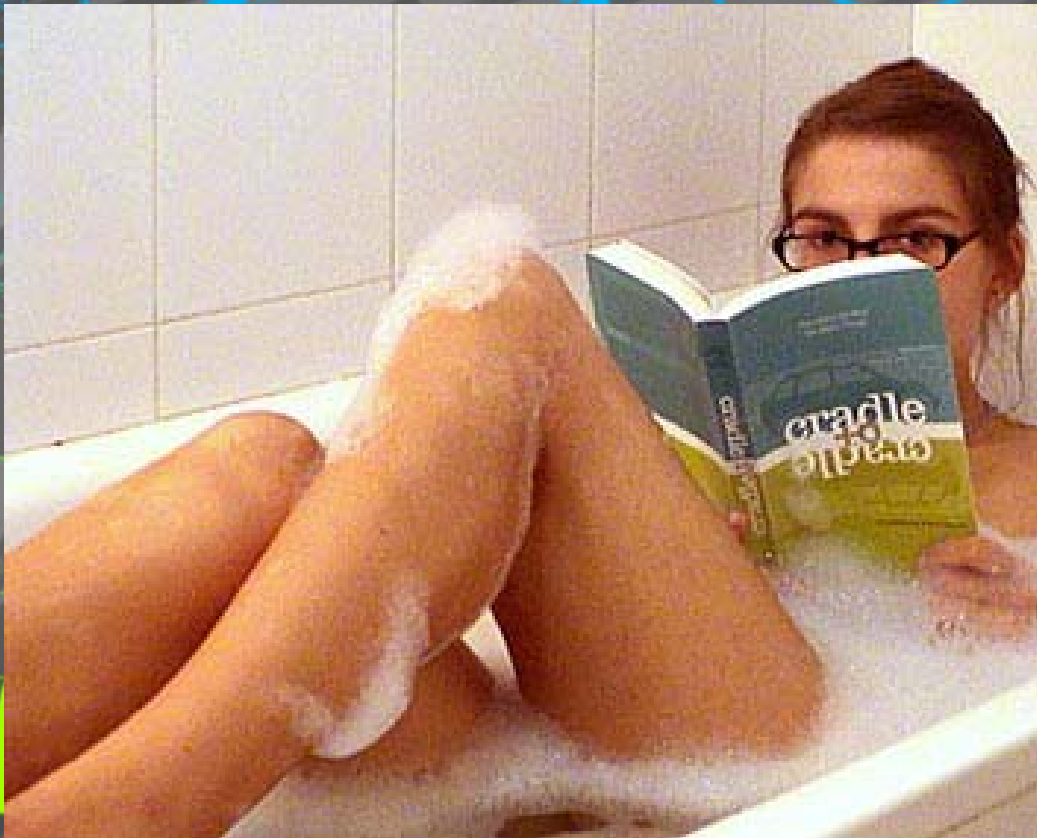


The background is a dark gray field with a complex pattern of technical and organic motifs. In the upper right, there are blue line-art flowers and a spiral. In the lower left, there is a large, bright green gear. Scattered throughout are green and blue line-art leaves and small flowers. Faint technical drawings, including circles, lines, and a small gear-like shape, are visible in the background.

Cradle to Cradle is...

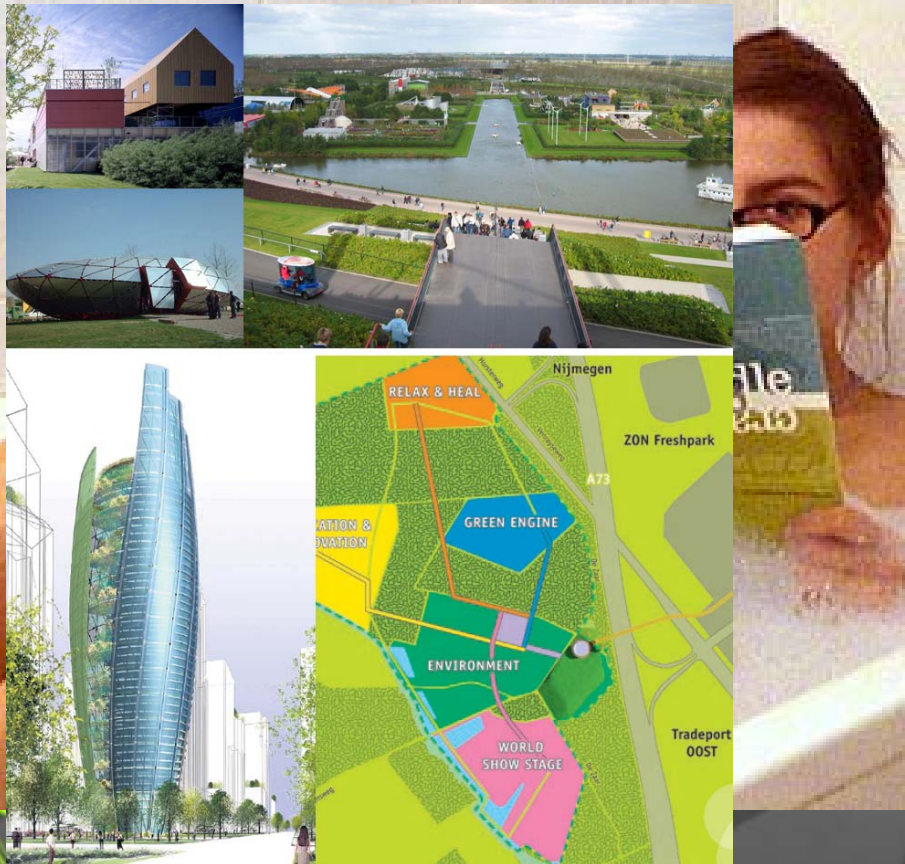


# Who am I to tell you



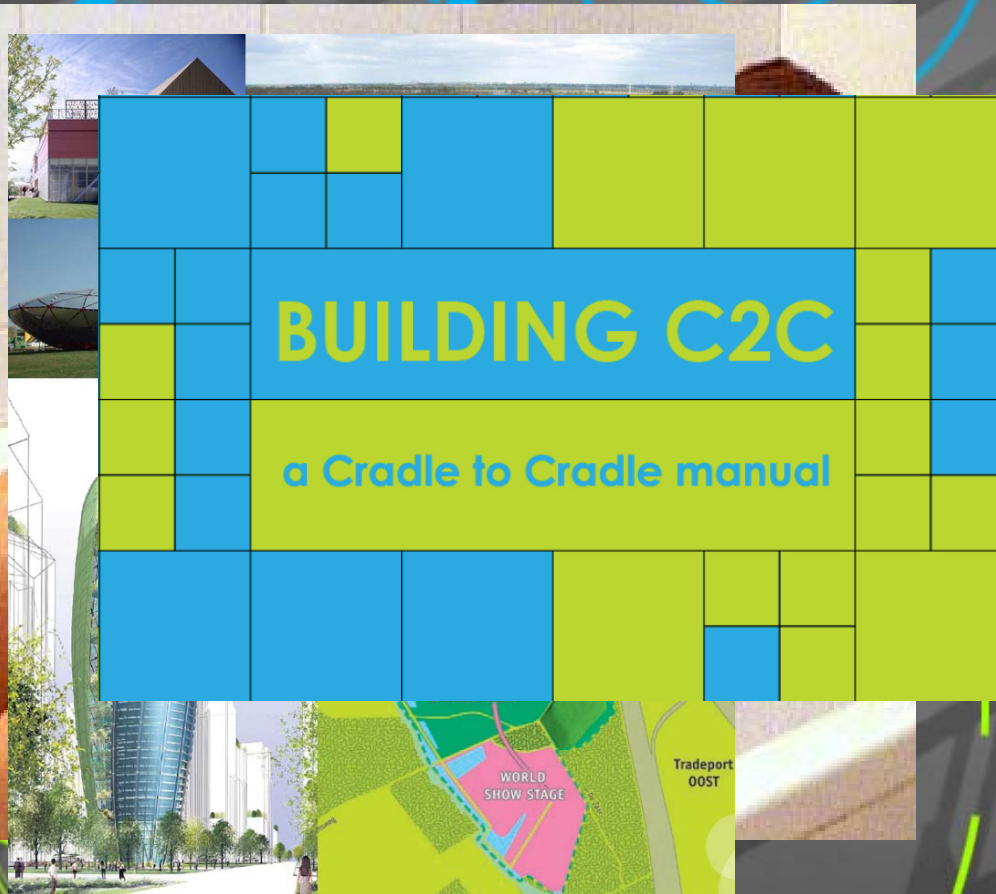


# Who am I to tell you





# Who am I to tell you





# Who am I to tell you





# Who am I to tell you



The collage features a central yellow rectangular area with a faint grid pattern. Overlaid on this yellow area is a small illustration of a house with a blue roof and a chimney. Below the house, the text "DINIEZAAMROUWEN" is written in a stylized, bold font. To the left of the yellow area is a vertical strip containing a grid of blue and green squares. To the right of the yellow area is a vertical strip containing a Google Earth satellite view of a building complex. The background of the collage is a dark gray with a pattern of blue and green floral and geometric shapes. The overall theme is architecture and urban planning.

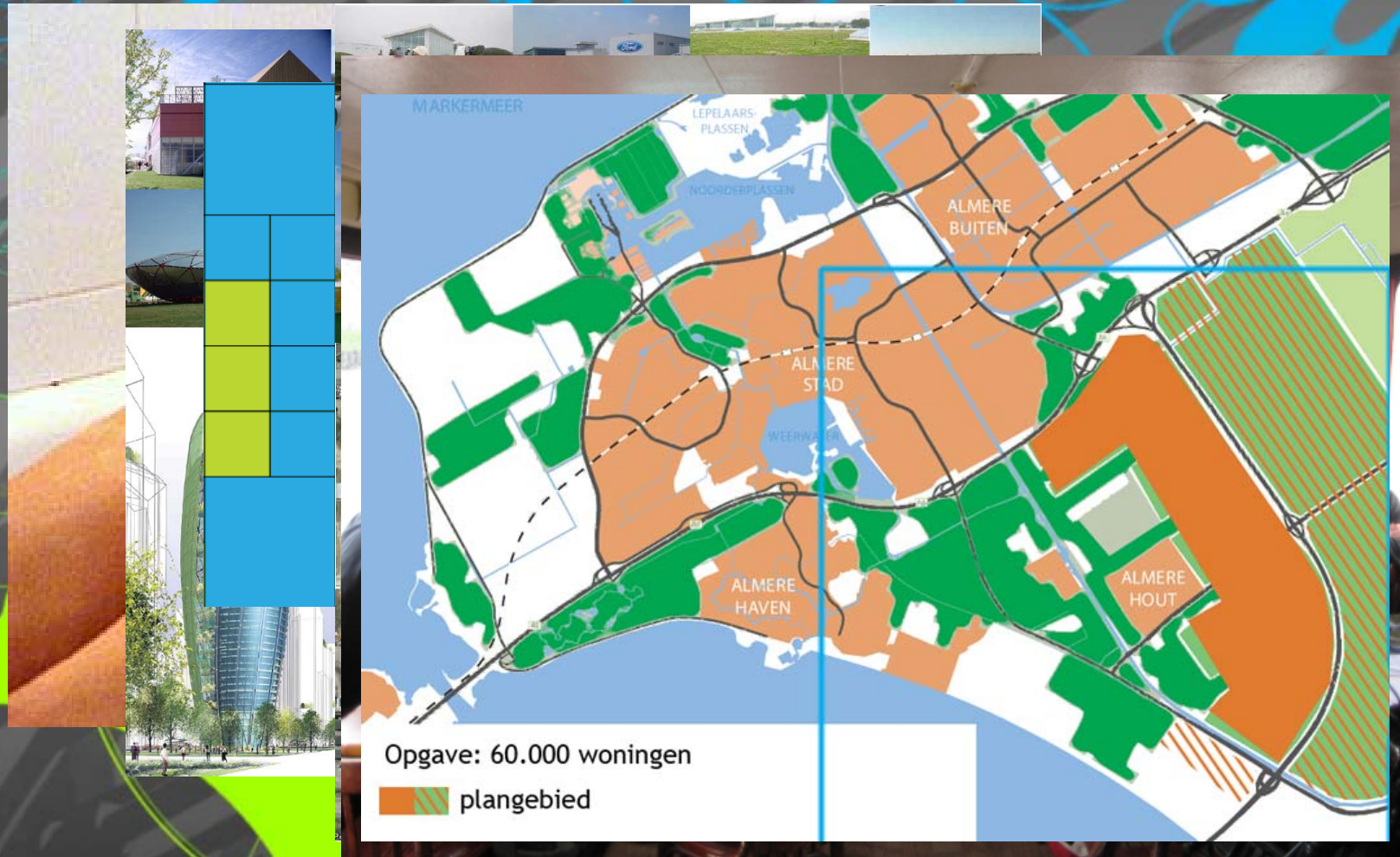


# Who am I to tell you



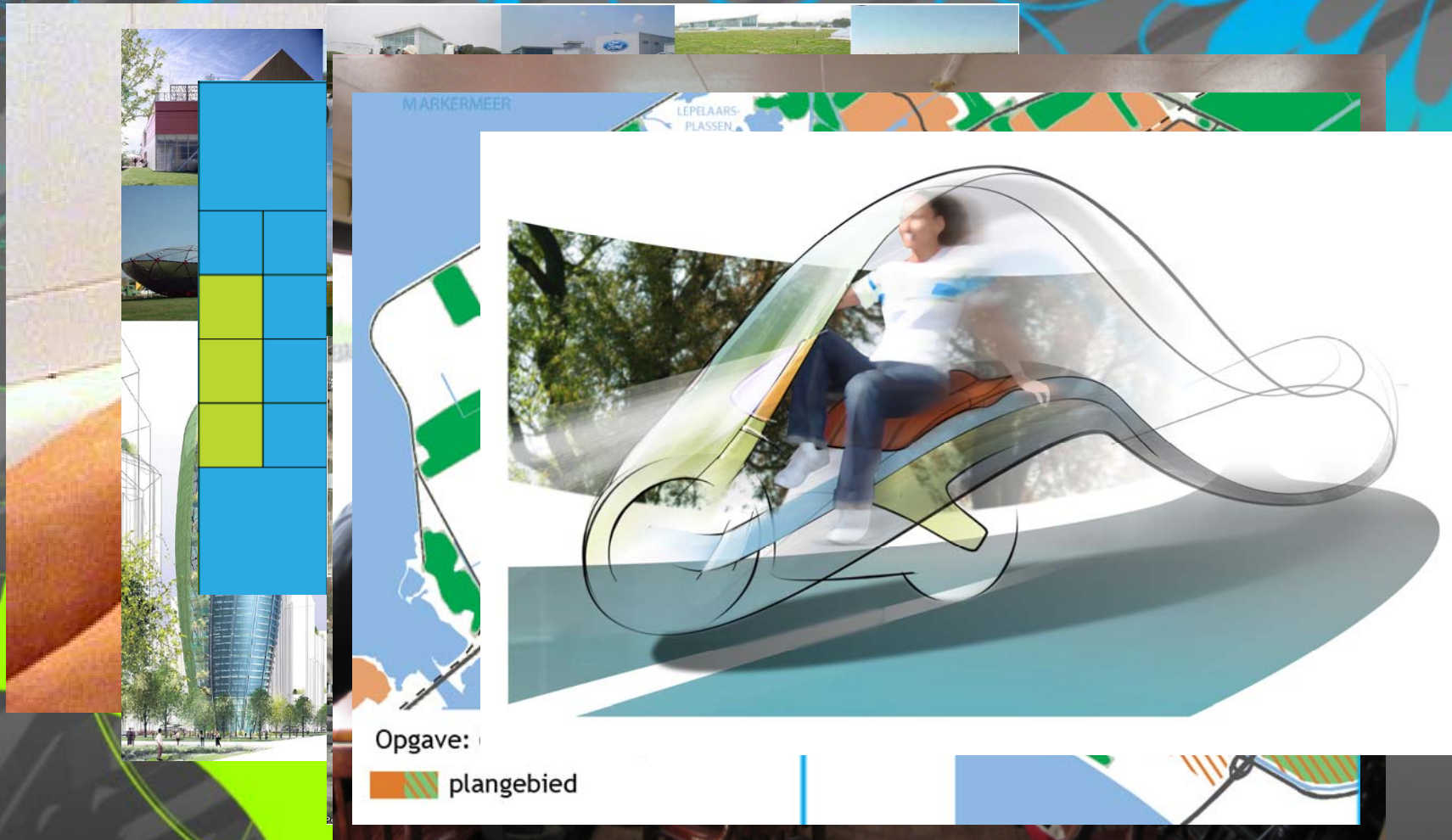


# Who am I to tell you



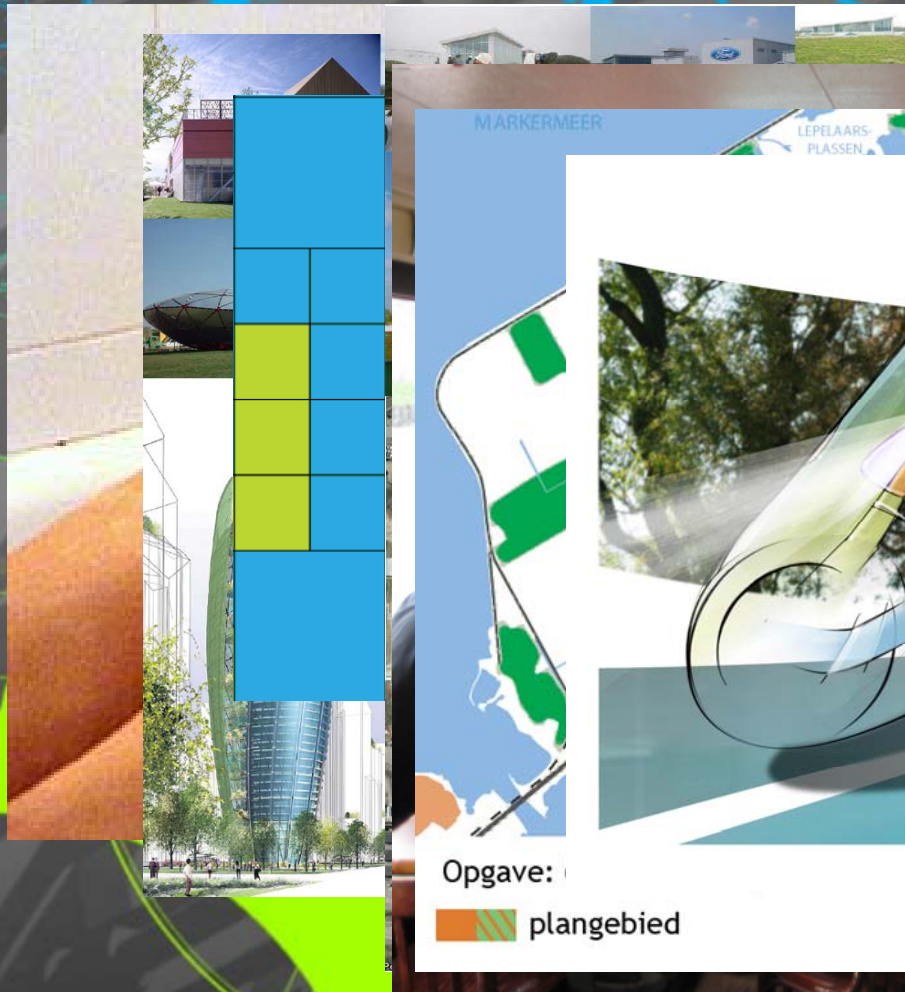


# Who am I to tell you





# Who am I to tell you





# C2C is a new paradigm





# C2C is necessary

## WHERE THE MINERALS ARE





# C2C is necessary

## WHERE THE MINERALS ARE

### WORLD TOTALS

Aluminium	32,350 (million tonnes)
Antimony	3.86 (million tonnes)
Chromium	779 (million tonnes)
Copper	937 (million tonnes)
Gold	89,700 (tonnes)
Hafnium	1124 (tonnes)
Indium	6000 (tonnes)
Lead	144 (million tonnes)
Nickel	143 (million tonnes)
Phosphorus	49,750 (million tonnes)
Platinum/Rhodium	79,840 (tonnes)
Silver	569,000 (tonnes)
Tantalum	153,000 (tonnes)
Tin	11.2 (million tonnes)
Uranium	3.3 (million tonnes)
Zinc	460 (million tonnes)

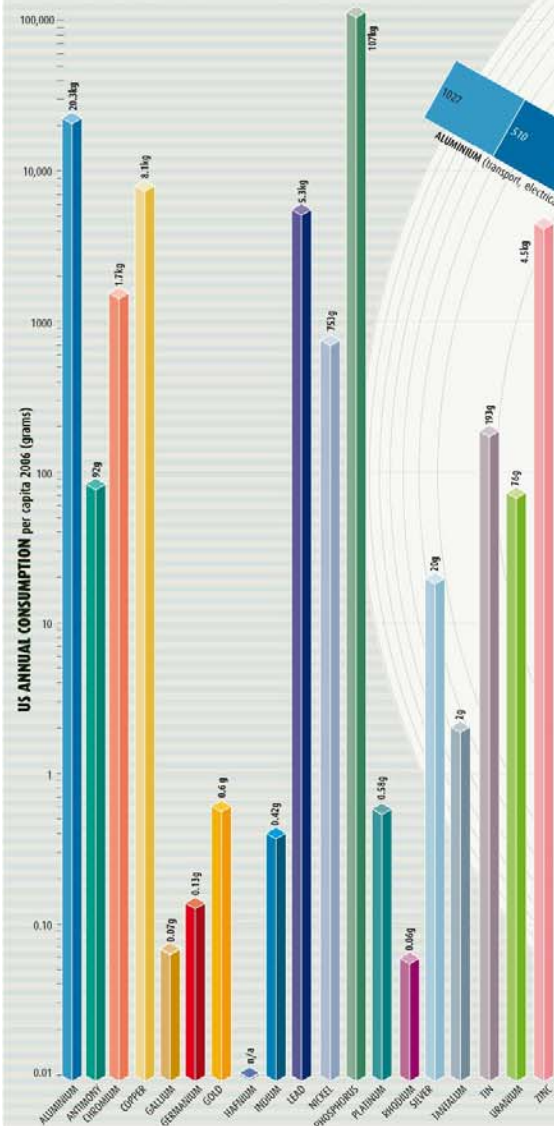


Figures refer to proportion of world reserves available for extraction given current technology, whether economic or not. Reserves below 5% not shown



# C2C is necessary

## HOW LONG WILL IT LAST?

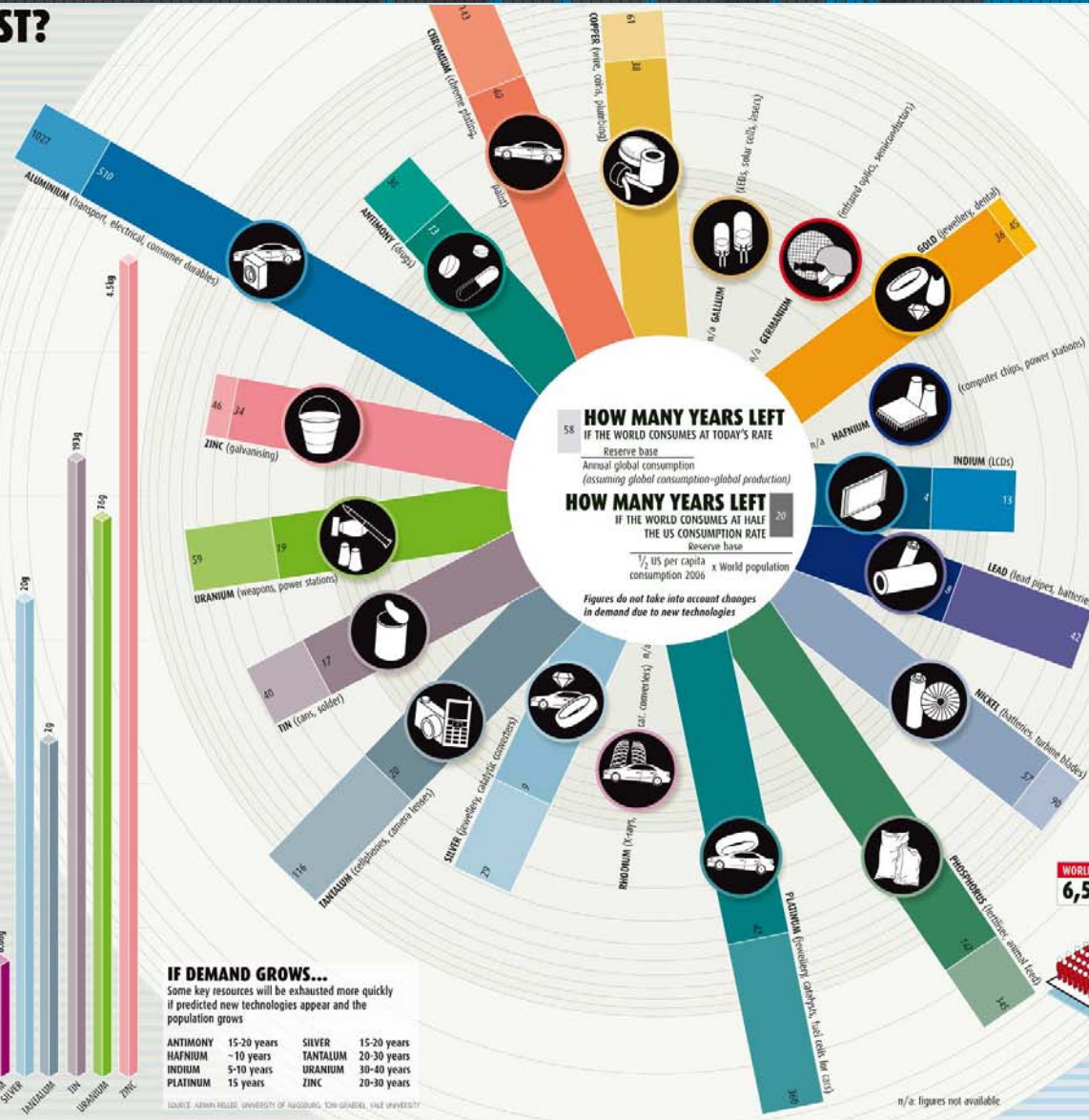


### IF DEMAND GROWS...

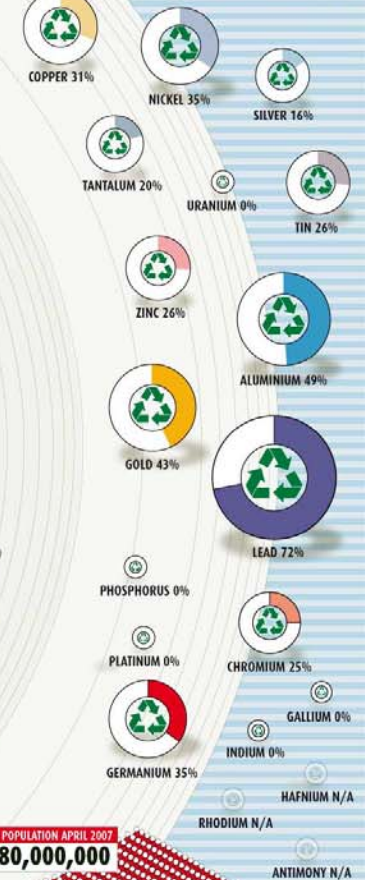
Some key resources will be exhausted more quickly if predicted new technologies appear and the population grows

ANTIMONY	15-20 years	SILVER	15-20 years
HAFNIUM	~10 years	TANTALUM	20-30 years
INDIUM	5-10 years	URANIUM	30-40 years
PLATINUM	15 years	ZINC	20-30 years

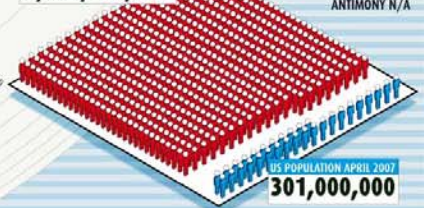
SOURCE: ARMIN HELLER, UNIVERSITY OF AACHEN; TOM GARDNER, FAIR UNIVERSITY



## PROPORTION OF CONSUMPTION MET BY RECYCLED MATERIALS (%)



WORLD POPULATION APRIL 2007  
6,580,000,000

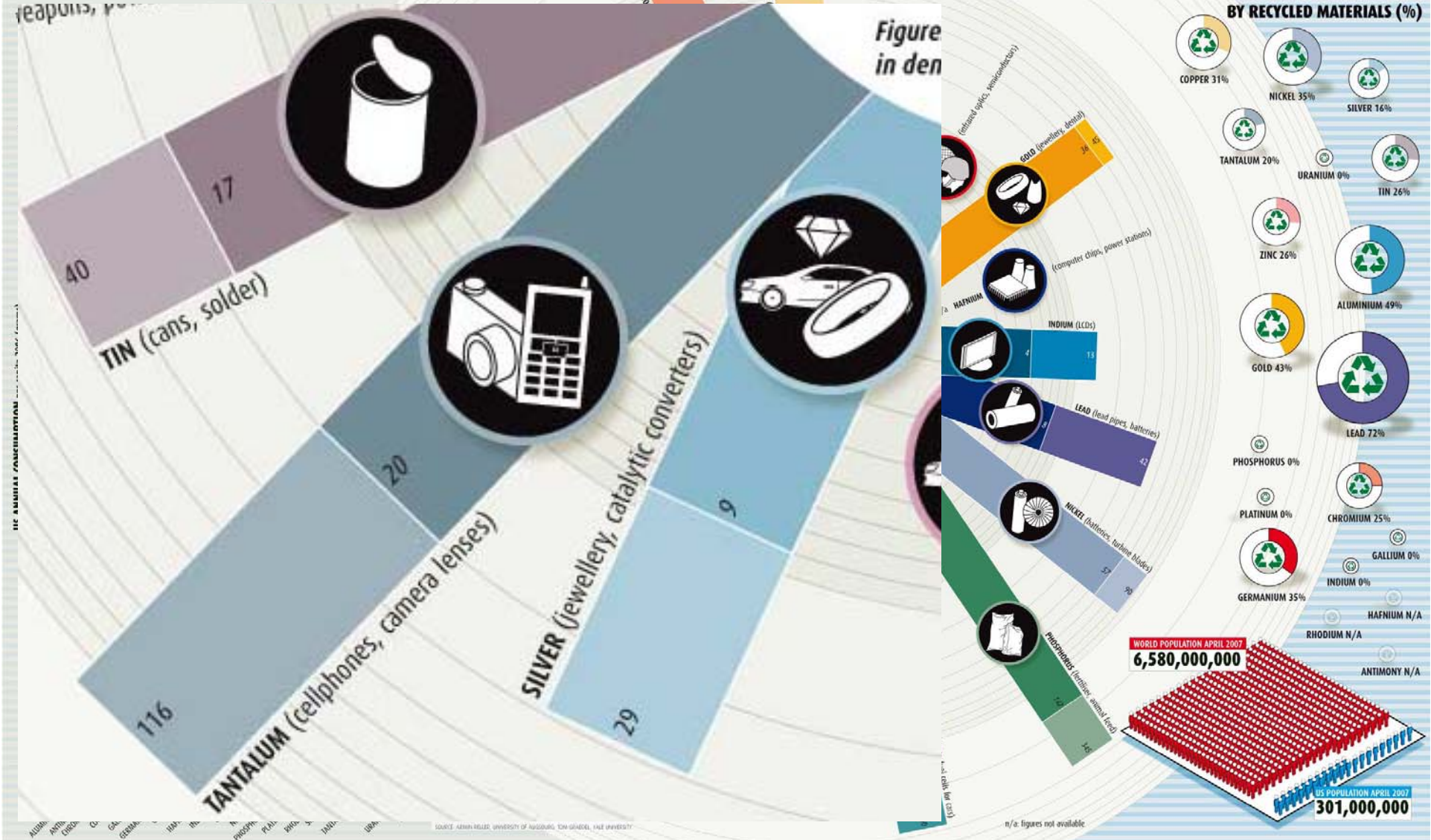


n/a: figures not available



# C2C is necessary

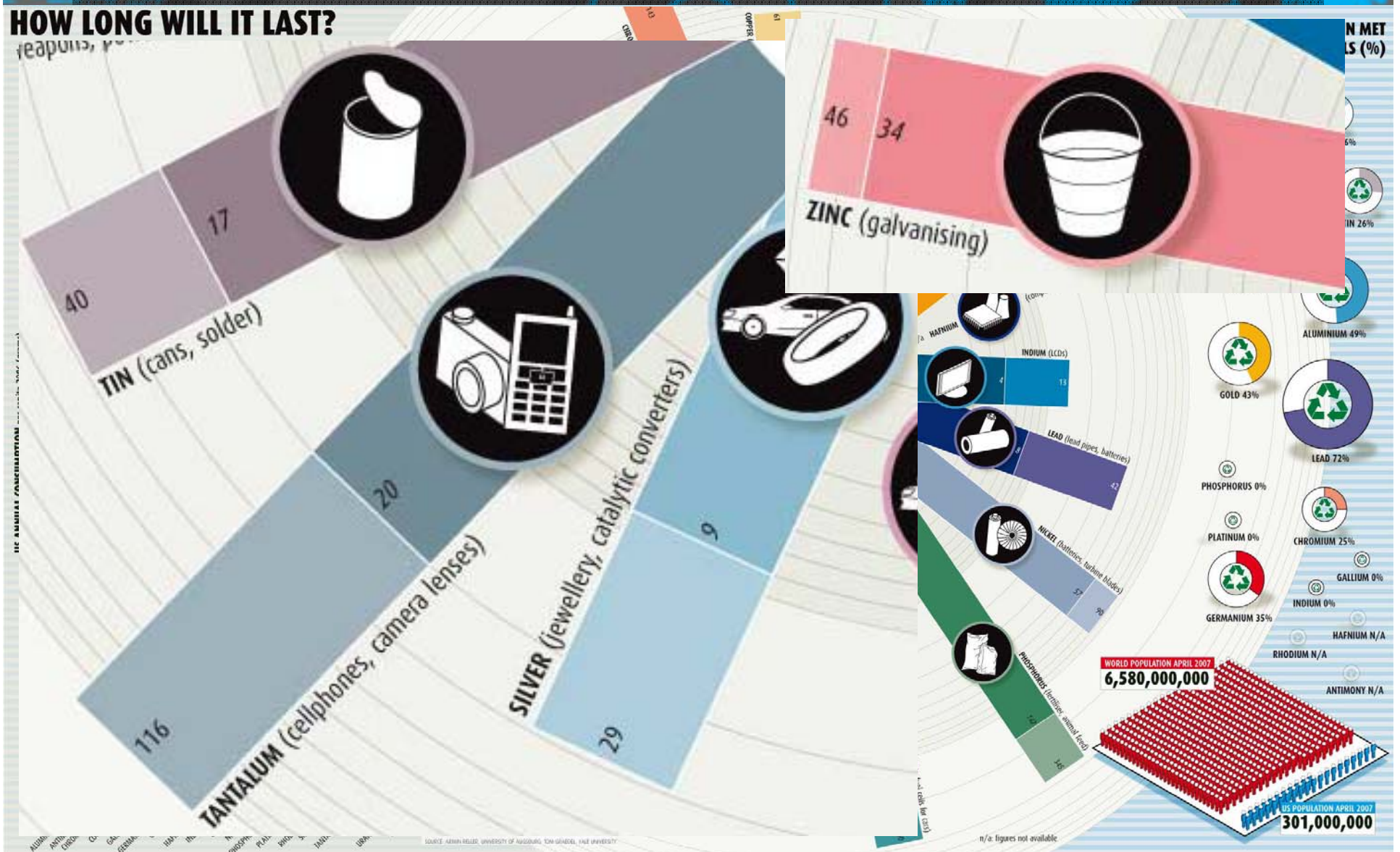
## HOW LONG WILL IT LAST?





# C2C is necessary

## HOW LONG WILL IT LAST?





# C2C is necessary

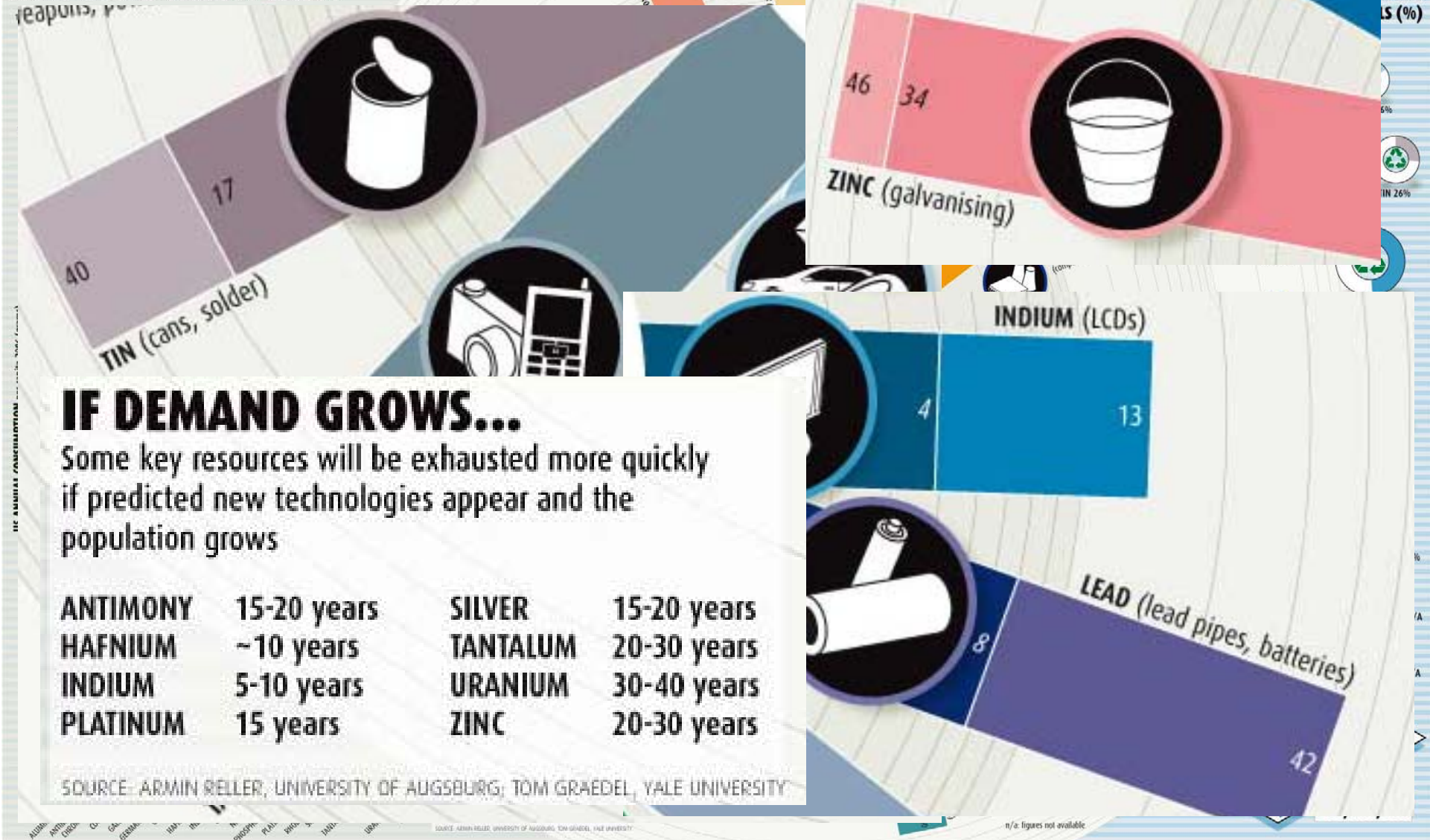
## HOW LONG WILL IT LAST?





# C2C is necessary

## HOW LONG WILL IT LAST?





C2C is utopian





# C2C is visionary

- Waste = Food
- Less bad = No good
- Efficient < Effective



# C2C is a unifying theory

- Michael Braungart
  - Chemist
  - Industrial Ecology
  - Greenpeace, EPEA
- William McDonough
  - Architect
  - Smart and Bioclimatic
  - Trias Ecologica
- Together
  - MBDC → C2C





# C2C is Life Cycle Assessment

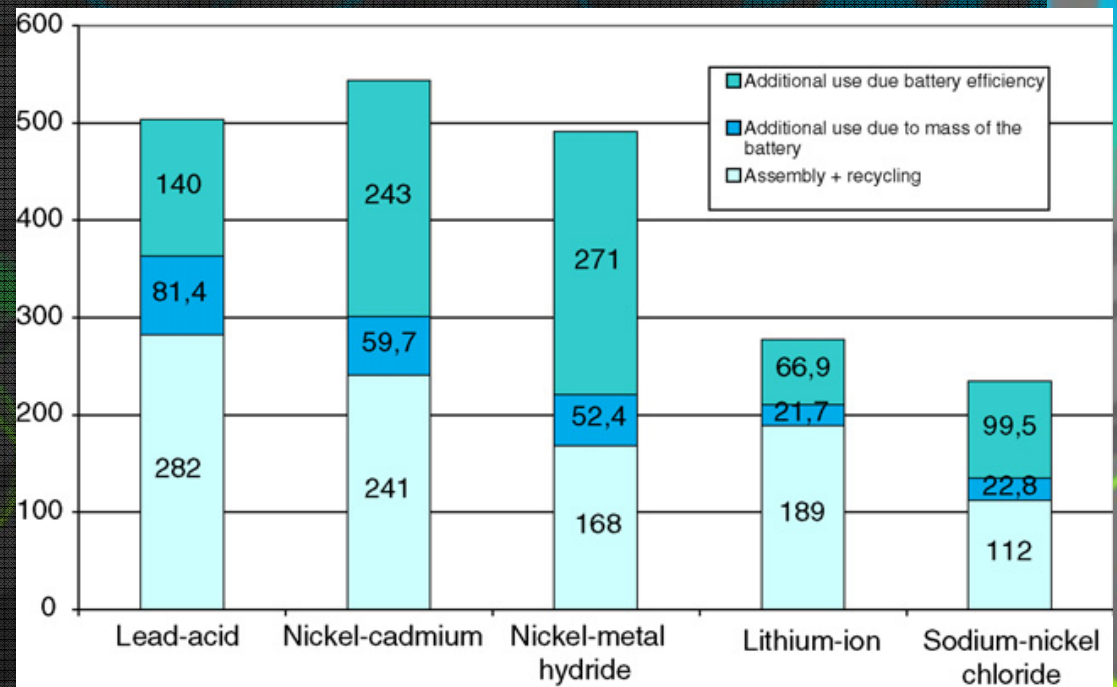
- Ecoscan
- Idemat
- Simapro
- CES
- Local resource





# C2C is Life Cycle Assessment

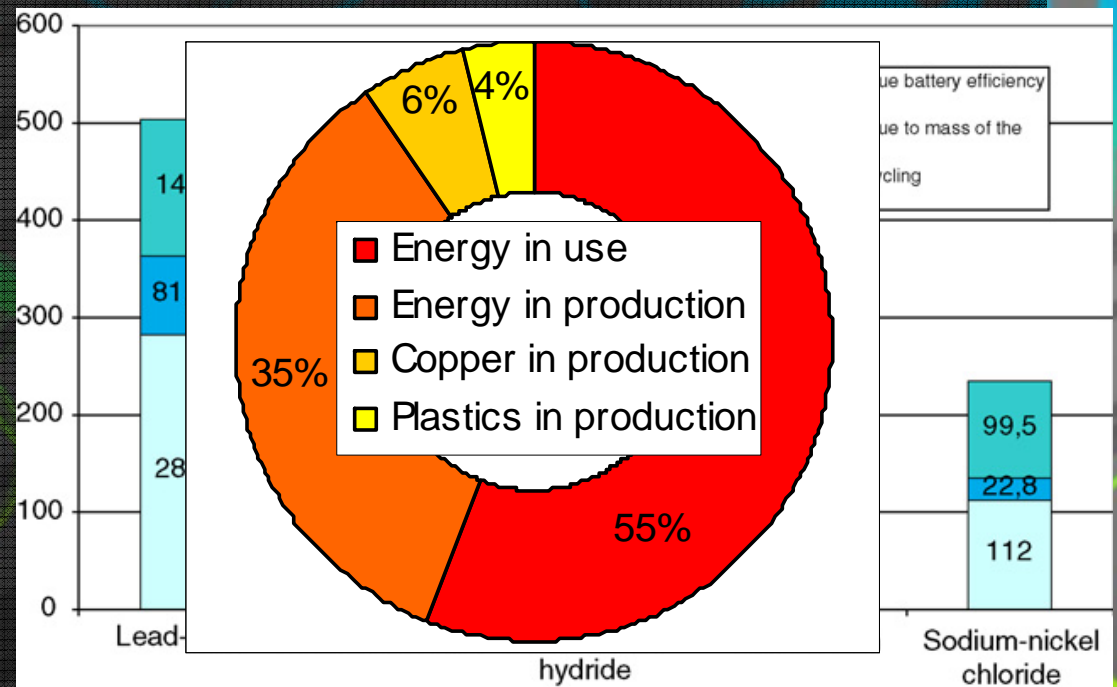
- Ecoscan
- Idemat
- Simapro
- CES
- Local resource





# C2C is Life Cycle Assessment

- Ecoscan
- Idemat
- Simapro
- CES
- Local resource





# C2C is cascading

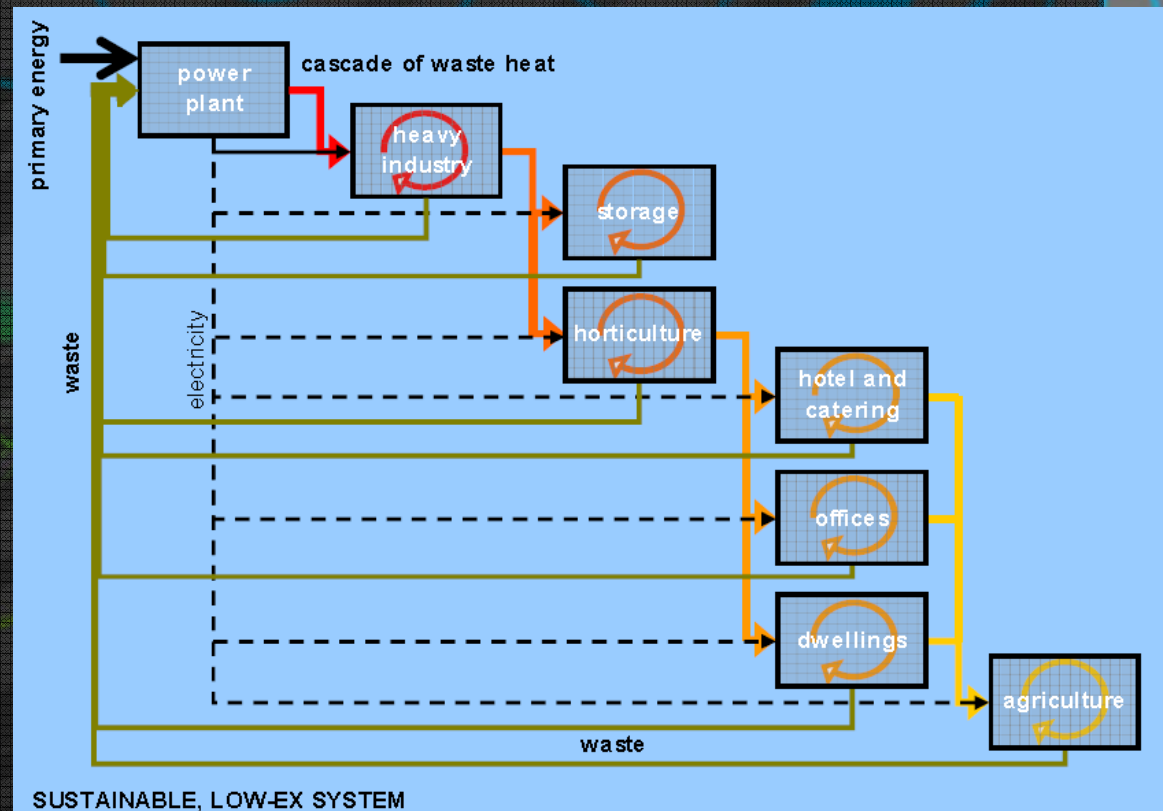
- Upcycling
- Refinement
- Superuse
- Exergy
- Waste trade





# C2C is cascading

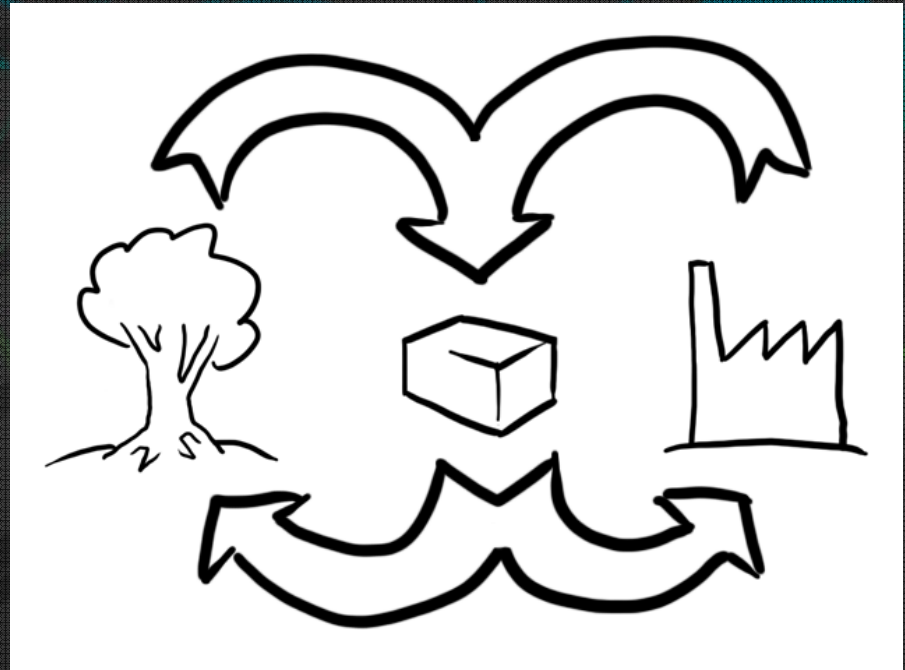
- Upcycling
- Refinement
- Superuse
- Exergy
- Waste trade





# C2C is design for retrieval

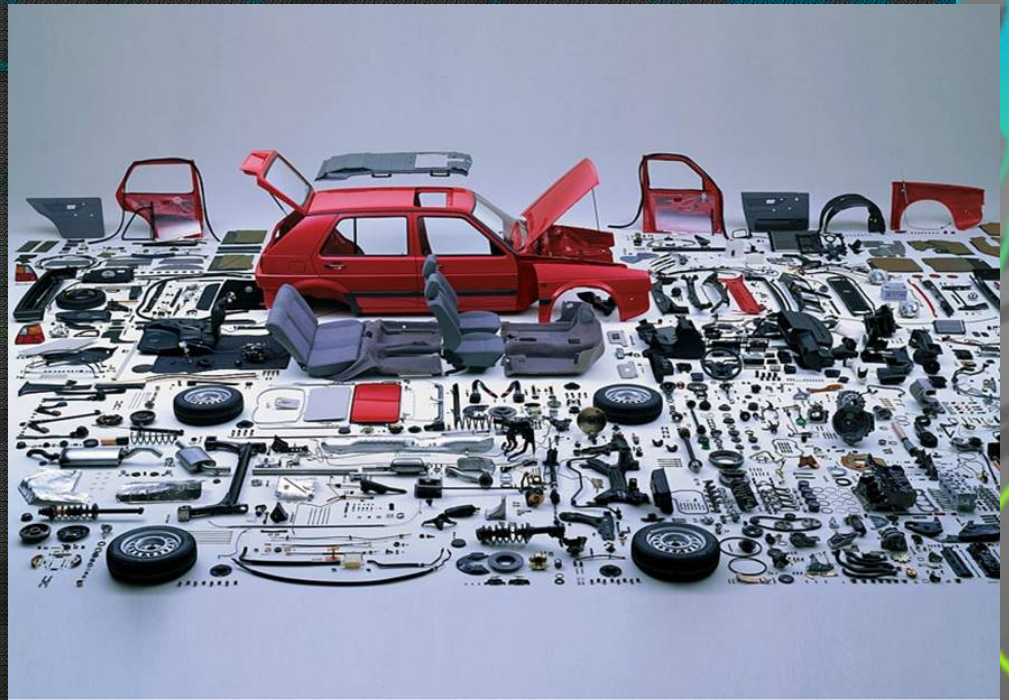
- Disassembly
- Biodegradables
- Recycling
- Material leasing





# C2C is design for retrieval

- Disassembly
- Biodegradables
- Recycling
- Material leasing





# C2C is design for retrieval

- Disassembly
- Biodegradables
- Recycling
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# C2C is design for retrieval

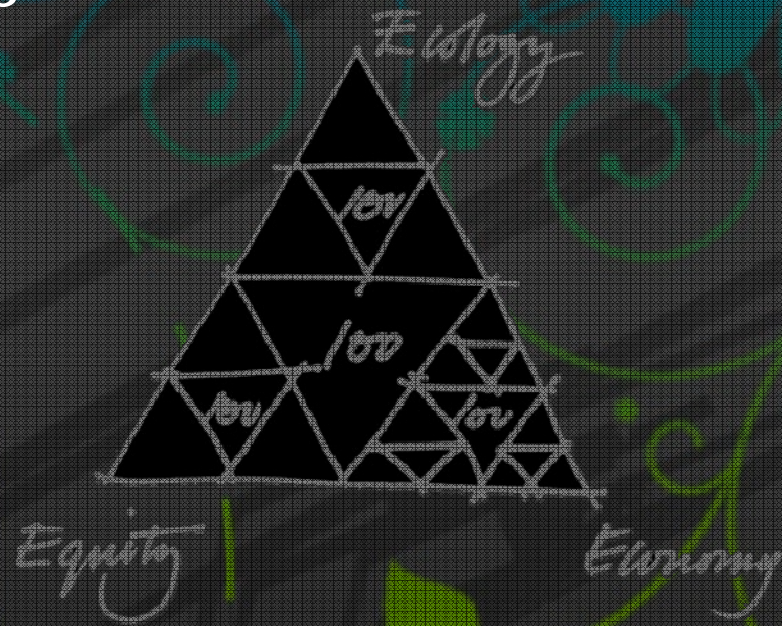
- Disassembly
- Biodegradables
- Recycling
- Material leasing





# C2C is a toolbox

- 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





# C2C is a toolbox

- 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

- 1 No harmful contaminants
- 2 Follow informed preference
- 3 Passive positive list
- 4 Activate positive list
- 5 Rediscover



# C2C is four certificates

- Basic: inventory and strategy
- Silver: 50% reuse and CSR
- Gold: 65%, clean materials, production and energy
- Platinum: 80%, water stewardship, 3<sup>rd</sup> party supervision



BASIC



SILVER



GOLD



PLATINUM

Parts/ materials: MBDC.com, materialconnexion.com, CradletoCradle.nl



# C2C is attainable



Herman Miller inc.  
office furniture

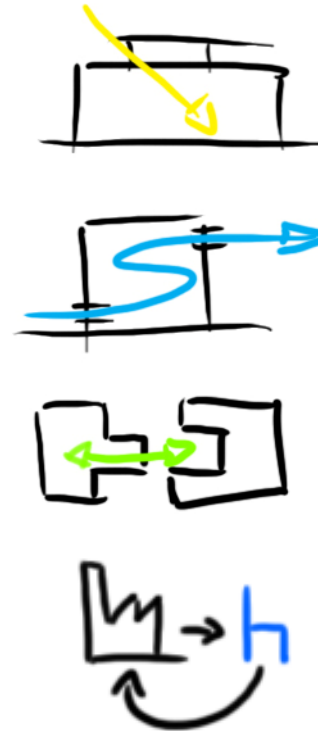




# C2C is attainable



Herman Miller inc.  
office furniture

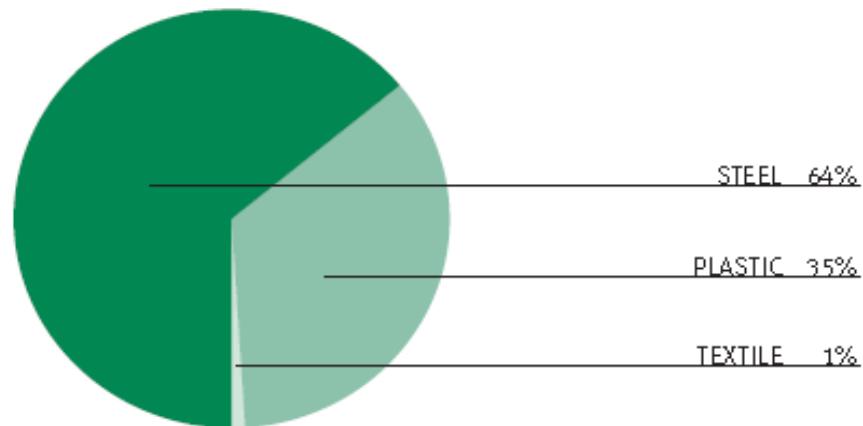




# C2C is attainable

## Material Content

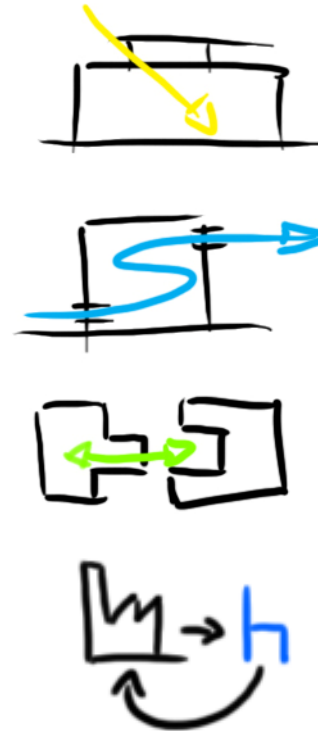
The Celle chair's components are constructed from steel, plastic, and textile.



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





# C2C is attractive



Nike considered





# C2C is attractive



Nike considered





# C2C is greenwashing



## Ford River Rouge Dearborn Truck plant





# C2C is greenwashing



Ford River Rouge  
Dearborn Truck plant





# C2C is greenwashing



Ford River Rouge  
Dearborn Truck plant





# C2C is greenwashing



Ford River Rouge  
Dearborn Truck plant



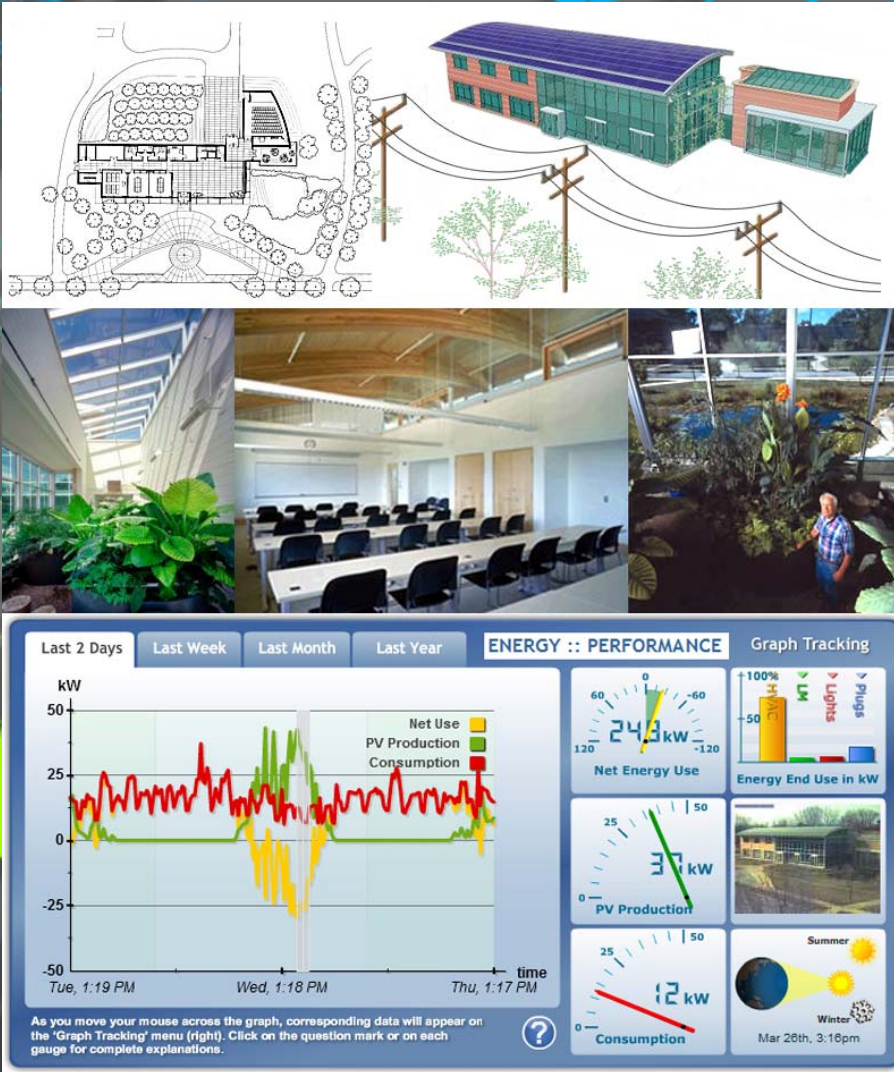


## 435

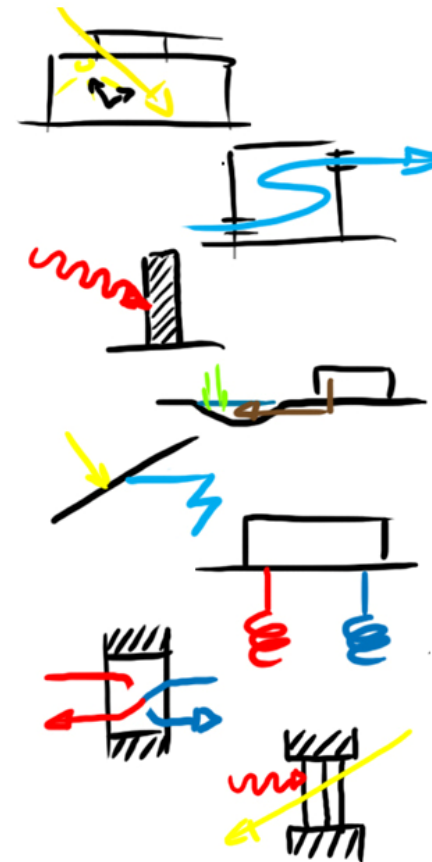




# C2C is inspiring

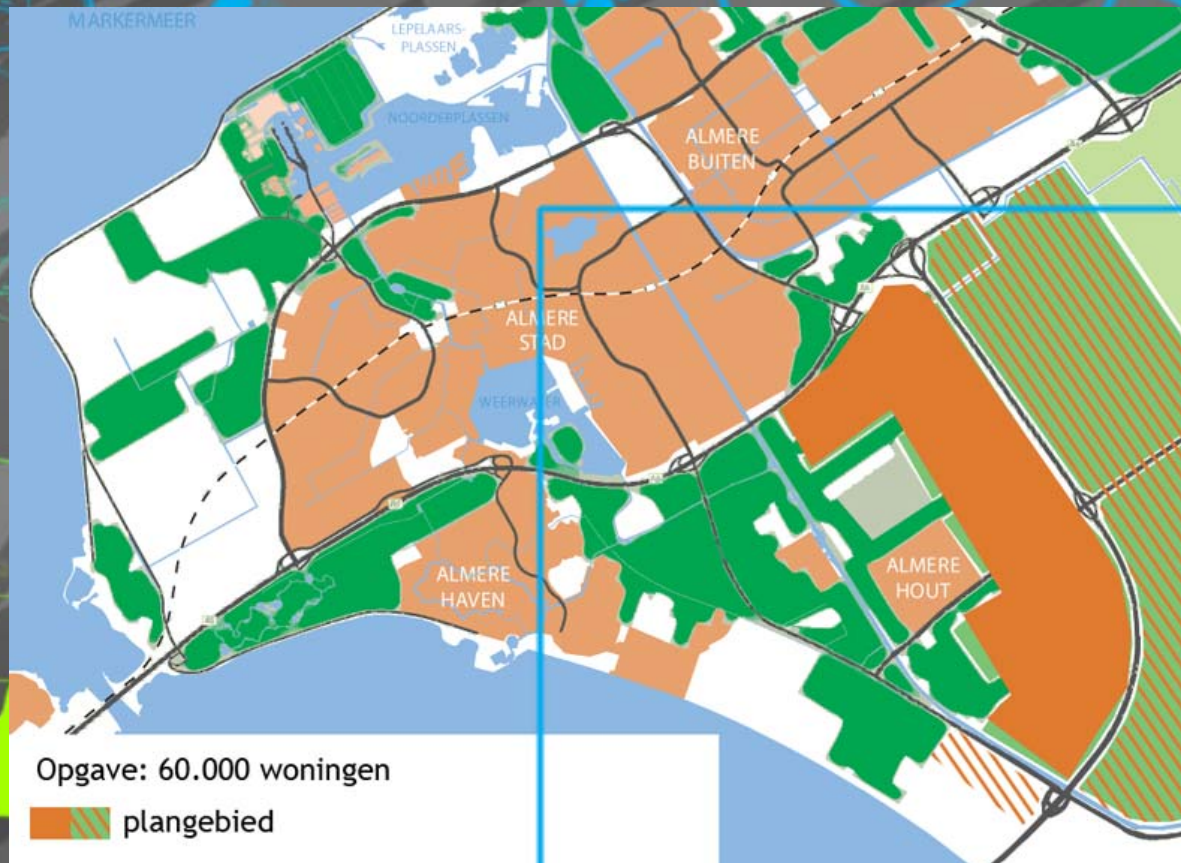


## Adam Joseph Lewis Centre for Environmental Studies





# C2C is booming





# C2C is booming





# C2C is booming





# C2C is booming

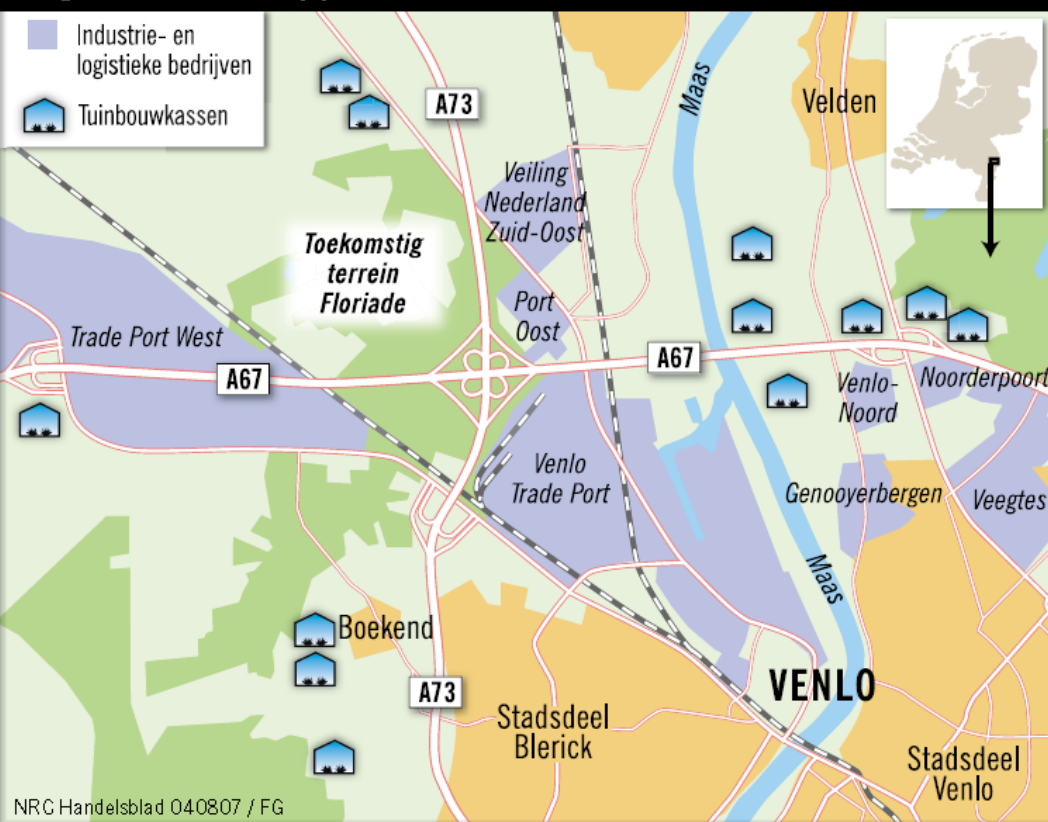




# C2C is booming



## Regio Venlo knooppunt van economische activiteit





# C2C is DIY

- Clean effluents
- Local solar income
- Design for disassembly
- Material lease
- Lightweight
- LCA
- Effective?

