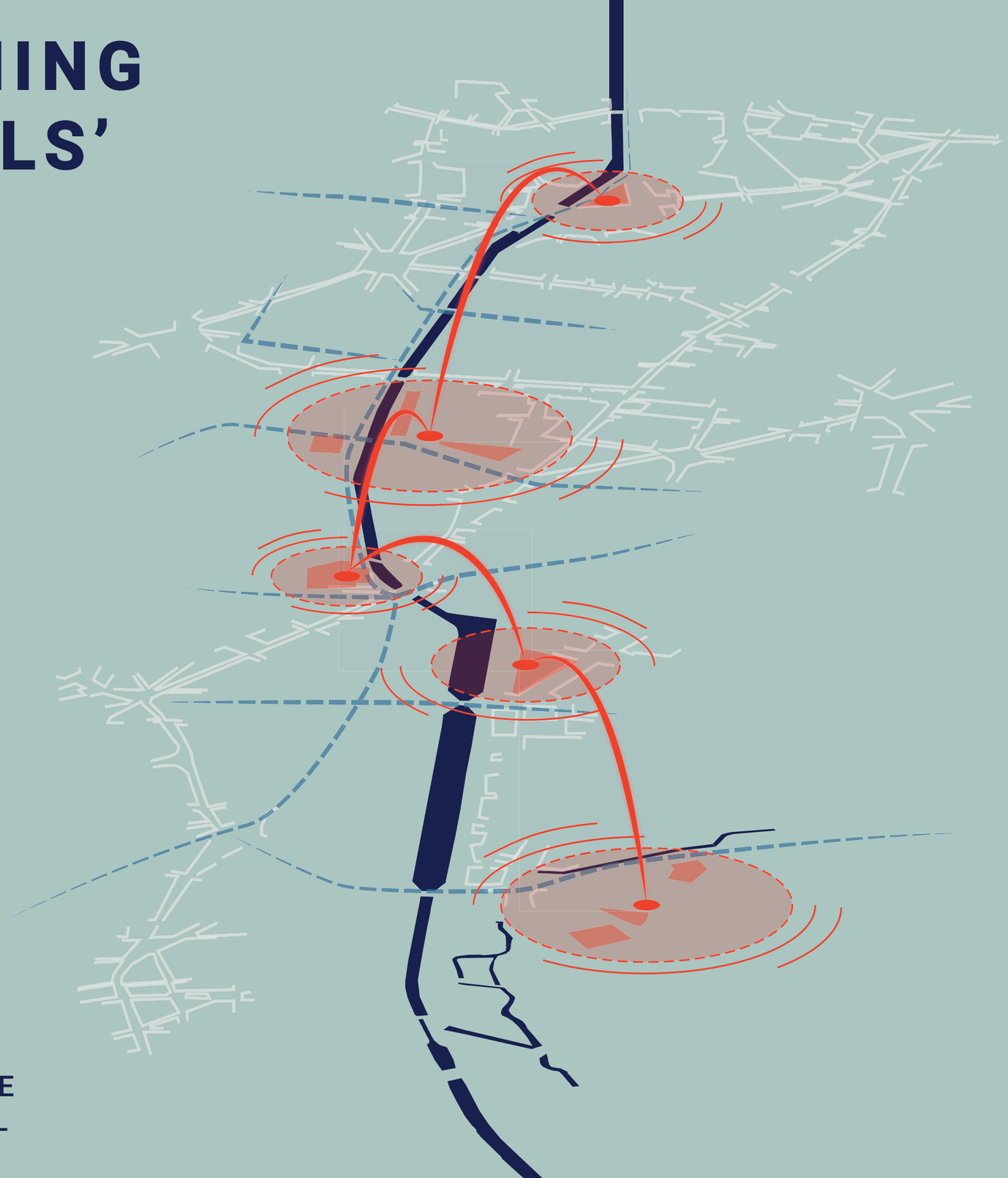
REFRAMING BRUSSELS' CANAL ZONE



FROM PATH DEPENDENCE TO PATH RENEWAL

SIENE SWINKELS

1. INTRODUCTION
2. ANALYSIS
3. VISION
4. STRATEGY
5. DESIGN TESTING
6. CONCLUSIONS

1. INTRODUCTION

MEGAPROJECTS

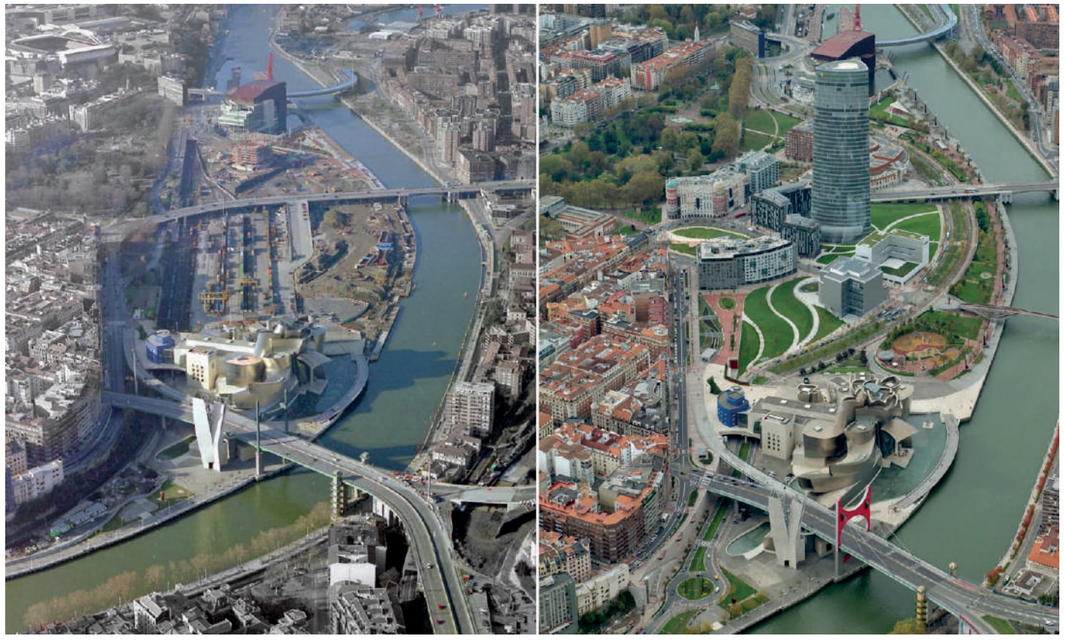


Figure 3: Battersea power station, London, UK (Hawkes, 2022)

Figure 4: Kop van Zuid, Rotterdam, the Netherlands (ANP, 2013)

Figure 4: Hafencity, Hamburg, Germany (Fotofrizz, HafenCity Hamburg GmbH, n.d.)

BRUSSELS' CANAL ZONE

Figure 13: the Buda bridge in the north of the Canal zone (Lalmand, 2023)

Figure 14: where Le croissant pauvre and the canal zone intersect (perspective.brussels, n.d.)

Figure 15: Harbour activities right next to urban functions (be.brussels, n.d.)

Figure 16: industrial functions in residential areas (van Tour, n.d.)

CHANGING CITIES

Decline in industry

Figure 1: Share of employment in manufacturing in Europe (Klenert, Macias, & Antón, 2020) adjusted by author

Increased urbanisation

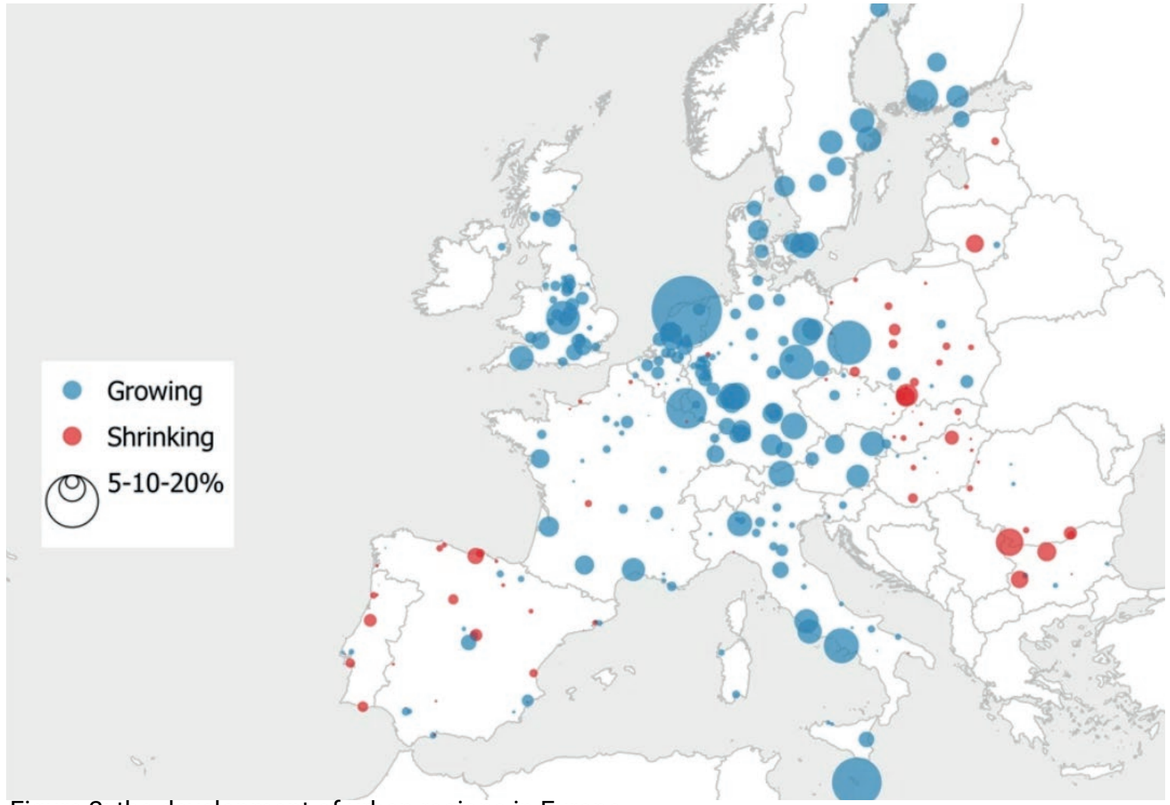
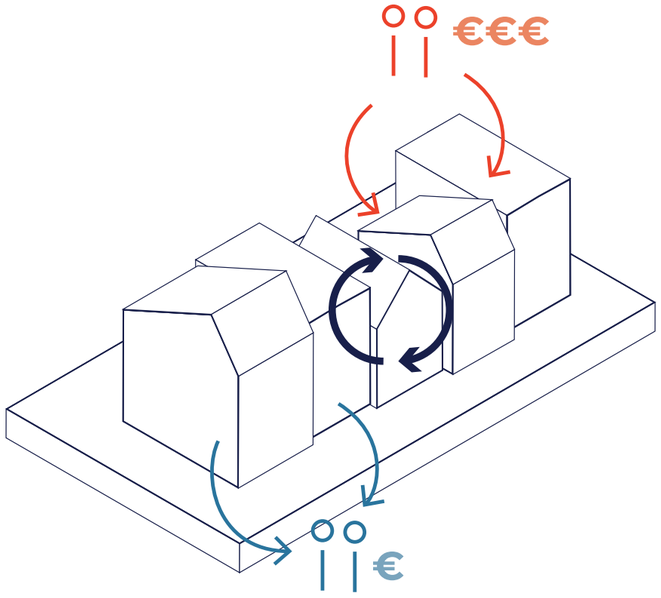


Figure 2: the development of urban regions in Europe over the past ten years (Cortinovis, Geneletti, & Haase, 2022)

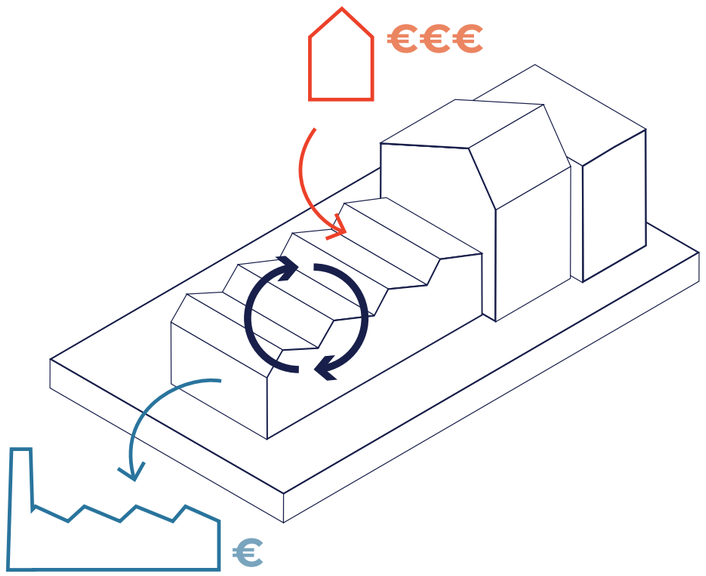
NEOLIBERAL PLANNING

neoliberal planning: ‘a restructuring of the relationship between private capital owners and the state, which rationalises and promotes a growth-first approach to urban development” (Sager, 2011)

GENTRIFICATION



social gentrification: the replacing of lower class residents with people of a higher socio-economic status (Shaw, 2008).



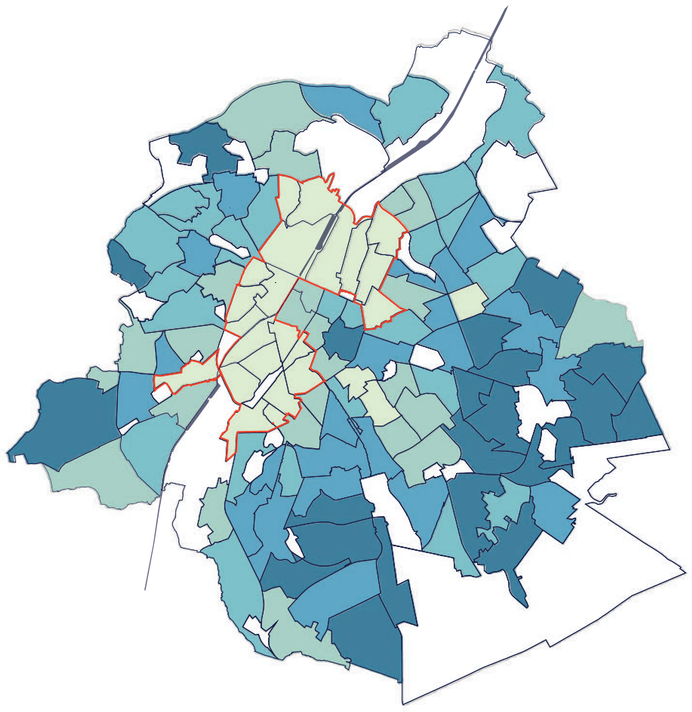
industrial gentrification: the the pushing out of production space through real estate dynamics (de Broeck & Ryckewaert, 2020).

state-led gentrification: gentrification as a deliberate policy by the state (Doucet et al., 2011).

A PATH DEPENDENT CONTEXT?

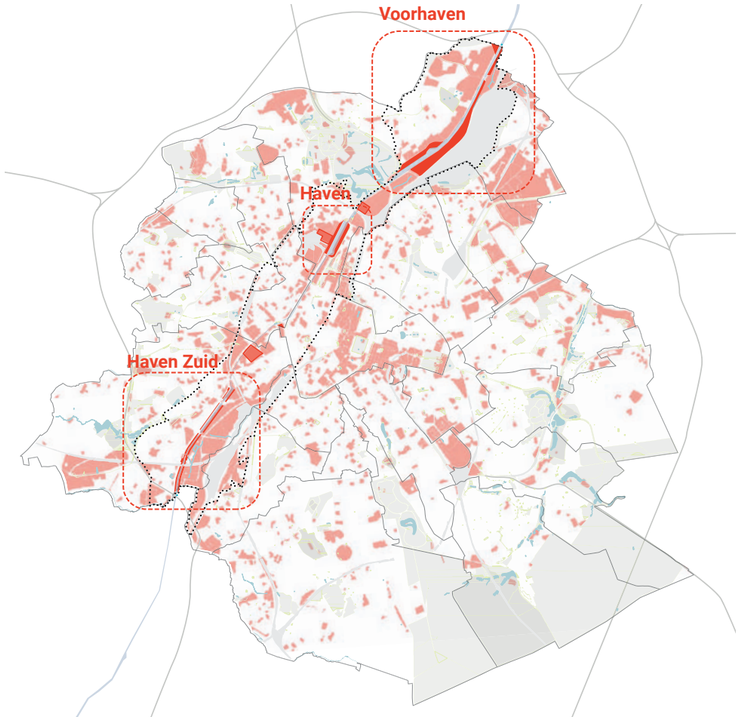
Path dependency: Proces where past events or decisions constrain later events or decisions

Social profile



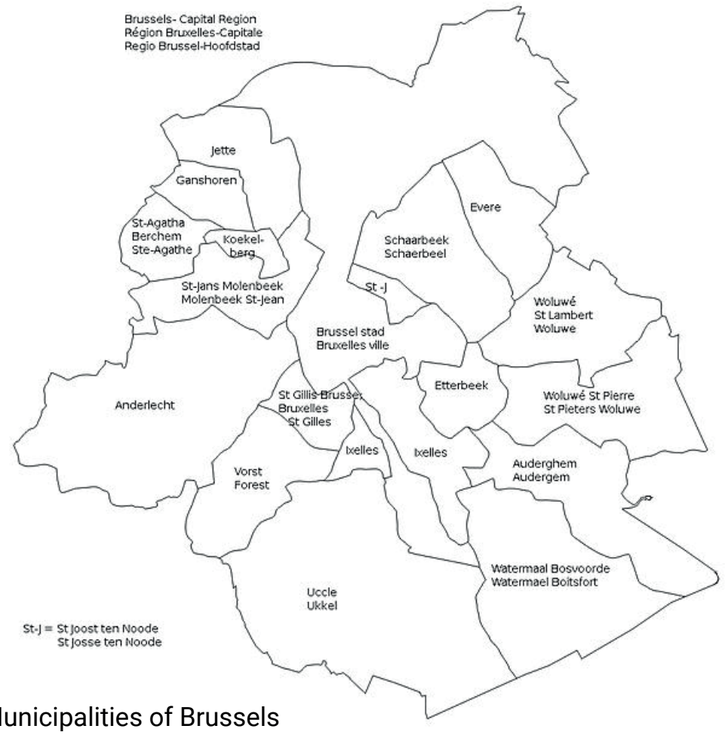
Average income per neighbourhoods bisa.brussels, 2018)

Industrial land use



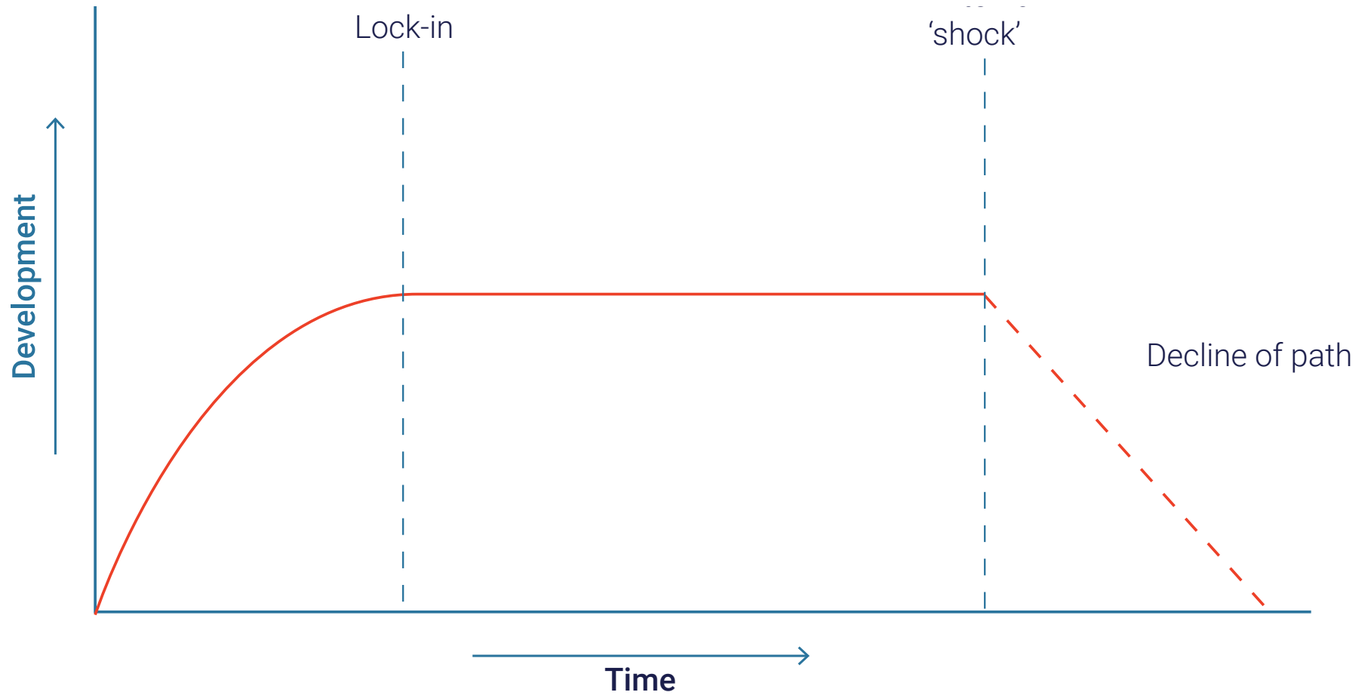
Industrial and commercial landuse, as well as land owned by the port of Brussels made by author based on (port Brussel, 2020 and Urban atlas, 2018)

Governance fragmentation

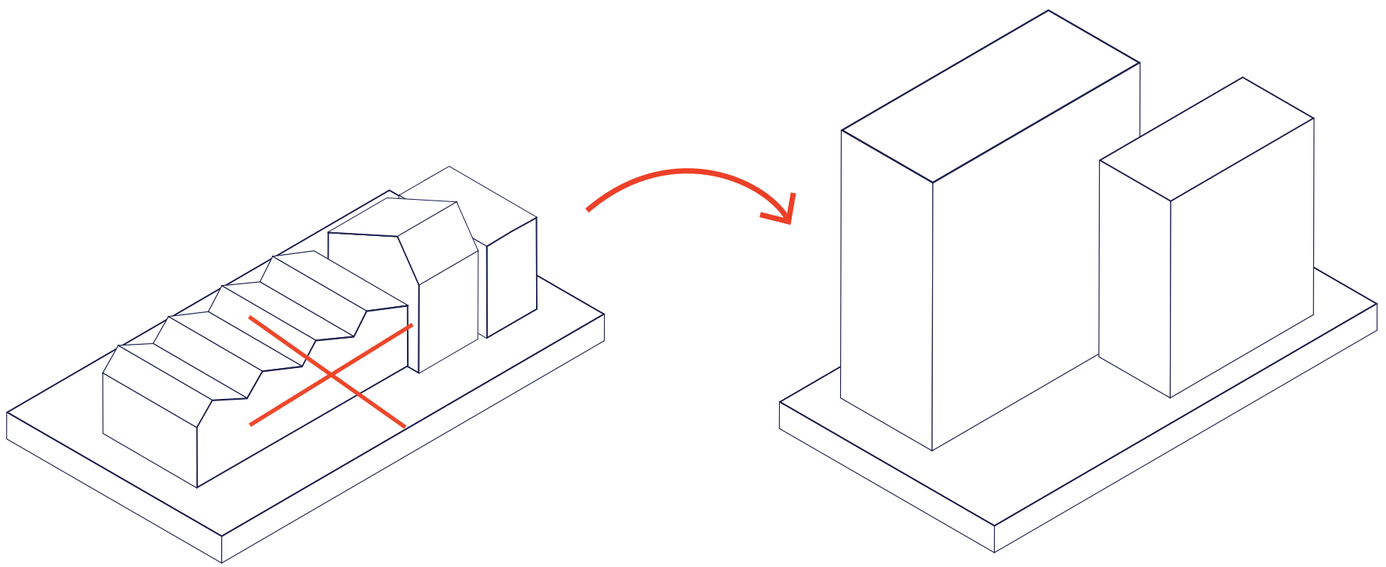


Municipalities of Brussels

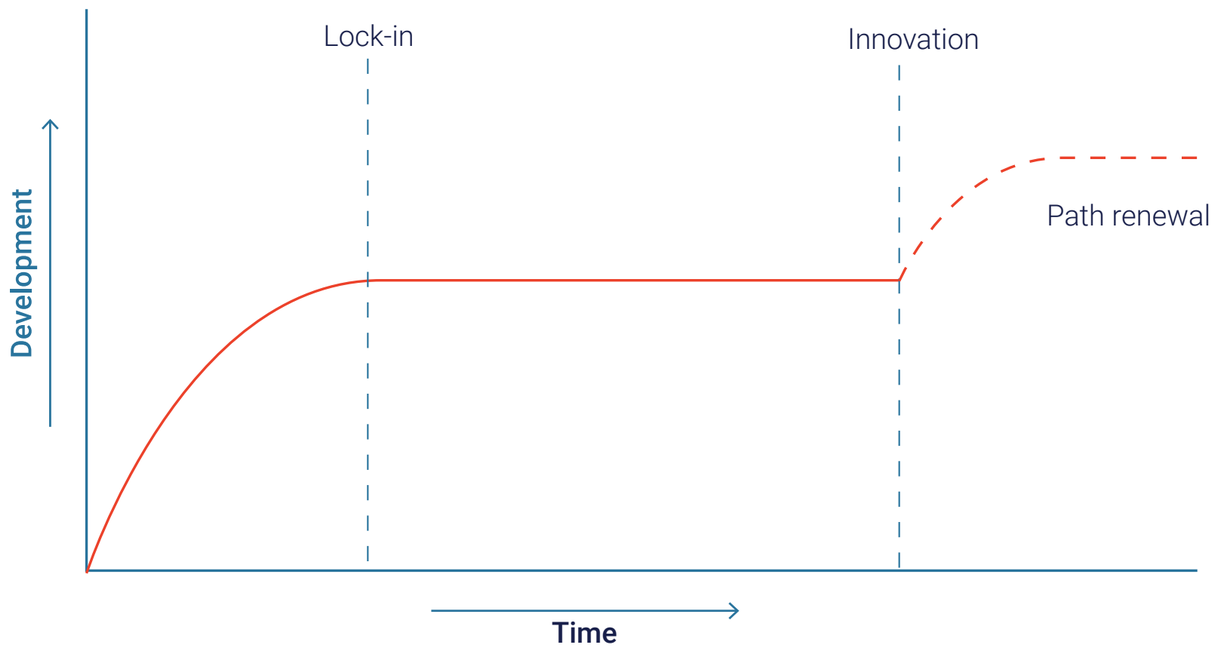
Path breaking: destabilising the system, opening it up opportunities for a new path to emerge (Martin & Sunley, 2010).



Development of path dependencies according the the David model (Martin & Sunley, 2010)

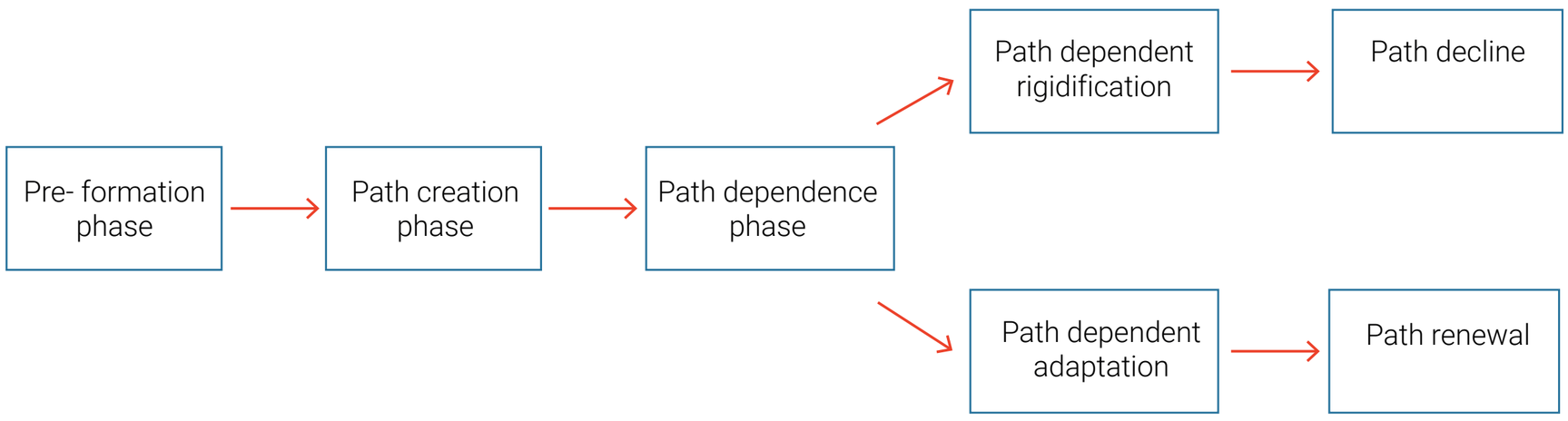


Path renewal: the process of revitalizing an existing path or trajectory. (Martin & Sunley, 2010).



Development of path dependencies according the the Setterfield model (Martin & Sunley, 2010)

What would this look like?



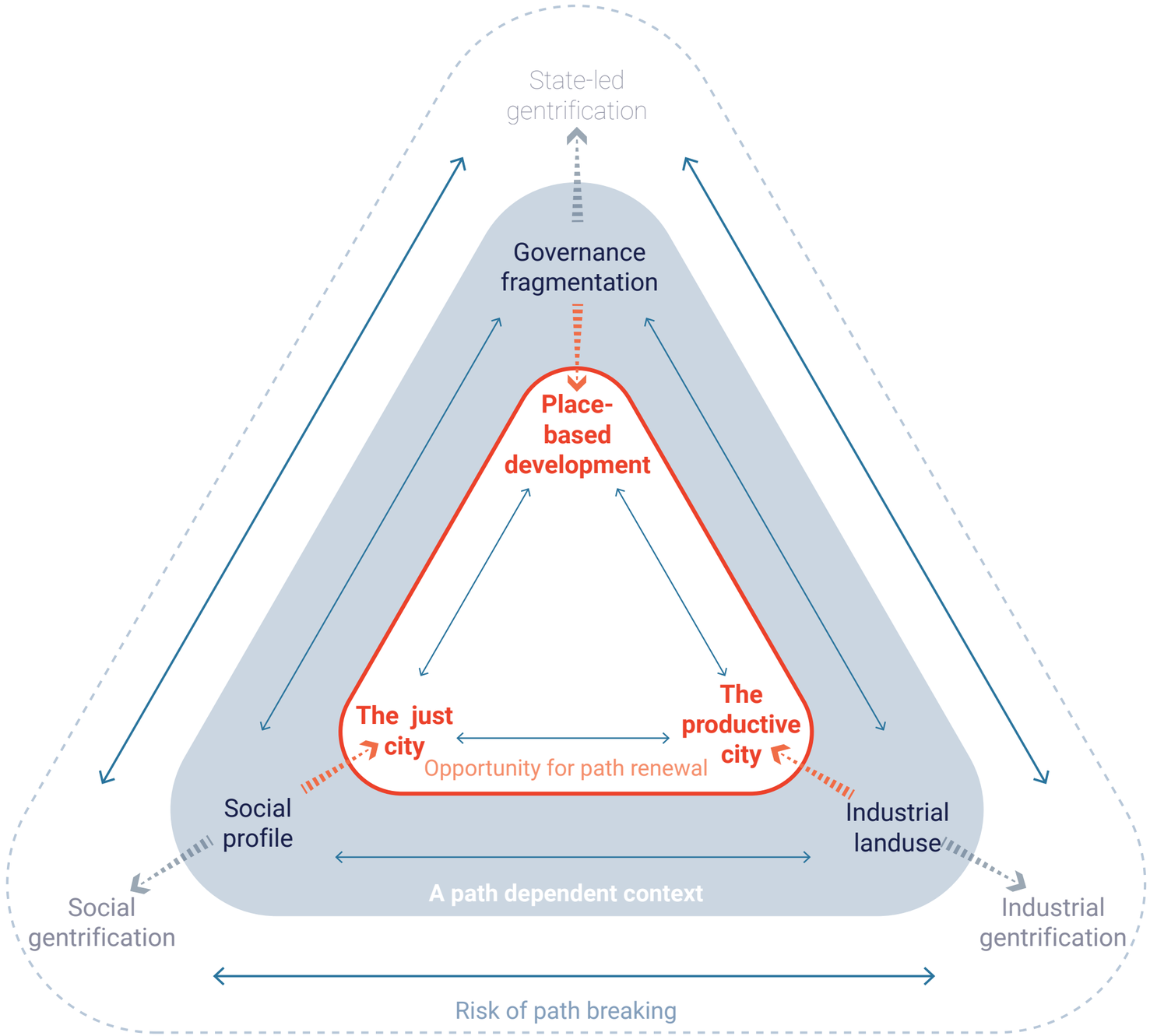
AN OPPORTUNITY FOR PATH RENEWAL

Governance fragmentation → **Place-based development:** holistic approach to planning and development that emphasizes the unique characteristics and potentials of a specific location.It is commonly associated with “bottom-up” modes of governance. (Daniels, Baldacchino, & Vodden, 2015).

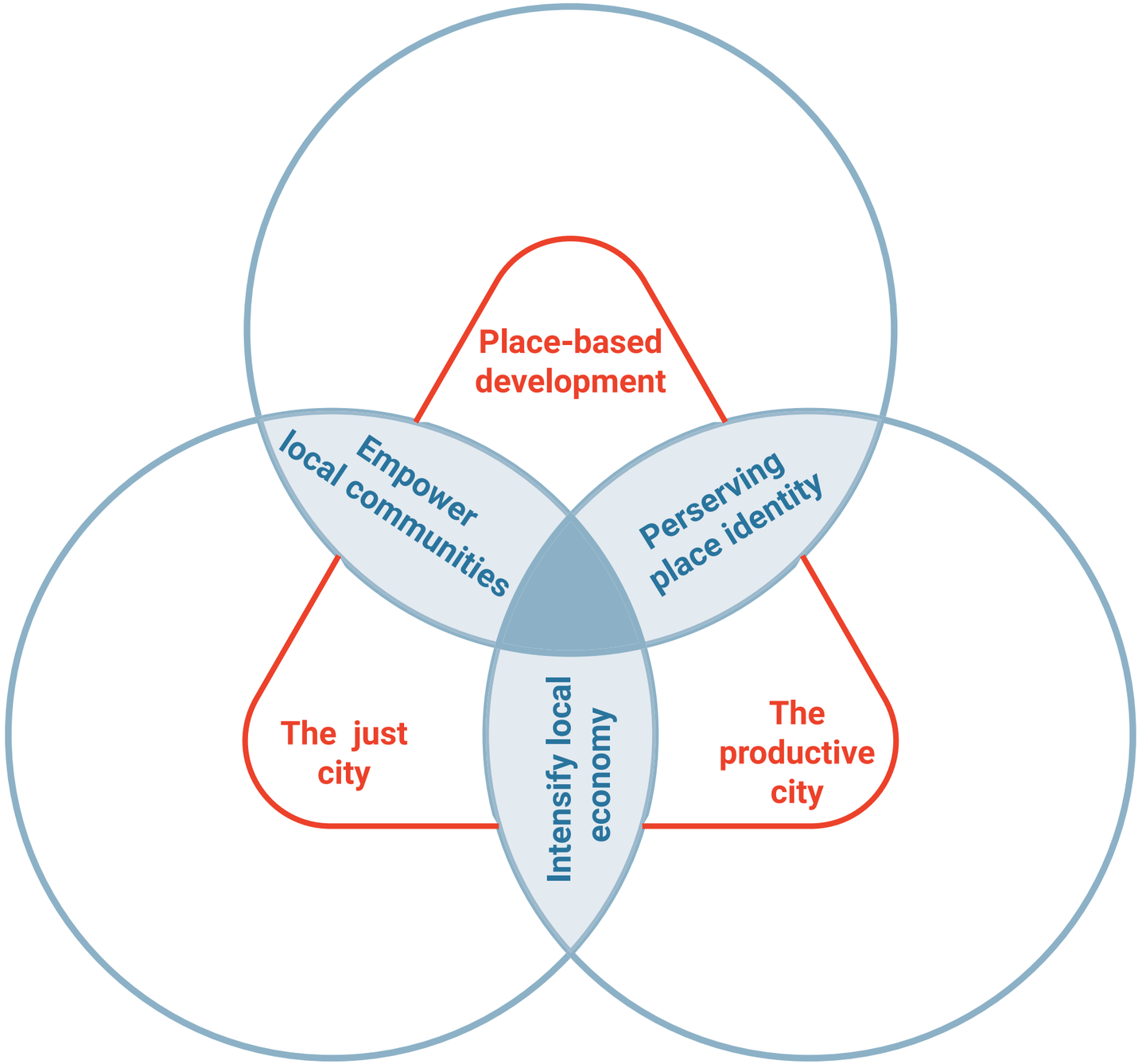
Social profile → **The just city:** a city that prioritizes social justice, and that strives to create an environment in which all residents have equal access to resources and opportunities (Soja, 2009).

Industrial land use → **The productive city:** a city that enables, promotes and celebrates the “productive” economy of cities (Novy, 2022)

PROBLEM STATEMENT



PROJECT AIM


Place-based development
Empower local communities
Perserving place identity
Intensify local economy
The just city
The productive city

RESEARCH QUESTIONS

Main question: How can a just, productive and place-based development be achieved in the Canal zone of Brussels, through path renewal?

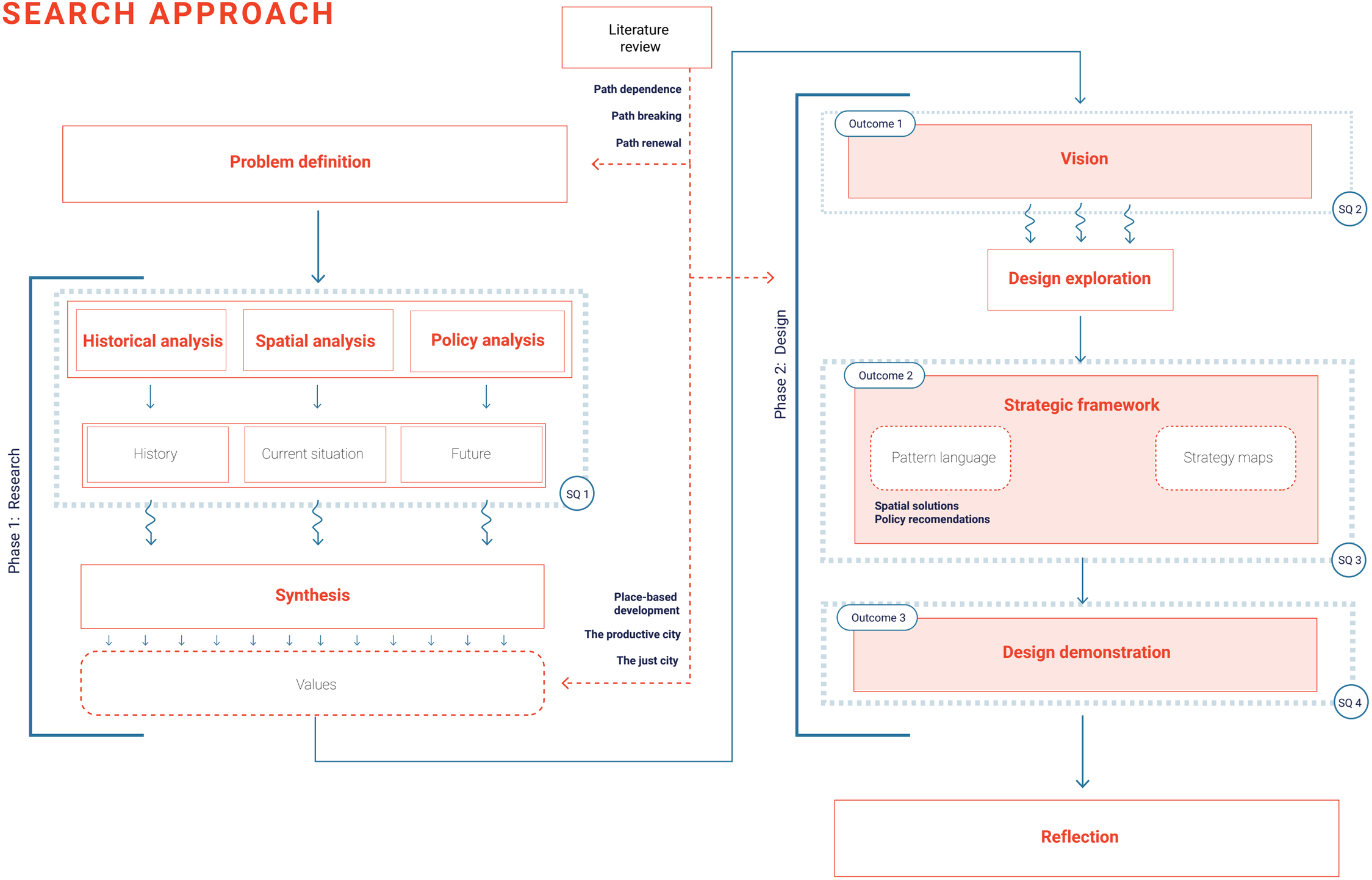
SQ1: How did the path dependencies in the Canal area develop and how do they manifest themselves in the current urban landscape and urban policy?

SQ2: What values can be synthesised from these path dependencies and how could these be integrated in an alternative vision for the Canal area?

SQ3: How can this vision be operationalised, through a strategic framework, utilising the path dependencies?

SQ4: How can the implementation of this strategic framework be spatialised on a smaller scale?

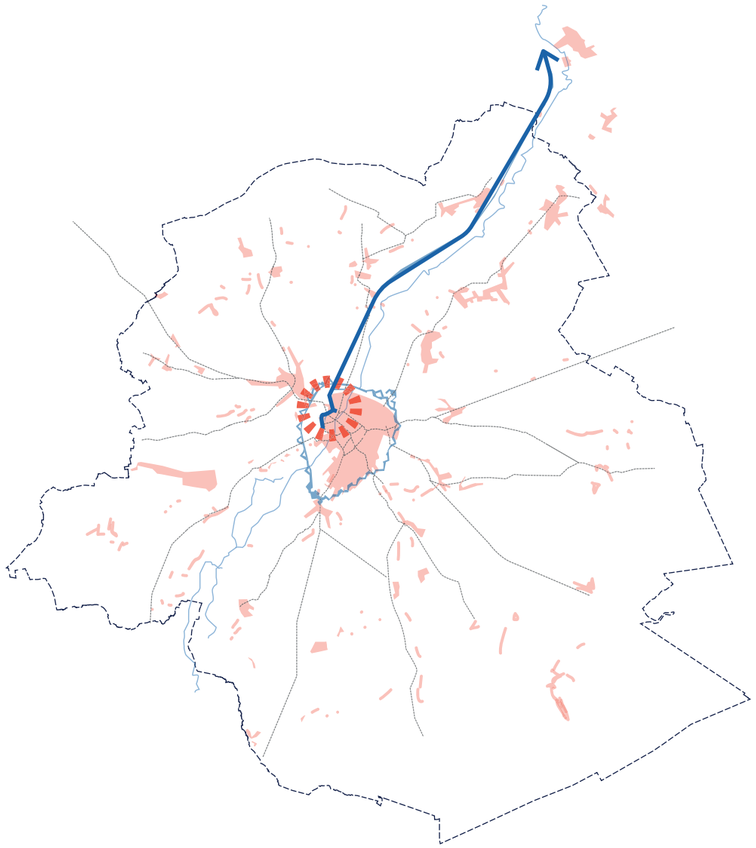
RESEARCH APPROACH



2. ANALYSIS

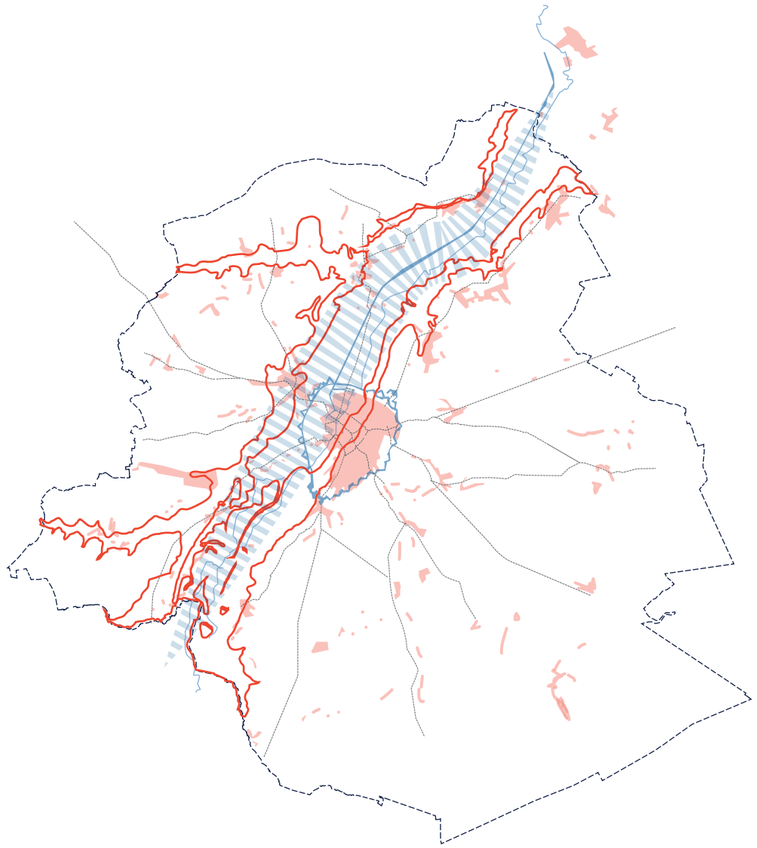
HISTORY

Industry



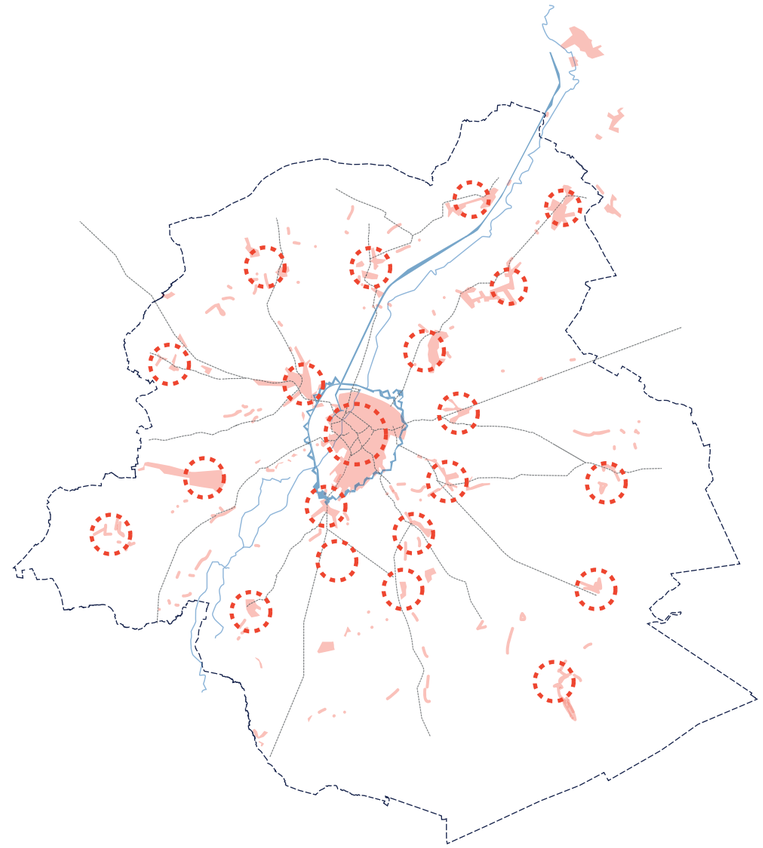
First industries estabished in harbour

Demographics



The river valley housed people of a lower socio-economic class

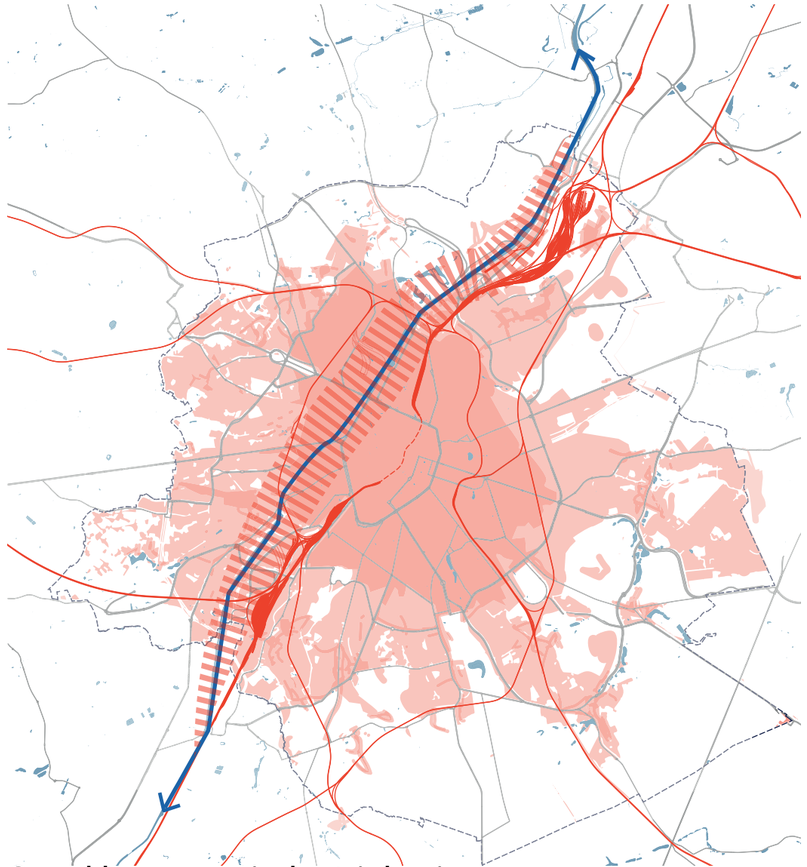
Governance



Several village centres around Brussels

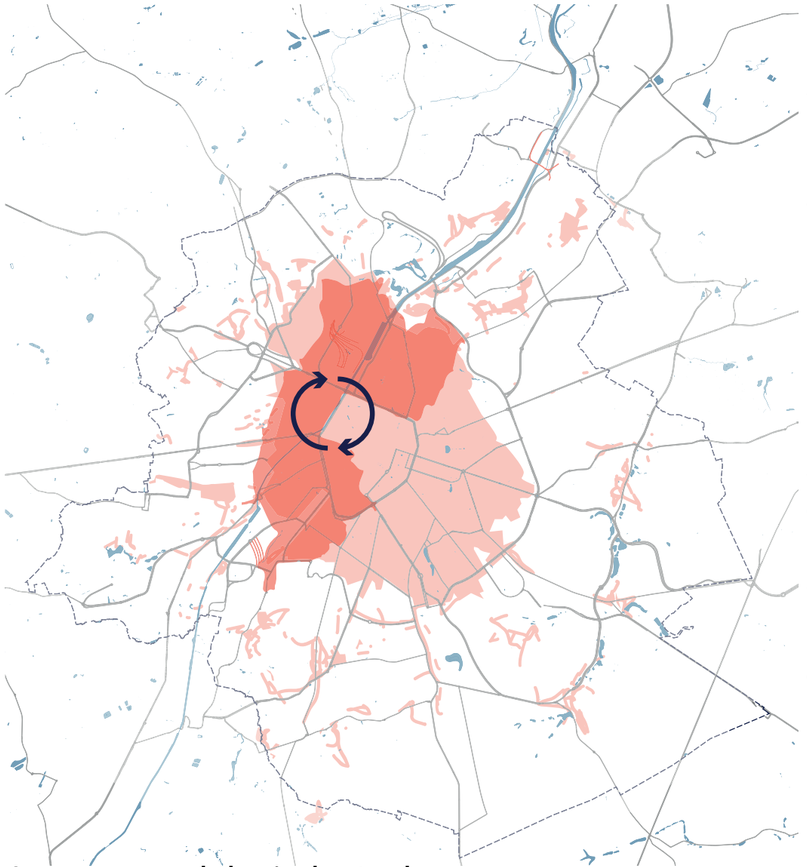
HISTORY

Industry



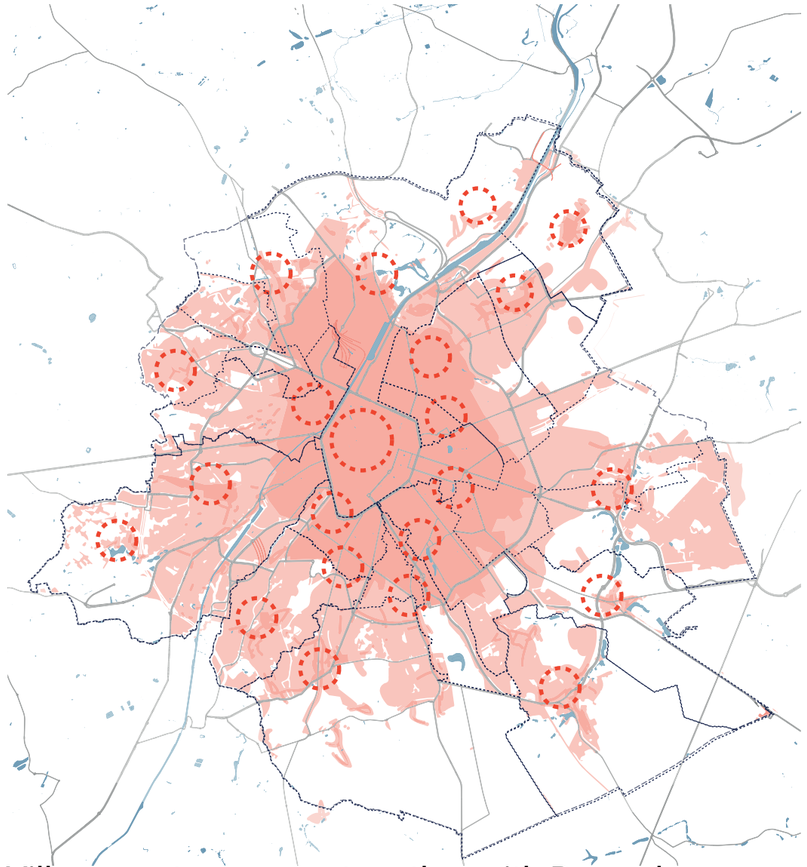
Canal becomes industrial axis

Demographics



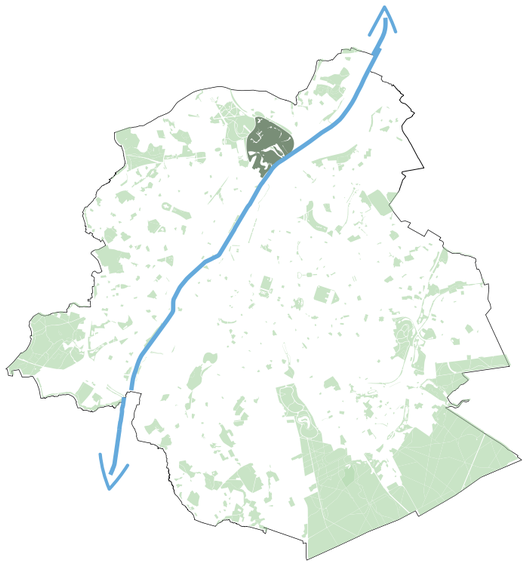
Areas around the industry become neighbourhoods of arrival

Governance

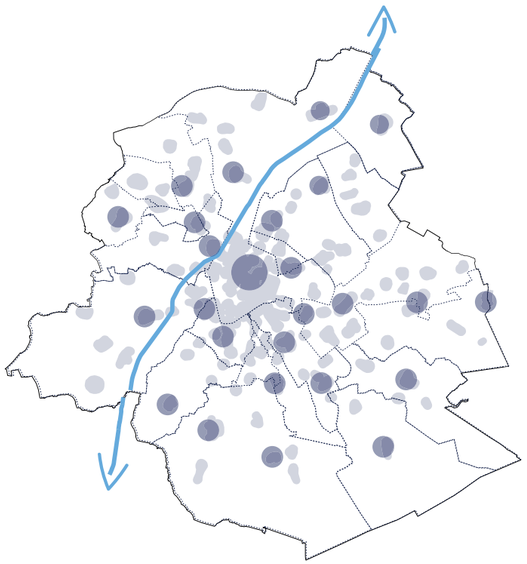


Village centres grown together with Brussels, but municipality boundaries are never updated

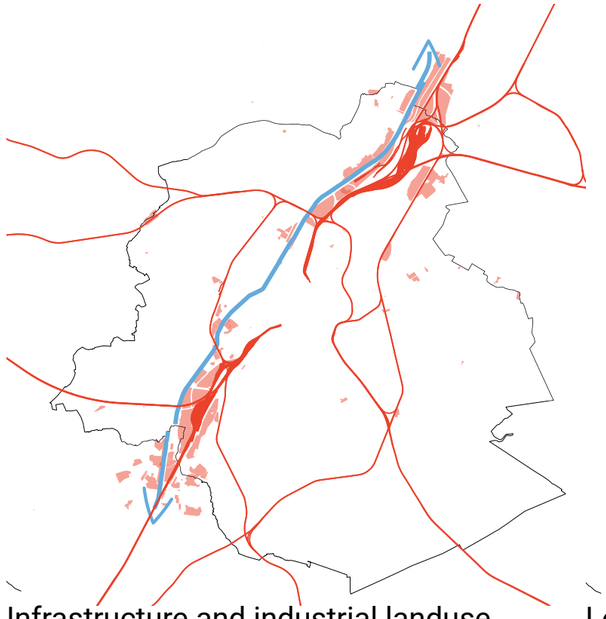
PRESENT



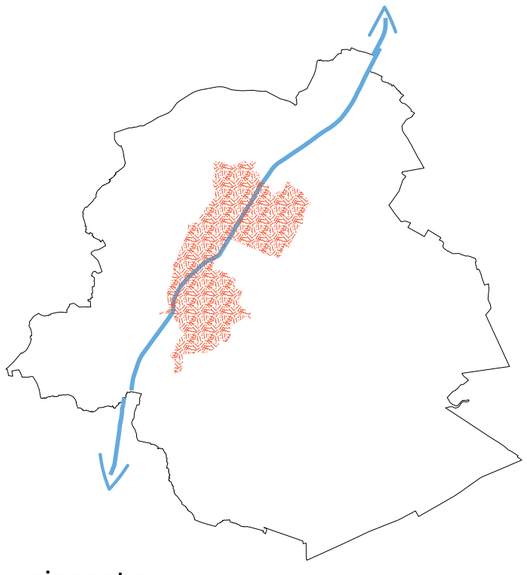
Poor quality of environment



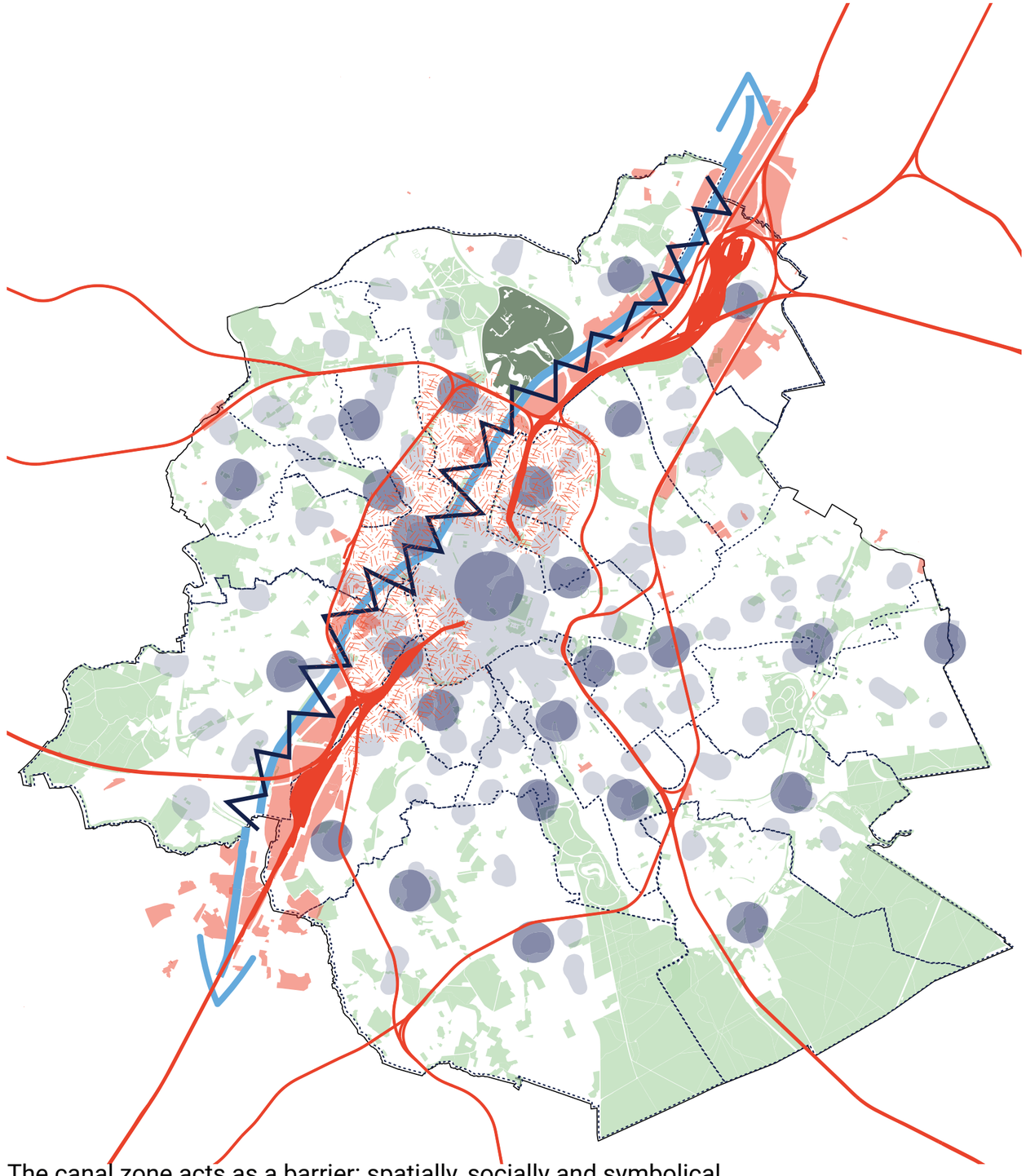
Different centralities



Infrastructure and industrial landuse, acting as barriers



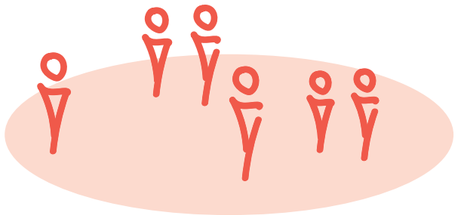
Le croissant pauvre



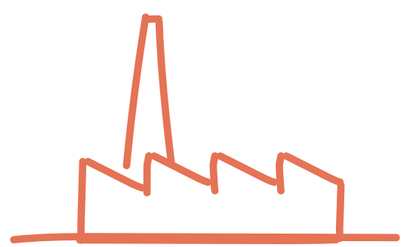
The canal zone acts as a barrier: spatially, socially and symbolical

PRESENT

Diverse local economy

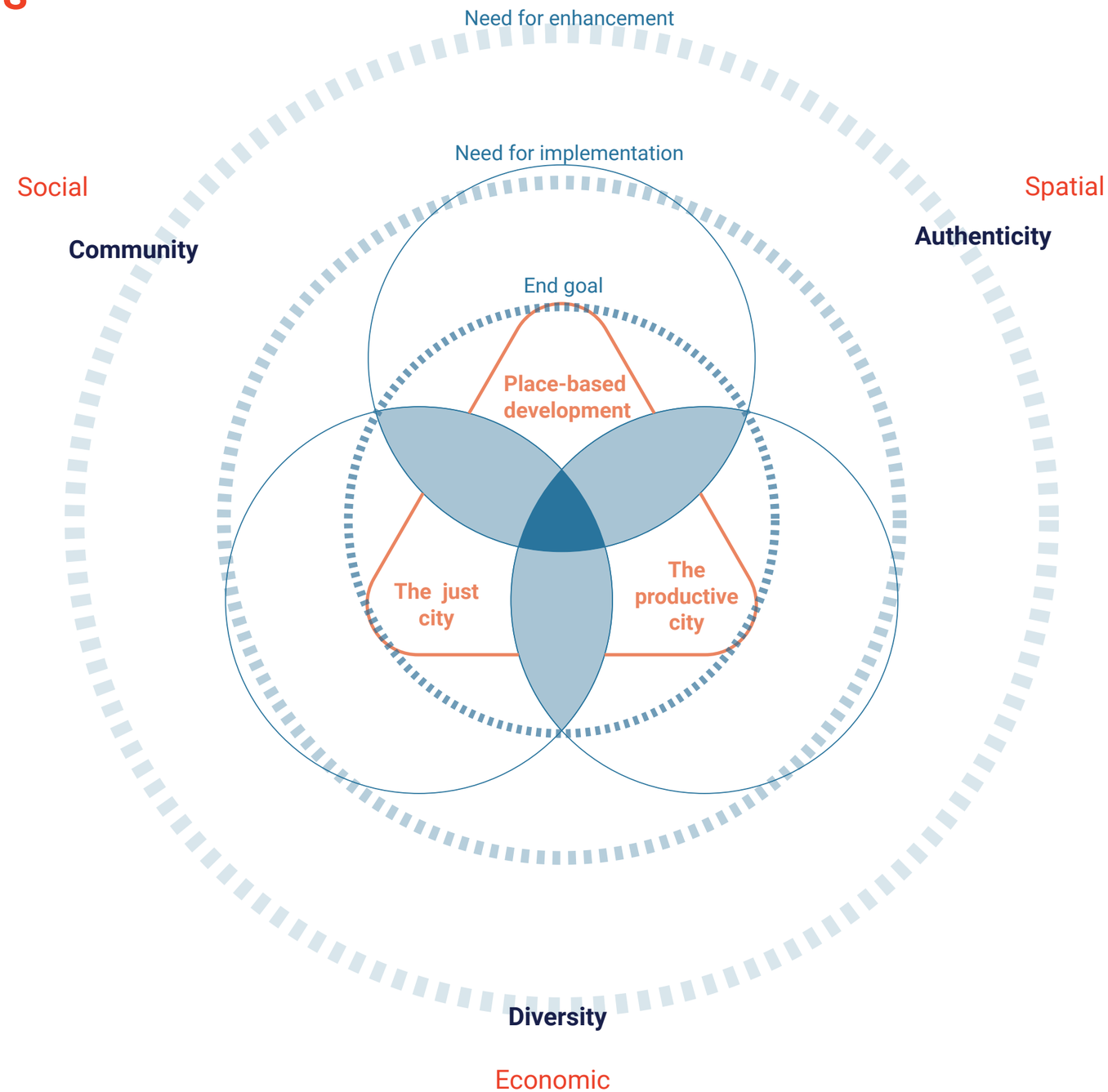


Diverse communities

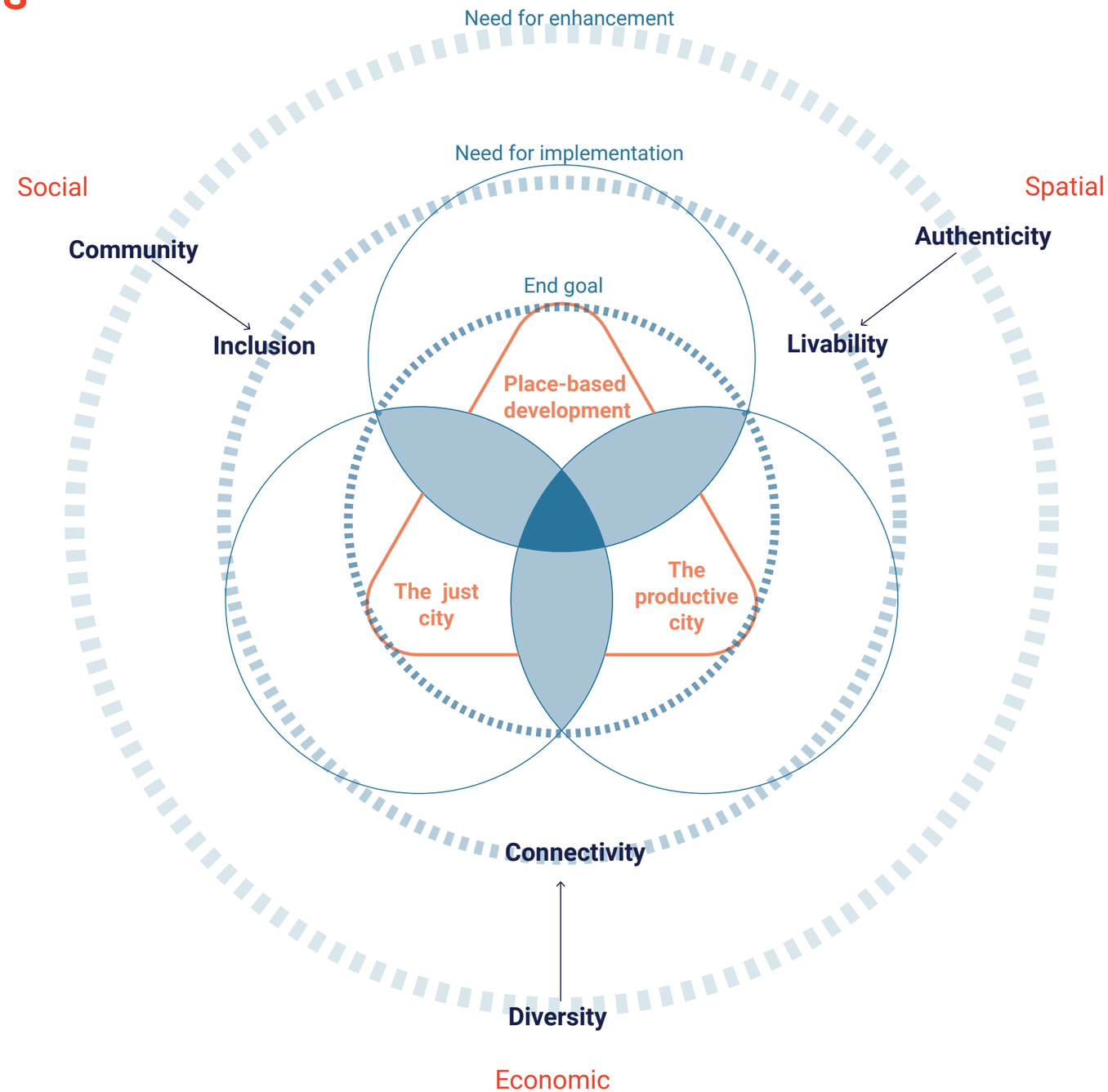


Industrial heritage

EXTRACTING VALUES



EXTRACTING VALUES



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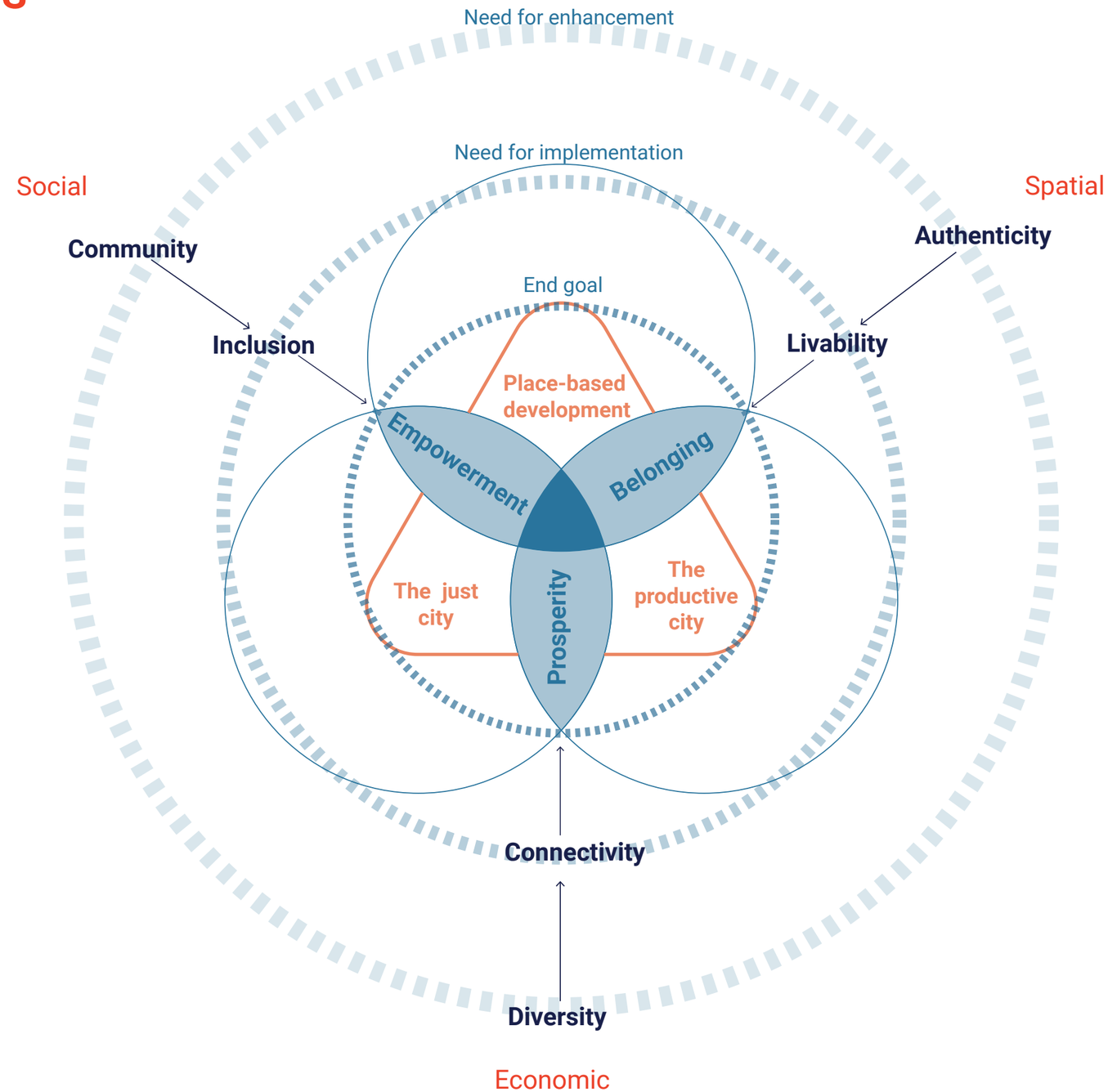
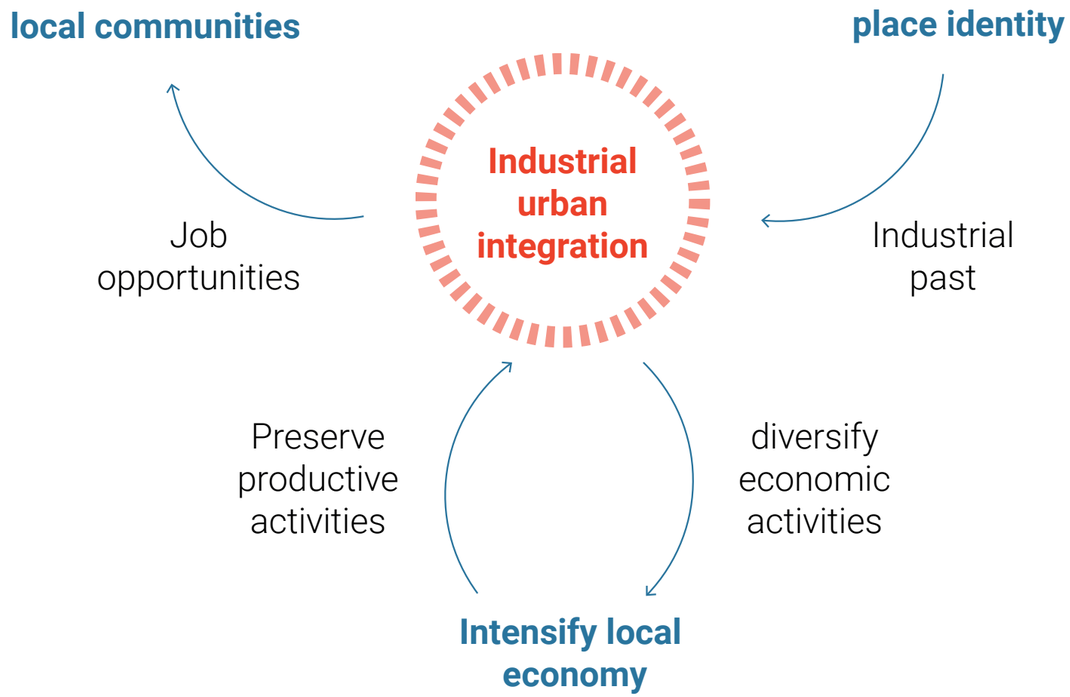


3. VISION

CONSTRUCTING VISION

Industrial urban integration: the integration of productive activities, as well as related activities such as logistics and construction, within urban environments.



VISION

‘In 2050 the canal area becomes an integral part of Brussels social and economic fabric again, using its historical significance and spatial identity to shape a new vision rooted in industrial urban integration. The canal and its infrastructure will become an important foundation for a new economic ecosystem that encourages local businesses and thus empowers the local community.

By repurposing the canal infrastructure and rethinking its surroundings, the canal area can be reinvented as an economic backbone like it once was.’

VISION

Community
- strengthening centralities
- providing community spaces
- providing spaces to meet

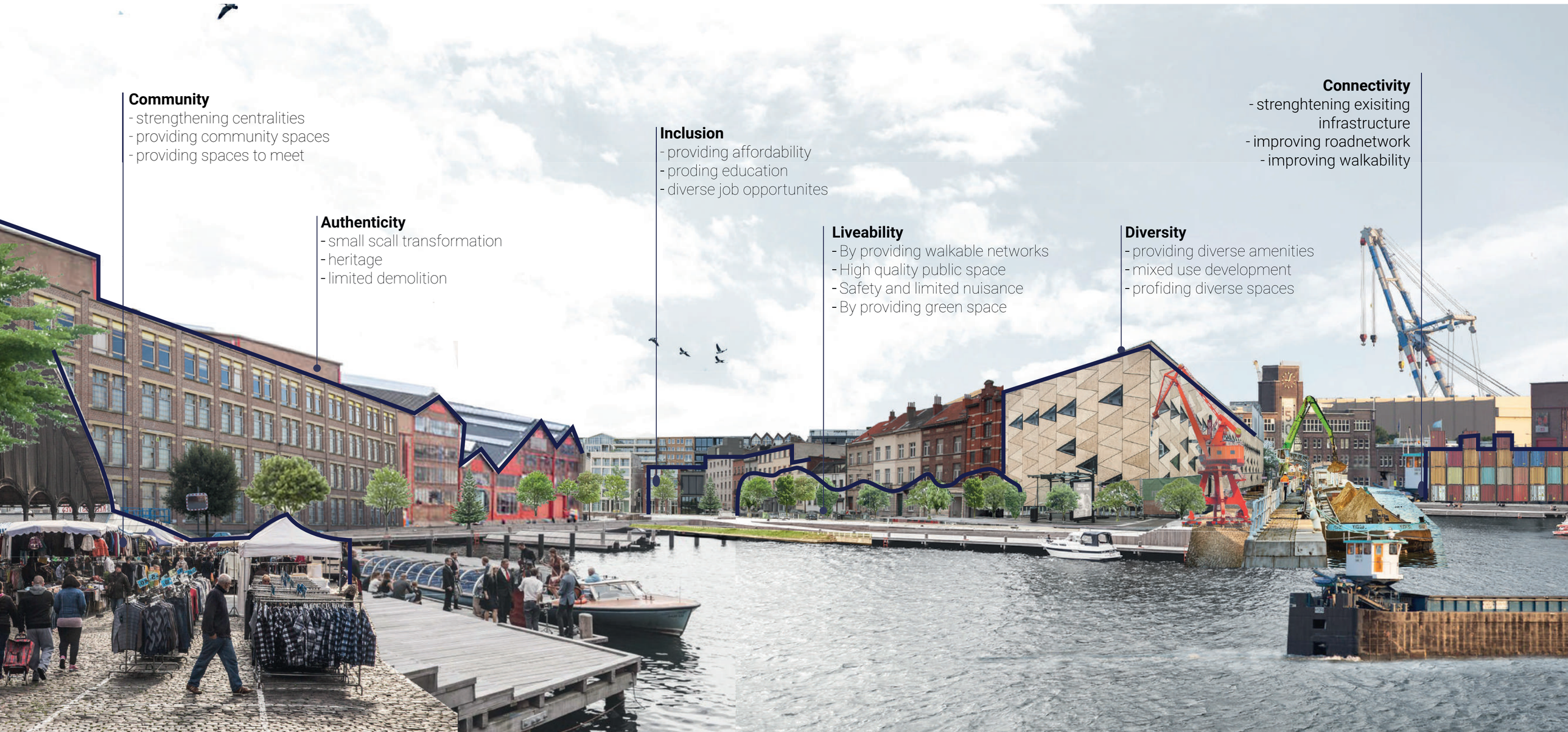
Authenticity
- small scall transformation
- heritage
- limited demolition

Inclusion
- providing affordability
- proding education
- diverse job opportunites

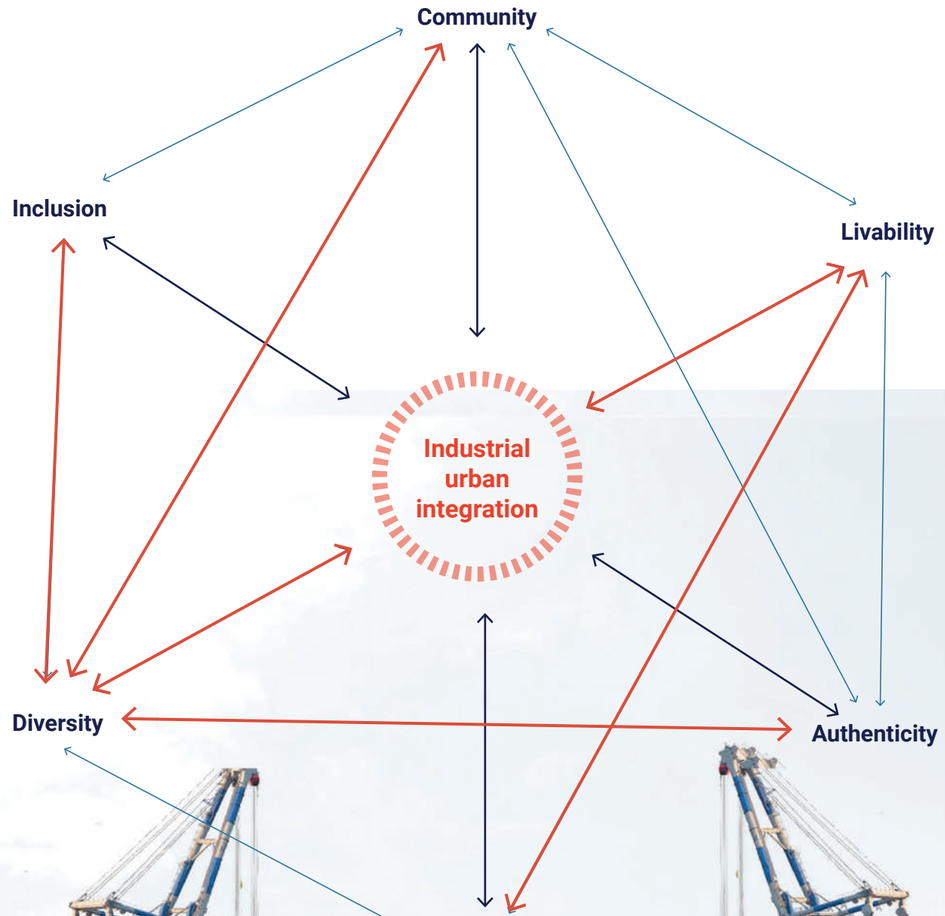
Liveability
- By providing walkable networks
- High quality public space
- Safety and limited nuisance
- By providing green space

Connectivity
- strenghtening exisiting infrastructure
- improving roadnetwork
- improving walkability

Diversity
- providing diverse amenities
- mixed use development
- profiding diverse spaces



CONFLICTS



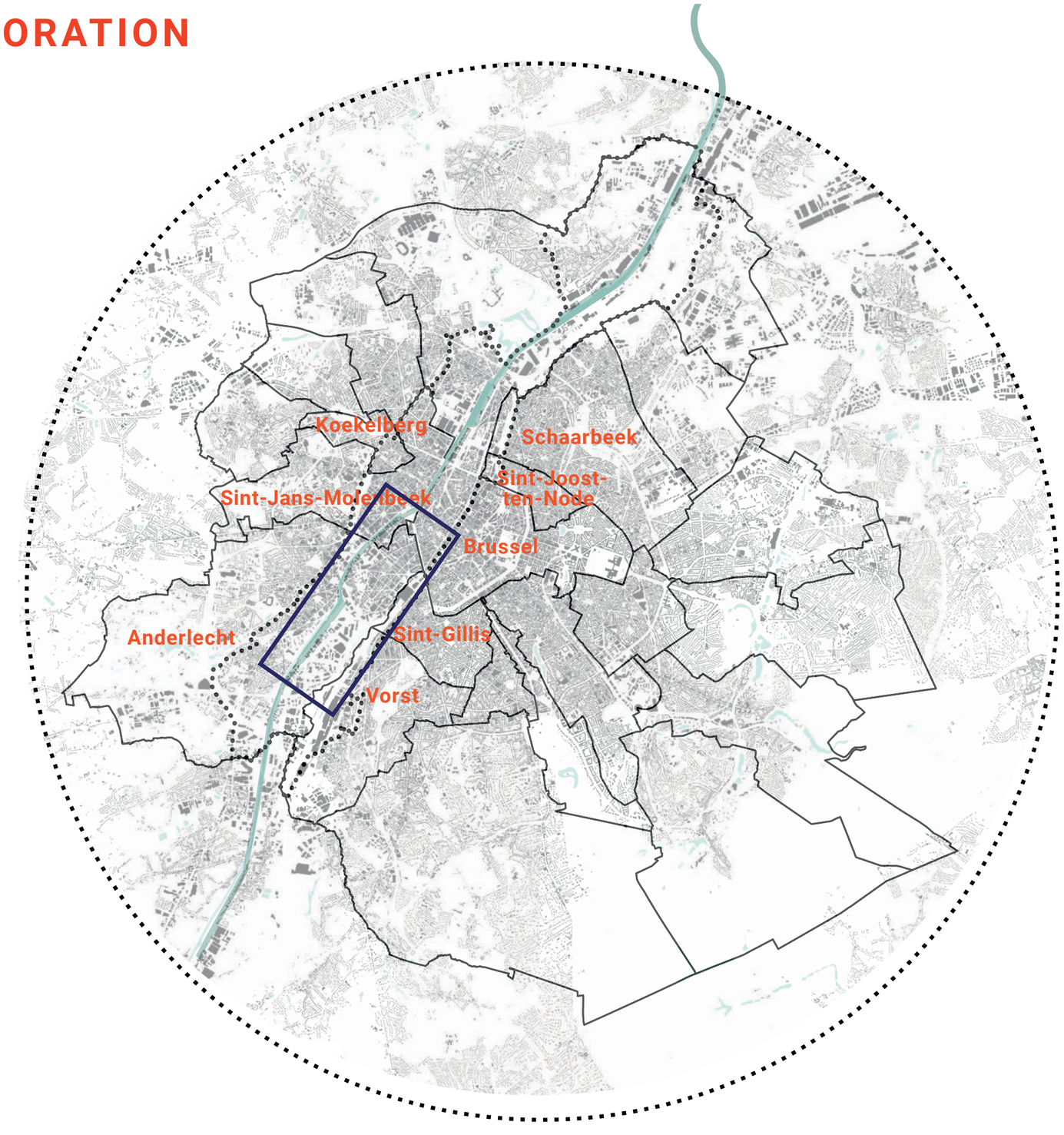
Conflict inclusion vs diversity

Conflict Authenticity vs diversity

Conflict industrial urban integration vs. Liveability

4. EXPLORATION

ZOOMED IN EXPLORATION



MAIN TAKEWAYS

Diversity: mitigating between functions

Legend

Retail

Industrial area

Centrality

MAIN TAKEWAYS

Connectivity: need to restructure network

Legend

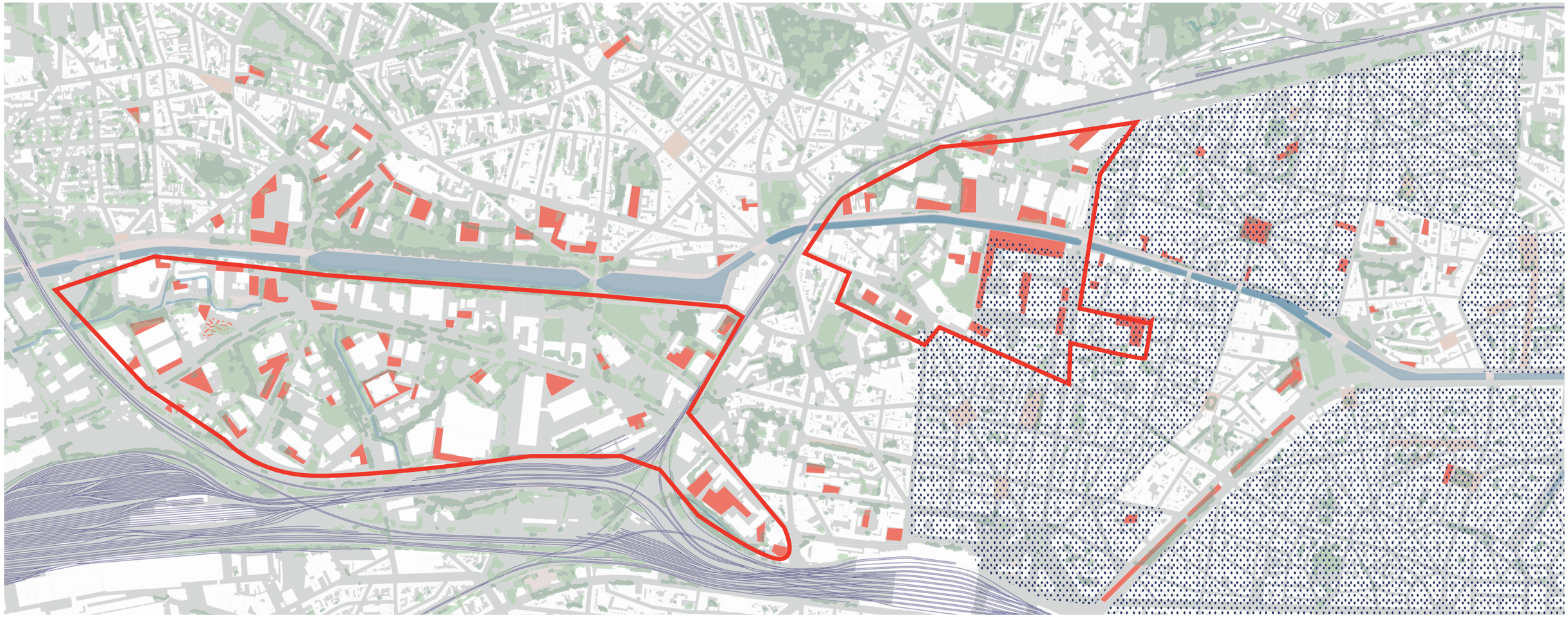
- Retail
- Regional road
- main road
- Secundary road
- Local road

MAIN TAKEWAYS

Liveability: lack of quality in space vs. lack of green

Legend

- Lack of green
- Lack of quality
- parking lot



MAIN TAKEWAYS

Authenticity: clusters of empty space, possibility to develop

Legend

- Empty space
- large grained
- medium grained
- small grained
- Industrial heritage
- Abandoned industrial heri
- Cluster of empty space

MAIN TAKEWAYS

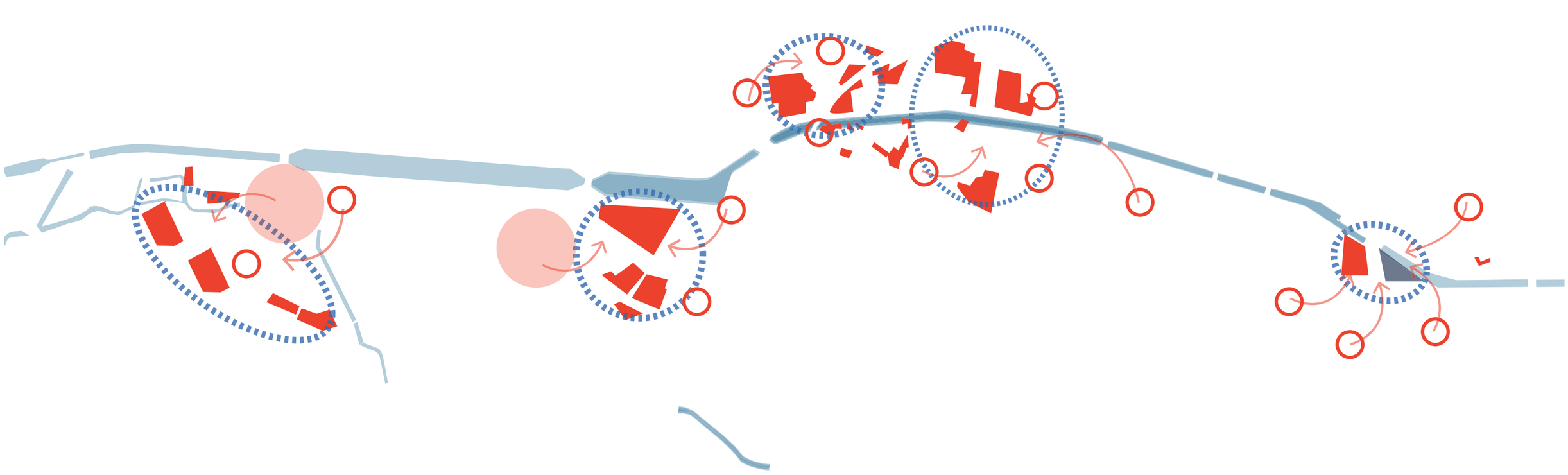
Community and inclusion: strengthening and collaborating with surrounding functions

Legend

Empty space

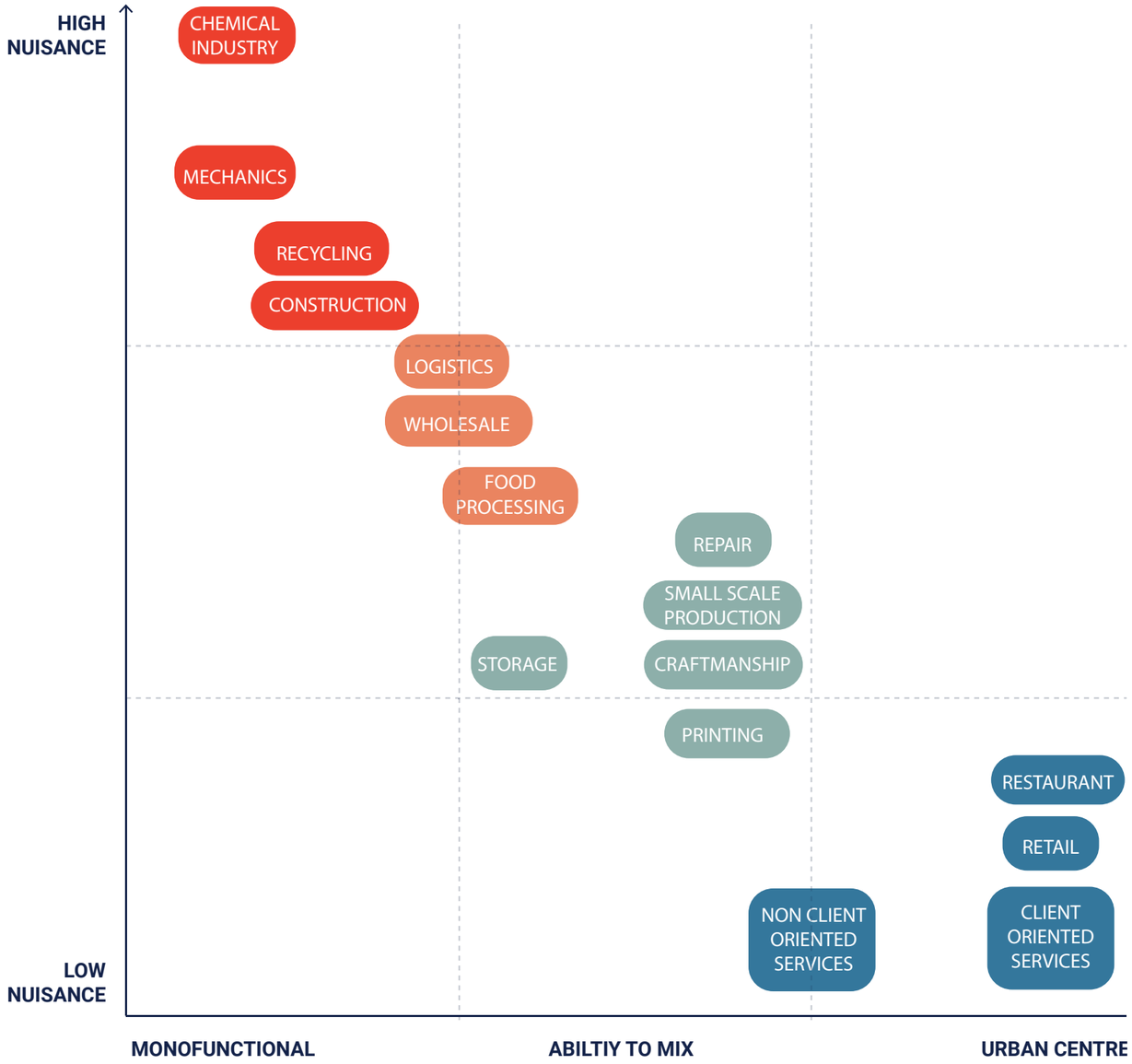
surrounding functions

new development

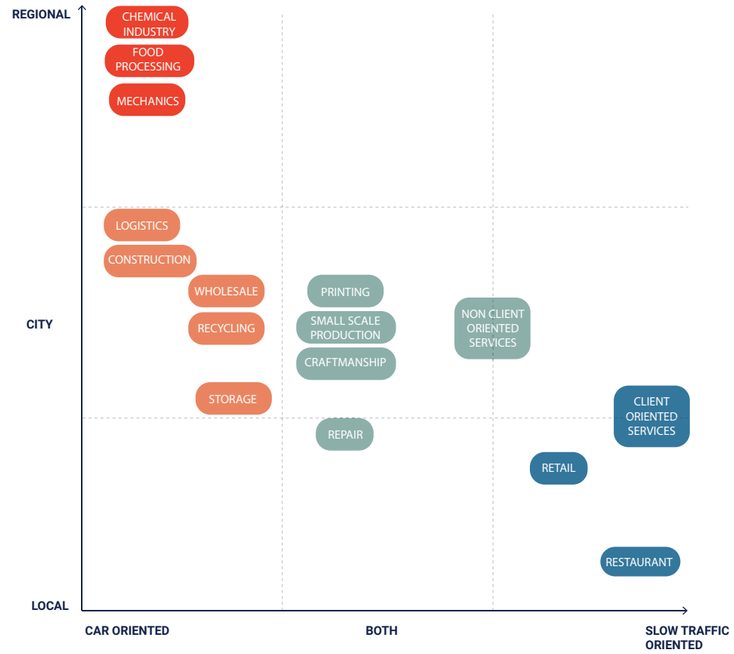


NEEDS OF URBAN FUNCTIONS

Nuisance - ability to mix



Accessibility - type of transportation



Space - flexibility

5. STRATEGY

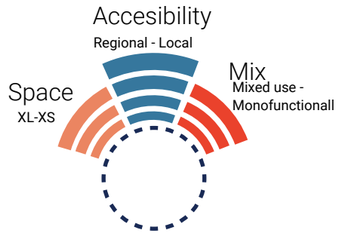
STRATEGIC OVERVIEW

Legend

- Logistic network
- Public space network
- Possible development
- Green area

- Culture
- Community hub
- Education
- Makers hub
- Recycling

- Market
- Amenties
- Harbour
- Train transport
- Road transpor



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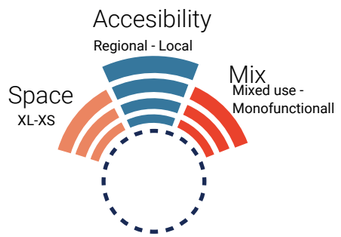

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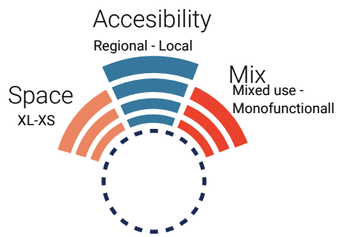

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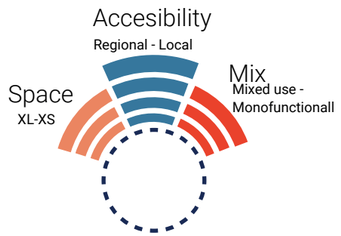


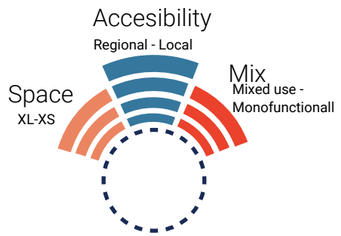
STRATEGIC OVERVIEW

Legend

- Logistic network
- Public space network
- Possible development
- Green area

- Culture
- Community hub
- Education
- Makers hub
- Recycling

- Market
- Amenties
- Harbour
- Train transport
- Road transpor



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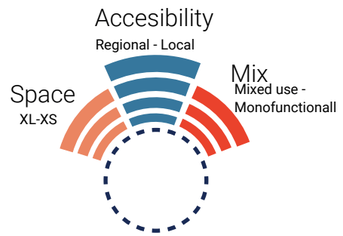

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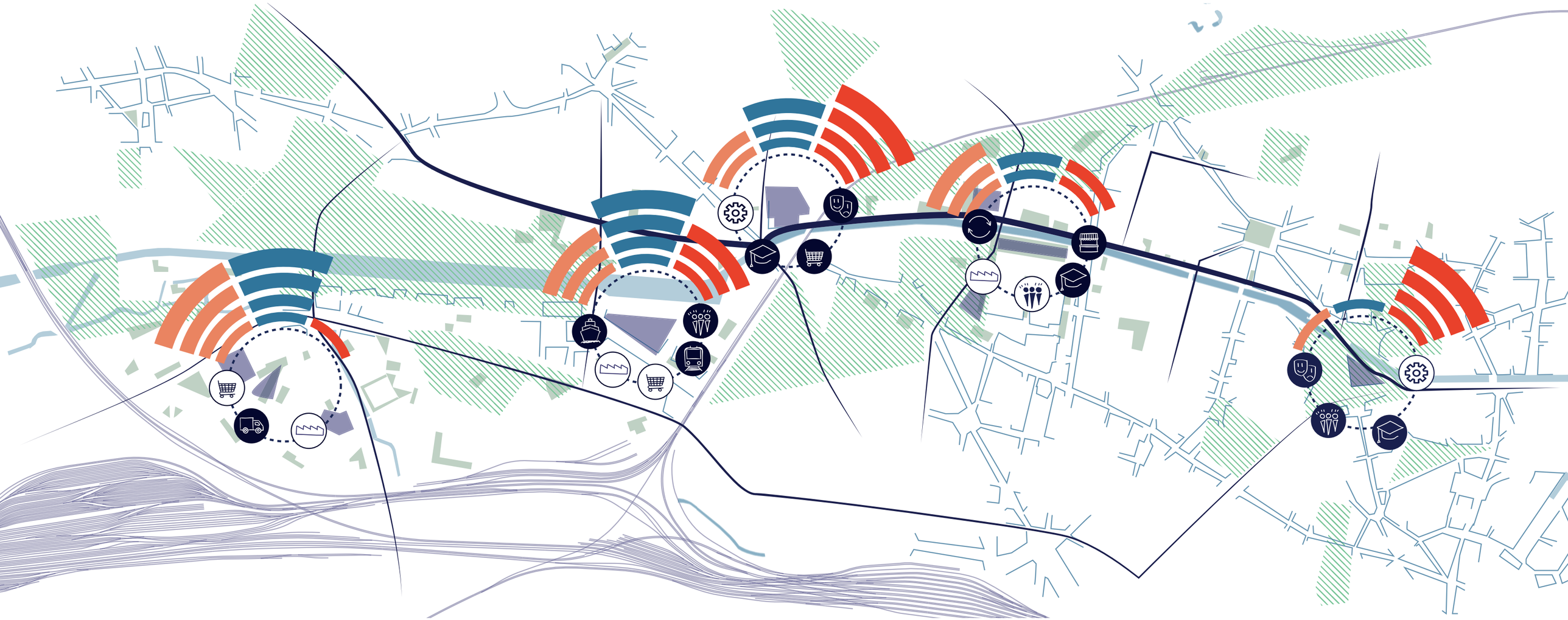

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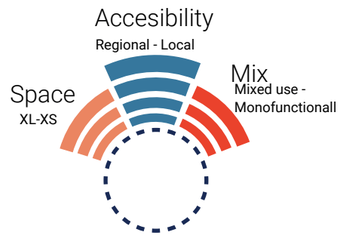
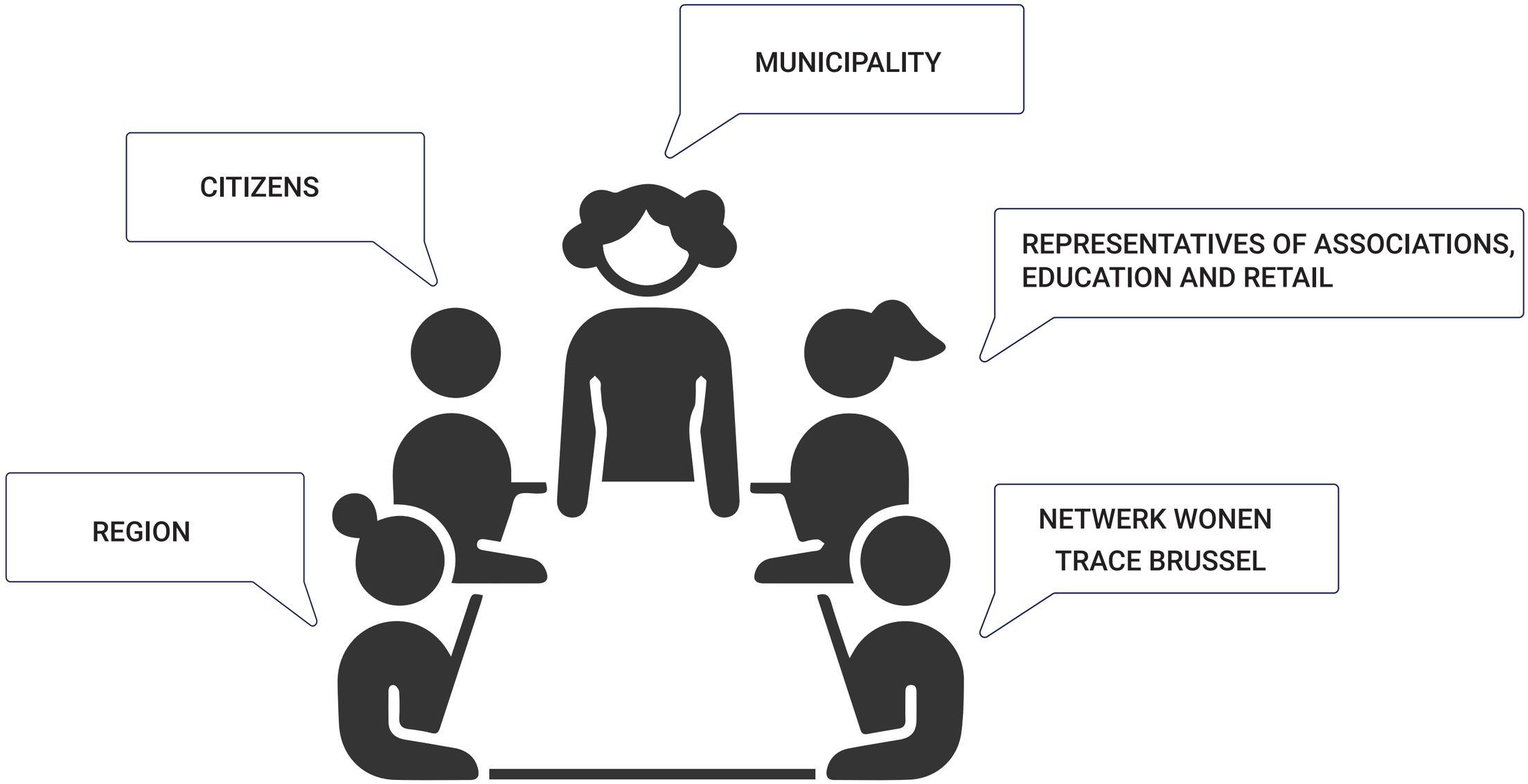
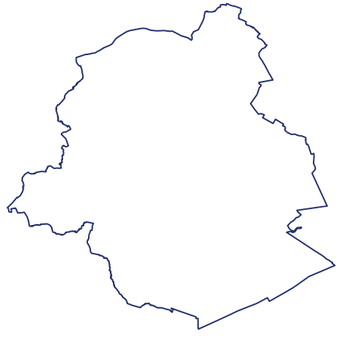


NEIGHBOURHOOD CONTRACTS



PROCESS



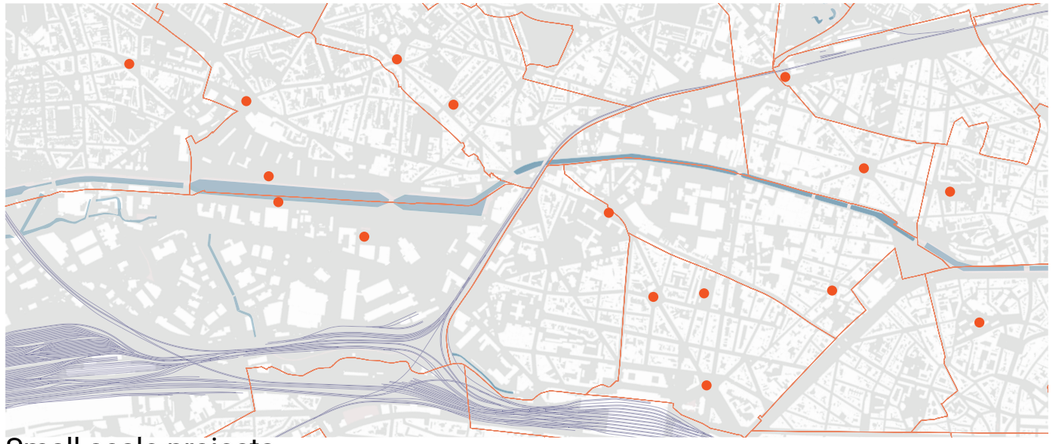
Neighbourhood

Bottom-up

Municipality

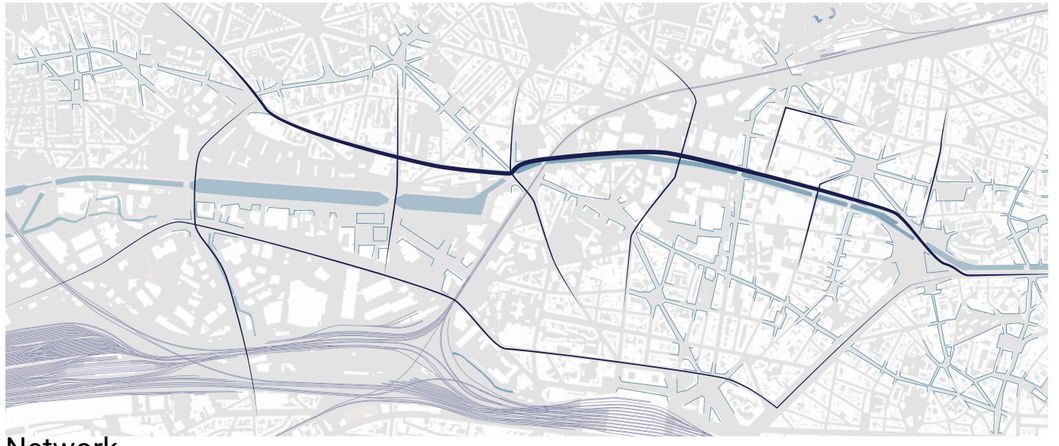
Region

Top-down



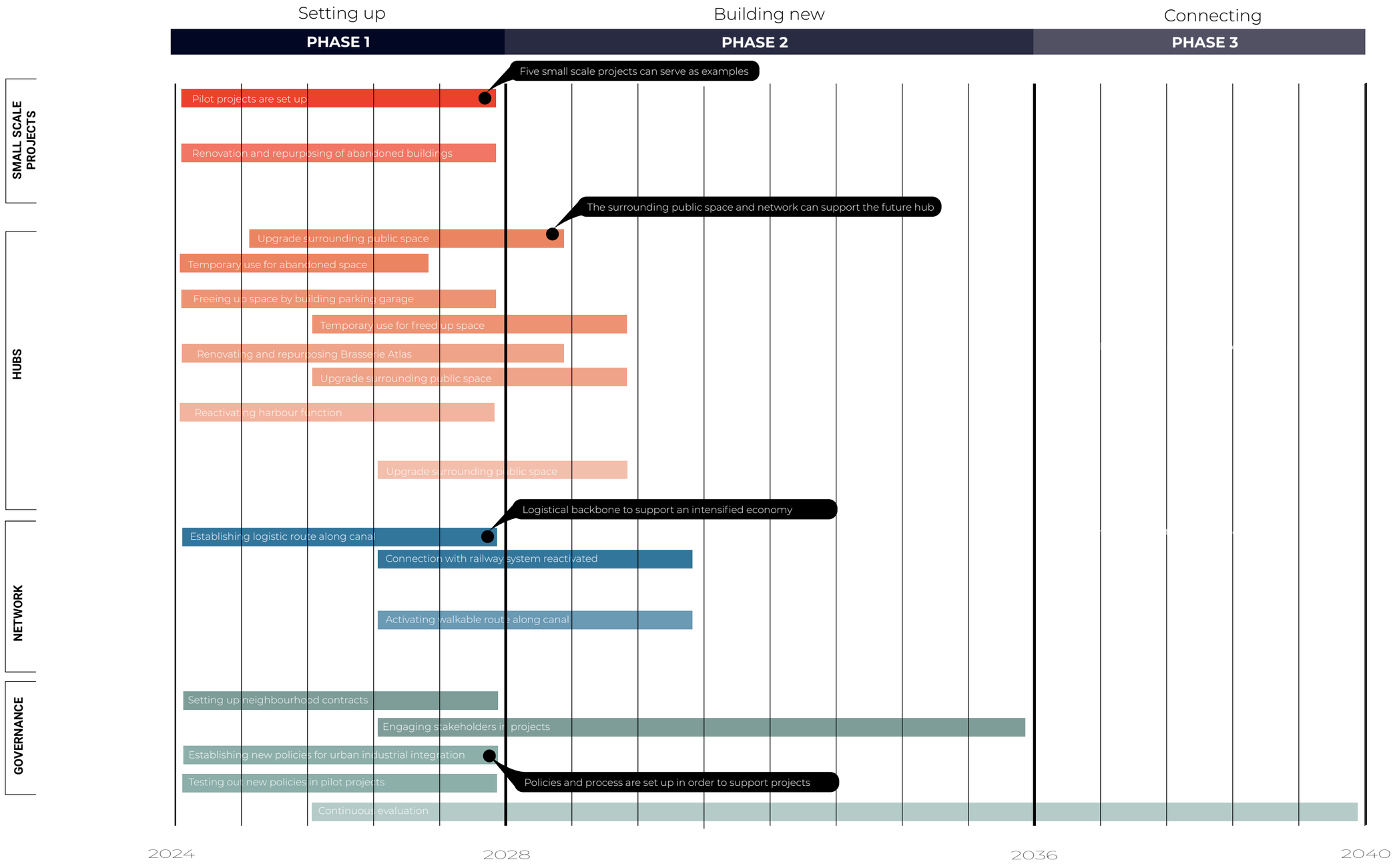
Small scale projects

Hubs

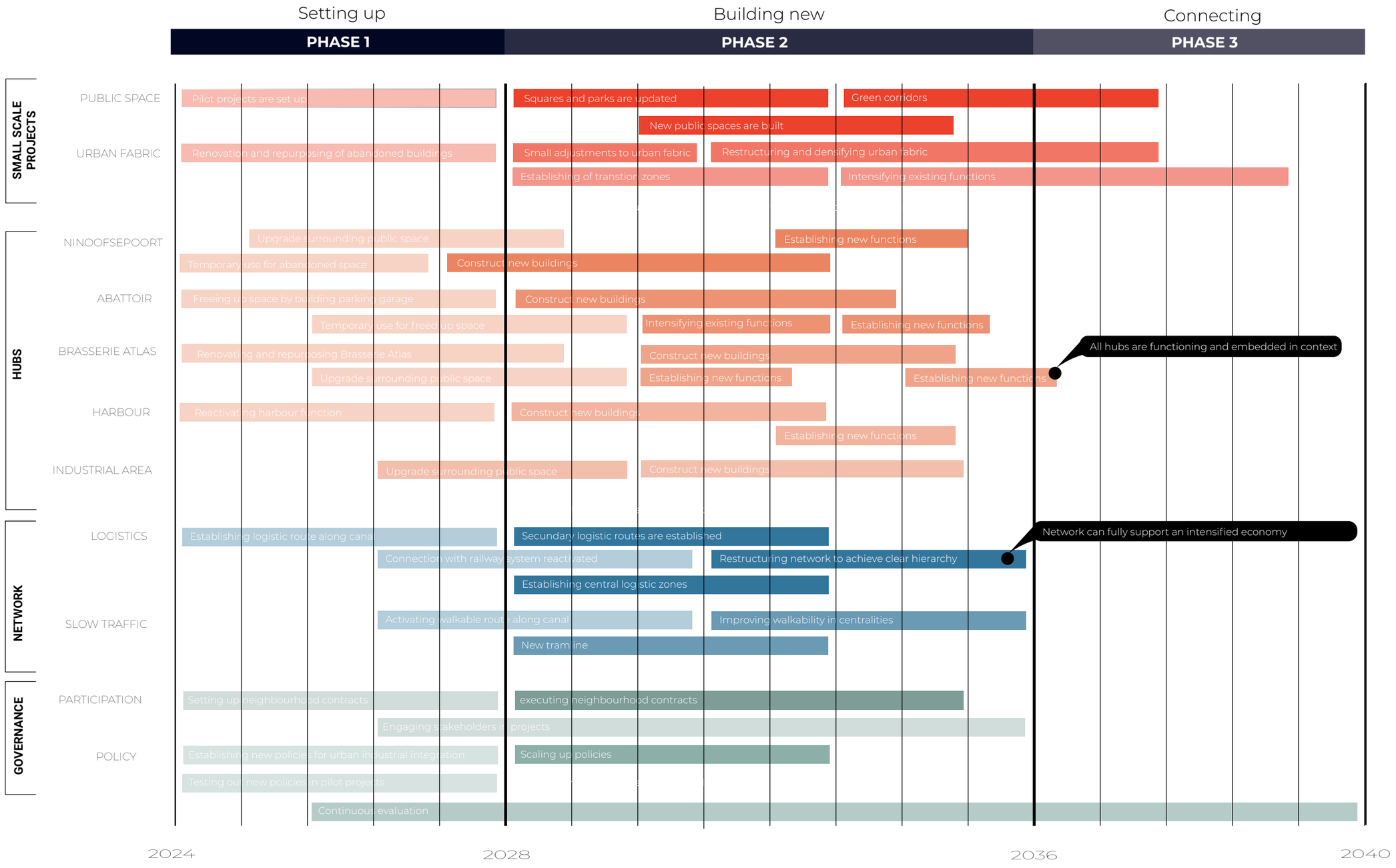


Network

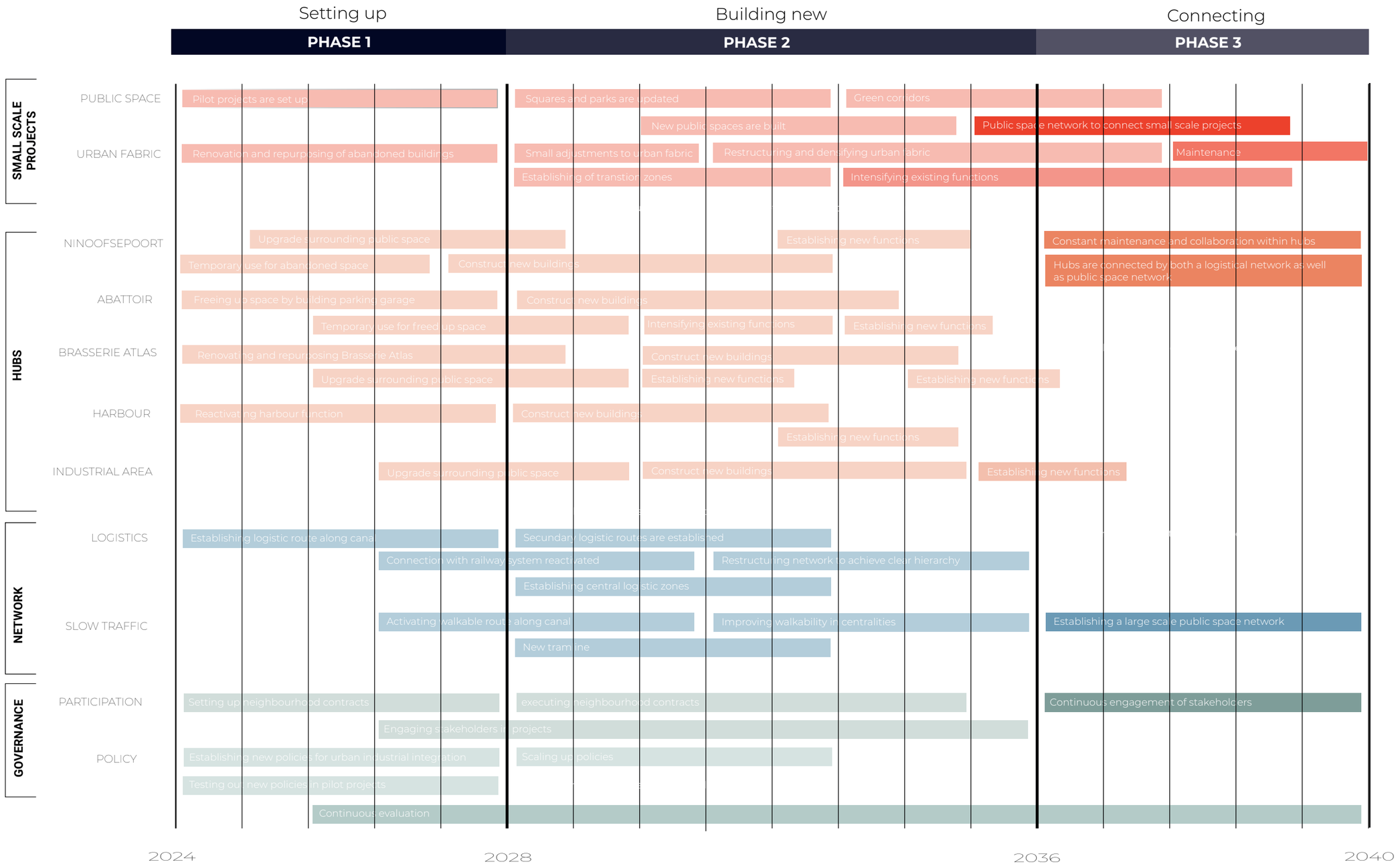
PHASING


Setting up
Building new
Connecting
PHASE 1
PHASE 2
PHASE 3
SMALL SCALE PROJECTS
HUBS
NETWORK
GOVERNANCE
Five small scale projects can serve as examples
Pilot projects are set up
Renovation and repurposing of abandoned buildings
The surrounding public space and network can support the future hub
Upgrade surrounding public space
Temporary use for abandoned space
Freeing up space by building parking garage
Temporary use for freed up space
Renovating and repurposing Brasserie Atlas
Upgrade surrounding public space
Reactivating harbour function
Upgrade surrounding public space
Logistical backbone to support an intensified economy
Establishing logistic route along canal
Connection with railway system reactivated
Activating walkable route along canal
Setting up neighbourhood contracts
Engaging stakeholders in projects
Establishing new policies for urban industrial integration
Testing out new policies in pilot projects
Policies and process are set up in order to support projects
Continuous evaluation
2024
2028
2036
2040

PHASING


Setting up
Building new
Connecting
PHASE 1
PHASE 2
PHASE 3
SMALL SCALE PROJECTS
PUBLIC SPACE
Pilot projects are set up
Squares and parks are updated
Green corridors
New public spaces are built
URBAN FABRIC
Renovation and repurposing of abandoned buildings
Small adjustments to urban fabric
Restructuring and densifying urban fabric
Establishing of transition zones
Intensifying existing functions
HUBS
NINOOFSEPOORT
Upgrade surrounding public space
Establishing new functions
Temporary use for abandoned space
Construct new buildings
ABATTOIR
Freeing up space by building parking garage
Construct new buildings
Temporary use for freed up space
Intensifying existing functions
Establishing new functions
BRASSERIE ATLAS
Renovating and repurposing Brasserie Atlas
Construct new buildings
All hubs are functioning and embedded in context
Upgrade surrounding public space
Establishing new functions
Establishing new functions
HARBOUR
Reactivating harbour function
Construct new buildings
Establishing new functions
INDUSTRIAL AREA
Upgrade surrounding public space
Construct new buildings
NETWORK
LOGISTICS
Establishing logistic route along canal
Secundary logistic routes are established
Network can fully support an intensified economy
Connection with railway system reactivated
Restructuring network to achieve clear hierarchy
Establishing central logistic zones
SLOW TRAFFIC
Activating walkable route along canal
Improving walkability in centralities
New tram line
GOVERNANCE
PARTICIPATION
Setting up neighbourhood contracts
executing neighbourhood contracts
Engaging stakeholders in projects
POLICY
Establishing new policies for urban industrial integration
Scaling up policies
Testing out new policies in pilot projects
Continuous evaluation
2024
2028
2036
2040

PHASING


Setting up
Building new
Connecting
PHASE 1
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SMALL SCALE PROJECTS
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Squares and parks are updated
Green corridors
New public spaces are built
Public space network to connect small scale projects
URBAN FABRIC
Renovation and repurposing of abandoned buildings
Small adjustments to urban fabric
Restructuring and densifying urban fabric
Maintenance
Establishing of transtion zones
Intensifying existing functions
HUBS
NINOOFSEPOORT
Upgrade surrounding public space
Establishing new functions
Constant maintenance and collaboration within hubs
Temporary use for abandoned space
Construct new buildings
Hubs are connected by both a logistical network as well as public space network
ABATTOIR
Freeing up space by building parking garage
Construct new buildings
Temporary use for freed up space
Intensifying existing functions
Establishing new functions
BRASSERIE ATLAS
Renovating and repurposing Brasserie Atlas
Construct new buildings
Upgrade surrounding public space
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New tram line
GOVERNANCE
PARTICIPATION
Setting up neighbourhood contracts
executing neighbourhood contracts
Continuous engagement of stakeholders
Engaging stakeholders in projects
POLICY
Establishing new policies for urban industrial integration
Scaling up policies
Testing out new policies in pilot projects
Continuous evaluation
2024
2028
2036
2040

PATTERN LANGUAGE

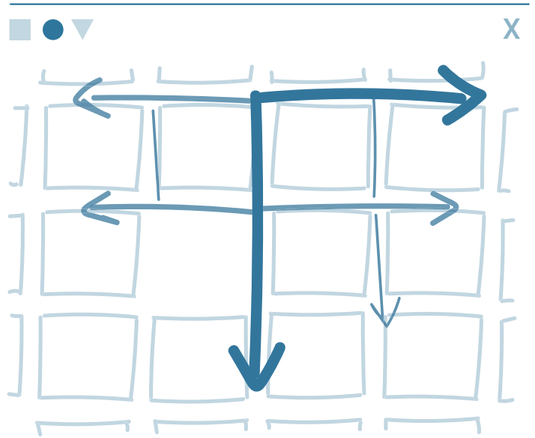
Theory
Cities of making (2018)
Industrial Intensification and Co-Location Guidance (2019)

Fieldwork

Research by design
Making use of opportunities
Solutions to urgencies

Related values

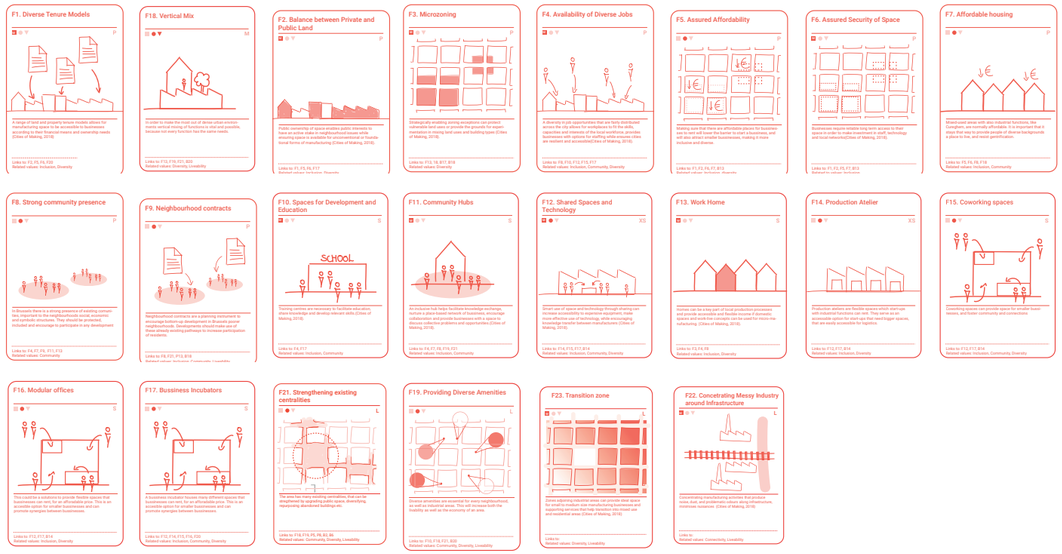
R1. Clear Hierarchy in Roads



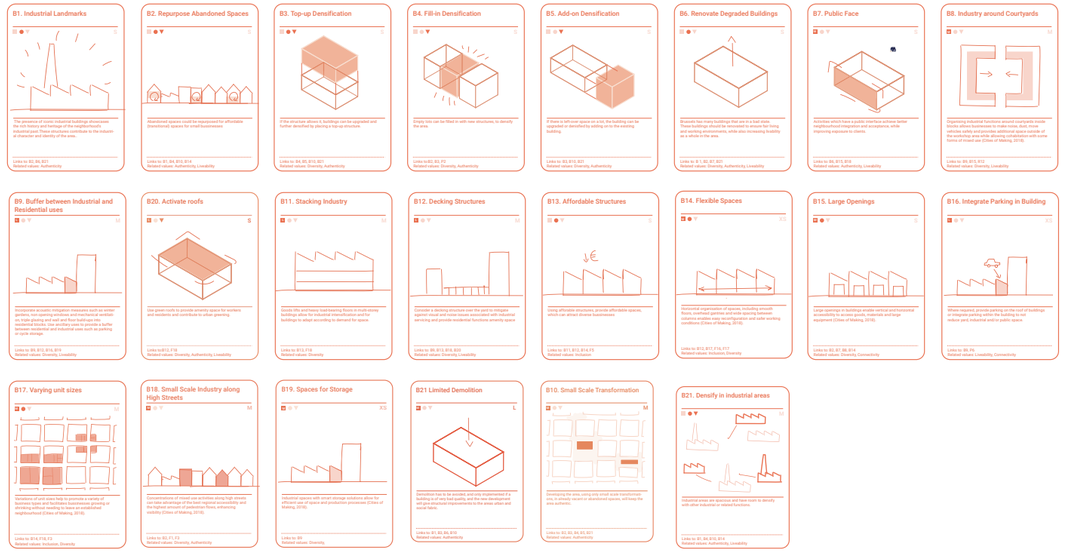
A clear hierarchy in roads will decrease congestion, nuisance and travel time

Links to: R2, R3, R13
Related values: Connectivity, Liveability

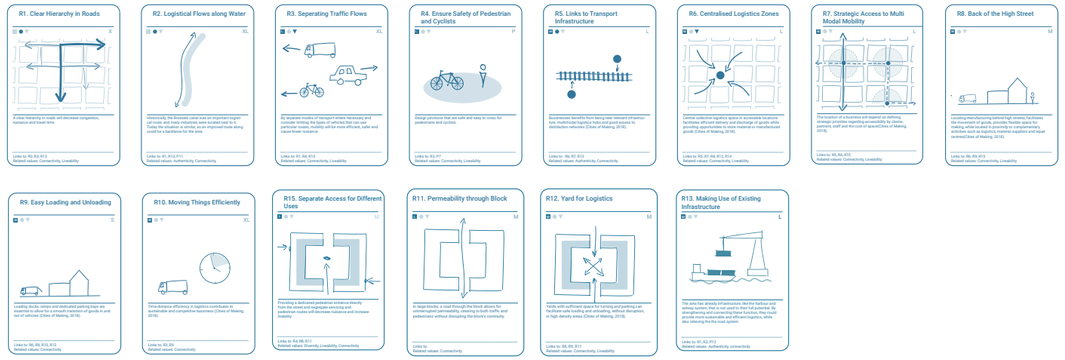
Functions



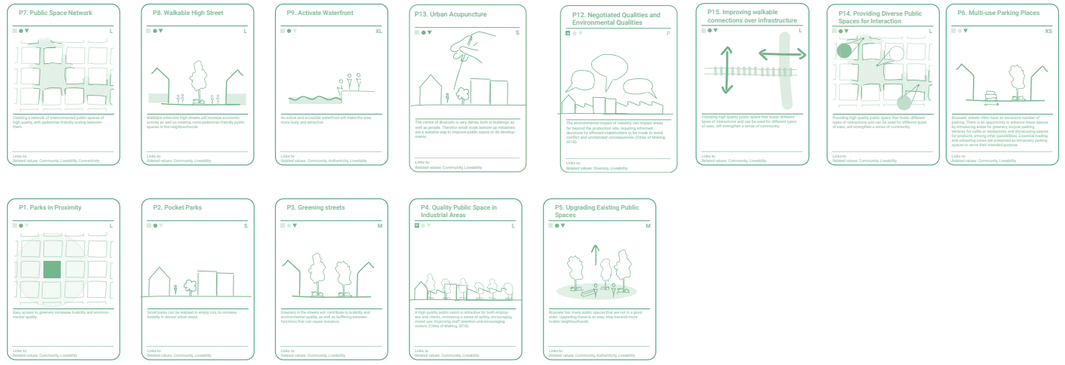
Built form



Relations



Public space



FUNCTIONS

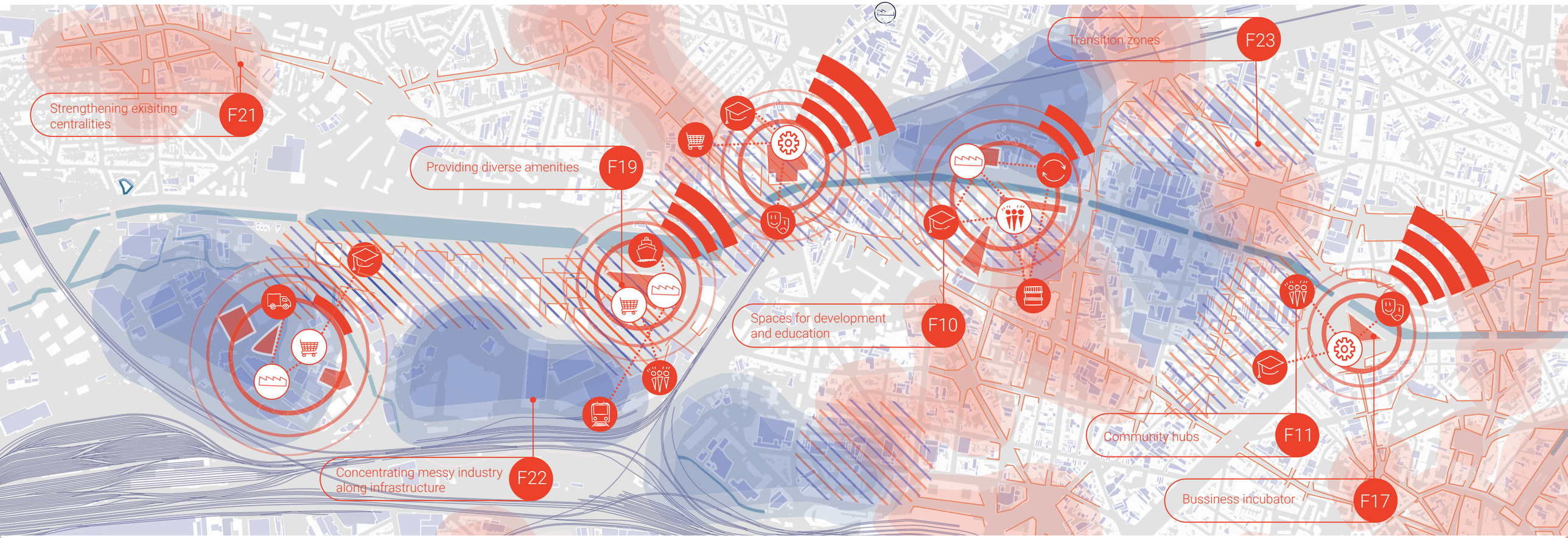
Legend

- Intensify Industrial area
- Transition zone
- Strengthen centrality

- Culture
- Community hub
- Education
- Makers hub
- Recycling

- Market
- Amenties
- Harbour
- Train transport
- Road transpor

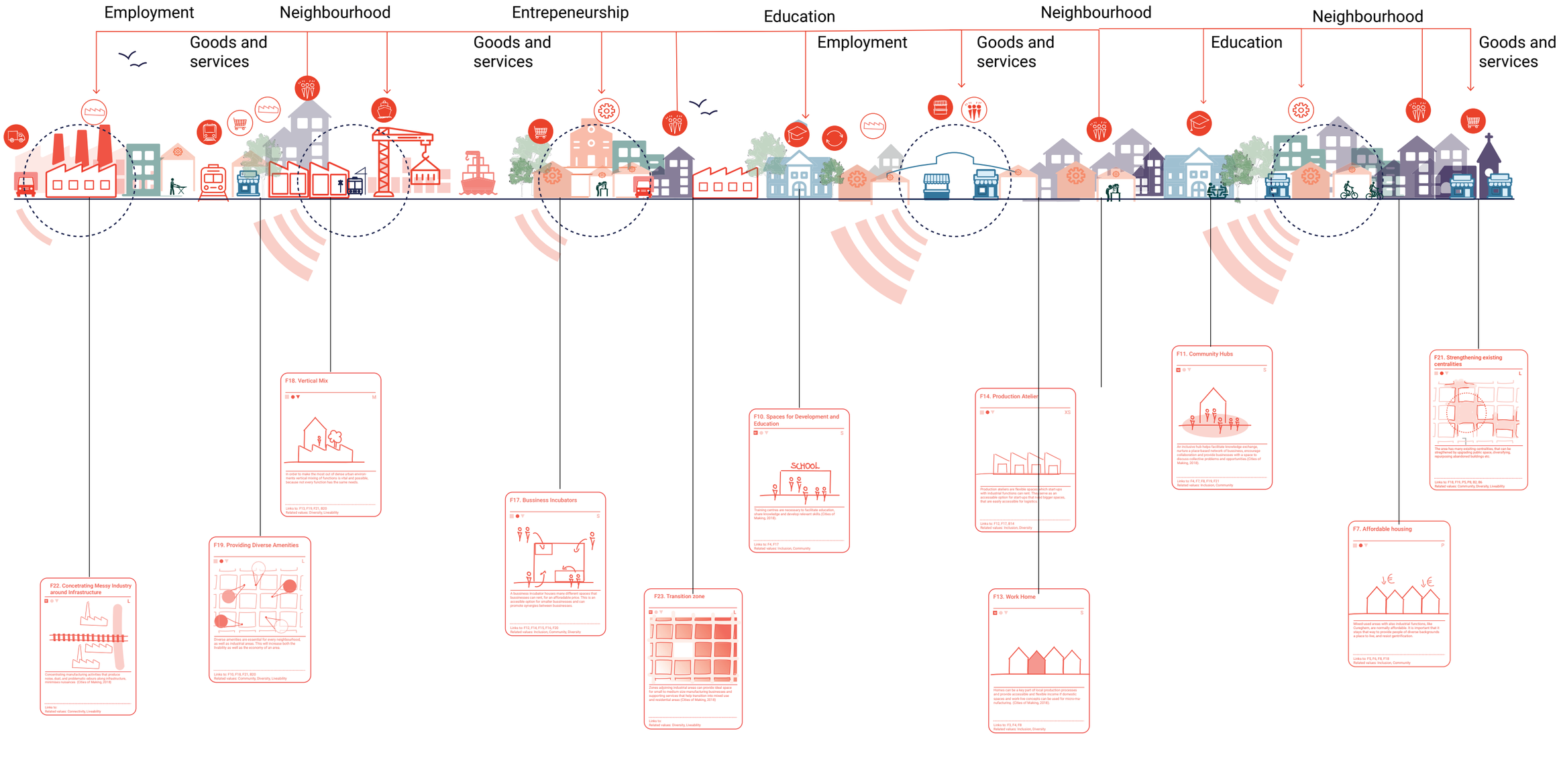
Mix
Mixed use - Monofunctionall



FUNCTIONS

Related values: inclusion, community, diversity

Socio-economic network



F22. Concetrating Messy Industry around Infrastructure

L

Concentrating manufacturing activities that produce noise, dust, and problematic odours along infrastructure, minimises nuisances. (Cities of Making, 2018)

Links to:
Related values: Connectivity, Liveability

F18. Vertical Mix

M

In order to make the most out of dense urban environments vertical mixing of functions is vital and possible, because not every function has the same needs.

Links to: F13, F19, F21, B20
Related values: Diversity, Liveability

F19. Providing Diverse Amenities

L

Diverse amenities are essential for every neighbourhood, as well as industrial areas. This will increase both the liveability as well as the economy of an area.

Links to: F10, F18, F21, B20
Related values: Community, Diversity, Liveability

F17. Bussiness Incubators

S

A bussiness incubator houses many different spaces that businesses can rent, for an affordable price. This is an accesible option for smaller bussinesses and can promote synergies between bussinesses.

Links to: F12, F14, F15, F16, F20
Related values: Inclusion, Community, Diversity

F23. Transition zone

L

Zones adjoining industrial areas can provide ideal space for small to medium size manufacturing businesses and supporting services that help transition into mixed use and residential areas (Cities of Making, 2018)

Links to:
Related values: Diversity, Liveability

F10. Spaces for Development and Education

S

SCHOOL

Training centres are necessary to facilitate education, share knowledge and develop relevant skills (Cities of Making, 2018).

Links to: F4, F17
Related values: Inclusion, Community

F14. Production Atelier

XS

Production ateliers are flexible spaces in which start-ups work individually or collectively. They can serve as an accessable option for start-ups that need bigger spaces, that are easily accessible for logistics.

Links to: F12, F17, B14
Related values: Inclusion, Diversity

F13. Work Home

S

Homes can be a key part of local production processes and provide accessible and flexible income if domestic spaces and work-live concepts can be used for micro-manufacturing. (Cities of Making, 2018).

Links to: F3, F4, F8
Related values: Inclusion, Diversity

F11. Community Hubs

S

An inclusive hub helps facilitate knowledge exchange, nurture a place-based network of businesses, encourage collaboration and provide businesses with a space to discuss collective problems and opportunities (Cities of Making, 2018).

Links to: F4, F7, F8, F19, F21
Related values: Inclusion, Community

F21. Strengthening existing centralities

L

The area has many existing centralities, that can be straithened by upgrading public space, diversifying, repurposing abandoned buildings etc.

Links to: F18, F19, P5, P8, B2, B6
Related values: Community, Diversity, Liveability

F7. Affordable housing

P

Mixed-used areas with also industrial functions, like Cuneghem, are normally affordable. It is important that it stays that way to provide people of diverse backgrounds a place to live, and resist gentrification.

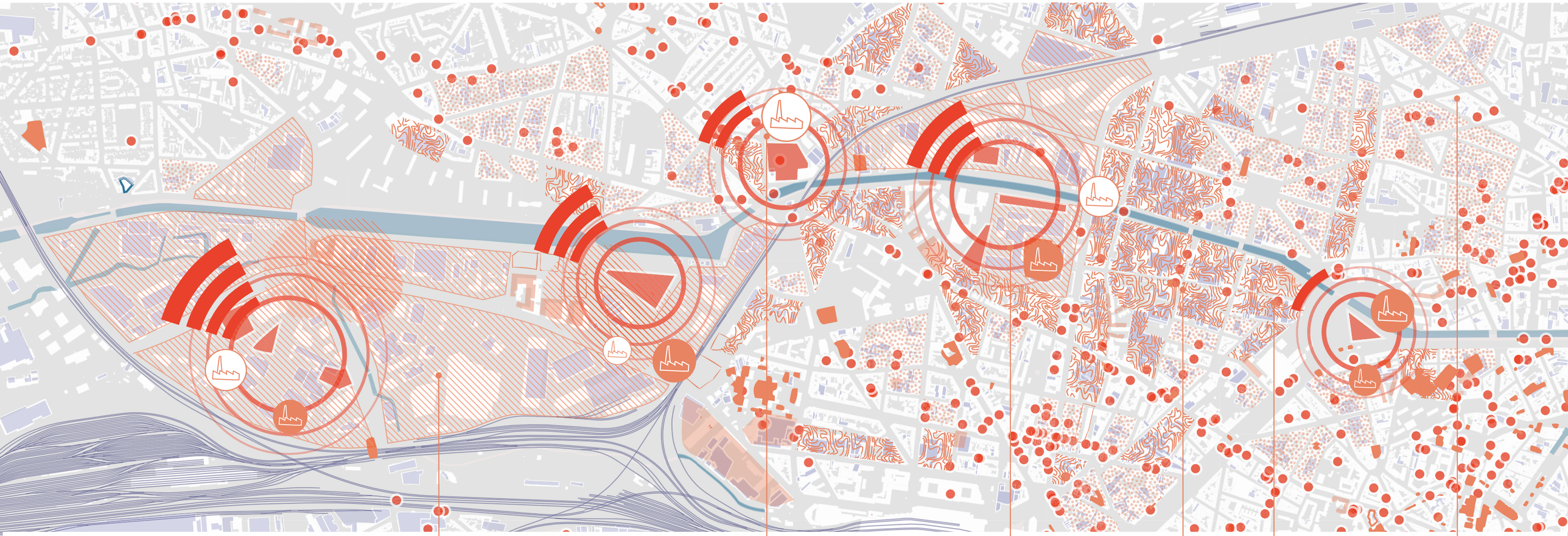
Links to: F3, F4, F8, F18
Related values: Inclusion, Community

BUILT FORM

Legend

- Possible development locations
- Densify
- Restructure
- Update
- Repurpose vacancies
- Industrial heritage
- Repurpose heritage

Space
XL-XS



Densify in industrial areas B21

Industrial landmark B1

Small scale transformation B10

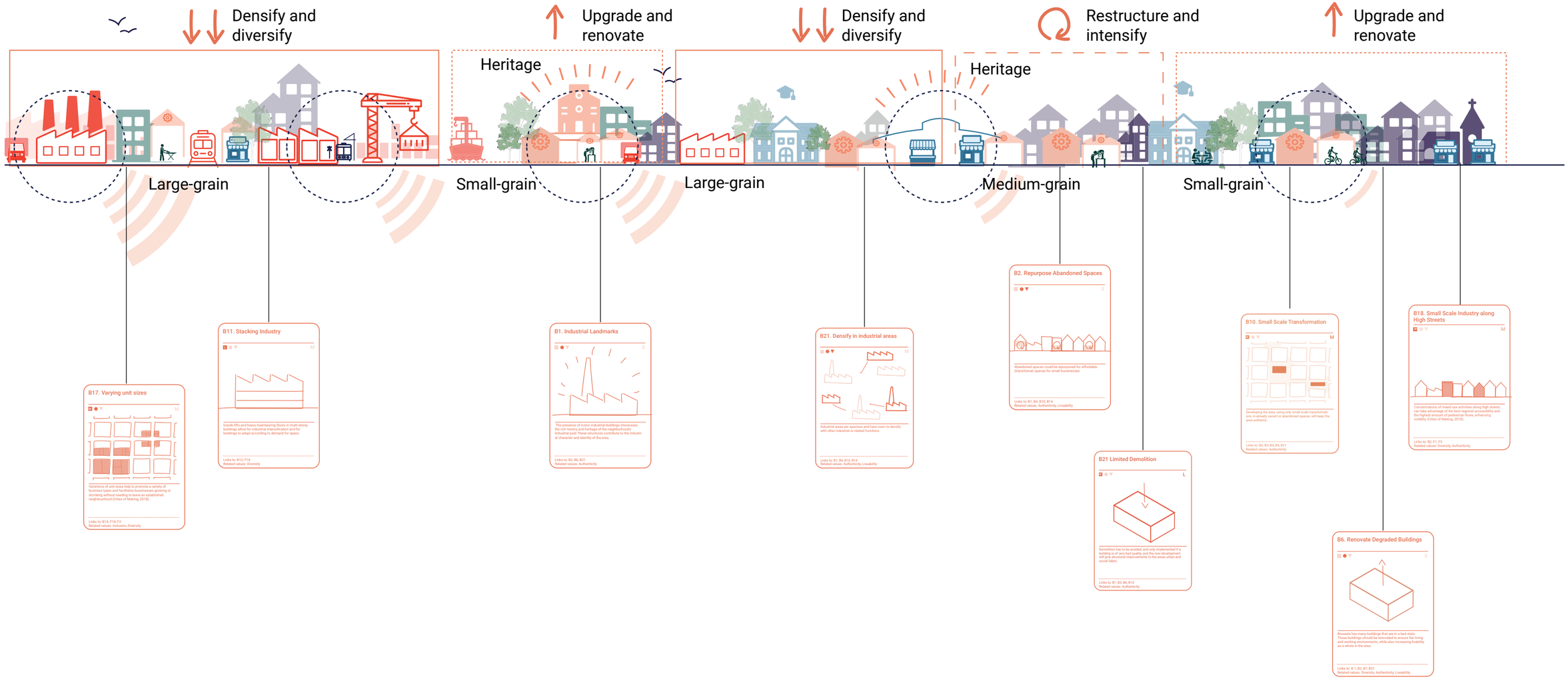
Repurpose abandoned spaces B2

Limited demolition B21

Renovate B6

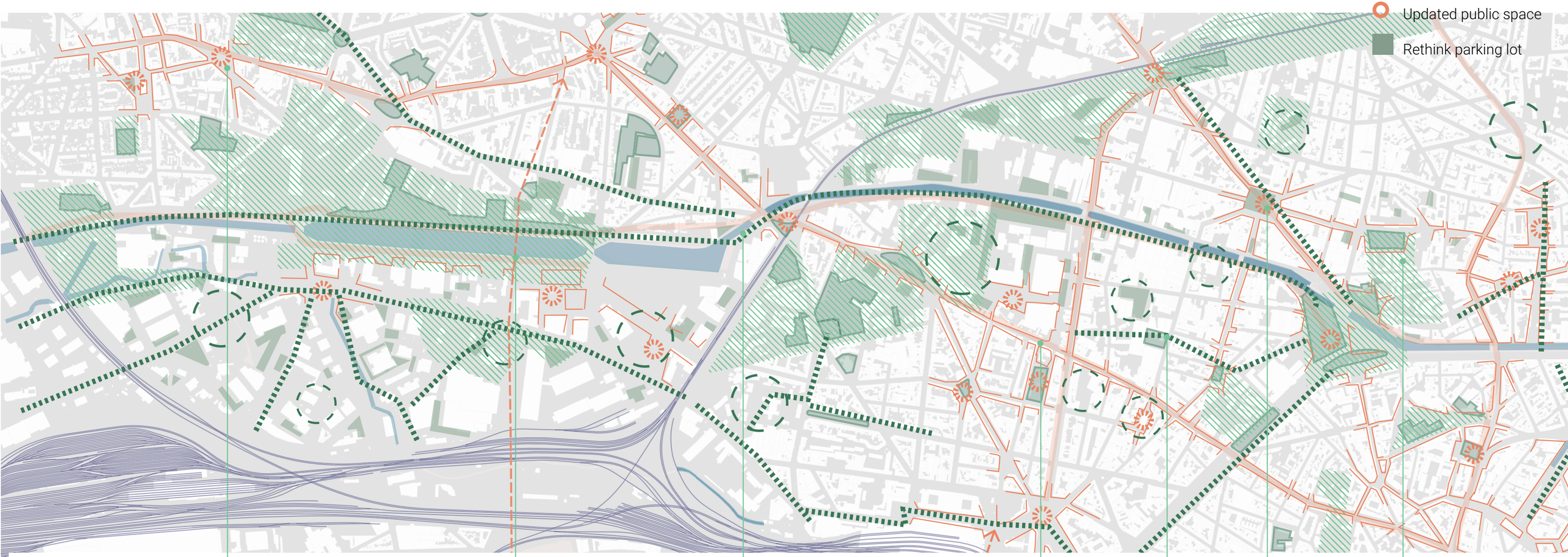
BUILT FORM

Related values: diversity, authenticity



PUBLIC SPACE

Related values: Liveability, community



Providing diverse public spaces for interaction P14

Improving connections over infrastructure P15

Activate waterfront P9

Walkable highstreet P8

Greening streets P3

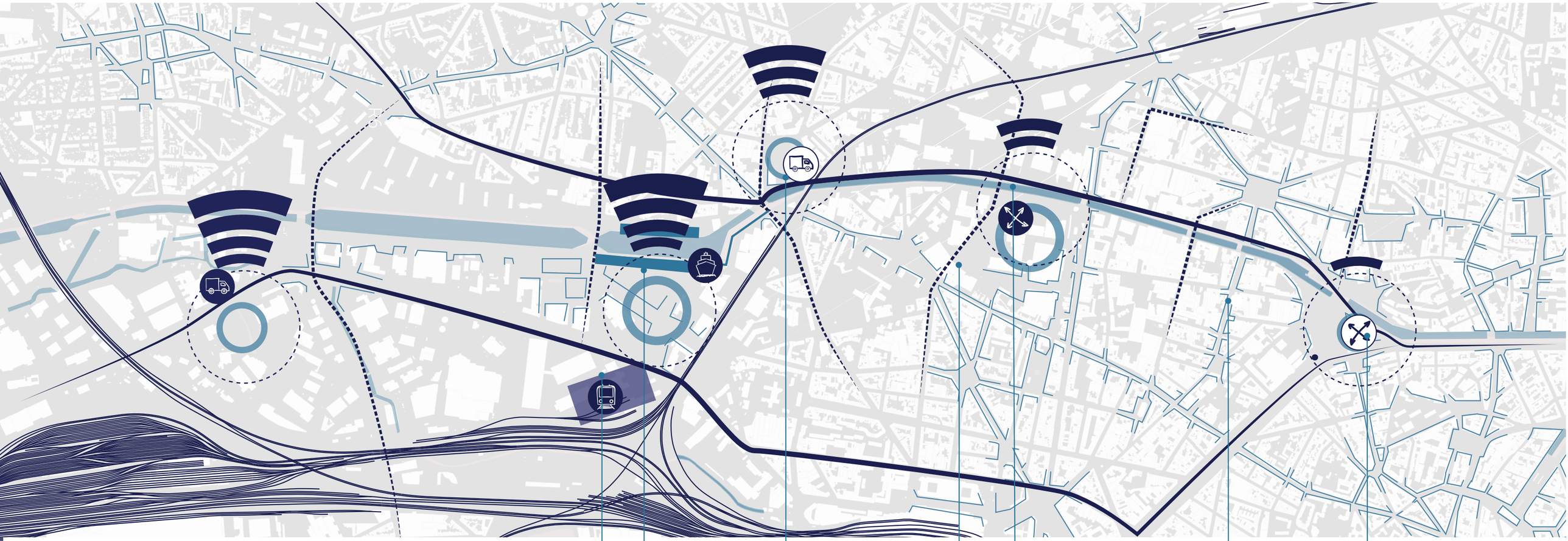
Upgrading existing public spaces P5

RELATIONS

Legend

- Main Logistical route
- Secundary logistical route
- Walkable network
- Harbour
- Train transport
- Road network
- Local logistic point

Accesibility
Regional - Local

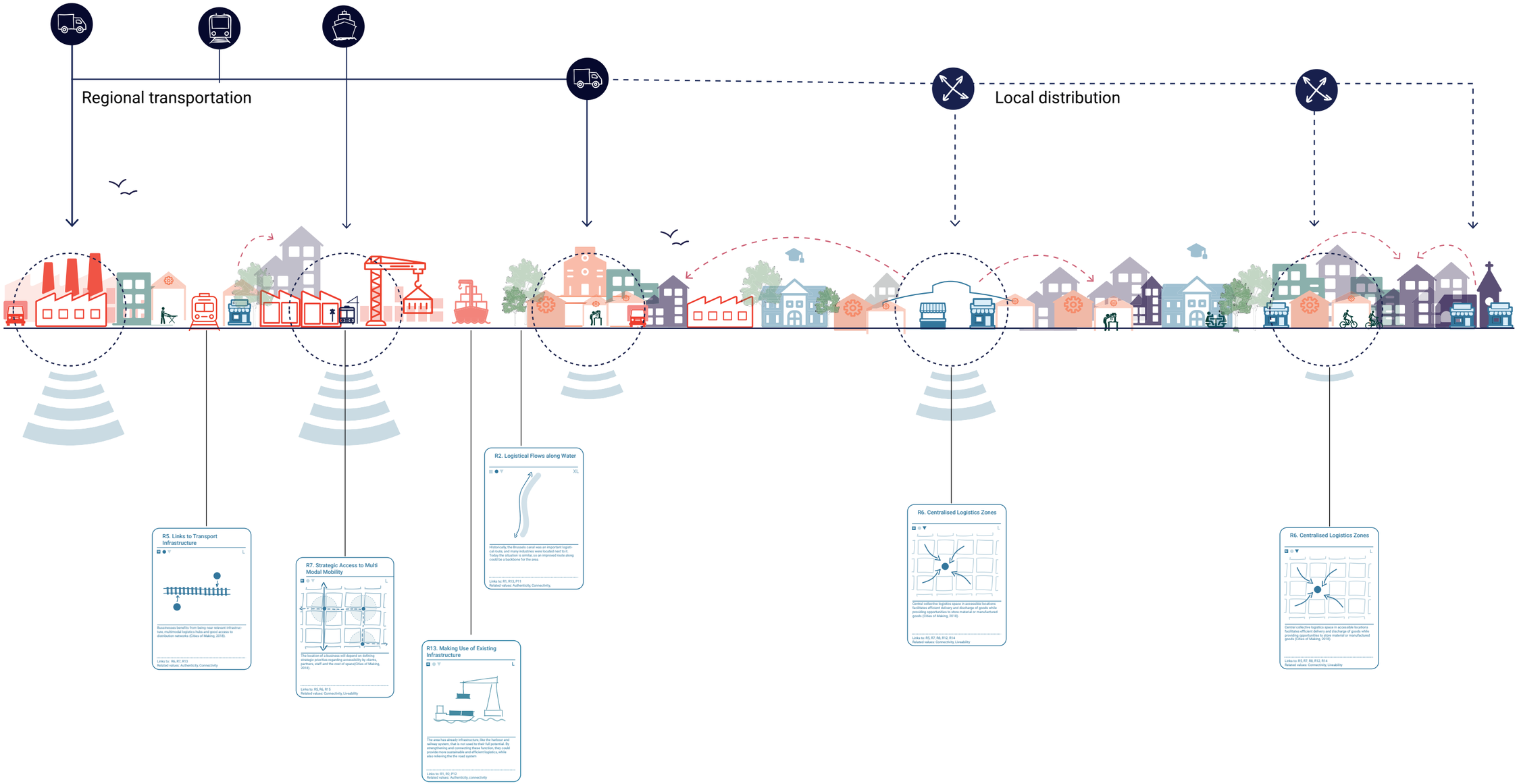


- Links to transport infrastructure — R5
- Making use of exisitng infrastructure — R13
- Centralised logistic zones
- Clear hierarchy in roads — R1
- Slow traffic network — R16
- Separating traffic flows — R3

RELATIONS

Related values: connectivity, liveability

Logistics network



R5. Links to Transport Infrastructure

L

Businesses benefits from being near relevant infrastructures, multimodal logistics hubs and good access to distribution networks (Cities of Making, 2018).

Links to: R6, R7, R13
Related values: Authenticity, Connectivity

R7. Strategic Access to Multi Modal Mobility

L

The location of a business will depend on defining strategic priorities regarding accessibility by clients, partners, staff and the cost of space(Cities of Making, 2018).

Links to: R5, R6, R15
Related values: Connectivity, Liveability

R2. Logistical Flows along Water

XL

Historically, the Brussels canal was an important logistical route, and many industries were located next to it. Today the situation is similar, so an improved route along could be a backbone for the area.

Links to: R1, R13, P13
Related values: Authenticity, Connectivity,

R13. Making Use of Existing Infrastructure

L

The area has already infrastructure, like the harbour and railway system, that is not used to their full potential. By strengthening and connecting these function, they could provide more sustainable and efficient logistics, while also relieving the the road system

Links to: R1, R2, P12
Related values: Authenticity, connectivity

R6. Centralised Logistics Zones

L

Central collective logistics space in accessible locations facilitates efficient delivery and discharge of goods while providing opportunities to store material or manufactured goods (Cities of Making, 2018).

Links to: R5, R7, R8, R12, R14
Related values: Connectivity, Liveability

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Links to: R5, R7, R8, R12, R14
Related values: Connectivity, Liveability

EXPLORING PATH RENEWAL

Legend

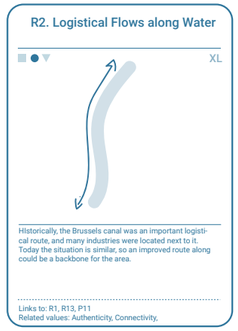
- Pedestrian path
- Regional road
- main road
- Secundary road
- Local road

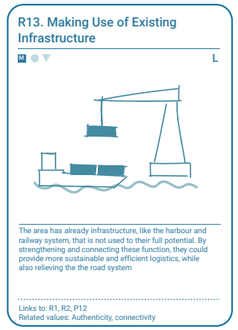
Legend

- Main Logistical route
- Secundary logistical route
- Walkable network

- Harbour
- Train transport
- Road network
- Local logistic point

EXPLORING PATH RENEWAL





Legend

- Pedestrian path
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Legend

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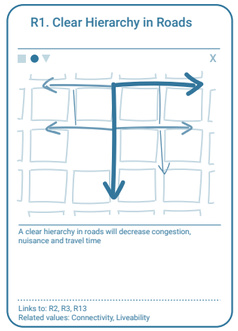
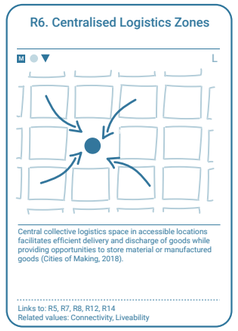
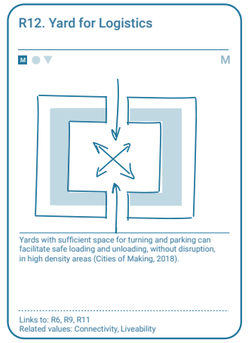
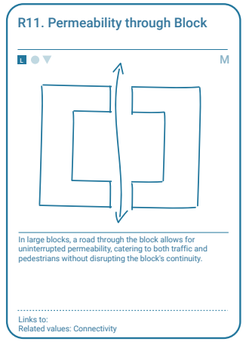








Legend

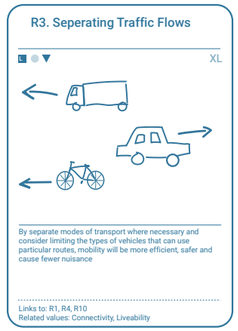
- Pedestrian path
- Regional road
- main road
- Secundary road
- Local road

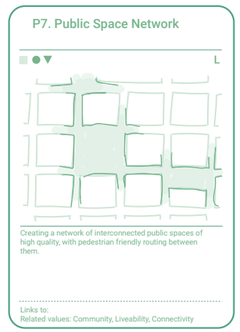
Legend

- Main Logistical route
- Secundary logistical route
- Walkable network

- Harbour
- Train transport
- Road network
- Local logistic point

EXPLORING PATH RENEWAL





Legend

- Pedestrian path
- Regional road
- main road
- Secundary road
- Local road

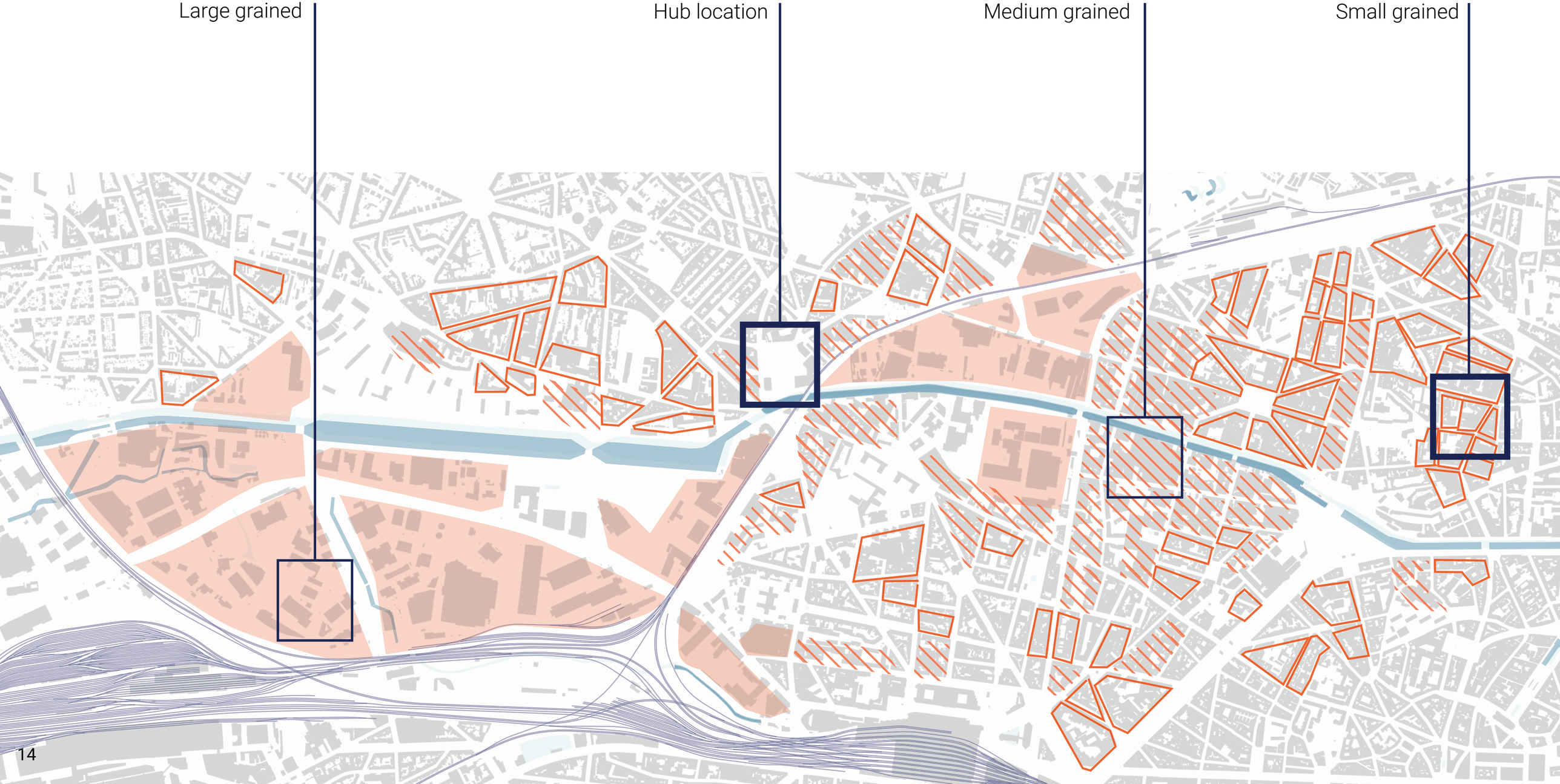
Legend

- Main Logistical route
- Secundary logistical route
- Walkable network

- Harbour
- Train transport
- Road network
- Local logistic point

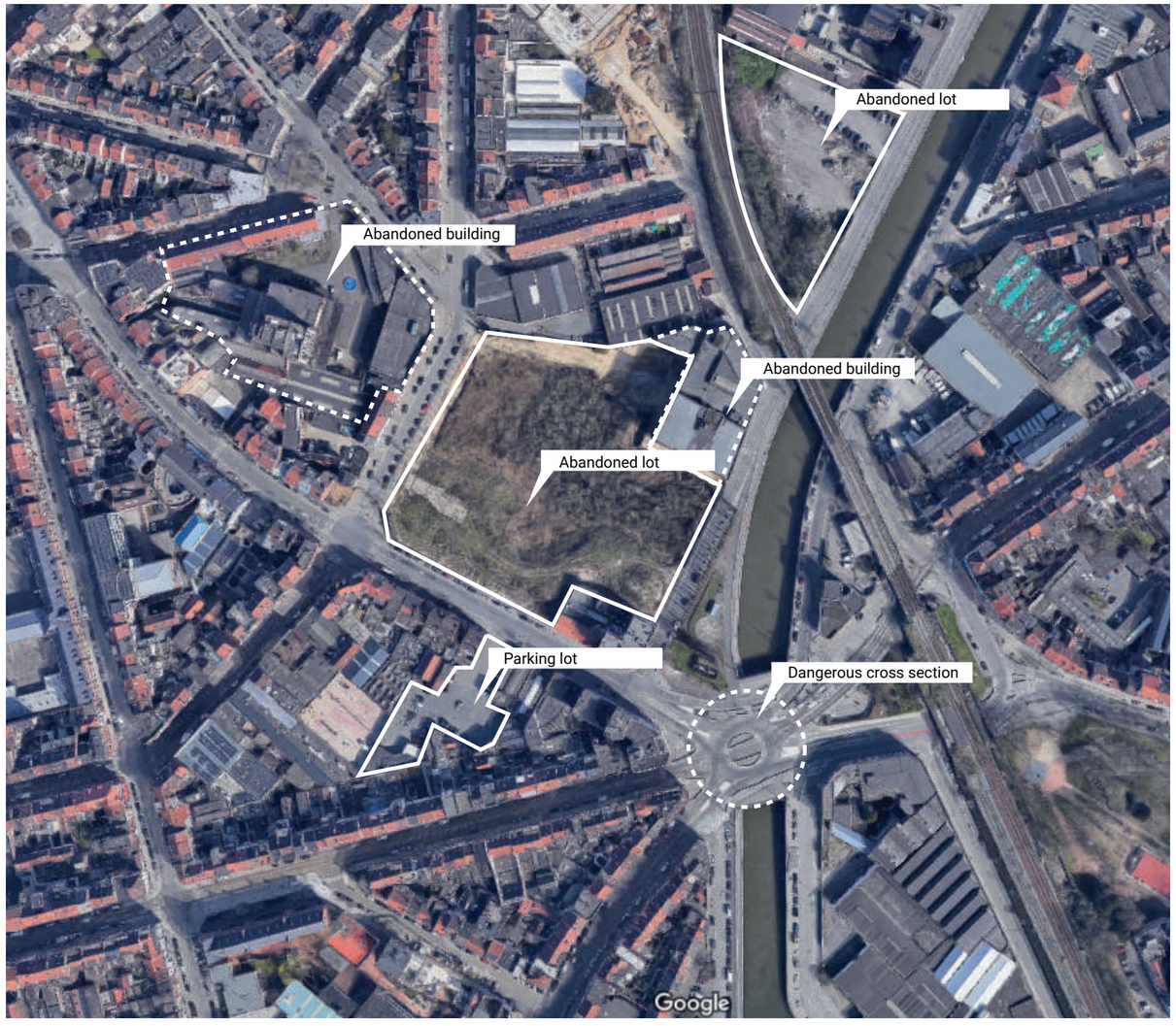
6. DESIGN TESTING

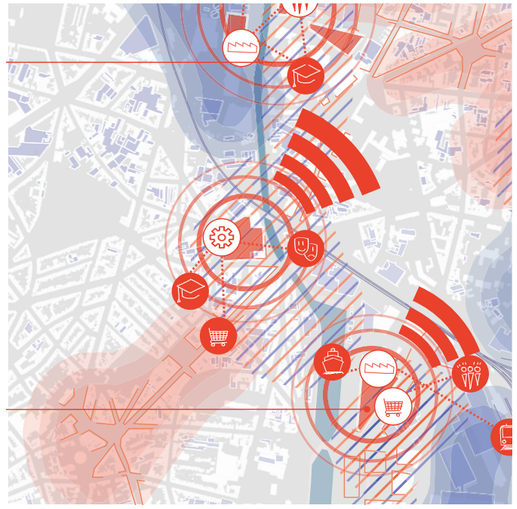
DESIGN TESTING

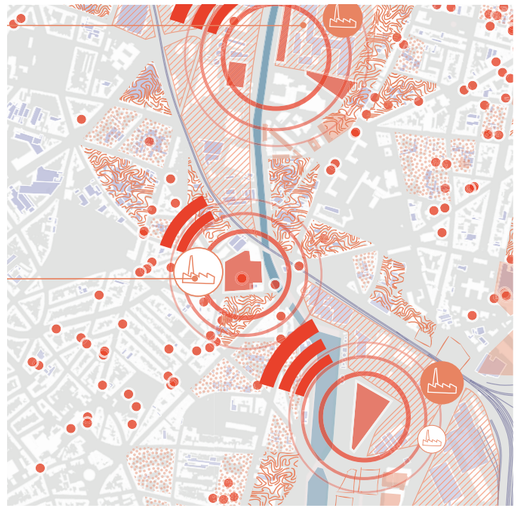


HUB

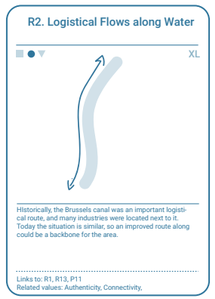
Node: Brasserie Atlas
Current situation and strategy

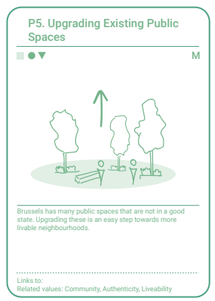


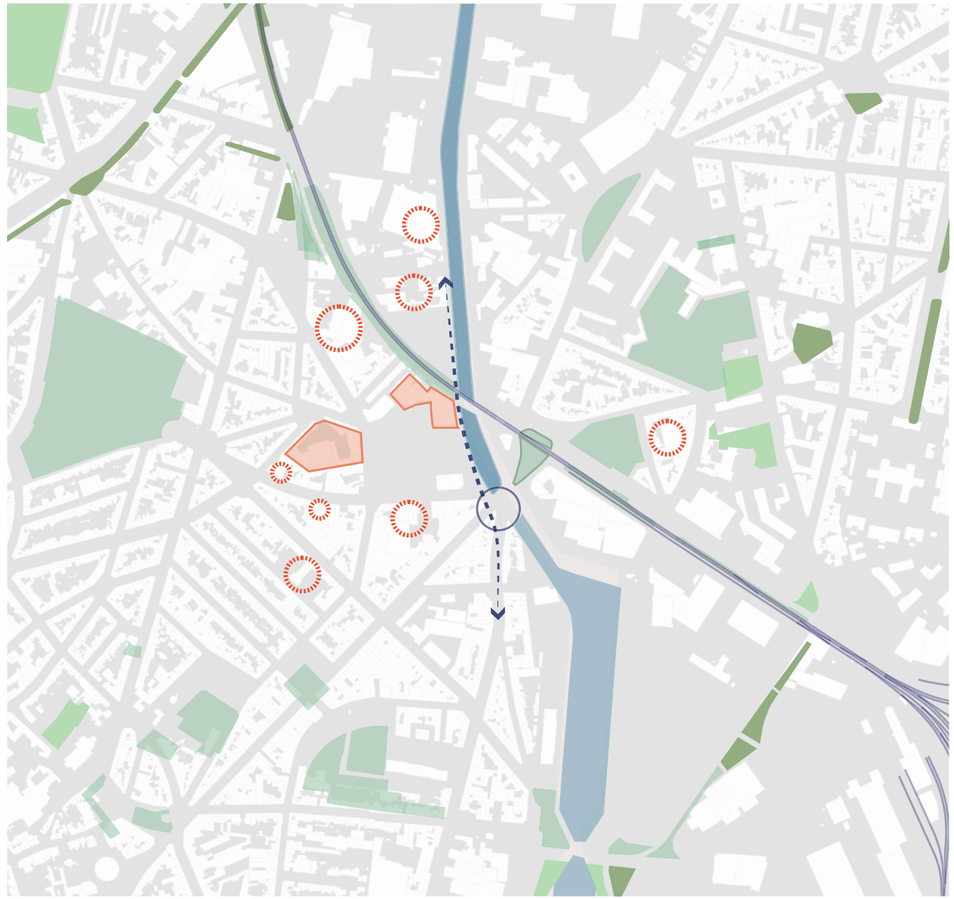




PHASING

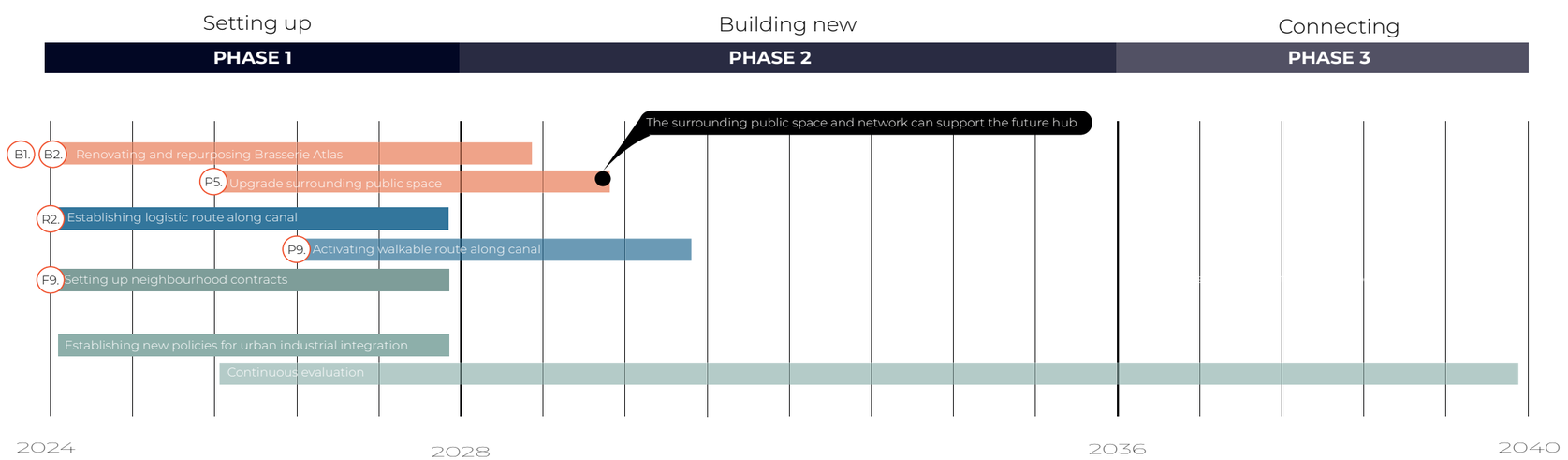






Legend

- Logistical route
- Upgrading space
- Surrounding functions
- Upgraded or new green space
- Renovation
- Built new



PHASING

B10. Small Scale Transformation

M

Developing the area, using only small scale transformations, in already vacant or abandoned spaces, will keep the area authentic.

Links to: B2, B3, B4, B5, B21
Related values: Authenticity

P2. Pocket Parks

S

Small parks can be realised in empty lots, to increase livability in denser urban areas.

Links to:
Related values: Community, Liveability

R11. Permeability through Block

M

In large blocks, a road through the block allows for uninterrupted permeability, catering to both traffic and pedestrians without disrupting the block's continuity.

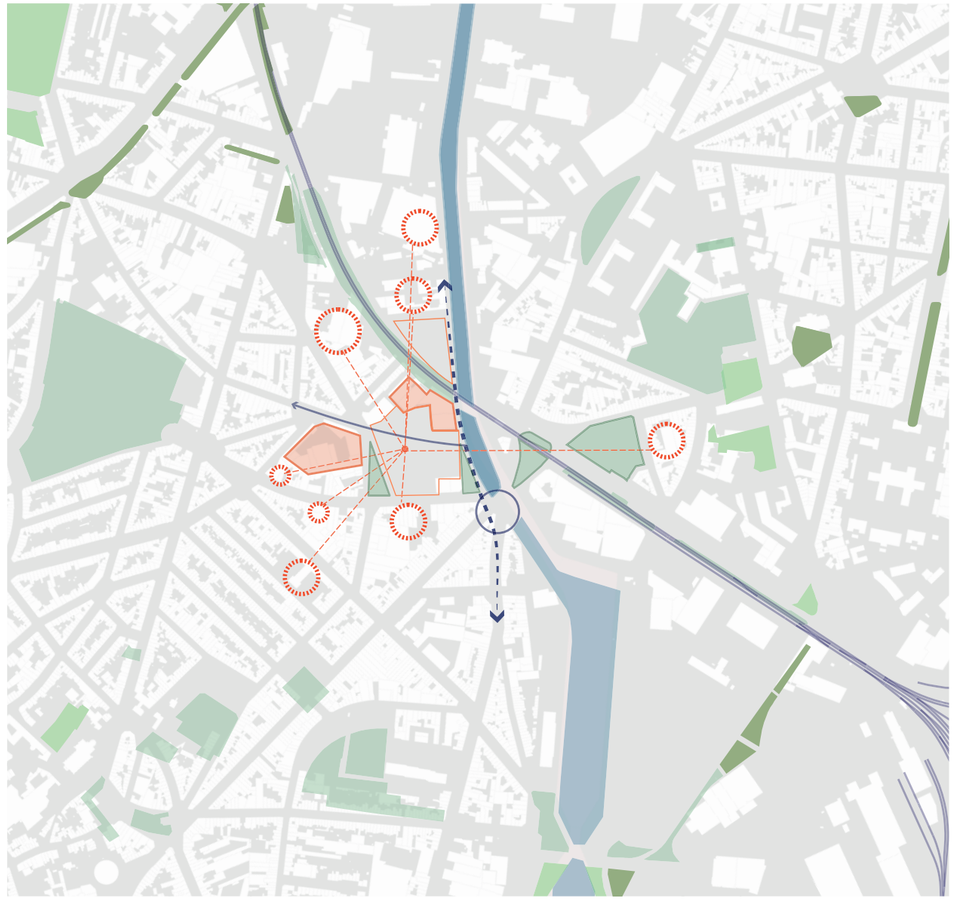
Links to:
Related values: Connectivity

F18. Vertical Mix

M

In order to make the most out of dense urban environments vertical mixing of functions is vital and possible, because not every function has the same needs.

Links to: F13, F19, F21, B20
Related values: Diversity, Liveability



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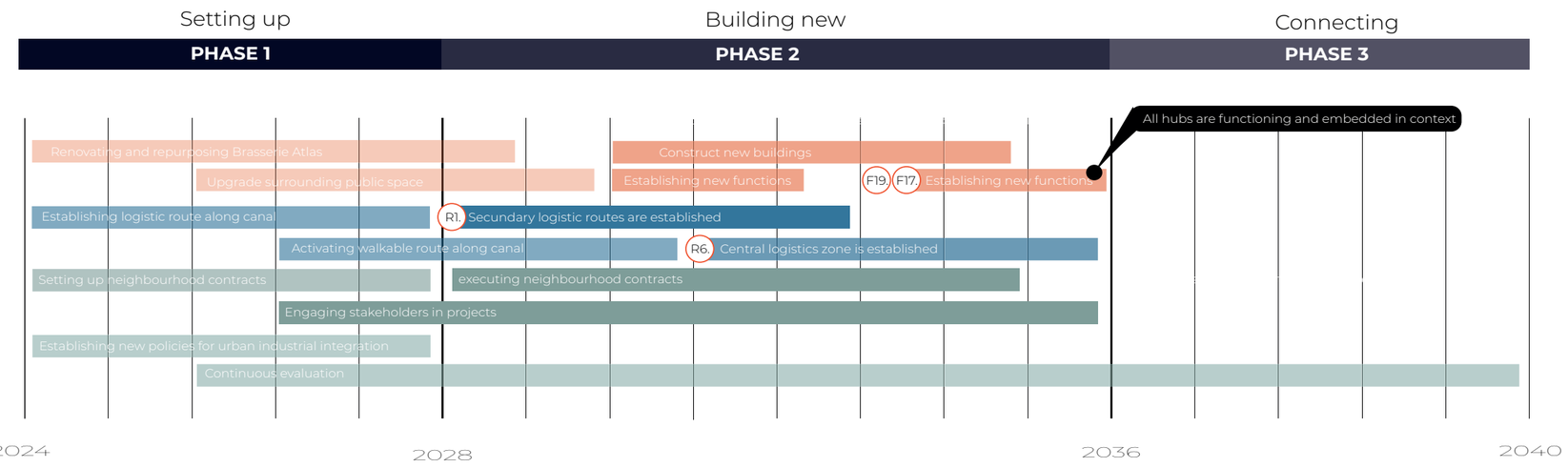
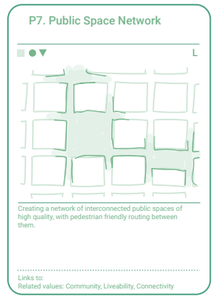
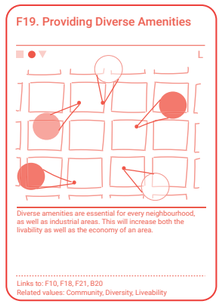
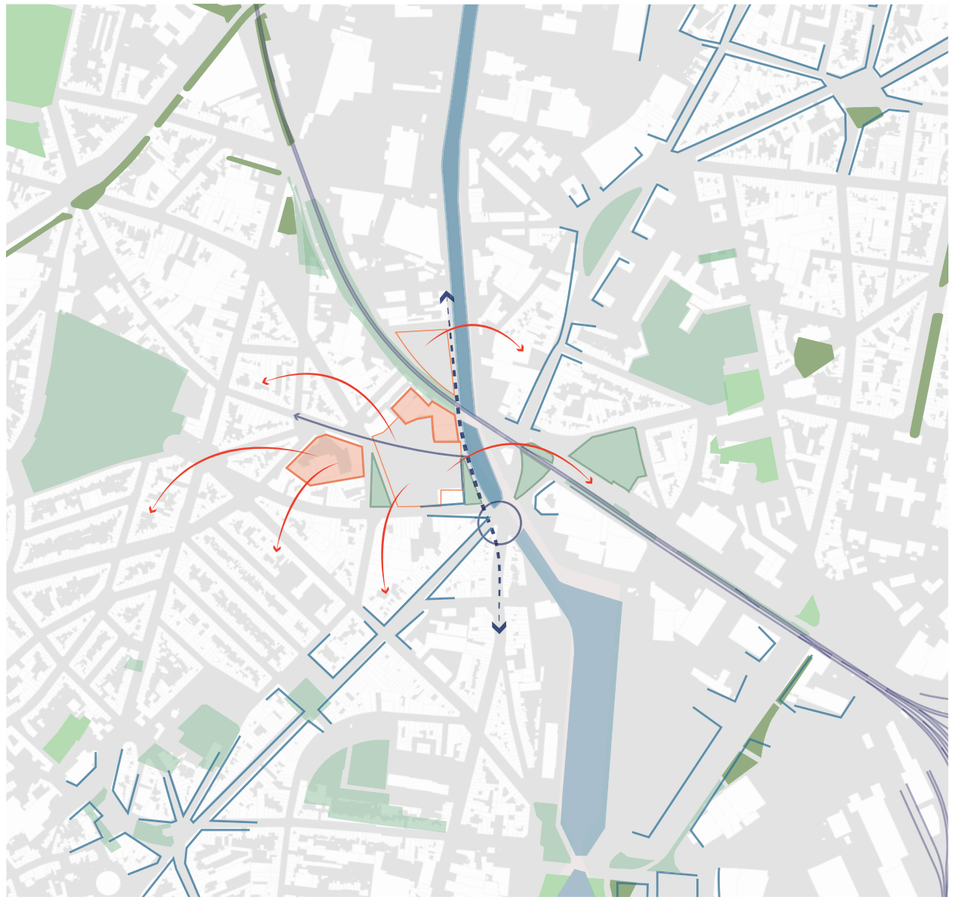


PHASING







Legend

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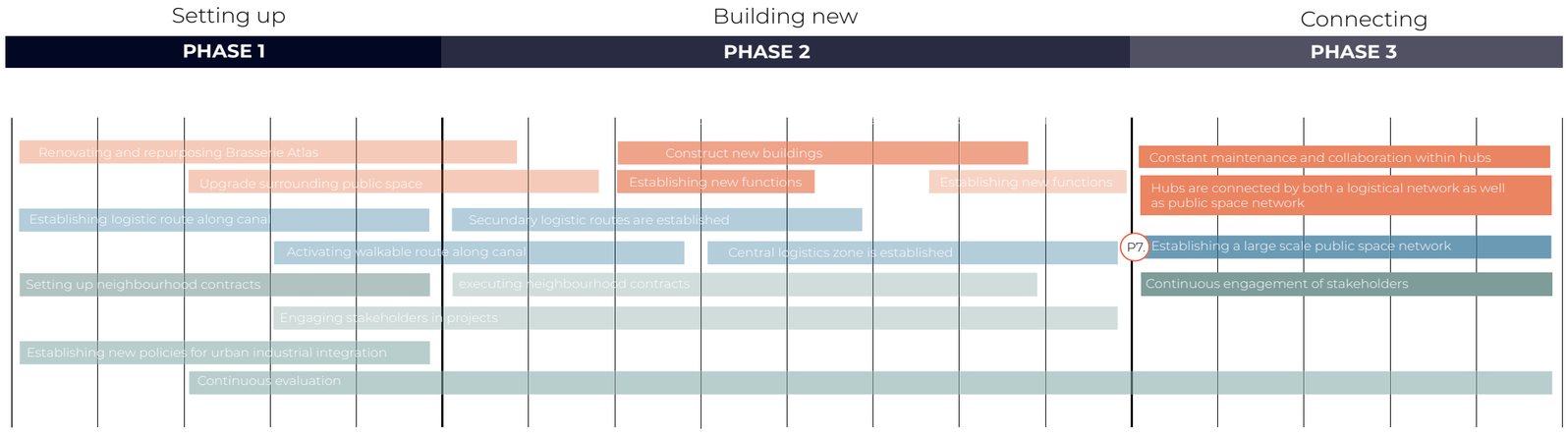
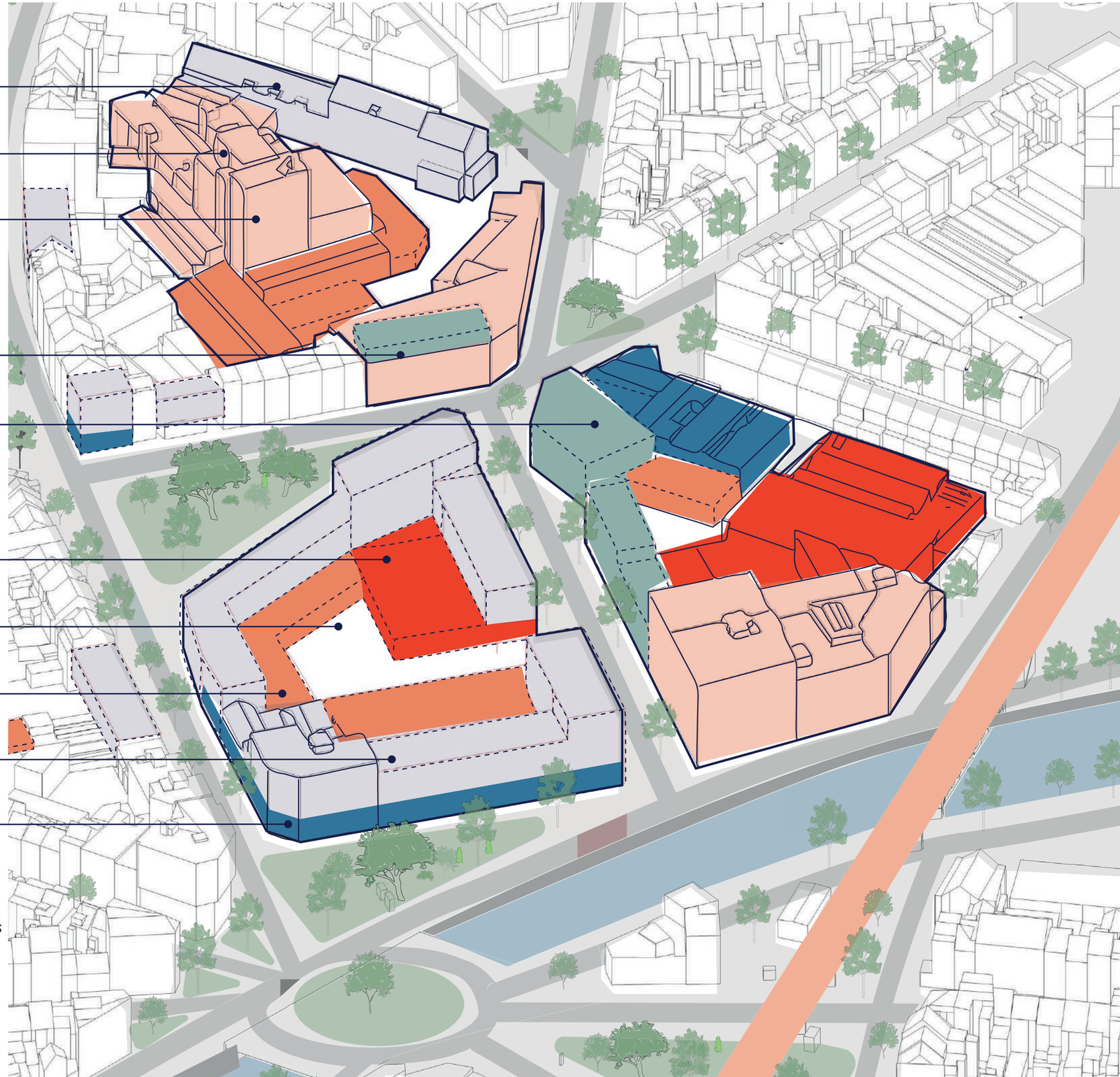


SMALL SCALE

- Repurpose abandoned spaces — B2
- Industrial landmark — B1
- Bussiness incubator — F17
- Top- up densification — B3
- Modular offices — F16
- Activate roofs — B20
- Production ateliers — F14
- Industry around courtyards — B8
- Affordable housing — F7
- Strentgthening exisitng centralities — F21



Legend

- Large warehouses
- Medium scale warehouses
- Small scale workshops/ateliers
- Retail
- Service
- Housing

SMALL SCALE

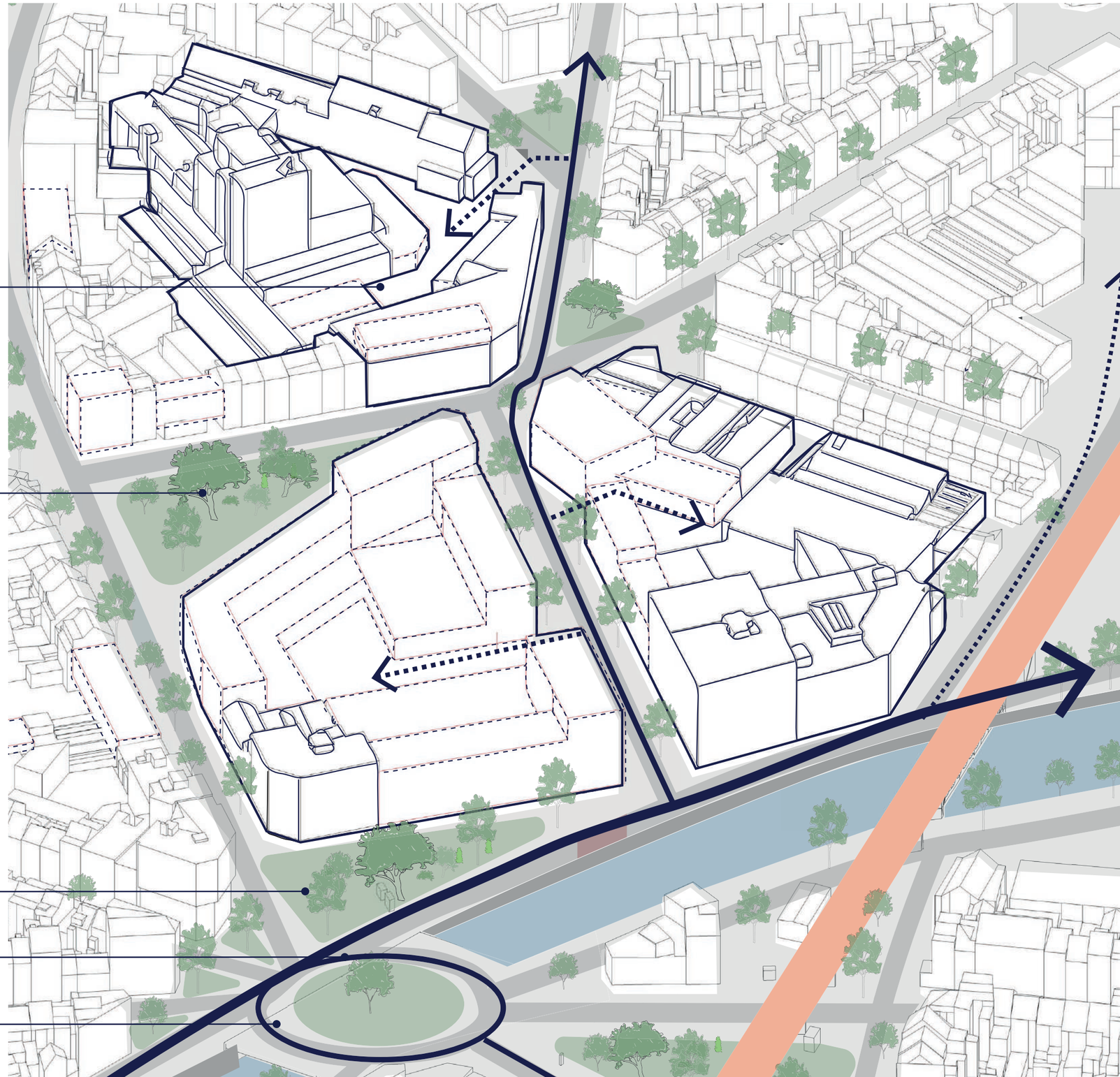
Yard for logistics R12

Greening streets P3

Seperate access for different uses R15

Upgrading existing public spaces P5

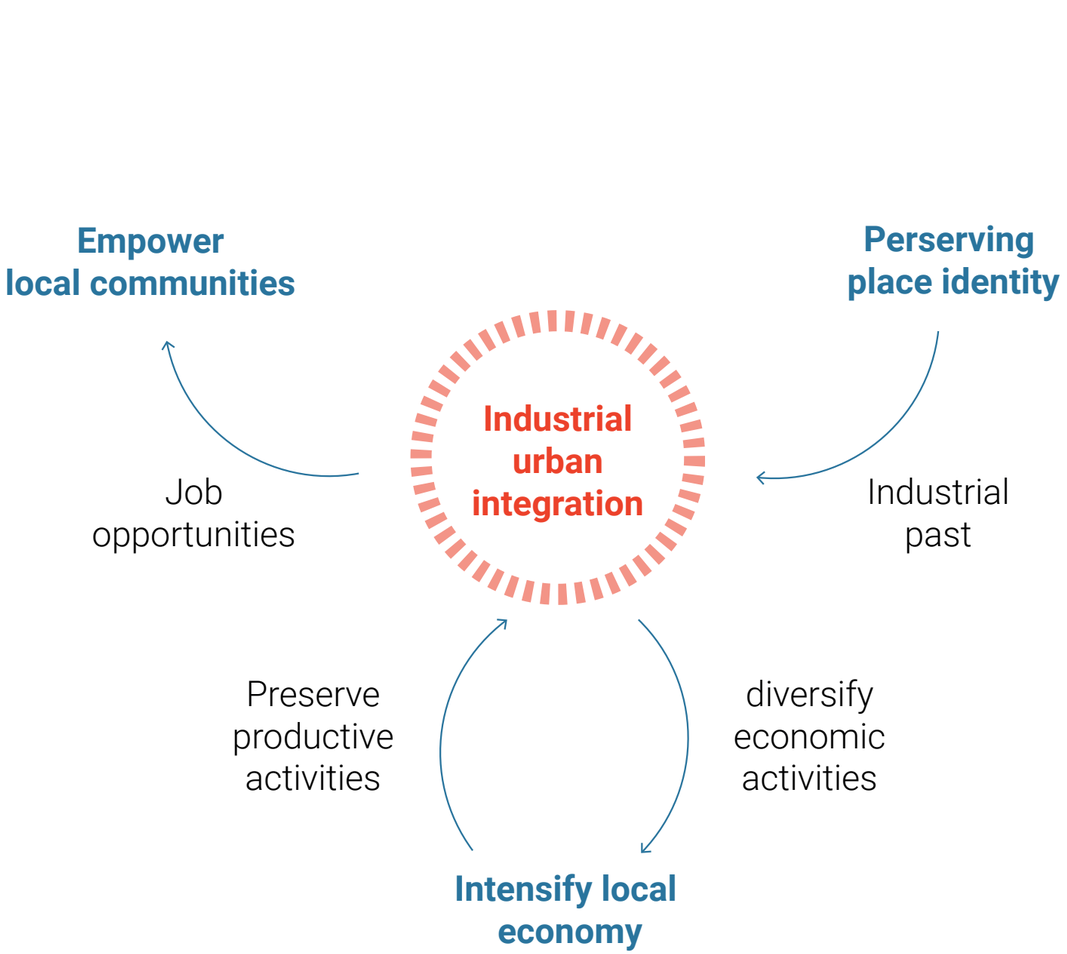
Separating traffic flows R3

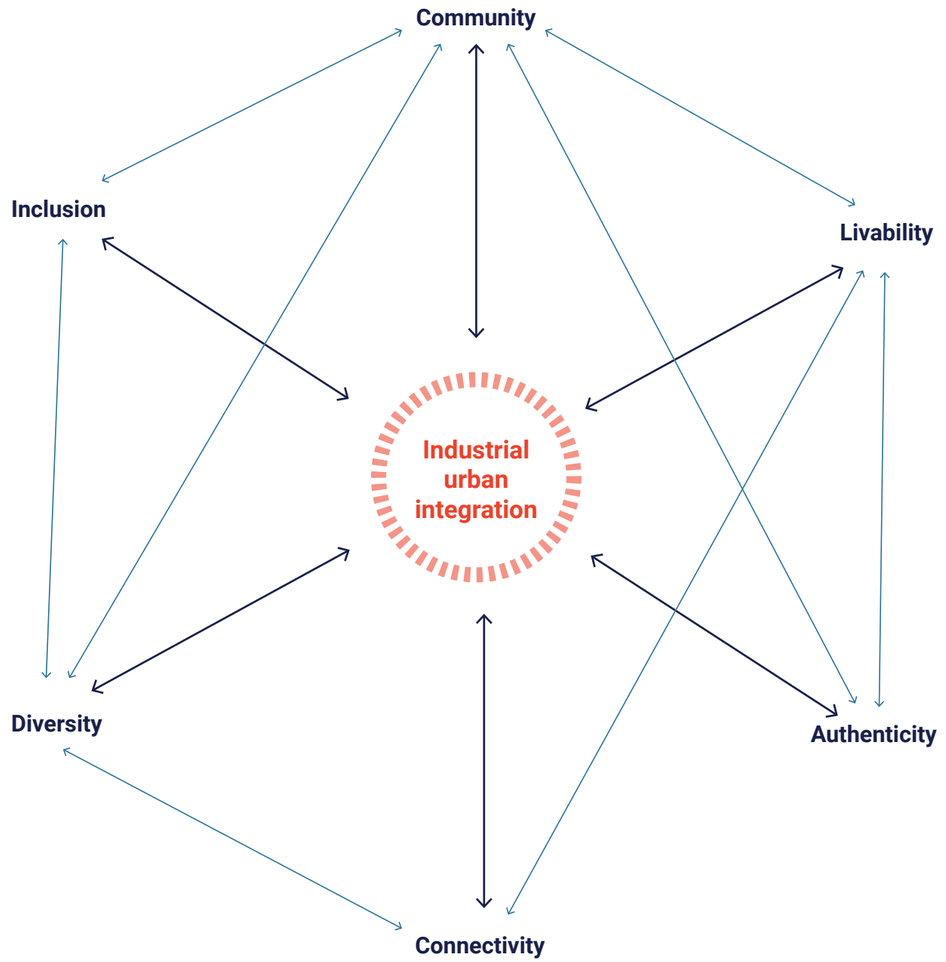


7. CONCLUSIONS

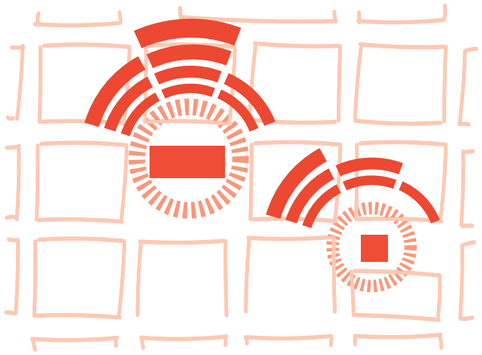
CONCLUSIONS

Main question: How can a just, productive and place-based development be achieved in the Canal zone of Brussels, through path renewal?

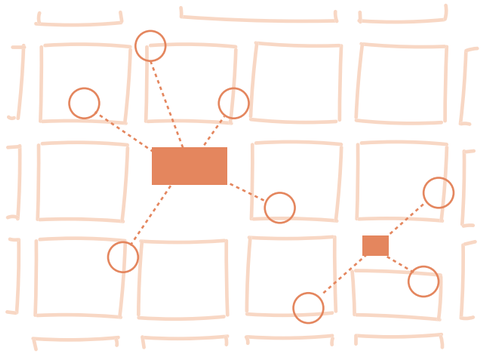




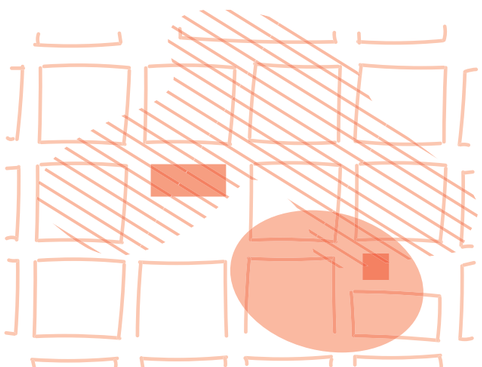
CONCLUSIONS



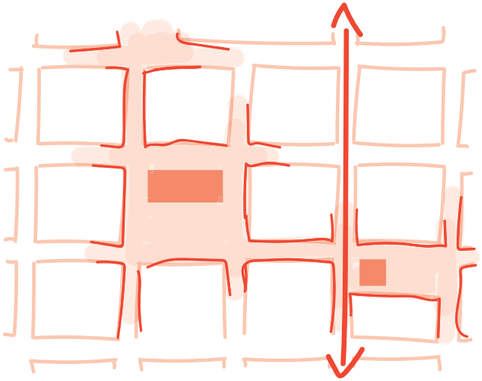
small scale interventions
embedded in context



Stakeholder engagement



strengthening existing functions



restructuring network and upgrading
exisitng public space

REFLECTION

Reflection on results
- Conflict between values
- Conflict between projects/level of governemts
- No clear end goal

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Transferability
- Context-dependent
- Exemplary function
- Pattern language

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Reflection on results
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Further research
- Small-scale design
- Experimenting in practice
- Navigating governance fragmentation

THANK YOU!

Thank you!