Design for Sustainability

Our linear economy



Source: Circular Economy – Master Circular Business with the Value Hill (2016)

Global annual resource extraction is 92 billion tonnes (2017). This contributes to 50% of our climate impact

Source: World Bank – What a Waste 2.0 (2018)

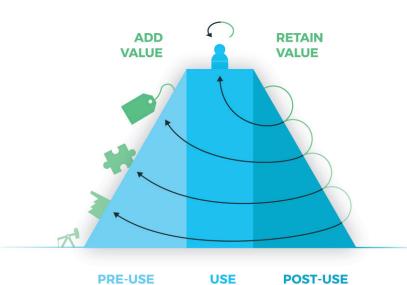
Global annual municipal waste is

2 billion tonnes (2016), expected to rise

to 3,4 billion tonnes (2050)

Source: UN Environment Programme – Resources Outlook 2019

A circular economy



Source: Circular Economy - Master Circular Business with the Value Hill (2016)

What can designers do?

10 Golden Rules of

Prof.dr.ir. Conny Bakker:

Design for Sustainability System Production Use Recovery

systems

Sustainable

design is systemic.

Design adaptive

There is no such thing as a fixed 'sustainability' where change is no longer needed. Products, services and systems need to be open for ongoing change along the way.

Design for net-positive impact

Sustainable design aims to create products, services and systems that have an overall

positive impact on

on society.

the environment and

This means: healthy and productive ecosystems and thriving lives and livelihoods.

Go bio &

design aims for

renewable

Sustainable

a future beyond fossils. Sustainable design embraces alternatives for fossilbased materials and energy sources.

Go clean Sustainable

design aims for

products and systems

that are non-toxic, non-critical and safe throughout their multiple life cycles.

Do with Less Sustainable design aims for

an absolute reduction

materials throughout

of energy and

and and life cycles. Less is not 'more'. Less is less. Sufficiency is encouraged and rebound effects are acknowledged.

Prof.dr.ir Ruth Mugge:

wellbeing

Sustainable

design strives to

Ensure equity &

end poverty and impove well-being through products and systems that support universal access to better nutrition, healthcare, education, information, housing, clean water and basic sanitation.

Support and shape sustainable

lifestyles
Sustainable design
aims to use products,
services and systems
to shape and support
sustainable lifestyles

for (groups of) people and communities.

Design for long use and reuse Sustainable design is about creating products that

last and that can be

reused, maintained, repaired, refilled and

repurposed.

Developed by TU Delft Design for Sustainability team

of.dr.ir Ruth Mugge:

Oesign for Sustainable

Consumer Behaviour

Design for endings
Sustainable design acknowledges the ending of a product

or service as an important, but generally overlooked, part of consumption and aims for well-designed and respectful 'offboarding' experiences.

Design for recovery Sustainable

design aims to

preserve as much

of the economic and environmental value of products, parts and materials as possible, by looping them back into the economic system over and over again.

Doffer sustainable alternatives Make products out of recycled plastics and materials and produce via high quality repair and



