Interreg Europe

Co-funded by the European Union

KARMA

CIRCULAR FLANDERS

# 6th KARMA Partner Meeting

# Flanders

## Public Waste Company Flanders
## Circular Flanders

March 25th – 28th 2025 | Flanders

Interreg Europe | Co-funded by the European Union | KARMA | CIRCULAR FLANDERS

| | |
|---|---|
| 08.45 am | Welcome and registration |
| 09.00 am | The transition model of Circular Flanders<br>Brigitte Mouligneau, transition manager - Circular Flanders |
| 09.30 am | Space Matters: Densification as a circular strategy in the VLAIO impaC³t project<br>Jesse Honsa, Postdoctoral Researcher, KU Leuven and Tine Van de Kerckhove, Research Associate, KU Leuven |
| 10.30 am | Coffee break |
| 10.45 am | Circularity in the built environment and local policies of Mechelen<br>Eva Neefs, project coordinator Circular Construction for the city of Mechelen |
| 11.30 am | Photoshoot |
| 11.45 am | Vegetarian lunch |
| 12.45 pm | Guided city walk in Mechelen<br>"heritage repurposed" |

# Circular Flanders in practice

Brigitte Mouligneau
Transition Manager



Flanders
State of
the Art

@CirculFlanders

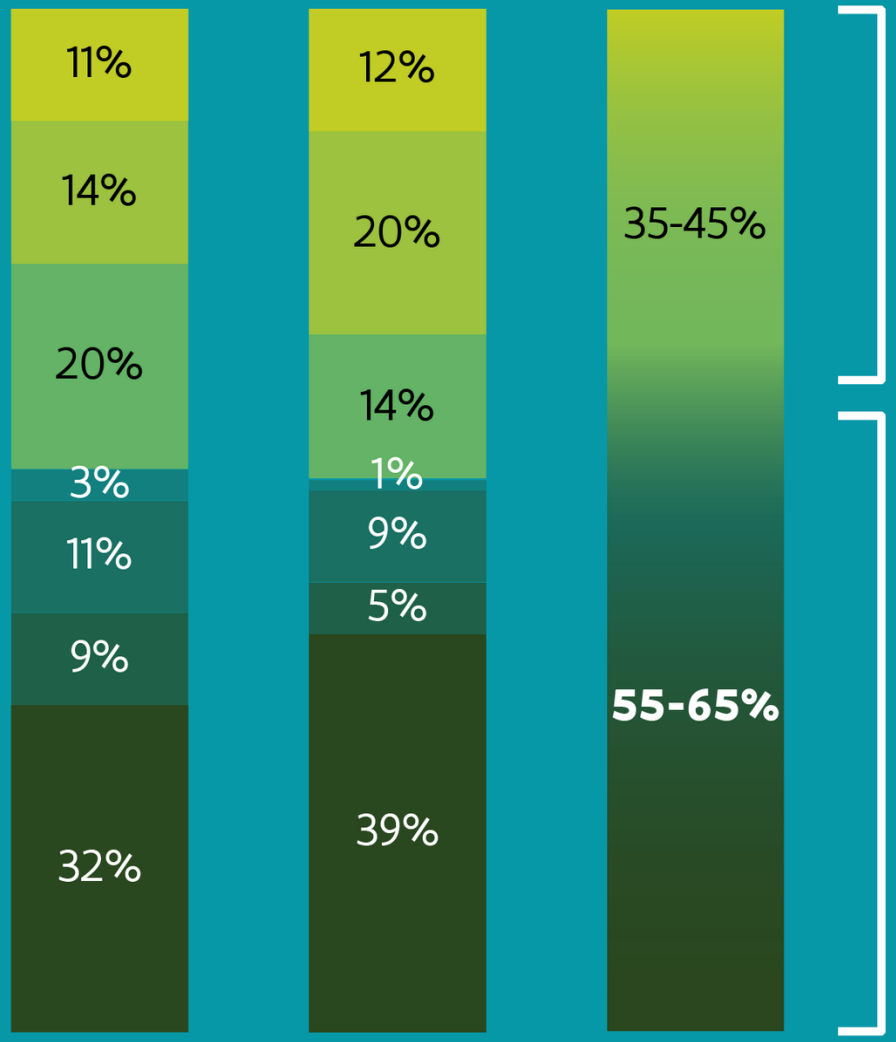
CIRCULAR
FLANDERS

circular-flanders.be

# 1 Ambition

# **Materials:** a big source of **greenhouse gases**

## **PART EMMISSIONS**
PER COUNTRY




NON-MATERIAL-RELATED

- non-residential energy consumption
- residential energy consumption
- passenger transport

**MATERIAL-RELATED**

- waste disposal
- food production and storage
- goods transport
- production of goods and fuels

**Source: OESO (2012)**
Greenhouse gas emissions and the potential for mitigation from materials management within OECD countries.
**Flanders: rough calculation OVAM**

# Textiles in Ghana





4,263,553,355

Number of consumers

GLOBALLY, RIGHT NOW

NOW | IN 2021 | THIS MONTH | THIS WEEK | TODAY



64,475,789,706

Tons of resources extracted from Earth

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY



20,334,472.94

Hectares of forests cut down or burned

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY



1,542,766,499

Tons of waste dumped

GLOBALLY, THIS YEAR

IN 2021 | THIS MONTH | THIS WEEK | TODAY



18y 98d 14h 21m 06s

Earth running out of freshwater

UNLESS WATER USE IS DRASTICALLY REDUCED



1,462,736,083

Tons of waste from households

GLOBALLY

IN 2021 | THIS MONTH | THIS WEEK | TODAY

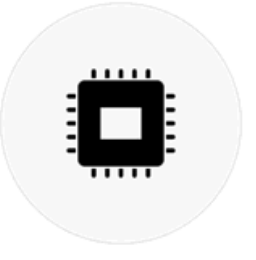


8,142,557,035

Tons of solid waste generated

WORLDWIDE

IN 2021 | THIS MONTH | THIS WEEK | TODAY

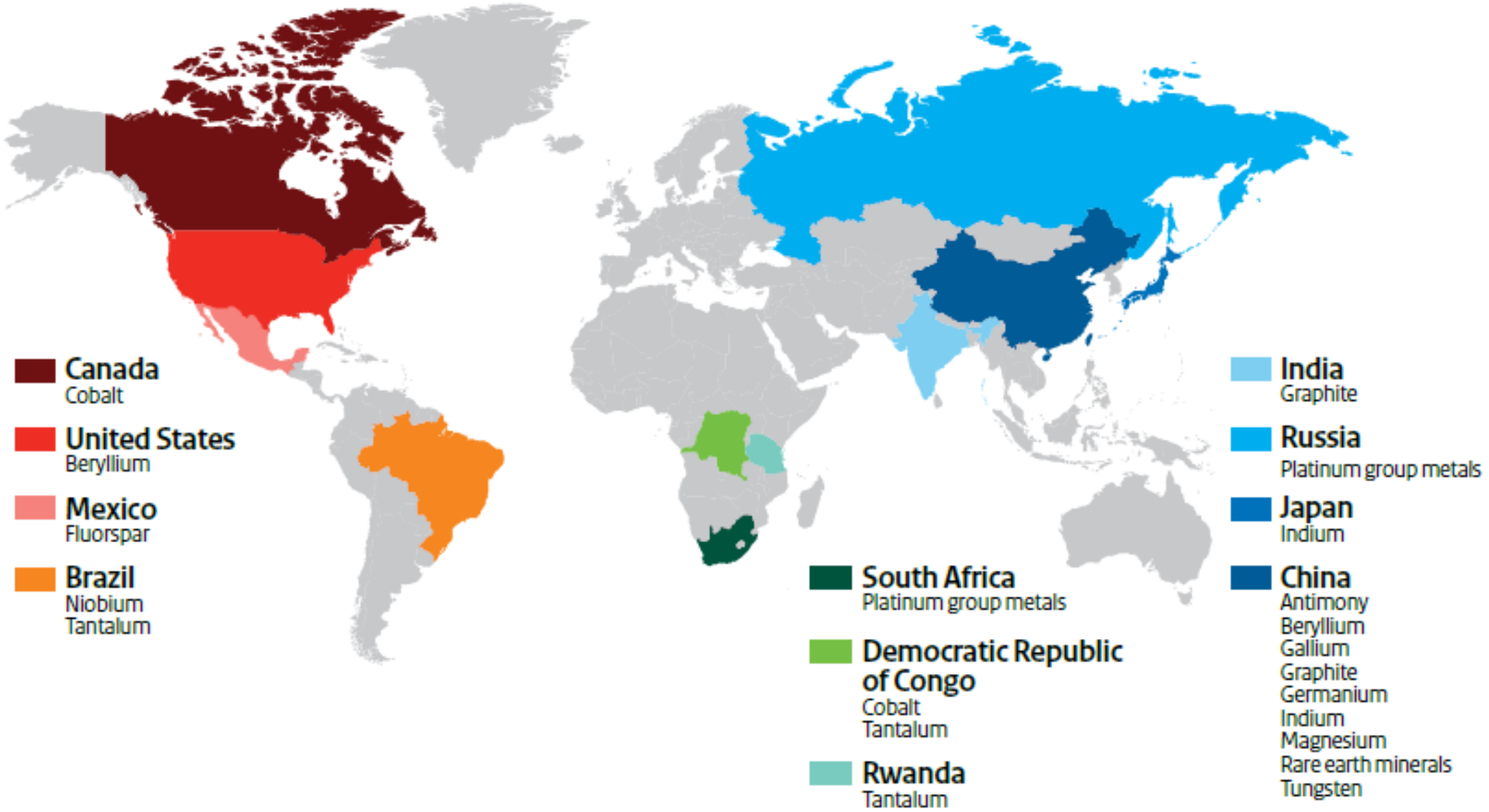


36,386,604

Tons of electronic waste thrown out

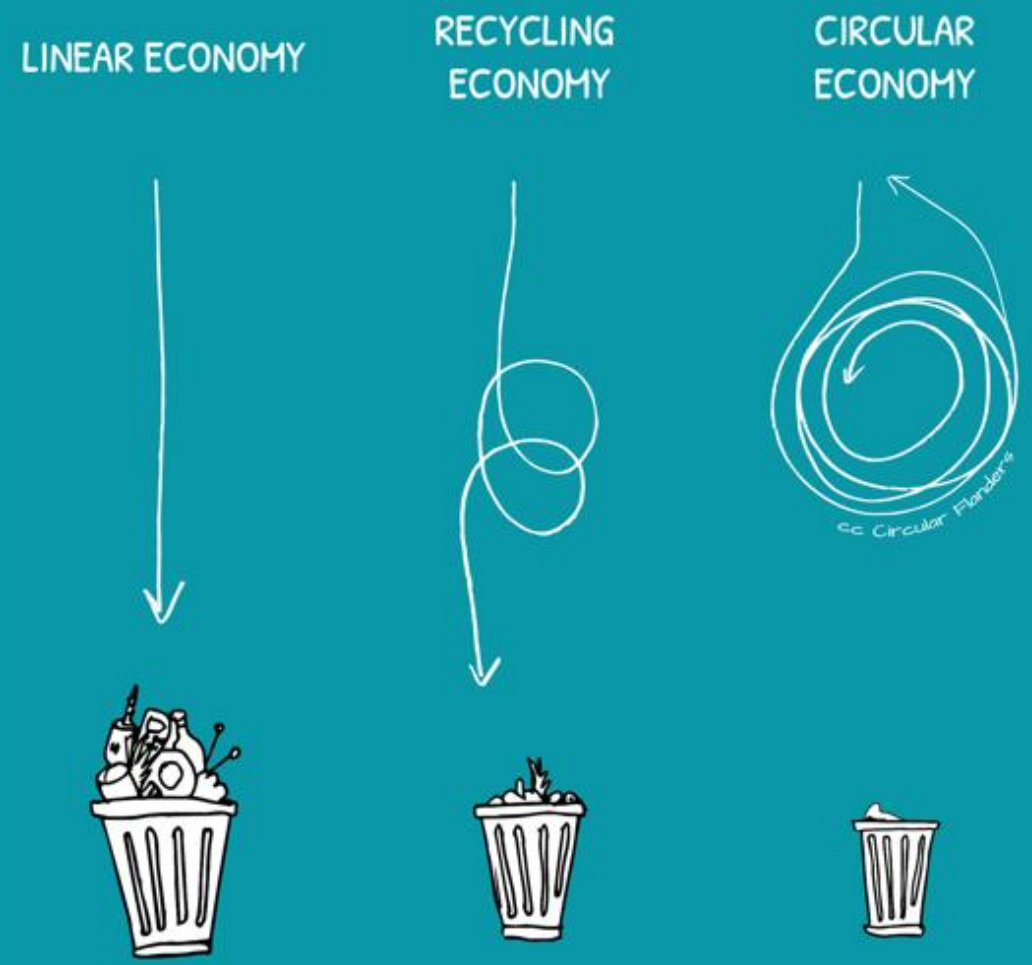
WORLDWIDE

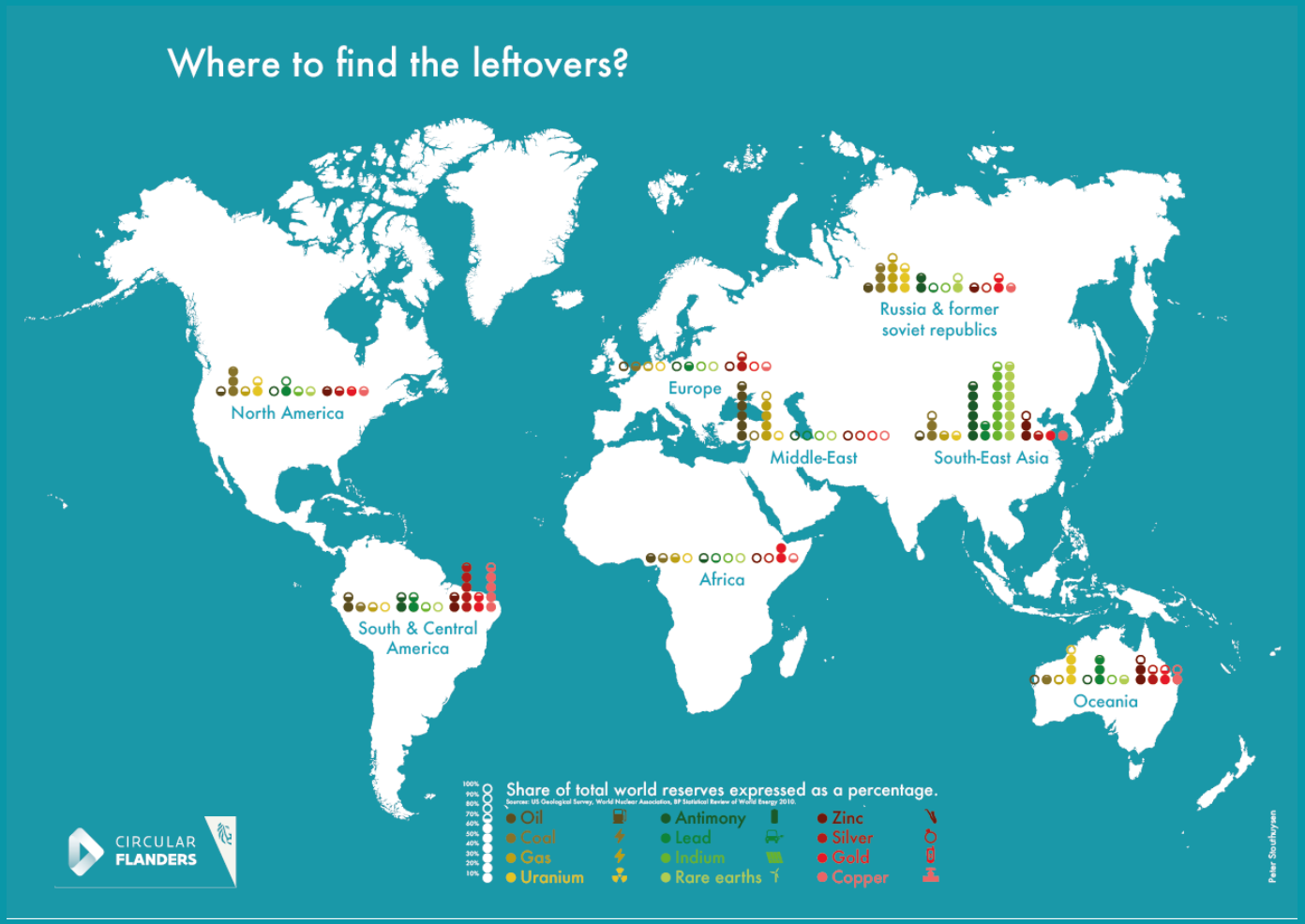
IN 2021 | THIS MONTH | THIS WEEK | TODAY




Source: European Commission, 2010

# Circular economy: necessary next step



# FROM EUROPE TO POLICY IN FLANDERS




European Green Deal

Action Plan Circular Economy

EU Public Procurement Directives

EU Green Public Procurement Criteria (GPP)

EU Sustainable Products Initiative

Construction Products Regulation

Critical Raw Materials Resilience

Renovation Wave

CSRD

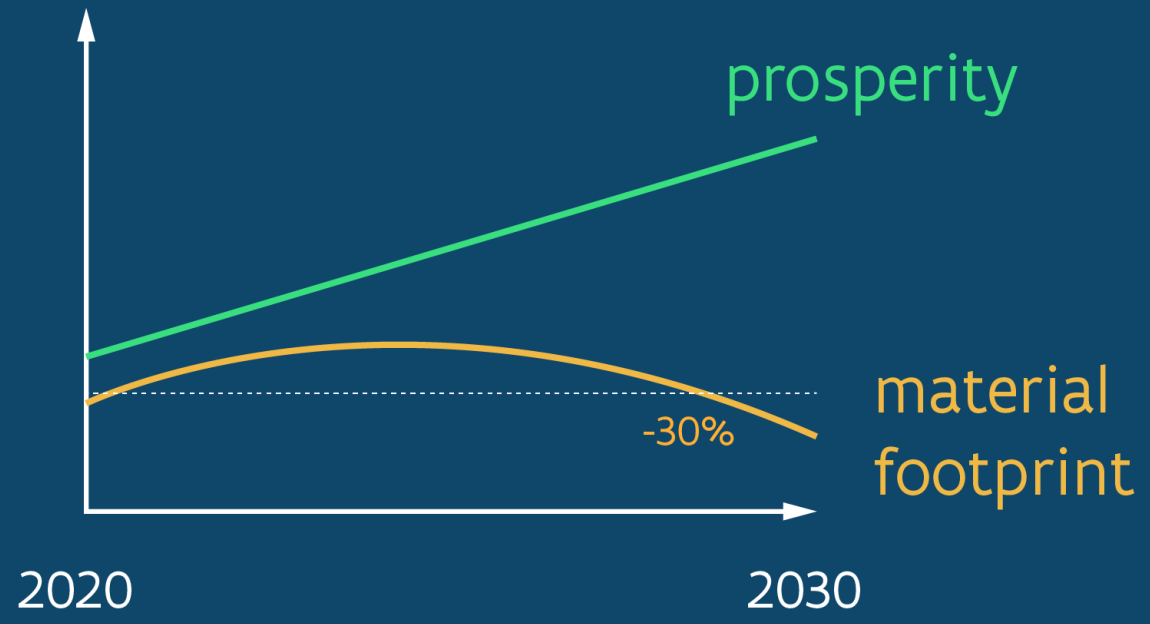
EU Taxonomy regulation

ISO/TC 323 Circular economy

Cross-cutting transition priority Flemish government:

# FLANDERS AS A FRONTRUNNER IN CIRCULAR ECONOMY

1. **DECOUPLING**
   material footprint from consumption by 2030
2. **REDUCTION**
   of material footprint by 30% towards 2030
3. **A PUBLIC-PRIVATE EFFORT**
   doing this in a **partnership** across society



# 2 Governance & approach

# GOVERNANCE CIRCULAR FLANDERS

Federal collaboration
Intra-Belgian Platform
Circular Economy

EU Green Deal & CE Action Plan




Minister of Economy, Innovation, Labour, Social economy and Agriculture

Minister of Environment and Energy

chairperson

**Steering group**

industry

civil society

finance

transition manager

government

research

operations team

# APPROACH

## 6 strategic agendas

Public-private collaborations with specific dynamics, targets, lead partners and actions

- circular construction
- chemistry & plastics
- water loops
- bioeconomy
- food chain
- manufacturing

## Roadmap Circular Economy

### 7 levers

Accelerators for overcoming barriers and spreading good practices

**Policy and policy measures**
Cities and municipalities
Regional policy
Intra-Belgian cooperation
Federal policy
European agenda

**Circular procurement**
European project ProCirc
Government leading by example
Innovative public procurement

**Communication & Reporting**
Raising awareness
Co-creation
Sharing knowledge
Sharing best practices
Monitoring, reporting

**Research**
Strategic research agenda
CE monitor
CE-Center for policy research

**Innovation & entrepreneurship**
I&E support & service
Partnerships
Experimentation

**Financing**
Incentive and investment policy
De-risking CE financing
CE Fund

**Jobs & skills**
Education and training
Starters en scalers
Employment
Social economy

**collaboration of 30 organisations 100 coworkers**

# INVESTMENT IN EXPERIMENTS

| Projects Open Call Circular City and Entrepreneurship | 2017 | 2018 | 2019* | 2020* | 2021 (VLAIO)* |
|---|---|---|---|---|---|
| Number of projects approved | 52 | 68 | 53 | | |
| Projects successfully completed | 50 | 67 | | | |
| Grants approved | € 4.588.249,31 | € 6.111.409,94 | € 4.910.433,11 | | |
| Grants paid out | € 4.388.249,80 | € 6.013.537,39 | | | |
| Average grant per project | € 87.765,00 | € 89.754,29 | | | |

| Circular Procurement Projects | 2017 | 2018 | 2019* | 2020* | 2021 (VLAIO)* |
|---|---|---|---|---|---|
| Number of projects approved | 11 | 4 | | | |
| Projects successfully completed | 11 | 4 | | | |
| Grants paid out | € 209.110,00 | € 65.255,00 | | | |
| Average grant per project | € 19.010,00 | € 16.313,75 | | | |

| Projects Focused Call Circular Construction | 2017 | 2018 | 2019* | 2020* | 2021 (VLAIO)* |
|---|---|---|---|---|---|
| Number of projects approved | | | | 29 | 19 |
| Grants approved | | | | € 2.838.225,89 | € 1.683.165,67 |

| EFRO-projects 'Circular economy' | 2017 | 2018 | 2019* | 2020* | 2021 (VLAIO)* |
|---|---|---|---|---|---|
| Number of projects approved | | | | | 7 |
| Grants approved | | | | | € 4.681.515,57 |

| ESF-call: social-circular hubs | 2017 | 2018 | 2019* | 2020* | 2021 (ESF)* |
|---|---|---|---|---|---|
| Number of projects approved | | | | | 12 |
| Grants approved | | | | | € 1.900.000 |

| TOTALEN | € 4,6 M | € 6,1 M | € 4,9 M | € 2,8 M | € 10,2 M |
|---|---|---|---|---|---|

Circular Flanders and OVAM launched four project calls between 2017 and 2021 to support innovative and valuable circular economy projects. With the projects we want to test the theory of the circular economy in practice: what works, what doesn't (yet)? This will allow us to learn lessons for policy, entrepreneurs and society.

In 2021, VLAIO (Agency for Innovation and Entrereneurship) took over the relay for the calls and subsidised 19 circular construction projects with the help of European recovery funds.

In addition VLAIO and Circular Flanders were able to fund 7 large EFRO projects.

Together with ESF funding from the Department of Work and Social Economy we co-funded 12 social-circular hubs.

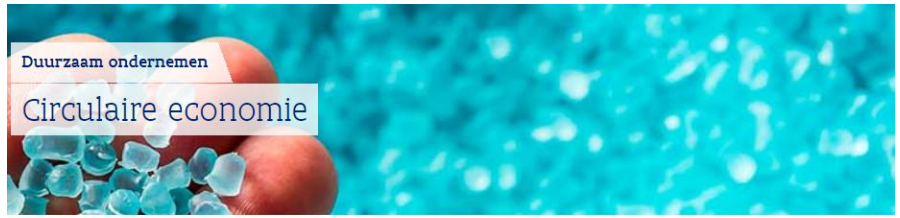
# Flanders recycling hub

*Support in next level recycling*

- LAUPAT
- Retourmatras
- GLUECOM
- SOPREMA
- TRINSEO
- BIOTERRA
- UNILIN
- JBF GLOBAL
- IGEAN
- GALLOO
- RAFF PLASTICS
- TRIPLE HELIX MAAS



# Circulaire economie | VLAIO




Onze huidige economie en industrie werken vooral volgens een lineair principe: basisgrondstoffen zoals metalen, brandstoffen en biomassa worden geëxtraheerd uit de natuur, ze worden op diverse manieren bewerkt en verwerkt tot producten, worden daarna gebruikt en/of verbruikt door consumenten, en uiteindelijk eindigen ze als afval. Deze aanpak heeft een hele tijd gewerkt, maar botst nu op haar limieten: materialenschaarste, schokken in supply chains en klimaatverandering zorgen dat de oude manier van werken alsmaar moeilijker vol te houden valt. De circulaire economie biedt een oplossing.

Ontdek de gesteunde projecten

Welke steun kan je krijgen?

- **Waarom circulaire economie?** Materialenschaarste, schokken in supply chains en klimaatverandering zorgen dat de oude manier van werken alsmaar moeilijker vol te houden valt.
- **Financiële steun voor circulaire economie** Op welke subsidies kan je als ondernemer een beroep doen?
- **Waar vind je advies & begeleiding inzake circulaire economie?** Doe beroep op de VLAIO bedrijfsadviseurs of experten uit het VLAIO Netwerk.
- **Tools om mee aan de slag te gaan** Met de Circu-Radar, Circu-Wijzer en het Circu-Plan helpen we jou op weg in de wereld van de circulaire economie.
- **Deze ondernemers delen hun ervaringen met de circulaire economie:** Laat je inspireren door ondernemers die ervaring hebben met circulaire economie.

*Strengthened and intense cooperation with Flanders Innovation & Entrepreneurship – VLAIO for short – **since 2021**. VLAIO stimulates and supports innovation and entrepreneurship and contributes to a positive business climate that strengthens sustainable economic growth and job creation.*

- *Putting CE at the heart of entrepreneurship*
- *Tools and support*
- *Advies: team of 12 business support*
- *Living Labs: +49 collaborative projects*

rijfstrajecten

r

**Cédric Dhaene**
- Recycling
- Materialen





**Elien Danckaerts**
- Voeding
- Valorisatie van nevenstromen

**Rik Candries**
- Energie & Klimaat
- Mechanica
- Water





**Lore Veelaert**
- Ecodesign
- Materialen
- Duurzaam consumentengedrag

**Liesbeth Peters**
- Digitalisering
- Financiering





**Gaëlle Lobelle**
- Bouw

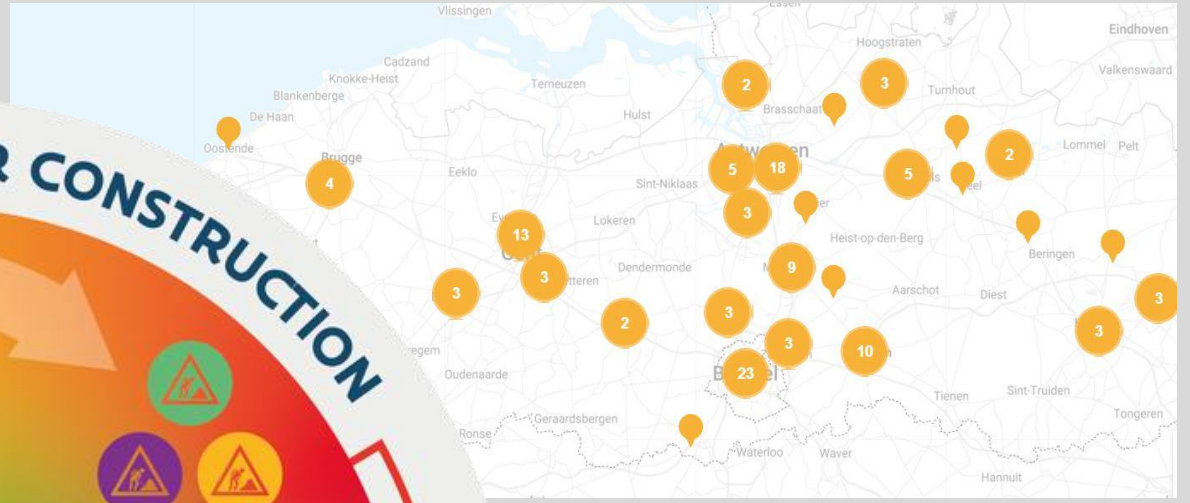


**Griet Vergauwen**
- Sociale economie
- Kringloopeconomie

3

# Public-Private Partnerships in 6 Key Areas e.g. Circular Construction


Draaiboek circulair aanbesteden Juridische FAQ
Bernard Vanheusden – Steven Van Garsse – Jonas Voorter
document opgemaakt in het kader van de Proeftuin Circulair Bouwen & de Green Deal Circulair Bouwen
VLAANDEREN CIRCULAIR
Praktijkgids circulair bouwen
Met vertrouwen innovatieve oplossingen toepassen
Aline Vergauwen – Buildwise
OPDRACHTGEVER
ONTWERPER
PRODUCENT
AANNEMER
document opgemaakt in het kader van de Proeftuin Circulair Bouwen & de Green Deal Circulair Bouwen
VLAANDEREN CIRCULAIR
Sleutel mee aan de synergiën voor een circulaire bouw
Draaiboek Circulaire Businessmodellen


Vlissingen
Eindhoven
Hoogstraten
Valkenswaard
Cadzand
Knokke-Heist
Terneuzen
Blankenberge
Turnhout
De Haan
Hulst
Brasschaat
Lommel
Pelt
Oostende
Brugge
Eeklo
Sint-Niklaas
Lokeren
Heist-op-den-Berg
Beringen
Dendermonde
Aarschot
Diest
Oudenaarde
Tienen
Sint-Truiden
Geraardsbergen
Tongeren
Ronse
Waterloo
Waver
Hannuit


GREEN DEAL CIRCULAR CONSTRUCTION
RESEARCH
EXPERIMENTS
LEARNING
LEVERS
Policy and market







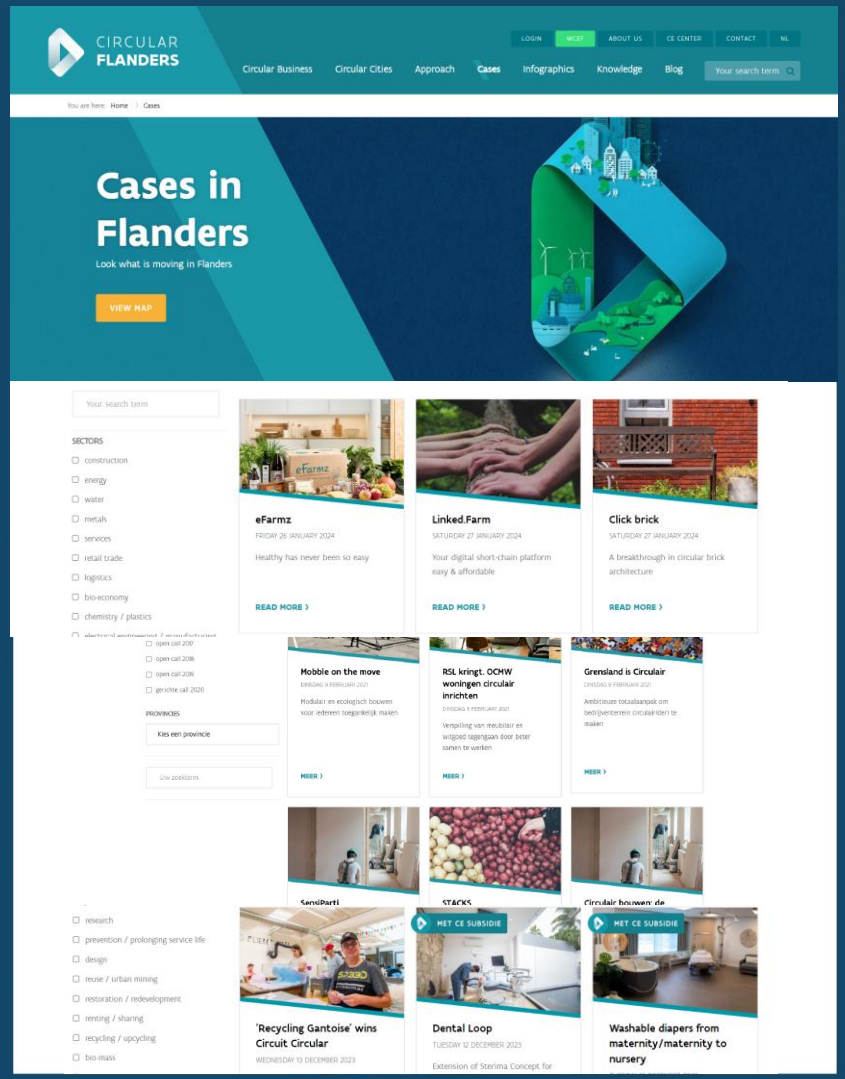
## Engagement to participate

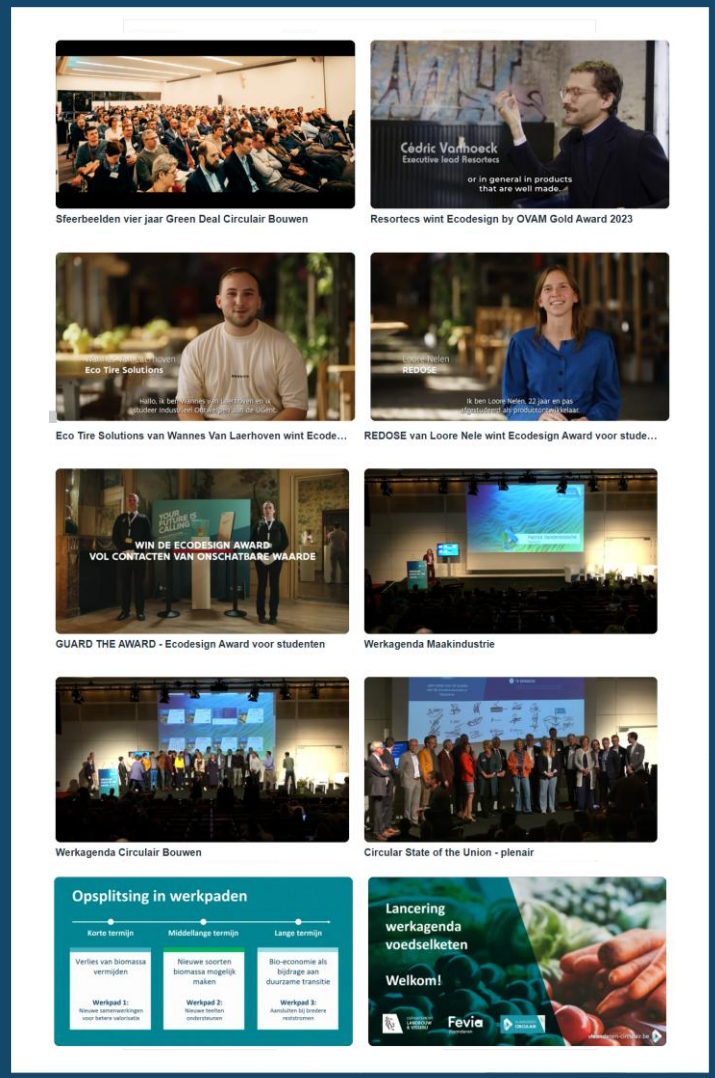
- Implement a pilot project
- Join the learning network (4 inspiration or action days annually)
- Provide data and insights from the pilot project to researchers
- Integrate circular construction principles within the organization

# LEARNING + SHARING KNOWLEDGE

website

linkedin



# 4 Circular Procurement

# ZIRKULÄRE ZIELSETZUNGEN UND STRATEGIEN
# FÜR KÄUFER

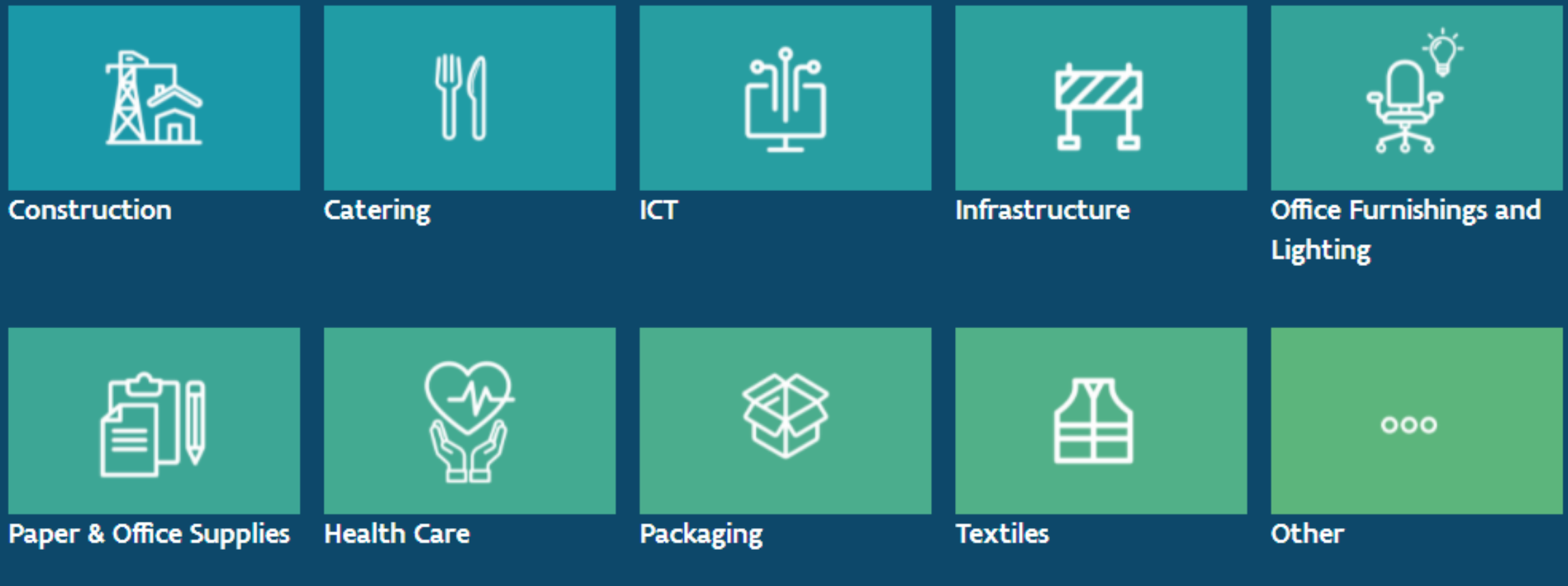
| A | B | C | D | E |
|---|---|---|---|---|
|  |  |  |  |  |
| **Weniger Materialien insgesamt verbrauchen** | **Einsatz von nicht erneuerbaren Primär-rohstoffen reduzieren** | **Lebensdauer verlängern** | **Potenzielle Wiederver-wendbarkeit von Produkten oder Bauteilen maximieren** | **Potenzielle Wieder-verwendbarkeit von Materialien maximieren** |
| A1 Intern Teilen und gemeinsam Nutzen | B1 Verständnis über Anteile der re-cycelten, biobasierten Materialien & Primärrohstoffen erlangen | C1 Design für Langlebigkeit | D1 Design für Demontage | E1 Design für Recycling |
| A2 Vermieten oder Peer-to-Peer-Teilen | B2 Anteil von recycelten Materialien erhöhen | C2 Modulares und veränderbares Design | D2 Modulares Design | E2 Verständnis der Materialien |
| A3 Wiederverwenden, Aufarbeiten oder Upcycling | B3 Anteil von biobasierten Materialien erhöhen | C3 Aufrüstbare Produkte | D3 Standardisiertes Design | E3 Reduzierung oder Verbot von Toxizität |
| A4 Materialverbrauch schon im Design minimieren | | C4 Reparierbarkeit und Wartungsmöglichkeiten | D4 Verständnis der Zusammen-setzung und Verbindungen | E4 Biologisch abbaubare / kompostierbare Materialien |
| A5 Abfall vermeiden | | C5 Vertragliche Vereinbarungen für Wartung und Reparatur | D5 Vertragliche Vereinbarungen für Rücknahme und Wieder-verwendung | E5 Vertragliche Vereinbarungen für Rücknahme & Recycling |
| | | C6 Vertragliche Anreize zur Verlängerung der Nutzungsdauer | D6 Förderung von zirkulären Geschäftsmodellen | E6 Förderung von zirkulären Geschäftsmodellen |
| | | C7 Beratung durch den Lieferanten zur optimierten Nutzung des Produkts | | |
| | | C8 erweiterte Rücknahmegarantien | | |

CIRCULAR FLANDERS

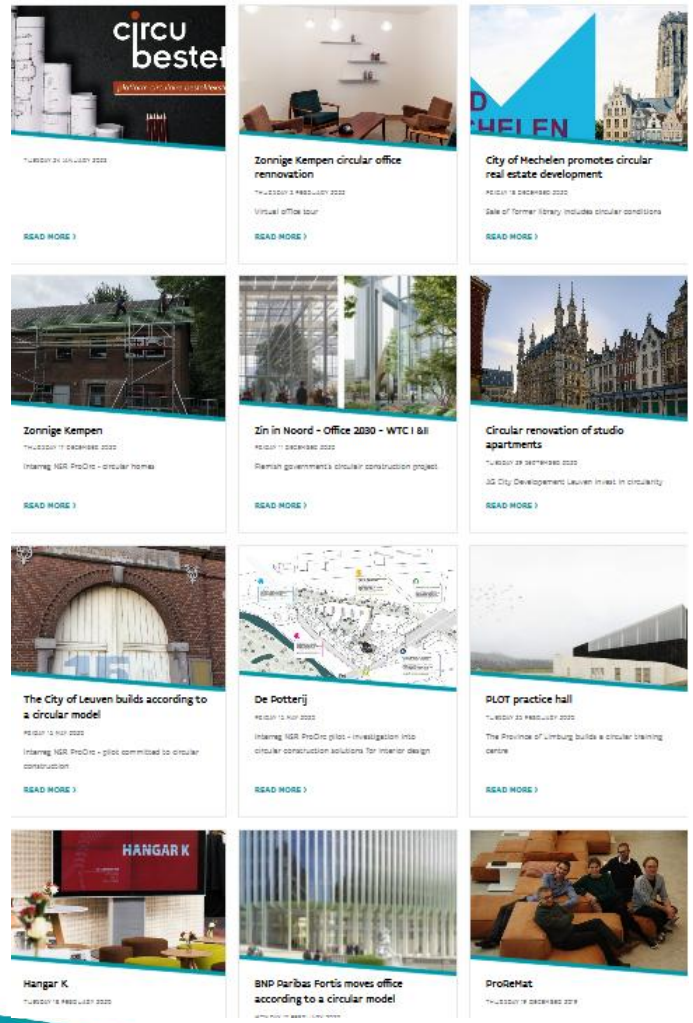
CC BY SA

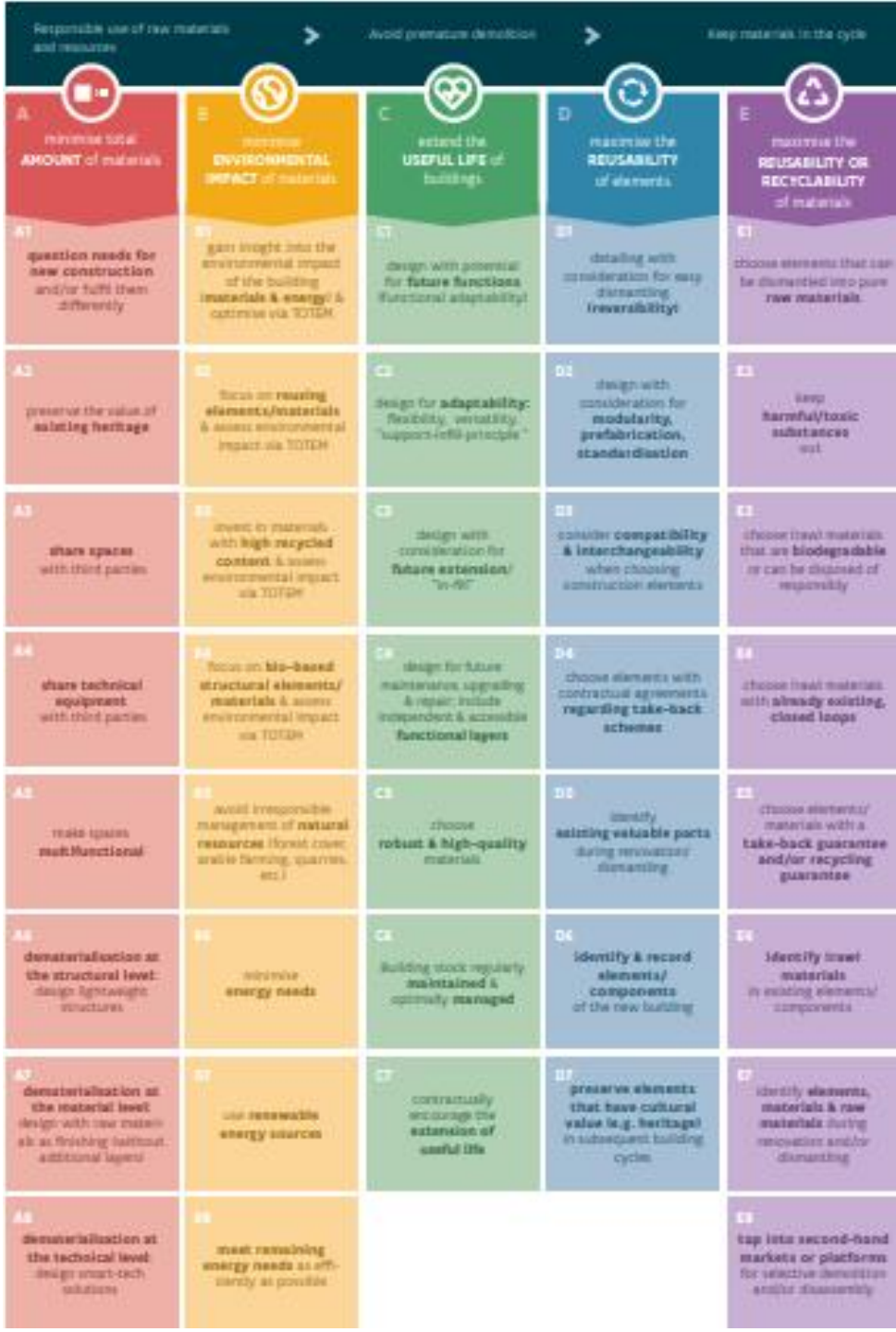
# Setting specifications

Circularprocurement.be



# Circularprocurement.be



5

# Circular Ports

# Circular Ports

## New Chair centered on monitoring the circular economy impact in Flemish sea ports

News | Circular Port Mon... | Monitoring | Posted on 21/05/2024

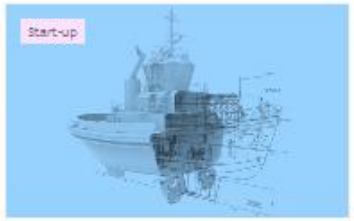





### Circular Port Monitor

How to develop a proper framework and process towards a mature monitoring system for the circular economy in port ecosystems.

LEARN MORE >




### Circular Ship Design

How can we make ships more modular and flexible in changing times, and ensure that a circular ship with more circular material choices can compete with the current financing models for traditional ships?

LEARN MORE >




### Delta Atelier

A collaboration with Delta Atelier on a shared exploration, incubation and knowledge-sharing project around the Circular (City) Ports challenge.

LEARN MORE >




### Mastering Metabolism

https://circularports.vlaanderen-circulair.be/



### Port Performance



### Port Integration



### Port Regeneration

6

# Jobs and Skills
# Social & Circular Hubs




# Want to know more?

Scan the QR code for more info on the program and enrollment.

https://vlaanderen-circulair.be/nl/cap-for-trainers

# Circular economy for trainers

## Enroll in a unique train-the-trainer edition of the circular ambassador program

### The 'Circular Ambassador Program'

Transitioning towards a circular economy requires knowledge of the circular economy, but also the skills to turn that knowledge into concrete action and initiate change within organisations. That is why the Circular Ambassador Program was created to shape ambitious professionals into Circular Ambassadors.

CAP succeeds in this aim by presenting a highly interactive 7-day programme that combines the application circular economy theory with skills development and practical application to real-life cases.

**After three successful editions, we will share our learnings with trainers across Europe to develop and improve circular economy trainings.**

### Train-the-trainer edition

Do you want to venture into or improve your own circular economy trainings? Expand your expertise in circular economy or change making skills? Do you want to experience first-hand which value CAP can offer?

**Then enroll in this exclusive European train-the-trainer edition that will only run once. Now or never! Places are limited.**

### Excited?

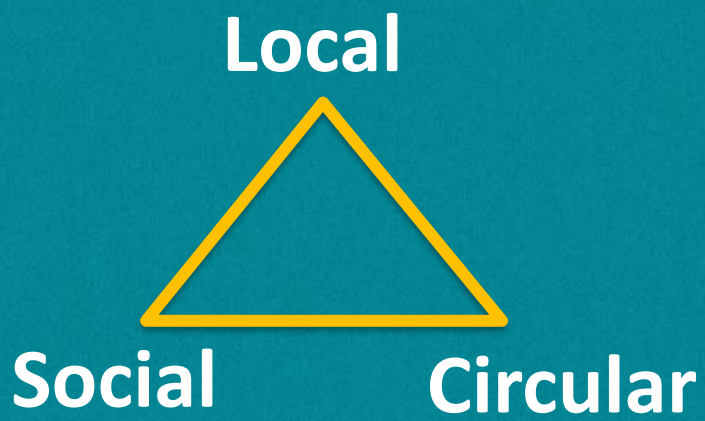
Want to know more or enroll straight away? Scan the QR code.

The Argonauts – Möbius – Vito – Circular Flanders

# How to stimulate cooperation?

- Initiating cooperation in the most practical way
  –> **supporting hubs in Flanders**

- 3 perspectives in the DNA of the hub







FOODLOOPS









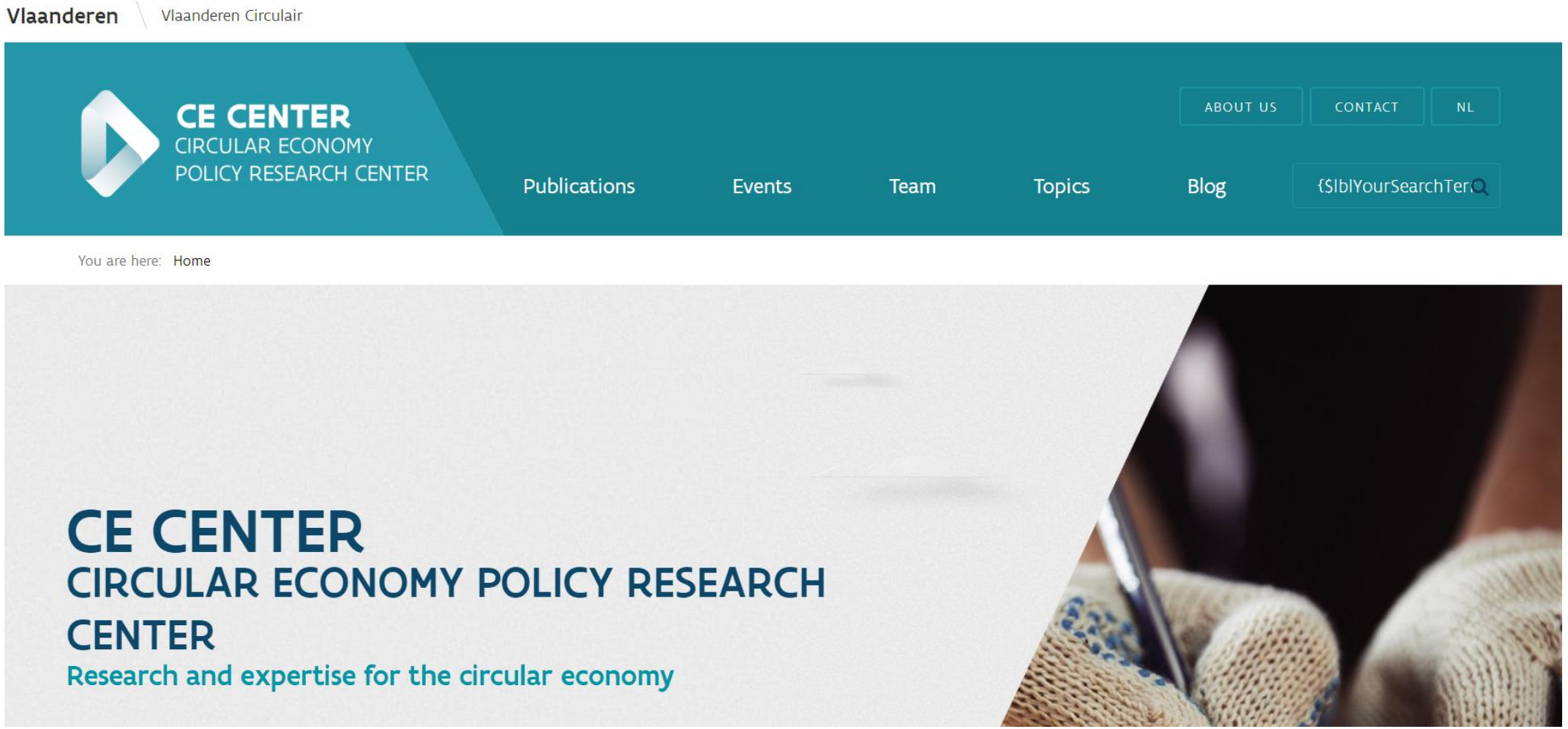

circulatte


Laureaat

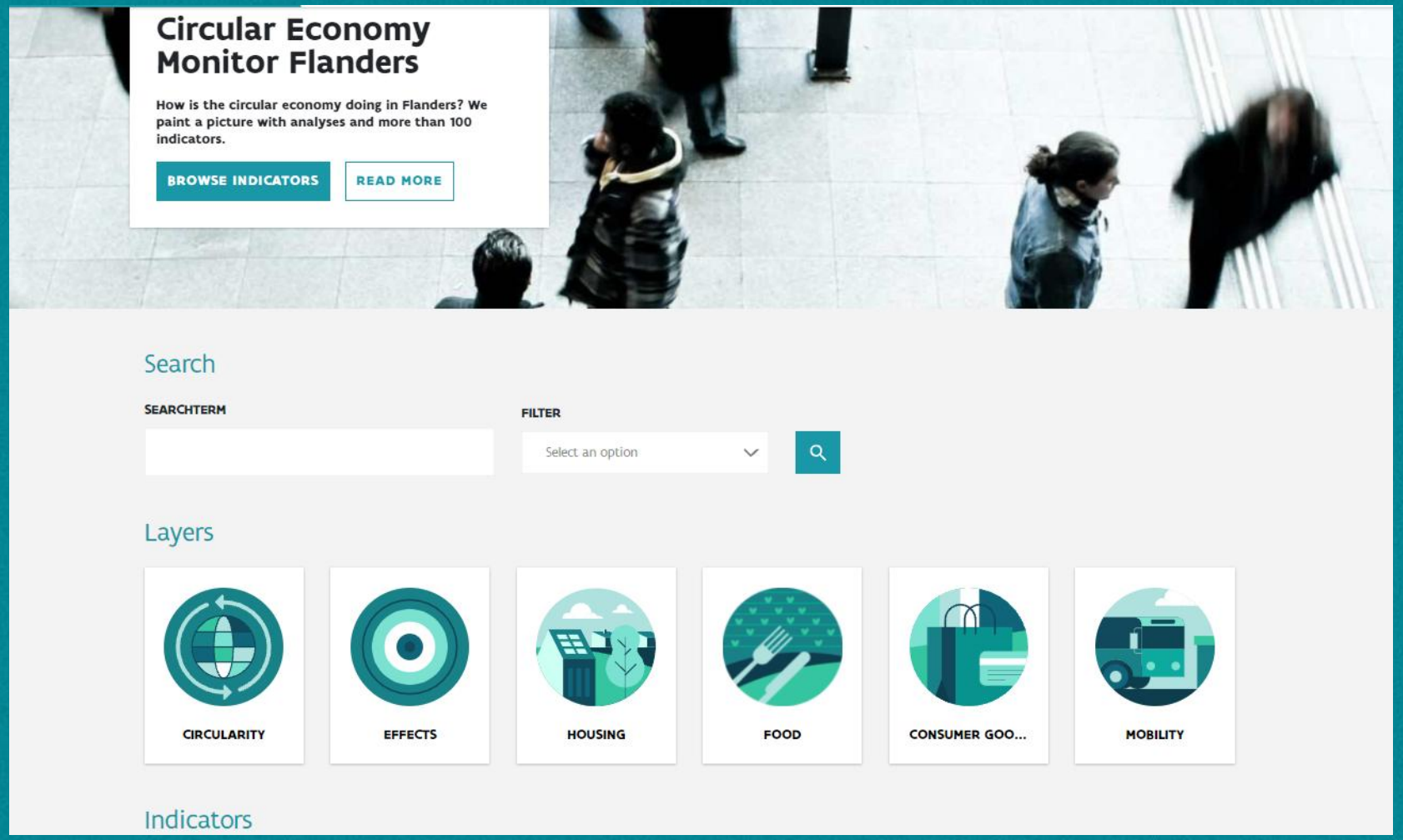

WINSULATION
CIRCULAIR

# 7 Research and Monitoring

# Research


Vlaanderen
Vlaanderen Circulair
CE CENTER
CIRCULAR ECONOMY
POLICY RESEARCH CENTER
ABOUT US
CONTACT
NL
Publications
Events
Team
Topics
Blog
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You are here: Home
CE CENTER
CIRCULAR ECONOMY POLICY RESEARCH CENTER
Research and expertise for the circular economy

# www.cemonitor.be



# 8 European partnership

# Circular Economy Stakeholder Platform

ECESP
EUROPEAN CIRCULAR ECONOMY STAKEHOLDER PLATFORM

## Good Practices




## Strategies



## Knowledge




## Dialogue



## Networks



## EU Circular Talks




CIRCULAR CIRCULAR ECONOMY



# Together towards a Circular Valley

Brigitte Mouligneau

## GET IN TOUCH WITH CIRCULAR FLANDERS

LINKEDIN

linkedin.com/company/vlaanderen-circulair

WEBSITE

vlaanderen-circulair.be/en

KU LEUVEN GENT

# Space Matters: Densification as a Circular Strategy

**VLAIO impaC3t project**
26 March 2025



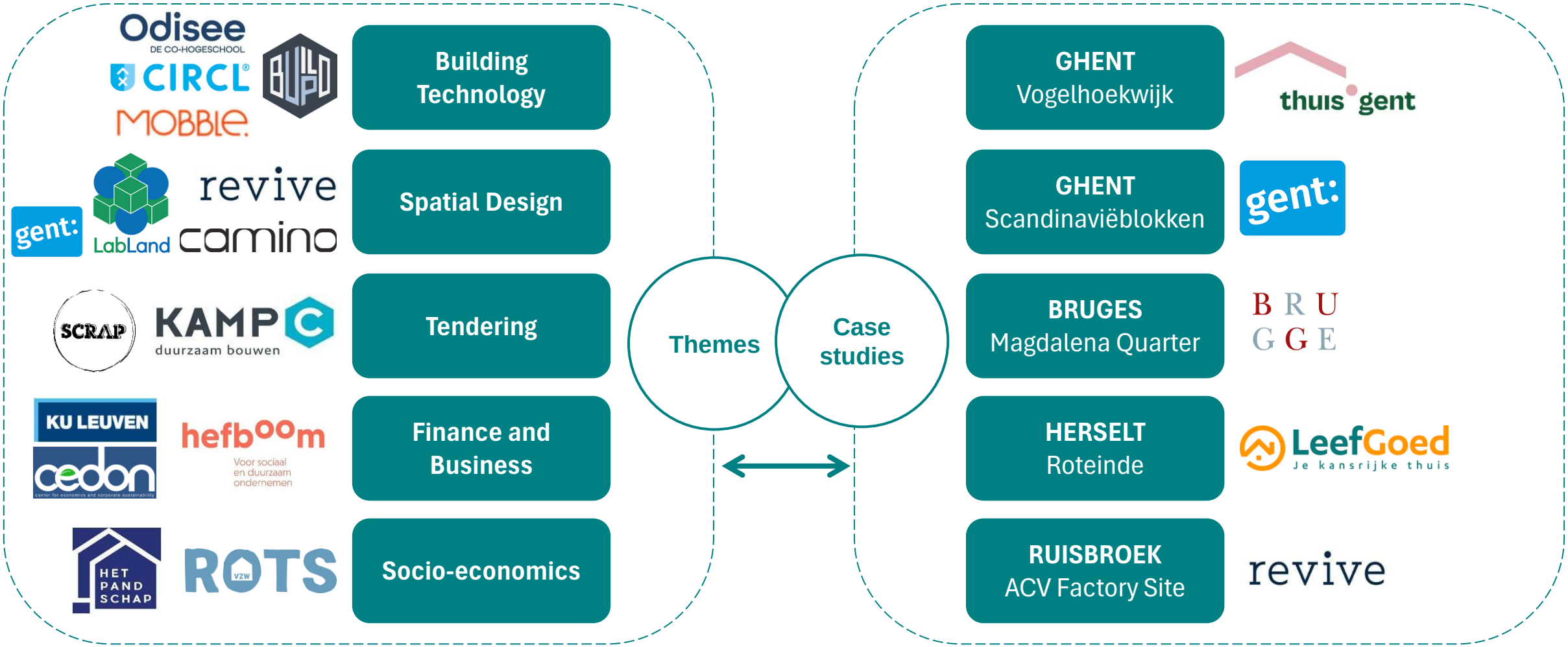

Dr.arch. Jesse Foster Honsa

Ir.arch. Tine Van de Kerckhove

# VLAIO impaC$^3$t living lab, KU Leuven

## Integrating a people- and environmentally friendly process approach for Circular, Constructive, and Co-creative Renovation Projects

# VLAIO impaC³t living lab, KU Leuven



# CASES

## Neighbourhoods



**BRUGES Magdalena Quarter**
Municipality + residents + stakeholders



**RUISBROEK ACV Factory Site**
Revive project developers + owners + residents



**GHENT Scandinaviëblokken**
Municipality + homeowners association + residents

## Social housing estates



**GHENT Vogelhoekwijk**
Thuispunt social housing company



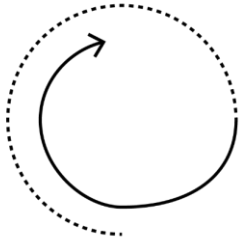
**LANDEN "Nieuw Korea"**
Kanvaz social housing company



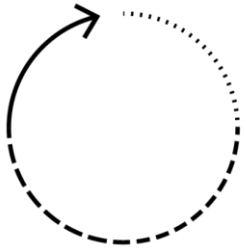
**HERSELT Roteinde**
Leefgoed social housing company

# R-LADDER PRINCIPLES

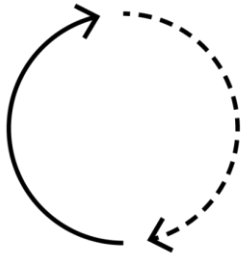
In housing and urbanism



Narrow the loop
*(avoid new construction)*



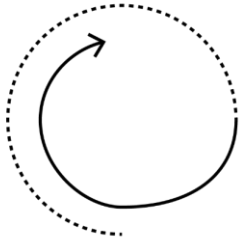
Slow the loop
*(extend building life)*



Close the loop
*(recover discarded resources)*

# R-LADDER PRINCIPLES

In housing and urbanism



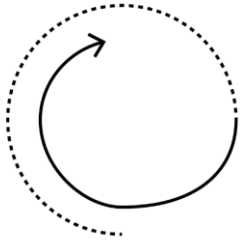
Narrow the loop *(avoid new construction)*

Intensify building use

Intensify infrastructure use

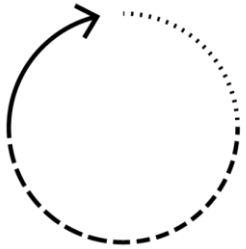
# R-LADDER PRINCIPLES

In housing and urbanism



Narrow the loop
*(avoid new construction)*

- Intensify building use
- Intensify infrastructure use

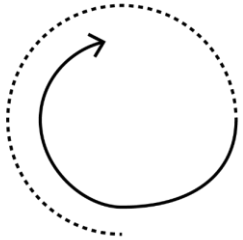


Slow the loop
*(extend building life)*

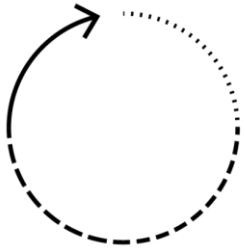
- Reuse buildings (don't demolish)
- Design for adaptability

# R-LADDER PRINCIPLES

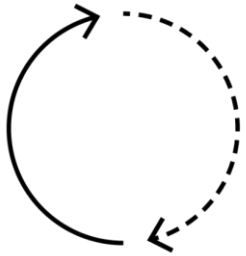
In housing and urbanism



Narrow the loop
*(avoid new construction)*



Slow the loop
*(extend building life)*



Close the loop
*(recover discarded resources)*

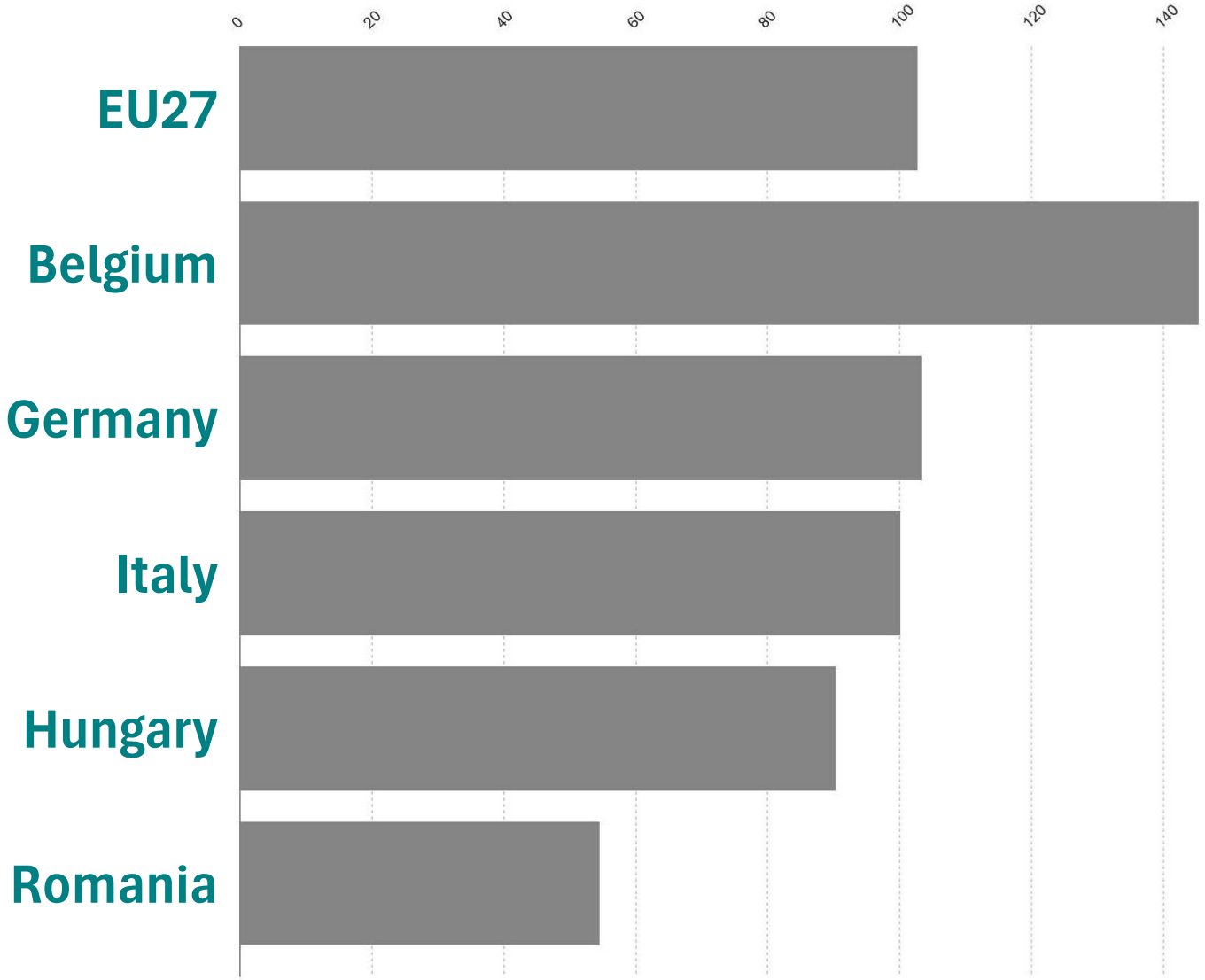
- Intensify building use
- Intensify infrastructure use
- Reuse buildings (don't demolish)
- Design for adaptability
- Design for demountability
- Reuse materials
- Recycle materials

Higher on the ladder = greater gains

1. Intensify building use
2. Intensify infrastructure use
3. Avoid demolition
4. Design for adaptability

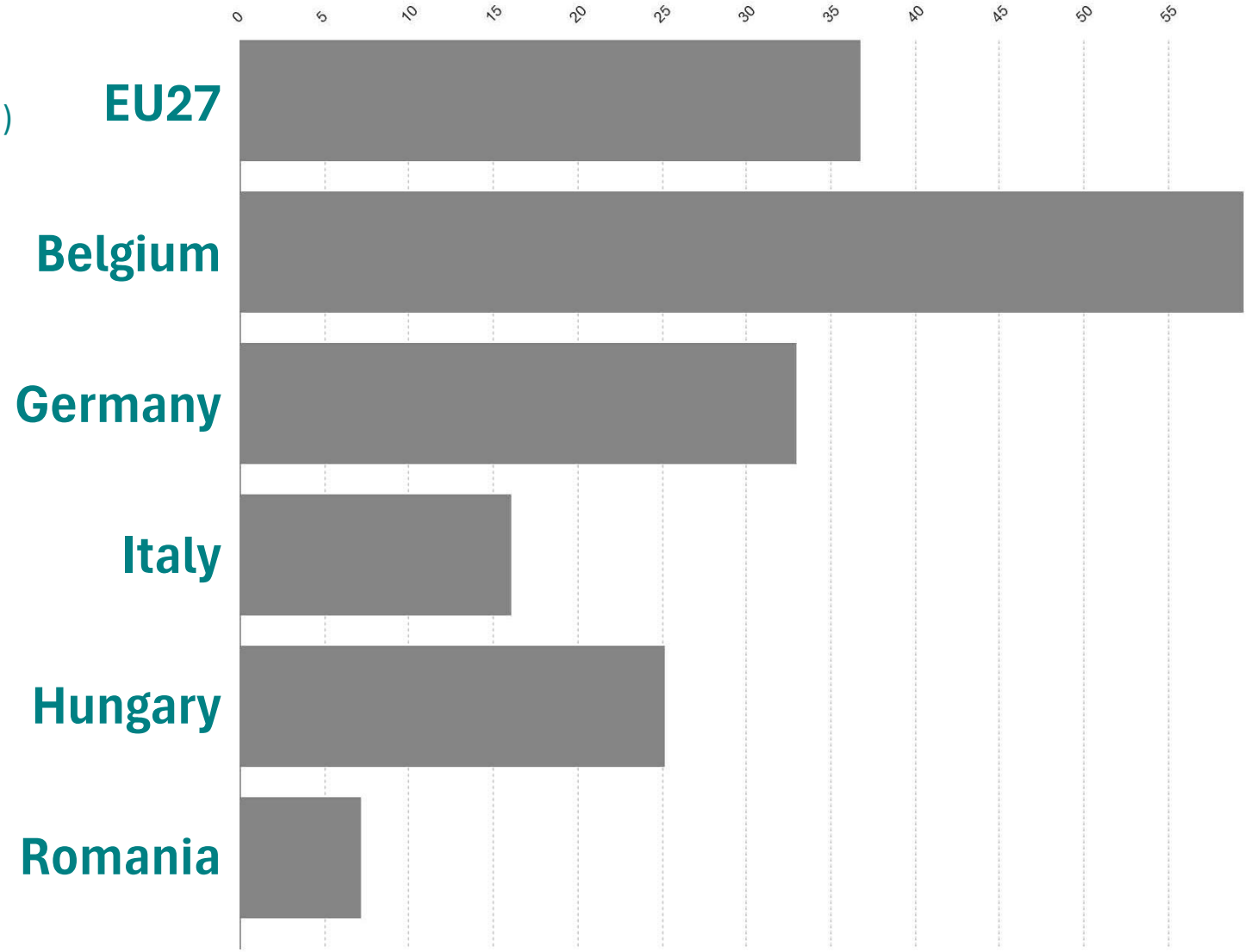
# 1. Intensify building use

# Average dwelling size (m2)



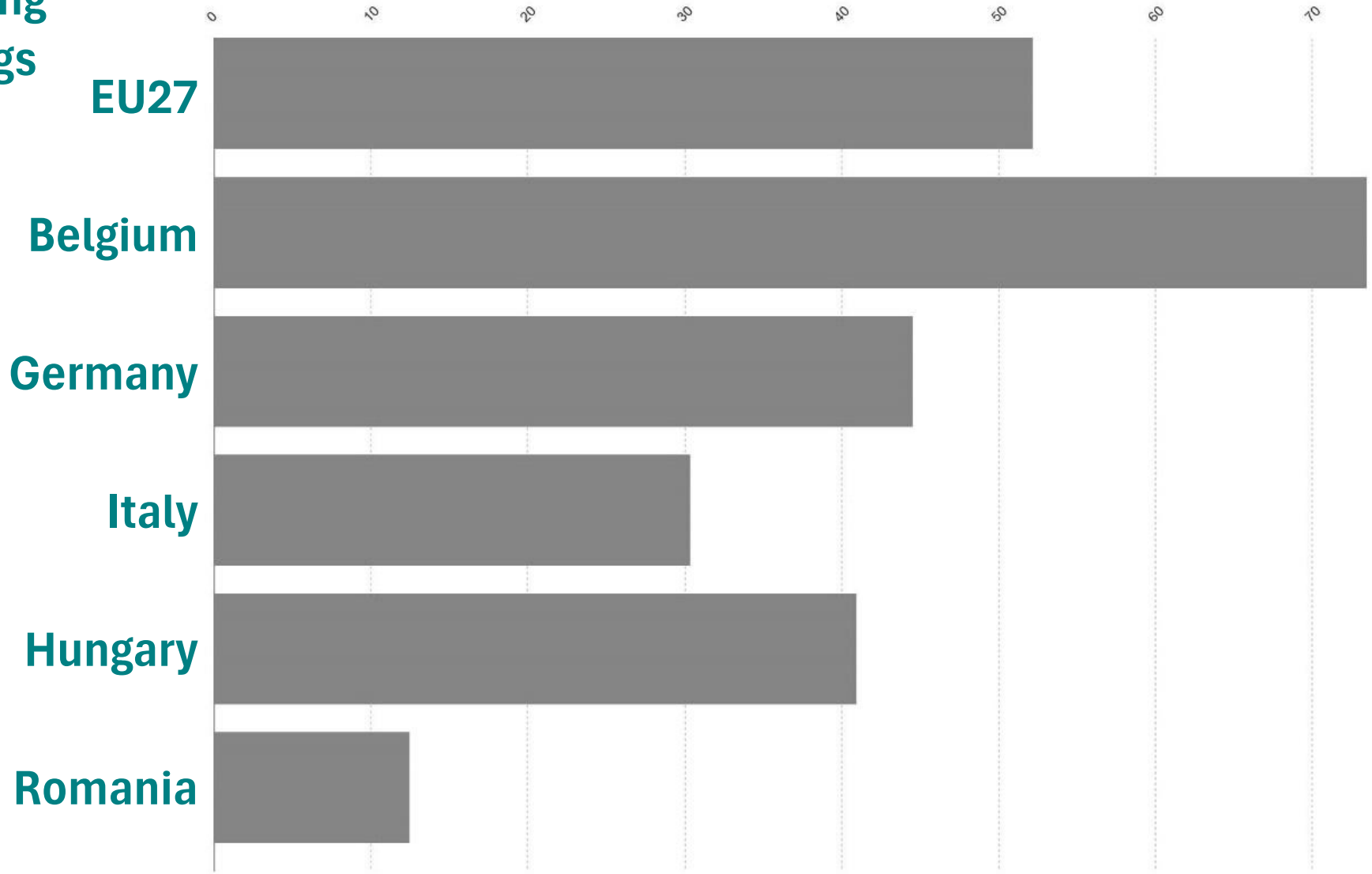
# % of people living in under-occupied dwellings

(#bedrooms > #people including children)



# % of older people (+65) living in under-occupied dwellings

(#bedrooms > #people)



**EPC B**
**150**
kWh/m²/yr



**70 m²**
10,500 kWh/yr

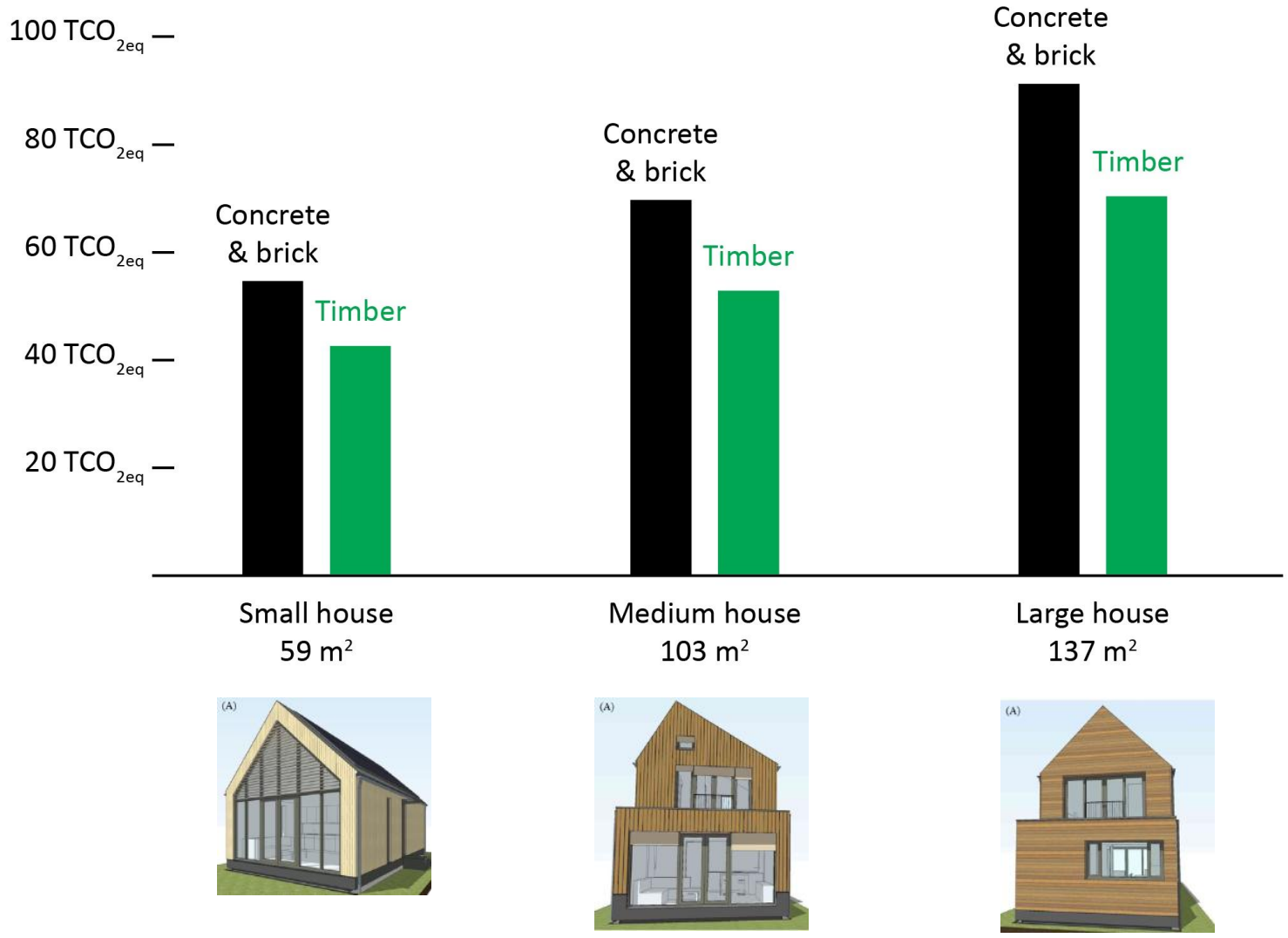
**EPC B**
**150**
kWh/m²/yr



**140 m²**
21,000 kWh/yr

# LCA: House size and $CO_2$ content of construction

## Total life cycle material impact
(cradle to grave: A1-A5, B2+B4, C1-C4)





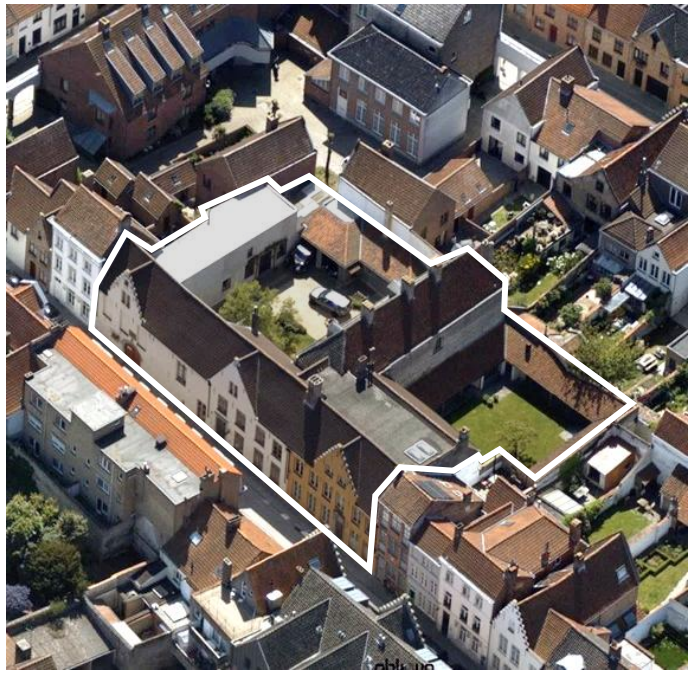





Souaid, C., ten Caat, P. N., Meijer, A., & Visscher, H. (2024). Downsizing and the use of timber as embodied carbon reduction strategies for new-build housing: A partial life cycle assessment. *Building and Environment,* 253, Article 111285. https://doi.org/10.1016/j.buildenv.2024.111285

# Underoccupany in impaC3t case studies

## Bruges



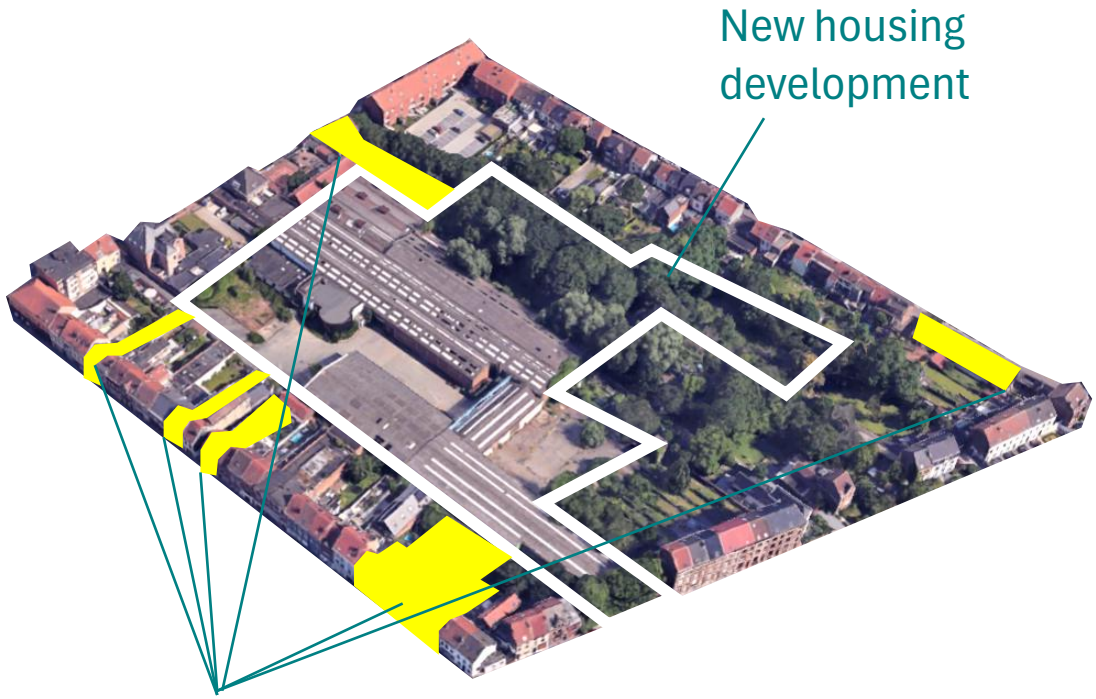
2-person household in +1,000m2

## Herselt



Half of 3-bedroom homes occupied by just one person each

## Ruisbroek




Vacant houses and shops

**Reducing vacancy:**
Het Pandschap
(Flemish initiative, impaC3t partner)

- Takes over the complex renovation process on behalf of a property owner (often someone who has inherited properties in poor condition)
- The dwelling is then rented via a social housing company at low rent.
- The owner gets a hassle-free renovation and management, with guaranteed rental income.



**Intensifying building use:**
"Aus Alt Mach 2 … Oder Mehr"
Baden Württemberg DE

- Splitting large family houses provides additional housing for small households
- Allows older residents with limited mobility to stay in the same neighbourhood
- Financial support for older residents
- Promotes social bonds

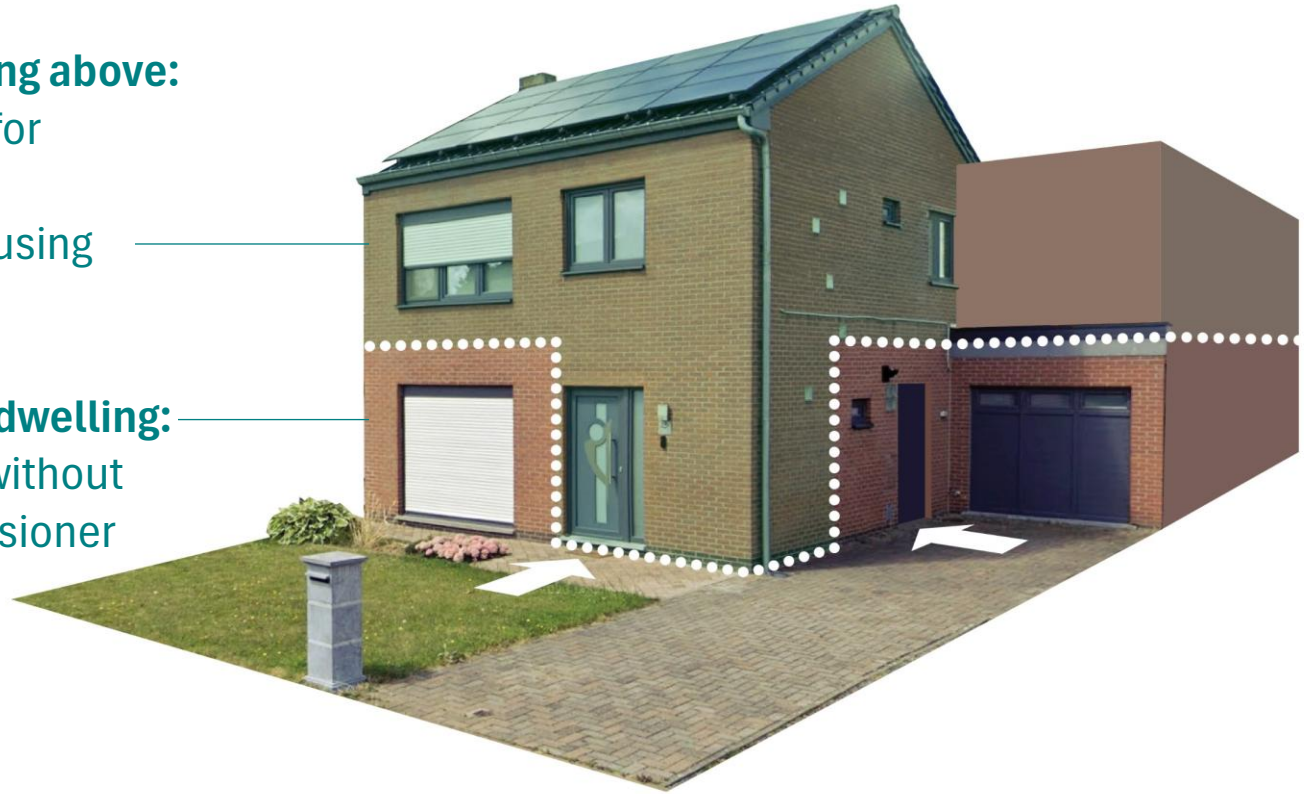


# **Intensifying building use:**
impaC3t case study, Landen

- Low-dense, underoccupied, aging area (+65ers are the largest demographic group).
- Tested a potential business model: to finance energetic renovation by also creating an additional rental unit above.

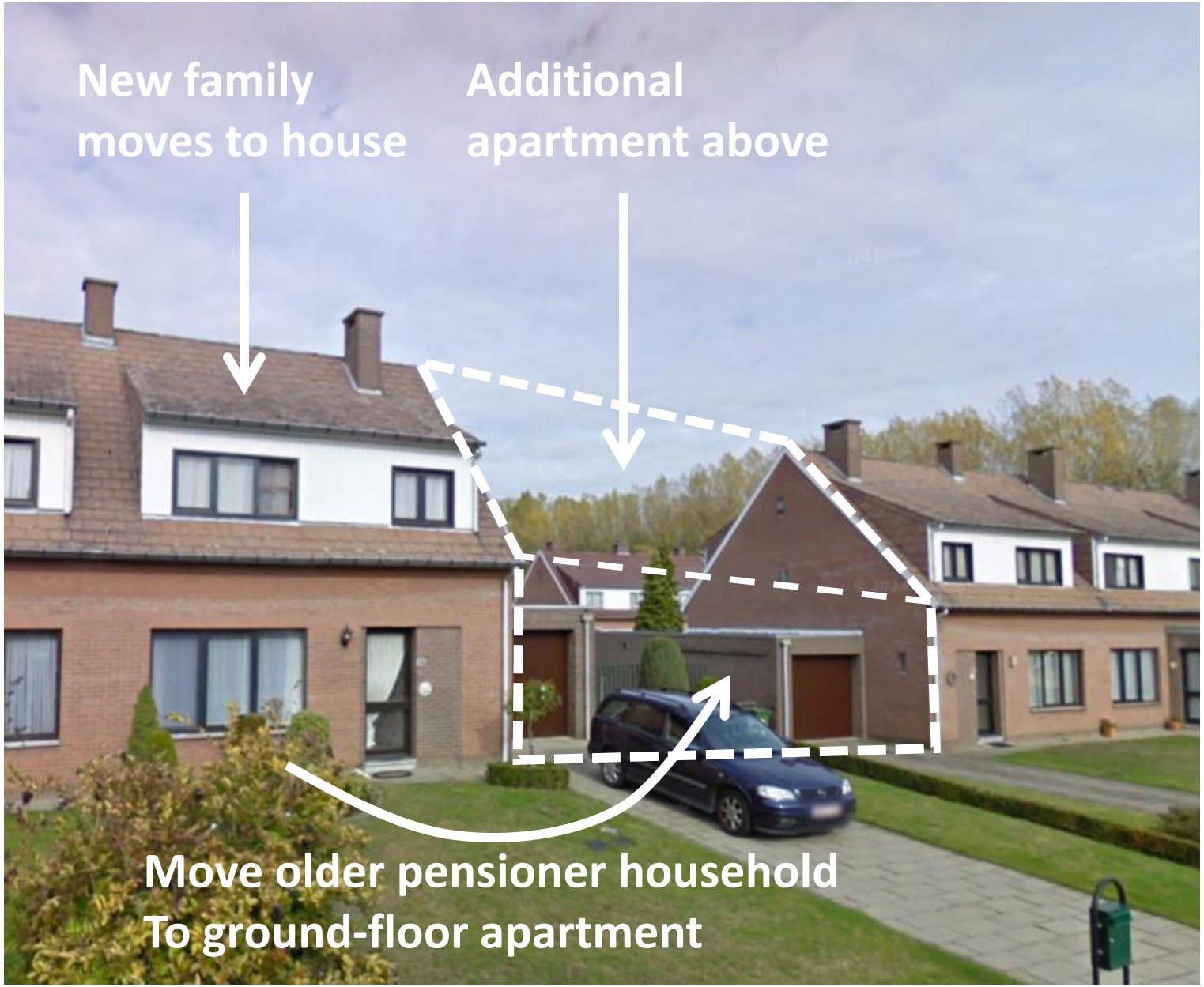
**Rental dwelling above:** extra income for pensioner, addresses housing shortage

**Ground floor dwelling:** with garden (without stairs) for pensioner



**Intensifying building use:**
impaC3t case study, Herselt

- Underoccupied social housing: 50% are singe-person dwellings, large amount of older people.
- Strategy to densify the estate with infill housing, allowing older people to move into smaller dwellings, freeing up the larger houses for families.



**Intensifying building use:**
impaC3t case study, Bruges

Renovation advice from the city to residents, including:

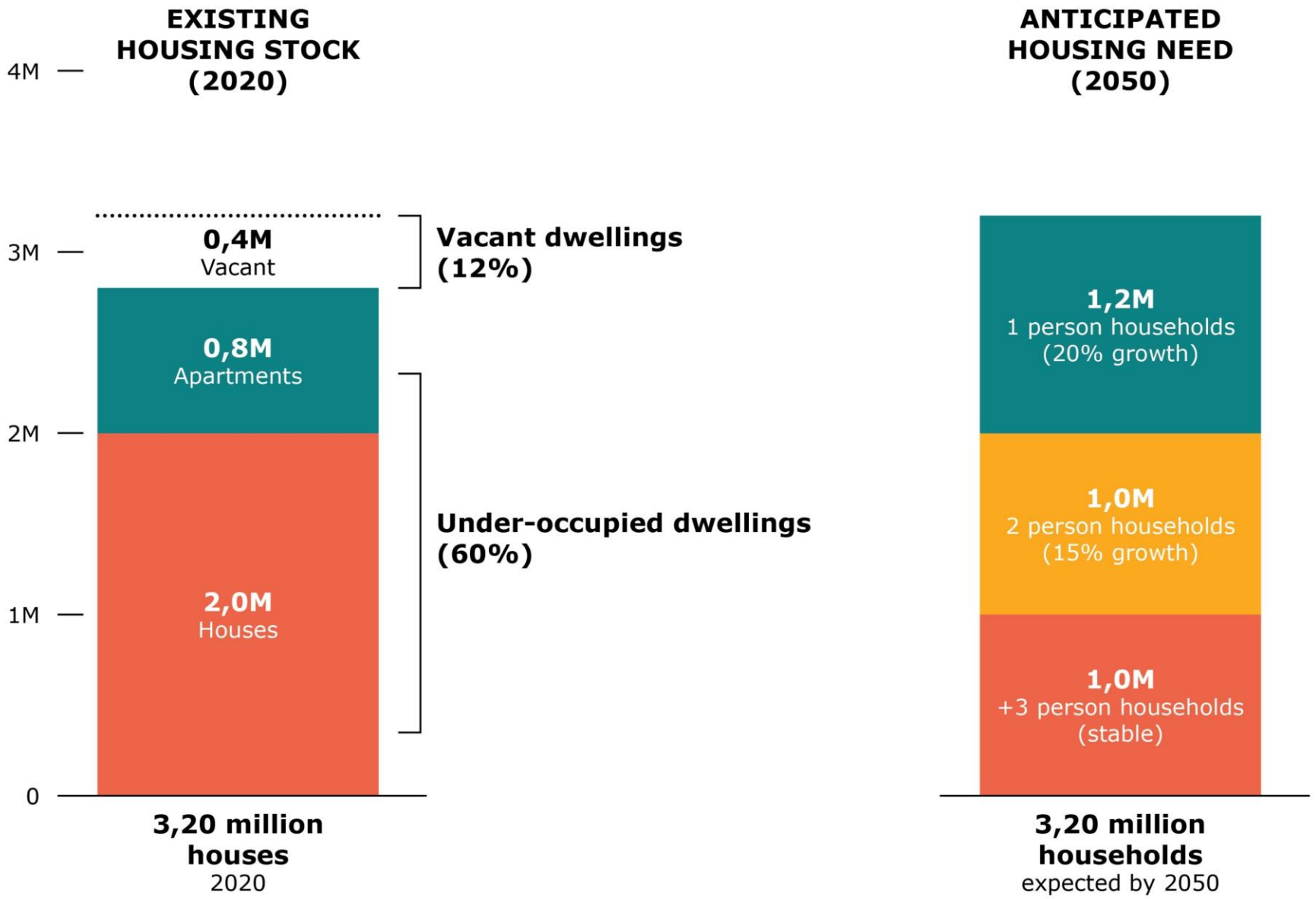
- Solutions for heritage (UNESCO)
- Reversible, circular construction
- Spatial planning, considering homeowners' long term plans and future needs for space.
- Currently testing this in 3 case study properties.



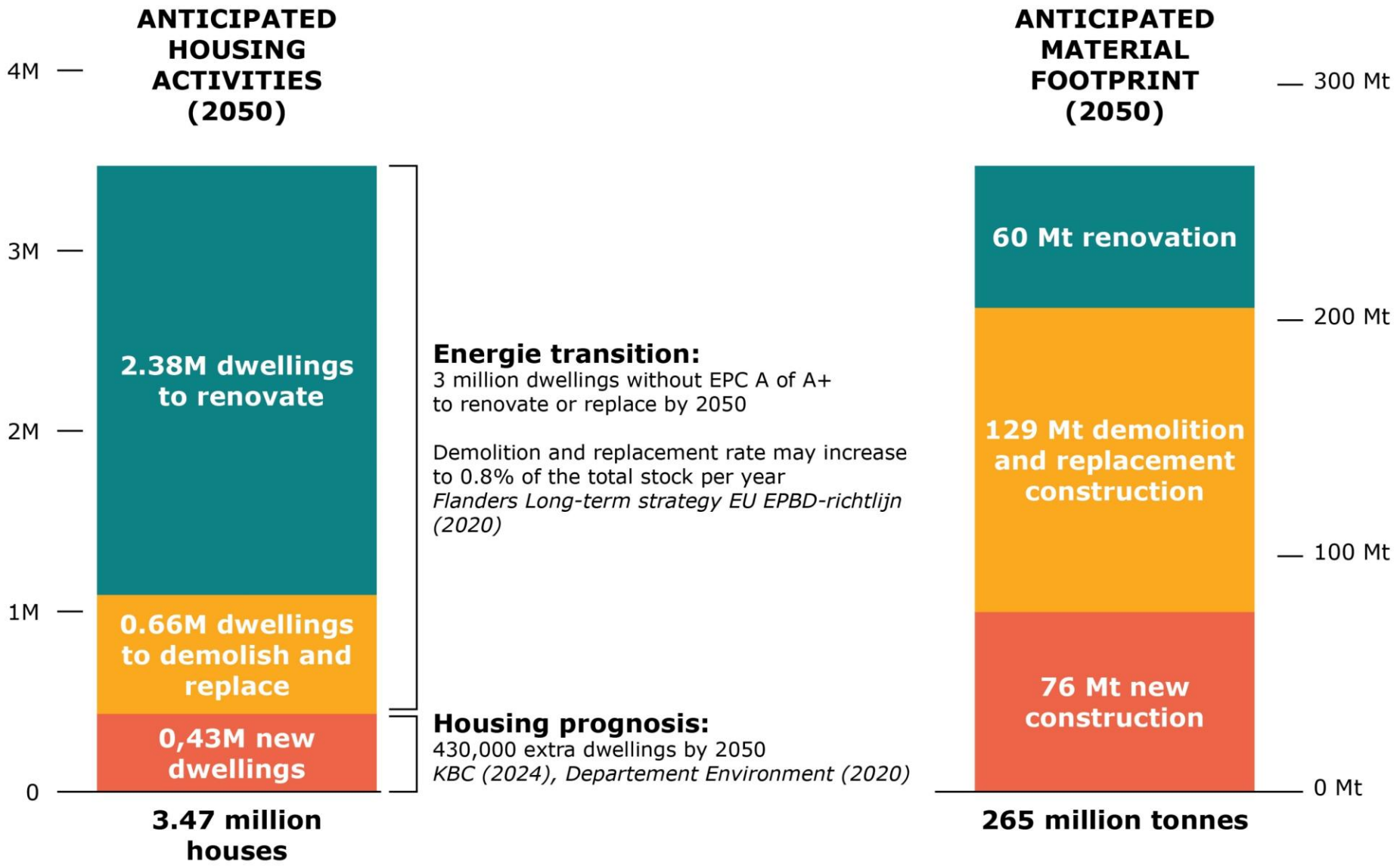
# Local policies on intensification of dwellings

| | Vacancy: Taxes | Splitting a single-family house | Car parking on site | Exeptions |
|---|---|---|---|---|
| **BRUGES** | 1st year: € 1,500<br>2nd year: € 3,000<br>...<br>Max: € 6,000 | < 180m$^2$ (3 stories)<br>< 260m$^2$ (2 stories)<br>can't be split | Single family house:<br>< 150m$^2$: 1 place<br>> 150m$^2$: 2 places<br><br>Apartment:<br>1,33 places / unit | Possible, depending on heritage and spatial qualities |
| **RUISBROEK** | 1st year: € 1,500<br>2nd year: € 3,000<br>...<br>Max: € 15,000 | < 250m$^2$ can't be split<br><br>*minimum area guidelines stricter than for social housing* | Single family house:<br>< 130m$^2$: 1 place<br>130m$^2$<260m$^2$: 2 places<br>260m$^2$<390m$^2$: 3 places<br><br>Apartment*:*<br>< 70 m2 : 1 place<br>70 < 200 m2 : 2 places<br>≥ 200 m2 : 3 places | Limited |

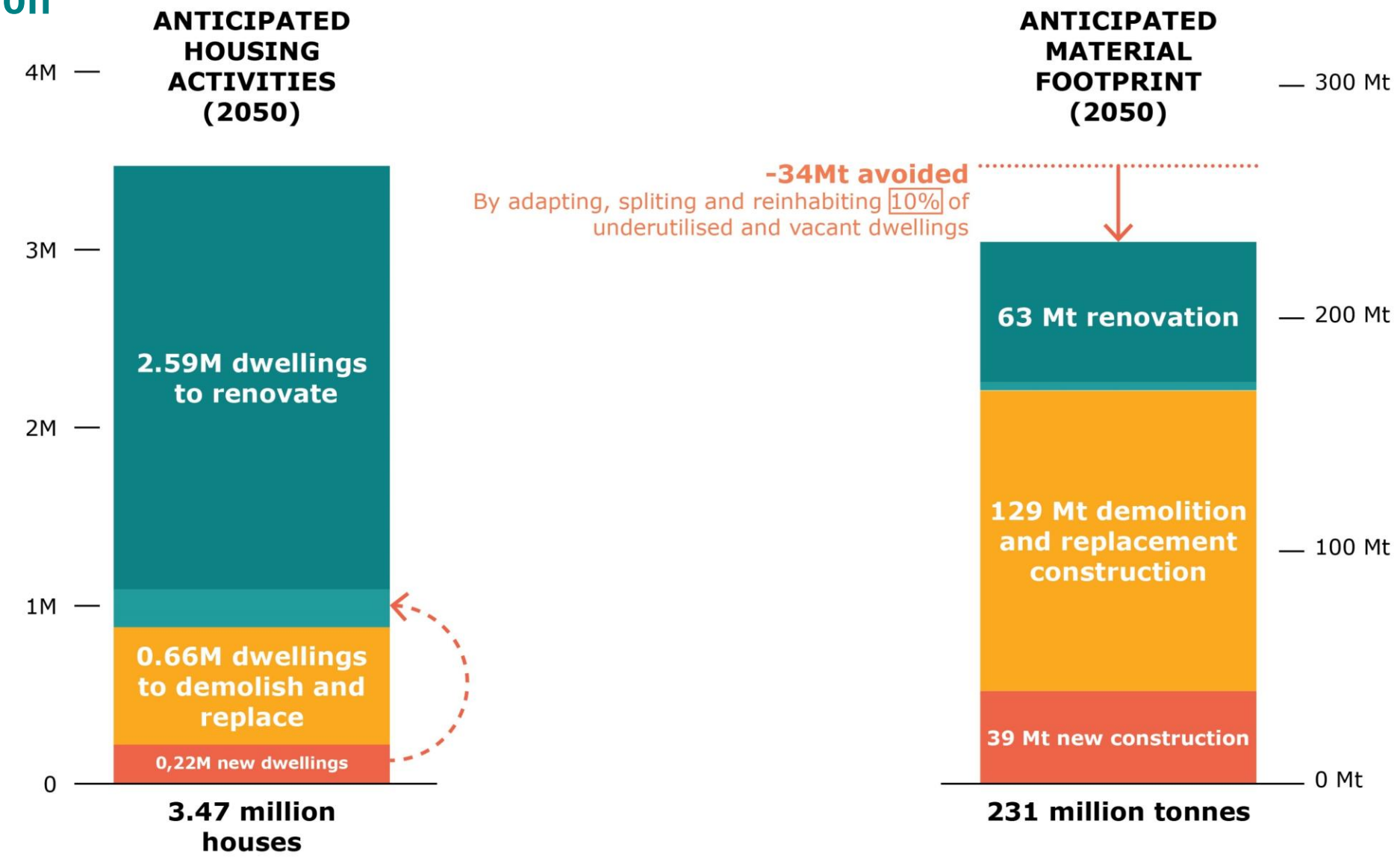
# Flanders Housing Prognosis



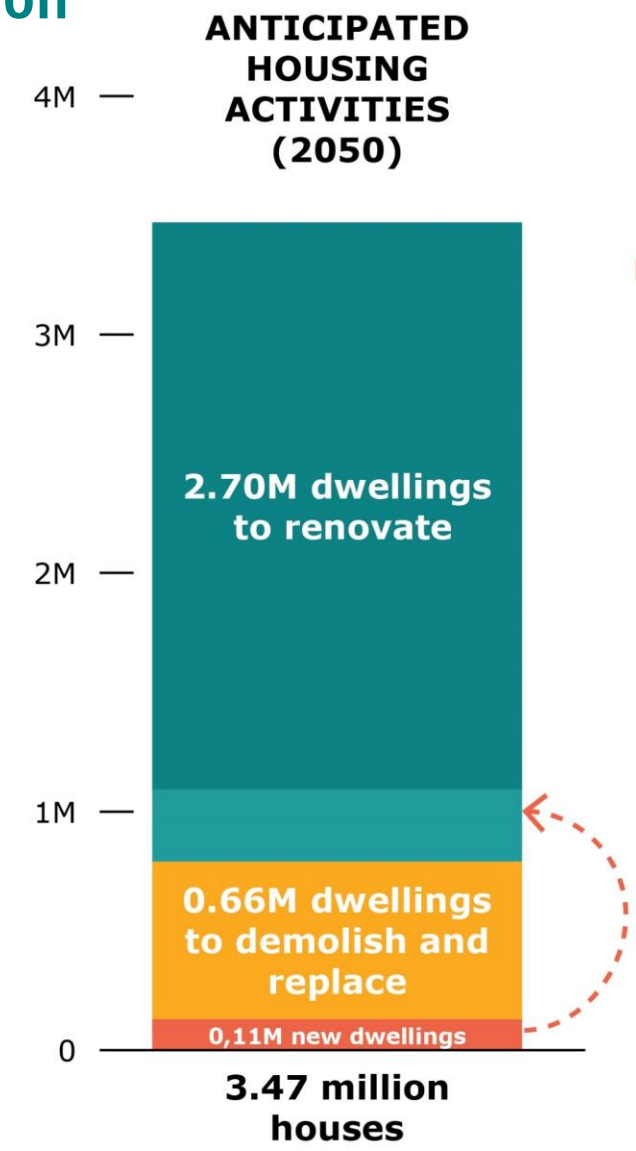
# Flanders Housing Prognosis

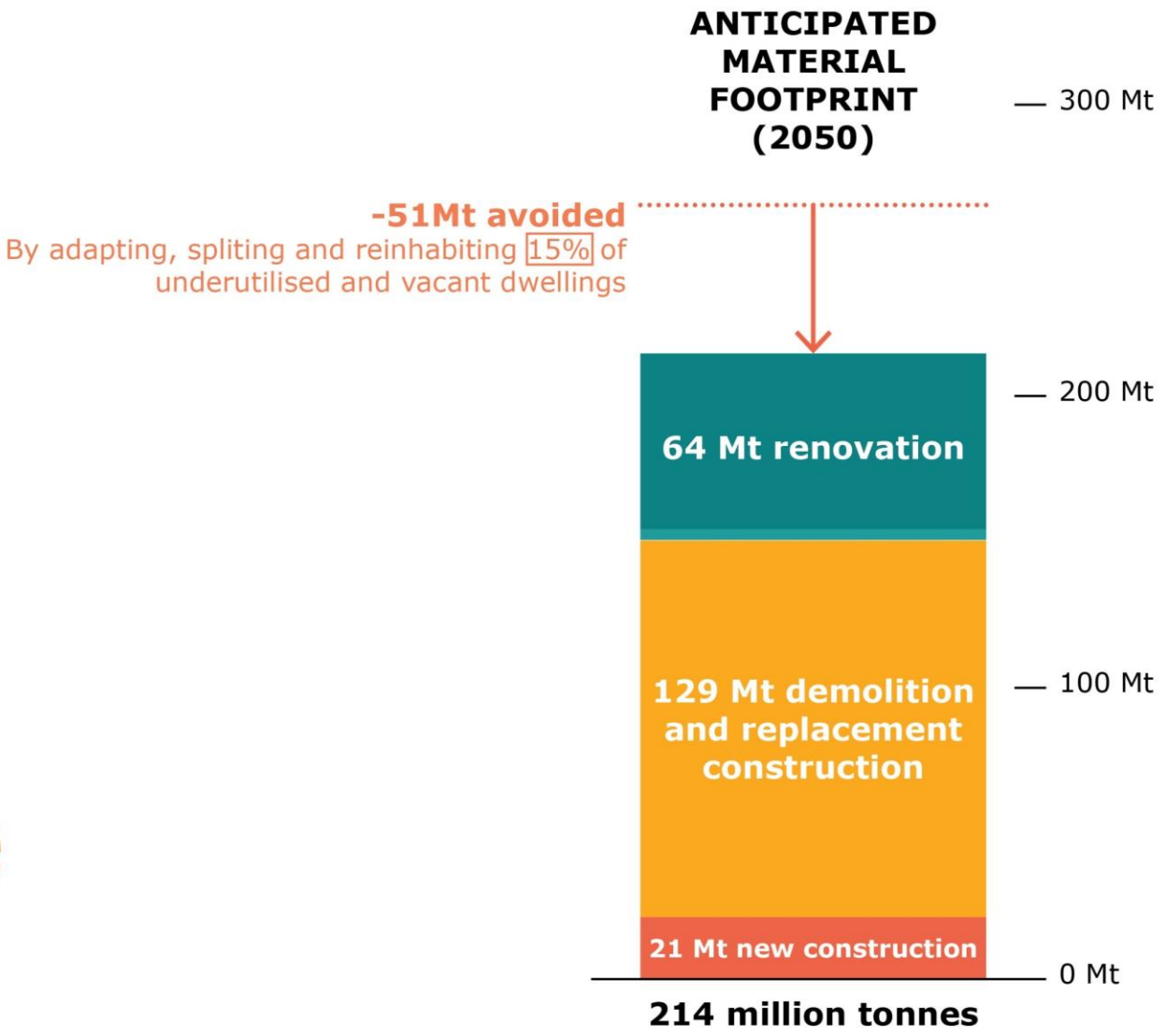


# Avoid new construction



# Avoid new construction

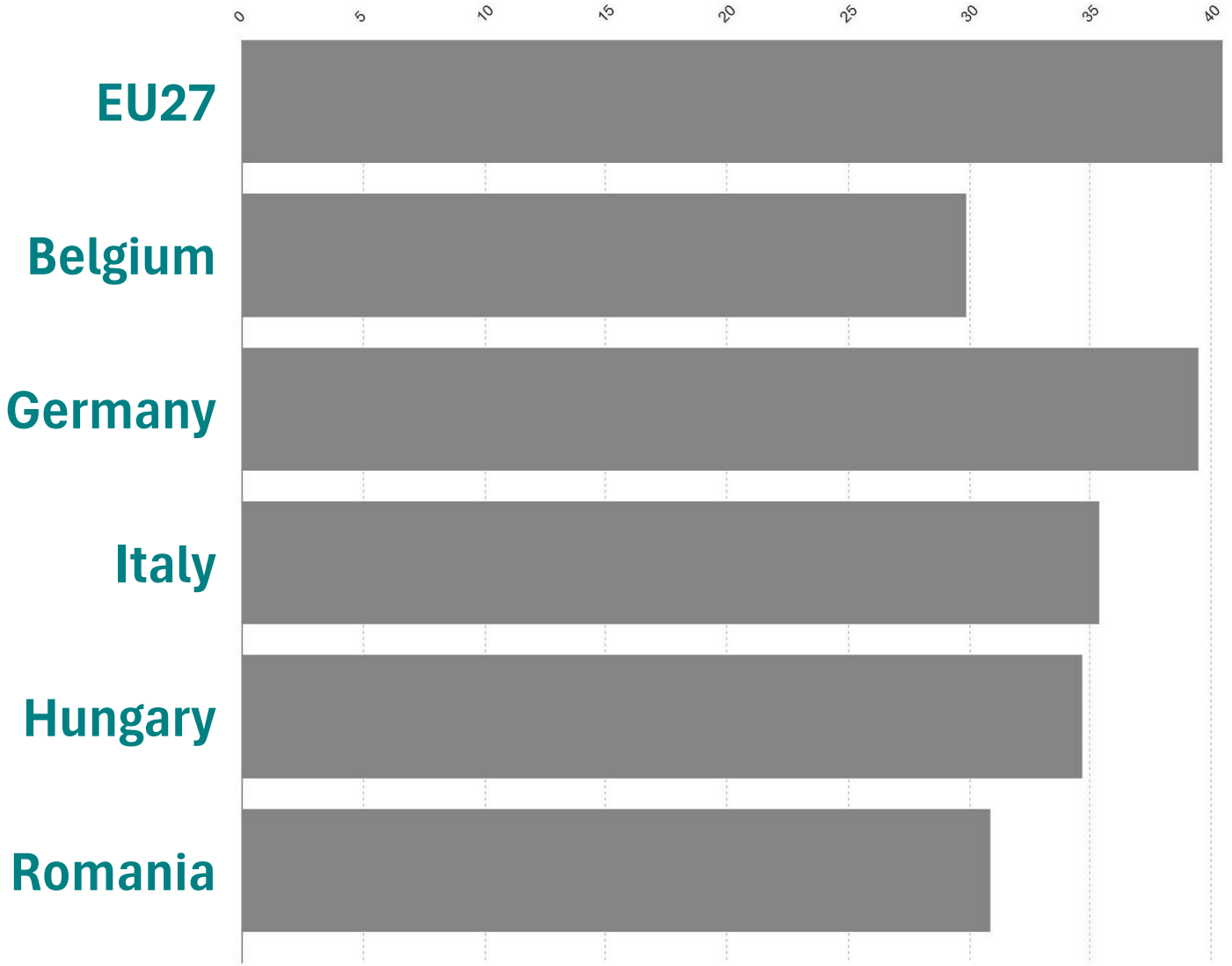


# 2. Intensify infrastructure use (densify)

# % of people living in cities

(as opposed to towns, suburbs, and rural areas)



# Suburban sprawl in Flanders

28.9% of Flanders is built-up.

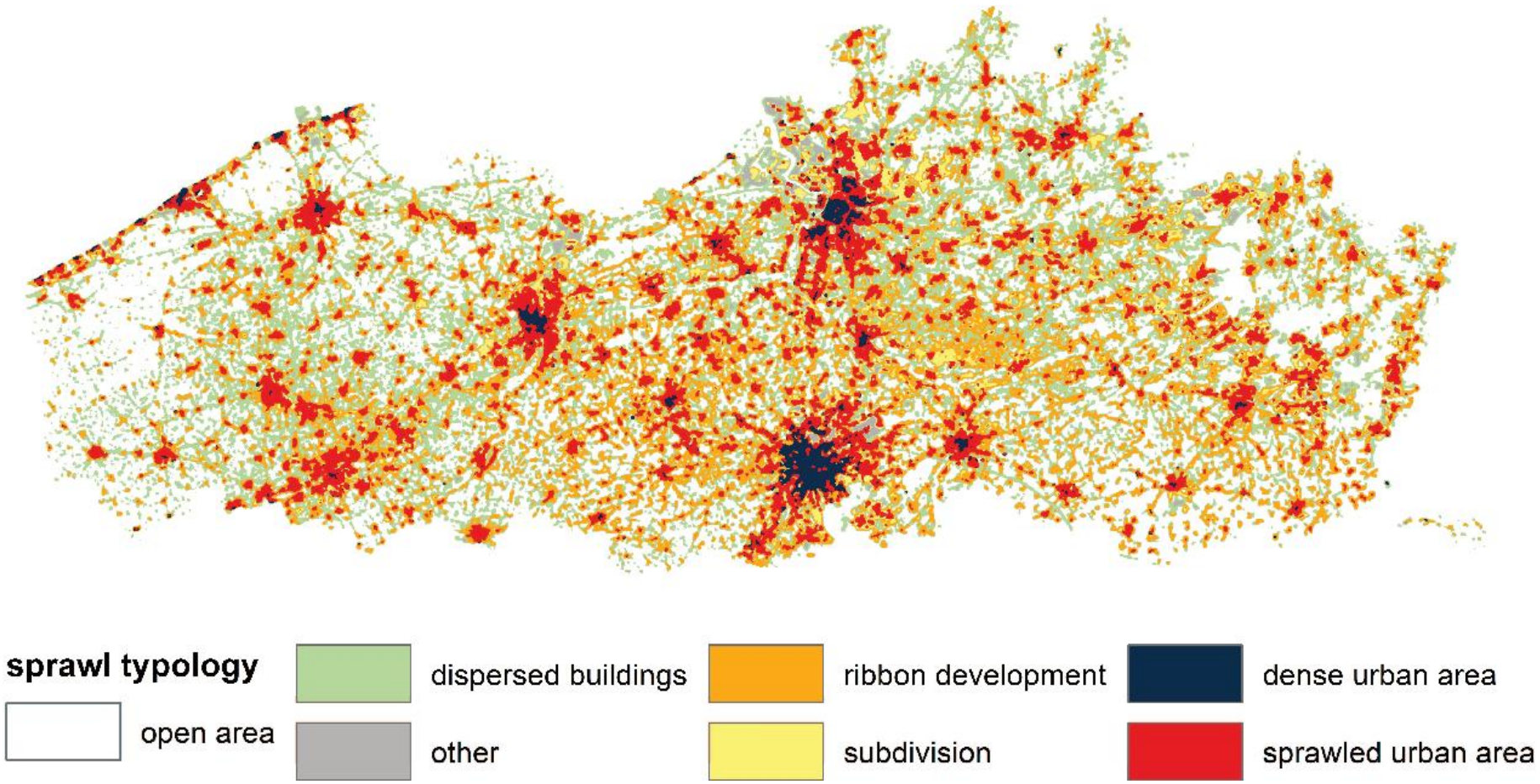



Image: Vermieren et. al, 2018.

# Infrastructure per building in Flanders

| |  **City Centers** **27% of population** |  **Outer cities / villages** **43% of population** |  **Suburbs** **22% of population** |  **Scattered development** **8% of population** |
|---|---|---|---|---|
| Local roads | 9.0m /building | 14.7m /building *(164% of city center)* | 25.0m / building *(278% of city center)* | 78.4m /building *(872% of city center)* |
| Road costs (initial investment and maintenance) | €1,050 /year/building | €1,721 /year/building *(164% of city center)* | €2,288 /year/building *(218% of city center)* | €7,171 /year/building *(683% of city center)* |

Source: Flemish Department of the Environment (2021). Monetarisering Urban Sprawl in Vlaanderen.

# Case study: Ghent Vogelhoekwijk densification



**Infrastructure efficiency:**
**170 dwellings per km**
(10m roads per building)

Roads: 956m

Existing dwellings: 163

# Case study: Ghent Vogelhoekwijk densification



**Infrastructure efficiency:**
**209 dwellings per km (+23%)**
(8m roads per building)

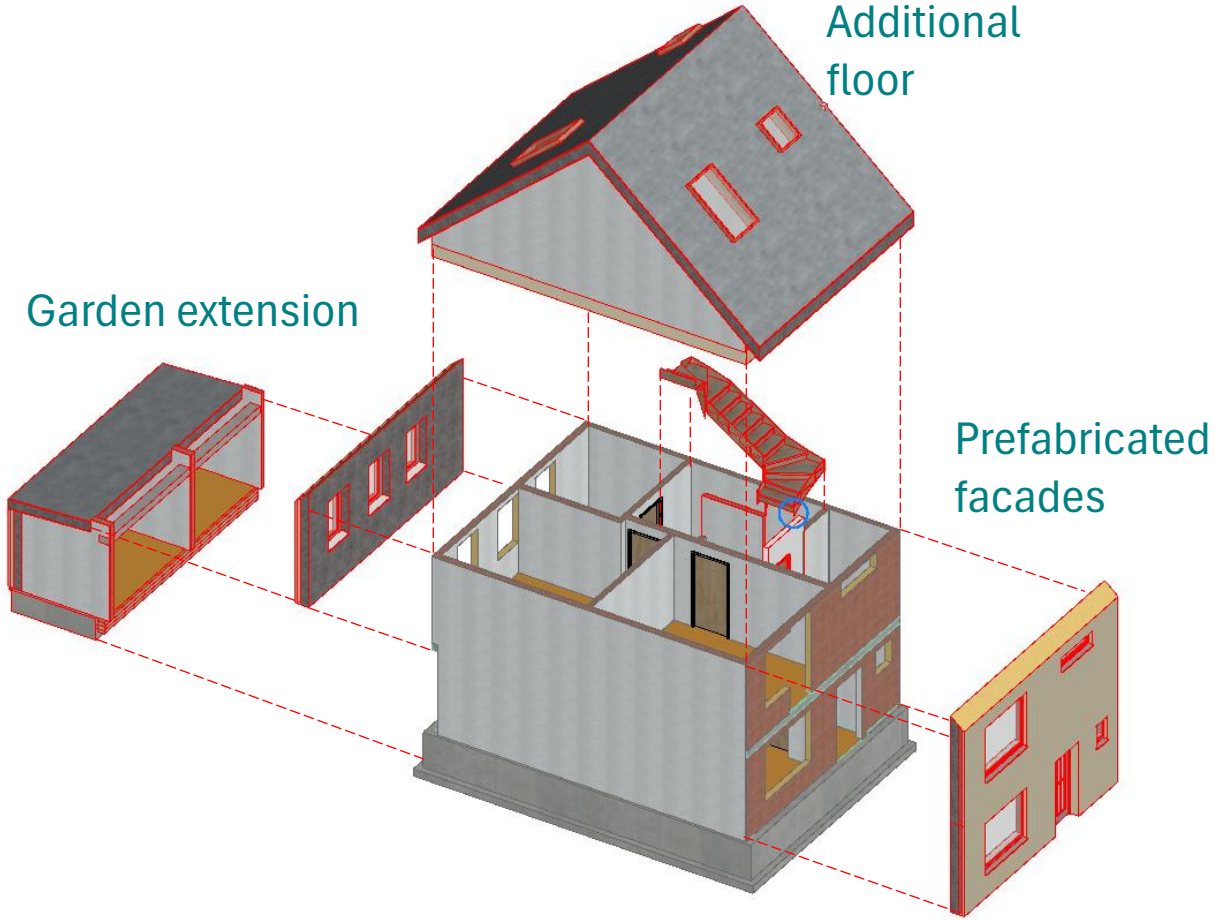
- Roads: 956m
- Existing dwellings renovated: 144
- New dwellings: 56
- Demolished dwellings: 13

# Case study:
# Ghent Vogelhoekwijk densification



Image: Atelier Midi

# Case study:
# Ghent Vogelhoekwijk densification



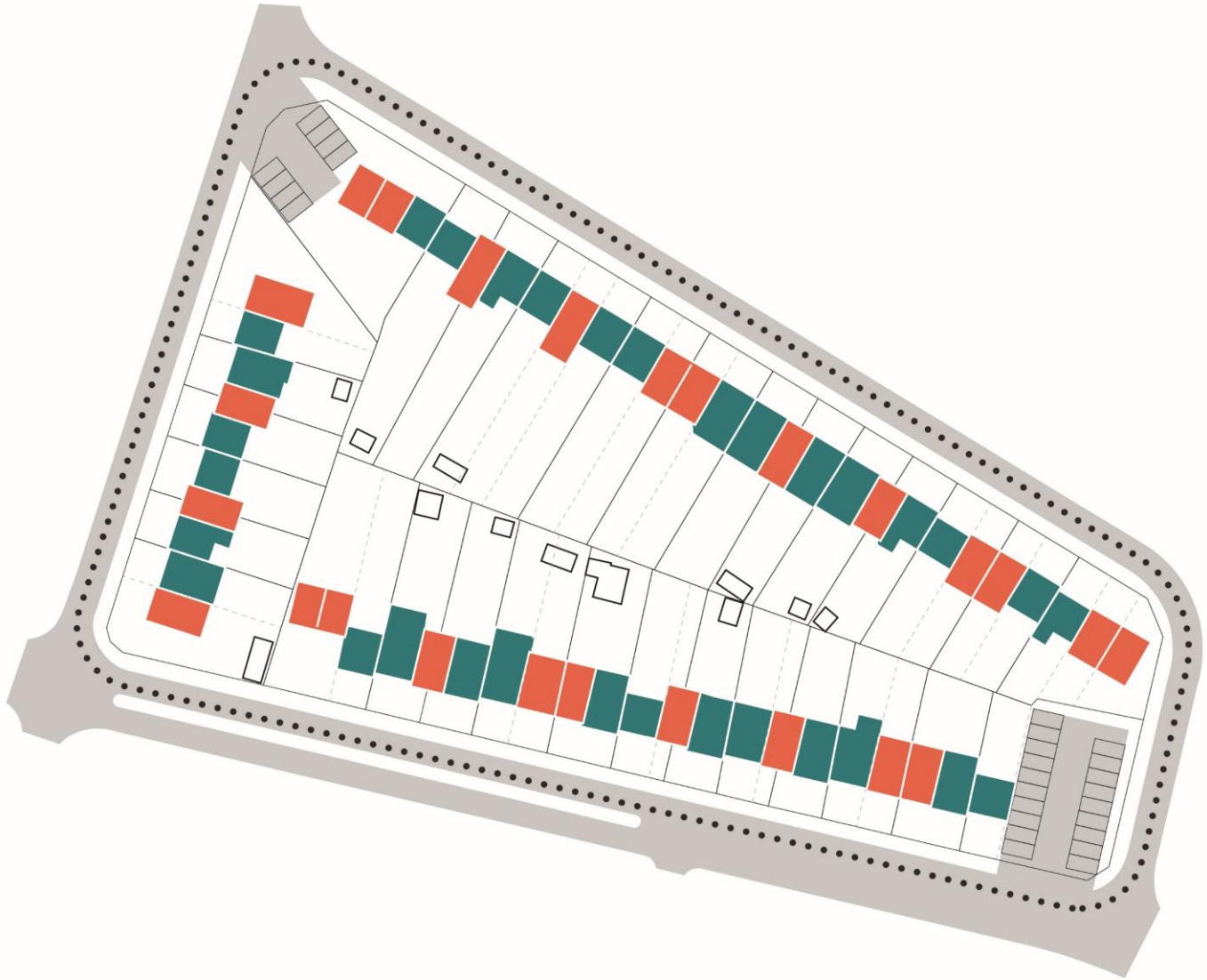



# Case study:
# Landen Densification



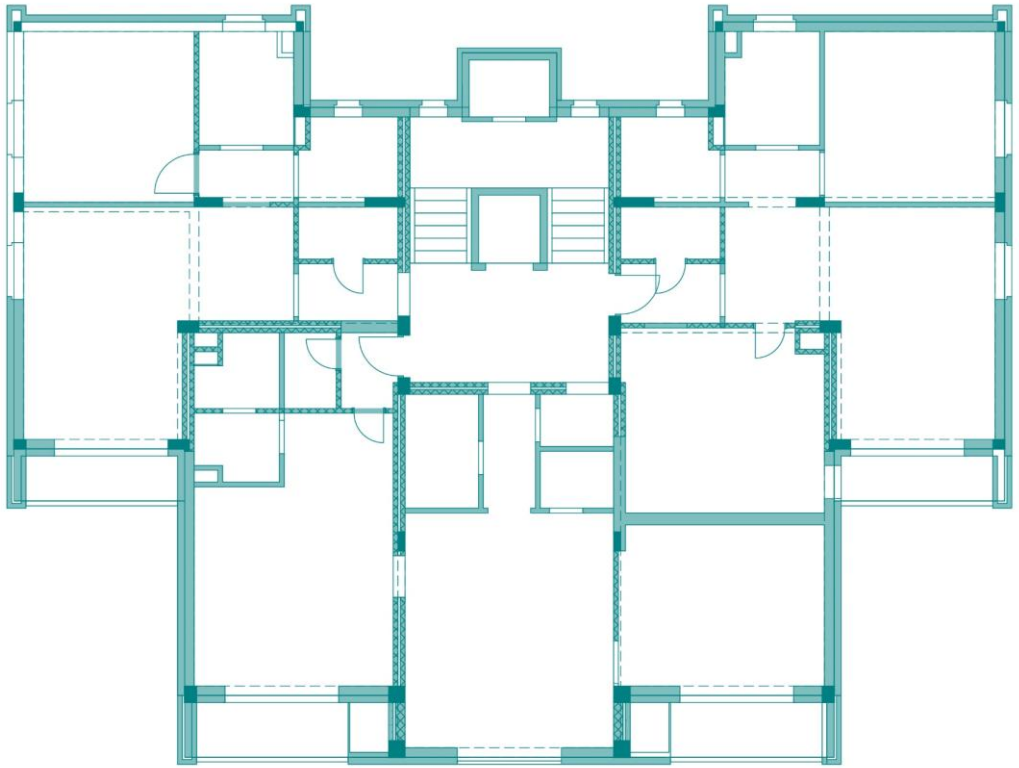
**Infrastructure efficiency:**
**89 dwellings per km (+68%)**
(11m roads per building)

- Roads: 600m + 38m new parking areas
- Existing dwellings renovated: 32
- New dwellings: 25

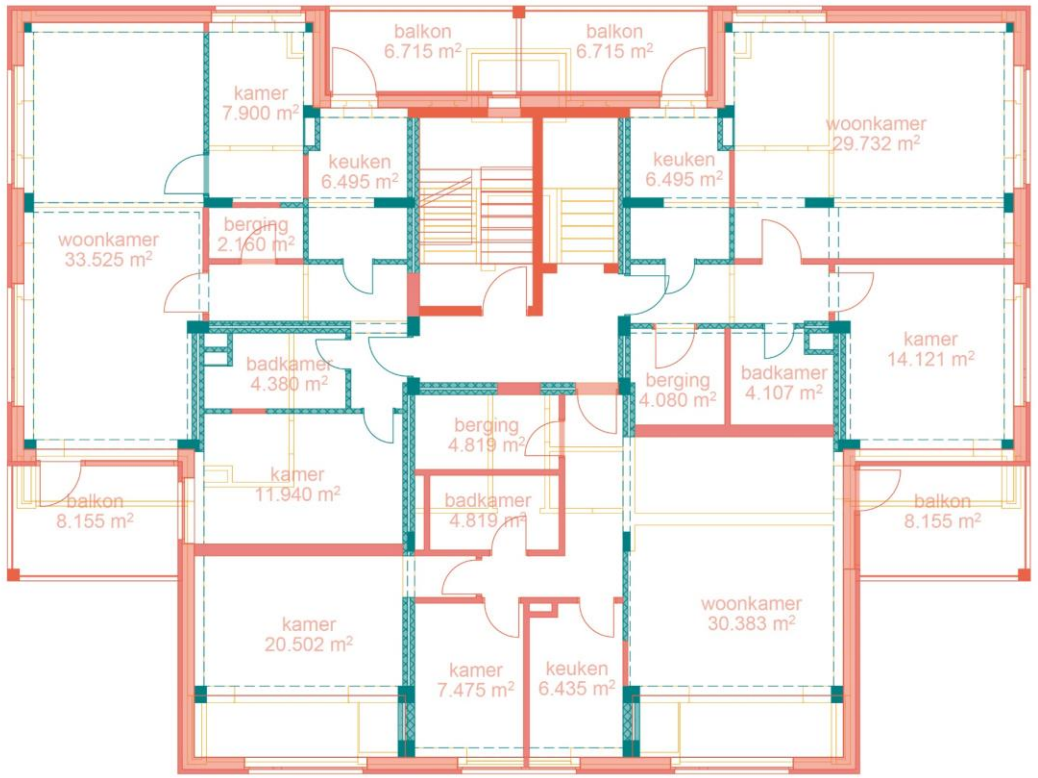


# 3. Avoid demolition

# Case study: Ghent Vogelhoekwijk apartment blocks



Original plan: dwellings and rooms too small.



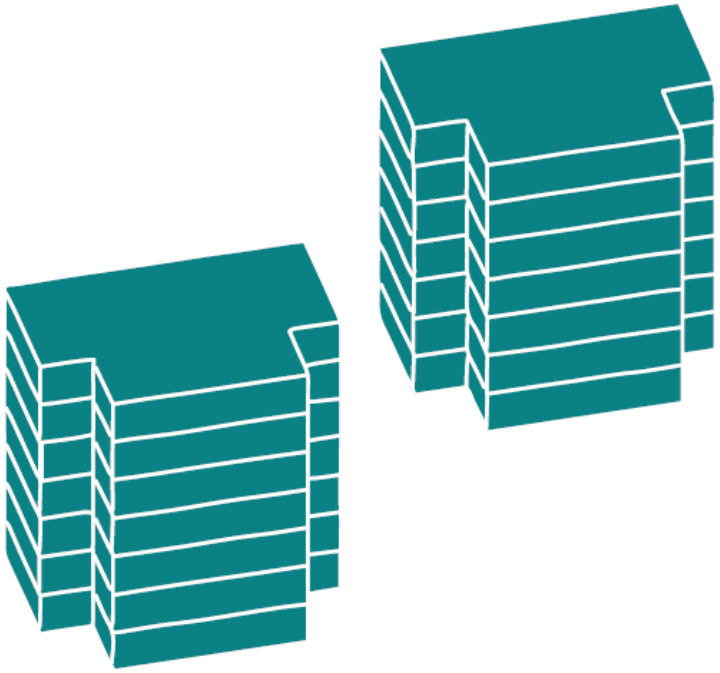

Potential renovation: requires complex changes to comply with new standards. Existing structure is not easy to adapt.

Existing

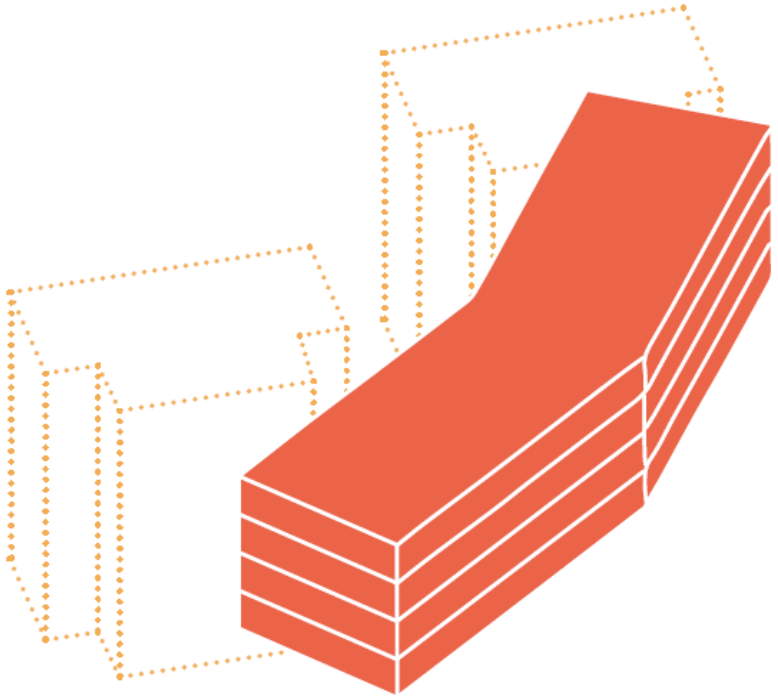
New

Demolished

# Case study: Ghent Vogelhoekwijk



**Renovation**
2 blocks, 7 stories
40-52 dwellings
3,000 $m^2$
€115k - €207k renovation per dwelling



**Rebuild**
1 block, 4 stories (due to height restrictions)
18-30 dwellings
2,000 $m^2$
€178K - €368k construction per dwelling
*+ extra land needed elsewhere, to house the dwellings that were lost*

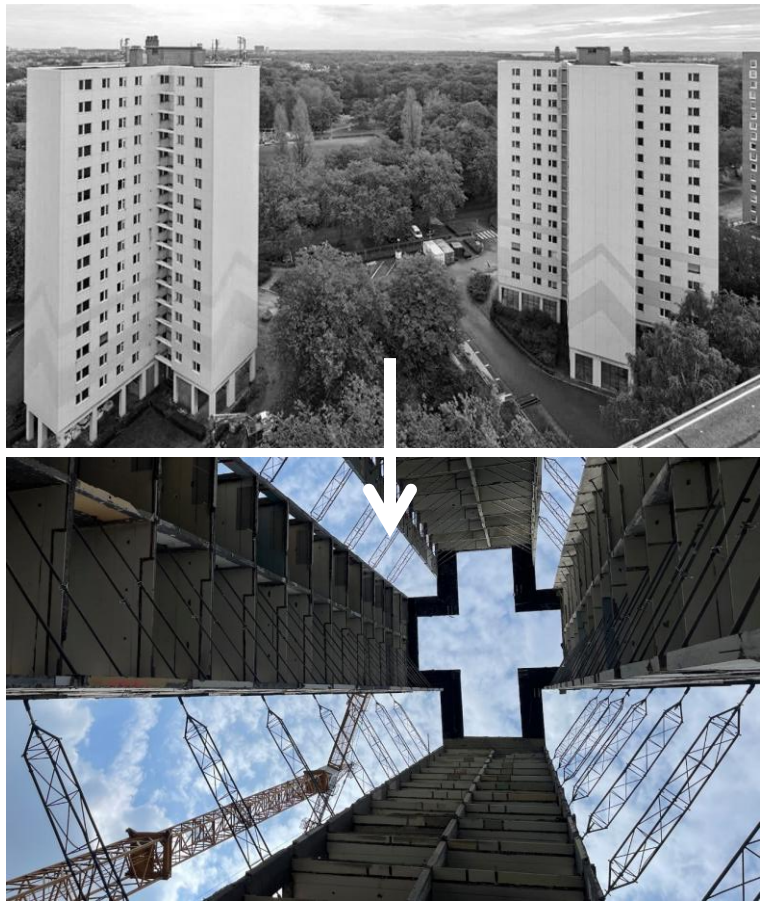
# Social housing in Flanders: tendency towards demolition



Ghent Tichelrei: replaced with the same volume, **but 29% less dwellings.**



Ghent Jubileumlaan: replaced with the **same #dwellings, but 5 stories taller.**

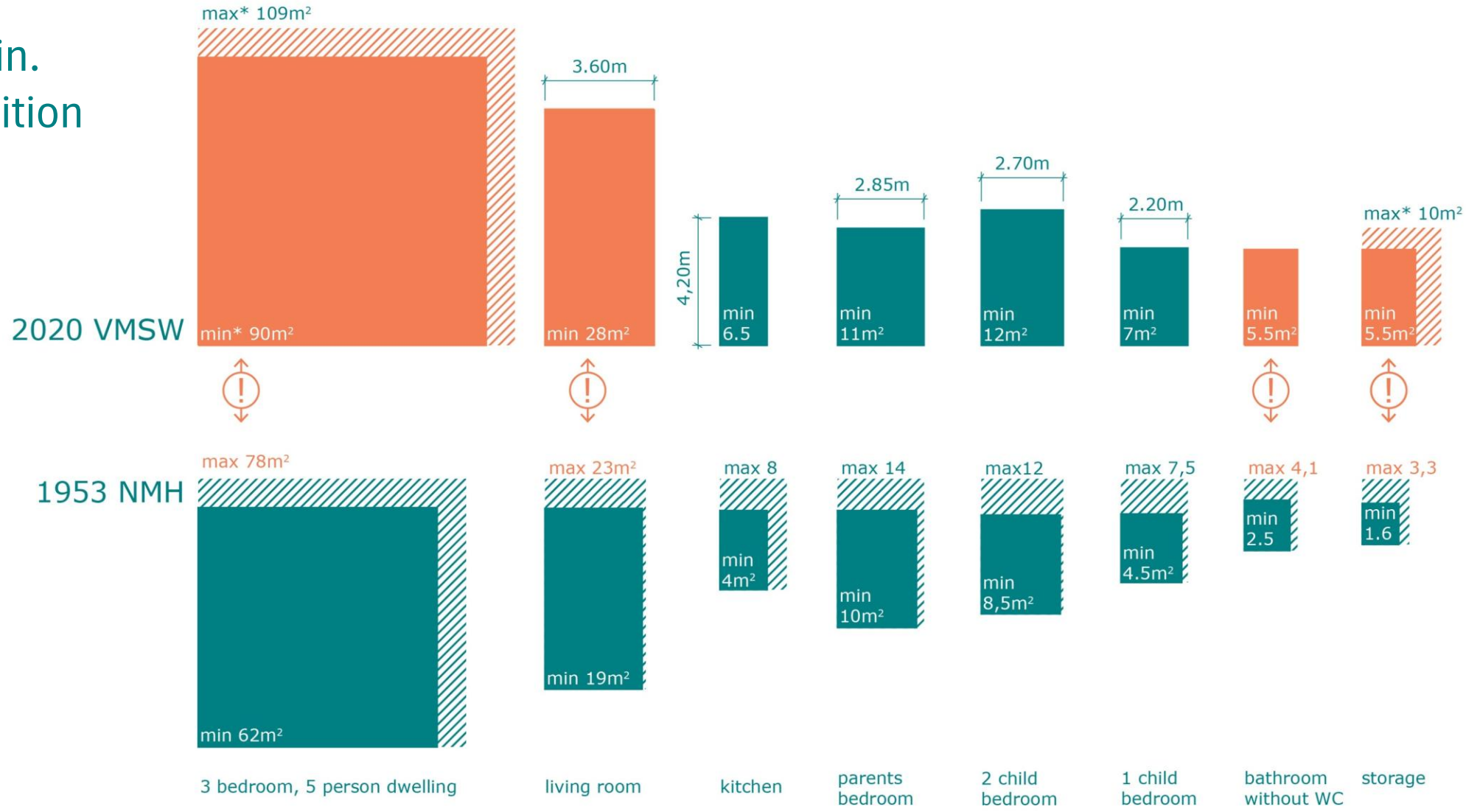


Antwerp Vinkenvelden: “renovation” with **21% less dwellings.**

# Social housing surface standards

Old max. < new min.

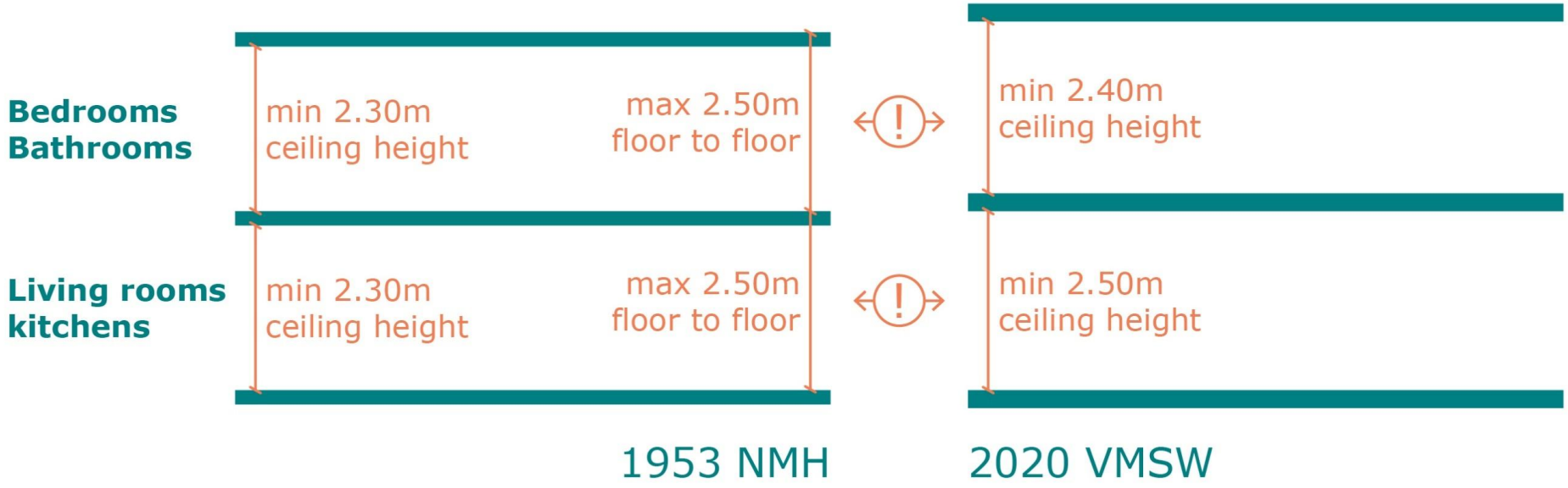
A recipe for demolition



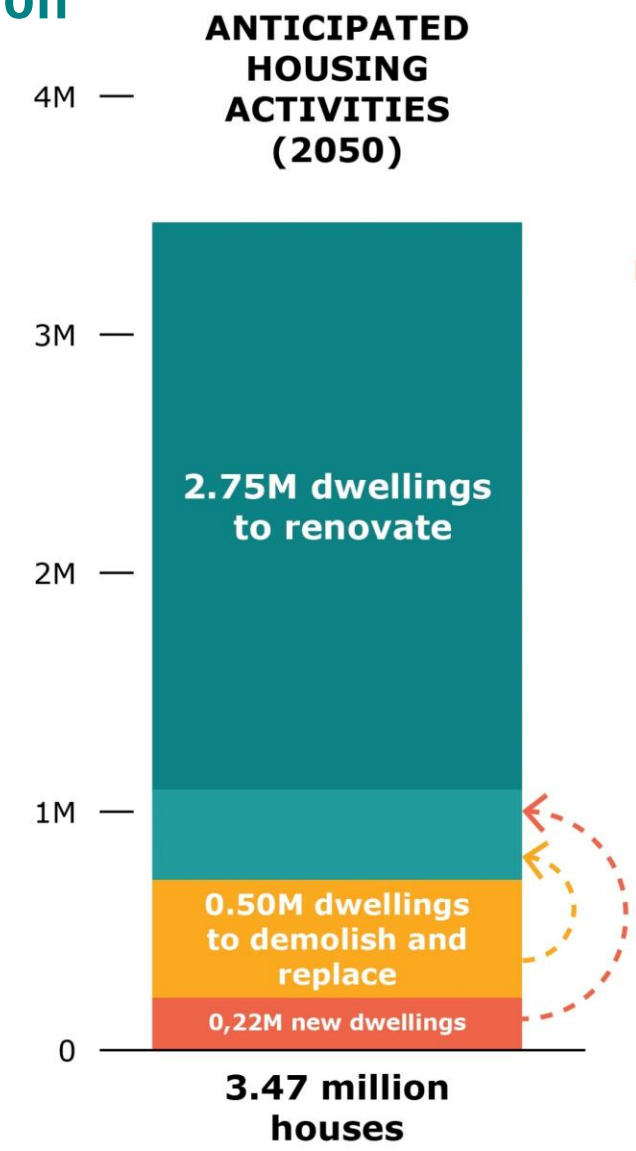
# Social housing ceiling height standards

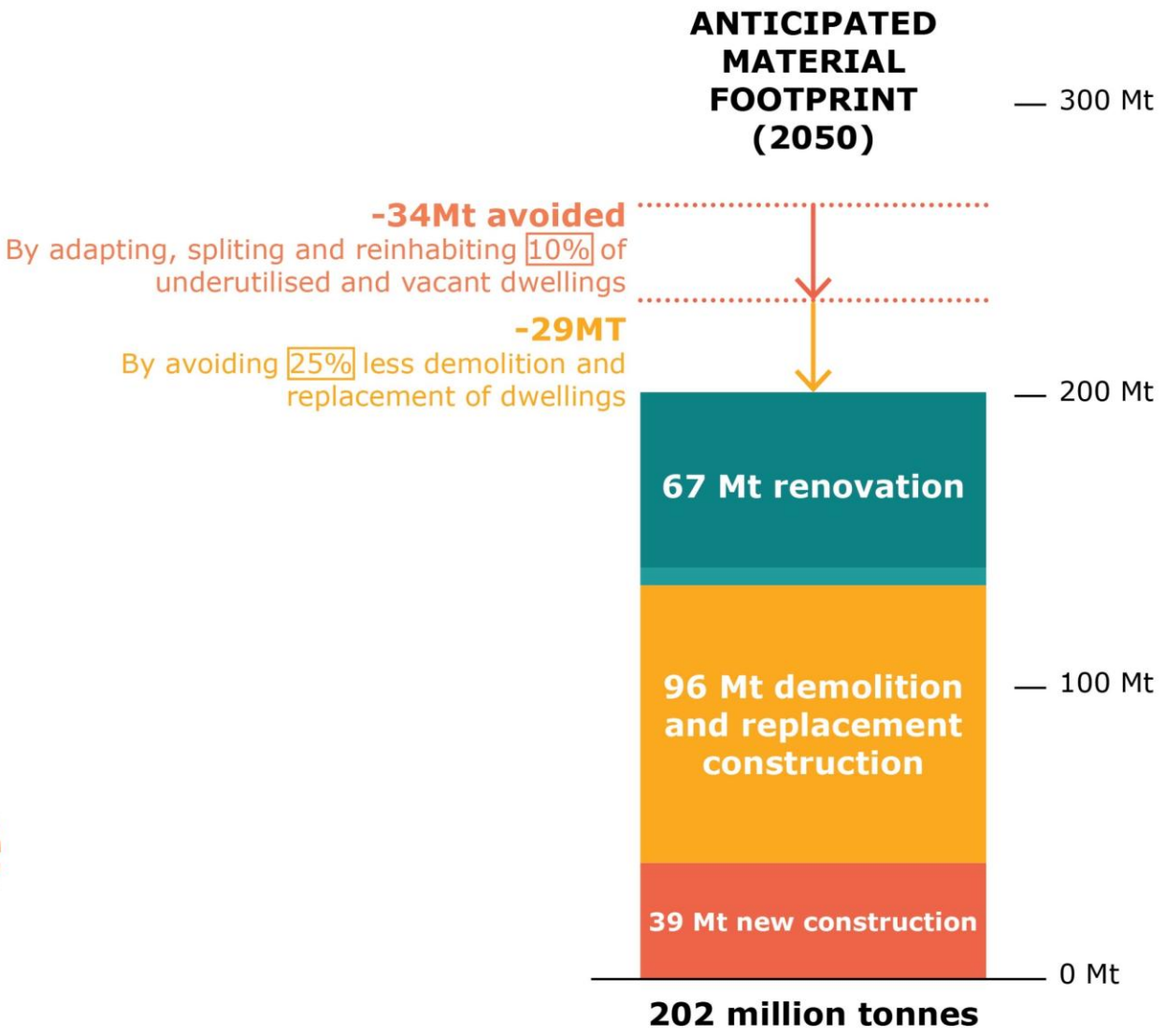
Old max. < new min.

A recipe for demolition

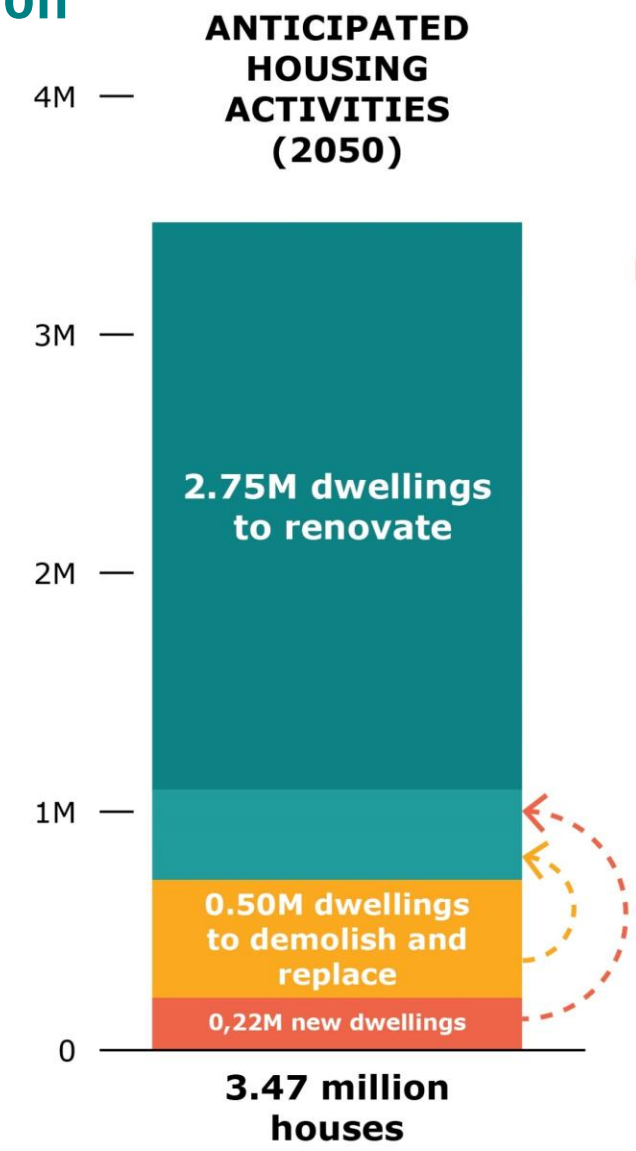


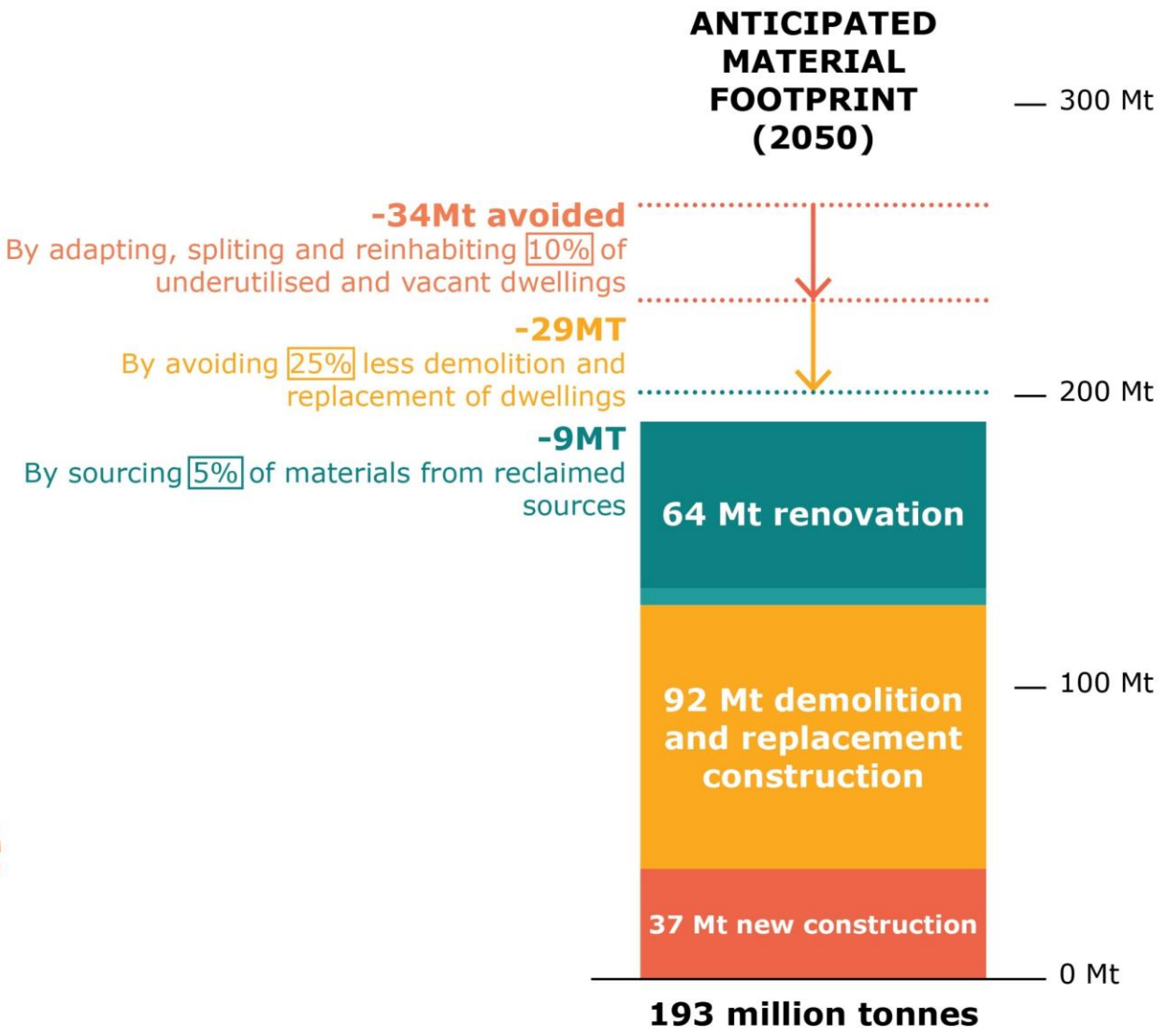
# Avoid new construction
# Avoid demolition



## Avoid new construction
## Avoid demolition
## Reuse materials



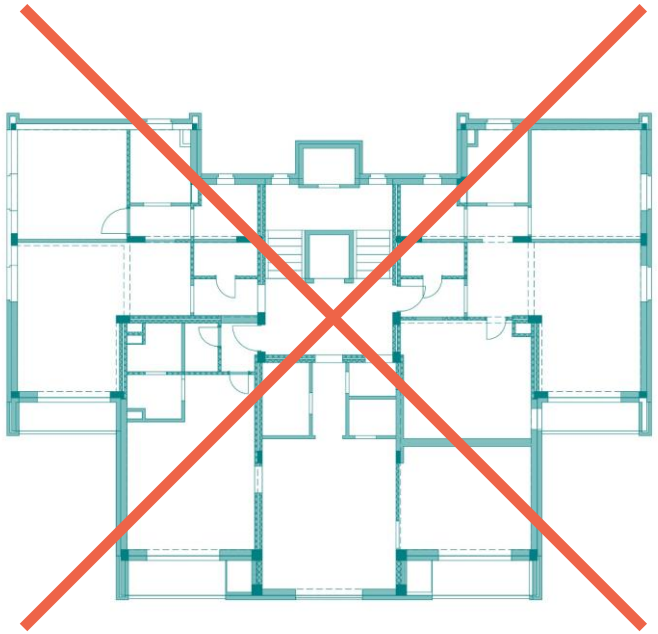
# 4. Design for adaptation

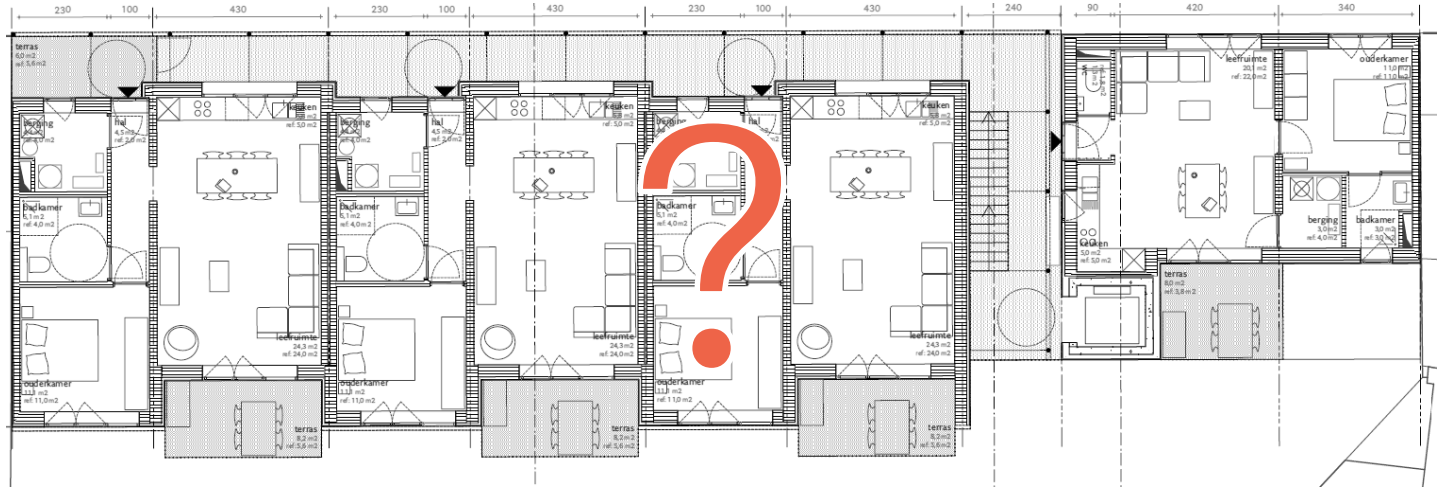
# Design Guidelines: Antwerp Woonhaven Social Housing

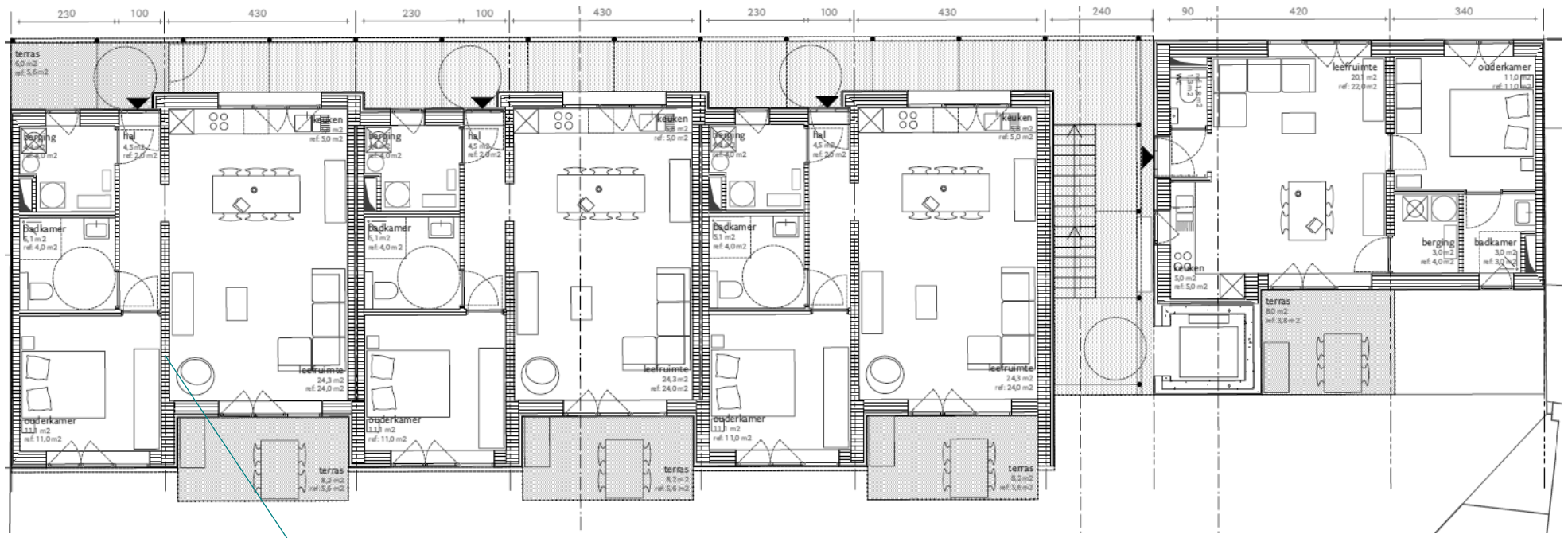
- “The most economical structure must be sought to make the building as affordable as possible. This means: small spans, load-bearing walls…”
- “The ceiling height should not higher than required in the applicable (Flemish) guidelines.”



Old buildings economically designed to old standards → Demolition today → New buildings economically designed to new standards → Demolition Tomorrow?



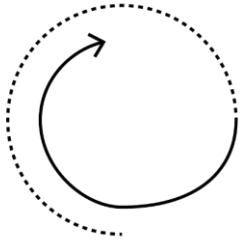




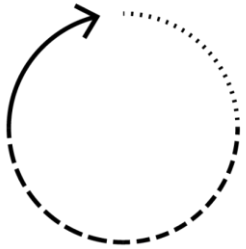

Cross-Laminated Timber walls between each room with no over-dimensioning nor future adaptability

# R-LADDER PRINCIPLES

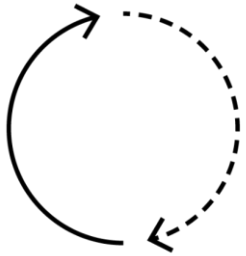
In housing and urbanism



Narrow the loop
*(avoid new construction)*



Slow the loop
*(extend building life)*



Close the loop
*(recover discarded resources)*

- Intensify building use
- Intensify infrastructure use
- Reuse buildings (don't demolish)
- Design for adaptability
- Design for demountability
- Reuse materials
- Recycle materials

Higher on the ladder = greater gains

# Questions?

Interreg Europe

Co-funded by the European Union

KARMA

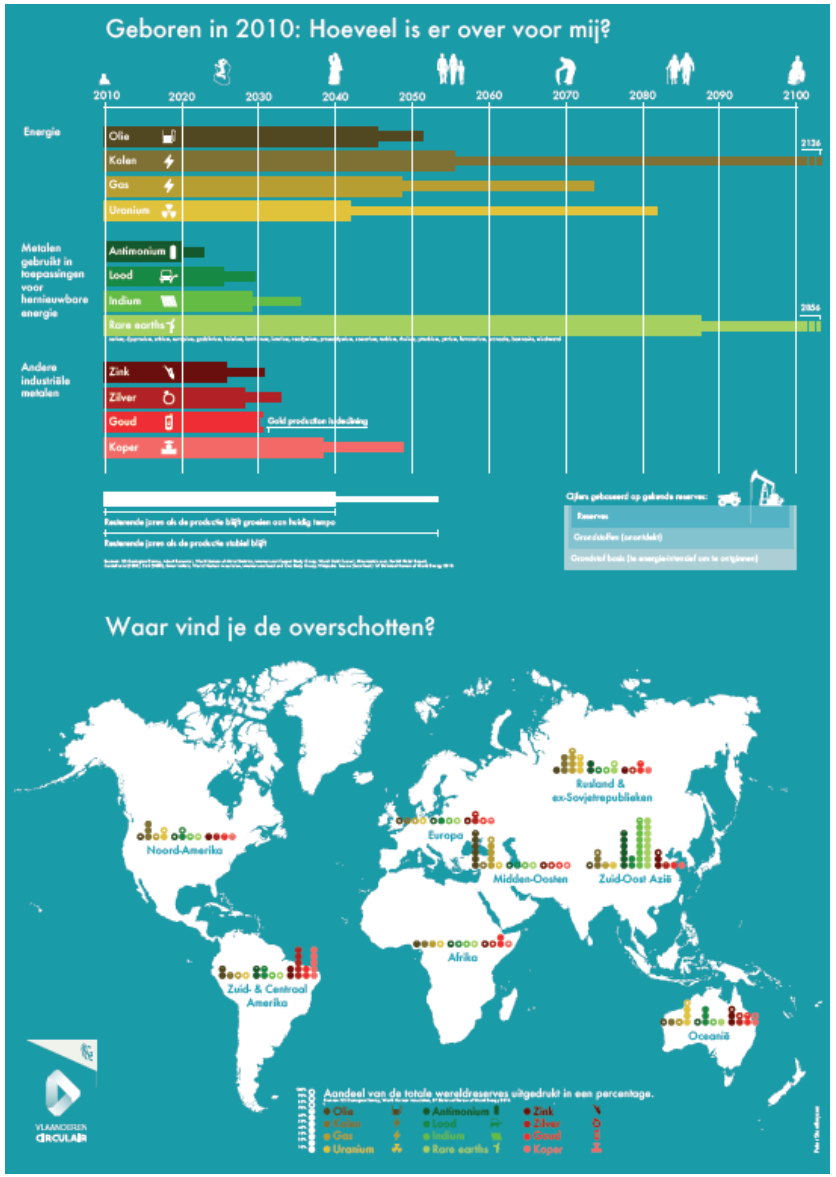
CIRCULAR FLANDERS

# Coffee break

# PARTNER MEETING
# KARMA – 26/03



# CONTEXT




- European construction sector accounts for 40% of CO2 emissions, 35% of total waste and 50% of extraction of new raw materials
- European regulations to reduce and improve these figures: Critical Raw Material Act, EU Taxonomy, CEN TC/350 SC 1, etc.

# CIRCULAR BUILDING ECONOMY



# THE ROLE OF THE MUNICIPALITY

**Intermunicipal platform**

employability for local authorities of different scales
interaction between policy levels

**CITY OF MECHELEN AS A CIRCULAR BUILDING DIRECTOR**

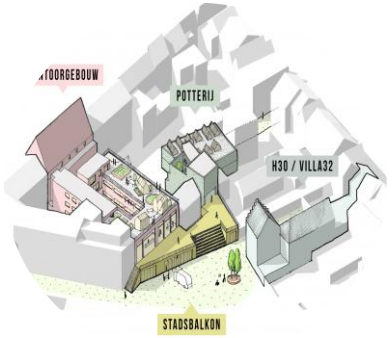
tools & processes

**cases**

partial experiments
learning-by-doing with construction teams



# CASES




Impact Factory

Library Moensstraat





Demolition Zwartzustersvest

**CITY OF MECHELEN AS A CIRCULAR BUILDING DIRECTOR**

tools & processes

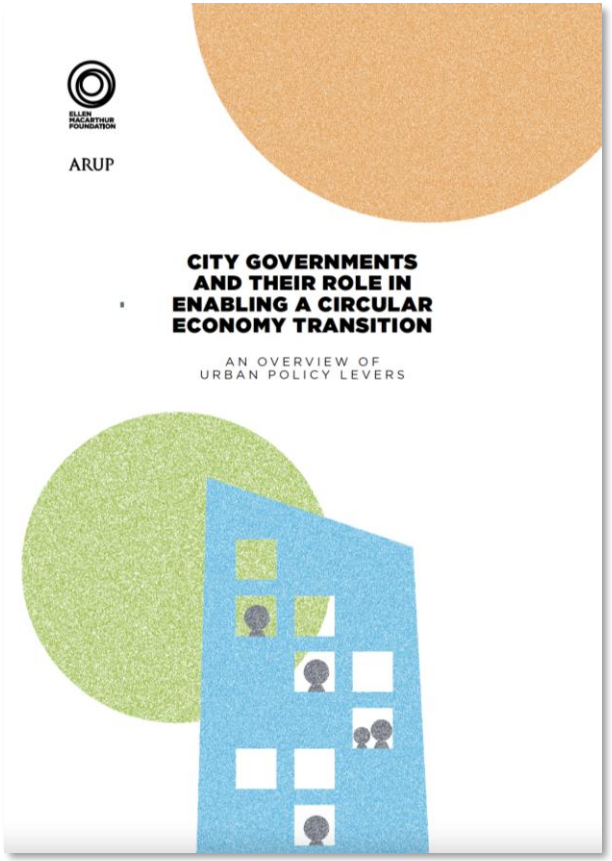
Sporting complex Leest

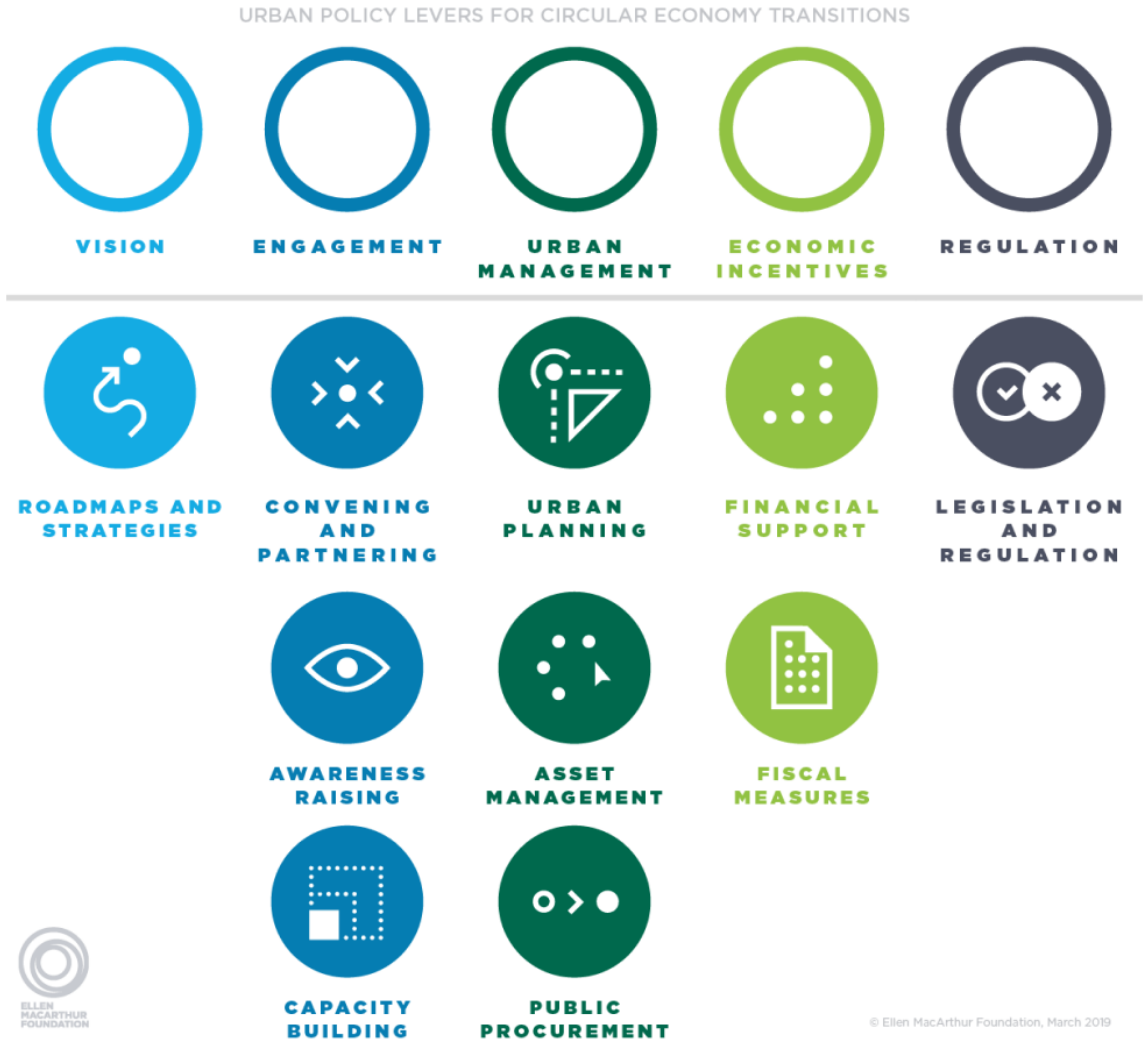


...

Building regulations, policy driven developments

# THE ROLE OF THE MUNICIPALITY



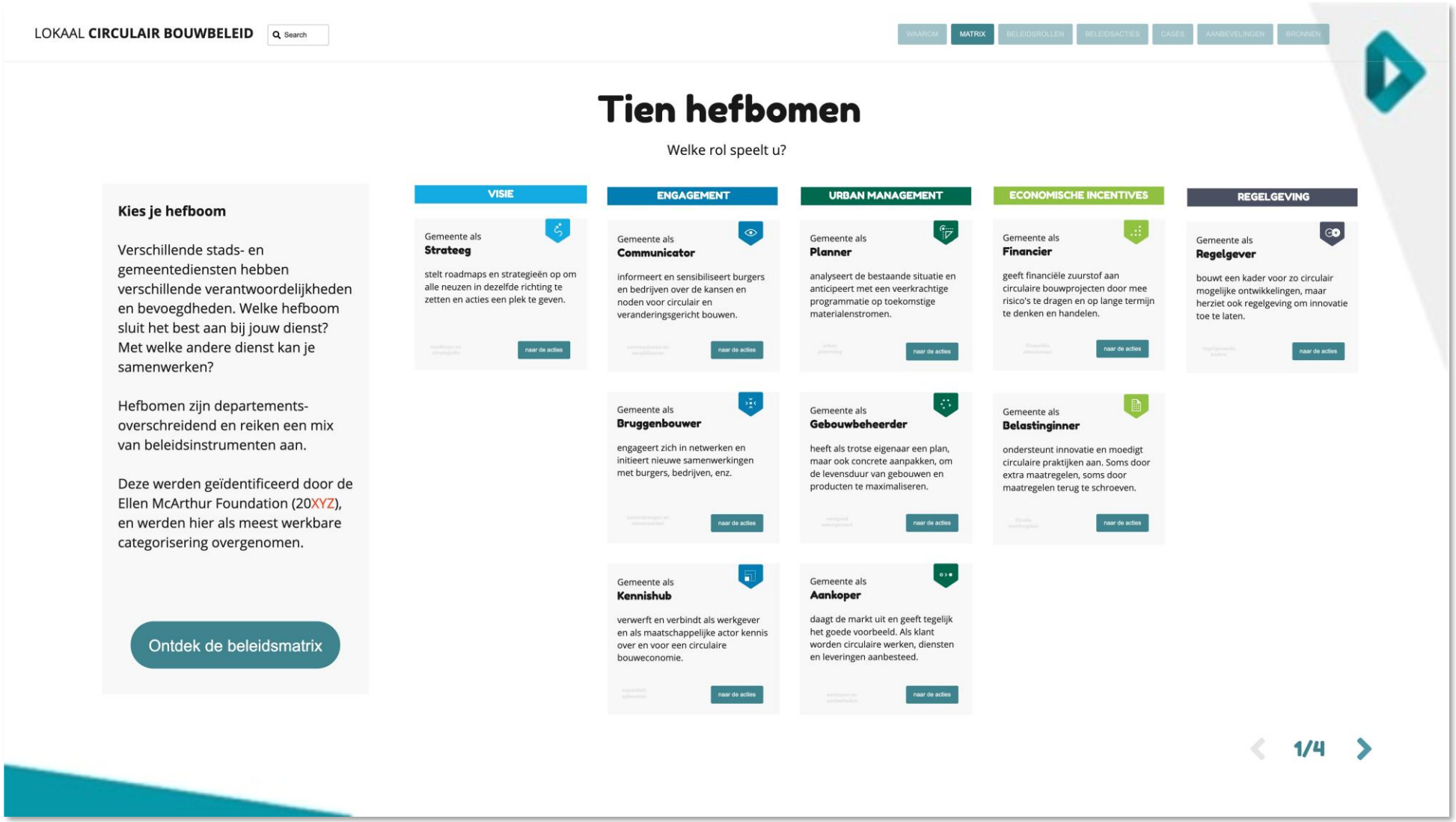

**Bron** Ellen MacArthur Foundation (2019)

# WORK IN PROGRESS...

## N POLICY LEVERS - ENABLING A CIRCULAR ECONOMY TRANSITION



# THE ROLE OF THE MUNICIPALITY



# LIBRARY MOENSSTRAAT

**Conditional sale (2019):** 15 pnt on sustainability and circularity + composition expertise construction team + working group after sale (cooperation with city)

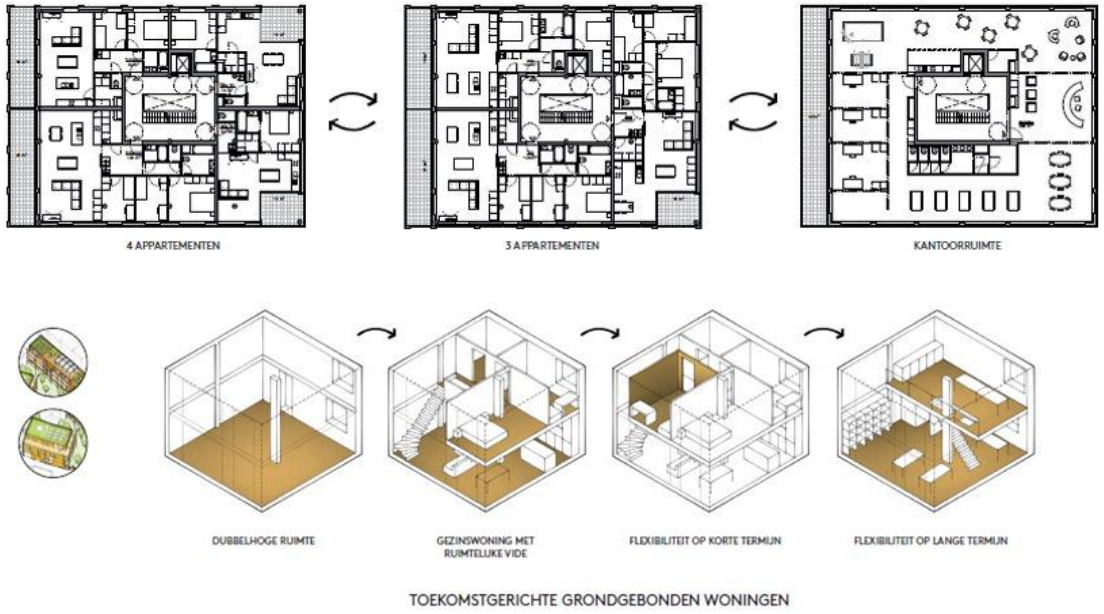
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  - Completed GRO checklist (TOE1)
- **Circular construction**
  - closing material cycles
  - material selection based on environmental impact and circularity
  - material passport
- **Circular use (remaining in service)**



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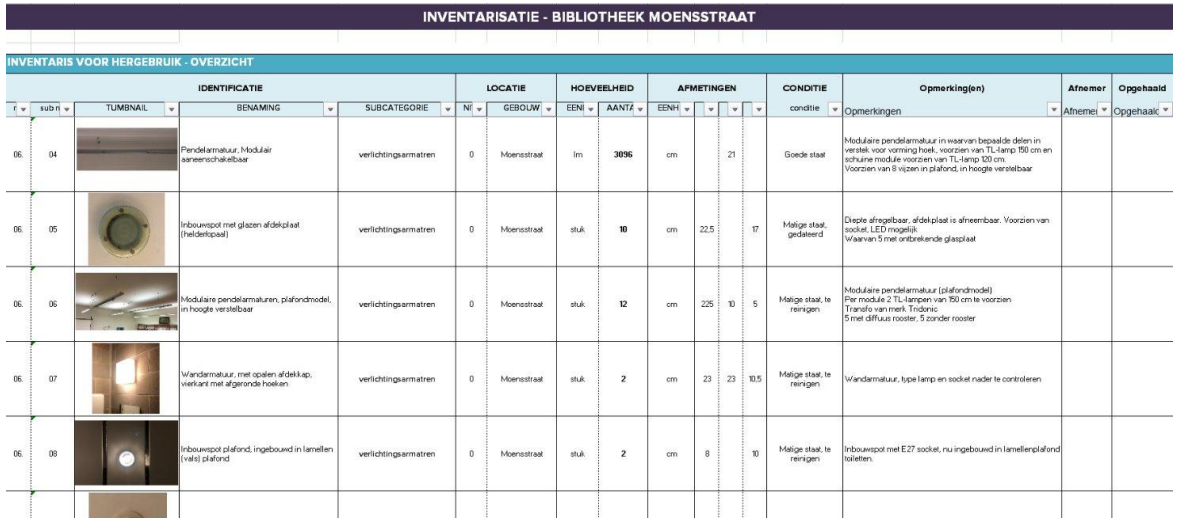
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INVENTARISATIE - BIBLIOTHEEK MOENSSTRAAT

INVENTARIS VOOR HERGEBRUIK - OVERZICHT

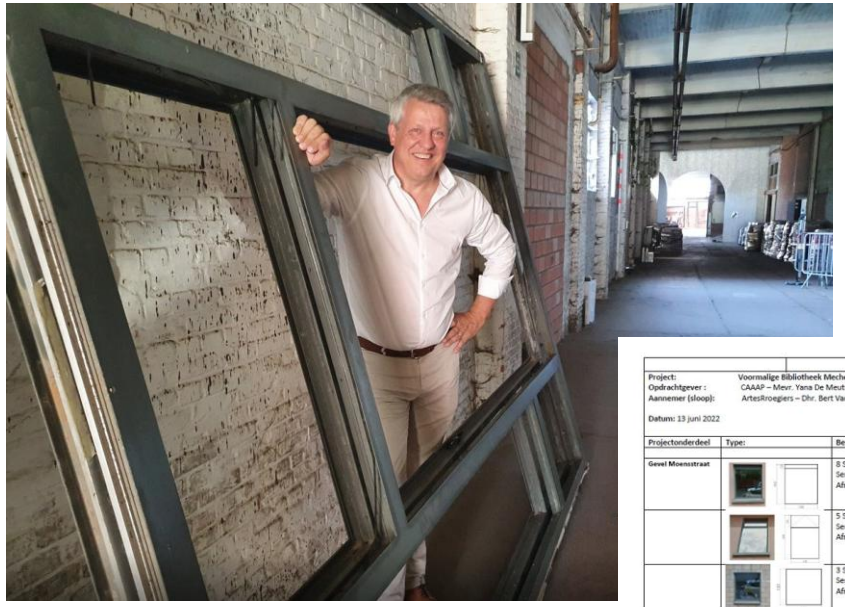
| | | IDENTIFICATIE | | | LOCATIE | | HOEVEELHEID | | AFMETINGEN | | | | CONDITIE | Opmerking(en) | Afnemer | Opgehaald |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| r | subn | TUMBNAIL | BENAMING | SUBCATEGORIE | NI | GEBOUW | EENI | AANTA | EENH | | | | conditie | Opmerkingen | Afnemei | Opgehaalc |
| 06. | 04 | | Pendelarmatuur, Modulair aaneenschakelbaar | verlichtingsarmatren | 0 | Moensstraat | lm | 3096 | cm | | 21 | | Goede staat | Modulaire pendelarmatuur in waarvan bepaalde delen in verstek voor vorming hoek, voorzien van TL-lamp 150 cm en schuine module voorzien van TL-lamp 120 cm. Voorzien van 8 vijzen in plafond, in hoogte verstelbaar | | |
| 06. | 05 | | Inbouwspot met glazen afdekplaat (helderlopaal) | verlichtingsarmatren | 0 | Moensstraat | stuk | 10 | cm | 22,5 | | 17 | Matige staat, gedateerd | Diepte afregelbaar, afdekplaat is afneembaar. Voorzien van socket, LED mogelijk. Waarvan 5 met onbrekende glasplaat | | |
| 06. | 06 | | Modulaire pendelarmaturen, plafondmodel, in hoogte verstelbaar | verlichtingsarmatren | 0 | Moensstraat | stuk | 12 | cm | 225 | 10 | 5 | Matige staat, te reinigen | Modulaire pendelarmatuur (plafondmodel) Per module 2 TL-lampen van 150 cm te voorzien Transfo van merk Tridonic 5 met diffuus rooster, 5 zonder rooster | | |
| 06. | 07 | | Wandarmatuur, met opalen afdekkap, vierkant met afgeronde hoeken | verlichtingsarmatren | 0 | Moensstraat | stuk | 2 | cm | 23 | 23 | 10,5 | Matige staat, te reinigen | Wandarmatuur, type lamp en socket nader te controleren | | |
| 06. | 08 | | Inbouwspot plafond, ingebouwd in lamellen (vals) plafond | verlichtingsarmatren | 0 | Moensstraat | stuk | 2 | cm | 8 | | 10 | Matige staat, te reinigen | Inbouwspot met E27 socket, nu ingebouwd in lamellenplafond toiletten | | |

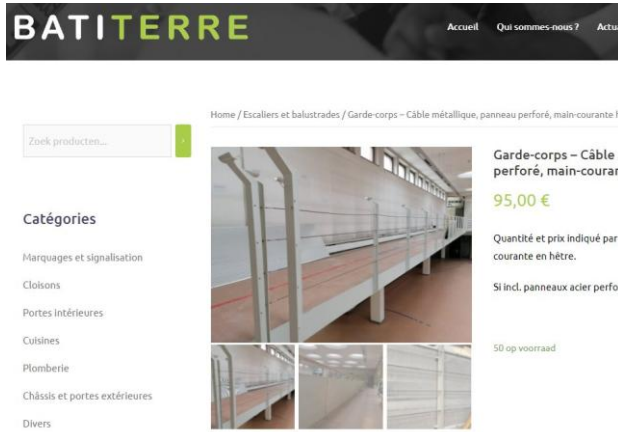


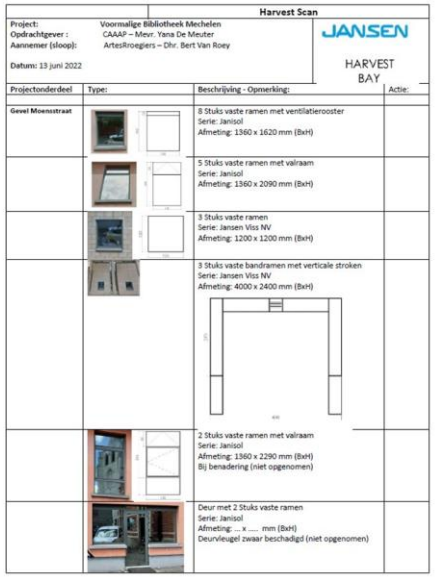
# LIBRARY MOENSSTRAAT

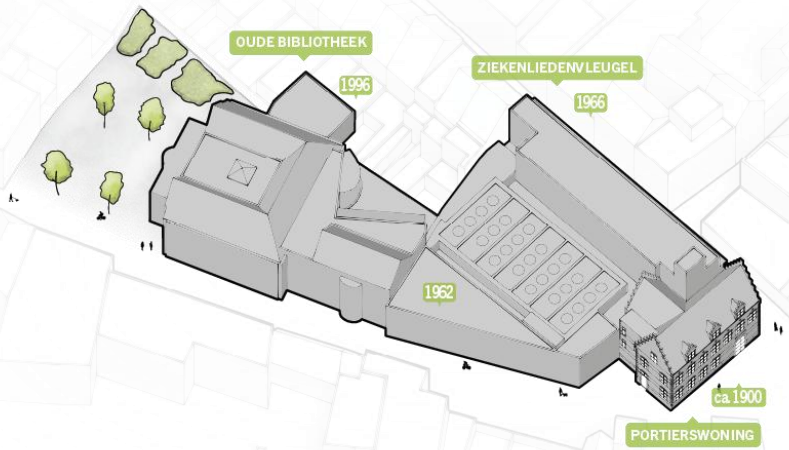
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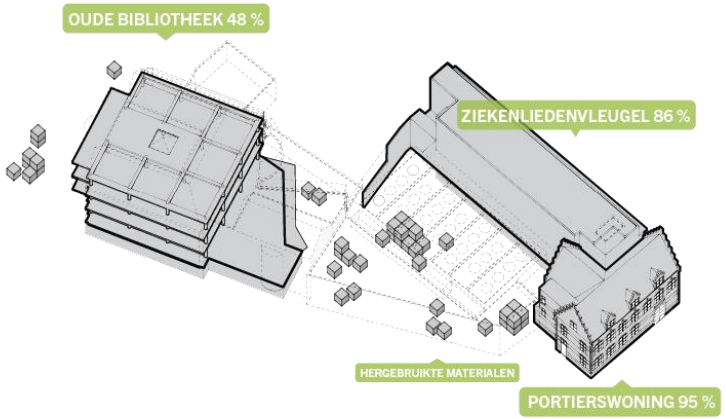






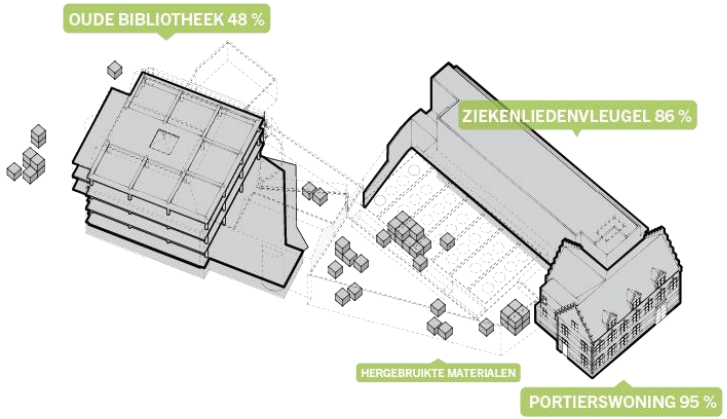

behoud en selectieve sloop




| | | $CO_2$ Avoided emissions | equivalent distance |
|---|---|---|---|
| **PRESERVATION** | **ca. 66 %** | | |
| - portierswoning | 95% | | |
| - ziekenliedenvleugel | 86% | | |
| - old library: preservation of structure | 48% | 74.463 kg | 446.030 km |
| **REUSE IN SITU** | **-** | | |
| **REUSE ON OTHER LOCATION** | **1 %** | | |
| - 4 containers bricks | 50-60 ton | 19.530 kg | 117.012 km |
| - natural stone panelling | 5 ton | 1.596 kg | 9.600 km |
| - 42 steel window frames > Impact Factory | 2 ton | 13.382 kg | 79.724 km |
| - 164 meters of book shelves | | | |
| - 54 meters of railings | | | |
| - furniture | | | |
| - stairs | | | |
| **RECYCLING** | **28 %** | | |
| - stone rubble | | | |
| - construction timber | | | |
| **WASTE TREATMENT** | **5 %** | | |
| - hazardous waste: asbestos, fluorescent lamps | | | |
| - residual fractions | | | |




nieuwe elementen




## REUSE MATERIALS

| | | $CO_2$ Avoided emissions | Equivalent distance |
|---|---|---|---|
| - 100% facing bricks | 200 ton | 44.138 kg | 264.448 km |

## RECYCLED MATERIALS

| | |
|---|---|
| - 76% van de vloerisolatie is gerecycleerd en recycleerbaar | 1800 $m^2$ |

## NEW RESOURCES

as much as possible:

- sustainable
- produced locally
- recyclable
- non-composite materials

# DEMOLITION ZWARTZUSTERSVEST

## Demolition of former hospital

Grant for rehabilitation as part of renewal of vacant and/or derelict business premises:

- Continuity of demolition follow-up: framework agreement on demolition expert/demolition coordinator
- best-efforts obligation that encourages reuse + coordination of dismantling and disposal operations on request
- Material flow analysis as discussion basis in function of Data Driven Demolition, initiation of cost-benefit comparison/discussions with potential processing channels
- Additional initiatives during standstill



sloopteams
SAMEN CIRCULAIR SLOPEN

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§2. Overeenkomstig de bepalingen in het materialendecreet (23 december 2011) van de Vlaamse regering betreffende het duurzaam beheer van materiaalkringlopen en afvalstoffen spant de opdrachtnemer zich tot het uiterste in om eerst voor eigen rekening, gratis of tegen vergoeding (volgens regietarief opgegeven in de offerte), de grootst mogelijke hoeveelheid van de bouwplaats afkomstige materialen af te leiden naar het professionele circuit van hergebruiksmaterialen, vooraleer hij ze als afval wegvoert.

§3. In het kader van de uitvoering van de onder paragraaf 1 bedoelde middelenverbintenis omvat de opdracht van de opdrachtnemer met name:

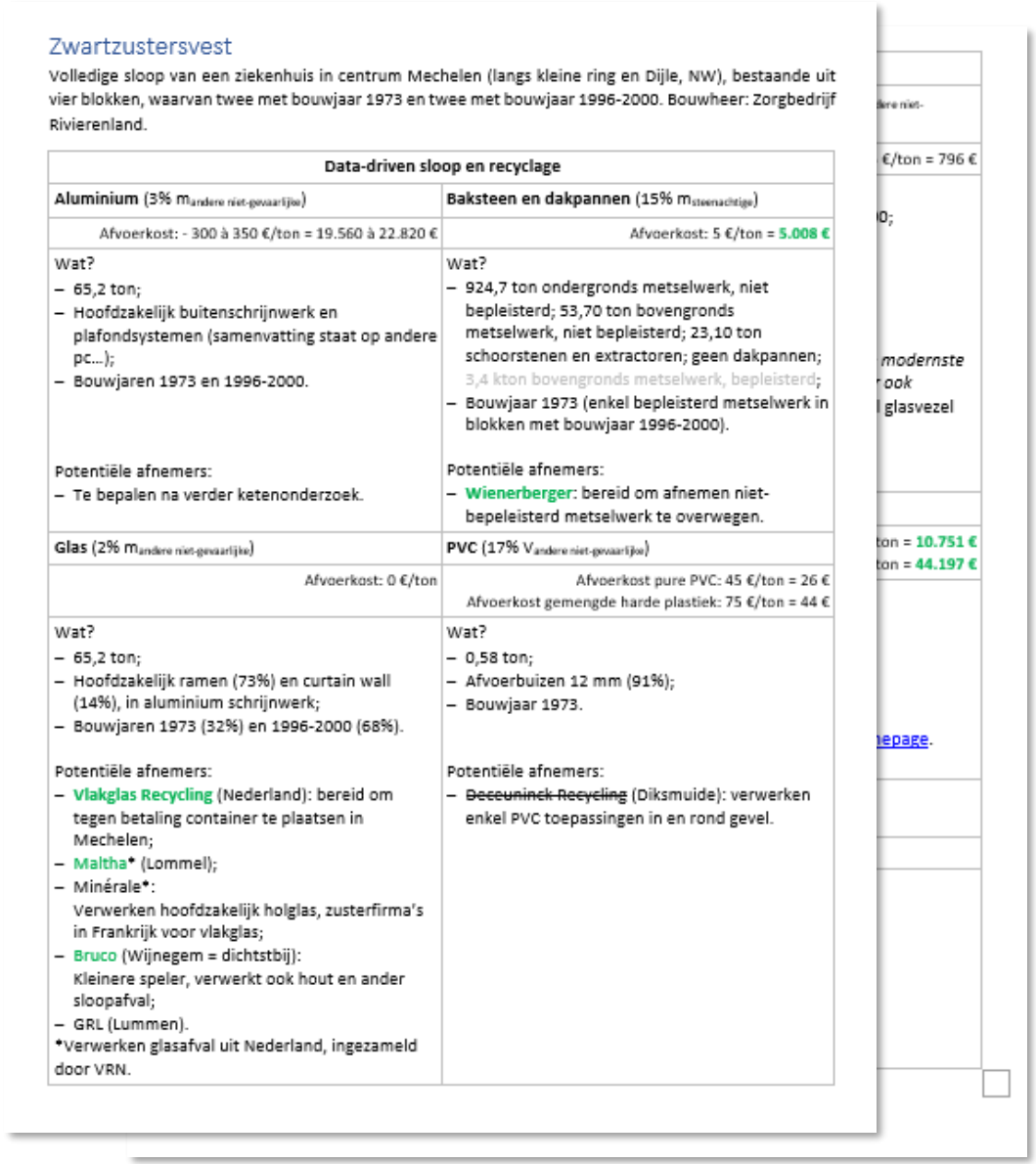
a) de zorgvuldige en veilige demontage en verwijdering van de van de bouwplaats afkomstige materialen, met het oog op hergebruik buiten de bouwsite. Onder "*demontage en verwijdering*" verstaan we: alle noodzakelijke ingrepen om de materialen die deel uitmaken van het gebouw te ontmantelen en om ze hieruit te verwijderen (ook de ingrepen om de materialen in te pakken en te laden);
b) het bezorgen van een recuperatieverslag, aan het einde van de uitvoering van de opdracht, alsook van andere documenten die noodzakelijk zijn voor de follow-up en de voltooiing van de opdracht;
c) als de aanbestedende overheid hierom verzoekt, de coördinatie van de demontage- en verwijderingsverrichtingen met andere gelijktijdige ondernemingen die op aangeven van de aanbestedende overheid worden uitgevoerd op of in de nabijheid van de plek van demontage, met inbegrip van alle voor de coördinatie noodzakelijke vergaderingen.

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Zwartzustersvest

Volledige sloop van een ziekenhuis in centrum Mechelen (langs kleine ring en Dijle, NW), bestaande uit vier blokken, waarvan twee met bouwjaar 1973 en twee met bouwjaar 1996-2000. Bouwheer: Zorgbedrijf Rivierenland.

| Data-driven sloop en recyclage | |
|---|---|
| **Aluminium** (3% $m_{\text{andere niet-gevaarlijke}}$) | **Baksteen en dakpannen** (15% $m_{\text{steenachtige}}$) |
| Afvoerkost: - 300 à 350 €/ton = 19.560 à 22.820 € | Afvoerkost: 5 €/ton = **5.008 €** |
| Wat?<br>– 65,2 ton;<br>– Hoofdzakelijk buitenschrijnwerk en plafondsystemen (samenvatting staat op andere pc…);<br>– Bouwjaren 1973 en 1996-2000.<br><br>Potentiële afnemers:<br>– Te bepalen na verder ketenonderzoek. | Wat?<br>– 924,7 ton ondergronds metselwerk, niet bepleisterd; 53,70 ton bovengronds metselwerk, niet bepleisterd; 23,10 ton schoorstenen en extractoren; geen dakpannen; 3,4 kton bovengronds metselwerk, bepleisterd;<br>– Bouwjaar 1973 (enkel bepleisterd metselwerk in blokken met bouwjaar 1996-2000).<br><br>Potentiële afnemers:<br>– **Wienerberger**: bereid om afnemen niet-bepeleisterd metselwerk te overwegen. |
| **Glas** (2% $m_{\text{andere niet-gevaarlijke}}$) | **PVC** (17% $V_{\text{andere niet-gevaarlijke}}$) |
| Afvoerkost: 0 €/ton | Afvoerkost pure PVC: 45 €/ton = 26 €<br>Afvoerkost gemengde harde plastiek: 75 €/ton = 44 € |
| Wat?<br>– 65,2 ton;<br>– Hoofdzakelijk ramen (73%) en curtain wall (14%), in aluminium schrijnwerk;<br>– Bouwjaren 1973 (32%) en 1996-2000 (68%).<br><br>Potentiële afnemers:<br>– **Vlakglas Recycling** (Nederland): bereid om tegen betaling container te plaatsen in Mechelen;<br>– **Maltha*** (Lommel);<br>– Minérale*:<br>Verwerken hoofdzakelijk holglas, zusterfirma's in Frankrijk voor vlakglas;<br>– **Bruco** (Wijnegem = dichtstbij):<br>Kleinere speler, verwerkt ook hout en ander sloopafval;<br>– GRL (Lummen).<br>*Verwerken glasafval uit Nederland, ingezameld door VRN. | Wat?<br>– 0,58 ton;<br>– Afvoerbuizen 12 mm (91%);<br>– Bouwjaar 1973.<br><br>Potentiële afnemers:<br>– ~~Deceuninck Recycling~~ (Diksmuide): verwerken enkel PVC toepassingen in en rond gevel. |

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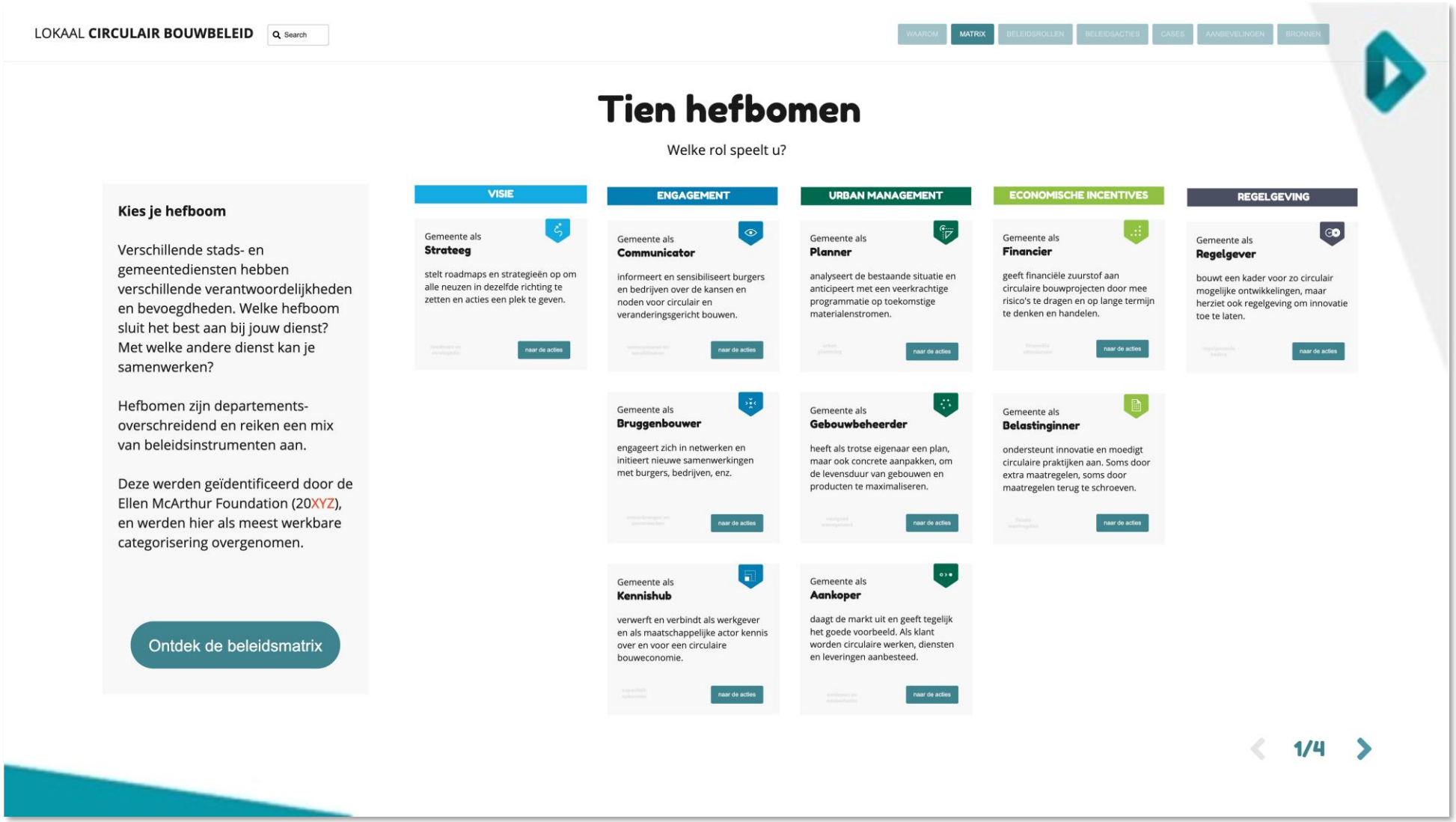
# DEMOLITION ZWARTZUSTERSVEST







# THE ROLE OF THE MUNICIPALITY



# CONTEXT

**VVSG - published on 18-10-2023**

The Local Energy and Climate Pact includes the commitment to draw up a **local demolition policy plan.** This action point is a consequence of a passage from the Flemish coalition agreement.

A demolition policy plan is a concept that appears in the Flemish Energy and Climate Plan p. 91: 'In addition, the Flemish minister of Home Affairs will discuss local demolition policy plans and local demolition funds in consultation with local administrations.'

This frames the section that deals with encouraging the demolition and rebuilding of older homes with poor energy performance and limited comfort. For some homes or buildings, it may make more sense energetically and technically feasible to demolish and rebuild rather than renovate.

The Flemish government has not yet given concrete substance to this concept, so the question of what such a demolition policy plan could or should look like cannot yet be answered.

The Climate Network will organise the necessary consultations on this in 2024. The commitment to draw up a demolition policy plan has been formulated by 2030.

# POLICY STRATEGIES



Comprehensive **vacancy policy** and examination of typologies and zones with known vacancy problems



A policy that drives maximum (value) **preservation of buildings**, building components and materials



**Link climate adaptation and softening measures** with opportunities for reuse and high-quality recycling.



**Preserving visual quality and heritage value**: protecting characteristic buildings and materials



Policies driving renovation instead of renewal (**renovation strategy**)



Building for maximum service life by **building spatially and technically reversible**

# POLICY STRATEGIES



Comprehensive **vacancy policy** and examination of typologies and zones with known vacancy problems







Evenement: Leegstaande gebouwen transformeren door tijdelijke bewoning

> Lees verder




Tijdelijke invulling van het terrein van het voormalige Shell-tankstation

> Lees verder




Projectoproep ABY

> Lees verder

*Screenshot web page Temporary.Brussels*

# POLICY STRATEGIES



**Link climate adaptation and softening measures** with opportunities for reuse and high-quality recycling.



*Open joints between reused cobblestones at seat level improve microclimate, Visitandinenstraat Brussels*

# POLICY STRATEGIES



Policies driving renovation instead of renewal (**renovation strategy**)





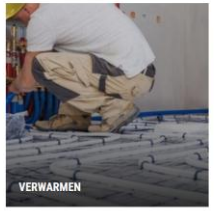










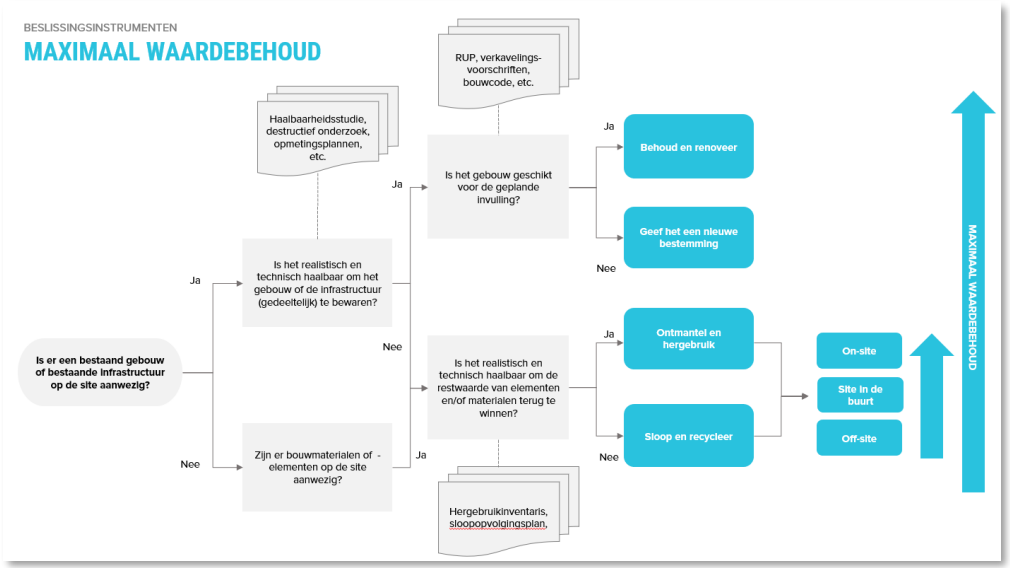









# POLICY STRATEGIES









A policy that drives maximum (value) **preservation of buildings**, building components and materials

# POLICY STRATEGIES



*Parijs' depot for street paving (cobblestones, natural stone) in Bonneuil sur Marne, 38 000m²*



**Preserving visual quality and heritage value**: protecting characteristic buildings and materials

# POLICY STRATEGIES

## Checklist Omkeerbaar Ontwerpen

Solutie | Ontwerp tools

De Checklist Omkeerbaar Ontwerpen is een vrijwillige ontwerptool die de Brusselse bouwheren en ontwerpers wil ondersteunen om omkeerbare en circulaire gebouwen te realiseren.



© Scott Graham / unsplash.com

'Omkeerbaar ontwerpen' betekent toekomstgericht bouwen en verbouwen. Gebouwen worden daarbij op zo'n manier ontworpen dat de ruimtelijke typologie gemakkelijk is aan te passen en dat gebouwonderdelen gedemonteerd en hergebruikt kunnen worden. Daarbij streven we ernaar de waarde en kwaliteit van het gebouw en zijn onderdelen zo hoog mogelijk te houden, met een minimum aan materiaalschade en zo weinig mogelijk bouwafval.

De checklists omkeerbaar ontwerpen zijn opgevat als semi-kwantitatieve ontwerpinst
gebruikt worden, bijvoorbeeld bij de definitie van een programma van eisen, maar zijn
de eerste ontwerpschetsen of bij de opvolging van het project doorheen de verschillen

Inhoudelijk focussen de checklists uitsluitend op de omkeerbaarheid van gebouwen er
omkeerbaarheid:

- Checklist ruimetlijke omkeerbaarheid (CIRC2) : ruimtelijke omkeerbaarheid, heeft
  verlengen door toekomstige veranderingen van gebruik en functie te vergemakkel
- Checklist technische omkeerbaarheid (CIRC3) : technische omkeerbaarheid, is ger
  van elementen, onderdelen en materialen.

Ze maken deel uit van het thema 'Circulaire gebouwen' in GRO, dat is onderverdeeld in






Building for maximum service life by **building spatially and technically reversible**

# CURRENT PROJECTS

sloopteams

SAMEN CIRCULAIR SLOPEN

AGENTSCHAP INNOVEREN & ONDERNEMEN

Vlaanderen is ondernemen

Interreg North-West Europe

Co-funded by the European Union

PREUSE

# REUSE OF BUILDING MATERIALS




197. De volgende jaren staan in Mechelen grote bouw- en renovatiewerken op stapel en die kennen veel hoogwaardige reststromen. Men kan met deze materialen op een andere, meer duurzame manier omgaan en het zogenaamde afval als materiaal weer in de kringloop te brengen. Zo wordt een circulaire economie realiteit. Mechelen zal daarom partners zoeken en een locatie voor de uitbouw van een materialenbank, waar men materiaalstromen verzamelt, inventariseert en opslaat. Deze reststromen worden dan terug als grondstof gebruikt. Zo creëert een circulaire aanpak economische meerwaarde. Deze materialenbank is een stimulans voor nieuwe, creatieve bedrijfsactiviteiten en start-ups.

Interreg
North-West Europe

Co-funded by the European Union

**PREUSE**

**Period:** 01/2024 - 12/2027

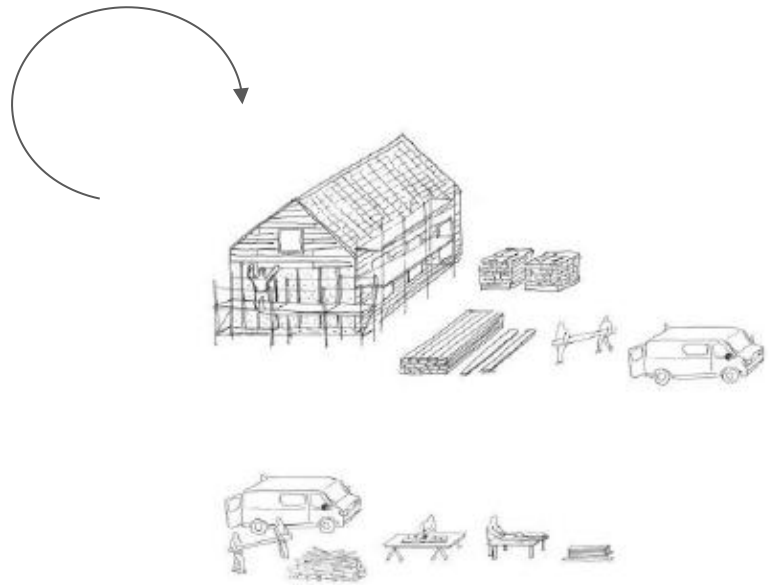
**Project budget city of Mechelen:** 687,975.00 euro.

- Funded by Interreg NWE: 412,785.00 euro.
- Funded by Province of Antwerp: 55,038.00 euros

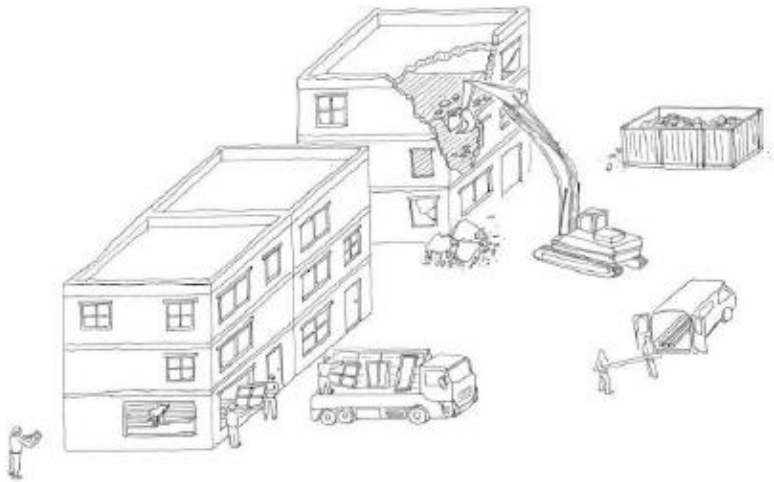
**Creation of 3 urban materials banks:** Utrecht, Lorient, Roubaix

**4 operational action plans** to set up materials banks: Paris, Utrecht, Wiltz & Mechelen

On-site reuse

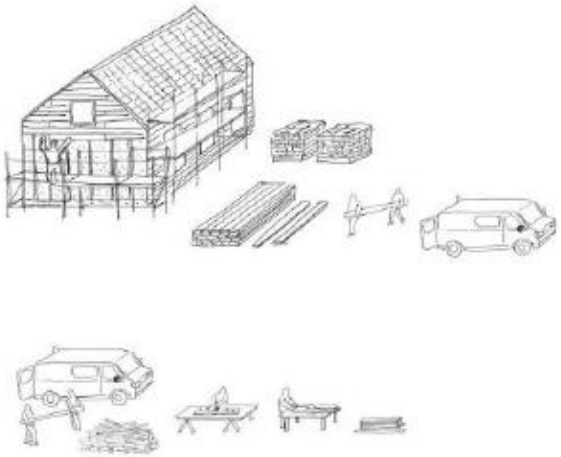


Material reuse on site

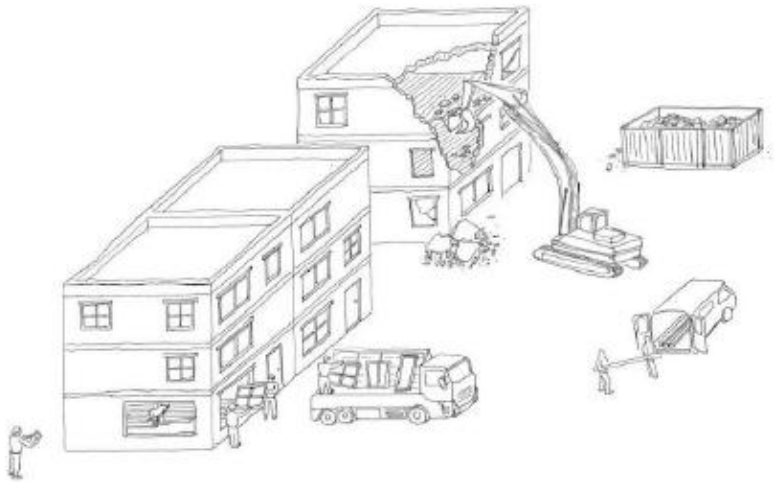


Material salvage from demolition and renovation projects

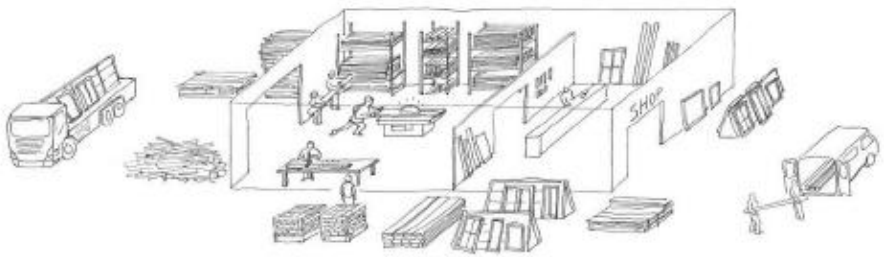
Site to site reuse



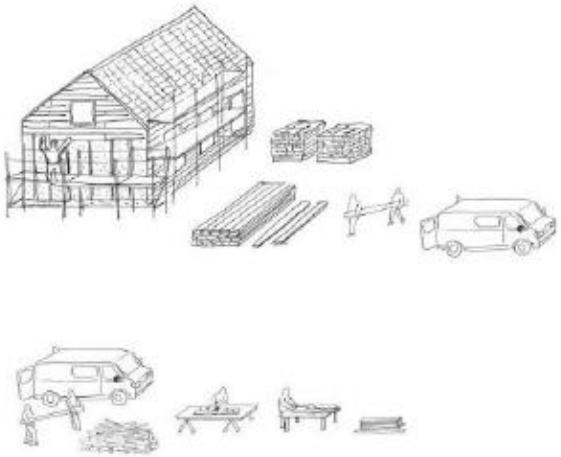
Material reuse on site



Material salvage from demolition and renovation projects



Interim storage and processing of recovered building materials



Material reuse on site

# REUSE OF BUILDING MATERIALS

**Internal public depots**



**Depots public domain:**
Brussel, Schaarbeek, Evere, Parijs, Caen, Rennes

**Depots publieke gebouweigenaars:**
Universitair ziekenhuis Poitiers

**Temporary building depots** linked to large scale urban developments



La maison du Réemploi, Magasin SAMOA, Sanitas district van Tours, La Maison du geste (FR)

*Oxy weggeefmarkt, Whitewood (BE)*

**Publicly supported materials bank** aimed at supporting the ecosystem for circular economy



Batirécup, La Base du Réemploi, Réavie, Matériauthèque des chutes de la Dore (FR)

Materialenbank Leuven, Recupcentrale Gent (BE)

**Materials bank focused on heritage management**



Banco des materials (PT)

Mobilier National (FR)

# CIRCULAR MANAGEMENT OF THE PUBLIC DOMAIN

**Reduce materials footprint via commissioning by 30% by 2030**

- Recurring
- Large quantities in circulation
- High environmental impact
- Tangible to the public
- Links to other objectives such as softening and greening



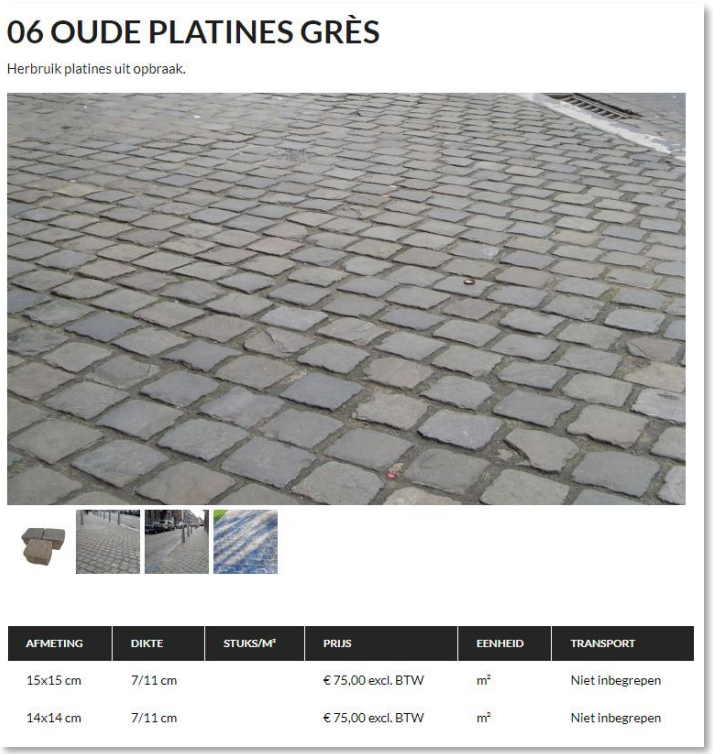
# DEPOT UTRECHT



*'The replacement value of Public Space in Utrecht is €4.5 billion'*

# CIRCULAR MANAGEMENT OF THE PUBLIC DOMAIN





06 OUDE PLATINES GRÈS

Herbruik platines uit opbraak.

| AFMETING | DIKTE | STUKS/M² | PRIJS | EENHEID | TRANSPORT |
|---|---|---|---|---|---|
| 15x15 cm | 7/11 cm | | € 75,00 excl. BTW | m² | Niet inbegrepen |
| 14x14 cm | 7/11 cm | | € 75,00 excl. BTW | m² | Niet inbegrepen |



**Financiële waarde**

# CIRCULAR MANAGEMENT OF THE PUBLIC DOMAIN

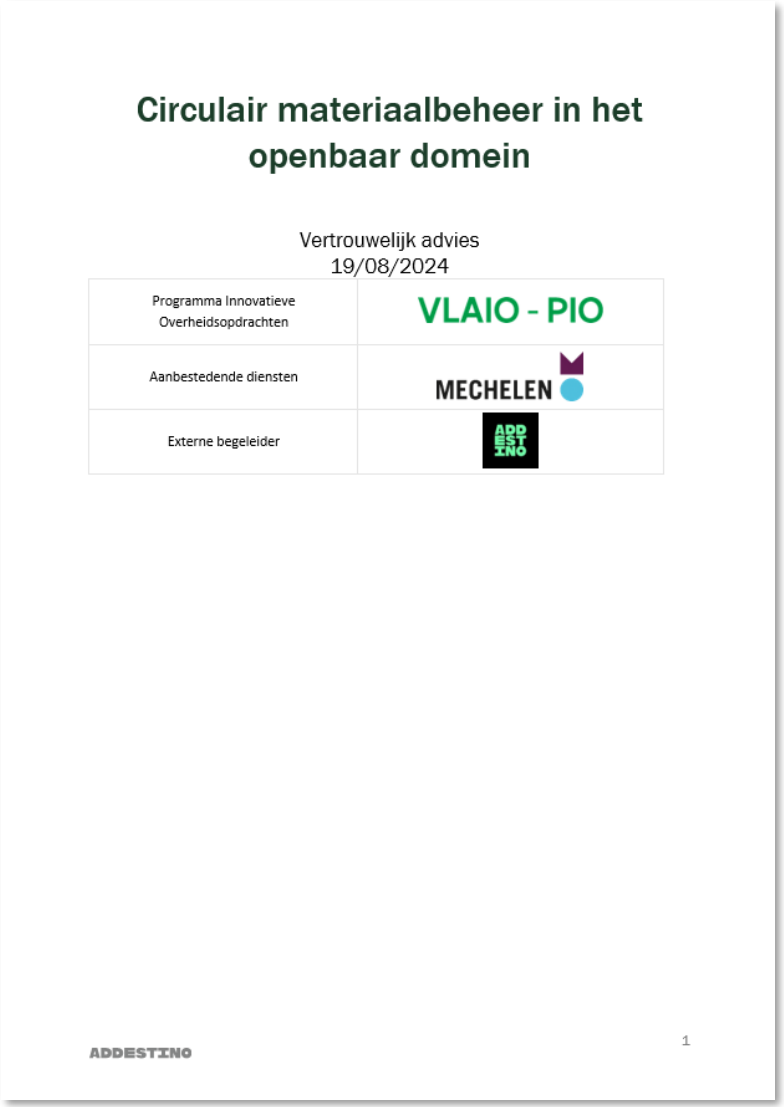


**Kosten nieuw toestel:** € 13.896,85
**Kosten voor verplaatsen en installeren:** € 3.872,00

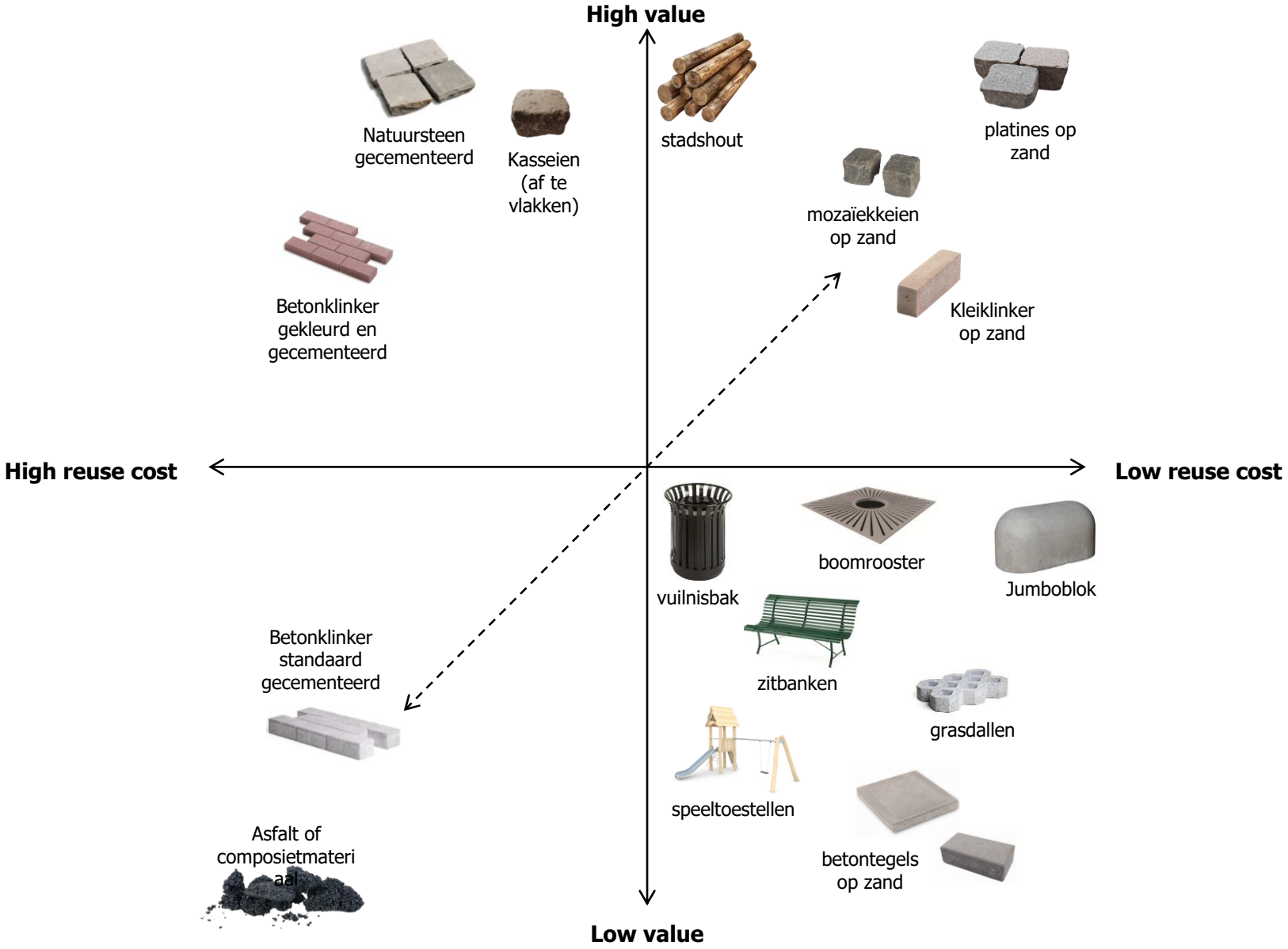
**Financiële waarde**

# CIRCULAR MANAGEMENT OF THE PUBLIC DOMAIN

- There is a need for a materials framework consisting of the following dimensions:
  - **"Criticality"** (the impact on project planning and potential cascading effects if a material is unavailable)
  - **Quality**
  - **Demolition cost** through the required method (e.g., the Circular Value Index)
- The forms of collaboration between the City and contractors need to be defined, for example, regarding liability for the quality of (reused) materials.
- It is a requirement for the City of Mechelen to provide its own local storage and logistical means to temporarily store materials between the demolition and reuse stages. This is necessary for several reasons:
  - Storage on the construction site where materials are harvested is often unworkable or very difficult.
  - This ensures the availability of materials for projects that the City of Mechelen wants to prioritize, as opposed to the situation where the demolition contractor removes the materials (and reuses or sells them at their discretion).
  - A central hub further reduces the distance over which materials need to be transported.
- **Intermunicipal collaboration**



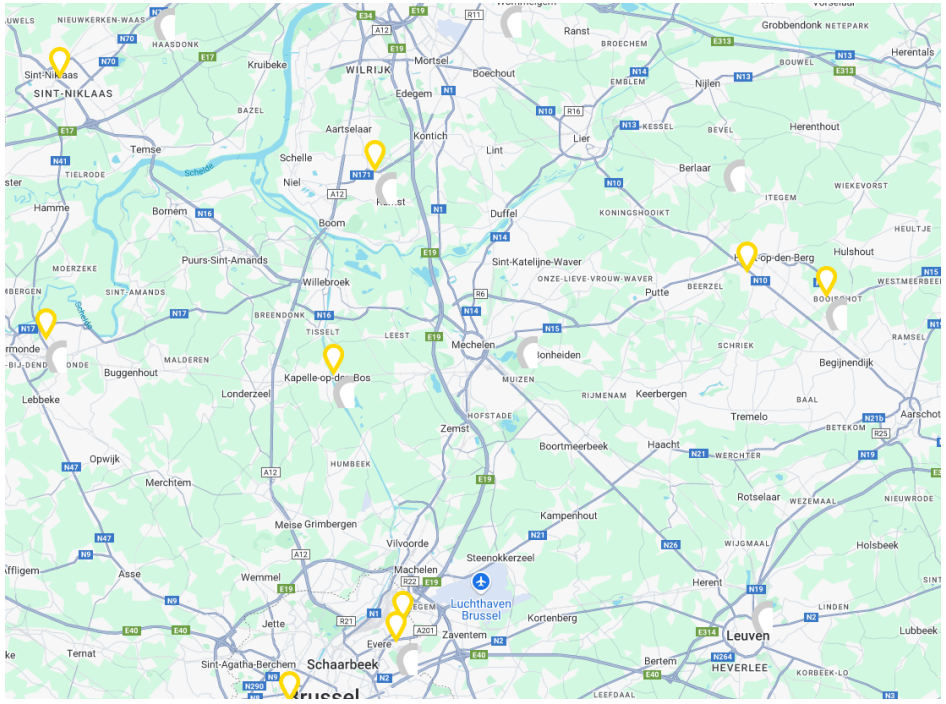
# CIRCULAR MANAGEMENT OF THE PUBLIC DOMAIN



# MATURE REUSE MARKET



*Maris Natuursteen (Heist-op-den-Berg), © Opalis*

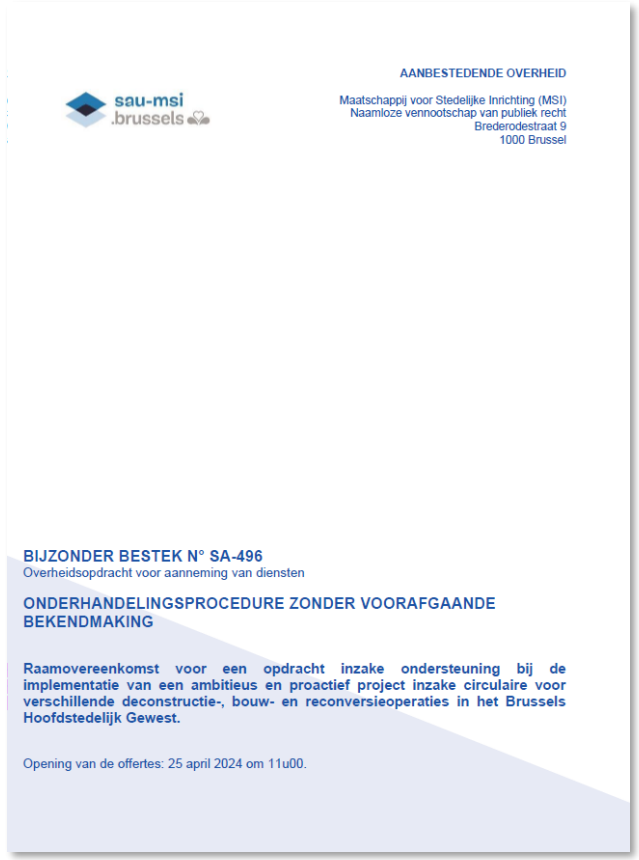



*Buitenaanleg en wegen - Opalis*

# SCALE UP!

Het Brusselse stadslandschap biedt een groot potentieel voor hergebruik en kan bogen op een aantal inspirerende voorbeelden. Verschillende Brusselse gemeenten beschikken over opslagplaatsen met beperkte stocks van bestratingselementen, zoals kasseien en klinkers, en meubilair, zoals vuilnisbakken en banken. Mits meer uitwisseling tussen gemeenten wordt circulariteit daardoor denkbaar. Zo kan de ene gemeente van de materialenvoorraad van de andere profiteren.

***Screenshot:*** *Fragment uit Draaiboek Publieke Ruimte, Brussels Hoofdstedelijk Gewest*



AANBESTEDENDE OVERHEID

sau-msi .brussels

Maatschappij voor Stedelijke Inrichting (MSI)
Naamloze vennootschap van publiek recht
Brederodestraat 9
1000 Brussel

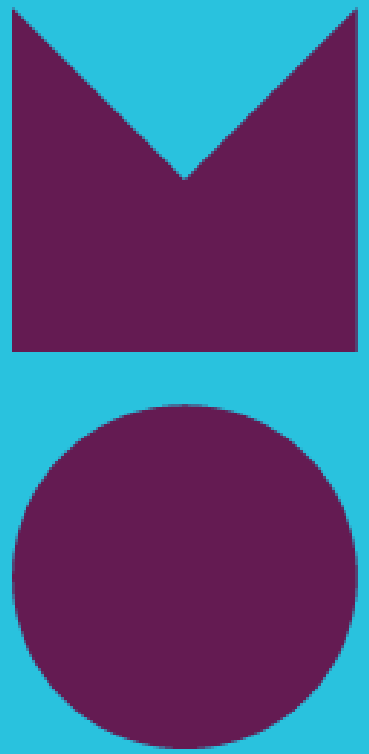
**BIJZONDER BESTEK N° SA-496**
Overheidsopdracht voor aanneming van diensten

**ONDERHANDELINGSPROCEDURE ZONDER VOORAFGAANDE BEKENDMAKING**

**Raamovereenkomst voor een opdracht inzake ondersteuning bij de implementatie van een ambitieus en proactief project inzake circulaire voor verschillende deconstructie-, bouw- en reconversieoperaties in het Brussels Hoofdstedelijk Gewest.**

Opening van de offertes: 25 april 2024 om 11u00.

Screenshot: Specification for support in reuse from the Society for Urban Planning, acting as a procurement center.



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| | | |
|---|---|---|
| 11.30 am | **Photoshoot** | |
| 11.45 am | Vegetarian lunch | |
| 12.45 pm | Guided city walk in Mechelen<br>"heritage repurposed" | |
| 02.15 pm | Transfer to Cocon by bus | Pickup point: Veemarkt, Mechelen (Bus company: De Polder) |
| 03.00 pm | Visit of Cocon<br>Presentation and visit | Heistraat 135B, 9100 Sint-Niklaas |
| 05.00 pm | Return to Mechelen by bus | |
| 07.00 pm | Dinner | Brewery Het Anker, Guido Gezellelaan 49, 2800 Mechelen |

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# Time for questions



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# •Thank you!

Don’t hesitate to follow us!

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