



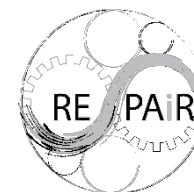
# GOVERNANCE CHALLENGES FOR A CIRCULAR ECONOMY IN THE AMSTERDAM METROPOLITAN AREA



Photo: M. Dabrowski

Dr Erwin Heurkens MSc

Grant Agreement No.: 688920 **REPAiR** - **RE**source Management in **Peri-urban AR**eas

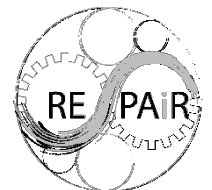


# Governance for a Circular Built Environment

## WHAT IS THE CONTEXT?

**URBAN AREAS** ARE RESPONSIBLE FOR AROUND **50% OF GLOBAL SOLID WASTE** AND BETWEEN 60% AND 80% OF GREENHOUSE GAS PRODUCTION (CAMAREN & SWILLING, 2012; CHÁVEZ ET AL., 2018).

FACING **ONGOING URBANISATION** IT IS ALSO PREDICTED THAT CONSUMPTION OF GOODS AND SERVICES AND, AS A CONSEQUENCE, THE **USE OF RESOURCES** IN CITIES, WILL **GROW** IN THE FUTURE (MCKINSEY, 2016).



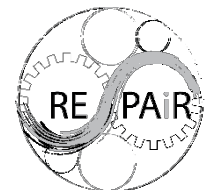
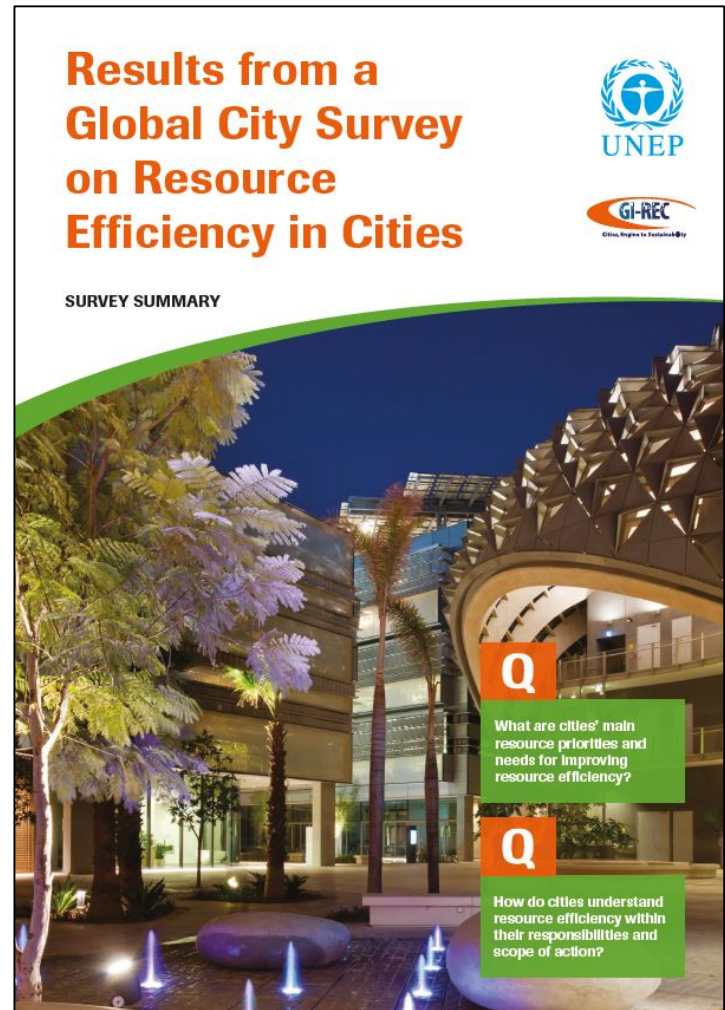
## WHAT DOES IT MEAN FOR CITIES?

RESOURCE EFFICIENCY HAS THE POTENTIAL TO ENHANCE THE **QUALITY OF LIFE** FOR ALL WHILE MINIMIZING CONSUMPTION.

CRUCIAL TO BETTER PROMOTE THE **BUSINESS CASE FOR INVESTMENT** TO STRENGTHEN THE POLITICAL MOTIVATION FOR ACTION, AS WELL AS EXISTING **INNOVATIVE FINANCING SCHEMES**.

**BIODIVERSITY AND ECOSYSTEMS SERVICES** AS WELL AS CLIMATE STABILITY ARE UNDERSTOOD TO BE THE RESOURCES AT **GREATEST RISK**,

BUT IN IMPLEMENTATION, **SECTOR-SPECIFIC APPROACHES** TO IMPROVE **URBAN ECOSYSTEM MANAGEMENT** LAG BEHIND IN URGENCY.

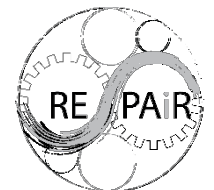


# Governance for a Circular Built Environment

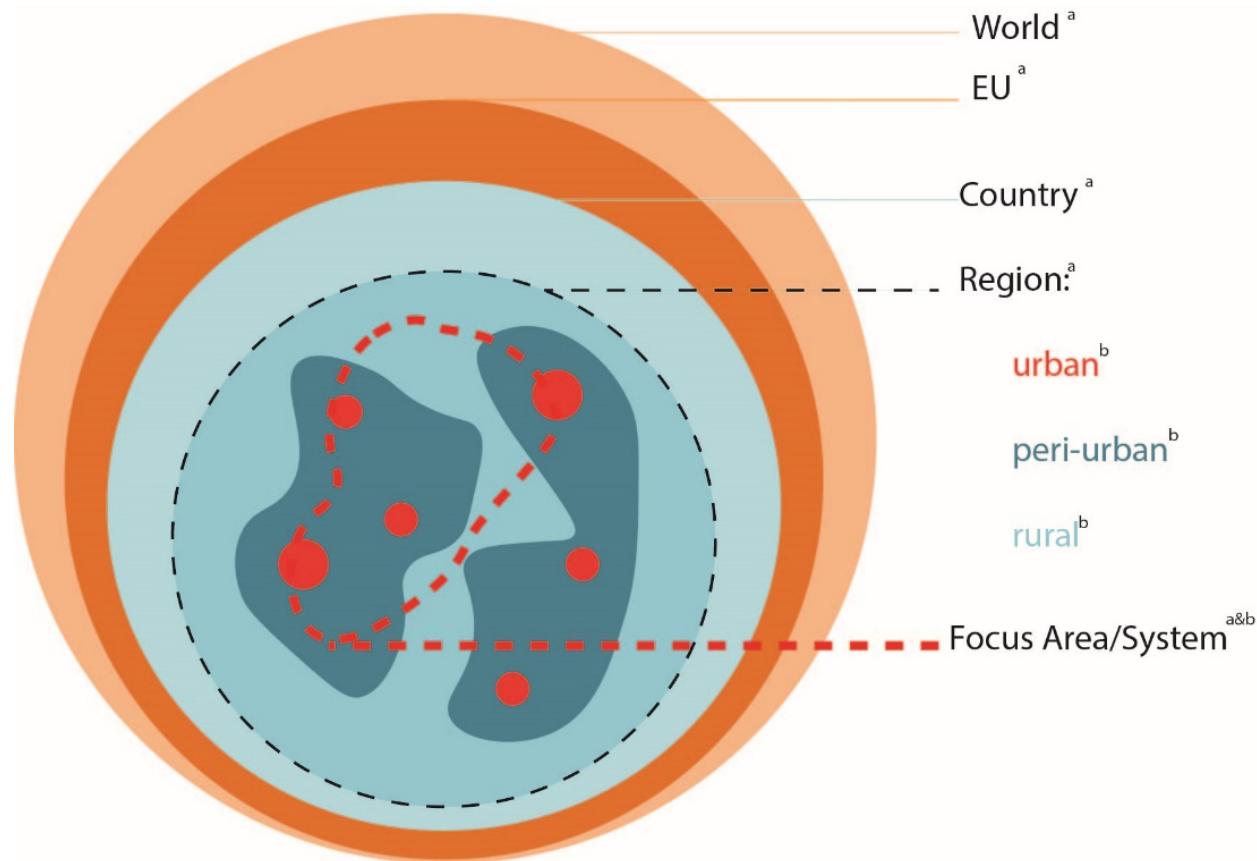
## WHICH SCALE TO FOCUS ON?

AMONG THE EXTENSIVE RECENT LITERATURE ON THE CITY SCALE OF CE IS A SUGGESTED APPROACH ABLE TO PROVIDE A **HOLISTIC INTERPRETATION**, ALLOWING A **SYSTEMATIC VIEW OF PROBLEMS AND OBJECTIVES** (GHISELLINI ET AL., 2016; GENG & DOBERSTEIN, 2008).

MORE RECENTLY GIRARDET (2015) ATTEMPTED TO CONNECT THE CONCEPT OF CE WITH **URBAN DEVELOPMENT APPROACHES** IN HIS **REGENERATIVE CITY CONCEPT**, ACCENTUATING THE NECESSITY OF **EFFECTIVE GOVERNANCE IN THE PROCESS OF APPLYING CE IDEAS TO CITIES**.



# System Boundaries: Spatial Scales & Waste Flows

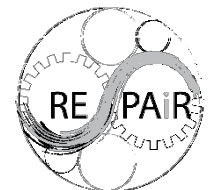


<sup>a</sup> Areas based on administrative boundaries

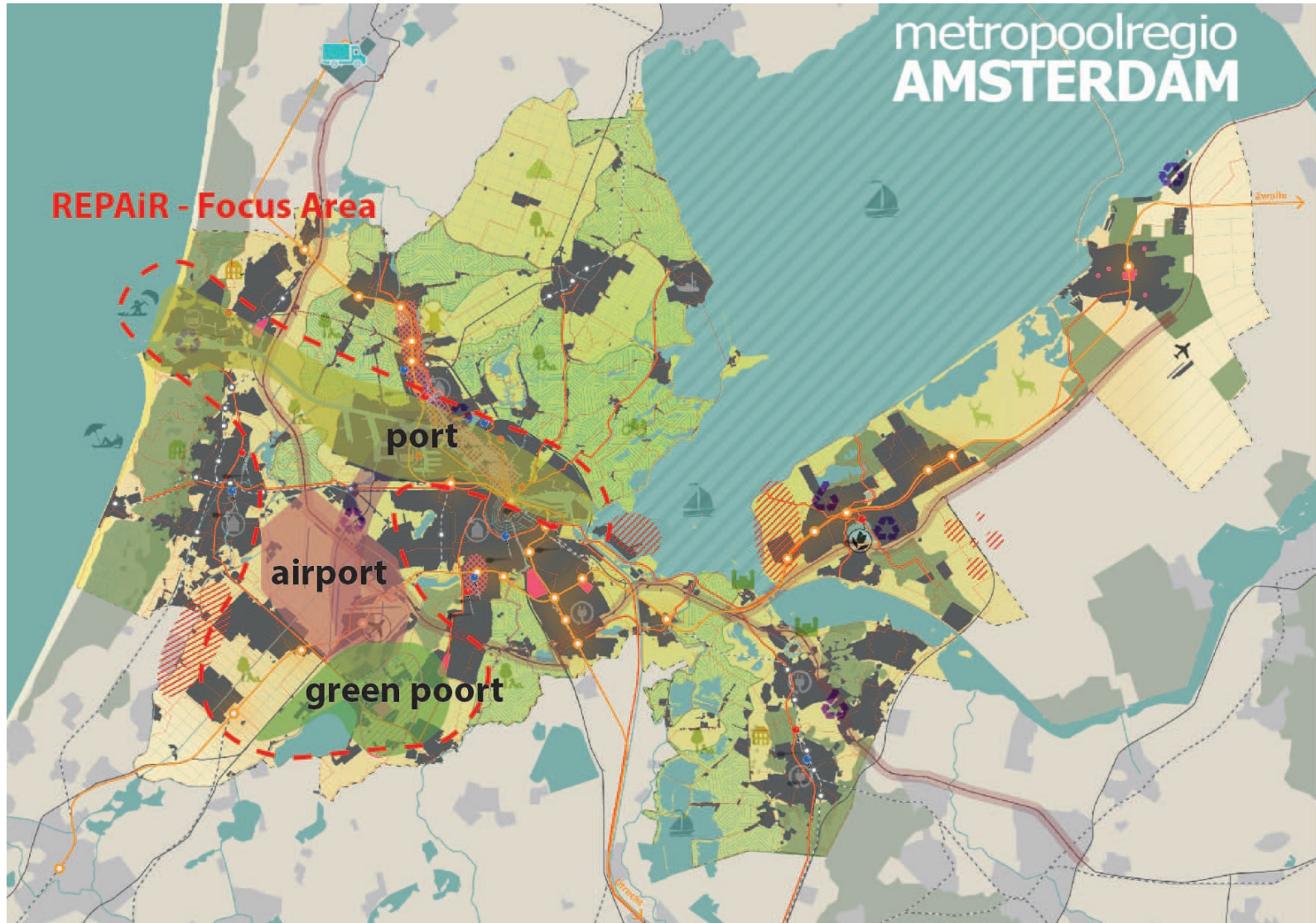
<sup>b</sup> Areas based on demographic and land cover data

## WASTE FLOWS

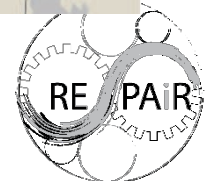
- WASTESCAPES
- FOOD WASTE
- DEMOLITION & CONSTRUCTION WASTE



# The Focus Spatial Area/System in the AMA



THE REPAIR FOCUS AREA IN THE AMA WITH IT'S THREE PORTS AS KEY DRIVERS FOR CE DEVELOPMENT

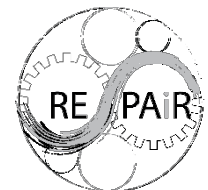


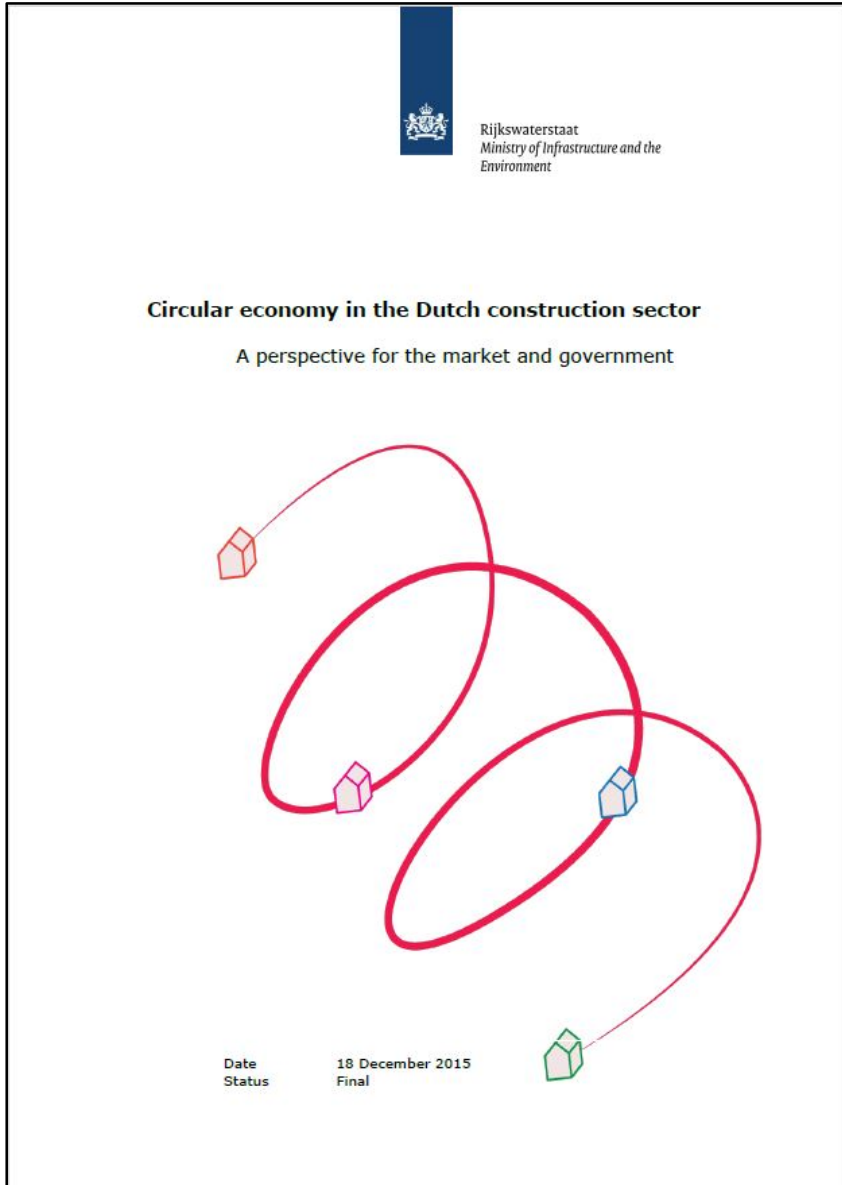
# Governance & Circular Built Environment

## DO SECTORAL APPROACH WORK?

FOR SUSTAINING AND FACILITATING CHANGES, A **TERRITORIAL GOVERNANCE APPROACH** MUST BE CONSIDERED WHICH INTEGRATES

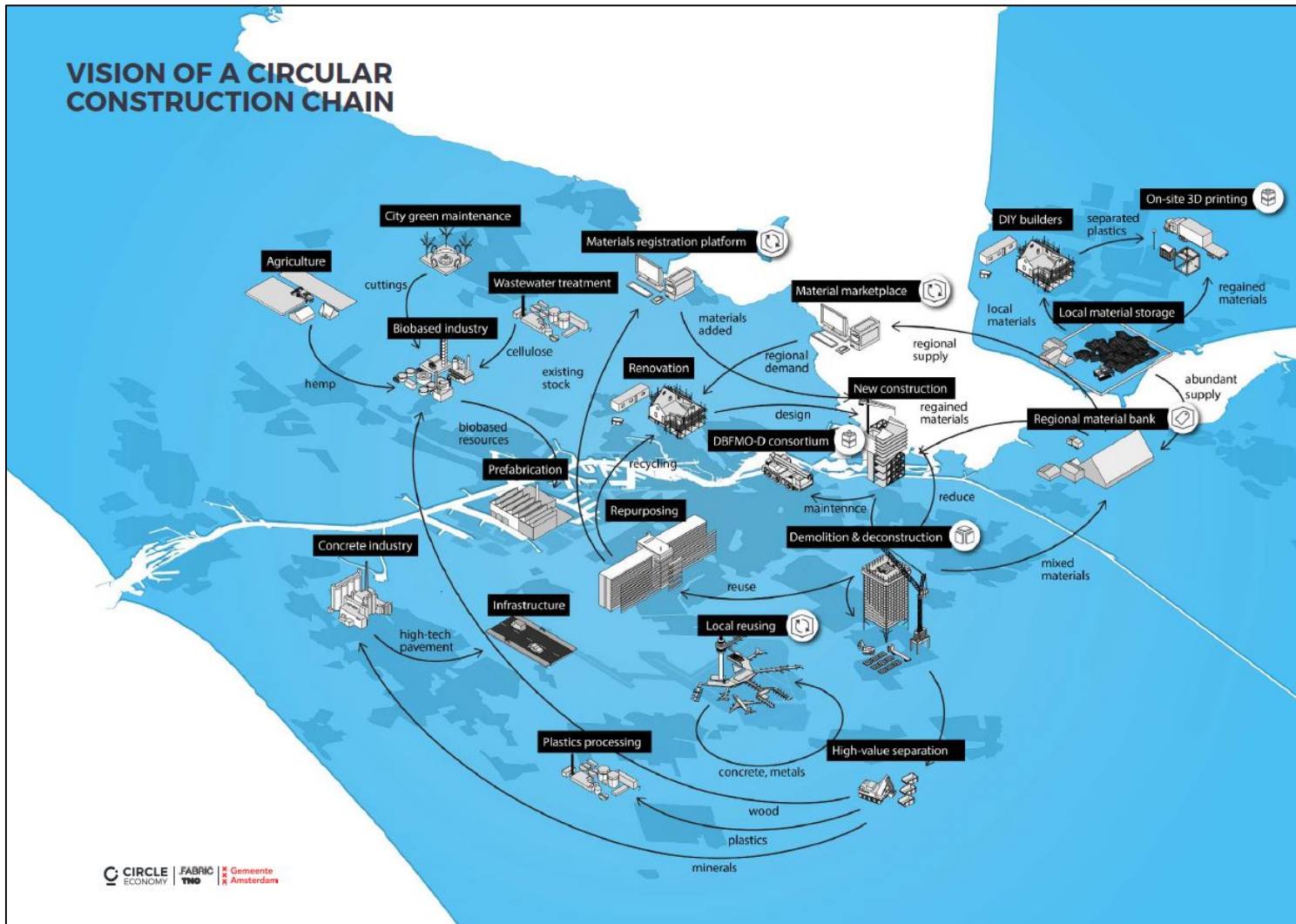
THE **MULTI-LEVEL AND CROSS-SECTORAL FEATURES OF GOVERNANCE** (SCHMITT & VAN WELL, 2016; VAN WELL & SCHMITT, 2016).



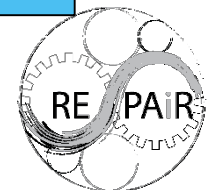




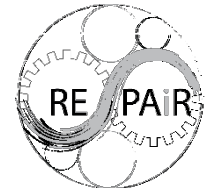
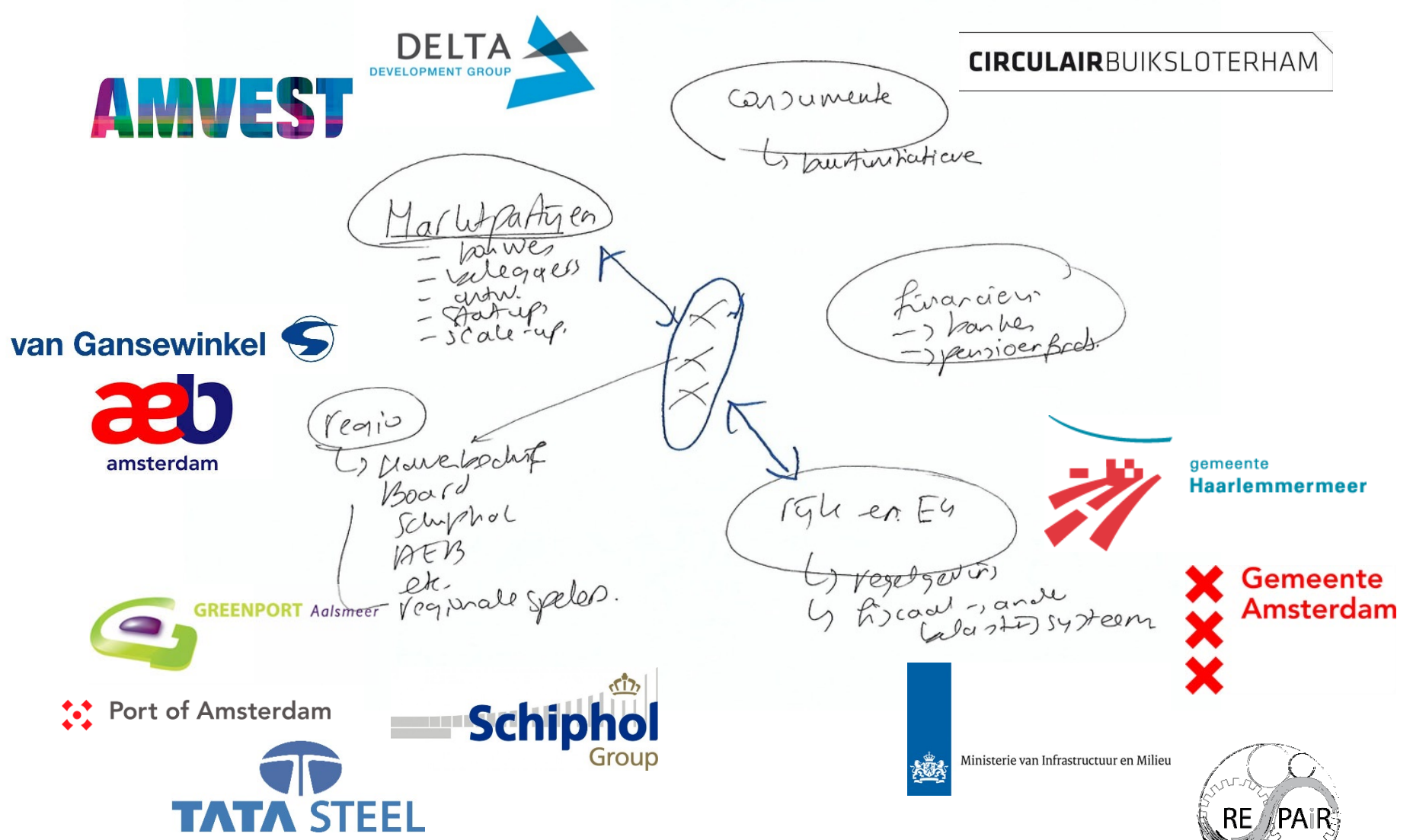
# Combinations: Circular Construction Chain



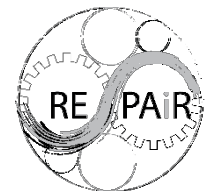
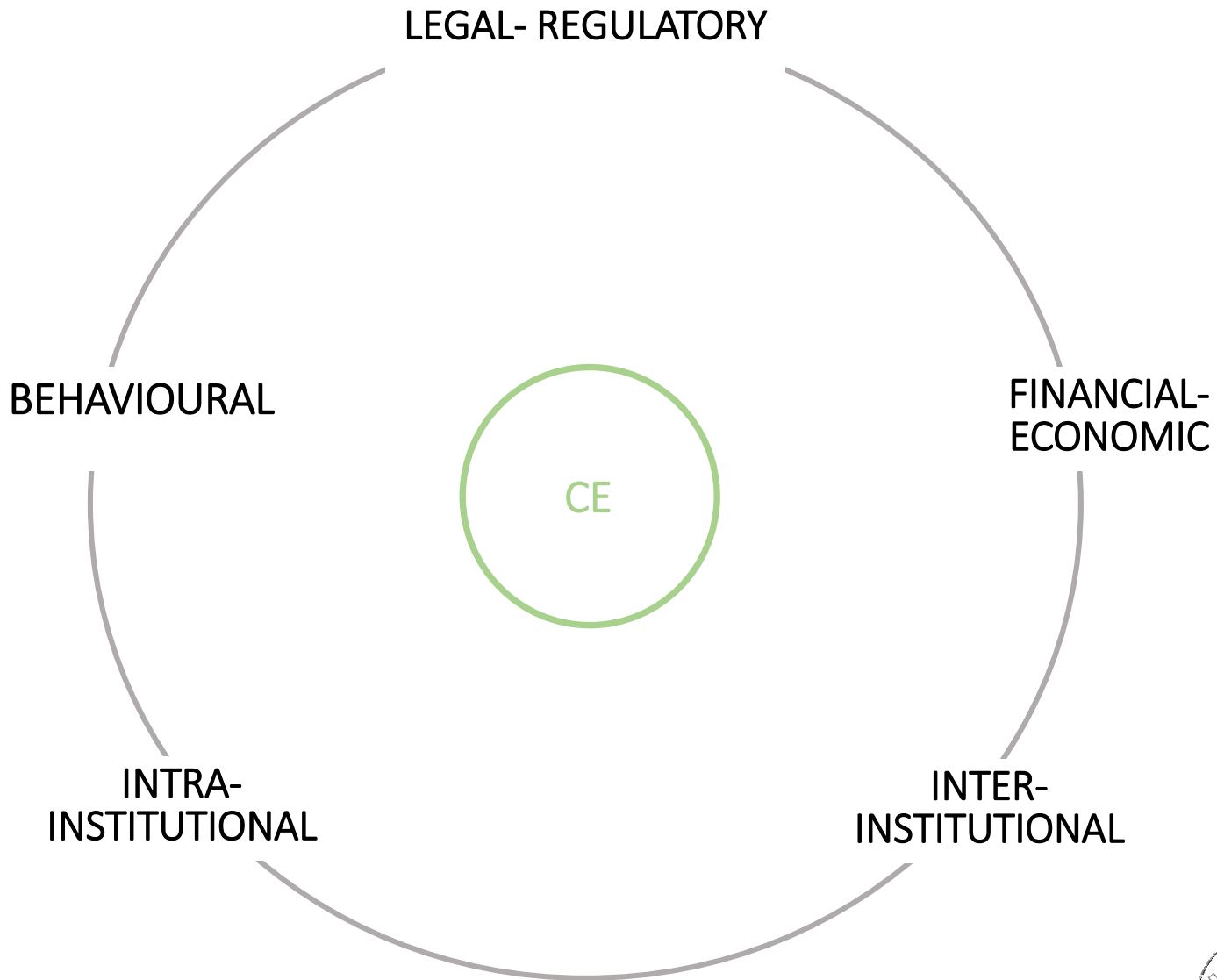
GEMEENTE AMSTERDAM, CIRCULAR AMSTERDAM (2016)



# WP6: Interviewing Key Stakeholders in AMA on Governance issues related to CE



# Challenges overview



TENDERING PROCEDURES NOT ADAPTED FOR CE

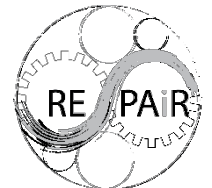
BUILDING REGULATIONS TOO RIGID

RESTRICTIVE REGULATIONS ON TRANSPORT OF WASTE

NO CLEAR RULES ON WASTE OWNERSHIP

NO TAX DISINCENTIVES FOR PRODUCING WASTE

LACK OF CONSISTENCY IN SUSTAINABILITY POLICIES OF MUNICIPALITIES



# EIS: Circular (land) tendering


**Gemeente  
Amsterdam**



## Roadmap Circulaire Gronduitgifte

Een introductie in circulaire bouwprojecten



## Circulair Cityplot Buiksloterham

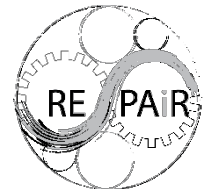
### HERONTWIKKELING GEBIED IN AMSTERDAM NOORD

Voor de Cityplot in Buiksloterham is de ambitie om het complete gebied te ontwikkelen volgens de principes van de circulaire economie.



Bron: *STUDIONINEDOTS | Delva Landscape Architects*

Voor het gebied Buiksloterham is er de ambitie om het complete gebied te laten ontwikkelen volgens de principes van de Circulaire Stad. Dit is vastgelegd in het visiedocument "Circulair Buiksloterham", welke door Metabolic, STUDIONINEDOTS en DELVA Landscape Architects is opgesteld.










# Criteria aligned with / embedded in practice?

## Criteria voor circulaire bouw

Op basis van de vier principes voor circulair bouwen zoals genoemd op bladzijde 13, en de vijf gekozen thema's voor circulair bouwen (zie hoofdstuk 2) zijn 32 criteria voor circulaire bouw opgesteld, die kunnen worden gebruikt bij het vormgeven van een circulaire tender. Deze staan in figuur 1 weergegeven. De gedetailleerde uitleg en scoringsmethodiek van deze criteria is te vinden in de bijlage A. Hoewel circulariteit een complex begrip is, kunnen we op basis van de overwegingen in de beide voorgaande hoofdstukken een definitie geven van circulair bouwen.

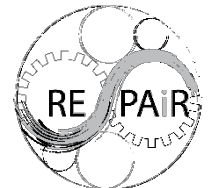
Circulaire bouw is te definiëren als: "Het ontwerpen, construeren, en slopen van een gebouw op zo'n manier dat naast het hoogwaardig inzetten en hergebruiken van materialen, en een adaptief en toekomstbestendig ontwerp, ook duurzaamheidsambities op het gebied van energie, water, en biodiversiteit en ecosystemen worden meegenomen."

Bij circulariteit bij woningbouw in Amsterdam wordt gefocust op onderstaande criteria.

Materialen	
	<b>Reductie</b> 1. Materiaalgebruik over levensduur 2. Milieubelasting (MPG) van gebruikte materialen
	<b>Synergie</b> 3. Ontwerp voor demontage 4. Theoretische herbruikbaarheid materialen of componenten op gelijkwaardig kwaliteitsniveau 5. Gebruik van secundaire materialen voor bouwproces 6. Hergebruik materialen tijdens constructiefase
	<b>Productie en inkoop</b> 7. Beleid op het gebied van circulair contracting 8. Certificering materialen 9. Gebruik en vastlegging schaarse en kritieke materialen 10. Gebruik van hernieuwbare materialen
	<b>Management</b> 11. Materialenpaspoort
	<b>Apex criteria</b> 12. Totaalscore circulair materiaalgebruik
Adaptiviteit en veerkracht	
	<b>Reductie</b> 1. Reduceer afhankelijkheid externe materiaal- en energiestromen 2. Klimaatbestendig bouwen
	<b>Synergie</b> 3. Inpassing stedenbouwkundig plan 4. Flexibel, redundant en adaptief ontwerp
	<b>Management</b> 5. Informatiemanagement systemen

Water	
	<b>Reductie</b> 1. Reductie watervraag
	<b>Synergie</b> 2. Cascadering waterstromen: nuttig gebruik grijs- en regenwater 3. Herwinning van grondstoffen uit afvalwaterstromen
	<b>Management</b> 4. Aanwezigheid watermanagementsysteem: monitoring en feedback 5. Regenbestendig ontwerp
Energie	
	<b>Reductie</b> 1. Energie efficiëntie 2. Ingebedde energie
	<b>Synergie</b> 3. Energie cascadering
	<b>Productie en inkoop</b> 4. Duurzame energie 5. Energie matching
	<b>Management</b> 6. Prestatie feedback 7. Prestatiegerichte contractering energiesystemen
Ecosystemen en biodiversiteit	
	<b>Reductie</b> 1. Ingebedde biodiversiteit impact
	<b>Synergie</b> 2. Ecosysteemdiensten
	<b>Productie en inkoop</b> 3. Bevordering lokale biodiversiteit

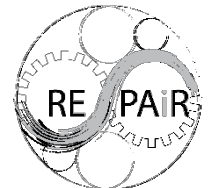
Figuur 1: Criteria voor circulaire bouw



BANKS RELUCTANT TO PROVIDE FINANCE FOR CE VENTURES

LACK OF AWARENESS OF SUCCESSFUL CE BUSINESS MODELS

LACK OF GRANTS OR REVOLVING FUNDING TO BRIDGE THE MARKET FINANCE GAP

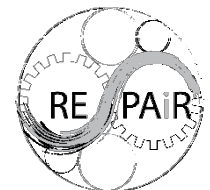


# Circular (urban) business models?

**Figure 2.**  
**Typology of Urban Business Models**

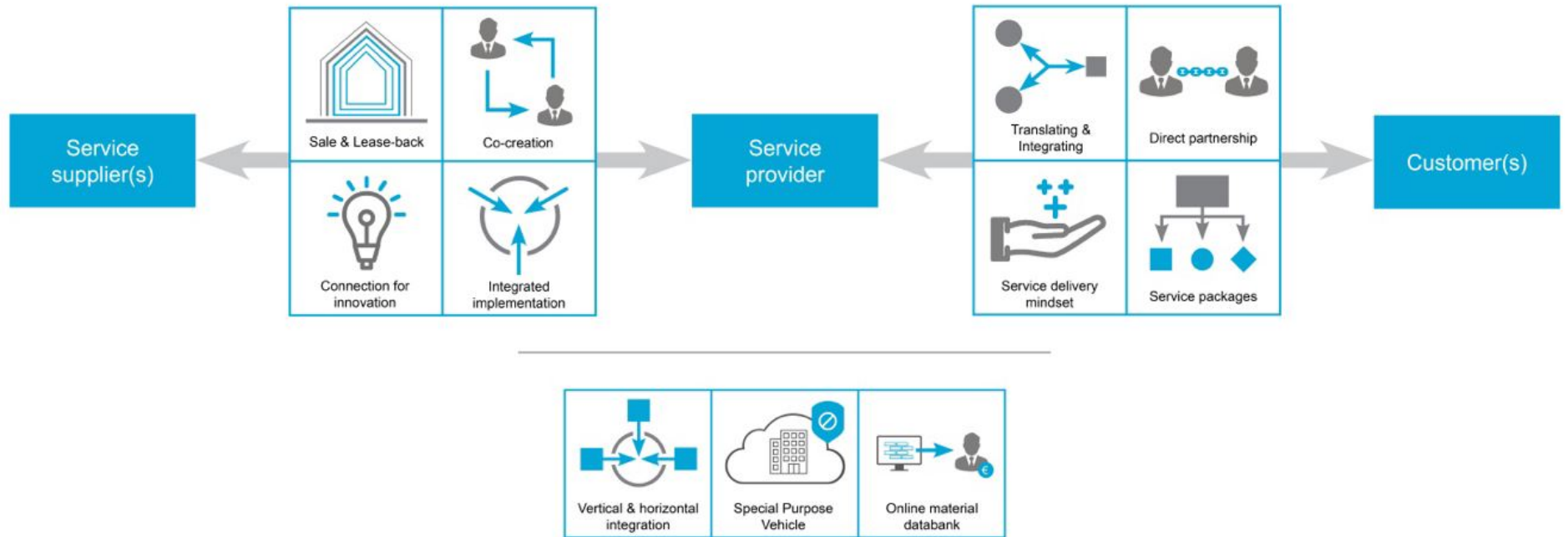
	<b>Circular based</b>	
<b>Community based</b>	<i>Product and Resource Optimizing model</i>	<i>Product and Resource Looping model</i>
	Optimizing products and resources through replacement of linear resource approaches, making use of renewable energy sources, and designing products for durability and repair. The urban environment is optimally used through for example the use of regional waste as input for renewable energy, and cooperation between different actors in the urban environment allowing for the created energy to be locally used within said environment.	Exploiting the residual value of both products and materials, creating value out of something that would otherwise be waste. The main characteristics of this model is creating loops through processes such as recycling, reusing, repairing and remanufacturing, leading to waste reduction. The creation of loops is done within the urban environment through different processes of cooperation and mutually dependent relationships between citizens, businesses and the local government, who are engaging in different processes and trying to close the loops together.
	<i>Urban Sharing Platforms model</i>	<i>Urban Circular Community model</i>
	The servitization of products through providing a platform for sharing within a city or urban environment. The sharing platforms provide a place where different actors are brought together in order to make use of a certain service or product, without there being a collaborative aspect to it as there is in the Urban Circular Community model. Examples of sharing platforms within urban environments can be shared gardens and bike or carsharing and other mobility solutions.	Combining different circular possibilities and initiatives and multiple actors within the urban environment in order to together create a collaborative circular network leading to a wholesome urban circular community in which different themes and processes from all three other models are combined, as well as adding an education aspect to it, as within the community there can be different ways of informing and educating other actors on circular ways of living within a city. This can for example be in the form of a circular neighbourhood.

KORTERIK (2019) URBAN BUSINESS MODELS

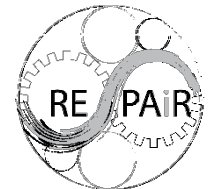




# Circular (actor) business models?



DE BLOK (2018) REAL ESTATE DEVELOPERS AS CIRCULAR SERVICE PROVIDERS



# Inter-institutional Challenges

COMPETITION FOR WASTE AS A RESOURCE

LACK OF (REGIONAL) PLATFORMS

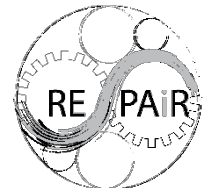
LACK OF REGIONAL LEADERSHIP

FRAGMENTATION AND KNOWLEDGE ASYMMETRY

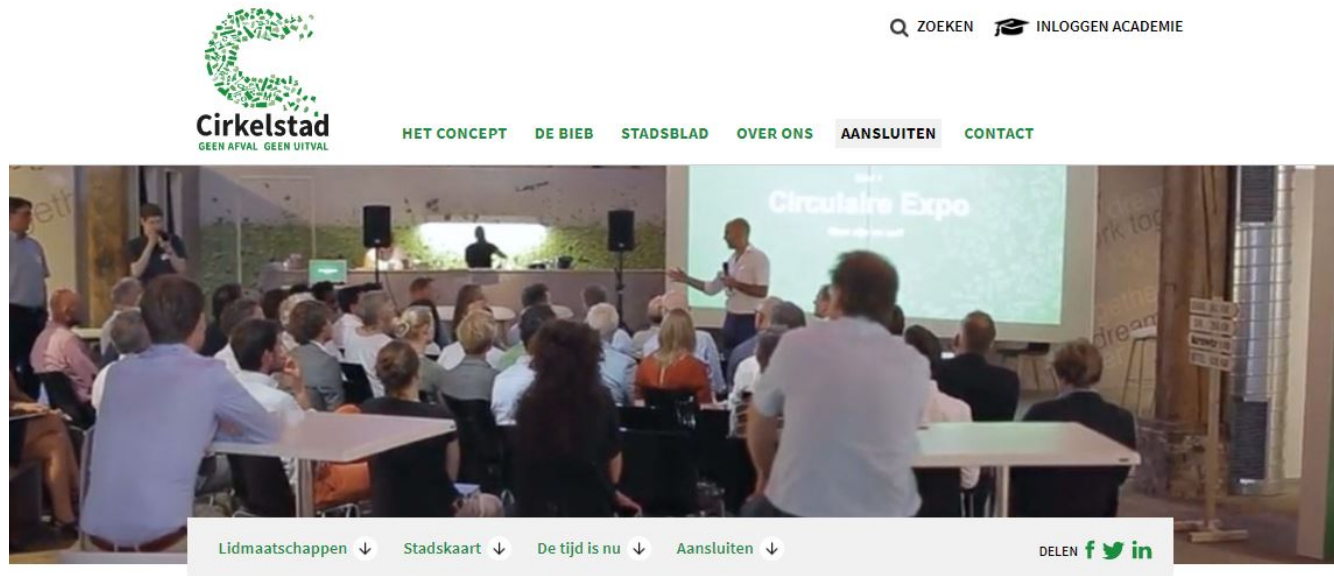
CLASHES OF INTEREST BUILDING INDUSTRY

DOMINANCE OF BIG PLAYERS IN WASTE MANAGEMENT

SECRECY ABOUT WASTE FLOWS PREVENTS OPPORTUNITIES



# Inter-organisational Platforms



## Aansluiten bij Cirkelstad

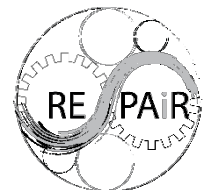
Cirkelstad is hét platform voor koplopers in de circulaire en inclusieve bouwsector.

Waar je ook staat in je ontwikkeling, aan het begin of klaar om je ervaring te delen met anderen, in het Cirkelstad netwerk kun je jouw volgende stap maken.

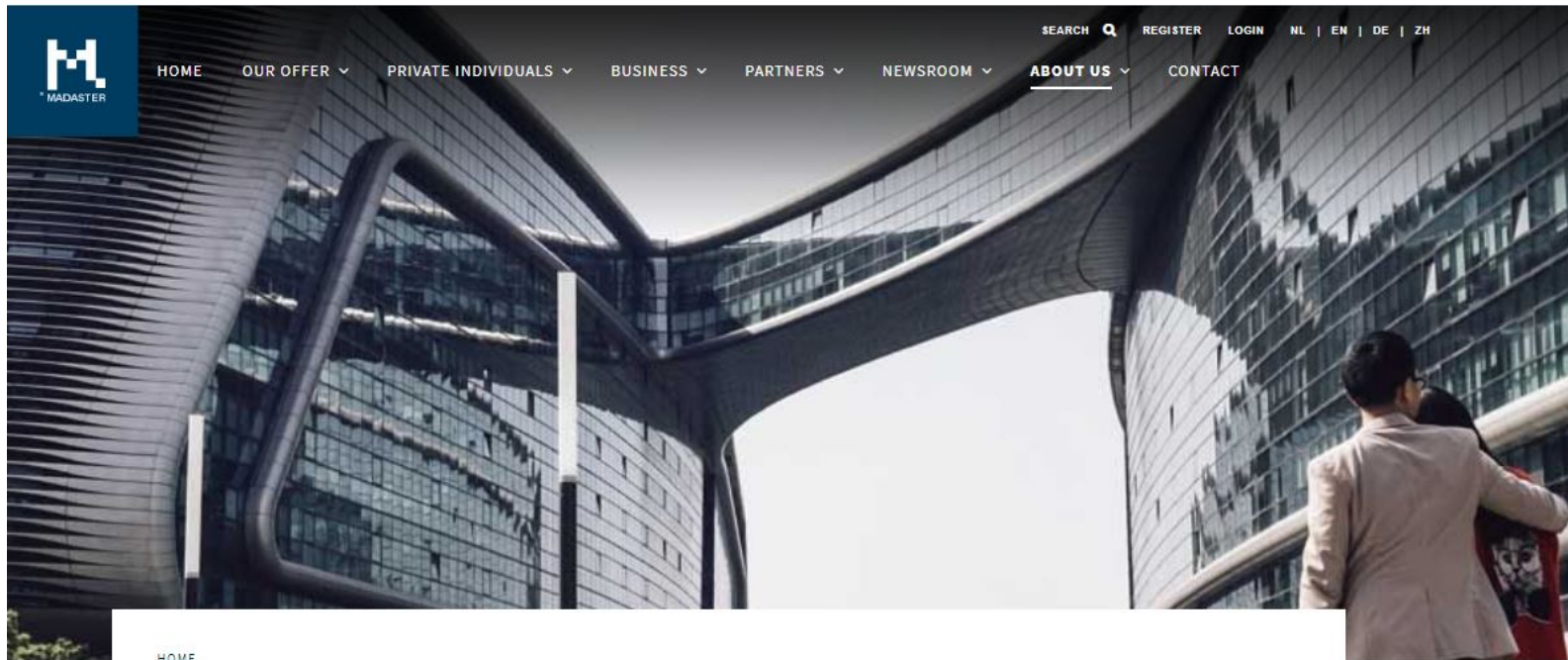
Op traditionele Cirkelstad thema's als circulair en inclusief beleid, inkoop en ontwerp en circulaire en inclusieve realisatie van bouw en sloop. Maar ook op andere thema's zoals bijvoorbeeld interieur, groen, water, energie of voeding.

- Regionale Community of Practice om kennis te maken en kennis te delen
- Online delen van ervaringen tussen partners en regio's
- Deelname aan bouwprogramma en corporate programma
- Landelijk overzicht met landelijk trefpunt
- Cross sectoraal netwerk van bestuurders en projectverantwoordelijken

[HTTPS://WWW.CIRKELSTAD.NL/](https://www.cirkelstad.nl/)



# Inter-organisational Platforms



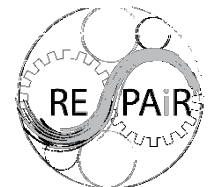
[HOME](#)

## ABOUT US

---

Madaster is the cadastre for materials. Raw materials are scarce but limited and must therefore be well documented so that they remain unlimited. With the help of the material passport, materials get an identity, which means that they can never disappear in anonymity as waste. Madaster acts as a library and generator for material passports. An independent platform accessible to all: individuals, businesses and governments. Madaster is being developed under the supervision of the Madaster Foundation.

[HTTPS://WWW.MADASTER.COM/](https://www.madaster.com/)

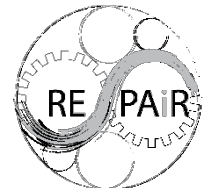


# Intra-institutional Challenges

SILO-MENTALITY MUNICIPALITY

CONFLICTS IN LAND SALE PROFIT VS. SUSTAINABILITY

ASYMMETRY OF KNOWLEDGE AND AWARENESS ACROSS DEPARTMENTS OF ORGANISATIONS



# Behavioural Challenges

RISK-AVOIDING MUNICIPALITIES

LOW AWARENESS ON CE AMONG PRODUCERS

FENCE-SITTING AND WAITING FOR THE BUSINESS LEADERS TO SHOW THE WAY

CONSUMER-READINESS TO PAY FOR CIRCULAR PRODUCTS



# Conclusions: Need for Governance/Decisions

## WICKED GOVERNANCE PROBLEM:

MULTIPLE SCALES / SYSTEMS / MARKETS / ACTORS

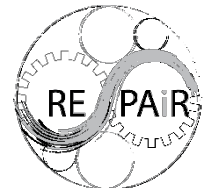
## WHAT TYPE OF GOVERNANCE IS NEEDED TO OVERCOME CE CHALLENGES?

- (1) MULTI-LEVEL/SCALE;
  - (2) CROSS-SECTORAL;
  - (3) MULTI-ACTOR
- POLICIES AND THINKING

## HOW CAN DECISIONS BE SUPPORTED?

REPAIR GDSE MIGHT SUPPORT THE PROCESS OF CHANGE:

- (1) CROSSING SPATIAL SCALES;
- (2) CONNECTING SECTORS (WASTE FLOWS > EISOLUTIONS);
- (3) INVOLVING MULTIPLE ACTORS





**THANK YOU.**

