

Circular supply Network (chain) collaboration for the social housing building renovation sector

Sorting out roles, relations, routines, responsibilities, risk and rules
for driving demand

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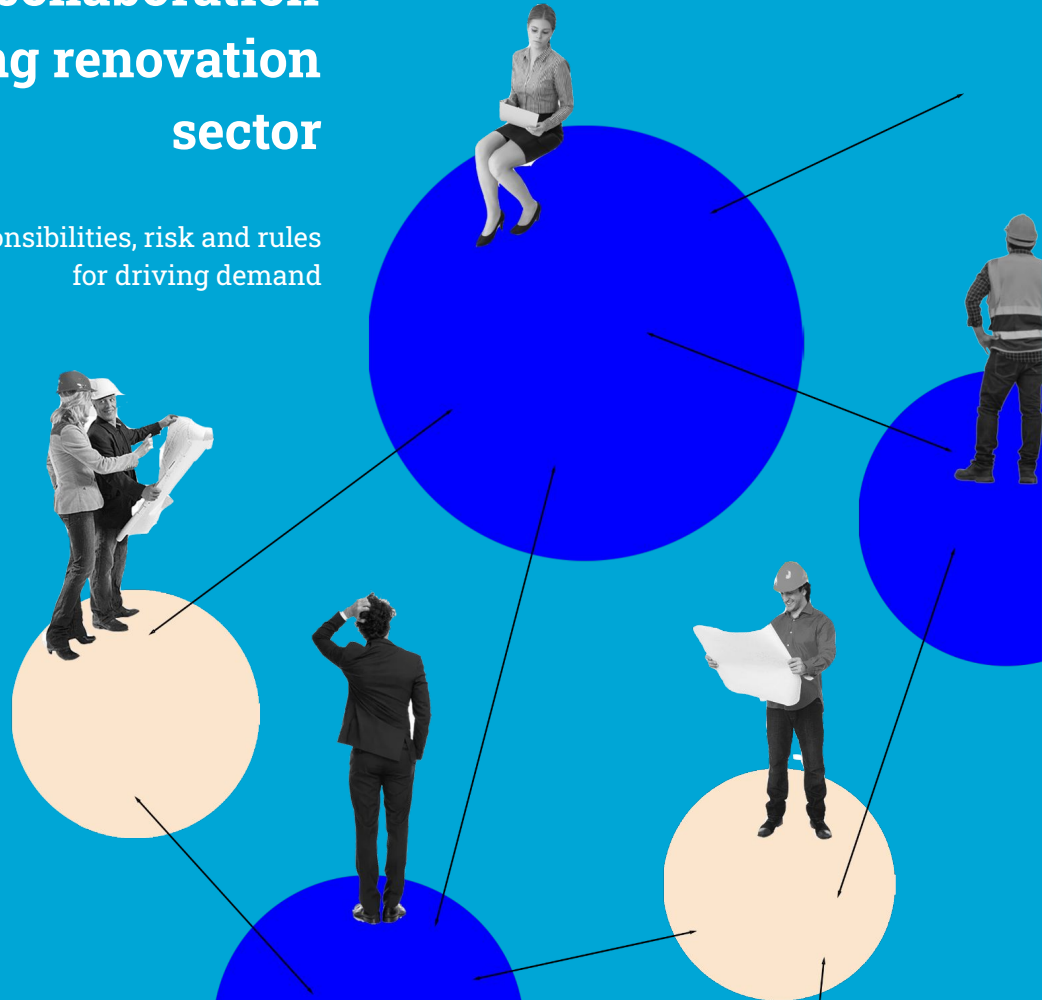
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Ilja Van Rijn
Organization science
#Unconscious group dynamics
#taboos



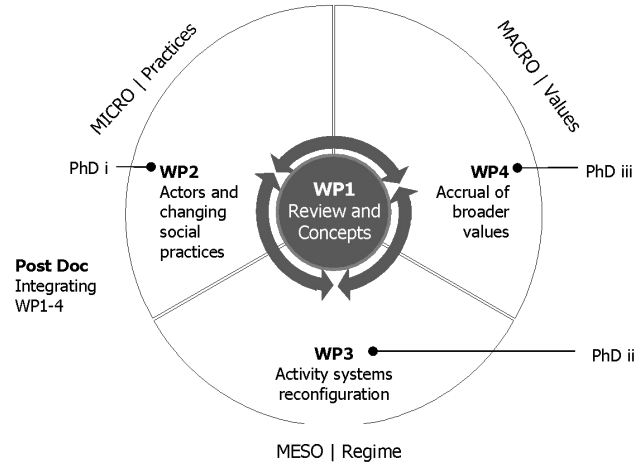
Nouman Khadim
#Financial considerations
Cost analysis
#Market dynamics



Universiteit
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Droovi De Silva
Industrial ecology
#Life Cycle Sustainability Analysis (LCSA) framework
#Value



Eline Baert
Management in BE
#circular supply chain collaboration
#renovation
#social housing





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Objective

Explore **Circular Supply Chain Collaboration (CSCC)**

for the renovation of social housing
from the demand side perspective.

CE

Circulaire economie

a **collaborative construct**,
reliant on the synergy among stakeholders and
emerges as a potential
alternative system to tackle
the challenge of transitioning
away from a linear built
environment to more circular
practices

(Berardi & De Brito, 2021)

CCSM

Circular Supply Chain Management

is the strategic integration of
circular principles into
supply chain management
practices involving
innovative business models
to promote sustainability
and **engage all stakeholders**
throughout the life cycle of
products or services,
including manufacturers,
service providers,
consumers and users

(Farooque et al.; 2019,
Montag, 2022)

CSCC

Circular Supply Chain Collaboration

Circular Supply Chain Collaboration (CSCC)

What is it?

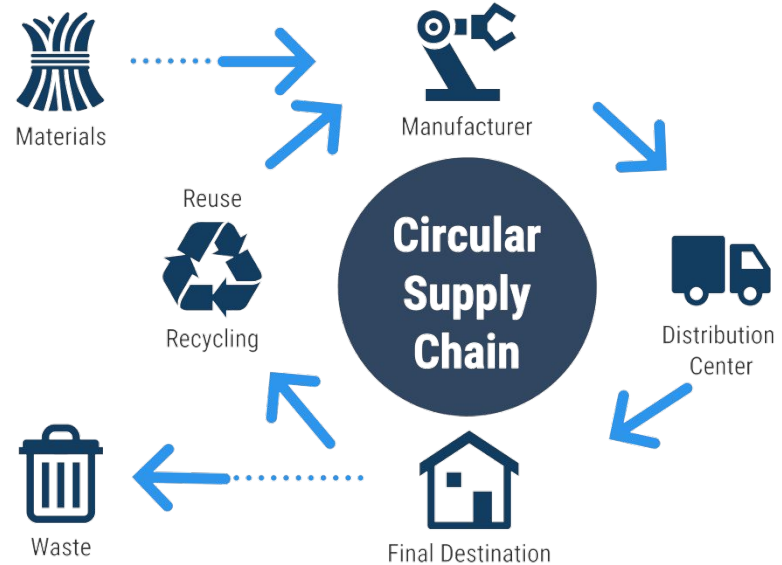
- Cooperation between different parties in the chain
- with **different roles**, from production to waste disposal
E.g. Demolisher becomes supplier
- To **jointly carry out activities** that lead to:
 - Less use of (new) raw materials
 - Prevention of waste

Why is it important?

- Reduces the environmental impact of the chain
- **Reduces risks** e.g. availability of materials
- Creates new opportunities

Key factors:

- **Knowledge** sharing
- Mutual **trust**
- Clear division of **roles**



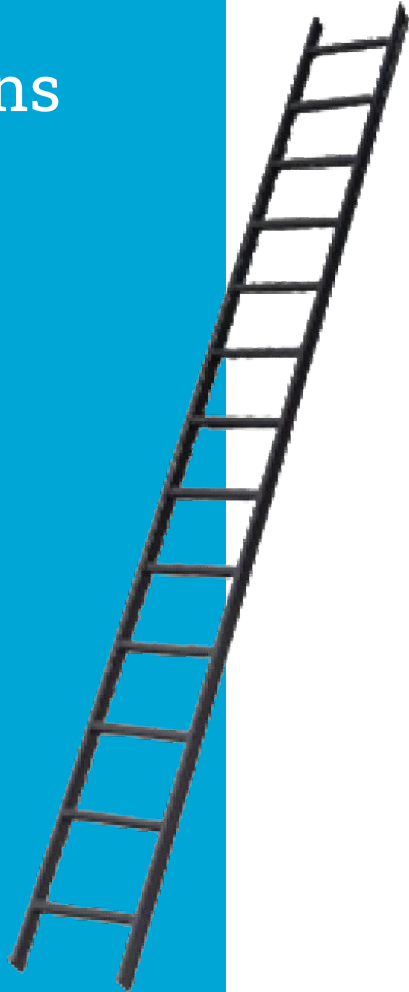
Sub Questions

ROLES

RELATIONSHIPS

ROUTINES

RESPONSIBILITIES



Who generates demand for circularity?

How do demand actors **roles** shape circularity?

How can **relationships** between actors be governed to drive demand for circularity?

How do existing routines impact the demand?

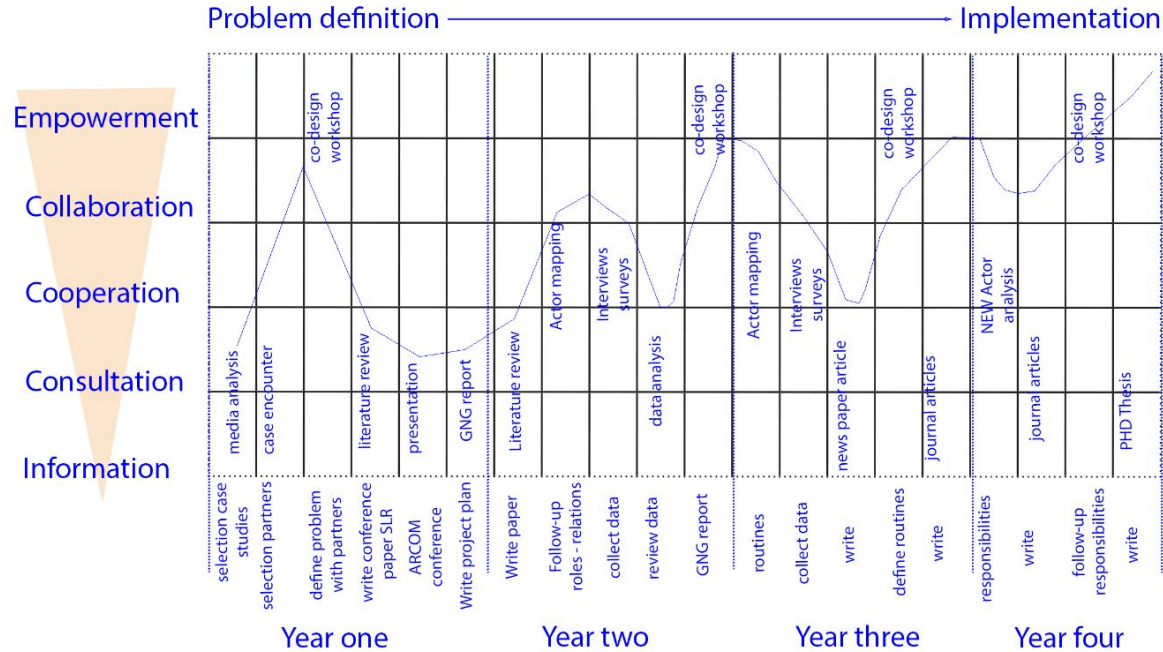
How can existing **routines** be changed to better align demand and supply?

What **responsibilities** do demand actors have in shaping circular supply chains?

DEF (Via Project Networks)

Responsibilities	the requirements or deliverables expected of all project participants and their liability for failing to fulfill these responsibilities. It encompasses the obligations of project members and their accountability for meeting specific tasks and requirements within a project. TTTT TIME TASK TEAM TRANSITION
Routines	In the context of the research paper, "routines" refer to established cycles of project work activities and their monitoring , often reflected in artifacts like information systems. These routines are used to monitor project progress, identify outliers, and facilitate the evaluation of project performance. Within-project routines differ from across-project routines that are situated in the project network.
Roles	refer to the hierarchical authority lines and expected lines of communication among project participants occupying specified project roles. Roles are defined by contract , Standard project/ practices = fixed roles Unic proj = flexible roles
Relations	the specific qualities of interactions among participants in network forms of organizing. These qualities include trust , reciprocity, and open-endedness, which are distinctive from both market (contractual) and hierarchical (administrative) forms of governing economic activity. Embeddedness : <ul style="list-style-type: none">- HISTORY and quality of individual relationships > Past relationships influence future behaviour- structural: how connected people are

Methodes - Actie onderzoek



CASE STUDIES



Multi Cycle
Collaboration **across material cycles**
Maintenance, reuse and procurement of circular components



Circular boilers
Multi material
cycles



Re-Use
Multi-project



Multi Scale
Collaboration **across scales**
Local, regional, national



"Material corridor
Utrecht"

Multi-scales

Case 1: Circular boilers: Collaboration between Housing corporation and external firms

Track 1: Take - back (R6 Recover) - Intergas

Track 2: Return and recycle (R5 Recycle) - Refurn and WEEE

Track 3: Refurbished boilers “kettel for a while” (R4 Refurbished) - Refurn

Track 4: Repurposing used boilers (R3 Re-Use) - Own maintenance team

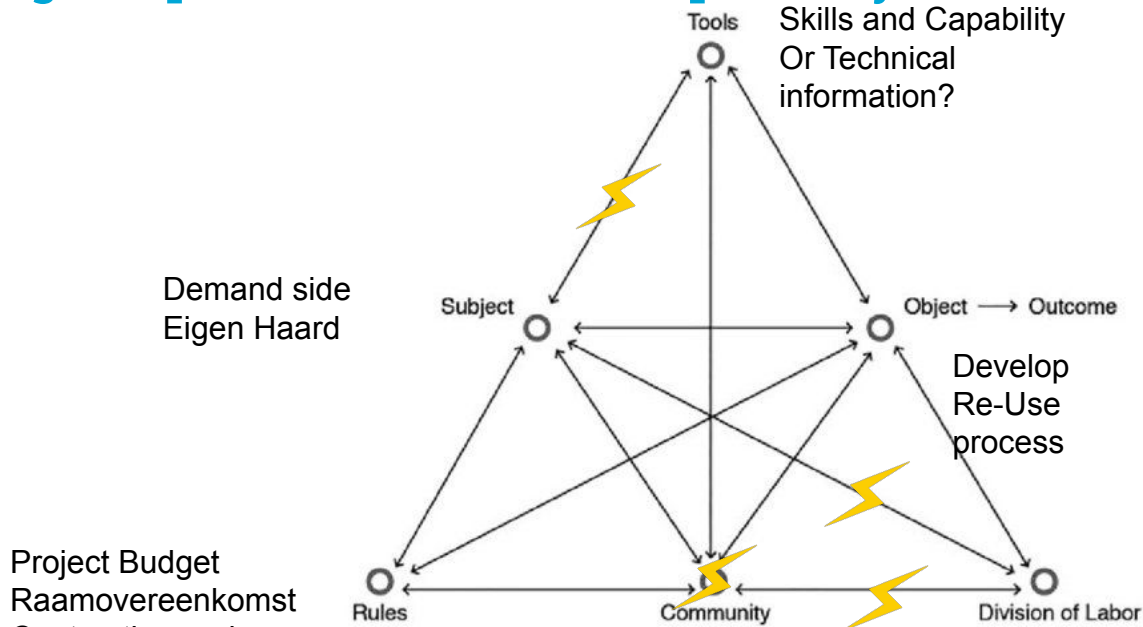


Circular boilers
Multi material
cycles

Case 2: Re-Use: Collaboration with multiple Housing Corporation over multiple Projects



Re-Use
Multi-project



Demand side
Eigen Haard

Project Budget
Raamovereenkomst
Contracting and no
Sub-Contracting

Skills and Capability
Or Technical
information?

Develop
Re-Use
process

1st interview: what is the
desired outcome:
Build large stock of Re-Use
materials over Multiple
corporations
OR
Think beyond only
harvesting, making sure the
materials are reused?



Make stock big enough

EH working together with Harvester
looking for ways to build a livable
business case (financieel plan) + Plan
van Aanpak

- flexible/ changable roles?

Case 3: Collaboration between Housing corporation and City



“Material corridor Utrecht”
Multi-scales

Principle

Agreement

Actors Involved

Transparency & Trust

Provide insight into calculations/estimates per phase

All

Knowledge Sharing

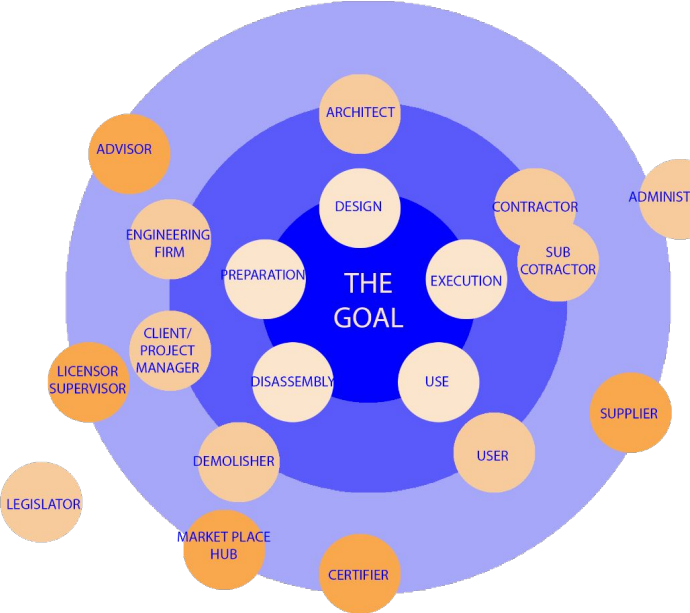
Be transparent about limited knowledge and experiences

All

Collaboration

Joint start-up meeting focused on circularity

Contractor and Client

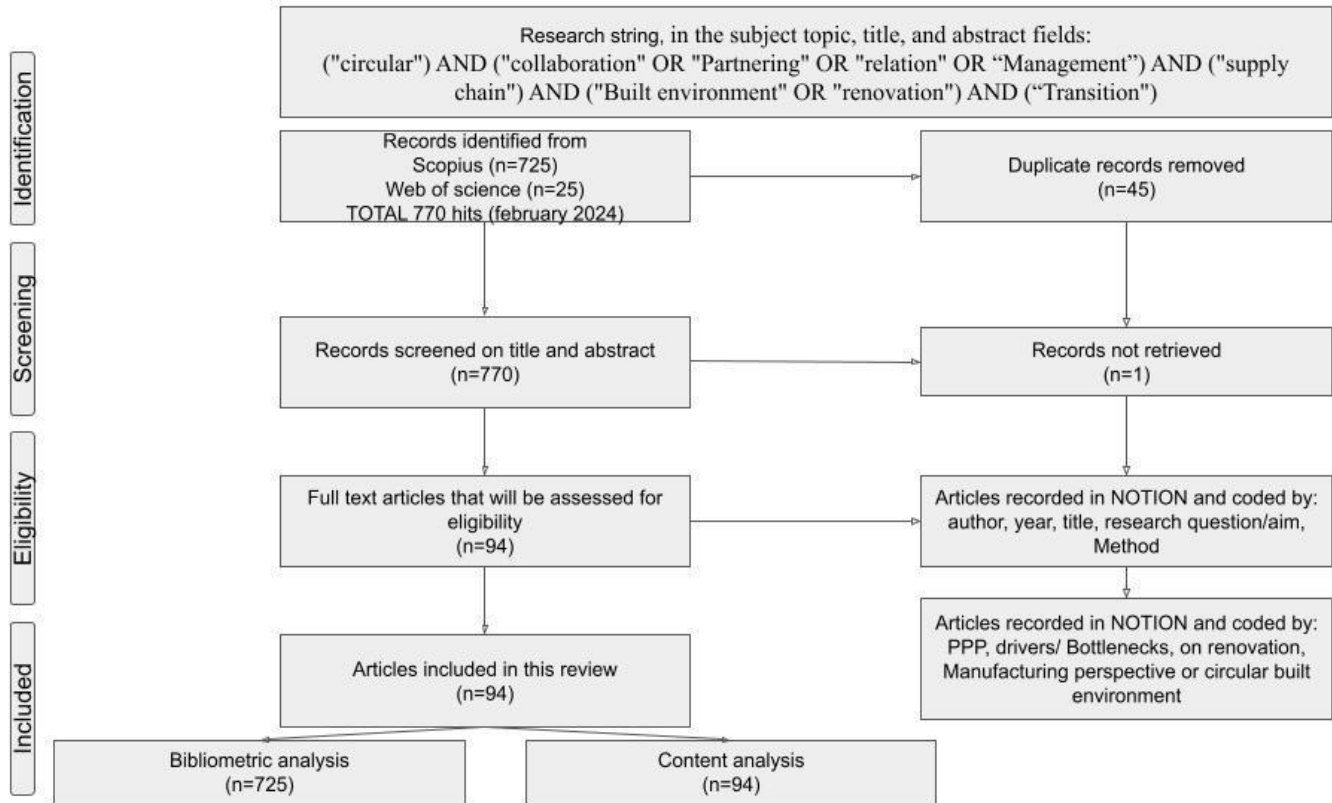


Systematic Literature Review Findings

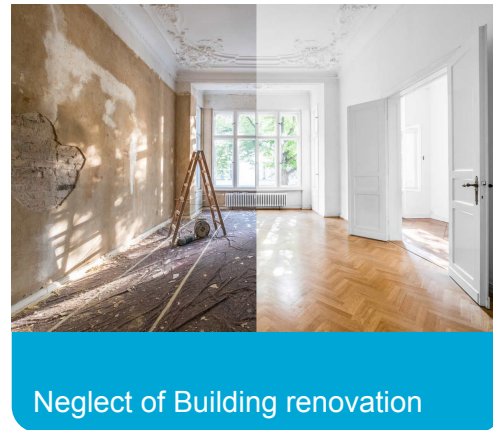


ASSOCIATION OF RESEARCHERS IN CONSTRUCTION MANAGEMENT

Method



Knowledge gaps



Main Research Question

"How can demand for circularity be promoted in the social housing sector in the Netherlands?"



ROLES AND RELATIONS

“In our collaboration, we are looking to actively seek **new roles** and **reformulate existing roles**, based on expertise and ambition, to realise circular ambitions, keep the ambition strong until execution and foster an (equal/balanced) relationship between client and contractor.”

- Circular material corridor
Utrecht

“ The ‘**circular heating boiler**’ project exemplifies how **evolving roles** among stakeholders, from housing associations to contractors, are crucial in driving circularity within the social housing sector.”

- Social housing corporation
Amsterdam

ROUTINES

“We integrate circular building principles into our daily practice, where **transparency and trust**, along with **flexibility** and pioneering leadership, are essential to align plans and budgets with our **shared ambitions.**”

- Circular material corridor Utrecht

“The development of the circular material list tool shows how integrating circular options into routine decision-making processes can **transform traditional practices (routines)**, making circular materials the **new standard.**”

- Social housing
Amsterdam

RESPONSIBILITIES

"By making clear agreements about **responsibilities** and accountability, we ensure that each party understands **its role** within the collaboration and is committed to solving problems together."

- Circular material corridor Utrecht

"Through its circular initiatives, we are **redefining responsibilities**, such as **maintaining** an up-to-date circular material catalogue, to ensure a systematic transition towards sustainable building practices."

- Social housing corporation
Amsterdam

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Promovendus CirCol

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Thank you for your attention!

#betterTUgether