mean to them? How do they see the world?

# DRAFF Studios

## Interview with Aymeric Renoud



**Right**  
*'draff' detail.*  
*hexagonal coaster*

I met Aymeric on a Wednesday morning in his workshop on the outskirts of Dundee. He welcomed me friendly and showed me some of the things he is currently working on. Next to his Draff Furniture, he takes on commissions and often works closely together with the Design Studio 'kenedytwaddle'. After a bit of chat, he made-shift a table on two tresses and we sat down for the interview. I audio-recorded 40 minutes of questions and answers and talked for a while longer afterwards when I was also able to take some photographs of him and his work.

According to Aymeric '...[sustainability] has become a word where it's like everything and nothing. Everyone uses it, but no one really knows what it is.' Draff Studios is about creating furniture of exceptional quality, something that is long-lasting; furniture that is made for people and not 'impacting them or their life'. To him, sustainability is the bare minimum that everyone should apply to their design, because 'why would you focus on designing something impacting the planet?' Aymeric always loved the outdoors and trees and woods in particular. He studied to be a cabinet maker in France,

and studied Interior & Environmental Design, at Duncan of Jordanstone Collage of Art and Design, Dundee, graduating in 2017 and writing his dissertation about Eco-Design. After he graduated, he had this idea one morning. After having attended several distillery and brewery tours, and hearing about the organic waste material draff, which is spent grain remaining from the brewing process, he thought that there would be a better way of utilising it instead of giving it to livestock as feed. He saw the problem that urban Breweries are often not able to arrange pick-ups with farmers for them to take the draff away, so he got in contact with 71 Brewing in Dundee and started experimenting with the material. The wet material comes in big bags, often with moisture content between 60-80% and has to be dried, which can be quite challenging according to Aymeric. After this the dried grains and botanicals are mixed with a water-based formaldehyde-free binder and pressed into a mould under high pressure and high heat which evaporates the water from the binder, leaving behind a material with a high density similar to an OSB/chipboard. This material can be cut, sawed, drilled into, sanded and

once varnished water-repellent. Locality plays a vital part in his business, his material, the workshop and his clientele. To him '[the] idea of locality [...] is really powerful', not only for his business and to keep CO2 emissions low. He aspires to the idea of a 20-minute neighbourhood for everyone, meaning hospitals, schools, shops, work, and everything for day-to-day business within a small walking distance radius. He has a very differentiated view on sustainable design, and sees certain eco-movements with caution, saying that 'green products are a bit of a trend' at the moment and 'it shouldn't really be a trend' and that everyone should be doing it. At this stage, I fully agree with everything that Aymeric is saying, but am also left wondering about people on a lower income who might not be able to afford higher-priced, superb quality and environmentally friendly manufactured products. It is the initial investment that needs to happen, but is everyone able to take that step? Design according to Aymeric should be smart and thought through, bad design 'shouldn't even be a thing'. He explains that plastic isn't a problem per se, but the many ways that we are not using it appropriately.



*Aymeric Renoud, portrait at the 71 Brewing premises where his new workshop will be.*



Lego, for example, is making their products with longevity in mind and he sees no reason why they should change it. But single-use plastic, such as bottles by large soft drinks manufacturers are a problem and could be rethought and redesigned, but regulations should be coming from the top. Consumers shouldn't be given too much responsibility, as they can recycle and be environmentally conscious as much as they want if the virgin single-use plastic industry keeps producing as before and the recycling system not properly working. Aymeric said that he's 'on the verge of stopping recycling' as he thinks that it might end up in other countries where children have to sort through it and/or in the waterways, rivers and ocean. 'There should be policies for producing companies' to be plastic-free in the near future. The government should put up

clear rules in the form of legislation that tackles the problem at the root, the system and not only on the consumer level. Aymeric's outlook on our planet's future was pessimistic... or maybe just realistic. He thinks 'we are already in a really really bad shape.' Big companies are often only marketing themselves as being green, by 'changing their logo' but 'it is just f\*\*\*ing greenwashing'. Businesses are still mainly profit-driven and governments/politicians are not putting the right measures in place fast enough. The plastic-straw ban for example is just the peak of the iceberg. When meeting Aymeric, he seemed like someone who felt a great responsibility for his work's impact and others. One day he'd like to take on some people working for him, but he would have to make sure that they are in a secure and stress-

free environment as he would 'hate himself' otherwise. He wants '...a company that respects everyone, respects its clients, respects its employees, respects the planet.'

Lots can be learned from Aymeric. Locality should play a bigger part again in our society, for manufacturing, work/lifestyle and a stronger community aspect. Most people will also only be able to make changes on a local level which would be very empowering nonetheless counteracting all the pessimism that is in the air today. We should always be contemplating the impact of everything we do and don't do, most of all if we are creators of products, objects and services. And last but not least, we should be respectful of one another and our environment.



**Left**

*The Feuilleté Chair and current commission  
Aymeric is working on*

**Below**

*The Feuilleté Chair, made of ash plywood and druff*





Aaron and Will in their Studio

# Still Life Studios

## Interview with Will Jenkinson and Aaron Cork



**Left**  
*HDPE milk bottle tops,  
source for their creations*



**Right**  
*Film canisters from across  
their road, heavily used in  
their makings*

**W**ill and Aaron work from a small workshop in Glasgow's Southside. They share some of the machines and space with other makers in the building which is good for various aspects including reduced costs, more space and lower environmental impact. Just like sharing one car among 10 people instead of ten people owning 10 cars.

I was keen on meeting and interviewing them in person so I made my way to Glasgow for a day and met them in their workshop. After talking for a while, we sat down to start the interview. I audio-recorded our conversation for one hour and took some pictures of the two afterwards.

Will and Aaron started off working together in London making furniture using wood. They 'remember being aware of the amount of waste around

[them] and wanted [to] try and utilise it, reuse something.' They saw 'many pieces of furniture' being disposed of in the streets and a high 'turnover of cheaply made furniture'.

Their starting point for experimenting with plastic was a video by Dutch designer Dave Hakkens. He is an award-winning designer who in 2013 for his Honours Project created DIY plastic recycling machines including a shredder, injection moulder and a sheet press. Everything was published open source and he started the Precious Plastic movement. According to stats on their website they are in over 107 countries and 'in 2022 alone over 595-THOUSANDS-TONS were recycled by people and organisations working on Precious Plastic.' (Precious Plastic)

This is a common story in the

community of plastic recyclers, it was also the starting point for me.

Both Aaron and Will were inspired by Italian artist and furniture designer Enzo Mari. They rebuilt his chair, table and shelves and were struck by the utilitarianism of his designs. It was around the time when they decided to move from London to Glasgow and set up a workshop, that they learned about the Precious Plastic movement. A lot '[...] more news and stories and articles about the Atlantic gyres and plastic pollution' highlighting the issue, inspired them to start experimenting. It wasn't about making furniture straight away but getting to know the material, its properties and how to work with it. They built machines and took 'a year of [just] experimenting with [plastic].'



**Above**  
V&A Dundee,  
Scottish Design Galleries.

‘I think you can appear sustainable easily. It’s a lot easier to appear sustainable than it is to actually be sustainable.’

- Aaron Cork, 2023

Their response to feeling responsibility as designers was almost identical to Aymeric. ‘I think if you’re designing things without thinking about the object’s lifecycle then it is bad design’. According to Will, it would be ‘irresponsible to design otherwise’. This made it very clear that the urge and the struggle to be sustainable and therefore responsible is deeply rooted in their mindset. They tell me that before even thinking about the look and price of what they are creating, they think about the material and ‘what’s going to happen to it afterwards’. This is reversing the method of designing and in my view one that should be adopted by every designer and maker in this age.

‘Repairable, reusable, recyclable.’ Those are the criteria they set themselves for everything they create. The ability to repair things has become neglected in the past decades, but its sustainable impact is often underestimated. Even at the London Design Festival, they tell me, there are lots of things claiming to be sustainable, but a lot of them are unrepairable. Only a ‘secondary thing’ and ‘greenwashing’ according to Will. There it is again: Greenwashing. Aaron thinks that ‘[sustainability] is definitely a hot topic. I think you can appear sustainable easily. It’s a lot easier to appear sustainable than it is to actually be sustainable.’

A lot of things that are produced responsibly are often more expensive, the key is to educate people and explain to them that it is ‘worth spending money on something that’s going to last a lifetime rather than [...] buying something cheap and then having to buy again.’ They are still to figure that one out, as it comes across that they’d be benefiting from selling a few more of their objects, to be able to invest in themselves and their business. It’s a mentality, but also for many reality of living on a low income, to buy the cheapest and to replace perpetually. ‘Societal change that has to happen in the way we view objects.’

## How to create a squishy stool:

Collect the plastic (locally)

Sort it by type (LDPE and  
HDPE)

Wash it

Sort it by colour

Melt in aluminium mould

Compress in a hydraulic press

Let cool.

Remove excess material (they  
call it 'splurge' and is reused in  
future projects)

Drill the holes for the legs on  
the underside

Cut thread into the holes

Sand the entire stool top

Turn legs from local wood  
(mostly ash)

Cut thread into the legs

Finish the legs with natural oil

Screw legs by hand into stool  
top

A squishy stool you can sit on.

As they are using locally collected single-use plastic, their objects are always influenced by the colour of the plastic. A lot of material comes from the photo lab across the road which supplies them with single-use film canisters. So locality directly 'informs the design'. This is something that I found really fascinating. In the past, it was the only way to design things. One could only work with the materials available to them locally. Since everything is available anywhere and at any moment, at least this is the perception in a globalised world, designers choose

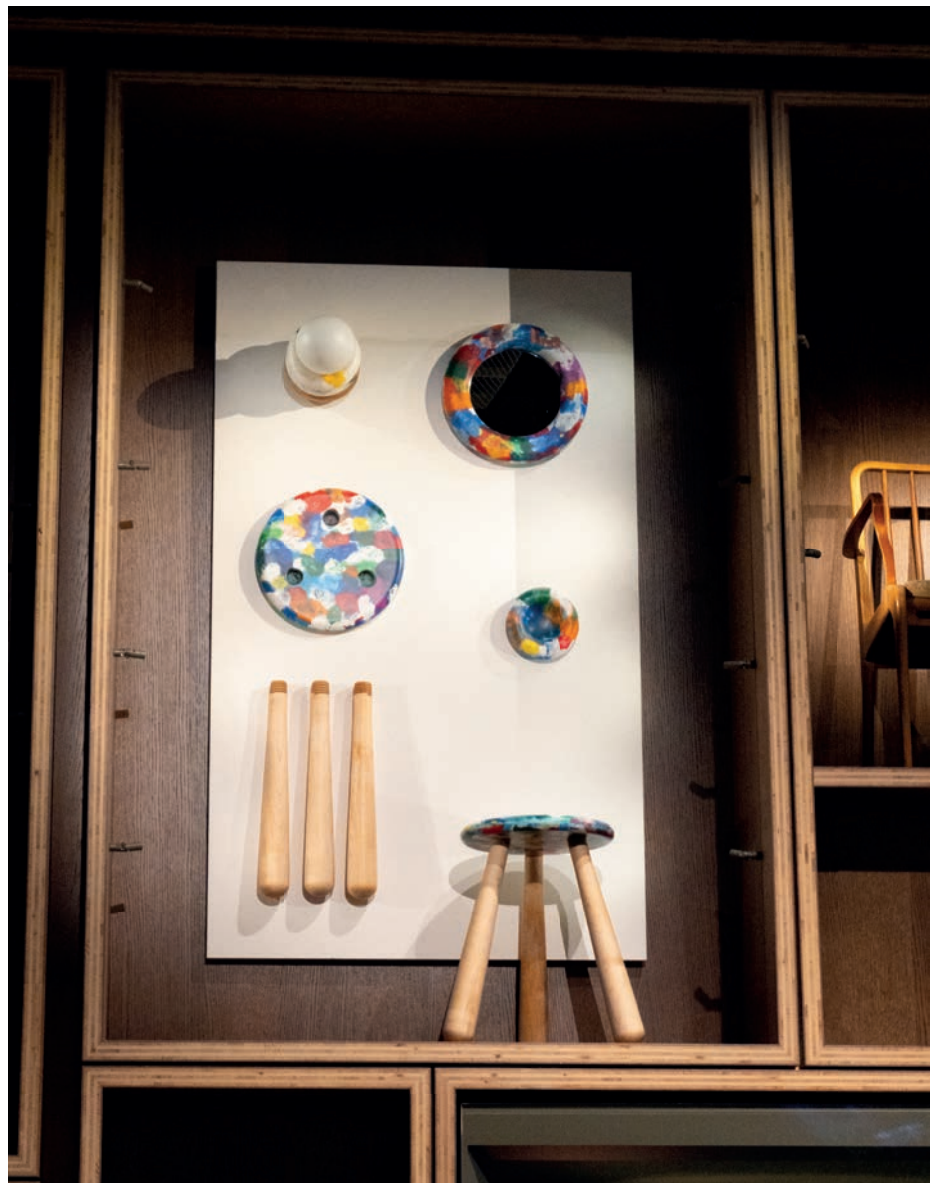
materials from across the globe for their products, creating whole new aesthetics but also inflicting impact on our planet through shipping and potential exploitation of humans, animals and nature in parts of the world we don't see.

For Still Life, it is not just about reusing plastic, but creating something of high quality. Small companies making loads of recycled plastic keyrings or carabiners, for example, are 'starting a conversation by having a product like that, but [...] not thinking about the lifespan of that object'.

Due to the amount of time and the costs of materials and running a business, their products come with a certain price tag. Being very conscious of this, they are working on a way of running workshops that more can participate in and be led through the process of making their own object. This would also be going back to the precious plastic ethos of spreading the message of a plastic recycling revolution.

### Above

*Still Life has been commissioned to produce a dish, mirror, lamp and stools for the permanent collection*





*Will and Aaron demonstrating easy (dis)assembly of their products, with reparability in mind.*





**Above**

*Innocent Smoothie HDPE bottle top, the perpetual recycling triangle, often far from reality.*



# Circular Economy

## A closed loop

At its core, the circular economy is a systemic approach to economic development designed to maximise the utility and value of products, materials, and resources. Unlike the traditional linear model, the circular economy aims to keep products and materials in use for as long as possible, extracting the maximum value from them before recovering and regenerating materials at the end of their lifecycle. It is offering a sustainable alternative to the linear 'take, make, dispose' model (Korhonen, Honkasalo and Seppälä, 2018). Rooted in principles of waste reduction, resource efficiency, and long-term viability, the circular economy presents a compelling vision for a regenerative and restorative economic system.

The essence of the circular economy model is to design for longevity, resource efficiency and a closed-loop system (Liu and Ramakrishna, 2021). In a circular economy, products are designed with durability

and ease of disassembly in mind. This encourages repair, refurbishment, and reuse, extending the lifespan of products and reducing the demand for new resources (Alvarez-Risco, Rosen and Del-Aguila-Arcenales, 2022). The circular economy emphasises the efficient use of resources, minimising waste and maximising the utility of materials. This involves strategies such as recycling, upcycling, and remanufacturing to extract value from products at the end of their life. Circular systems prioritise closed-loop models where materials are continually cycled through the economy (Muthu, 2021). Closed-loop systems minimise the extraction of new resources and reduce the environmental impact associated with waste disposal.

By promoting resource efficiency and minimising waste, the circular economy contributes significantly to environmental conservation. Reduced resource extraction, lower greenhouse gas emissions, and less waste

in landfills are among the environmental benefits (Brears, 2018). The system creates new economic opportunities by fostering innovation in product design, recycling technologies, and sustainable business models (Obradović, 2023). As the global demand for resources continues to rise, the circular economy provides a resilient alternative to the linear model. By decoupling economic growth from resource consumption, it helps mitigate the impacts of resource scarcity.

While the circular economy holds immense promise, it is not without challenges. Obstacles include the need for widespread adoption, changes in consumer behaviour, and the development of supportive policy frameworks. Overcoming these challenges requires collaboration among businesses, governments, and consumers to drive the necessary transformations.

# CONCLUSION

Plastics play a significant role in the world of design, but also in the world itself. The first euphoria of unimaginable and limitless uses of this material has been followed by a big outcry over the environmental implications of the material. Though it was not necessarily the material itself, but more the way it has been used. Plastics brought huge advancements in medicine saving uncountable lives. On the other hand, it causes great harm to people, animals and our environment with millions of tons ending up in nature every year and microplastics being within and all around us. Plastic led to mass production of furniture allowing for cheaper costs and selling furniture such as the Eames plastic chair and the Monobloc on a global market.

Planned Obsolescence describes the essence of a broken system in which products are made NOT to last, on purpose. A perpetual cycle of buying and disposing is entered by a consuming world population. Furniture and products are made to be thrown away, replaced and not to be repaired.

Green marketing is often misleading a more environmentally conscious consumer base in the form of 'greenwashing'. Big companies are taking steps in the right direction, but most are not yet committing fully, using eco products only as a chance to increase their sales to a wider consumer base.

The high cost of living means that only wealthier people can buy sustainably. And do the initial investment in longer-lasting quality goods.

Eco Furniture Makers are (re)using waste materials to become an integral part of their furniture. Sustainability to them is essential to good design. The furniture and products they make are built to the highest quality, being durable and made to last a lifetime and even longer.

The circular economy is about reducing resources and becoming energy efficient. The design process starts with the end of a product's lifecycle and the transition into a new one, perpetually reusing materials.

Sustainability is and should be more than a trend. Similar to conserving, sustaining means to support and keep going, and protect what we have. Nothing should be designed with an impact on humans, animals and nature. Everything is closely linked and interconnected. Change needs to happen (quickly), but no one should be left behind. Strategies need to be implemented where economies are heading away from linear streams without becoming unaffordable.

I would describe myself as being very aware of the many things impacting our environment, whilst also having to accept the reality of my limited monthly funds, forcing me to buy cheaper options that I know are unsustainable. I am fighting this conflict inside, like many others, almost every day. This is why I truly believe that there is only so much that we can do on an individual level and that we as a collective, through our councils, organisations and governments need to move forward....together.



VALARIS 123

## why photography...

I have grown up around a photojournalist, my father, and have understood the close link, that photography and journalism possess.

I wanted to celebrate this in my dissertation, so I decided to create ALL content myself, written and non-written. Every image in this magazine has been taken by me through the medium of digital photography, with all but one over the course of the past 3 months.

Being 'on the go' with a camera in my hand helps me to observe, analyse and realise what is happening around me.

Photography is documenting what is, even if it is just for a moment.

## acknowledgements

THANK YOU TO:  
Johanna Roehr,  
my dissertation supervisor,  
for very helpful tutorials and feedback

Sonja Walters,  
Citydruck Karlsruhe,  
for advice on graphics and print

Sarah Smart,  
[REDACTED] Equipment Loans,  
for supporting me  
with photography equipment

# BROKEN...

Dissertation Magazine exploring wastefulness and recycling in furniture design

**Supplementary Document**

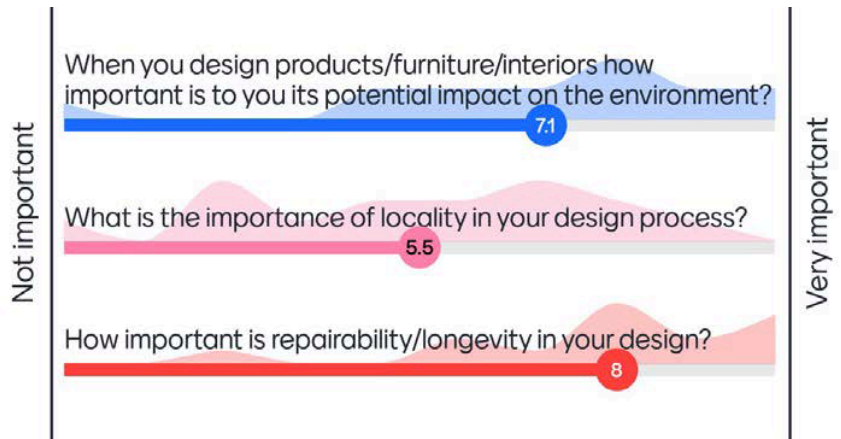
**Camillo Feuchter**



**Explain how you have defined the scope of your publication. Who is it for, why is the information in it important, how does it sit alongside other publications that already exist?**

The publication is intended to give an overview of the sustainable and less sustainable design methods practised in the furniture and interior design industry. It is for everyone interested in the field of furniture and interior design, but many of the methods that I write about are often found across the various design disciplines; such as product design, textile design, industrial design, etc. There are reoccurring themes across the board, some are processes of working, designing and manufacturing others deal with communication and marketing. Those apply to all that is design and making. The information is important to those who design and make, as we have a responsibility to not create more things impacting humans, animals and the environment. Many design students in particular are nowadays very aware of this issue, but still by far not everyone. I conducted a small survey through [mentimeter.com](https://www.mentimeter.com) among 4th-year Product, Digital Interaction and Interior Design Students [redacted], aged 18-25, with 15 responses. These are the answers:

The survey was sadly not representative due to its low number of participants but gives a general idea, which I can confirm through my everyday studies with peers at the Art School.



This Zine sits alongside many publications that deal with the matter of sustainability, sustainable design, the origins of plastic, plastic in furniture design, green marketing strategies, planned obsolescence, circular and linear economy. These are in most cases long academic papers delving into each of those topics individually in length. I have tried to show the whole spectrum, from the origins of plastic, its chances, its problems, misleading marketing, the consumer and back to its chances for small sustainable businesses working with it as a waste material. All alongside photographs, that have been given equal space to fully support the narrative and even expand the written word. This Zine has most strongly been influenced by the Greenpeace magazine (German publication) that I receive every two months. It always has a big topic it analyses through various articles. In most cases, it has some "good news" stories of individuals who make a difference at the beginning and then transition into the more serious, 'disastrous' problems that this month's topic is about.

I have tried a similar approach, as I wrote about the origins, problems and good examples of people trying to design and make different.

**Explain how you have structured your publication and handled type. What existing reference points have you used to shape its identity?**

It was clear that wastefulness and recycling in 'my' discipline is what I wanted to write about as I am very passionate about this topic and have been exploring recycled plastics as a source for my furniture in the past two years.

I immediately broke down the topic into three subtopics; the origins of plastic (relating it to the furniture design industry), greenwashing and planned obsolescence, and eco-makers/designers (and the circular economy). Whilst researching and starting to write I quickly realised that those are all topics that can be broken down into individual articles again. I have tried to create a balance between informing about the history at the start, showing problems and problematic design practices and balancing it out with good design practices and positive examples.

The birth of Plastic, Planned Obsolescence, Green Marketing Strategies, The Consumer View (something that I concentrated on towards the end of my dissertation as I was previously more focused on designers, but is central to the topic), Eco Makers with 2 Interviews with 2 Design/Make Studios in Scotland and Circular Economy. All are bracketed by an Introduction and Conclusion.

Existing reference points for this Zines identity were the environmental magazine by Greenpeace, design magazines such as Frame, Domus and Icon and publications my father has made as a photojournalist (<https://www.alabiso.de/>). With all those influences I took inspiration from my favourite attributes of each and tried to create my Zines own identity, without trying to pretend to be an existing publication.

**Talk about how you have researched, taken and used images in your publication.**

**What photographers or illustrators have you referenced to inform your publication?**

I have researched through the [REDACTED] library, a lot of online publications and physical magazines. As I broke down the dissertation into various subtopics I found lots of individual secondary research to each of them and it was more a case of identifying the relevant chapters. I also used my impressions from the Plastic: Remaking Our World exhibition which I attended at Vitra, Germany and later at V&A Dundee and the book accompanying the exhibition, which I had purchased back then.

I also had first-hand experience working with recycled plastics which helped me understand the topic on a practical level.

Early on I knew that I wanted to conduct interviews with designers/makers (working sustainably) to get primary research and I hoped for a different angle on the topic itself, as those were people that are giving lots of thought about the topic every day and have built companies on those thoughts.

I reached out to 4 companies, asking for participation in my interview; Kenoteq, Ocean Plastic Pots, Draff Studios and Still Life. Sadly the first two couldn't find time for me this semester, but amazingly Draff and Still Life did and were very welcoming of me and my prepared questions (see transcription at the end of the supporting document).

Every photograph in this Zine has been taken by me, with all but one (me sitting on my chairs p.2) for the purpose of this dissertation. I looked at the style of photographs of other Magazines and Publications and decided to take images with low to no post-editing, showing objects and colours as close as possible to how they are. I took photographs of objects in the photography studio, portraits of the designers/makers in their workshop and relevant street photography. I wanted to combine journalism and photography in this Zine into a photojournalistic publication.

**Describe the anatomy of each major article in your publication. Why are they important to your publication, how have you researched them (including a list of all the references) and how have you structured the content?**

**The Birth of Plastic, the Beginning of 'democratic' furniture.**

Intro, history of plastics, the term plastic, polymers, bakelite, new plastics such as polyethylene and polypropylene, Eames Plastic Chairs, Monobloc Plastic Chair, objective advantages of plastic over other materials, problems rising, the impact of plastics and conclusion.

Those are the themes of each paragraph in this article. This was important to lay a foundation at the start and get every reader on the same page about what plastics are while also making clear the direction of this dissertation, which is furniture and interior design related.

I have researched general plastics publications, through the online library and Eames and Monobloc related research through the library and web.

**Planned obsolescence, unsustainable design methods.**

Intro, consumer society, single-use and societal challenges, functional and technological obsolescence, environmental impact, the cycle of consumption, the culture of consumerism, responsible design changes, survey findings and conclusion.

Obsolescence is a term that I remember first hearing over ten years ago when Apple was accused of making their products break on purpose just after the warranty time had expired, for consumers to keep buying their products. This method, which can manifest itself in various ways and strengths, seemed to be showing pretty clearly the problem 'us' designers can become a part of.

For this chapter, I solely relied on online journals and publications and a small survey among peers that I conducted.

**Green Marketing Strategies, is it all greenwashing?**

Intro, the term, recycled plastic, false promises, possible transformation (transparency, certifications and durability) and conclusion

Greenwashing seems another one of those things that everyone is confronted with daily. It is all about communication, marketing and misleading consumers. Naturally, my 3 interviewees see this trend very critically. It shows that it is not necessarily the quality of



the product that is important but more the way it is marketed, which in my opinion is very dangerous to design.

Sources are online journals handling various aspects of greenwashing.

## The Consumer View, different priorities

Intro, religious Environmentalism, Conservatism and Environmentalism, cost of living crisis and two-class society, conclusion.

I wrote this article last. I previously focused on the issues of plastic, design and making and always just touched upon the challenges consumers face when wanting to buy sustainably. Through tutorials with Johanna it was clear that this plays an important role in the complicated world of production and consumption, therefore I dedicated a whole article in the centre of the Zine to this topic. It talks about the will of many to consume differently and those on a lower income who can't afford different products. This is a puzzle hard to solve, which sustainable designers and makers are confronted with all the time.

Sources are online journals and publications talking about cost of living crises and environmentalist movements

## Eco Makers, chances for small sustainable businesses

Overview

Intro, Interview with Aymeric, Conclusion

Intro, Interview with Aaron and Will, Conclusion

To have this primary research from two design/maker studios in Scotland was great to have. People like them have a strong influence on me and I am sure on others too. I feel it was very important to show how others have done it, running their company sustainably, often successfully and not hiding that there are struggles too. Draff Studio has been recognised for material innovation by many and Still Life has just been commissioned to produce a range of furniture/products for the V&A permanent collection and displayed in the Scottish design galleries. They have a very differentiated view and have spent lots of time thinking about designing and making sustainable, but also marketing themselves and their creations.

## Circular Economy, A closed loop

Intro, the essence of a circular system, positive impact, conclusion

The Circular Economy is one of those terms that are used a lot these days when it comes to sustainable design. I thought it was important to explain through an article at the end of the Zine what exactly it is and the pros and cons of this economic model.

There were already many online publications on this topic, so I wanted to compress the essence into a small article that was easily understandable.

## References (in chronological order)

1. Robertson, C.E., Pröllochs, N., Schwarzenegger, K. et al. Negativity drives online news consumption. *Nat Hum Behav* **7**, 812-822 (2023). <https://doi.org/10.1038/s41562-023-01538-4>
2. Great Pacific Garbage Patch. (2010). BBC. Available at: <https://www.bbc.co.uk/programmes/p007fms9> [Accessed 5 Apr. 2020].
3. Rhodes. (2019, p.220). Solving the plastic problem: From cradle to grave, to reincarnation. *Science Progress* (1916), 102(3), 218-248. <https://doi.org/10.1177/0036850419867204>
4. PICKER, J.M. (2008,p. 35) 'Atlantic Cable', *Victorian review*, 34(1), pp. 34-38. Available at: <https://doi.org/10.1353/vcr.2008.0024>.
5. Olatunji, O. (2022, p.3) *Plastic and Polymer Industry by Region: Production, Consumption and Waste Management in the African Continent*. Singapore: Springer. Available at: <https://doi.org/10.1007/978-981-19-5231-9>.
6. 'Obituary: Plastics filmmaker, Bakelite historian Hugh Karraker' (2022) *Plastics news* (Akron, Ohio), 33(19).
7. Scarr and Hernandez. (2019) 'Drowning in plastic: Visualising the world's addiction to plastic bottles ', *Reuters Graphic*. Available at: <https://www.reuters.com/graphics/ENVIRONMENT-PLASTIC/0100B275155/index.html>
8. Vitra. (n.d.). Vitra | Eames Plastic Chair. [online] Available at: <https://www.vitra.com/en-gb/product/eames-plastic-chair>.
9. Kullmann, C. (2020) 'The Monobloc Chair: Democratising the Practice of Sitting', *Res Mobilis International Research Journal of Furniture and Decorative Objects*, Vol. 9, no 11 (2020), p.11.
10. *The story of an icon* (2023) Icon. Epping: Media 10 Ltd, p. 96-.
11. United Nations. (n.d.). In *Images: Plastic is Forever*. [online] United Nations. Available at: <https://www.un.org/en/exhibits/exhibit/in-images-plastic-forever#:~:text=But> [Accessed 13 Dec. 2023].
12. Cook, W. (2017). Charles and Ray Eames: The couple who shaped the way we live. [online] [www.bbc.com](https://www.bbc.com). Available at: <https://www.bbc.com/culture/article/20171218-charles-and-ray-eames-the-couple-who-shaped-the-way-we-live>.

13. Al-Salem, S.M. (ed.) (2019, p.403) *Plastics to energy: fuel, chemicals, and sustainability implications*. Kidlington, Oxford, United Kingdom: William Andrew is an imprint of Elsevier.
14. Chanda, M. (2017, p.796) *Plastics Technology Handbook, Fifth Edition*. Fifth edition. Boca Raton, FL: CRC Press. Available at: <https://doi.org/10.1201/9781315155876>.
15. Xanthos, D. and Walker, T.R. (2017, par. 5) 'International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review', *Marine pollution bulletin*, 118(1-2), pp. 17-26. Available at: <https://doi.org/10.1016/j.marpolbul.2017.02.048>.
16. Pope, K. (2017, p.45) *Understanding planned obsolescence: unsustainability through production, consumption and waste generation*. London, England: Kogan Page.
17. Satyro, W.C. et al. (2018, 746) 'Planned obsolescence or planned resource depletion? A sustainable approach', *Journal of cleaner production*, 195, pp. 744-752. Available at: <https://doi.org/10.1016/j.jclepro.2018.05.222>.
18. Guiltinan, J. (2009, 19) 'Creative Destruction and Destructive Creations: Environmental Ethics and Planned Obsolescence', *Journal of business ethics*, 89(Suppl 1), pp. 19-28. Available at: <https://doi.org/10.1007/s10551-008-9907-9>
19. Bulow, J. (1986, p.729) 'An Economic Theory of Planned Obsolescence', *The Quarterly journal of economics*, 101(4), pp. 729-749. Available at: <https://doi.org/10.2307/1884176>.
20. Hellmann, K.-U. and Luedicke, M.K. (2018, p.86) 'The Throwaway Society: a Look in the Back Mirror', *Journal of consumer policy*, 41(1), pp. 83-87. Available at: <https://doi.org/10.1007/s10603-018-9371-6>.
21. Szabo, S. and Webster, J. (2021, p.719) 'Perceived Greenwashing: The Effects of Green Marketing on Environmental and Product Perceptions', *Journal of business ethics*, 171(4), pp. 719-739. Available at: <https://doi.org/10.1007/s10551-020-04461-0>.
22. Motavalli, J. (2016) 'A History of Greenwashing: How Dirty Towels Impacted the Green Movement', AOL website. [https://www.aol.com/2011/02/12/the-history-of-greenwashing-how-dirty-towels-impacted-the-green/?guccounter=1&guce\\_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce\\_referrer\\_sig=AQAAAJM2llzWInDnlqgUSDTZC8MgxHFbrq9QjKiE2aGSiLNZE-\\_WoIQPz9lu\\_dnXiklj5wg-jinfP\\_Epd8f6yccdkwcTa3o6tcYstWCWY6zX5kE7WbQWZHWOMniNMezIGFoNmlBLy d2y0j\\_7ZL359BnMLOb6Mhtkeaa3lvZ3VroK4s23](https://www.aol.com/2011/02/12/the-history-of-greenwashing-how-dirty-towels-impacted-the-green/?guccounter=1&guce_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce_referrer_sig=AQAAAJM2llzWInDnlqgUSDTZC8MgxHFbrq9QjKiE2aGSiLNZE-_WoIQPz9lu_dnXiklj5wg-jinfP_Epd8f6yccdkwcTa3o6tcYstWCWY6zX5kE7WbQWZHWOMniNMezIGFoNmlBLy d2y0j_7ZL359BnMLOb6Mhtkeaa3lvZ3VroK4s23)
23. Siano, A. et al. (2017, p.1, par.2) "'More than words": Expanding the taxonomy of greenwashing after the Volkswagen scandal', *Journal of business research*, 71, pp. 27-37. Available at: <https://doi.org/10.1016/j.jbusres.2016.11.002>.

24. Mukonza, C. et al. (eds) (2021, p.204) *Green Marketing in Emerging Markets Strategic and Operational Perspectives*. 1st ed. 2021. Cham: Springer International Publishing.
25. Sommer, M. and Haunss, S. (eds) (2020, p.227) *Fridays for Future - Die Jugend gegen den Klimawandel: Konturen der weltweiten Protestbewegung*. 1 ed. Bielefeld: transcript Verlag.
26. Jens Koehrsen, Blanc, J., & Huber, F. (Eds.). (2023, p.1). *Religious environmental activism: emerging conflicts and tensions in Earth stewardship*. Routledge.
27. Keith Neal, P.W. (2022) 'The "cost of living crisis"', *Journal of public health* (Oxford, England), 44(3), pp. 475-476. Available at: <https://doi.org/10.1093/pubmed/fdac080>.
28. preciousplastic.com. (n.d.). *Precious Plastic Impact 2023*. [online] Available at: <https://www.preciousplastic.com/impact/2023#:~:text=A%20large%20portion%20of%20the> [Accessed 13 Dec. 2023].
29. Korhonen, J., Honkasalo, A. and Seppälä, J. (2018, p.39) 'Circular Economy: The Concept and its Limitations', *Ecological economics*, 143, pp. 37-46. Available at: <https://doi.org/10.1016/j.ecolecon.2017.06.041>.
30. Liu, L. and Ramakrishna, S. (eds) (2021, p.91) *An Introduction to Circular Economy*. 1st ed. 2021. Singapore: Springer Singapore.
31. Alvarez-Risco, A., Rosen, M.A. and Del-Aguila-Arcentales, S. (eds) (2022, p.4) *Towards a Circular Economy Transdisciplinary Approach for Business*. 1st ed. 2022. Cham: Springer International Publishing.
32. Muthu, S.S. (ed.) (2021, p.91) *Circular Economy Assessment and Case Studies*. 1st ed. 2021. Singapore: Springer Singapore.
33. Brears, R.C. (2018, p.20) *Natural Resource Management and the Circular Economy*. 1st ed. 2018. Cham: Springer International Publishing.
34. Obradović, V. (ed.) (2023, p.vi) *Sustainable Business Change Project Management Toward Circular Economy*. 1st ed. 2023. Cham: Springer International Publishing.

## Survey 1 - Findings

Survey on Mentimeter among Interior/Product/Digital Interaction Design Students

Stats: 15 participants, aged 18-25, design students at [REDACTED]

Quotes by participants to the continuation of the words *Sustainable design to me means, that...*

... my design doesn't add any impact on the environment and reuses materials as much as possible

... we don't send out any more pollutants and reduce waste.

Plastics are already

contaminating oceans & affecting animals, carbon emissions are off the charts due to capitalism. Change is direly needed.

... The design uses materials that can be locally sourced or can use recycled materials.

... It lasts a long time and is still relevant to its intended use 10- 15-20 years along the lifetime of the product of space created

I am finding an alternative solution for a product or service to be greener for the environment

... long lasting

... The design has a thought process behind it that considers the environmental impact. The journey of the materials before and after creation and use.

... Reusing materials when possible to get a better use out of them

... It's can be reuse recycled and fixed easily also does no harm to environment when materials are being selected

... The design can be reused for further use



**Is there any other important thinking behind your publication? Please explain this here.**

This Zine was created for the purpose of my dissertation, but to me, it is much more than that. It is manifesting in one publication, what I am passionate about and interested in, sustainable design and making (predominantly furniture and spaces), whilst also highlighting the many issues that come from within that discipline. It is written to inform readers and whilst writing it, informed myself. I tried very hard to write balanced, show both sides in a spectrum if they existed and try to understand why certain methods and behaviours are practised when they have a negative impact.

Whilst it was clear to me the requirements for the dissertation were an online submission, I wanted to create something physical, that felt real. In my mind, there is a huge difference between reading on screen, and reading on paper, feeling and even smelling the pages. From the start, I had always in mind printing several copies of this work; I wrote, took every image and even compiled the Zine itself, myself (see a short video, link to Instagram, of me compiling the Zine in a copyshop in Germany <https://www.instagram.com/p/C1IS4Nvs1NE/> ).

## **Druff Studios - Interview Questions**

1. What motivated you to create sustainable furniture?
2. Why are you using druff as a resource for your furniture?
3. In which ways do you feel responsible as a designer/maker to create sustainable products?
4. How does your process work?
5. Does locality play a part in your process?
6. How significant is sustainability to your brand/company?
7. How significant is sustainability in your process?
8. What does sustainability mean to you?
9. Do you think upcycling can solve one problem whilst creating another?
10. What message do you want to communicate by using a waste material for your furniture?
11. What is your vision of your company's future?
12. What is your outlook on our planet's future?

## **Still Life - Interview Questions**

1. What motivated you to create sustainable furniture?
2. Why are you using plastic as a resource for your furniture?
3. In which ways do you feel responsible as a designer/maker to create sustainable products?
4. How does your process work?
5. Does locality play a part in your process?
6. How significant is sustainability to your brand/company?
7. How significant is sustainability in your process?
8. What does sustainability mean to you?
9. Do you think upcycling can solve one problem whilst creating another?
10. What message do you want to communicate by using a waste material for your furniture?
11. What is your vision of your company's future?
12. What is your outlook on our planet's future?

## Interview Transcription - Aymeric Renoud

24.08.2023 42:44 (min:sec)

**Camillo** So question, number one, what motivated you to create sustainable furniture?

**Aymeric** For me, it's not necessarily about making sustainable furniture, it's about making a good product. For me, any product should be sustainable and should be respectful towards the planet and people. Pieces of furniture are designed for people, so we should not impact them, their health and life. There's a big thing at the minute where sustainable and/or green products are a bit of a trend. It shouldn't really be a trend, it should be what everyone should do in a way, because if you were to reverse this argument, why would you focus on designing something impacting the planet?

So for me, it's not so much about the sustainability aspect. It's about creating a good product and putting a good product on the market. And also in terms of motivation. Well, that's what I've really been passionate about, woodworking or even when I was younger, climbing trees or walking in the forest. I think wood is a really nice material to make stuff with.

**Camillo** Why are you using draff as a resource for your furniture?

**Aymeric** Well, it started when I was at uni and I wrote my dissertation about eco-design in the furniture industry. Obviously, at the time I think a lot of people were thinking that when you were working on that type of topic, you would just be making a chair or whatever made of paper mache or recycled cardboard. Obviously, I learned a lot about different aspects of eco-design: the material approach by using waste or making sure a piece of furniture could be reused in another way for example if people stopped using a wooden table it could become a bookshelf, some sort of modularity. So I obviously found the waste aspect very interesting because every industry creates waste and I think as humans we totally forget about everything we produce. Look at those pieces of steel over there, it's totally good functional stuff, but because they're smaller size, they were just thrown away. I found working with waste quite interesting. I was passionate about whisky and beer and went to visit many distilleries and breweries. Every time I attended a tour I heard from the tour guys about the draff being used for animal feeding or sometimes it's just left to decompose in the field. One day I woke up and just had the idea and started experimenting with it. And I think it's really interesting, maybe not necessarily for the massive distillery, but when I first contacted 71 Brewing in town and they were actually struggling at the time to get rid of their draff because it wasn't a quantity big enough to attract a farmer to come into town with a tractor. It wasn't a big enough quantity for someone to come and pick it up, so it ended up in a bin. And then he started to smell as it decomposed. This being in an urban environment, you've got neighbours and so everyone was starting to be a bit pissed off. You never really ask where does it go? You know, you drink beer and you know it's made using barley. I'm pretty sure 80% of the people would think that the whole barley is in there. But, you know, it's just the sugar and the malt extracted using water. So you've got this astonishing quantity of grain that could be used as a raw material.

**Camillo** I think on your website it says its like almost 50,000 tonnes in Scotland alone



**Aymeric** it is a bit crazy. This is from 2019/2020. When you think about it, it is mental and you know obviously the big distilleries have got local farmers, so they got their kind of cycle. But I think there is so much more that could be done with it. I'm not saying that giving it to the cows is a bad idea but, if you could stop chopping trees down because we are going to make a sheet material out of this, for me that would be way more impactful.

**Camillo** In which way do you feel responsible as a designer/maker to create a sustainable product?

**Aymeric** This goes back to the roots of design. Design is using tools and techniques to improve people's lives. There shouldn't be a bad design, it should not even exist. For me, design should not be bad and could not be bad because if you design something, it's something you spend time on to make sure that it's good for the planet and is good for the people. As designers and makers, we've got this massive responsibility because we are the ones creating this stuff. So we have if you make something and throw it out there, you are responsible for it.

As a designer, I can educate people. You know, a lot of the work I do, not necessarily with draff, but with kitchen, I don't use MDF. I don't use any "bad" products, but often the clients are like, but it's going to be really expensive. A sheet of MDF costs maybe around £60, and a sheet of Birch Ply around £90, if you go for the 18mm. But if you use 15mm Ply, which is more solid than an 18mm MDF that's only £70 so £10 more per sheet. And for a kitchen like I showed you earlier, you would need around 10 sheets. So you explain to your client, you're going to pay £100 more, which is not much more than the overall price of the kitchen, but it's going to be a much better material. If you've got a leak in your kitchen, it's not going to be totally destroyed because it's going to be totally fine, because it's varnished and its birch ply, it's bombproof, and instead of MDF which would swell and warp. And so I think there's there is this idea of, yeah, educating people and trying to argue, well, listen, yeah, maybe you're going to be £100 more, but in the long run it's going to be more beneficial for you. Yeah.

**Camillo** So could you break down how your process with draff works?

**Aymeric** To make draff you obviously contact the distillery or the brewery when they mash the beer or whisky or gin and then I collect the grain after the mashing process. It's a massive bag of wet stuff, which can vary between 60 and 80% moisture content. So it's soaked. So I need to dry it first, which is a bit challenging sometimes and then it's mixed with a water-based binder, which is formaldehyde-free. Formaldehydes are really bad for our health, it's in every glue and stuff like that and they keep releasing substances into the atmosphere. There were studies, that I was reading when I was writing my dissertation saying, that some of the most polluted places indoors are nurseries because all the furniture is made of curvy stuff in MDF and it's spraypainted and it needs to be bomb proof and all the rest... and they never open the window, because obviously you don't want kids to jump out of the window. And then you create this bubble of formaldehyde and all the substances are being released by your pieces of furniture, by your sofa, by your fabric. So it was very important for me to try to find a binder that was totally free of this and safe for the consumer, but also safe for me when making it. The grain mixture with binder and grain, I then compress under high heat and high pressure. Because it's a water-based binder, I need to extract the water from the mix, which is why I need heat. This transforms the water into steam and then the steam evaporates and once the core of the material reaches a certain

temperature it's just solid. And then I can just use it as any other sheet metal. So the only downside of using this binder is, that it's not totally waterproof. Once varnished though, it's like an OSB board or MDF sheet.

**Camillo** How does locality play a part in your process?

**Aymeric** For me locality in terms of finding the raw material is the best for low CO2 emission. There is this idea of a 20-minute neighbourhood it's basically a city that should be designed in a way so that you would be a maximum of 20 minutes walking distance away from everything you need, so a hospital, a library, a swimming pool, shops, your work.

So this idea of locality for me is really powerful.

**Camillo** How does sustainability play a role in your process?

**Aymeric** As explained before, I wouldn't work with MDF for example. I try to use European timber such as ash, oak and maple. I try to make stuff durable and buy the right fittings, spend a bit more money on better quality. It is going to last in the long run. I try to use water-based products. In terms of sustainability, it has become a word where it's like everything and nothing. Everyone uses it. But no one really knows what it is. And when you look at the world itself and what it means, I mean, an oil rig is sustainable in a way because sustainable means that a business is sustaining. So as long as it's doing well, it's sustainable.

**Camillo** So what does it actually mean to you?

**Aymeric** Well, for me, sustainability means nothing in everything because we use the word sustainability often attached to this kind of green revolution. But it isn't. As I say an oil rig is sustainable. A car manufacturer that's doing good is sustainable because it sustains its business. For me, it's more about just doing the right stuff, designing the right thing, and then going back to the word design. And I think for me you shouldn't design bad stuff. It shouldn't even be a thing. For example, I'm not necessarily saying plastic is a bad thing or oil is a bad thing, you just need to use it cleverly. I think. You know what, as a silly example, I'm totally fine with Lego making their stuff out of plastic because their stuff is not supposed to be thrown into nature or thrown into a bin. So why would it change that process? I think it's more about educating people. So yeah, I've got nothing against Lego making stuff out of plastic, but I've got a big issue with Coca-Cola being a massive producer of plastic waste. Single-use plastic is a totally different thing. In theory, the idea of plastic is brilliant, we just need to stop the fact that it's going to end up in the ocean.

**Camillo** Do you think upcycling can solve one problem whilst creating another one?

**Aymeric** Again, it's a tricky one, because you could upcycle plastic and make something else, which is great. But then if this same product ends up in the ocean again, well, what's the solution? Obviously, it's better to reuse waste plastic to make something, than use new plastic to make something.

If tomorrow, the draff of every single distillery or brewery was used to make sheet material, the farmer would be pissed off. But it's not just about that. It's about finding ways and finding an alternative product. You know what I mean? The Orkney chair for example, that's a chair that's been made in Orkney, since I don't know how many centuries or years ago, but the design of the chair and shape of the chair and the use of the chair were impacted by what was around. They're using straws because that's what they had there. They don't have trees there, so they had to just make sure the wood was used in the best way. So then if you bring it back to context, I want to just make the most of what would be around, like the distillery, But I think the barley would be much more valuable than just being food for animals. And I'm not saying animals don't need food, but I think it's an overall problem. It's a whole other thing. It is not really sustainable. When you look at the meat industry and its impact on CO2 emissions. They give that barley to feed that cow that then someone's going to eat. You could not eat meat, but you're still going to need to build your house, you are still gonna need material. Imagine a massive crisis, I think resources would be used much better.

**Camillo** What is your vision of your company's future.

**Aymeric** I want a company that respects everyone, respects its clients, respects its employees, respects the planet. You kind of want to stay small and to what the future for draff in an ideal world, I would like to have a couple of employees working for me and just continue to be honest with everyone. You know, be not necessarily profit-driven, but more experience-driven. And, you know, at the end of the month, yeah, everyone needs to make money. But for me as an example, I am able to produce/craft a kitchen or stuff like that for a fraction of the price that you would pay in B&Q, because it's just me. Overall I earn around 2,500 to £3,000 a month. It's enough for everything. It's enough to pay the rent. That is £500 rent for the workshop, is enough to pay the insurance and enough to pay the loans and enough to give me a small salary. And when I say small, it's small. It's always this race of profit, this race of stuff and selling stuff. So if you become a big company then you're spending your time, spending your money on advertising, spending money on fees and random stuff. When I make a kitchen and then I see what is being sold in B&Q, I mean I'm actually shocked at, you know, the price of the thing, for how shit it is. What's the point? Especially now, you can make advertising really easy with Instagram for free. The thing for me as a business is just trying to stay humble through your whole process. And I'd like to have a couple of employees, but it needs to be the right time because when you hire people, you have a massive responsibility. I would hate myself if I hired someone and when working here can feel that there is a bit of uncertainty. This person has probably kids, probably has a house and probably has a mortgage. So for me, it's a massive responsibility to hire someone.

**Camillo** So and last question, what is your outlook on our planet's future?

**Aymeric** That is a depressing one. I won't lie but we are already in a really really bad shape. And I mean, obviously, as humans, we adapt, you know, we are going to adapt. But I think for me, I'm just really struggling with the fact that you've got a report every month, every year, scientists say this, scientists say that and no one is really giving a fuck, no one is caring. Let's face it. For COP26 in Glasgow I was contacted, they wanted me to clad a whole room using my material. First of all, they contacted me really late, two weeks before the opening of the thing. And I'm like, how many square metres do you need? Well, it's not going to happen. And then I'm like, wait

a minute, what is it for, okay cladding the room, okay good? But then I am like, Why should they do that? So you're going to use it for two days and then you get a chuck it into a bin and it's like, But it is a sustainable material we want to showcase it? Well, yeah, but that goes totally against what I do. We don't do stuff to chuck it into a bin. And then I think for me that's, that's what is worrying me, there is this massive push for green stuff at the minute, but 75% of it is just fucking greenwashing. Maybe McDonald's could change their logo to green or like BP's, change their logo to a nice yellow and green flower. People, hey don't want to change, because we are trying to milk everything out of this planet. Until we die, literally and then it's going to be too late. And you know, as an example, you go to McDonald's in France, everything is in recycled plastic or in paper. When you sit in, you've got a cup, it's plastic, but they keep it, wash it and give it to another customer. You cross the channel, which is like 20 miles, and you go to the same Mcdonald's or the same Starbucks, the same brand, fair enough if it's franchised, so it's a different thing, it's all in single-use plastic. And you're like, come on, guys. You see the government doing literally nothing. What did the UK government do? They banned plastic straws. Is that the only thing you can do? Everyone's like, it's so cool, ban the plastic straw so we are all happy because now we are saving turtles when we are having our cocktail on a Friday night with a cardboard straw and you're like, are you serious? So I think for me, I mean, I know it sounds really bad, but I think, really the future is not bright. Obviously, rich people will manage. What I am going to say might be a bit controversial, but I think in 500 years we are going to be seen as bad as the people that were that were doing slavery 500 years ago. You know, you really have to put that into context. And I think shit does not hit the fan yet because there are not too many refugees because of climate change yet. But I think in the next 30 years when some islands will totally disappear, people will need to go somewhere, people will need to move. And when you look at the migrant crisis now, politicians don't even know how to deal with that. So now multiply that, how many millions of people will have to move because their islands are underwater or because there is a forest fire every two months? So they can't stay. Even here in the UK, if you've got your house flooded in Dundee every October every year, you won't stay here. So people will need to move and that is going to create problems. The future is not bright because no one cares. Well, people care, but not about the right thing. They care about money, care about making investors happy, and keeping voters happy. I think a decision needs to come from the top. You know, it's nice to recycle, but I'm on the verge of stopping recycling because it's pointless. You see the bins, they are all overflowing, it's all being blown away and end up in the Tay and end up in the sea. You don't even know if it's recycled. Most of it is sent to China or Turkey or Africa to be sorted by children, like and sorry, but you're asking me to recycle. There should be a policy with the producing companies like Coca-Cola to be like, you've got ten years. In ten years it's no plastic anymore. And then the problem is sorted, you know, at the root. SNAP.

It's important which role we have as designers, it's just really easy to blame the consumer all the time. We are the ones having to recycle. Take your bag, do this or do that. Obviously, it's not our fault. Take my van, for example, putting in place that Low Emission Zone in Dundee is great, but that means if a client is asking me to install a kitchen and they live in the city centre, I couldn't do it, because I can't drive into the low emission zone. Things need to be changed and change needs to be radical, but change also needs to be cleverly done.

It needs to come from the top and start at the roots. I think in 30 years we're going to be in a really bad place. We are talking about people not having water, and people not having places to live. It's not going to be a nice place. Hopefully, we can make some changes. Every scientist says

we should stay below 1.5 degrees and we are already on our way to 2.5 and no one cares. Its gonna come biting at some point and we don't really know when it is. It's a bit scary.

Sorry to make you depressed

**Camillo** You have to be realistic.

**Aymeric** I think governments should do much more. It's unbelievable. Every person in some sort of higher position should really question themselves. It comes back to using good design for everything we do. If it has a bad impact, it shouldn't exist. They should sit down at a table and actively think about it and look at the state of our waste management, the state of our cities and other things. In France in every school, college or uni, you've got the canteen. Everyone goes there and everyone eats there. On Perth Road, I see what's happening every lunch seven, eight, nine, and ten-year-old kids, that literally go to the Spar, and buy a Mars bar and a can of Iron Brew for lunch. That's where the problem starts, problems like using single-use plastic, but also the problem of bad alimentation, obesity and other health issue and then more [pressure] into the NHS and it's just the whole system is fucked. These are small examples of where it starts. We should be using design thinking design tools in everything we do in society. And I think unfortunately that's not what's happening.

**Camillo** In our democracies it is good that governments change, but I also feel that's one of the biggest flaws, because as you mentioned earlier [politicians] want to be re-elected. Everything is very short term, but things like [tackling] climate change have to be thought in a very long term, over decades.

**Aymeric** That's an interesting one when I was in Norway a few years ago [...] literally 75% of the people were using electric cars. Wait a minute. How do they charge them, how do they produce so much electricity? I do understand Norway is a bit of a different case because it's a huge country with loads of rivers, but I think in the nineties one politician decided that he would focus totally on hydroelectricity. So you know when you make electricity using turbines and.

You may want to fact to fact-check that on Wikipedia, but I think something crazy like 95 or 99% of the overall production of electricity in Norway is just based on hydroelectric. Yeah. And that took one single individual and his government to make a decision 20 years ago to be like, okay, we're going to focus on that. So obviously they must have pissed off some people. He must have pissed off the coal and oil industry or but then look at Norway now, like they are auto-sufficient in electricity, producing green electricity. They can rely on having electric cars. Here everyone's telling you to buy electric [cars], but how are you going to produce the electricity to charge, where are you going to charge it, you know? There's a whole infrastructure that needs to be put in place. It just shows that the decision needs to come from the top. We just need one individual well obviously, it needs to be democratic, but it just shows you that it is possible. It's really strange the way and [governments] don't look outside, like in another country what works well. I'm not saying just to copy just and you don't want every country to be the same, but there is so much we could learn from all those places. In the end, those responsible for it are the governments. I can recycle as much as I want if Coca-Cola still produces tons and tons and tons of single-use plastic, then what are we going to do?

## Interview Transcription - Will Jenkins and Aaron Cork

25.08.2023 1:00:11 (h:m:s)

**Camillo** So the first question is what motivated you to create sustainable furniture?

**Will** I guess we started making wooden furniture together, we just realised that we wanted to use some sort of waste. I don't know if there was a particular, light bulb moment. I can't remember.

**Aaron** I just remember being aware of the amount of waste around us and just wanting to kind of try and utilise it, reuse something, utilise some of the stuff. You see so many pieces of furniture getting lobbed out on the street all the time. It just didn't seem right.

**Will** We were in London at the time. I think it was especially there. We have seen a lot of turnover of cheaply made furniture. Then we'd started making a few pieces for friends and then you've seen that Dave Hakkens Video. We saw that and then got down the rabbit hole.

**Aaron** Yes, I think that we were thinking about trying to use some sort of waste material. I remember looking and thinking about paper and stuff and then came across precious plastic.

**Will** Well and then others like Enzo Mari Furniture, kind of utilitarian. Our first pieces we're kind of inspired by Enzo Mari. You made the shelves. You made a table. I made a table. We made quite a lot of his pieces. And then developed the design from that into benches...

**Camillo** The next question would kind of dock onto that anyway why are you using plastic as a resource for your furniture?

**Aaron** We were looking at waste and came across the precious plastic and thought you know that makes, that makes a lot of sense and, and seems like something that we could utilise within furniture.

**Will** I think around the same time that we moved up here and we got a studio and just started experimenting with the plastic. It was around that time we saw in the Dave Hakkens video that there were loads more news and stories and articles about the Atlantic gyres and plastic pollution being everywhere and single-use plastics and it felt like it was definitely more and more getting talked about at that time. We have seen those videos and thought, yeah, this looks cool. Initially, we were just experimenting with the plastic we didn't straight-away start making furniture because it was a long process just building machines and experimenting with the plastic. We didn't even we were like, "We are going to make furniture". What is this material? How do we make it? What can we do with it?

**Aaron** That was probably really just a year of experimenting with it. But then we made that table for Charlotte Maria. It was a wooden table with plastic pegs to hold it together. That was kind of like the first, so that'd be flat packed but also was using the plastic.

**Camillo** Question three In which ways do you feel responsible as a designer/maker to create sustainable products?

**Aaron** I think that that's intrinsic to design. I think if you're designing things without thinking about the object's lifecycle then it is bad design.

You're not designing it well if you're not thinking about the life of the product.

It is irresponsible to design otherwise, I mean, obviously, people still are doing that, well the majority of things that are made.

**Will** Design that doesn't think about the material, what the material is you're making [things] out of, and what's going to happen to it afterwards. These are the first two things that we think about, before, how expensive is it gonna be, what is it for and what it is gonna look like.

It certainly has to be circular and recyclable or compostable.

**Aaron** Repairable.

**Will** Repairable, reusable, recyclable.

**Aaron** We went to the London Design Festival a few weeks ago and there's loads of cool stuff that we saw but still, a lot of it is made not to be repaired.

A secondary thing most of the time.

**Will** Greenwashing.

It's definitely a hot topic. I think you can appear sustainable easily. It's a lot easier to appear sustainable than it is to actually be sustainable. I think you can see it a lot in huge companies.

**Aaron** You see a sea-plastic football shirt, you know but it's made from 2% recycled plastic. It's just a batch they can put on, that's just greenwashing.

That's capitalism, isn't it? Giant corporations being like, ooh, this is what people care about at the moment, let's make trainers out of fishing nets but will make them still non-recyclable objects. I guess a lot of the thing with making something responsibly and or sustainably is that it often makes a product more expensive. The hard thing is convincing people that it's worth more money. Worth spending money on something that's going to last a lifetime rather than, you know, buying something cheap and then having to buy again. But that's something that we've not figured out the best way of doing.

**Will** Everyone's so used to just buying a cheap thing and replacing it each year.

Societal change that has to happen in the way we view objects.

It's learning behaviour.

It's not that long ago people would, wouldn't throw things away, they would repair them you know and it's only after the war and a lot to do with plastic is why we've we've learned this.

There's an amazing quote from the head of the Plastics Foundation in America and he's talking in their conference in the late forties or fifties and in his opening speech he said the future of plastic is in the trash can. And it's like his whole speech about basically making these plastic

bottles and convincing people to throw things away. That is sad, when you go to the design festival and people say stuff is sustainable but if you look a bit deeper then it's just at the surface.

**Camillo** Could you just break down how your process works?

**Aaron** We collect bottle tops and plastic from a couple of businesses in our local area. We get a lot of film canisters from the film processing lab on our street, and then we bring it back to our workshop and we sort through it, and select the right plastic type that we use, which is HDPE and LDPE. And then, depending on what we're making, separate it by colour depending on what we want the product to look like. Sometimes we shred the plastic and then kind of then the next stage, once we have done it, we clean it as well. Yeah, simple. And once we have clean the plastic, we then melt it in an aluminium mould and then pressing it in a hydraulic press. Then once that's cooled, you have the kind of newly formed piece of plastic, could be a stool top. They have to have some excess we call it splurge, which is like some of the excess plastic that we trim off and then reuse in future pieces and then we will do a bit of that. So for for making a stool, we then mark up the stool to drill the holes in, then thread them, then finish the stool top with sanding. Yeah. And then the other side would be to turn the legs on the lathe and then thread them and then oil them.

And there you go, finished.

That's 500 steps. So that is to one product, I guess that's the one, that's the kind of most complicated product for making a dish or something that's a, you know, fewer steps. Yeah, that's kind of the that's kind of it broken down.

I should have had my script.

**Camillo** Does or how does locality play a part in your process?

**Will** We use film canisters from that film lab across the road over there. Yeah.

You know, it would be quite, it would be really interesting to relocate to a different area or a different city. Well the kinds of plastic we would get would be different, I imagine it would be.

**Aaron** Locality is important, we use solely Scottish hardwood. Rather than getting imported timber. Yeah. Removing trees in another country to supply us with something.

Like in Britain, we import 80 per cent of our timber because of, like, these international standards that are placed upon things. And also a lot of I think is how design has evolved well in architecture how people use concrete, which is like obviously an amazing material for building with, but it's really unsustainable. But the way you can build with it, people become so accustomed to that. So then the other materials say a length of timber needs to be way longer than most of the timber that grows in Britain. Whereas if, if you built more to like a scale that we would have in the past, no, these vast open spaces where you know where you can, that you can have by using concrete and steel, but that all that material comes from, you know, other parts of the world. Yeah. So.

So, yeah, we're trying to ask we're trying to make things out of the materials that are here, but as locally as possible.



Without buying anything from all over the shop.

**Will** We'd love to be able to source timber from Glasgow, but because there's not like there are loads of trees, especially ash, like thousands of ash trees will be chopped down in Glasgow, but there's not a link between the council and a sawmill here, a lot of it will just end up being chipped or, or put in a furnace. So which is really, you know, it's sad. It's a real shame that there can't be a more. I don't know. Yeah, I guess it would be a more circular system because also the council could, if they had their own sawmill, they could earn money selling the wood and it's, they've got the space. It doesn't, Yeah. It doesn't make sense for it to be. I guess I'd see it as being wasted. There's a lot of good timber that the people would use, but yeah. Yeah. But you know we get all our timber from um, it's just, it's about 45 minute drive and they only get the trees from within a 20 miles radius of there so. Yeah. It's good. It's a good story, really? Yesterday. First, can I say that?

**Camillo** How significant is sustainability to your brand/company?

**Aaron** Yeah, I think it's intrinsic. Yeah. It's the first thing we think about when we're designing, we consider and look at the products that we make and think about how we can make it better.

**Camillo** There's the next question is relatively related to that. How significant is sustainability in your process?

**Aaron** I mean, it would be possible to run everything we do on, you know, renewable energy. Yeah. And that is, you know, a lot of Scotland's energy electricity comes from wind. If we had loads of money we could just go and build a workshop, then we could build it with solar panels and a wind turbine and everything could be from renewable sources. But yeah, but that's not, you know simply as that

**Will** You know, that's something to aim for, isn't it.

**Aaron** But it's not attainable right now. But yeah I mean so it's definitely something we think about and you aim towards.

I guess, like it said, things that are out of our control. You're dependent on the grid now which is like most, I think on a windy day Scotland is fully renewable pretty much.

But because it is connected to the rest of Britain. If the energy created by Scotland would only supply Scotland, then we'd be way more renewable than the rest of Britain. In the South especially is a lot of the electricity is from gas-powered power plants and then quite a bit from nuclear power.

**Camillo** The word sustainability. So yeah, used a lot in many different ways. What does that mean to you?

I guess we were talking about that just before we started the interviews that well for us is it, it's obviously the, you know, being sustainable and using waste and being responsible with materials

and things like that. But then for trying to support to people like trying to earn a living as well as that, you have to think about how you can, you know sustain yourselves and your company.

**Will** We pay ourselves, but also keep ourselves happy and, you know, have the right balance. You know, and then also keep yourself inspired as well as like this. So it's all kind of everything's linked in that way. Sustaining ourselves and our families, but also the, I guess that company and then within that being responsible with what we make. Yeah. That's the kind of it

**Camillo** Do you think upcycling can solve one problem while creating another?

**Aaron** Yeah, we do see it within the precious plastic movement, products that people mostly make are kind of keyrings and small things that probably don't have a very long lifespan will end back up in the recycling. And I guess it's like, well, it's tricky. It's like they're using waste is, but not in a responsible way. I think there's definitely part of it where you're starting a conversation by having a product like that, but you're maybe not thinking about the lifespan of that object. Yeah. Yeah. People are making stuff casting things in resin and you're creating a new material that's non-recyclable. Yeah. And that is just a complete contradiction to the reason for doing it, you know.

**Will** Like it's tricky because you want people to get interested in it and, like, learn about it and like, doing workshops or whatever where you make, like, carabiners. Yeah, it's good to show the process of recycling and that's like, you know, part of the whole ethos is basic is that introducing more people to upcycling.

But, I just think basic plastic isn't the right material to make a carabiner.

**Aaron** You had one. Someone gave you a plastic one and it broke straightaway. Yeah. It's not a yeah, it's not the right material.

**Will** Good intentions and but it wasn't made well.

**Aaron** Basically we are thinking about the object after its end of life. There's this Native American idea of seventh-generation thinking, right? So like, you make something and then you think about, well, what are seven generations in the future are going to have to do with that? And I think that's a good thing to apply to anything.

**Camillo** What message do you want to communicate by using waste material for your furniture?

**Will** Well, I guess responsible material usage. Like making objects that are longlasting, repairable.

We try and be open with people, you know, about how we do it. Yeah.

And I guess to give the customer, the consumer the, you know, choice to buy something that's not made in a factory. Yeah, well, I make them think about what they're buying and who they're buying it from. And where it comes from.

**Camillo** What is your vision of your company's future?

**Will** We'd like to make bigger pieces.

Yeah. You know, tables and, and stools and I mean benches and, but then also I think would be, would love to be able to, um, you know, do like you're talking about like a café fit out and stuff like that.

**Aaron** Projects that would be more than just one object. A whole sort of range.

**Will** And then sort of short term, I guess it's time to try to do these workshops.

Because I think we've realised that, you know, we making stuff by hand means that your products had to be a certain price and unless you're pumping out hundreds and hundreds of things. So that just obviously eliminates some people who can't afford your products. So doing the workshop is a way we'd hopefully be able to connect with a broader audience.

Yeah. Yeah.

**Camillo** Could you quickly explain what kind of workshops you want to offer?

**Will** We haven't perfected it yet, but we're trying to come up with say, like a lamp-building workshop where people would come in for a couple of days or something and they would come in and we would do a bit of plastic recycling and show them our process, and then they would all build a lamp and go away, each with the finished product.

**Aaron** Make bigger stuff. Have a shot on a sheet.

You know, it also would just be nice if we could just pay ourselves properly. That'd be great. Yeah.

**Will** Yeah. Sustainability. For ourselves and everyone else.

It is hard running a business. And I think I think it's actually to get to a level where you can pay to people properly. It's quite hard because you can't necessarily make twice as many things, but because there's a lot of the jobs of running a business are made easier and more fun because it's a shared load, but manufacturing making things isn't necessarily twice as fast.

**Camillo** What is your outlook on our planet's future?

**Aaron** We're just stuck in global systems. And I can't see a way that they're going to change as quick as they need to, to reach even the targets of, you know, the governments aren't even going to reach their own targets.

**Will** Politicians, they're in it to become powerful and rich or whatever. They're not often in it for the reasons you'd hope. These people are making the decisions that can affect us all. I think that change is going to happen, but I think it's happening on smaller, smaller scales, for example, more localised, within cities, they are changing things faster than the government of the country, you know.

Councils have more ambitious aims than the actual government, maybe that will push change. I think we can maybe get somewhere. Yeah, I don't know. The more you think about it, it's just bleak, but giving up isn't really an option either. But it's hard to know what's going to happen because changes are on the way. I think we are living in a time where there's going to be the most amount of change over a short amount of time. And I think maybe things will reach a peak in our lifetime and then maybe things escalate and even out in the future. It's hard when you have a kid and you think about that.

**Aaron** De-growth is really the only way.

But that goes against capitalism, which is the dominant force around. People still think that capitalism will save us all and it's actually going to kill us all. Yeah. So there's going to be yet some kind of reckoning, that sounds a bit biblical.