30 IEA-HPT ANNEX 61 PRE-WARMING EVENT

30 January 2023

Kathleen Van de Werf – BUUR Part of sweco

BUUR
Part of Sweco

Transforming Society Together.

- Introducing Sweco's Value Proposition

TRANSFORMING reflects how change and advancement are part of everything we do. Sweco co-creates solutions that address urbanisation and capture the power of digitalisation. These solutions make our society more sustainable, through our expertise in numerous fields and our commitment to the success of our clients.

SOCIETY reflects that Sweco is deeply involved in the constant transformation of the societies where we operate and that we are always ready to address the challenges at hand.

TOGETHER reflects the way Sweco empowers our local engineers and architects to co-create with our clients to reach the best possible solutions. We interact as one team with the client at the center of everything we do.

3

WE DO URBANISM

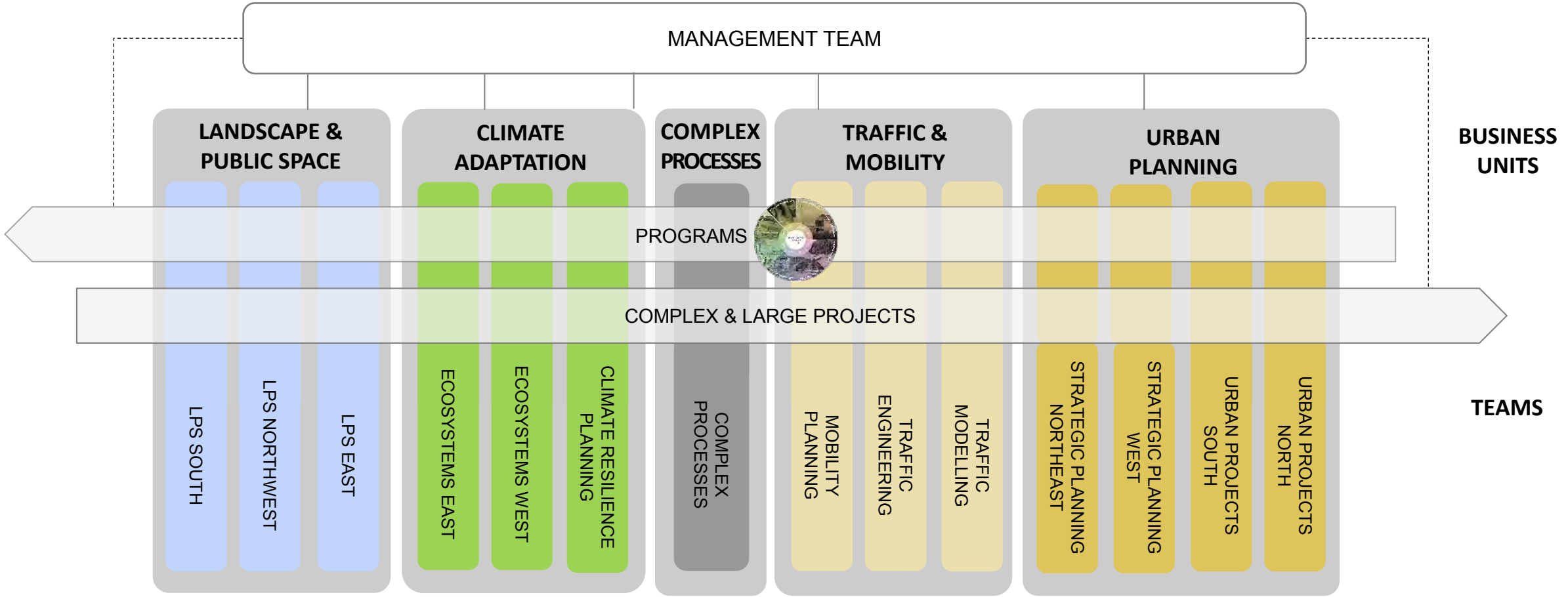
Part of Sweco

DIVISION BUUR
220+ PEOPLE

WORKING ON URBAN SUSTAINABILITY

DIVISION BUUR

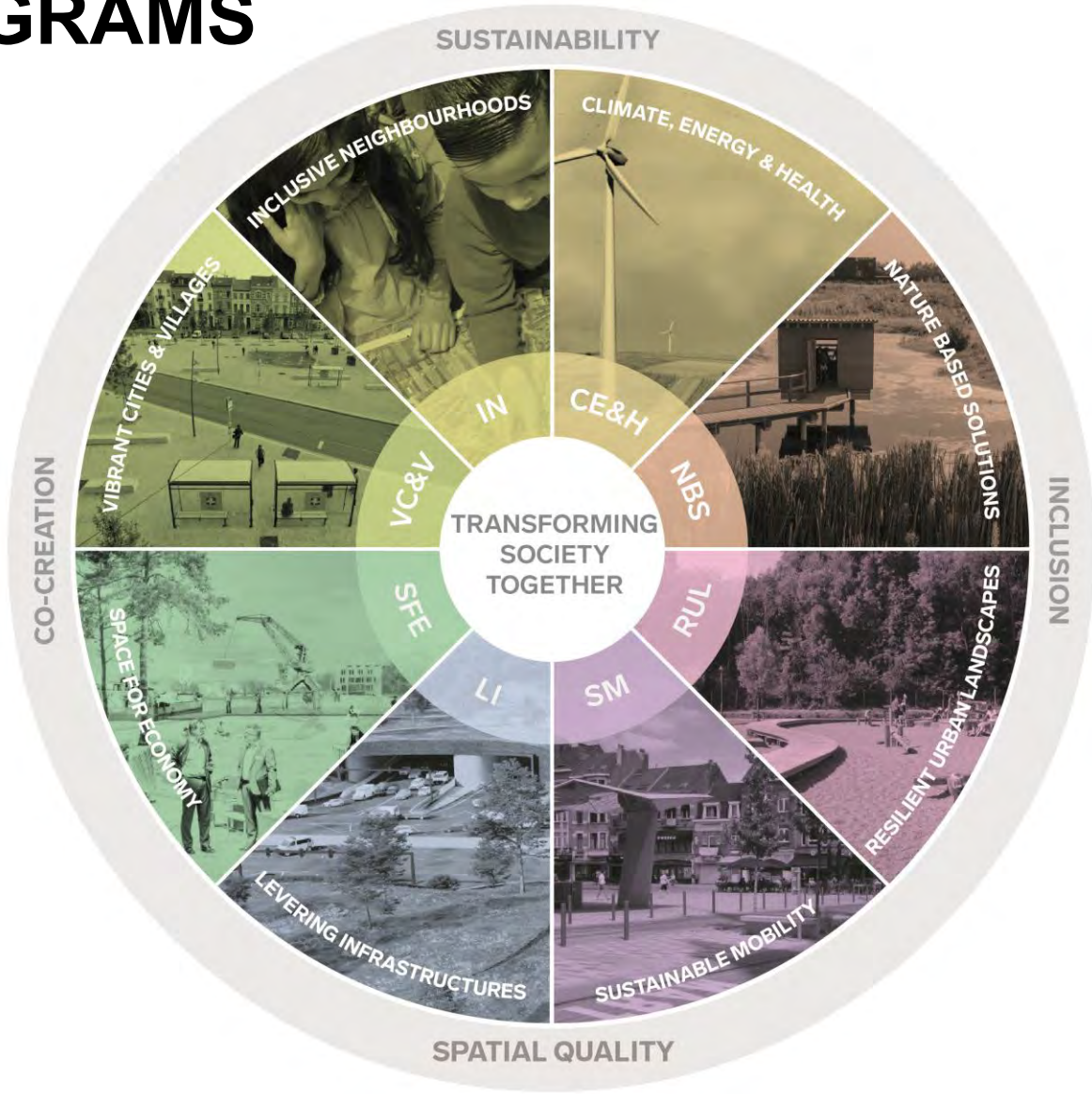
14 TEAMS – 5 BUSINESS UNITS - WORKING ON URBAN SUSTAINABILITY



8 URBAN DEVELOPMENT PROGRAMS

Our eight complementary programs reflect how we can pursue our mission.

They focus on important societal challenges that require the transformation of our living environment.



CHALLENGES OF FUTURE PROOFED DISTRICTS

BU
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ACT ON URGENCY

Common **transition agenda**

Keep raw materials, materials and products as high-quality as possible **in the cycle**

Use renewable **energy sources**

Strengthen the **resilience of natural systems**

Goals are clear, the transition paths towards those goals not

Complex challenges

A **systemic change** where all key players must evolve along with it

RESILIENT CITIES

By 2050, about 2.5 billion people will live in cities.

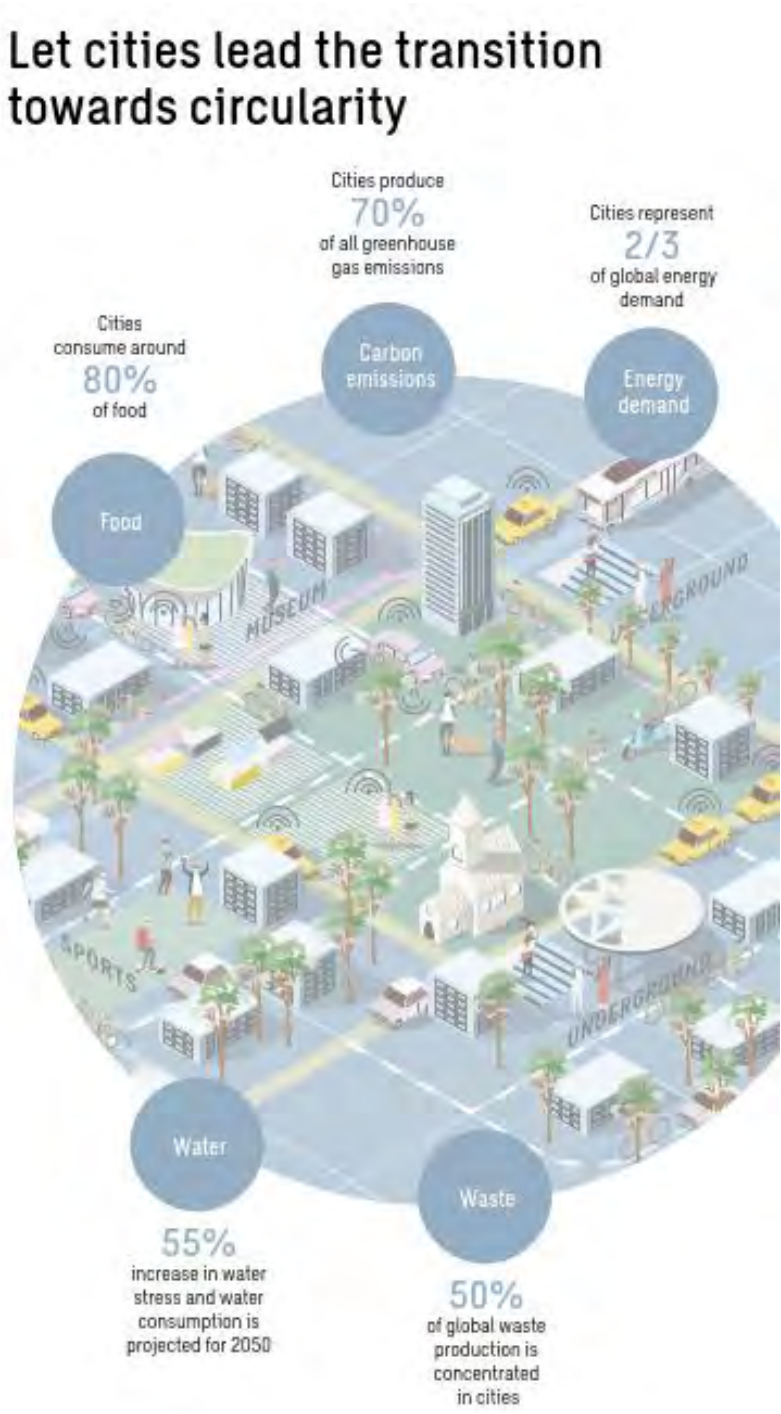
The **circularity gap is widening** - the global economy is becoming less circular, from 9.1% circular in 2018 to 8.6% in 2021.

For the last decade, the **date of overshoot day** has been moving in the wrong direction of the calendar every year.

How can we avoid overshoot day through **circular design and planning**?

Challenges of future-proof urban development and how to adress them as an urban planner?

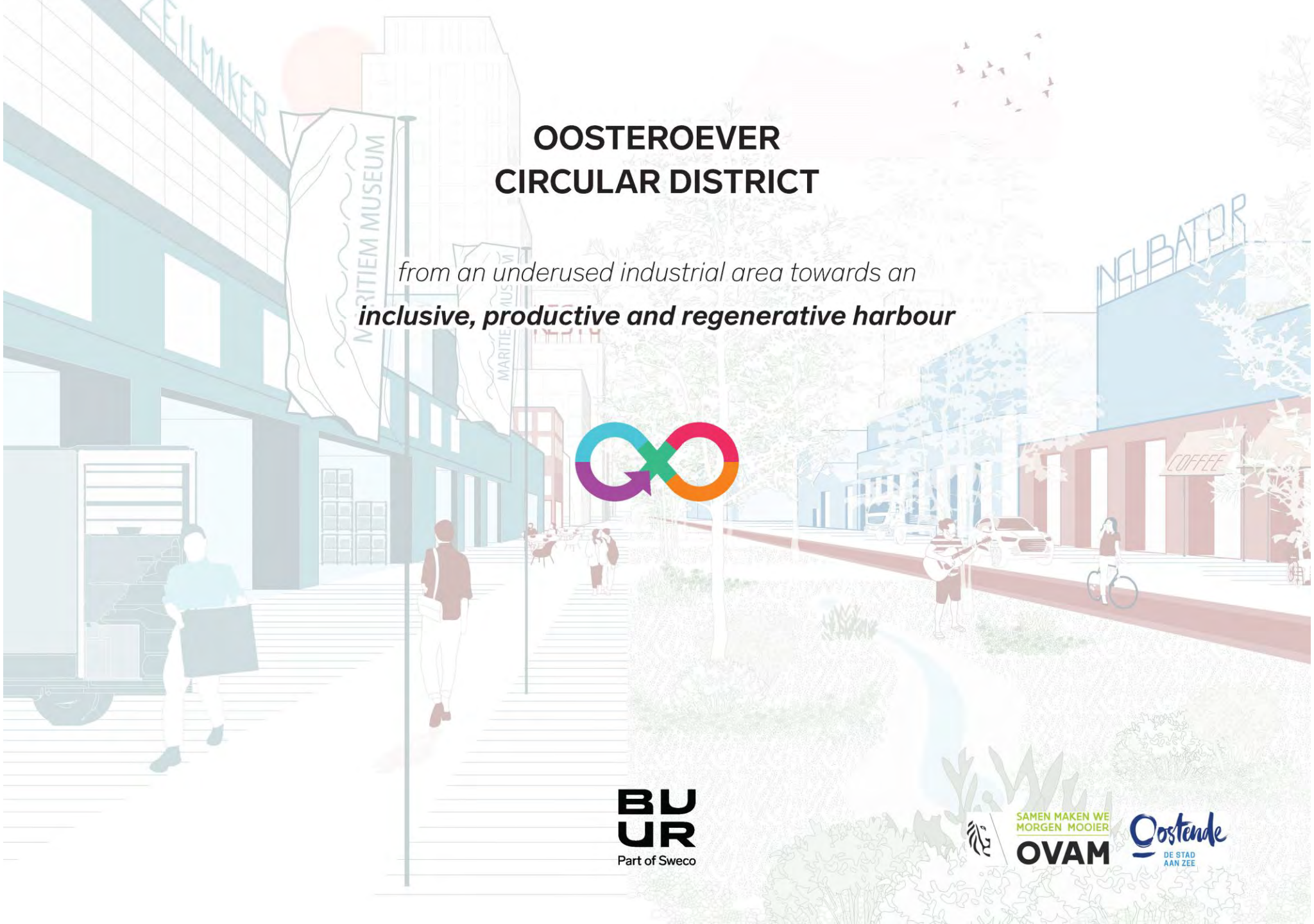
Important rol of the **scale of the district** to accelerate the impact of pilot projects



OOSTEROEVER
CIRCULAR DISTRICT

from an underused industrial area towards an

inclusive, productive and regenerative harbour



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SAMEN MAKEN WE MORGEN MOOIER
OVAM

Oostende
DE STAD AAN ZEE

OSTEND - OOSTEROEVER

Vision on the transition from an underused industrial area towards an **inclusive, productive and regenerative city district**

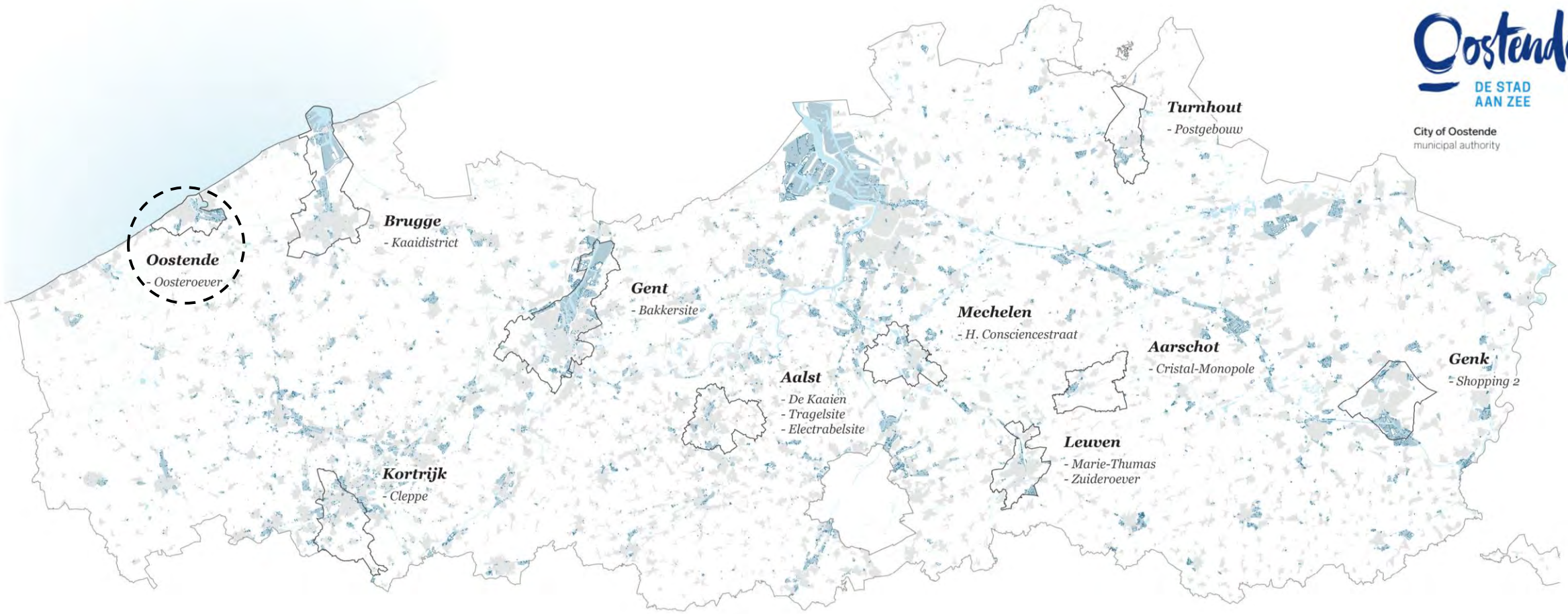
SAMEN MAKEN WE MORGEN MOOIER
OVAM

OVAM
regional authority (Flanders)

OVAM strives for sustainable waste and materials management and a clean soil in Flanders.

Oostende
DE STAD AAN ZEE

City of Oostende
municipal authority



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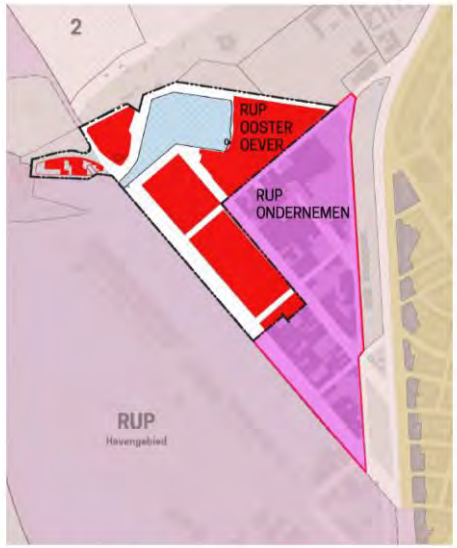
1. CONTEXT

OSTEND OOSTEROEVER

Define success factors to reinforce the existing economic tissue – zone under pressure – urgency to guarantee space for economy

Ruimtelijk Uitvoerings Plan
Spatial Implementation Plan
(city authorities)



RUP OOSTEROEVER Residential development
RUP ONDERNEMEN Mixed-use economic area

1. View Victorialaan and water tower

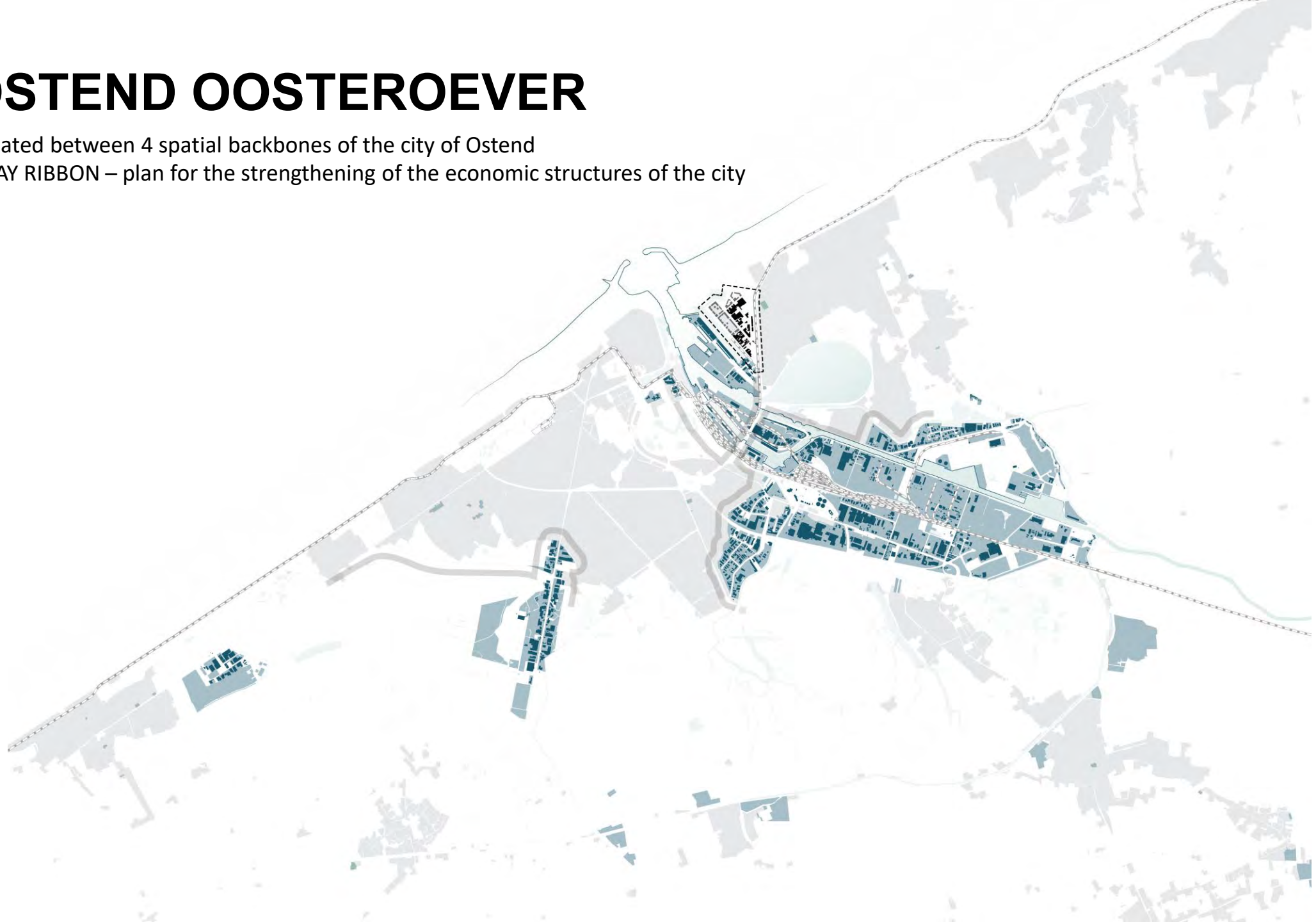
2. View industrial plots

3. View Moreauxlaan tramway

Project area - Economic role and integration with surroundings

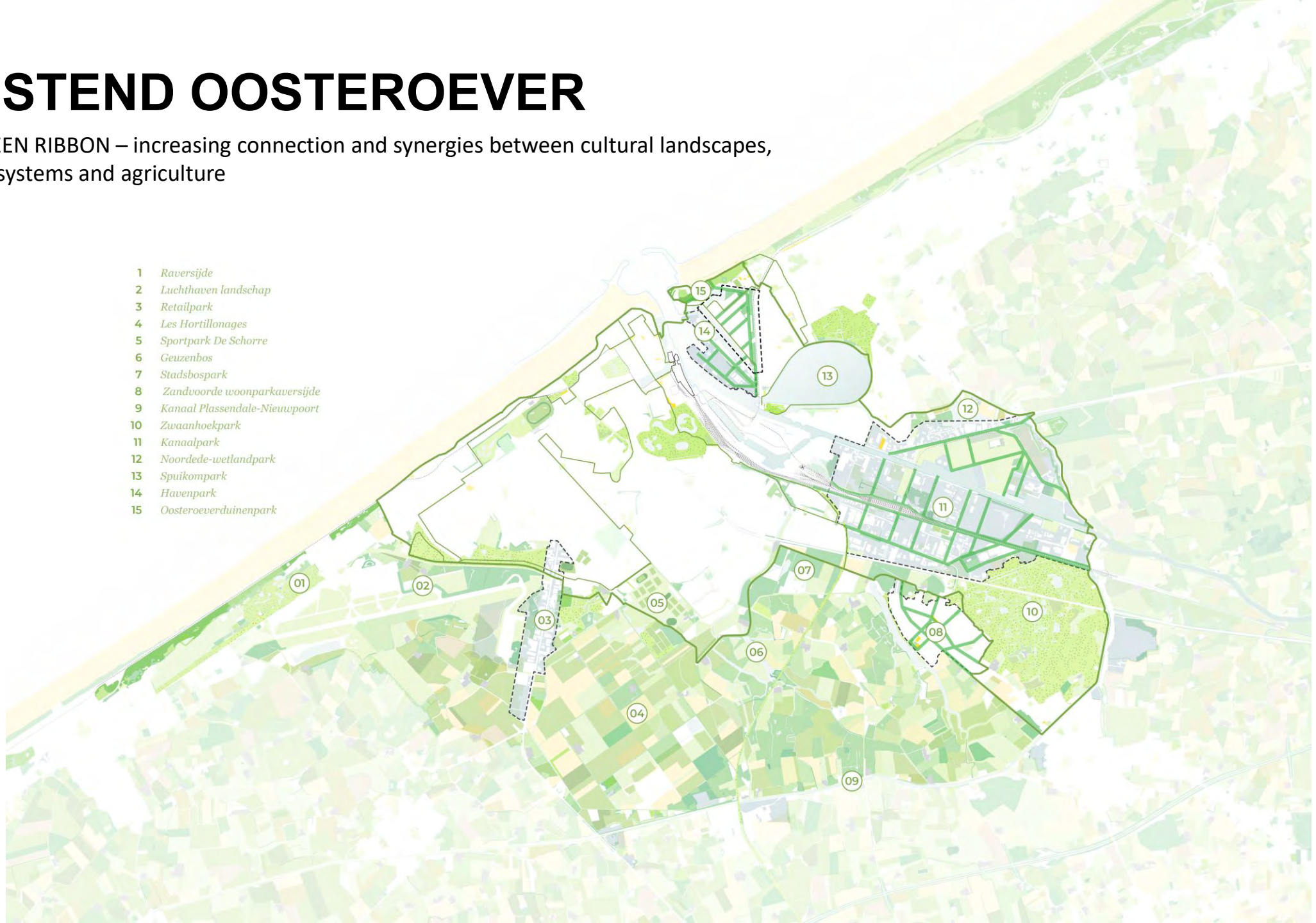
OSTEND OOSTEROEVER

Situated between 4 spatial backbones of the city of Ostend
QUAY RIBBON – plan for the strengthening of the economic structures of the city



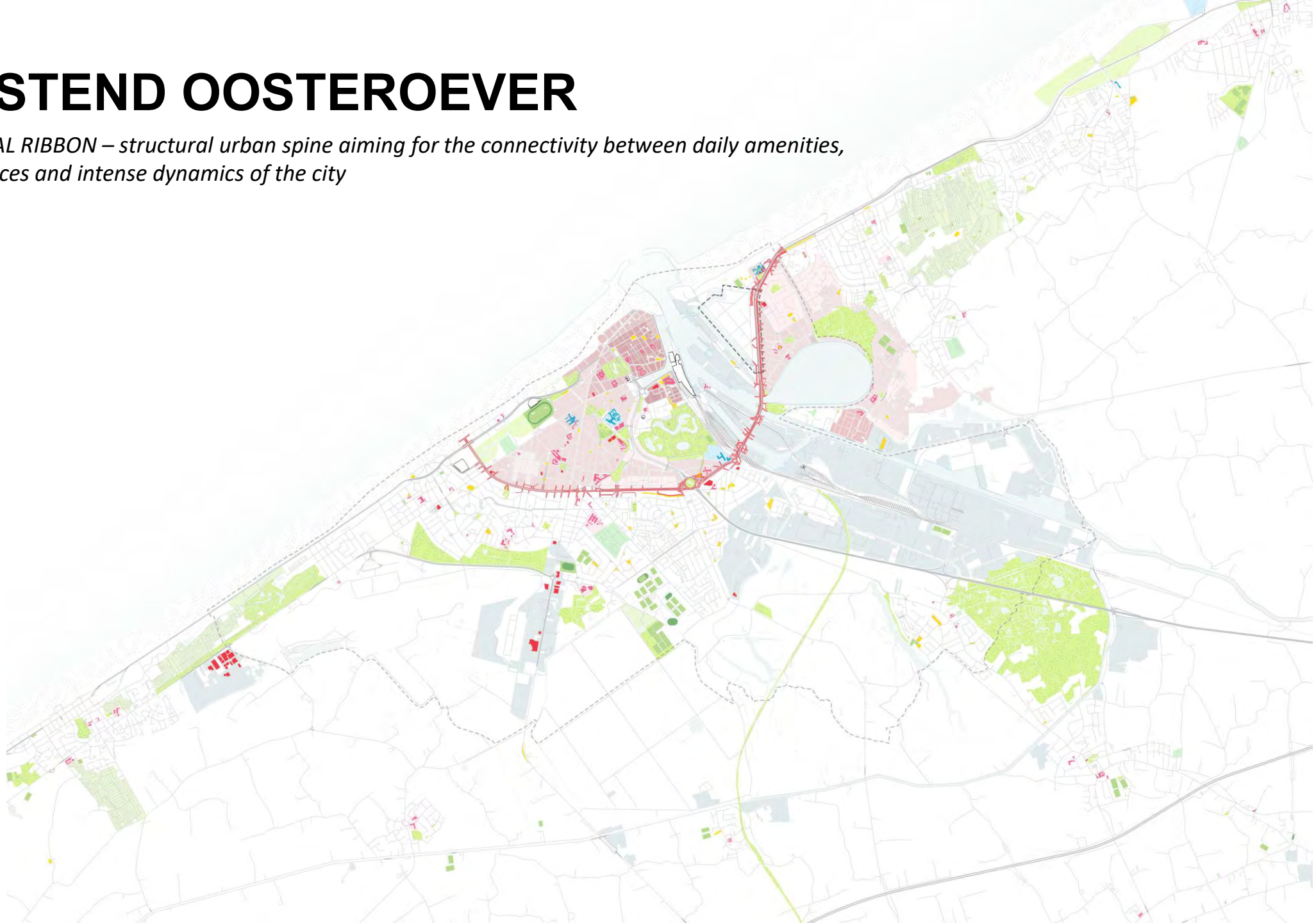
OSTEND OOSTEROEVER

GREEN RIBBON – increasing connection and synergies between cultural landscapes, ecosystems and agriculture



OSTEND OOSTEROEVER

ROYAL RIBBON – structural urban spine aiming for the connectivity between daily amenities, services and intense dynamics of the city



OSTEND OOSTEROEVER

COASTAL RIBBON – Sand beaches and dune landscapes represent the cultural heritage, landscape value and protection against sea level rise

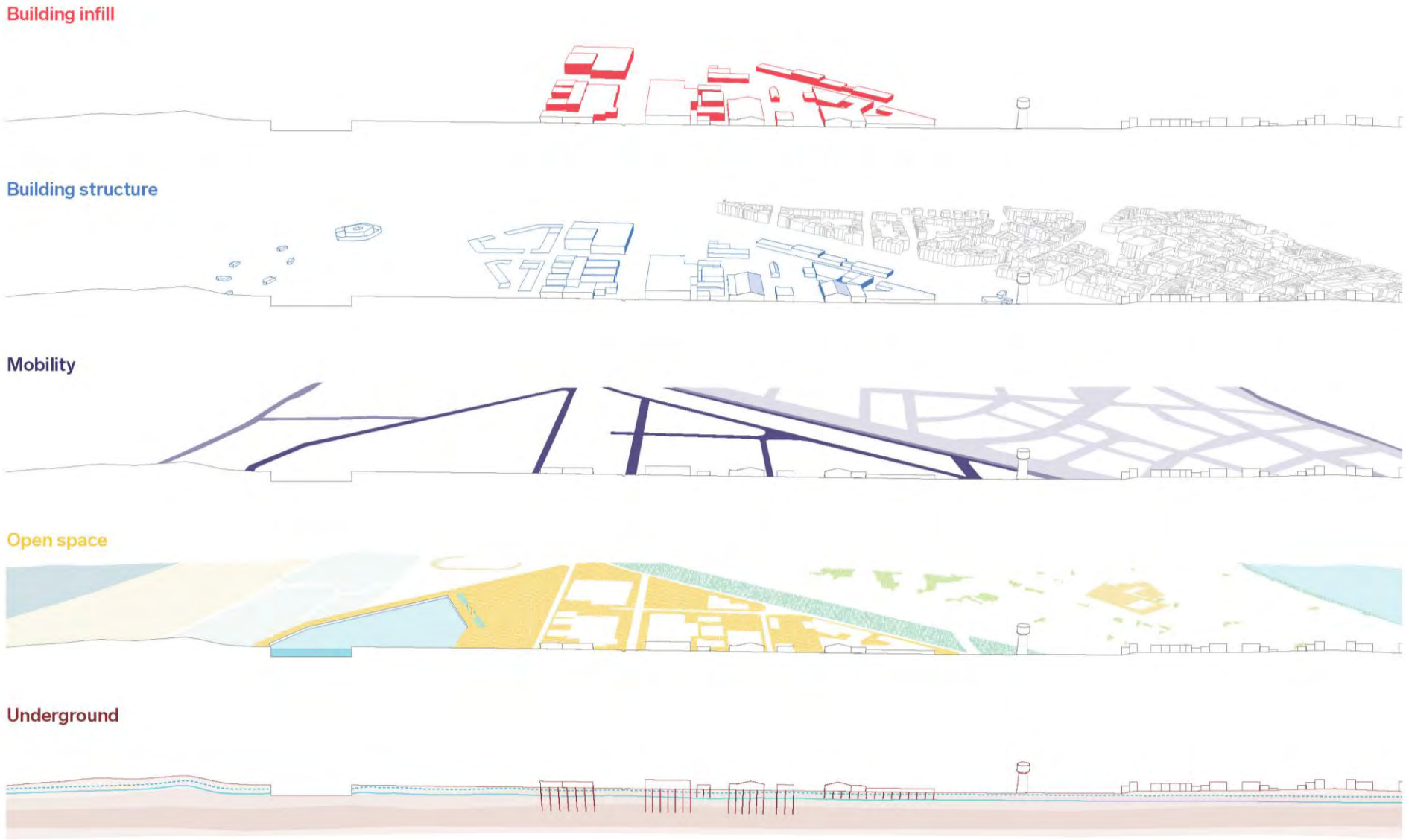
2. PROJECT PROCESS

HIGH CIRCULAR AMBITION

development should follow and facilitate 4 circular principles / focusing on 5 streams

SPATIAL LAYERS

Spatial embedding of those streams



3 STEPS METHODOLOGY

Starting from the unique DNA of the site and its context

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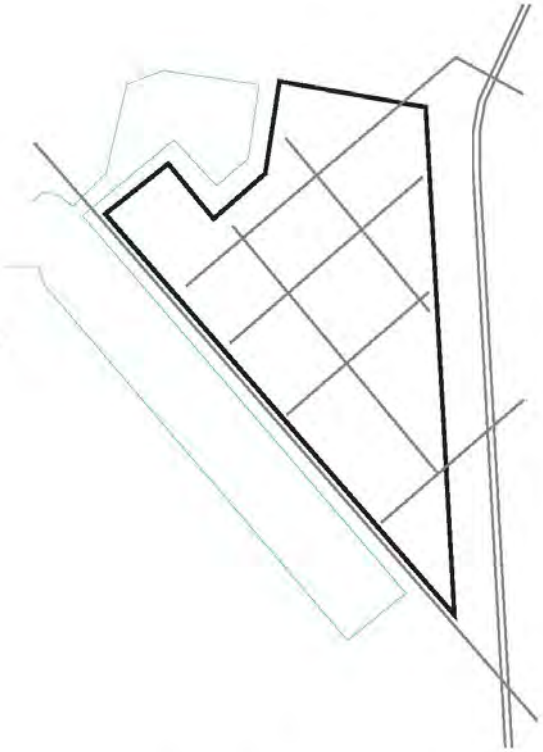

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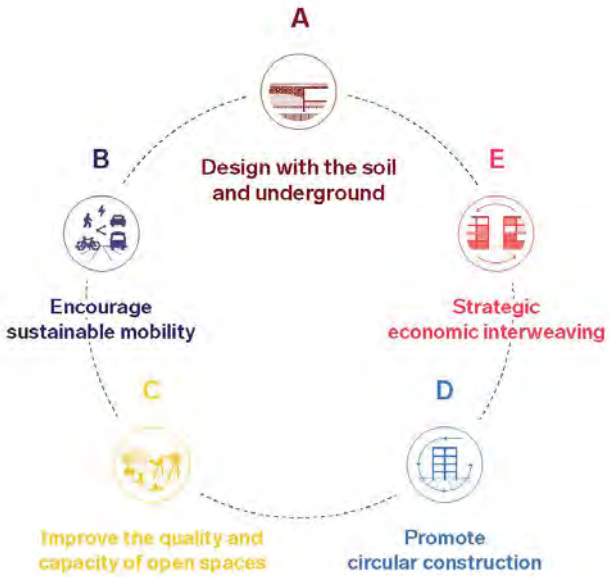


ECONOMIC VOCATION

- COLLECTIVE AMBITION, LOCAL ADDED VALUE -

SPATIAL FRAMEWORK

- FLEXIBLE SPATIAL CONDITIONS -

SYSTEMIC STRATEGIES

- CIRCULAR DEVELOPMENT -

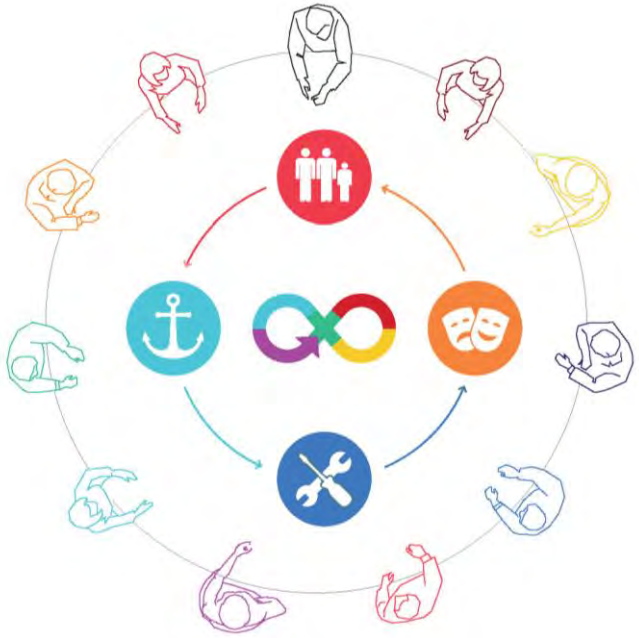
FUTURE VOCATION

with local and regional actors - define a common ambition and identity – 4 economic vocations

OOSTEROEVER

CIRCULAR DISTRICT

INCLUSIVE, PRODUCTIVE AND REGENERATIVE



01 Maritime district

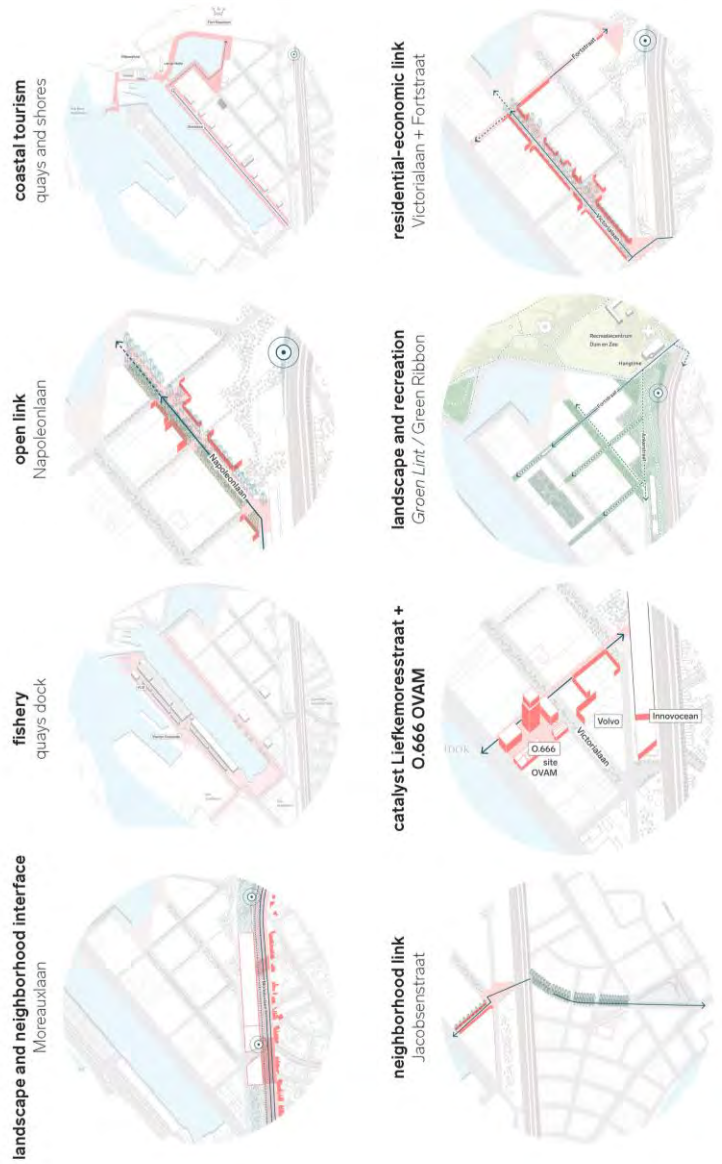
02 Economic Pole

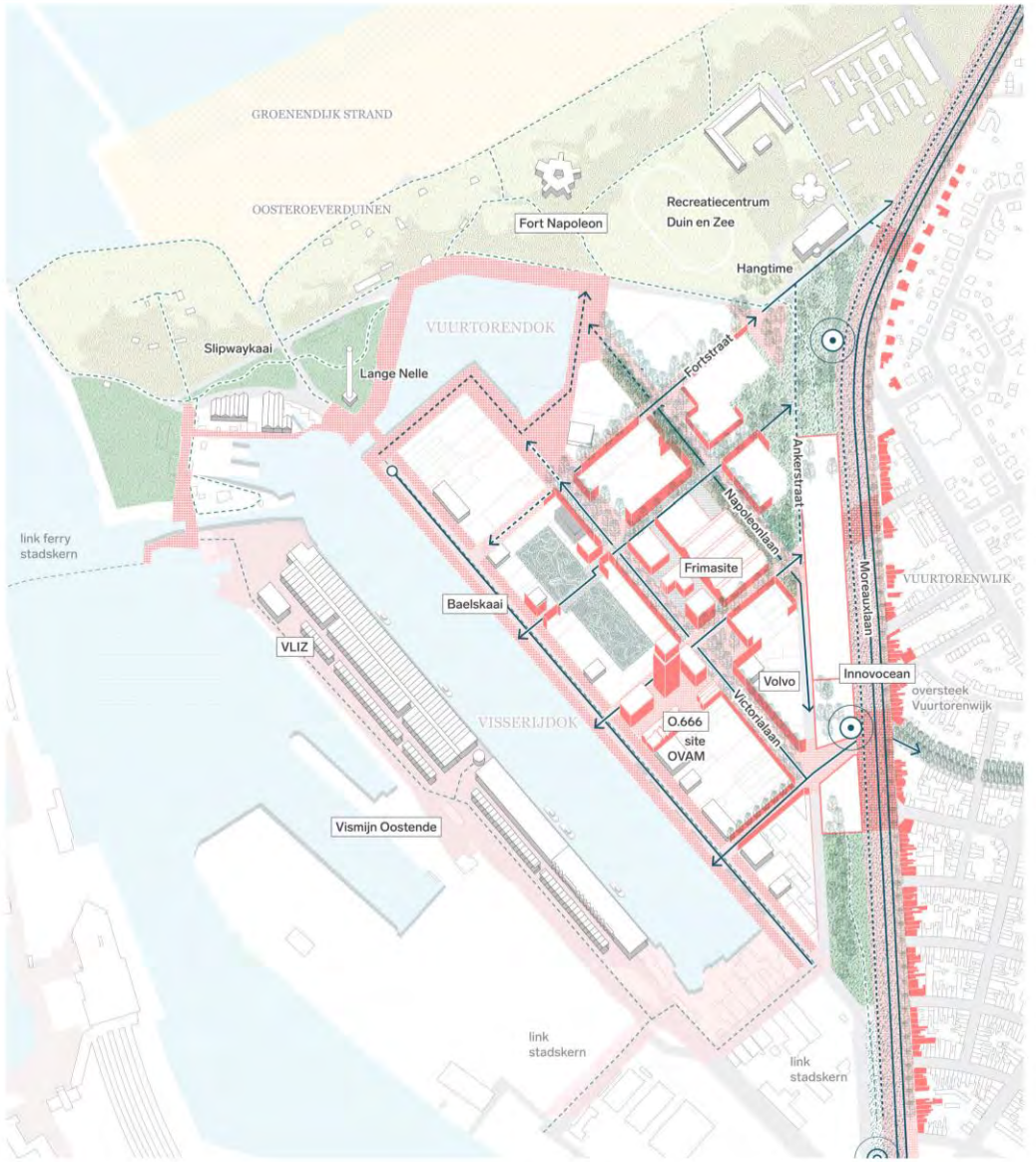
03 Culture and Recreation

04 Housing and Amenities

SPATIAL FRAMEWORK PLAN

highlighting fundamental spatial structures for an integrated development in the context





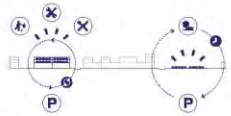
5 SYSTEMIC STRATEGIES

programming of the plan / specific actions to translate synergies between resource flows and spaces

A — Design with the soil and underground

- **A.1** Promote soil remediation and soil recycling + Reuse of unpolluted excavated soil
- **A.2** Integrate the underground environment
- **A.3** Design building foundations according to soil conditions
- **A.4** Encourage shared multi-utility networks
- **A.5** Investigate opportunities for geothermy and aquathermy
- **A.6** Investigate opportunities for ATES (Aquifer Thermal Energy Storage)

B — Encourage sustainable mobility



- **B.1** Promote adaptive parking solutions
- **B.2** Design efficient logistics systems
- **B.3** Create shared infrastructures for sustainable transportation modes
- **B.4** Promote intermodal connections
- **B.5** Design environments and buildings that promote active mobility
- **B.6** Encourage a pedestrian-oriented and slow traffic environment

C — Improve the quality and capacity of open spaces

- **C.1** Increase soft and green surfaces
- **C.2** Promote the permeability of paved surfaces
- **C.3** Create spaces for water buffering
- **C.4** Design of closed water drainage and infiltration systems
- **C.5** Encourage qualitative public green areas
- **C.6** Design for multifunctional, flexible and collective open spaces

D — Promote circular construction

- **D.1** Design with modular and flexible structures
- **D.2** Promote circular buildings through the reuse of materials
- **D.3** Encourage energy-neutral buildings
- **D.4** Design collective systems for storage and reuse of rainwater
- **D.5** Equip buildings with green roofs and facades
- **D.6** Promote the adaptive re-use of existing structures and materials

E — Strategic economic interweaving

- **E.1** Design for the neighbourhood and surrounding urban fabric
- **E.2** Interweaving program to promote synergies between functions
- **E.3** Design the plinth structure for economic activities or flexible spaces.
- **E.4** Program the open space to support the adjacent building function
- **E.5** Provide daily amenities within a 15-minute walk radius.
- **E.6** Create affordable and mixed housing and economic typologies

STRATEGIC FRAMEWORK

shared underground infrastructure as a backbone of the site

A
Design with the soil and underground

- *exchange of energy, water and materials*
- *activation of local energy sources*
- *exchange of residual heat from industrial activities into houses, sports facilities,…*
- *integrated soil remediation encouraging recycling or reuse of the residual space*

A.1
Promote soil remediation + Reuse of unpolluted excavated soil

A.2
Integrate the underground environment

A.3
Design building foundations according to soil conditions

A.4
Encourage shared multi-utility networks

A.5
Investigate opportunities for geothermy and aquathermy

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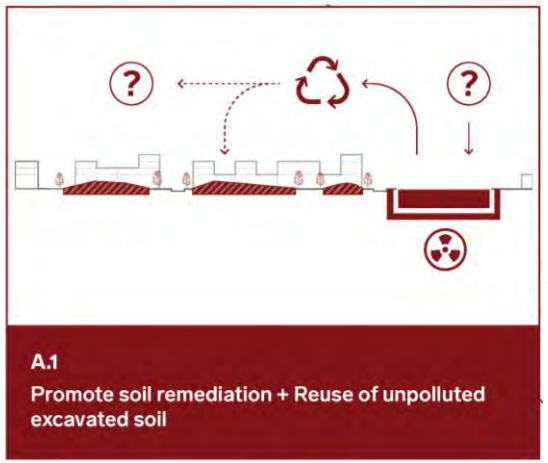

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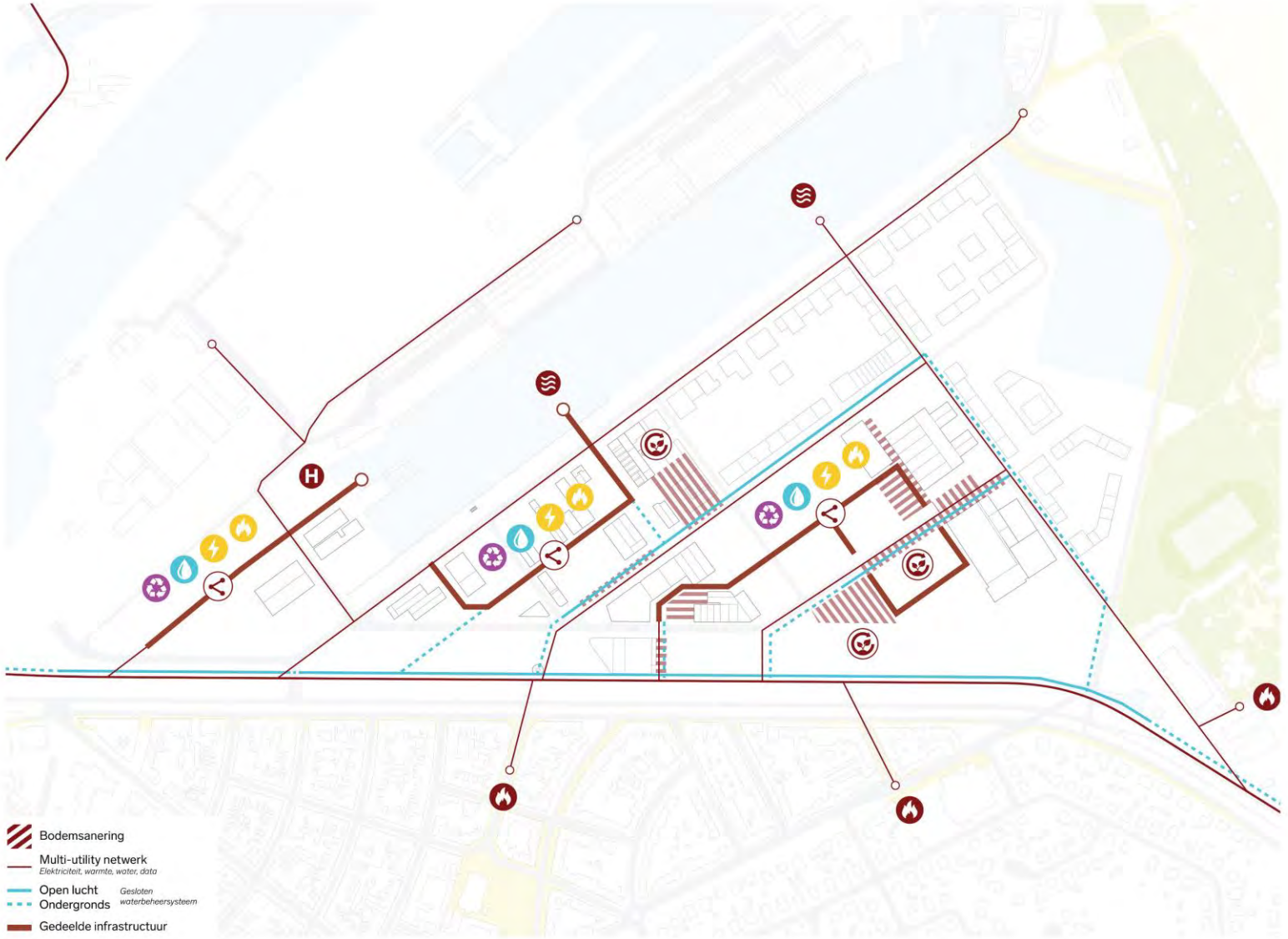
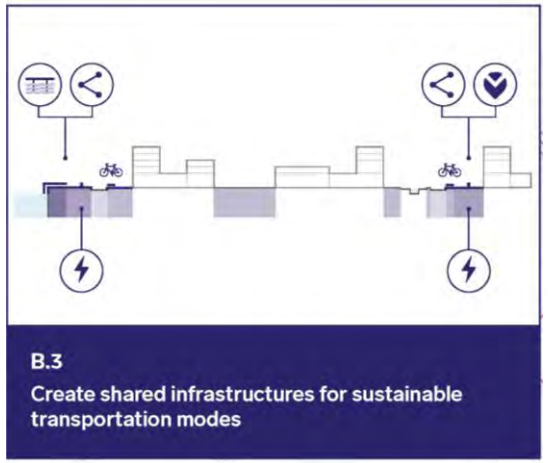


STRATEGIC FRAMEWORK

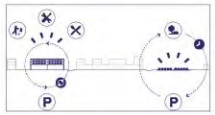
sustainable mobility system

B
Encourage sustainable mobility

- *Efficient, qualitative and safe organisation of logistics*
- *Pedestrian and bycicles networks facilitate the link to the city and neighborhoods*
- *Conditions for sustainable modes of transportation (electric charging stations and mobility hubs)*



B.1



Promote adaptive parking solutions

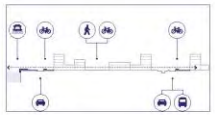
B.2

Design efficient logistics systems

B.3

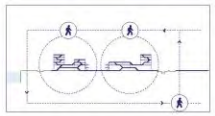
Create infrastructure for sustainable transportation modes

B.4



Promote intermodal connections

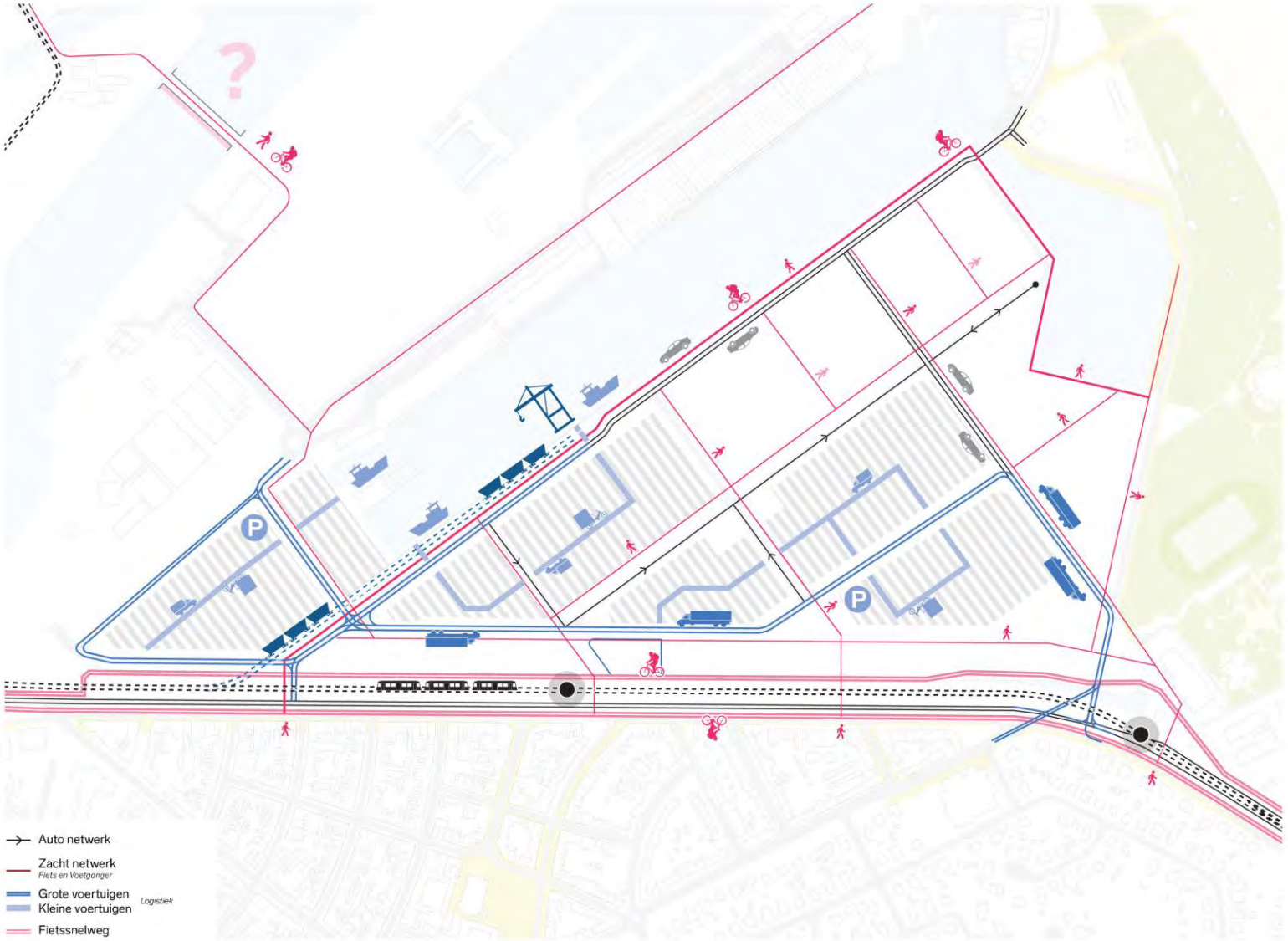
B.5



Design environments and buildings that promote active mobility

B.6

Encourage a pedestrian-oriented and slow traffic environment

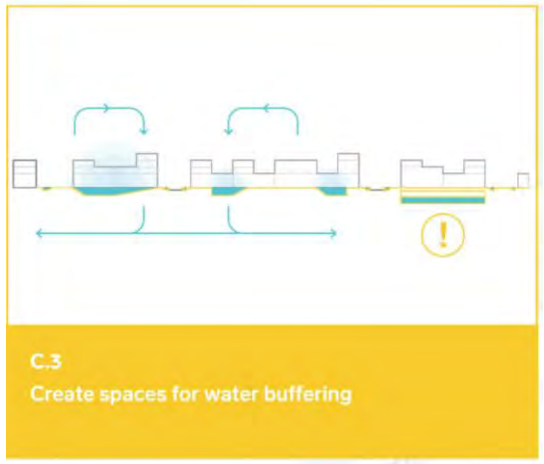


STRATEGIC FRAMEWORK

open space strategy

C
Improve the quality and capacity of open spaces

- *Focus on the creation of qualitative functional spaces*
- *Facilitate pedestrian and ecological connections*
- *Promote social relationships both in residential and economic areas*
- *Integrated water management integration of 'the City River Project'*
- *Collect rainwater by an enclosed wadi structure to capture and store fresh water*



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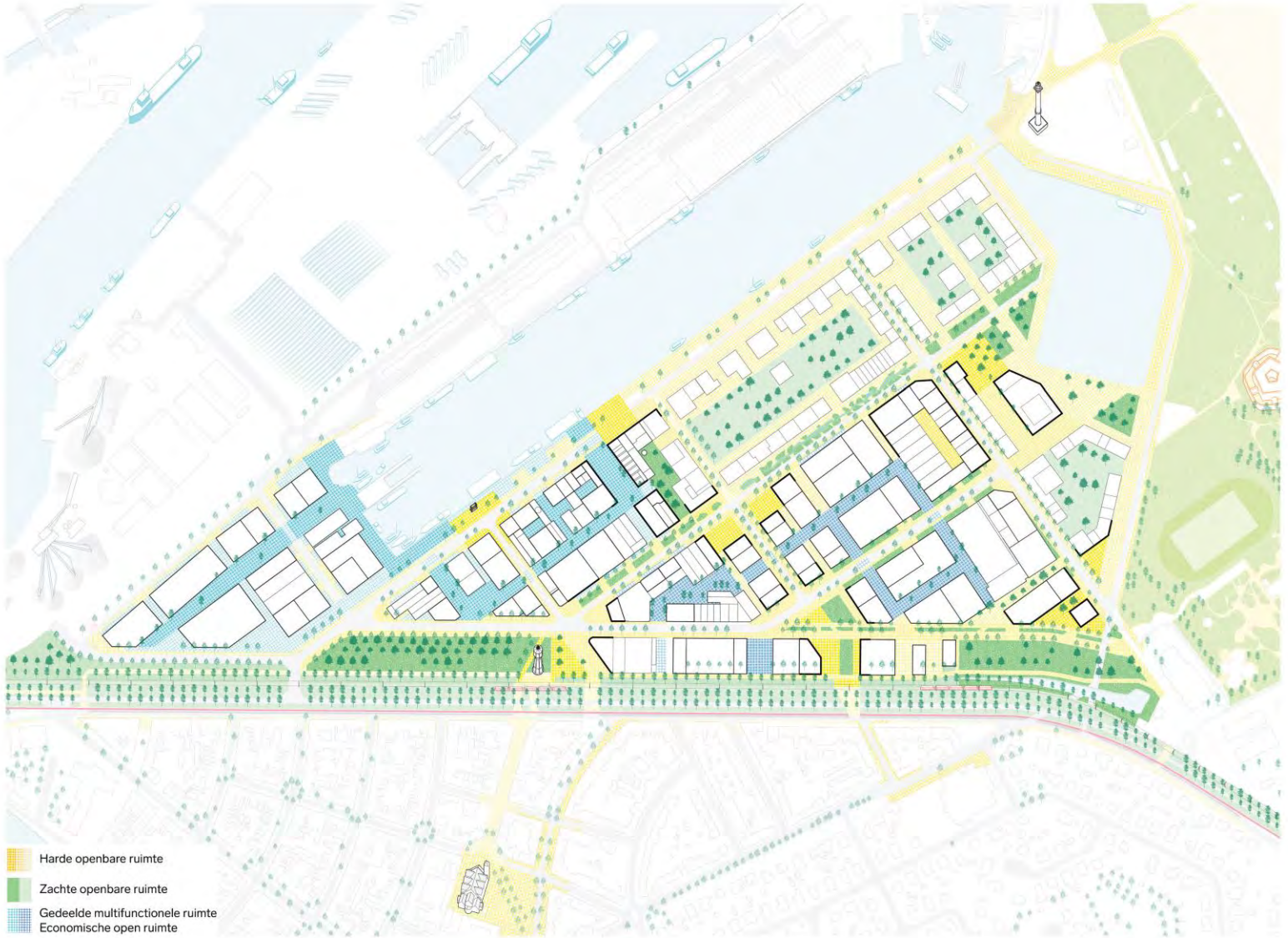
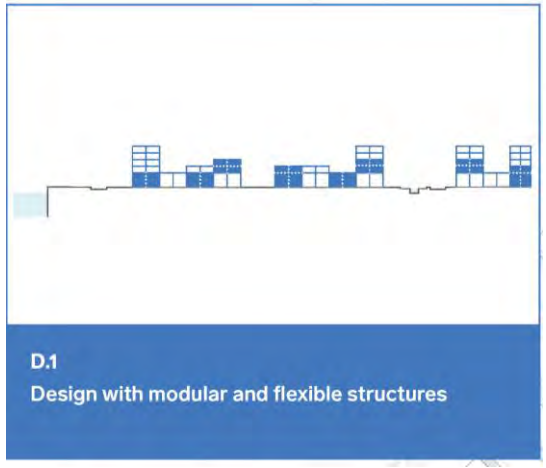


STRATEGIC FRAMEWORK

Future proof buildings

D
Promote
circular construction

- *Diverse set of typologies accomodating different types of economic functions and actors*
- *Increase adaptive capacity of the building stock by applying modular building dimensions and flexible structures*
- *Designed for collective systems for storage and reuse of rainwater*
- *Encourage energy-neutral buildings*



D.1
Design with modular and flexible structures

D.2
Promote circular buildings through the reuse of materials

D.3
Encourage energy-neutral buildings

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D.5
Equip buildings with green roofs and facades

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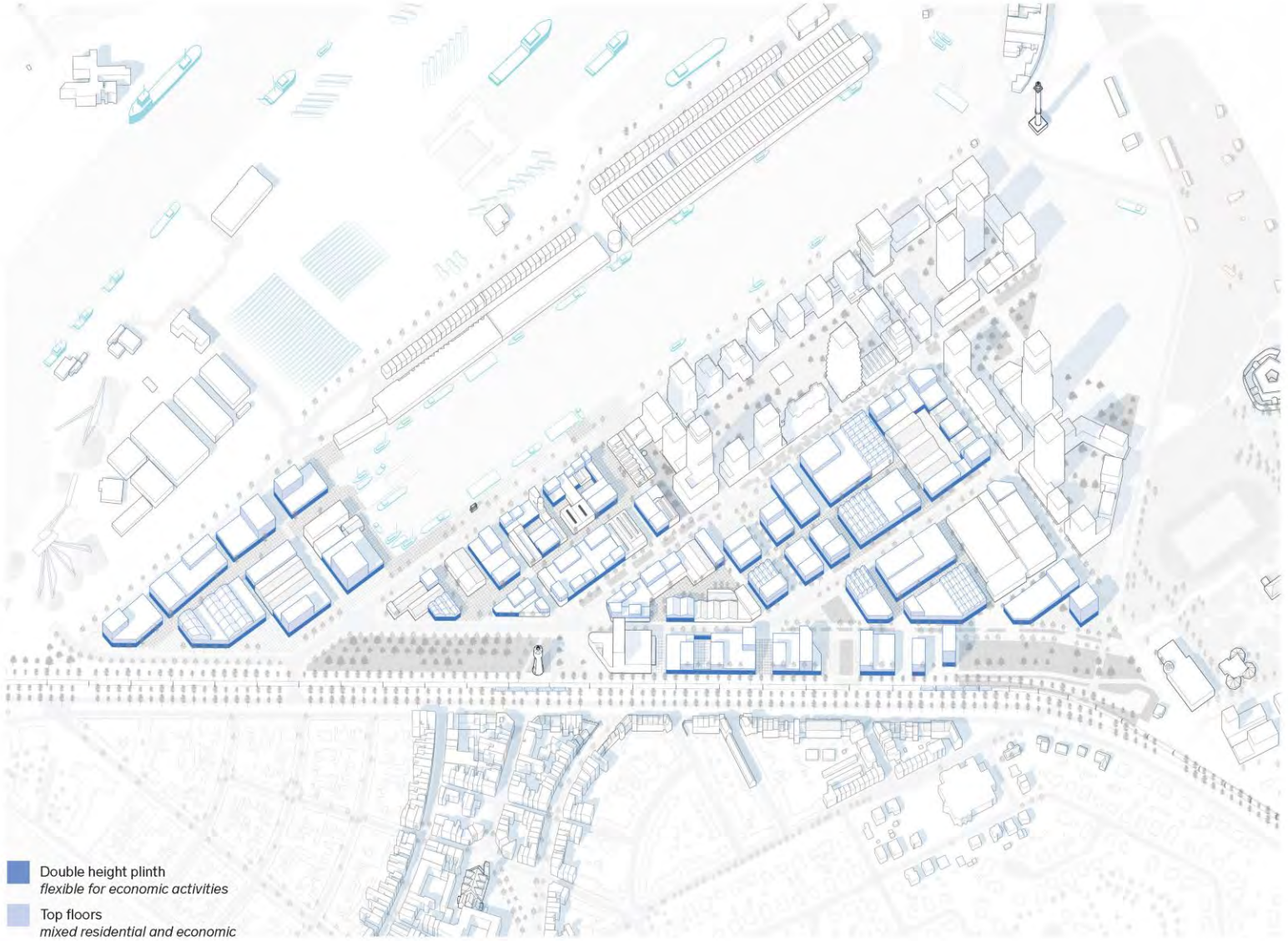
Promote the adaptive re-use of existing structures and materials



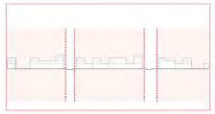
STRATEGIC FRAMEWORK

economic program

E
Strategic
economic interweaving

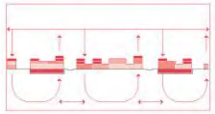
- *Zoning system integrating maritime, economic, cultural and recreational functions*
- *Corridors of daily amenities activating links with the neighbourhoods + provide daily services for the site as a qualitative working environment*

E.1



Design for the neighborhood and surrounding urban fabric

E.2



Interweaving program to promote synergies between functions

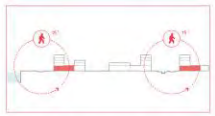
E.3

Design the plinth structure for economic activities or flexible spaces.

E.4

Program the open space to support the adjacent building function

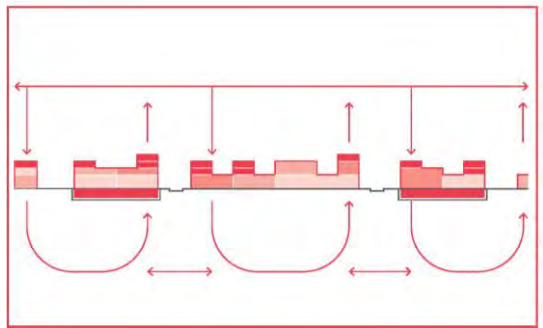
E.5



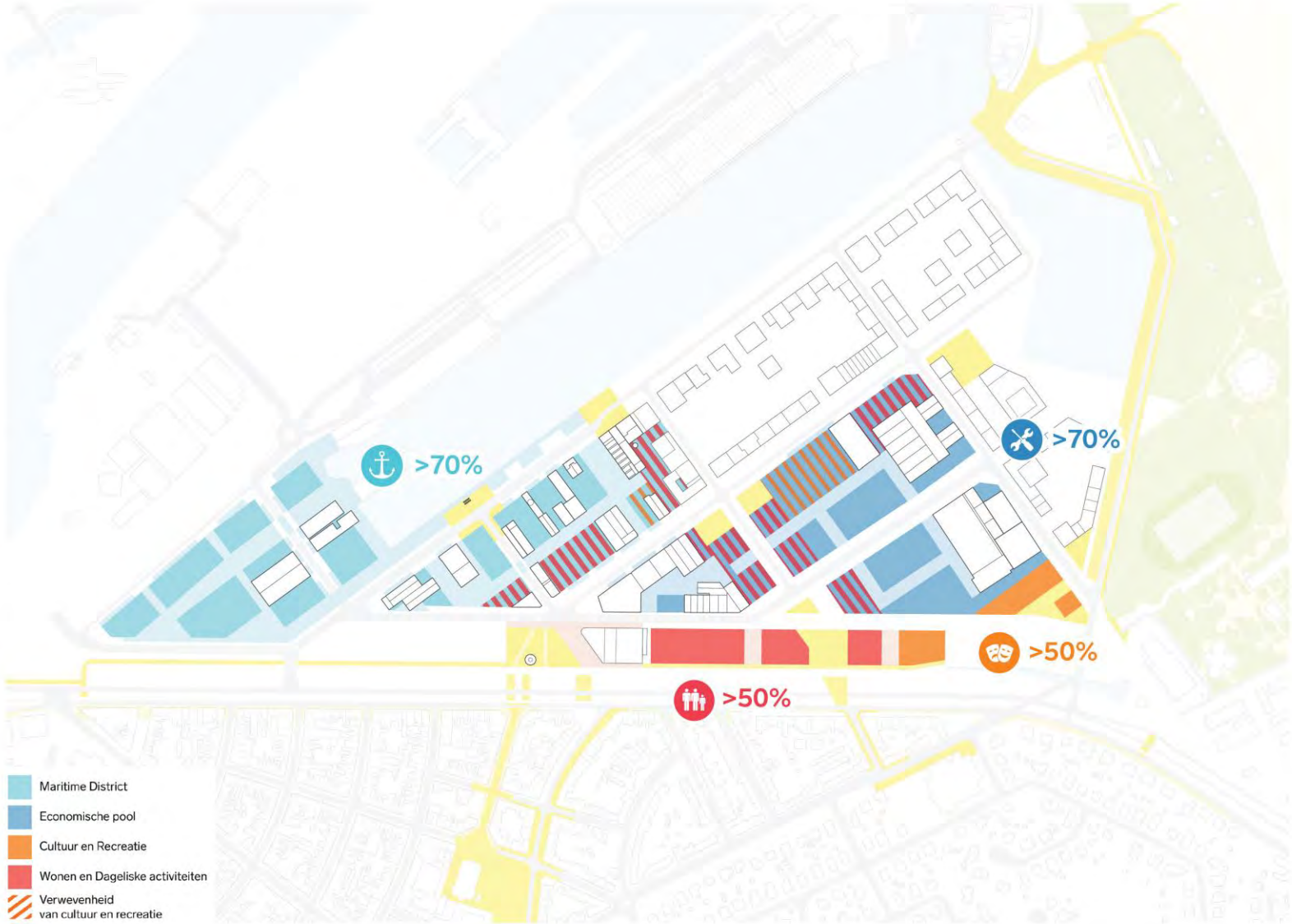
Provide daily amenities within a 15-minute walk radius.

E.6

Create affordable and mixed housing and economic typologies



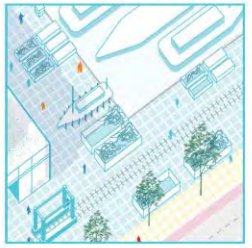
E.2
Interweaving program to promote synergies between functions



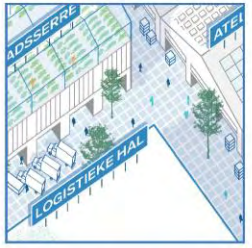
TRANSITION PLAN

a flexible instrument to guide the development towards an inclusive , productive and regenerative site

01 Maritime district

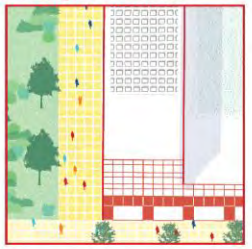


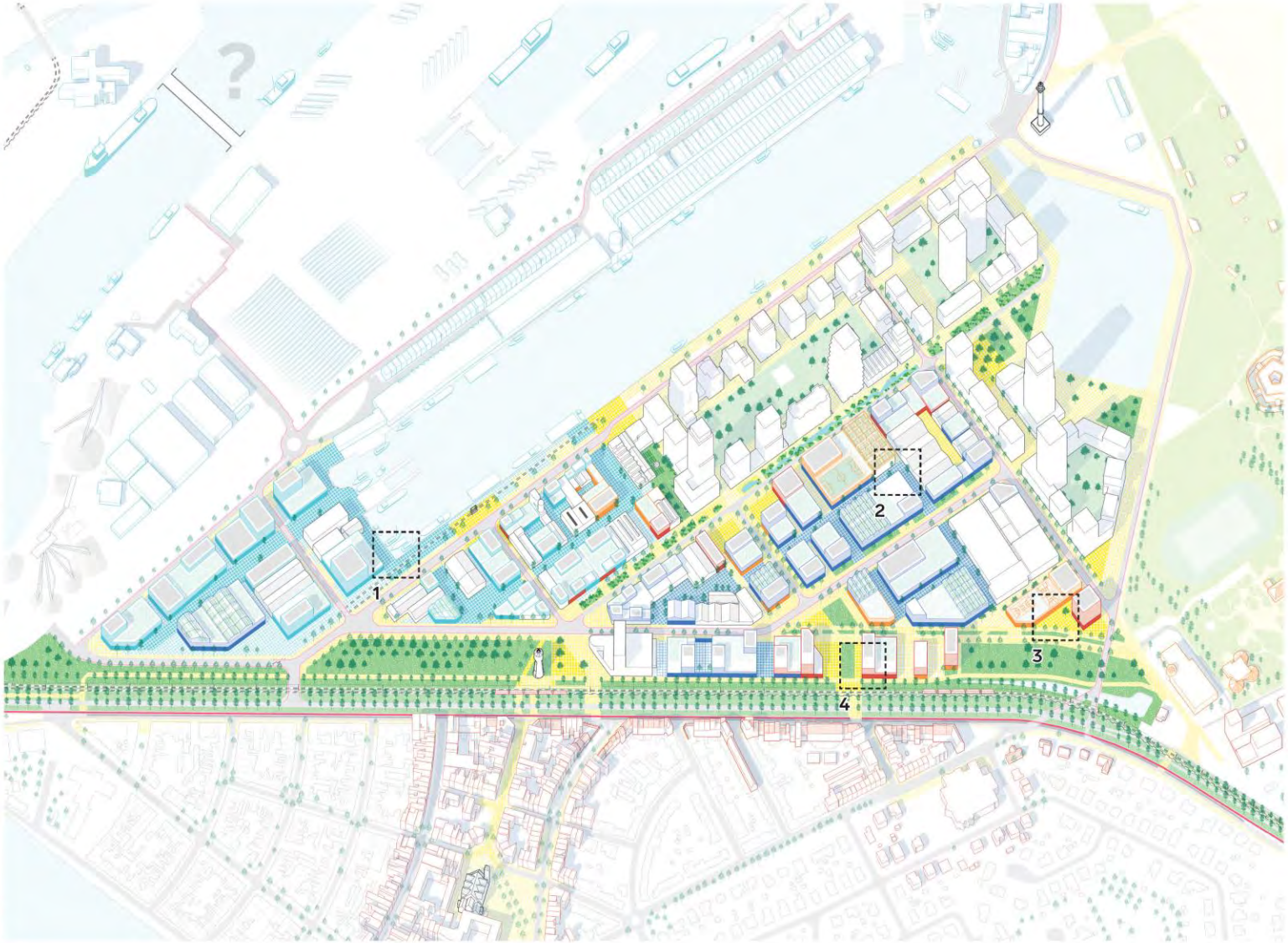
02 Economic Pole



03 Culture and Recreation

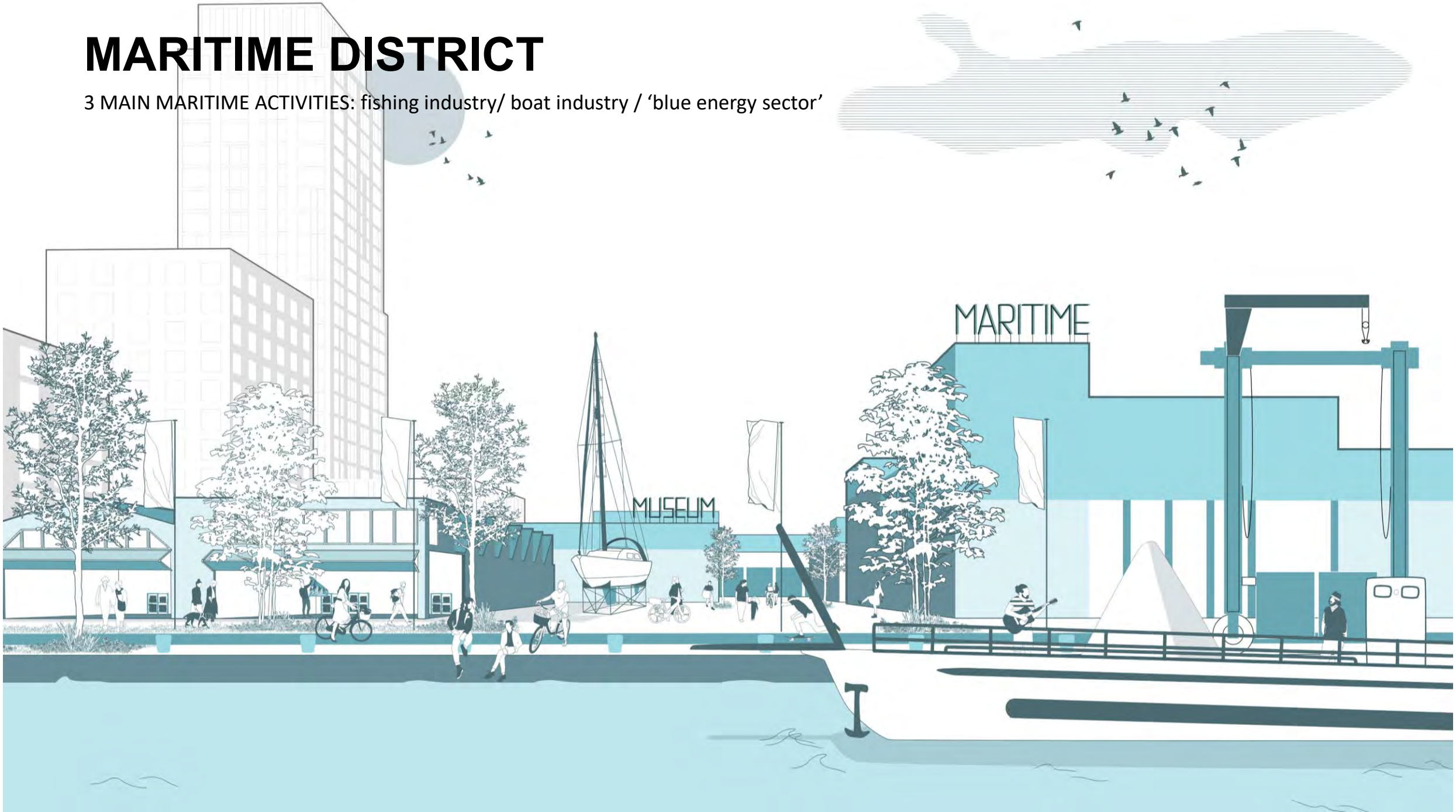
04 Housing and Amenities





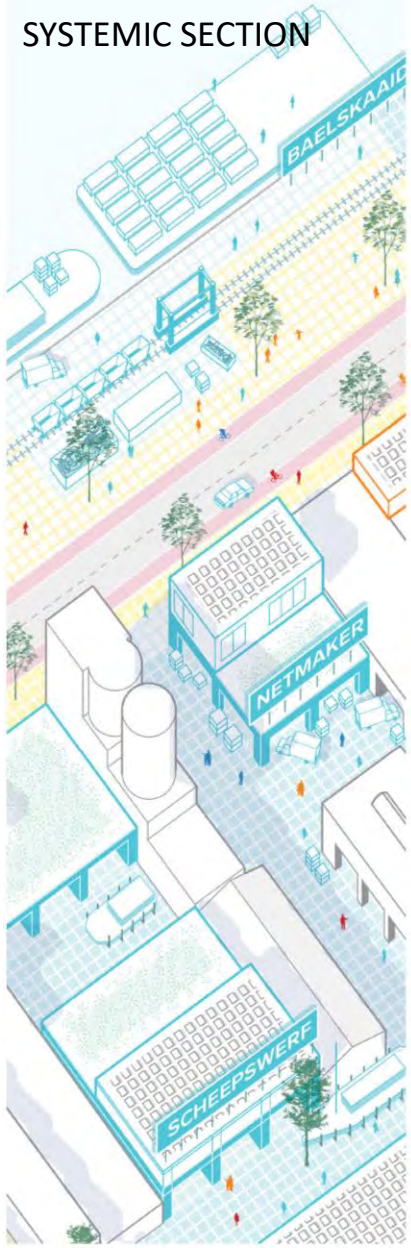
MARITIME DISTRICT

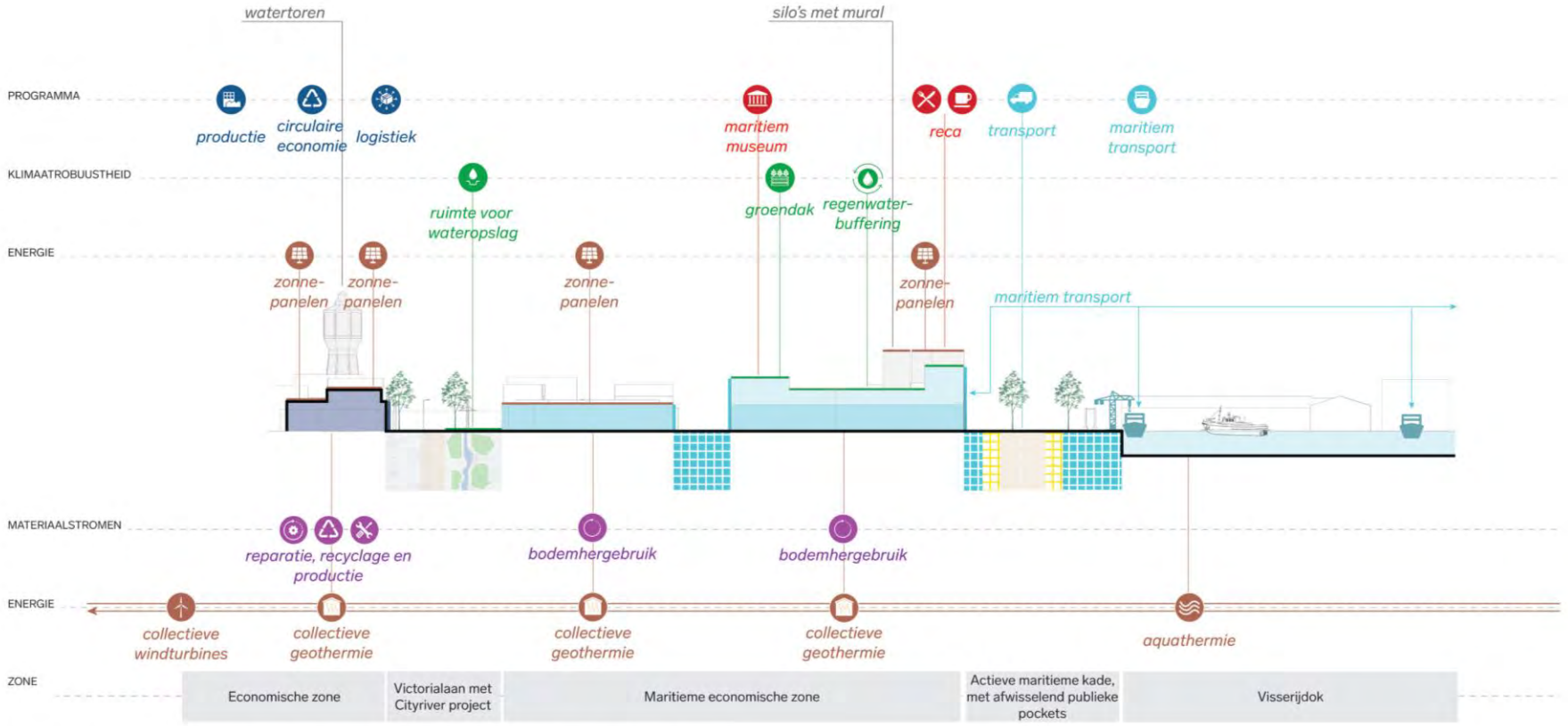
3 MAIN MARITIME ACTIVITIES: fishing industry/ boat industry / ‘blue energy sector’



MARITIME DISTRICT

SYSTEMIC SECTION

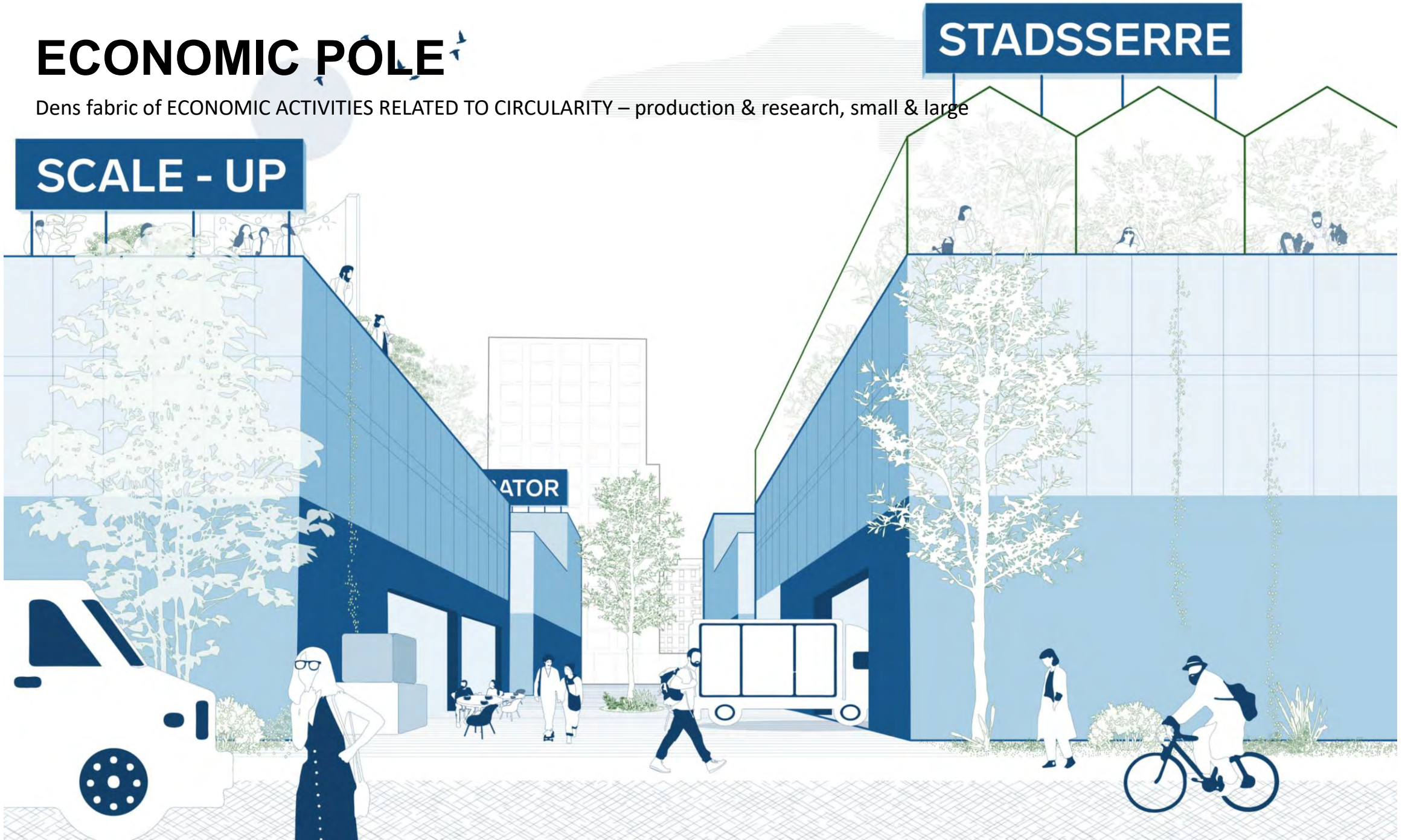




Sterk gebonden aan de **omliggende waterstructuren,** zoals het **Visserijdok**

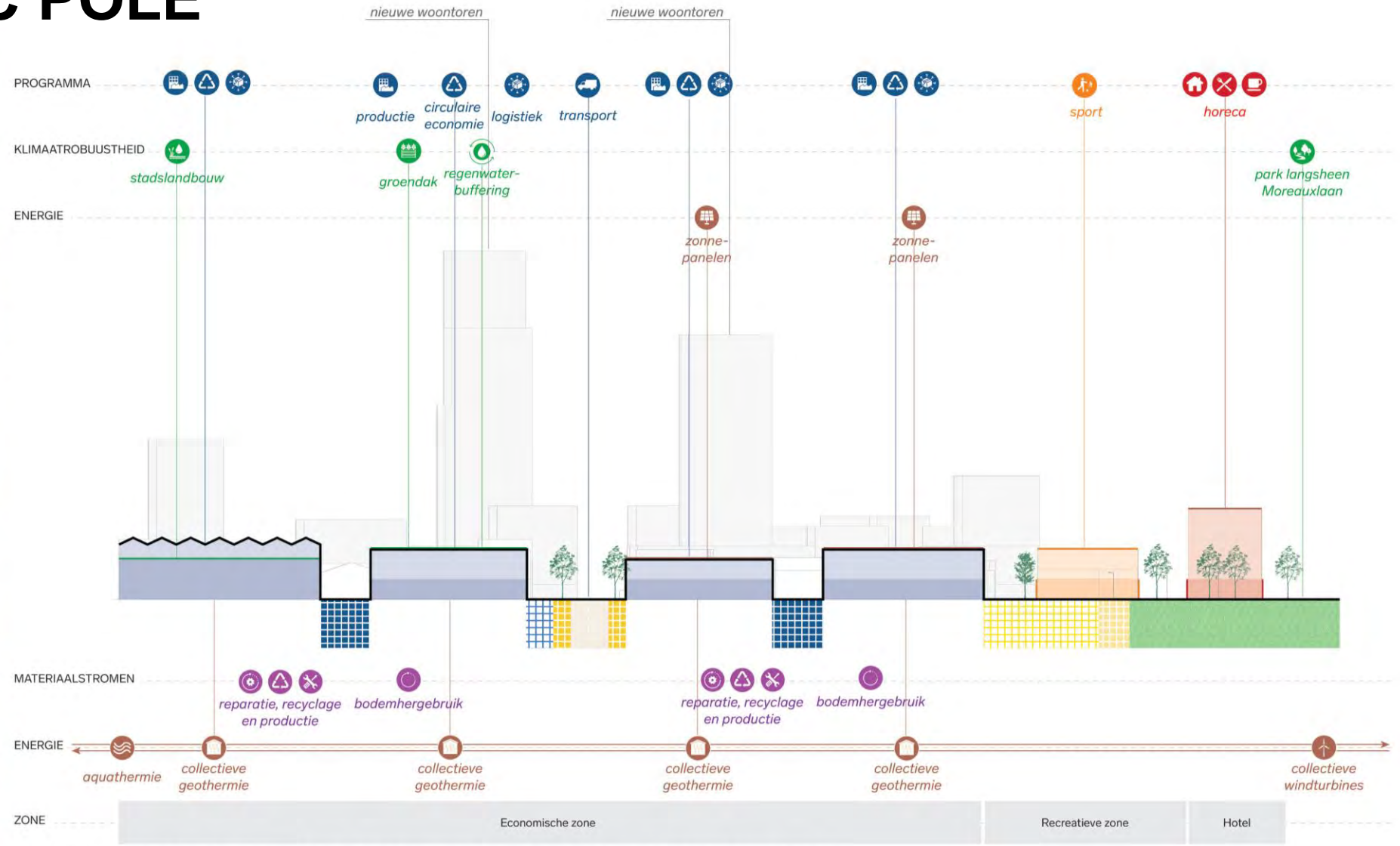
ECONOMIC POLE

Dens fabric of ECONOMIC ACTIVITIES RELATED TO CIRCULARITY – production & research, small & large



ECONOMIC POLE

SYSTEMIC SECTION



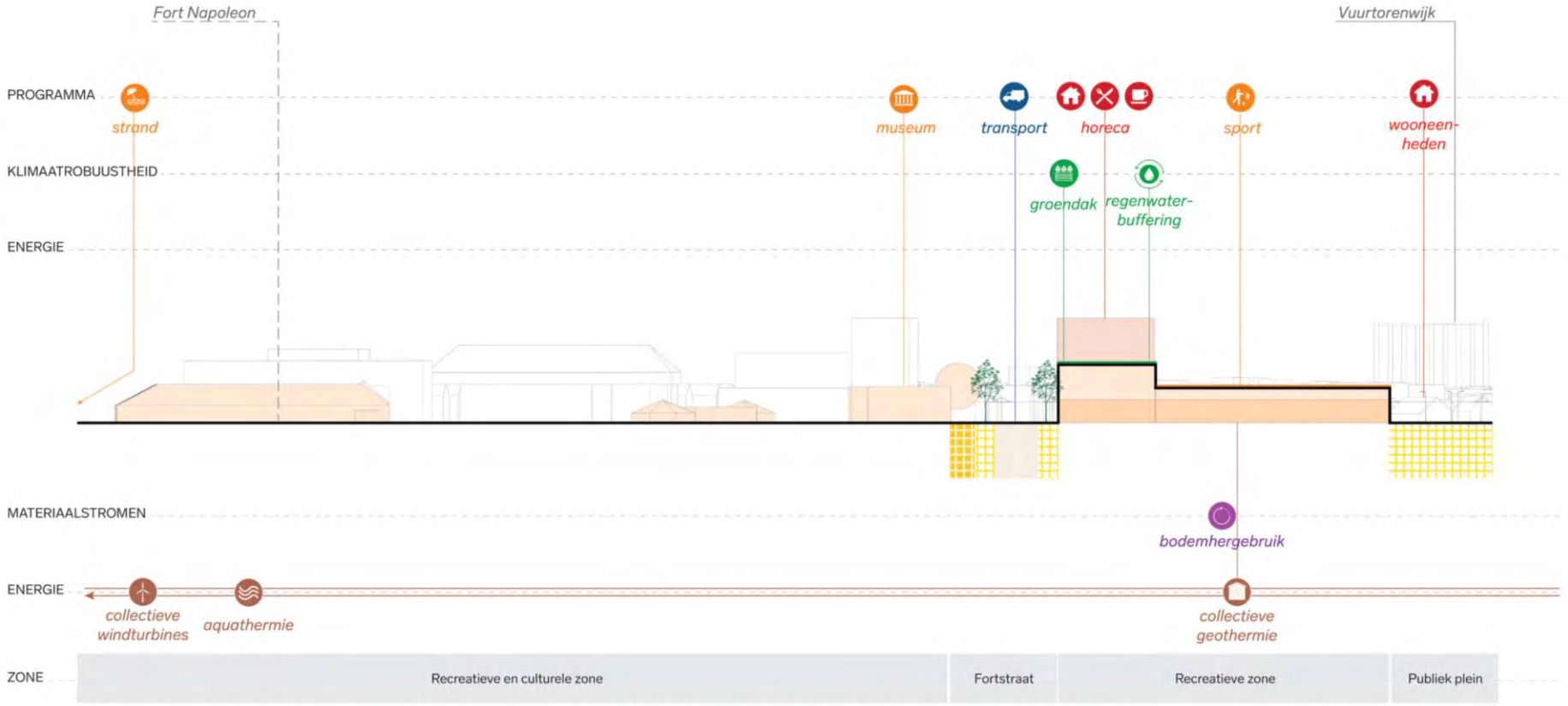
Gedeeld ruimtegebruik bevordert een c**ompact logistiek systeem** en vrijwaart meer ruimte voor andere **kwalitatieve invullingen** en **groenstructuren**

CULTURE & RECREATION

DYNAMIC STEPPING STONES LINKING ECONOMIC ACTIVITIES AND DAILY AMENITIES

CULTURE & RECREATION

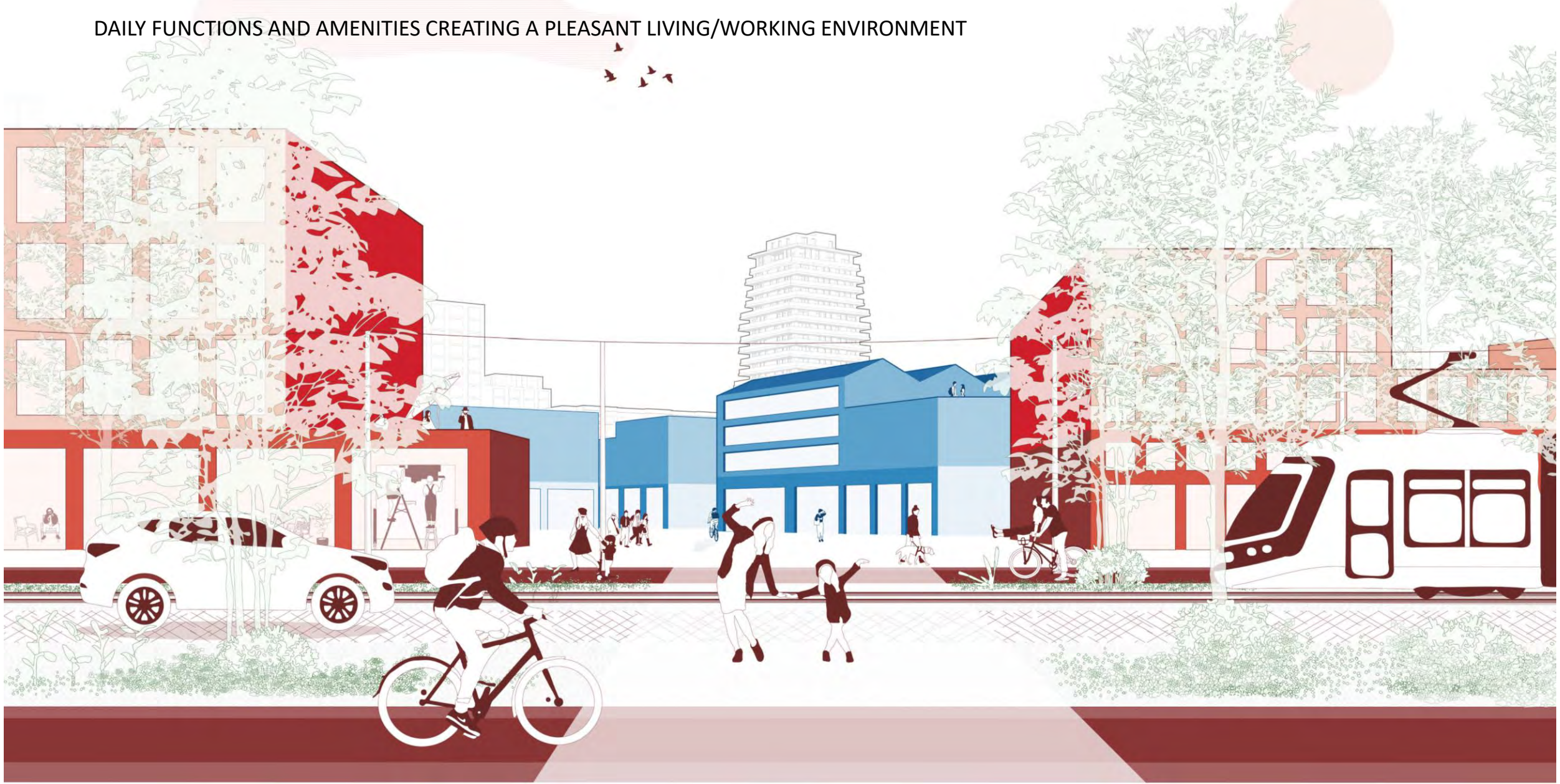
SYSTEMIC SECTION



De **grote dimensies van de gebouwen** kunnen verschillende culturele en recreatieve activiteiten een plaats geven.

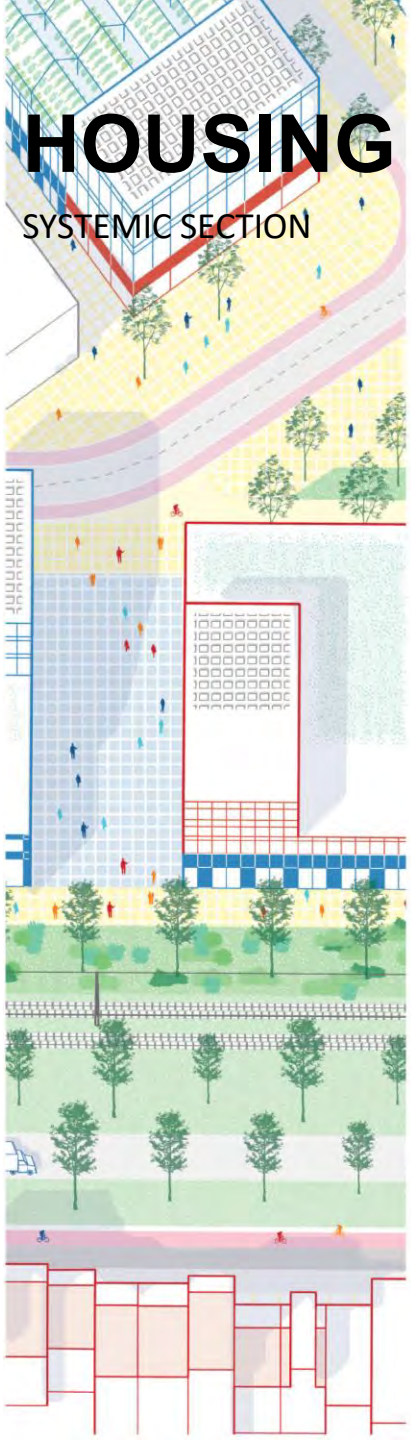
HOUSING AND AMENITIES

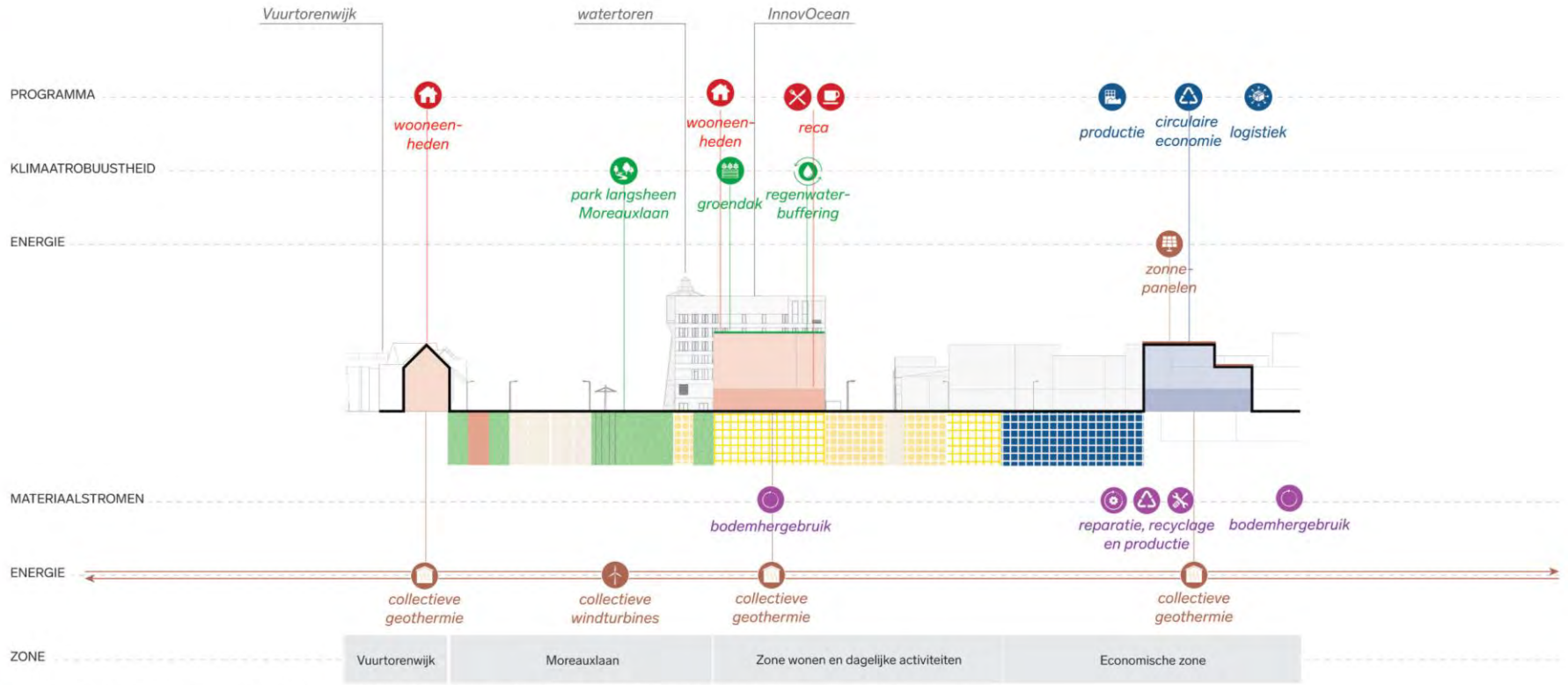
DAILY FUNCTIONS AND AMENITIES CREATING A PLEASANT LIVING/WORKING ENVIRONMENT



HOUSING AND AMENITIES

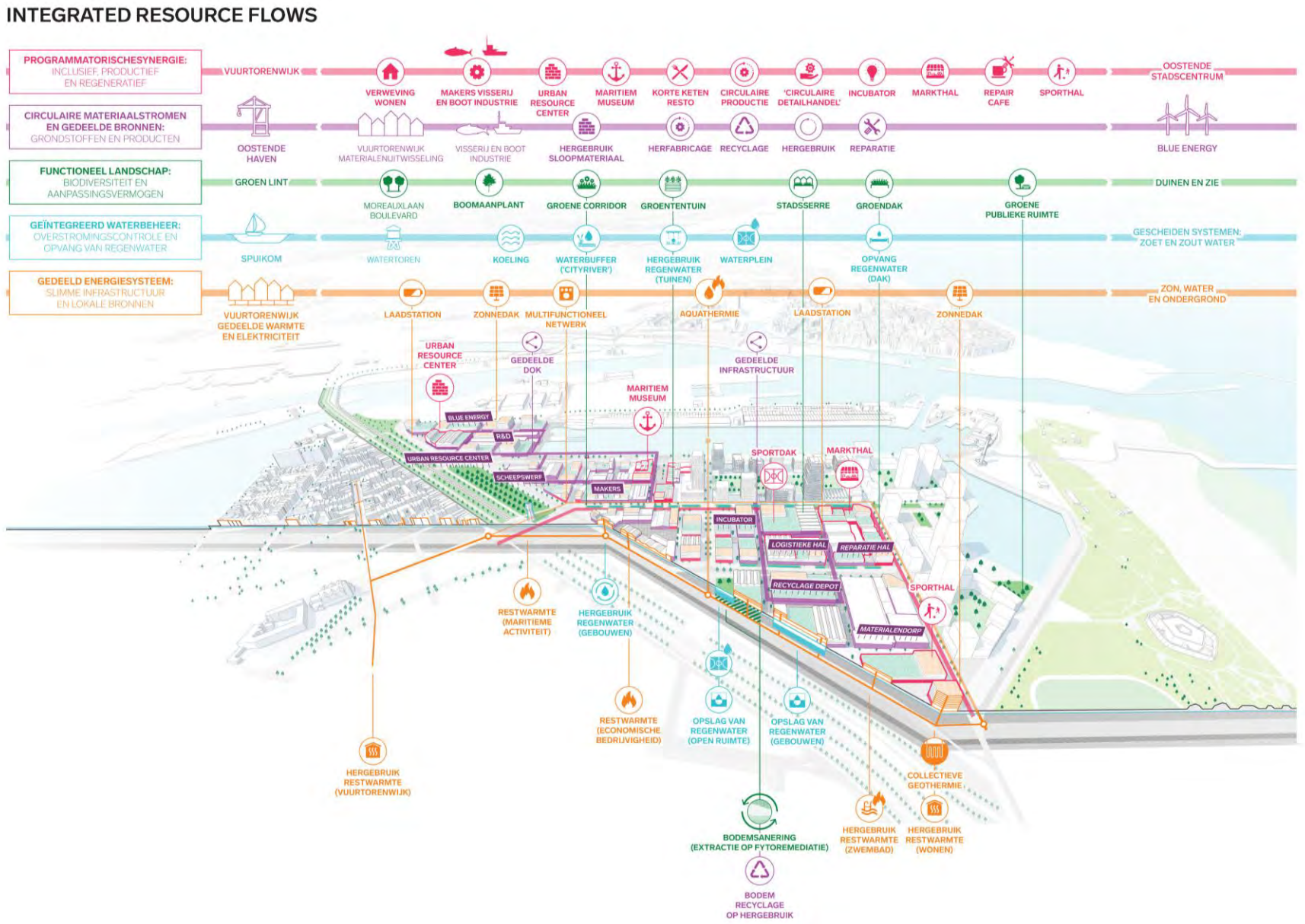
SYSTEMIC SECTION





De herinrichting voorziet **aangename, verkeersveilige fiets- en voetpaden,** brede groenstroken en een betere inpassing van de **traminfrastructuur**.

INTEGRATED RESOURCE FLOWS



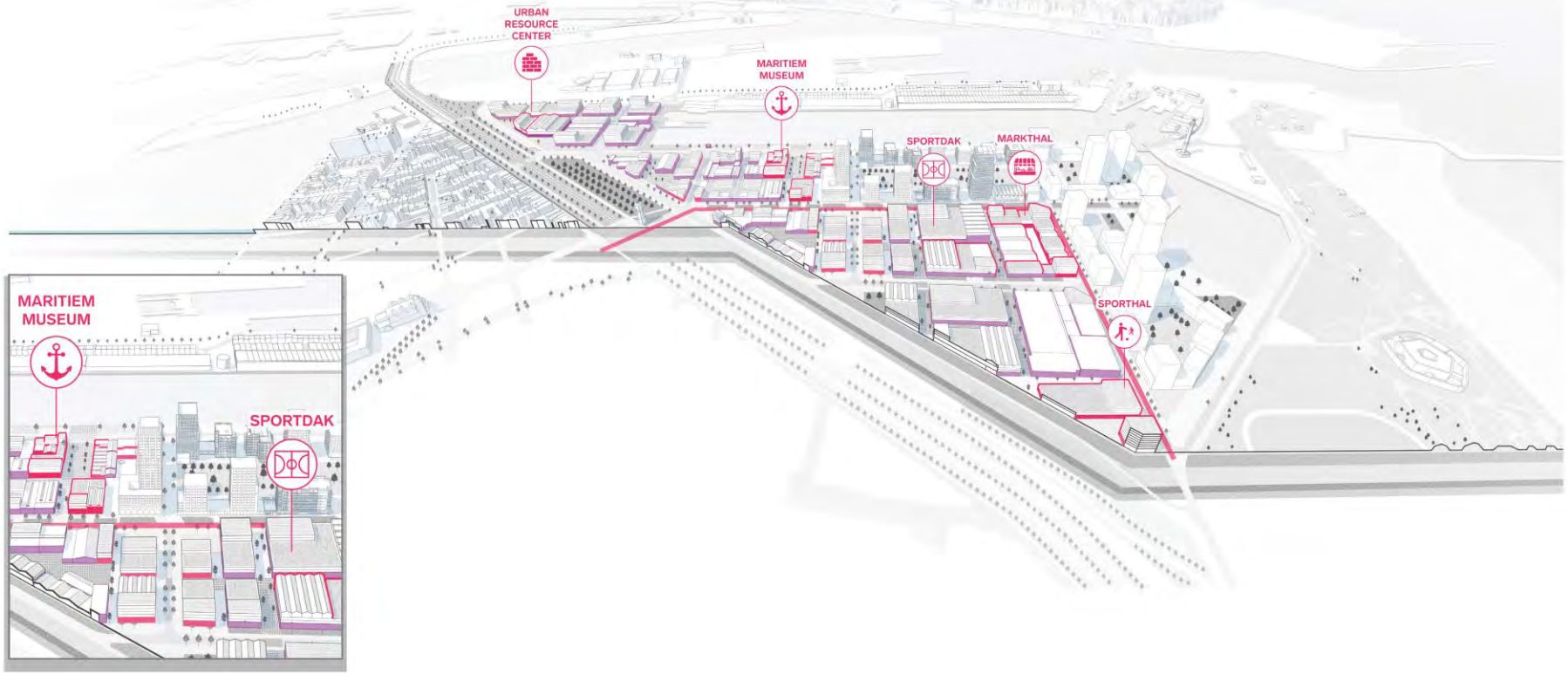
The transition plan not only focusses on ***how the space 'looks like',***

but rather ***'how space works'*** *and* ***how different spatial and resource networks are systemically linked to each other***

CIRCULAR SYNERGIES

PROGRAMMATIC SYNERGY:

INCLUSIVE, PRODUCTIVE AND REGENERATIVE



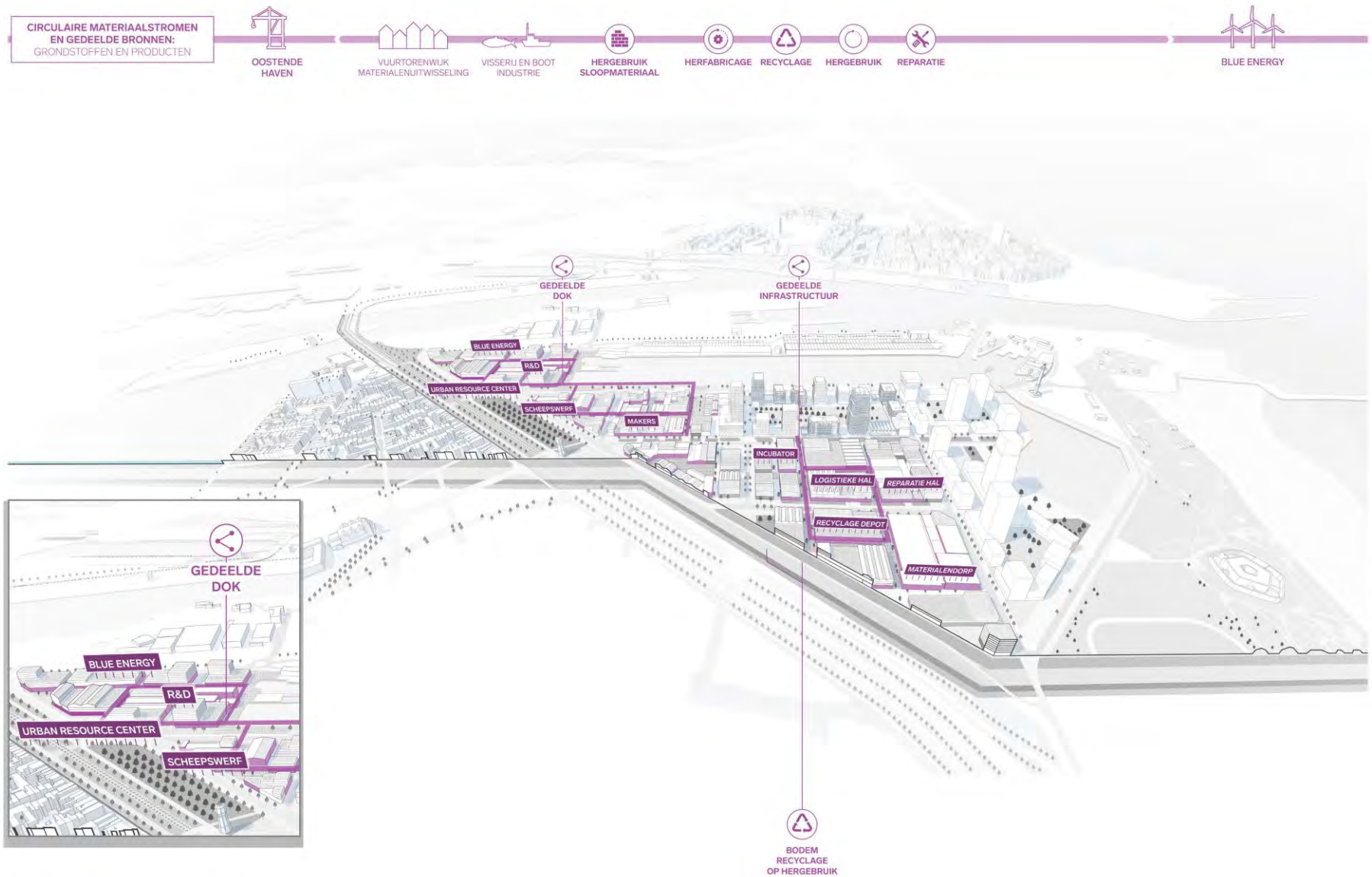
It's about ***creating programmatic synergies***

By a ***careful definition of the programmes*** *and their* ***location on site***

CIRCULAR SYNERGIES

CIRCULAR MATERIAL FLOWS AND SHARED RESOURCES:

RAW MATERIALS AND PRODUCTS



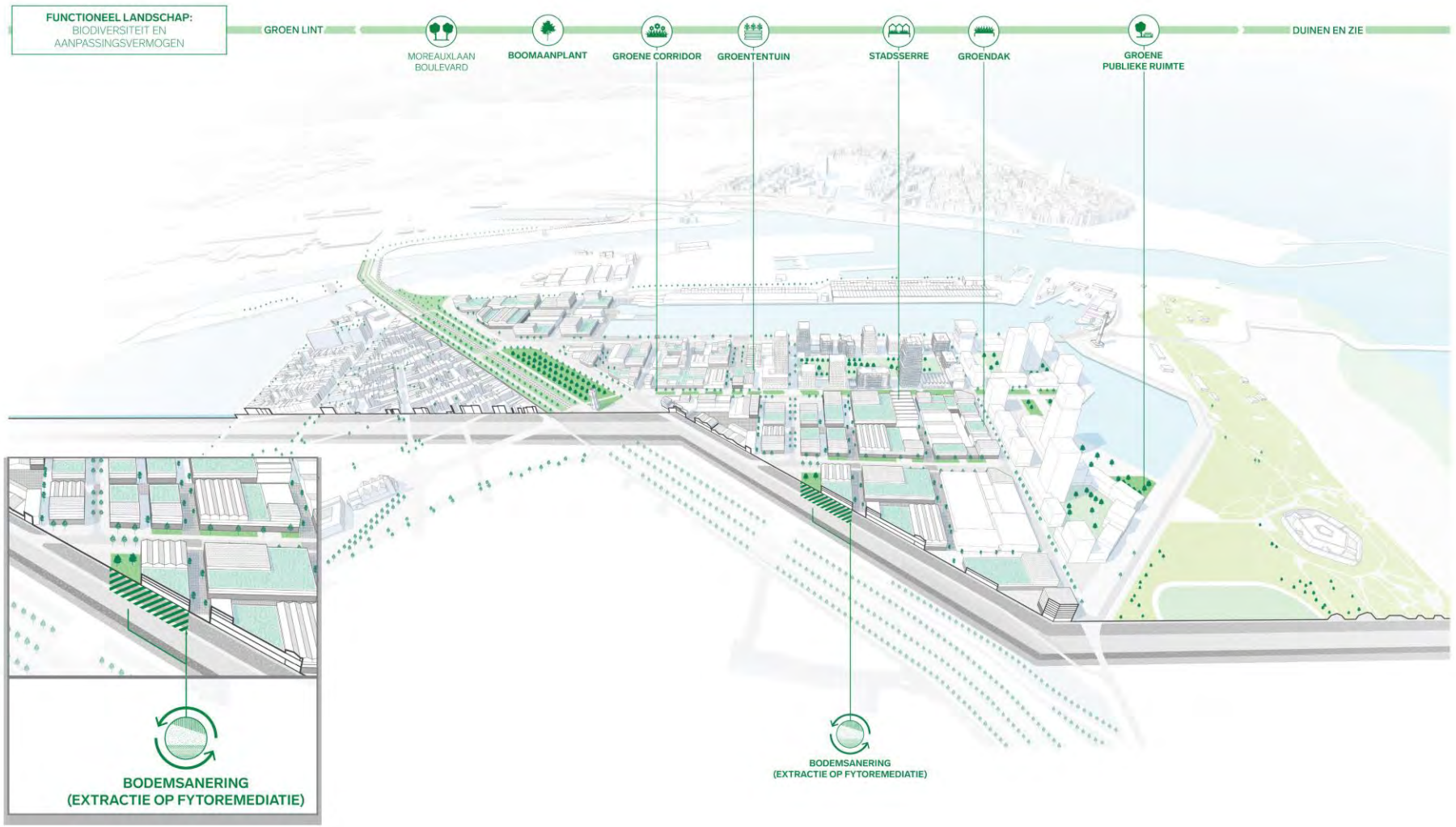
*It's about **circular material flows and shared resources***

*Facilitated by **collective infrastructure**, organised by **efficient logistic loops** that **support circular businesses** and **short supply chains***

CIRCULAR SYNERGIES

FUNCTIONAL LANDSCAPE:

BIODIVERSITY AND ADAPTIVE CAPACITY



*It's about a **functional landscape** integrating **green and blue structures** both on the **ground level as in the buildings***

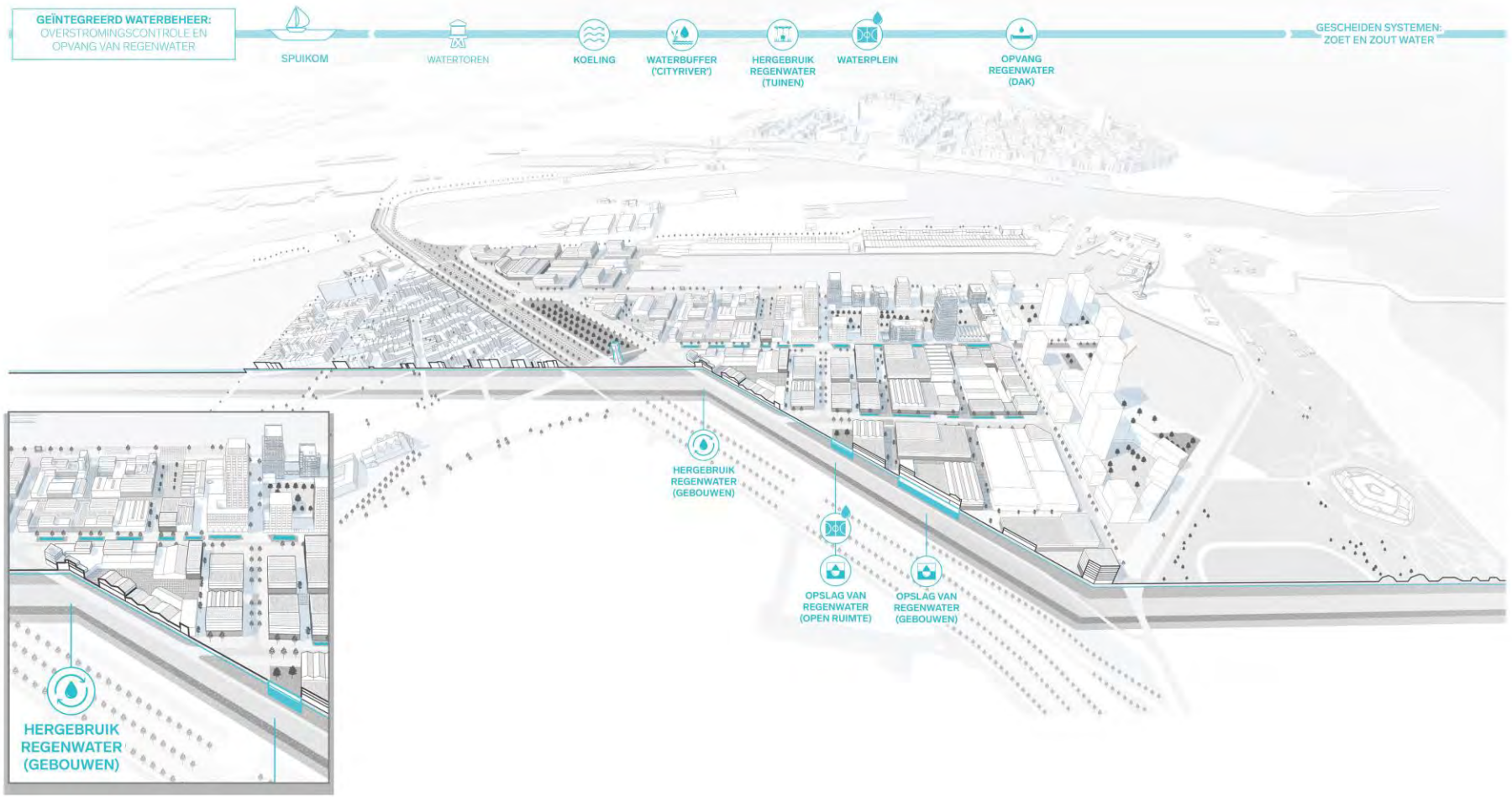
*Integrating **different ecosystems**: watermanagement, soil remediation, biodiversity, cooling*

*Integrating a **healthy living and working environment** as well as **social inclusion***

CIRCULAR SYNERGIES

INTEGRATED WATER MANAGEMENT:

FLOOD CONTROL AND RAINWATER HARVESTING



*It's about an **integrated water management***

*Constructed by **different components***

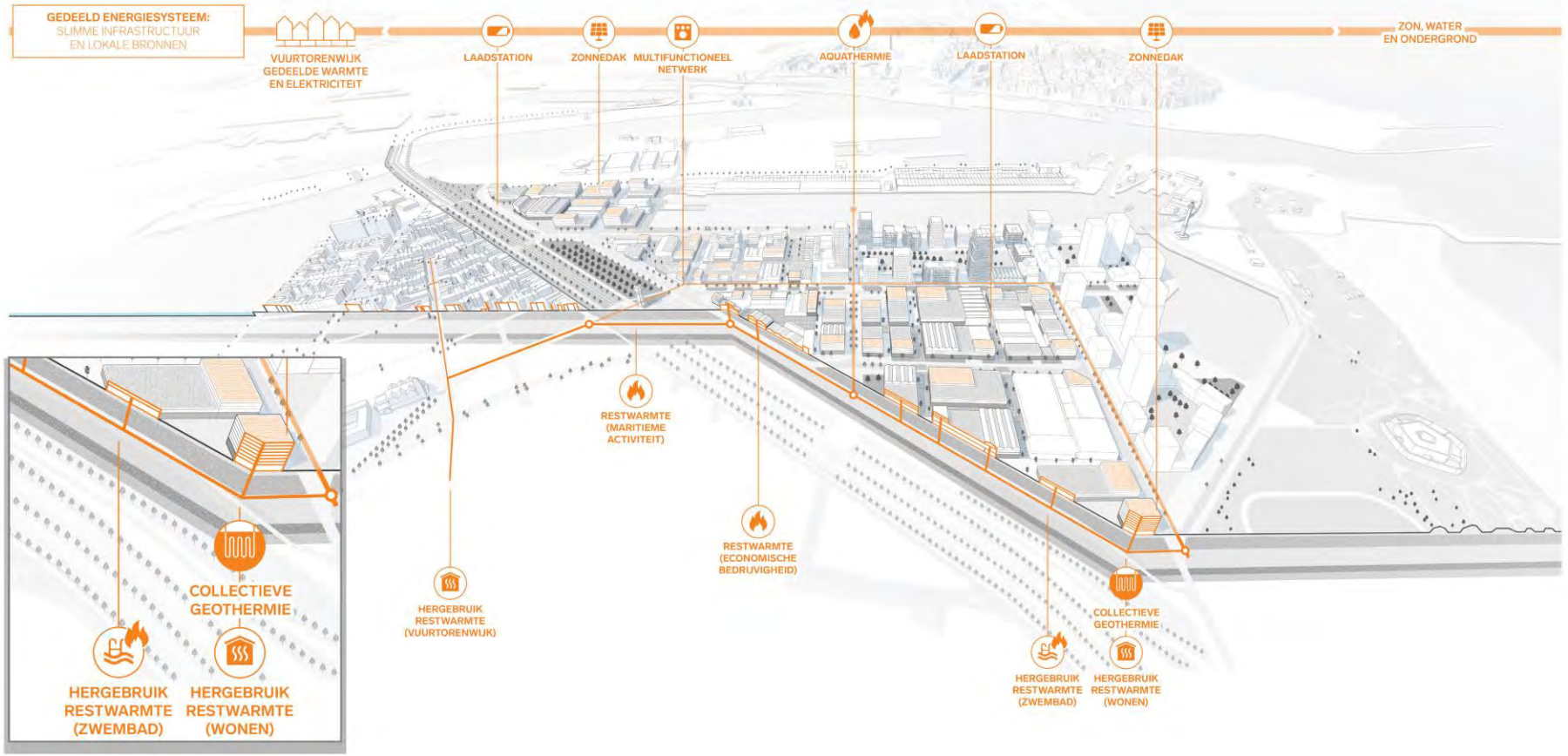
*From the **building roofs** and **underground areas** to **public and shared spaces***

*That work together on **flood control** and **rainwater captation***

CIRCULAR SYNERGIES

SHARED ENERGY SYSTEM:

SMART INFRASTRUCTURE AND LOCAL RESOURCES

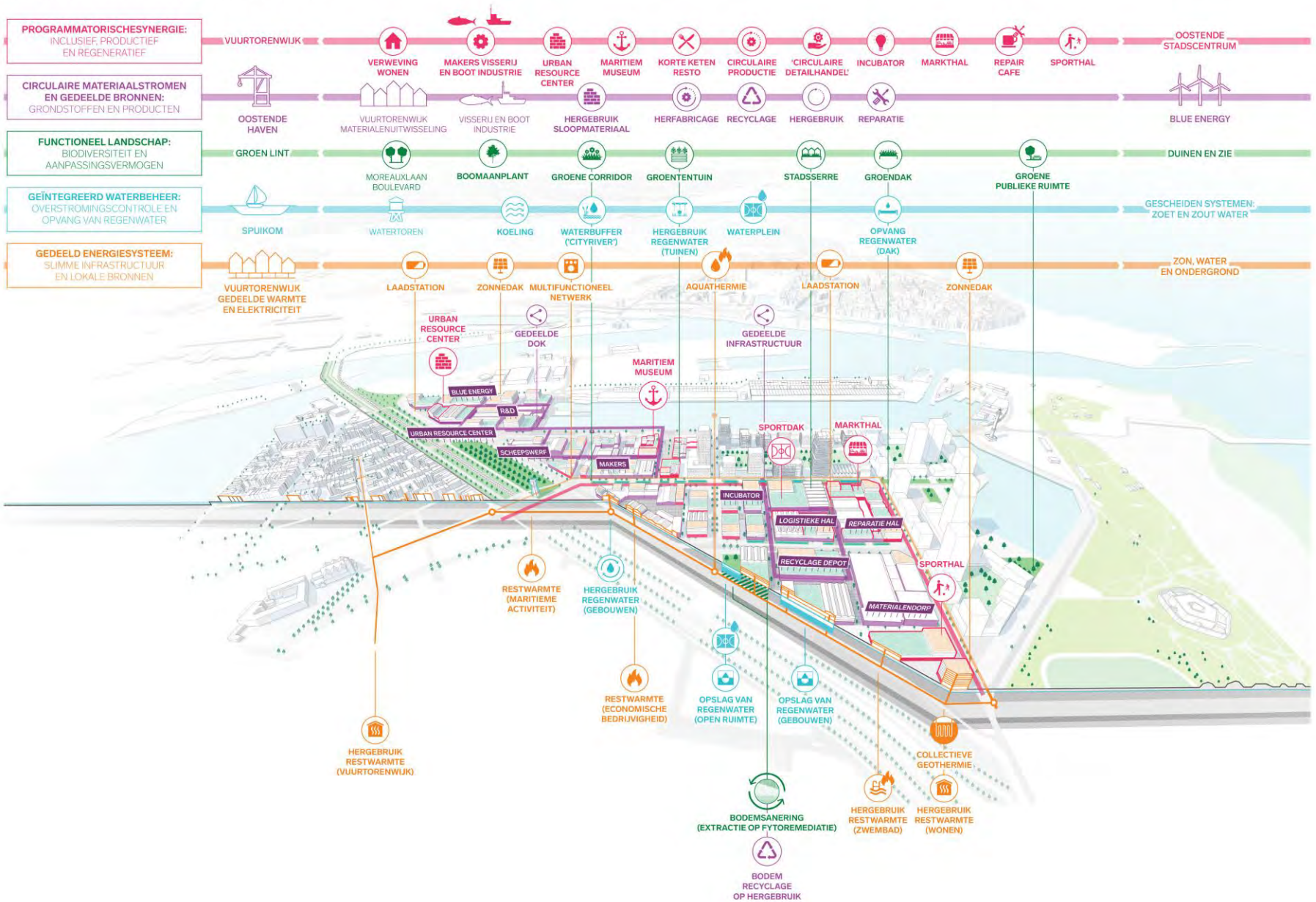


*It's about a **shared energy system***

*Structured by a **multiutility network,** facilitating **exchange of production and consumption***

CIRCULAR SYNERGIES

INTEGRATED RESOURCE FLOWS



*By **linking different scales and layers,** we bring **different sectors together** and **cross different governance levels***

Promote the dialogue towards a future proofed plan

Systemic change** that surpasses the **traditional silo's

CHANGING ROLE OF THE URBAN PLANNER

Pure design assignments with defined problem evolve into **integrated projects**

Connected agendas in a **complex stakeholder setting**

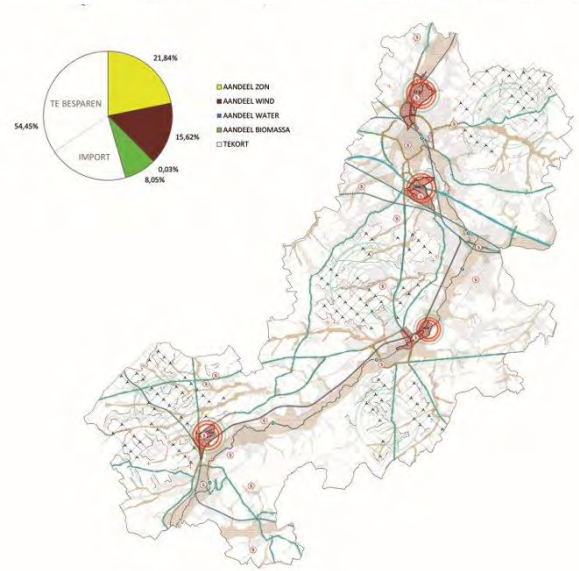
The role of architect, urban planner, engineer evolves to **'partner in transition'**

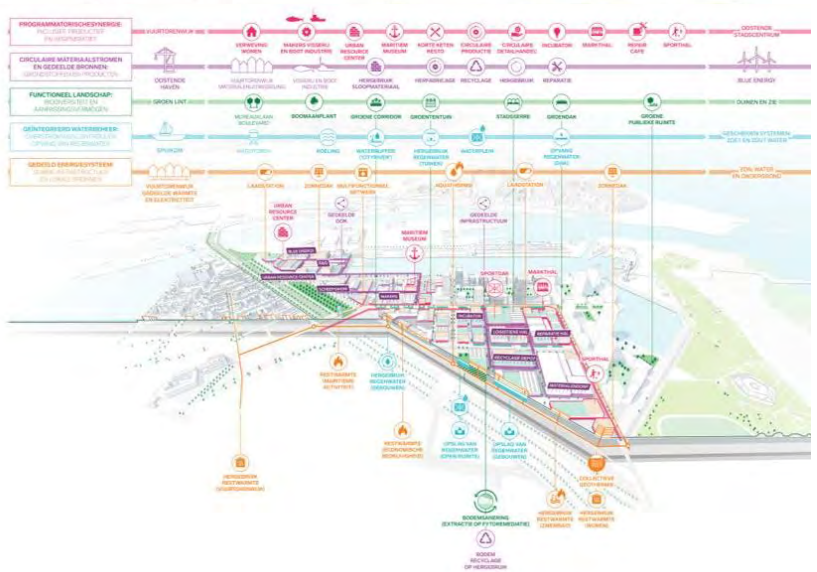
Take steps outside of our traditional way of working – **interdisciplinary and systemic approach**

DESIGN MISSIONS

INTEGRATED PROJECTS

VALUE CHAINS





SUSTAINABLE IMPACT PROGRAM

cross-division collaboration and knowledge framework on societal transition themes

broad expertise in our divisions to answer these complex issues integrally - from policy support to design and technical implementation

INDUSTRY	EN & ENV	INFRA	BUUR	BUILDINGS
Energy transition				
Sustainable mobility transition				
Circularity				
Healthy and safe living environments				
Climate resilience				
Smart & Strong Cities & Systems				
Infrastructure as a lever				

City in symbiosis
urban infrastructure as leverage

Smart and strong cities and systems

Healthy and Safe City

SWECO

Transforming Society Together

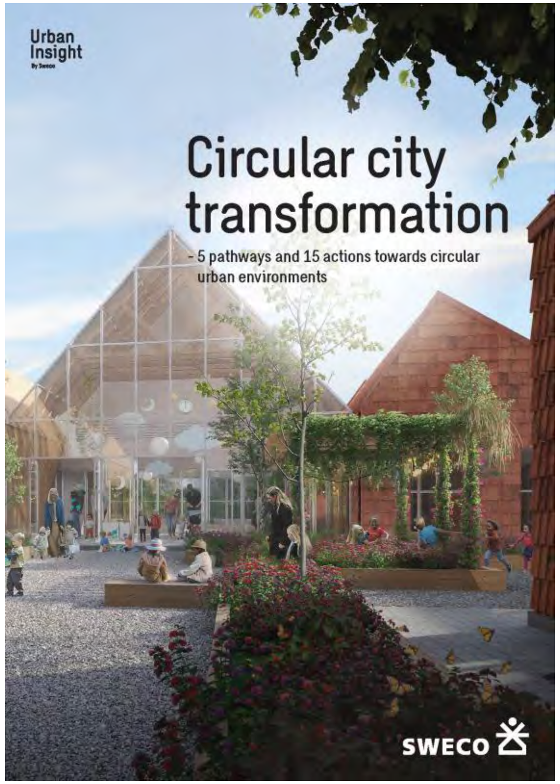
Sustainable Mobility Transition

Circularity

Climate Resilient City

Energy Transition

URBAN INSIGHT
INTERNATIONAL KNOWLEDGE SHARING PLATFORM

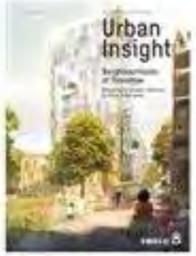


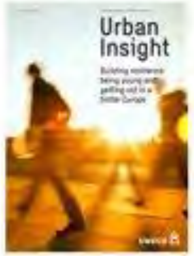
https://www.swecourbaninsight.com/

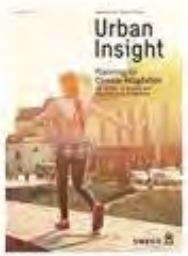
Created by experts, based on data and facts

Situations, challenges and solutions described based on needs and desires of citizens

Examples, comparisons and best practice from urban areas across Europe







WE HAVE A COMMON MISSION!

BU
UR
Part of Sweco

THANK YOU!

BU
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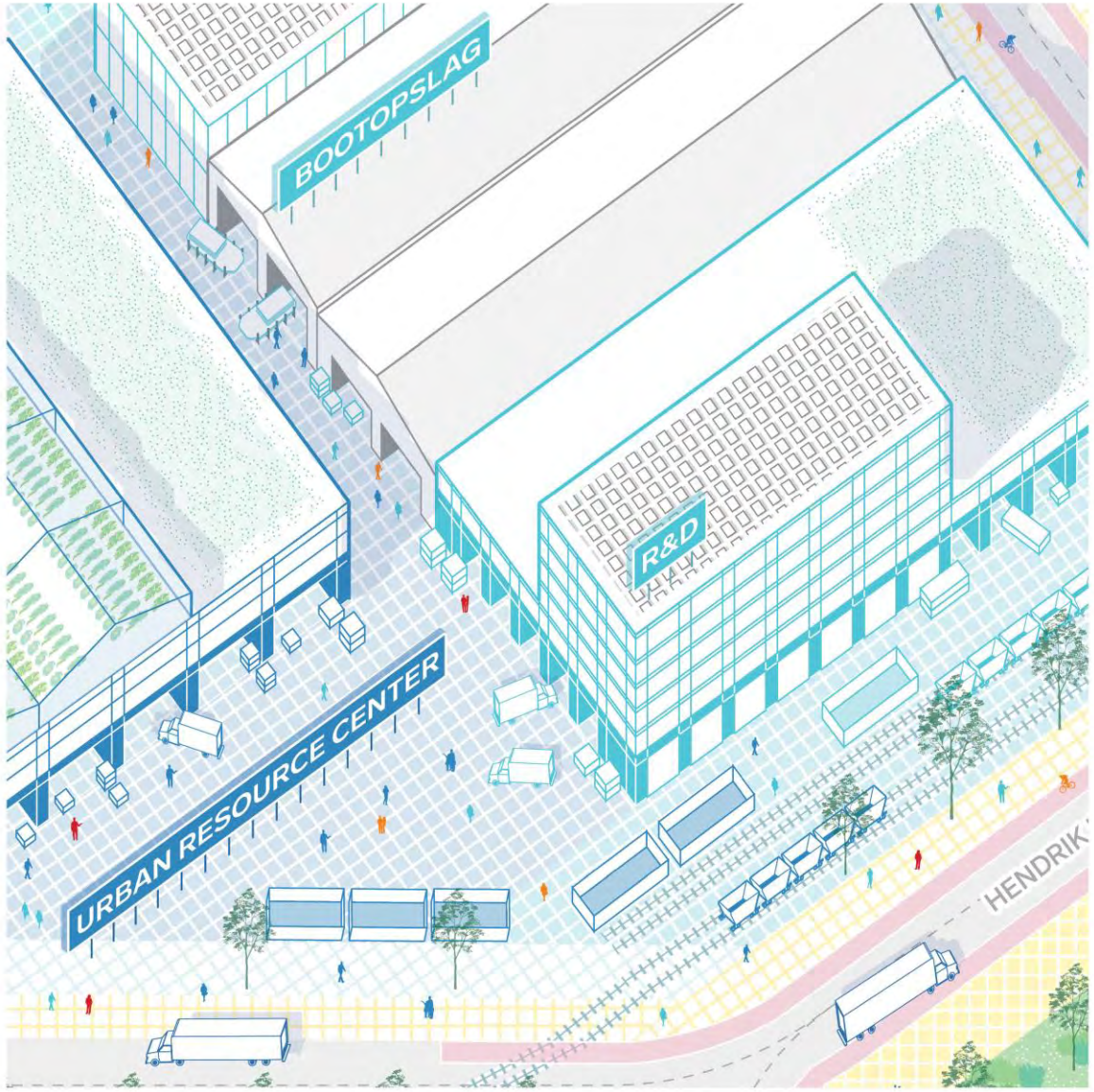
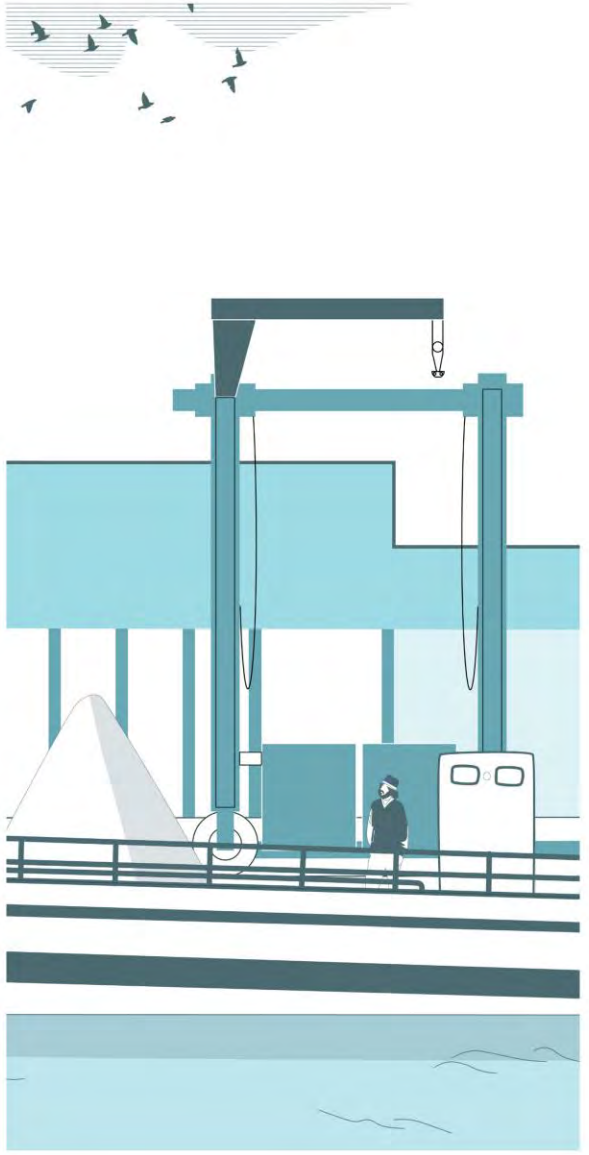
Part of Sweco

MARITIME DISTRICT

URBAN RESOURCE CENTER

- *Operates as a material bank where resources can be collected, distributed and remanufactured*
- *Strategically located nearby the harbour and railinfrastructure*
- *Accessible by sustainable modes of transportation*

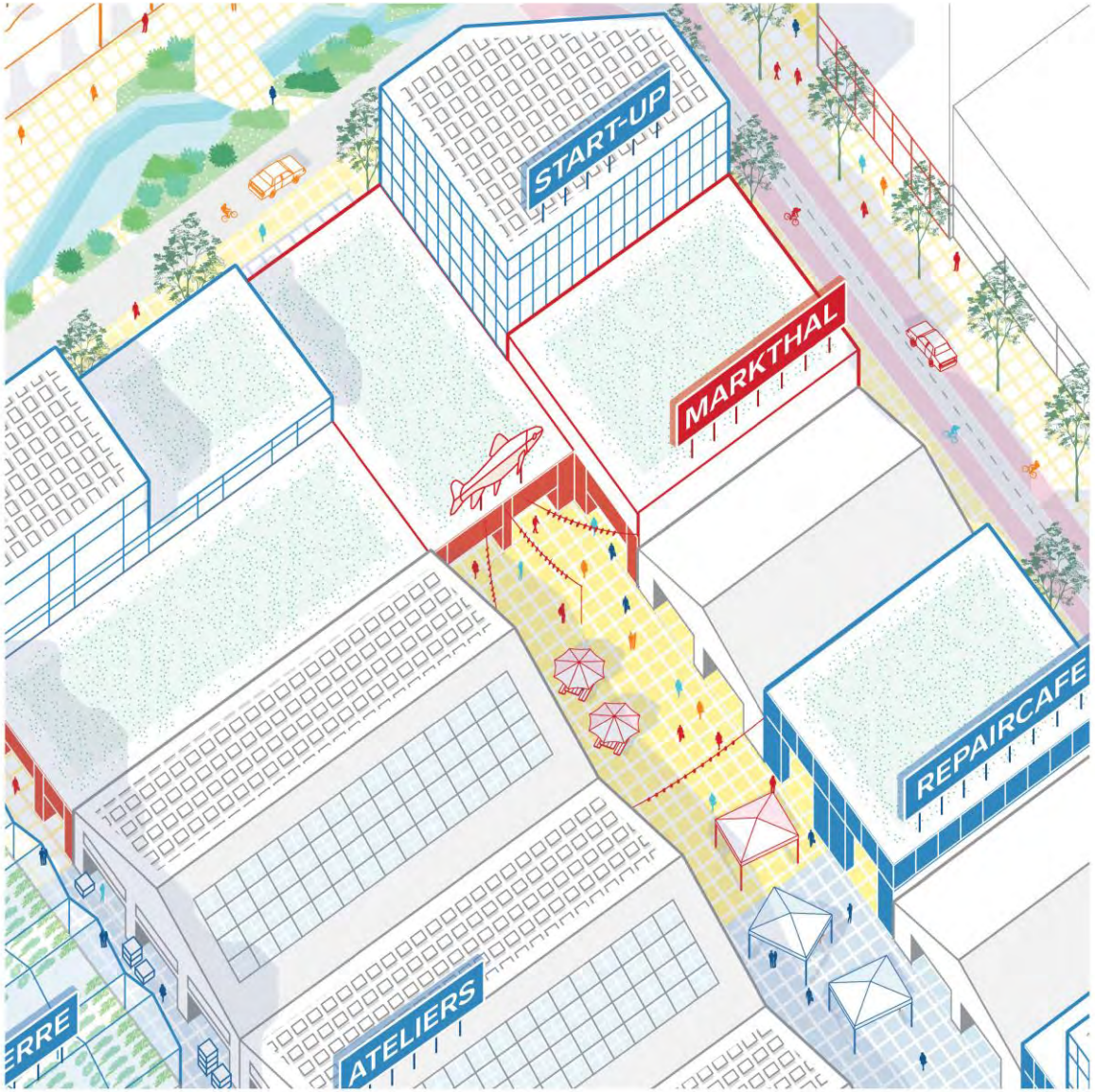




HOUSING AND AMENITIES

MARKET HALL

- *Opportunity for short supply chains*
- *Focus on the commerce of fish and local food*
- *Products and resources recycled or repurposed on site*
- *Ateliers or repair cafés*
- *Accessible for pedestrians and bicycle flows*



SUSTAINABLE CITY PLANNING

the evolution from linear to circular economy has an **impact on the life cycle of products, raw materials and services** and thus on everyone's daily life

changing consumption patterns

urban and social fabric must be prepared to **support and accelerate** these **evolutions**

resilient cities make **space for local energy networks, sustainable mobility,** urban-oriented agriculture, for urban-oriented production, for sustainable urban logistics, integrated watermanagement,…

Importance of the **district scale**