What a *Waste*!

Redefining the Private-, Collective-, and Public Space Towards a Circular System for Food and Consumer Goods in the Domestic Domain

Emma Lolkje Leuntje Tulp
4673948
January 17th 2024



(made by author)

Content

section 1. problem field
section 2. research questions
section 3. analysis
section 4. spatial framework
section 5. spatial design
section 6. governance framework
section 7. conclusion & reflection

What if...

What if...

one thinks twice about the consumption and disposal of products



a society focused on buying, buying, and even more buying

(NOS, 2015)



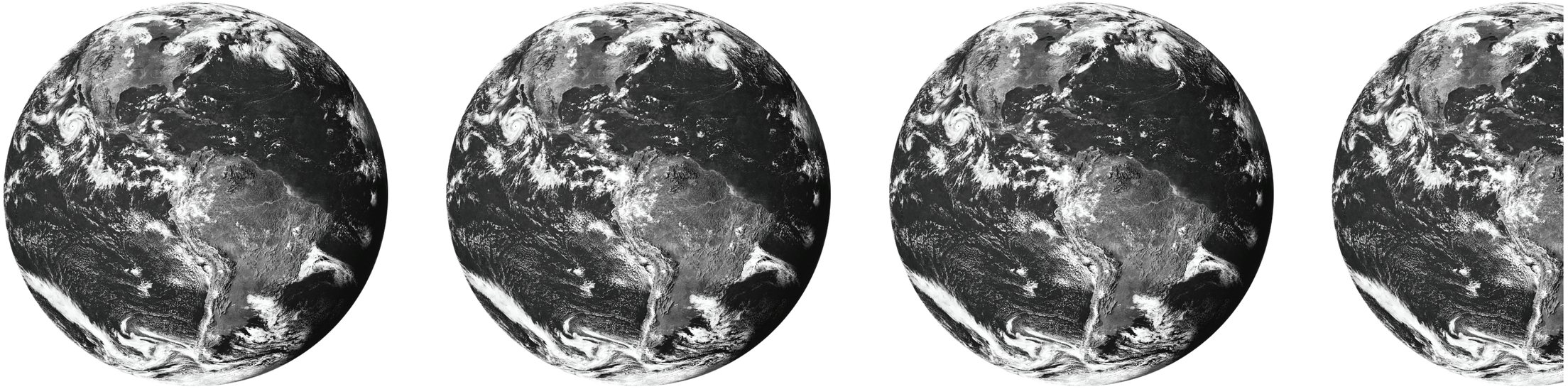






(Butler, 2016)
(De Souza, n.d.)
(Tinto, n.d.)
(González, 2023)

if everyone lived like the Dutch we would need 3.6 earths

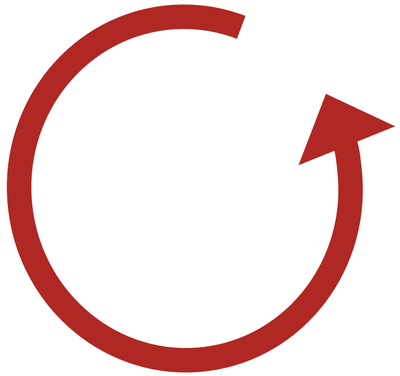


(Earth, 2016)



CHANGE is needed in the way we handle our products and resources

Masterplan voor betere recycling, 2016)

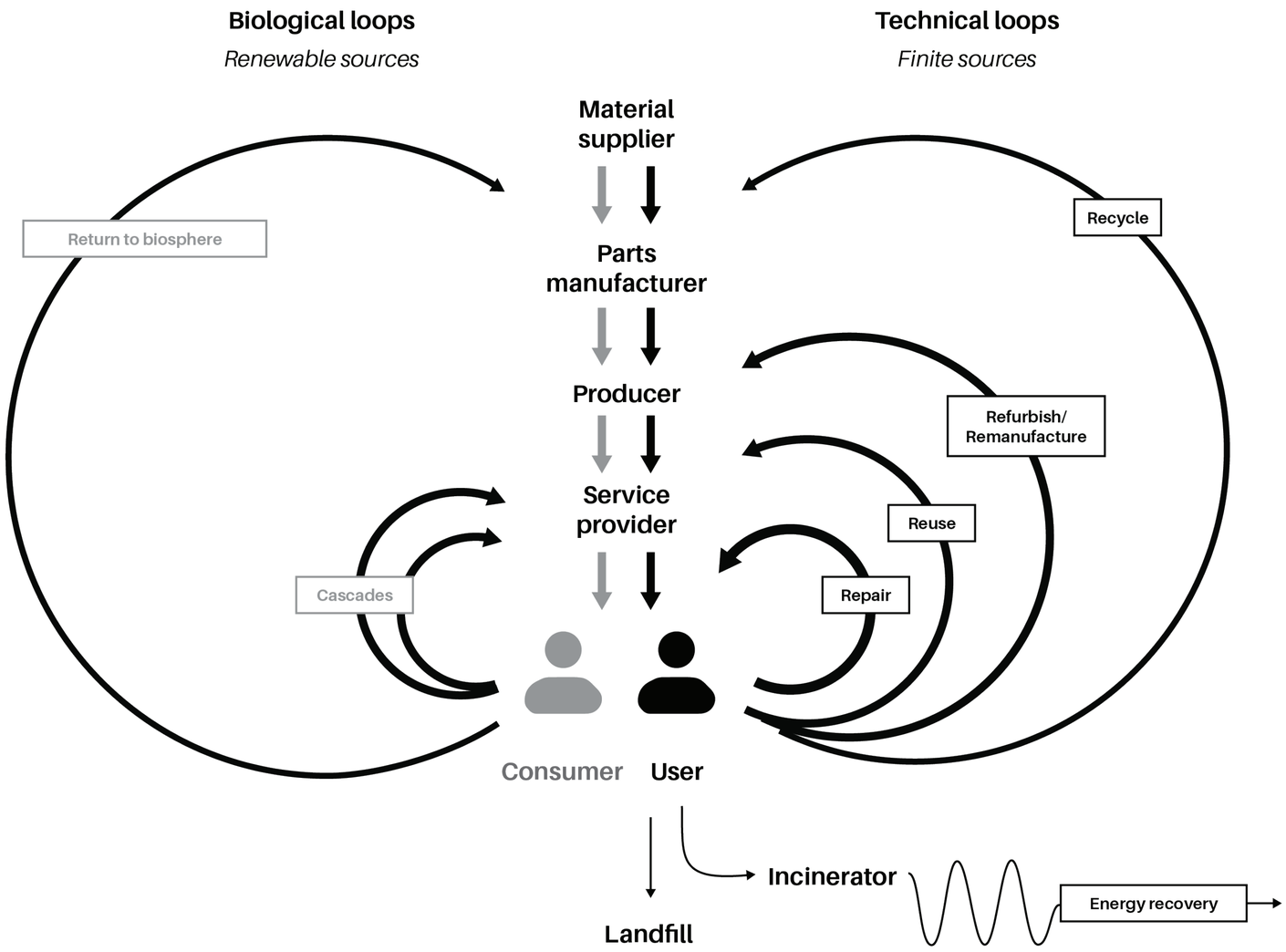


(made by author)

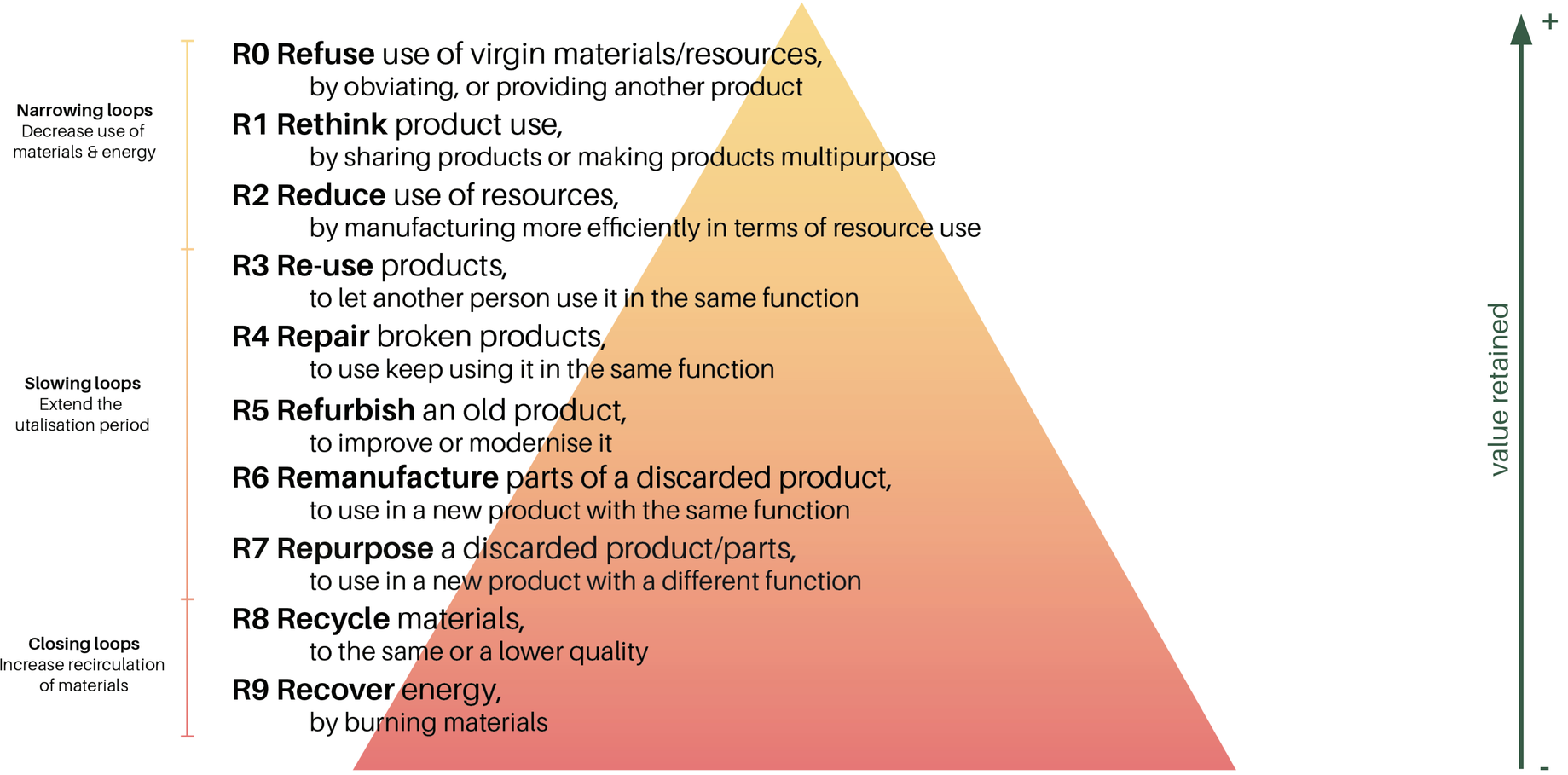
circular economy:
[1] maintain utility & value (of materials, components & products)
[2] prolong lifetime (of products)
[3] concept of waste is eliminated: one's waste is another's resource



(made by author)



(adapted from Dokter, 2021 (based on Ellen MacArthur Foundation, 2013))



(made by author, based on Schut, 2019)

a project into how social- and **spatial interventions** can support the transition towards a circular domestic use of food and consumer goods

How can **spatial design interventions in the public, collective, and private space** support and facilitate the shift to **a circular domestic use of food and consumer goods** in the Indische Buurt (in Amsterdam)?

How can **spatial design interventions in the public, collective, and private space** support and facilitate the shift to **a circular domestic use of food and consumer goods** in the Indische Buurt (in Amsterdam)?

[aim]
explore how the Indische Buurt (Amsterdam) should **change spatially** to make the system of **domestic use of food and consumer goods** circular, and **increase the awareness and execution** of circular behavior by residents.

How can **spatial design interventions in the public, collective, and private space** support and facilitate the shift to **a circular domestic use of food and consumer goods** in the Indische Buurt (in Amsterdam)?

[aim]
explore how the Indische Buurt (Amsterdam) should **change spatially** to make the system of **domestic use of food and consumer goods** circular, and **increase the awareness and execution** of circular behavior by residents.

[outcome]
a **spatial framework** to reorganize the whole district,
a **detailed design** for the area around the Javaplein and Javastraat,
and a **governance framework** to make recommendations on national- and municipal level.

How can **spatial design interventions in the public, collective, and private space** support and facilitate the shift to **a circular domestic use of food and consumer goods** in the Indische Buurt (in Amsterdam)?

[RQ.1]
What are the social- and spatial characteristics of the Indische Buurt?

[RQ.2]
What improvements could be identified in the current urban metabolic-system of the Indische Buurt to reach a circular domestic use of food and consumer goods?

[RQ.3]
What behavioral aspects (of residents) should be considered when making a spatial design to transition towards a circular domestic consumption of food and consumer goods?

[RQ.4]
What changes are needed in the governance of the Netherlands and the municipality of Amsterdam to integrate the proposed spatial interventions, needed for a circular domestic use of food and consumer goods?

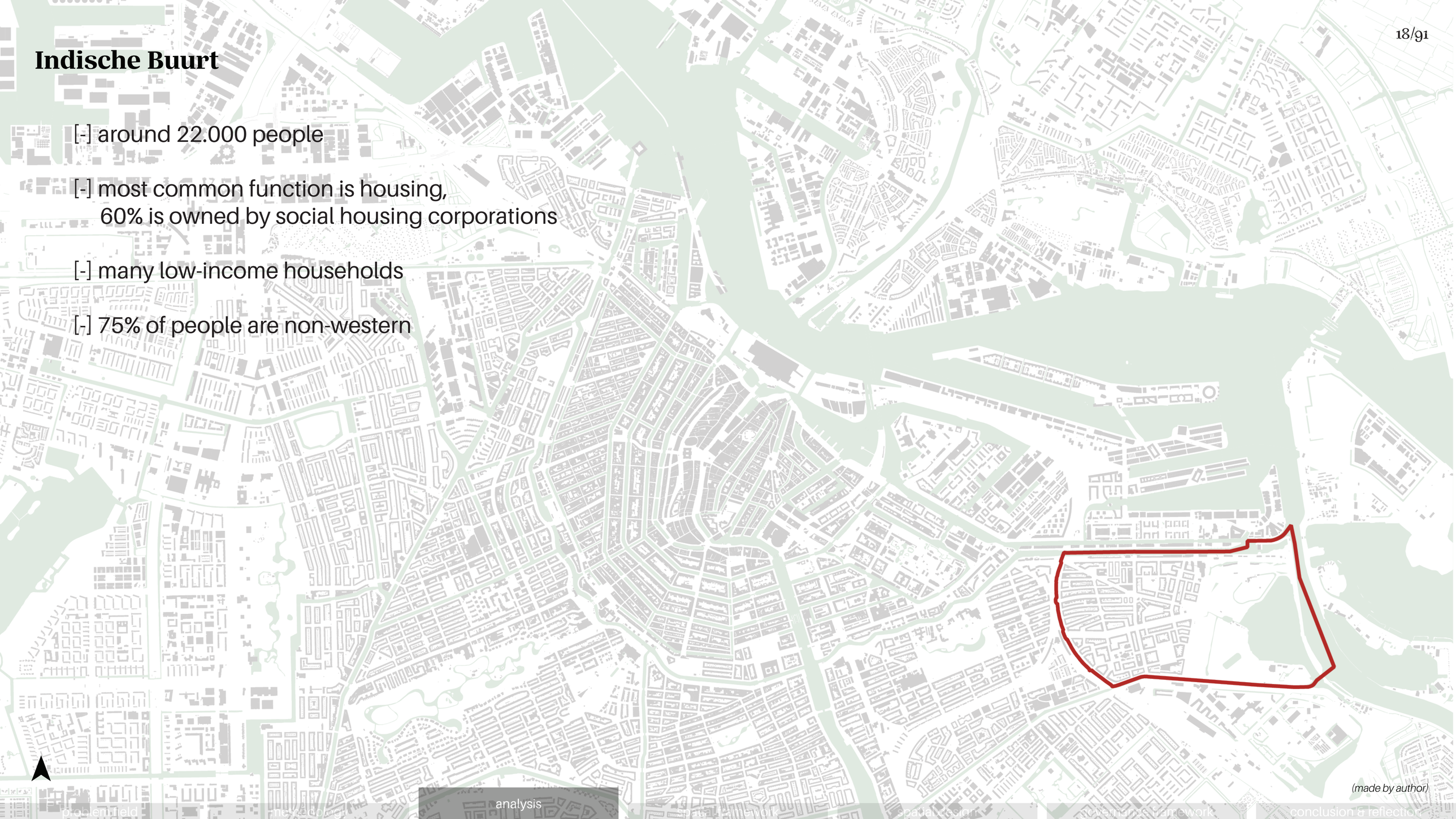
Indische Buurt

[-] around 22.000 people

[-] most common function is housing,
60% is owned by social housing corporations

[-] many low-income households

[-] 75% of people are non-western



(made by author)

Indische Buurt | **Insulindeweg**





(made by author)

Indische Buurt | **Molukkenstraat**





(made by author)

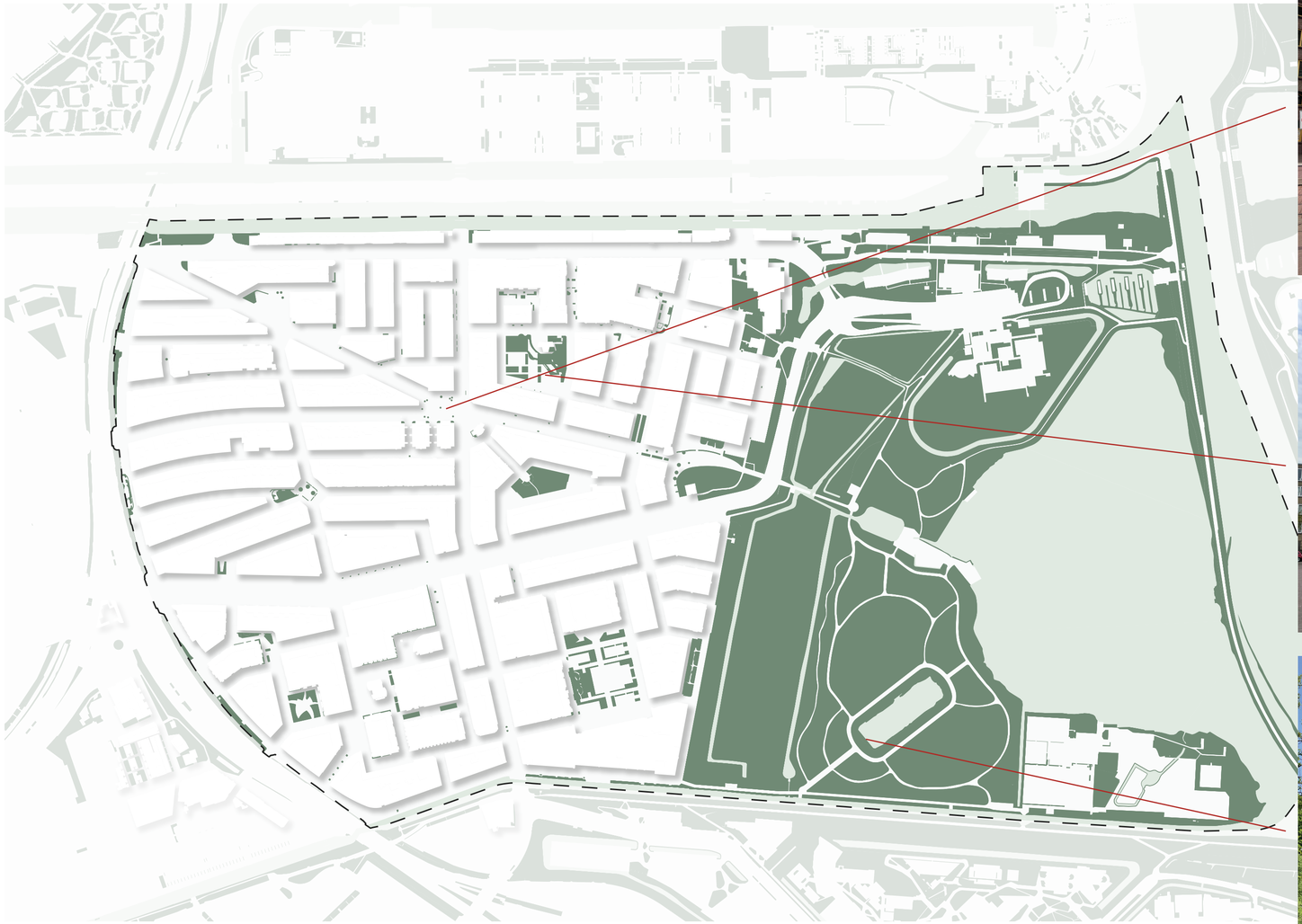
Indische Buurt | **Javastraat**





(made by author)

Lack of Greenery









0 100 200 m

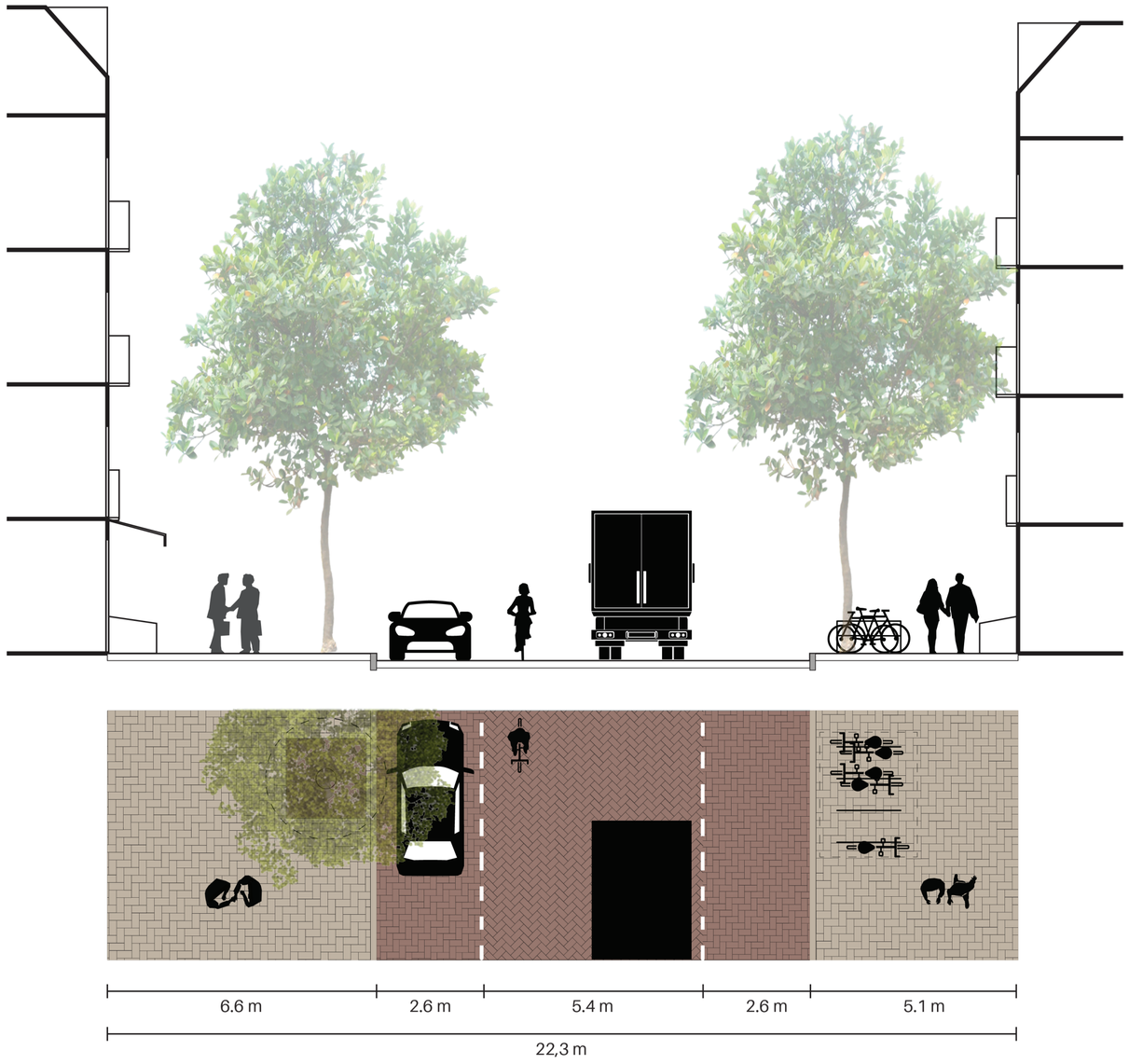
(made by author)

Green in Amsterdam



(made by author)

Javastraat



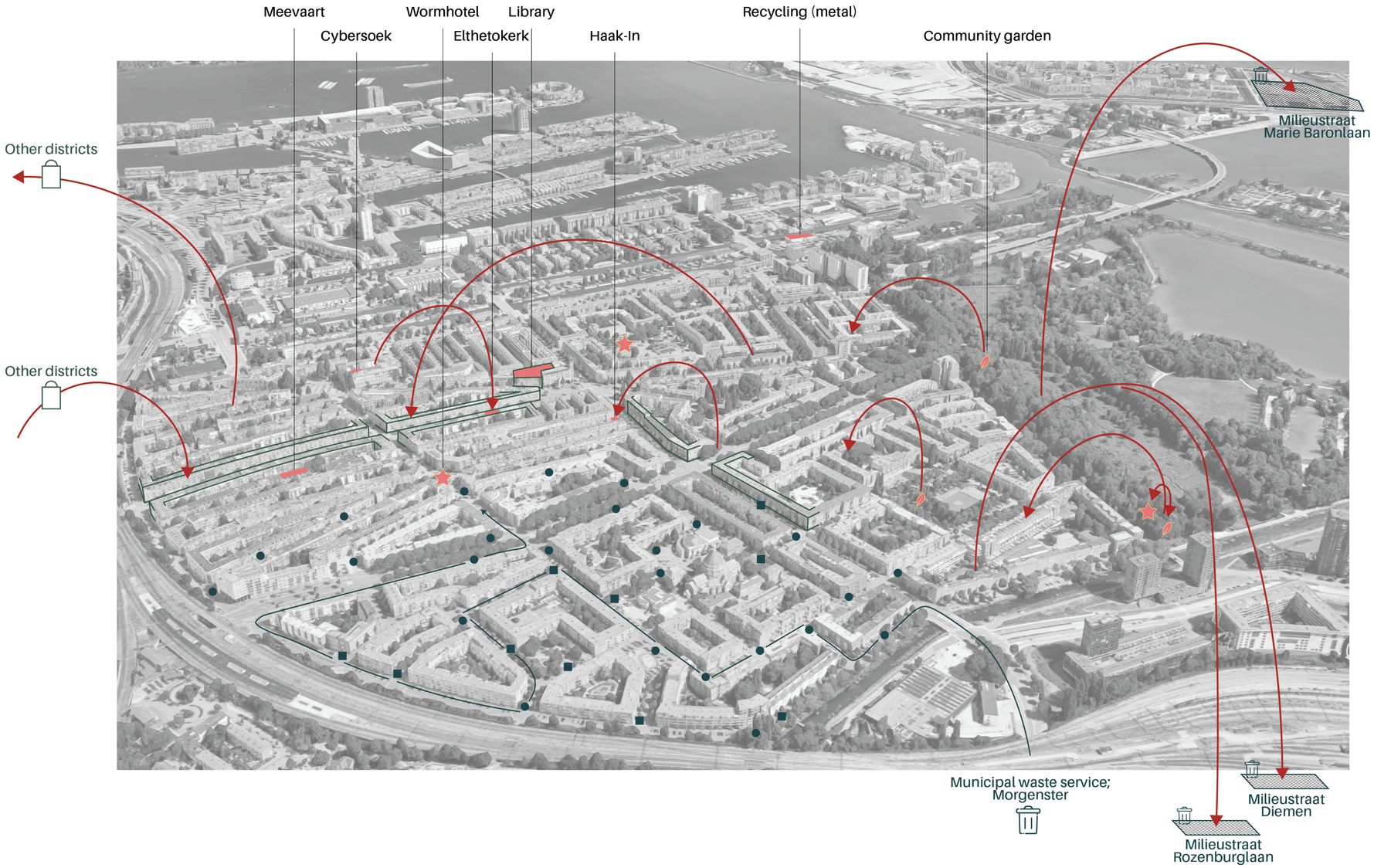
(made by author)

Javastraat



(made by author)

Resource Flows in the Indische Buurt | **Overview *(now)***



(made by author)

Resource Flows in the Indische Buurt | **Waste Collection** ***(now)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

Municipal waste service;
Morgenster

(made by author)

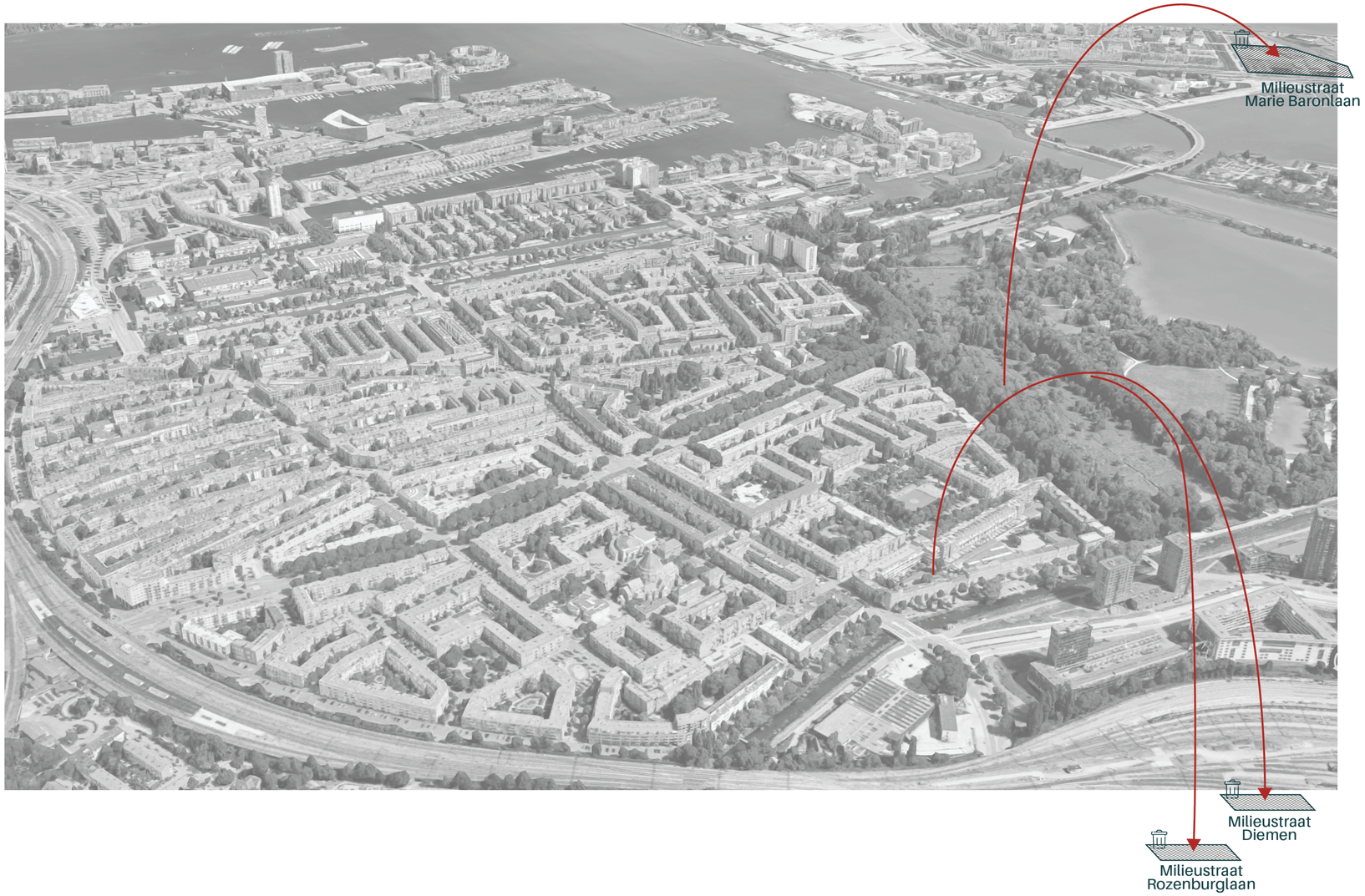
Resource Flows in the Indische Buurt | **Waste Collection** ***(potential)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

(made by author)

Resource Flows in the Indische Buurt | **‘Milieustraten’** ***(now)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

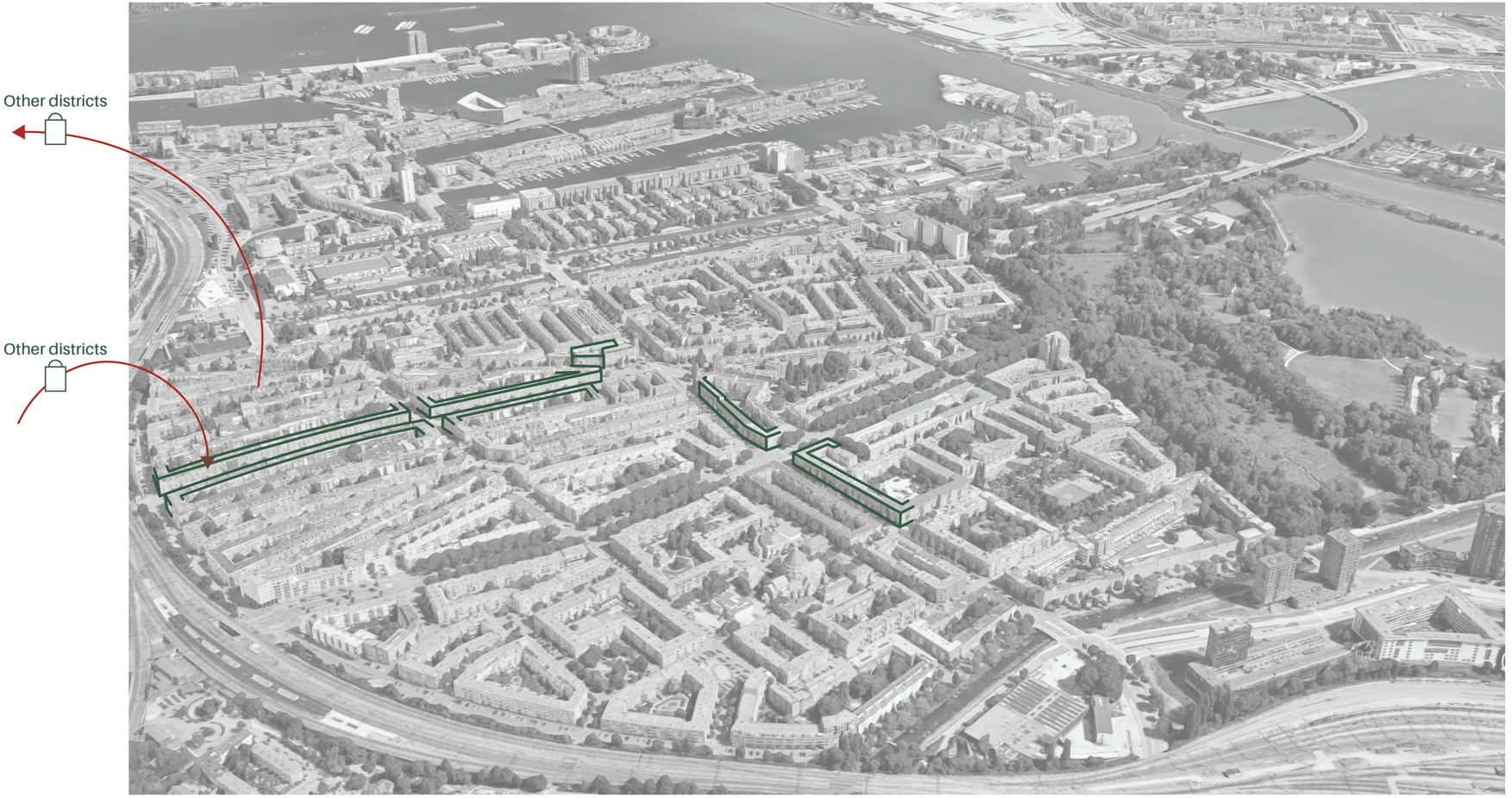
(made by author)

Resource Flows in the Indische Buurt | **‘Milieustraten’** ***(potential)***



(made by author)

Resource Flows in the Indische Buurt | **Shopping Streets** ***(now)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

(made by author)

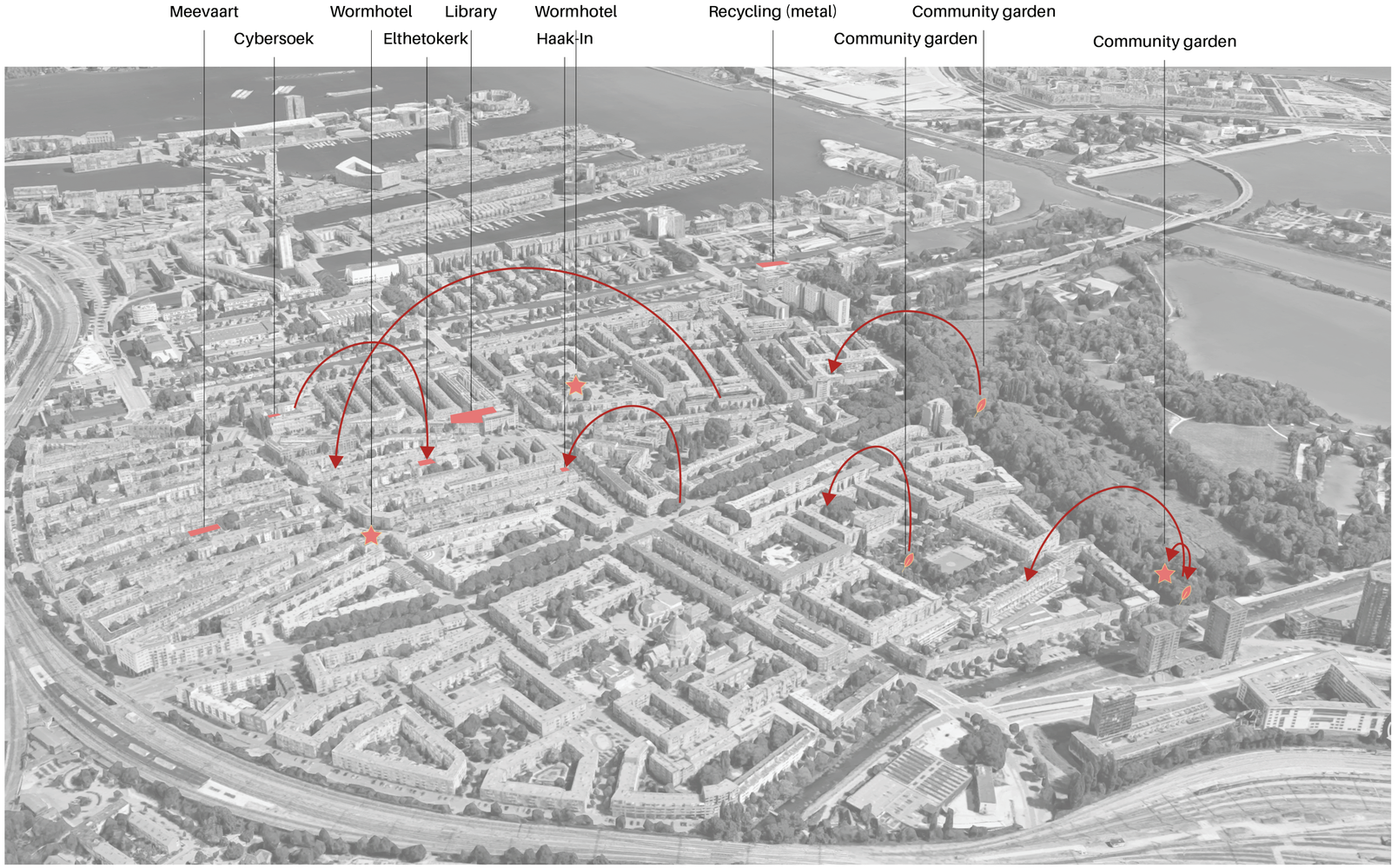
Resource Flows in the Indische Buurt | **Shopping Streets** ***(potential)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

(made by author)

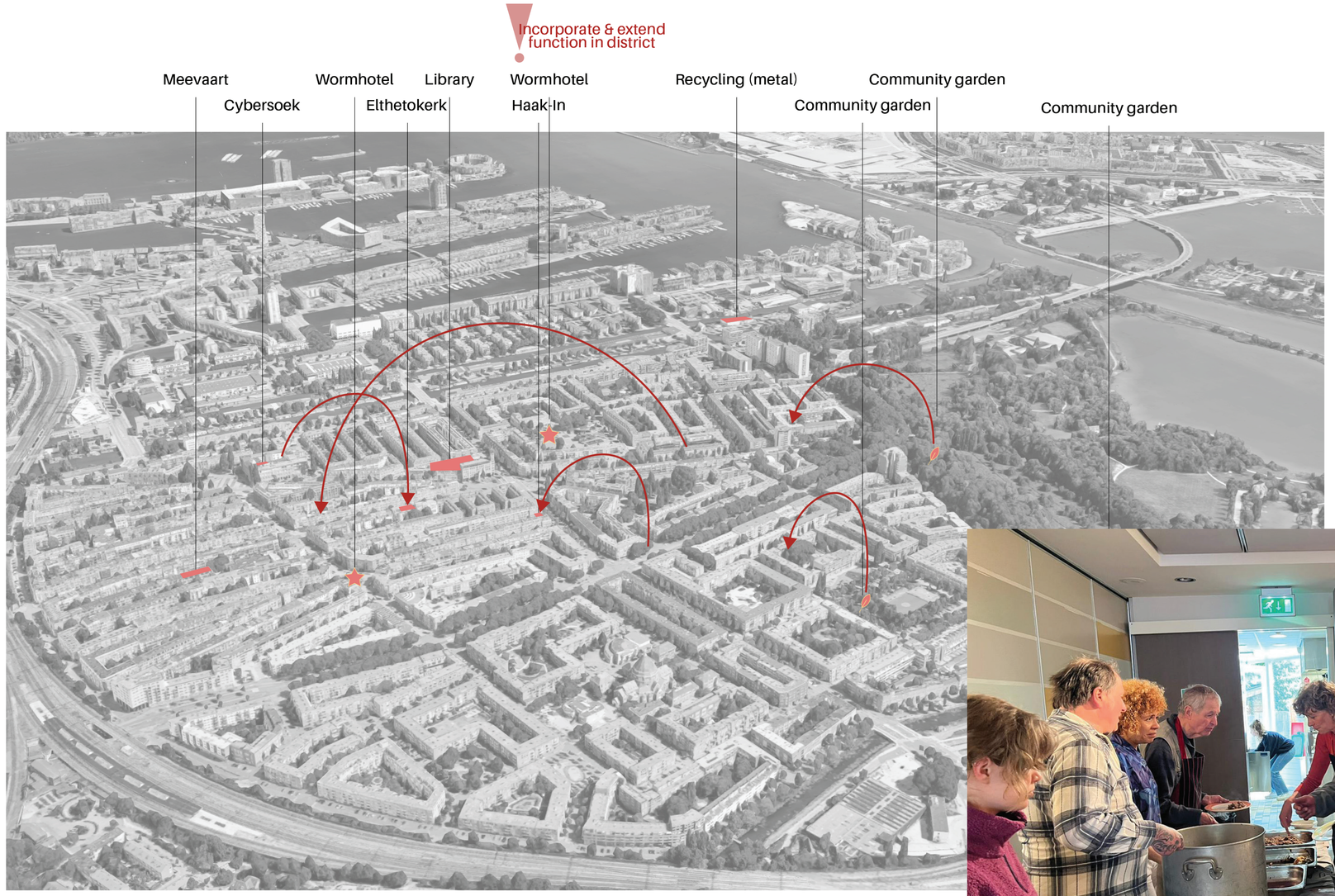
Resource Flows in the Indische Buurt | **Circular Initiatives *(now)***



Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

(made by author)

Resource Flows in the Indische Buurt | **Circular Initiatives *(potential)***



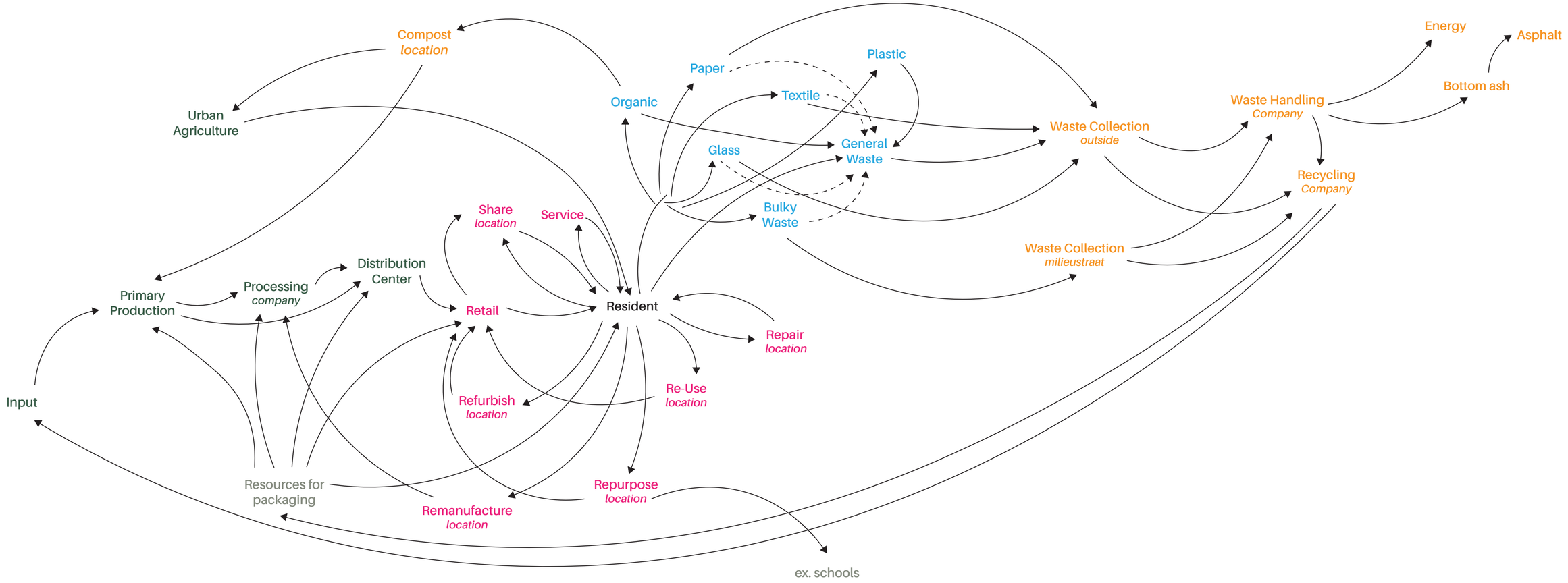


(Buddelmeijer, 2023)

Legend
- Waste container (recycling)
- Waste container (only general)
- Milieustraat
- Shops
- Circular initiative
- Wormhotel
- Community garden
- (Urban metabolic) flow

(made by author)

Production - Consumption - Disposal - Handling



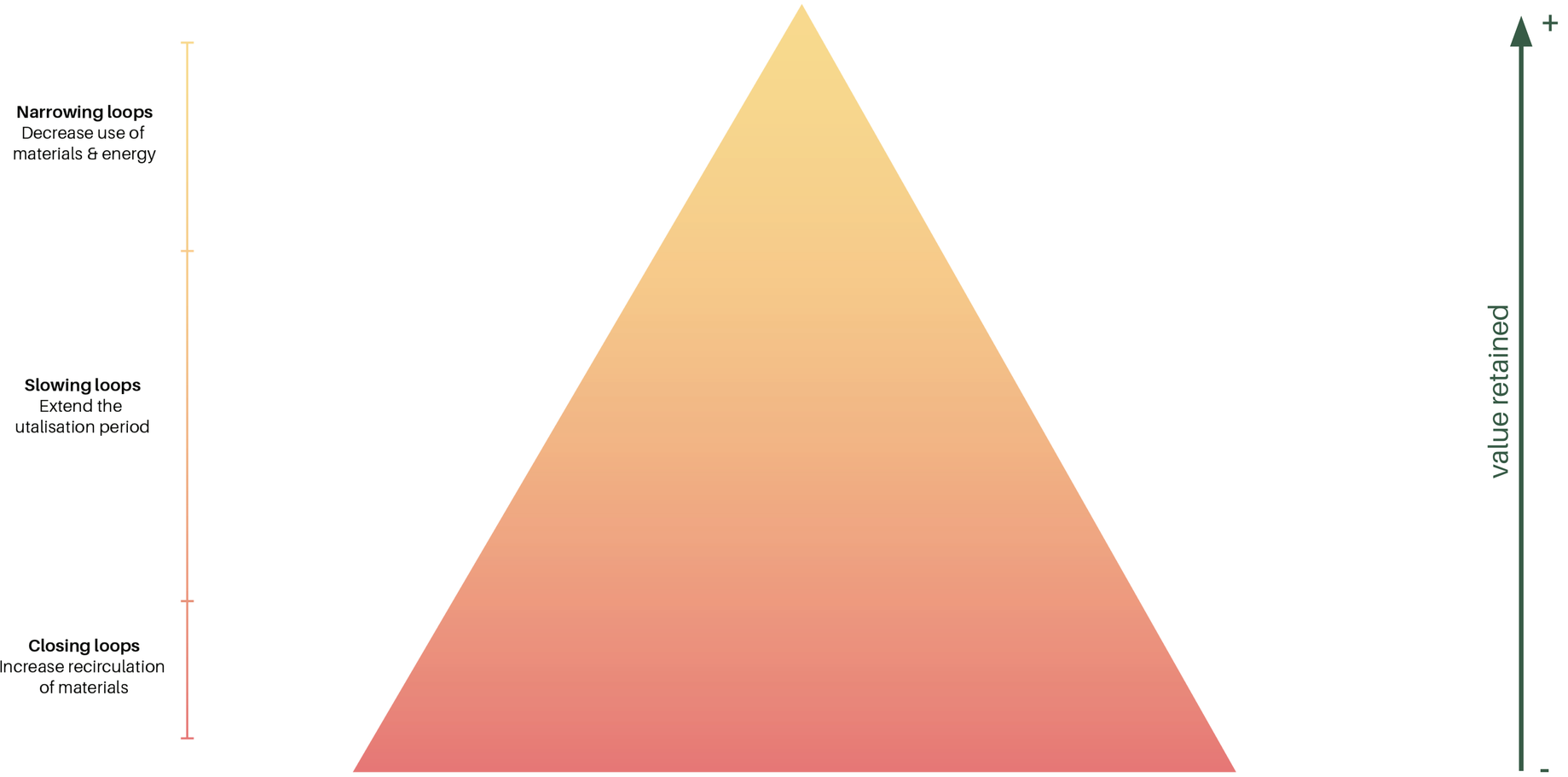
Legend
- Production
- Consumption/ Disposal
- Waste Collection (inside)
- Waste Management
- Other

(made by author)

What if...

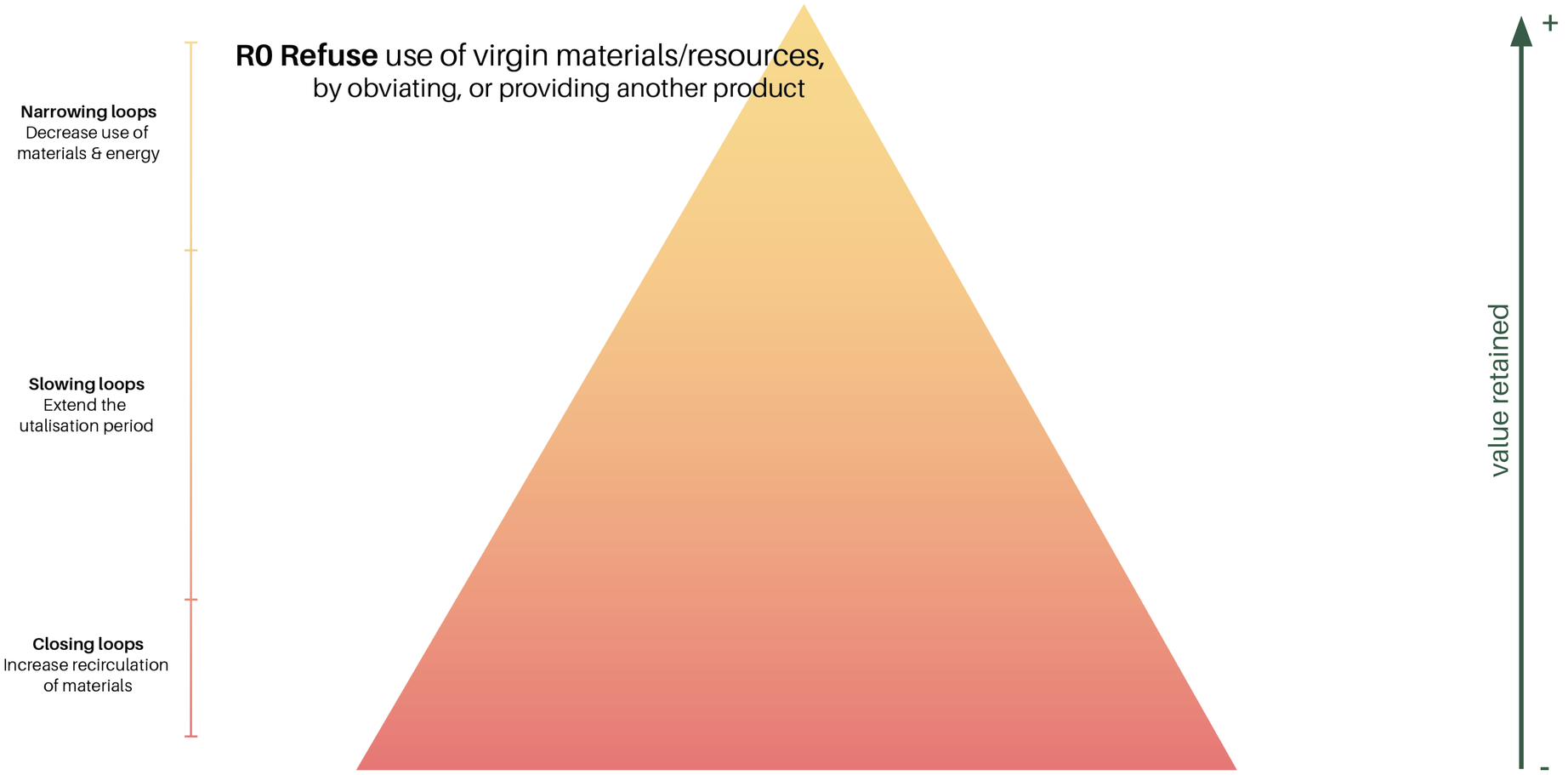
one thinks twice about the consumption and disposal of products,
and the configuration of the spatial environment supports this

R-ladder as planning tool



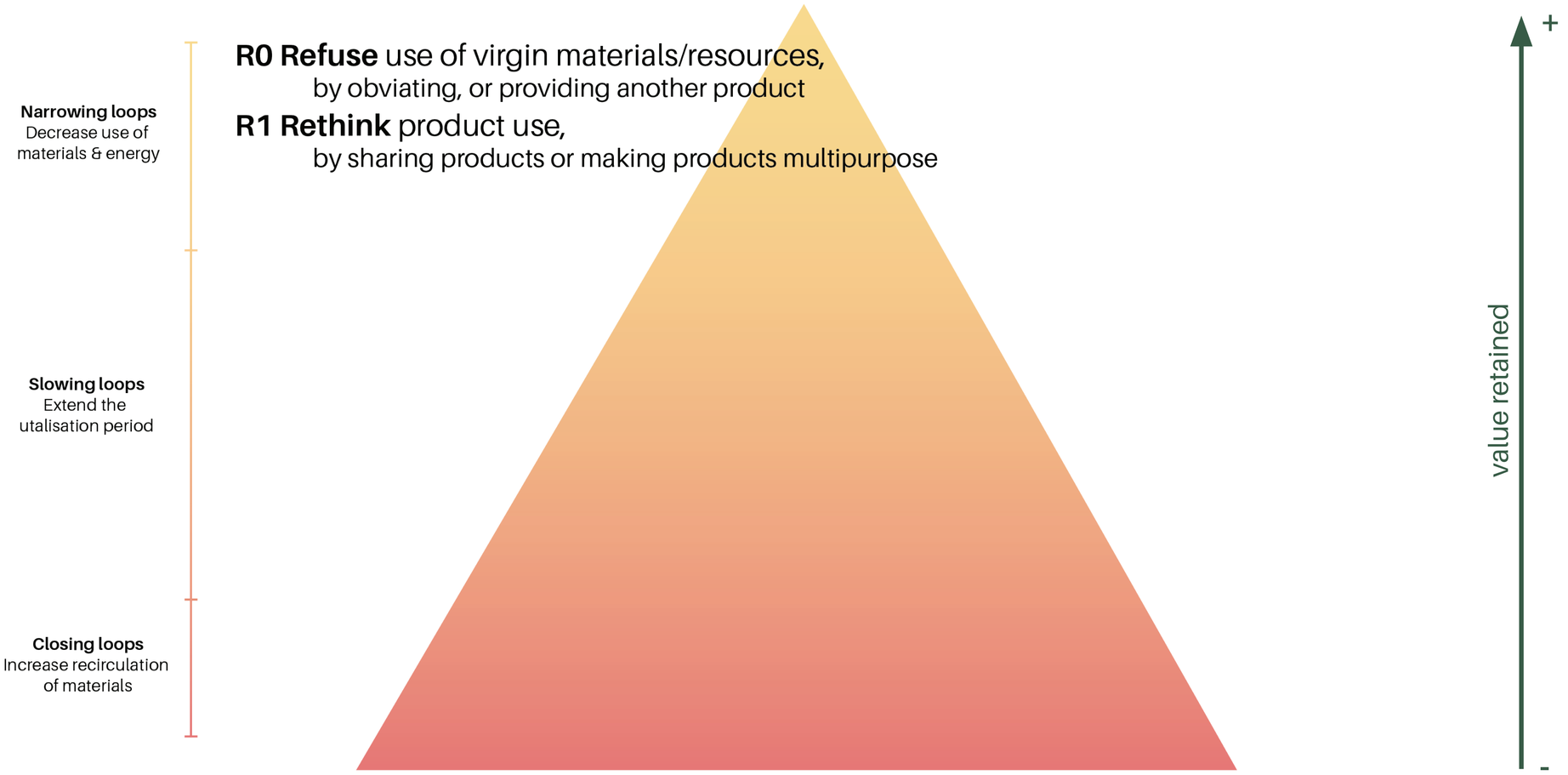
(made by author, based on Schut, 2019)

R-ladder as planning tool



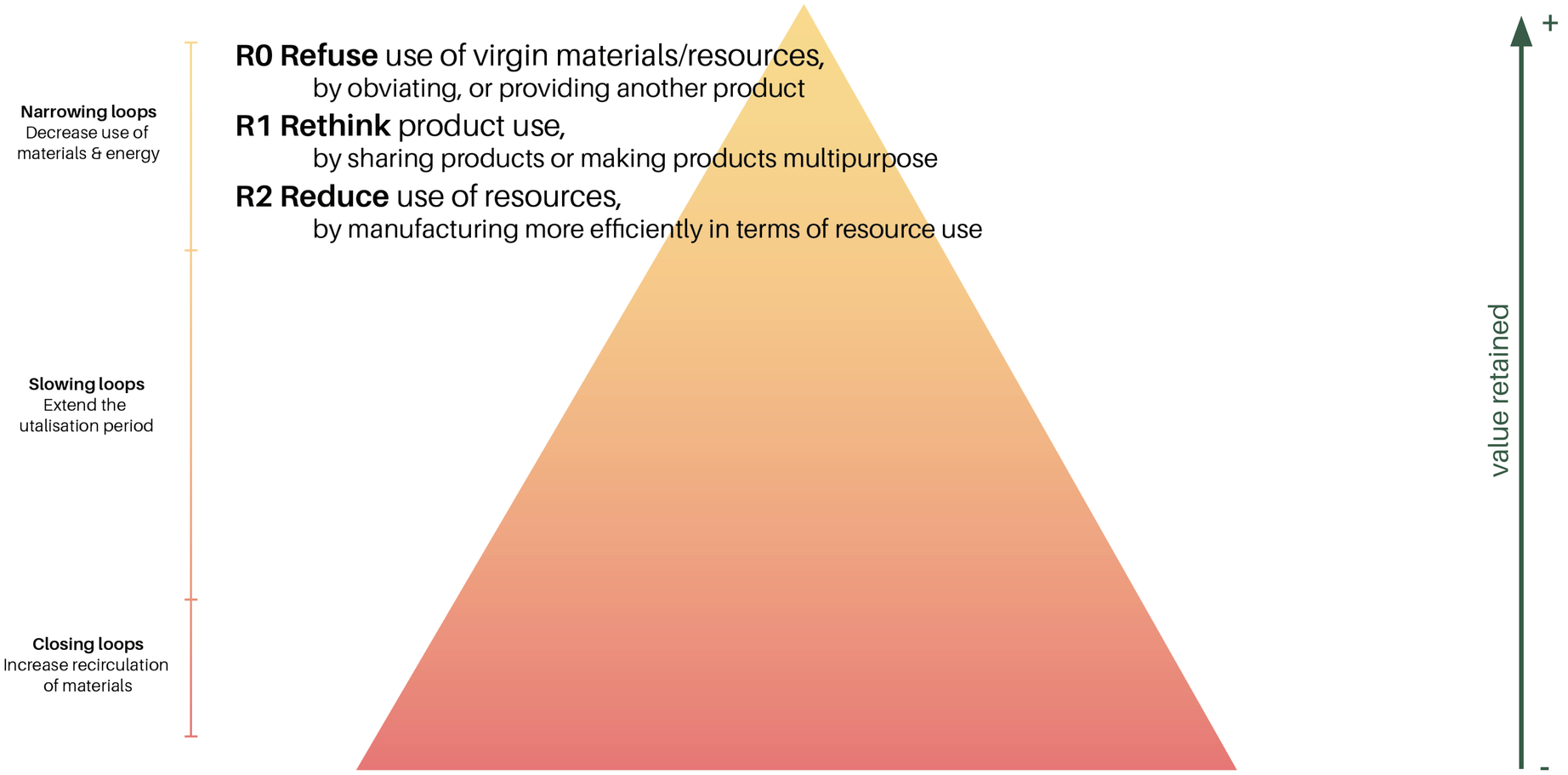
(made by author, based on Schut, 2019)

R-ladder as planning tool



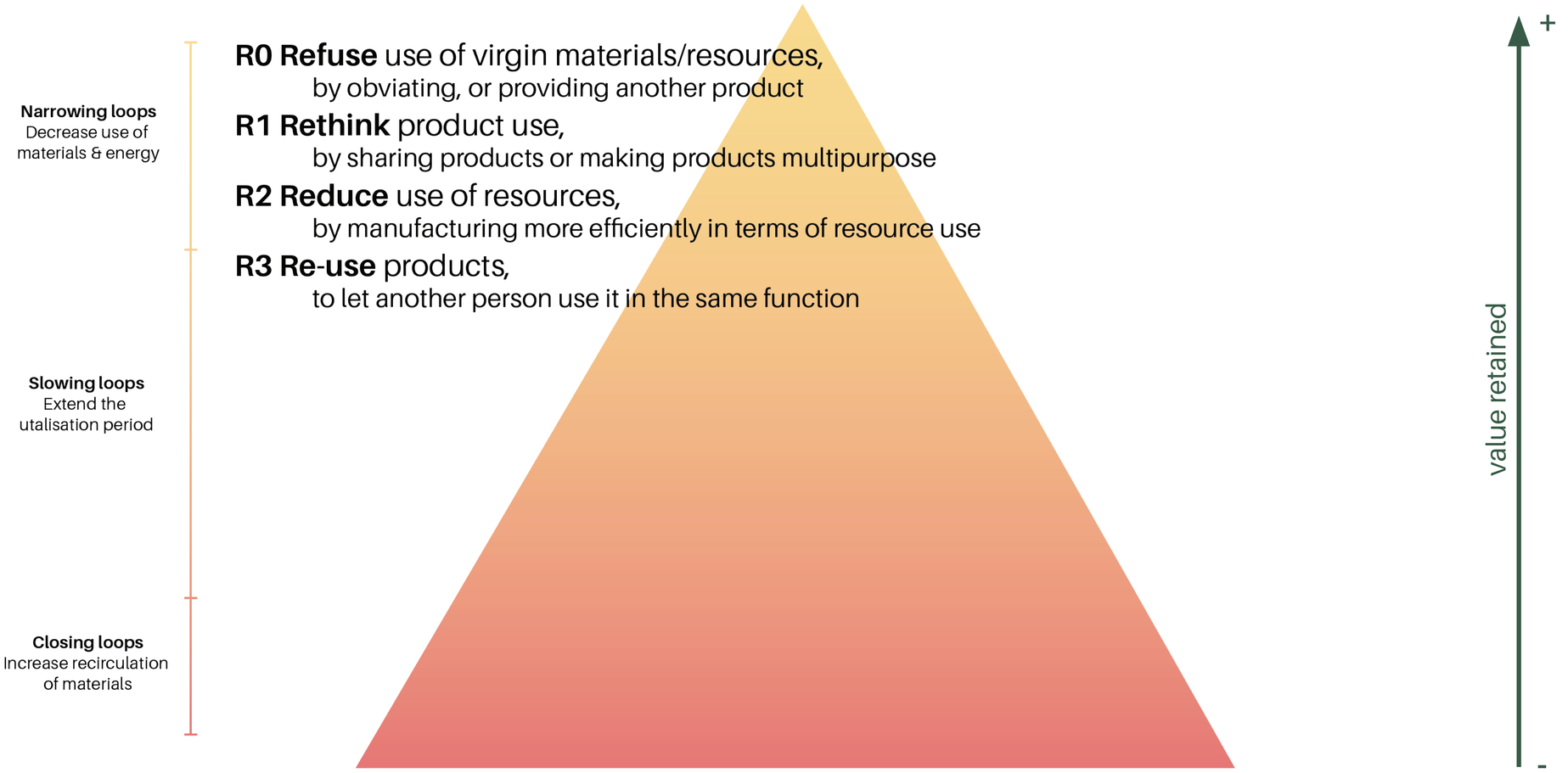
(made by author, based on Schut, 2019)

R-ladder as planning tool



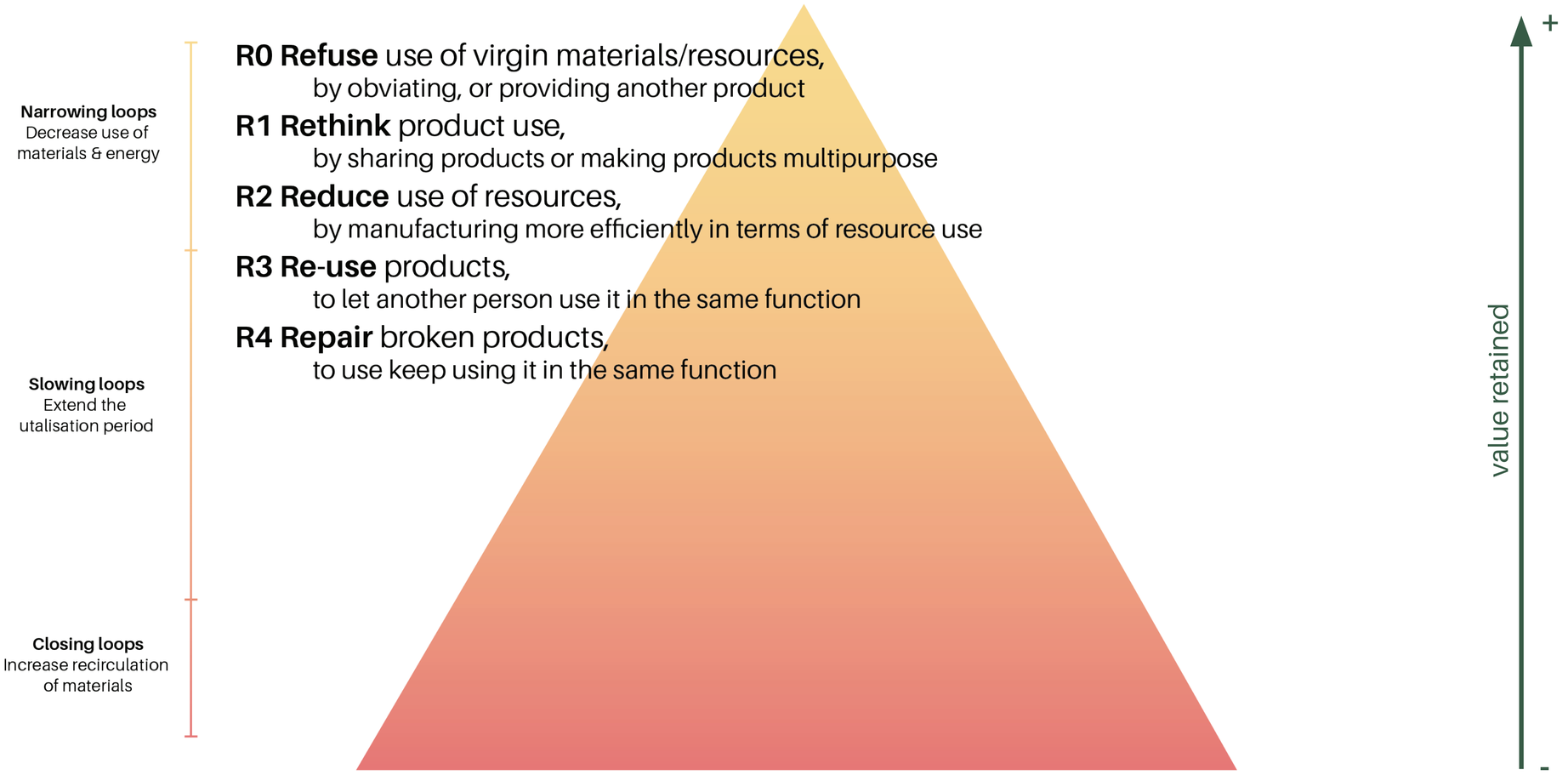
(made by author, based on Schut, 2019)

R-ladder as planning tool



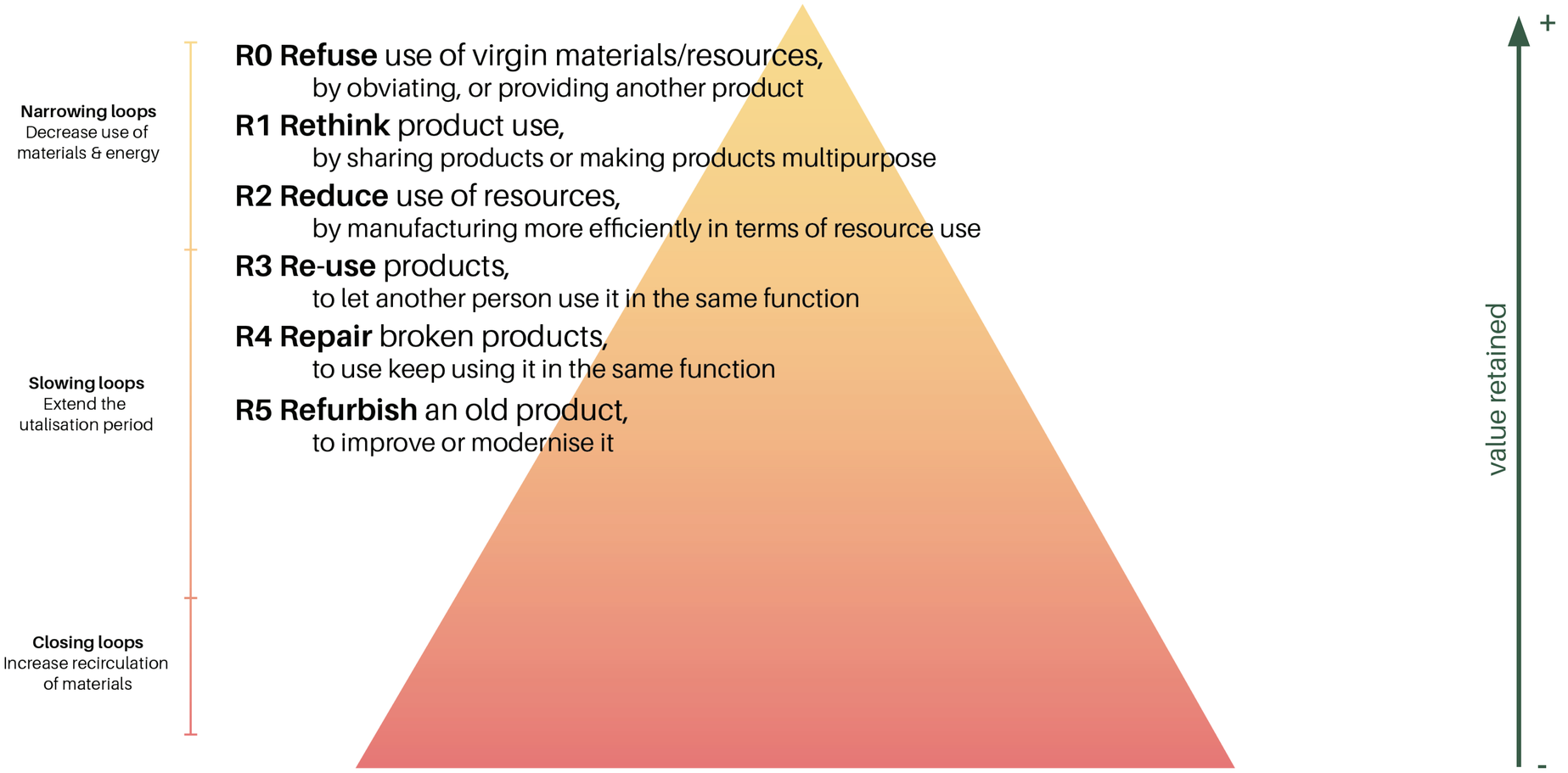
(made by author, based on Schut, 2019)

R-ladder as planning tool



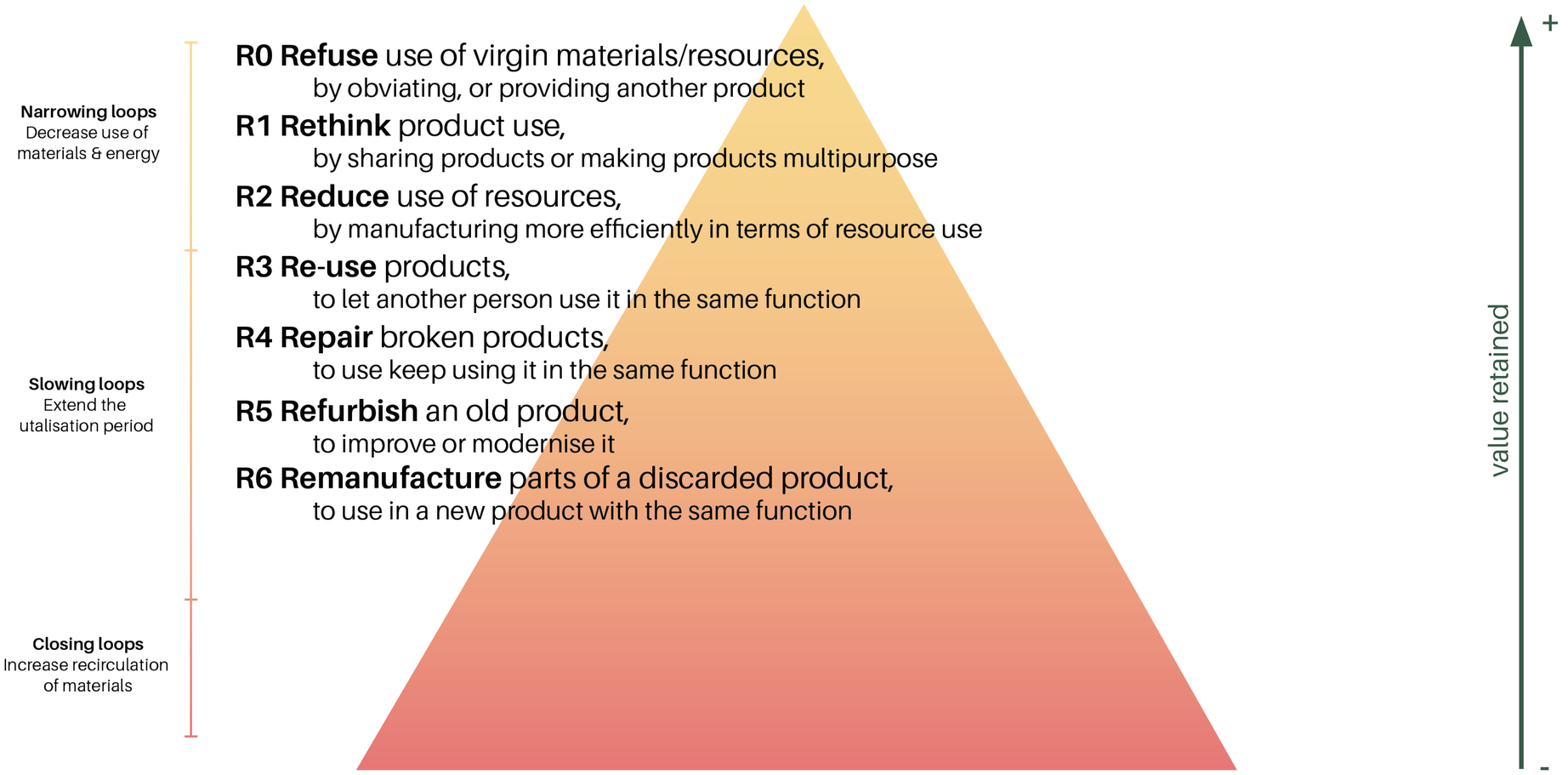
(made by author, based on Schut, 2019)

R-ladder as planning tool



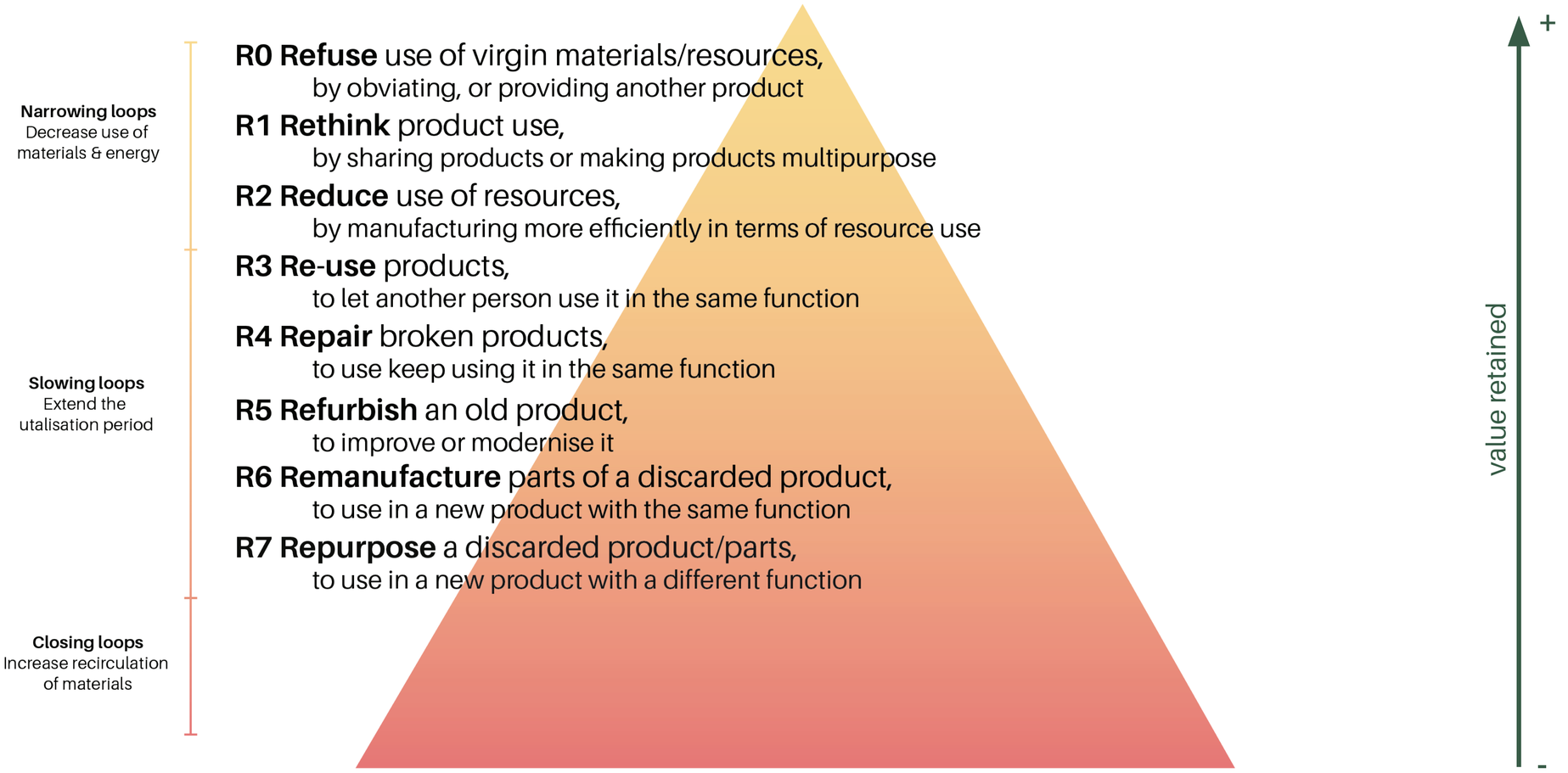
(made by author, based on Schut, 2019)

R-ladder as planning tool



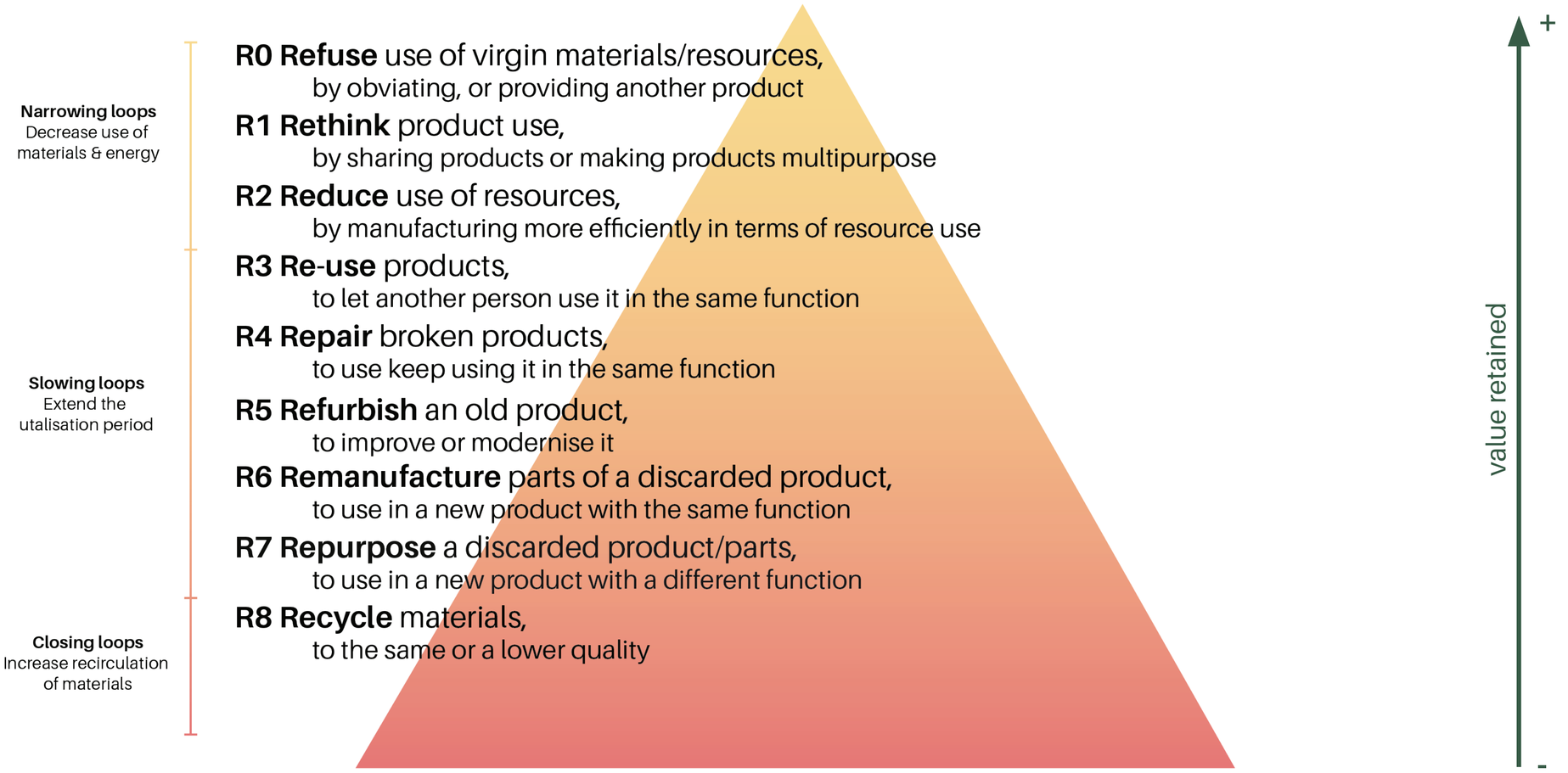
(made by author, based on Schut, 2019)

R-ladder as planning tool



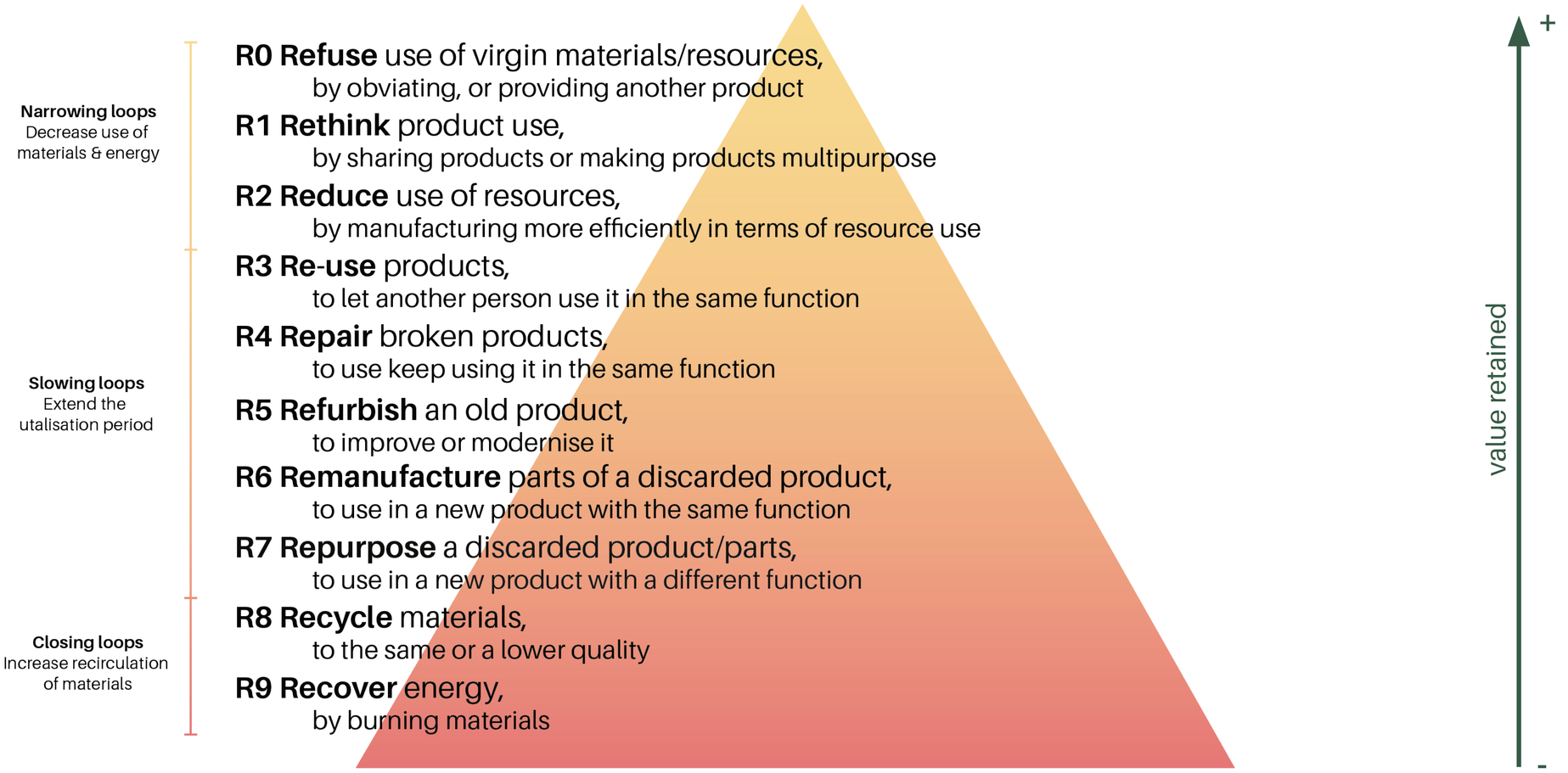
(made by author, based on Schut, 2019)

R-ladder as planning tool



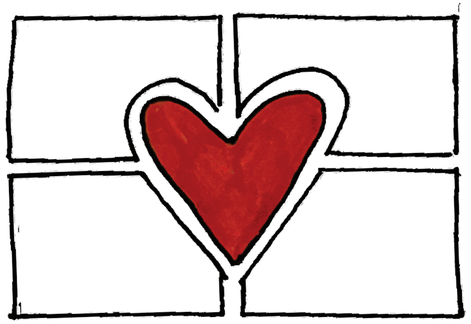
(made by author, based on Schut, 2019)

R-ladder as planning tool

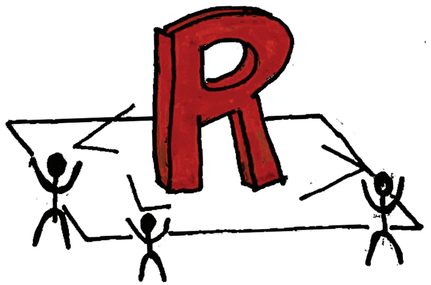


(made by author, based on Schut, 2019)

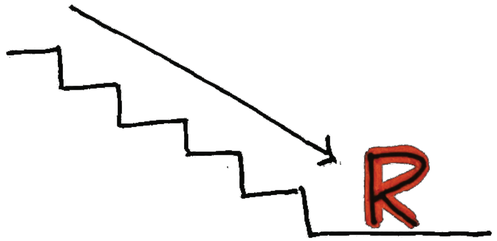
R-ladder as planning tool | **Concepts**



R's at the heart of the community



R's are visible in the district



lower threshold to execute a R-strategy

(made by author)

R-ladder as planning tool



Legend:

refuse: most important

refuse: connecting streets

refuse: Flevopark

rethink

re-use, repair

repair, refurbish

refurbish, remanufacture, repurpose

Refuse
Rethink
Reduce
Re-use
Repair
Refurbish
Remanufacture
Repurpose
Recycle
Recover

(Google Maps, 2024)

R-ladder as planning tool

Refuse

[aim R] limiting consumption
[intervention] swap passive- to active recreation



Legend:

- **refuse**: most important
- **refuse**: connecting streets
- **refuse**: Flevopark
- rethink
- re-use, repair
- repair, refurbish
- refurbish, remanufacture, repurpose

Refuse !
Rethink
Reduce
Re-use
Repair
Refurbish
Remanufacture
Repurpose
Recycle
Recover

(made by author)

R-ladder as planning tool

Rethink

[aim R] sharing products
[intervention] locations are close-by



Legend:

refuse: most important

refuse: connecting streets

refuse: Flevopark

rethink

re-use, repair

repair, refurbish

refurbish, remanufacture, repurpose

Refuse
Rethink !
Reduce
Re-use
Repair
Refurbish
Remanufacture
Repurpose
Recycle
Recover

(made by author)

R-ladder as planning tool

Re-use, Repair

[aim R] give products a second life, or repairing
[intervention] placed on most used streets



Legend:

- **refuse**: most important
- **refuse**: connecting streets
- **refuse**: Flevopark
- **rethink**
- **re-use, repair**
- **repair, refurbish**
- **refurbish, remanufacture, repurpose**

Refuse
Rethink
Reduce
Re-use !
Repair !
Refurbish
Remanufacture
Repurpose
Recycle
Recover

(made by author)

R-ladder as planning tool

Repair, Refurbish

[aim R] repairing, or modernizing
[intervention] facilitate space to do it yourself



Legend:

- **refuse**: most important
- **refuse**: connecting streets
- **refuse**: Flevopark
- **rethink**
- **re-use, repair**
- **repair, refurbish**
- **refurbish, remanufacture, repurpose**

Refuse
Rethink
Reduce
Re-use
Repair !
Refurbish !
Remanufacture
Repurpose
Recycle
Recover

(made by author)

R-ladder as planning tool

Refurbish, Remanufacture, Repurpose

[aim R] using components to modernize, or new products
[intervention] combine to make it easier for residents



Legend:

- **refuse**: most important
- **refuse**: connecting streets
- **refuse**: Flevopark
- **rethink**
- **re-use, repair**
- **repair, refurbish**
- **refurbish, remanufacture, repurpose**

Refuse
Rethink
Reduce
Re-use
Repair
Refurbish !
Remanufacture !
Repurpose !
Recycle
Recover

(made by author)

R-ladder as planning tool

Recycle

[aim R] make new materials

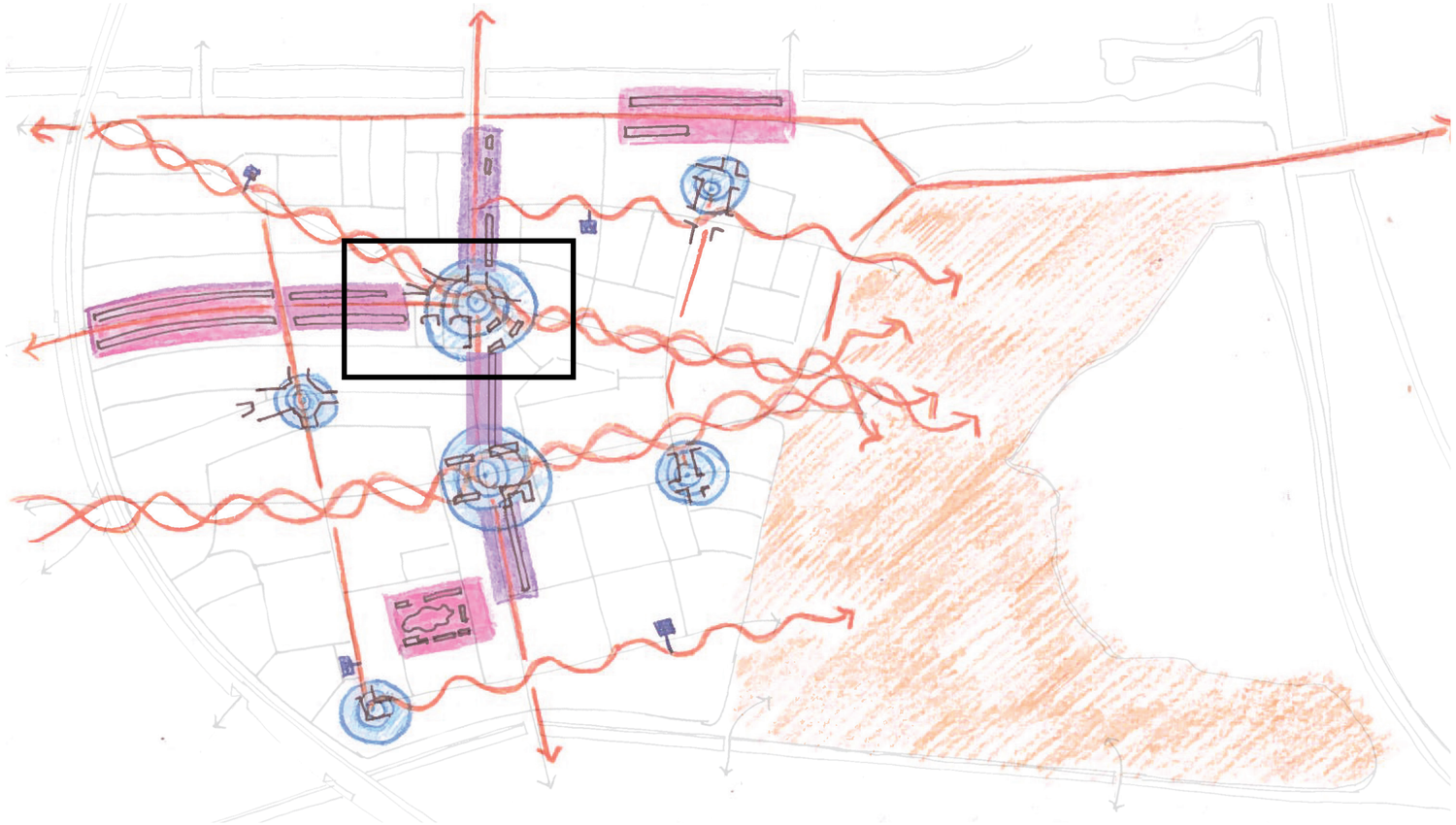
[intervention] combine with other R-principles & at gate-ways



Refuse
Rethink
Reduce
Re-use
Repair
Refurbish
Remanufacture
Repurpose
Recycle !
Recover

(made by author)

Design Location in Spatial Framework



Legend:

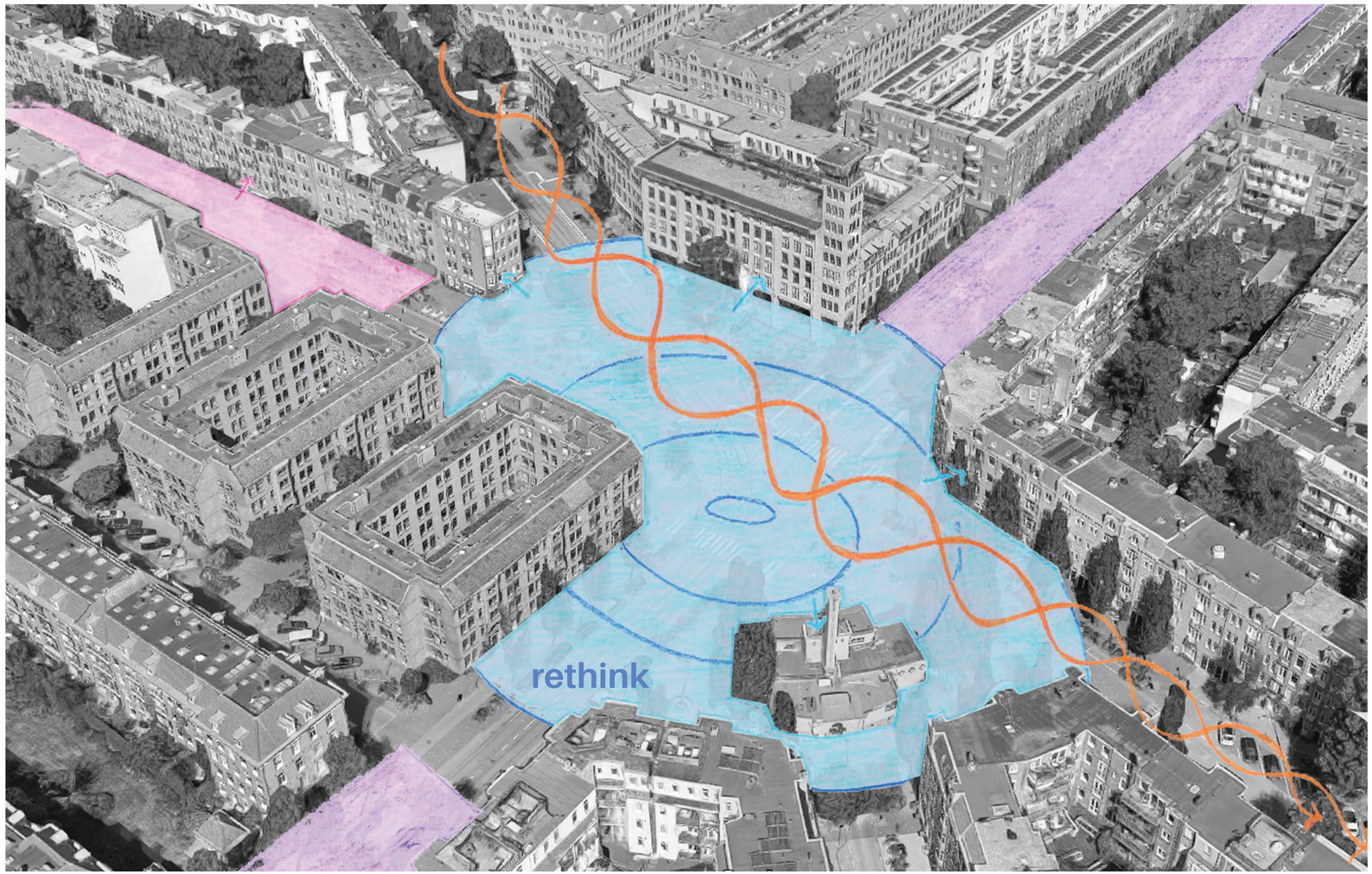
- **refuse**: most important
- **refuse**: connecting streets
- **refuse**: Flevopark
- **rethink**
- **re-use, repair**
- **repair, refurbish**
- **refurbish, remanufacture, repurpose**

(made by author)

Design Location in Spatial Framework

reuse & repair

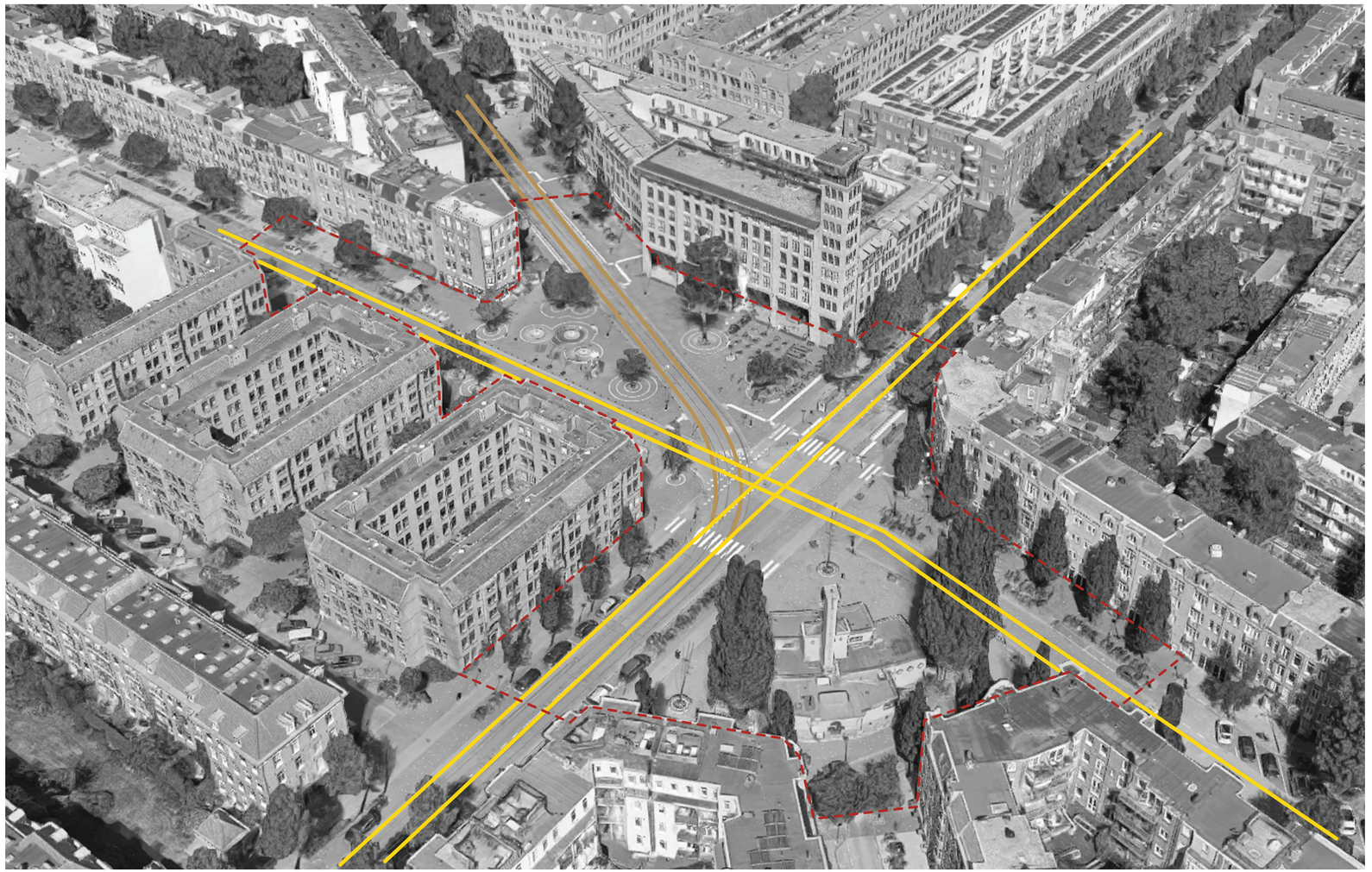
refurbish, remanufacture & repurpose



refuse

(made by author, picture Google Maps, n.d.)

Mobility Flows



Legend
- Tram & Bus
- Pedestrian, Bike, Car
- Defined Boundary

(made by author, picture Google Maps, n.d.)

Overview



Refuse



**Re-Use &
Repair**



**Refurbish,
Remanufacture &
Repurpose**



**Rethink &
Convergence of the
R-streets**

(made by author)

‘Refuse’-street | **Concepts**

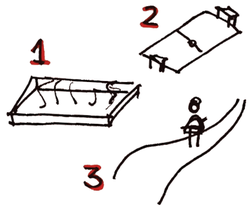
[aim]
stimulate people to actively recreate outside,
instead of buy items to passively recreate



bring greenery to people

it is difficult to stimulate people to go outside

(Schouten, 2016)



options for active recreation

such as walking, gardening, and jeu de boules



uninterrupted walking paths

this stimulates people to walk

(de Ingenieur, 2020)



room for slow traffic flows

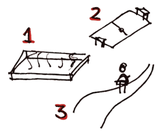
using the public space is more pleasant for walking and biking

(made by author)

‘Refuse’-street | **Section & Plan**



bring greenery to people



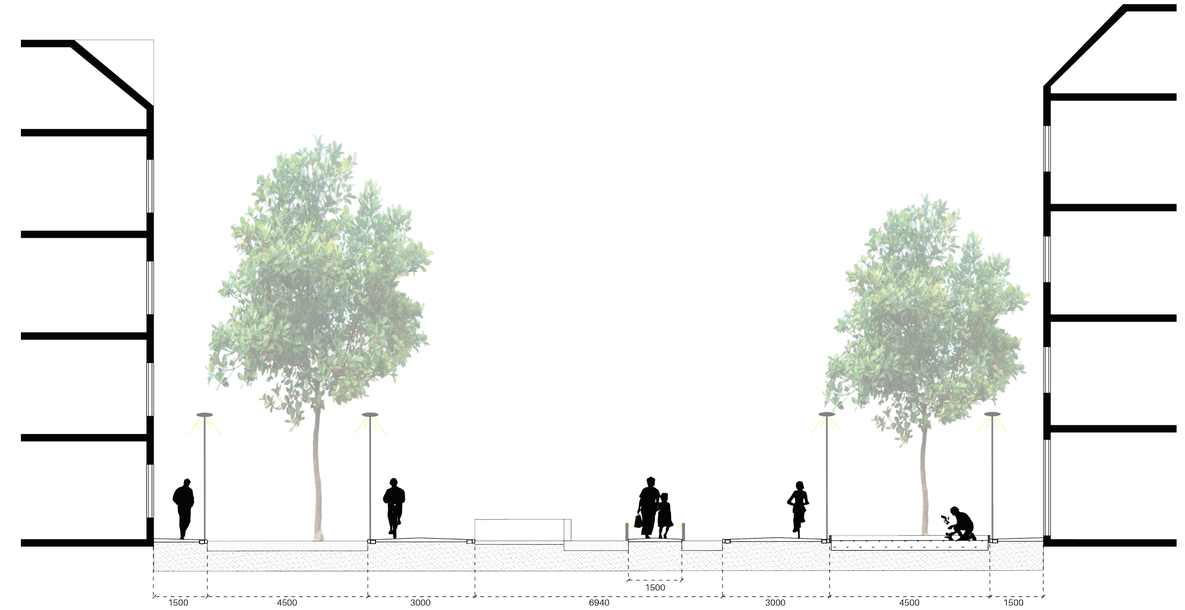
options for active recreation

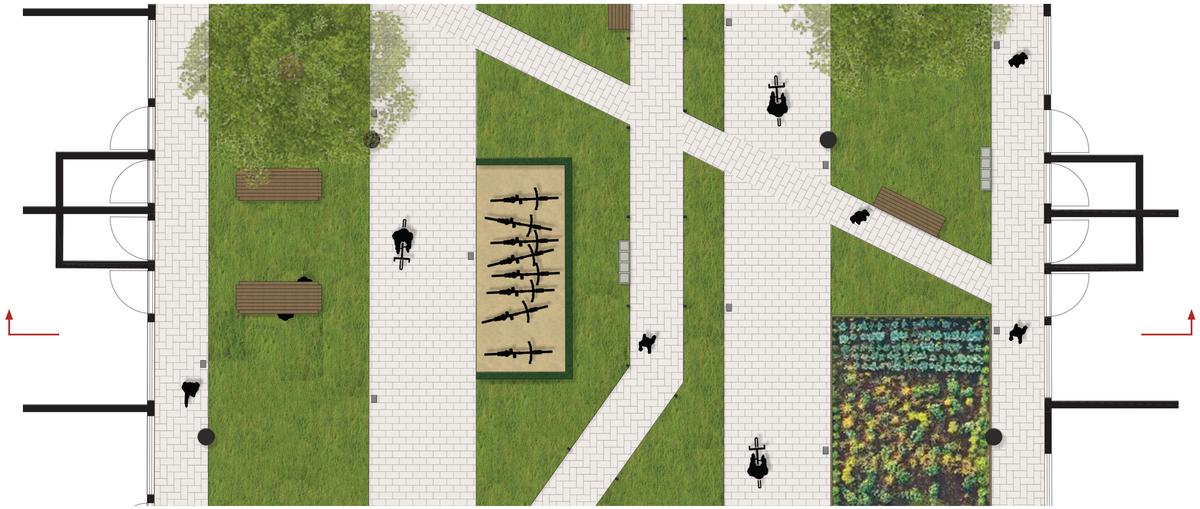


uninterrupted walking paths



room for slow traffic flows





(made by author)

‘Refuse’-street | **Day**



(made by author)

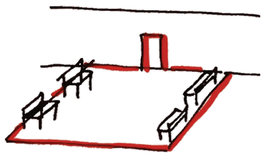
‘Refuse’-street | **Night**



(made by author)

‘Reuse & Repair’-street | **Concepts**

[aim]
make re-using & repairing easier



create places to stay near entrances

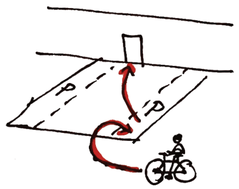
people are stimulated by seeing the actions of others

(Knickmeyer, 2020 & Celestino, 2022)



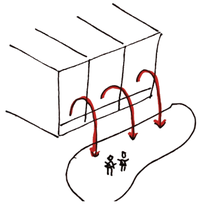
create side road

one can calmly park their bike



parking near entrances

goods do not have to be carried for long

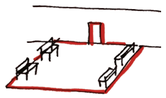


give back public space to people

currently focused on parking or providing space for shopping

(made by author)

‘Reuse & Repair’-street | **Section & Plan**



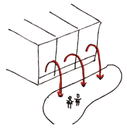
create places to stay near entrances



create side road

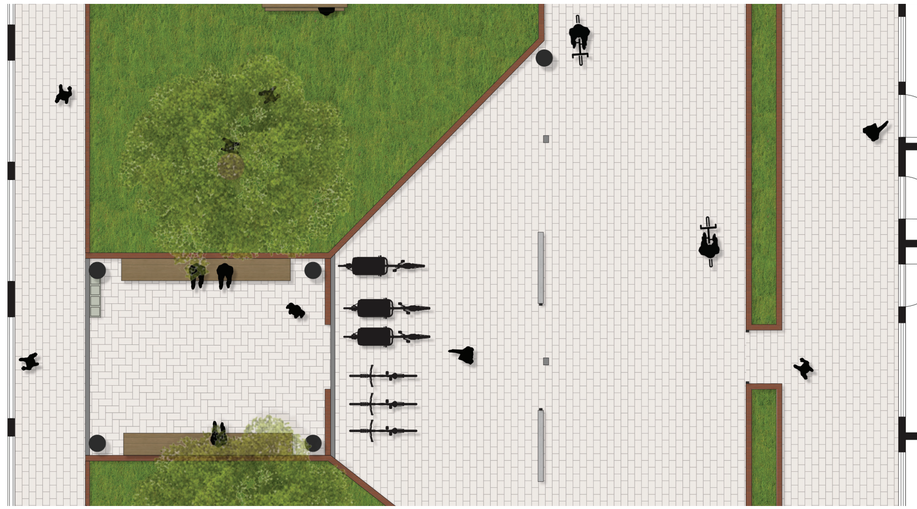


parking near entrances



give back public space to people

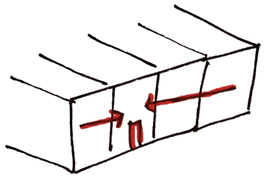




(made by author)

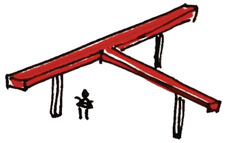
‘Refurbish, Remanufacture & Repurpose’-street | **Concepts**

[aim]
encourage bringing products to this street
instead of throwing them away



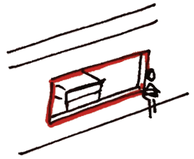
combine buildings for clarity

each location has a certain expertise (such as electronics or furniture)



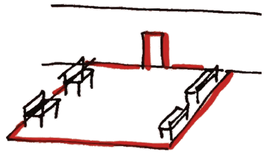
conveyor above public space

for exchanging items between different R-strategies & awareness



display how items are re___

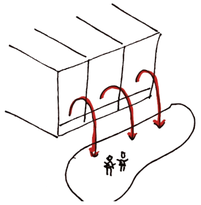
replace functions of shop windows, to increase awareness



create places to stay near entrances

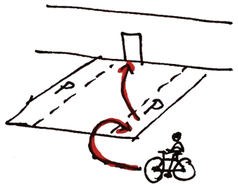
people are stimulated by seeing the actions of others

(Knickmeyer, 2020 & Celestino, 2022)



give back public space to people

currently focused on parking or providing space for shopping

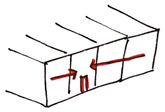


parking near entrances

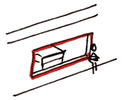
goods do not have to be carried for long

(made by author)

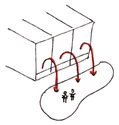
‘Refurbish, Remanufacture & Repurpose’-street | **Section & Plan**



combine buildings for clarity



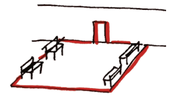
display how items are re___



give back public space to people



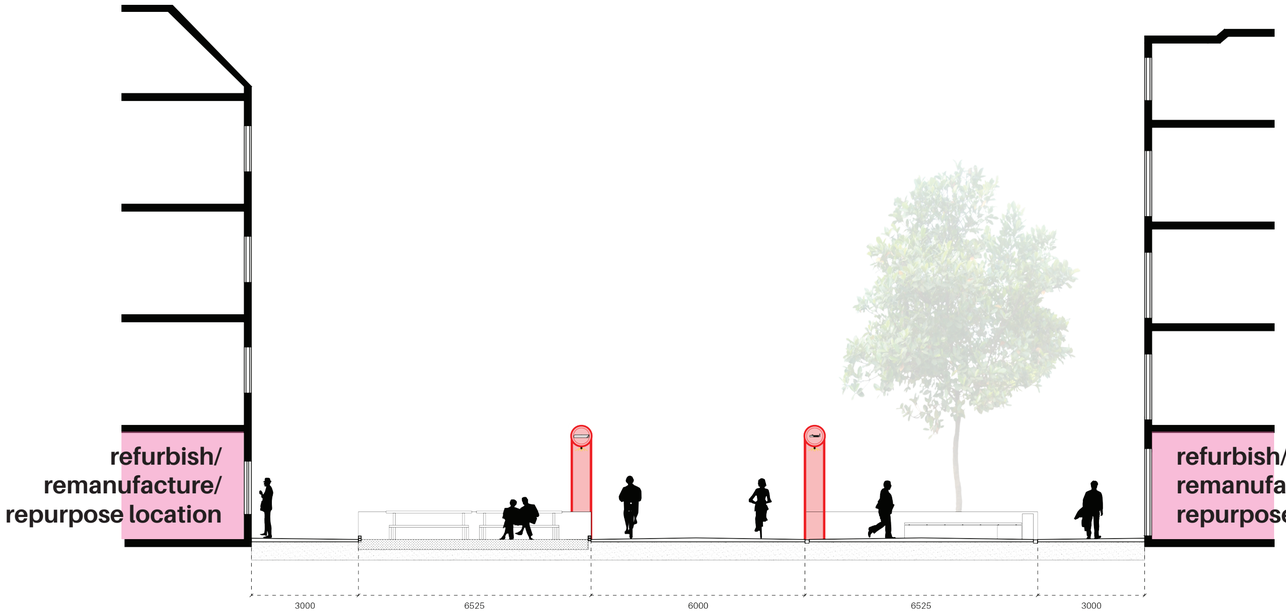
conveyor above public space

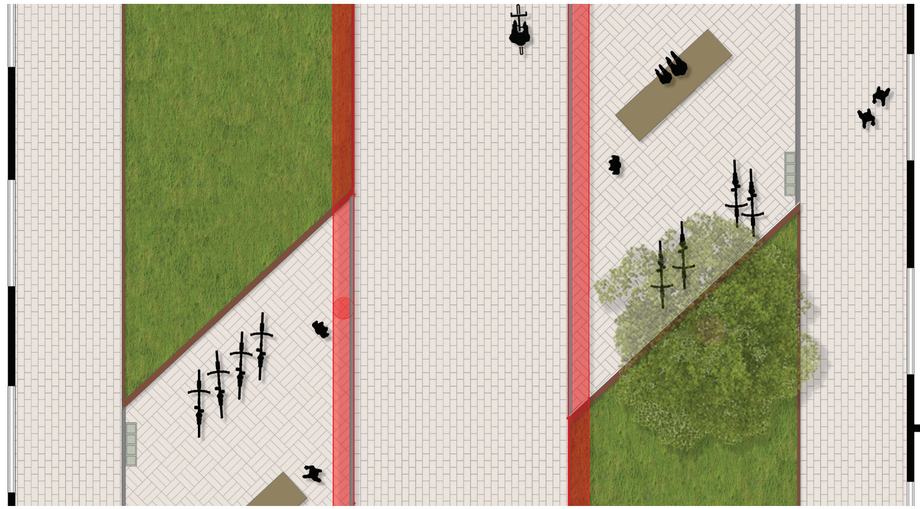


create places to stay near entrances



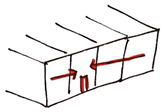
parking near entrances



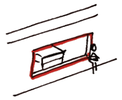


(made by author)

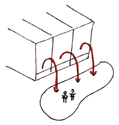
‘Refurbish, Remanufacture & Repurpose’-street | **Section & Plan**



combine buildings for clarity



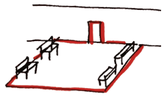
display how items are re___



give back public space to people



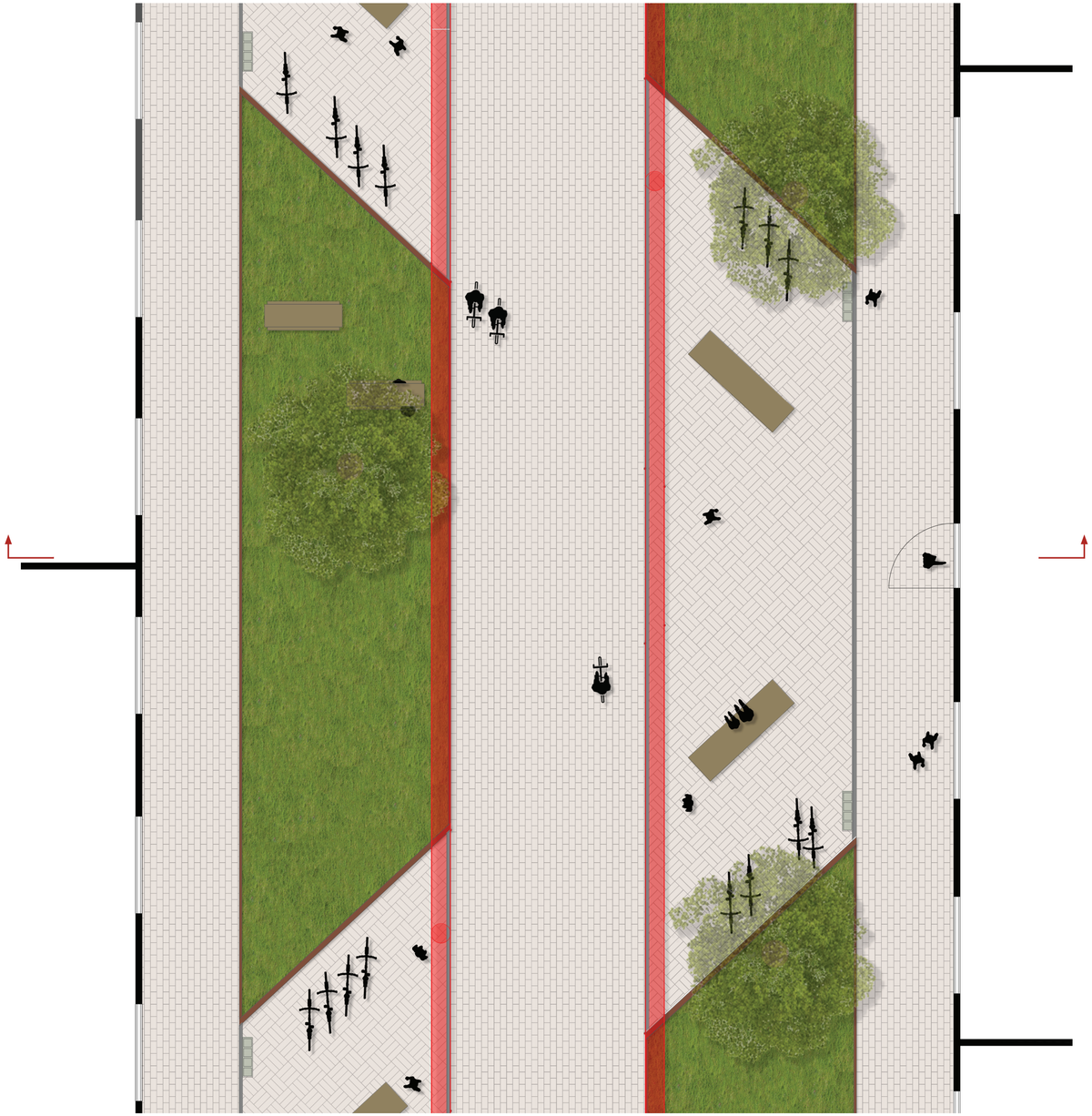
conveyor above public space



create places to stay near entrances



parking near entrances



(made by author)

‘Refurbish, Remanufacture & Repurpose’-street | **Day**



(made by author)

Overview



Refuse



Re-Use &
Repair



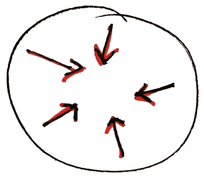
Refurbish,
Remanufacture &
Repurpose

Rethink &
Convergence of the
R-streets

(made by author)

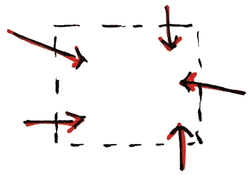
‘Rethink’-square | **Concepts**

[aim]
rethink ownership by sharing &
multiple R-streets come together



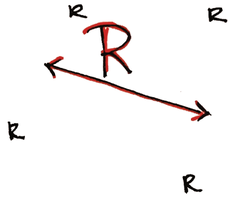
collectiveness

‘rethink’ is about sharing goods



confluence of different streets

different R-streets come together here



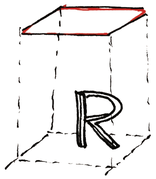
highest R is most central

the ‘refuse’-axis has the highest priority



increase awareness

the square is visited by a lot of people, therefore an ideal place for increasing awareness

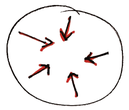


implicit centrality of R-strategy

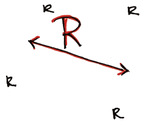
a storage-facility and a recycling center is created underneath the square

(made by author)

‘Rethink’-square | **Section**



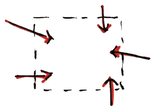
collectiveness



highest R is most central



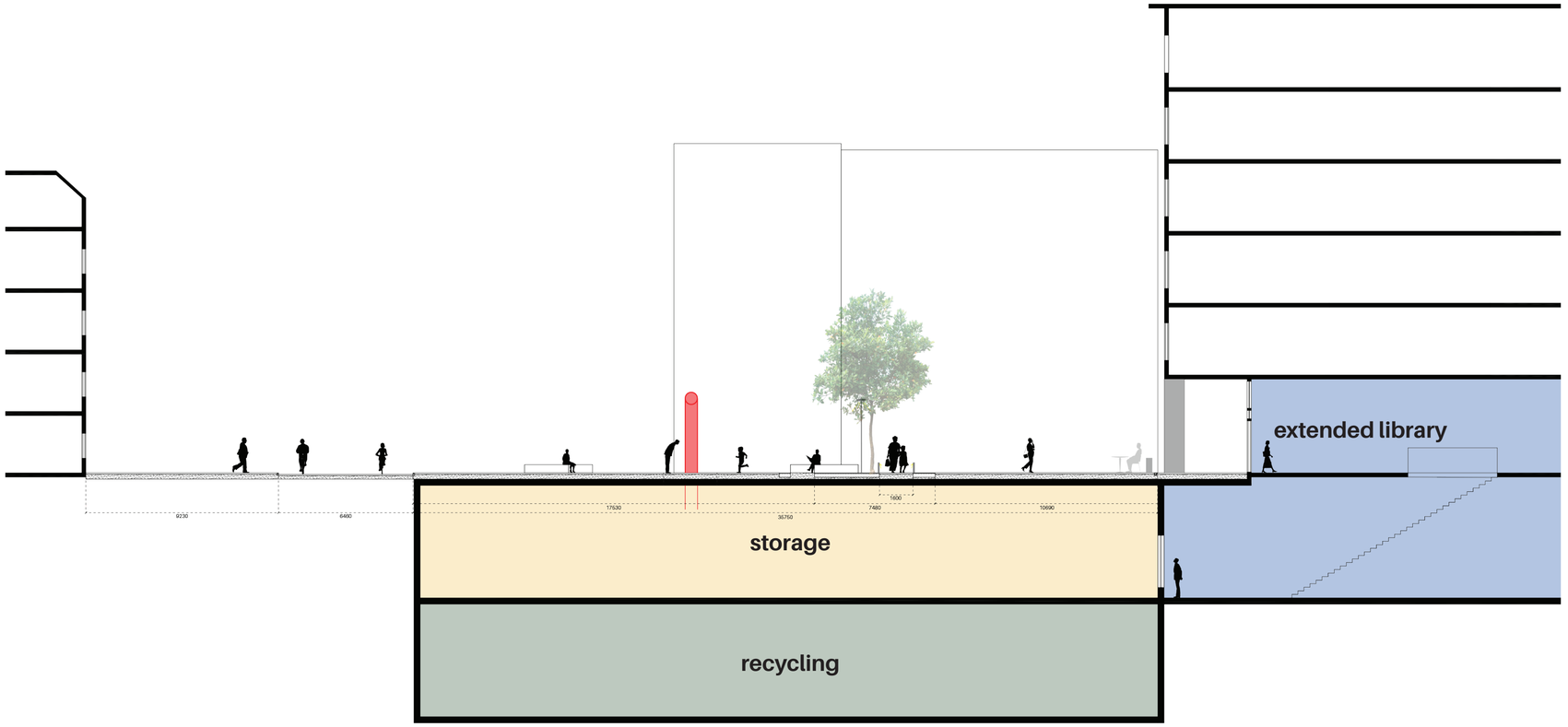
implicit centrality of R-strategy



confluence of different streets

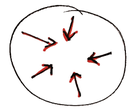


create awareness

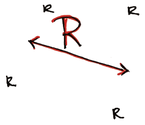


(made by author)

‘Rethink’-square | **Plan**



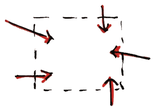
collectiveness



highest R is most central



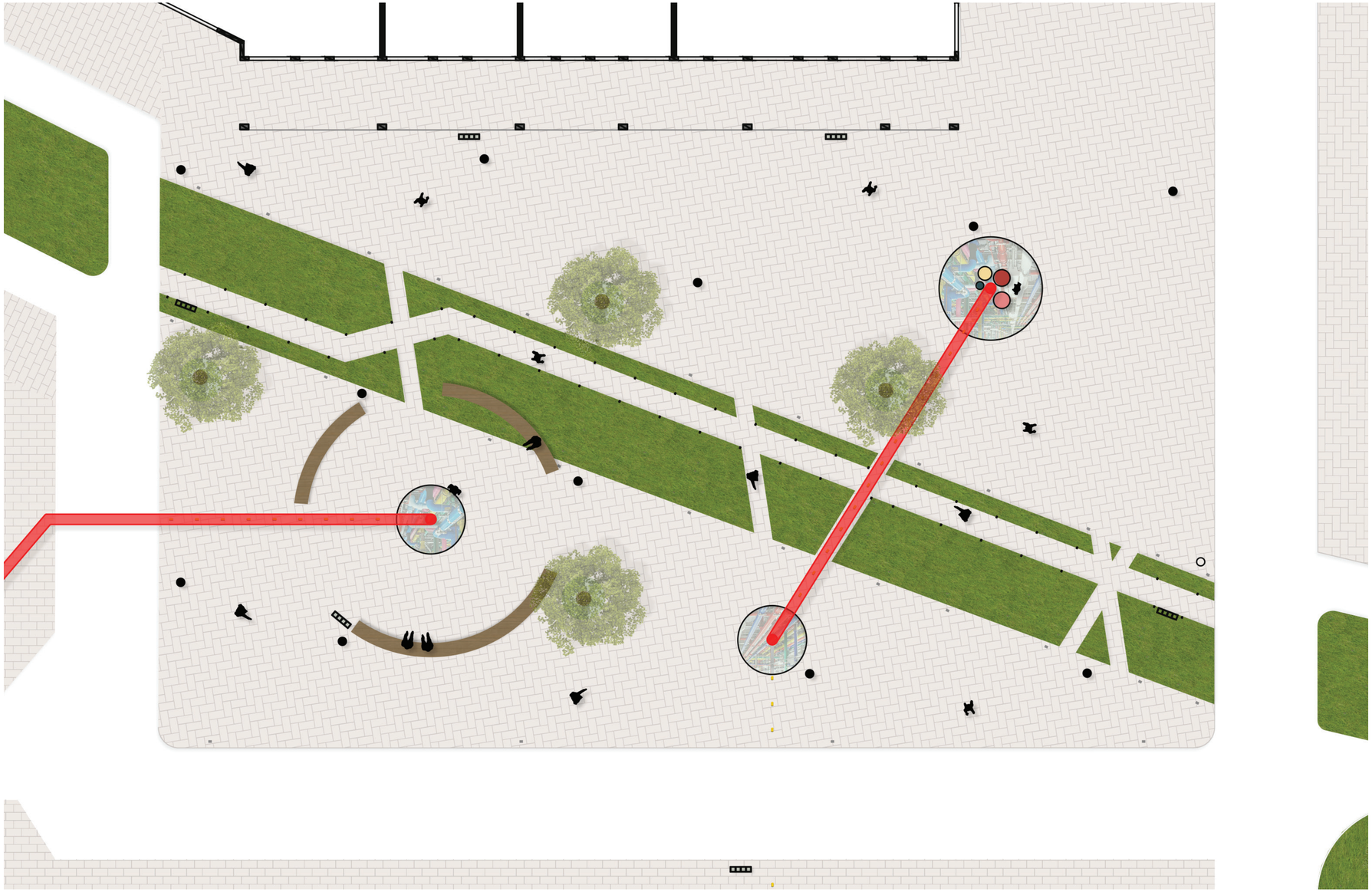
implicit centrality of R-strategy



confluence of different streets



create awareness



(made by author)

‘Rethink’-square | **Day**



(made by author)

Ground Floor

reuse & repair

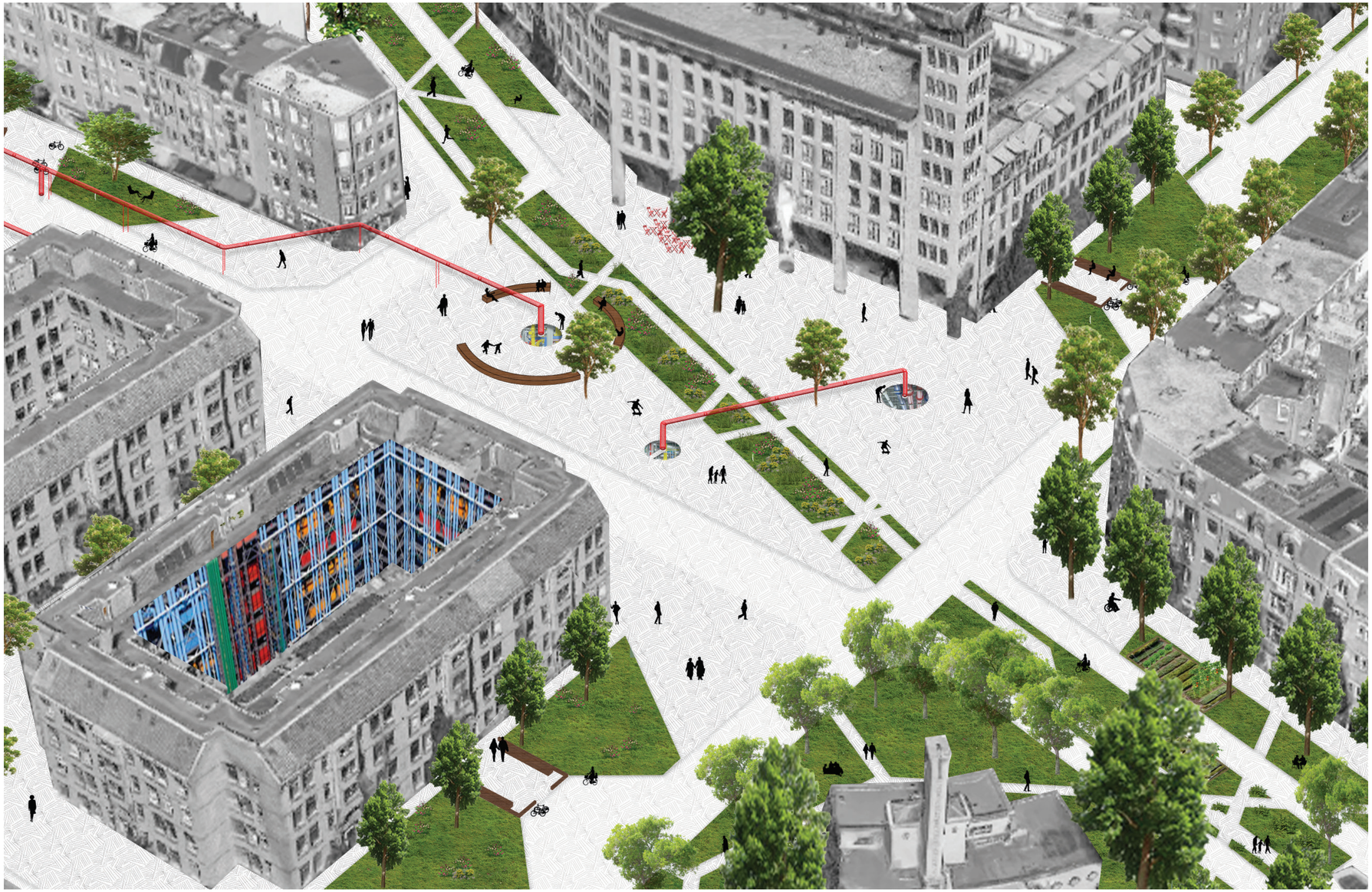
refurbish, remanufacture & repurpose



refuse

(made by author)

Overview



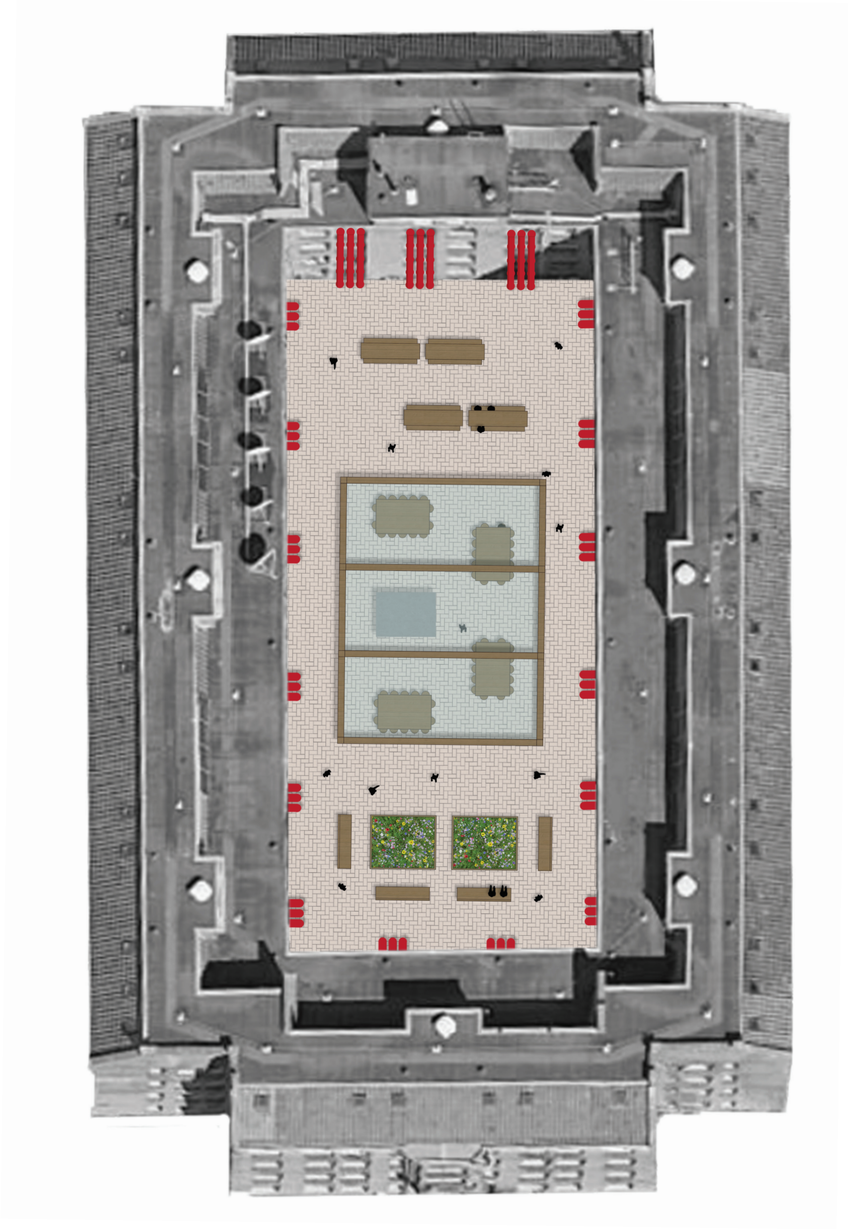
(made by author)

Collective Domain | **Urban Gardening & Sharing Tools**



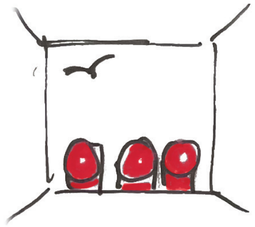
(made by author)

Collective Domain | **Waste Disposal Tubes & DIY**



(made by author)

Private Domain | **Interventions**



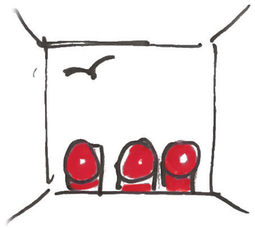
throw-away waste from window

for plastic, organic & glass



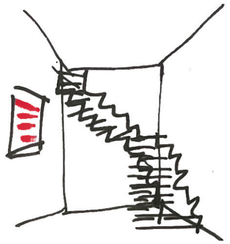
(made by author)

Private Domain | **Interventions**



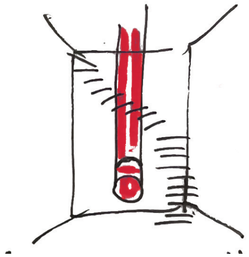
throw-away waste from window

for plastic, organic & glass



advertisement in hallway

for sharing left-over items or food

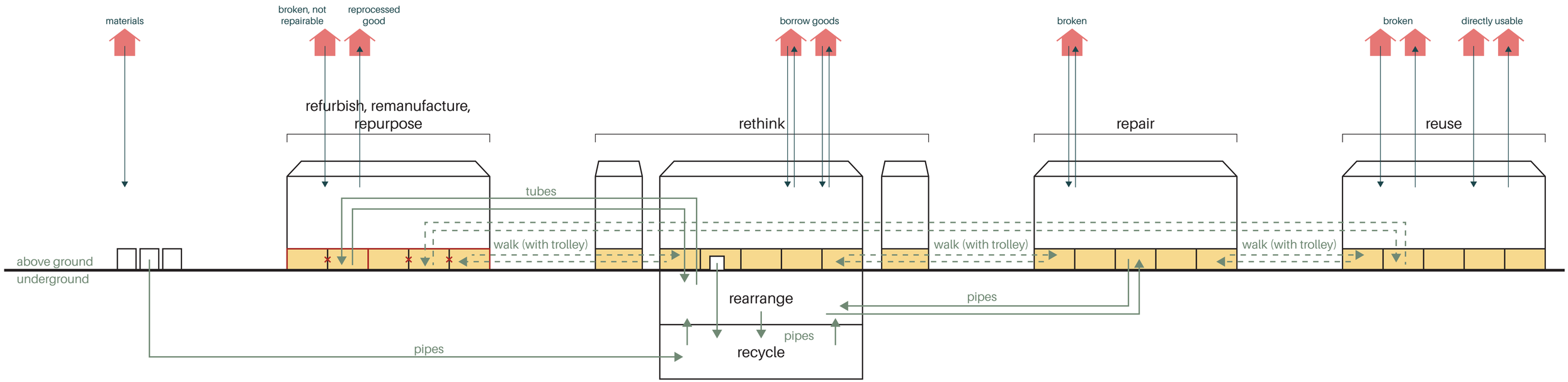


shaft in stair case

to make it easier to transport waste bags

(made by author)

Urban Metabolic System of Design

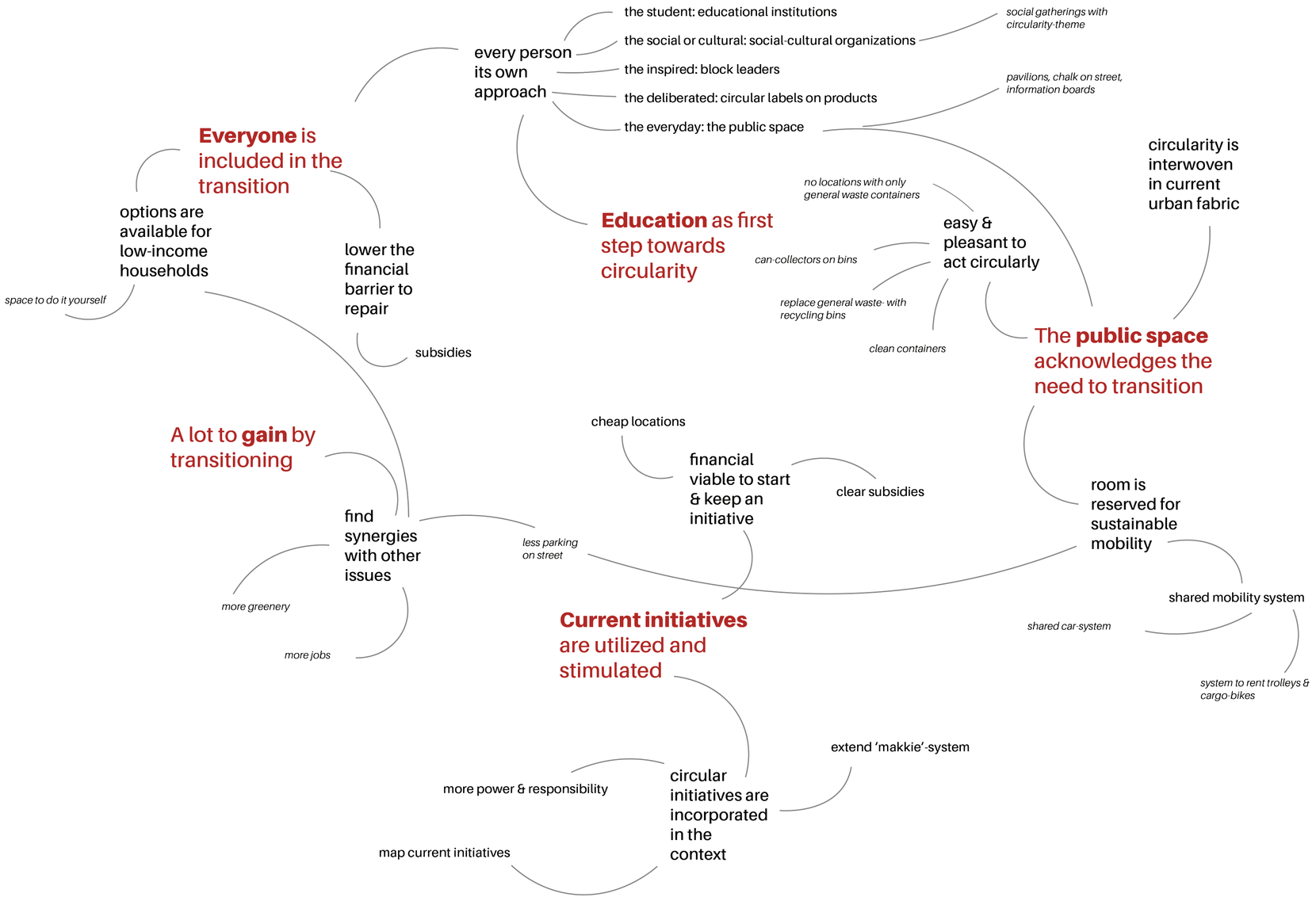


Legend

- Commercial ground floor
- Transport by tube/pipe
- Transport by walking
- Building is merged
- Resident/Household
- Action

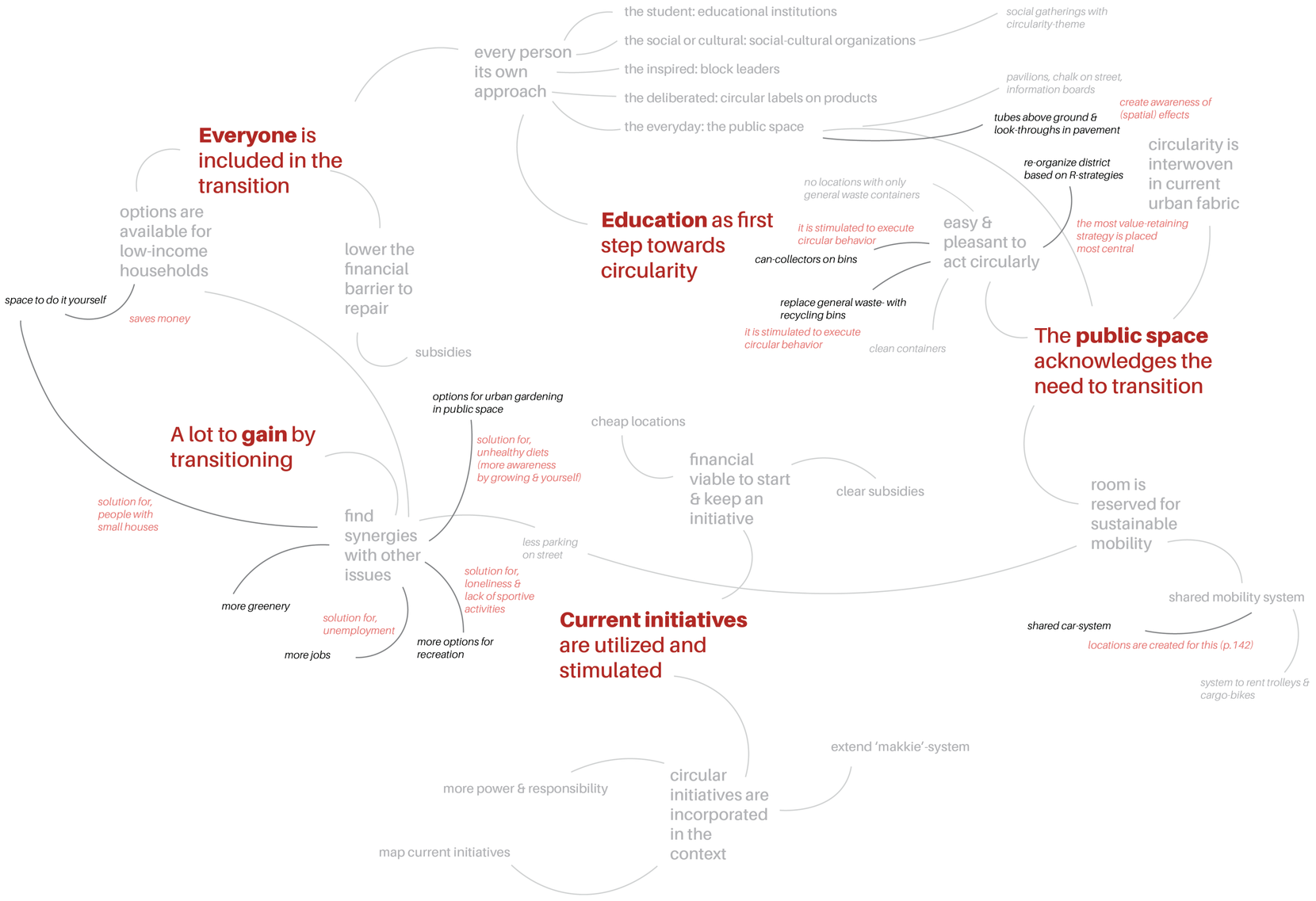
(made by author)

Governance Framework | **Aim High!**



(made by author)

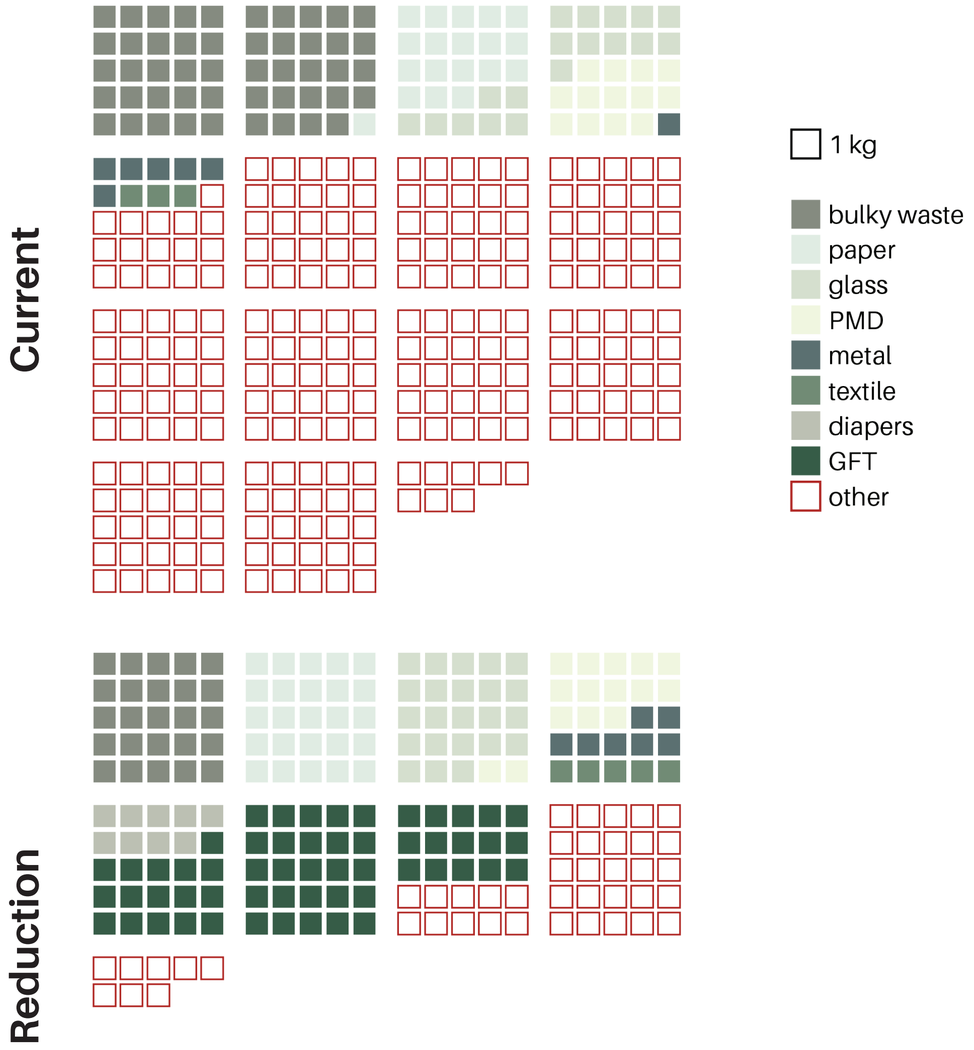
Governance Framework | **Aim High!**



(made by author)

Conclusion | **Reduction of Household Waste**

[-] Reduction of around 40%
[-] Reduction of bulky waste & texile,
prolonged lifetime of products
[-] Reduction of paper, glass & PMD,
reusable packaging & less new products
[-] Reduction of organic waste,
more awareness due to urban gardening
[-] Reduction of ‘other’ waste,
more separation



(made by author)

Conclusion | **Research Question**

How can spatial design interventions in the public, collective, and private space support and facilitate the shift to a circular domestic use of food and consumer goods in the Indische Buurt (in Amsterdam)?



(made by author)

Conclusion | **Public**

How can spatial design interventions in the public, collective, and private space support and facilitate the shift to a circular domestic use of food and consumer goods in the Indische Buurt (in Amsterdam)?

[-] reorganizing based on the R-ladder
[-] make circularity visible
[-] stimulate outside (active) recreation



‘refuse’-street



‘rethink’-square



‘refurbish, remanufacture, repurpose’-street

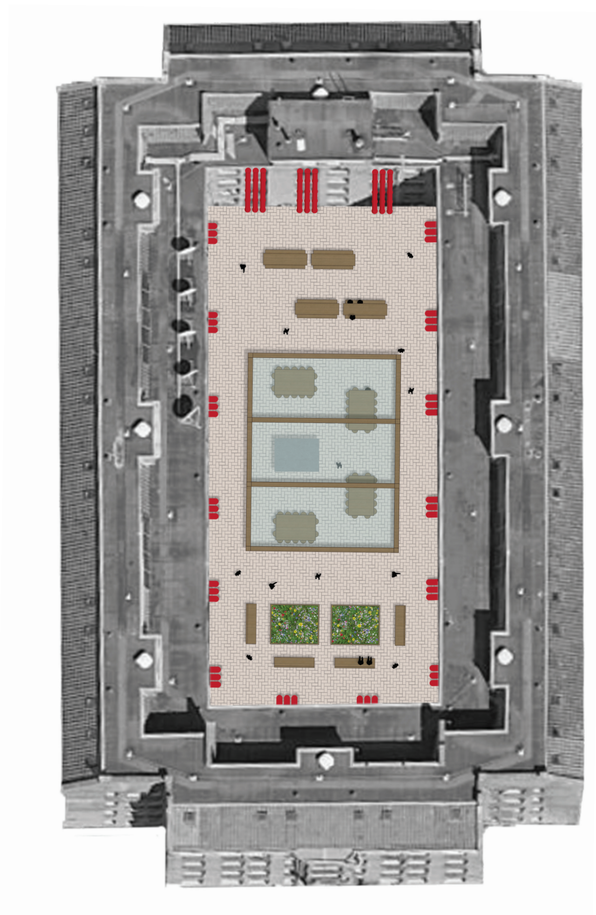
(made by author)

Conclusion | **Collective**

How can spatial design interventions in the public, collective, and private space support and facilitate the shift to a circular domestic use of food and consumer goods in the Indische Buurt (in Amsterdam)?

[-] collective gardening & sharing tools
[-] productive approach with waste collection tubes & repair/refurbish areas



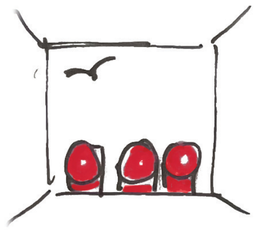


(made by author)

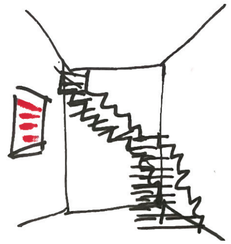
Conclusion | **Private**

How can spatial design interventions in the public, collective, and private space support and facilitate the shift to a circular domestic use of food and consumer goods in the Indische Buurt (in Amsterdam)?

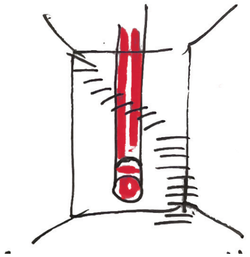
[-] create tubes outside of homes or
a shaft in the hallway
[-] advertisement board to mention when one has food
and/or products to share
[-] pavilions to repair and refurbish themselves



throw-away waste from window



advertisement in hallway



shaft in stair case

(made by author)

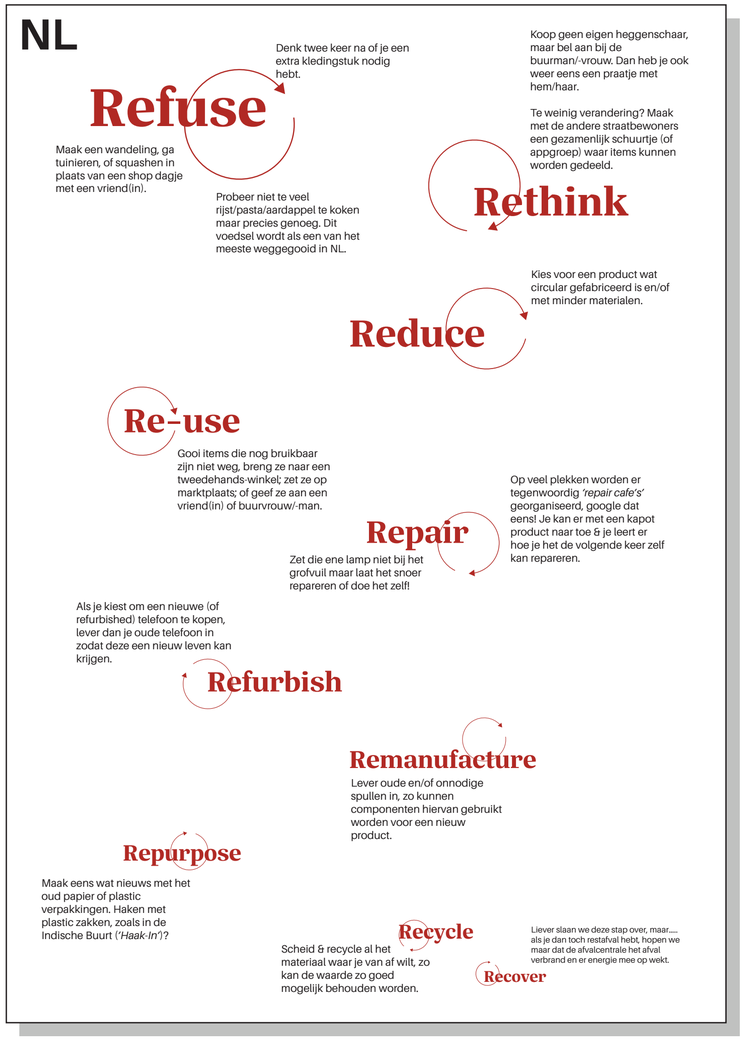
Reflection | **Limitations & Recommendations**

[-] Focus on household waste, therefore industrial- & commercial waste was left out
[-] Little emphasis on the collective- and private domain



(made by author)

Awareness & Execution of Circular Behavior | **Hand-Out**



(made by author)

In the future, will you

think TWICE

about the consumption and disposal of products?

Thank You for Listening!



(made by author)