

GREEN WITH GREY



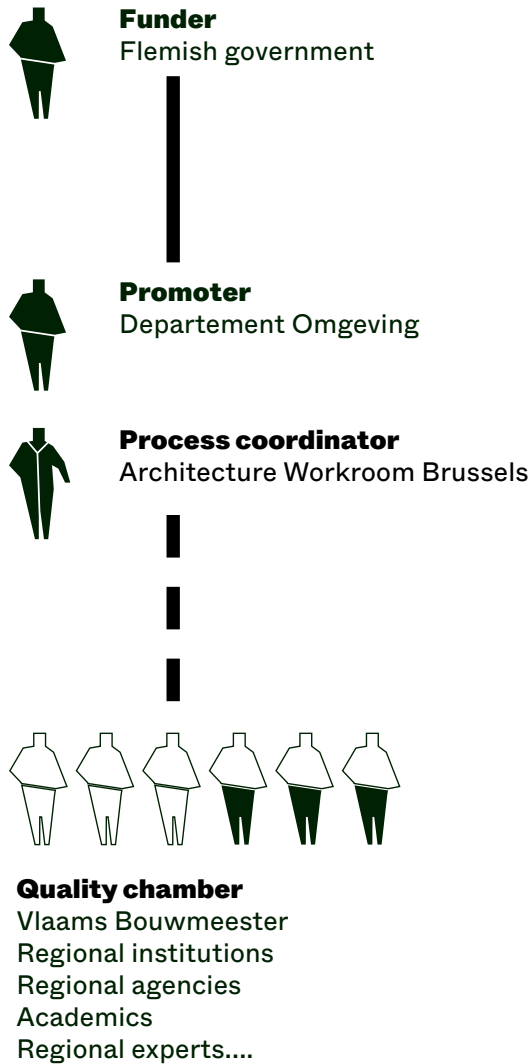
Nati00ns event – Breaking Ground Together: Solutions for Urban and Post-Industrial Soil De-sealing
December 14, 2023

Federico Brogginì

LATITUDE
PLATFORM FOR URBAN RESEARCH
AND DESIGN

An aerial photograph of a city street scene. In the center, a rectangular green space with a wooden bench and some trees is surrounded by a paved area. People are walking on the sidewalks and crossing the street. A blue car is parked on the right side of the street. A small orange and white truck is parked on the left side of the street. The street has white lane markings and a crosswalk. The surrounding area includes buildings, trees, and a grassy area.

Ontharding Programme / Desealing



Ontharding living labs programme

45 living labs

2018 // 1st generation >> 23 LL

2019 // 2nd generation >> 22 LL

Type of project

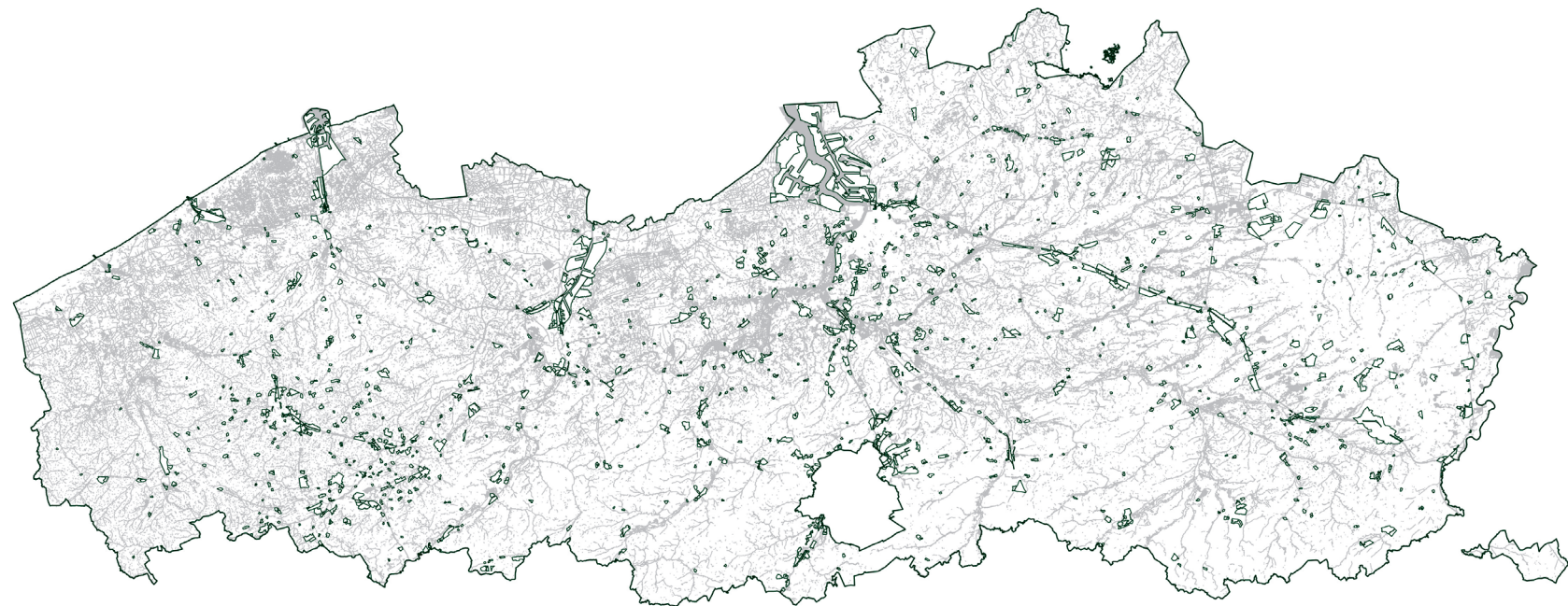
- > quick-win
- > coalition-building
- > strategic

Topic

- > desealing for more space for water
- > desealing for more qualitative school environments
- > desealing for more mobility with fewer roads



Flanders: an European Productive Territory

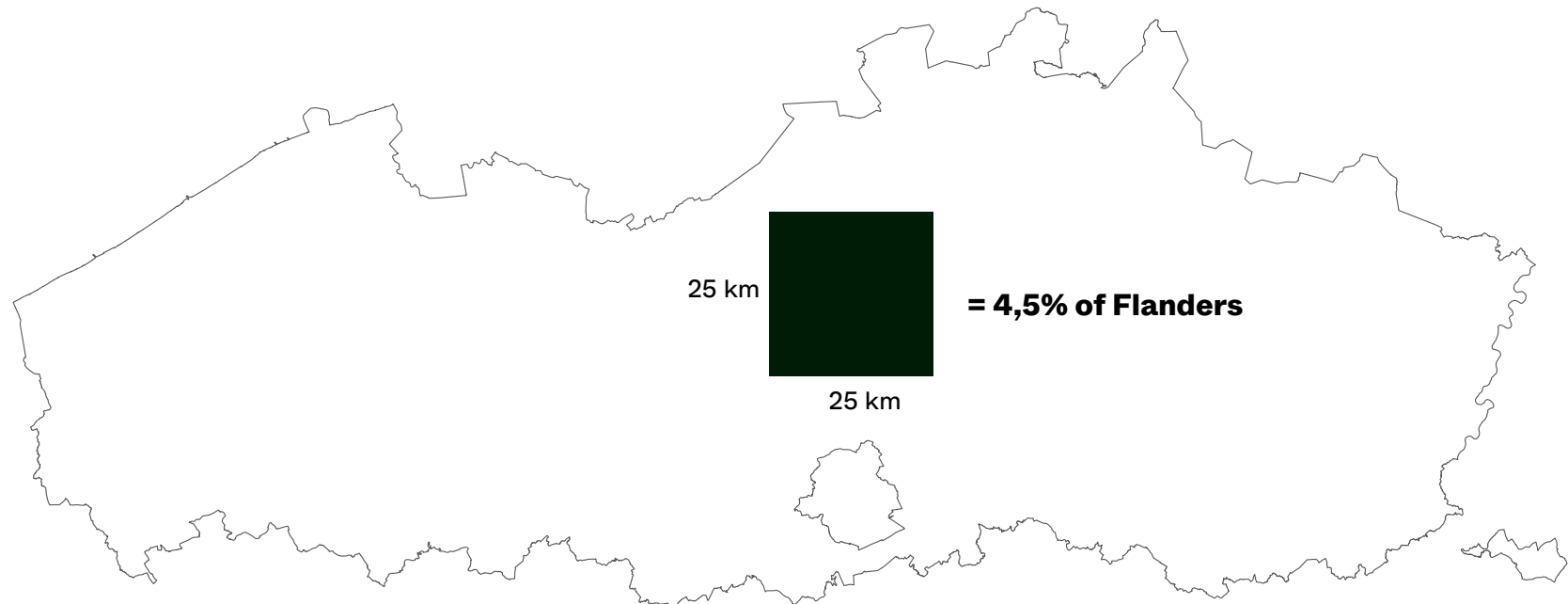


□ industrial platform
■ surface water

Industrial platforms n°
Industrial platforms surface

1356
60.746 ha

Flanders: an European Productive Territory



Flanders territory of production



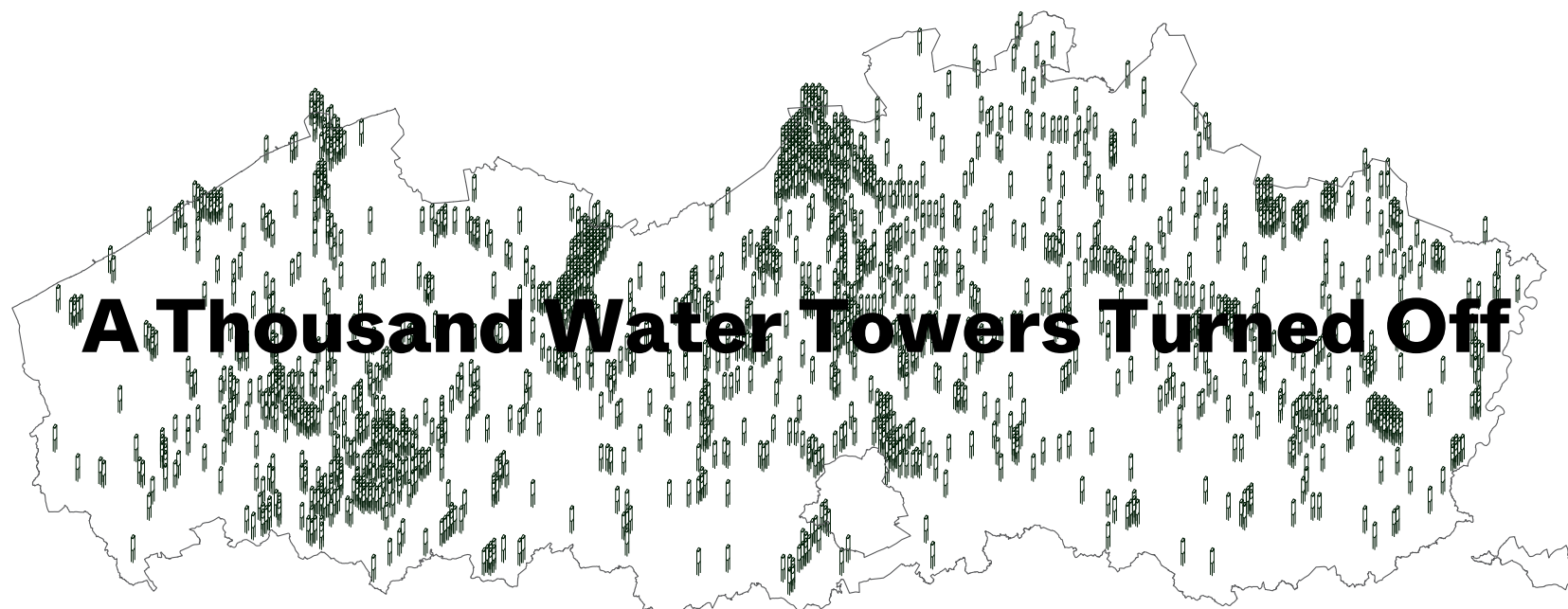


Industrial platforms runoff

222.348.382 m3

Industrial platforms sealed surfaces runoff

180.142.055 m3

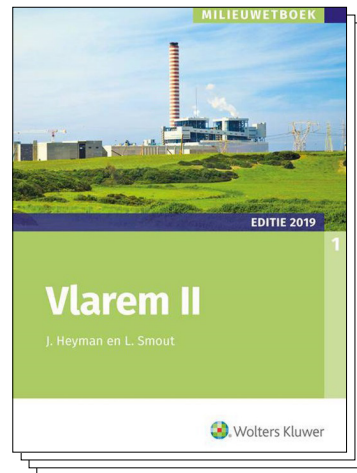


A Thousand Water Towers Turned Off

Regional strategies and policies to support ecological transition



2018
Strategic Vision
Departement Omgeving

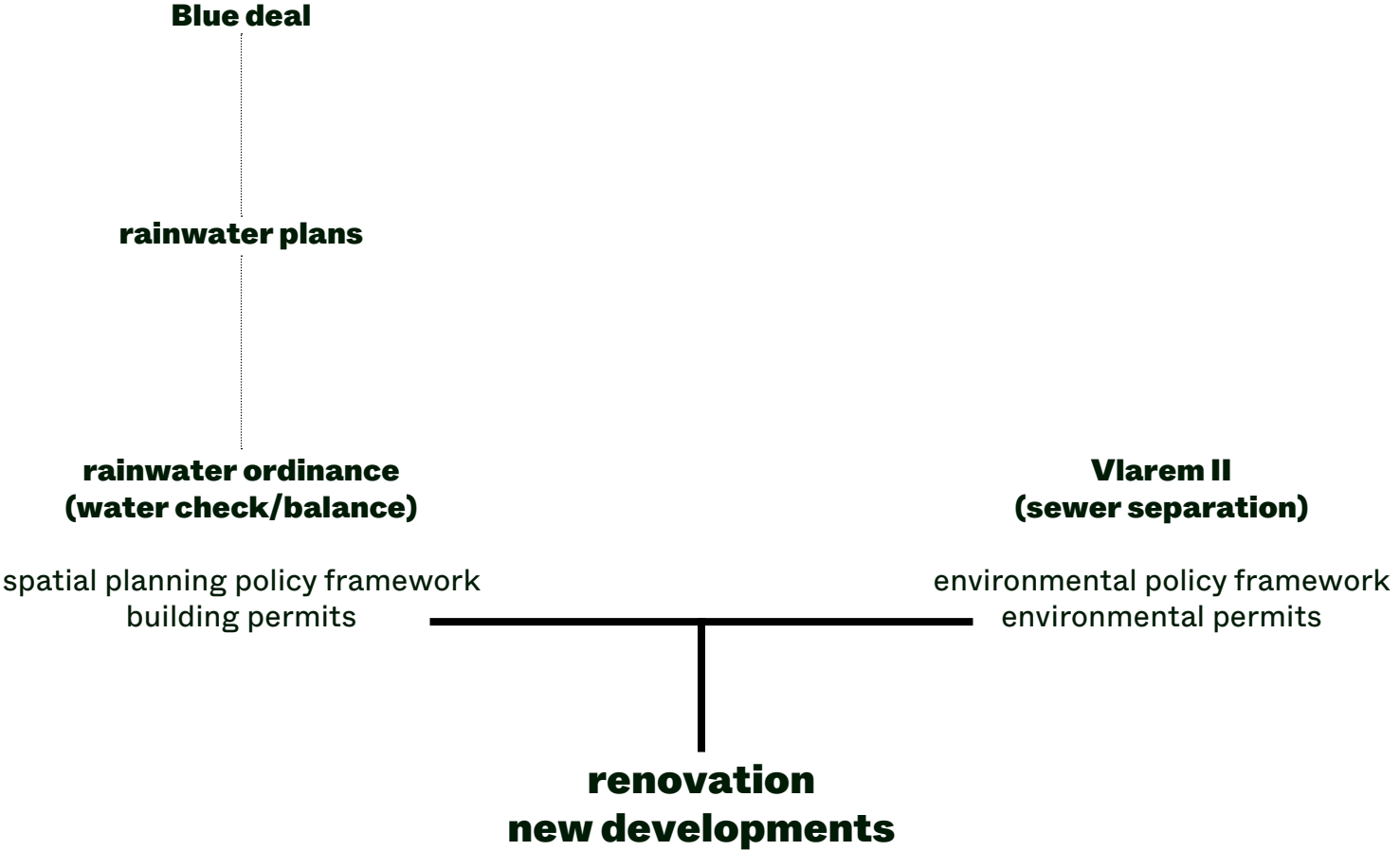


2019
Vlaem II
Flemish Government (+VMM)



2020
Blue Deal
Flemish Government (+ task force)

Regional policy framework to support ecological transition



how to deal with the existing stock?



Cargovil industrial platform, Vilvoorde. Credits Bruno Dias Ventura/LATITUDE

GREEN	GROEN	WITH	MET	GREY	1 GRIJS
A Thousand	Water Towers for	Flanders			
	GreenWithGrey	In Brief			
Territory of	Water Towers	GreenWithGrey	Diagnosis		
Actions for	Water	GreenWithGrey	Coalitions		
Choreographies of	Water	GreenWithGrey	Design Illustrations		
Motions for	Water	GreenWithGrey	Policy Instruments		
Towers of	Water	GreenWithGrey	Design Projects		
Deseal for	Water	GreenWithGrey	Testing Grounds		

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

06. Tower of Water GreenWithGrey Design Projects

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

GREEN	WITH	GREY	1
GROEN	MET	GRIJS	
A Thousand Water Towers for Flanders	GreenWithGrey In Brief		
Territory of Water Towers	GreenWithGrey Diagnosis		
Actions for Water	GreenWithGrey Coalitions		
Choreographies of Water	GreenWithGrey Design Illustrations		
Motions for Water	GreenWithGrey Policy Instruments		
Towers of Water	GreenWithGrey Design Projects		
Deseal for Water	GreenWithGrey Testing Grounds		

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

06. Tower of Water GreenWithGrey Design Projects

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

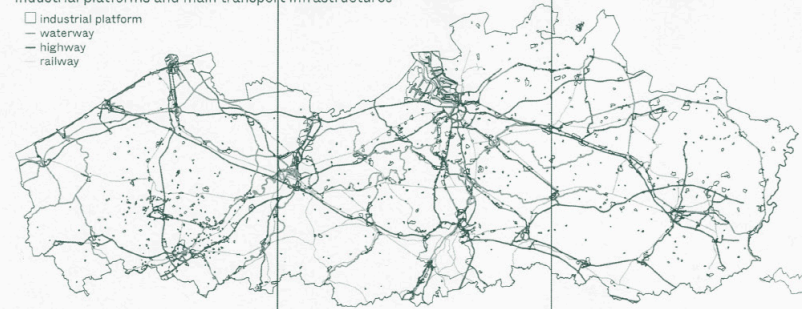
07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

GREEN 12 GROEN WITH MET GREY GRIJS

Industrial platforms and main transport infrastructures

- industrial platform
- waterway
- highway
- railway



Industrial platforms and surface water

- industrial platform
- waterway
- surface water



Industrial platforms and soil permeability

- industrial platform
- low permeability soil
- medium permeability soil
- high permeability soil



0 5 50 km

34

01KANAAL VAN IEPEER
NAAR DE IJZER**07**ZENNE TOT MONDING
ZUUNBEEK**13**

WIMP

**02**ZUIDERVAARTJE
TOT MONDING
ST.TRUDOLEKE**08**ZENNE VAN MONDING
WOLUWE TOT
MONDING TANGEBEEK**14**

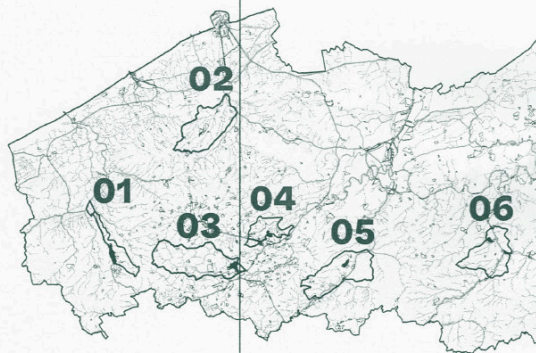
MOL NEET

**03**

HEULEBEEK

**09**

WEESBEEK

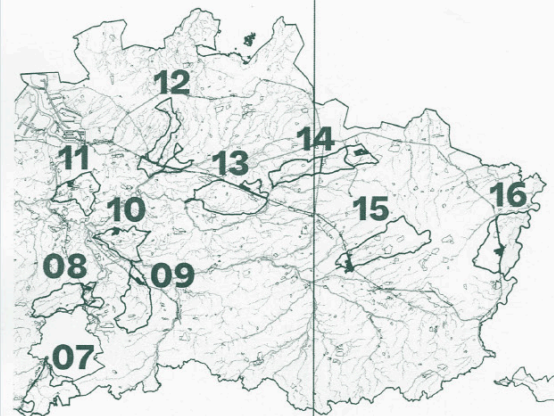
**15**DEMER VAN MONDING
MANGELBEEK TOT
MONDING GETE

The 16 watersheds within Flanders.

35

04MANDEL VAN
MONDING DEVEBEEK
TOT MONDING IN LEIE**10**VROUWVLiet
VAN MONDING
KREKELBEEK (excl) TOT
MONDING IN DIJLE**16**MAAS VAN MONDING
KIKBEEK TOT
MONDING BOSBEEK**05**SCHELDE VAN MONDING
MOLENBEEK TOT
MONDING ZWALMBEEK**11**

BOVENVLiet

**06**DENDER VAN MONDING
MOLENBEEK/
WOLFPUTBEEK TOT
MONDING HOEZEBEEK**12**MOLENBEEK/BOLLAAK
VAN MONDING VENLOOP
TOT MONDING IN KLEINE
NETE

GreenWithGrey

GREEN
36

GROEN

WITH

MET

GREY

GRIJS

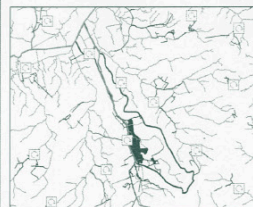
01. KANAAL VAN IEPER NAAR DE IJZER

Ijzer
Bellewaerdebeek
3,318 ha
337 ha
10%

main pipes

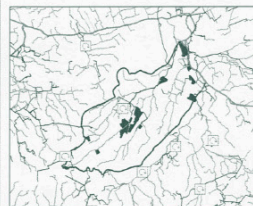


drainage



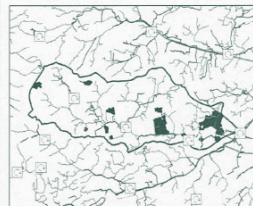
02. ZUIDERVAARTJE TOT MONDING ST.TRUDOLEKE (incl)

Brugse Polders
Kerkebeek
8,606 ha
384 ha
4%



03. HEULEBEEK

Leie
Heulebeek
10,892 ha
626 ha
6%



04. MANDEL VAN MONDING DEVEBEEK (excl) TOT MONDING IN LEIE

Leie
Mandel
3,486 ha
340 ha
10%



N° NAME WATERSHED

main river watershed
reference surface water
watershed surface
industrial platform surface
% of IP occupation within watershed

- watershed
- industrial platform
- waterway
- highway
- railway
- flood risk area

- watershed
- industrial platform
- surface water
- main wastewater collector
- ⊠ treatment plant

0 2.5 15 km



Diagnosis

GREEN

GROEN

WITH

MET

GREY

37
GRIJS

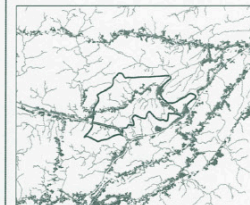
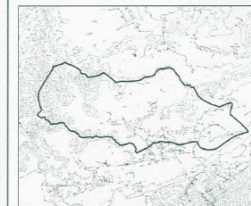
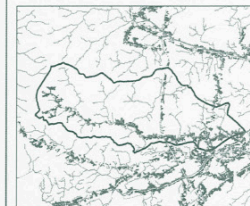
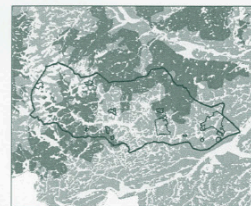
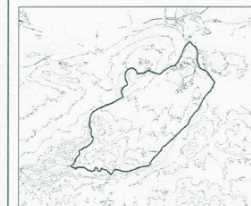
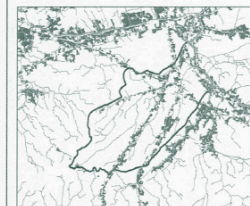
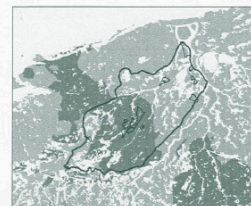
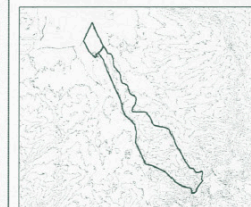
soil permeability



ecological connectivity



topography



- watershed
- industrial platform
- low permeability soil
- medium permeability soil
- high permeability soil

- watershed
- surface water
- ecological corridor

- watershed
- isoline (5m)

46

47

01
IEPERLEEKANAAL



07
HEIDEVELD HUIZINGEN



13
ENA 23 Z.3
(WEST ZONE 4)



02
AZ
TORHOUTSESTEENWEG
(DE SCHATTING)



08
CARGOVIL



14
BALENDIJK



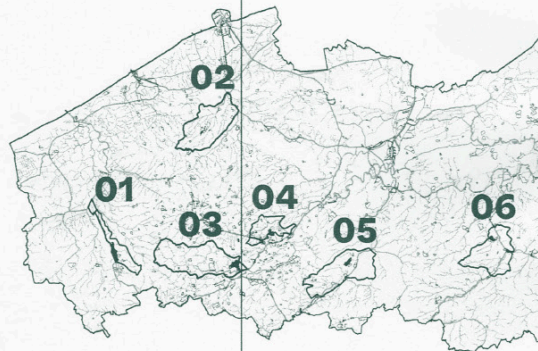
03
KORTRIJK - NOORD I+II



09
KAMPENHOUT-SAS



15
ZOLDER-LUMMEN



The 16 industrial platforms within Flanders.

04
BREESTRAAT



10
VEILINGZONE



16
LANKLAAR



05
BRUWAAN - RING II



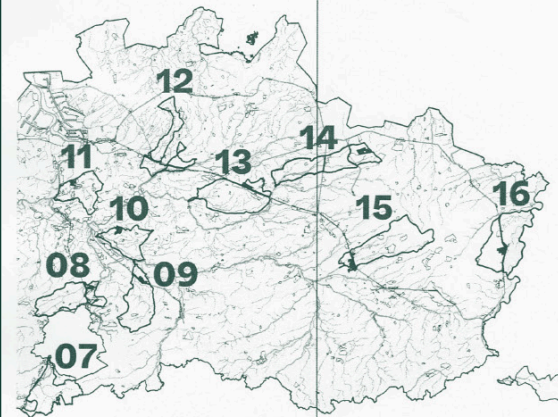
11
WILRIJK
TERBEKEHOFDREEF



06
ZUID III
(EREMBODEGEM III)



12
MASSENHOVEN
ZAGERIJSTRAAT



GreenWithGrey

GREEN
48

GROEN

WITH

MET

GREY

GRIJS

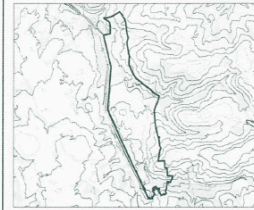
01. IEPERLEEKANAAL

Kanaal van Ieper naar de Ijzer
Ieper
299 ha
205 ha (68%)
94 ha (32%)

drainage

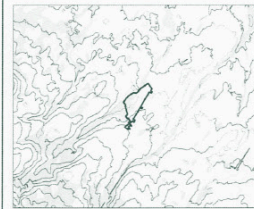


topography



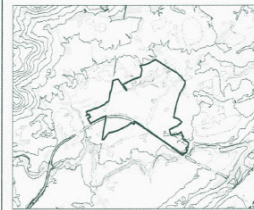
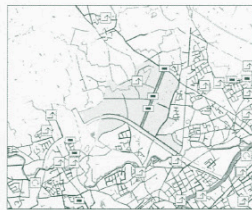
02. AZ TORHOUTSESTEENWEG (DE SCHATTING)

Zuidervaartje tot monding
St.Trudoleke (incl)
Zedelgem
27 ha
20 ha (73%)
7 ha (27%)



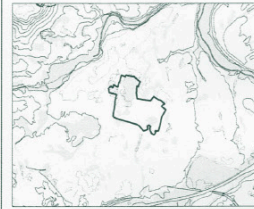
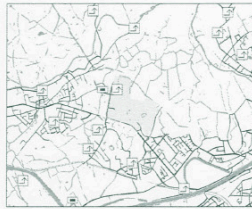
03. KORTRIJK - NOORD I+II

Heulebeek
Kuurne / Kortrijk
255 ha
180 ha (70%)
75 ha (30%)



04. BREESTRAAT

Mandel van monding Devebeek
(excl) tot monding in Leie
Wielsbeke / Oostrozebeke
96 ha
54 ha (56%)
42 ha (44%)



N° NAME INDUSTRIAL PLATFORM

watershed
municipality
Industrial platform surface
sealed surface (%)
unsealed surface (%)

0 1 5 km

- industrial platform
- surface water
- stormwater drainage system
- wastewater drainage system
- treatment plant
- pump
- stormwater basin

- industrial platform
- flood risk area
- isoline (5m)

Diagnosis

GREEN

GROEN

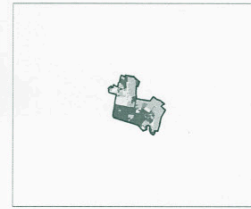
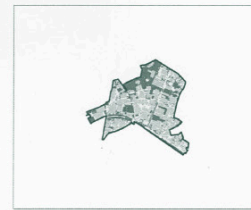
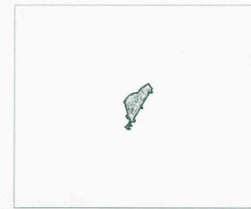
WITH

MET

GREY

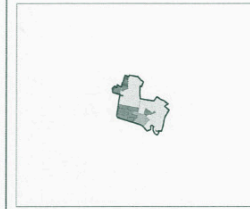
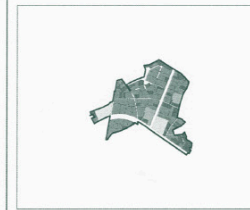
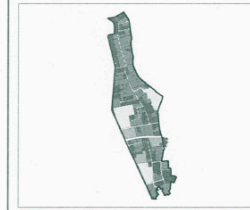
49
GRIJS

sealed and unsealed surfaces



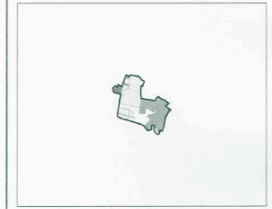
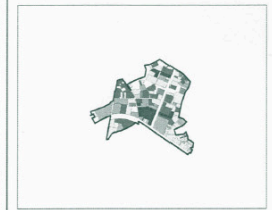
- industrial platform
- roof
- sealed surface
- permeable surface
- vegetated surface

parcels dimensions



- industrial platform
- small parcel ($0 > 9.999 \text{ m}^2$)
- medium parcel ($S > 49.999 \text{ m}^2$)
- large parcel ($M > 99.999 \text{ m}^2$)
- extra large parcel ($> 100.000 \text{ m}^2$)

parcels programs



- industrial platform
- manufacturing - NACE C
- construction - NACE F
- wholesale and retail - NACE G
- logistics - NACE H
- other economic function

58

01
LOGISTICS



07
WHOLESALE



13
MANUFACTURING



02
CONSTRUCTION



08
WHOLESALE



14
LOGISTICS



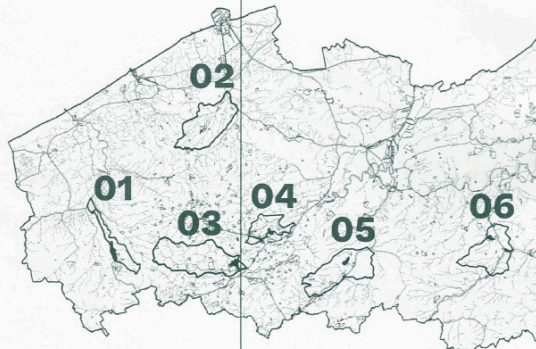
03
LOGISTICS



09
CONSTRUCTION



15
CONSTRUCTION



The 16 industrial parcels within Flanders.

59

04
WHOLESALE



10
MANUFACTURING



16
BUILDABLE PARCEL



05
WHOLESALE



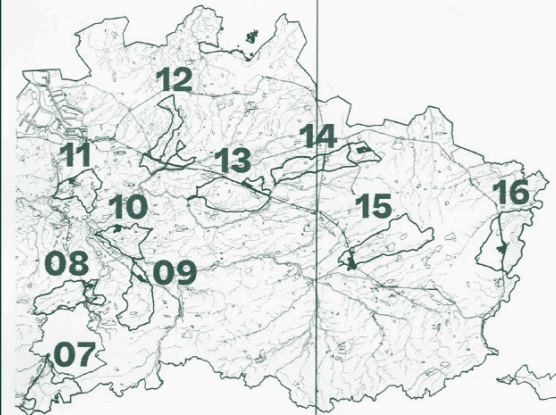
11
LOGISTICS



06
BUILDABLE PARCEL



12
MANUFACTURING



GreenWithGrey

GREEN
60

GROEN

WITH

MET

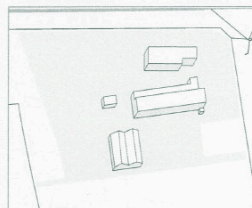
GREY

GRIJS

01. LOGISTICS (H)

Ieperleekanaal
Kanaal van Ieper naar de IJzer
56,160 m²

drainage

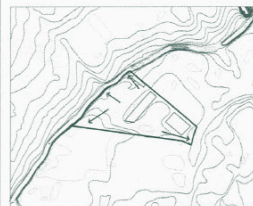


microtopography 20 cm



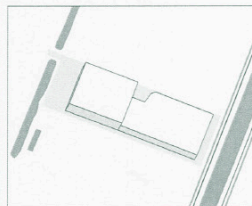
02. CONSTRUCTION (F)

AZ Torhoutsesteenweg (De Schatting)
Zuidervaartje tot monding
St.Trudoleke (incl)
9,933 m²



03. LOGISTICS (H)

Kortrijk - Noord I+II
Heulebeek
19,956 m²



04. WHOLESALE (G)

Breestraat
Mandel van monding Devebeek
(excl) tot monding in Leie
347,784 m²



N° INDUSTRIAL PARCEL PROGRAM (NACE CODE)

industrial platform name
watershed
industrial platform surface

industrial parcels n° 01, 02, 03
0 50 250 m

industrial parcel n° 4
0 100 500 m

- industrial parcel
- industrial building
- surface water
- stormwater drainage system
- wastewater drainage system
- ⚡ pump
- stormwater basin

- industrial parcel
- roof
- isoline (20 cm)
- runoff direction

Diagnosis

GREEN

GROEN

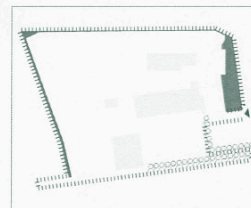
WITH

MET

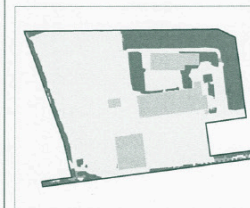
GREY

61
GRIJS

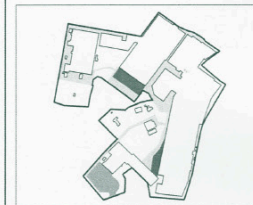
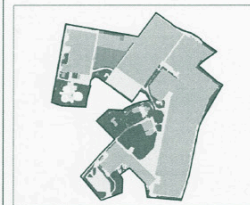
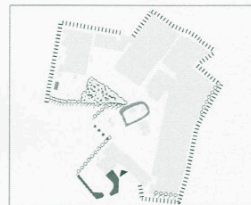
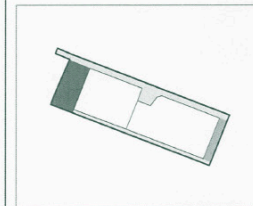
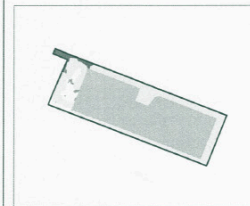
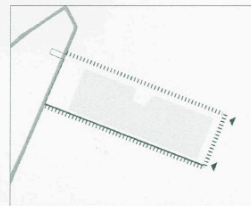
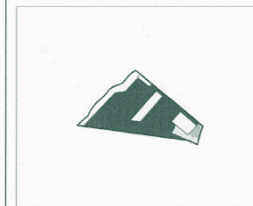
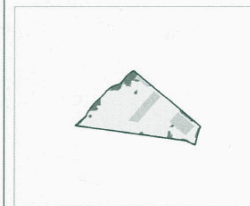
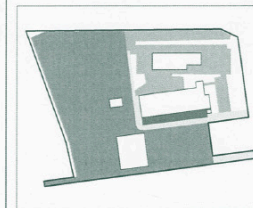
parcel edges



sealed and unsealed surfaces



productive open space programs



- industrial parcel
- roof
- surface water
- lawn
- tree
- fence (hard material)
- ... fence (bush, vegetation)
- ▼ entrance

- industrial parcel
- roof
- sealed surface
- permeable surface
- vegetated surface

- industrial parcel
- roof
- open-air storage area
- loading-unloading dock
- truck parking lot area
- car parking lot area
- circulation area

GreenWithGrey

Diagnosis

GREEN 4 GROEN WITH MET GREY 3 GRIJS

Neighbourhood, district, or park?

GreenWithGrey ventures can be located in a neighbourhood, a district, or a park, depending on the domain, public or private, where the project has the most significant impact.

A **neighbourhood** project is a GreenWithGrey initiative that primarily rolls out on private plots and has major implications for local businesses. A neighbourhood project, however, does not exclude the passage of a rainwater pipe across the public domain and/or economic or organisational stimulus by a public actor.

A **district** project combines a collection of interventions taking place in both public and private domains and with implications for both private businesses and the public good.

A **park** is a project that manifests itself primarily on public land and deals with issues that are not directly related to businesses. However, the drainage of rainwater that runs off private plots is still possible.

Neighbourhood / Private actors



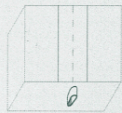
District / Private public actors



Park / Public actors



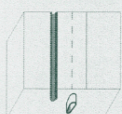
Combined sewer



Separated sewer



Open air ditch



Combined, separated, or open air?

GreenWithGrey transformations build on the **existing drainage system**. It could be **combined**, with pipes conveying stormwater and wastewater together. It could be **separated**, with pipes for stormwater and pipes for wastewater. Or it could be **open air**, with pipes to drain wastewater as well as with ditches to convey stormwater.

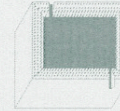
One can often find all three systems within the same industrial platform.

GREEN GROEN WITH MET GREY 3 GRIJS

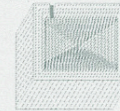
Detain, infiltrate, reuse!

To turn the existing industrial platforms of Flanders into A Thousand Water Towers Turned On, all efforts should be aimed at getting them to **detain, infiltrate, and reuse** rainwater. The GreenWithGrey industrial platforms of Flanders literally engage their ground with water, fine-tuning the ratio between sealed, intercepting surfaces and areas intensively planted in order to direct water but also to activate its vertical movements such as infiltration and evapotranspiration.

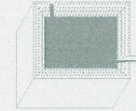
Detain



Infiltrate



Reuse



Dry, wet or reuse?

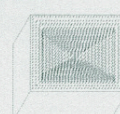
In order to make a Flanders' platform detain, infiltrate, and reuse rainwater, one must first determine if the platform's area of action is dry or wet.

A **'dry' project** can only occur on a dry location with a sufficient infiltration capacity. Here, both detention and infiltration are possible.

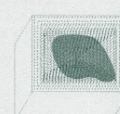
A **'wet' project**, on the other hand, lies on a wet location, hence on terrain where the infiltration capacity is less favourable and where only temporary detention of rainwater is possible.

Rainwater reuse, instead, is possible both on dry or wet locations. A **'reuse' project** is a GreenWithGrey initiative for rainwater reuse and presupposes the presence of large water-consuming activities on the platform or in surrounding areas.

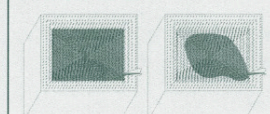
DRY project



WET project



REUSE project



GREEN	GROEN	WITH	MET	GREY	1 GRIJS
A Thousand Water Towers for Flanders					
		GreenWithGrey In Brief			
		Territory of Water Towers			
		GreenWithGrey Diagnosis			
Actions for Water		GreenWithGrey Coalitions			
		Choreographies of Water			
		GreenWithGrey Design Illustrations			
Motions for Water		GreenWithGrey Policy Instruments			
		Towers of Water			
		GreenWithGrey Design Projects			
Deseal for Water		GreenWithGrey Testing Grounds			

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

06. Tower of Water GreenWithGrey Design Projects

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

WET NEIGHBOURHOOD

Trigger

A company is planning to expand its building (1). As they will need to apply for a building permit, the company and its architectural firm are confronted with the rainwater regulation (2). However, complying with that regulation through standard practices proves difficult. The remaining open surface of the plot is small and the company wants to use it to the maximum. The architects look for a solution to comply with the regulations without losing buildable space. Consulting the VMM's publication, "Water Guide" (Waterwegwijzer), they find information about a neighbour-shared detention system with reduced space requirements and which does not involve the costly work that other solutions entail. The website mentions the possibility of contacting the VMM for more advice (3).

A VMM consultant advises the architects to redirect the rainwater to the borders of the plot and possibly to share the infrastructure with the neighbours in order to obtain more detention volume. Moreover, the VMM consultant inspires the company owner to design its rainwater facility in relation to the ecological network of the environment (4).

The company owner presents the project during a meeting of the industrial platform association and asks the neighbours whether they also wish to contribute to the realisation of a shared vegetated ditch, as suggested by the VMM (5).

Two of them are interested: one is also planning an extension in the future and the other has quite a lot of space available. The collaboration, moreover, allows the three companies to realise a long-requested emergency access for the fire department, and this without losing buildable land.

Plan

The suggested infrastructure consists of a wet shared vegetated ditch. For advice about the vegetation and ecological connections, the VMM consultant suggests contacting the VLM or an association such as Natuurpunt or Regionale Landschappen.

The industrial platform association manager (or simply, platform manager) mediates the three owners and the architectural firm develops the detailed plan and budget estimation of the shared vegetated ditches (6). At the same time, the infrastructure and its overflow into the public drainage system are discussed with the local sewer manager.

Execution

Once the negotiations are over, the platform manager works out a contractual agreement between the neighbours involved (7), which also mandates the platform manager to follow up on the building permit (outsourced to the architects) (8), realisation (outsourced to a contractor) (9), and maintenance (outsourced to a maintenance firm) of the new infrastructure (10). The costs are shared in accordance with the contractual arrangements.

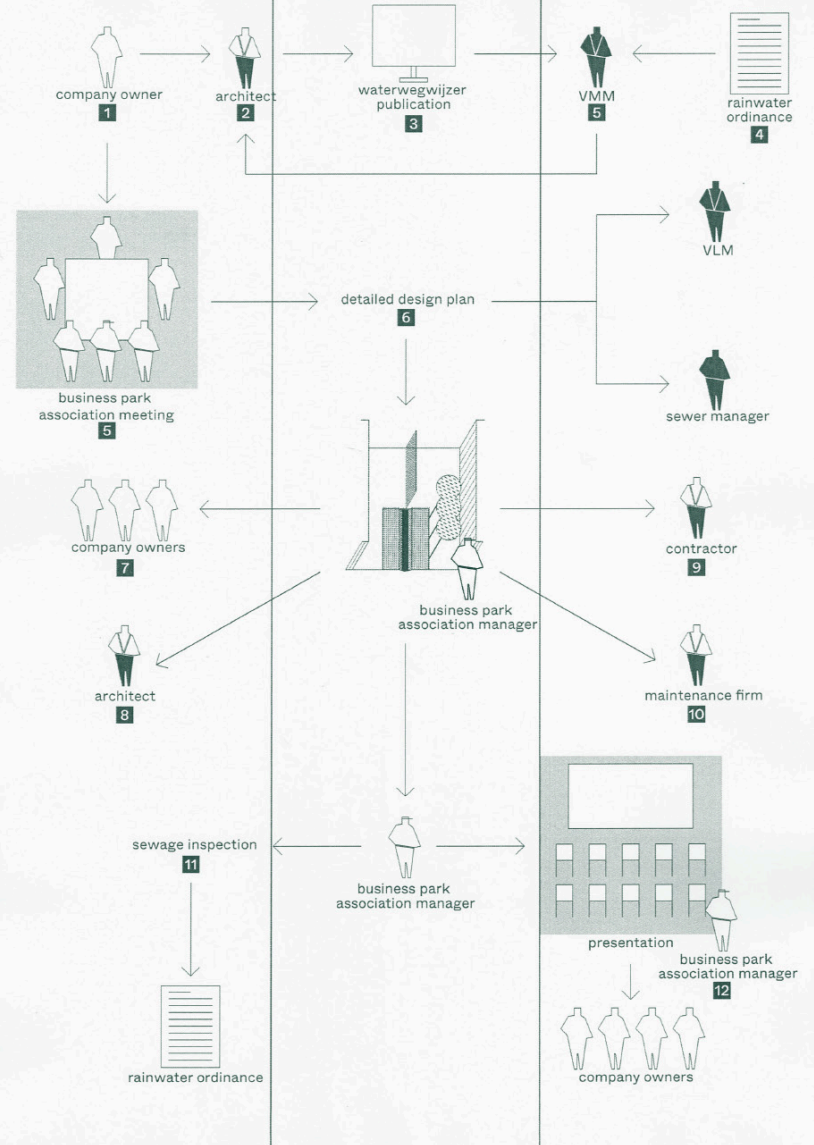
The sewer manager is contacted for the discharge connection to overflow into the open-air rainwater drainage system.

Follow-up

Once installed, the connections to the rainwater drainage and the compliance with the rainwater ordinance are verified by a sewage inspection (11).

The project is presented during a meeting of the industrial platform association. The industrial platform association manager also proposes that other companies on the industrial platform undertake a similar project (12).

The environmental, economic (additional building space), and organisational (outsourced rainwater management) benefits convince other neighbours and slowly the entire platform is upgraded. The business association succeeds in transforming their industrial platform into a WET Neighbourhood.



Trigger

Plan

Moreover, road renovation will also involve converting the road into (iv) a one-way loop. The pavement on

Execution

The execution of the action plan is followed up by the POM. A single contractor is assigned to do the work.

Follow-up

Once the different actions are being undertaken, the POM discusses a conditional disposition (leasing, concession, ...) of the parking spaces with the participating companies: these will have free access to this parking space in exchange for its maintenance (14).

The companies, members of the industrial platform association, decide to hire a platform manager for this purpose (15).

The roads, detention ditch, and detention pond are maintained by the municipality (16).

The proper execution of the private water devices is approved by a certification of (separated) sewage systems by a certified inspector (17).

2 The water is now mixed into a single combined sewage pipe. The system itself is in a good condition, but the sewage manager encountered several problems: firstly, the rainwater runoff dilutes the wastewater and hereby reduces the effectiveness of the treatment process downstream; secondly, the capacity of the sewerage system is exceeded (the capacity of the combined water) from the mixed sewage system into the surface water. The sewage manager is therefore in favour of disconnecting the rainwater and discharging it directly into the surface water network. However, the local stream only has a limited capacity and the rainwater will not be able to be discharged into the stream in high flows. It was decided that the rainwater from private and public land will be collected separately, detained both locally and centrally, and discharged in a delayed manner into the surface water. An emergency spillover from the detention basin into the mixed sewerage system is planned, considering this older system is now slightly overdimensioned.

GreenWithGrey

GREEN
26

GROEN

WITH

MET

GREY

GRIJS

WET PARK

Trigger

The industrial platform is located on the border between two municipalities. It has a separate sewage system, consisting of two pipes that separately collect wastewater and stormwater. The stormwater pipe drains the runoff produced both by private and public spaces directly into a small nearby stream. During heavy rains, the water level in this stream rises and prevents the stormwater pipe from discharging. As a result, the pipe tends to back up into the open spaces of the industrial platform, causing local floods.

The VMM has indicated that no increase in peak discharge to the surface water is possible, both to prevent flooding and to maintain ecological qualities (1). This restriction, enforced through the permit system ("Watercheck", "MER", "PrMER"), creates significant legal uncertainty and puts new developments on the industrial platform at risk.

Thanks to the development of a rainwater plan, one of the municipalities in which the platform is located is aware of this problem (2). The municipality, therefore, teams up with its neighbouring municipality (3) and together they decide to address the original public developer of this platform: the intermunicipal development company, with a request for a project to improve the platform's detention capacity (4).

The intermunicipal developer has a key role to play by setting the initiative in motion, finding the necessary partners, and following up on the project—from conception to realisation. After launching a public tender (5), the intermunicipal developer appoints a design team (landscape architect and hydraulic engineer) (6).

The intermunicipal developer and the design team organise a first round table together with the actors involved (7):

- the two municipalities (project commissioners, funding the preliminary design process),
- VMM (responsible for the second category watercourse),
- sewer manager (responsible for the stormwater pipe),
- ANB (manager of the neighbouring natural area).

Plan

Together they frame the first proposals and possibilities for the design project. The idea is to resolve the local flooding problem by installing a detention pond that collaboratively enhances the ecological connectivity of the wet landscape in the vicinity. In fact, the industrial platform is positioned in proximity to a wetland, which is part of the riparian landscape of the main river

(where the secondary water body discharges). An area of interest is delimited, which includes various parcels owned by De Vlaamse Waterweg (DVW) along the canal (8).

DVW is therefore asked by the intermunicipal developer to join the coalition. Because the implementation of a detention pond will also reduce the water pressure in the canal and thus its risk of overflowing, DVW agrees to participate in the project by giving a concession to the intermunicipal company to realise the new wet infrastructure on one of their plots (9).

Once the location is defined and the different aims of the project are clarified, the design team develops a detailed design of the detention infrastructure (10). It is proposed as a natural green zone enhancing the recreational potential of the watercourse and canal banks by offering a picnic area for passersby and people working on the industrial platform.

The project is finally presented again to the project team: the neighbouring municipalities, the VMM, the sewer manager, ANB, and DVW in order to define how the municipalities can obtain funding to realise their project. ANB offers the possibility of applying for forestation subsidies (subsidy "Bebossing") to cover the costs related to the nature area (11). Also, the VMM is able to contribute to projects that relate to flood-risk reduction of the watercourse under their management (12).

Execution

The municipality that initiated the project translates the masterplan into a detailed rainwater plan to ensure the enforcement of ecological connections during future developments on the industrial platform (13).

The intermunicipal developer is in charge of launching a public tender to find a contractor to build the infrastructure (14).

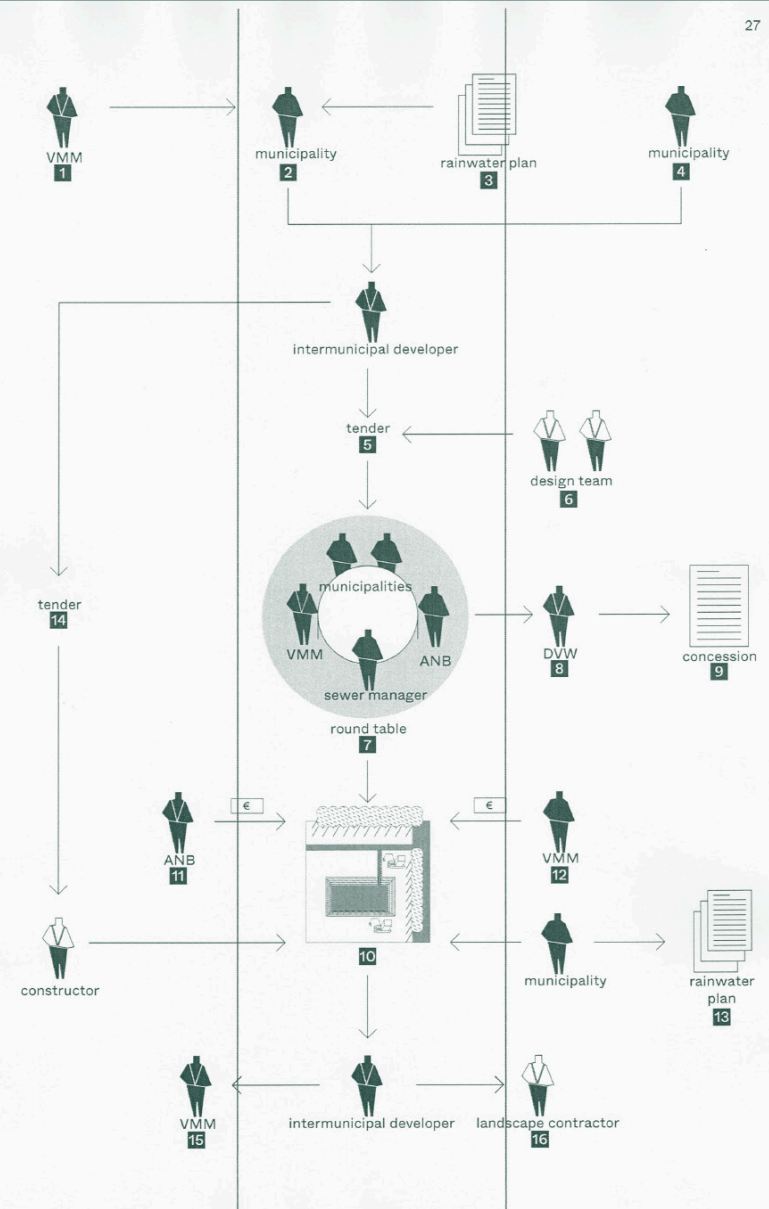
The execution is financed partly by the municipality, partly by the ANB subsidy and by the VMM. The sewer manager is in charge of connecting the stormwater pipe to the new detention pond and is also engaged in monitoring the construction site.

Follow-up

Once the detention pond and its ancillary infrastructures are realised, the intermunicipal developer arranges a consultation with the VMM (15) for the management of the detention pond and one with a landscape contractor (16) for the maintenance of the vegetated and recreational infrastructure.

Coalitions

27



GREEN	GROEN	WITH	MET	GREY	1 GRIJS
A Thousand Water Towers for Flanders					
		GreenWithGrey In Brief			
Territory of Water Towers		GreenWithGrey Diagnosis			
Actions for Water		GreenWithGrey Coalitions			
Choreographies of Water		GreenWithGrey Design Illustrations			
Motions for Water		GreenWithGrey Policy Instruments			
Towers of Water		GreenWithGrey Design Projects			
Deseal for Water		GreenWithGrey Testing Grounds			

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

06. Tower of Water GreenWithGrey Design Projects

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

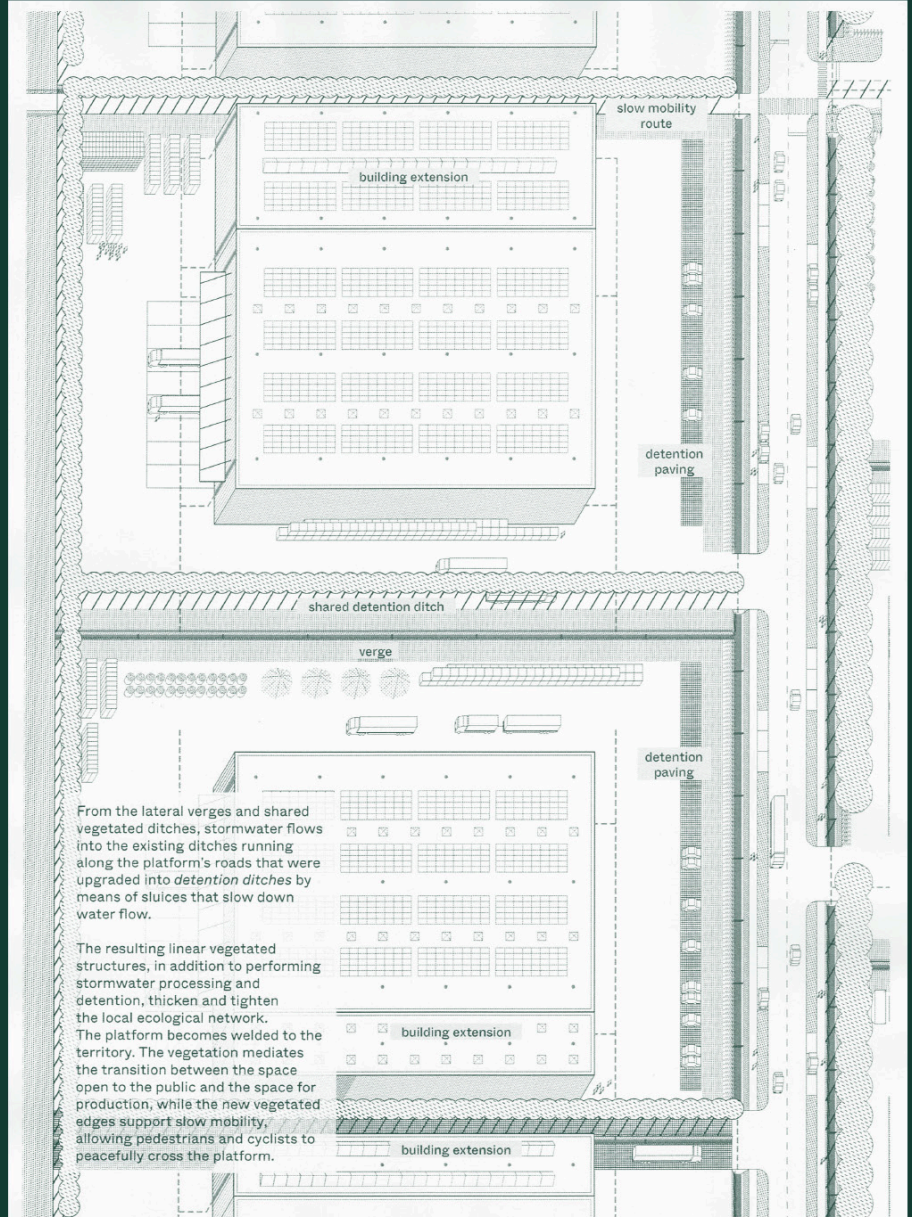
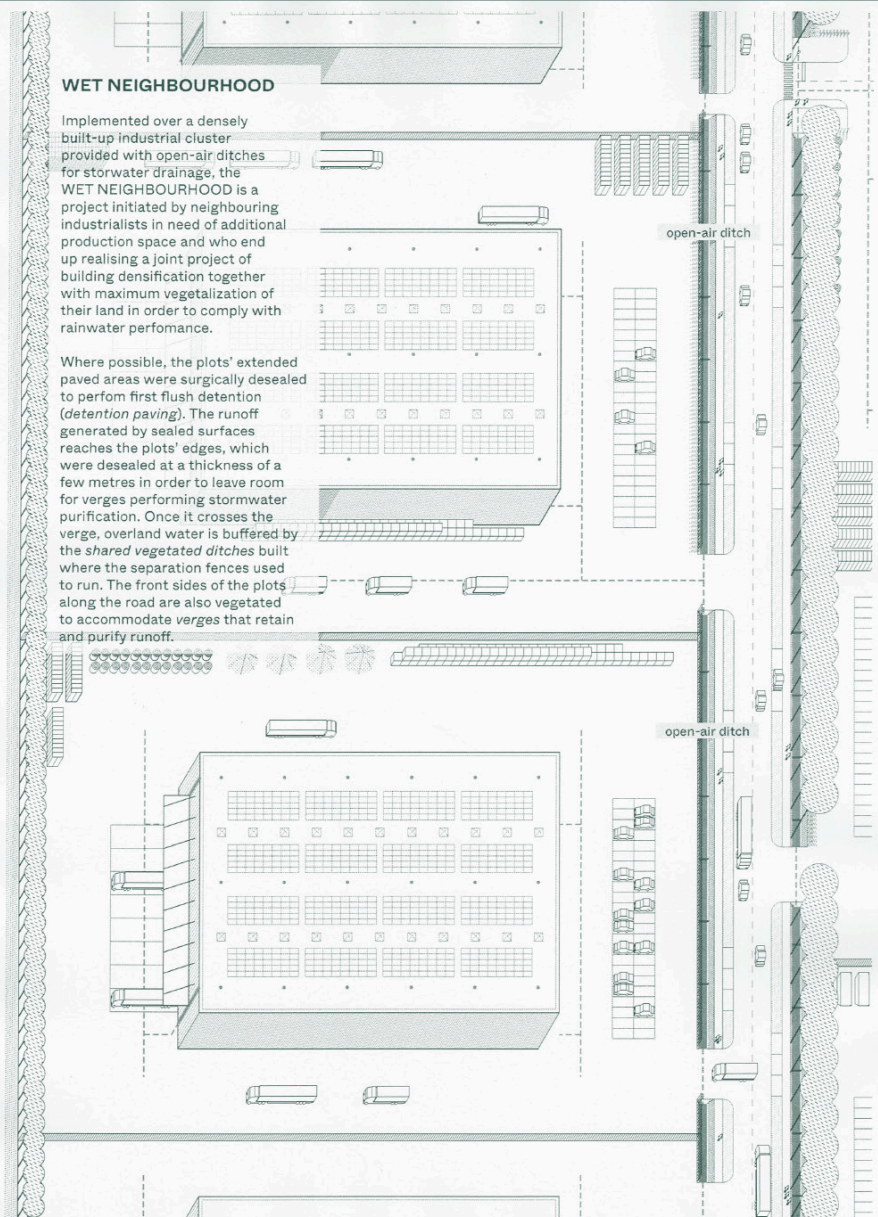
07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

WET NEIGHBOURHOOD

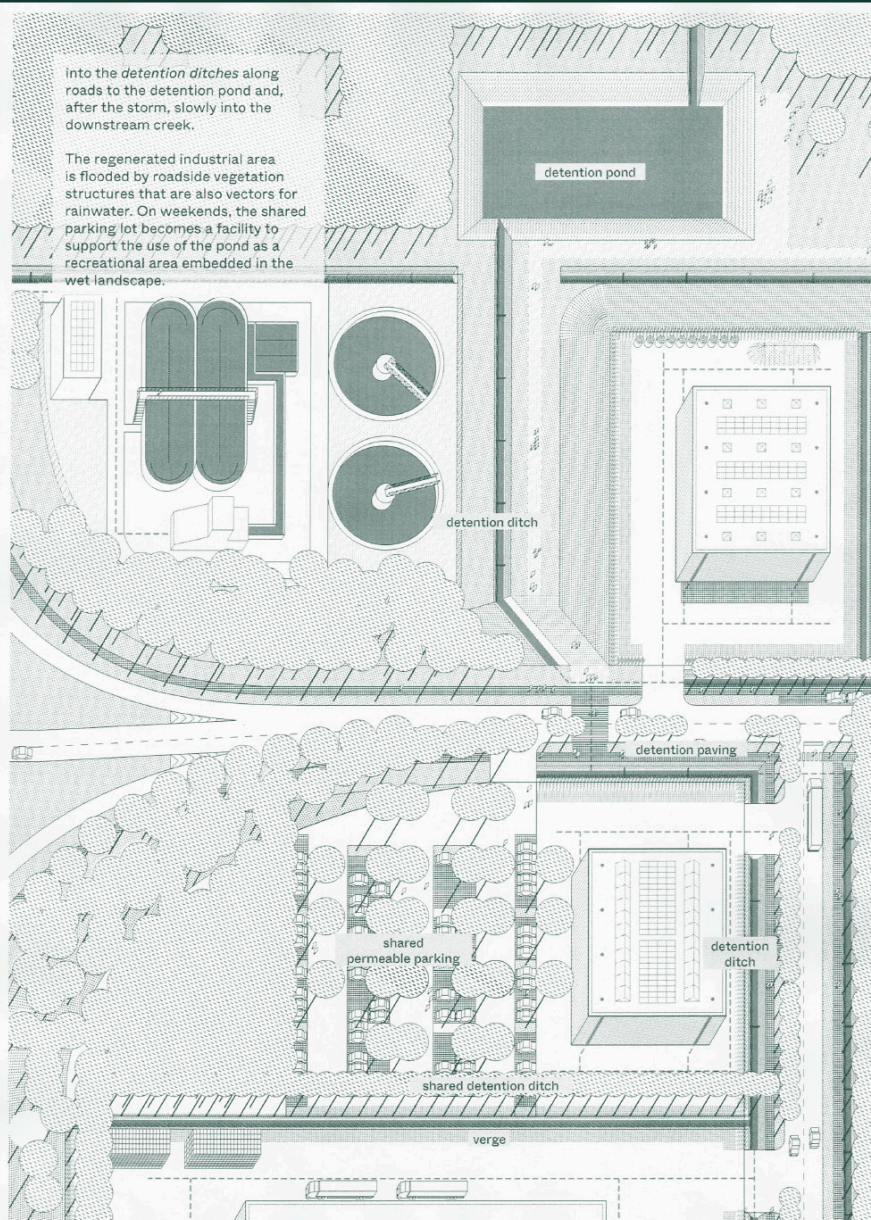
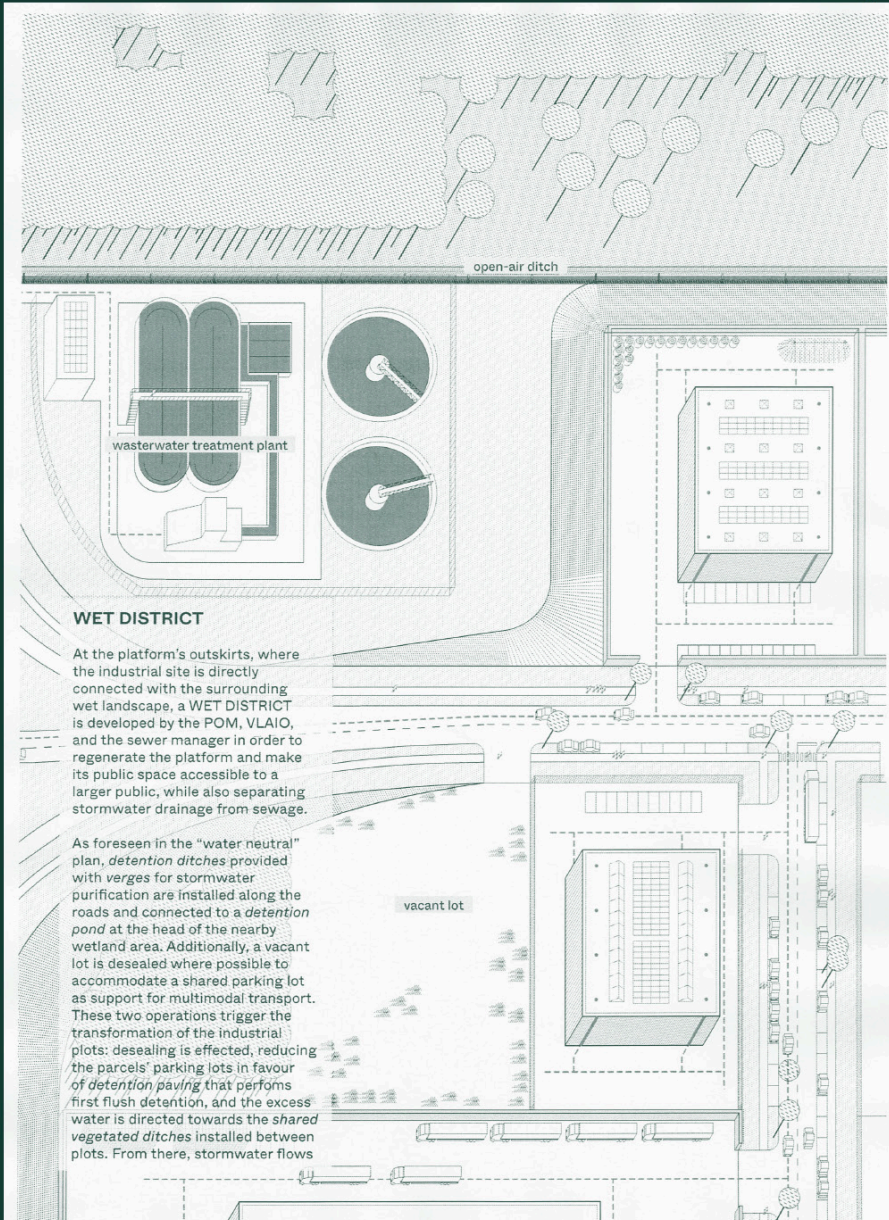
Implemented over a densely built-up industrial cluster provided with open-air ditches for stormwater drainage, the WET NEIGHBOURHOOD is a project initiated by neighbouring industrialists in need of additional production space and who end up realising a joint project of building densification together with maximum vegetalization of their land in order to comply with rainwater performance.

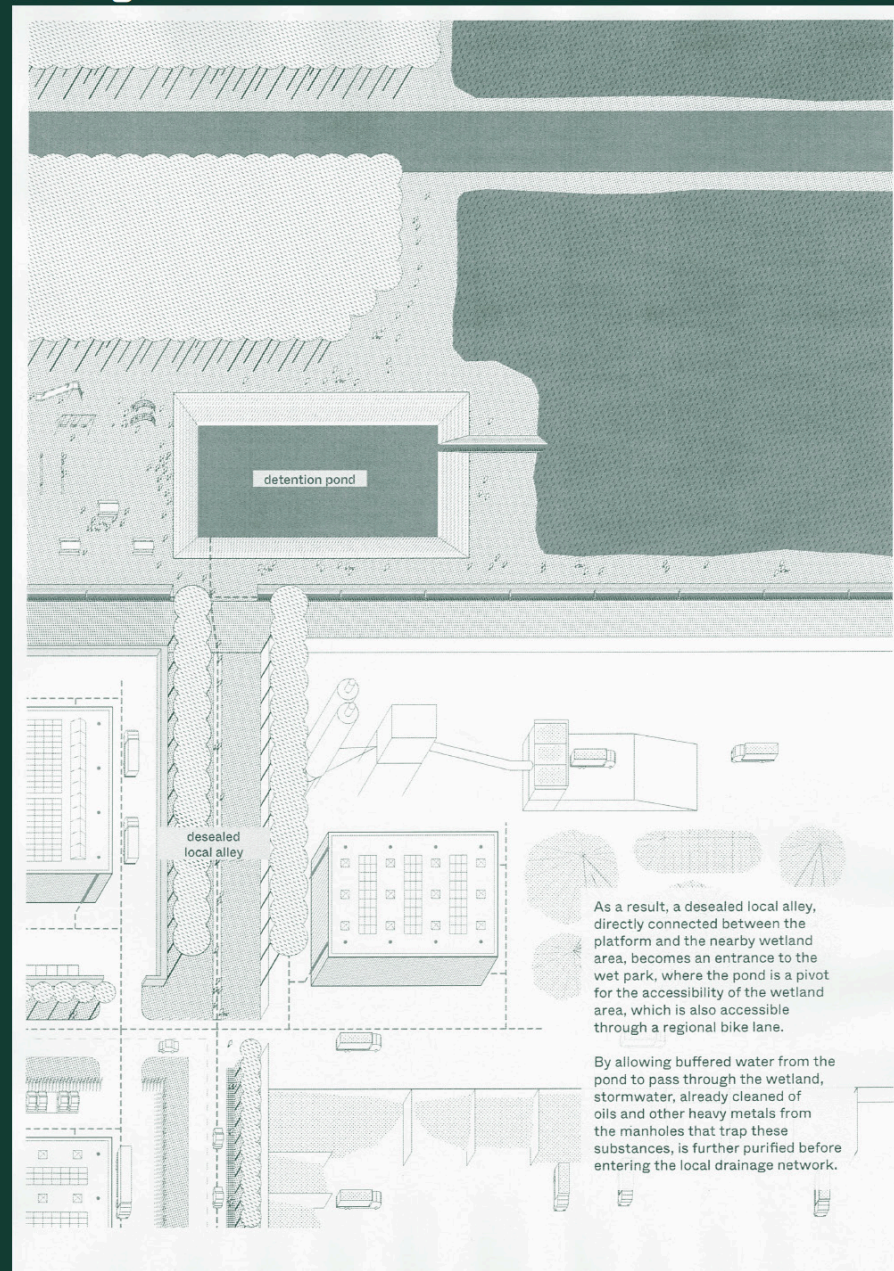
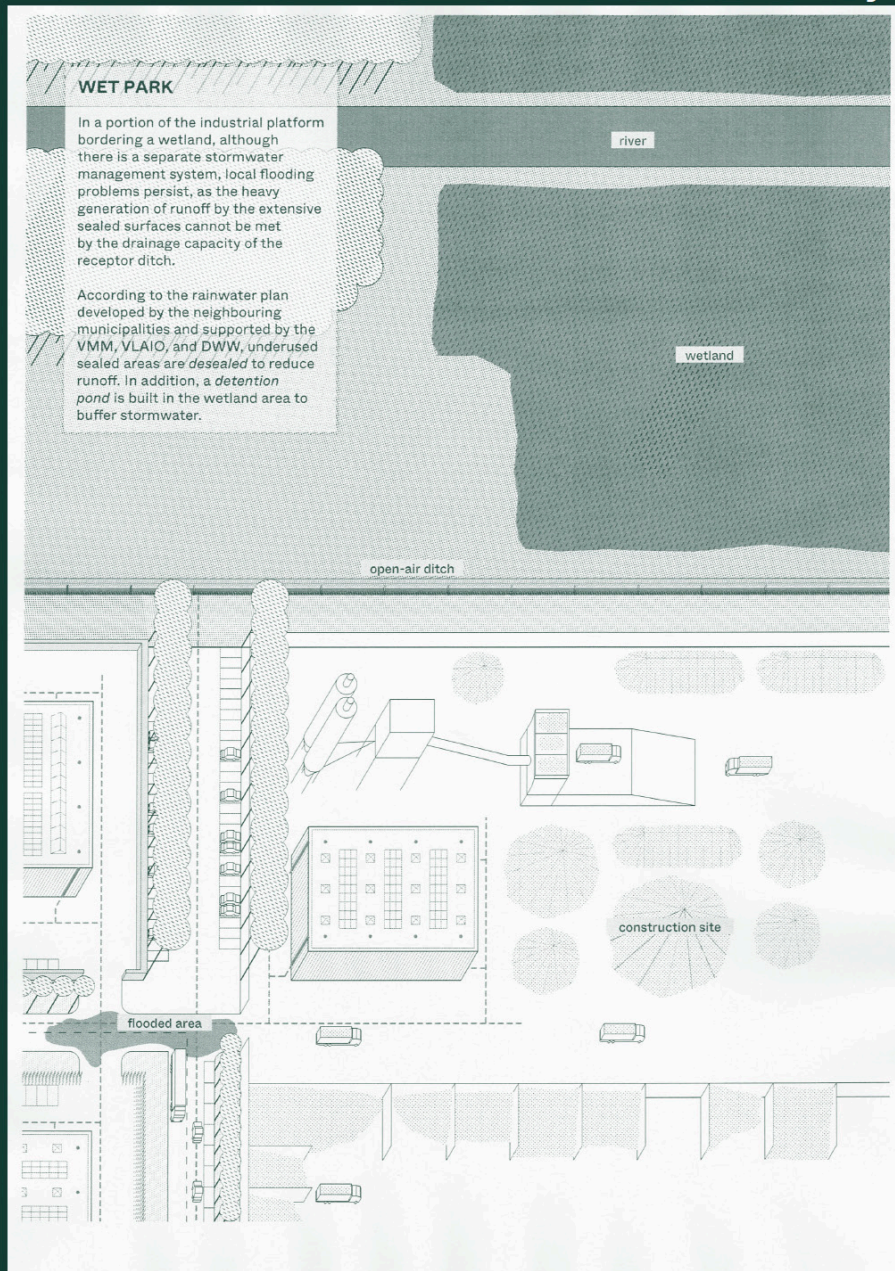
Where possible, the plots' extended paved areas were surgically desealed to perform first flush detention (*detention paving*). The runoff generated by sealed surfaces reaches the plots' edges, which were desealed at a thickness of a few metres in order to leave room for verges performing stormwater purification. Once it crosses the verge, overland water is buffered by the *shared vegetated ditches* built where the separation fences used to run. The front sides of the plots along the road are also vegetated to accommodate *verges* that retain and purify runoff.



From the lateral verges and shared vegetated ditches, stormwater flows into the existing ditches running along the platform's roads that were upgraded into *detention ditches* by means of sluices that slow down water flow.

The resulting linear vegetated structures, in addition to performing stormwater processing and detention, thicken and tighten the local ecological network. The platform becomes welded to the territory. The vegetation mediates the transition between the space open to the public and the space for production, while the new vegetated edges support slow mobility, allowing pedestrians and cyclists to peacefully cross the platform.





GREEN	GROEN	WITH	MET	GREY	1 GRIJS
A Thousand Water Towers for Flanders					
		GreenWithGrey In Brief			
Territory of Water Towers		GreenWithGrey Diagnosis			
Actions for Water		GreenWithGrey Coalitions			
Choreographies of Water		GreenWithGrey Design Illustrations			
Motions for Water		GreenWithGrey Policy Instruments			
Towers of Water		GreenWithGrey Design Projects			
Deseal for Water		GreenWithGrey Testing Grounds			

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

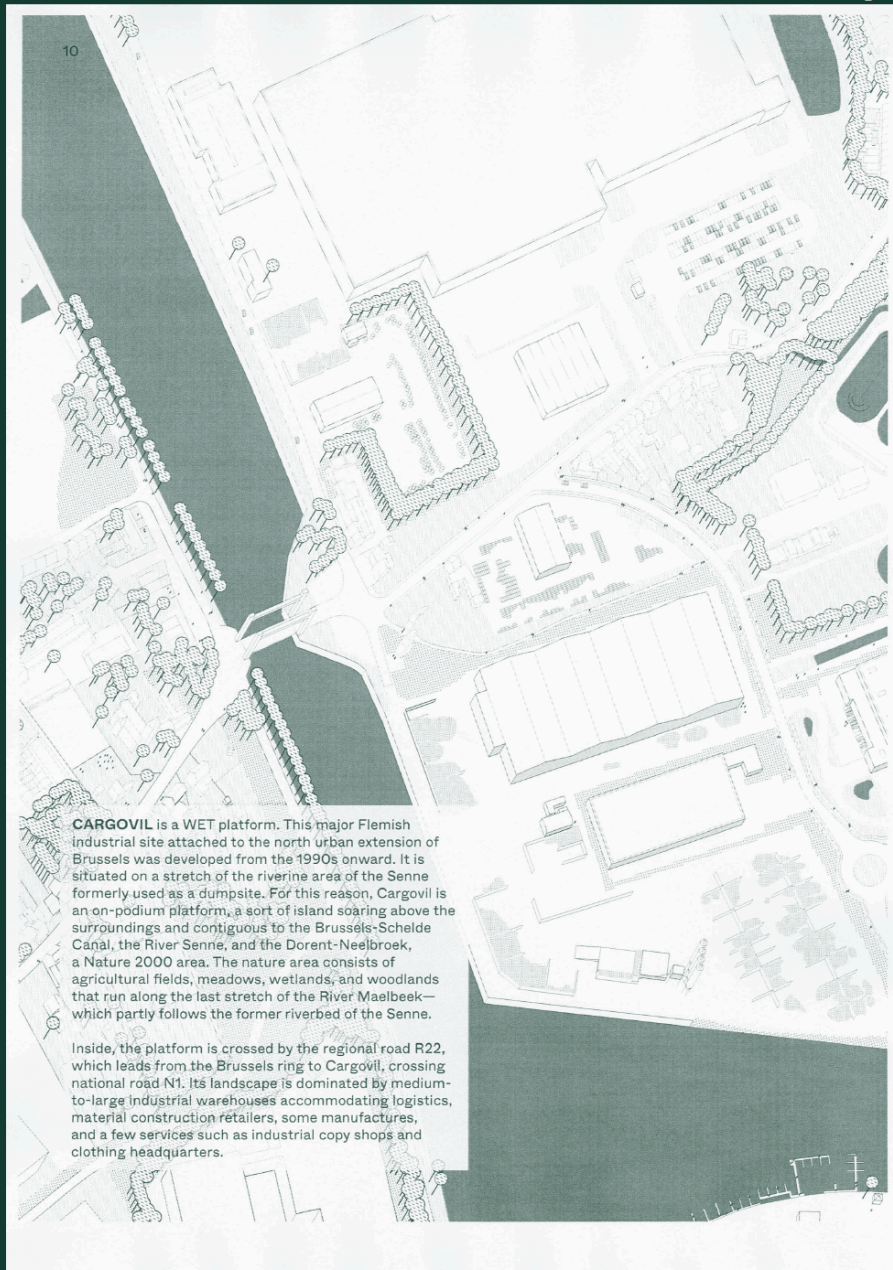
institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

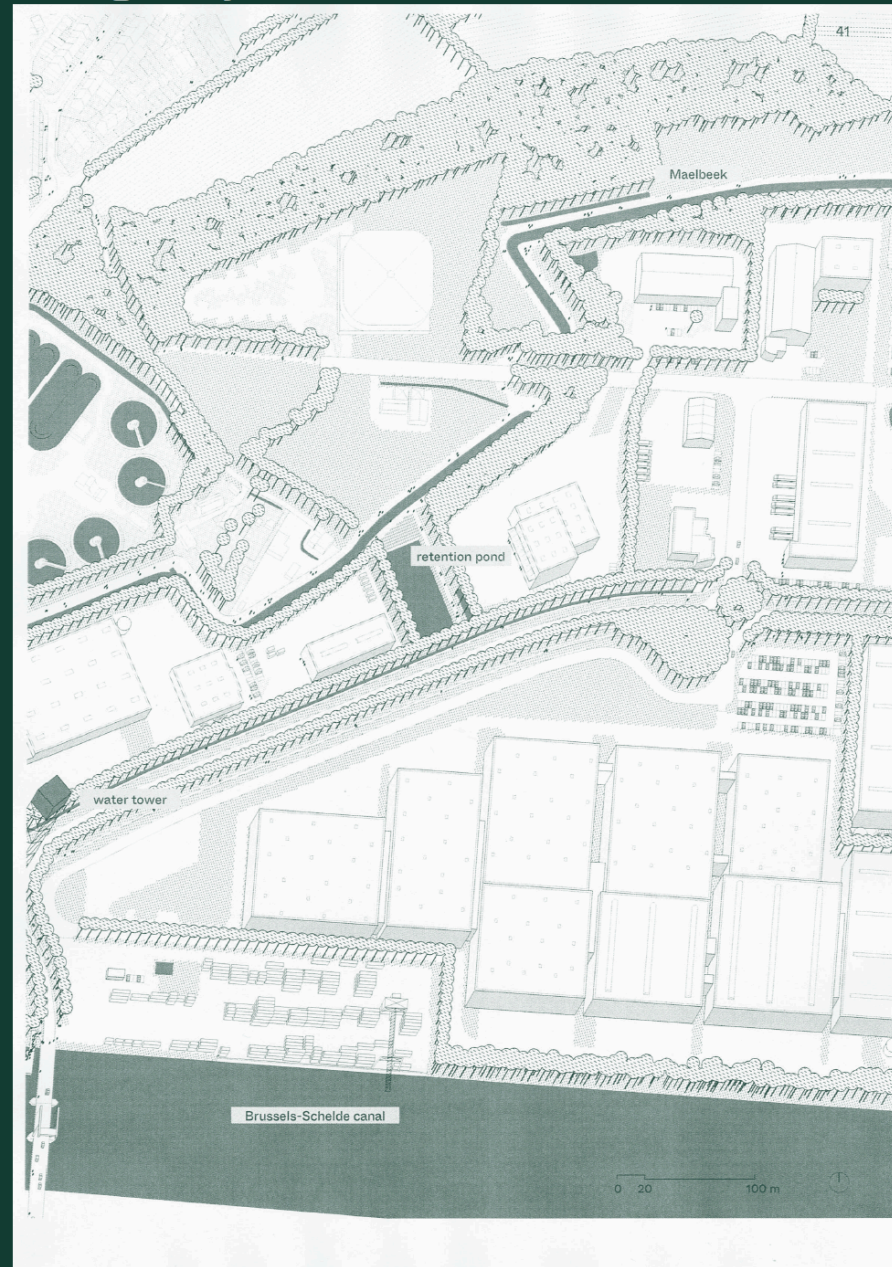
06. Tower of Water GreenWithGrey Design Projects

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design





GREEN	GROEN	WITH	MET	GREY	1 GRIJS
<p>Deseal for Water GreenWithGrey Testing Grounds</p>					

01. A Thousands of Water Towers for Flanders GreenWithGrey In Brief

general public (regional+supralocal+local scale)

02. Territory for Waters Towers GreenWithGrey Diagnosis

general public (regional+supralocal+local scale)
cross-sectional audience + policy, governance, design

03. Actions for Water GreenWithGrey Coalitions

intermediaries (supralocal scale)
Vlaio, Intercommunals, POM, VMM + BTM

04. Choreographies of Water GreenWithGrey Design Illustrations

technicians (local scale)
municipality, sewage manager, designers, industrials

05. Motions for Water GreenWithGrey Design Policy Instruments

institutional (regional scale)
policy makers (Omgeving, VMM, Vlaio, OVAM)

06. Tower of Water GreenWithGrey Design Projects

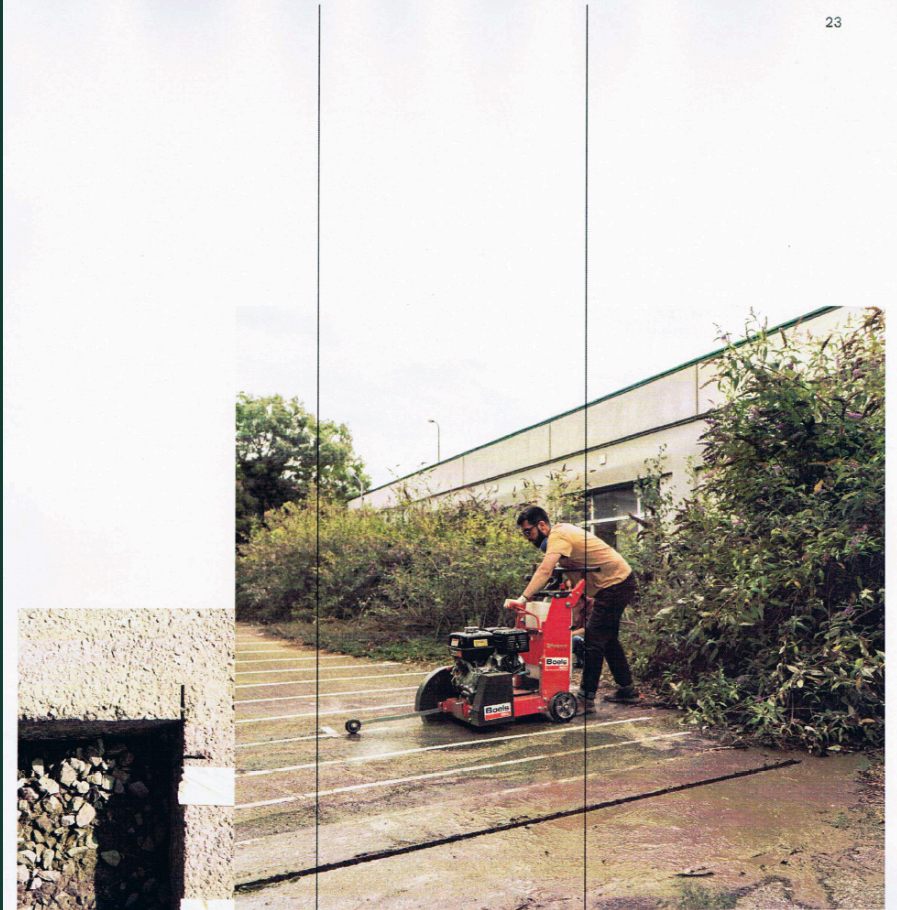
general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design

07. Deseal for Water GreenWithGrey Testing Grounds

general public (regional+supralocal+local scale)
cross-sectional for policy, governance, design



Sawing the asphalt.





Sawing and chiselling the concrete
(and GreenWithGrey).

40



41



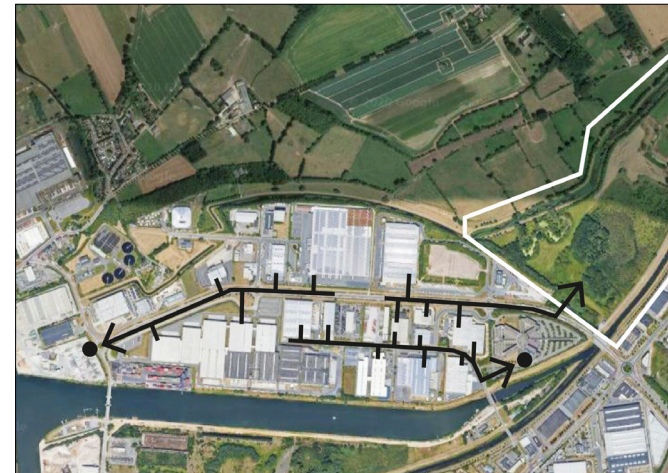
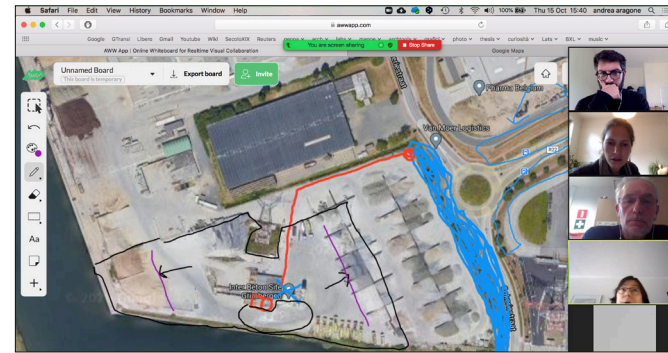
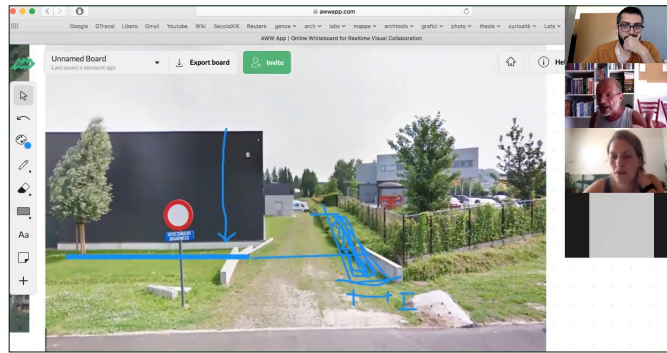
GreenWithGrey samples of asphalt.

Between action and strategic project
Summer School



Between action and strategic project

Bilateral interviews



Between action and strategic project *Roundtable*

The screenshot shows a Miro board titled "GWG Roundtable // upstream". The board contains a diagram of a drainage system on the left and a list of notes on the right. The diagram shows a cross-section of a drainage system with a central channel and side channels. The notes are organized into sections: "PROPOSED PROCESS", "BOTTLENECKS", and "POLICY ADAPTATION".

PROPOSED PROCESS

- >Trigger
 - recurrent flooding problem (because of peak volume)
- >Planning implementation (how+actors)
 - how: strategic project; collaboration between industrial and business park association
 - actors: Regionale Landschappen (strategic coordination); Industriële Landschappen (industrial)
- >Execution (actors+finance)
 - actors: building company appointed by business park association
 - finance: funded by business park association members
- >Follow-up
 - maintenance by single industrial or business park association

BOTTLENECKS

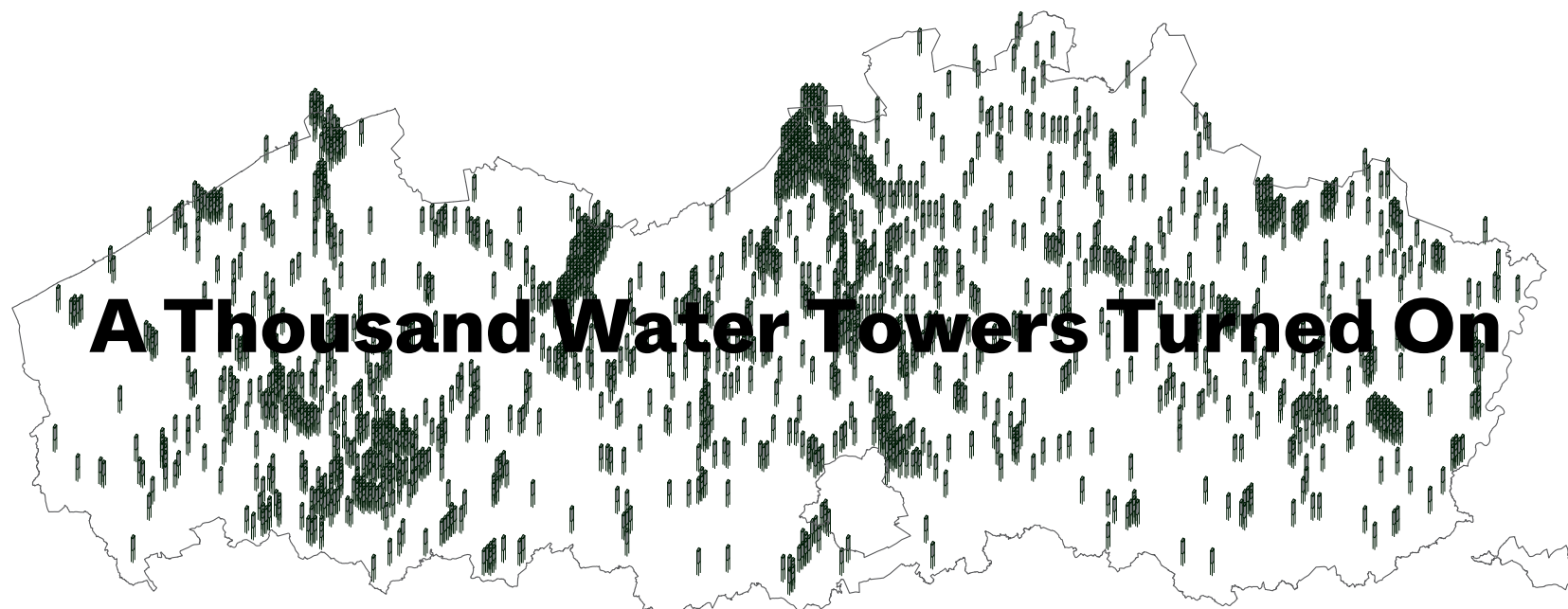
- if flooding problem is not on a particular private plot, a collective solution is needed
- membership to business park association is not compulsory
- strategic projects are not easily granted

POLICY ADAPTATION

VLAIO is looking if they can fund/support/ initiate "by mutual agreement" participation by private companies in a fund used in public or collective terrains: a collective investment fund.

At this moment VLAIO only funds public terrains.

Can park managers take the lead instead of strategic project?



A Thousand Water Towers Turned On