

Circular Building and (Re)manufacturing Hub

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Where did we start?

Consortium members:

- Leiden municipality
- Economic board Alphen ad Rijn
- Province Zuid-Holland
- Bouwend Nederland
- Alphen ad Rijn municipality

“We want to accelerate the circular built environment and our circular economy in general, therefore we need a circular hub”

→ In a way, very easy concept, so it should be doable, no?

- Place where supply and demand for circular building materials come together

→ But wait, it is maybe not that easy (Neuberger, Weidner & Steane, 2019)

- Characterised by a rich diversity of actors, structures, social values, and sectors serviced.
- The intention of circular hubs is to operationalise sustainable and circular material loops.
- They can provide the practical means to move beyond traditional conceptions of reuse, repurposing and sharing, to address more fundamental questions of consumption (e.g. by shifting values from status and fashion to frugality/sufficiency and functionality).

IDEA



As an example of what a hub could/should look like.

- Location along the water
- In a industrial park
- Should be build with circular materials
- Zero-energy
- White label

So, we're done? → let's build that hub

No, wait, it's way more complex than we think

We were a group with very different backgrounds



Bouwkunde: Koert & Batuhan

Industrial Ecology: Alex, Manon, Wen Hui

Urban Governance: Arjan, Jose Luis, Karismi

So, from the beginning it was clear that it was not easy to bring all different backgrounds together, showing the 'easy' concept, was apparently not easy

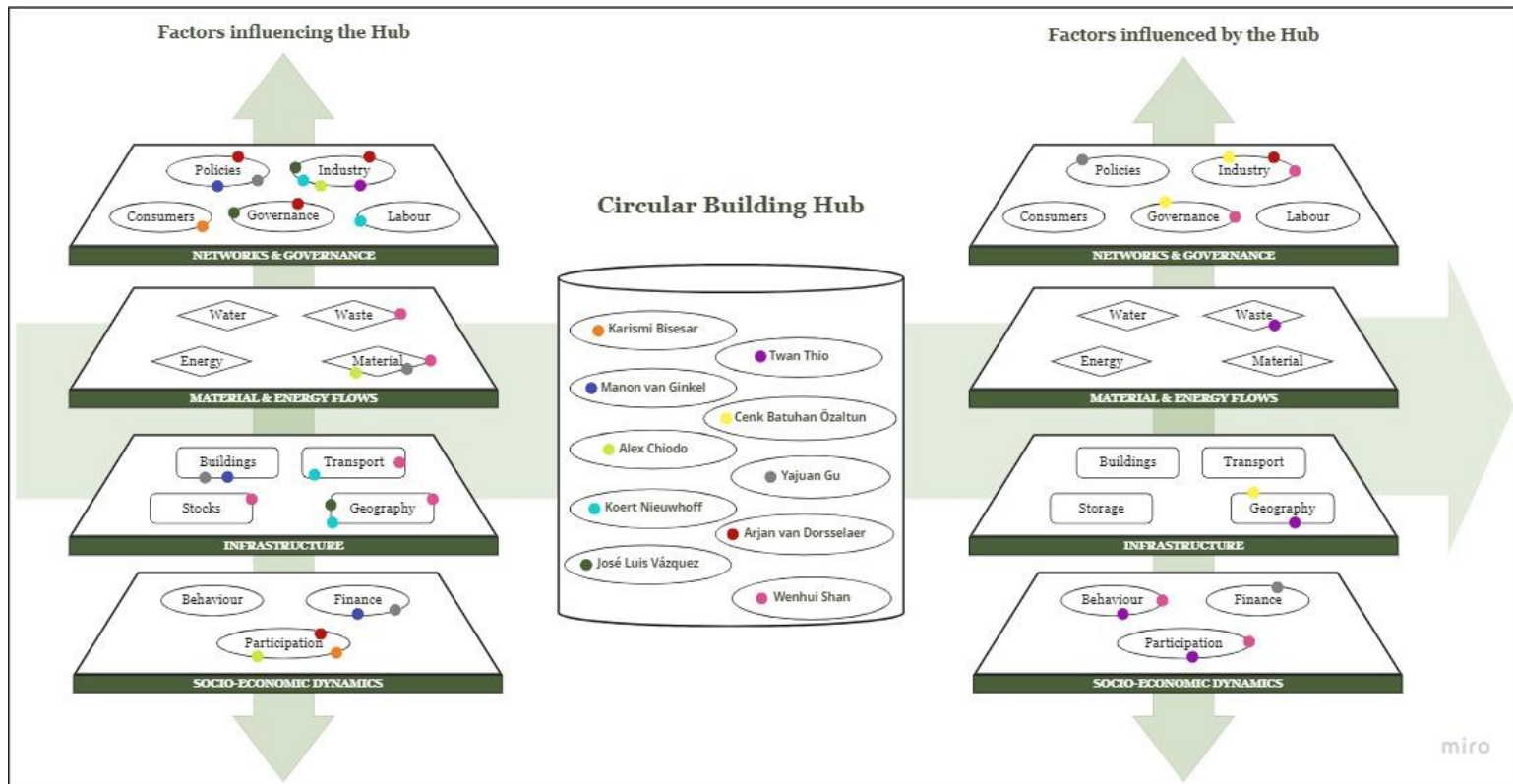
Deconstructing the circular building hub

We gradually followed a series of lectures and workshops.

- Visit to Vlasman & Rutte Group
- Lectures on Geopolitics, Circularity in Zuid-Holland
- Roundtable (Beelen Next)
- Pressure Cooker
- Workshops



Overview of all the different aspects



Alex

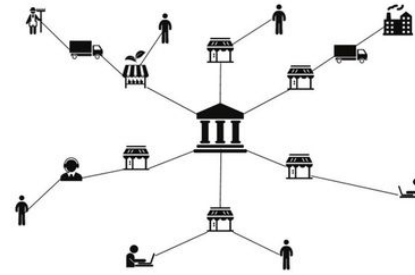
Main topic: Blockchain application for boosting reuse/recovery practices in the construction industry

Main challenge/problem:

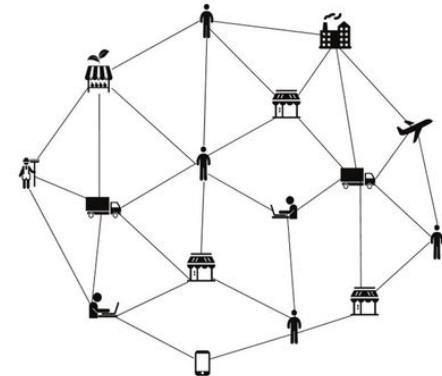
- Missing/inaccurate data
- Standardization in data collection/management is missing
- Trust and compliance related issues
- Laws and regulations do not accelerate digital transition

Lessons learned/key insights

- Alignment across the industry is key
- A strong and long-term narrative is important for offering a perspective to a conservative industry
- Who is the initiator ?



Centralized



Blockchain

Arjan

Main topic

Scaling up impact of Circular Community Enterprises

Main challenge/problem

- Multitude of actors involved in the Hubs
- Government willingness vs support
- Gaining enough revenues

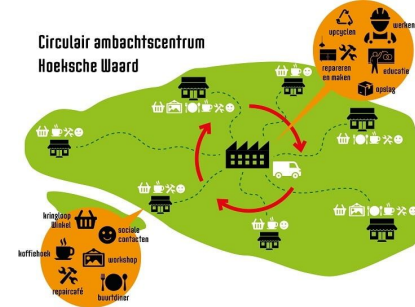
Lessons learned/key insights

- Transformative and Boundary Spanning Leadership
- Government should show trust and have a boundary spanner
- Multiple income sources (sales, education, care budgets, establish a network)

SAMEN
Circulair

HOF
VAN
GAR
TES
HET
TUS

easy housing



Karismi

Main topic

Motivations and values for circular use of materials in house by homeowners and renters

Main challenge/problem

Disconnection between motivations and values of homeowners and renters and their current circular behaviour pattern

Lessons learned/key insights

Focus on short term (time constraint and convenience) vs. long term (liveability of Earth)



Manon

Main topic

Financial feasibility of circularity in construction and potential of tax shift to contribute

Main challenge/problem

Focus on the boundary conditions for Hub

Lessons learned/key insights

Results will show the effect of a tax shift on the financial feasibility of circular construction



Koert

Main topic

Emergence of the Circular Building Material and (re)Manufacture Hub

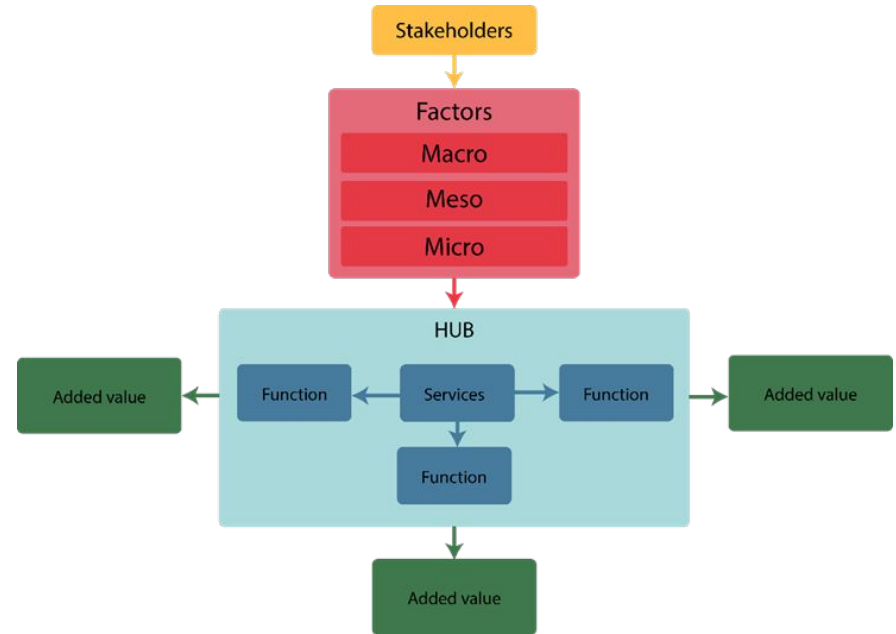
Main challenge/problem

Shortage of industrial estate location in PSH in combination with (circular) ambitions

No consensus on the definition of a CBMMH

Lessons learned/key insights

There are Land based, Economic, Logistical, Technological, Social and Governance factors influencing the hub on different scales. There is no 'one size fits all'.



Wenhui

Main Topic:

The logistics needs for accelerating the building material circularity, with the case study of Leiden.

Main challenge/problem:

The structural mismatch between secondary material supply and new construction demands always exists, in terms of:

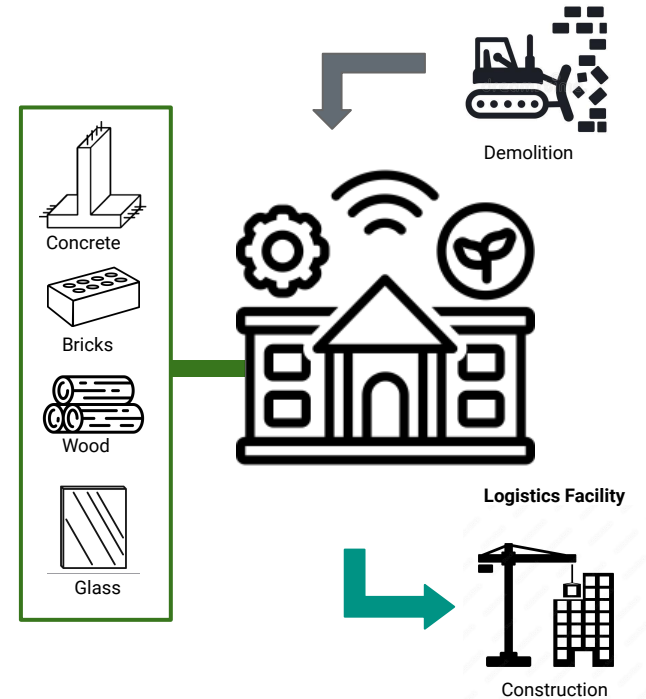
1) temporal, 2) spatial, 3) material properties

Lessons learned/key insights:

It's hard (nearly impossible in the short term – 5-10 years) to close the loop, but great potential to reduce the mismatch by logistics.

Knowledge gap in the future research (I need some help please!):

The quantity of major building materials harvested by demolition, demanded by construction during the past 5-10 years in Leiden, which could bring really valuable insights to quantify the scale and function for the logistics facilities.



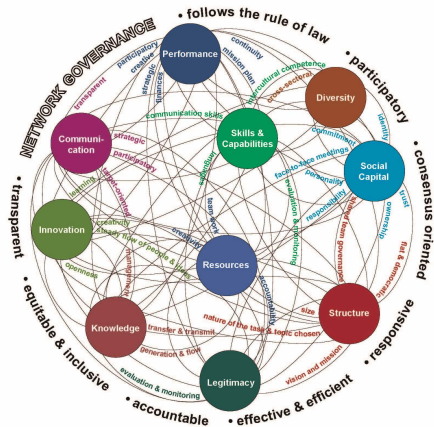
José L.

Main topic

Metagovernance for Circular Economy

Main challenge/problem

How to effectively bring together institutions through metagovernance in order to implement Network Governance for the implementation of the Circular Building Manufacturing Material Hub



Network Governance Model by Anna Steinkamp

Lessons learned/key insights

- Metagovernance (Network Governance) is a condition to address complex issues like Circular Economy, however certain needs are needed for the success of the implementation of a CBMMH:
 - Accountability, Effectiveness, and Moral Responsibility are regarded as the main principle for effective Metagovernance of CE
 - There is a need for a strong and legitimate **Metagovernor** that steers the network to.
 - Resourcing strategies are regarded as fundamental when implemented correctly
 - Evaluation, and knowledge exchange between partners involved is key
 - The CBMMH has to develop self organizing capacities and build a strong network.

And now bring all these aspects together

	Circular Craft Center	Mandatory Hub	Multimodal Hub	Hub with urban development	Industrial Cluster
Land	-	+	+	+	0
Economic	+	0	0	+	+
Logistical	0	+	+	+	+
Technology & knowledge	-	+	+	+	+
Social	+	-	+	+	+
Governance	+	+	+	+	+



What now?

PARADOX:

To accelerate the circular transition, we need to slow down.

So:

Facilitate an arena in which **all** stakeholders can express their demands, expectations, potential roles, etc.

→ Role for government to be the facilitator

