



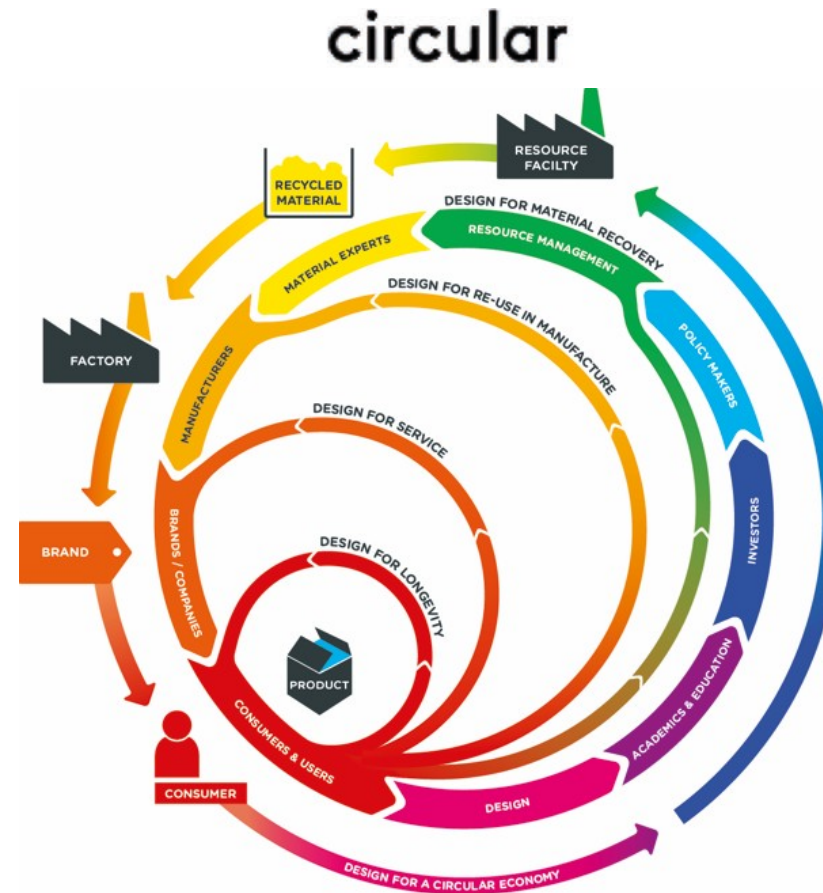
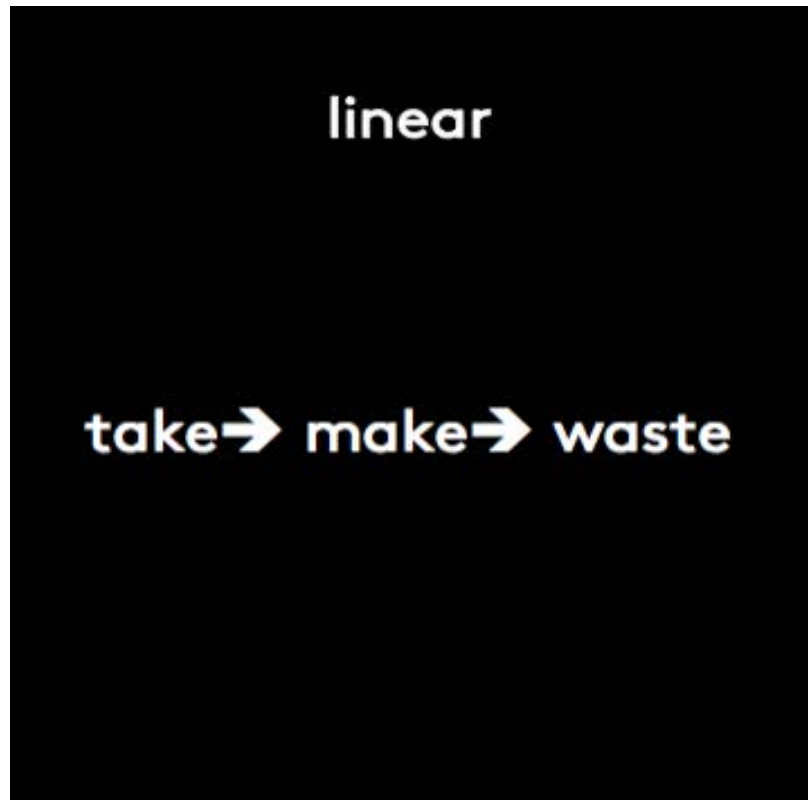
THE TEN

LECTURE SLIDES



CENTRE
for CIRCULAR
DESIGN

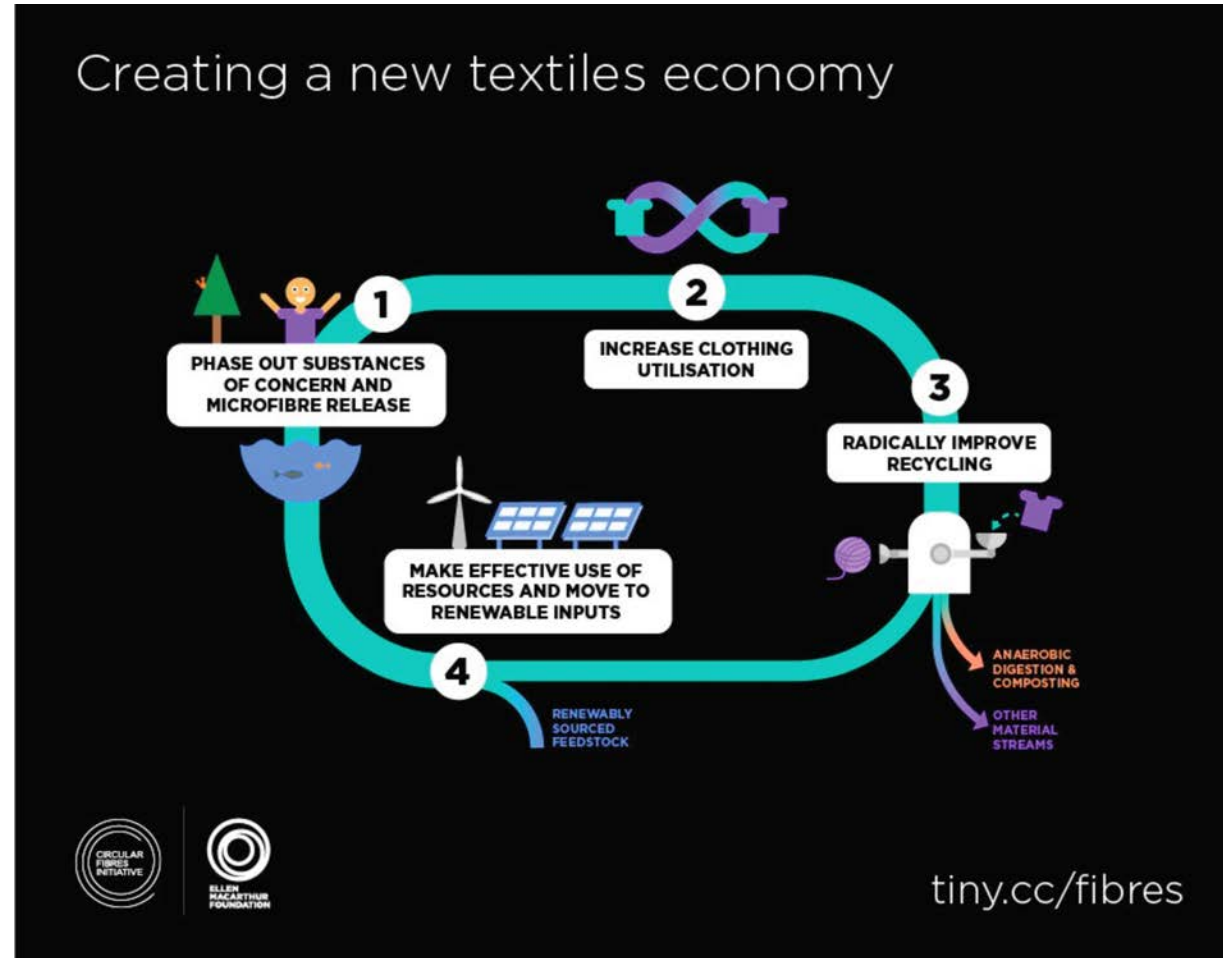
What is Circular Design?





The production and use of clothing accounts for around 3% of global CO₂ emissions

The Carbon Trust
International Carbon Footprint - Clothing 2018

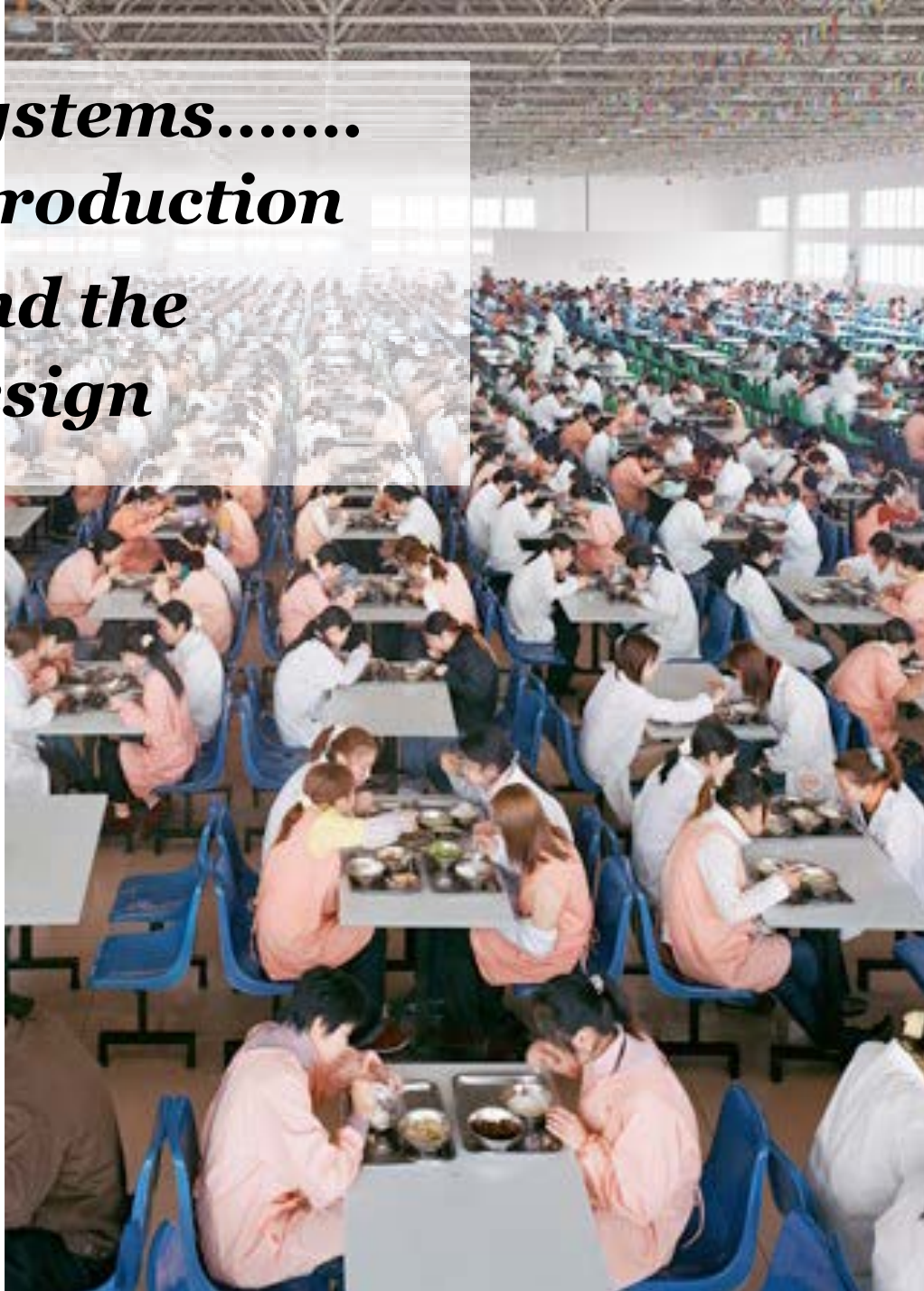


All of our research is based on an estimation that decisions made at the design stage are responsible for approximately **EIGHTY** percent of a product's environmental and economic costs

(Graedel et al. 1995)



*Products as systems.....
materials & production
impacts beyond the
objects we design*



Material Journeys project
to explore not only raw
material origins but also
their end-of-life potential

THE TEN

Textile
Environment
Design

Textiles
Environment
Design

1

Design to Minimise
Waste

TED's TEN are:

1

Design to
Minimise Waste

2

Design
for Cyclability

3

Design to Reduce
Chemical Impacts

4

Design to Reduce
Water and Energy
Use

5

Design That Explores
New Technologies

6

Design that Takes
Models from
Nature & History

7

Design for Ethical
Production

8

Design to Reduce
the Need to Consume

9

Design to Dematerialise
and Develop
Systems & Services

10

Design Activism

THE TEN

1

Design to Minimise Waste

V.2

1

Design to Minimise Waste

How to reduce the many kinds of waste created within the textiles industry, both pre and post consumer?

Assess the potential forward impact of design choices/decisions, on production, use and eventual disposal of textile products. Create a design narrative in response to a life-cycle analysis of the product.

Examples: slow design; design for long-life and short-life applications; zero waste cutting; design with enhanced aesthetic value.

Keywords:
Reducing Size

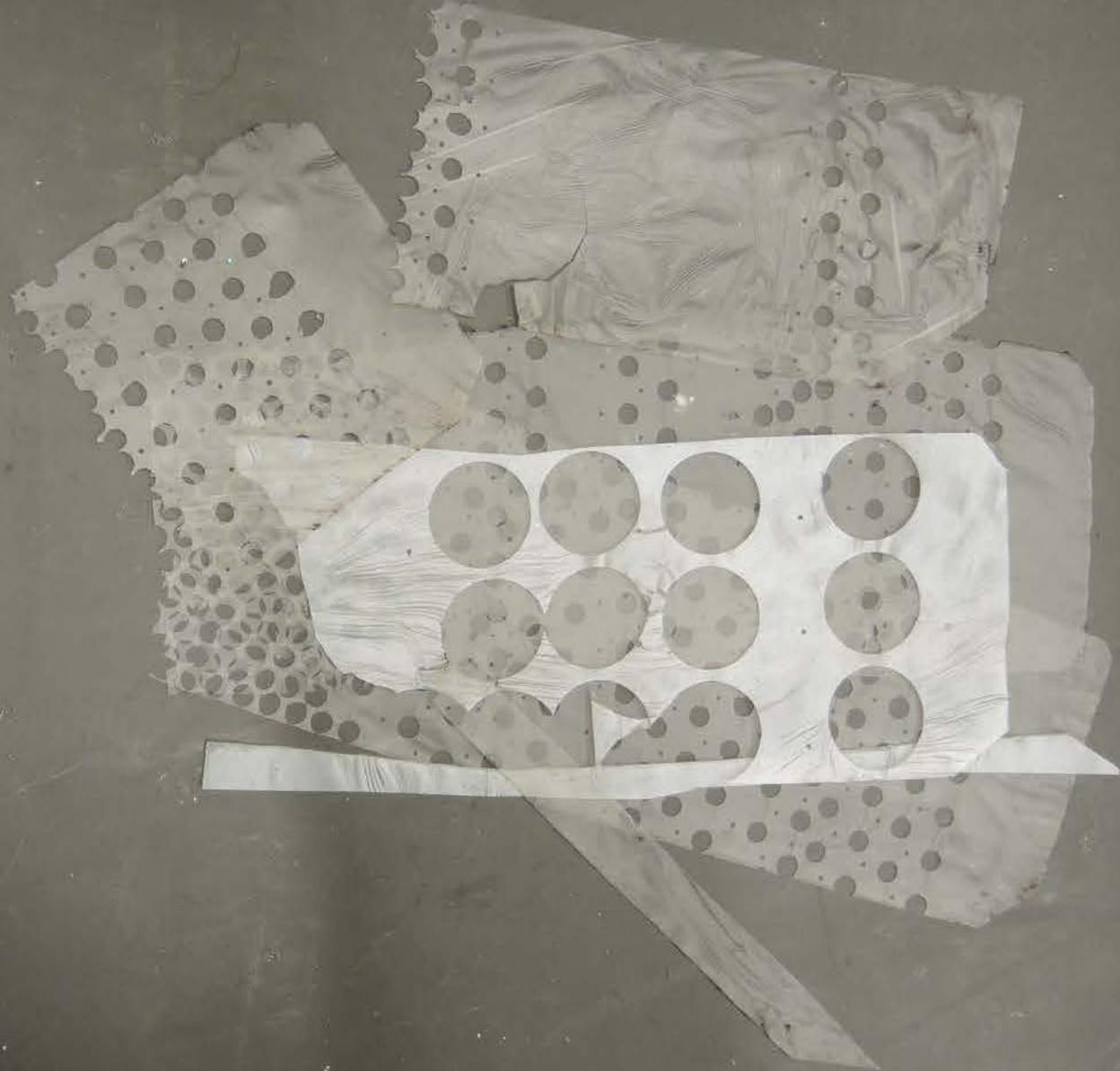
**Muji, Product Fitness 80,
(2012)**



Cotton buds don't have to be that long.

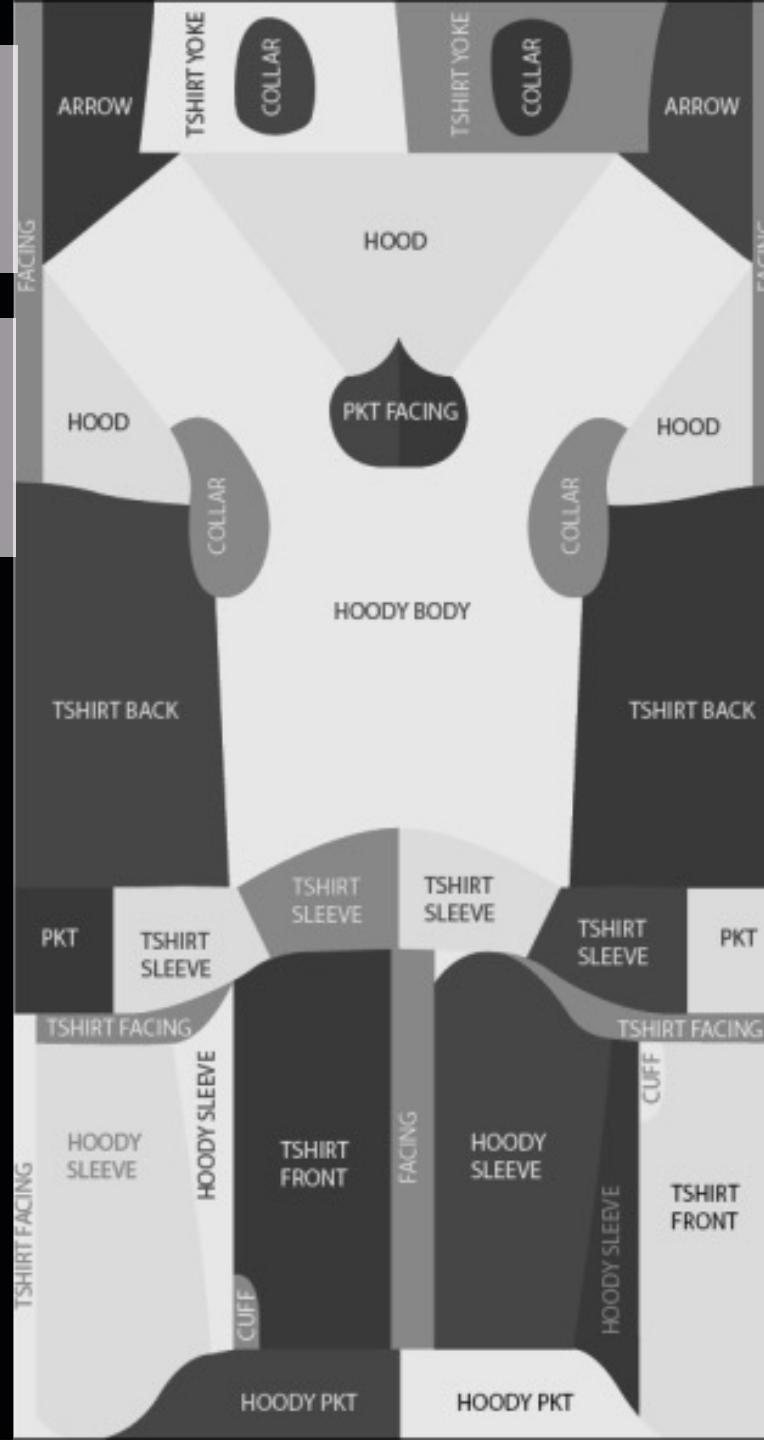
Keywords:
Grown to shape

Elissa Brunato, Future Sequin
(2018-ongoing)



Keywords:
Zero Waste, Pattern Cutting

Timo Rissanen and Holly Mcquillan, Zero waste Fashion Design (2016)



zero
waste
fashion
design

timo
rissanen
–
holly
mcquillan

BLOOMSBURY

1

2

3

4

5

6

7

8

9

10

THE TEN

2 Design for Cyclability

V.2

2

Design for Cyclability

How to upcycle existing garments and how to design with virgin materials, in anticipation of future recycling?

The initial design process anticipates the potential for eventual recycling and re-purposing of the textile product. Also existing garments or products considered as 'raw materials', ready for added value to be applied.

Examples: this strategy includes design for recycling, upcycling, design for mono materiality and design for disassembly for the closed-loop systems of the future. Think re-useable/non-invasive installation or renewal.

Keywords:
Upcycling, Mechanical Recycling

Anneka Textiles (2018)

1

2

3

4

5

6

7

8

9

10

Keywords:
Upcycling

**Michelle Baggerman, Precious
Waste (2011)**

1

2

3

4

5

6

7

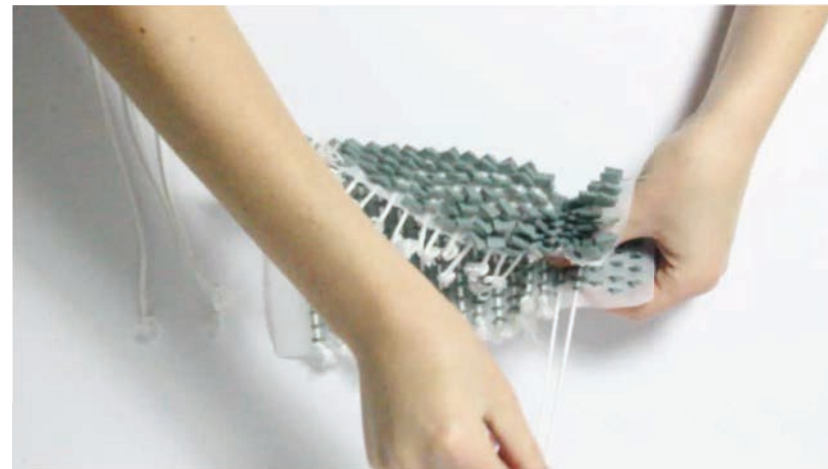
8

9

10

Keywords:
Disassembly, Recyclability

**Textiles for Disassembly, Laetitia
Forst (2018)**



1

2

3

4

5

6

7

8

9

10

THE TEN

3

Design to Reduce Chemical Impacts

V.2

3

Design to Reduce Chemical Impacts

How can the use of harmful chemicals at every stage in the life of the product be reduced by design?

Select the most appropriate material and processes for any product to minimise environmental impacts.

Examples: seek organically produced materials; use mechanical technology to create non-chemical decorative surface pattern; create effects to replace materials and processes known to be harmful.

Keywords:
Earth dying with no mordants

Hyun Jun Jeong, Earth Dye (2011)



1

2

3

4

5

6

7

8

9

10

Keywords:
Growing Fabric

Suzanne Lee, BioCouture
(2011 – Ongoing)



Keywords:

'Digital Denim'
Re:Design, Low impact,
Reduce Waste,

Dawn Ellams, (2016)



THE TEN

4

Design to Reduce Energy and Water Use

V.2

4

Design to Reduce Energy and Water Use

How to conserve water in the production and use of textile products?

Evaluate the ways water and energy are consumed in the processing of textiles. Assess the carbon footprint, particularly in consumer laundry.

Examples: In the production phase: exhaust printing and dyeing; dry patterning systems; air-dyeing; distributed manufacture. In the use phase: design for no/low laundry; 'short life' textiles; technical coatings to reduce washing; innovative and informative labeling; localisation; natural energy systems.

Keywords:
Made to wear

**Becky Earley and Kate
Fletcher, 5Ways (2003)**

1

2

3

4

5

6

7

8

9

10

Keywords:
Safe Chemicals

Dyestar (2018)



THE
TEN

5

Design that Explores
Cleaner/Better
Technologies

V.2

5

Design that Explores
Cleaner/Better
Technologies

How can technology be used to make more sustainable textiles?

Design for new technologies to save energy and materials. Reduce environmental damage in the production of yarn and fibre, the construction of fabrics, dyeing and finishing of products.

Examples: bio-based materials and processes; 3-D printing; laser; water-jet; sonic cutting; sonic welding; digital printing, 're-surfacing' of polyester; novel dyeing techniques; digital finishing; tagging.

Keywords:
DIY

**Martijn van Strien, Post-
couture collective (2018)**

1

2

3

4

5

6

7

8

9

10

Keywords:
Enhanced Retail Experience

**Ikea Place, Augmented Reality
(2017)**



1

2

3

4

5

6

7

8

9

10

THE TEN

6

Design that Takes Models from Nature & History

V.2

6

Design that Takes Models from Nature & History

How can the practices of the past and models from the natural world inform textile design and production of the future?

Seek design inspiration, information and solutions from studying the textiles, habits and societies of the past and from nature including bio-mimicry.

Examples: shape-memory polymers to mimic natural movement; 'lotus effect' nano-coatings; Velcro; austerity repair; make-do-and-mend; D.I.Y./punk customization; modern nomads; historic dyeing/printing techniques.

Keywords:
Inspired By Nature

**George de Mestral , Velcro
Hooks (1941)**

1

2

3

4

5

6

7

8

9

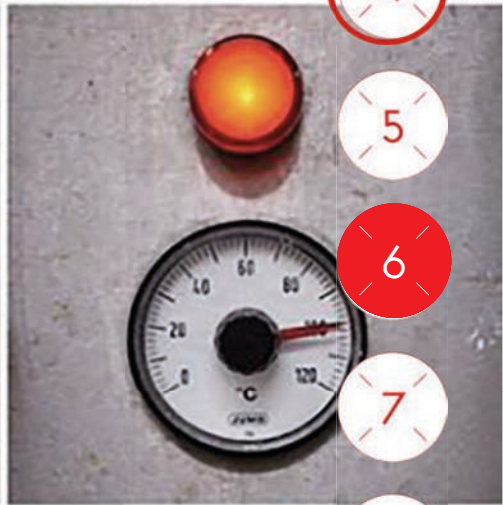
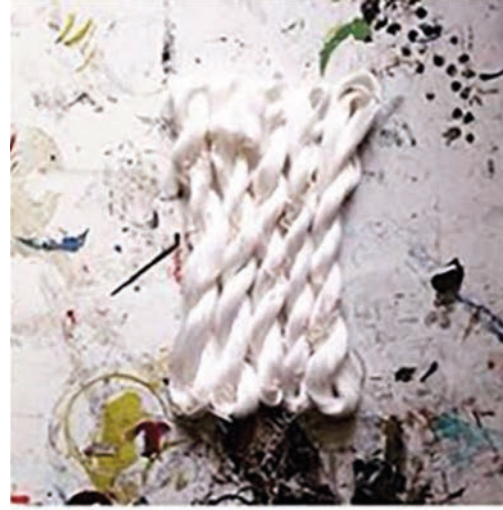
10

Keywords:

‘Cyclical Colour’

Closed Loop, Low Impact,
Biodegradable, Reduce Waste

Dawn Ellams, (2016)



THE TEN

7

Design for Ethical Production

V.2

7

Design for Ethical Production

How can design encourage ethical production, that supports and values people and skills?


Designers can engage with communities, either in the supply chain or for local needs.

Examples: sourcing fair trade materials; engaging suppliers who abide by codes of conduct; vertical supply chains; consideration of local resources; designers acting as facilitators of sustainable enterprise in communities.

Keywords:
Indian craft communities

**Prerna Gupta, Kala Cotton
(2018)**





Keywords:
Non-animal fur

**Naomi Bayley-Cooper,
Alternatives to exotic animal
furs (2015-ongoing)**

1

2

3

4

5

6

7

8

9

10

THE TEN

8

Design to Reduce the Need to Consume

V.2

8

Design to Reduce the Need to Consume


How can designers make stuff that lasts, that people want to keep and look after?

Textile products can be designed and produced to adapt and improve with age. Encourage replacement of shopping with creative social experiences; the customisation of clothing and textiles; the DIY culture.

Examples: emotionally durable design; slow design; consumer participation in co-design and collaborative consumption, crowd sourcing and social networks; apps for bespoke information.


Keywords:
Voting Prevents
Overproduction

Threadless, Crowd-Sourcing
(2012)



Design by [MadKobra](#)

FOLLOW



7 Days Left

SCORE IT

5

4

3

2


1

31 Votes

VISIT BIKINI ATOLL

Hope you like it. >)

6 Comments



Design by [MadKobra](#)

FOLLOW



2 Days Left

SCORE IT

5

4

3

2

1


169 Votes

SUMMER MAGIC OF 2025

"... I still remember when we first moved back then at the colony. It was magical but now I only wish you where here...." Thanks for your support friends hope you like...


24 Comments

Challenges: Time Vintage Vacation Dark Anime Critique Threadless



Design by [Mingon12](#)

FOLLOW



7 Days Left

SCORE IT

5

4

3

2

1

55 Votes

SOVIET SURF ACADEMY

Behind the "Iron Curtain", holidays used to be slightly different from today's spontaneous getaways. Even though to my best knowledge such a thing that national surf academies...

10 Comments

1

2

3

4

5



Design by [colibri-arts](#)

FOLLOW



7 Days Left

SCORE IT

5

4

3

2

1

32 Votes

WHALE TAIL BY COLIBRI ARTS

For me, whales have always mystified me. Exclusive creatures are truly incredible to behold. I love knowing there're out there...



Design by [darnelade-sign](#)

FOLLOW



7 Days Left

SCORE IT

5

4

3

2

1

40 Votes

GO TO THE BEACH

Your outfit is sacred today!

4 Comments



Design by [v_cakshan](#)

FOLLOW



6 Days Left

SCORE IT

5

4

3

2

1

61 Votes

VISIT HADES

Book one night. stay for ever!

14 Comments

6

7

8

9

10

Keywords:
Activist Repair

**Bridget Harvey, Mend More
Jumper (2015)**



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

THE TEN

9

Design to Dematerialise and Develop Systems & Services

V.2

9

Design to Dematerialise and Develop Systems & Services

How can designers develop the concept of designing services that replace or support products?

Employ a design strategy for multi-functional products and materials conservation via temporary and non-invasive installations. Encourage repair. Facilitate on-line/local communities of producer-consumers.

Examples: lease; share; repair; experience design; user-centered methods to design services; collaborative online/local communities; transition-towns.

Keywords:
Repair Service

Nudie Jeans (2012)



COMBO REPAIR:

1. Crotch repair made at the Nudie Jeans Repair Shop at Vallgatan in Göteborg.
2. Handmade pocket fix using the Repair Kit.

ual: centre for
circular design

ORDER THE REPAIR KIT



WE STRIVE
FOR SUSTAINABLE
CONSUMPTION
PATTERNS BY:

OFFERING
FREE REPAIR
SERVICE

Nudie Jeans co

1

2

3

4

5

6

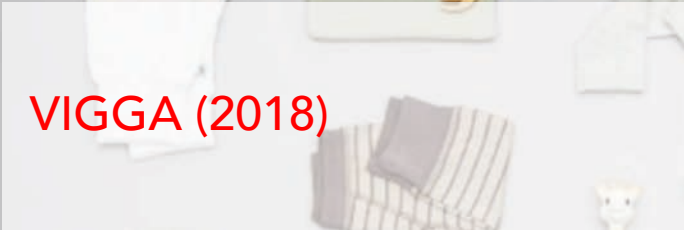
7

8

9

10

Keywords:
Lease/Rental Service



VIGGA (2018)



ual: centre for
circular design



THE
TEN

10

Design Activism

V.2

10

Design Activism

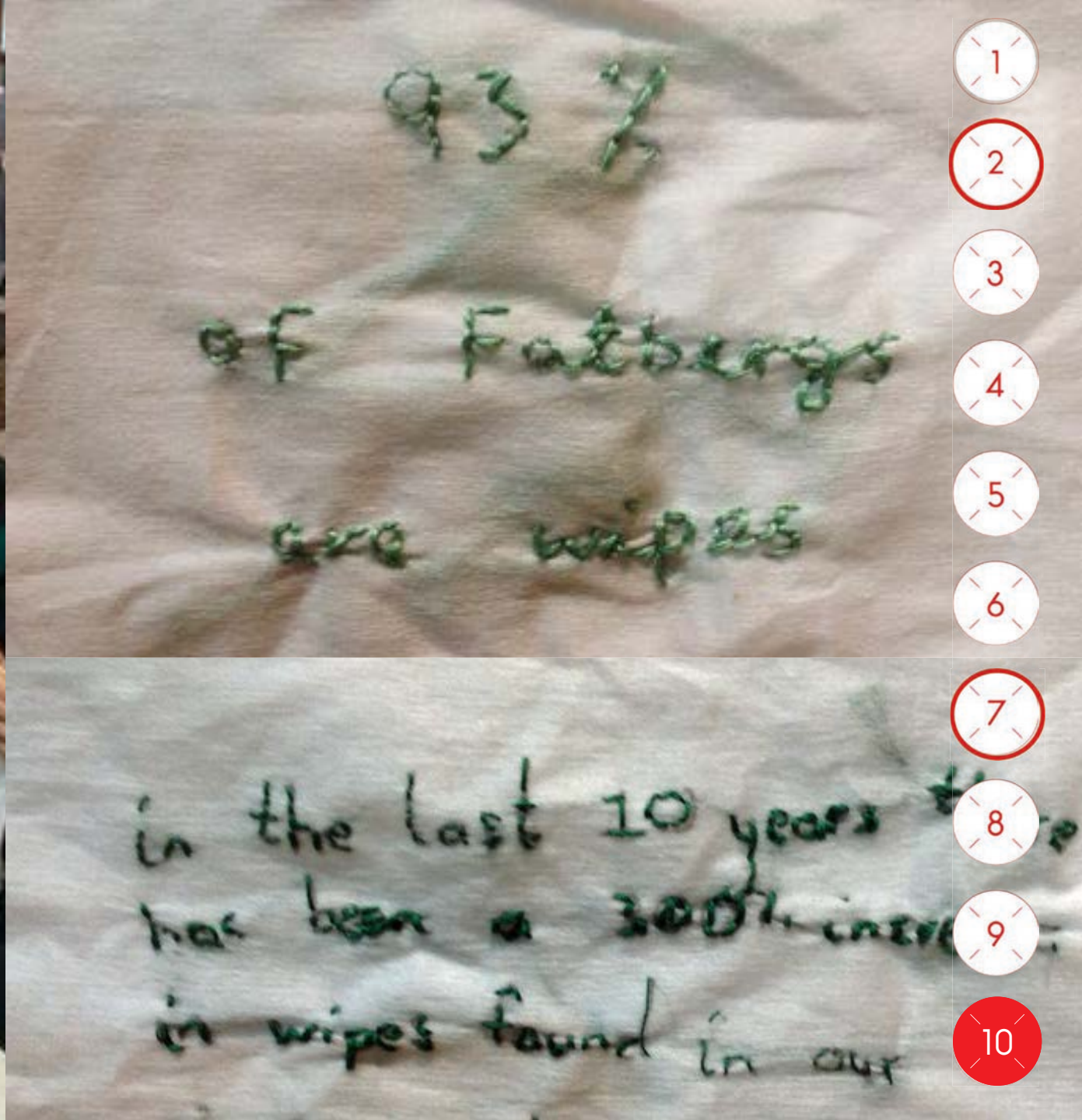
How can designers extend their effect beyond the product to work creatively with consumers and society at large?

The textile designer becomes a 'social Innovator' using design skills to meet social needs. It includes designing events and communication strategies to increase consumer and designer knowledge about the environmental and social impacts of textile products.

Examples: publications; blogs; open-source networks; exhibitions; conferences; festivals; social media; manifestos.

Keywords:
Craftivism

**Kath Lovett, Wet Wipe
Activism (2018-ongoing)**



1

2

3

4

5

6

7

8

9

10

Keywords:
T-shirt Waste

**Timo Rissanen, Janelle
Abbott & Salla Salin, 15%**



Ten Strategy Cards:!

A Map!

Innovation Catalyst!

Workshop Structure!

Game Play!

Business Innovation! Practical
Implementation!

