

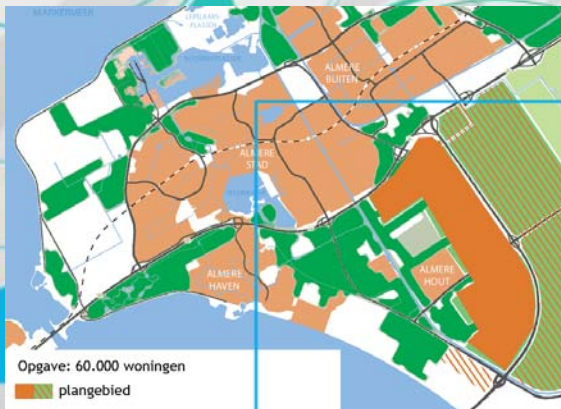
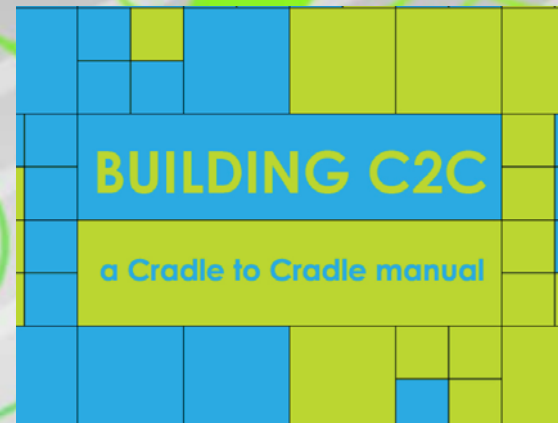
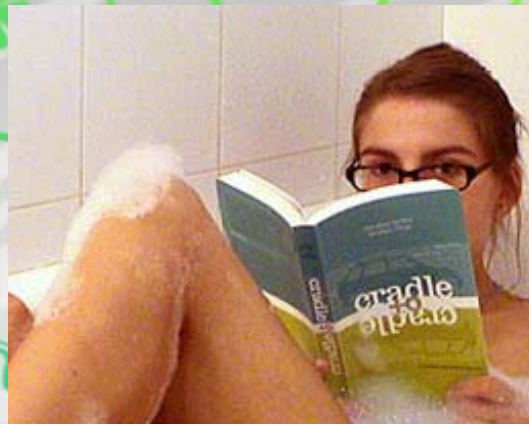
The background is a complex collage. On the left, there are technical drawings including a circular diagram with a scale and a gear. In the center, there are large, stylized letters 'C:C' in black. To the right, there are green organic shapes, including a large flower-like pattern and several spirals. The overall color palette is grey, green, and blue.

C:C

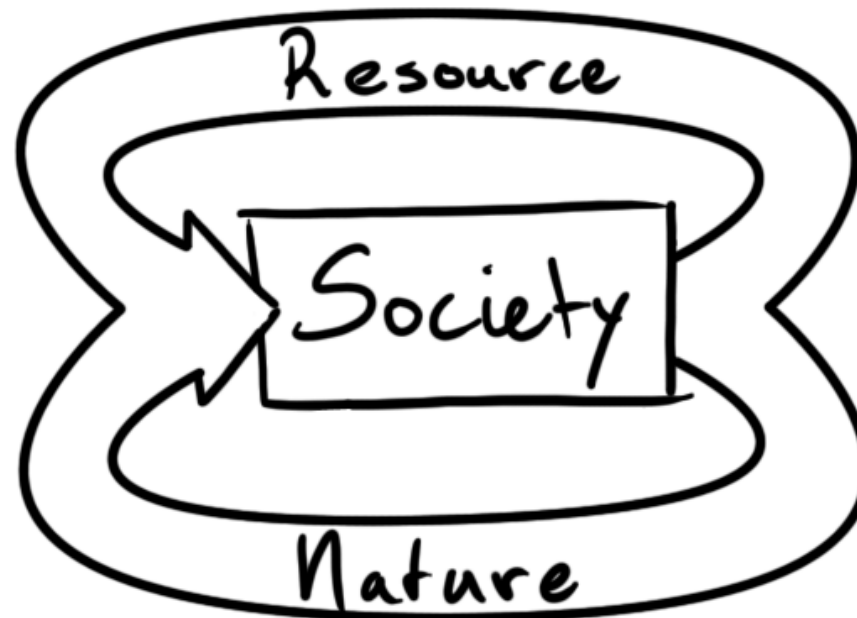
A critical view on Cradle to Cradle

Bram vd Grinten Bootweek 21/04/2009

Who am I?



C2C in brief



C2C - a new paradigm

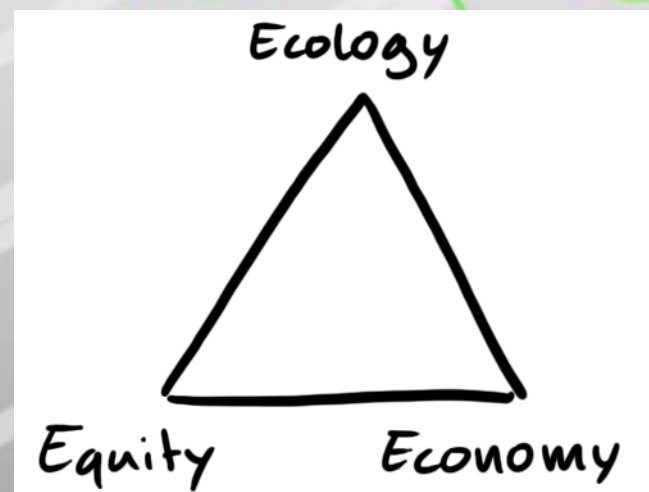
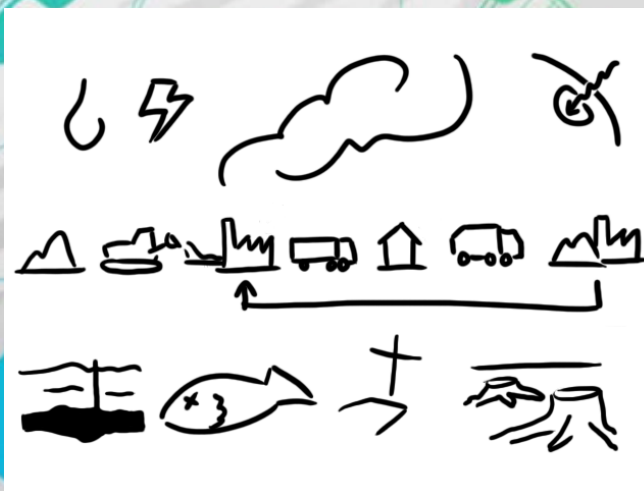
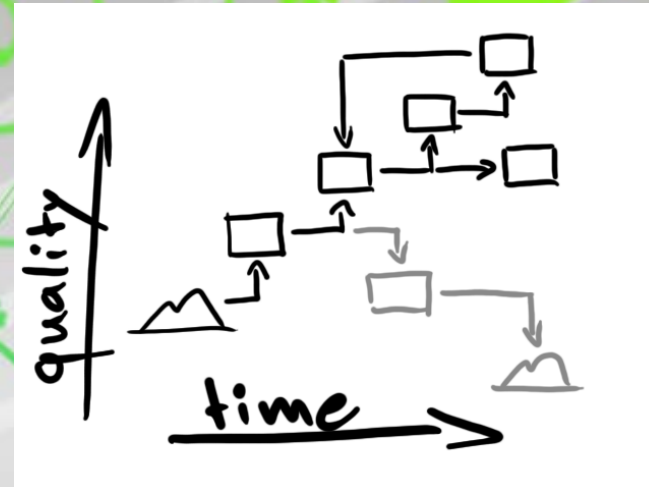
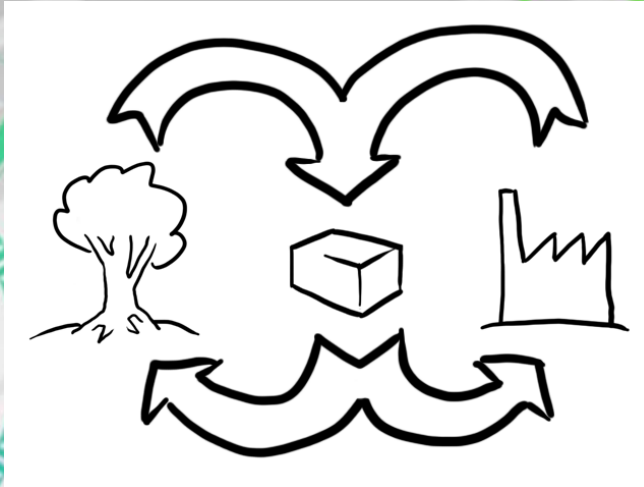


Less bad is no good

Waste = Food

Efficient < Effective

C2C - key concepts



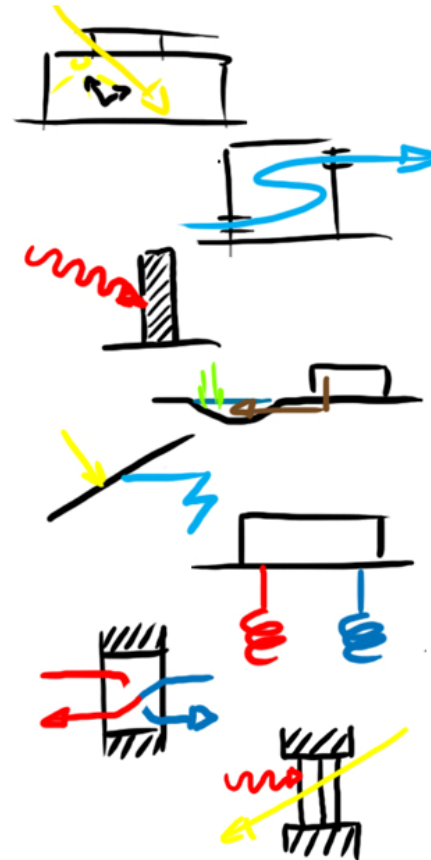


Successes and Criticisms

Bram vd Grinten 21/04/2009



Adam Joseph Lewis Centre for Environmental Studies





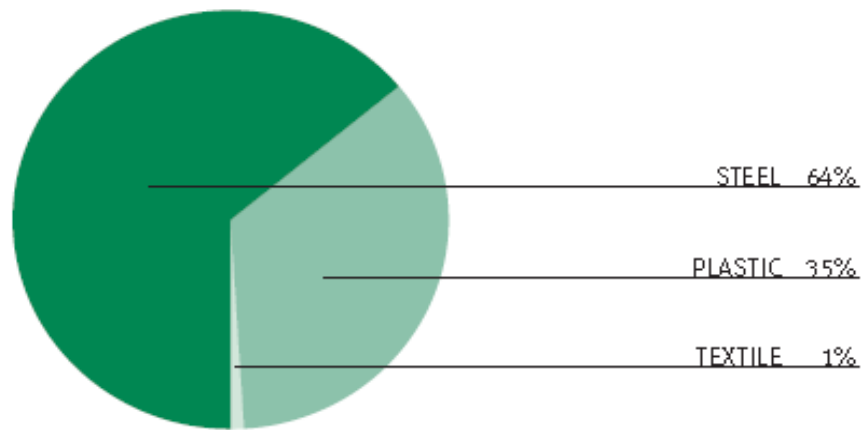
Ford River Rouge Dearborn Truck plant



Bron: Colleggerama.tudelft.nl, 11/21/2007, De kern van de C,MM,N, J. Lammers

Material Content

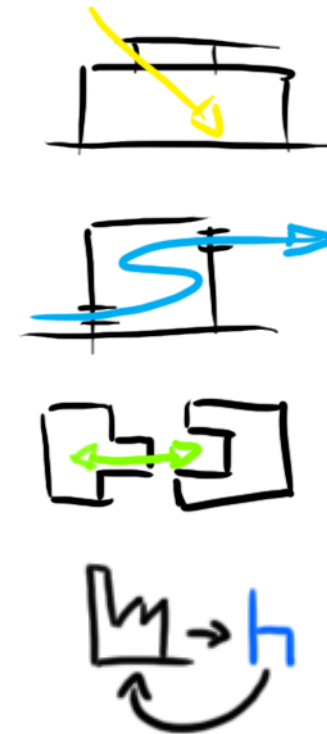
The Celle chair's components are constructed from steel, plastic, and textile.



The Celle chair is up to **99 percent recyclable** at the end of its useful life.

Celle is comprised of **33-percent recycled** materials. This figure breaks down to 28-percent post-consumer and 5-percent pre-consumer recycled content.

Herman Miller inc. office furniture



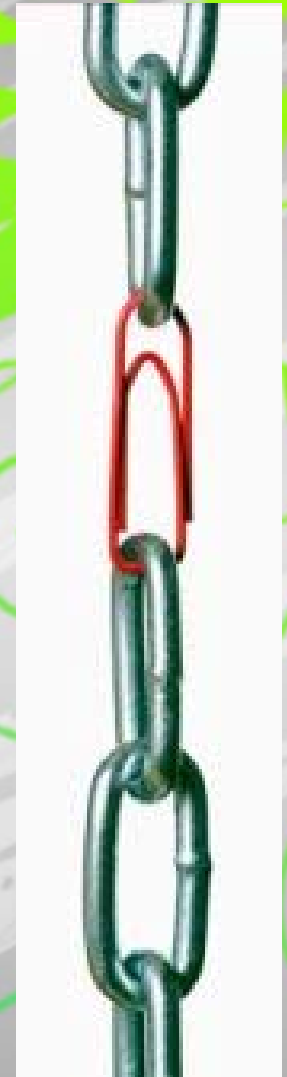


Nike considered



Weak links?

- Unclear connection to existing theory
- Unclear connection to existing legislation
- Insufficient information or support for practice
- Energy problem is unaddressed
- C2C is a trademark, not a hallmark
- C2C has four flavors



Unclear connection to existing theory

- Lifecycle analysis
- Industrial ecology
- Sustainable/ bioclimatic
- Biological systems

Impact
assessment

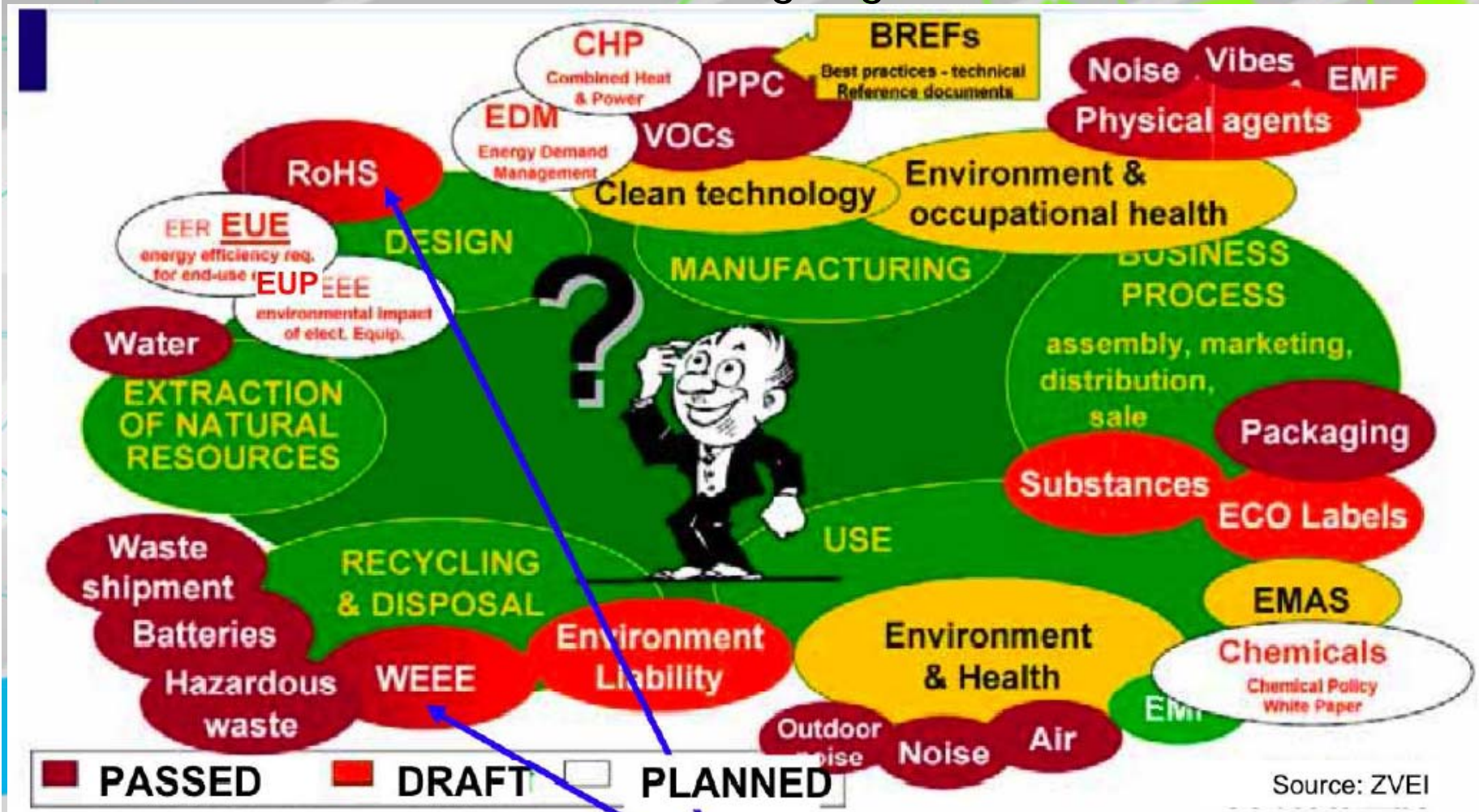
Impact Ana

Life Cycle
Inventory

Life cycle
phases

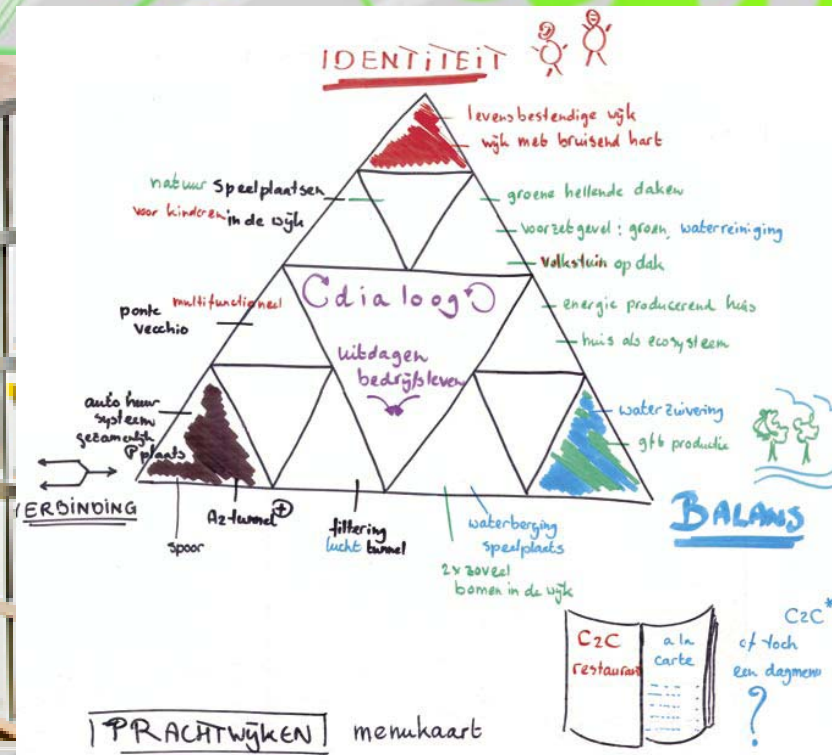
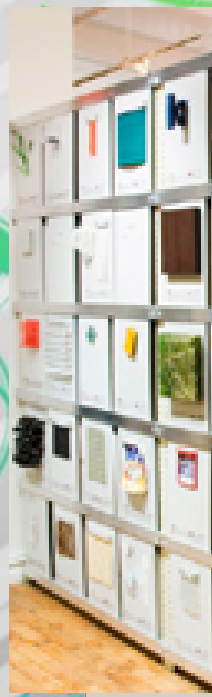


Unclear connection to existing legislation



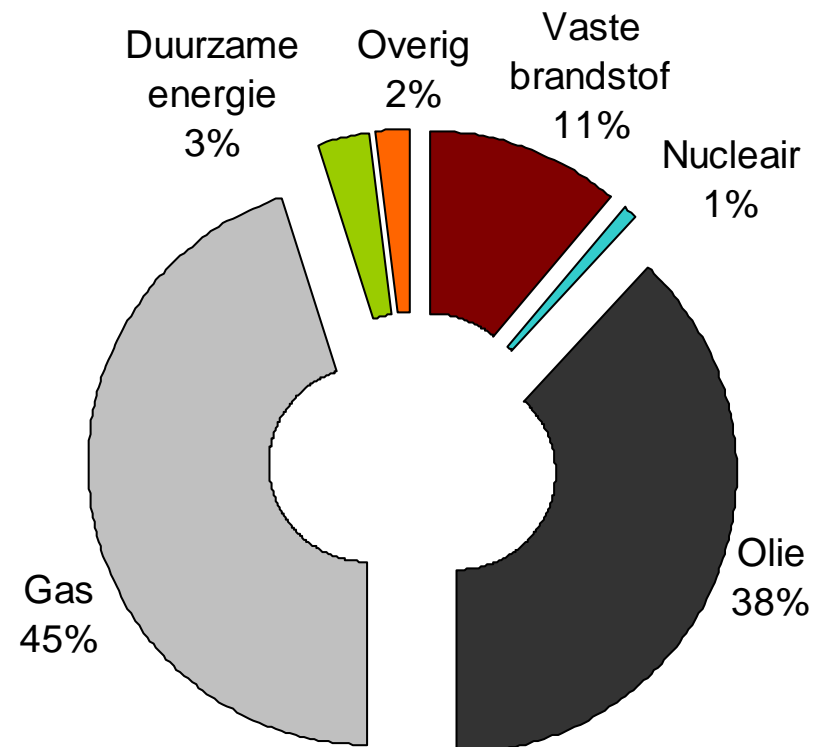
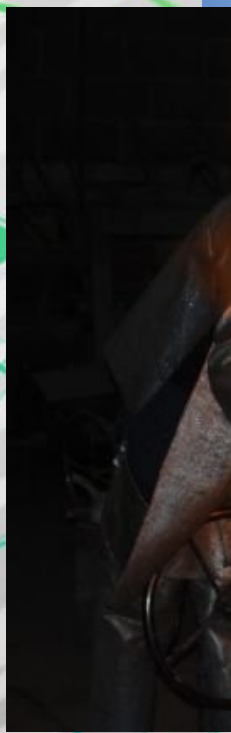
Insufficiënt information or support for practice

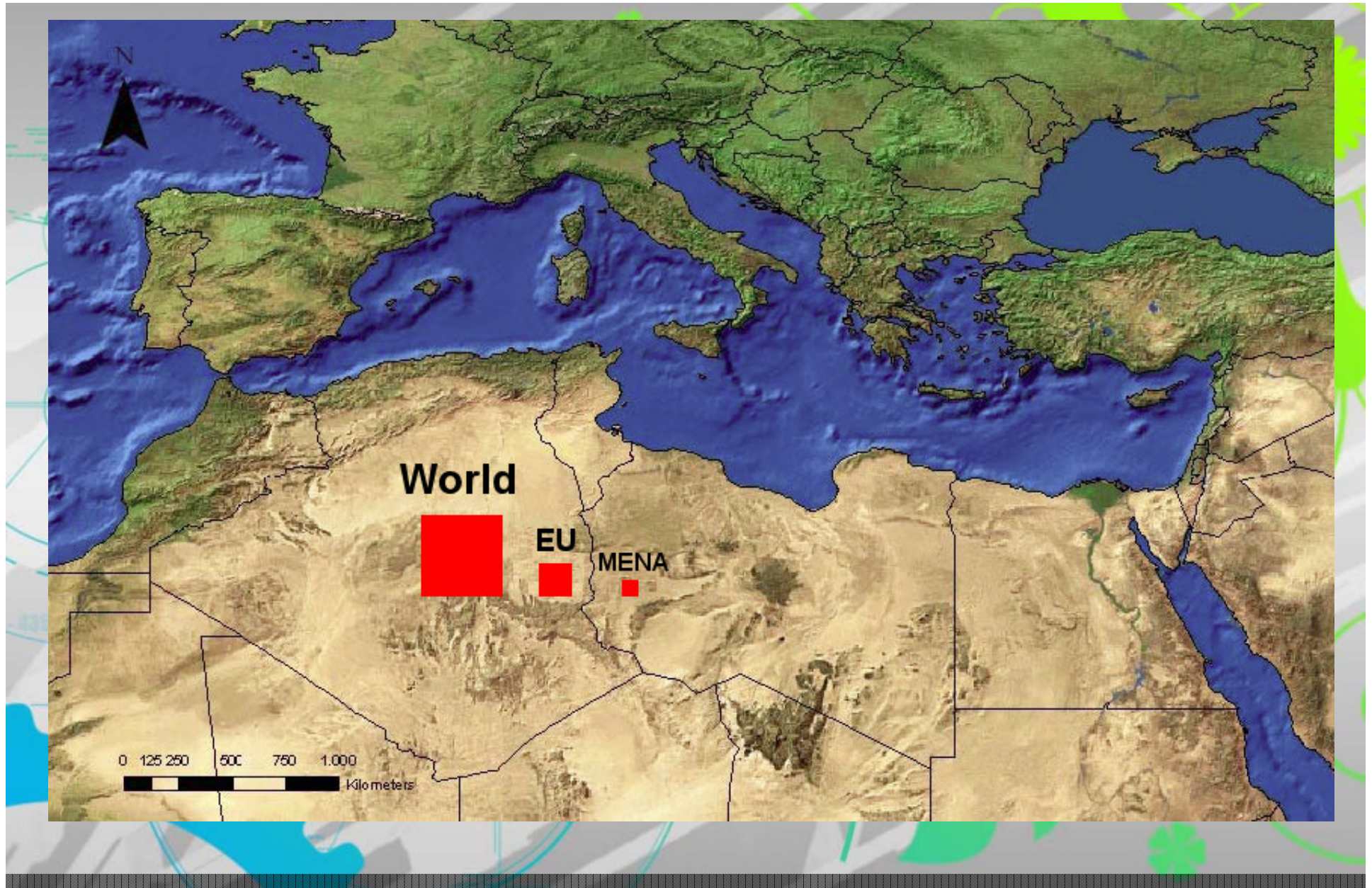
- Ecoscan/ SimaPro/ Idemat
- Materials and components limited, access costly
- Tools not operationalised



Energy problem is unaddressed

- PV technology problematic
- Energie-intensieve reuse
- 100% sustainable energy currently impossible



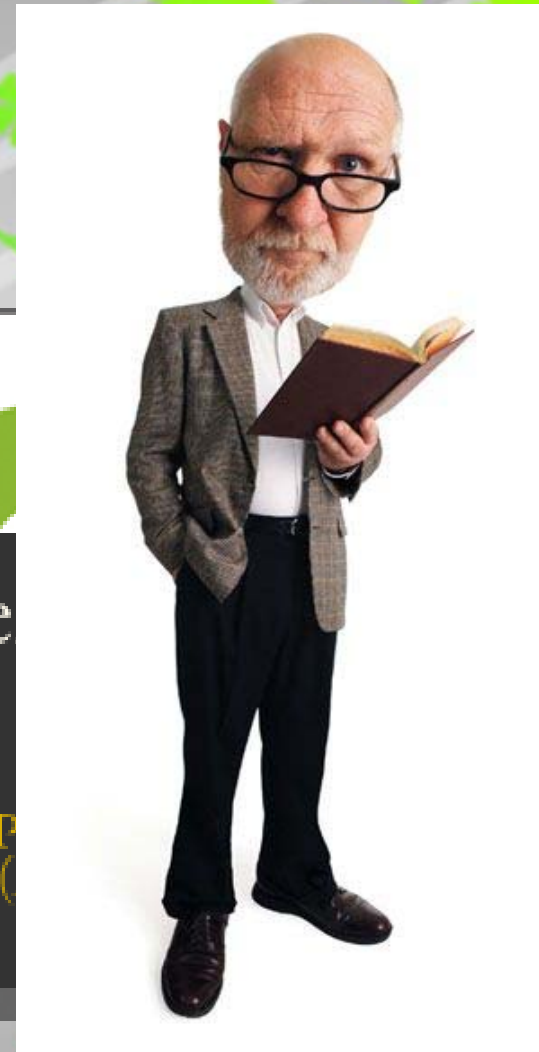


C2C is a trademark, not a hallmark

- Certifications costs money
- C2C expertise is commercial property
- C2C checks are not independent
- No scientific debate?

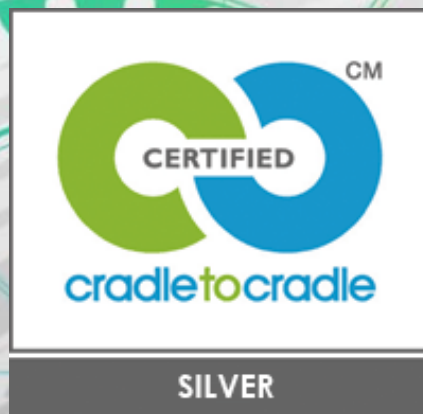
MBDC's C2C Be

KNOWLEDGE IS P



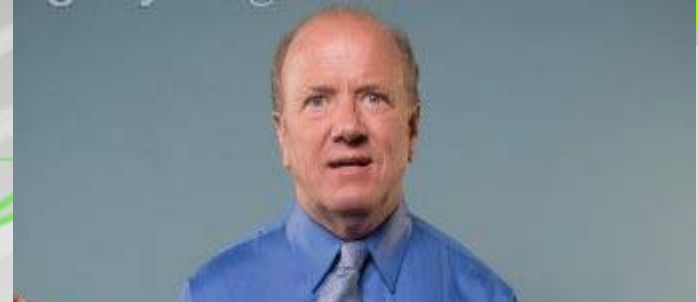
C2C has four flavors

- Basic: inventorize and strategize (do little)
- Silver: 50% reusable en CSR document
- Gold: 65%, clean materials, production and energy (50%)
- Platinum: 80%, water management and supplier check



But:

- C2C is popular with business
- C2C inspires
- C2C leaves room for improvement





Next:

- Four questions for you lot

Intermission





Q1

C2C is corporately owned (as opposed to scientifically open) to offer a reliable eco check, so

A: it is good that C2C is a trademark

B: it is in fact unreliable since it is corporately owned



Q2

A: C2C is a visionary approach and a lasting sustainable strategy

B: C2C is a void hype and will not last like other approaches will



Q3

C2C products and services show that C2C products are attainable, real and of high quality, which is because

A: C2C is a vision that works in real life

B: C2C certification is too easy to get



The big

What to do with C2C?

How to overcome the hurdles
and utilize the benefits?



The big

Research?

Activities?

Legislation?

Policy?

You?

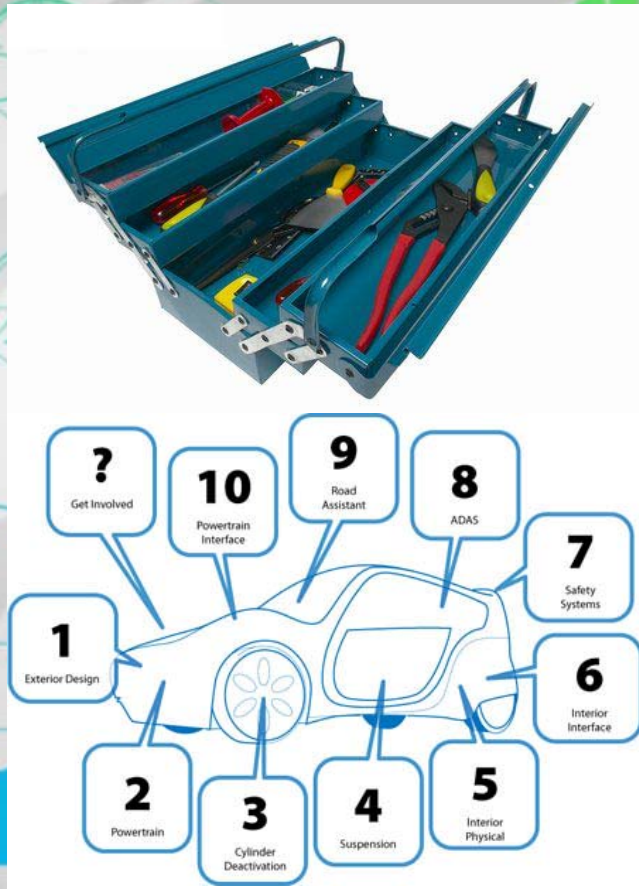
Products?

Business?



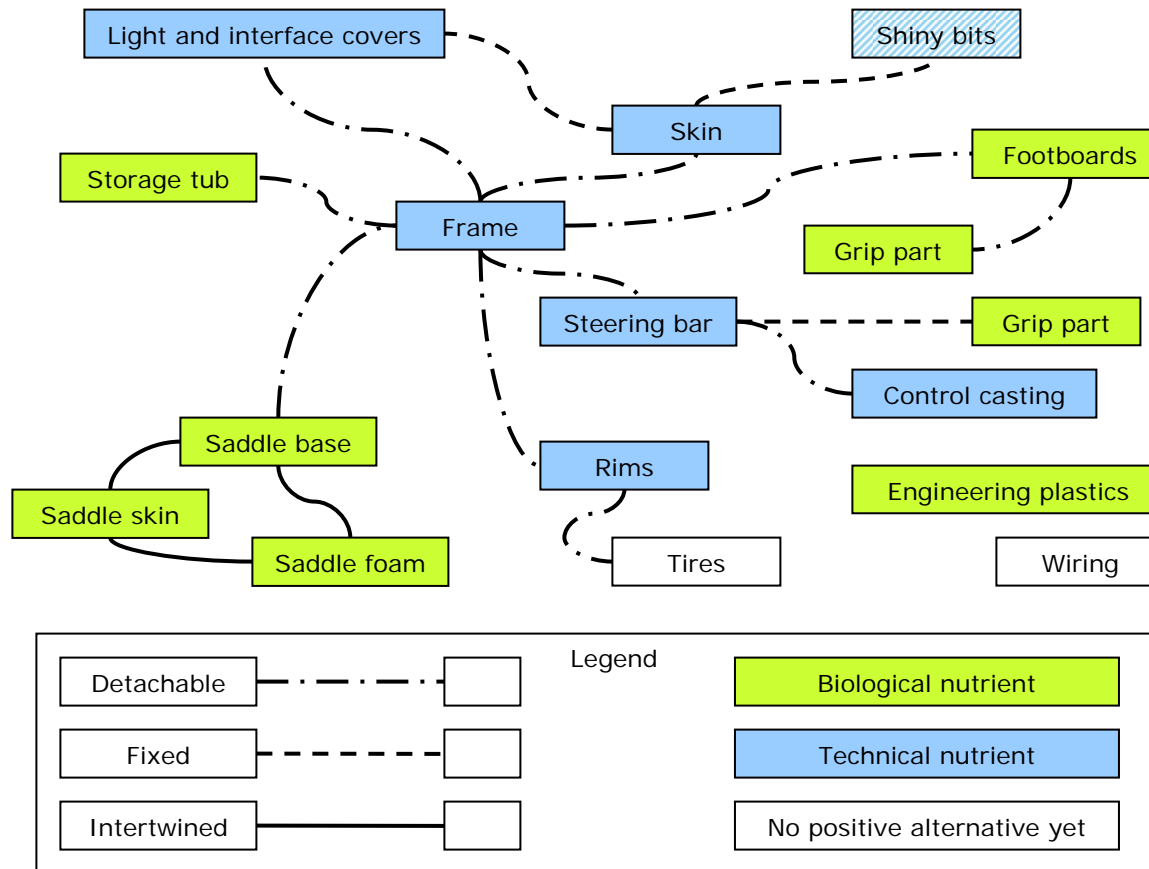


Wat kunnen we doen?



- Design for disassembly
- Biodegradable materials
- Life Cycle Assessment
- Design chemistry
- Triple E-pyramid
- X-list and P-list
- Five stages of redesign
- Eco-effectiveness
- C2C certification

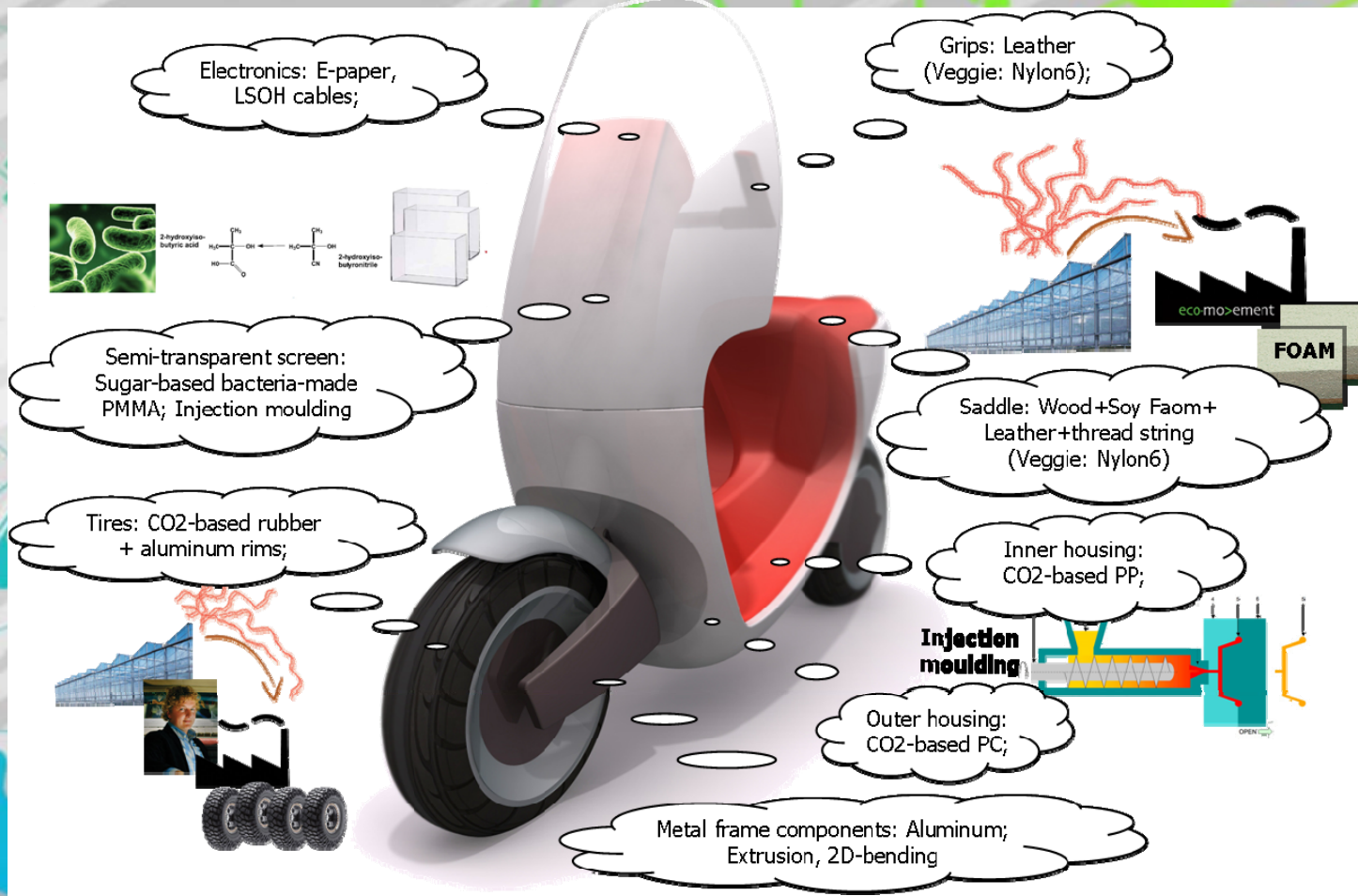
Design for disassembly



Biodegradable materials



Design Chemistry



Bron: EVE / Eco-Movement, 10/01/2009, EVE final report, M vd Meij

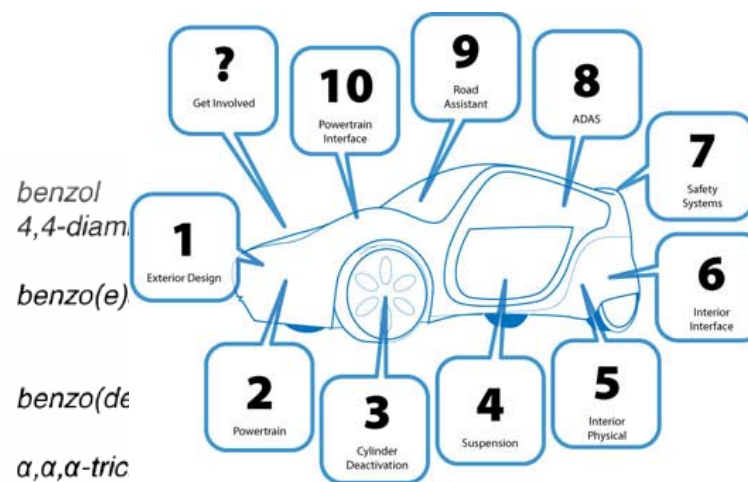
X-list en P-list

azokleurstoffen op basis van benzidine
 azokleurstoffen op basis van o-dianisidine
 azokleurstoffen op basis van o-tolidine

B

benzeen
 benzidine (+ zouten)
 benzo(a)anthraceen
 benzo(b)fluorantheen
 benzo(j)fluorantheen
 benzo(k)fluorantheen
 benzo(a)pyreen
 benzo(e)pyreen
 benzotrichloride
 benzychloride
 beryllium
 berylliumverbindingen (met uitzondering van
 berylliumaluminiumsilicaat)
 4,4'-bi-o-toluidine
 zouten van 4,4'-bi-o-toluidine

2,2'-bioxiraan
 bis-(chloor)-methylether
 4,4'-bis(dimethylamino)benzofenon
 bleomycine



benzol
 4,4-diam.

benzo(e)

benzo(de)

α,α,α -tric
 α -chloortolueen

3,3'-dimethylbenzidine/ o-tolidine

1,2:3,4-diepoxybutaan
 dichloormethylether/ BCME
 Michlers keton

100-44-7
 7440-41-7
 --

119-93-7
 612-82-8
 64969-36-4
 74753-18-7
 1464-53-5
 542-88-1
 90-94-8
 11056-06-7

Delen en netwerken



The screenshot shows the homepage of the Cradle to Cradle .nl website. The header features the logo (three colored squares: green, blue, and a geometric pattern) and the text 'Cradle to Cradle .nl' with the tagline 'Een dynamisch en informatief Nederlands Cradle to Cradle webkanaal'. A navigation menu includes links for 'home', 'over cradletool', 'over c2c-planet', and 'contact'. Below the header is a secondary navigation bar with 'cradle to cradle', 'actueel', 'aan de slag', 'projecten', and 'producten & materialen' (which is highlighted). A search bar with the text '...zoek' is on the right. The main content area is titled 'Producten' and includes a sub-header 'Cradle to Cradle producten'. A paragraph states: 'Een overzicht van de op dit moment beschikbare Cradle to Cradle producten met een C2C keurmerk.' Below this, there are two sections: 'Bouwproducten' and 'Interieurproducten', each with a list of products. On the left side, there is a sidebar with a list of 'Producten & Materialen' including 'Producten', 'Materialen', 'MDBC Productenlijst', and 'Material Connexion'. A small image of autumn leaves is also present in the sidebar area.

Cradle to Cradle .nl
Een dynamisch en informatief Nederlands Cradle to Cradle webkanaal

home over cradletool over c2c-planet contact

cradle to cradle actueel aan de slag projecten **producten & materialen** ...zoek

home » producten & materialen » producten

Producten

Cradle to Cradle producten

Een overzicht van de op dit moment beschikbare Cradle to Cradle producten met een C2C keurmerk.

Bouwproducten

- » Muur en Daksystemen - Centria
- » Muurpanelen - INVELOPE™
- » Muurpanelen - PolySteel
- » Natuursteen - Las Vegas Rock
- » Natuursteen - Serrastone

Interieurproducten

- » Blindering - MechoShade Systems
- » Kantoormeubilair - Haworth
- » Kantoormeubilair - myMiller
- » Kantoormeubilair - Steelcase
- » Verlichting - Litecontrol

Producten & Materialen

Producten

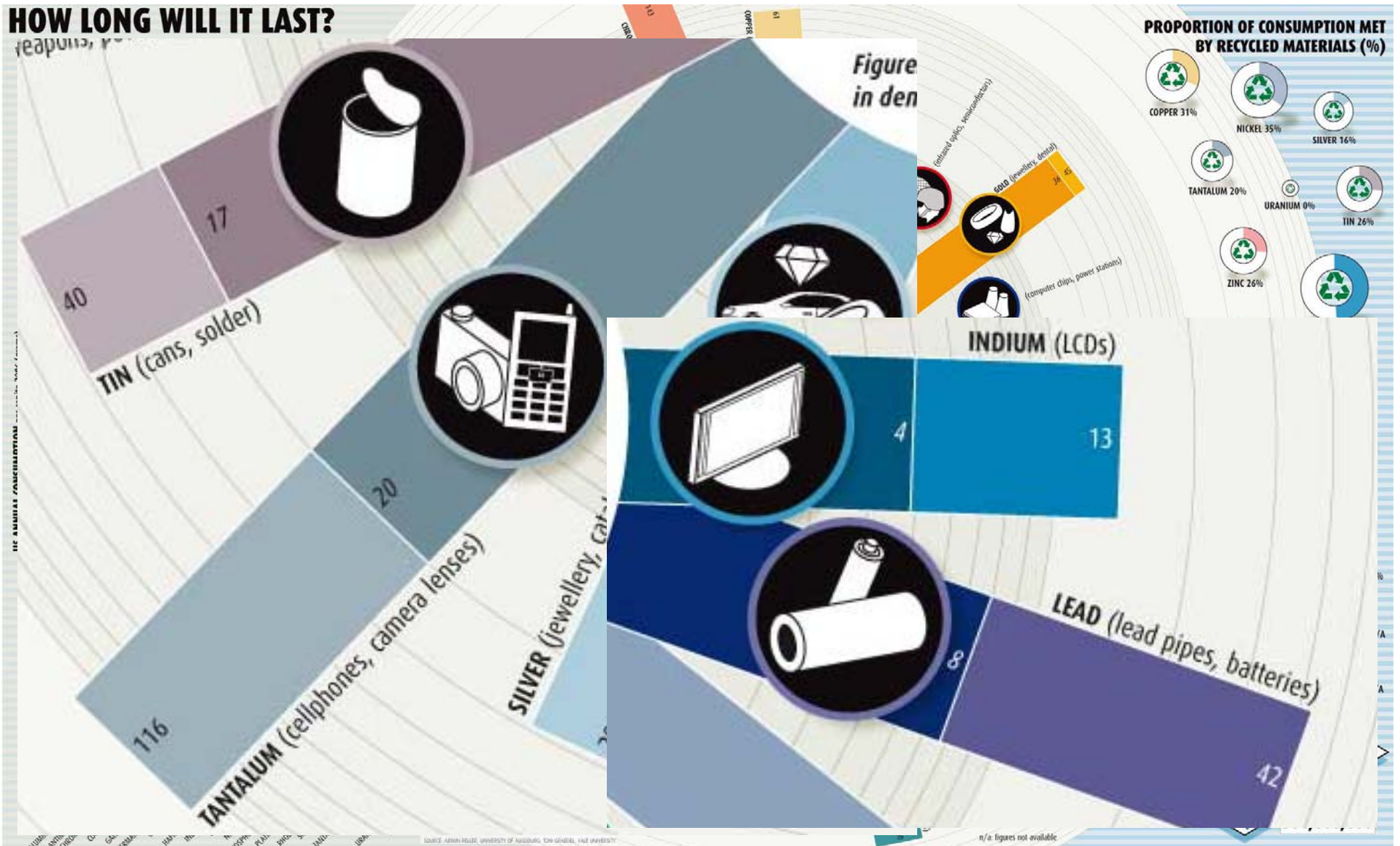
- **Bouwproducten**
- **Interieurproducten**
- **Overige producten**

Materialen

MDBC Productenlijst

Material Connexion

HOW LONG WILL IT LAST?



Bron: #2605 of New Scientist magazine, 23 May 2007, page 34-41, Onderzoek van University of Augsburg en Yale University

Bram vd Grinten 21/04/2009