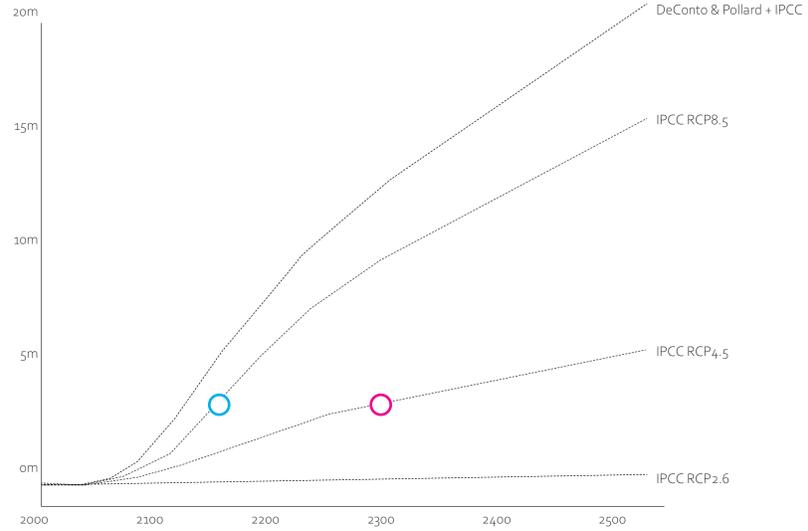


1. Adaptive Frontier

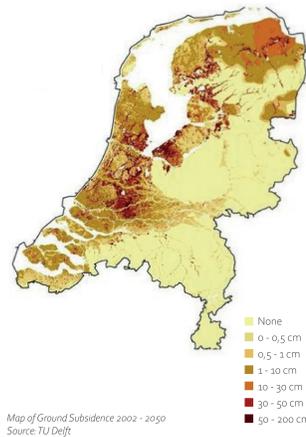
The Zuiderwaterlinie reintroduced as a climate-proof metropolitan area

Drastic change of the Dutch landscape

Effects of climate change urge the need to change

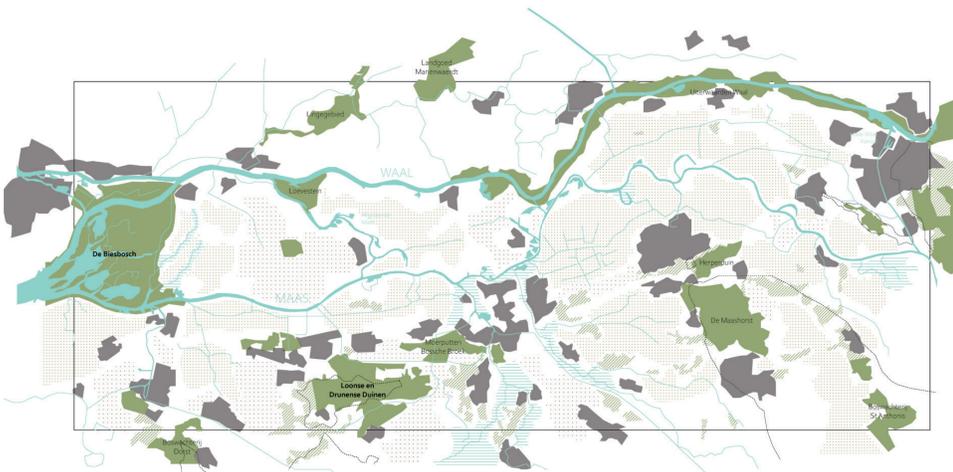
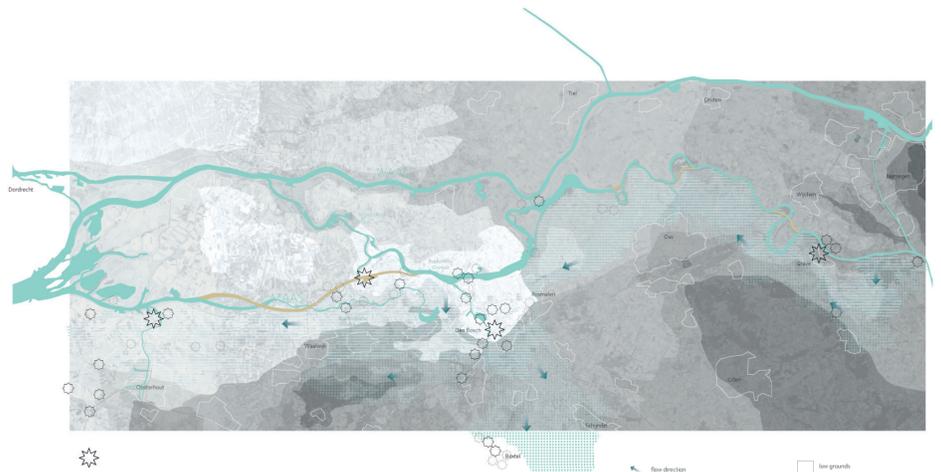
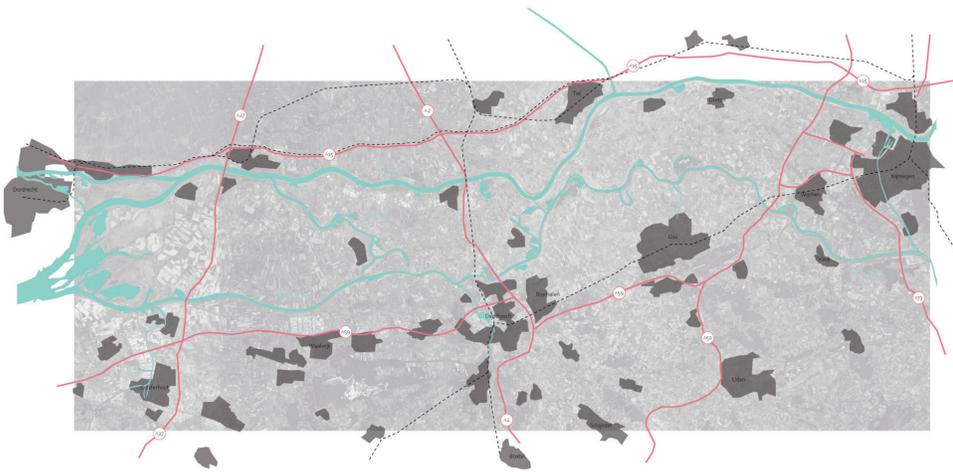


Measures compatible with Paris 2050
Recent PBL report show current measures not compatible



Act now: Adaptive Frontier in 2100

Towards the Zuiderwaterlinie Urban Coastline

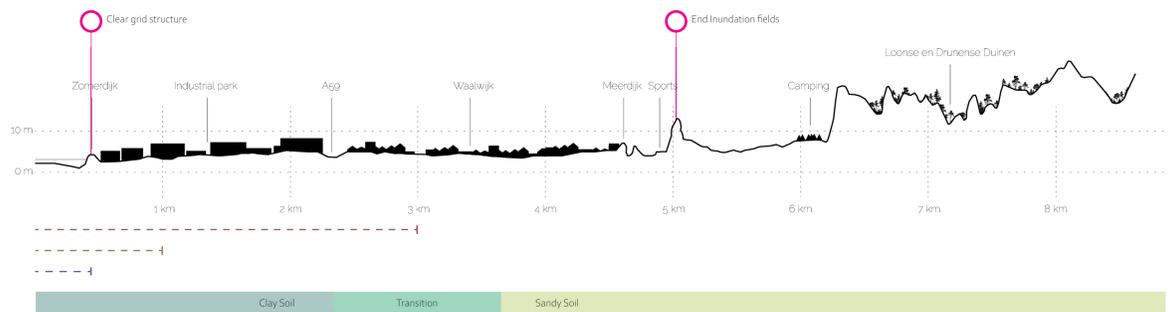
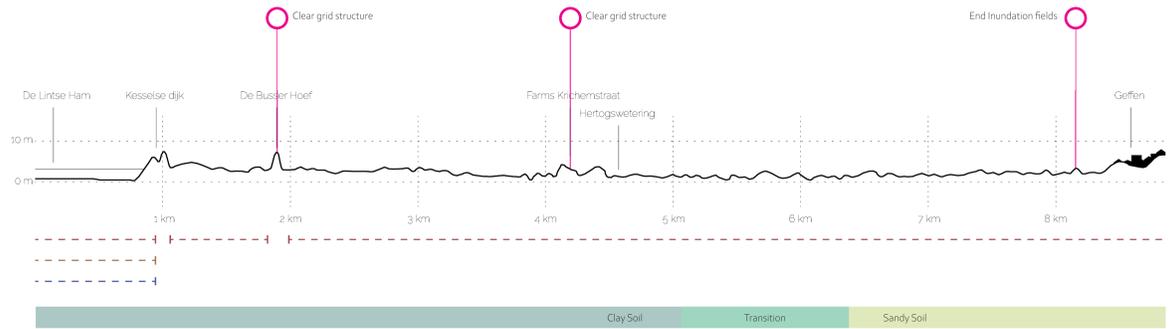
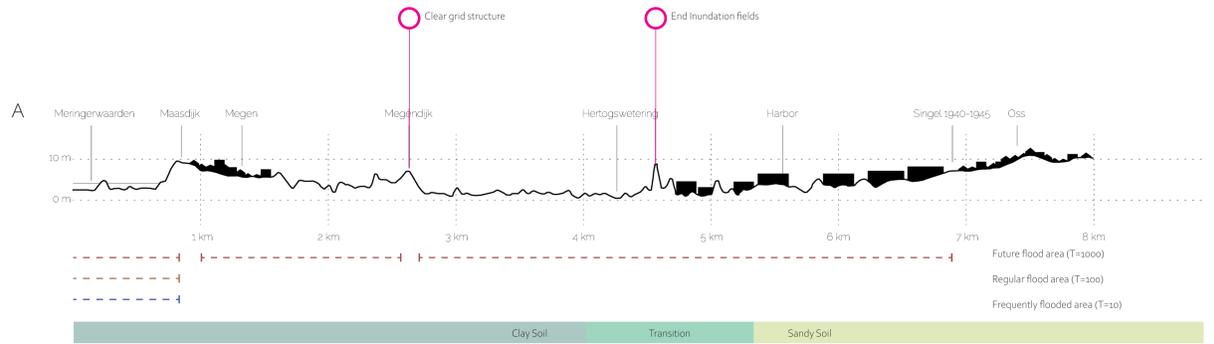


Map of the current Zuiderwaterlinie, Area typologies

Map of the Zuiderwaterlinie, Blocks of Intervention

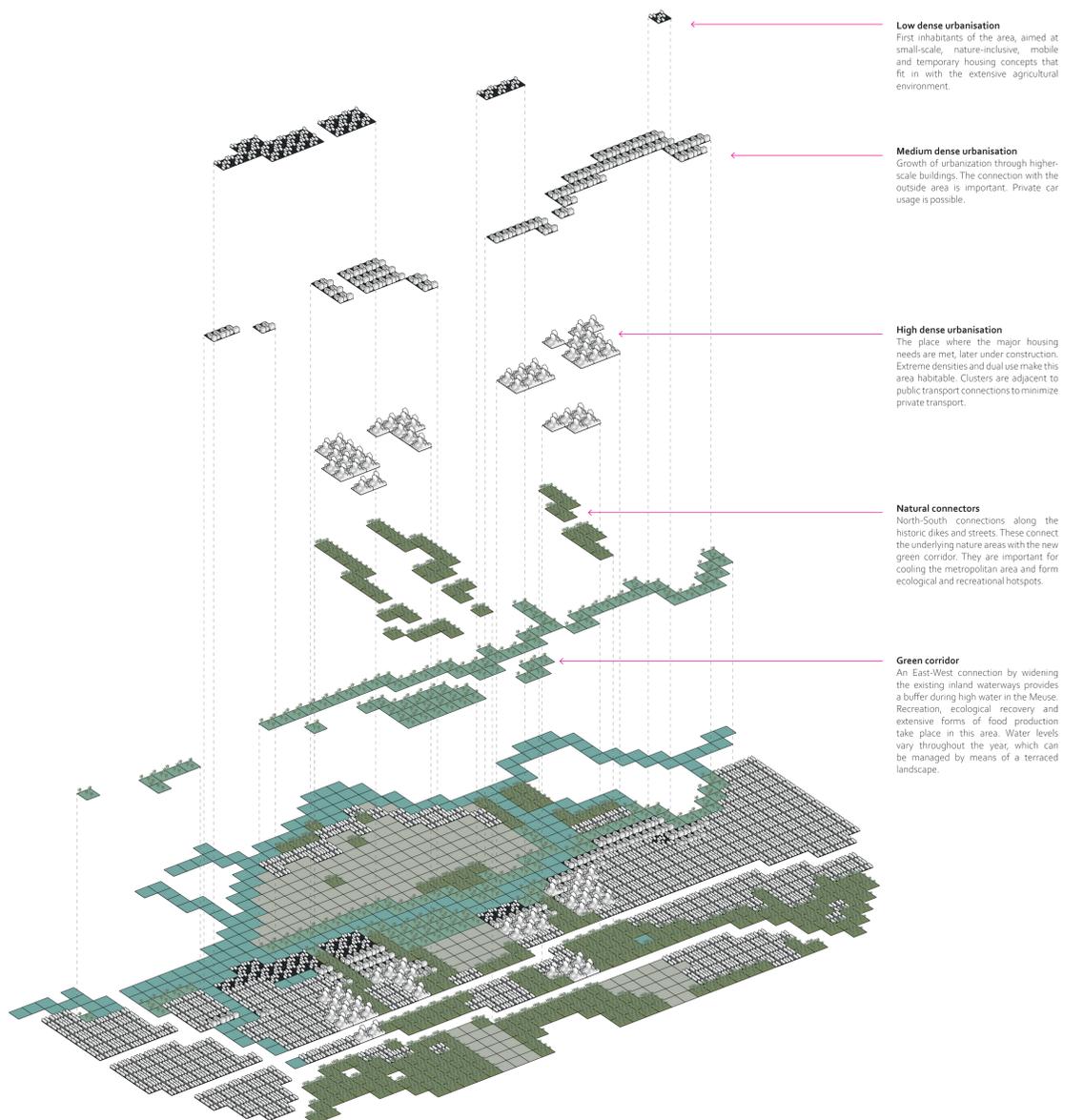
Urban expansion in Coherence with Landschape

Spillways and grid structure as a guideline



Total Intervention Dissected

Roads and former inundation fields guide the urbanisation

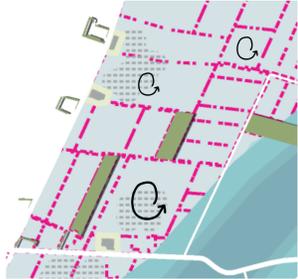


2. Adaptive Frontier

The Zuiderwaterlinie reintroduced as a climate-proof metropolitan area

Basic rules on the larger scale

Urban / landscape strategy



Small-scale livable landscape
Reintroduce small-scale landscaping by adding trees and shrubs to the edges of historic lots. This makes it possible to create rooms in the landscape, some suitable for living, others for water storage or for a variety of agriculture or small-scale animal husbandry.



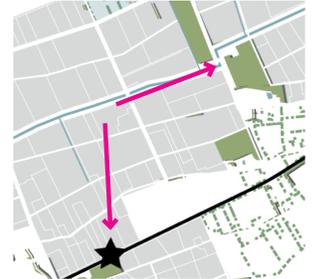
Sustainable large scale energy production
In order to provide the large housing with sufficient energy without further harming the planet, large-scale renewable energy production via wind turbines is being used. These are placed on the green river, which accentuates this important landscape line. A minimum number of homes will be placed in the vicinity of the windmills.



Building blocks according existing agricultural plots
The layout of the building areas in the intensive area is based on existing agricultural subdivision. The current main road structure will be upgraded, whereby the dykes in the north-south structure will be widened. The east-west structure will have one additional central road with space for drainage.



Climate adaptation via linked green veins
The built areas are drained by connecting to the existing system of ditches. These ditches come together in the central drainage channel, which in turn are connected to the green veins. These green veins connect the natural areas and fresh water reserves in the hinterland with the green river. Rainwater infiltrates within the vicinity of the urban plan.



Walkable and e-cycle friendly distances
In the metropolitan area, maximum use is made of walking and cycling connections and public transport. The nearby train track connects the areas on a regional scale. Locally, the built-up areas are up to 4 km wide, making the green arteries accessible on foot. Each block contains primary civic and commercial programs.

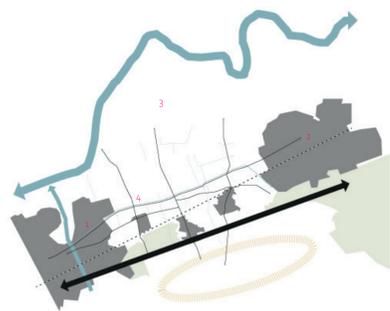
The New Frontier

Map of the total intervention in the region of the Green corridor

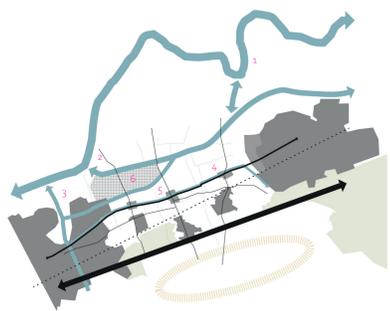


Rome was not built in one day

Phased development of the Adaptive Frontier



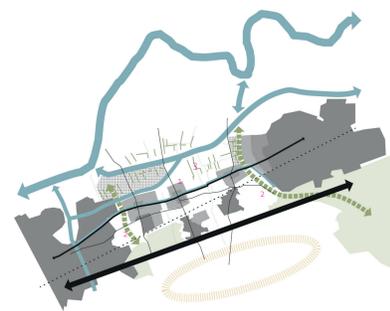
2022: Current Situation
The cities of Rosmalen (1) and Oss (2) are separated from each other by a large-scale open reclaimed landscape (3). This landscape is intersected with the characteristic grid of roads (4) and flood plains. A railway and highway connect the towns through a few small villages.



2030: The Water and the Pioneers
Climate change necessitates the construction of a water-storing strip via the former green river. The new river rises from the old Maas (1) and returns via the Hertogenwaard (2) and the Grootte Wielenplas (3).

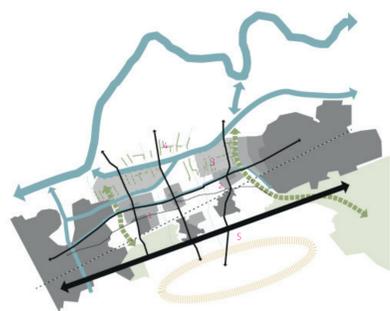
The existing Weteringsgraaf (4) will be widened and will form the new main axis connecting new residential areas with the cities of Rosmalen and Oss.

At intersections on this axis, the first urban housing takes place in the form of medium-density pioneer villages (5). These cores are the basis for further metropolitan expansion along the line. Space is also provided for innovative, temporary and flexible forms of living in the armpits of the new waters (6). This gives the first pioneers from the Randstad the opportunity to realize a home more cheaply and quickly.



2040: Growth and Connection
The smaller pioneer villages grow ring-radially into a higher-density small city (1). The old center will become the central place for a diversity of social functions, where the expansions mainly focus on housing and accommodation.

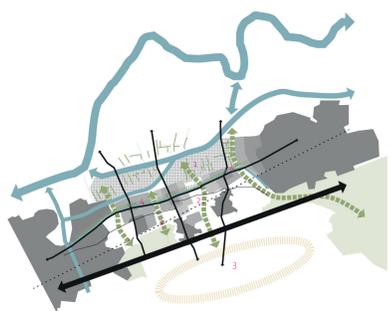
Due to the high density and low degree of public space, it is important to create a robust green structure. The nature reserves in the hinterland are connected to the new waters by growing veins (2). The banks of the new green river are being designed on a small scale (3), by reducing plots, planting hedges and trees to allow the old grid work to return and to strengthen flora and fauna.



2050: Upgrading the Framework
The pioneer cities are growing rapidly, whereby they differ from each other in urban structure and identity because they are given a different context. The city on the Rosmalen side will have a more fortress-urban layout (1), due to its location near various canals and De Grootte Wielen. The cities towards Oss are located in a small-scale landscape, with a more gradual transition from city to rural area (2).

As climate change has continued, the urgency has become more visible. Space pressure will increase because relocation pressure from the Randstad is increasing. This creates extra space for adaptive temporary housing in the rooms of the small-scale river landscape (3).

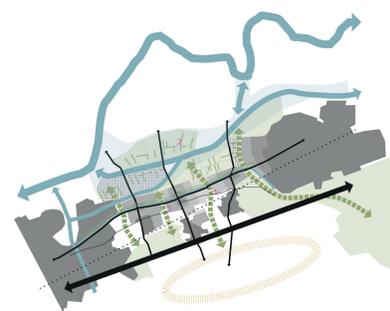
This thickens the line, creating the need to widen the historic north-south dyke structure (4) and connect it to the main infrastructural structures, such as the existing highway (5).



2075: Salvaging the Necessary
The small-scale landscape offers even more space for climate refugees, but the temporary nature of the housing concept in the floodable areas is increasing (1).

The construction of two extra green arteries (2) is necessary to provide the growing cities with space and cooling. In addition, these veins penetrate the sandy soils in the hinterland, with which they provide storage of excess rainwater via the existing water structures and replenish the scarce freshwater reserves (3).

The former Weteringsgraaf is upgraded with natural borders, cooling down the cities and forming a landscape connection with walking and cycling routes (4).

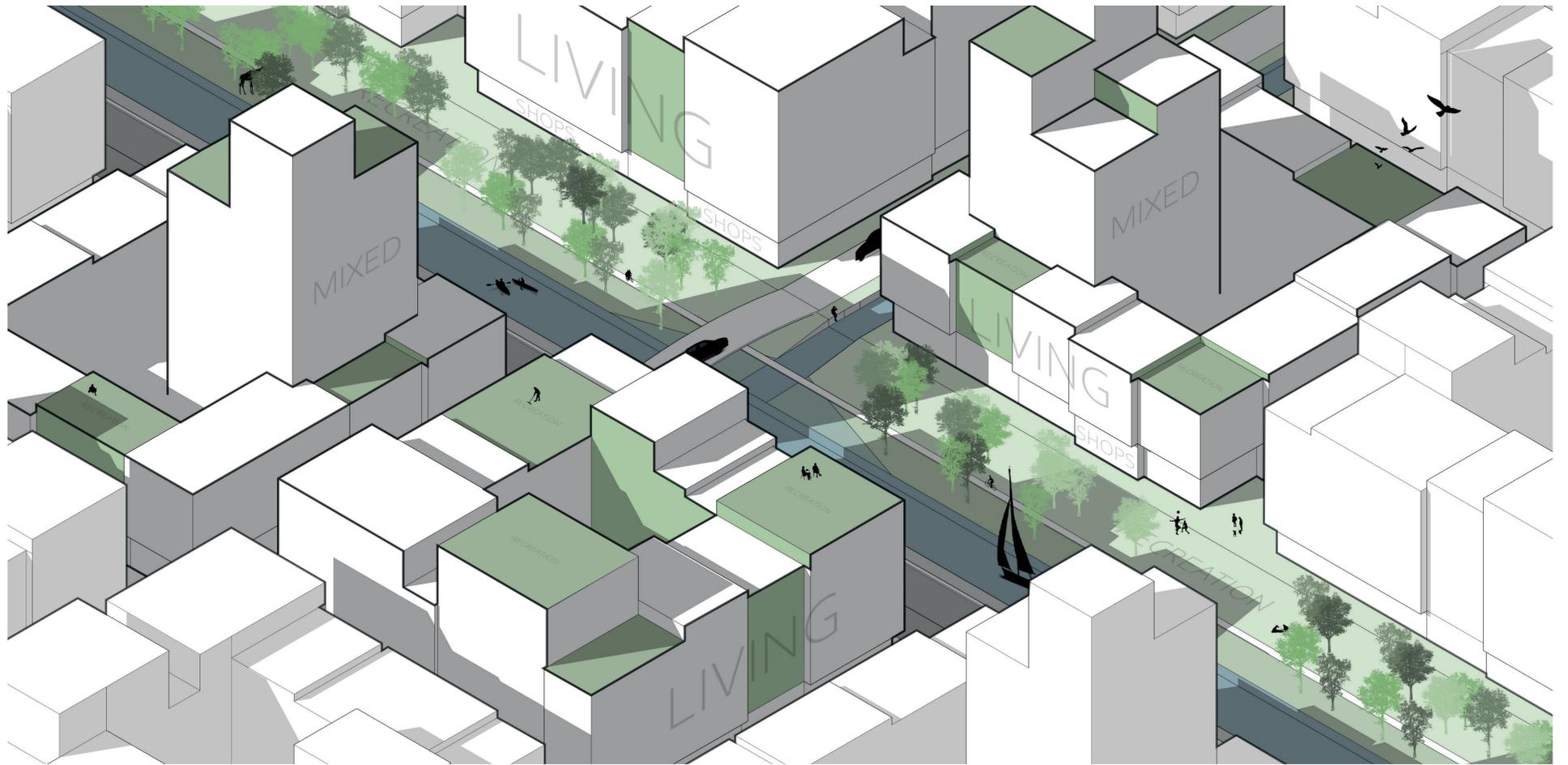
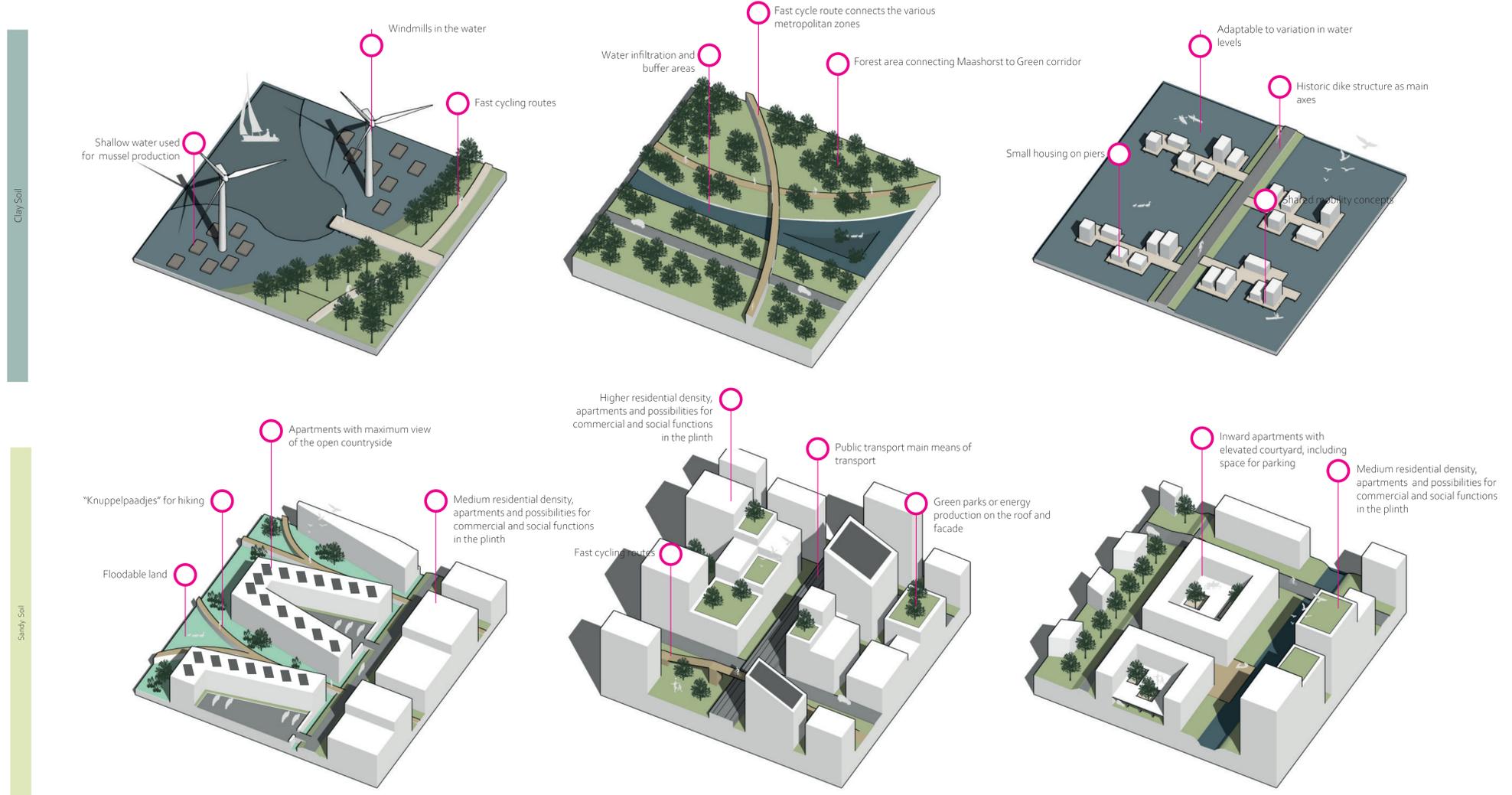


2100: Making the Frontier Adaptive
The cities grow up to the green arteries, which thus take the form of city parks (1). The metropolitan line is thus complete.

Adaptive pioneers are leaving the temporary locations, because permanent housing can be found in the metropolitan area. In this way, the rooms in the small-scale landscape are returned to cultural use (2), such as food production, water storage or nature. This zone remains adaptive, in order to be able to continue to respond to the effects of climate change.

Zooming into the New Frontier

Detailing the concept of building blocks



ISO of part of the Intensive Region



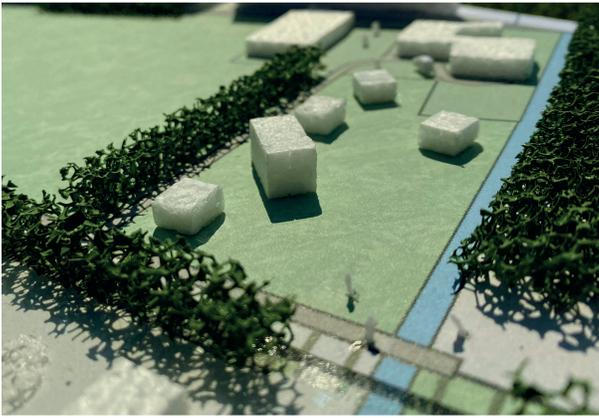
3-

Adaptive Frontier

The Zuiderwaterlinie reintroduced as a climate-proof metropolitan area

Life in the Adaptive Region

Maximum freedom, bottom-up society



Collage of life in the of Adaptive Region



Lots of freedom, natural beauty and space



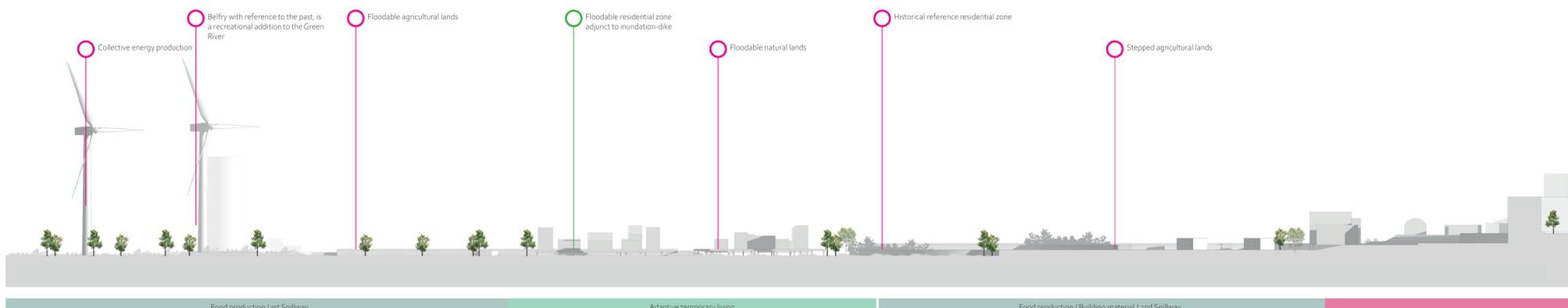
Free to live, but obligation to make a collective contribution



Responsible for own protection



Self-sufficient in mobility, building its own living environment



Section N-S New Frontier

Life in the Intensive Region

Maximum protection, top-down society



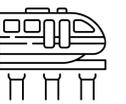
Little public space, extreme metropolitan area



High cost of living, very individual oriented existence



Governmental planning ensures water safety



Dependent on collective public in transport, large-scale collective urban planning

Collage of life in the of Intensive Region

Gradually emerging high dense buildingblocks

Inland canal to cooldown the city and to transport surplus rainwater towards green veins

Existing traintrack, upgraded and possibly adding stations.

Village of Nuland

Agg. lifted to create final defence measure

High dense living

Natural area / Building materials