

Circular Design Guidebook

Fashion with Integrity

dress



Foreword



Welcome to the ASOS Circular Design Guidebook.

Circular design gets to the heart of what fashion is all about: creating products that are loved and treasured for a long time by multiple owners, made through fantastic design and innovative production methods. Most crucially, it's about designing and creating products in a new way that moves the fashion industry away from the linear 'take-make-dispose' model of old, and towards a new model where our fashion circulates through a system that doesn't just minimise its impact on the planet but, in the best cases, actively repairs or protects it.

Achieving this will be no small feat. Much innovation has taken place within circular design over recent years and cutting-edge solutions, methods and techniques are rapidly evolving. With such a pace of change, the fashion industry has yet to define a set of agreed circular design systems against which all of us can create and manufacture fashion.

The work to define those agreed systems is thankfully underway, through industry-wide collaboration and expert-led initiatives such as Textiles 2030, overseen by WRAP and backed by the UK government. Through Textiles 2030, organisations including ASOS are coming together to agree and define industry-wide good practice design principles for circularity as part of a wider roadmap on circular textiles.

This work is only possible because of the spirit in which brands are approaching circular design: as a pre-competitive, collaborative space where we can work together to reduce and transform the impact of fashion on the planet.

It is in that spirit that ASOS is publishing this circular design guidebook, which has been adapted from an internal guidebook rolled out by ASOS to its commercial teams in 2020 and 2021. In publishing it, we hope to contribute to the conversation taking place within the industry and offer our own perspective on how circular design can be applied in practice.

Part of a collaboration started in 2018, the guidebook is co-authored with the Centre for Sustainable Fashion. It has been created to support designers, brands and industry colleagues in designing and creating circular fashion. We also hope to support fashion students and young creatives just starting on their journey in the industry by offering access to the latest best practice taking place within commercial organisations.

It has been designed as an interactive reference tool that enables interested readers – regardless of their level of technical expertise – to learn more about circular design, how it fits into sustainability efforts, and how it can be applied in practice.

We do not have all the answers and we are continuing to learn and evolve our own approach to circular design as innovation continues at pace. As a result, rather than offering rigid guidelines to each of our nine circular design strategies, we instead pose questions that are informed by our experience and which we hope will inspire others to create and define their own approaches.

The guidebook includes five chapters: circular design at ASOS; an overview of the circular economy and how it relates to sustainability; nine strategies to put circular design into practice; materials and their suitability for circular products; and an introduction to textile recycling and 'the power of the inner circle'. Readers are not required to read the guidebook cover-to-cover – instead, feel free to skip to the most relevant sections using the table of contents on the next page.

The prize offered by effective and impactful circular design is enormous.

Getting it right is critical to the future of the fashion industry and achieving the sustainability we all want to see. So much so that,

in the recent launch of our 2030 programme for Fashion with Integrity, ASOS defined 'Be More Circular' as one of our two key goals to minimise our impact on the planet, alongside our ambitious Be Net Zero goal. These sit alongside our two key goals to deliver positive benefits for people: Be Transparent and Be Diverse. Under Be More Circular, we are committed to doing much more to make our products more sustainable, and to scaling up our use of circular design strategies across our business. The publication of this guidebook is the latest step on that journey and will be followed by a dedicated circular strategy launched before the end of 2023, where we'll be setting out our next steps in greater detail.

Crucially, we're not doing any of this work alone. Collaborating with our partners, from the Ellen MacArthur Foundation to Centre for Sustainable Fashion to our peer brands through Textiles 2030, is key to bringing circular design to life. That spirit of collaboration will continue to prove vital for the entire industry as we head on this journey together.

A handwritten signature in black ink, appearing to read 'Simon Platts'.

Simon Platts
Responsible Sourcing Director, ASOS

ual: london college of fashion

centre for sustainable fashion

Centre for Sustainable Fashion is a research centre based at London College of Fashion, University of the Arts London, that:

- Provokes, challenges and questions the fashion status quo in order to create internationally acclaimed research in the sustainability space.
- Helps government, businesses and public arenas to set their sustainability agendas.
- Pioneers world-relevant curricula to help the industry players to put sustainability into action.

Learn more about the Centre's work here.

Contents



How to use this document



This guide has been created with interactive features. This means that it is important that you view this document in the following way:

- **Must be downloaded** onto a Windows or Mac desktop or laptop computer.
- **Must be viewed** using the latest Adobe Acrobat Reader or Pro versions (latest versions can be downloaded here).
- **This document will not work when viewed on a web browser, mobile or tablet device.**
- Viewing this document on other PDF software will limit your experience and some sections of the guide will not appear.

Chapter 1: Circular Design at ASOS

ASOS started its circular design journey in 2018, when it first partnered with Centre for Sustainable Fashion (CSF) to create and launch a pilot educational programme for ASOS designers on circular design. As part of that initial pilot, 15 members of ASOS' design team progressed through a series of half-day workshops, discussions and drop-in sessions to explore concepts, case studies, and practical applications of circular design with researchers and designers from the CSF team.

The results of that pilot were used to refine and improve the educational programme, which was then rolled out across all of ASOS' design team. At the same time, work began on the development of ASOS' first circular design range. This capsule collection was designed to showcase circular design and demonstrate how ASOS could create circular products that were commercial and appealed to its customers.

The ASOS Design Circular Collection launched in September 2020, by which time 100% of ASOS designers had completed the circular design educational programme. The collection comprised 29 styles, with fashion-forward and trend-led pieces featuring oversized styling and 90s' prints, in everything from micro prints to original blue denim, and bumbags. The collection also included colour-drenched tailoring, oversized cardigans and tees, mix and match stripes, and square neck volume dresses, all in the season's key colours – brown, lilac and neutrals.

Each product included a QR code on its garment tag, which customers could scan to visit a dedicated circular design page on ASOS.com and learn more about the circular design strategies used to create the range.

The ASOS Circular Design Collection was a commercial success, selling 8,000 units in the first 6 weeks and resonating with ASOS customers: ASOS' social posts on the collection received 756,000 views and reached 3.3m customers. It was also a technical success, allowing ASOS to bring circular design to life in a real-world product collection and take several key lessons from that process.

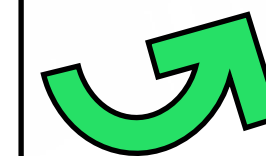
Those lessons were folded into the wider programme of work developed by ASOS and CSF and subsequently rolled out to wider commercial teams within ASOS between June and August 2021. Alongside its education programme, ASOS also worked with CSF to design and launch a guidebook on circular design strategies, to be used by teams as an interactive reference tool to support product development. That guidebook was then adapted into this version for external audiences.

Continuing to expand education across the commercial team is a key step given the importance placed on the circular economy in ASOS' Fashion with Integrity 2030 programme (available to read here), launched in September 2021. *Be More Circular* is one of four key 2030 goals included in Fashion with Integrity and will be achieved by scaling ASOS' use of circular design strategies across its business.

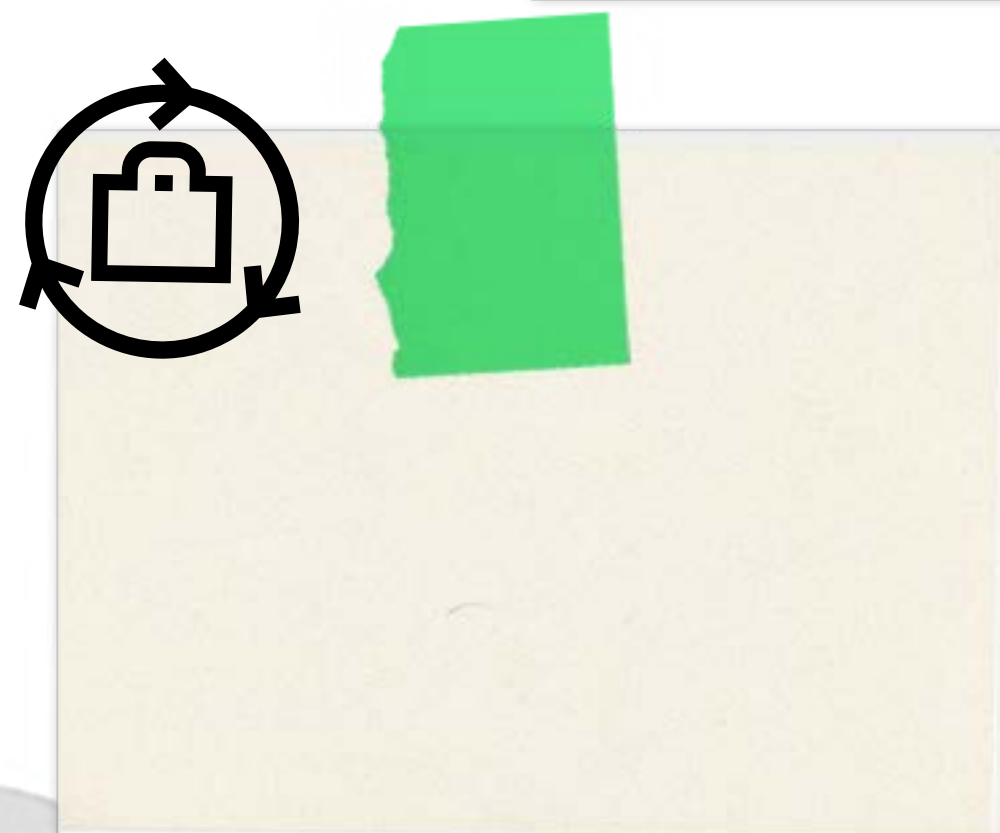
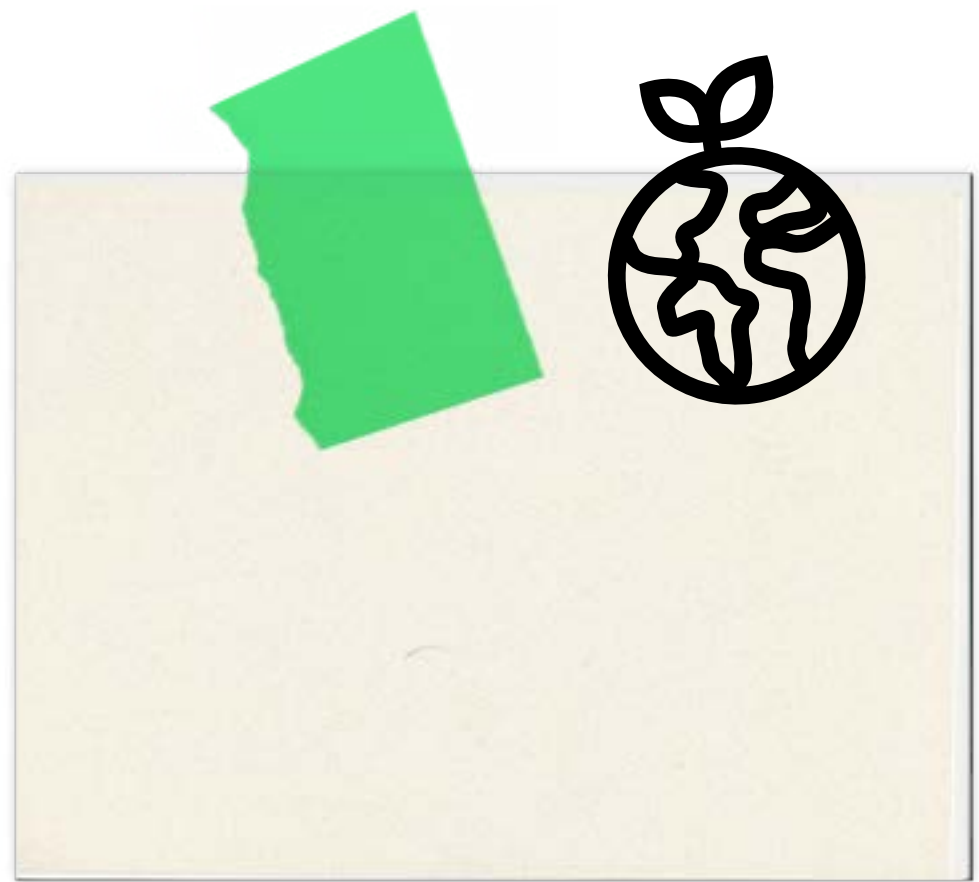
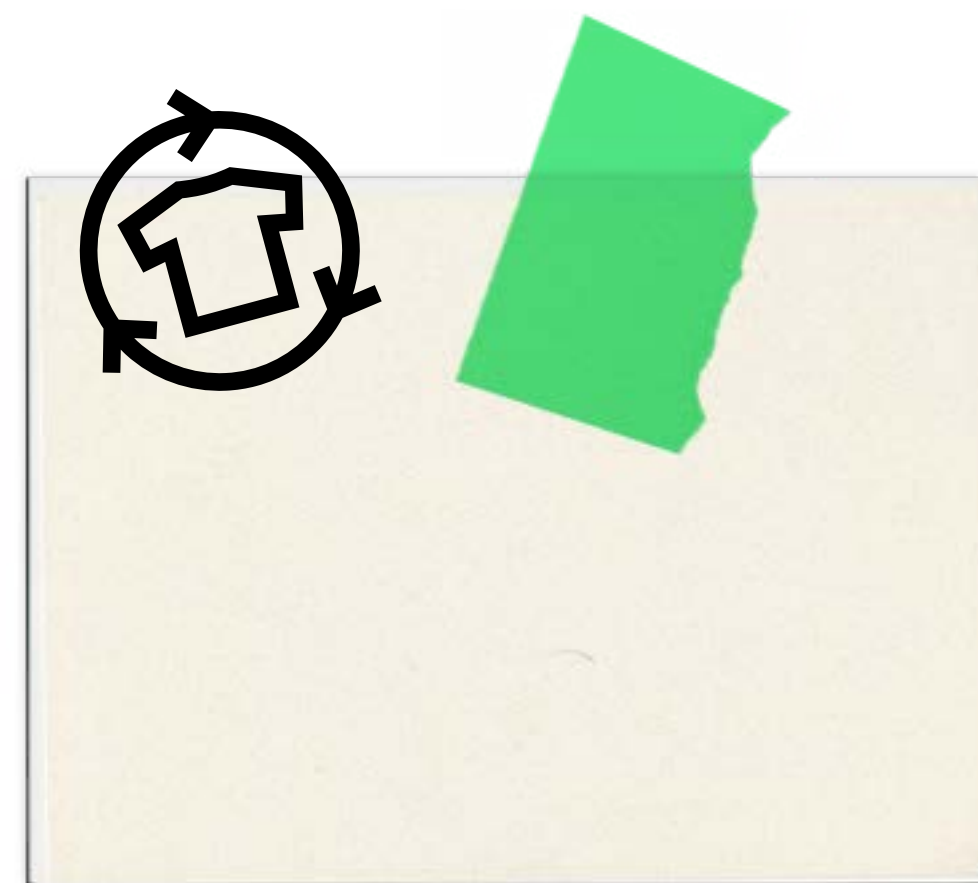
ASOS' circular design journey continues as the business evolves its approach to take account of the latest thinking and best practice. Its designers are currently developing future circular design collections for release over the coming seasons, with more detail coming soon.



Click on one the link
to learn more about
Fashion with Integrity



🕒 10 MIN



Click on one of the topics to start learning about the circular economy



Chapter 2: Introduction to the Circular Economy

"A circular economy is an alternative to a traditional linear economy - take, make, use, dispose - in which we eliminate waste and pollution, we keep products and materials in use and we regenerate our natural systems."

- Ellen MacArthur Foundation

Against the backdrop of the climate emergency, it has never been more important for the fashion industry to think about the way we develop and make products, the impact this has on the planet, and how we can change for the better.

The circular economy is a key tool to bring about positive change. But to understand its importance in making fashion more sustainable, we must start with the relationship between fashion and the environment, and the issues that this relationship can create.

In this chapter we'll define sustainability and how it relates to the circular economy. We'll explore the three principles of the circular economy as defined by the Ellen MacArthur Foundation. And we'll explain how this translates into meaningful action for the fashion industry.



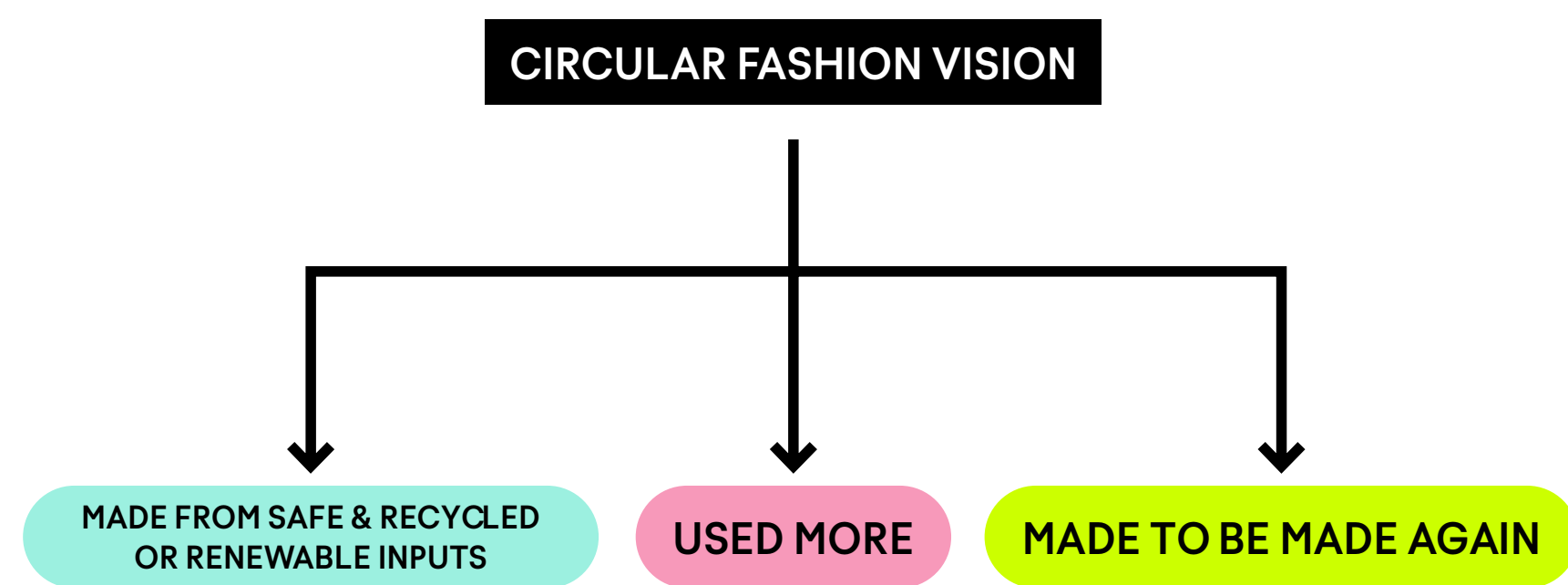
Chapter 3: The Circular Design Strategies

INTRO TO THE CIRCULAR DESIGN STRATEGIES

This chapter aims to support designers, brands and creatives on their journeys to transform the way we as an industry create fashion. At ASOS, we want to share what we know and what we've learned so far, so we can help others on their journey to embrace circular design systems in fashion.

Context: the circular economy

The circular economy is a new way of thinking, designing, making and using. As we covered in Chapter 2, the circular fashion vision is based on three pillars:¹



Design sits at the heart of the circular economy. It enables the development and manufacture of products that fulfil the pillars of the circular fashion vision by creating products that easily move through the circular fashion industry.

There is currently no industry standard or certification for circular design, but our approach at ASOS is closely aligned with the Ellen MacArthur Foundation 'Vision of a circular economy for fashion' (2020)².

To do this at ASOS, we've developed a set of nine circular design strategies to guide us when creating circular products. These have been developed over a three-year process in collaboration with Centre for Sustainable Fashion (CSF), which co-authors this report.

This process commenced in 2018, when CSF developed a circular training curriculum in collaboration with ASOS. This included piloting studio-based workshops with ASOS designers, testing how the circular design strategies could be applied to our product categories and resulting in exploratory pieces including a zero-waste skirt and 100% recycled puffer.

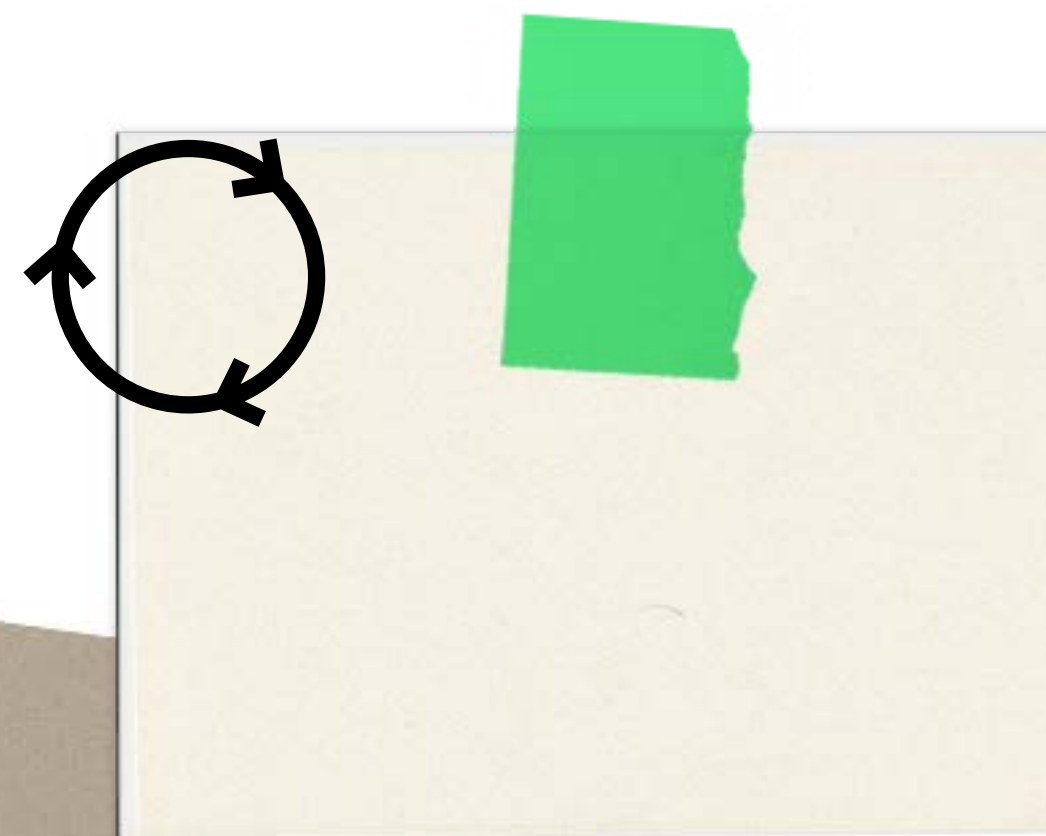
¹ Ellen MacArthur Foundation (2020). Vision of a circular economy for fashion. Ellen MacArthur Foundation.
² Ellen MacArthur Foundation (2020). Vision of a circular economy for fashion. Ellen MacArthur Foundation.

In 2019, this training was rolled out to 100% of designers as part of our Global Fashion Agenda (GFA) circular commitment. In 2020, we launched our first circular collection, a 29-piece capsule of trend-led styles that put the strategies into practice. And in 2021, we updated our curriculum and design strategies based on our learnings from the collection and developed a circular design guidebook for internal use by our employees – which has now been adapted into this guidebook for our colleagues in the industry.

Our nine strategies are ASOS' interpretation of circular design, based on our real-world experiences of product development from the circular collection. Each one helps to build towards the circular economy vision and supports the transition from a linear to circular system.

The strategies give our teams guidance on how to design with both the circular economy and product lifecycle in mind, from designing to manufacturing to use to end of use. They support all three key phases of a product's lifecycle: from initial product development, to extending the active life of a product in use, and finally to ensuring the product is able to stay in the technical cycle (see Chapter 2) after it's recycled.

Crucially, this approach encourages our teams to embrace holistic design: thinking across the entire life of the product and its intended use when making design decisions, rather than focusing on relatively more simple switches like lower-impact fibres or processes. Within this design framework, designers are empowered to be flexible and use their own expertise to apply the strategies that best suit their products.



Click on the link to learn more about The Circular Design Strategies

Circular design is an iterative process, and while we're pleased with our progress to date, we at ASOS have yet to reach our full ambitions in this space. We will continue to test and learn, so we can refine our design strategies as they evolve. And we need to move beyond design, too. We need to collaborate with the whole fashion supply chain, from mills and laundries to factories to recycling and garment collection facilities. We are also committed to collaborating with our industry peers through our memberships with the Ellen MacArthur Foundation, WRAP's Textiles 2030, and Textiles Exchange & Sustainable Apparel Coalition, as we progress in our Be More Circular goal as part of Fashion with Integrity. Read more about that here.

The Circular Design Strategies

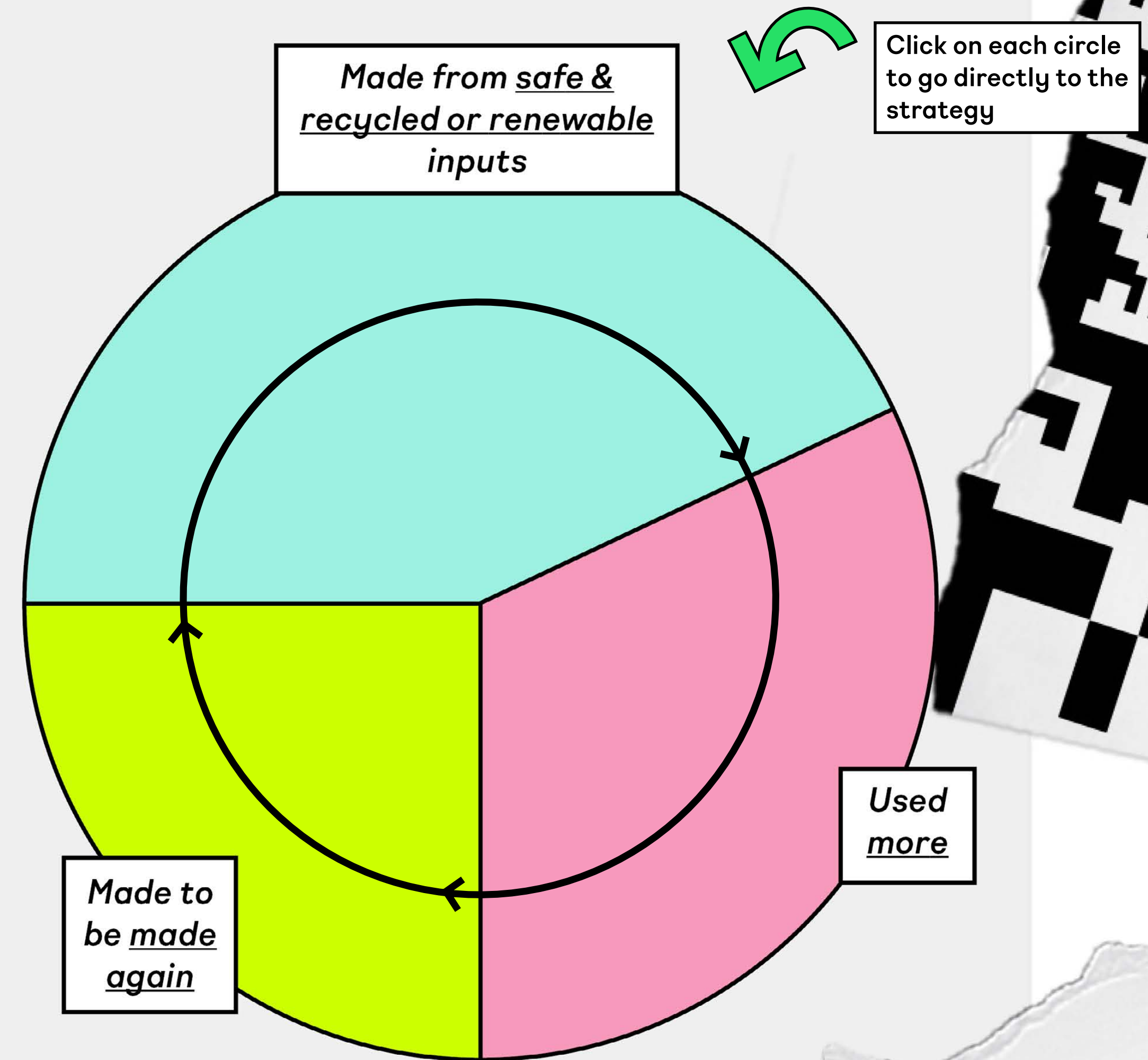
The nine circular design strategies are the way ASOS embeds the circular fashion vision into products. Each strategy fits into one of the three points of the circular fashion vision: Made from safe and recycled or renewable materials, Used more, Made to be made again.

Under our approach to circular design, a circular product must be made from safe and recycled or renewable materials, plus it must be designed to meet either the 'Used More' or 'Made to be Made Again' points, through appropriate circular design strategies.

This is because sometimes these points can conflict with each other – a super-durable product designed for durability or performance might not be able to be recycled; or a product designed for recyclability that can be easily disassembled ready for recycling might not be very durable.

Meeting both durability and recyclability at the same time would be the gold standard, but because of these trade-offs, we ask our designers to consider how the product will be used by the wearer and use this to determine which principle makes the most sense for that specific product. We call this holistic design: thinking about the full life cycle and intended use of a product during its design, to make sure we're making the right circular design decisions.

In the rest of this chapter, we'll share an overview of each of our nine circular design strategies. We'll introduce a series of questions that designers and brands can use to set their own standards and approach, and which have helped steer our own approach to circular design at ASOS. We're still developing our work in this space, so we'll be reviewing and revising our approach to align with best practice as circular design continues to evolve.

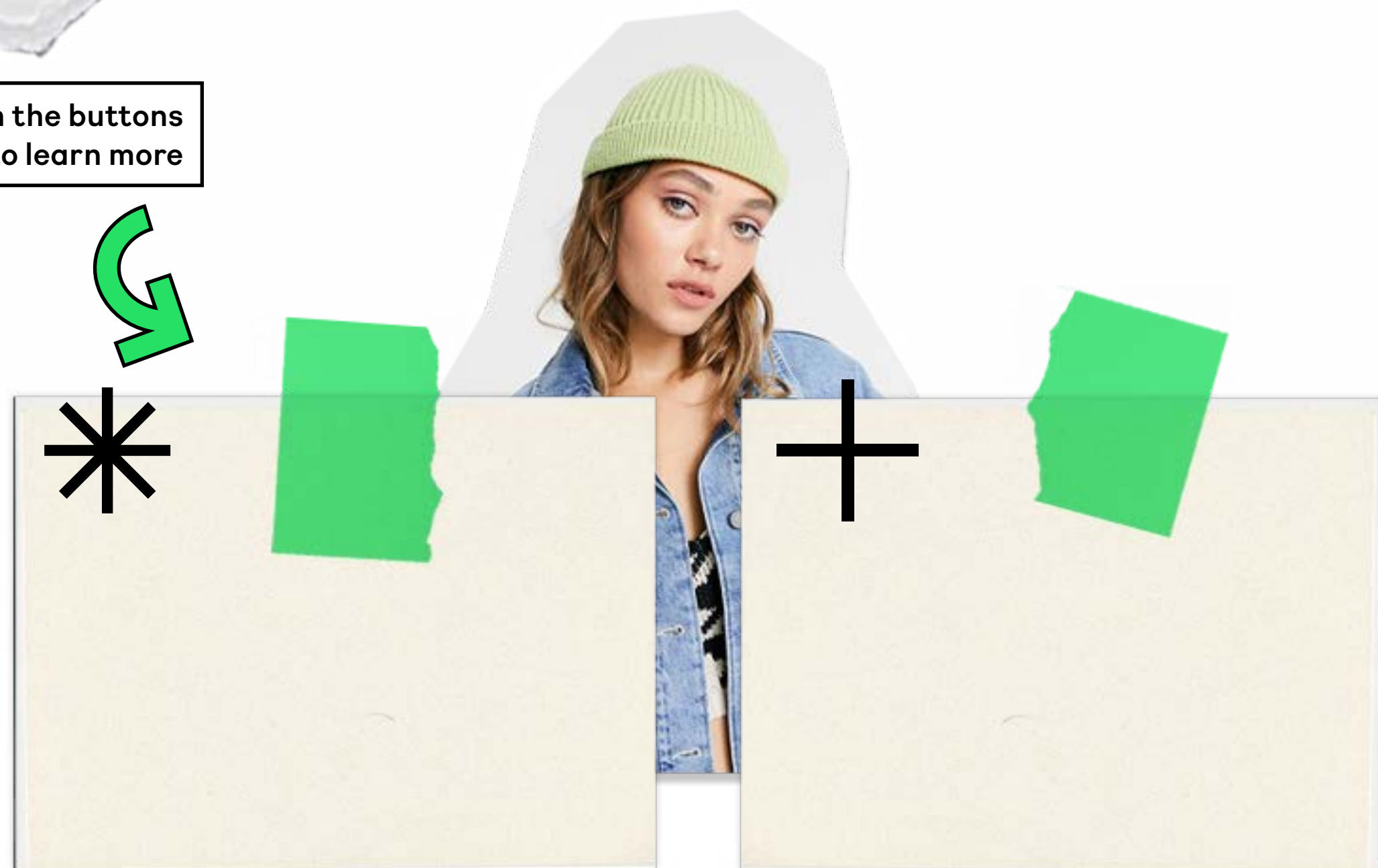


🕒 5-10 MINS



Because this strategy focuses on innovation, it's a fast-moving area with a lot of changes and new launches happening regularly. Many innovative materials are not yet available at scale. As the circular economy becomes more of a priority for the fashion industry, innovative options should become more widely available. Until then, we're focusing on supporting materials that promote new recycling technologies, are made from waste, and are made using alternative recycled materials.

Click on the buttons to learn more



Regenerative fibres are another emerging area in this space. These are materials that are grown using regenerative agriculture farming practices and without the use of hazardous chemicals. While it's currently difficult to find material suppliers for these, the Ellen MacArthur Foundation has profiled a number of brands that are working with farmers to achieve regenerative outcomes. See page 64 of their 2021 paper, *The Nature Imperative*¹, for more information.

¹ Ellen MacArthur Foundation (2021). *The Nature Imperative: How the circular economy tackles biodiversity loss*.

Chapter 3.1: Innovative Materials

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This strategy goes beyond switching fibres for more sustainable input. Instead, it uses innovative approaches to produce recycled and renewable materials. Innovation can focus on many different points in the supply chain – for example growing renewable fibres using regenerative practices; processing with safe chemistry; textile production techniques; and recycling using new techniques or new material streams – which is why this strategy will continue to evolve.

Recycled fibres are also included in this strategy. This is because some of the technologies and materials are not as widely available as more traditional techniques like mechanical fibre recycling (see Chapter 5 for more info).

Incorporating innovative materials into designs might be more challenging in some cases, because not all innovations will be available at scale. Because of the emergent nature of the strategy, not all the options may have a certification. Designers will need to do some research to ensure that the materials they are interested in are sourced from a reputable brand or supplier with a verifiable circular production system, verifiable scientific evidence or an assessment.

Some materials designers might want to explore include:

MADE FROM WASTE

- Agraloo™ BioFibre™ by Circular Systems, made from food and medicine crop leftovers

PROMOTING NEW RECYCLING TECHNOLOGIES

- LENZING™ Refibra™ technology upcycles cotton scraps into a cotton pulp and transforms this into virgin quality Tencel™ Lyocell fibres to make fabrics and garments
- Infinited Fiber Company's Infinna™, a chemically regenerated textile fibre made from cellulose-rich waste including textiles and cardboard
- Texloop™ RCOT™ by Circular Systems, high-quality recycled cotton made from pre-consumer textile waste

PROMOTING INNOVATIVE RECYCLED MATERIALS

- Parley for the Oceans is a global organisation collaborating with brands to tackle marine plastic waste through worldwide initiatives and projects. Some of the plastic debris collected by their global network is processed and upcycled to create Parley Ocean Plastic® – a range of premium fabrics, yarns and materials which have featured in products ranging from jackets by Helmut Lang and dresses by Iris Van Herpen to trainers with adidas and even credit cards from American Express.
- REPREVE® is transforming discarded bottles into new recycled fibres. The fibre process can embed properties like wicking, adaptive warming and cooling, and water repellence to create a reliable and durable fabric quality. So far Unifi – which makes REPREVE® – has recycled over 25 billion plastic bottles into new fabrics.
- ECONYL® is regenerated nylon made from made from both pre- and post-consumer waste including textile scraps and fishing nets.

Head to our materials glossary in Chapter 4 to understand more about the terms used in this strategy.

Chapter 3.2: Recycled Materials

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This circular design strategy is comparatively simple: using recycled materials instead of virgin options. This has a dual benefit: it gives material waste a new life, while helping to reduce environmental impacts compared to landfilling and incineration of old materials that could otherwise be recycled.¹

Using recycled materials also increases demand for these options, such as our recycled outerwear styles which are popular with our ASOS customers. Increasing demand is important, as currently there's insufficient supply of recycled materials in the market, which can make this strategy a challenge.

As more customers purchase products made with recycled fibres, and more brands and manufacturers demand products made with recycled materials from suppliers, supply should grow to match demand – helping us all move in the same direction.

There are two terms you'll hear when you're buying recycled products:

POST-CONSUMER WASTE: waste generated after a product has reached its user.² This includes waste from households, businesses or commercial facilities, e.g. discarded plastic bottles or discarded clothes.³

PRE-CONSUMER WASTE: waste generated before a product reaches the user, usually from manufacturing or processing, e.g. fabric offcuts from the factory floor.⁴

The best way for a designer or a brand to start working with recycled materials is by incorporating them into designs. Generally, the following fibres are more commonly available as recycled materials, although this will depend on location and source.

- Recycled cotton
- Recycled polyester
- Recycled polyamide (nylon)
- Recycled cellulose-based fabrics (e.g. viscose, lyocell)
- Recycled leather
- Recycled wool

Some recycling techniques, for example mechanical fibre recycling (see Chapter 5 for more details), can weaken the fibre. This can make using 100% recycled content a challenge, depending on the kind of fibre, material and product, so lower percentages may be required depending on end-use.

¹ G. Sandin, G.M. Peters. Environmental impact of textile reuse and recycling – A review. J. Clean. Prod., 184 (2018), pp. 353-365, 10.1016/j.jclepro.2018.02.266

² Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Post-consumer waste. Condé Nast.

³ ISO 14021:2016. Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling). <https://www.iso.org/obp/ui/#iso:std:iso:14021:ed-2:v1:en>

⁴ Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Pre-consumer waste. Condé Nast.

Learn more about the recycled fibre certifications we accept at ASOS here.

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Recycled materials and recyclable materials are different. The former is what this strategy is all about. We'll cover the latter in the Mono-materiality and Disassembly strategies, and in more detail in Chapter 5.

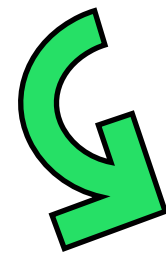


Click on the buttons to learn more





Click on the buttons to learn more



Chapter 3.3: Minimised Waste

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This strategy focuses on reducing the resources needed to make products. It addresses waste by aiming to increase efficiency in material use and in processes, and by ensuring that only the necessary volume of fabrics, trims and components is used.

There are a range of techniques that can be applied under this strategy. Examples include manufacturing techniques that create pieces with the exact amount of yarn needed, such as fully-fashioned or whole knits; or laser denim distressing, that cuts out the need for water or chemicals. Other techniques address lay planning (how pattern pieces are placed on fabric for cutting), such as finding efficiencies in how individual garments are cut or by combining two styles onto one lay plan.

Minimised processes on the other hand (also known as lower-impact processes) reduce the natural resources (water, chemicals, energy, land etc.) needed and the pollution that can be created by washing, finishing or dyeing items. Combined with a commitment to the Zero Discharge of Hazardous Chemicals¹ Roadmap to Zero Programme, these processes will help reduce the pollution created by washing, finishing and dyeing.

To start working with minimised waste materials, designers should think about which fabrics, materials, trims or components are essential for a product, and which can be reduced or removed. There may also be techniques (such as fully-fashioned or seamless knitting) that are appropriate for the product being designed.

To start working with minimised waste processes, designers should review the processes that are currently used to create their items. Some processes might be able to be switched to lower-impact alternatives, like some of the options below – or even omitted altogether.



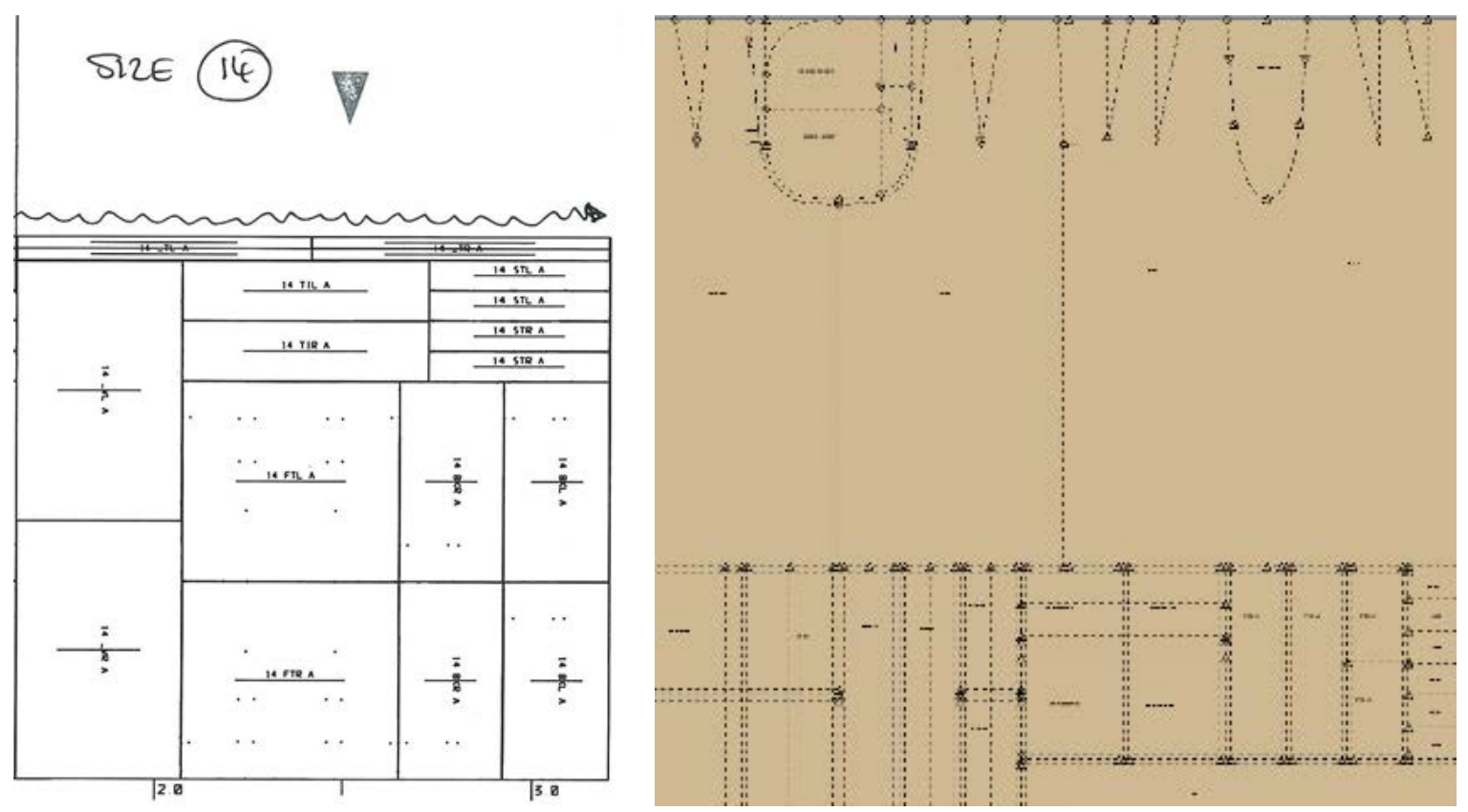
It's worth noting the difference between minimised waste and zero waste. The zero waste strategy focuses purely on pattern cutting that eliminates all fabric offcuts. The minimised waste strategy looks at ways to reduce the resources needed to create products (such as water, chemicals, energy or materials). We'll cover zero waste in the next section.

¹ The ZDHC Foundation (ZDHC) is an initiative committed to eliminating the discharge of harmful chemicals in the apparel and footwear value chain. ASOS is a Contributor to the ZDHC Foundation and has committed to their Roadmap to Zero Programme. This programme includes the implementation of sustainable chemical management practices, driving innovations, and best practices in the apparel, footwear, and leather industries to protect consumers, workers, and the environment. ASOS has adopted the ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) to keep the harmful chemicals identified on this list out of its value chain.

Chapter 3.4: Zero Waste

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

Right now, it's estimated that conventional production generates about 15% offcut waste for every single garment.¹ This is where zero waste comes in – it's a form of pattern development in which no fabric waste is created during cutting and sewing. All offcuts are incorporated into the final product.²



Left: Square cut, Right: Tailored

Zero waste pattern cutting is a technical process that involves pattern development, fit, grading and size ratios. Zero waste patterns can be created most easily with square-cut pieces: the pattern is made up of rectangular or triangular pattern pieces. Some zero waste patterns use curved pieces instead to create a more form-fitting or tailored garment, with the pattern pieces nested into each other.

Zero waste design has been around for centuries³ (well-known examples include the traditional Japanese kimono) but it has not been widely explored by the mass market or large fashion brands.⁴ Many of the contemporary zero waste designers profiled in the seminal text *Zero Waste Fashion Design* (2016) are researchers, students, academics, and smaller brands, including Zandra Rhodes and Maja Stabel.⁵

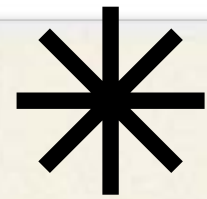
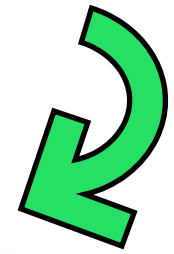
The easiest way to start using zero waste is to select a product that's more adaptable to zero waste pattern cutting – for example, products with a boxy shape, products that use a lot of fullness, or products that are sewn together from fewer components and can be simplified into rectangular shapes more easily.

1 Rissanen, T., & McQuillan, H. (2016). *Zero Waste Fashion Design*. New York: Bloomsbury.
2 Ibid.
3 Ibid.
4 Ibid.
5 Ibid.

Click on the buttons to learn more



Click on the buttons to learn more



Chapter 3.5: Remanufacture/Upcycling

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This strategy keeps materials in use by giving them a new lease of life as a new product. Remanufacture or upcycling (also known as 'repurpose') makes use of pre-consumer materials like offcuts, or post-consumer waste like second-hand garments or vintage fabrics. This design strategy aims to prevent textile waste from ending up in landfill, and helps to reduce the need for new fabrics.

This isn't a one-size-fits-all strategy. Designers will need an open mind and a creative approach to looking at waste materials, creating tomorrow's looks with yesterday's fabrics. Upcycled materials can be built into the design in a visible way (as a design feature) or in an invisible manner without any impact on the external look of the garment (for example hidden internal sections like pockets).¹ Transforming low-value waste into a desirable product is a truly creative circular challenge.



¹ Reverse Resources (2017). The Undiscovered Business Potential of Production Leftovers within Global Fashion Supply Chains: Creating a Digitally Enhanced Circular Economy. Reverse Resources.

Chapter 3.6: Durability

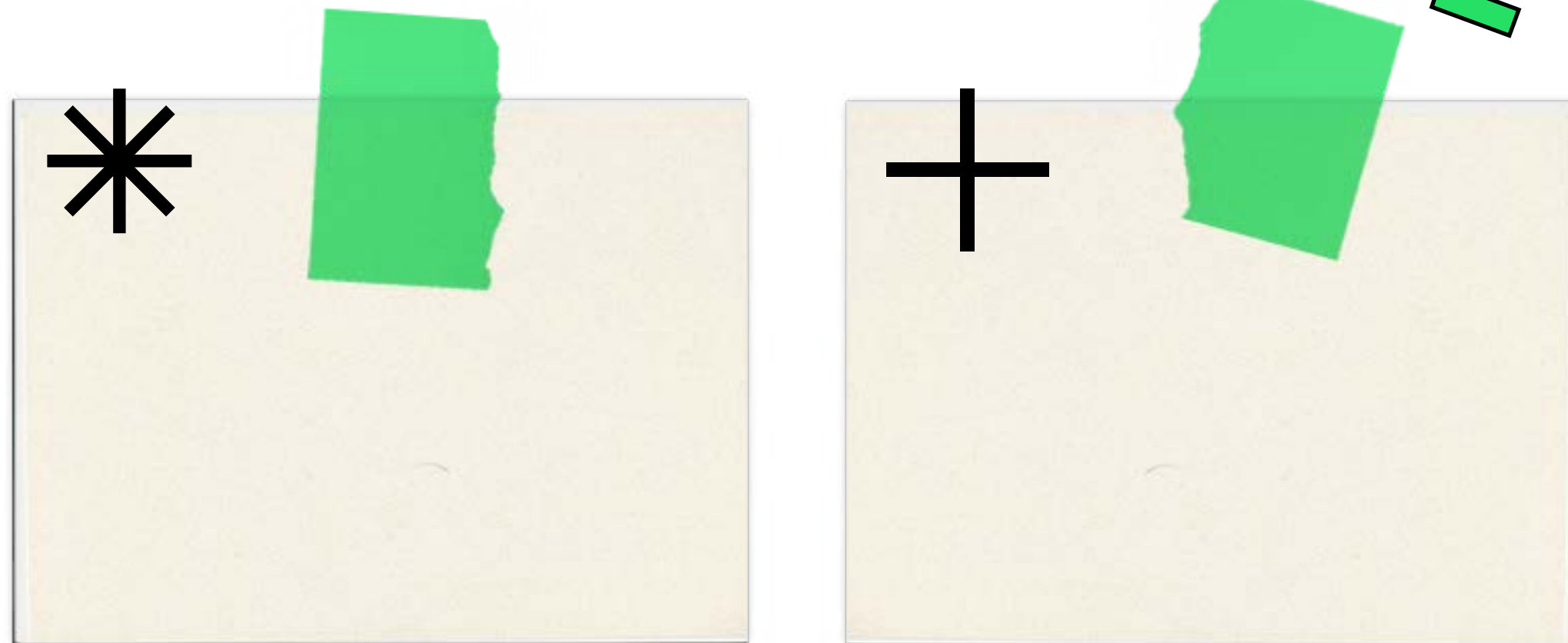
WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This strategy ensures products can be 'used more' by creating pieces that are designed to last for a long time. Enhancing the longevity of fashion is an amazing opportunity to strengthen our connection to our clothing. Durability relates to physical and practical attributes, but also to emotional ones – how a product is cherished and loved.

In terms of physical durability, this means the product is easy to care for, physically well-made and protected against colour changes.¹ Emotional durability focuses on long-term relationships between wearer and garment, enhanced through its design but also how the wearer interacts with it.² Both contribute to a fashion industry where products have an on-going, lasting value for the wearer(s).

To design for durability, select materials, finishes and construction methods that will allow the product to endure wear and care over a long period of time. Tenacity and elongation of yarns also play an important role in the durability of the fabric, enhancing longevity.

Click on the buttons to learn more



1 For more information on clothing durability, check WRAP's 'Sustainable Clothing Guide'.
2 Burcikova, M. (2019) Mundane Fashion: Women, Clothes and Emotional Durability. Volume 1. Doctoral thesis, University of Huddersfield.





Chapter 3.7: Versatility

“Extending the life of clothes by an extra nine months of active use would reduce carbon, water, and waste footprints by around 20–30% each.”¹

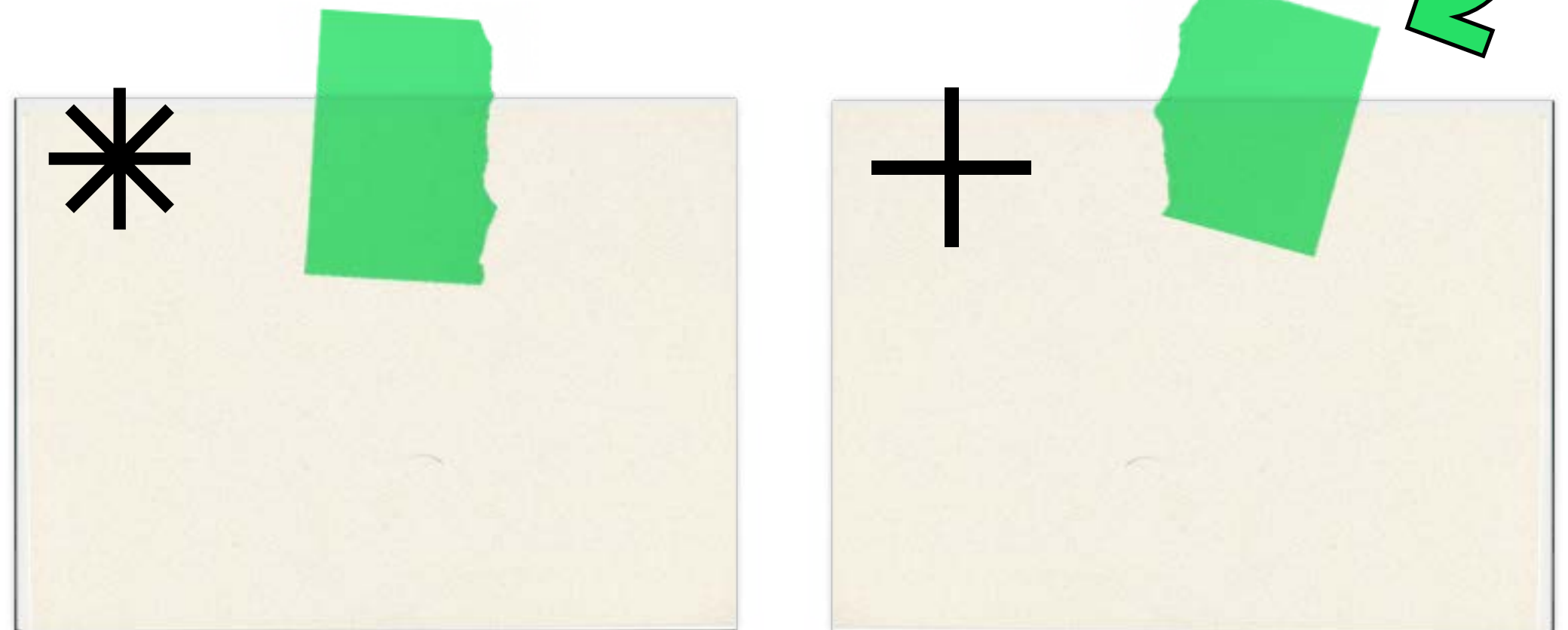
- WRAP

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

This strategy is about keeping products in use through versatility: designing products to have more than one function, or to be worn by more than one customer, or in different styles. Different shapes, components or features give the wearer options for styling, and they can adapt the piece based on changes in their moods, needs or trends. This also helps to make inclusive pieces that are more accessible for the next person to use it, like one-size-fits-most and unisex products that any gender and any shape can wear. The result is design that aims to increase use by reducing the number of products a person needs (through fulfilling multiple functions), and/or by increasing the number of people that can wear the piece over time.

Versatility is also a way to enhance the emotional durability of a product. Versatility enables a garment to be adapted across changes in a wearer’s shape, size, aesthetic, style or lifestyle, so they adjust it to fit their needs or creative inspiration at the time.² This means they can keep it for longer, helping to build a stronger connection to the piece.

Click on the buttons to learn more



¹ WRAP (2017). Valuing our clothes: the cost of UK fashion. WRAP.

² Burcikova, M. (2019) Mundane Fashion: Women, Clothes and Emotional Durability. Volume 1. Doctoral thesis, University of Huddersfield.

Chapter 3.8: Mono-materiality

WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

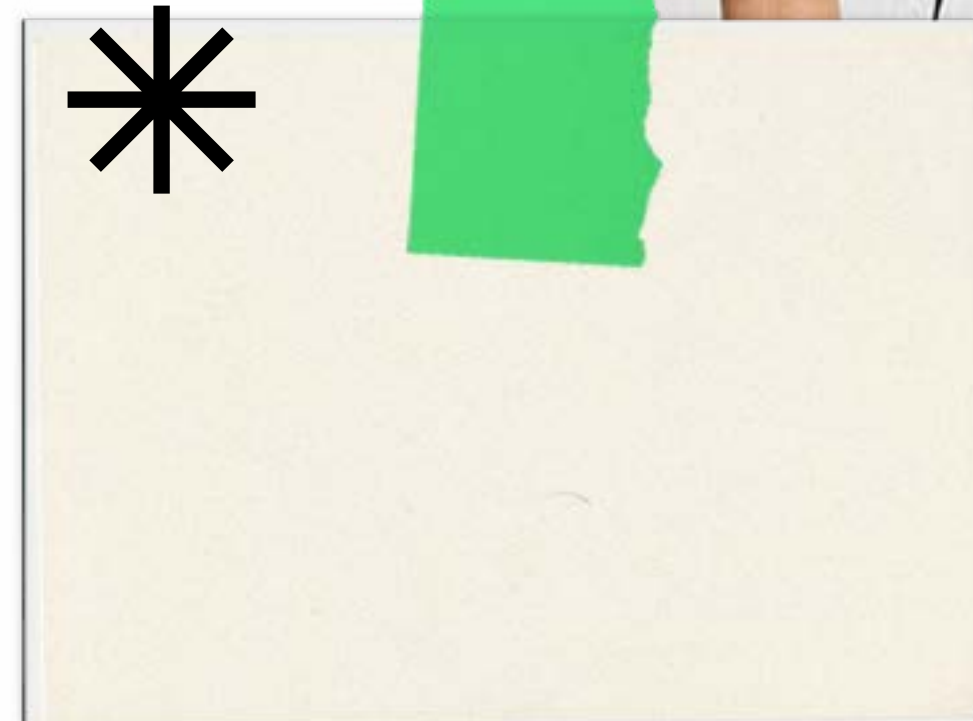
The final two circular design strategies are all about closing the loop: designing products that are made to be made again. In simple terms, this strategy deals with 'end-of-life' in relation to circularity, answering the question: 'what are we going to do with this product when we're finished with it?'. These strategies focus on making it easier for products' materials to be given a new life through recycling.

As we covered in Chapter 2, designing for end-of-life is just one part of the puzzle. Best practice would be to combine these design strategies with programmes to put products back into the system, such as clothing take-back or recycling services. However, making sure products are designed with end-of-life in mind is a great place to start.

Mono-materiality closes the loop by making pieces easier to recycle. As we'll cover in Chapter 5, blended materials are a challenge for recycling – only some techniques such as mechanical fibre recycling can be used, which damages the fibres.¹ New technologies to recycle blends (such as polycotton) are still being scaled and are not widely available.² These issues can be avoided by using only a single material – a mono-material. A mono-material product, if made from a recyclable fibre, can go straight into recycling without the need to separate fibres or fabrics. (Head to Chapter 5 to learn more).

While simple in theory, this strategy can be difficult to put into practice. Mono-materiality includes everything that goes into the product, from linings, fillings, zips, buttons, and fusing. Additionally, if designing a more complex product – like hard accessories, shoes or outerwear – it can be tricky to find components and trims all made from the same kind of fibre.

Industry best practice defines mono-materiality as 98% of the total volume by weight³, which gives some leeway when it comes to things like care labels and threads. But everything else must be made from the same fibre.



Click on the buttons to learn more



1 Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion's future. Ellen MacArthur Foundation.
2 Ibid.
3 Ellen MacArthur Foundation (2021). The Jeans Redesign Guidelines. Ellen MacArthur Foundation.



Chapter 3.9: Disassembly

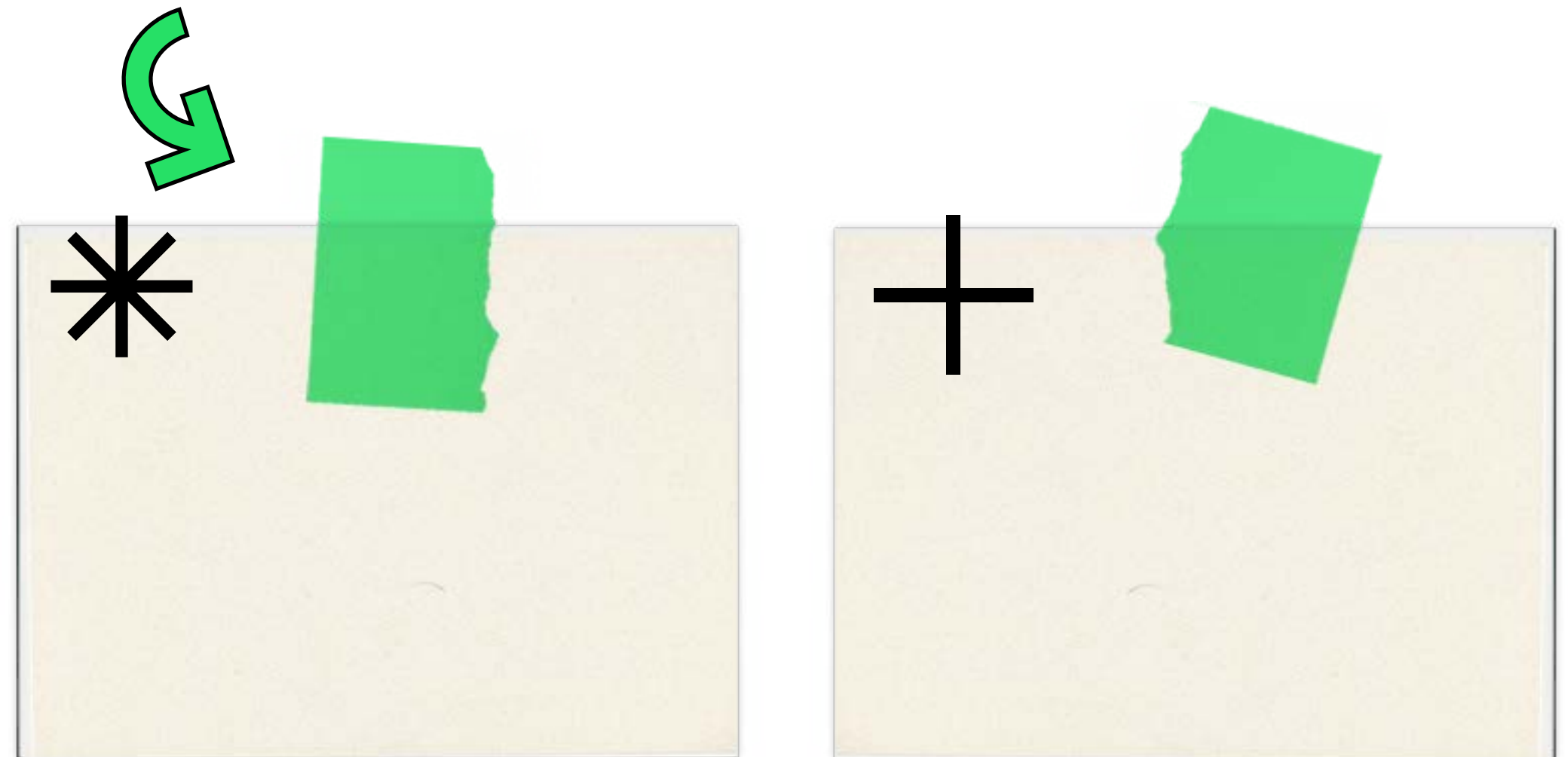
WHAT IS THE CIRCULAR DESIGN STRATEGY AND HOW DOES IT WORK?

If it's not possible to get a product to 100% mono-materiality, this strategy offers another route to ensuring that materials are reused or recycled.

Disassembly focuses on making it easier to take products apart, remove components, and separate different materials ready for recycling or remanufacture. For example, a cotton shirt with sheer polyester sleeves can still be recycled if you can take the sleeves off quickly and easily for separate recycling processes.

To start designing for disassembly, first look at simplifying products by reducing their material complexity (the number of components, trims, or fibres used). This means not everything needs to be taken apart, only the pieces that are made of different materials, making it a lot easier for the person who needs to recycle the product once the customer is finished with it.

Click on the buttons to learn more



Chapter 4: Sourcing Materials for Circular Design

WHAT ARE SAFE AND RECYCLED OR RENEWABLE MATERIALS?

As the Ellen MacArthur Foundation outlines in its vision of a circular economy for fashion,¹ all inputs (such as materials or chemicals) in the circular fashion economy must be safe and recycled or renewable.

SAFE: “In a circular economy, substances that are hazardous to health or the environment are designed out to allow safe material circulation and ensure that no pollutants are released into the environment.”²

RECYCLED: “Material that would have been disposed of as waste, but is instead reprocessed by means of a manufacturing process and made into a final product or into a component for incorporation into a product.”³ This means that circular products turn waste materials into something new.

RENEWABLE: “Material that is composed of biomass from a living source and that can be continually replenished.”⁴ This means that circular products are made from materials that can be grown again.

Everything a circular product is made from must be safe (free from hazardous substances), and made from a recycled feedstock or a renewable feedstock (from a living, sustainably grown or managed source, e.g. organic cotton).

Fibre types can be broken down into three simple categories: cellulosic (plant-based), protein (animal-based), and synthetic (oil-based).⁵

CELLULOSIC FIBRES: Fibres “obtained from plant-based material. This material can be either directly captured from plants, such as cotton, or treated chemically to extract and process cellulose”.⁶

PROTEIN FIBRES: “Fibres whose origin is protein. They traditionally come from an animal source through condensation of amino acids (e.g. wool, cashmere, silk)”.⁷

SYNTHETIC FIBRES: “Fibres made from polymers through chemical synthesis of raw materials such as petroleum (e.g. polyester, nylon)”.⁸

1 Ellen MacArthur Foundation (2020). Vision of a circular economy for fashion.

2 Ibid.

3 Ibid.

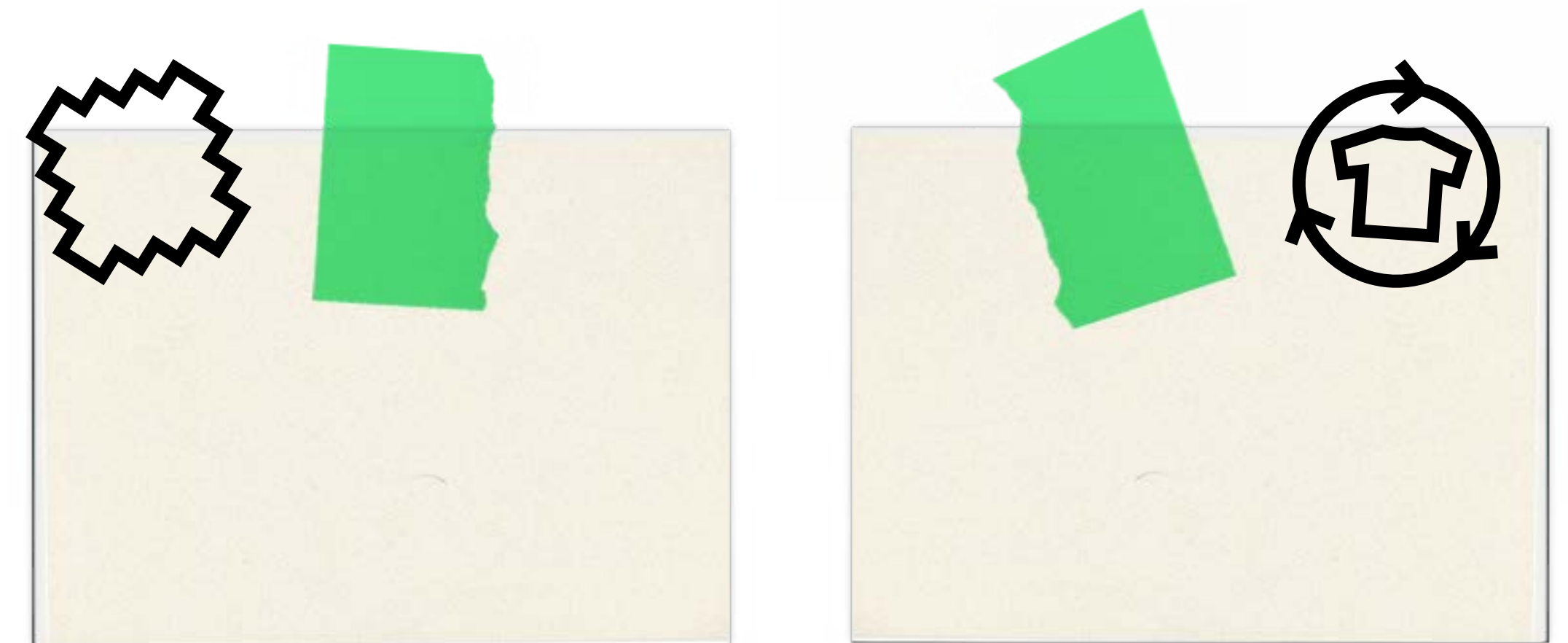
4 Ibid.

5 Rex, D., Okcabol, S., and Roos, S. (2019). Possible sustainable fibers on the market and their technical properties: The Fiber Bible Part 1. MISTRA Future Fashion.

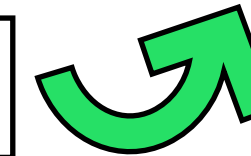
6 Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion’s future. Ellen MacArthur Foundation. P. 120.

7 Circular.fashion. (2020). Circular.fashion dictionary.

8 Ibid.



Click on one of the topics to learn more



FEEDSTOCK: “Feedstock is anything used to produce a new product. This in particular includes raw materials (from either virgin, bio-based, or recycled sources) but can also include components from old products reused in a new product”.⁹

PRE-CONSUMER WASTE: waste generated before a product reaches the user, usually from manufacturing or processing, e.g. fabric offcuts from the factory floor.¹⁰

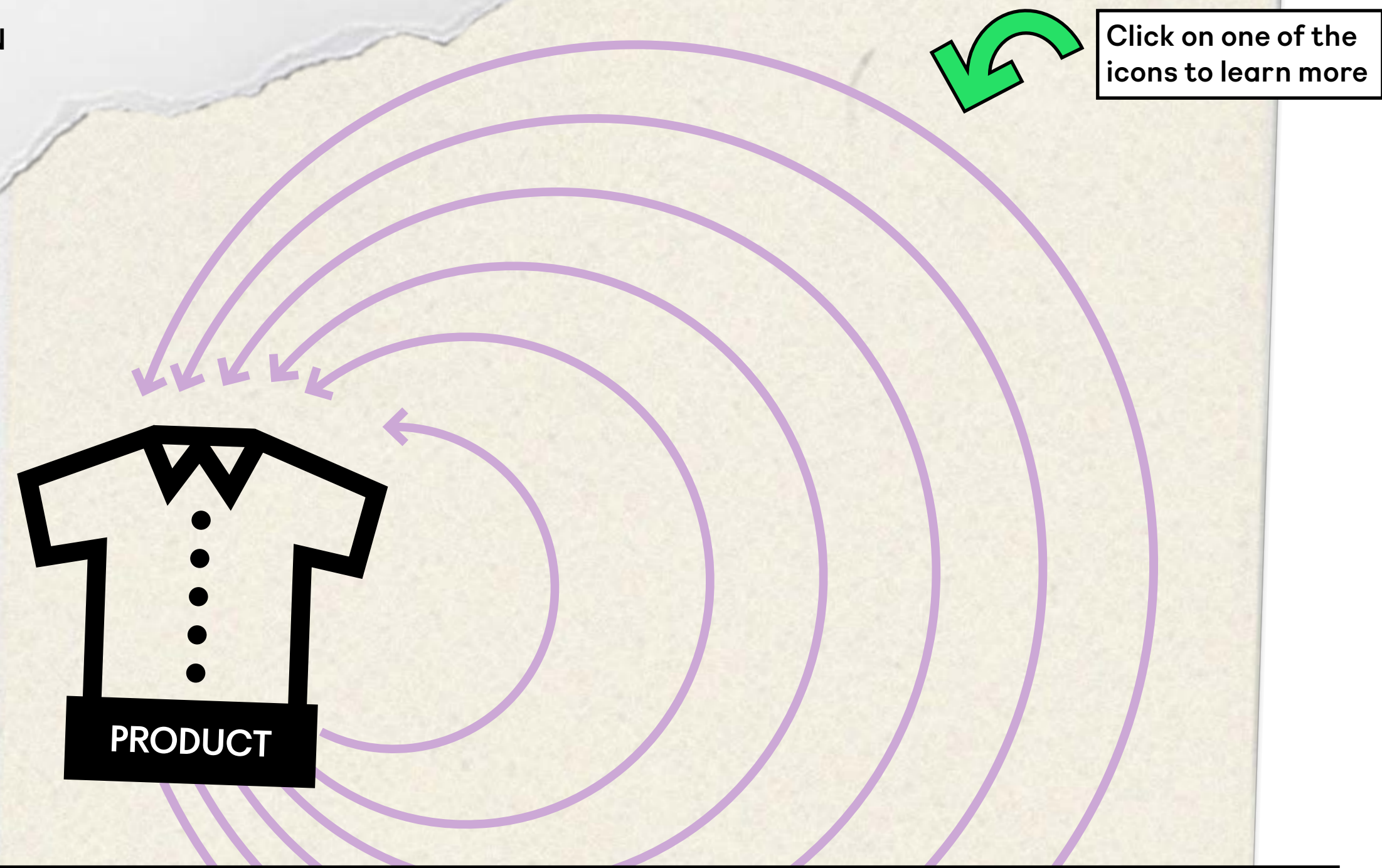
POST-CONSUMER WASTE: waste generated after a product has reached its user.¹¹ This includes waste from households, businesses or commercial facilities, e.g. discarded plastic bottles or discarded clothes.¹²

9 Ellen MacArthur Foundation (2015). Circularity Indicators: An Approach to Measuring Circularity. Ellen MacArthur Foundation.

10 Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Pre-consumer waste. Condé Nast.

11 Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Post-consumer waste. Condé Nast.

12 ISO 14021:2016. Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling). <https://www.iso.org/obp/ui/#iso:std:iso:14021:ed-2:v1:en>



Click on one of the icons to learn more

THE POWER OF THE INNER CIRCLE

As explored in Chapter 4, the fashion industry uses large amounts of resources (water, energy, land, fossil fuels and chemicals) to create products. One of the core principles of the circular economy, 'circulate products and materials', ensures that we retain these resources in the fashion system for as long as we can.¹

One key way of doing this is by using 'the power of the inner circle'. This concept outlines a series of six loops that help to keep materials in the technical cycle (see Chapter 2). The first loop (use) is the most important, as it makes the most out of the resources and creativity that goes into products. The final loop (recycle) should be the last route before the materials are turned into something new. To help preserve the materials at their highest value, materials should travel around the inner loops for as long as possible. Or, as the Ellen MacArthur Foundation outlines:

"The tighter the circle, i.e. the less a product has to be changed in reuse, refurbishment and remanufacturing and the faster it returns to use, the higher the potential savings on the shares of material, labour, energy and capital still embedded in the product, and the associated externalities (such as greenhouse gas (GHG) emissions, water and toxicity)".²

¹ Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion's future. Ellen MacArthur Foundation.

² Ellen MacArthur Foundation (2014). Towards the circular economy Vol. 3: Accelerating the scale-up across global supply chains. Ellen MacArthur Foundation. Pg. 16.

Chapter 5.1: Waste & Textile Recycling

In this chapter we'll introduce the Ellen MacArthur Foundation's 'power of the inner circle' concept, and outline what textile recycling is, why it's important for the circular economy, and how it works.

WHAT IS TEXTILE RECYCLING AND WHY IS IT SO IMPORTANT FOR THE CIRCULAR ECONOMY?

Textile recycling helps to divert clothes from landfill by collecting, sorting and processing them and then using the recovered materials. This has two impacts for the circular economy: first, it reduces reliance on non-renewable resources by reusing materials already in existence. Second, it eliminates waste by turning it into feedstock for new material. It plays a vital role in 'closing the loop' on fashion by ensuring products and materials stay in use.

Currently less than 1% of textile waste is recycled back into clothing (fibre-to-fibre recycling, also known as F2F)³. Recycling also faces technological and geographical limitations⁴ – not all discarded products are recyclable, and even if they are, there might not be a local recycling facility capable of processing them.

Blended fibres also pose a significant recycling challenge.⁵ Only mono-material products where 98% of the total volume by weight is a single fibre⁶ can be recycled – and that extra 2% leeway should be saved for trims like care labels and threads, rather than used in the fabric itself.

These are significant challenges, but textile recycling is a quickly developing industry with a lot of innovation taking place – from polycotton recycling⁷ to tracking materials from production to recycling through QR or RFID technology.⁸



There are two terms you'll hear when you're sourcing recycled textiles:

PRE-CONSUMER WASTE: waste generated before a product reaches the user, usually from manufacturing or processing, e.g. fabric offcuts from the factory floor.⁹

POST-CONSUMER WASTE: waste generated after a product has reached its user.¹⁰ This includes waste from households, businesses or commercial facilities, e.g. discarded plastic bottles or discarded clothes.¹¹

³ Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion's future. Ellen MacArthur Foundation.

⁴ European Parliamentary Research Service (2019). Environmental impact of the textile and clothing industry.

⁵ Ellen MacArthur Foundation (2017). A New Textiles Economy: Redesigning fashion's future. Ellen MacArthur Foundation.

⁶ Ellen MacArthur Foundation (2021). The Jeans Redesign Guidelines. Ellen MacArthur Foundation.

⁷ Worn Again (n.d.) The Solution.

⁸ Circular.fashion (n.d.) Circularity ID.

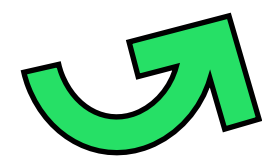
⁹ Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Pre-consumer waste. Condé Nast.

¹⁰ Centre for Sustainable Fashion and Condé Nast (2020). The Sustainable Fashion Glossary: Post-consumer waste. Condé Nast.

¹¹ ISO 14021:2016. Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling). <https://www.iso.org/obp/ui/#iso:std:iso:14021:ed-2:v1:en>

Chapter 5.2: Textile Recycling Technologies

Click on each section
to find out more



Final Thoughts



Everything in fashion comes from nature: soil, sunshine and human ingenuity are at the heart of all that we wear. This guide is about how we value nature, so that we can all live well.

The only constant is change, but the direction of change depends on what we think is valuable. This guide builds on a long-term partnership between ASOS and Centre for Sustainable Fashion, aiming to change the direction of fashion. The aims are bold and ambitious, it's about valuing nature – our only source of wealth – and making that economically viable and valuable.

We have a good start: nature is the most experienced, most talented designer we can learn from, and ASOS is recognised by suppliers, governments and its customers as a leader in change in fashion. Beyond that, each one of us is a part of nature, so for us to thrive, we must ensure that nature thrives.

Designing and product developing uses skills, including ingenuity and imagination, to improve a situation. That means better fit and great colour combinations, but unless it improves life, it isn't good design.

Fashion is a personal decision that we each make every day. It is also a business that employs around one in six people in the world. Fashion that respects nature and all humanity is something that more and more people are choosing to define themselves. Disrespectful practices are being called out: together we can put an end to them. It's up to us all to improve the world of fashion.

This guide is about seeing that personal actions and planetary scales are intimately interconnected. It's about creating with a sustainability mindset. This involves learning, experimenting, and sharing ideas within your teams, across teams, and with suppliers and customers. The guide has been co-created with Design, Buying, Merchandising, Technical and Sustainability teams across ASOS, drawing on all our experience and from what customers tell us they expect from ASOS.

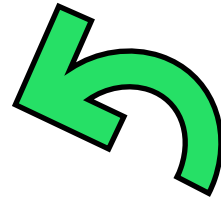
We hope that the guide inspires and informs your work. Let us know what you think and what you are doing in response to it.

Professor Dilys Williams
Director, Centre for Sustainable Fashion

Acknowledgements

ASOS and CSF would like to offer their sincere thanks to the brands, suppliers, businesses, creatives and organisations that have agreed to be featured in this report.

With thanks to our pattern cutters Steve Rousou and George Mocanu and designer Sean Muntaner for the creative work on this guide.



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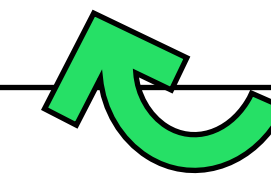
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