Seamless

Circular clothing design implementation

Friday, 7 August 2026

Acknowledgement of Country

We acknowledge the traditional custodians of Country throughout Australia and their connections to land, sea and culture.

We pay our respects to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander Peoples.

Your facilitators

Courtney Holm

- CEO and Founder of A.BCH World and Circular Sourcing
- Circular fashion designer and systems thinking

Teslin Taylor

- RMIT lecturer and former Head of Sustainability at Country Road Group
- Played a pivotal role in setting up the project between RMIT x Country Road Group that created the Refashioning Guidelines

What we'll cover

1. Circular design method overview
2. Design
3. Document
4. Deliver
5. Next steps

Image: The Social Outfit

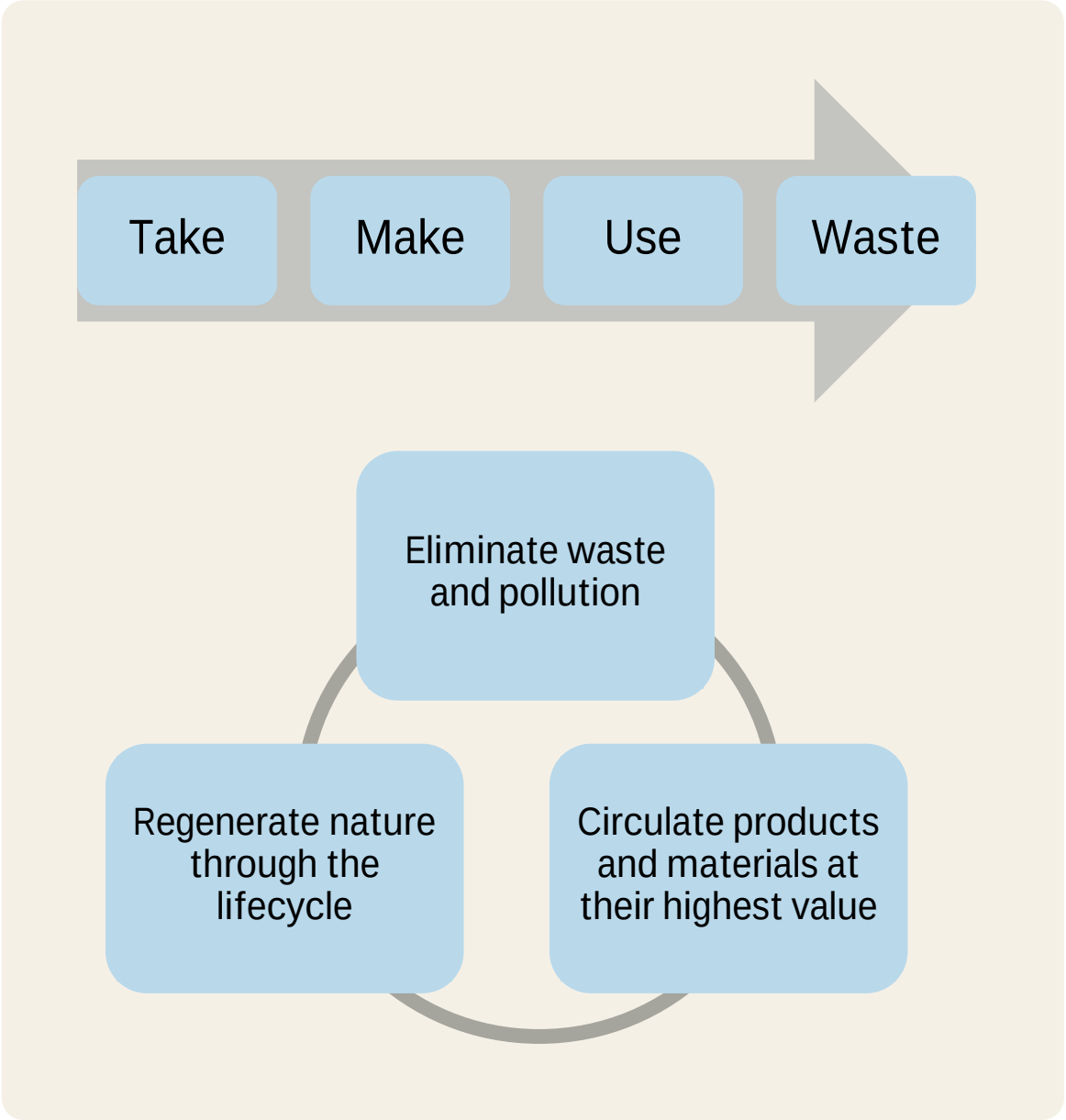
Learning objectives

1. Apply the Refashioning circular clothing design methodology in a real-world environment to redesign a garment that aligns with circular design principles.
2. Collaborate with others to share learnings and set practical, actionable goals to support the implementation of circular clothing design principles within your organisation.

Refashioning

- Refashioning: Accelerating Circular Product Design at Scale (Refashioning) is an innovative circular design guide for all clothing brands, no matter the scale.
- It was produced by a collaboration led by RMIT University's School of Fashion and Textiles and delivered in partnership with Country Road Group, A.BCH World and Julie Boulton Strategy and Sustainability.
- This training program leverages this guide.

Circular design method overview



Linear vs circular

- A linear economy is where products are made, used and discarded – the 'take, make, waste' economy.
- A circular economy eliminates waste throughout a product's lifecycle by ensuring that safe, recyclable or renewable inputs are used, and that what we make is enjoyed for longer and made to be reused.

Material flows

- The circular system can be understood within two material flow cycles: biological and technical.
- The biological cycle refers to a natural systems process for materials that are generated, consumed and returned to the earth safely.
- In the technical cycle, products and materials are kept in circulation for as long as possible to maintain the value embedded in the product.

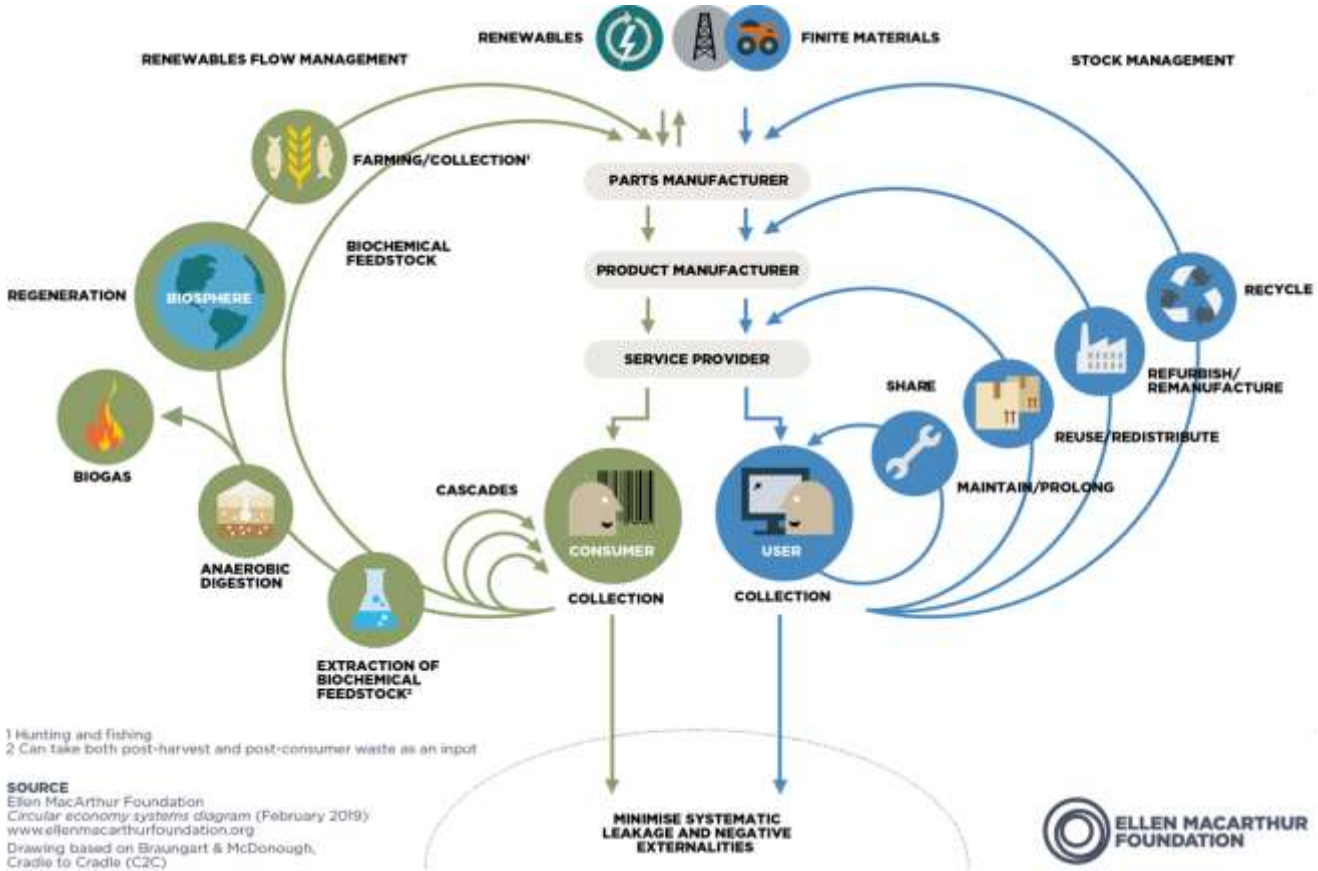


Image courtesy of the Ellen Macarthur Foundation

Circular design

- Circular design embeds circular economy principles into the design process. The objective is to produce products that can flow through a circular system.
- Slowing the flow is about designing products for a long life - they are kept in use at their highest value, for longer.
- Closing the loop is about designing for end of life – identifying how material value can be captured and reclaimed from the beginning.

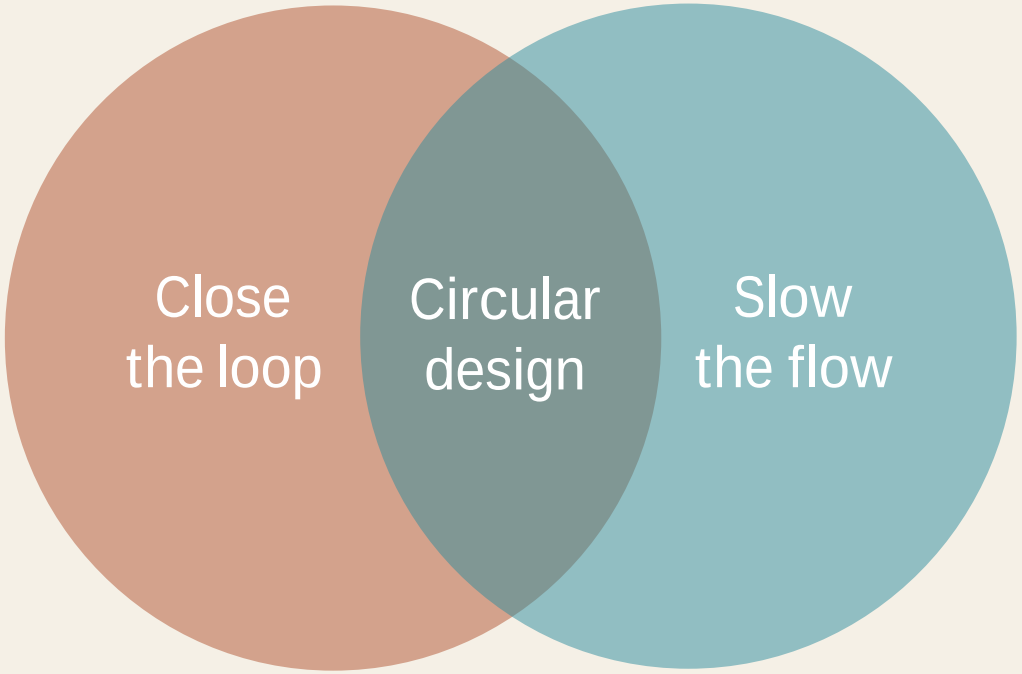


Image adapted from 'Refashioning: A Practical Guide'

Circular design for the full lifecycle

- Designing clothing for circularity requires knowledge of the full product lifecycle.
- It's crucial that designers consider the full lifecycle and if the product is not able to circulate past the use phase, to question whether the product needs to be created in the first place.
- Products that are not able to flow through this system are not circular.

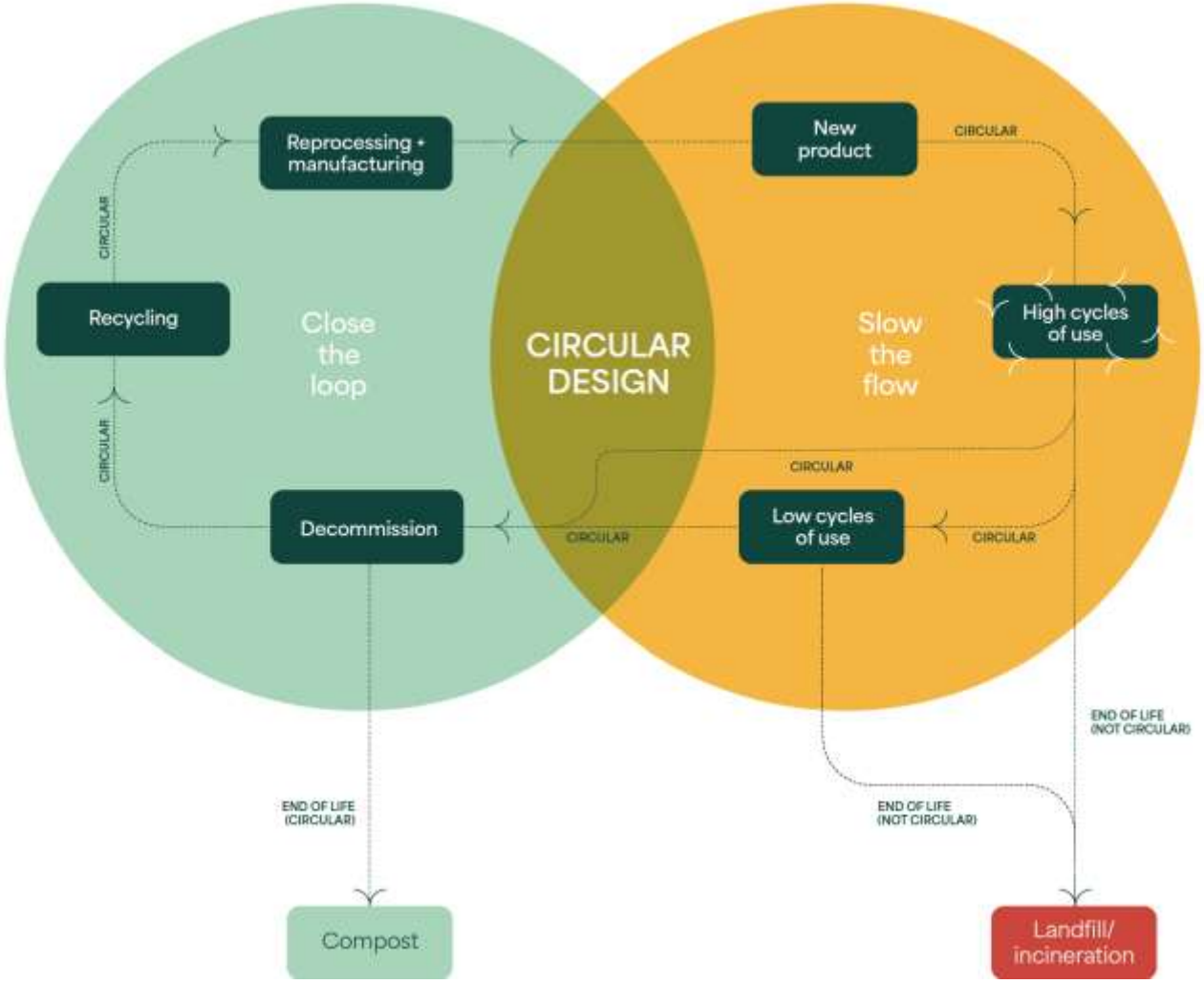


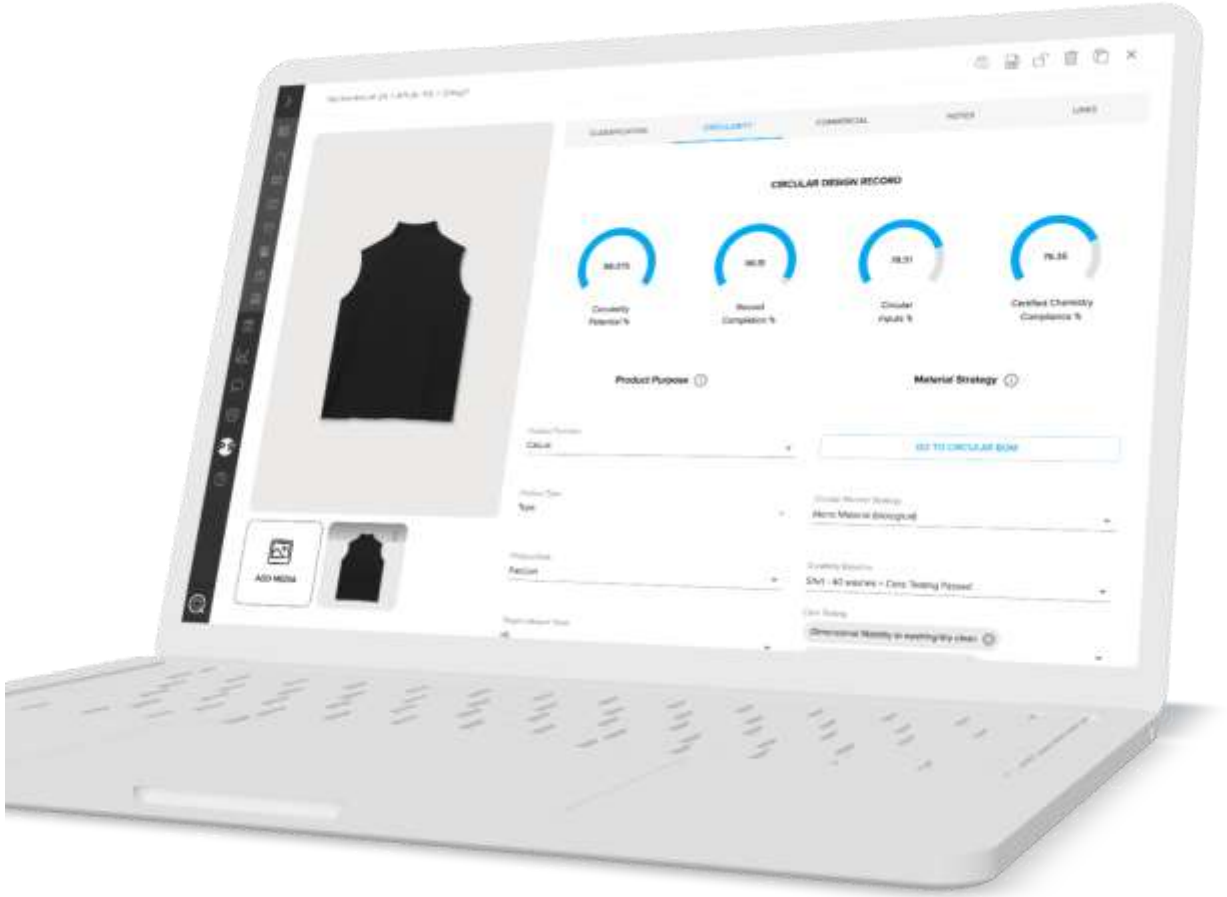
Image: Refashioning circular design systems approach, adapted from A.BCH World

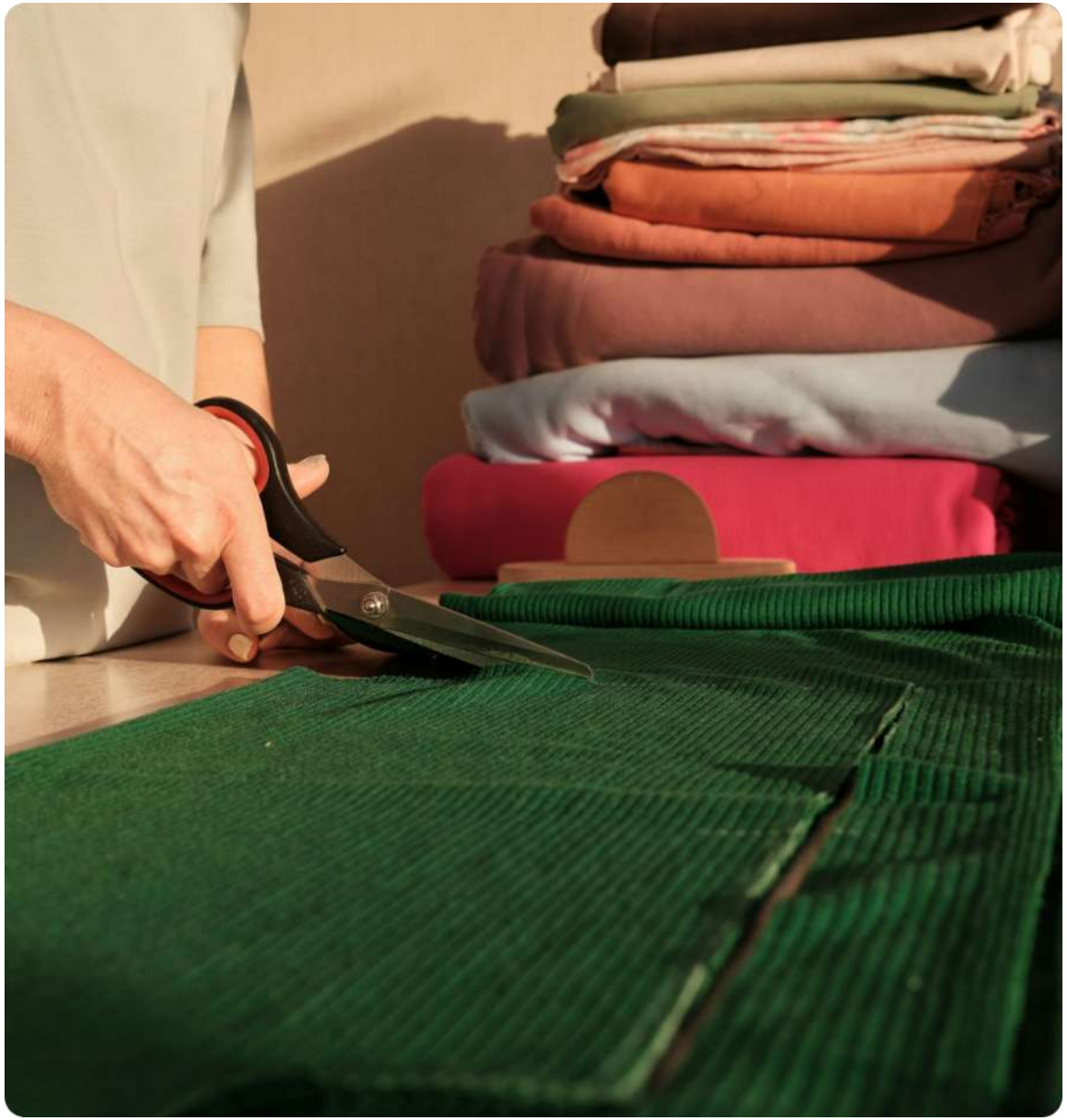
Group activity

Introductions including your role, your organisation and your interest in circular clothing design.

Quadrant Circular

- As part of this course, you receive a complimentary six-month licence for Quadrant Circular.
- It's a circular clothing design platform developed by Seamless supporter Style Atlas.
- You'll use it throughout the course to document your garment, record design decisions and develop your new circular garment design.
- Information you enter into the platform is private and only accessible by you.





In this workshop

- Across this 12-week course, you'll redesign an existing garment using circular design principles.
- Keep this garment with you as you'll need to refer to it.
- You'll also need to refer to the bill of materials you've created for this garment – if you don't have one, we can make a start on one today.

Circular design method

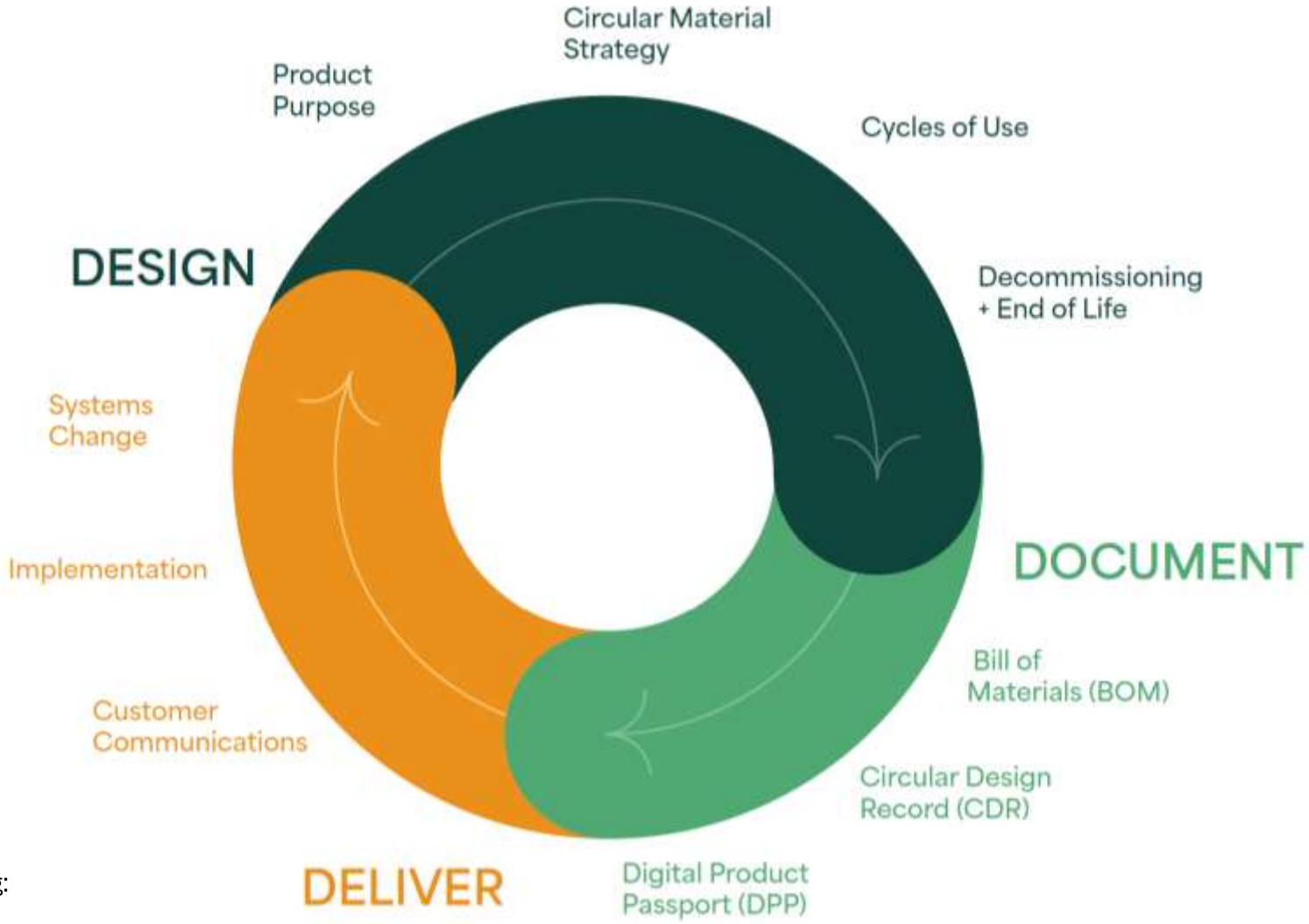


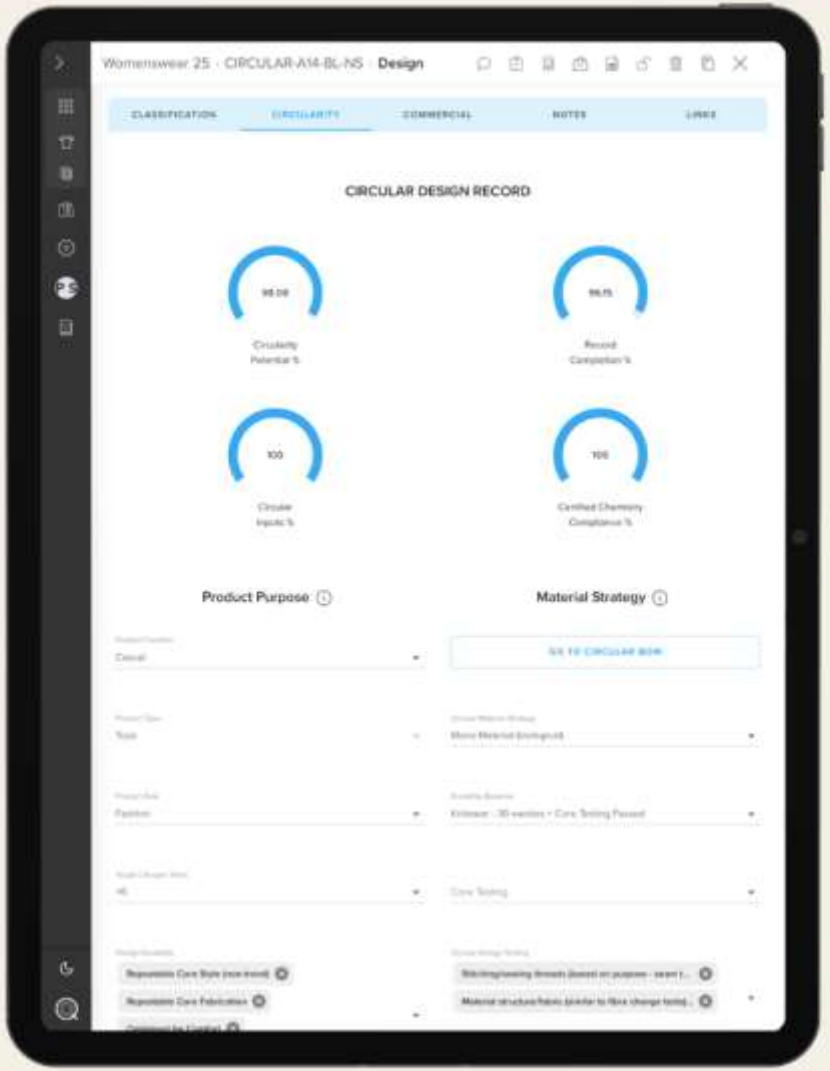
Image: Refashioning circular design method, 'Refashioning: Accelerating Circular Product Design at Scale', 2024

Introducing the CDR

The circular design record (CDR) captures each stage of the circular design method and the agreements made with lifecycle partners.

It includes the:

1. Product purpose statement
2. Circular material strategy
3. Use plan
4. Decommissioning and end of life plan



Group activity

In your group, discuss:

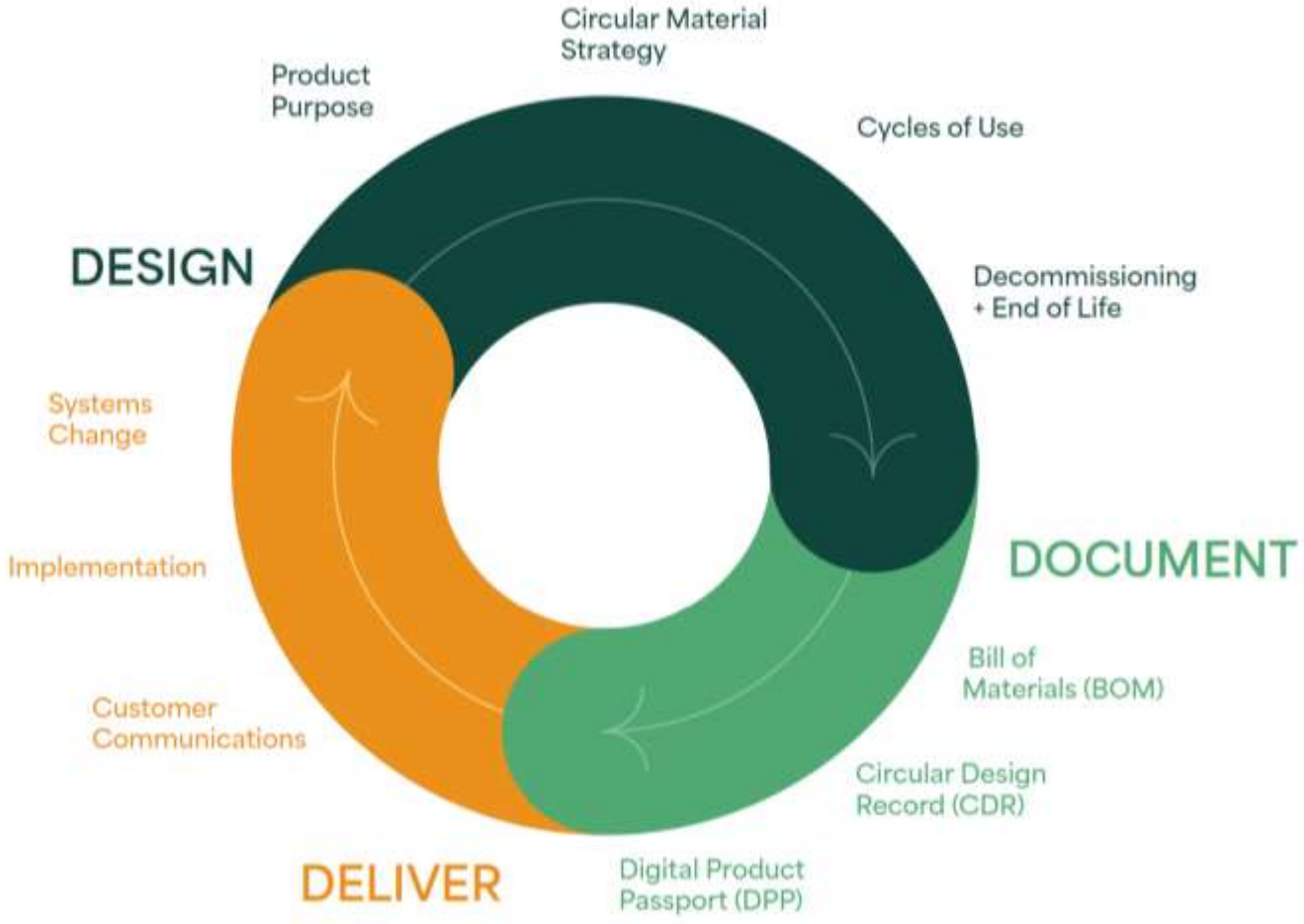
- The garment you'll redesign
- Why you chose it
- What challenges you foresee, if any

Enjoy your break

Design

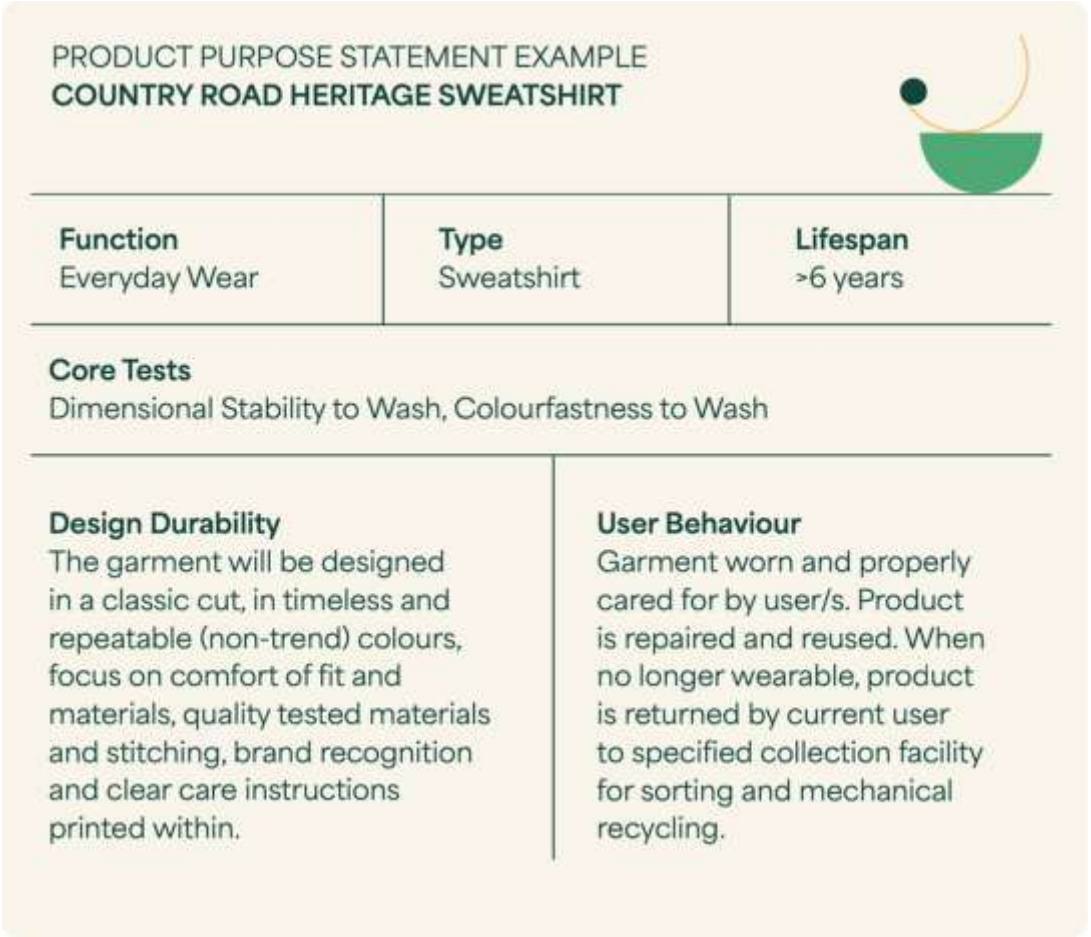
Product purpose

1. Product purpose statement
   - Product purpose statement
   - Design for highest value
   - Introduction to lifecycle partners
2. Circular material strategy
3. Use plan
4. Decommissioning and end of life plan



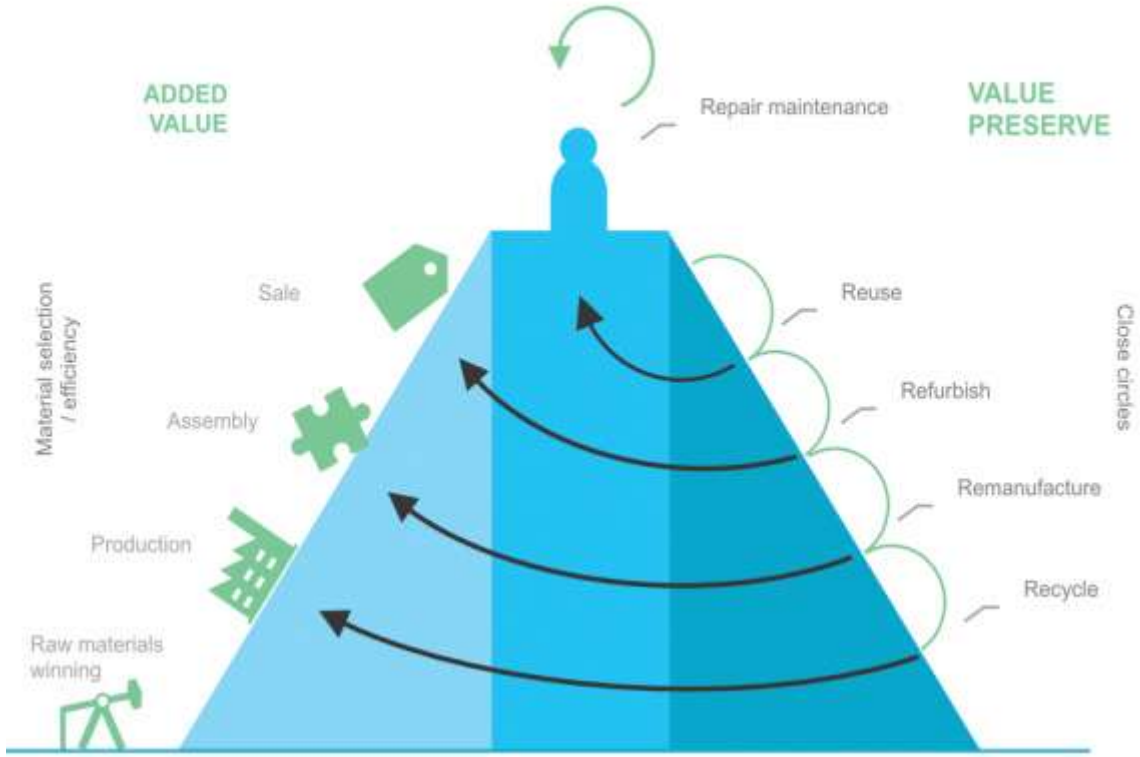
Product purpose statement

- The product purpose explains ‘why’.
- It’s an opportunity to rethink part of the resource hierarchy and redesign a product for quality, appeal over time and distribution of value to others.
- The statement lists the product’s:
  - Function
  - Type
  - Intended lifespan
  - Design durability
  - User behaviour



Design for highest value

- Design for highest value means:
  - Valuing raw materials, resources and skills required to make the product
  - Actively creating opportunities for users to value the product over a long time
  - Designing for high value material recovery and recycling
  - Communicating the product lifecycle plan to relevant stakeholders.
- Less than 1% of the global fibre market comes from recycled textiles, meaning most clothing ends up in landfill. Why?



The Value Hill

Introduction to lifecycle partners

- Stakeholders who provide a service that's integral to a garment's flow through a circular system.
- Working with lifecycle partners at the design stage helps to develop use cycle plans and decommissioning scenarios.
- Lifecycle partners can be internal or external. They might be existing or new.
- At this stage, consider both raw materials and manufacturing lifecycle partners.

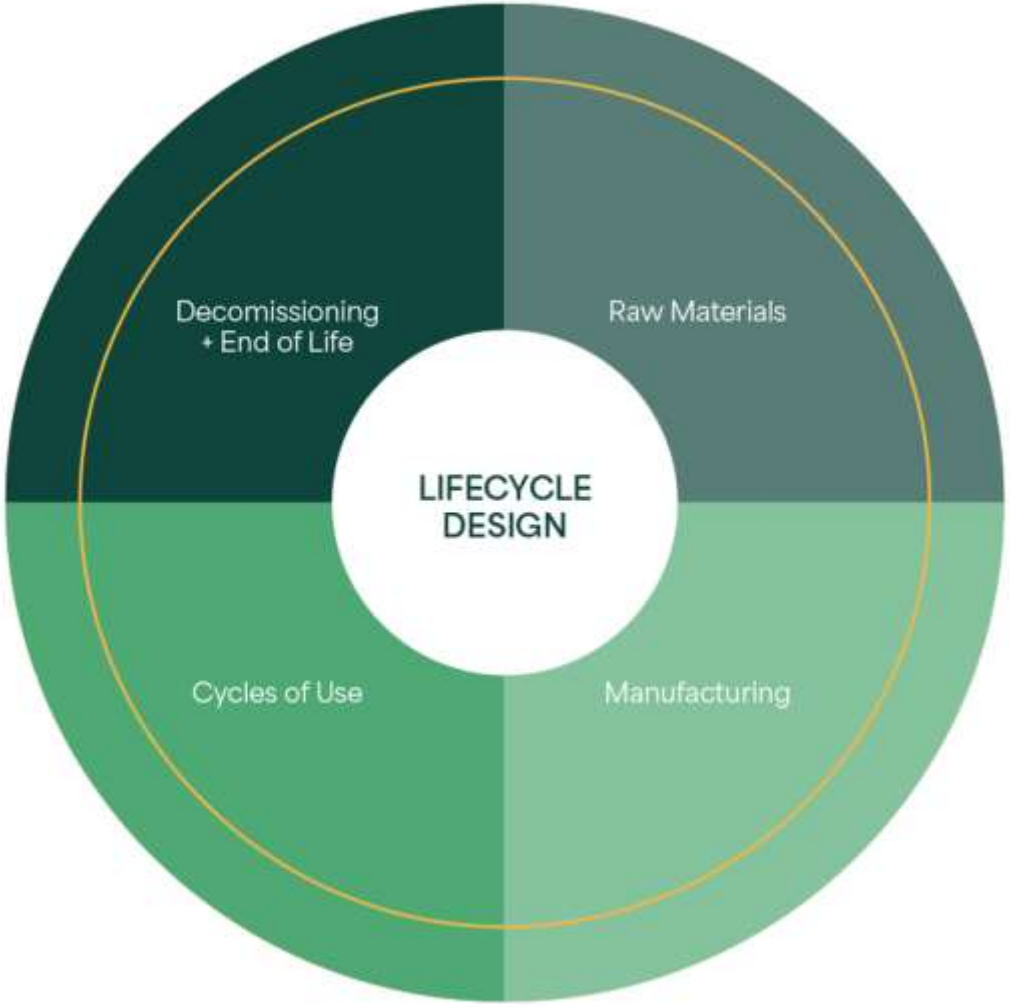
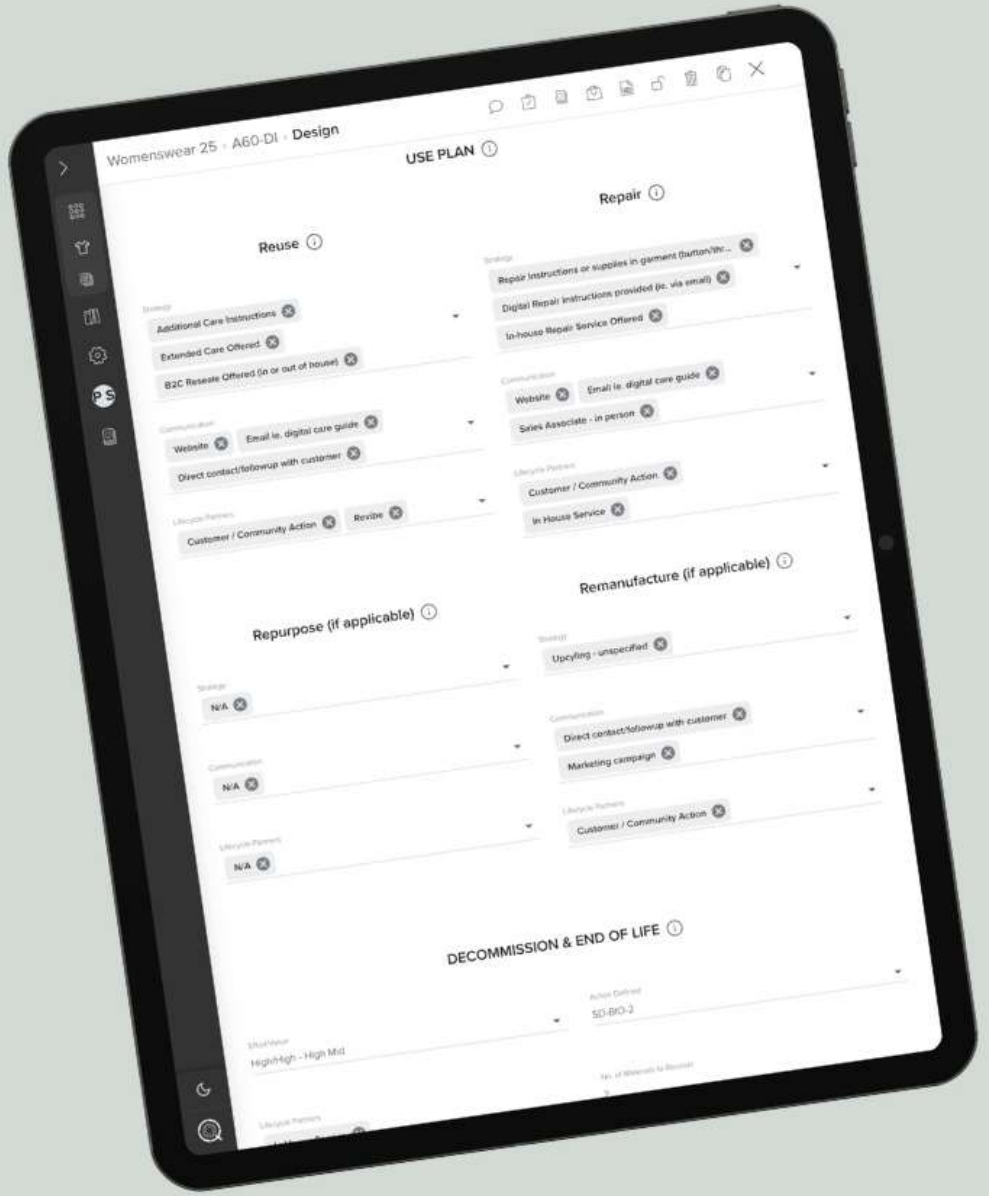


Image: Refashioning lifecycle design

Activity

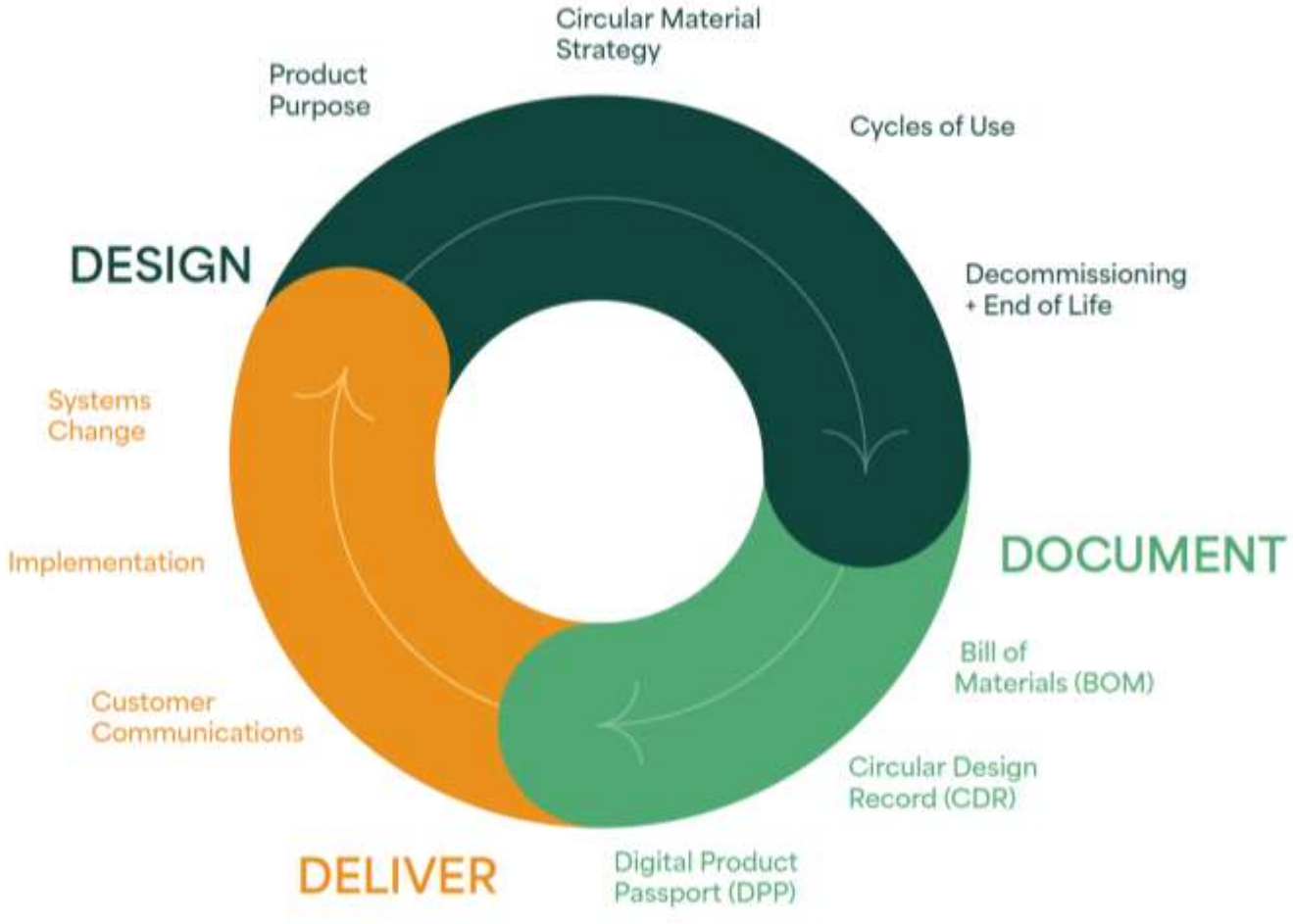
Create your product purpose statement in Quadrant Circular.

This forms part of the circular design record (CDR).



Circular material strategy

1. Product purpose statement
2. Circular material strategy
   - Material categories
   - Material strategies
   - Bill of materials (BOM)
   - Durability and circularity potential
   - Production efficiencies
   - Lifecyle partners
3. Use plan
4. Decommissioning and end of life plan

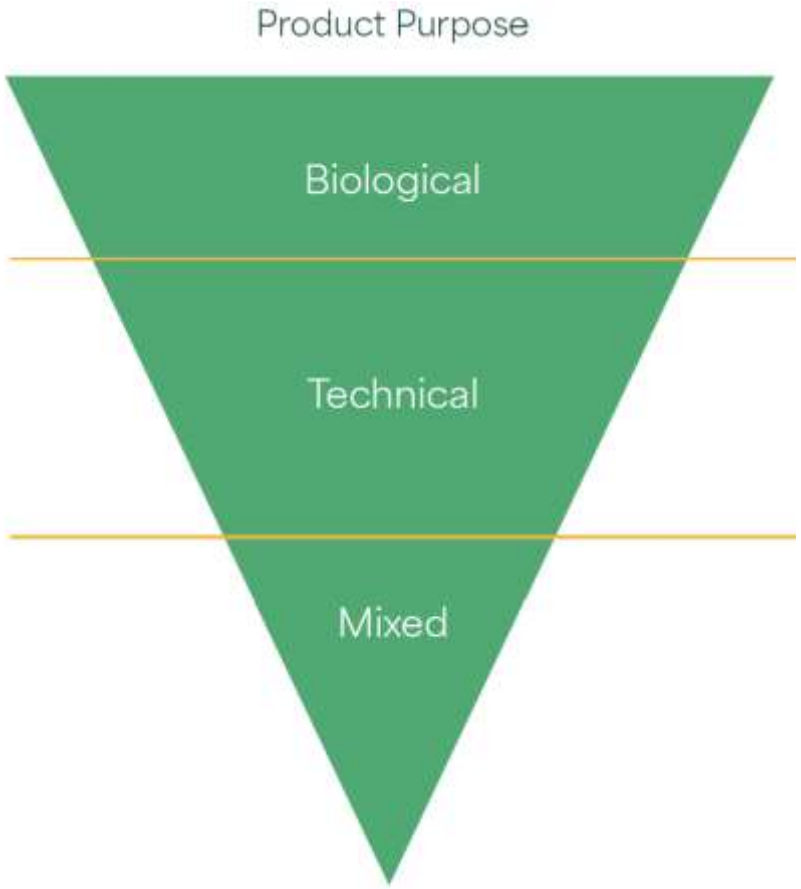


Material categories

There are three categories of materials for circular design:

1. Biological: derived from natural fibres. Not augmented with technical materials and can return safely to the earth.
2. Technical: derived from synthetic fibres, not augmented with biological materials.
3. Mixed: blend of biological and technical materials.

The material you choose should align to your product purpose.



Circular design material

The further you move down the triangle, the harder it is for a product to flow through a circular system.

Material strategies

- Seven material strategies to choose from.
- These strategies align with circular principles of eliminating waste and regenerating nature.
- Strategies are a hierarchical list based on:
  - Monomateriality or simple disassembly
  - Highest lifecycle materials value
  - Simplest, most scalable processes for end-of-life pathways
- Your product purpose should help to inform which strategy you choose.

Material strategies

Image: Refashioning guide

Material strategies

- Monomaterial: where materials and products consist of one (100%) of the same fibre or contents.

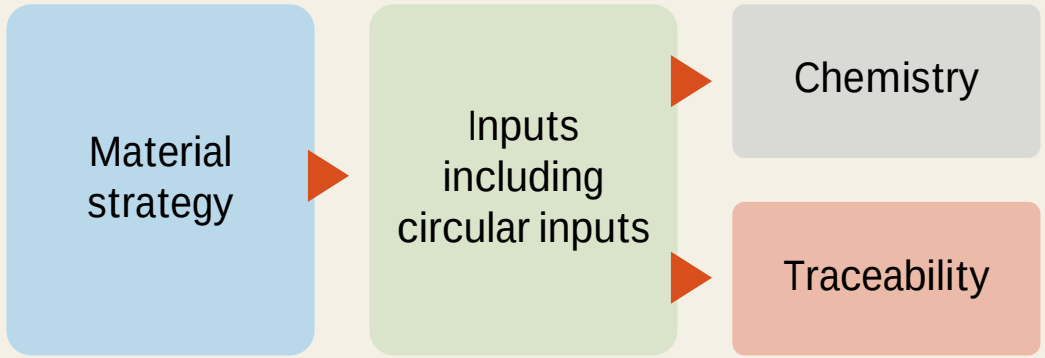
- Simple disassembly: products can be easily separated into material constituents at a particular phase in the lifecycle. "Simple" means a minimal number of disassembly tasks is required - they must be outlined in the design phase. Simple disassembly allows for materials to enter reuse or end of life phases.

Material strategies

Image: Refashioning guide

Material strategies

Material strategy	Definition	Market example
Monomaterial (biological)	100% biological material of the same fibre. Requires no manual separation of materials at end of life.	A.BCH
Monomaterial (technical)	100% technical material of the same fibre. Requires no manual separation of materials at end of life.	Napaprijri
Simple disassembly (biological)	A mix of 100% biological materials specifically designed for simple separation for further processing.	Kowtow
Simple disassembly (technical)	Mix of 100% technical materials specifically designed for simple separation for further processing.	Norse Projects
Simple disassembly (mixed)	Mix of biological and technical materials specifically designed for simple separation of materials into multiple reclaimable material streams.	Unspun Uniqlo
Simple disassembly (polyester/cotton blends)	Mix of only polyester (PET) and cotton fibres (either as a blended fabric or mixed materials) specifically designed for simple separation of individual components, for example, removing buttons. Requires additional chemical separation of biological and technical materials from a specialist provider or mechanical recycling into renewed poly/cotton fabrics.	Cargo Crew
Not yet circular	Mix or blend of fibres and/or materials that are not easily separated, for example, wool/nylon blend fabric. Requires time consuming and manual separation of biological and technical materials that are generally considered too high effort or low value to perform. Reserve for the most complex of items with performance restrictions, such as fire fighter uniforms or extreme weather gear, with the goal to develop circular innovations for these products.	



What inputs in your current BOM should be replaced?
Who do you need to speak with to find out?

Bill of materials

- Once selected, record the material strategy in the bill of materials.
- The bill of materials (BOM) captures, measures and tracks every input including components and trims, of a garment.
- This is where you capture every raw material and whether it is:
  - Circular (renewable, recycled or reused)
  - Certified for traceability (chain of custody certifications such as OCS)
  - Certified for chemistry (Oekotex 100, Crade2Cradle Gold)
- The material strategy should always come first.

Bill of materials examples

Circular Material Strategy: *NOT YET CIRCULAR*

BILL OF MATERIALS

Input list	Input Weight	Circular Input	Chemistry Verification	Traceability Verification	De-commission Steps	Input End-of-Life Pathway
100% Cotton Jersey 150gsm - White	*210 grams*	*Renewable*	*None*	*None*		
100% Recycled PET Threads - 35 Tex - White	*18 grams*	*Recycled*	*None*	*RCS*		
100% Recycled Cotton Labels - Optic White / Soy Ink Screen Print - Black	*7 grams*	*Recycled*	*OEKO TEX 100*	*RCS*		
100% Polyester Woven Brand/ Size Label - White / Black Yarns	*10 grams*	*None*	*None*	*None*		

Circular Material Strategy: *BIOLOGICAL MONOMATERIAL*

BILL OF MATERIALS

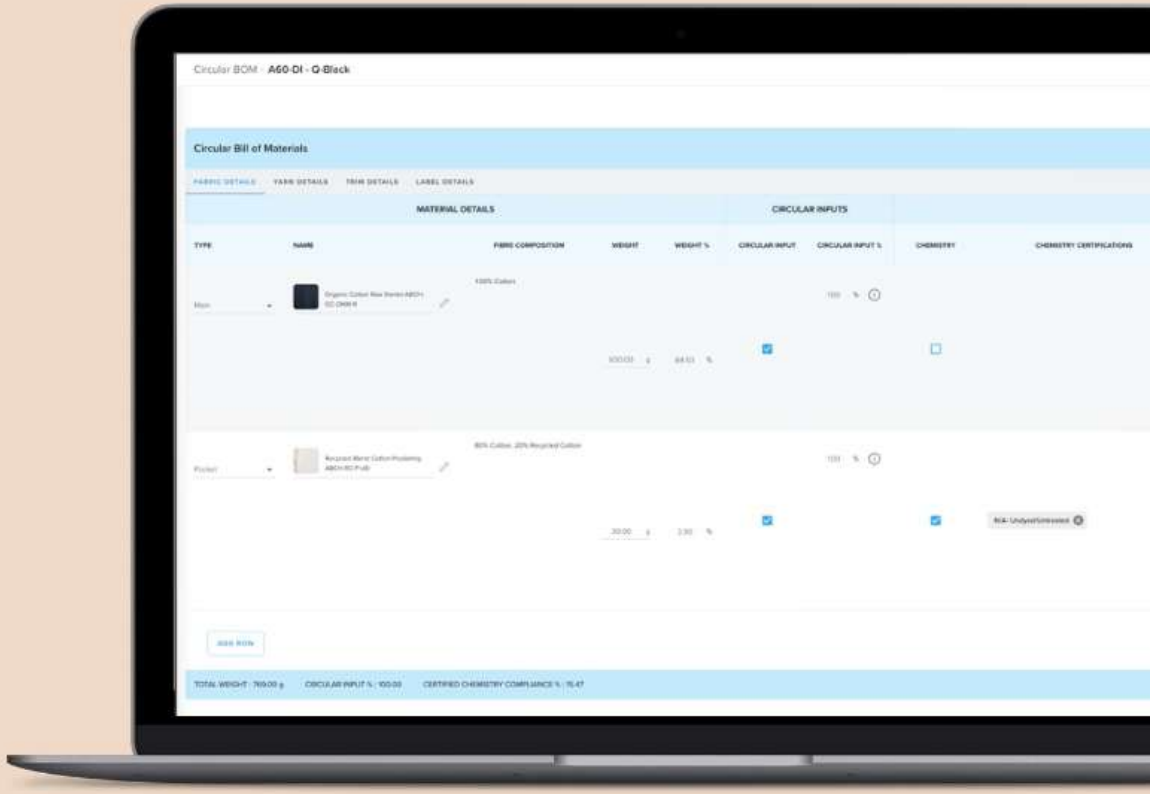
Input list	Input Weight	Circular Input	Chemistry Verification	Traceability Verification	De-commission Steps	Input End-of-Life Pathway
100% Organic Cotton Jersey 150gsm - Optic White	*267 grams*	*Renewable*	*OEKO TEX 100*	*ORGANIC COTTON STANDARD*		
100% Organic Cotton Threads - 40 Tex - White	*37 grams*	*Renewable*	*Cradle to Cradle Material Health: Gold*	*GOTS*		
100% Recycled Cotton Labels - Optic White / Soy Ink Screen Print - Black	*7 grams*	*Recycled*	*OEKO TEX 100*	*RCS*		
100% Cotton Woven Brand/ Size Label - Undyed / Black Yarns	*12 grams*	*None*	*OEKO TEX 100*	*None*		

Activity

Consider your bill of materials:

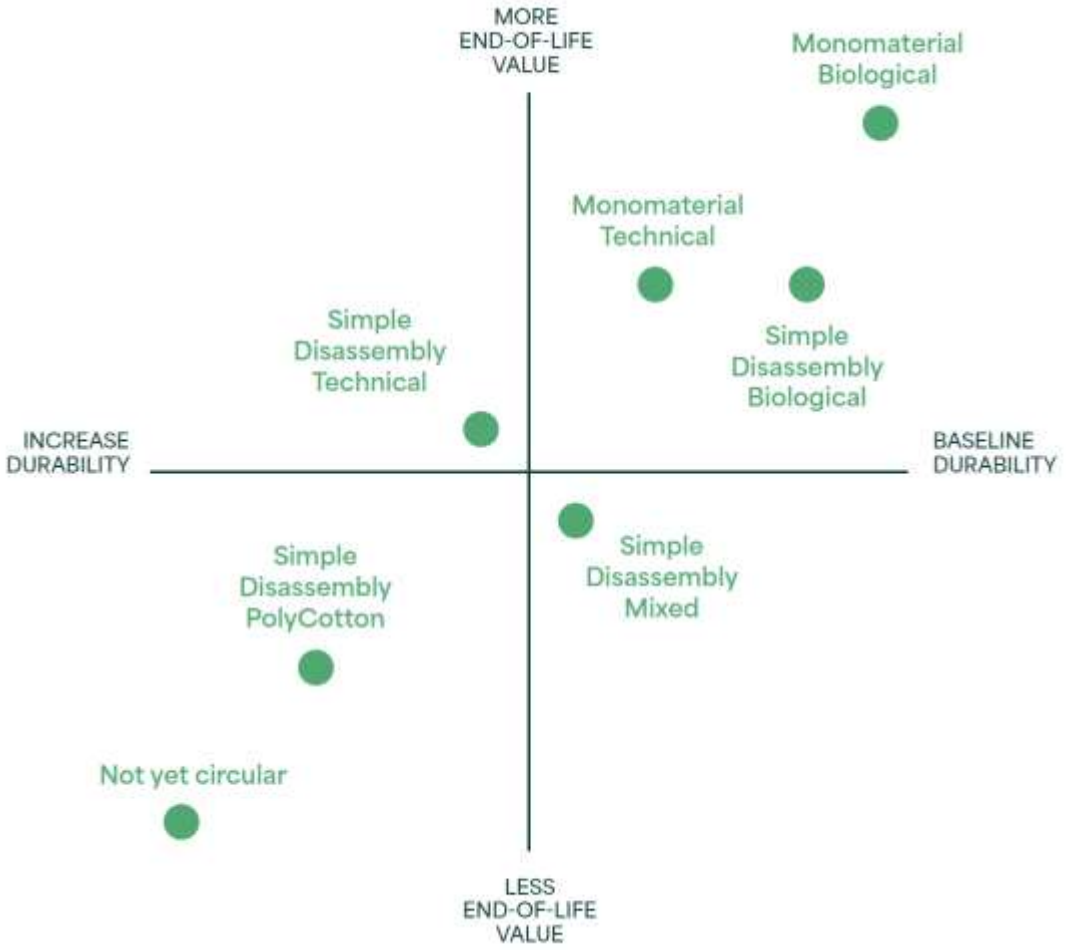
- Do you need to revisit any materials to fit your material strategy?
- Can any inputs be swapped for circular inputs?
- Do your inputs have any certifications?

This forms part of the circular design record (CDR).



Durability

- To keep products in use at their highest value, a minimum level of durability (baseline durability) is required.
- Efforts to increase durability should be made alongside efforts to increase value downstream, from repair and reuse, and remanufacture or repurpose, through to decommissioning and recycling.
- The durability x value matrix shows that when technical and mixed material strategies are chosen, a higher level of durability should be applied.



Durability x value matrix

Image: Refashioning guide, adapted from A.BCH World

Durability

According to the clothing longevity protocol, baseline durability is met when the specified product meets its:

- Target lifetime for longevity, calculated by reference to hours of wear, and
- Average number of washes with no/or little change* to the garment based on a set of core performance tests.

*Note that reasonable wear and tear is expected.

Row	Longevity factors	Knitwear	Shirt	Jeans	Socks	T-shirt
A	Current lifetime estimate (years) [i]	3.7	3.6	3.1	1.8	3.3
B	Target lifetime (years) [ii]	5	5	4	2.5	4.5
C	Average wear days per year [iii]	30	16	75	50	25
D	Implied wear days per month [iv]	2.5	1.3	6.2	4.2	2.1
E	Total days of wear for the target lifetime [v]	150	80	300	125	112.5
F	Hours of wear for the target lifetime [vi]	1,800	960	3,600	1,500	1,350
G	Assumed days of wear per wash [vii]	5	2	10	2	2
H	Hours of wear per wash [viii]	60	24	120	24	24
I	Average number of washes for the target lifetime [ix]	30	40	30	62	56

i Based on WRAP data
ii Based on lifetime increase of one third
iii Working assumption (validated by industry interviews)
iv Row C / 12
v Row B x Row C
vi Row E x 12 (assumed avarage 12 hours wear per day)
vii Working assumption (validated by industry interviews)
viii Row G x 12
ix Row F / Row H

Clothing longevity protocol

Image: Refashioning guide, sourced from WRAP

Durability

- Products should have a defined:
  - Function
  - Type
  - Intended lifespan
  - Core testing performance
  - Design durability
  - User behaviour

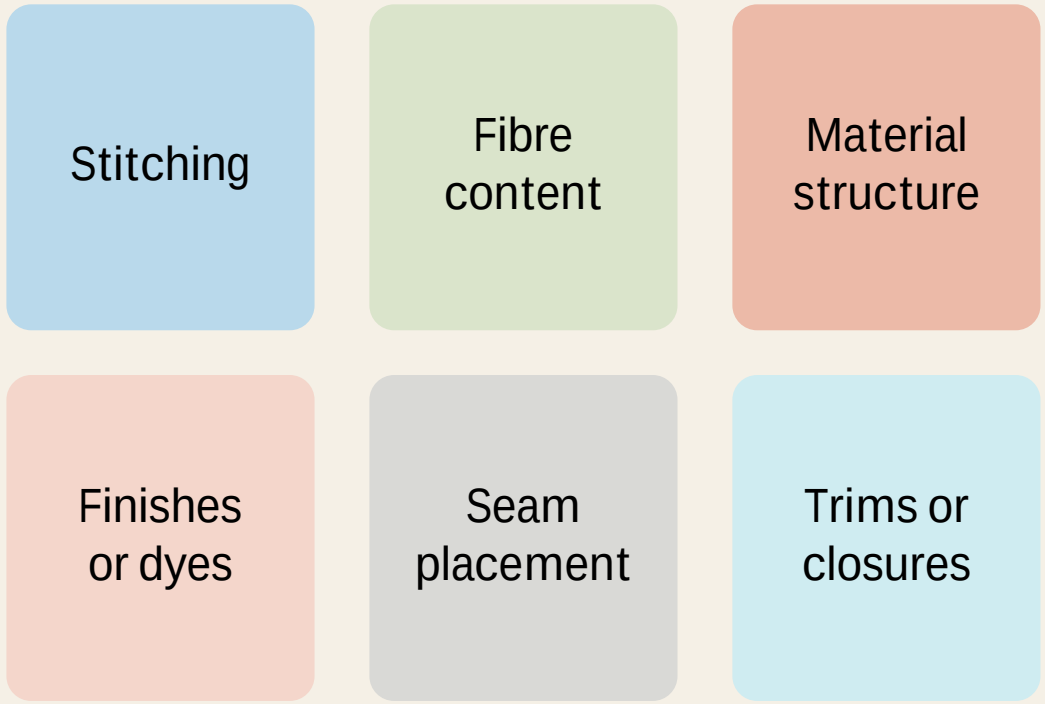
- Let's considering core testing performance in more detail. How will we know if our product is durable enough?

Core test	Knitwear	Shirt	Jeans	Socks	T-shirt
Number of washes to conduct before testing	**30**	**40**	**30**	**62**	**56**
Dimensional stability to washing/dry clean	+ or -5%	+ or -3%	+ or -3%	to fit sock boards or volumentric legs	+ or -5%
Pilling	4	n.a.	n.a.	4	4
Care label wash with visual assessment	expert judgement	expert judgement	expert judgement	expert judgement	expert judgement
Colour fastness to: •Washing* / dry clean • Water or perspiration* • Light • Rubbing *includes shade change and staining	 4 4 4 4	 4 4 4 4	 4 4 n.a. 4	 4 4 n.a. 4	 4 4 4 4
Spirality	3%	n.a.	n.a.	n.a.	3%
Seam slippage	n.a.	80N for 60mm opening	n.a.	n.a.	n.a.
Seam strength	n.a.	100N for 60mm opening	n.a.	n.a.	n.a.
Fusible lamination	n.a.	appearance after wash	n.a.	n.a.	n.a.

Core testing performance standards

Image: Refashioning guide, sourced from WRAP

Circular design testing for major changes to:

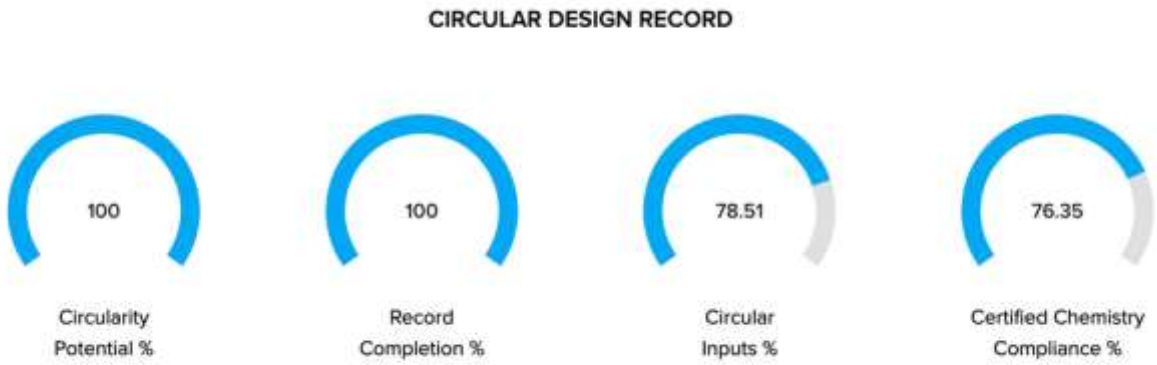


Durability

- Material choices need to be balanced with product quality and physical durability.
- Changes to materials, seams or finishes may require additional iteration.
- It is recommended that changes undergo circular design testing, especially in the early days of circular design transition.
- Over time and with practical experience, potential impacts can be accounted for more easily.

Circularity potential

- The circular design record (CDR) is where each stage of the circular design method and the agreements made with lifecycle partners will be captured.
- It sits alongside the BOM and assists in calculating the product's circularity potential.
- Circularity potential is the circularity rating of a garment determined by alignment to the CDR.
- It is a quantifiable rating that designers are encouraged to implement, measure and improve over time.



Production efficiencies

- Reducing waste in production typically requires change at a company level (although it can also be for a singular product type, for example, 3D knitwear).
- These interventions are supplementary to circular product design.
- Each organisation will have an individual approach to production efficiencies.
- Organisations can employ facility-wide production efficiency mapping, analysis and system updates to reduce waste.

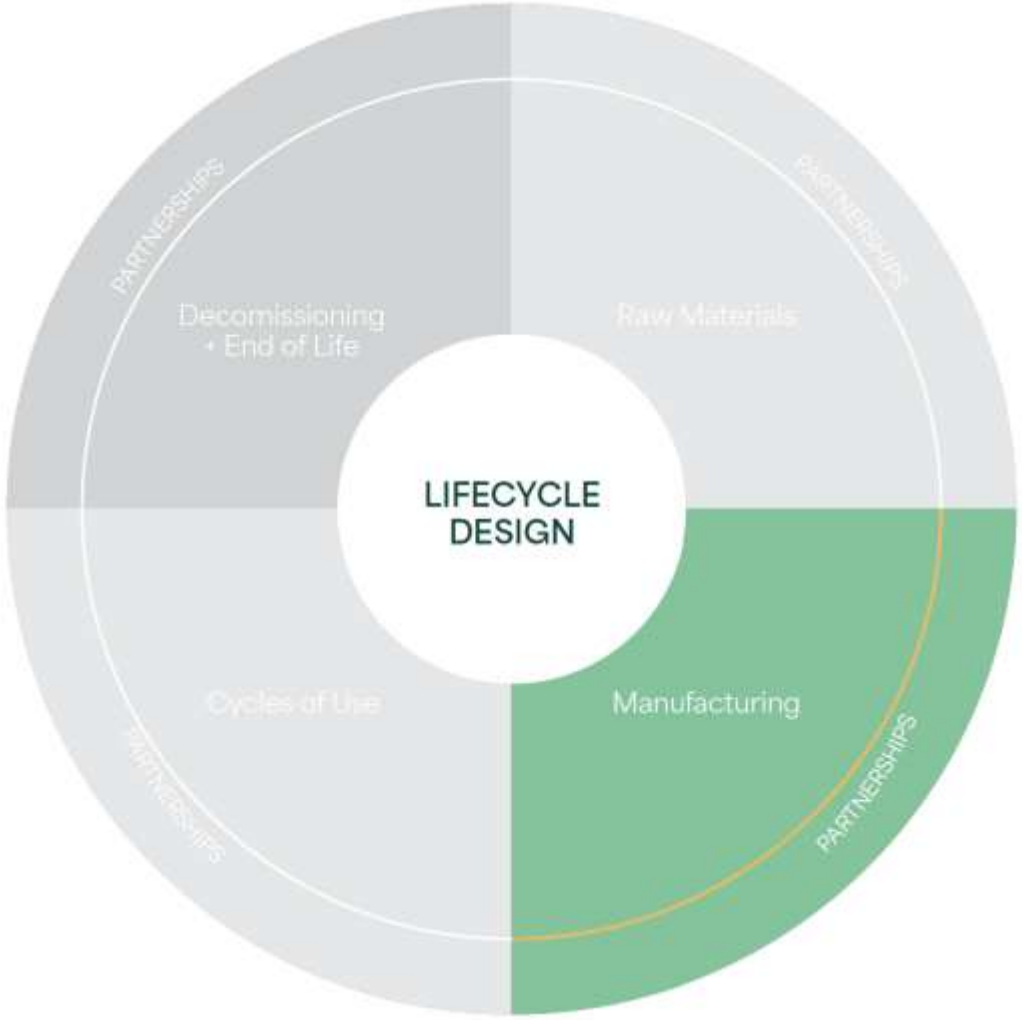
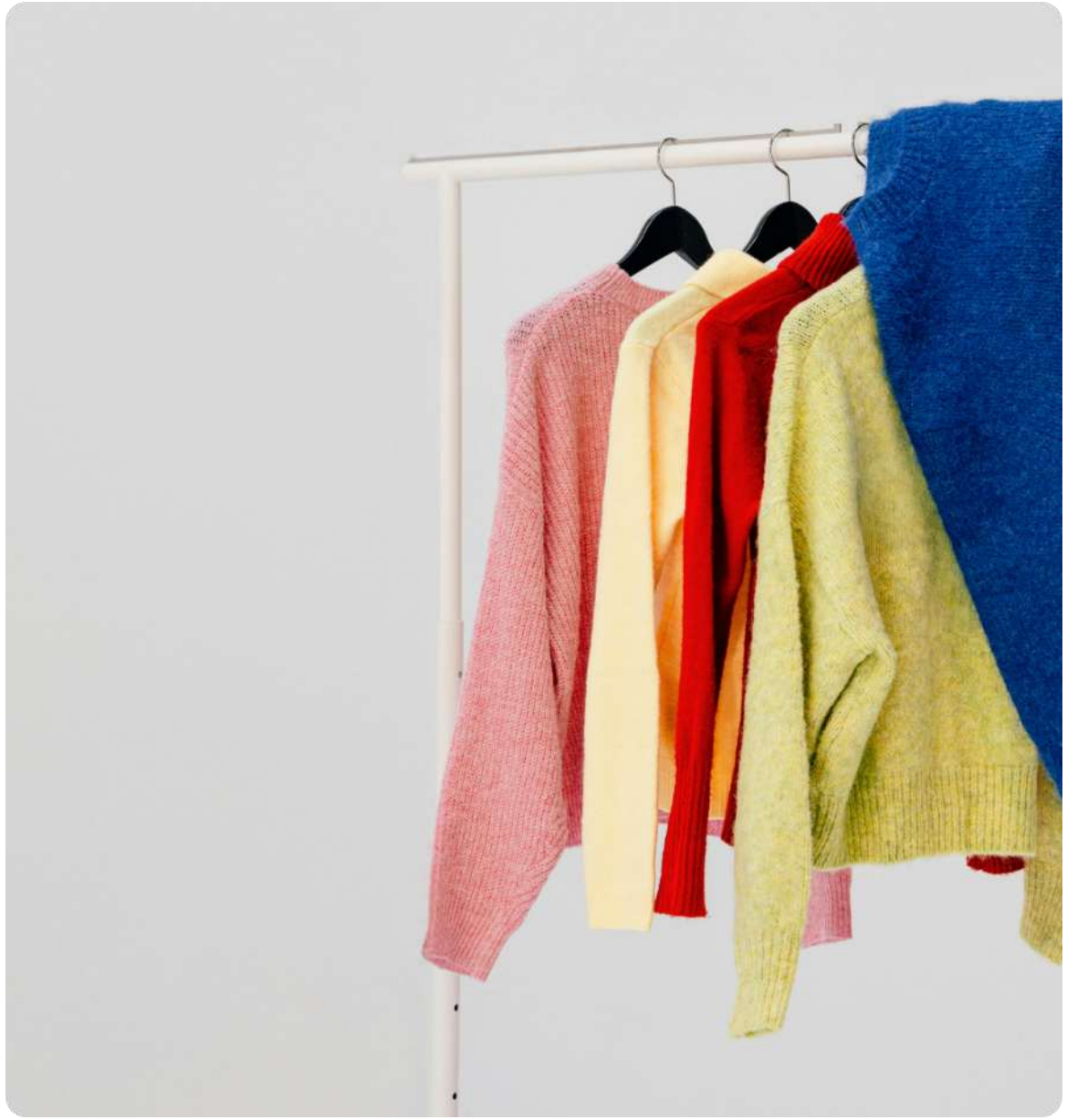


Image: Refashioning lifecycle design

Efficiency examples

Example of facility level production efficiencies:

- Zero or low waste pattern making
- Digital sampling
- Cross business or brand material sharing
- AI or predictive software to deliver more accurate product planning and allocation
- Accurate data collection on unsold stock
- Made to order or just in time manufacturing
- Material waste flow management
- Surplus use, reuse and remanufacturing strategies
- Lower impact processes, such as reduced water and energy use



Circular material strategy lifecycle partners

- Circular material strategy lifecycle partners may include:
  - Raw material suppliers (for example, farmers and technologists)
  - Yarn and textile producers
  - Wet processors (for example, dye houses)
  - Manufacturers
  - Accreditation, certification and testing organisations.
- Engaging with these partners ensures the circular material strategy is accurate and data is correctly documented.

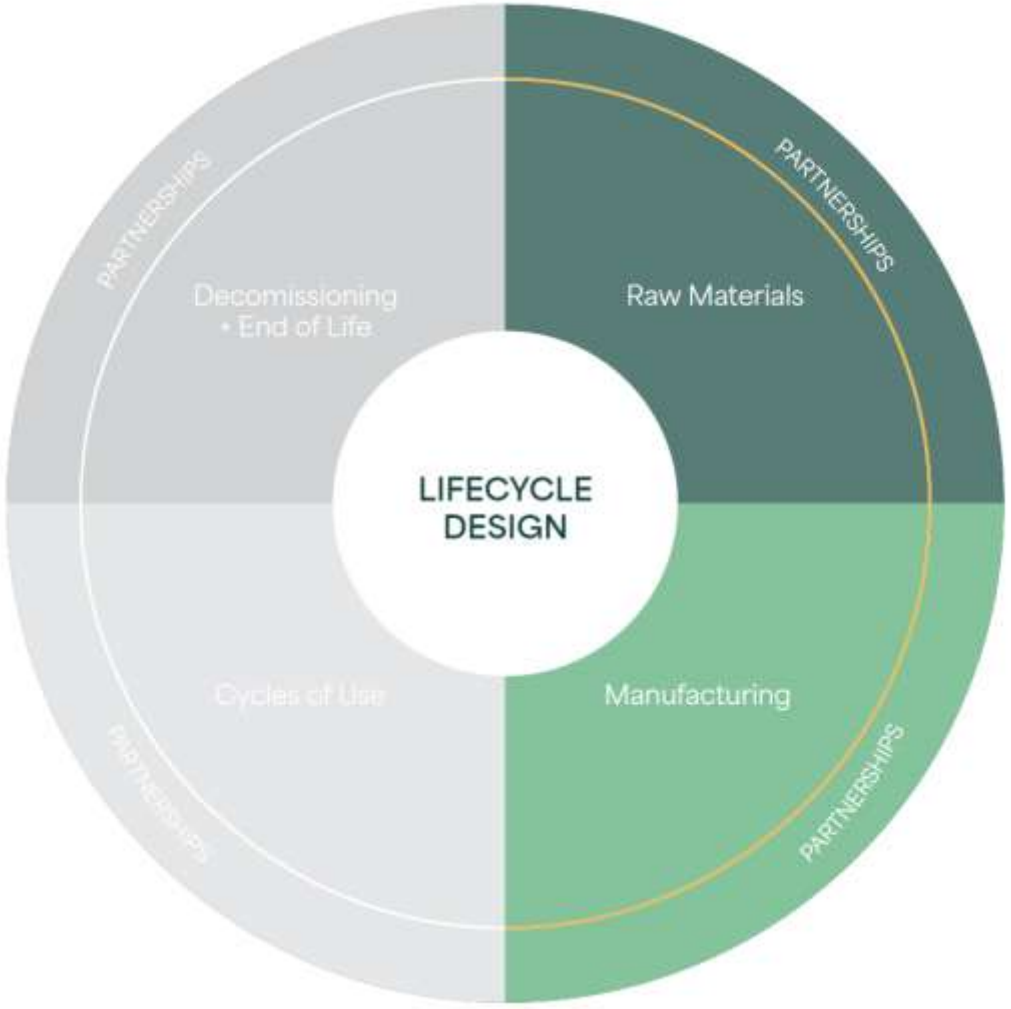
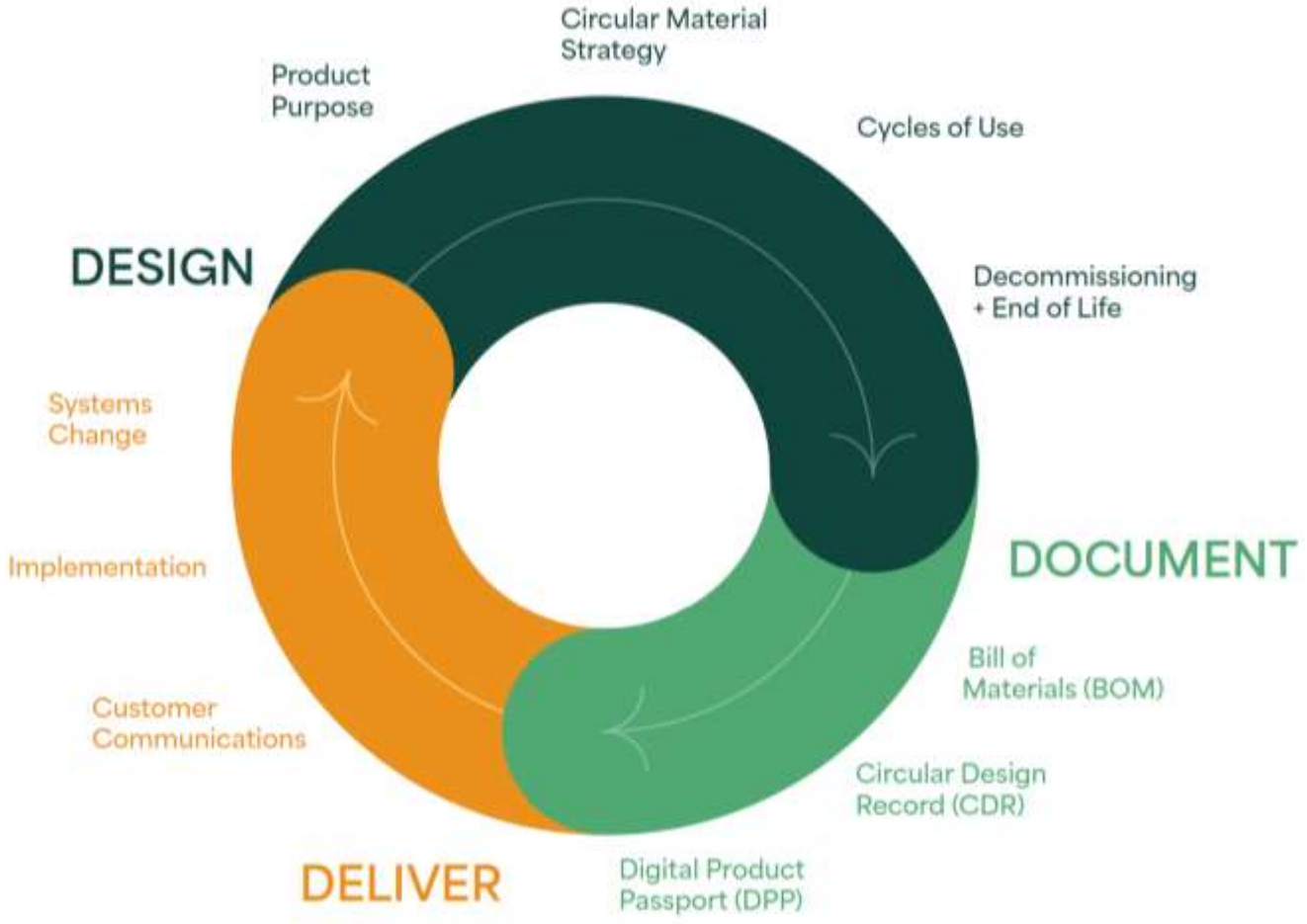


Image: Refashioning lifecycle design

Enjoy
your break

Use plan

1. Product purpose statement
2. Circular material strategy
3. Use plan
    - Material categories
    - Use strategies
    - High and low cycles of use
    - Examples
    - Lifecycle partners
4. Decommissioning and end of life plan



Use plan

A use plan:

- Describes how a product will flow through (and stay within) the chosen cycles of use
- Defines expectations for how the garment should be used, reused, repaired and if appropriate, remanufactured or repurposed.

The use plan will outline strategies, lifecycle partners and communications required, and aligns to the product purpose and circular materials strategy.

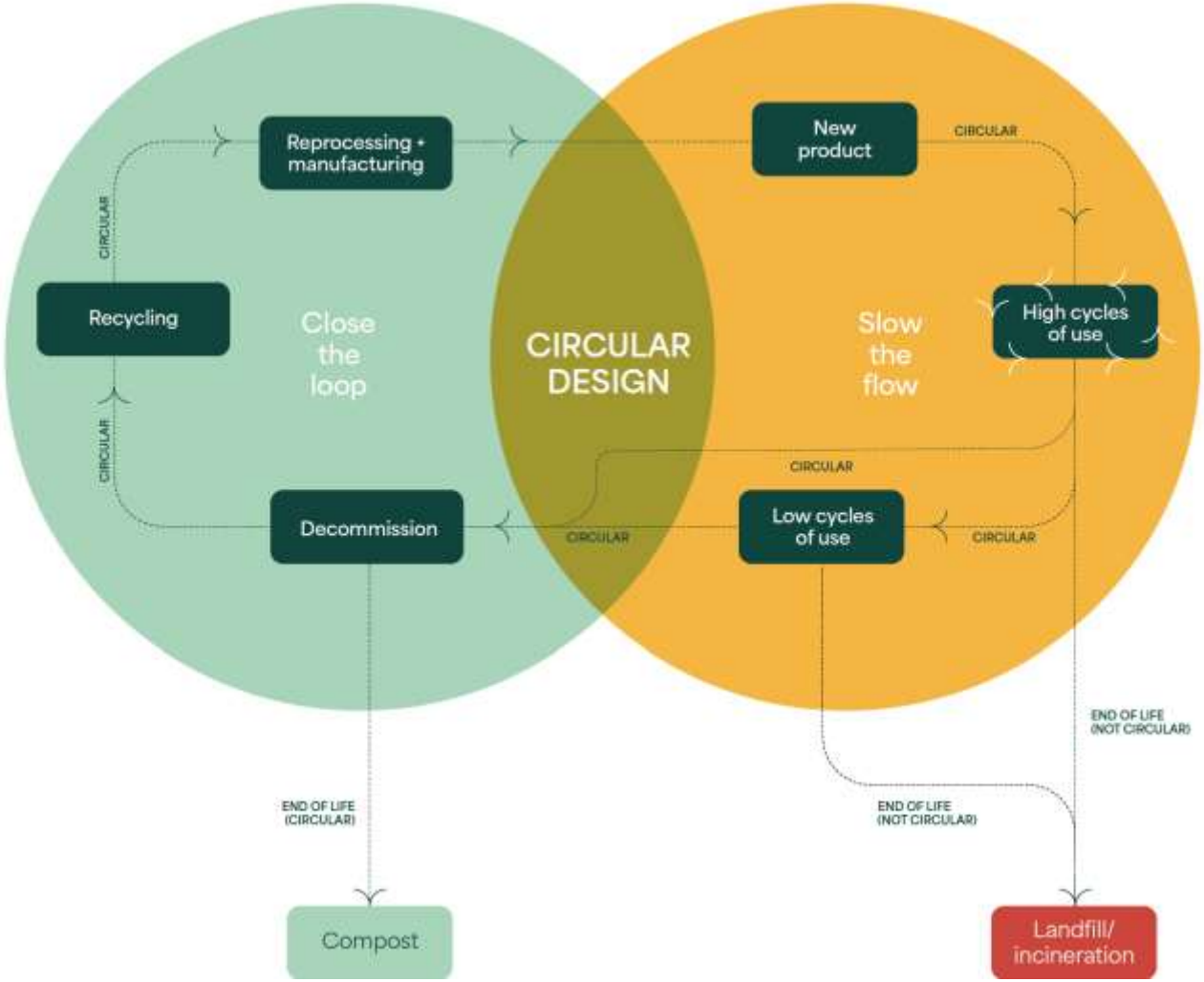
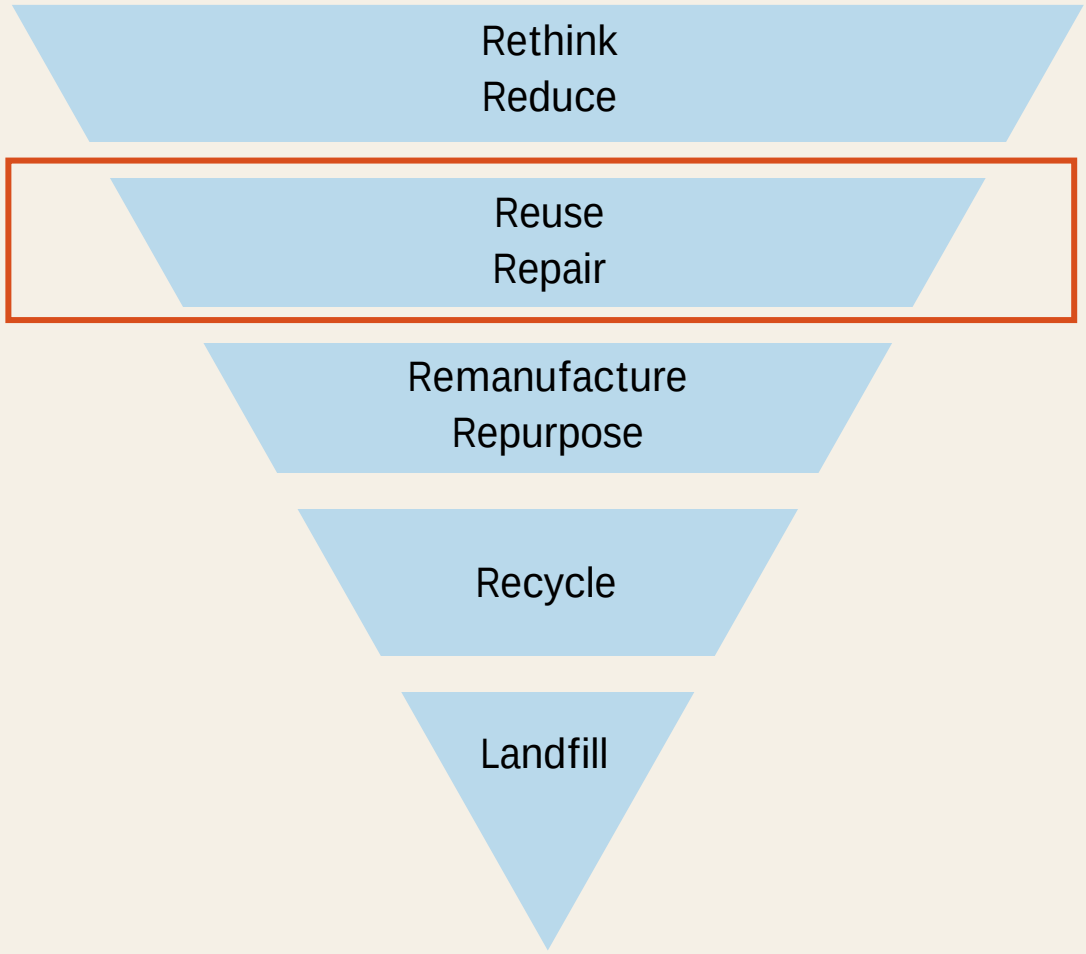


Image: Refashioning circular design systems approach, adapted from A.BCH World



High cycles of use in the resource hierarchy

High cycles of use

High cycles of use maintain a product in its original form, making maximum use of embodied value.

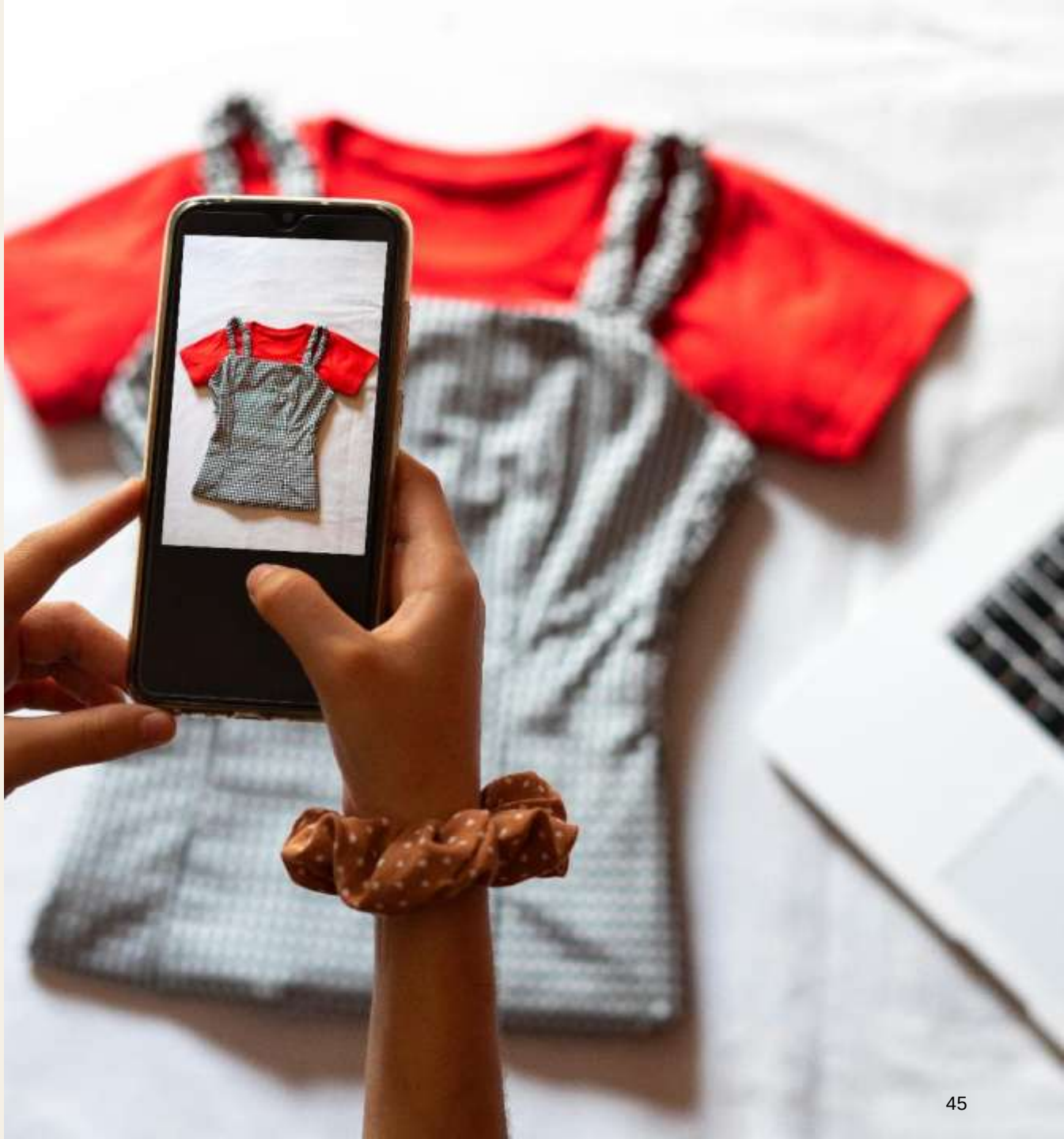
They are the highest value and lowest effort to implement and include:

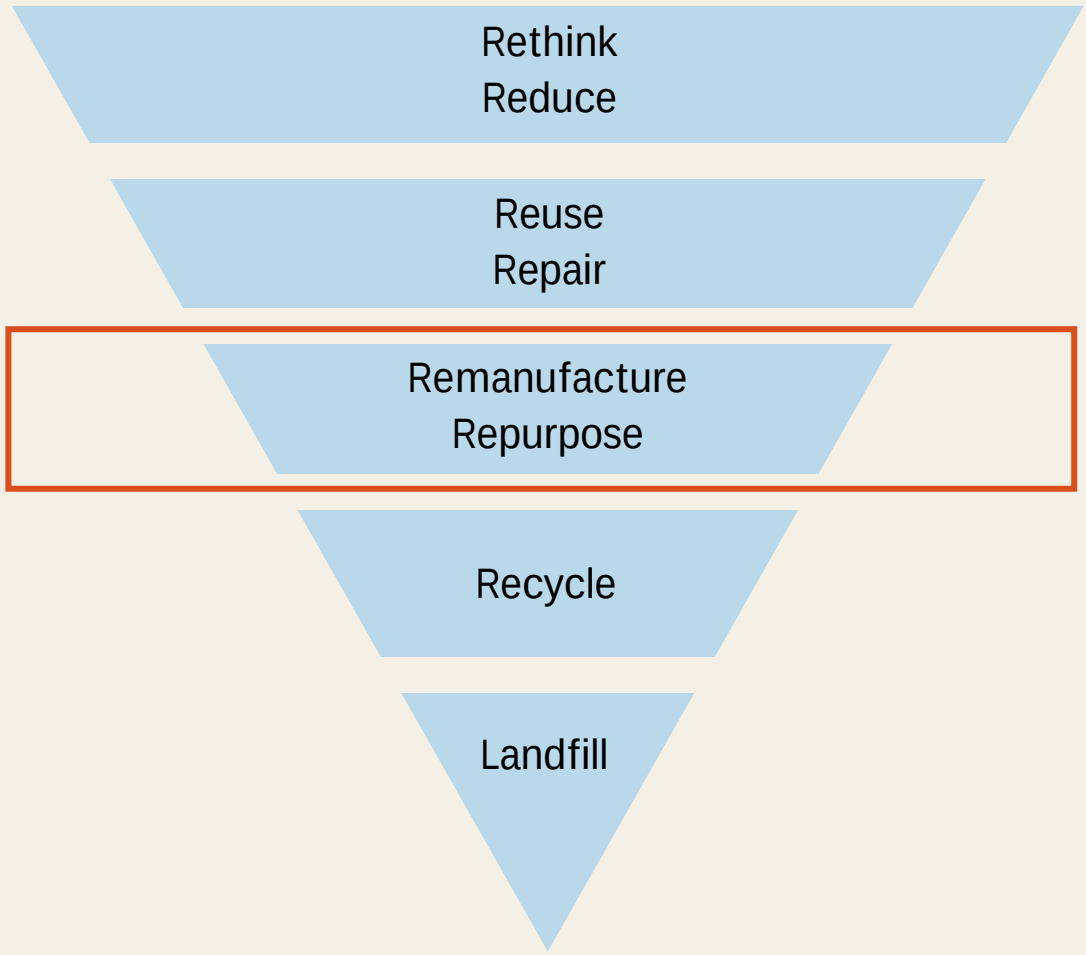
- Reuse: used by multiple users through resale, rental, swapping or sharing
- Repair: damage or wear-and-tear mended

Almost all clothing should be designed to enable high cycles of use.

Discussion

1. Share examples of high cycles of use.
2. How would you describe high cycles of use to a colleague?
3. Explain why high cycles of use are important.





Low cycles of use in the resource hierarchy

Low cycles of use

Low cycles of use alter the original form and value of the product and may include:

- Remanufacture: high effort and high value actions, also referred to as upcycling
- Repurpose: low effort and low value actions, also referred to as downcycling

Products designed with high circularity potential may deliberately avoid a low cycles of use plan.

Plans for 'not yet circular' products should contain both high and low cycles of use.

Discussion

1. Share examples of low cycles of use.
2. How would you describe low cycles of use to a colleague?
3. Discuss circumstances when you might skip low cycles of use.

Documenting cycles of use

- This example shows how to plan and document the cycles of use.
- Not all products will be suitable for low cycles of use due to the destructive action required to the original form, which could result in disruptions to a product's material strategy.
- If your product is falling into the 'not yet circular' material strategy, it's recommended you create a plan with high and low cycles of use.

EXAMPLE ON HOW TO DOCUMENT CHOSEN CYCLES OF USE, STRATEGIES AND LIFECYCLE PARTNER/S

HIGH CYCLES OF USE	STRATEGIES	PARTNER/S
Reuse	e.g., White label in-house resale and rental program	e.g., RNTR
Repair	e.g., In-house + preferred repair provider network provided for customers	e.g., In-house: Sustainability + Marketing Departments
LOW CYCLES OF USE	**STRATEGIES**	**PARTNER/S**
Remanufacture	e.g., Products are cut, re-worked and combined with other materials to make new products	e.g., Loop Upcycling
Repurpose	e.g., Products are torn into wiper rags	e.g., Sam's Rags

Lifecycle partners for your use plan

Cycles of use lifecycle partners may include:

- Consumers
- Rental businesses
- Repairers
- Second life sellers (resale platforms, charities)
- Remanufacturers
- Collection and sorting operators

Revisit the product purpose statement to define actions you want consumers to take in the use phase.

Also consider how you will communicate with consumers.

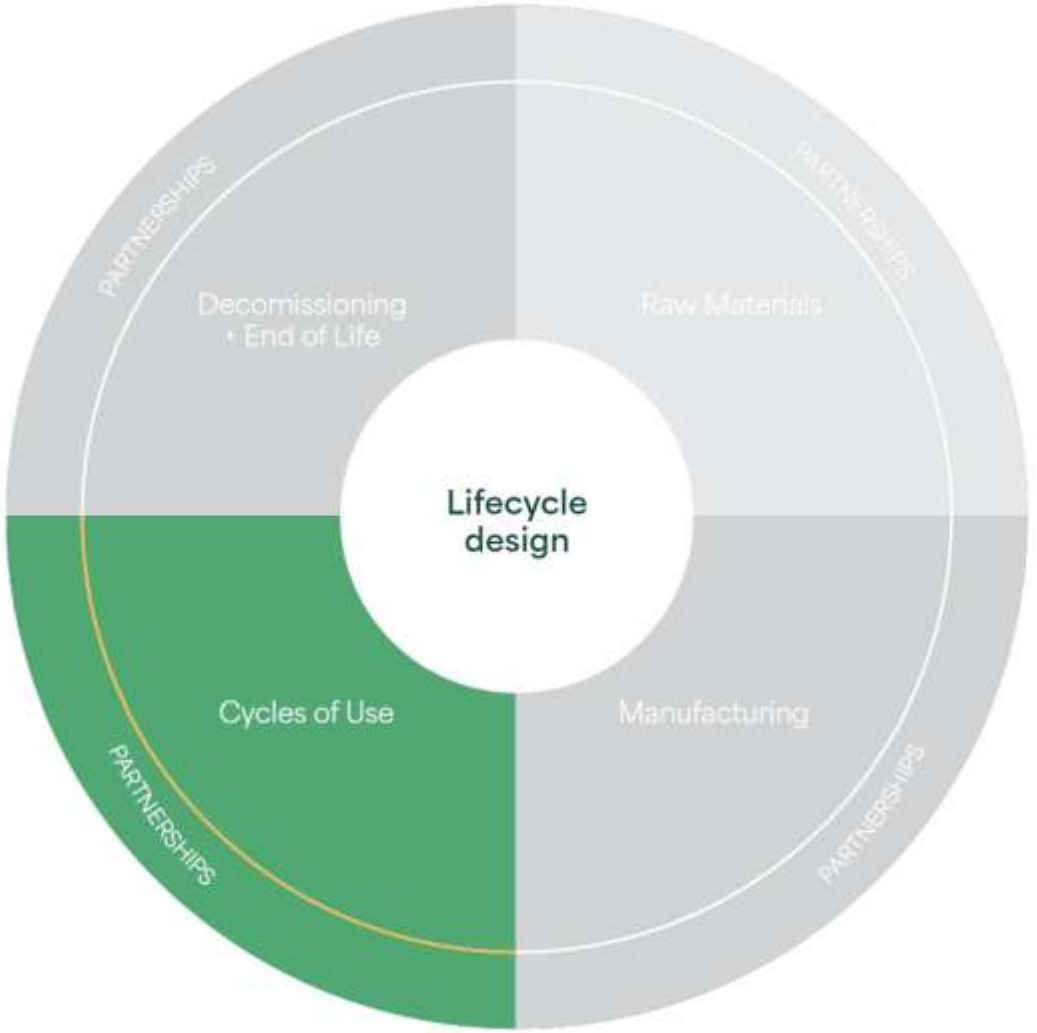


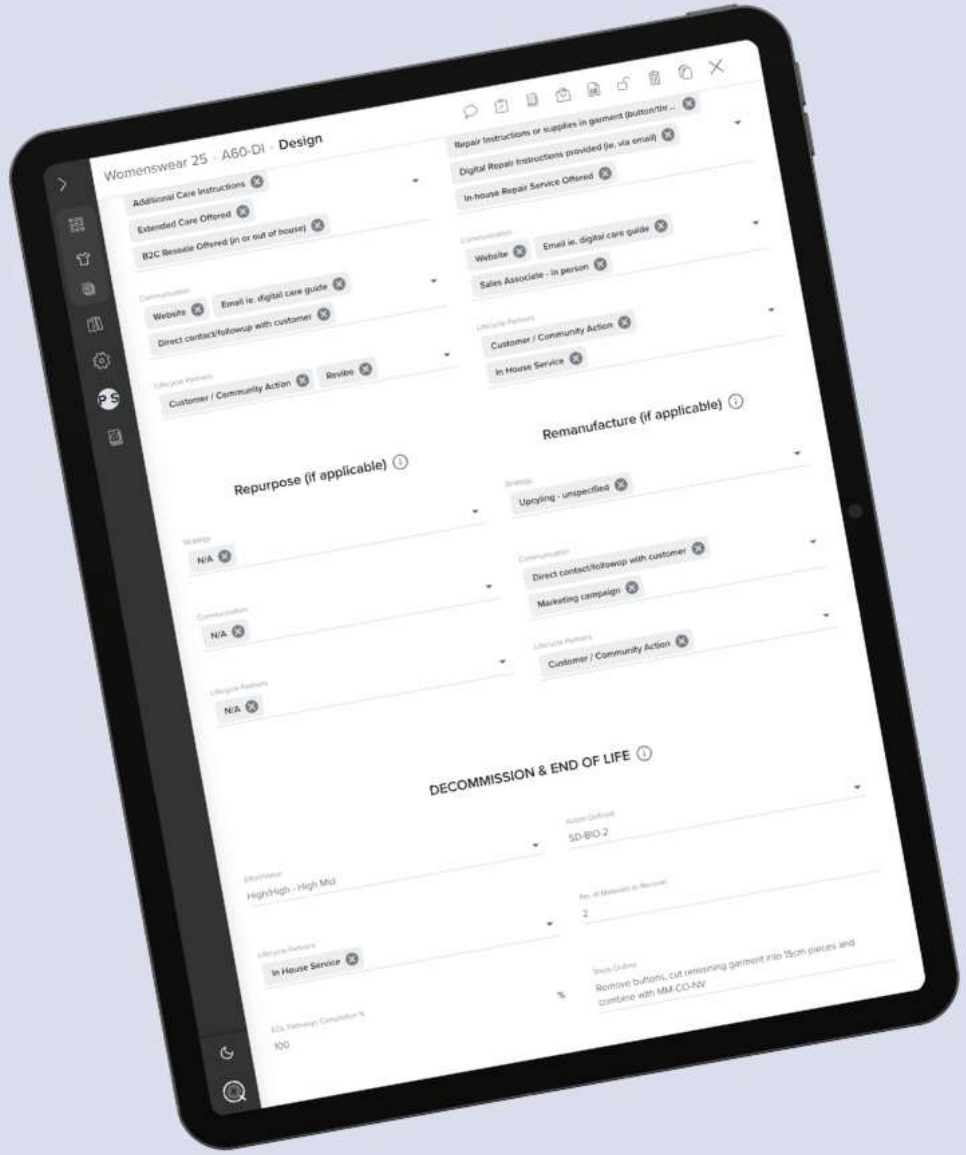
Image: Refashioning lifecycle design

Activity

Create a use plan for your garment in Quadrant Circular.

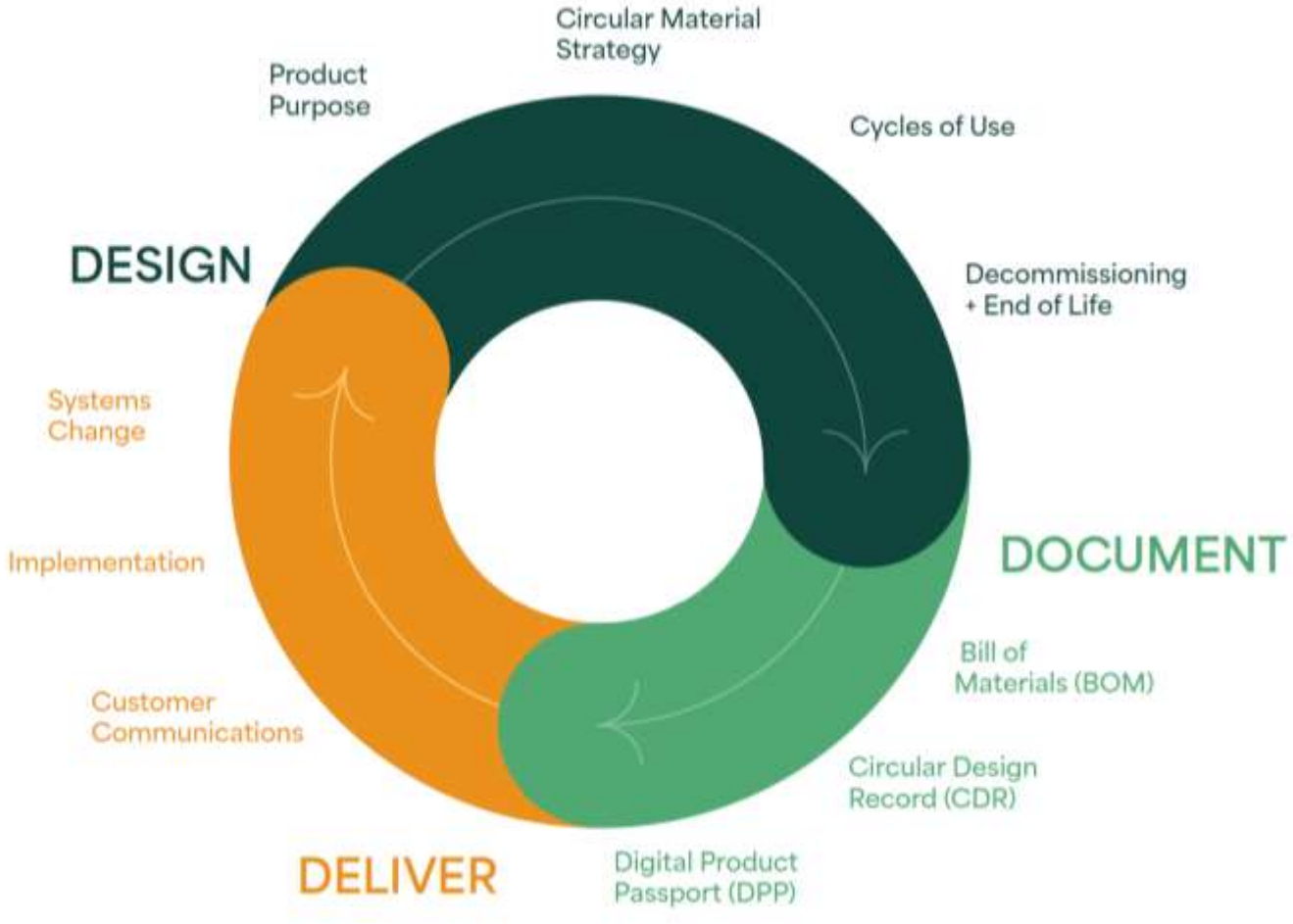
If you can't identify all lifecycle partners now, consider what research you might need to undertake.

This forms part of the circular design record (CDR).



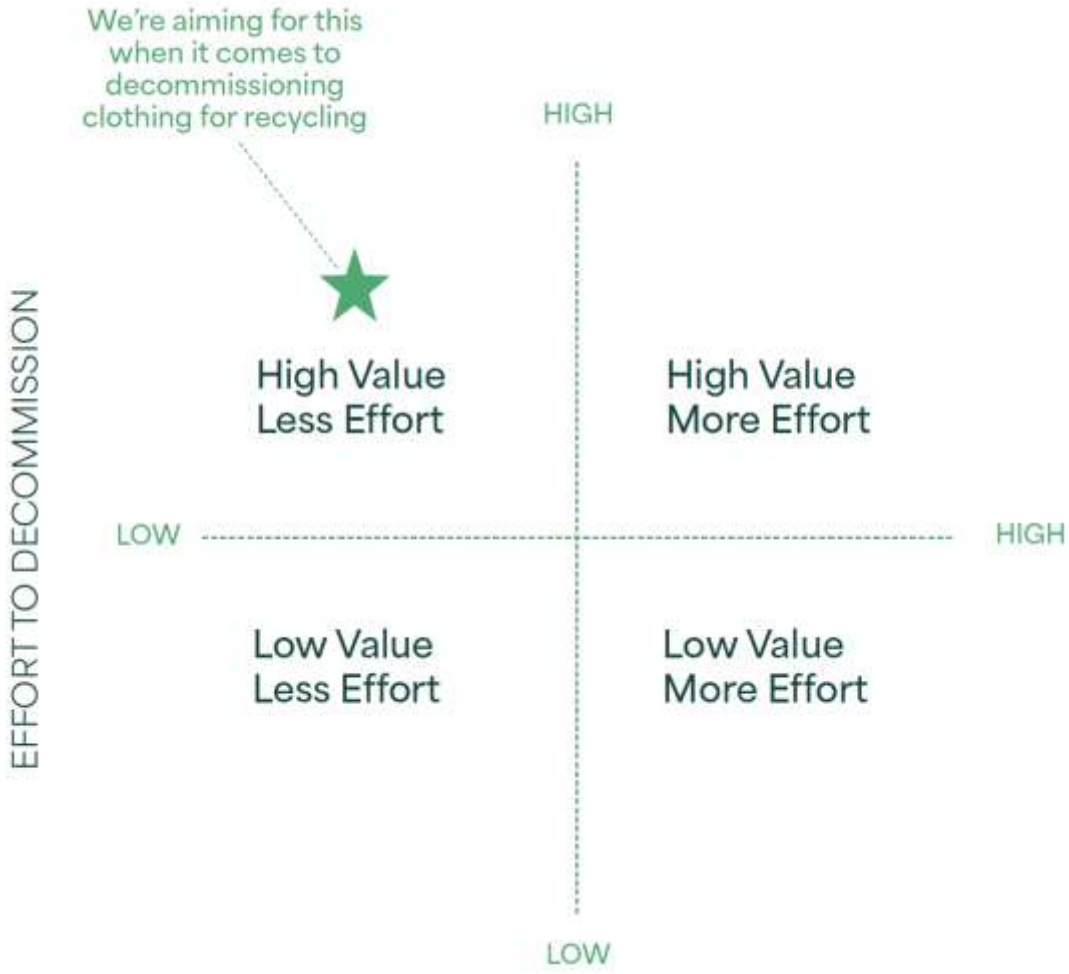
Decommissioning and end of life plan

1. Product purpose statement
2. Circular material strategy
3. Use plan
4. Decommissioning and end of life plan
    - Decommissioning feasibility
    - End-of-life (EOL) pathways
    - Inputs and outputs
    - Completing the bill of materials (BOM
    - Linking material strategies to EOL
    - Planning for recirculation
    - Lifecycle partners



Decommissioning feasibility

- Decommissioning is when a garment is no longer fit for cycles of use and is disassembled for end-of-life processing.
- For decommissioning garments at scale to be feasible, the value of the recovered materials must be high enough to warrant separation efforts.
- The disassembly effort factor considers the complexity and number of steps involved in disassembly. Ideally, this process should be as simple as possible.



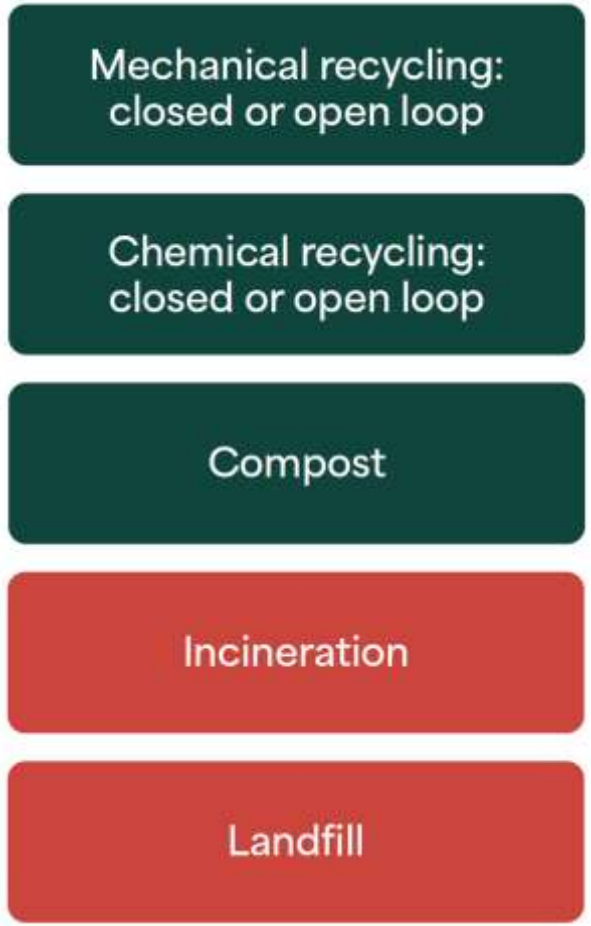
Material value x decommissioning effort matrix

Image: Refashioning guide, adapted from A.BCH World

End of life pathways

Circular end of life pathways include:

- Composting: biologically safe and suitable products or disassembled materials enter the biosphere via aerobic or anaerobic digestion.
- Recycling (open loop): products or disassembled materials are broken down and reprocessed into materials for a different end market, for example insulation for housing.
- Recycling (closed loop): products are broken down to fibre and reprocessed into yarns and materials of similar quality and function.



End of life pathways for textiles and clothing

Image: Refashioning guide

Inputs and outputs

Inputs are the resources that are put in or added to a system, process or product and outputs are the resulting resources (including waste and finished materials) expended from a system, process or product.

Mechanical recycling	Chemical recycling	Compost	Incineration	Landfill
Input: Industrial monomaterials Output: High quality same fibre (shorter staple length than virgin fibre) Input: Mono pre/post consumer materials Output: Mid quality same fibre (shorter staple length than virgin fibre) Input: Mixed materials Output: Low quality mixed fibre (shorter staple length than virgin fibre)	Input: Cotton, viscose, polyester, nylon mono materials Output: High quality MMCF (man made cellulose fibre) and MMF (man made fibre)	Input: Biological materials Output: Neutralised compost	Input: Any materials Output: Negative environmental impacts (greenhouse gas emissions, waste, soil, water and air toxicity) or neutralised output (waste to energy)	Input: Any materials Output: Negative environmental impacts (greenhouse gas emissions, waste, soil, water and air toxicity)

Revisiting the bill of materials

We can complete the bill of materials with:

- Decommission steps, which include instructions for how inputs should be deconstructed and whether any inputs are combined
- The end-of-life pathway for inputs, which should be documented.

It's important to engage with relevant lifecycle partners for this step.

Circular Material Strategy: *BIOLOGICAL MONOMATERIAL*

BILL OF MATERIALS

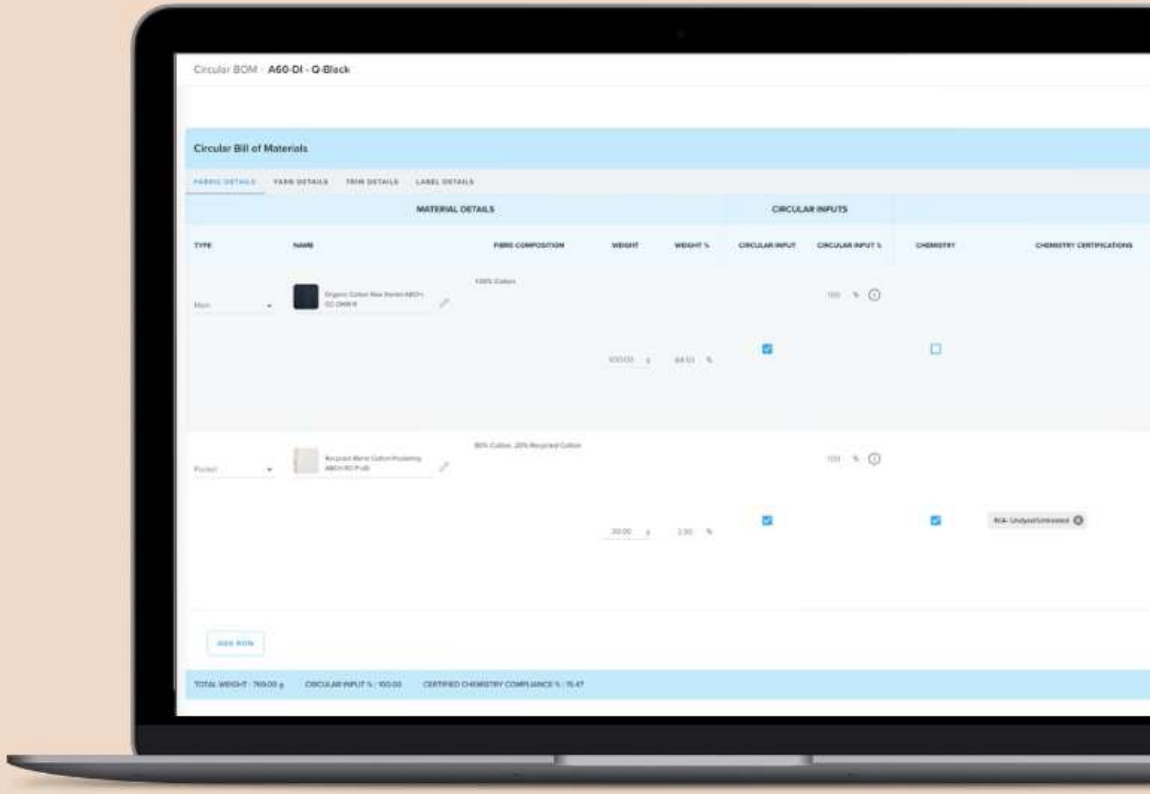
Input list	Input Weight	Circular Input	Chemistry Verification	Traceability Verification	De-commission Steps	Input End-of-Life Pathway
100% Organic Cotton Jersey 150gsm - Optic White	*267 grams*	*Renewable*	*OEKO TEX 100*	*ORGANIC COTTON STANDARD*	*Shred or cut into pieces smaller than 15cm*	*Mechanical Recycling (Fibre to Fibre)*
100% Organic Cotton Threads - 40 Tex - White	*37 grams*	*Renewable*	*Cradle to Cradle Material Health: Gold*	*GOTS*	*Remain with cotton fabric*	*Mechanical Recycling (Fibre to Fibre)*
100% Recycled Cotton Labels - Optic White / Soy Ink Screen Print - Black	*7 grams*	*Recycled*	*OEKO TEX 100*	*RCS*	*Clipped off from fabric*	*Mechanical Recycling (Open Loop)*
100% Cotton Woven Brand/ Size Label - Undyed / Black Yarns	*12 grams*	*None*	*OEKO TEX 100*	*None*	*Clipped off from fabric*	*Mechanical Recycling (Open Loop)*

Activity

Revisit your bill of materials in Quadrant Circular:

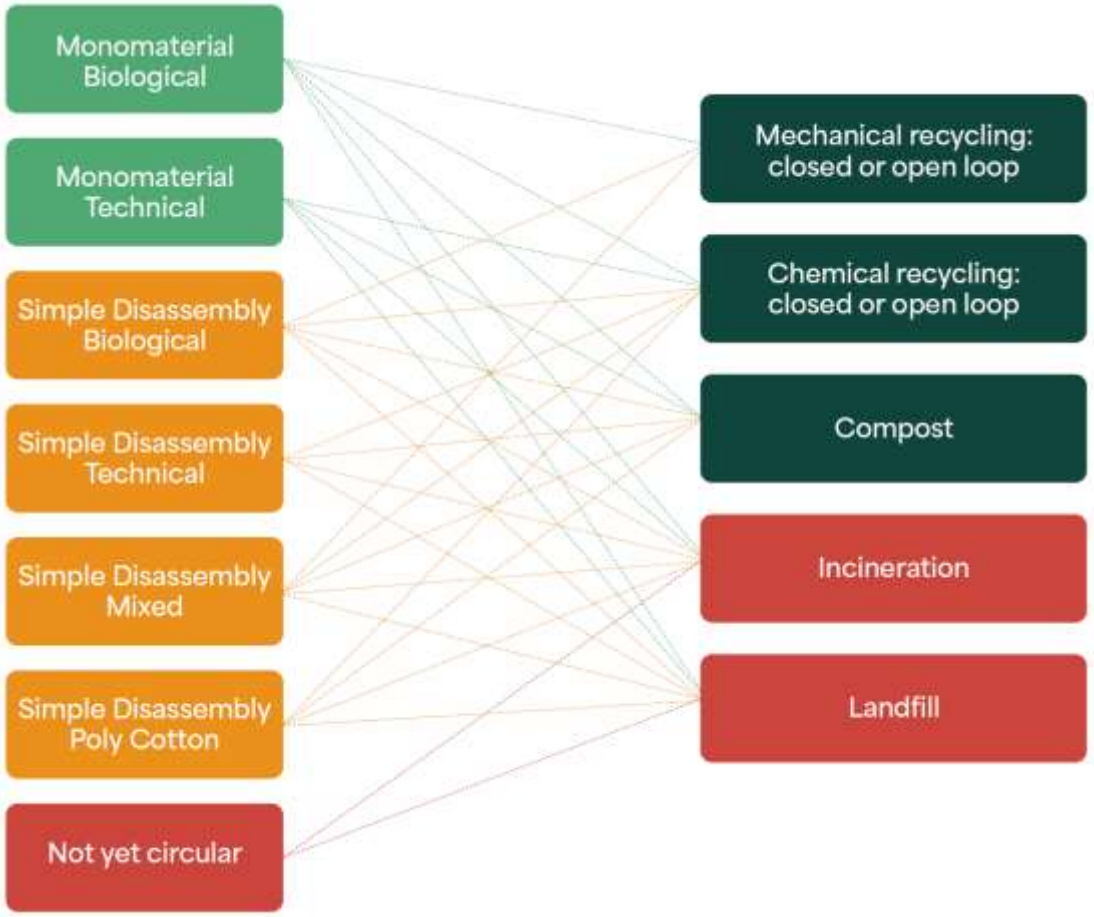
1. Complete the decommissioning steps
2. Complete the end-of-life pathway

This forms part of the circular design record (CDR).



Linking circular material strategy to end of life

- It's important to consider which circular materials strategies and end of life pathways are compatible.
- For example, a garment that has employed a monomaterial biological material strategy should have every end of life pathway available to it.
- In comparison, a garment that is not yet circular will only be able to move to incineration or landfill when it reaches end of life.



Circular material strategies and end of life

Image: Refashioning guide, adapted from A.BCH World

Planning for recirculation

- To increase circular inputs, we must influence the quality of feedstock being generated and re-circulated.
- High-quality outputs come from high-quality inputs.
- It's critical to take collective action on:
  - Re-circulation standards for recycled materials
  - Improving the quality, consistency and volume of post-consumer recycled materials
  - Securing demand for recycled feedstock to next markets.

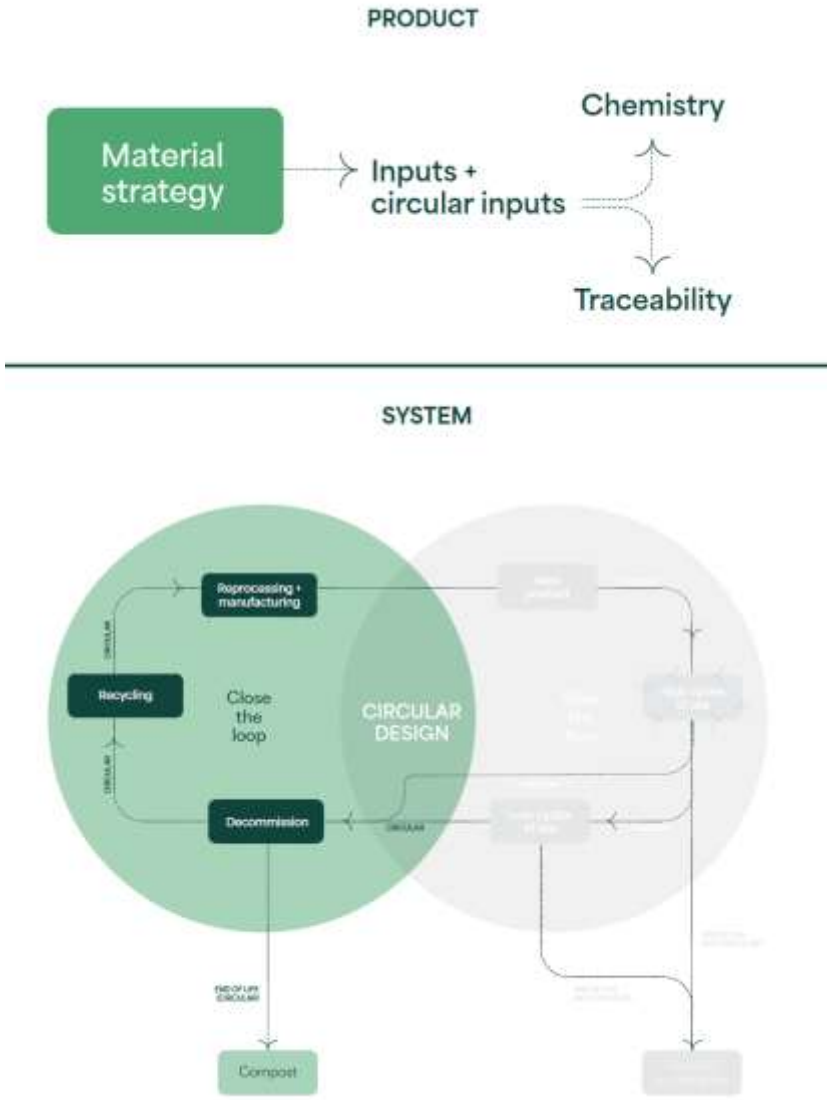


Image: Refashioning circular design systems approach, adapted from A.BCH World

Decommissioning and end of life example

- Recycle for progress, not perfection.
- Open loop recycling and composting are good initial aims.
- When materials are safe, renewable and high quality, even incremental blends of recycled fibres into new textiles will help reduce reliance on virgin materials and help build the circular system sustainably.

Decommissioning lifecycle partners

Decommissioning and end of life partners may include:

- Sorters
- Decommissioning agents
- Recyclers (mechanical and chemical)
- Composters.

When engaging with partners, you'll need to understand:

- Steps required for each stage
- Responsibilities for each stage
- Options for end-of-life processes (locations)
- Options for closed and open loop recycling

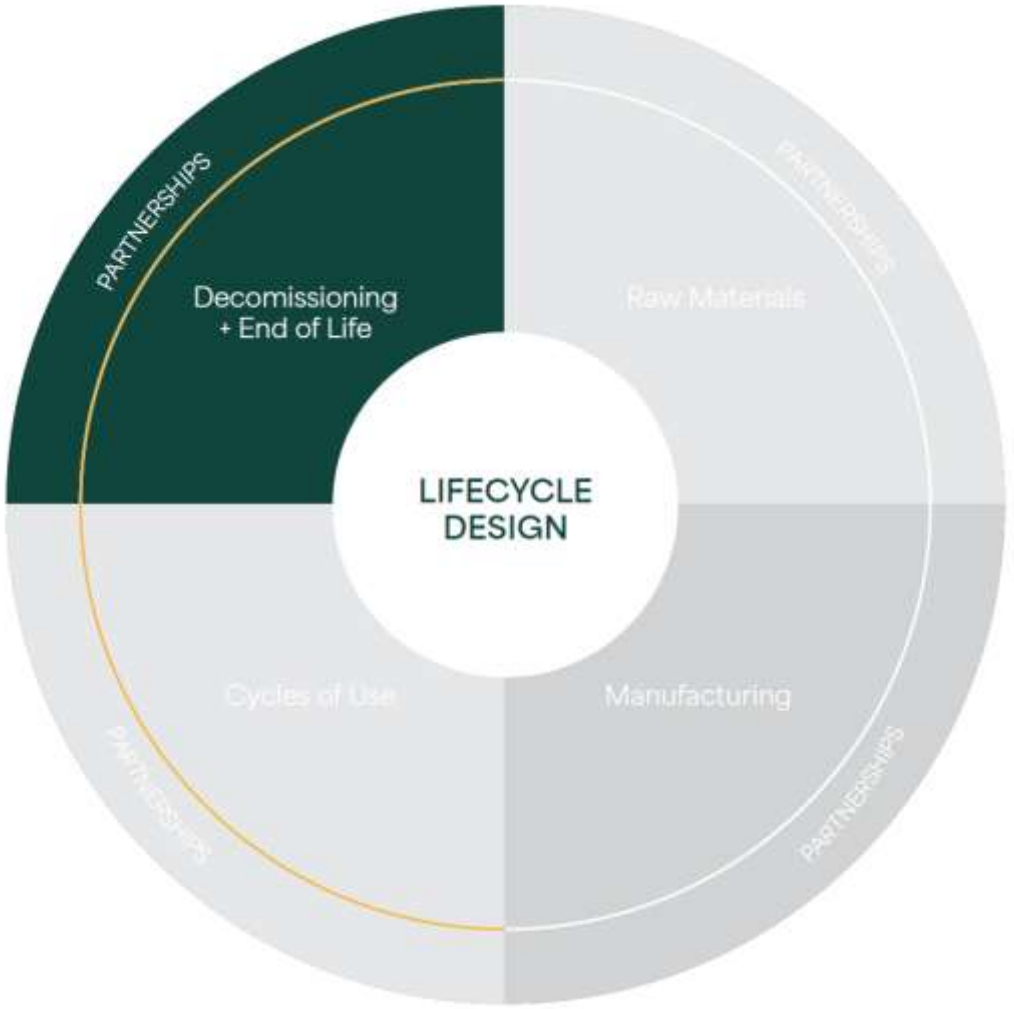


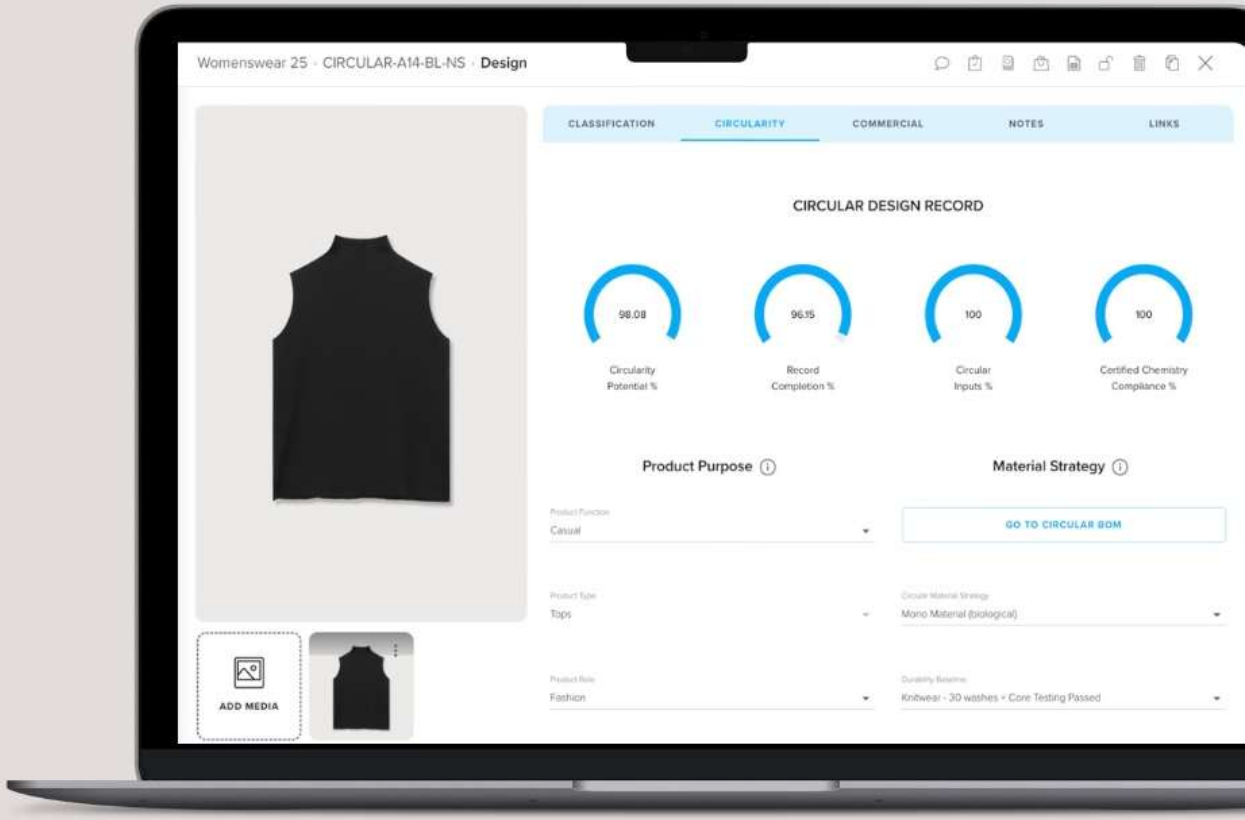
Image: Refashioning lifecycle design

Activity

Complete the decommissioning and end of life plan for your garment in Quadrant Circular.

If you can't identify all lifecycle partners now, consider what research you might need to undertake and how Seamless might assist.

This forms part of the circular design record (CDR).

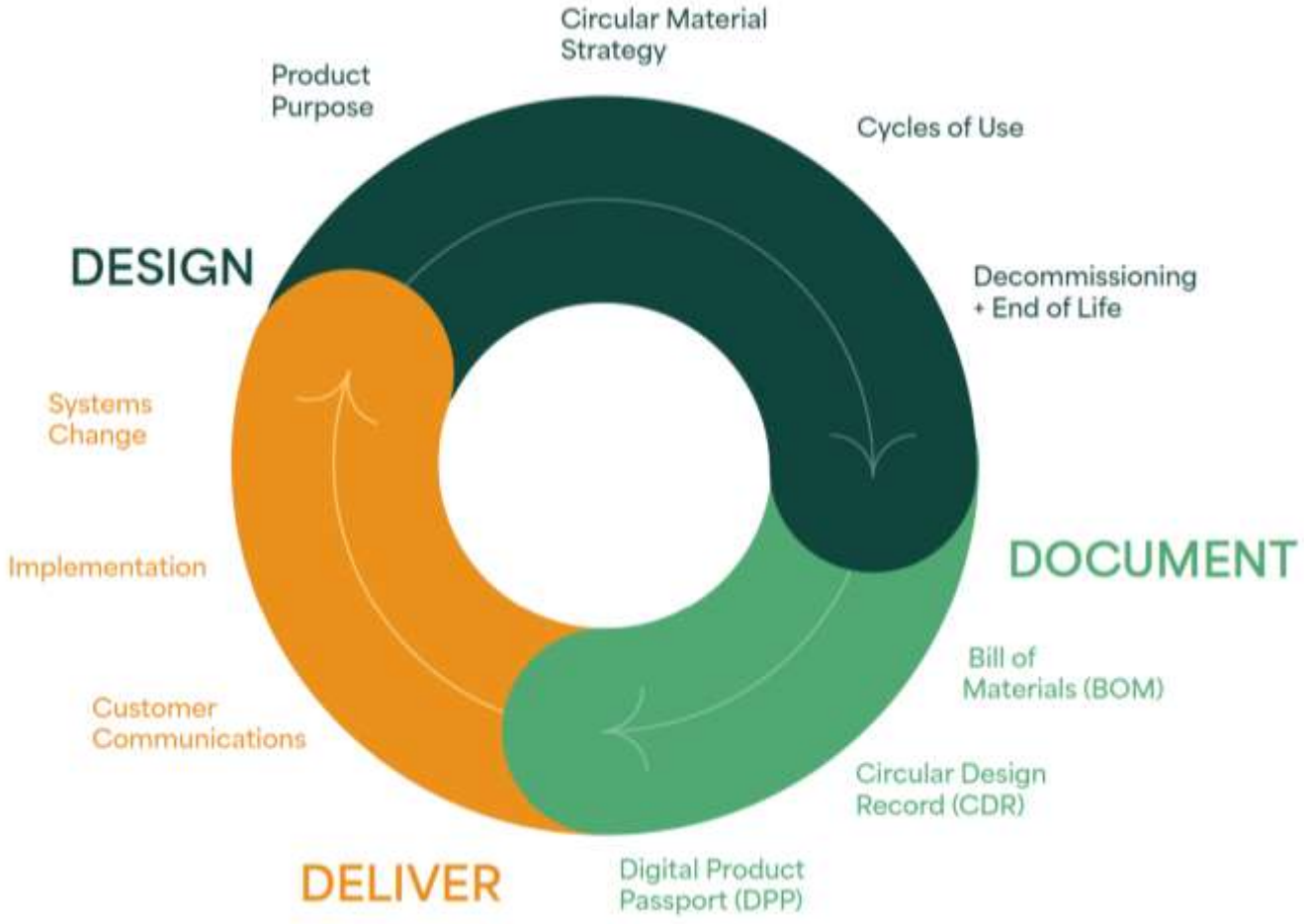


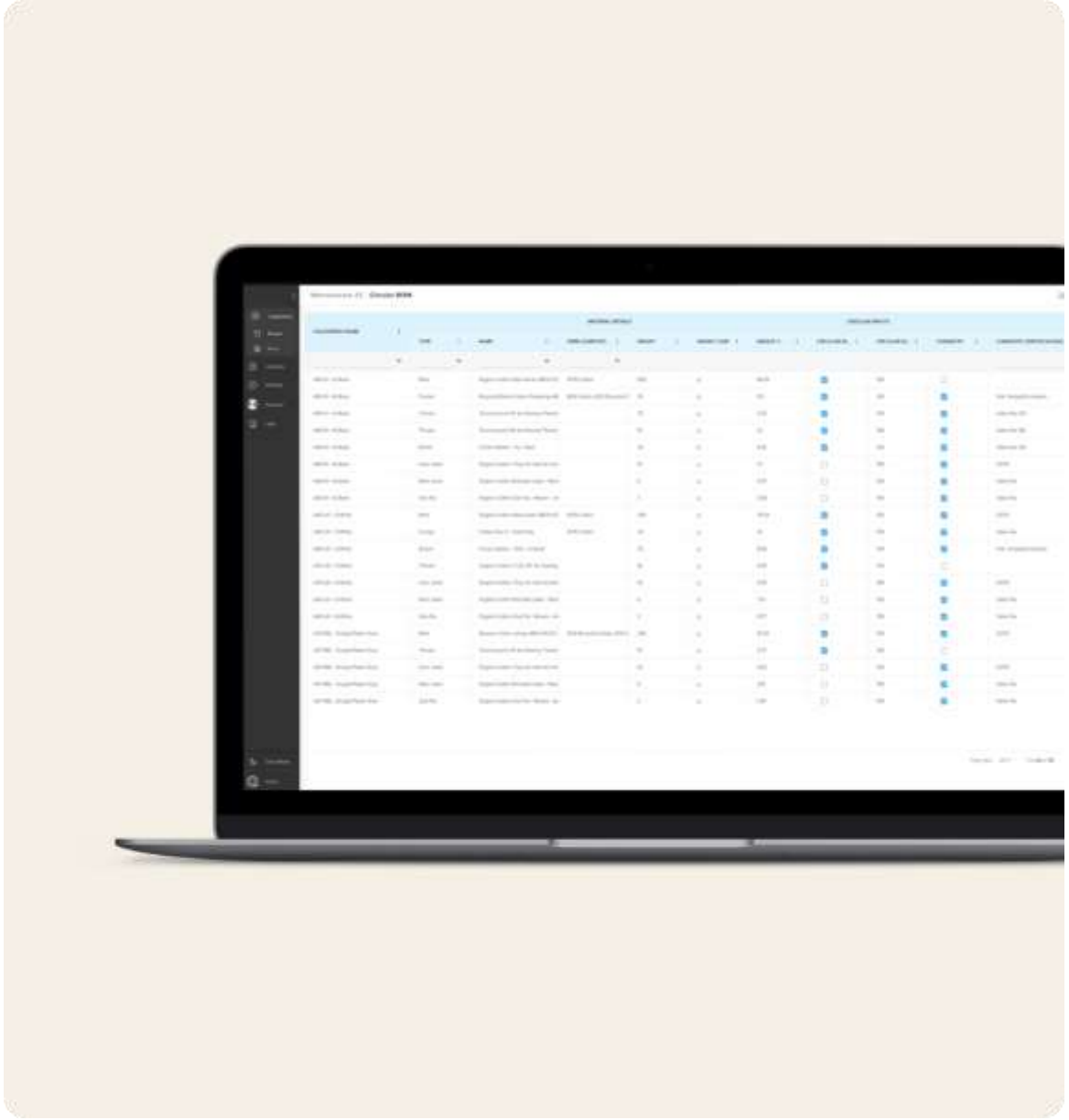
Enjoy
your break

Document

Document

1. Bill of materials
2. Circular design record
3. Digital product passport





Bill of materials

- Your bill of materials for your garment should be completed at the design stage in Quadrant Circular.
- As the bill of materials measures and tracks circular inputs it will be useful for identifying your garment's circularity potential and measuring its environmental footprint.

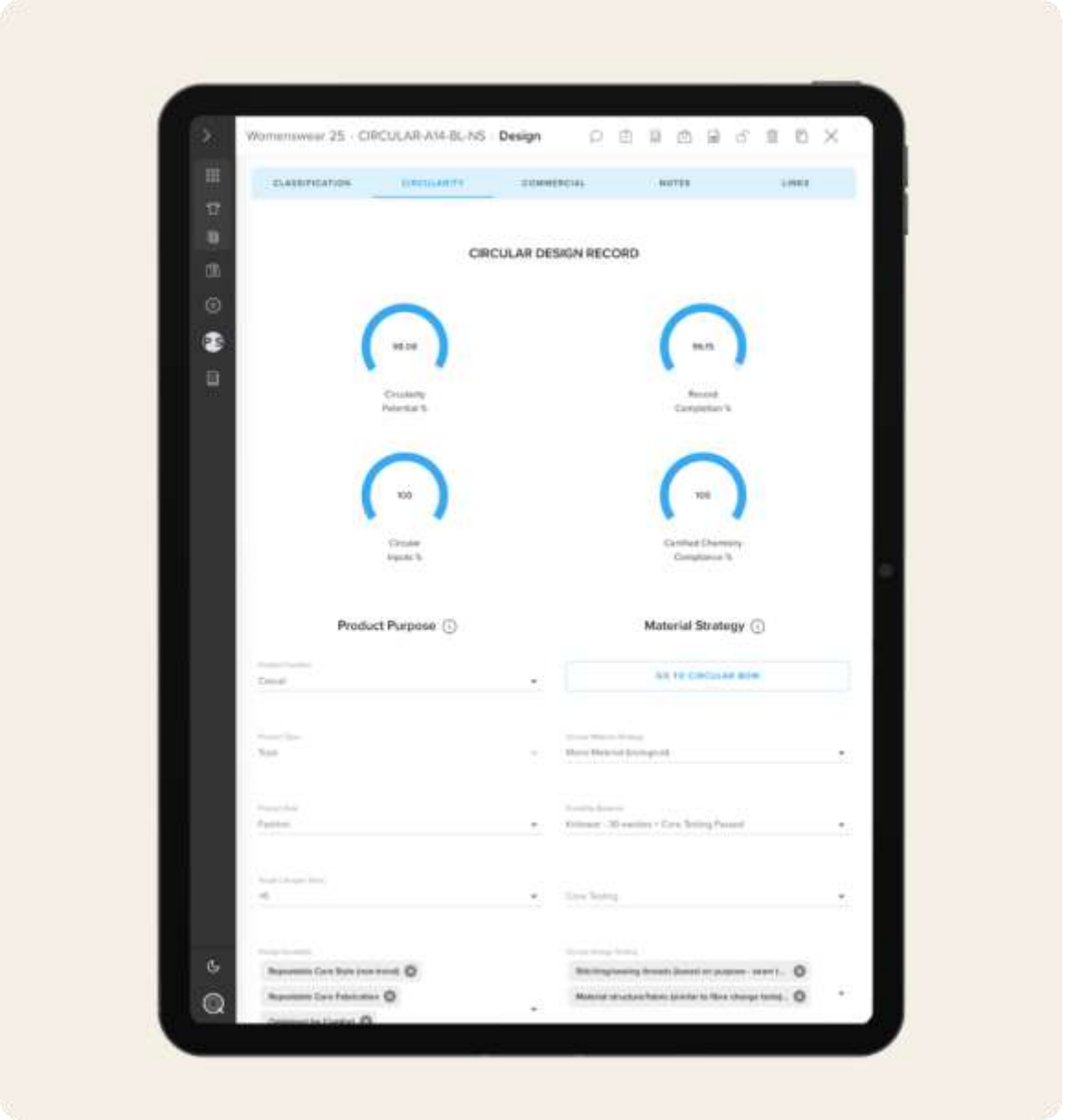
Circular design record

The circular design record (CDR) captures each stage of the circular design method and the agreements made with lifecycle partners.

It includes the:

- Product purpose statement
- Circular material strategy
- Use plan
- Decommissioning and end of life plan

This can be completed in Quadrant Circular.



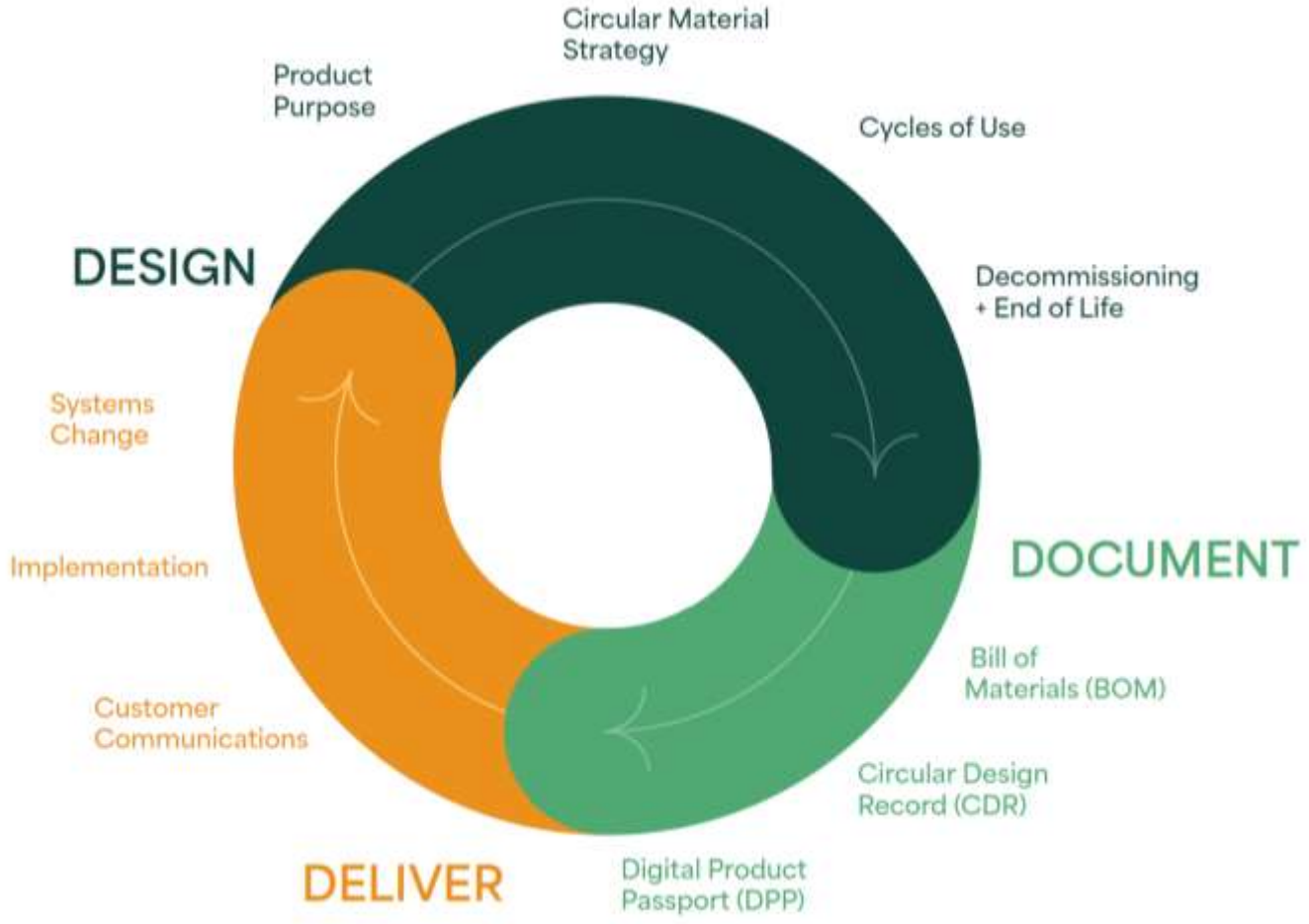
Digital product passport

- Digital product passports (DPPs) enable producers and consumers to track and trace resource use and impacts across the value chain.
- There is currently no standard in Australia for the information included in DPPs.
- Some overseas jurisdictions are enacting legislation.
- Download the Seamless resource: ‘Digital Product Passports Explained’.

Deliver

Deliver

1. Customer communications
2. Implementation
3. Systems change



Customer communications

- The customer plays a critical role in ensuring the garment reaches its circularity potential.
- They can:
  - Buy circular designed products
  - Adopt circular behaviours
- Designers can work with Marketing and Product teams to drive change across these areas.

Communication examples

- In-store or online instructions at point of sale.
- QR codes on care labels or tags.
- Scannable thread embedded into clothing, that is, smart yarns.
- Near field communication (NFC).
- Follow-up communications or website resources regarding use, care, alterations, restyling, repairs and options for when the garment is no longer needed.

Image: Elk Mornington store

Implementation

Key actions:

- Engage lifecycle partners
- Create the circular design record
- Ongoing measurement and improvement

Lifecycle partners may be internal or external partners who focus on:

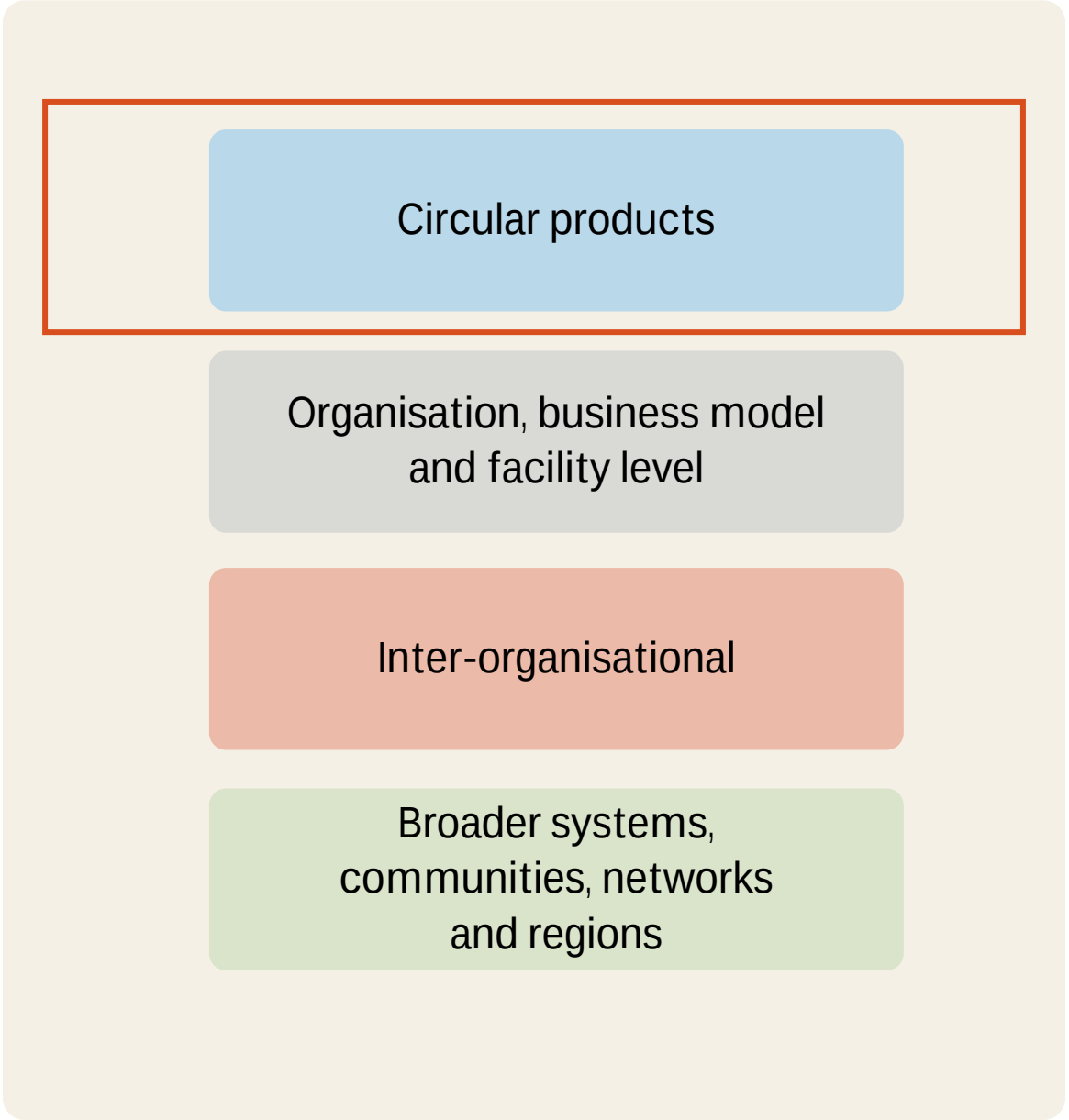
- Marketing and communications
- Retail
- Clothing collection
- Logistics such as rental, resale and repair
- Decommissioning
- Recycling

Circular system levels

Make circular progress by changing how you design your garments.

Businesses can contribute by:

- Designing products that leverage circular principles
- Investing in circular design and circular business models and empowering teams to transform
- Engaging and educating consumers on circularity benefits and opportunities.

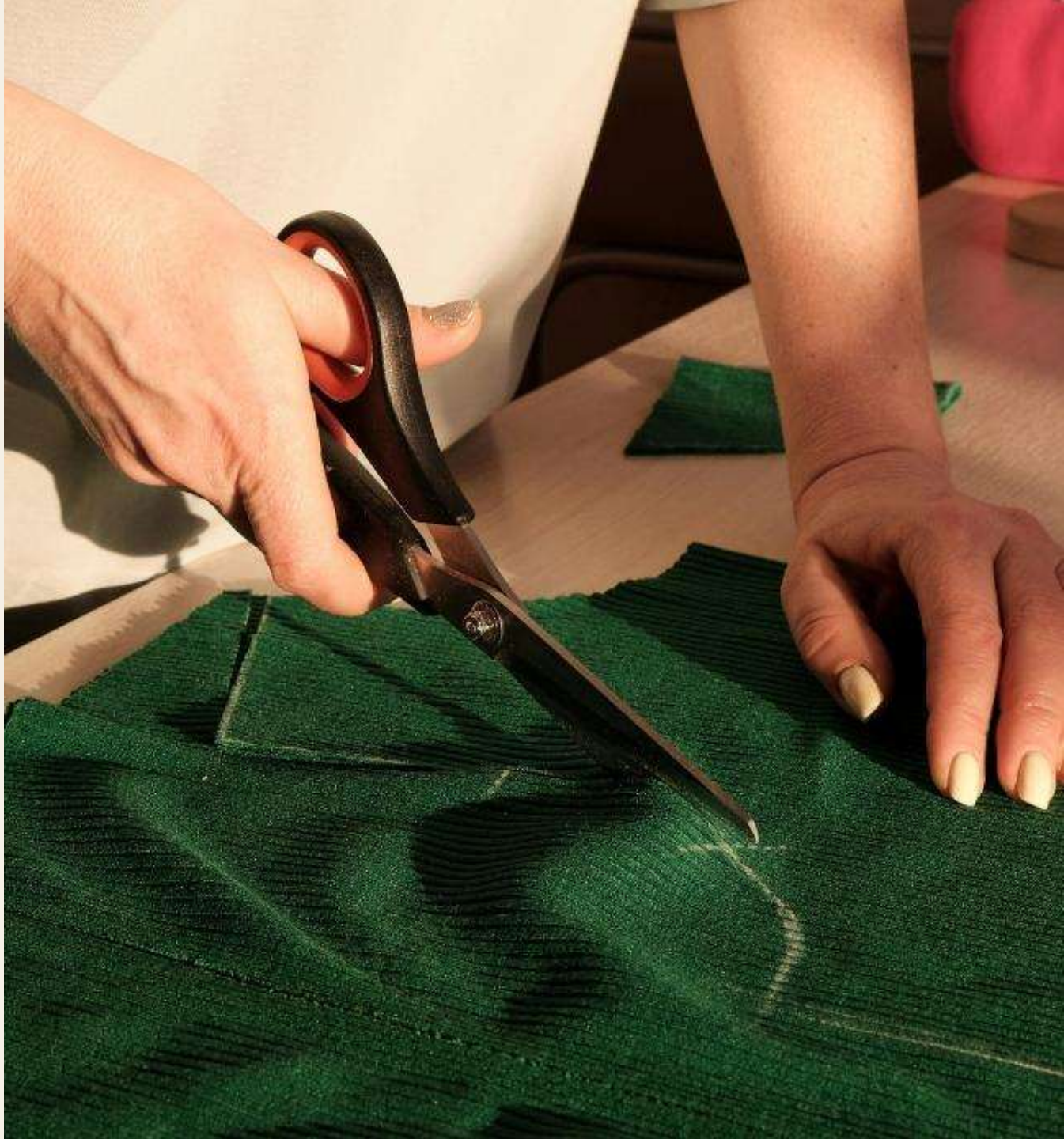


Practical steps

Ongoing actions your organisation can take are:

- Work on collaborative solutions for example, sourcing or sharing materials
- Engage in multi-stakeholder forums
- Invest in circular raw materials and zero waste manufacturing
- Push for regulatory change and industry standards
- Support regulated participation in Seamless
- Establish or fund circular business models, such as rental, repair, alterations, restyling and sharing to meet circularity ambitions
- Educate customers

Questions



Enjoy
your break

Next steps

Your next steps

1. Continue to work through Quadrant Circular and redesign and produce your garment.
2. Check in with your facilitators in a one-on-one coaching session.
3. Prepare for the final online presentation on Wednesday, 21 October 2026 where you'll share your redesigned garment and learnings (calendar invitation will be shared by Seamless).

Seamless circular design training

When	Course	Participants
22 & 28 July 2026	Seamless Circular Clothing Design Foundations	Organisation wide
7 August 2026	Seamless Circular Clothing Design Implementation	Design and production teams
21 October 2026	Seamless Circular Clothing Design Implementation: online presentation	Design and production teams and key decision makers

Seamless circular design training

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22 & 28 July 2026	Seamless Circular Clothing Design Foundations	Organisation wide
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21 October 2026	Seamless Circular Clothing Design Implementation: online presentation	Design and production teams and key decision makers

Online presentation

Five-minute presentation followed by five-minute Q&A session on 21 October 2026.

Treat this session as a pitch which informs and persuades your executives to take a specific course of action.

We suggest you cover:

1. The challenges you set out to solve
2. Your planning process
3. The outcome: your redesigned garment
4. Your key learnings and insights
5. What's next

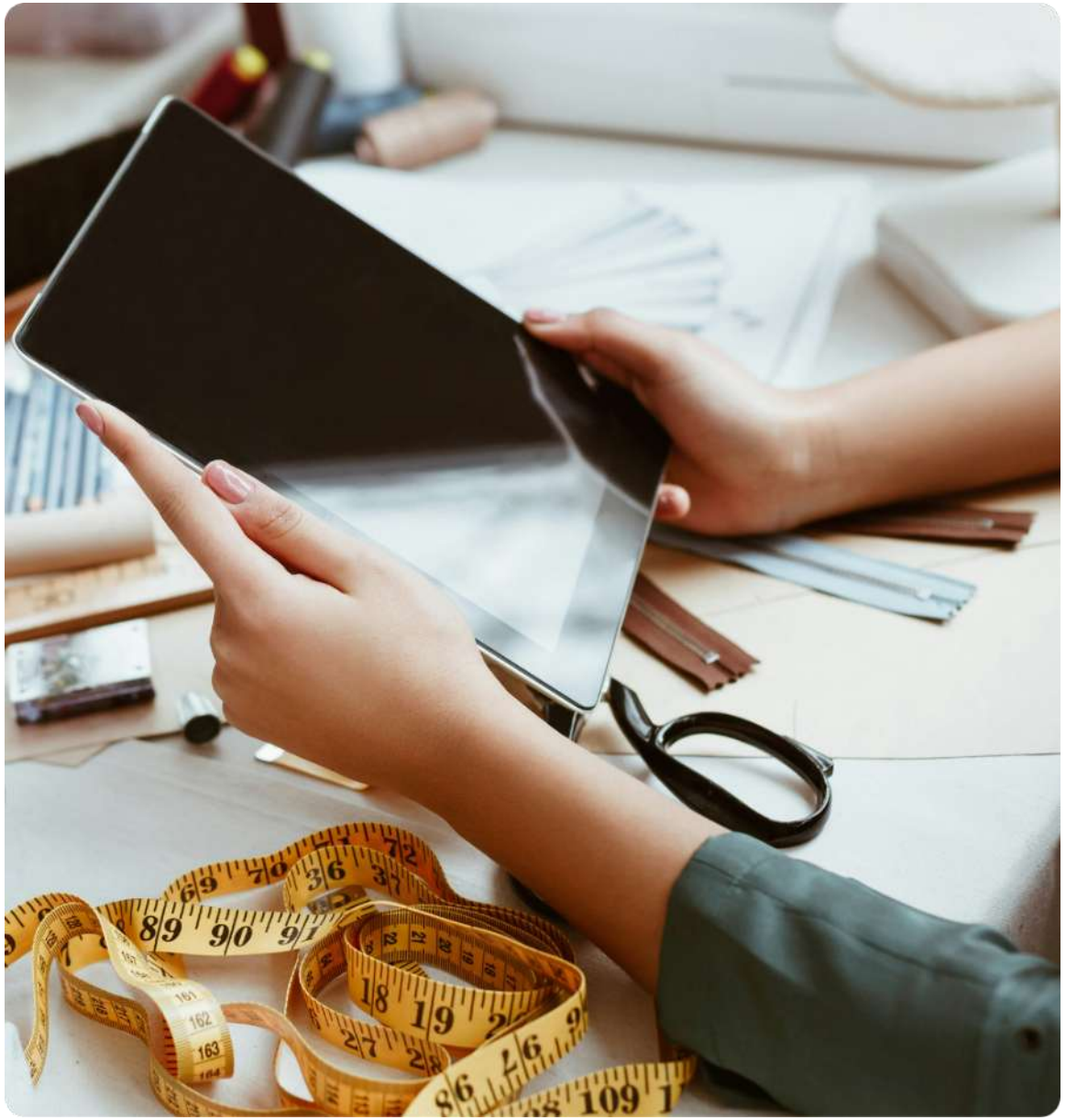

Image: The Social Outfit

Helpful hints

- Treat this as a pitch to your leadership team. Keep it short, sharp, direct and engaging.
- Share a clear problem statement which explains the challenges and circularity principles you set out to address.
- Explain how the proposed garment redesign addresses those challenges.
- Consider the role of broader business or system changes including changes to business models or financial strategies.

Resources

Access course resources via the QR code including:

1. Implementation workshop presentation
2. Refashioning circular design guide
3. Information about one-on-one coaching sessions
4. Guidance for the online presentation on 21 October 2026

Moving forward

- Find the right partners in the business to contribute to and lead this cross-functional work.
- Translate into the language and priorities that your audiences use.
- Find the value proposition that's right for your business to carry the work.
- Sell the steps, not the whole vision, to avoid overwhelm, burnout or disillusionment.

Key takeaways

Seamless

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