

# Daring to dream of a Green River

THE VISION OF THE CITY OF ANTWERP ON THE DEVELOPMENT OF THE STRATEGIC SPACE OF THE GREEN SINGEL

# Colophon

This brochure is a translation of the Dutch brochure 'Durven dromen van een Groene Rivier. De visie van de stad op de ontwikkeling van de strategische ruimte Groene Singel', published in September 2009. During the translation process, small changes were made where relevant.

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## **Published by**

Hardwin De Wever, AG Stadsplanning Antwerpen

Grote Markt 1 - 2000 Antwerpen, Belgium

## **Graphic design and lay-out**

KuBis (Dutch version)

Graphic Centre of the city of Antwerp (English version)

## **Printer**

Graphic Centre of the city of Antwerp

## **Publisher's identification code**

D/2010/0306/264

The city of Antwerp received the 2008 Flemish Spatial Planning Award for its research on the Green Singel.

This publication is printed on paper that was produced with respect for the environment.

*September 2010*

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**FOREWORD** (after publication)  
Antwerp, 17 December 2010

## Daring to dream of a Green River

Also after the approval of the 2020 Masterplan

**This publication discloses the vision of the city of Antwerp on the development of the strategic space of the Green Singel. This vision statement was completed and approved by the city council on 4 September 2009. Since that day, several important decisions have been taken. With the recent approval of the 2020 Masterplan, the Green Singel mobility project – as described in this vision statement – was cancelled. However, the city’s vision on the desired development of the space between the inner and the outer city, prevails.**

On 24 September 2010, the Flemish government approved the new 2020 Masterplan. It provides for the closure of the Antwerp Ring Road by means of tunnels, but cancels the so-called Green Singel. The Green Singel mobility project included a Through Ring Road and an Urban Ring Road embedded in the Ring Road area. Subsequently, the Singel would become a local road with more space for public transport and slow traffic. On the other hand, the Ring would become wider.

In its vision statement “Daring to dream of a Green River” and in the Spatial Structure Plan, the city declares that the strategic space of the Green Singel is not only important in terms of mobility. The space between the inner and the outer city, which besides the Singel and the Ring also comprises of a broad

roadside landscape, can indeed play a crucial role in terms of green space shortages, the development of local public facilities, ecological connections, city climate, housing development, top and office locations, water management, etc. In short, this space has a key role to play in the development of a liveable city.

The cancellation of the Green Singel mobility project by the Flemish government gave rise to the impression that the city council, too, had stored away its ambitions for this space. Nothing is further from the truth. Moreover, as the 2020 Masterplan keeps through traffic further away from the city, doesn’t require widening of the Ring and places the Singel under the competence of the city, the city has more opportunities than ever to achieve its vision.

On 19 November 2010, the city council explicitly confirmed that the 2020 Masterplan does not change its ambition to take on the challenge of developing the space between the inner and the outer city into a high-quality space where infrastructure and city go hand in hand. In the next few months and years, the autonomous municipal company AG Stadsplanning Antwerpen will take the necessary steps to achieve these ambitions on behalf of the city and within the context of the Green Singel programme. In this endeavour, the vision elaborated in this publication will serve as the framework.



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# 1. Introduction

## 1.1 // Introduction to the space

The story of the Green Singel unfolds in the area between the 19th-century inner city and the 20th-century outer city. The Green Singel is a 13 km long and 200 to 500 m wide area covering 625 hectares of open space, or twice the surface of the area within the 19th-century city belt 'the Leien'. 150 hectares of this area is 'unzoned' residual space. That is the equivalent of 300 soccer fields. Approximately 155 000 residents live within walking distance of this infrastructural space.

The contours of the Green Singel correspond to those of the old Brialmont defence walls, which were rendered useless by new military technologies 50 years after they were built. The walls were demolished to make way for the Antwerp Ring Road infrastructure.

In the 1960s, Antwerp eagerly looked forward to welcoming this new infrastructure. The concrete symbol of progress was allowed to stretch out in the green landscape between the inner and the outer city. Historic moats, city gates and recreation areas were destroyed with no notable signs of protest. Citizens even invested their hard-earned money to finance this ahead-of-its-time connection of Antwerp to the world. For a short while, the motorway landscape became the new city centre.

In time it became more and more apparent that the Ring Road was hailed into the city like a Trojan horse. The infrastructure soon became the victim of its own success. Traffic came to a halt and the city turned its back on the Ring Road area. A greater contrast with the optimism of the 1960s is hardly imaginable.



Today, the Ring Road area shows all the typical symptoms of present-day urban ring roads: fragmentation, congestion, noise and air pollution, ...

Specific characteristics of the Antwerp Ring Road area are the mostly sunken position of the international motorway, the presence of the Singel as a parallel road on the side of the inner city and the generous embedding of the Ring Road in the landscape.

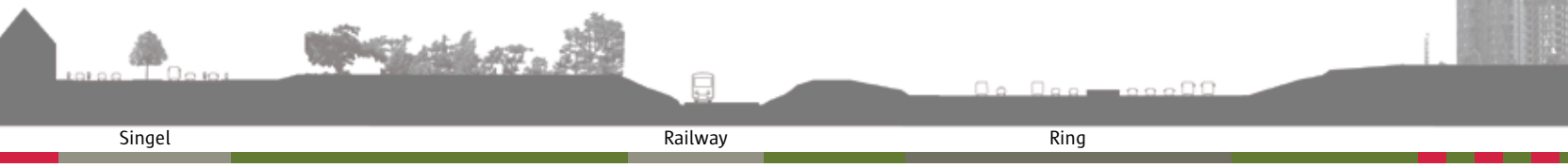
Paradoxically, because of this, the Ring Road area is a source of pollution as much as it is one of the most important ecological systems of the city.

In 2004-2005 the Antwerp Ring Road was renovated. This involved using the Singel as a switching system with temporary bridges at the crossroads. However, the need for a sustainable solution to the mobility problems in Antwerp calls for a well-considered optimisation of the Ring-Singel system.

The new wave of infrastructure works that will result from this optimisation will perhaps give rise to some distrust. Yet, these new works hold a promise as well, namely the creation of a 'Green Singel'.



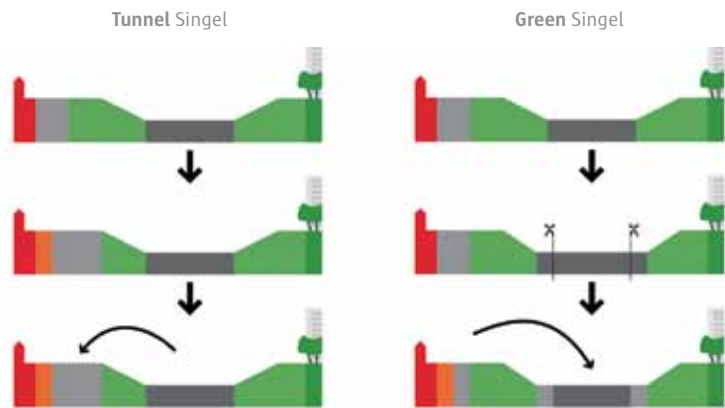
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Singel

Railway

Ring



Schematic illustration of Tunnel Singel and Green Singel (SAM)

## 1.2 // Planning context

### GREEN SINGEL AS A MOBILITY PROJECT

The Green Singel originated as a mobility project and part of the Antwerp Mobility Master Plan of the Flemish government. The Flemish government founded BAM (Management Company Mobility Antwerp) to coordinate and implement the many different projects of the Master Plan. SAM, a temporary association of research agencies Grontmij, Arcadis-Gedas and Technum, directs and coordinates research for the Master Plan.

One of the Mobility Master Plan's solutions to the mobility issue in Antwerp is the separation of through and local traffic. The initial idea was to tunnel the crossings of the Singel with the radial main roads into the inner city.

In the course of 2002-2004, the tunnel scenario was abandoned for ecological, technical and spatial reasons and traded in for the Green Singel concept. This concept is based on the separation of the Ring Road into a Through Ring Road and an Urban Ring Road. The Urban Ring Road takes over the Singel's current supra-local function so that the latter can be converted into a local road with space for public transport and soft traffic.

### GREEN SINGEL AS A STRATEGIC SPACE

With the approval of the strategic Spatial Structure Plan for Antwerp in 2006 came a remarkable deepening and widening of the Green Singel concept. From then on, the Green Singel is no longer defined as the sum of the New Singel and Urban Ring Road traffic streams, but as one of the five strategic spaces with a key role in the development of the city.

This raises the stakes for the Green Singel. The strategic Spatial Structure Plan aspires to the transformation of the entire underused space between the inner and the outer city into a new centrality and the creation of a connection between the five parks around the inner city. The Structure Plan combines a clear open and green ambition for the Green Singel with building programmes at top and office locations (e.g. Berchem Station) and new residential areas (e.g. former gas site Nieuw Zurenborg).

In order to integrate all these different ambitions and spatial claims (green, offices, ...) into one qualitative whole, there is need for a master plan for the Green Singel. This master plan will refine the ambitions of the strategic Spatial Structure Plan and offer a frame of reference for the further development of the Green Singel space.

Strategic map s-RSA: strategic spaces, programmes and projects



- strategic space: Hard Spine
- strategic projects within the Hard Spine
- strategic space: Soft Spine
- strategic projects within the Soft Spine
- strategic space: Green Singel
- strategic projects within the Green Singel
- strategic space: Lively Canal
- strategic projects within the Lively Canal
- Urban and local centres
- lower network: boulevard
- lower network: alternative route for cars
- lower network: East-West boulevard
- lower network: park avenue
- lower network: park avenue - extension
- lower network: tram line
- lower network: alternative tram line
- lower network: shopping street

Selections located outside the municipal borders are considered illustrative. Selections not in accordance with the Flemish or provincial spatial structure plans are considered to be suggestions.



## 1.3 // Genesis of a master plan for the Green Singel

### Internal vision development

In 2007, the city starts up a vision development process for the Green Singel as part of the elaboration of the Structure Plan. The goal is to integrate the different ambitions and spatial claims for the Green Singel space into one master plan as a frame of reference for further developments.

A multi-disciplinary project team is composed. The team consists of urban developers, architects and a landscape architect as well as a sociologist, a geographer and a traffic expert. On a regular basis, the project team reports its findings to thematic sounding board groups, the Green Singel planning group and at the thematic council of mayor and aldermen devoted to urban development.

### Structural consultations

Simultaneously with the start of the research for the Green Singel, the cooperation with supra-local mobility partners<sup>1</sup> is organised into ongoing structural consultations. The objective is the parallel elaboration of the mobility project and the spatial vision for the Ring Road area.

The results of these structural consultations for the Green Singel are summarised in an orientation note by SAM in the second half of 2007. Among other things, the note describes the history, the common research agenda, the arrangement of the structural consultations and the budget for the optimisation of the Ring-Singel area.

However, the collaborative process comes to a halt at the end of 2007. In that same period, the focus shifts towards another project of the Mobility Master Plan: the Oosterweel connection.

### Extensive research process

Meanwhile, the city is working hard on the first research phase for the Green Singel. The research takes three different angles: mobility, functional and design research. On 29 February 2008, the results are presented to the Board of Mayor and Aldermen. The findings of the different research trajectories are integrated into 9 concepts that form the backbone of the city's vision.

Despite the deadlock in the collaborative process, the city decides to go forward with its research for the Green Singel. In the shadow of the Oosterweel connection, a second research phase is started with a focus on ecology and development strategy. External expertise is relied on in this phase. A book is also prepared on the history of the Ring Road area that provides insight in the planning history of the area.

On 3 October 2008, the second phase of the functional research is concluded and presented to the Board of Mayor and Aldermen. The functional research provides new insight in the potential role of the space in solving shortages of local public facilities in the city. These results are integrated as well: from now on, not 9 but 11 concepts make up the backbone of the city's vision on the Green Singel space.

Finally, on 28 August 2009, the ecological research and the comparative research into development strategy are presented to the Board of Mayor and Aldermen. Once again, the concepts are adapted and updated on the basis of the new insights. Moreover, the city elaborates a strategy for the realisation of this project.

<sup>1</sup> BAM/SAM, regional public transport company De Lijn, Agency for Roads and Traffic, Flemish Mobility and Public Works Department



## 1.4 // Status of the summary note

### **The city's vision on the Green Singel space**

The original objective of the city was to have a complete master plan for the Green Singel in 2009. This master plan would contain an elaborated spatial vision for the Green Singel as well as a mobility project supported by all parties involved. In part due to the debate on the Oosterweel connection, this deadline was not met.

This summary note marks the conclusion of the city's internal vision development process for the development of the Green Singel as a strategic space. This is not a master plan. Not all has been resolved. Where should the future entrance and exit ramps be located? How exactly should top and office locations be defined? What about Ring Road caps? There remain many unanswered questions that can only be addressed in the context of the further development of the mobility project for the Ring-Singel area.

### **Strong coordination in expectation of the master plan**

The development pressure on the strategic space of the Green Singel is vast, and hence so is the risk of fragmented development. In order to avoid this, the city needs to assume a strong coordinating role today. This is why the city now presents a comprehensive and inspiring vision.

The city is convinced that this note indicates a clear direction for managing current and planned developments in a well-considered and coherent manner without jeopardising a future mobility project for the Ring-Singel area. The summary note is to serve as a frame of reference for current and planned projects in the zone between the inner and outer city in expectation of a new start of the collaborative process between Flanders and the city and of a definitive master plan for the Green Singel.



## 2. Vision

The results of the extensive research from 5 angles were integrated in 11 concepts and produced a development strategy for the realisation. This shaped the backbone of the city's vision on the development of the strategic space of the Green Singel.

### 2.1 // Five research angles

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#### MOBILITY RESEARCH

##### Bottom-up and top-down

The city of Antwerp has broad internal expertise at its disposal in the area of mobility. Unfortunately, it does not have the complex mathematical models that are required for conducting the entire research programme for the Green Singel. The required instruments and expertise are, however, available with SAM, which is commissioned by BAM with the elaboration of the Flemish Mobility Master Plan for Antwerp.

The internal mobility research of the city departs from a bottom-up approach of New Singel as a local road. As such, it flanks the rather top-down approach from the higher planning level. Two research reports were delivered up to now on the basis of the results of internal study groups. These reports contain working hypotheses, stances and research questions and form input for a shared research trajectory with the Flemish government.

##### The Singel as a 'residential collector road'

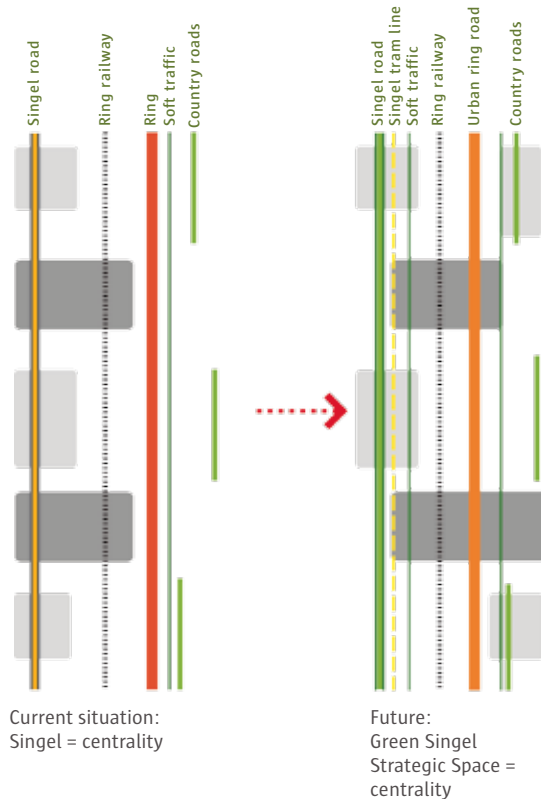
In the first research report, a working hypothesis is put forward presenting New Singel as a future local road. In this hypothesis New Singel runs from Blancefloerlaan at Linker-

oever ('Left Bank') to Noorderlaan via a new southern bridge over the Scheldt.

The current function of the Singel is to connect the different urban areas to each other as well as to destinations outside the city. The Urban Ring Road is to take over this supra-local function in the bed of the Ring, allowing the Singel to become a local road. This New Singel will process traffic coming from or going to the residential areas behind the road.

The appropriate road category for this function is a 'local road of the residential collector road type'. The design characteristics include one lane in each direction and a design speed of 50 km/h.

Depending on their location within the road network, some segments of New Singel will inevitably take on an access or connecting function, for example from a radial road to an interchange. New Singel is hybrid, but its main function remains that of a collector road. 'Filters' will be integrated in order to avoid the current Ring-Singel switching system.



Balanced use of the different traffic lines

- Local car traffic generating programme
- Supra-local car traffic generating programme

### Parking

At the local level, parking in the Green Singel space will be integrated into the surroundings as much as possible and access will be provided via Singel road. At the supra-local level, long-term destination parking will be linked in with top and office locations and access will preferably be provided directly via the Urban Ring Road.

Park&Ride facilities will be developed at greater distances from the city centre and coupled with tram and bus route extensions. Park&Ride facilities are to be developed in the Green Singel space only when related to Inter City train stations and operating at the level of the Flemish Diamond<sup>2</sup>.

### Public transport and soft traffic

A tangential Singel tram line is to provide a necessary complement to the city's current mainly centre-oriented public transportation network. This Singel line is to perform a supra-local as well as a local function. In other words, it is intended to connect different poles of activity and public transport hubs as well as provide access to the surrounding residential areas.

Slow traffic and vulnerable road users are central to the strategic space and thus to the design of New Singel. Like the tram line, cycling infrastructure is to function at both supra-local and local level.

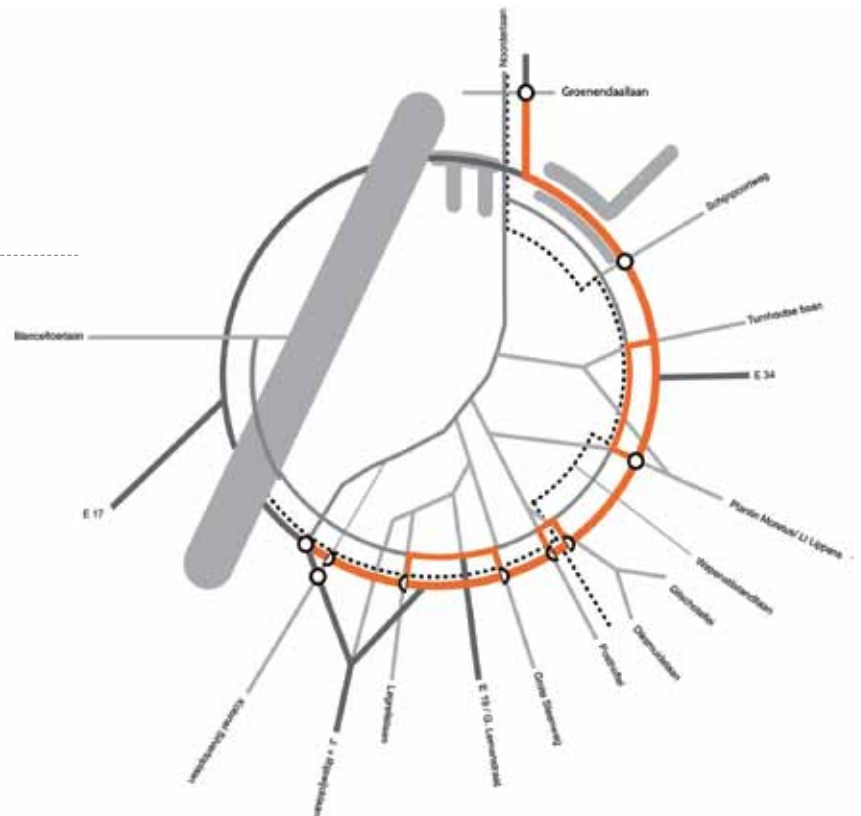
### New centrality and mobility

From a mobility perspective, the concept of New Singel as a residential collector road is compatible with the ambition to transform the area into a new centrality for the city. A precondition for this is a well-considered location policy for new functions.

These functions do not have to be exclusively focussed on New Singel. The new centrality can and should be supported by the entire Urban Ring Road – New Singel system as well as by a great number of public transport possibilities. Within this system, urban (or metropolitan) functions generating supra-local (car) traffic should be concentrated near public transport hubs (crossings of radial axes with the Singel line, train station areas) and near entrances and exits on the Urban

<sup>2</sup> The urban area and network between Brussels, Ghent and Leuven.

segments of New Singel with access function from radial road to Urban Ring Road (entrances and exits according to the 2003/2004 conceptual draft by SAM)



Ring Road. Local functions and supra-local functions generating little or no car traffic will fill up the spaces between these developments.

### Connection to higher network

A major objective of the optimisation of the Ring-Singel system is safeguarding the surrounding neighbourhoods from supra-local traffic. The connections to the higher and lower road network play an important role in this and form the focus of the second mobility research report.

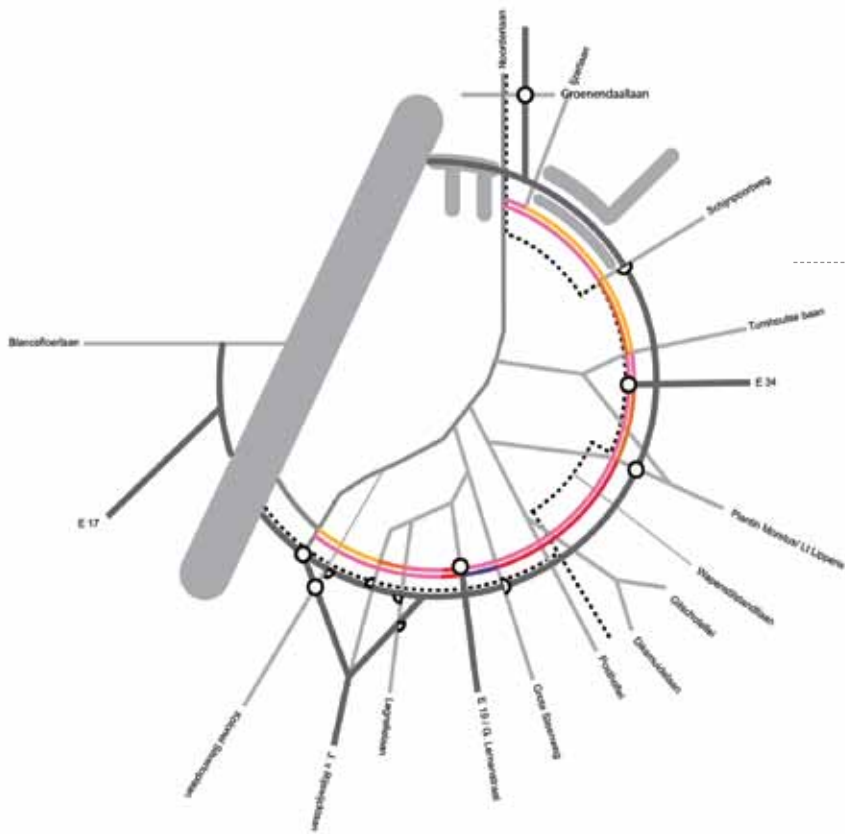
The success of New Singel as a local road and the prevention of cut-through traffic depend on the traffic flow and accessibility of the Urban Ring Road, the number of entrances and exits and their locations. To improve readability, integrated junction complexes should be aspired to as much as possible instead of the current fragmented and scattered entrances and exits.

The allocation of interchanges should take into account a number of important criteria: the (over)load and possibly deviant (hybrid) function of New Singel, the road category of the radial roads, the presence of destination parking and P&R facilities, possible car traffic generating programmes

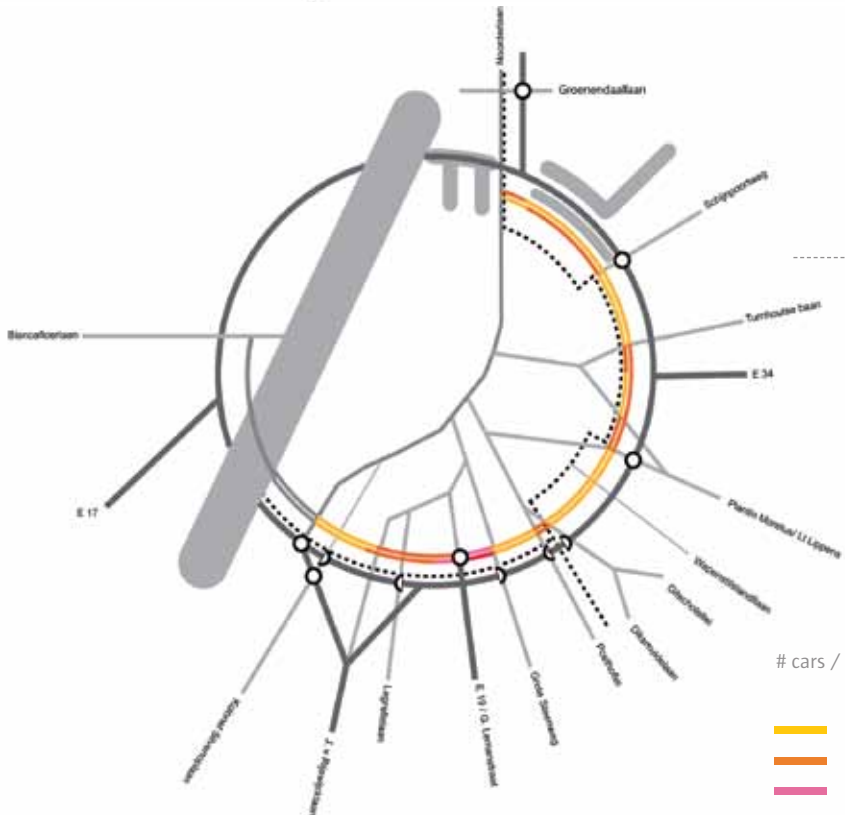
and the accessibility of the location by means of public transport.

### Further mobility research

Research variants on locations for junction complexes are formulated to serve as input for further research in collaboration with SAM. The city also asks for extra research into the connection of radial main roads (E313-E34, E19, A12) to the lower network (New Singel, Turnhoutsebaan, Generaal Lemanstraat, ...).



Traffic volume on current Singel  
(results of Antwerp traffic and transport model,  
situation in 2000)



Traffic volume on New Singel  
(MMA3, Master plan scenario project EIA, 17/11/2005)

# cars / hour / direction

- < 800      desired capacity of the residential collector road
- 800 - 1200      theoretical capacity of one lane
- 1200 - 2000      desired capacity of the urban main road
- 2000 - 2600      theoretical capacity of 2 lanes
- 2600 - 3500

## FUNCTIONAL RESEARCH

### Foundation for soft functions

The elaboration of a master plan for the Green Singel involves a balanced approach to different spatial claims. Hard functions, such as traffic, offices and housing, were central to the studies for the Antwerp Mobility Master Plan and the strategic Spatial Structure Plan.

This is why the functional research focussed on local public facilities, in order to create a foundation of quantifiable arguments for soft functions.

### Deficit analysis: walking distance and capacity

The starting point of the functional research is a deficit analysis in terms of local public facilities. The analysis is carried out according to a GIS<sup>3</sup> model that takes into account barriers like the Ring and the railway. The analysis is based on two approaches.

The first approach maps deficit zones per facility and based on walking distance. A deficit zone indicates those locations where a new facility would reach the most people and thus have the greatest effect. These maps allow for a balanced dispersion of functions.

The second approach consists of a capacity analysis. This relates the number of facilities or the surface of a certain facility in any given neighbourhood or area, to its population. In order to determine how many facilities are lacking in a neighbourhood or an area, a population-related standard is used (e.g. the BLOSO standard for sports facilities). In the absence of such a norm, the city average is the point of reference. Based on these maps, the volume of facilities can be optimally adjusted to the population density.

### Green space shortages

A first functional research report offers insight into the potential of the Green Singel to solve green space shortages in surrounding neighbourhoods. Based on the walking distance analysis, a number of open spaces are selected which could be strategically interesting for solving existing green space shortages. These spaces include Konijnenwei/Nieuw Zuid, the former gas site near Zurenborg, Spoor Oost and the open space next to Wolvenberg.

Around Borgerhout, green space shortages remain vast.

1. Green space shortages at local level
2. Simulations: effects at local level
3. Deficit zones and capacity for elementary schools
4. Deficit zones and capacity for playgrounds

Hence, additional simulations are made for this segment, this time breaking through the existing barriers of the railway and the Ring. The analysis suggests that such radical projects could have an important positive effect on the green deficit.

When capacity is taken into account as well, it becomes clear that transforming only the strategic spaces from the walking distance analysis into local and neighbourhood parks will be insufficient. When population density is brought into the picture, the conclusion is that all the present open space is in fact needed to solve the green space shortages. Again, the needs are highest in the central segment with, at the side of the inner city, the densely populated districts of Berchem and Borgerhout.

### Support of local public facilities

A second research report analyses the remaining local shortages: playgrounds and sports fields, schools, child care facilities, party halls, sports centres, ... This report demonstrates that the neighbourhoods around the bundle of infrastructure not only suffer from significant green space shortages, but are also deficient in all local public facilities.

In order to assess the role which the Green Singel space could play in supporting local public facilities, the calculated shortages were projected on the available space. It became clear that as much as three fourth of the 'available' space would be needed to solve all local public facility deficits. Also, major differences emerged between the segments of the Green Singel. The situation is the most precarious in the central segment. Shortages there are considerably larger than the available space.

### Central public buffer zone

Of course, the Green Singel space does not have to solve every shortage problem in the surrounding neighbourhoods. However, considering that there are no sufficiently large spaces available in the densely populated urban fabric, the strategic space is the only alternative for many neighbourhoods.

Moreover, there are other reasons for facilities in this zone. Because of the strategic location of the space between the inner and outer city, public facilities can stimulate new meetings between the inner and outer city. Additionally, they

<sup>3</sup> Geographic Information System



- Green and/or open spaces**
  - Green spaces not accessible to the public
  - Informal green spaces
  - Formal green spaces
  - Need for revitalisation to solve shortages
  - Less need for revitalisation to solve shortages
- Inhabitants within reach**
  - Formal local green spaces within reach
  - Simulations within reach
  - No formal local green spaces within reach

- Local facilities**
  - Pre-school and primary education
  - Playgrounds
  - Deficit zones
- Available facilities per target group**
  - Little
  - Sufficient
  - Many

can eliminate differences between the use and the perception of facilities in the inner and outer city. In short, local public facilities can serve as a catalyst for the transformation of the underused infrastructural landscape into a new centrality.

One thing is certain: the city wants to keep developing as an attractive living environment, and so it needs to increase and sustain its local public facilities accordingly. This means that a considerable part of the strategic space of the Green Singel is to be safeguarded as a public buffer zone.



## DESIGN RESEARCH

The design research is brought into play in different ways and at different scale levels in the strategic space of the Green Singel. On the one hand, the design research forms a spatial check of the rather quantitative data or sectoral stances from the mobility research, the GIS analyses, the ecological research and other research methods. On the other hand, the design research formulates an answer to different research questions from a completely independent logic.

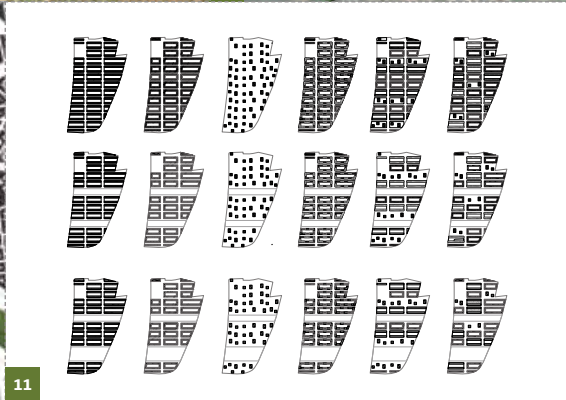
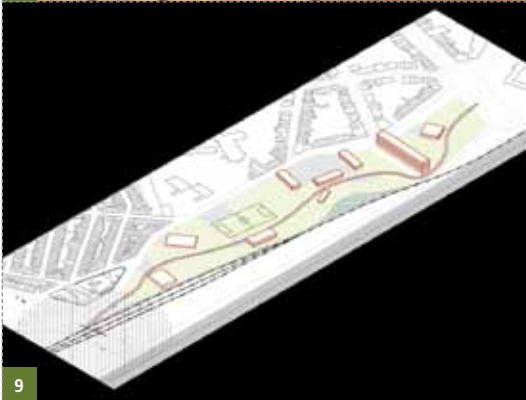
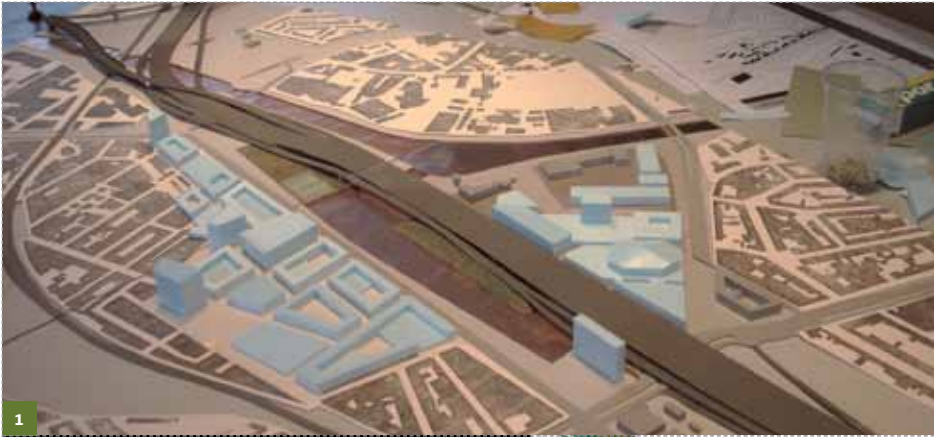
The starting point of the design research is spatial analysis and a strong vision for the strategic space of the Green Singel. It is used simultaneously at the level of the entire strategic space as well as in the detailing of smaller projects. This results in interaction between concepts and projects, which in turn results in focussed concepts at the programme level and enhanced discussions at the project level.

All this makes design research the most integrating research method in the vision development process.

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- 1. Singel Noord**  
Design research into the development of Lobrekdok and the Slachthuis site.
- 2. IJzerlaanbrug**  
Part of the master plan for Bridges over the Albert Canal. Design research into the development of a new cyclist's bridge and new housing on the northern access slope *uapS for the city of Antwerp and BAM.*
- 3. Ten Eekhove car park building**  
Design research into parking problems at Sportpaleis.
- 4. Schijntje**  
Design research as a result of the sand trap of the Flemish Environment Agency.
- 5. Rivierenhof Park connector**  
Design research as a result of the restructuring of the E313 junction by BAM.
- 6. Nieuw Zurenborg**  
Design research into an urban design for the former gas site as new mixed residential area. *De Smet Vermeulen/Palmboom and van den Bout for the city of Antwerp*
- 7. Korfbal club Berchem**  
Design research into a location for a korfbal club in the roadside landscape.
- 8. Top and office location Berchem**  
Ontwerpend onderzoek ifv afbakening top- en kantoorlocatie Berchem station.
- 9. Desguinlei**  
Design research into the definition of top and office locations near Berchem station.
- 10. Southern tangle**  
Design research into restructuring the southern tangle.
- 11. Nieuw Zuid**  
Design research into housing density at Nieuw Zuid.





## ECOLOGICAL RESEARCH

### Launch and strategy

On 22 August 2008, the tender for the ecologic research for the Green Singel is approved by the Board of Mayor and Aldermen. On 7 November 2008, the Board decided to award the contract to Resource Analysis/Technum. On 28 August 2009, the study was delivered.

On the one hand, the ecologic research comprises of an ecologic valuation of the existing situation in the strategic space of the Green Singel. On the other hand, it offers an ecological check for the II concepts already developed. The research focuses on environmental disciplines fauna & flora, urban microclimate, air quality, sound quality and water management.

### Current ecologic value

The strategic space of the Green Singel is the largest interconnected green space in the city of Antwerp. However, the ecologic valuation of the space unearths a strong duality. On the one hand, this space is very valuable to the city in terms of fauna & flora and microclimate. On the other hand, it is very polluted; the traffic infrastructure causes air and noise pollution.

The central segment between the connection with the E313 and the E19 shows remarkably bad results in terms of ecological value as well as in terms of pollution. This can be explained by the rather narrow roadsides and the strong concentration of traffic. It is busier here than in other segments.

Because of its generally poor score for air and noise quality, the Green Singel space is currently hardly accessible and usable by humans today.

### Ecologically reinforcing concepts

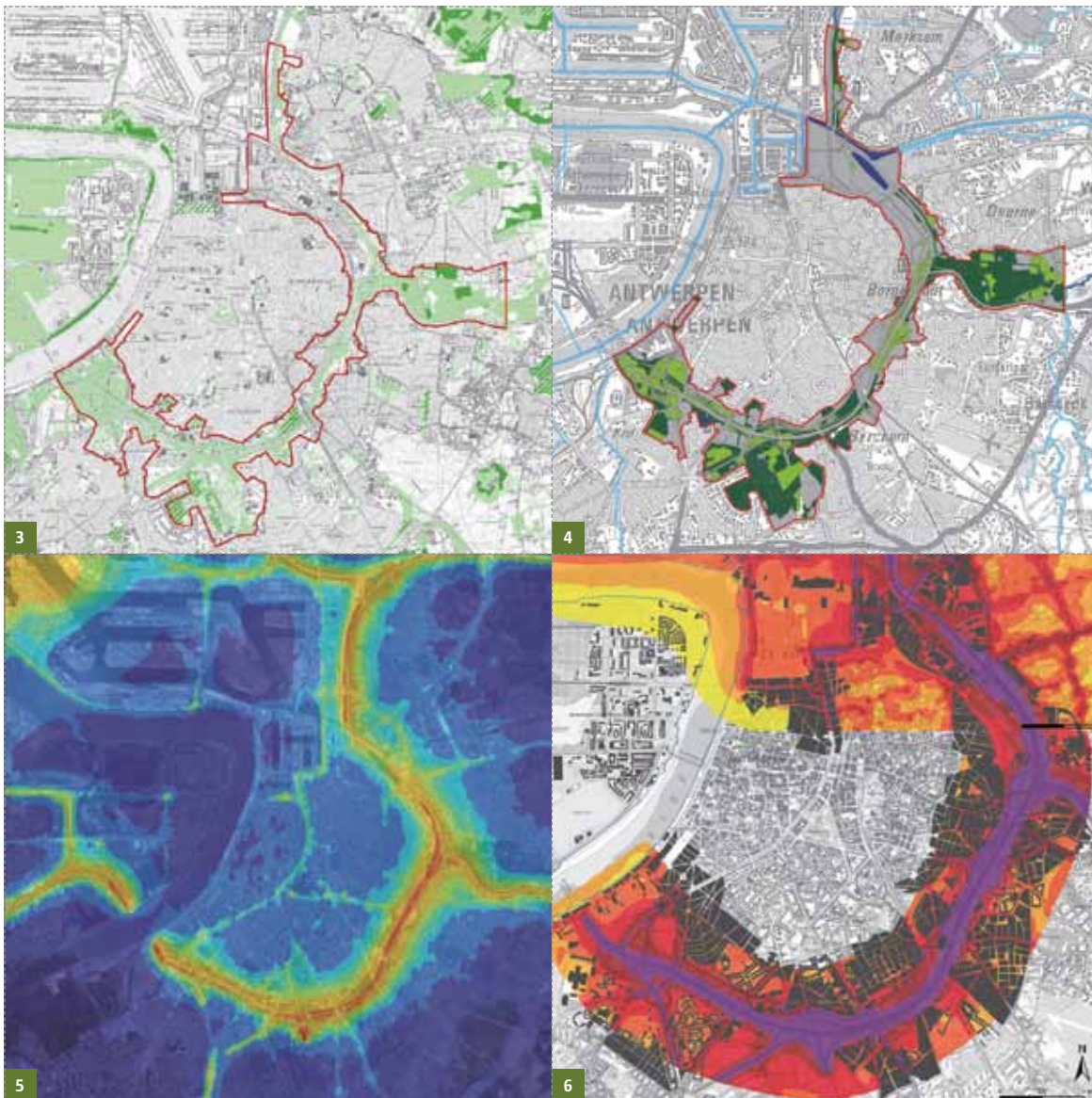
In the second part of the ecologic research, the II concepts previously developed by the city undergo a check for environmental aspects. Based on this analysis, the concepts can roughly be divided into ecologically reinforcing and ecologically disturbing concepts.

Central to the ecologically reinforcing concepts is open space and the creation of a coherent ecological system. They have a positive effect on environmental quality (air, sound, microclimate) and offer potential for fauna & flora and water management. The ecologic research proposes concrete recommendations to further maximise the ecological value of these concepts.

### Ecologically disturbing concepts

Concepts that focus on introducing human activity and infrastructure (hardening, building, ...) are in principle ecologically disturbing. Strictly speaking, human presence and infrastructure disturb fauna & flora development possibilities and negatively affect the microclimate. In addition, depending on the manner of implementation, they may produce negative effects on air quality and noise pollution. The ecological study formulates concrete proposals for minimising the ecological impact of these concepts (e.g. green roofing and absorbing façade materials).

1. Wolvenberg nature reserve, Berchem
2. Wolvenberg nature reserve, Berchem
3. Biological value map
4. Simplified illustration of vegetation types
5. Calculated annual average of NO<sub>2</sub> concentration in 2006 ( $\mu\text{g}/\text{m}^3$ )
6. Sound contours in 2003, Lden (dB)



## DEVELOPMENT STRATEGY

### Launch and strategy

On 24 October 2008, the Executive Board of AG Stadsplanning Antwerpen approves the tender for the comparative study focused on development strategy. On 2 December 2008, the Executive Board decides to award the contract to STEC. On 28 August 2009, the study is delivered.

The comparative study focused on development strategy searches for insights, success factors and development strategies for the Green Singel. This involves researching comparable projects that combine large-scale infrastructure with area development.

### 11 reference projects

In a first step, 11 international reference projects are detailed in project sheets. Together, these sheets form an interesting atlas for the comparison of differences in approach and development strategy.

More specifically, the following projects were selected:

- \* The Netherlands: Zuidasdok/Amsterdam, A2/Maastricht
- \* United States: Big Dig/Boston, Portland Max/Portland
- \* Spain: Calle 30 & Rio Project/Madrid, 22@BCN/Barcelona, Turia/Valencia
- \* France: Public transport/Strasbourg, Cité de la Méditerranée/Marseille
- \* Switzerland: Weststrasse/Zurich, Nordtangente/Basel
- \* Luxembourg: Kirchberg/Luxembourg

### Comparative matrixes

In a next step, it is possible to make 'cross sections' through all projects. Several aspects are compared in a number of matrixes. The most important finding resulting from this comparison is that the expected clichés about projects like these are confirmed.

For instance, in a first matrix the aspects of 'ambition' and 'investment resources' are set against each other. This cross-section confirms the expectation that projects aiming at the development of a great amount of public space require large public investments. Private parties are usually only interested when there is sufficient commercial property to be developed or when they have the opportunity to manage the infrastructure.

A similar phenomenon can be observed in projects that involve the development of complex infrastructure, such as caps. Such projects demand either great public investments or the implementation of a sizeable real estate programme on or near the cap. Even in the last case, these projects never promise a 100% return and always require significant government participation.

### Risk and success factors for the Green Singel

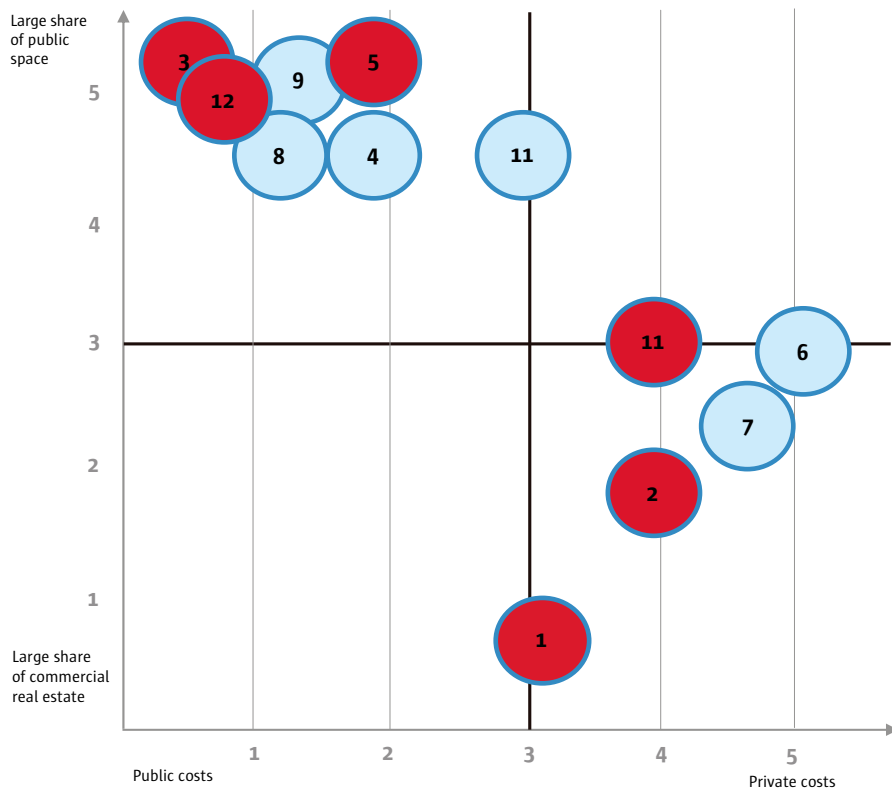
When the insights from the cross sections are confronted with the II concepts, we can incontrovertibly conclude that the realisation of the city's ambitions will require large public investments.

The study shows that investing in public space and public facilities is the most useful strategy to attract private investments. On the other hand, however, this strategy confronts the government with difficult financing issues in the starting phase of the project.

The study indicates that the risk of confusion of end and means is great. This means that the share of real estate rises in the course of the development in order to cover public costs. This can be avoided by determining a clear frame of reference for decisions and persistent alertness with respect to the original ambitions.

And finally, the study specifies a number of success factors for process management, such as creating a support base, investing in public space, organised and structured decision-making and clear internal and external communication.

Ambition versus investment resource matrix (red = including caps)



1. Zuidasdok, Amsterdam
2. A2 Maastricht, Maastricht
3. Big Dig Project, Boston
4. Portland MAX, Portland
5. Calle 30 en het Rio Project, Madrid
6. Kirchberg, Luxembourg
7. 22@BCN, Barcelona
8. Weststrasse/Flankierende Massnahmen, Zürich
9. Gardens of Turia, Valencia
10. Redevelopment of public transport infrastructure, Strasbourg
11. Cité de la Méditerranée, Marseille
12. Nordtangente, Basel



## 2.2 // Eleven concepts

### *BASIC CONCEPT*

#### THE GREEN RIVER

##### **Analysis**

The basic concept for the strategic space of the Green Singel is the Green River. The starting point is the analysis that the space between the inner and outer city has always been an urban area with its own logic in terms of urban development. At first because of the Brialmont military defence walls, later because of the railway and Ring infrastructure. The contours of the Brialmont walls are still largely visible on maps and aerial photographs today.

When the walls lose their military function, the space is appropriated by local residents as a recreational area: swimming in the Wezenberg open air swimming pool, playing soccer on the military exercise terrains, ... The strip between the inner and outer city thus takes on a sort of centrality. It becomes a meeting place. In this period, several, often ambitious integrated plans are drawn up for the space. However, the only large-scale realisation is the construction of the current Ring in the second half of the 20th century.

The introduction of the infrastructure into the space made the area interesting for other, mostly car-oriented programmes, such as offices, companies and supra-local public facilities. These developments put more and more pressure on the available green space.

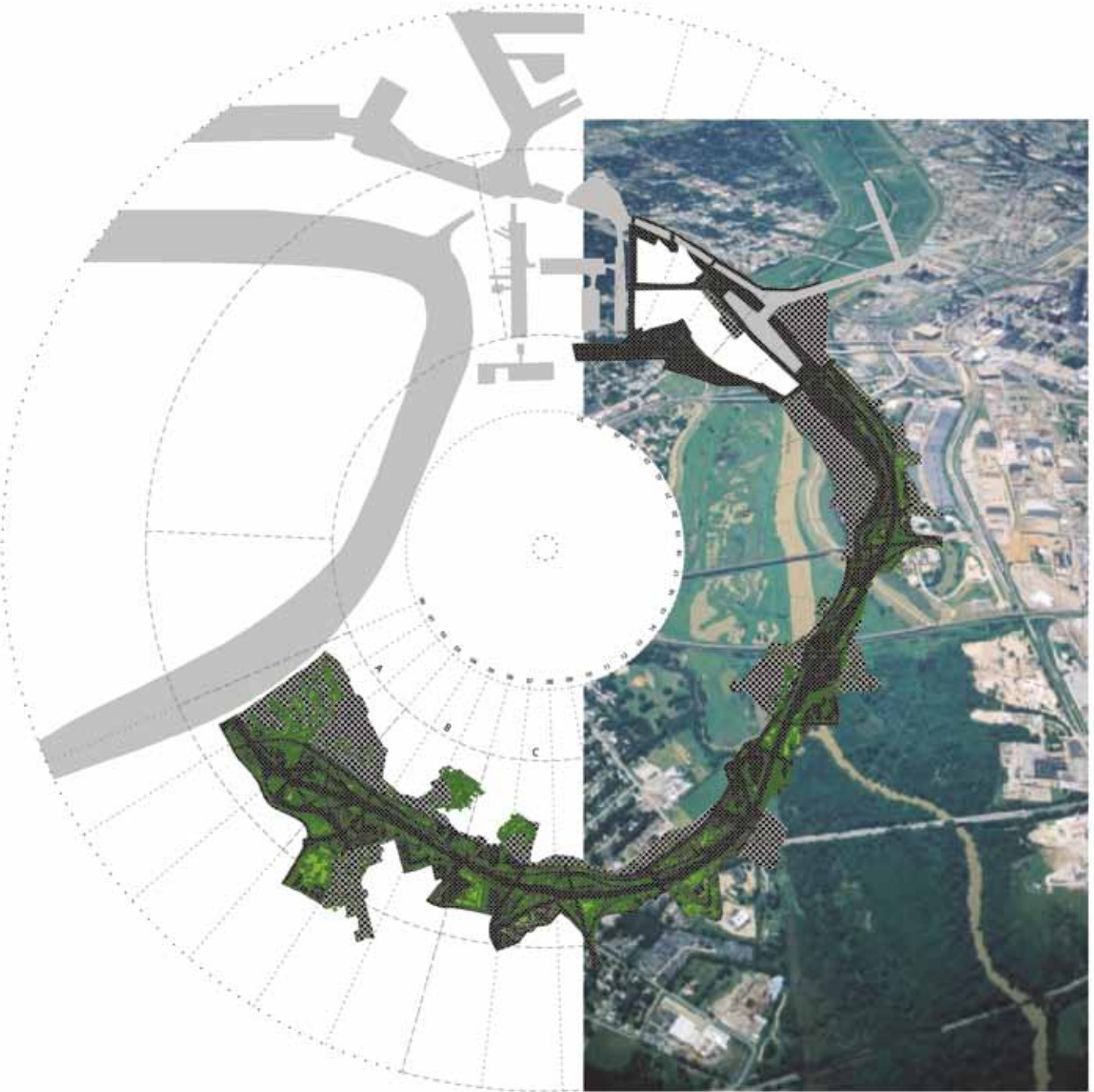
##### **Concept**

With the Green River concept, the city chooses to reinforce the individual character of the space and turn this into an asset and a new centrality for the city. This means that the strategic space of the Green Singel remains a recognisable figure in the city, within which different approaches are adopted towards infrastructure, landscape and built space than in the inner and outer city, both of which are traditionally composed of blocks of houses, streets, squares, parks, ...

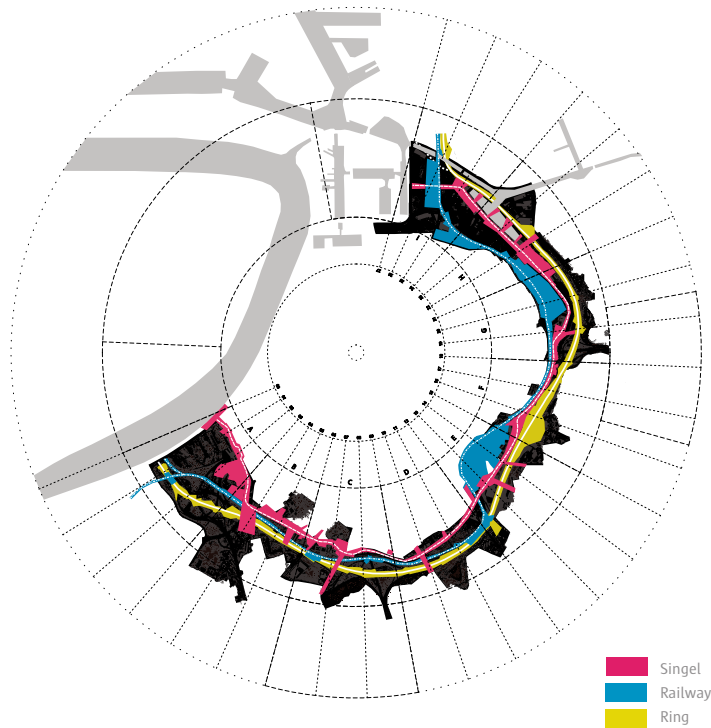
The choice for a new centrality also means that a new balance needs to be found between the supra-local and local role this space can play, between open green space and additional developments and between motorway infrastructure and the city.

This unique logic in terms of urban development is translated into the remaining concepts.

# THE GREEN RIVER







## INFRASTRUCTURE

### MULTIWAY BOULEVARD

#### Analysis

The landscape between the inner and outer city is traversed by different infrastructure lines: Ring, Singel and railway. These infrastructure lines divide the space in longitudinal direction in separate strips without much coherence.

This lack of clarity is also apparent in the use of the infrastructure. The Ring as well as the Singel are used at local and supra-local level. Their design and proximity stimulate exchange between both systems. Moreover, incomplete interchanges are scattered over several radial bridges.

Traffic has increasingly taken possession of the space between the inner and outer city. The impact of the infrastructure today is so dominant that the city has turned its back on the space. The predominant conception of the 'Singel boulevard' manifests a strong tendency to exclusively attribute a structuring role for the city to the Singel. As a consequence, new functions are mainly developed facing the Singel while the motorway is hidden away.

#### Concept

The concept of the Multiway Boulevard implies a different view on using the future infrastructure system. The infrastructure is to be a guest in the city again, adopting a structuring role instead of a dividing role.

Firstly, more clarity is required for users. The Singel is to become a predominantly local road in the future system. A tangential tram line will complement the existing centre-oriented public transport network. Supra-local traffic will

have its place in the bed of the Ring Road. Access ramps are preferably completed and reduced to a limited but sufficient number of radial roads.

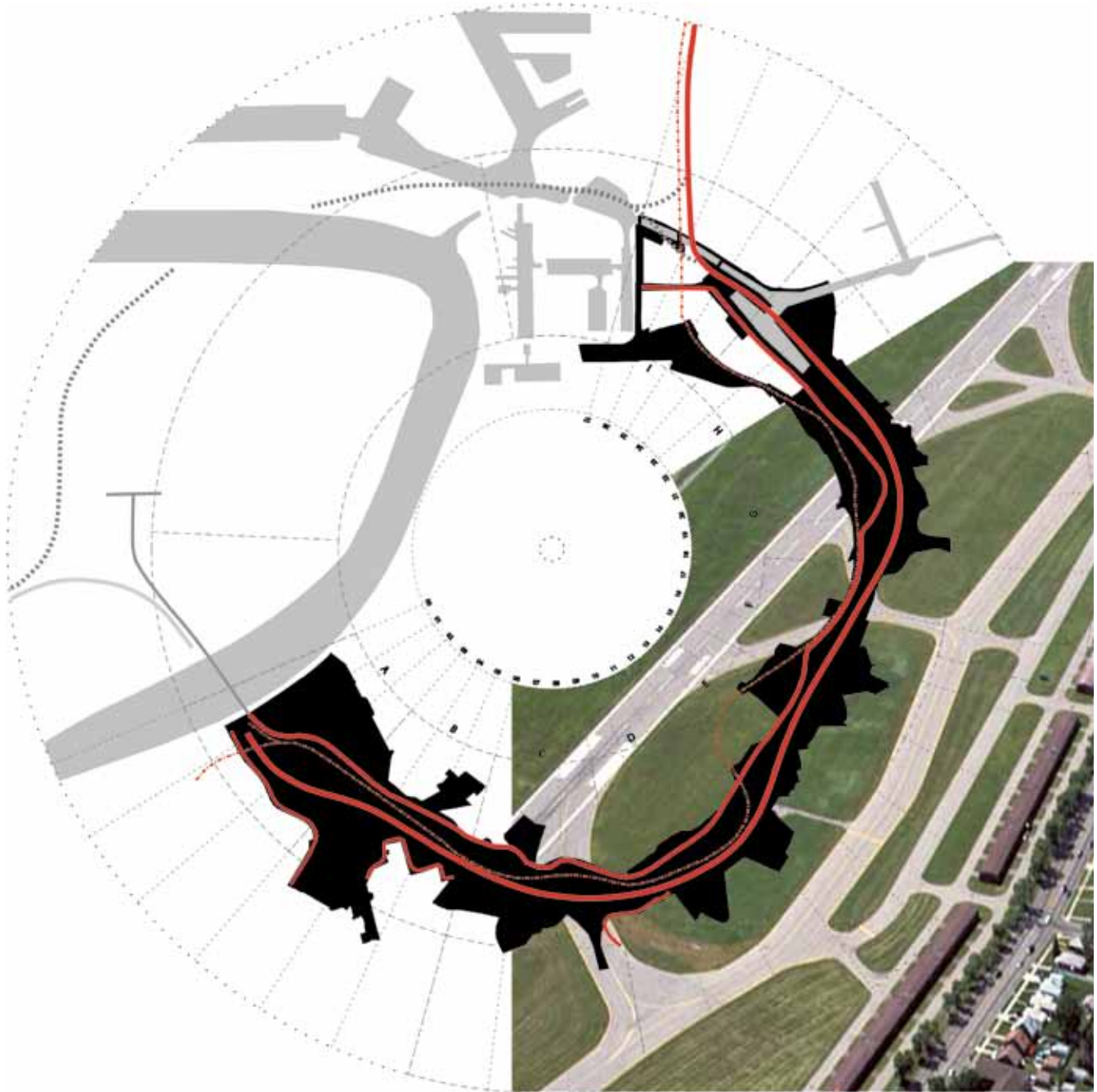
Secondly, the mobility profile of a programme and the accessibility profile of a location are to be attuned. This way, local programmes and functions can be allocated to the New Singel. Supra-local functions are assigned to a limited number of top and office locations. They are linked in with public transport hubs and supported by a parking system that is preferably directly accessible via the Urban Ring Road.

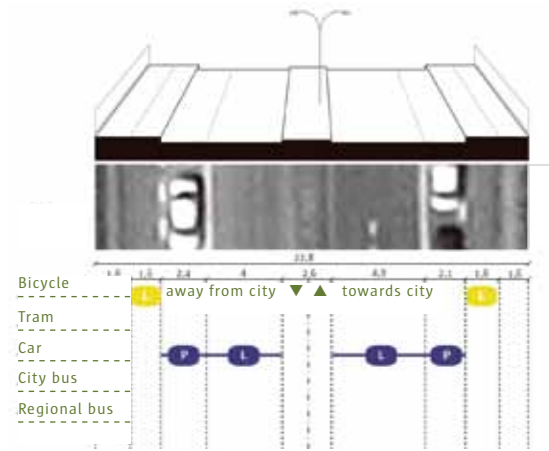
The concept of the Multiway Boulevard does not only represent an attractive mobility scenario in which the lower network is maximally safeguarded from supra-local traffic.

The Multiway Boulevard also introduces an interesting spatial image: the city that presents itself at top and office locations to (international) passers-by on the motorway and stimulates new meetings between the inner and outer city with local functions in the intermediate zones.

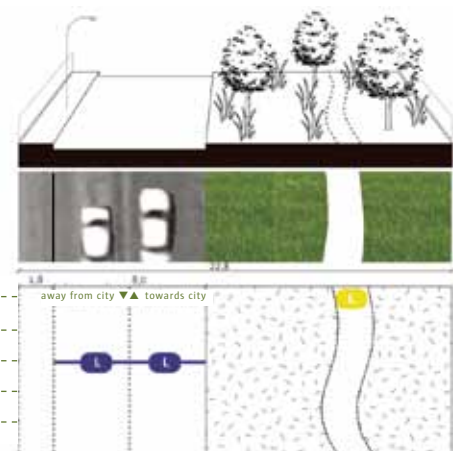
The city does not opt for a charged-up Singel boulevard and a hidden Ring Road. Within the concept of the Multiway Boulevard, both Singel and Ring Road are important carriers of the new centrality that the Structure Plan proposes for the space.

# MULTIWAY BOULEVARD





Current situation



New situation

Modes of transport:

- L** local road - residential collector road
- P** local parking facilities
- L** local cycling paths

## GREEN AND GREY BRIDGES

### Analysis

Today, 13 radial bridges connect the inner and outer city over the Ring. While they all differ from each other in terms of functions, road categorisation and traffic intensity, their design shows hardly any differences.

Most bridges are over-dimensioned. Unnecessary asphalt strips have been marked off and the available parking lanes mostly serve as truck and tour bus parking facilities, with free advertising on the motorway as an added bonus.

### Concept

The concept of the Green and Grey Bridges aims at a clearer and more logic use, design and perception of radial bridges.

### Grey Bridges

Grey Bridges are the bridges at interchange complexes. They have an explicitly infrastructural design and provide a functional connection between the inner and outer city and between the higher and lower road network. First and foremost, Grey Bridges channel motorised traffic efficiently to surrounding neighbourhoods, the inner city and the parking systems of the top and office locations.

Bridges that do not accommodate interchange complexes are made as green as possible.

### Green bridges

The Green Bridges are given a rather landscape-like design. In the first place, they are ideal locations to give maximum room to slow traffic. The elimination of parking spaces and unnecessary asphalt strips may provide more space for slow traffic without reducing traffic capacity. Apart from their pure traffic function, these bridges are employed to improve the coherence of the space. They are recycled into small caps.

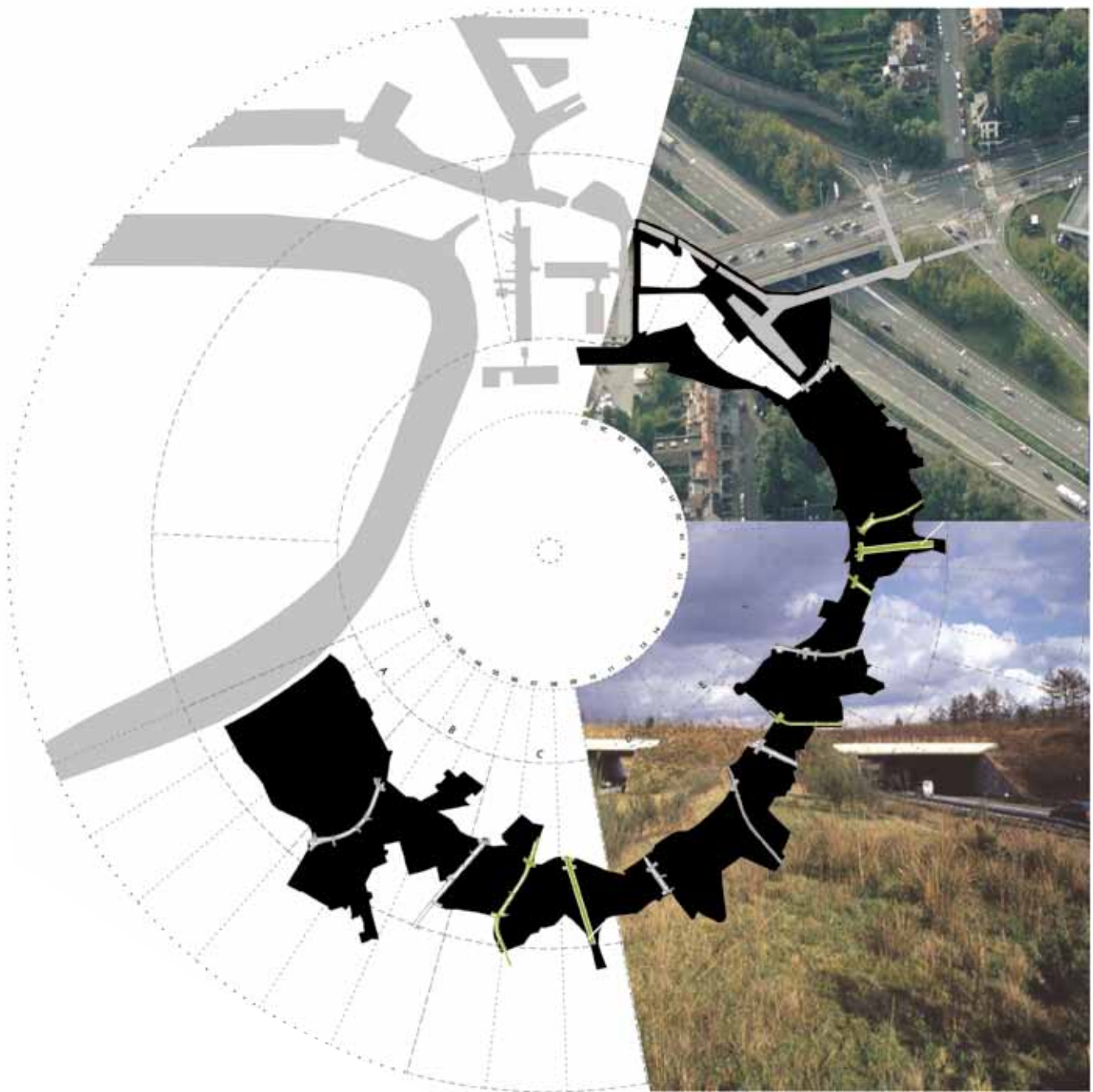
With their predominantly green, landscape-like design, Green Bridges belong to the internal system of the Green River. They link up the green spaces and strengthen the ecological network of the space. In addition, they make interesting viewpoints from where it is possible to view the entire space between the inner and outer city.

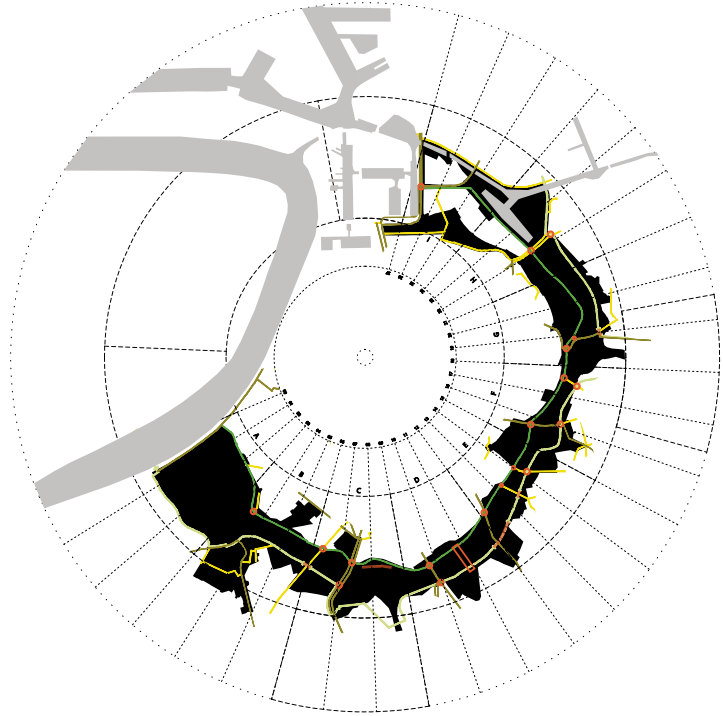
With a well-considered design, the Green Bridges may offer migration possibilities for mobile species (birds, insects, ...) in their capacity as green corridors. Important criteria are a sufficiently wide green strip (minimum 10 m), appropriate vegetation and connection to the roadside areas and nearby green areas.

Especially the location of future interchange complexes will be decisive for the selection of Grey and Green Bridges. These locations will be decided on during the elaboration of the Flemish mobility project for the optimisation of the Ring and the Singel.

In this context, the city pleads for complete interchange complexes on a limited but sufficient number of radial roads. This way, the lower network is freed from supra-local traffic as much as possible. The city considers the role of radial roads in the city's mobility scheme and their potential for strengthening the ecological network to be the most important angles for further research.

# GREEN AND GREY BRIDGES





- Slow traffic modes of transport
- Singel cycling path
  - Ring cycling path
  - Supra-local cycling path
  - Local cycling paths
  - Level crossings
  - Non-level crossings
  - Cycling bridge

## YELLOW BRICK ROAD

### Analysis

The Ring cycling path, the Singel cycling path and the radial cycling routes are already present today. However, the existing cycling paths do not form a coherent and recognisable cycling system. In addition, they are managed by different governments. There are several gaps and at several locations cyclists are led too far away from the strategic space. Finally, there is little logic in the choice for level or non-level crossings with the radial roads.

### Concept

Yet, the existing infrastructure forms an ideal base for the development of a network for soft traffic. The Yellow Brick road will become a readable ladder structure, allowing the user to traverse, experience and use the entire space in an evident manner.

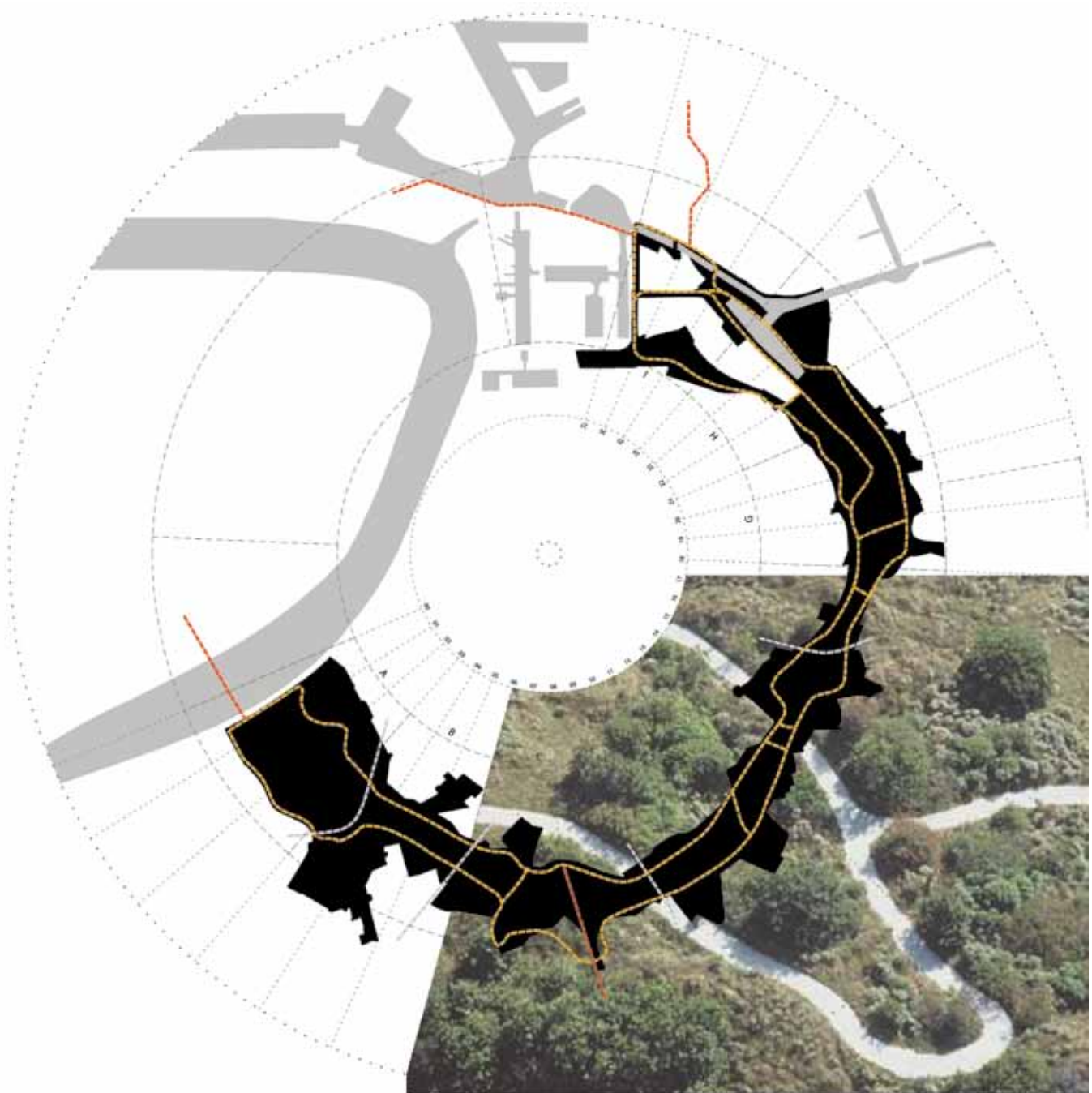
In the way that the main characters in the fairy tale of the Wizard of Oz are guided through an enchanting landscape along the Yellow Brick Road, the optimised ladder structure is to efficiently guide slow traffic through the Green Singel space.

Within the ladder structure, a functional, conflict-free and non-stop main cycling route is ensured. This requires well-thought-out placement of non-level and level crossings. Green radial bridges can play an important role in this.

Even if the ladder structure is built up out of parts of tangential and radial cycling paths with different functionalities and design and managed by different governments, a well-considered materialisation concept will turn the Yellow Brick Road into a coherent, recognisable and legible whole.

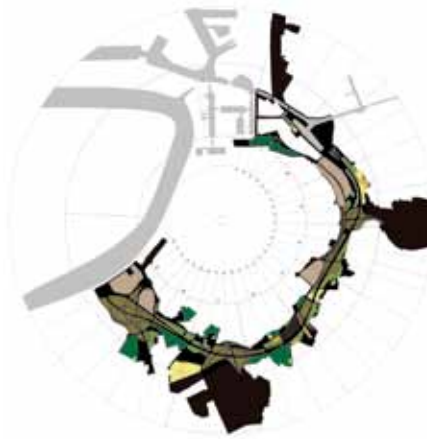
The Yellow Brick Road aspires to more than providing a functional cycling connection. The ladder structure links the different open spaces and the building programme on both sides of the road. Finally, the Yellow Brick Road also has a recreational function (running route, cycling, inline skating, walking, ...) for the city in general and the surrounding neighbourhoods in particular.

# YELLOW BRICK ROAD



#### Green structure - usage

- Park
- Plantings
- Nature reserve
- Closed-in roadside areas
- Allotment gardens
- Railway verge
- Sports and play areas
- Vacant land



## LANDSCAPE

### ROADSIDE LANDSCAPE

#### Analysis

The strategic space of the Green Singel is characterised by a unique relief that tells the story of the Brialmont defence walls and the later railway and Ring construction works. It is a cultural landscape that distinguishes itself from the rest of the city, which is considerably level. The largely sunken location of the Ring has a positive effect on noise pollution. In spite of this, sound pollution remains a major problem for the neighbourhoods around the infrastructure.

The vegetation present misses structure and logic. Grasslands and pioneer vegetation dominate the image of the roadside. Today, the landscape is largely divided in three sub-spaces: Ring, Singel and railway. In part because of the different managers of the infrastructure lines, these spaces have little to do with one and other. But the combination of these spaces and their abundant embedment in the landscape make the area into one of the most important ecological spaces of the city with a beneficial effect on fauna & flora and the city climate.

In terms of use, the strategic space of the Green Singel is first of all a place for the undefined and the unorganised. The potential of the space for human use is rather poor because of the current problems with air and noise pollution. The environmental quality is particularly low in the central segment with its relatively narrow bundle of infrastructure and high traffic intensity.

#### Concept

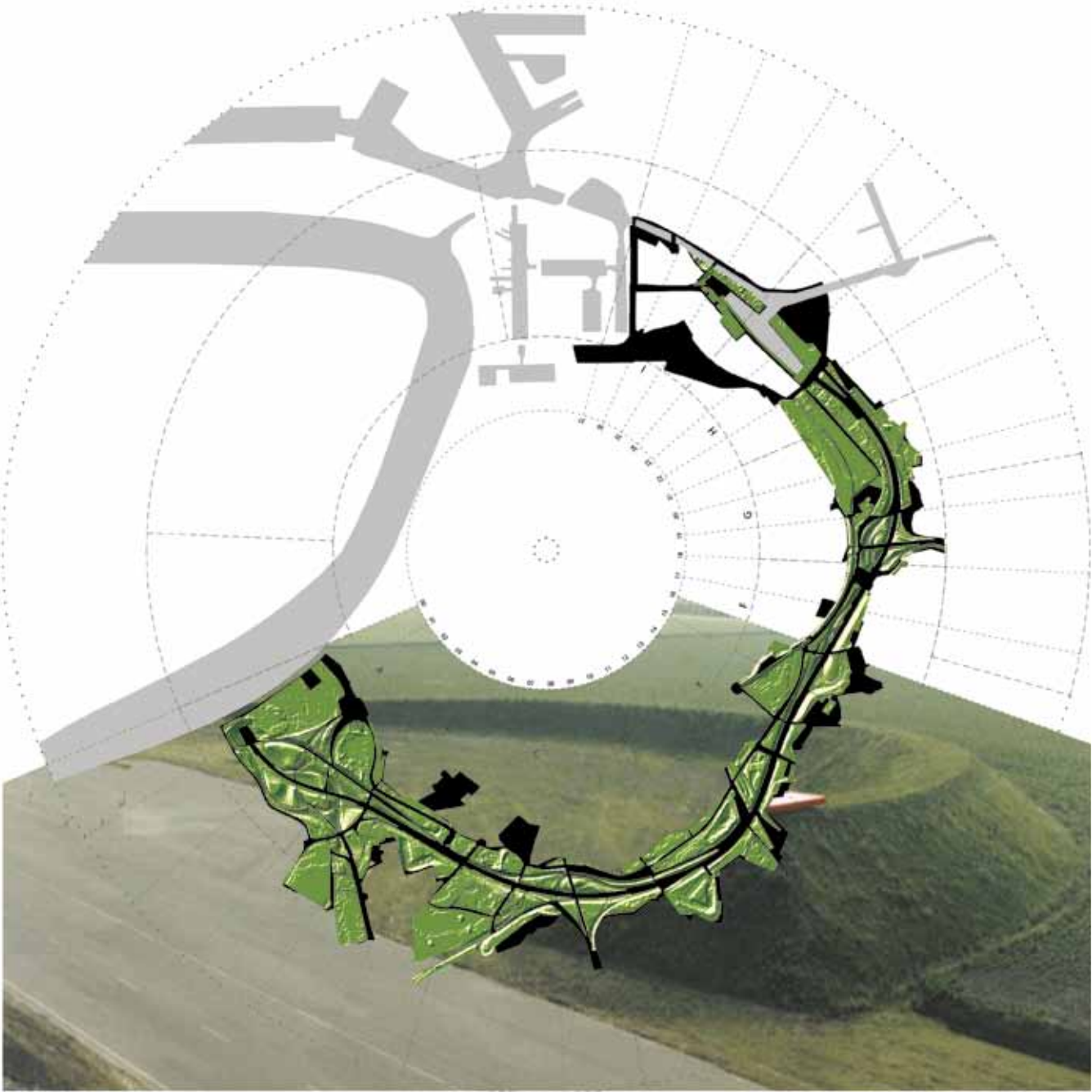
The existing relief, the vegetation present and the current use of the space of the Green Singel are qualities. They determine the unique character of the space and form the basis for the concept of the Roadside Landscape. This concept aims at the creation and optimisation of a unique, informal landscape that clearly distinguishes itself from traditional parks. A 'kinetic landscape' where movement is central.

Relief and vegetation are optimised to create views and the necessary barriers (e.g. the borders of a sports field). But relief and vegetation also serve to control noise and can improve air quality (dust capture). The optimisation of the system of internal and external links between the green plots present creates a coherent landscape within which ecological and functional connections are made between the various parks surrounding the city. Finally, an optimised Roadside Landscape reinforces the ecological role of the entire space and its beneficial effect on the city climate.

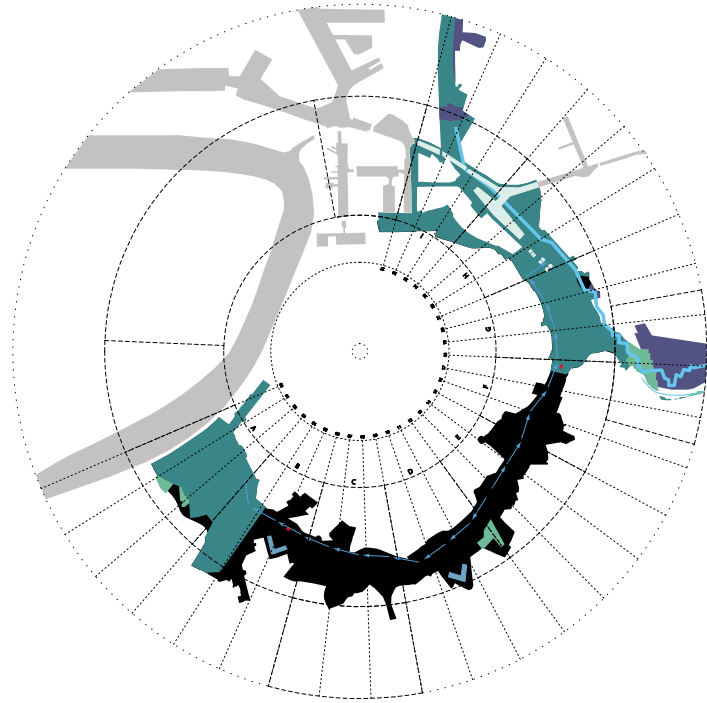
In view of the considerable shortages in local public facilities (playgrounds, sports fields, sports halls, schools, child care, ...) in the neighbourhoods around the Green Singel, the Roadside Landscape is attributed an important public function. Therefore, large parts of the strategic space are safeguarded as public buffer zones to solve current as well as future local public shortages of facilities.

Increasing the accessibility of the Roadside Landscape is a necessity for the liveability and attractiveness of the city. However, this will be a phased process, with public programmes being developed in relation to the available means on the one hand and the state of the local environmental quality (air and noise) on the other. In this respect, the development of public functions and ecological strengthening will go hand in hand. The improvement of the environmental quality creates additional possibilities for making use of the space. The optimisation of the Roadside Landscape can be correlated directly to the infrastructure works around Ring and Singel. Necessary groundworks are combined with landscape development.

# ROADSIDE LANDSCAPE







- Water structure**
- Naturally floodable area
  - Course of the sewerage
  - Recently flooded areas
  - Schijn Valley
  - Water treatment mills
  - Flood risk zones, 2006 version

## WATER LANDSCAPE

### Analysis

The most elevated location within the strategic space of the Green Singel is to be found in the central segment near Brillschans. The relief slopes downward in two directions from this point, towards the Kennedy tunnel in the south and the Schijn valley in the north. These two lowest points are floodable by nature.

The mostly sunken location of the Ring requires artificial lowering of the groundwater level. The pumping stations near Desguinlei and Stenenbrug are the only visible elements in an otherwise invisible technical water management system processing sewage and drainage water.

The northern segment of the strategic space is characterised by the water structure present. On the one hand, there is the natural water course Het Schijn; on the other hand, there is the Albert Canal and the dock structure. In the central and southern segments, there are smaller water elements – remainders of the former ramparts.

### Concept

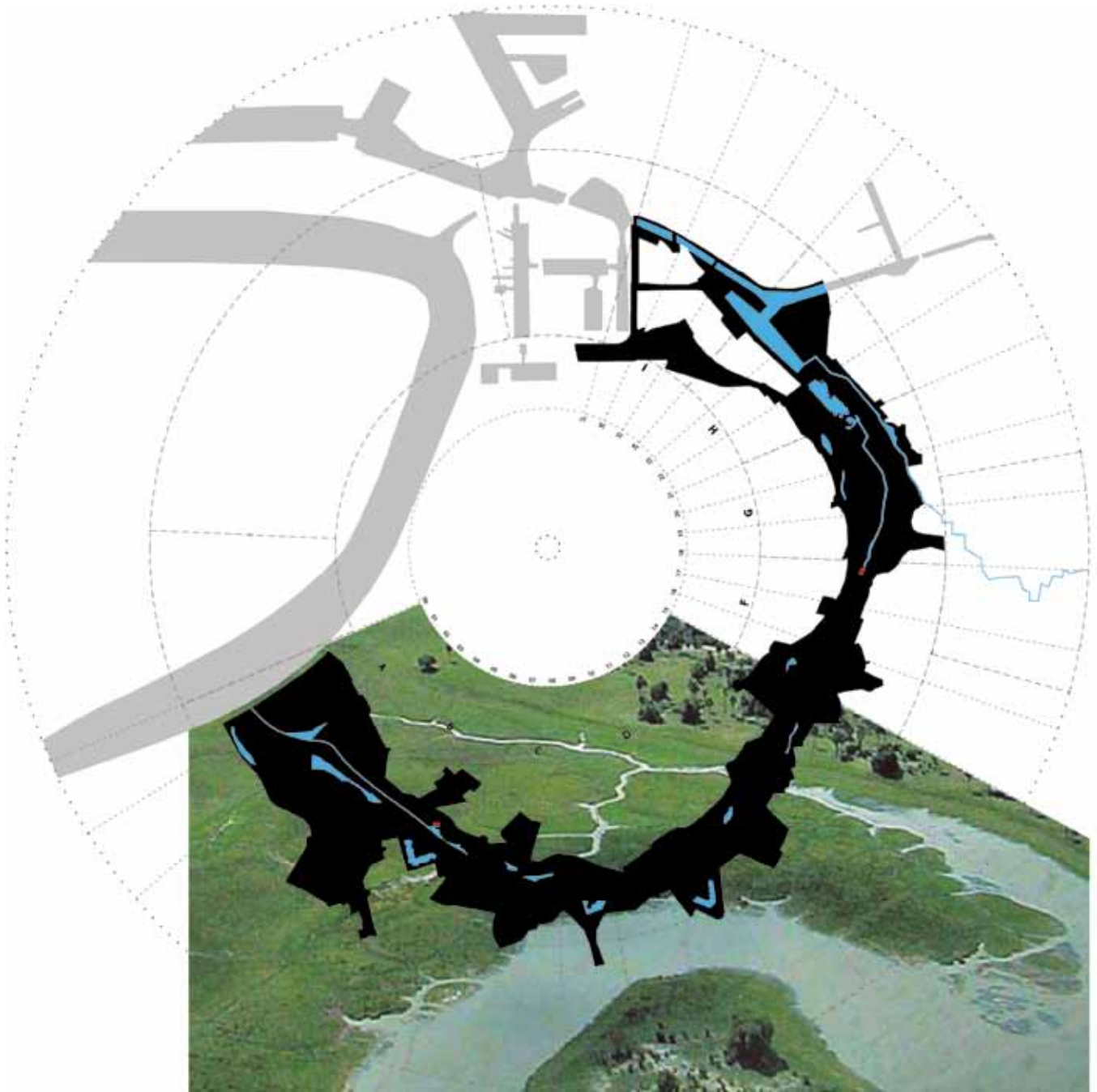
The city wants to give water a place again in the strategic space of the Green Singel. The city sees an important role for the space as an ecological water buffer. The landscape is capable of draining the water in a natural manner in an open

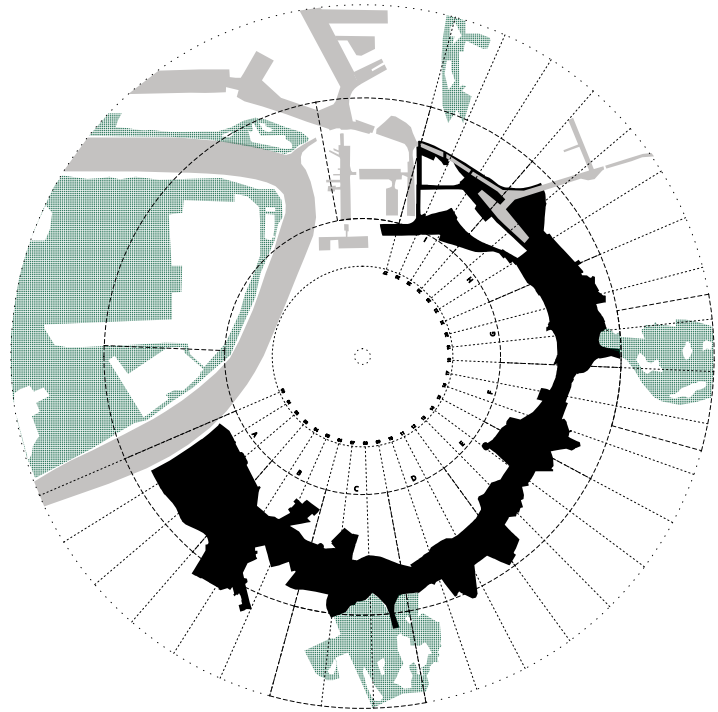
water system. Any new development along the edges or in the Green River is to optimally connect to this water management system.

Water has an important role in accomplishing a pleasant city climate. Pursuant to the guidelines for integrated water management, space can be made for water buffering of captured rain water in the entire Green Singel area. This way, the impact of existing and new hardened surfaces in and around the Green Singel can be minimised. In addition, the clear drainage water pumped up from the bed of the Ring can be drained aboveground to water bodies instead of to underground sewerage systems. The potential is greatest in the central and northern segments, considering the quality of the pumped up water.

Systems like these are not only ecological and sustainable, but also enhance the experience of the users of the Green River. The existing water treatment mills and plants form landscape building blocks in the system. The fauna & flora becomes richer, water can be purified naturally and the water system contributes to the unique character of the Roadside Landscape.

# WATER LANDSCAPE





## PARK CONNECTORS

### Analysis

Rivierenhof-Sterckshof and Nachtegalepark-Middelheimpark are the two largest traditional parks of the city. They are located in the outer city and collide with the Ring-Singel infrastructure bundle. The barrier effect of the infrastructure makes the parks difficult to access from the densely populated neighbourhoods in the inner city, where in fact the most significant green space shortages occur.

Apart from these existing parks, the Structure Plan indicates three other parks within the concept of the Soft Spine: Scheldepark, Noorderpark and Havenpark. The beginnings of these green structures are already present, but need to be expanded further. These park structures, too, are separated from the inner city by major barriers (the River Scheldt, docks, ...).

### Concept

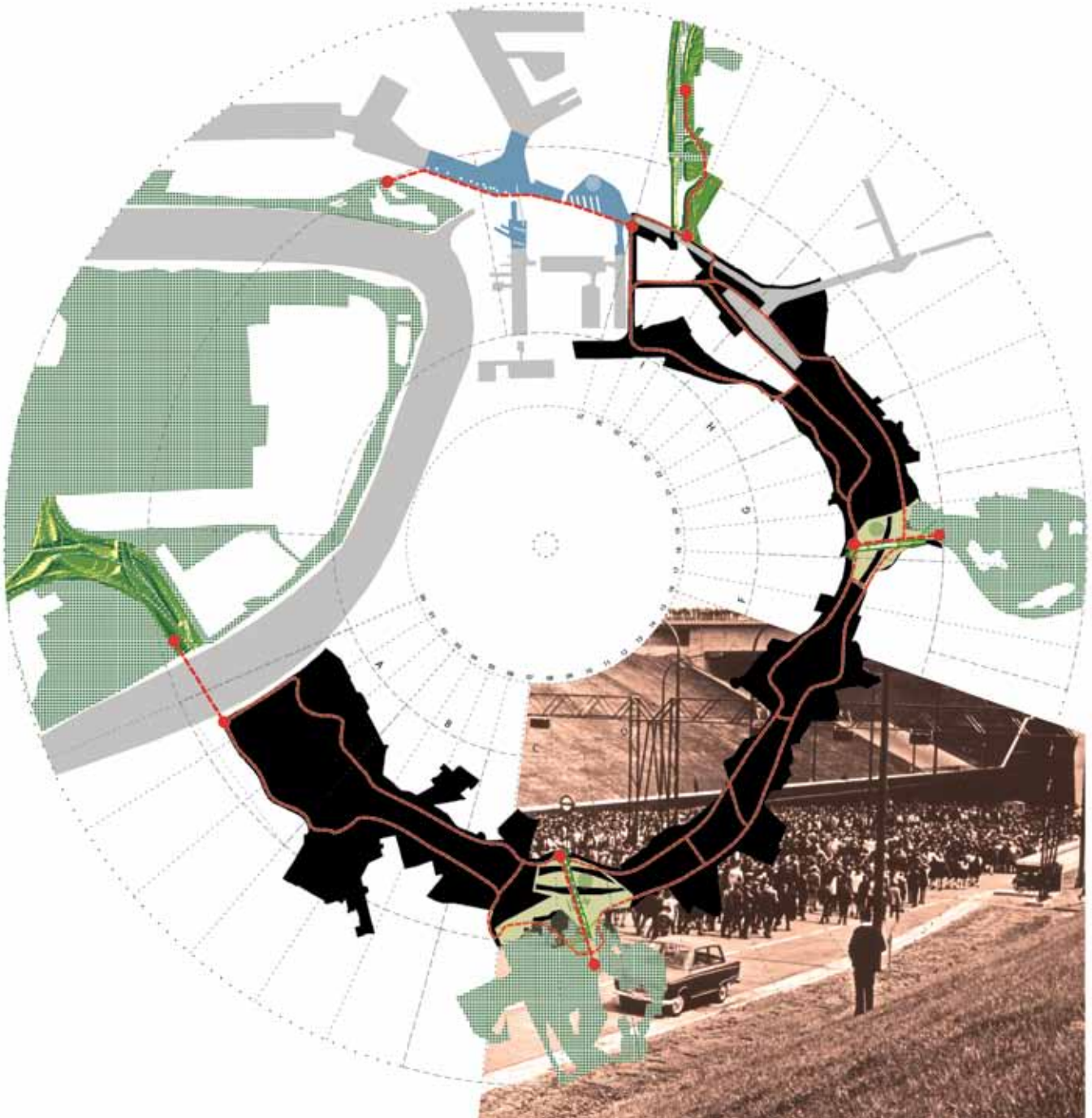
Within the concept of the Roadside Landscape, an ecological and functional connection is created between the parks. Complementarily, the Park Connectors are to link the parks to the inner city, and more precisely to the neighbourhoods showing the largest green space shortages. Therefore, the concept entails an expansion of the green structures over and through the infrastructures.

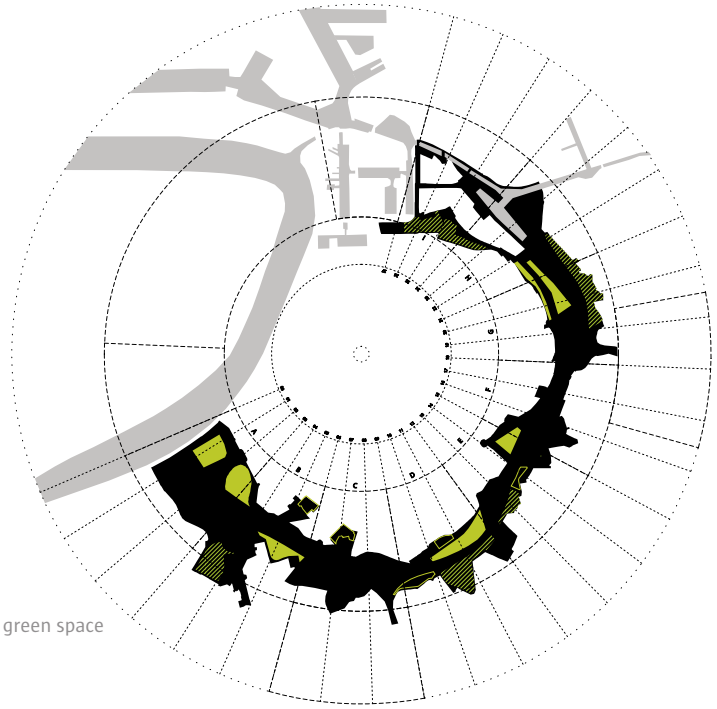
For Rivierenhof and Nachtegalepark, the possibilities of developing this connection have to be studied within the context of the necessary reorganisation of the infrastructure hubs. Infrastructures that lose their function in this reorganisation can possibly be reused as Park Connectors (e.g. the connection of radial main road E 313 to the Singel, which will basically be cut). The implementation of this concept will have a considerable impact. A substantial group of citizens will suddenly live within walking distance of a large-scale park.

The connections of the other parks within the Soft Spine to the space of the Green Singel will be worked out together with the elaboration of the green structures themselves. The Roadside and Water landscapes will help creating the necessary connections.

The Park Connectors are to be given the design and management characteristics of a traditional park as a second layer over the informal Roadside Landscape. The resulting contrast makes Park Connectors recognisable as variations on the main theme.

# PARK CONNECTORS





Green space needs - GIS

-  Existing area neighbourhood green spaces
-  Potential for optimisation as a neighbourhood green space
-  Existing local green spaces

## PEARLS IN THE GREEN RIVER

### Analysis

Apart from the large-scale parks, there are a lot of smaller green spaces with limited infrastructure for sport and recreation in and around the Green Singel area. These spaces have an important function for the surrounding areas and neighbourhoods. Still, certain areas have considerable green space shortages and lack space for recreation and sport. Especially in the inner city.

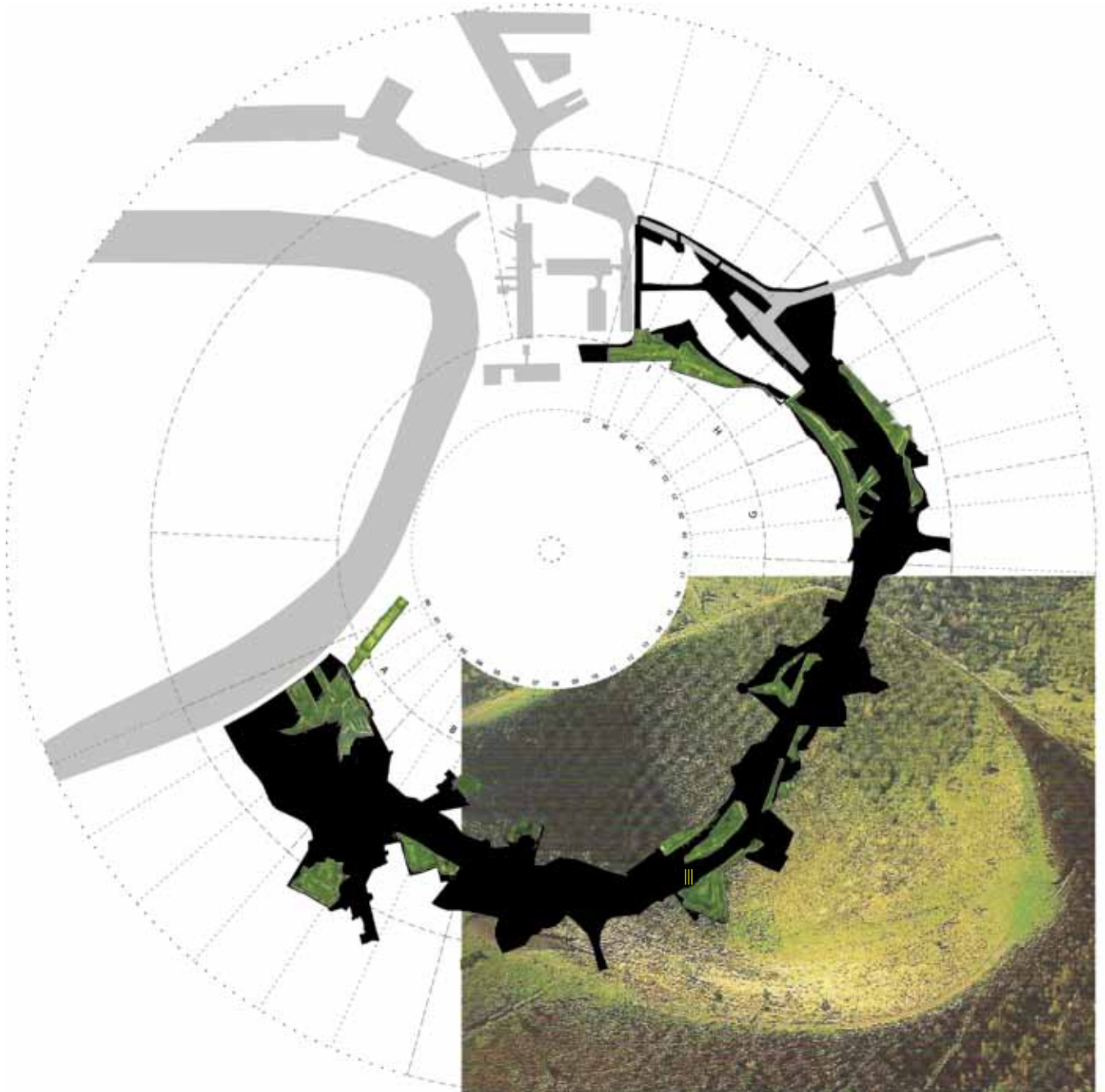
The Green Singel strategic space can solve an important part of these shortages. Based on GIS analyses, strategically interesting locations can be defined where local and neighbourhood green areas can be developed within walking distance of people that have no local or neighbourhood green spaces within reach today.

### Concept




These strategic places are not conceived as formal traditional parks, but as peaceful zones within the kinetic Roadside Landscape – or Pearls. Relief and vegetation, the main elements of the Roadside Landscape, are optimally used to create a qualitative space to be in. A place where the necessary infrastructures for sport and play are provided according to the needs of the adjacent neighbourhoods.

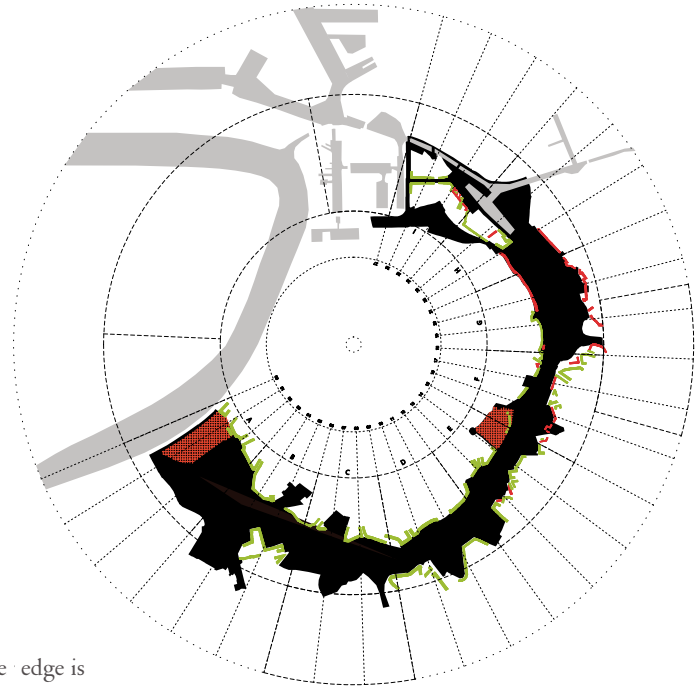
These new as well as existing local and neighbourhood parks will thus be elaborated as special places in the Roadside Landscape. These are places where the quality and costs of the landscape design and maintenance are higher than elsewhere in the informal roadside landscape.

# PEARLS IN THE GREEN RIVER



#### Buildings - analysis

-  Backs
-  Planned urban extensions
-  Fronts



## BUILT ENVIRONMENT

### PERIPHERAL BUILDINGS

#### Analysis

In the southern part of the strategic space, the inner edge is lined by a strong, continuous wall of buildings. The functions present – mainly housing and offices – look out on and are accessible via the Singel's service roads.

Past the Zurenborg neighbourhood, this image changes and the edges are largely defined by the raised railway side. Only the Dam neighbourhood in the north lies in front of the railway side.

Here and there, there are large breaches in the inner wall, among which the former gas site near Zurenborg and the East railway emplacement. The Structure Plan defines these places as new mixed residential areas.

On the outside, the edges of the strategic space are more diversified. Residential fronts around Mastvest and Brilschans and high-rise clusters interchange and result in a more diffuse definition of the space. In the central and northern segments, the edge of the strategic space is mostly defined by enclosures and parking and storage areas.

#### Concept

The reinforcement of the edges of the Green River is crucial for a liveable and readable Green Singel figure. This does not mean that the walls have to be closed everywhere. Infiltrations of the Green River into the urban fabric will enhance the desired interaction between both.

The existing 'fronts' on the inside will be made accessible via the New Singel. The route of the New Singel will by and large follow the existing service roads. This allows reduction of the current infrastructure in favour of the Roadside Landscape.

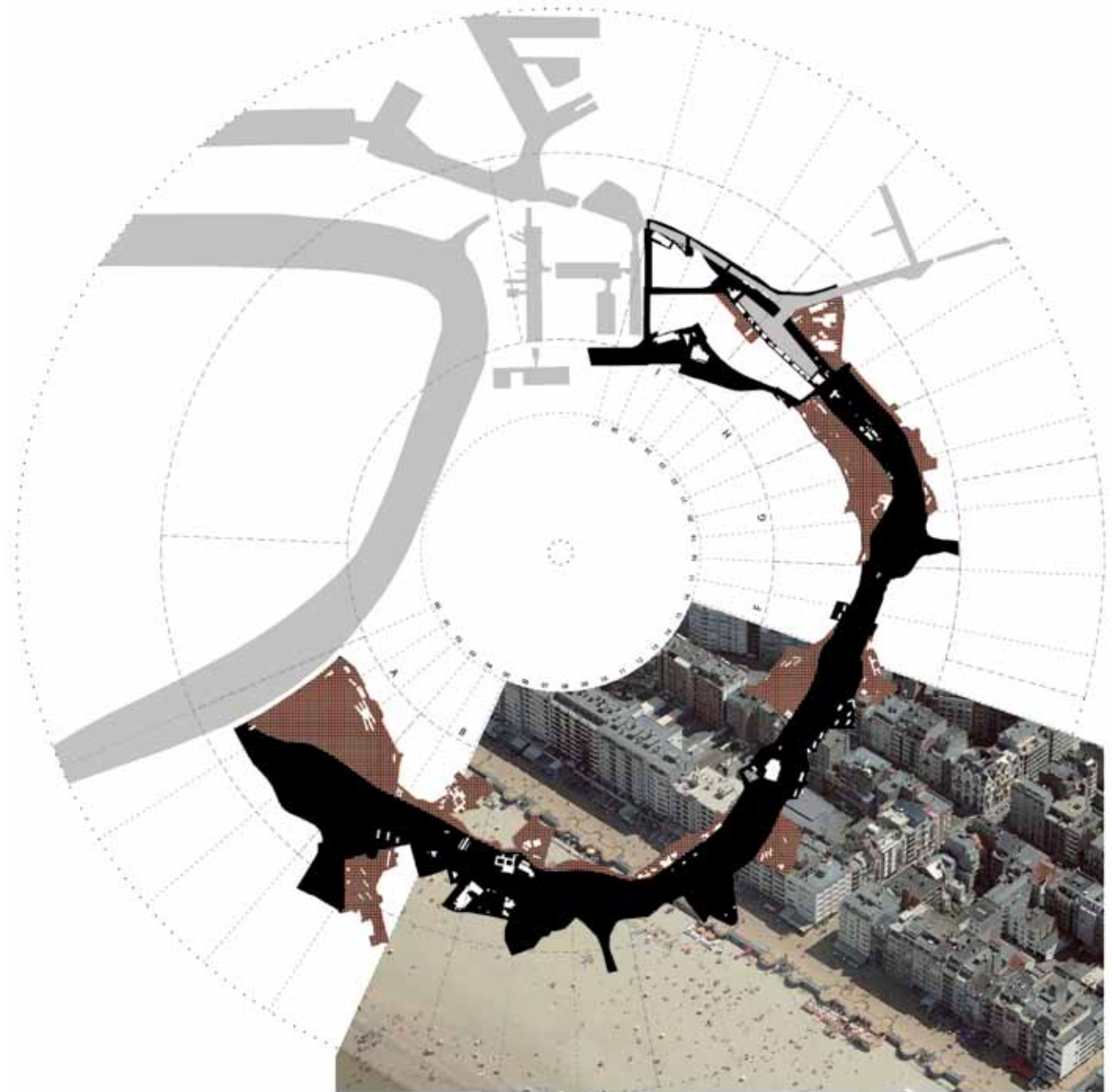
On the outside, the 'backs' require attention. This entails a new attitude towards the space of the Green Singel. By guiding building applications, the peripheral built environment needs to receive a (second) front on the Singel space and connect to the Yellow Brick Road's ladder structure for slow traffic.

At locations that allow for new developments a decision needs to be taken as to where the urban logic ends and the logic of the Green Singel begins. This decision is to be made at project level and each time requires careful weighing of the need for expansion of the city against maximisation of the Green River.

In short, living with a view on the Green River is to be made attractive again. Housing (in all its forms) is the main function within the edges of the inner and outer city and in the project areas (such as Nieuw Zurenborg and Spoor Oost). The mix of housing, working and local residential amenities is central to this.

Retail businesses, bars and restaurants are limited to 400 sq m per building application, with an occasional exception of maximum 1,000 sq m of commercial space if the business caters to the local residents or supports the residential character. Offices in these areas are limited to 1,500 sq m per building application.

# PERIPHERAL BUILDINGS





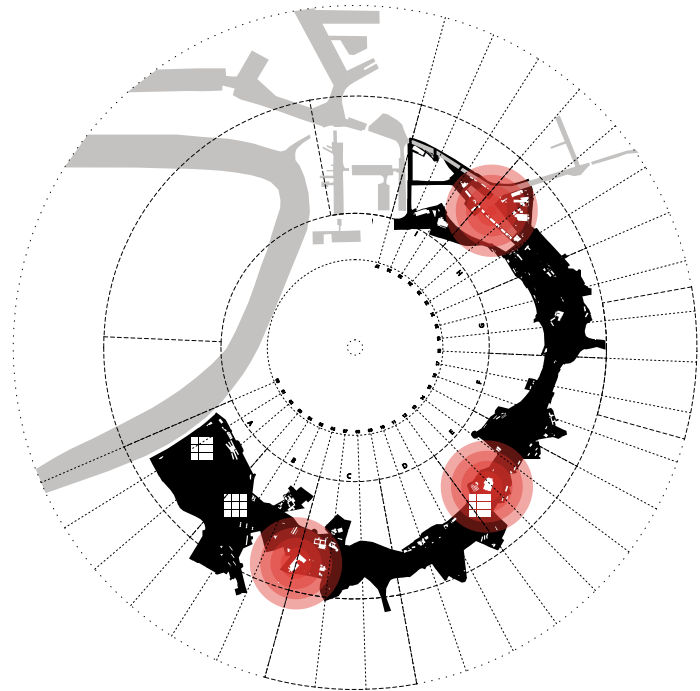
#### Building analysis



Office locations



Top locations



## PEBBLES IN THE GREEN RIVER

### Analysis

Apart from the residential towers in the outer edges, there are certain (clusters of) solitary buildings located in the strategic space with a remarkable visual impact. Examples are the Court of Justice, the deSingel arts centre, the former mail sorting centre and the Sportpaleis events hall. These buildings largely determine and provide rhythm to the city's image that presents itself to international passers-by on the motorway. The buildings accommodate important programmes generating supra-local traffic. And even though they strongly manifest themselves along the motorway, they are often difficult to access from this system.

On the other hand, easy access by car of the entire zone along the Singel and the parallel Ring-Singel system has caused the Singel to evolve into one enormous office location, resulting in unavoidable parking issues and abundance of supra-local traffic on the Singel.

The Structure Plan wants to put a stop to this proliferation by selecting a limited number of top and office locations within reach of public transport hubs. This selection includes office locations Zuidstation and Berchem Station and top locations Culture Park (Expo – deSingel), Berchem Station and Looisveld/Slachthuis.

### Concept

The top and office locations selected in the Structure Plan are to be developed as Pebbles in the Green River. These are compactly defined developments with high densities, thus saving as much green open space as possible in the space between the inner and outer city.

The Pebbles are concentrated near public transport hubs and integrated in a parking system that will be preferably directly accessible via the Ring Road. This will safeguard the New

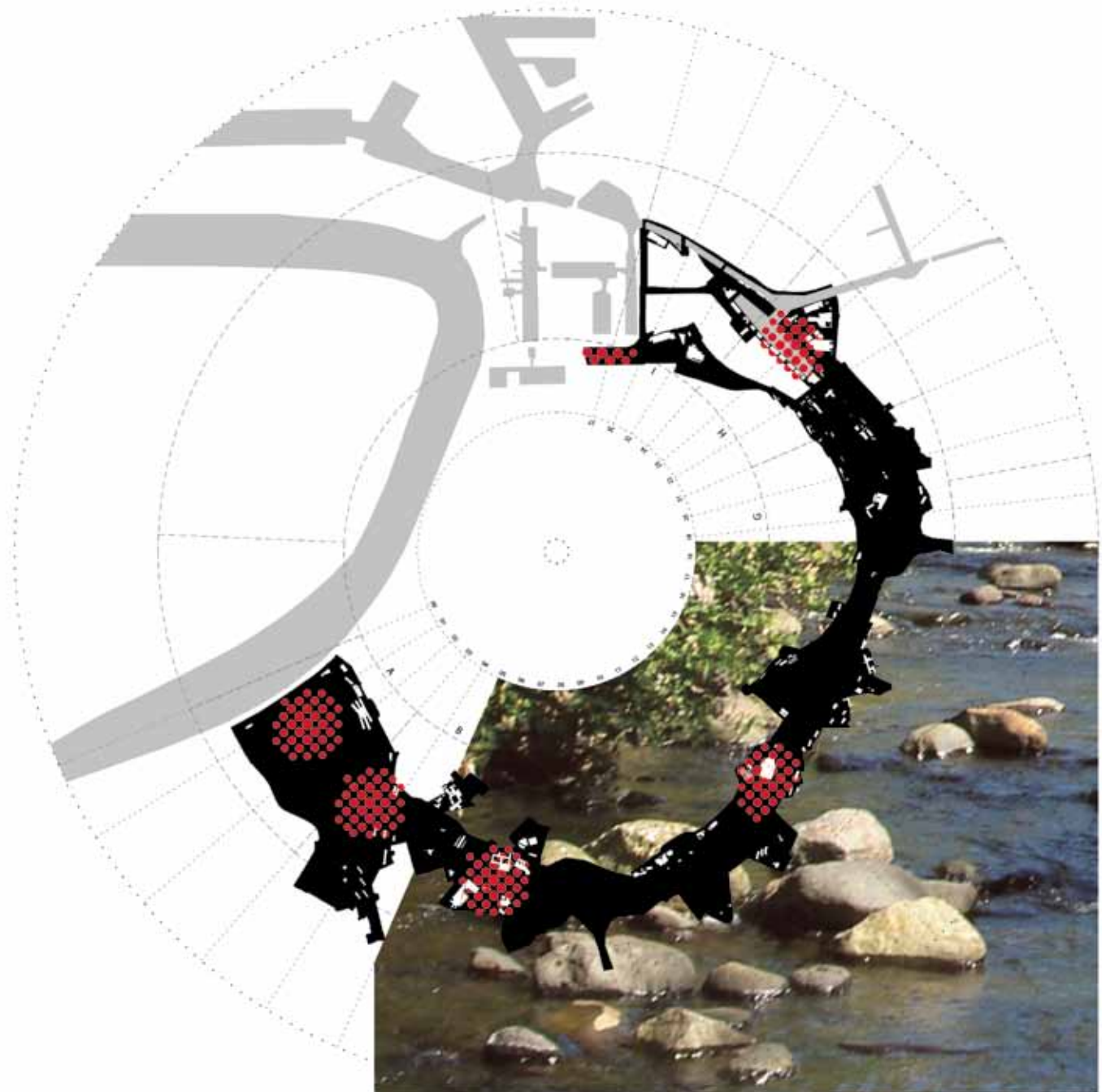
Singel and the surrounding neighbourhoods from supra-local traffic. The precise definition of top and office locations and the accessibility of the underlying parking system will have to be determined together with the elaboration of the Flemish mobility project for the Ring.

Functions with supra-local appeal and/or traffic attraction are allocated to the top and office locations. This way, a maximum modal shift can be obtained in favour of public transport. In addition, the current rhythmic image defined by remarkable buildings is further reinforced as an attractive showpiece for the city.

In order to avoid undermining the economic function of the surrounding shopping streets, retail concepts such as shopping centres and supermarkets are excluded. Generally, large scale retail businesses at these locations are limited to a gross floor surface of 1,000 sq m. Large-scale retail concentrations are limited to a gross floor surface of 10,000 sq m. An urban variant of large-scale retail (with a gross floor surface of more than 1,000 sq m) remains possible only at top location Looisveld/Slachthuis.

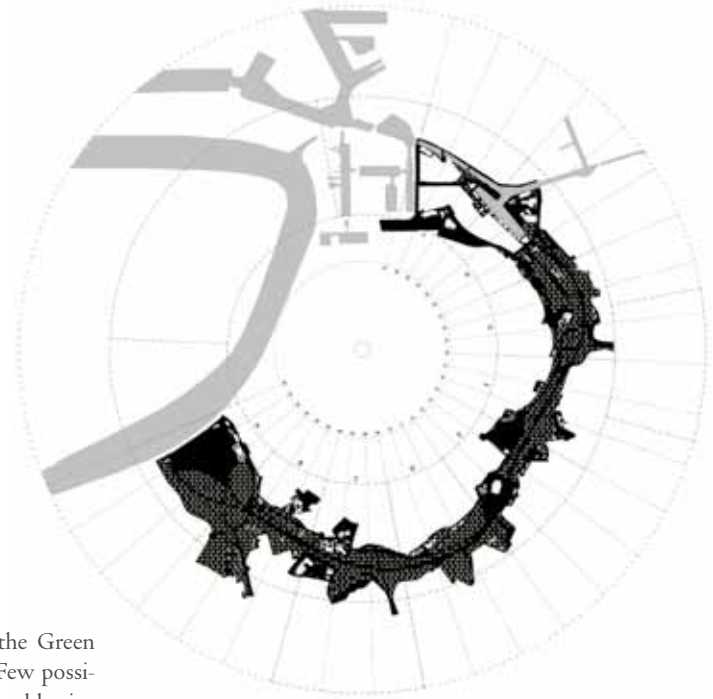
Where there are top and office locations, the landscape is narrowed and the built environments of the inner and outer city meet. Yet, a minimal continuation and continuity of the Green River is to be assured in the further elaboration of these locations, to which a favourable effect on environmental quality (air and noise) is central. The composition and materialisation of the buildings (sound-absorbing facade materials, green roofs, ...) will be important factors in this.

# PEBBLES IN THE GREEN RIVER



Building analysis

Roadside



## ROADSIDE BUILDINGS

### Analysis

The neighbourhoods surrounding the space of the Green Singel show large shortages in public amenities. Few possibilities for developing public amenities of considerable size remain within the dense urban fabric of the inner and outer city. The strategic space of the Green Singel is therefore often the only available alternative.

Apart from this pragmatic approach, assigning local public amenities to the space between the inner and outer city is an attractive idea from the perspective of urban development as well. These amenities can serve as a catalyst to charge up the Roadside Landscape and stimulate new encounters between the inner and outer city.

The shortages in public facilities on the one hand concern open space: green space, sport, recreation, dog running areas and allotment gardens. On the other hand, there are shortages in built facilities such as schools, nurseries, sports and youth centres. Furthermore, the available space does not suffice to remedy the shortages. Therefore, an innovative approach to the spatial claim for local public amenities in the Roadside Landscape is necessary.

### Concept

In order to maximally preserve the open space, it is necessary to build according to the principle of the minimal visual footprint. This means that the visual impact of a new building is not to dominate the perception of the Green River. Buildings as an artificial landscape, suspended buildings and hidden buildings are examples of possible building options at these locations.

The number of new buildings has to be limited. Therefore, only local public amenities are allowed. Commercial developments such as retail businesses, restaurants, bars and offices

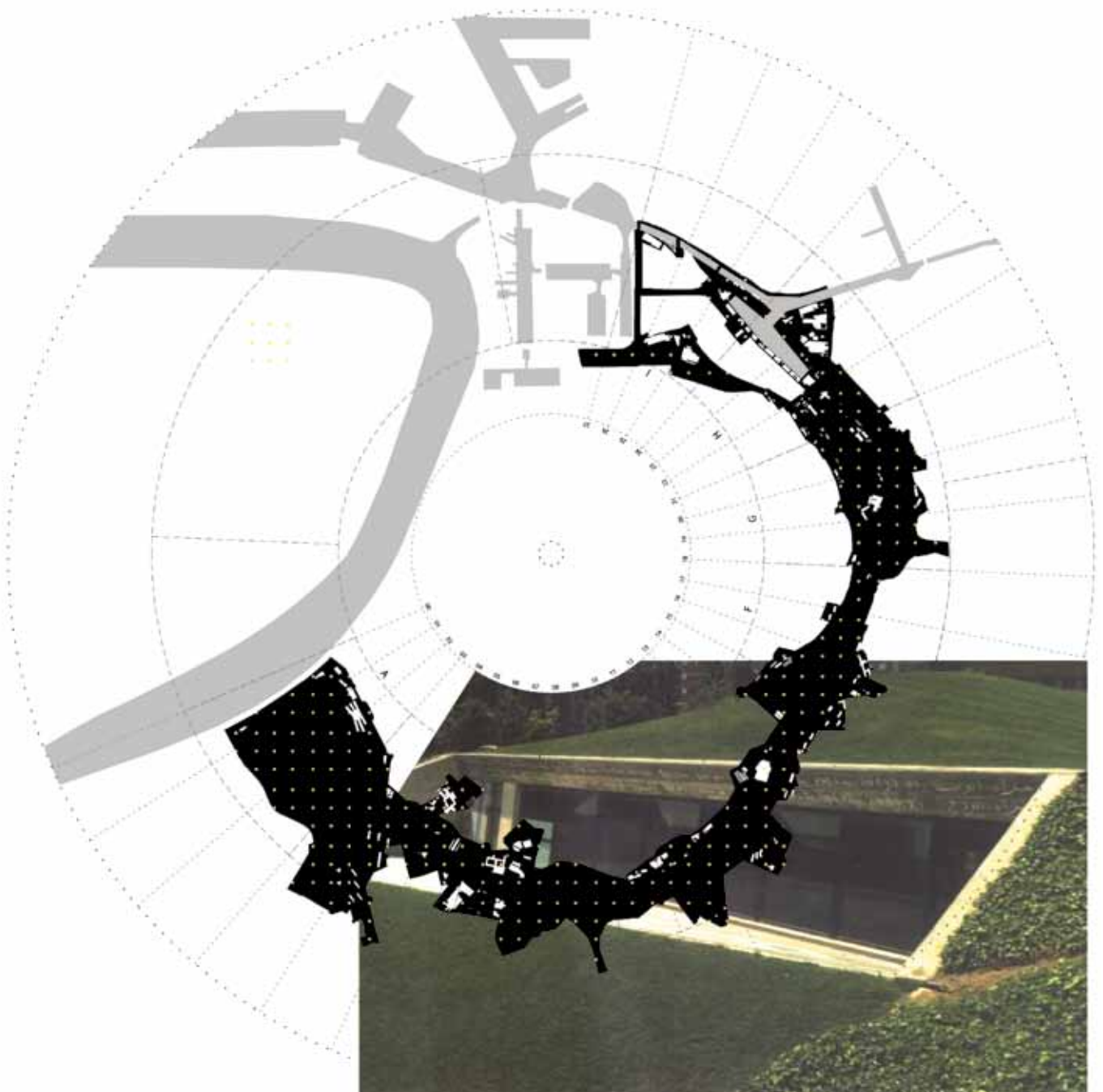
are only allowed if they clearly support and are linked to the public programme (e.g. a cafeteria linked to a sports terrain).

This way, the new centrality proposed in the Structure Plan is taking form in layers. The city presents itself to the outside world in the top and office locations, while the in-between zones allow for and stimulate encounters between neighbourhoods in the inner and outer city.

The Roadside Buildings only appear step by step as surgical interventions in the landscape. When parts of the Roadside Landscape need to be closed off (e.g. the playground of a school), landscape elements are employed to obtain this screen (e.g. relief and vegetation) so that the Roadside Landscape continues visually as much as possible. Considering the shortages in open space, the aim is to keep the Roadside Landscape public as much as possible.

The development of public functions in the Roadside Landscape will be phased in accordance with the available public means and the local environment quality (air and noise). As with the top and office locations, buildings should be conceived in ways that maximally ensure a positive effect on the quality of the environment (e.g. by means of green roofs or absorbing facade materials).

# ROADSIDE BUILDINGS



## SYNTHESIS

The concepts for the strategic space of the Green Singel depict a Green River, a recognisable figure in the city, within which a different approach is taken to infrastructure, landscape and building than in the inner and outer city.

The top and office locations selected in the Structure Plan will be developed as Pebbles in the Green River: compact developments near public transport hubs and connected to a parking system that is preferably directly accessible via the Urban Ring Road. This way, the open space is maximally preserved and the New Singel and surrounding neighbourhoods are relieved from supra-local traffic.

Within this vision, both the Singel and the Urban Ring Road are important elements supporting the centrality proposed in the strategic Spatial Structure Plan for Antwerp. The Urban Ring Road and the New Singel are both part of the Multiway Boulevard. The supra-local functions manifest themselves on the Urban Ring Road and determine the image of the city as presented to the international passer-by and the urban visitor. The local functions are situated along the New Singel and facilitate new meetings between the inner and outer city.

In longitudinal direction, the unity in the strategic space is created in the concept of the Roadside Landscape. The typical roadside vegetation and relief are modelled in ways that have a positive impact on noise and air pollution problems and contribute to a coherent, informal landscape that distinguishes itself from the traditional parks around the city. Maximum preservation of this landscape is important in view of the green space shortages present in the city and the ecological role this figure has been playing as an ecological corridor for fauna & flora and in cooling off the city climate.

Within the concept of the Water Landscape, the abundance of water that is currently drained into large underground sewers is given a new place in the Roadside Landscape as an added value and an ecological water buffer for the city. Considering the important shortages in local public amenities in the neighbourhoods around the Green Singel, the Roadside Landscape is to play an important role in terms of green as well as public functions. The space forms a 'public buffer zone' that is preserved in order to maintain/increase the level

of amenities for future generations.

The Roadside Landscape also accommodates for Roadside Buildings, but only step by step, with respect for the landscape and in view of a public programme. At strategic locations, the Roadside Landscape provides room for local and neighbourhood parks, little oases in the motorway landscape or Pearls in the Green River. The development of the public programme will have to be phased in accordance with the guarantees on local environmental quality (air and noise) and the availability of public means.

Another series of concepts relates to lateral connections. The concept of Gray and Green Bridges brings more clarity and logic to the 13 radial bridges that currently connect the inner city to the outer city. Interchange complexes are located on the Grey Bridges, where people switch between the higher and lower road network. The remaining bridges are employed to connect the different green snippets in the Roadside Landscape. This is possible without eliminating their traffic function by eliminating redundant parking and asphalt strips and turning them into green spaces. This way, the existing infrastructure is recycled into small caps.

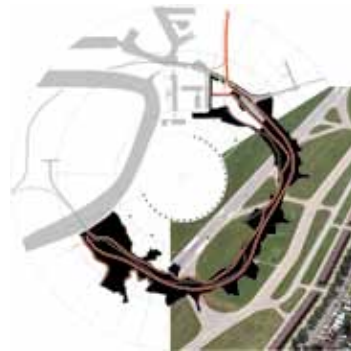
The parks located in the outer city require an extra effort. The concept of the Park Connectors stands for the extension of the park structures and their connection to the present green space shortages and the reinforcement of the ecological network.

The entire strategic space is linked in both lateral and longitudinal direction by means of a ladder.

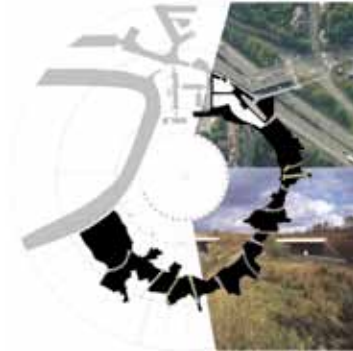
# SYNTHESIS



1. Green River



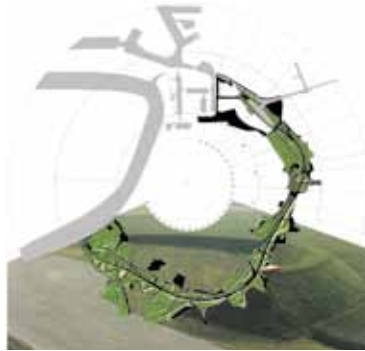
2. Multiway Boulevard



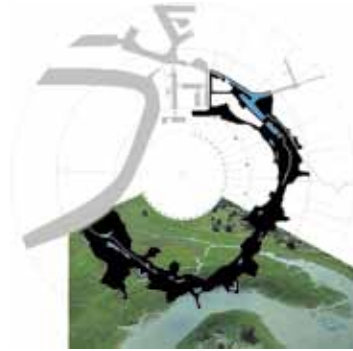
3. Green and Grey Bridges



4. Yellow Brick Road



5. Roadside Landscape



6. Water Landscape



7. Park Connectors



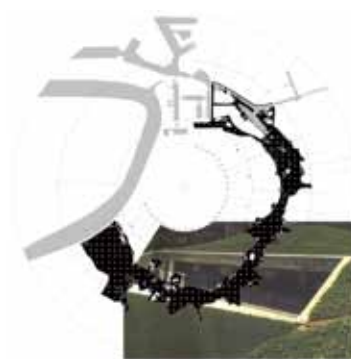
8. Pearls



9. Peripheral Buildings

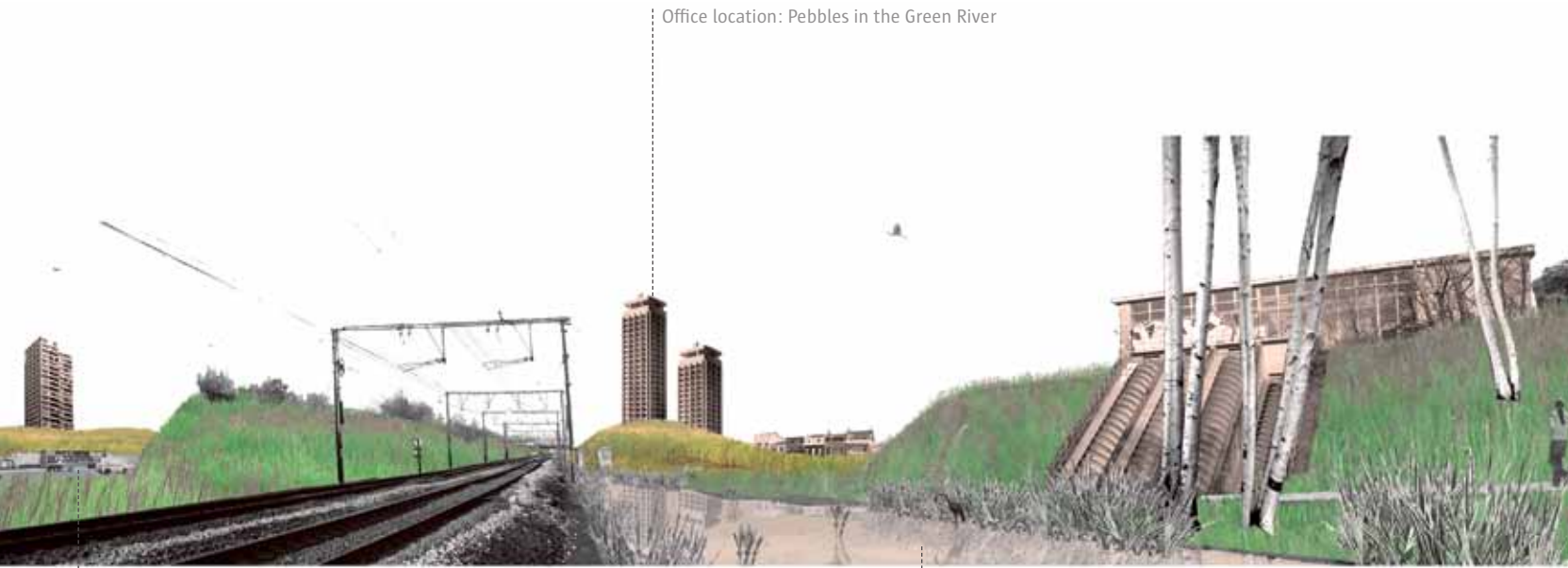


10. Roadside Buildings



11. Pebbles

Office location: Pebbles in the Green River

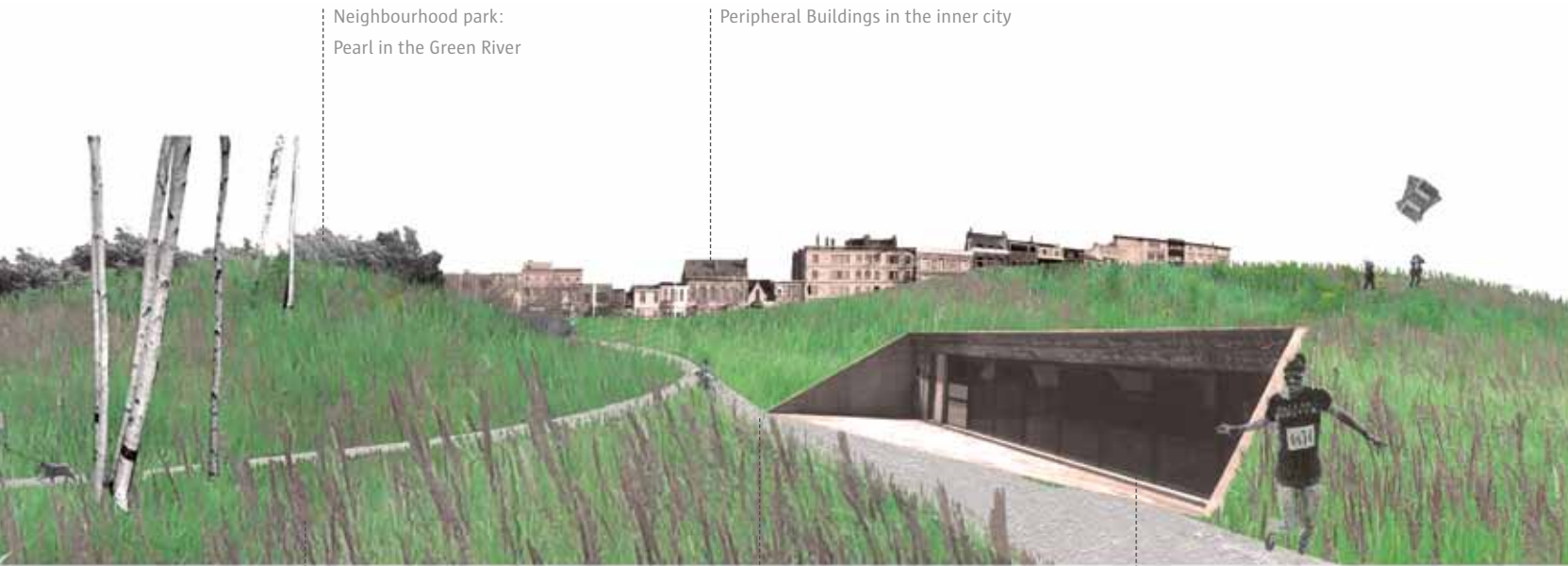


Ring Road

Water Landscape

Neighbourhood park:  
Pearl in the Green River

Peripheral Buildings in the inner city



Roadside Landscape

Yellow Brick Road

Roadside buildings



## 2.3 // One development strategy

### Phased, steadily proceeding transformation

Based on the scale of the Ring Road area, the limited public funds and the absence of large-scale funding programmes, an intensive renewal of the entire space between the inner and outer city in addition to the optimisation of the infrastructure planned by the Flemish government seems utopian.

The desired master plan is therefore to be conceived as a strategy enabling a quality check for individual projects, rather than the type of fixed overall plans that were developed in vain at the time of the dismantlement of the Brialmont defence walls.

The current quality of the landscape, the high percentage of government-owned terrains and the many 'green' and 'blue' designations on the Flemish Regional Plan on the one hand, and the limited public means and the poor environmental quality (air, noise) on the other, enable as well as necessitate a strategy that aims at a phased and steadily proceeding transformation of the landscape based on a strong and inspiring vision.

### Steadfast policy

The execution of comparable development strategies demands years of intense attention from policy-makers, whereby each project, no matter how small or at whose initiative, must be conceived as a tool for communicating a greater vision.

The limited financial means should be distributed strategically in view of:

- \* improvement of the environmental quality, which generates possible uses
- \* a number of themes with a strong visual impact
- \* elements attracting private investments, such as accessibility, qualitative public space and amenities
- \* the central segment, which is clearly the weakest link in all fields (environmental quality, shortages, ...)

Furthermore, the city is to manifest a relentless alertness in order to safeguard 'softer' spatial claims, such as green spaces and local public amenities, from repression by 'harder' spatial claims in terms of infrastructure and commercial real estate. International projects show how, in the absence of the necessary public means, the initial ambitions suffer from a systematic increase of commercial real estate developments in order to find the means to finance complex infrastructural interventions.

This 'confusion of end and means' is also one of the most important traps hiding in the implementation process of the vision on the strategic space of the Green Singel. This summary note and the elaborative research that forms its foundations is, however, an instrument for the city to pursue a well-considered and steadfast policy. The city now has a well-founded and integrated vision at its disposal as a frame of reference for the further development of the strategic space of the Green Singel.



# 3.

## Follow-up process

### 3.1 // Towards an area-oriented and integrated master plan

In the shadow of the Oosterweel connection, the city has managed to take a leap forward with its vision on the strategic space of the Green Singel. However, this is only the beginning of a crucial process. A next phase necessitates the parallel elaboration of the mobility project for the optimisation of Ring and Singel and the spatial vision on the strategic space of the Green Singel, resulting in an area-oriented and integrated master plan.

A major threat to a qualitative and spatially coherent development is the division of the space according to the authorities in charge – the supra-local infrastructure for Flanders and the space alongside the infrastructure for Antwerp. The local and Flemish governments have no choice but to find each other in a shared process. Together, they will have to work on a wide social support base by means of a well-conceived and transparent communication and participation trajectory.

The concepts for Green Singel that the city has developed, are sufficiently open and flexible to allow for new insights. First and foremost, they indicate which role the strategic space of the Green Singel can and must play in the development of the city.

In this view it is important to the city that a future mobility project for the optimisation of the Ring and Singel is conceived within a global vision on the mobility problems in the region of Antwerp, and that this project supports and preferably even reinforces the city's ambitions for the strategic space of the Green Singel. A (more) local role for the Singel and the minimisation of supra-local traffic are important objectives in this perspective.

## 3.2 // From concepts to projects

The planned optimisation of the Ring-Singel is the ideal stepping stone towards the development of the space. However, the city does not want to and will not make its vision totally dependent on the infrastructure project.

The several studies that were carried out have shown which important role this space can play for the city:

- \* in solving green space shortages and shortages in terms of local public amenities
- \* in the economical development of the city at the top and office locations such as Berchem Station
- \* in terms of housing, in mixed residential areas such as Nieuw Zurenborg
- \* in improving the environmental quality of the surrounding areas and the general city climate.

Even or especially if the optimisation of the Ring-Singel is delayed for another few years, the city needs to reinforce the quality of this strategic space. The space has a key role to play in the development of the city. The city can and should optimise the enormous potential this space has to offer, albeit with due consideration and without jeopardising a future mobility project.

Moreover, the development of the Singel as a future local road is only possible by working within a long-term vision today. At present, the city is mainly in search of synergies with the different initiatives by others in this space. However, the city also specifically works on projects it can realise and manage itself in the short term.

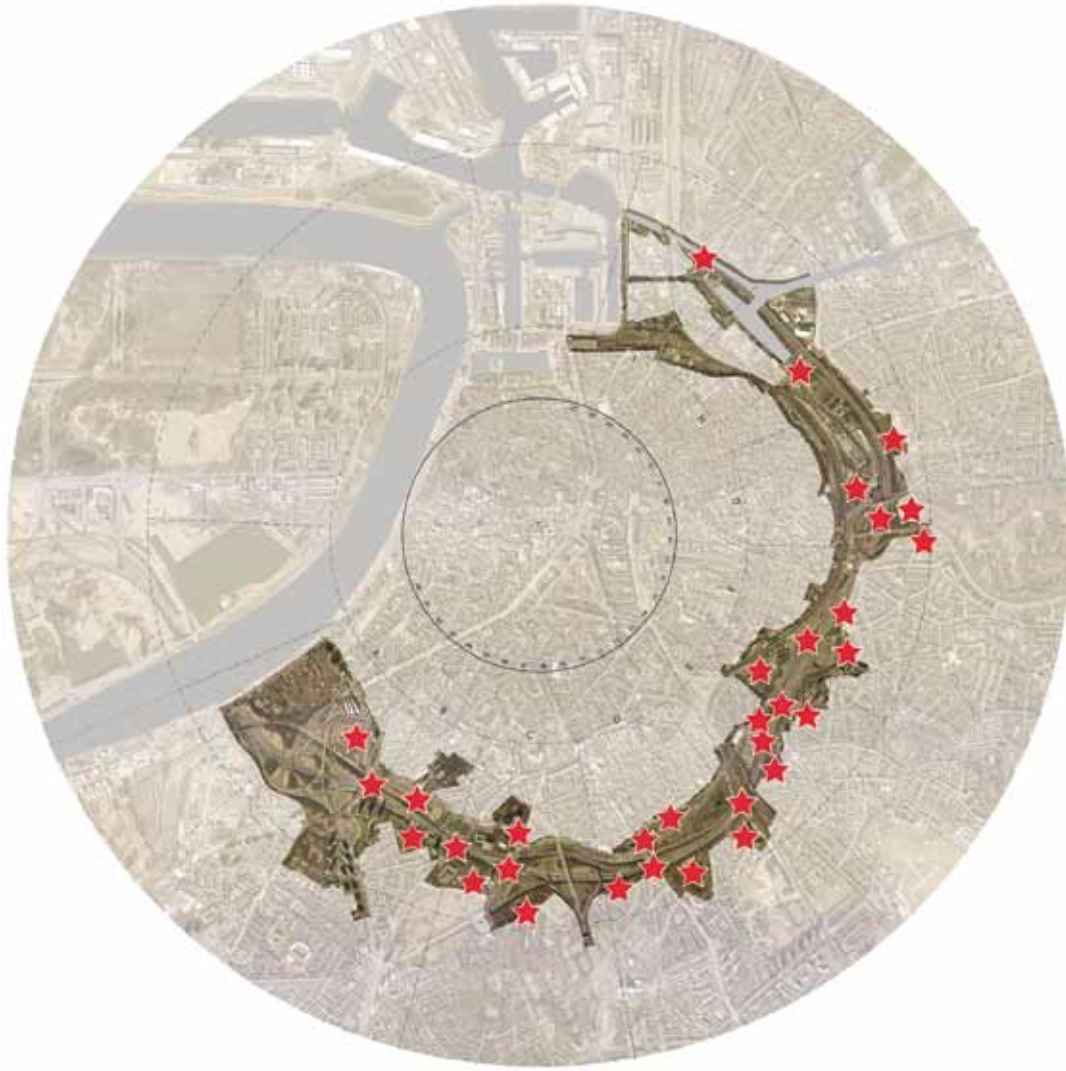
By now, the concepts have proven to provide an excellent base for an interesting dialogue between different partners about one and the same space. Furthermore, the interaction

between projects and concepts refines the concepts at programme level and enriches the debates at project level.

Several examples illustrate how the II concepts influence the debates already today.

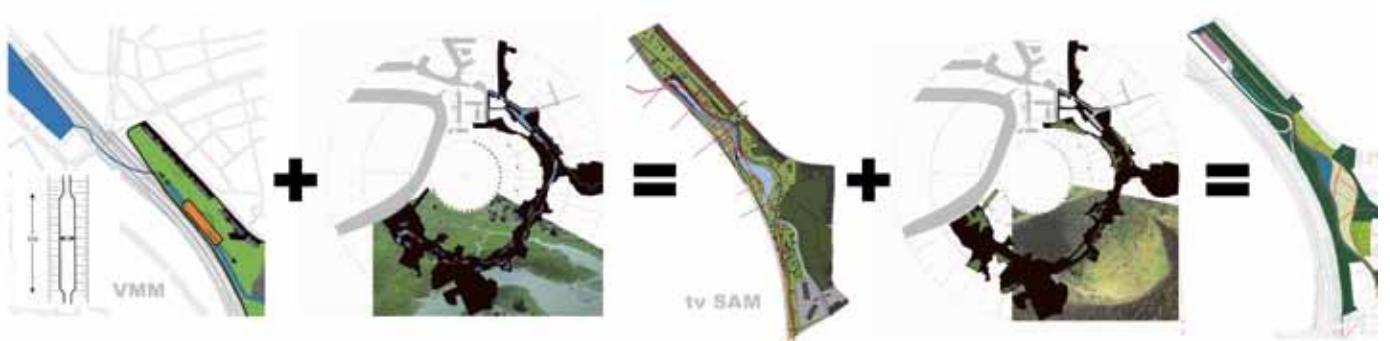
A first example can be found near Schijnpoort. At this location the Flemish government is planning a sand collection system in the Schijn stream. The first design proposed a long, concrete casing. SAM, however, redesigned the system entirely within the concept of the Water Landscape. This way, the system received an ecological design that is adapted to and fits into the landscape. This proposal was further elaborated by the city and combined with the creation of a Pearl, a neighbourhood and community park in the Roadside Landscape, addressing present green space shortages. The initial purely infrastructural project has evolved into a landscape project with an ecological water aspect and adds residential quality to the local area.

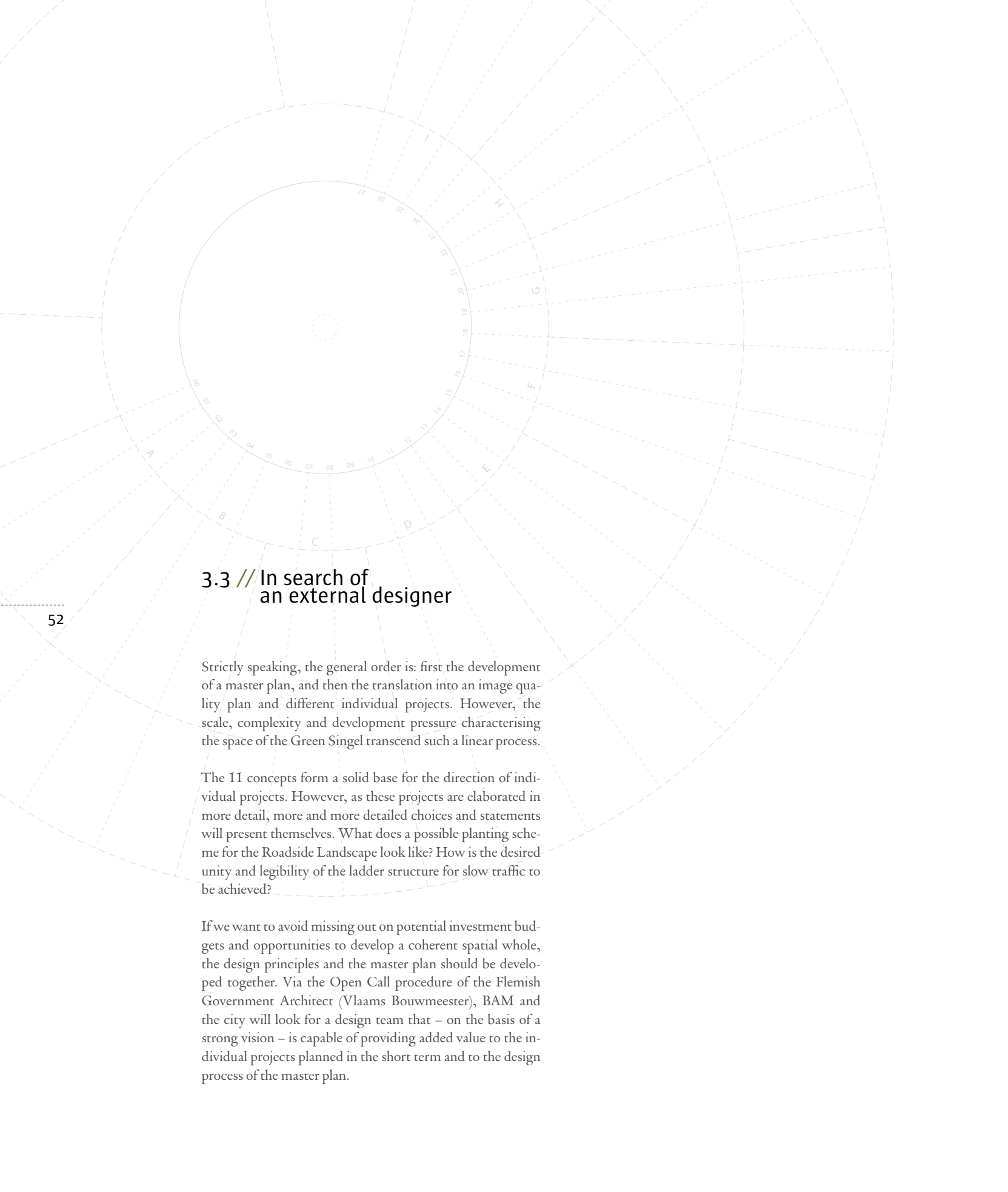
Another example is the development of the former gas site into the new mixed residential area Nieuw Zurenborg. In the design by De Smet Vermeulen and Palmboom-van den Bout, the Green River becomes the setting of a new neighbourhood and community park. The logic of the existing Zurenborg quarter is partially extended. The zone of transition between the city and the infrastructural landscape is marked by an elongated building alongside the park and a tower building at the head that enters into dialogue with the towers on the other side of the Ring.



Projects currently under development or planned projects

Evolution of Schijntje project






### 3.3 // In search of an external designer

Strictly speaking, the general order is: first the development of a master plan, and then the translation into an image quality plan and different individual projects. However, the scale, complexity and development pressure characterising the space of the Green Singel transcend such a linear process.

The 11 concepts form a solid base for the direction of individual projects. However, as these projects are elaborated in more detail, more and more detailed choices and statements will present themselves. What does a possible planting scheme for the Roadside Landscape look like? How is the desired unity and legibility of the ladder structure for slow traffic to be achieved?

If we want to avoid missing out on potential investment budgets and opportunities to develop a coherent spatial whole, the design principles and the master plan should be developed together. Via the Open Call procedure of the Flemish Government Architect (Vlaams Bouwmeester), BAM and the city will look for a design team that – on the basis of a strong vision – is capable of providing added value to the individual projects planned in the short term and to the design process of the master plan.



# 4. Conclusion

The Green Singel started out as a mobility project and part of the Antwerp Mobility Master Plan of the Flemish Government. This concept entails the division into a Through and an Urban Ring Road in the bed of the Ring, enabling the Singel to become a local road. The approval of the strategic Spatial Structure Plan for Antwerp increases the stakes for the Green Singel. The Green Singel now becomes one of five strategic spaces with key roles in the development of the city.

The integration of the different ambitions and spatial claims into one qualitative whole requires a master plan for the Green Singel. In 2007, the city initiates an internal vision development process. At the same time, the cooperation with supra-local mobility partners is elaborated into a structural conference model. The objective is the parallel elaboration of the mobility project and the spatial vision for the Ring Road area.

At the end of 2007, the joint process comes to a halt and the focus shifts towards another project within the Antwerp Mobility Master Plan: the Oosterweel connection. However, the city continues the research on the Green Singel.

The results of the elaborate research from 5 angles were integrated in II concepts and produced a development strategy for its implementation. This summary note marks the completion of the internal vision development process of the city for the development of the strategic space of the Green Singel.

However, this is only the beginning of an important process. In a next phase, the mobility project for the optimisation of the Ring-Singel and the spatial vision on the strategic space of the Green Singel have to be elaborated simultaneously and result in an area-oriented and integrated master plan.

In anticipation of a new start in the joint process between Flanders and the city and a final Green Singel master plan, the summary note will serve as a frame for several current or planned projects in the zone between the inner and outer city.

The development pressure on the strategic space of the Green Singel is considerable, and hence so is the risk of fragmented development. To avoid this, the city needs to take a leading role as of today. This is why the city already presents a comprehensive and inspiring vision today.

The city is convinced that this note outlines a clear direction and provides the insight needed to direct current and planned projects in a well-considered and coherent manner without jeopardising a future mobility project for the Ring-Singel. Moreover, only by starting from a long-term vision today can we enable the development of a local Singel in the future.

# Sources

AG Stadsplanning Antwerpen	Cover, P10-13, P17 (8), P49, P53, P55
AG Stadsplanning Antwerpen/GIS	P15
De Smet Vermeulen - Palmboom and van den Bout	P17 (6)
Geert Debusschere	P18 (left)
Heemkunde Berchem	P18 (right)
SAM/BAM	P6, P17 (5)
City of Antwerp/Design Research cell	P5, P16, P17 (1,3,4,7,9,10,11), P22-47, P51
City of Antwerp/Spatial policy	P7
Antwerp City Archives (FelixArchief)	P4 (top)
STECgroep	P21
Technum	P19 (3,4,6)
uapS Anne Mie Depuydt & Erik Van Daele	P17 (2)
Vito	P19 (5)

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For more information about the Flemish Mobility Master Plan for Antwerp, please visit [www.antwerpen.be](http://www.antwerpen.be)  
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