EXPLORING RINGCULTURE
in 21st century Amsterdam

A search for the role of the ring road in the growth of the city

Rosa Stapel
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Thirty years ago Willem Jan Neutelings graduated on a study of the potential ‘Ring Culture’ of Antwerp. He saw a zone in the city where mass culture could develop and showcase itself to the public in the verge of the ring road. In Amsterdam, in the year 2017, under the pressure of the massive urban growth and the ambition to realise that growth within the existing city, the verges of the ring road are interesting as a potential development area to house new urbanites.

In this thesis, I tried to unravel the (often) hidden potential of these areas for the city as a whole and how we - through a different perspective on existing structures - can deploy this in the growth and development of Amsterdam. A new role for the ring road in the city: from traffic machine to backbone of the new 21st century Amsterdam.

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PROBLEM ANALYSIS

The case of the Ring A10 in the light of today’s urban developments
The life and death of the Ring A10

Since 1990 Amsterdam has a ring road: the Rijksweg A10. Nowadays the ring road is a clear concept in our mind, when you travel by car to Amsterdam, you will definitely see a part of it. The 18 exits, logically numbered, distribute the traffic into the city. Like it has never been any different. But, appearances can be deceiving. It took 55 years until the ring was closed.

Plans for a ring road around Amsterdam occur for the first time around the 1930s. Since the beginning of the 20th century the amount of traffic had increased drastically. After the war, the government starts working on a 'Rijkswegenplan': the network of highways in the country. In this plan, the first 10 highways leave or arrive from Amsterdam, but mysteriously they are not connected to each other. The transit traffic is still using the city network for this.

Both Amsterdam and the government see that Amsterdam needs a ring road. The question is: where should it be located? Rijkswaterstaat pleads for a route a bit further away from the city, especially on the west side of the city, were Van Eesteren is at the same time working on the AUP. In this plan a road south and west of the city is proposed. The so-called 'Ceintuurbaanweg' was supposed to have a mixed use function: a city street with cars, tram, cyclists and pedestrians (Buurman et al., 2005).

The municipality of Amsterdam saw a great win-win situation here. Putting the ring road on the location planned for the Ceintuurbaanweg would have a major advantage: the status of a road a highway meant that the government was going to pay for it.

This decision put the planners of the road for a major challenge: how to organise a highway in an urban environment? Luckily for them in the south and eastern part there was still space to reserve for the ring road. The A10 West became an example of what Nijenhuis (2007) describes as a 'Diabolic Highway': trying to cover the interests of both residents and cars in a spatial design.

In the southern part the highway was built ahead of the new neighbourhoods, resulting in a more dominant spatial presence of the road. Already in 1978 the road stretched from the Europaboulevard towards Zaanstad and beyond. In the 1980’s the construction of the eastern and northern part encountered some procedural delay and the economic crisis slowed down the process, causing the late realisation date in 1990.

The realisation of the ring road has certainly improved accessibility of the city and a release of pressure of the city streets. Also, a new way of experiencing the city became available: driving a ‘rondje ring’ and the road offered new chances for business and industry along it. In other words, it brought the city the prosperity of the Zuidas, but also the traffic jams.

The infrastructural object is already problematic in itself for the socio-spatial conditions of the city. The A10 ring road separates the pre-war and post-war urban fabric and is increasingly seen as a barrier, both physically and mentally, dividing the rapidly gentrifying inner city neighbourhoods from the relatively downgrading garden cities at the municipality’s peripheral boundary (Savini et al., 2016). The location of the road on an embankment with multilevel organisation of the traffic creates even more functional separation and buffer zones around it. The problem
of the large scale of the infrastructure is both two and three-dimensional: the regional function of highways is not perceivable when you are standing next to it and they just take up huge amounts of space, even when you don’t take noise and pollution effects into consideration (Meyer, 1998).

All together, the A10 is very much needed for the traffic management in the city, but very problematic in social, spatial and environmental terms.

The congestion on the ring road is inextricably to the growth of Amsterdam and the surrounding municipalities. The city of Amsterdam grows with an average of 11,000 inhabitants each year. The current housing market can not meet this huge demand and therefore the municipality plans to facilitate the need by building 30,000 extra housing units in the next 10 years, comparable in size to the AUP (Amsterdam, 2016). The question is how to make this happen within the exiting city.

“To realise further growth and to prevent more traffic congestion, space for extra housing has to be found in the city. But ‘easy’ extension locations, like the garden cities in West, the Bijlmer, de Aker or Uburg, are not available anymore. Therefore, the city has to redevelop old industrial locations and struggling business parks within the existing city increasing the amount of residential area in the city.”

F. van der Molen (2009), translated by author

The areas appointed for development concentrate around the IJ and the A10, a zone defined by the municipality as the Ringzone. In the Structuurvisie Amsterdam 2040: Economisch sterk en duurzaam (Amsterdam, 2011) and the recently published Koers 2025: Ruimte voor de Stad (Amsterdam, 2016) this vision on densifying in the existing city is explained.

In the Structure vision the municipality describes four major movements for the city towards 2040: extension of the city center area, reweaving metropolitan landscape and the city, rediscovering the IJ waterfront and internationalisation of the ‘Zuidflank’. The fact that all four movements touch upon locations in the Ringzone is illustrative for the challenges ahead in the spatial transformation of the zone. The most important however, is the extension of the city center area. It describes the increase of the area that we call ‘the city center’ – space is rare in the historic center, but more and more people, businesses, tourists demand to be in the central area. It needs more houses and high-end commercial space and the areas around the current city center have to answer to that need. City streets are important carriers of the urbanity towards the area around the A10 ring road. Also, here is place for high rise, because it is not under the influence of the UNESCO prescriptions for the monumental Canal Zone (Amsterdam, 2011).

This vision is translated into a strategic plan called Koers 2025. It is a strategic plan for the realisation of 70,000 houses for 2025. In this plan the locations for new housing are specified and they are almost all in the proximity in the Ringzone. They give several reasons for this:

1. Available (affordable) space: in general along the highways the land use is of low intensity and functions can be located elsewhere easily
2. Adding housing stock is ‘netto’ – no residents have to leave
3. Adding program in the Ringzone can soften the differences and barrier between inside and outside of the ring
4. Accessibility is outstanding

In a strategic map however it remains unnoticed that the areas also have large challenges in realising such large amounts of new housing, regarding their proximity to the highway.

The map on the right page shows that almost all areas of the Koers are within the range of (negative) influence of the road, shown in the red areas of the map, that was made by Heesen and West 8 (2013). How to cope with the negative effects of the highway in all these locations?

In Table 2 the Koers 2025 building blocks and the projected project size (in housing units), adapted from Amsterdam, 2016. The project areas in the Ringzone are marked red.
Realising residential program along the road now means in general to mitigate the negative effects. Two examples are the building ‘Tribune’ and ‘De Leeuw van Vlaanderen’. These buildings function as a sound screen for the area behind it. However, these buildings do not change anything for the major spatial barrier that the highway forms in the area.

It is good that solutions can be found in architecture to deal with the spatial and environmental problems that the highway causes in the city. Also the structure vision and the Koers 2025 show good intentions to see the area no longer as buffer space and a reservation for extra driving lanes.

It is however a complicated field with many stakeholders. The municipality of Amsterdam is not in the position to take decisions about the highway, because they are not the owners - that is Rijkswaterstaat. The interests of these two stakeholders conflict in this matter: of course Amsterdam wants the accessibility that the A10 offers, but not the negative effects. Spatial quality is important to Rijkwaterstaat, but capacity and reduction of traffic jams is their main goal. This explains why the highway for now is left untouched and architectural solutions are found for the negative effects of the road.

The designs on Delflandpleinbuurt are illustrative for the struggle to create integrated and original designs for the highway environment. The plan of 2005 was to connect the neighbourhood under the highway and adding two large towers as landmarks from the perspective of the car. The plan was found to be impossible and the revised plans consist again of inward looking sound screen buildings. Another example of how urban interventions don’t work with the road in the current status quo.

It is time to question again the status quo of the highway in the city, given the situation of the growth of the city and the limited space for expansion on other locations. A better solution can and must be found where city and highway add value to each other, instead of creating walls between them.

As an urbanist, neither working for Rijkswaterstaat or the municipality of Amsterdam, I hope to explore in this project the possibilities for integration on the scale of the city. It is about balancing interests and proposing structural changes that can create new perspectives on the development in the Ringzone.
PROJECT FRAMEWORK

The goal of the project and how to get there
Inspiration

Talking about the design of areas around a ring road in architecture, it doesn’t take long to hit the project of Willem Jan Neutelings’ “Ringcultuur” from 1986. His observations about the development along the ring roads in cities is fairly interesting:

“In de meeste Europese steden is de transformatie van een perifere snelwegzone tot stedelijk centrum van massacultuur immiddels in volle gang. Ringzones ontwikkelen zich internationaal tot gelijkwaardige ruimtelijke en programmatische structuren, als een collier van grootschalige elementen rond de stad. De ringzones zijn reactorvaten voor de massacultuur, waarin de concentratie van nieuwe activiteiten een kettingreactie van typologien, stijlen en structuren op gang brengt, de ringcultuur.”

Willem Jan Neutelings (1986)

Neutelings’ approach to the ring road inspires me in two ways. Firstly, his observations are very sharp and illustrative. I wonder to what extend these developments are still present today and if the situation of Antwerp is similar to the one in Amsterdam. Intuitively I would say yes, because the positive and negative side effects of the ring road attract a certain type of development that is benefitting from accessibility and not suffering too much from the pollution and nuisance of the cars.

Secondly, I like his approach to the project. First he made a very clear overview of what he finds now in the zone around the ring, in order to use these elements to create a new reality. From my preference of observing and understanding spatial elements, a similar approach suits me too.

In a way this project is a reflection on the work of Neutelings, 30 years later, hence the title of the project.

Aim

From the problem analysis becomes clear that because of the difficult relationship between city and highway and their stakeholders the development of the zone does not yet provide solutions for the possible alterations of the highway in facilitating the new urban development, as described in both the Structure Vision and the Koers 2025.

In this project my aim is to research the possibilities for another configuration of the highway in the city in order to facilitate urban development, instead of accepting the status quo of the road. I expressed this aim in a provisional hypothesis on the project:

“The A10 is forced to take its final position in the urban fabric, with possibly another function or capacity. The zones surrounding it will gradually transform from buffer zones with transit functions into central areas that are a destination in itself, where city and highway are integrated. This new urban typology has a unique identity: recognisable as 21st century Ring Culture.”

Context

Position statement

This hypothesis places my research between the Structure vision and Koers 2025. The vision shows the future development of Amsterdam, the Koers 2025 is a process document about how to tackle the housing problem, only proposing locations and numbers. What is lacking is a study that puts significant focus on the relationship of the planned development and the existing object of the highway: I call this in-between urban exploration.

My starting position resembles that of Neutelings’ Ringcultuur project: the highway as an object that influences its direct surroundings. The road is the starting point and question is how the road will have to change in order to facilitate, and not limit, the development of the city.

Relevance

This approach fits in the current movement to study the possibilities of integrating city and highway better. This problem is one of the main topics of the College van Rijksadviseurs (govermental advisers on spatial planning and design) and that resulted this year in a research organised by the BNA: Stad en Snelweg. My research is closely related to this research (I also attended all the meetings) and adds to it because of the perspective of urbanism - where the BNA research focussed on architecture and mobility.

Within the research group of ‘The Design of the Urban Fabric’ the question about the influence of mobility changes in the future is also a topic for future research. This graduation project can add to the body of knowledge by testing different ways of intervening in the urban fabric of a former highway environment to transform it to a living environment at an infrastructure that has to adapt to future forms of mobility.
Framework

On the left page you see the framework of the project. The top part is the starting point of what has been explained above. From that arise several research questions, that do not one-to-one correspond to final products, but help to define the scope. Next is the introduction of the methods that I applied in order to perform my ‘in-between’ exploration.

On the bottom part is a circle shown with 6 elements. These elements also correspond with the chapters of this report and represent the process of getting to the results of the graduation project.

These elements are in constant interaction with each other. I made these subdivision and process flow loosely based on the structure of Neutelings project. His project consists of first defining the phenomena and analysis of the ring, create guidelines for the design and create a ‘development model’ for the Ringzone. My project refers to this: the term development model means an integration of all the exploration into a set of strategic interventions, placed on the right locations on the ring. He finishes his work by showing 5 typologies - in my project these are the key project that show the impact of the development model on the local scale.

The report follows the structure of the methodology diagram. The content is split in 6 sections:

**Exploration**
The collection of research on the characteristics of the Ring and theoretical framework of working with urban highways

**Vision**
What do I foresee for the future of the Ring?

**Making the model**
Account of the design research

**Development model**
In steps explained how the Ringzone can develop according to the vision

**Key projects**
Examples of new configurations of the road with corresponding development potential

**Evaluation**
Looking back on the process & project

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Structure of Ringcultuur (1986) by Neutelings
Research questions

The aim of the research is:

'To research the possibilities for another configuration of the highway in the city in order to facilitate urban development, instead of accepting the status quo of the road'

The sub questions are:

1. Can the Ringzone be described by the term 'zone', what is the current spatial condition of the area and what generic phenomena can be found?

This sub question aims to grasp the characteristics of the Ringzone: what are generic elements that you find in the whole area and what are elements that differ?

This is researched by fieldwork that is focused on getting to know the area and experiencing the atmosphere. Also, by mapping the Ringzone using different perspectives (program/structure). This part leads to the bundling of EXPLORATIONS in part A.

2. What (spatial) interventions for better integration of city and highway are applicable in the Ringzone to support the transformation from highway environment to an urban environment?

This might have been the main question of the project: my starting point is that the city and highway in the current situation don’t go together well: my aim is to see what urban and network interventions could be done in order to establish a better conditions for urban development. It is essential to have knowledge about possible interventions in for better integration of city and highway. The ideas are collected by literature study and expert meetings. The creative sessions help going from the collection of ideas toward a selection of guidelines. In the VISION part I explain my general perspective on what kind of interventions are good and the process of idea processing towards guidelines is shown in the part MAKING THE MODEL.

3. What are the local characteristics of the area and how do they influence the applicability of certain interventions?

The central question after the selection of guidelines: can we apply everywhere the same measures and if not, what determines if the guideline works some-

where? This question is answered the 'translation to location' in the part MAKING THE MODEL.

4. What strategic interventions on city level are necessary to make the highway environment into an urban environment?

The answer to this question forms the foundation for the DEVELOPMENT MODEL. The input comes from expert meetings, the VISION and the creative sessions trying out several strategies and ideas on the map.

5. How can the new urban development model lead to urban design solutions on a local scale?

This question evaluates the applicability and sustainability of the vision and development model by test by design: creating KEY PROJECTS within the model shows how the vision can be translated into projects. The projects will be evaluated by the use of (simple) future scenarios with changing parameters of mobility development and housing demands.

6. To what extend are the general ideas of the vision represented in the urban design solutions on a local scale?

Because the bottom part is a circle, an important question is to see how the final results on the smallest scale level can reflect back to the vision that was formulated earlier. The process of getting to the result in this project is just as important as the results themselves, hence the title ‘Exploring Ring Culture’. This question is used for the EVALUATION.

Used methods

Mapping. This is the spatial exploration of the city and the Ringzone by desk analysis. Essential basic information as urban boundaries, road network, underlying landscape, public transport, morphology, historic development etc. will be studied and documented.

Fieldwork. In the period before P2 I visited the area three times and I travelled along the ring by foot. This results in extra information for the process of mapping, provides the experience of the ‘ring atmosphere’ at the moment and is documented in a large inventory drawing and pictures. After P2 I repeated this, but then from the car (documented by film).

Literature study is represents all the reading and researching that will be done for the project.

Expert meetings. Mainly in the context of the BNA research. I joined several meetings with stakeholders and design teams that work on various locations on the ring. This is a very fruitful source for understanding the complex relations between stakeholders and what influences decision-making in highway environments. Also, it provides inspiration and specific knowledge (i.e. from the traffic engineers involved in the teams) for my own design. A full description of the nature of the meetings can be found in the Appendix.

Reference study. In order to generate a vision on the desired urbanity for the Ringzone and the structure of the strategic map/model references and the study of other designs is essential. From good ideas other good ideas can grow. The first elaboration on this way of working is explored, comparing Neutelings’ design for Antwerp to Amsterdam.

Montage. This method is the technique of projecting other situations on locations on the ring, in order to get a feel of scale and different possibilities. In the way I see it montage can also serve as... seeing that ... exercise: for instance ‘what if the highway was a river?’ Or ‘what if we compare the Boulevard Peripherique to the Ring A10?’ (see Appendix) is done by a montage method. This will help to determine the right scale, experiment with the location of certain interventions and give insights in the spatial possibilities of the area (showing possible spatial developments).

Creative techniques. To process all information and conclusions from the above methods and the diagnosis I had to develop a way of dealing with the wide variety of analysis and ideas. I created a method that I call ‘the post-it sessions’ (see MAKING THE MODEL).

Test by Design. By designing key projects and elaborate in detail, the vision and development model will be tested and evaluated. By designing key projects in these different situations, following the guidelines of the model and the argumentation of the vision, one can test the applicability and coherence of the plan as a whole.
EXPLORATION

Exploring the topic, location and interpreting its current characteristics

Content of this chapter
1. Trends
2. Theoretical framework
3. Fieldwork
4. Mapping ring road characteristics
5. General conclusions
6. Comparison Ringcultuur Antwerpen & Amsterdam
Before entering the ring road, first some relevant trends and context sketching on car mobility and infrastructure, urban growth and changing mobility demands and urban highway interventions around the world.

Changing views on car mobility and infrastructure

The image of the car and the infrastructure connected to it has had a rollercoaster history. It started with the utopian views on the car in the beginning of the 20th century and the optimism in the decades after the world wars. Driving the freeway was a recreational activity at the high times of mobility autonomy and no longer you had to live in the overcrowded city centres. A house in the suburb with a private car was the ultimate symbol of welfare. However, with the research on climate change by the Club of Rome in 1972 the optimism changed into realism: the comforts of car mobility got a dark side of deprived resources and pollution. ‘Car free Sundays’ and protests against more highways show the changed perspective on the hegemony of the car. At the same time, spatial policy of locating the growing amount of people in urban regions in ‘groeikernen’ and ‘VINEX-locations’ cause more traffic and congestion on the Dutch highways. In the graph below can be seen that from the 1970’s the built of extra highways decreases, whereas the addition of extra lanes on the existing highways starts to rise. The realism of the 70s and 80s is changing in pessimism: it seems that the mobility system of mass car transportation that had been created is losing on all fronts: supply and demand will never meet, because of our increasing demand for mobility and lack of spatial and environmental capacity to meet these demands. Besides that, liveability and health issues around highways are taken more seriously and have to be taken into account in decision making in infrastructure.

This trend analysis puts the current vision of the Dutch ministry of Infrastructure and Environment in a logical context. Their ‘Beter Benutten’ strategy starts from the notion that more asphalt is not the solution for better accessibility and connectivity, but that smarter use of current infrastructure is the new concept. New technological developments like automatic vehicles offer opportunities by increasing the capacity of the roads (automatic vehicles can drive closer together). Also, improvements of public transport infrastructure can decrease the demand for more driving lanes.

Urban growth – finding space for densification of the existing cities

Together with the realism about the negative effects of car mobility the process of re-urbanisation has started. The planning paradigm of locating people in ‘groeikernen’ and VINEX locations lost support because of the negative side effects such as more traffic congestion and loss of natural landscapes. Also, people started to revalue the attractiveness of the city and started moving back. Since the 1980s the urban population is growing again and even accelerated between 2010-2015, while the surrounding municipalities are shrinking (Planbureau voor de Leefomgeving, 2015). The dominant idea of guiding this urban growth sustainably is searching space in the existing city. The government has made this operational with the ‘Ladder Duurzame Verstedelijking’: building projects have to be integrated in the existing city. Non-urban development can only be justified by creating multimodal accessibility.

There are many examples of successful inner city densification: transformed abandoned industrial or harbour sites or the realisation of higher density in existing urban areas. However, finding space is still hard, considering that only buildings don’t make a city: it needs a variety of strong urban environments with recreational, commercial and office functions (Planbureau voor de Leefomgeving, 2010). In this trend, buffer zones around highways are suddenly seen as reservoirs of potential building locations.

Urban mobility – what’s next?

Densification in the existing urban areas fits the idea of the compact city. In the compact city working, living and other functions are closer together and that creates less car dependency (Newman and Kenworthy, 1989). The modal split (the percentage of travellers using a particular type of transportation or number of trips using said type) of the inhabitants of Amsterdam illustrates this: only 20% of the trips are by car (Amsterdam, 2015). Also on the longer distance the car is getting serious competition of public transport: in the Randstad 40% of trips over 10 km are by the use of public transport (Kennisinstituut voor Mobiliteitsbeleid, 2011). In other words, smart urbanisation strategies can positively influence a modal shift from car use to public transport, cycling and walking, one of the essential developments towards a sustainable mobility.

The intention is to design cities of such quality and at a suitable scale that people would not need to have a car (Banister, 2008).

There is still a lot to gain in the fine-tuning between mobility and urban planning and city life in order to create sustainable mobility. The key to improve urban mobility lies in new technologies, shaping the urban system differently and other ways of mobility delivery (Bouton et al., 2015). Transit-oriented development (TOD) is a rising star: creating high-density mixed-use environments around public transport hubs (van den Boom, 2015). It is in line with the governmental tools mentioned before, the existing [public transport] infrastructure is used to the maximum potential and urbanisation takes place in at existing urban nodes. When these nodes are multimodal, things are getting even better. A vital region does not depend on one modality, but you can choose between train, tram, metro, bicycle or (shared) car services. Great potential is also seen in new technologies and services that make modal merge easier: when the coordination between different modalities is better, transport will be faster, more convenient and you are less dependent of the car for ‘the last mile’ (Venhoesen and van den Boom, 2012). Finally, many cities are investing in improvement of public space to encourage walking and cycling.
World wide struggle with urban highways

The possibilities of sustainable mobility have shown many cities around the world how to say goodbye to car dominance. This also questions the future of car infrastructures in cities, often eyesores for ambitious city councils that want to facilitate the transition to sustainable mobility. Because of the optimism towards the car in the past (as described above), urban highways are often in central places in the city that have high potential for densification within the city. The last decades total removal of highways has been a popular policy measure to improve urban quality and property values, create space for development and restore neighbourhood connections. Especially in the United States freeways are mega-structures from the 60s and 70s that otherwise would have needed major expensive restoration (Bocarejo et al., 2012). The Big Dig in Boston is the most famous example. Another striking example of freeway removal is the Cheonggyecheon Freeway in Seoul, South Korea (2005), bringing back the river and creating new public space along it. In Europe removal takes place differently. The solution is often an underground relocation of the highway with downgraded city boulevards on the former highway location or step-by-step improvement of highway and city integration with several projects (Rijksadviseurs and Heesen, 2016). The former can be seen in Madrid and Munich, the latter in Barcelona and Paris.

<table>
<thead>
<tr>
<th>City</th>
<th>Goal</th>
<th>Intervention</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munich</td>
<td>Improving traffic capacity and flows</td>
<td>28 km of ring road, 12 tunnels with total length of more than 8 km</td>
<td>€2.3 billion</td>
</tr>
<tr>
<td>Barcelona</td>
<td>Improving connections between city and hinterland</td>
<td>16 interventions: tunnels, lower position and tunnels</td>
<td>€1.2 billion</td>
</tr>
<tr>
<td>Paris</td>
<td>Deriving better between inner city and suburbs</td>
<td>25 km of ring road, 15 zones appointed with different strategies</td>
<td>€1.5 billion</td>
</tr>
<tr>
<td>Madrid</td>
<td>Reusing the riverfront by underground relocation of the M30</td>
<td>43 km of highway removed, replaced by large urban park</td>
<td>€4.5 billion</td>
</tr>
<tr>
<td>Boston</td>
<td>Environmental and traffic flow improvements</td>
<td>1.6 km tunnel through city center</td>
<td>€2.2 billion</td>
</tr>
<tr>
<td>Seoul</td>
<td>Improve environmental qualities and realise a park</td>
<td>Removal of freeway, 5.8 km replaced by smaller road and restored river creeks</td>
<td>€0.3 billion</td>
</tr>
</tbody>
</table>

Table 1: Reasons and type of intervention per city

States freeways are mega-structures from the 60s and 70s that otherwise would have needed major expensive restoration (Bocarejo et al., 2012). The Big Dig in Boston is the most famous example. Another striking example of freeway removal is the Cheonggyecheon Freeway in Seoul, South Korea (2005), bringing back the river and creating new public space along it. In Europe removal takes place differently. The solution is often an underground relocation of the highway with downgraded city boulevards on the former highway location or step-by-step improvement of highway and city integration with several projects (Rijksadviseurs and Heesen, 2016). The former can be seen in Madrid and Munich, the latter in Barcelona and Paris.
Theoretical framework

The literature on the topic of urban highways covers a wide spectrum of disciplines. In the writings an interesting contrast can be discovered between the ones that experienced it from the car and those who studied it from an urban perspective.

The theoretical framework consists of three parts:
1. The ‘tradition’ in urban highway design research
2. The history and future city development of Amsterdam
3. The ‘tradition’ in urban highway design research

“In architecture, good increasingly means beautiful, but what is ‘good’ infrastructure? Traditional aesthetic and urbanistic notions are not much help in understanding infrastructure works. The same is true of the urban areas generated by motorways: the planning of such residual zones has a logic that is difficult to understand in terms of traditional urban planning. (...) designers and officials are desperately trying to get a grip on these apparently still new phenomena.”

Provoost (2002)

This quote of Michelle Provoost in the article ‘Infrastructure urbanism’ illustrates quite well the on-going struggle with car infrastructure in the field of architecture and urbanism. Research on urban highway design is just as old as the highway itself and has had many forms. Here I will shortly describe the main views.

Studies like Learning from Las Vegas (Venturi et al., 1972) and The View from the Road (Appleyard et al., 1964) illustrate the emergence of highway design. Venturi shows new typologies that are in a sense symbolic architecture: showing of their message by building composition, in the form of the ‘decorated shed’ and the ‘duck’. ‘The View from the Road’ studies city form from the highway, based on the way car drivers perceive the city (Appleyard et al., 1964).

In Los Angeles: the architecture of the four ecologies Banham (1971) also studies the city from the highway, but his research doesn’t lead to the study of shaping architecture along the highway, but defining the highway environment as ‘Autopia’ among three other ‘ecologies’, nowadays better understood as ‘habitat’ or life-style environment (de Hoog, 2005). His Autopia more than an infrastructural zone: it is the manifestation of car mobility culture.

While these studies are paying much attention to the highway as an urban environment, later on the significance of designing from the perspective of the diver is diminishing. Driving at the speed of 120 km an hour is much too fast to really experiencing the surrounding urban landscape. At the same time, in the Netherlands auto mobility is more and more perceived as a necessary evil to get from A to B (Provoost, 2002). However, integration of infrastructure and urban planning is besides on the aesthetic important on the functional level. In the Dutch practice these two are miles apart and this has lead to separate development of for instance Vinex locations and the highways connecting those locations to cities (Venhooven and van den Boomen, 2012).

In the design and planning of urban highways multiple spatial paradigms can be distinguished. Van Acker (2016) has defined these paradigms based on the plans for the ring road of Antwerp in the past 150 years.

The first two paradigms are strongly connected to the period of optimism towards car development (see Trends). The highway facilitates mobility and also provides a development structure for urban development. In the works of Venturi and Lynch the perception of the highway as an artefact is present: they describe coherence between road, driver and surrounding buildings.

Following the line of reasoning of van Acker, the work of Neutelings on the ring road of Antwerp can be put in context by the paradigm of ‘test space’. Neutelings (1988) sees potential for the ring zone to become the place for the manifestation of mass culture. The city center is transforming to a historical sanctuary and people have moved to live in the suburbs. The highway zone in-between is the prefect location for places to consume, relax and work – all with the huge benefit of the individual freedom to go there by car.

However, it still is a major issue to achieve support to realize a new highway habitat that ‘serves’ both mobility and attractive urban environments. Meyer (1998) observes in the 90s both attention for renewal of infrastructure and the quality of public space, but these two are still barely combined. He states as a challenge ‘to design the major infrastructure in a way that locally the function is untouched, but adds value to the direct urban context’. He underpins this challenge by the argumentation that from a moral point of view infrastructure should have ‘open accessibility’ because...
it has been funded by major public investments. In the same line of reasoning, he questions the sustainability of the infrastructure. The continued existence of car dominance can already be strongly questioned due to societal and technological trends and the excessive land use of infrastructure is getting more intolerable by the day in the densely populated Randstad. Therefore, infrastructure should be designed with a multifunctional approach, with more attention to the public use and combinations between architecture, urbanism and infrastructure engineers.

The research of Calabrese (2004) builds further on the argument to integrate urbanism, mobility and architecture. She describes the origin of the problem of infrastructure planning: the large scale focussed on logistic and strategic aspects doesn’t meet the spatial reality of the highway. However, with increasing problems in highway surroundings in urban environments due to higher numbers of traffic the possibilities of integrated infrastructure gain more attention.

The work of van der Hoeven (2001) is focussed on the possibilities for multifunctional utilisation of the ring road zones in Amsterdam and Rotterdam by building tunnels. His research shows that the decision for a tunnel has to be based on several policy objectives that are a combination of mobility and urban issues the present insertion of the ring, safety and the spatial experience of road users, the costs, the quality of the environment alongside the ring, and the degree of transection of the ring zone. He concludes that only tracks with two or three double policy objects can be marked as potential tunnel locations.

Currently in the Amsterdam regions there are no plans for tunnels, but only for coverage in combination lowering the level of the road (the so-called ‘dok’ model) or route diversion. The projects are mainly on the A9 in Radiodreven (route diversion), Amstelveen and Gaasperdammerring (dokmodels) and the infamous plans for the Zuiderdok. For the Zuiderdok an improvement in the public space is projected, that has to be earned by the extra building locations. However, the costs for the Dok are around 2 billion euros and the expected gains by real estate development are no higher than 200 million. Funding infrastructure interventions by increased real estate opportunities and prise turns out to be a fairy tale.

However, in the financial model there are values that are not taken into account, such as environmental quality and liveability. Studies are investigating better models for this MKBAs (maatschappelijke kosten-baten analyses) with these values integrated. As Rients Dijkstra put it boldly: “The extra costs of the integration of the A2 (Utrecht Leidsche Rijn) are, spread over one generation, 25 cents per inhabitant. The costs of current interventions are in the range of 1 billion euros. If every inhabitant of the Amsterdam metropolitan region pays 1 euro each day, a generation can spend 25 billion dollars on spatial quality in the urban environment” (Dijkstra, 2016).

The tendency of today is in Dijkstra’s line of reasoning: spatial quality is worth something in the current urban environment. We have reached van Acker’s fifth paradigm: ‘soft infrastructure’. Parks and recreational zones on top of the highways have value and we have more and more references from abroad (see Trends).

However, a strange paradox comes with this trend: the landscape above the ground seems repaired, but in reality the landscape below is destroyed by the engineering works. We artificially are hiding the road and creating an instant landscape on top (Shannon and Smets, 2010).

The last paradigm of van Acker is still a quite unexplored area: the ring as a wholesome, healthy neighbourhood. In Antwerp a large project has started about redesigning and developing the ring zone, strongly influenced by the Rebuild-by-Design strategy that was applied in New York after hurricane Sandy and working with Alexander d’Hooghe (MIT) and Henk Ovink. In this project the health and participation of the inhabitants living close to the ring play a major role. Van Acker concludes his story with the following:

“The ring landscape has from the start been the preeminent location where dreams and plans for the future of the city are projected and until the day of tomorrow it will be the subject of many visions.”

The history and future city development of Amsterdam

In order to understand the origin and the current position of the A10, a short overview of the urban growth process of the city of Amsterdam is given.

City expansion processes

In general, the development of the Dutch city follows a structure of rings. Multiple expansion waves from different times surround the core of the city. In this process, rings, radials, transition zones and city ports play a central role. This is explained by the drawings of Dijkstra et al. (1999) The canal zone is the first expansion and after that the plan of Kalff is the basis for the next ring. The radials, the ‘city streets’ of Amsterdam, play an important role in the expansion: they...
are, figuratively speaking, the pioneers of the new city districts.

Berlage criticized this process of concentric city development and in his Plan Zuid the streets are therefore oriented in a different direction. Also the AUP is not an additional ring, but the start of another way of expansion: the ‘lobbed structure’ of the city, with urbanized fingers reaching into the landscape. However, the two expansion sites south and west of the 19th century city can also be regarded as a new ring with new city gates and extended radial streets. The development of the Ring A10 supports the interpretation of the AUP expansions as a ring, however this expansion only takes place in the west and south of the city.

The west and south side of the city with new urban centers at the ring become the new city gates, with office locations of Sloterdijk, Zuidas and Amstel. All along the ring road many office buildings are realised. In the east part of the city, the ring road was realized much later and this influenced the city development. Here we don’t see clear city gates if we don’t consider Amstel and it looks more like a city-satellite model where Zuidoost is connected to the city by metro and the in-between area of Diemen is left out of the map.

This strengthens the image of the Ringzone as a ‘transition zone’ – a vacuum of car mobility and office space between the 19th and 20th century city in the west and south and in the east the municipal borders. At the same time the attention of city development is pulled towards the areas along the IJ. Space is available there and can provide some counterweight for the shifting of the economic center towards the Zuidas and Schiphol.

Shifting planning paradigms: the concentric development, the lobbed structure and the urban field (Dijkstra et al., 1999)

The general conclusion of Dijkstra et al. (1999) is that Amsterdam is an asymmetrical city and that this can be explained by looking at the subsoil differences between different layers (landscape, network, occupation).

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The development of the principal borders and different modes of transport. To these analyses I'd like two other factors: the municipal borders are not tied to city radials or lobs. To take place: it is a matter of making new nodes that automatically suggest where urban development has perspective of urban growth, the urban field doesn't focus on one central point, but there are multiple cores like the Zuidas, Schiphol and other economic centres. In the central point, but there are multiple cores like the Zuidas, Schiphol and other economic centres. In the perspective of urban growth, the urban field doesn't automatically suggest where urban development has to take place: it is a matter of making new nodes that are not tied to city radials or lobs.

To these analyses I'd like two other factors: the municipal borders and different modes of transport. The development of the municipal borders in the region has had major influence for the choice of expansion locations. Borders have always been leading principles in city development, even while they are much easier to adjust. The fact that municipal borders were first extended to the east and that until the day of today there is a gap between Amsterdam and Amstelveen, Zuidoost has left its traces in city development.

The general question is to what extend future developments have toe respect or challenge these principles. Inspiration by subsoil or historical developments seem to be very beneficial for the grid city in west and south, but how can we find inspiration in the fragmented Ringzone in the east? Can the old ribbons and polders give ideas for the densification of this area and the transformation of the infrastructure?

Future growth scenarios
In Atlas Amsterdam are two future scenarios explored to give an idea what the opportunities in the spatial layout of Amsterdam can be. Based on the asymmetry of the city and the possible future development of Schiphol they predict expansion in either the northeast or the southwest direction. In the first case, further growth in the southwest direction is problematic because of the noise lines of Schiphol. Further urbanisation will take place on the water towards Almere.

In the second scenario, Schiphol has to shift their landing tracks to the sea, in order to further urbanize the Haarlemmermeer. The northeast landscape can be preserved. This fits the shift of economy towards the second ring of Amsterdam (A9). This can then become a large axis of activity. This would also imply a continuous urban field between Amsterdam and the municipalities surrounding it. This is now only slightly the case with Amstelveen, but for instance Badhoevedorp is now not part of the urban fabric of Amsterdam. In this scenario, radials to support the connections between city and now regional centres remain very important in the southwest.

The focus of these final scenarios is mainly on connecting and stimulating the economic power of the logistic main ports in the region. In the first part of the 21st century, these main ports (harbour, airport, centres of trade) have flourished. An interesting perspective on this development and how we should continue can be found in the book ‘De Holandse Metropool’.

In this book de Hoog and Balz (2012) study the aspects that make the differences between a city and a metropolitan area. They argue that for the quality of the metropolitan area more attention should be given to the creation of interaction environments where people can meet, instead of only strengthening the logistic and economic power. They discovered several types of interaction environments: culture, congress and knowledge centres that attract many visitors and thereby stimulate metropolitan quality. In Amsterdam, the city center, Zuidas, Science Park and the RAI are good examples of attractive environments.

Combining the scenario of Dijkstra et al. and the rise of interaction environments in the city, a new configuration of the region is sketched out, where the old city ring can develop on the latter and the new second ring can be the motor for the logistic power of the region.
So what is the current condition of the ring road? To get to know the A10, you can drive around in less than half an hour (if you don’t get stuck in traffic). However, this only shows you the rhythm of the changes in the environment and brings up a lot of questions. What is that building? Where am I exactly driving right now? But most of the time: what is behind that sound screen? It took me three days to travel by foot from the Coentunnel to the Zeeburgertunnel along the A10. Sometimes it lead me to some adventurous tracks, trying to stay as close to the road as possible, some blisters on my feet but mainly a lot of observations and ideas. Here is the story of my trip.

Coentunnel to Lelylaan (March 30)

From Sloterdijk station it is a long walk to get to the tunnel entry. Next to the station is infrastructure wonderland: train tracks and the new A5 fly above you [1]. After that the A10 underpass seems negligible. In the harbour area it is quiet with many anonymous large business locations and a small office hub at the Coengebouw. You can walk along the sound screens. It sometimes opens for exits and gives you a glimpse of the traffic [2]. The energy plant makes the whole look very industrial together with some wind turbines, especially with the backlight at the end of the day [3].

It gets semi-urban at Sloterdijk, the old traces of Oud Sloterdijk are built in by the large office facilities of Telepoort [4]. Then we move into Bos en Lommer.

The sound screens that were so present at the harbour area are now hidden behind bushes and graffiti [5]. The underpasses are wide and have low ceilings. Sometimes you see they’ve tried to make it interesting [6], but behind a fence. The Max Havelaar flats are the example of how city and highway really don’t go together well [7] – but straight after that you see integration of the two in the bridge building at the Bos en Lommerweg [8]. Here you feel the dynamics.
of city and infrastructure coincide, however it would be much better if an important public function was in the building (and not a gym).

The old 19th century city and the new come very close here (9). A small waterway is crossed by the A10 and pedestrians can also use this bridge – shared space with a wall in-between (10). Here we arrive at one of the three large roundabouts overpassing the highway (which is a rarity for the ring, it only happens here in the west part), the Jan van Galenstraat (11). Some public functions are here: a hospital, a municipal office, the hotel management school and also a cultural place/night club ‘De School’. The large building in the picture is a sound screen for the new project Laan van Spartaan behind it, a transformation of sport fields into residential blocks, also the first of many similar projects in this zone between highway and railway: the Ringspoorzone. In general can be said that the flats from the 60s are removed and replaced by closed building blocks with courtyards that have to seduce the Amsterdammers to live just outside the Ring. Most of these buildings turn their back to the A10 and fill the space in-between with parking space (12).

Before we arrive at the next crossing at Lelylaan, the A10 is accompanied by the Rembrandtpark with the specially designed altering pattern of flats along the road. Looks impressive from a moving vehicle, but at ground level a bit disappointing with no functions in the plinths – but nice trees (13).

Lelylaan to RAI (April 20)

At Lelylaan you are directly confronted with the construction works. Along the Lelylaan from station to A10 new residential buildings with ‘metropolitan feel’ are built (14). The strip along the A10 from here towards Delflandplein is a sequence of office buildings on the west side (15) with left over spaces for park.

Lelylaan to RAI (April 20)

not a very attractive public space) the regeneration continues (19) and more (empty) office buildings accompany the A10. We arrive in the business park area Schinkel where the Henk Sneevlietweg overpasses the A10. The sportfield area next to junction Nieuwe Meer is being transformed to student and refugee housing (20) and the business park on the other side (21) is on the list as well. What is now a highway location (22) has potential for residential use, the old harbours at the Schinkel have great potential (23) and it is very close to the Amsterdamse Bos (24). Altogether a really interesting point on the ring, now a neglected outskirt, but with the proximity of the Zuidas and a natural city escape and the quality of the Schinkel are promising. The houseboats here can definitely support this (25).
After crossing the water we pass more sports fields at the Olympic stadium and another green city escape. Then we get urban again at the Amstelveenseweg (26), which is almost as busy as the ring itself. Ambulances are frequently passing and the streets parallel to the A10 house not only offices, but also schools, the court of law and a cemetery. From here on you hear only construction sounds (27), new offices but also new apartment buildings (28). The underpasses busy with cars, trams and cyclists will soon disappear when the Zuidasdock is built (29). The last picture is taken a bit further along the ring, at the business park area close to RAI, and shows the offices and the original land use of the Zuidas: more sports fields (30). We end this part of the trip at the congress centre, surrounded by hotels and large schools. A large flow of people can be seen here every day in morning and evening (31).

RAI to Zeeburg (May 4)

The RAI congress centre marks the end of the Zuidas strip along the A10. However, the building doesn't stop here (32). This is a very interesting place for living and working environments, close to the popular southern part of the city center and close to the Amstel. The strip along the highway is a small park here (33),
connecting the natural environment along the Amstel to the city. The wide underpass at the Amstel shows a very interesting space (34, 35), but to get on the other side you have to get up to the level of the highway (36). However, it is rewarding, seeing the green fields along the Amstelland (37). Here you can cross the junction with the A2 and see the entrance of the city by car from Utrecht (37). The entrance into the city you have by foot then is less spectacular: a generic business park that follows the scale of the highway, not the scale of the human (38). There are only a few roads that connect the businesses with the surroundings. Here you can’t follow the ring road, but the metro line takes over. From the station Over-Amstel the development of residential area at the former water facility of the city is visible (39). We follow the turn of the metro lines high above us (40) and finally get back to the A10. More business parks along it (41).
On the other side now not more business activity, but suddenly a park strip with residential area. This is Duivendrecht (42). It doesn’t feel very urban at all here and the contrast between the business parks and the neighbourhoods is strange. It gets even more confusing when there is again a large infrastructural crossing and you feel that all the activity takes place above you (43).

Here the A10 is located on the old ring dike of the Watergraafsmeer, separating Betondorp (Amsterdam) and Diemen (44, 45). The space around the water here (Weespertrekvaart) is barely used but has great potential.

The new sound screens are the décor of small urban parks that separate the residential and the neighbourhoods (46). The atmosphere of Diemen is dominant here and it feels like a calm residential area (47). There is still a final connection between highway and surrounding by the one and only cycling connection over the A10 (48). Then our paths separate to give space to the train lines and the junction of the A1. You have to walk through Diemen and before we say goodbye to the A10 we can relax in the beautiful park along it (49). Then the Zeeburgerbrug takes the highway again high above us, crossing the canal and the marina (50). We take the new bridge and end up in IJburg, leaving the highway alone, flying over the water to dive under it at the Zeeburgertunnel.

Conclusions Exploring the Ring

Exploring the Ring leads to many thoughts, questions and ideas. Here are some questions and ideas that came to mind travelling along it.

1. First things first. The density along the ring is very low. There is no doubt that there is still a lot of space available to build. Especially at the junctions (Nieuwe Meer, Amstel, Watergraafsmeer) the highway takes too much space away from the public. Can’t we make that into useful spaces, for instance to transit to other forms of mobility? Are the junctions possibly the new transit hubs?

2. The A10 is a very dominant structure. More then fifty times you have to be submissive and pass underneath. I liked it the best when the monotonous wall is broken and the level of the highway is going up (at Zeeburg and the bridges over the Schinkel and Amstel). Diversity is good and it breaks the atmosphere.

3. There is only one cycling bridge over the highway. It feels like winning to stand above the road and have an overview on the traffic flows. Can’t we use that feeling and turn the passage of the highway into a victorious experience?

4. Some green along the way is beautiful, but most of it is just cover-up green. The cover-up green spoils it a bit for the nice parts. Also the nice parts can be better. Invest in quality, not quantity. That means making strong connections to the parks so that necessary buffer space is used well. And add functions to the park, so that we have a reason to go there.

5. If you really have to cover it up, use something else than shrubbery. Green gets really boring if it is just a strip of three meters. Explore the possibility to use functions and buildings to cover it. Even if it is just parking - that is already a lot better than the ‘schaamgroen’ that is so often used.

6. Underneath is still a lot to gain. With some fantasy you can imagine stuff happening there, people gathering for a movie or a party (you stay dry when it rains). If it was not the Netherlands, but another country the underpasses would be full of life with selling points and temporary markets. Can we learn from those examples?

7. What up with all the closed building blocks? Why do you have to create closed environment in an open city? That is futile for the surrounding public space. If the Ringzone has to have an urban atmosphere, we need people in the streets and shops in the plinth (not parking garages).

8. Why are the sound screens the same on both sides? Isn’t the perception from the car different from the one from the walking path on the other side? Maybe we can see the sound screen as a blank canvas and give people space to express themselves. Variating between transparent and solid screens makes already a more interesting sight.

9. The municipal border combined with the A10 draws a thick line between neighbourhoods on both sides of it. Active streets passing the ring can benefit both sides!

10. For the waterways the A10 is not a problem at all. It just flows underneath it. Sometimes the people flow along it with a similar pace, but there are some waterways that could be used much better: the Haarlemmervaart, de Weespertrekvaart, de Slotervaart and the Erasmusgracht.
**View from the Road**

After seeing the highway from the city, it was time to do it the other way around: seeing the city from the highway. What is visible from the road that you don’t see while walking along it?

Analysing the view from the road originates from the article by Appleyard and Lynch (1964). In the image on the right there is my ‘View from the Road-analysis’ showing the visible elements from the road. In orange the ‘landmarks’, in yellow the points of the ring where you can see something characteristic in the distance.

**From A4**

From knooppunt Badhoevedorp the road is on one side flanked by the railroad and on the other side by the tops of trees that are planted lower on the side slopes. The first sign of the city is the office buildings of Riekerpolder. The road makes a turn and then the bridge over the Schinkel and the view of the Zuidas catch your attention.

**A10 Zuid**

Once past the bridge, the office buildings of the Zuidas dominate the view. The train is still on your side and the high rise makes an interesting view. You pass the platforms of station Zuid with the waiting passengers, very close. After station RAI follows the passage over the Amstel, which is nice if you have time to look to your left.
A10 Oost
After the Amstel the train leaves us. The road gets higher here, to go over knooppunt Amstel. The next area has some office buildings and that show you their trade (the new G Star building as an example).

Then, at Duivendrecht, you enter into what seems a bit like the skeleton of a snake: high sound screens on both sides. Nothing to see from here anymore, the neighbourhoods have protected themselves from the nuisance of the road. After underpassing the train viaduct, the sound screens disappear and you are flying over the water, to arrive on Zeeburg where the road is going down again into the tunnel under the IJ.

From A2
From knooppunt Holendrecht the road is nicely flanked by trees on the right side and behind that the business park of Amstel III with a lot of car resellers and other companies. The road runs here through a rather green environment, and you can actually see the trees instead of only the tops of it. Taking the turn left on knooppunt Amstel gives a nice view from the other side of the Zuidas.

West
Driving from the harbour, first the A5 goes over the A10. After the darkness you see the view over the Sloterdijk area with the high rise. After Sloterdijk you approach the Poortgebouw at the Bos en Lommerweg, and your view gets more narrow. It gets the narrowest at the Max Havelaar flats, then you dive under the Bos en Lommer building and after that more residential buildings can be seen from the road. This is clearly a dense area. Arriving at the first ‘roundabout’ where the ongoing traffic goes under the roundabout, the road loses a bit its residential character: there are bigger buildings like the hospital and the hotel school. Next are the towers of Rembrandtpark, showing a clear pattern (chess board) along the road. Here the sound screens appear (in a very bad state, not like at Oost) and more tree tops.

At Lelylaan, the second roundabout, some more landmarks: Weeber’s three towers with green roofs, the World fashion center (white cubes) and then the road makes a slight bend before arriving to the third roundabout at the Sneevlietweg. Here the city seems to have ended a bit, business park again. More trees and green space accompany knooppunt Nieuwe Meer, where you either go underneath the A4 to the Zuidas, or over it towards the A4 to Schiphol.
**Familiar**

During the fieldwork I noticed the large amount of new apartment buildings along the route. All big and with sharp rectangular shapes, but variation in used materials. All at least 10 floors high.

The type of new development can be placed in the context of other large urban expansions in other cities. I was inspired by this photo montage called ‘Familiar’ of different but very similar buildings in the cities of London, Stockholm, Hamburg and Oslo.

I added in the middle of every collage a new building in the Ringzone in Amsterdam. The similarity is striking. Apparently this is the new style of building - large block size, orderly facades and sharp shapes.

**Sound screen and billboard buildings**

Along the highway we find two other characteristic building types. They both have a relationship with the highway, but in a very different way.

**The Sound Screen Building**

Long buildings parallel to the road, often with soundproof facades. They basically are sound screens with inhabitants, because they are used as a buffer for the rest of the buildings behind it.

**The Billboard Building**

A show off. This building loves being along the road and preferably houses a fancy office. The Billboard Building has always a characteristic to remember the building by and often has a nickname. Around Sloterdijk and Zuidas there are so many Billboards that not one stands out. Rem Koolhaas likes the highway too: recently the G Star office and from next year the biggest hotel of Amsterdam at RAI.
The A10 south of the IJ has 14 exits. The exits are the points where the city connects to the road and where Amsterdammers leave their city by car. The exits area also used as P+R facilities nowadays: parking locations close to the ring, so visitors can transfer from there to public transport instead of searching for a parking spot in the city center.

The interesting thing about the highway in the city is that everywhere the highway is located higher than the city on a slope. The highway needs to be uninhibited by city streets and crossings. The height map of Amsterdam’s ground levels shows the entire highway in red: the mountains in the city. Because of this, hardly anywhere the highway goes underneath the city network. That happens only 6 times: at the three roundabouts at the west side, at the Poortgebouw and at two places on the east side.
Underpasses and fringes: connecting the city

Where the exits connect the city and the road, there are many more underpasses that connect the city on both sides of the ‘mountain’ A10. The amount of connections and quality of the underpass varies a lot. The A10 West has 23 crossings, the A10 Oost only 7 while they cover a similar distance.

They type of connection also differs a lot, both in the crossing or moving along the A10. The A10 West has a parallel road from the Jan Evertsenstraat until the Sneevlietweg and a lot of smaller cycling underpasses reachable from this side road. On the A10 Zuid the situation is different: here there are 4 perpendicular streets underpassing the road that connect Amsterdam Zuid and Buitenveldert. Another hierarchy compared to the west side.

The A10 Oost is crossed by some long streets of the main road network (s112, s113 en s114) and separated from these there are some cycling routes along the Weespertrekvaart and Radioweg cycling bridge. After that there is less reason to cross: not on both sides is urban area.

The object of the highway causes two atmospheres: very dark underneath it and long parallel lines along the green slopes. It should be noted that from here you can’t see a car of the A10.
Ten out of twelve Amsterdam train stations are in the Ringzone area. These stations form together a ring of train tracks around the city. The Ring is not only made of asphalt, but also made of steel: both metro and train.

This combination of rail and road functions as an entrance zone for travellers to Amsterdam. Depending on where you come from, you have your ‘own’ arrival station. Around these stations, during the last three decades urban centers started to develop.

Especially the A2 and A4 and its parallel train track are big entrance roads to the city. Station Zuid in the middle is gaining a more important position, as the station closest to the other cities of the Randstad. With the completion of the Noord-Zuidlijn, the shift south will continue.

Old structure vision of Amsterdam showing the focus on the development of subcenters (Boxtown Amsterdam)
The sub center development around the train station becomes clear in the map of a selection of urban functions: office areas, business parks and educational or care functions. Why did these functions develop here? In the process of the growing city, each time the functions that have a high demand of space and that don’t directly need to be close to the city center are the first ones to be pushed out. In Amsterdam this was behind the edges of the pre-war city: the current Ringzone. Later on the ring road and train lines were added, making the area even better suitable for these larger functions by improving accessibility. Because of the negative effects of the road, new city expansions were built a bit further away on the other side of the road, in Amstelveen, Nieuw West en Zuidoost, leaving these functions in the middle, exactly on the best accessible spots in the city and therefore attracting even more of these functions to the zone: for instance Science Park, or the Diemer Campus. Neutelings called this in his analysis calls ‘the urban foyer’: “with its concentration of various transit facilities the ring has become a vestibule to the city. Meetings are planned at places best suited to all participants, in the current agglomerations generally in a ring zone”.

Besides the functions attracting many people on a daily basis, there is another dominant land use type along the ring road – something that Neutelings calls ‘the Arcadian Idyll’. In his words “rural areas for letting of steam by temporarily escaping into a self-imposed primitivism”, in normal English: allotment gardens. These small patches of green space for the Amsterdammers living “4 hoog achter” have emerged along the ring for similar reasons as the ‘modern city gates’ – in need of space, not suitable in the middle of the city and negative effects of the road have little impact here. For similar reasons functions like sport fields, golf courts and some larger parks emerged along the ring.
‘Urban foyer’ + ‘Arcadian Idyll’ = Ringzone

Combining both the ‘urban foyer’- and ‘arcadian idyll’-land use on a map and comparing that to residential area, shows an interpretation of the shape of Amsterdam: the ‘H-shape’ of ring zone functions between urban districts along the highways in the city.

Business, sport facilities, care/education, allotment gardens and offices filling up the ‘H’

Seeing Koers 2025 as Algemeen Inbreidingsplan

We are currently at a crossroad: developing new urban fabric in the areas around the ring road instead of new extensions elsewhere, demands from us to make decisions about the future of the road. Simply put: it is either building in the natural area of Waterland, along the runways of Schiphol or in the open areas within the existing city: the relatively empty spaces around the ring. Amsterdam has already made its choice for the latter, as can be seen in the image below. This outspoken densification strategy is may starting point for the vision - the interventions on the highway should aim for as much as possible residential program.
To conclude the explorations, I show the conceptual comparison of the developments on the old fortifications with the current highway investments done on the larger ring around Amsterdam.

The Stelling van Amsterdam taking over the function of the fortifications

To place the developments along the Ring A10 in perspective, an interesting conceptual comparison can be made to the development of the ‘Stelling van Amsterdam’. This is an alternative defense strategy for Amsterdam. The city walls that had been build around the canal zone in the 17th century already became redundant a century after that because of a very effective alternative: the ‘Stelling van Amsterdam’, a system of fortresses and floodplains in a large ring around the city. The walls and ramparts first were used as recreational space and when the city started expanding during the industrial revolution halfway the 19th century, the walls were taken down and urban development started.

The SAA projects increase the capacity of the A9, releasing pressure of the A10

In conceptual terms this can be compared to the current developments of infrastructural development around Amsterdam. We are increasing capacity on the roads A9 in order to make these roads better for the regional traffic. In that way the ring road has less regional traffic to digest and in that way is changing its function more towards an urban road than a highway for transit traffic only passing Amsterdam.

This can be seen in the nature of the interventions of the A9. In the three projects, capacity expansion are done with respect to the surroundings. In Badhoevedorp the highway is relocated further from the city (and capacity increased), at Amstelveen the highway is sunken to improve connections over it and reduce nuisance and the Gaasperdammerweg becomes a land tunnel with a park on top.

All these measures are very suitable at those locations in the periphery of the city, but within the city another approach needs to be found.
Comparing the Singelzone to the Ringzone

When comparing the transformation of defence and infrastructure works, it is just a small step to also compare the development that followed on the structure that just lost its original function. Taking down the fortifications was the first step for new development. Changing the function of the A10 can possibly have a similar effect.

When taking the comparison one step further, we might be able to draw some parallels in the next steps after the change of function. The “Singelzone” was suddenly free open space in a very central place in the city. The ramparts offered space to integrate larger building volumes, such as the Rijksmuseum, Tropenmuseum and the burnt down “Paleis voor Volksvlijt”, functions that marked a societal era. The Singelzone with the Singelgracht as a recurring element on all parts of the old fortifications still is a recognisable structure in the city that stands for a certain atmosphere and program.

Simultaneously with the developments on the former fortifications the first extension plans were drawn. The famous plans of Niftrik and Kalff show how this process took place: creating new structures and centralities, different street patterns and an infrastructure plan.

With the ambition of the city of Amsterdam to extend the city center outwards to and over the ring road, the area around the A10 is starting to show similar signs of space opening up for new development. However, it is not a totally empty land, but a place containing many destinations, such as office buildings, sports facilities etc. The task here is to integrate residential program and attractive working environments in the area. Examples of this are the Startblok Riekerhaven, a project housing students and refugees in container units together, on a sport complex next to the A10. Or an old office building that is transformed into a start up community (B Amsterdam).

The first signs are there, but it remains a significant challenge to shape developments in a way that the Ringzone gets a distinguished, attractive identity. Furthermore, the recent developments that are spread out the whole zone as acupuncture projects that will bring more and more residents and visitors to the area need to go hand in hand with structural urban investments, for instance in green, blue and street networks - and a highway that can support this, instead of limiting it.
Comparing Ring Culture Antwerp - Amsterdam

The applicability and value of Neutelings’ Ring Culture (1986) in the current context of the Amsterdam Ringzone developments

Abstract – The development of urban highways in the 20th century in European cities created infrastructural zones between the old city center and other city districts. Thirty years ago architect Willem Jan Neutelings conducted a research about the ring road zone of Antwerp and developed a model in which the manifestation of mass culture (“Ring Culture”) in the city takes place in this zone (Neutelings, 1991). In this paper the work of Neutelings will be reviewed and related to the current situation in the ring road zone in Amsterdam. In section 2 the work of Neutelings will be described and contextualized within other research on urban highways. In section 3, the comparison of his work and the spatial situation in Amsterdam will be made. In section 4, the societal and spatial changes that influence the value and applicability are described. The main observations are the spatial differences between the rings of the two cities that strongly determine the development approaches. The conclusions about the current manifestation of Neutelings’ ideas are that many aspects are still visible, but that current trends of more permanent use (Amsterdam, 2016), focus on public transport (Bertolini and le Clercq, 2003) and public interaction environments (de Hoog and Balz, 2012) create a different design task for the Ringzone, that is oriented on the presence of people in the ring zone instead of just cars.

Keywords – ring road; urban highway; Amsterdam; Antwerpen; Neutelings; comparison; transformation

1 Introduction

With the rise of motorized traffic in the 20th century, the role of the car in the city increased significantly and has had enormous consequences for the organization of the city. Highways were built to lead travellers into the city and at the same time distribute the local traffic. These urban highways were planned on a reasonable distance from the built environment, leaving the areas around it as peripheral buffer zones. However, these buffer zones gradually filled up with new functions that couldn’t find a place in the existing urban fabric, like sport parks, business districts, allotment gardens, industry and conference centres.

Mid-1980s architect Willem Jan Neutelings discovered patterns in this development, which he investigated and operationalized for strategic interventions in his research ‘Ring Culture’ about the zone around the ring road of Antwerp. His main observation is that the development along the ring is a manifestation of 20th century mass culture and consumerism – due to the accessibility and central location of the ring road.

Currently, the zones around major city ring roads are undergoing a new wave of transformation. Due to the growing amount of inhabitants in the city, the ‘ring zones’ are becoming possible locations for residential development. These zones have good proximity to the city center and attractive land prices and are often the only open spaces left within the existing city. At the same time the fact that these zones often function as barriers in the city with low spatial quality, drives the need for transformation. This certainly is the case in Amsterdam, which will be investigated in this paper.

The central question here is to what extend the ideas of Neutelings are present in the ring zone of Amsterdam and if not, what kind of ‘ring culture’ can be used to describe the current development.

In section 2 the work of Neutelings will be described and contextualized within other research on urban highways. In section 3, the comparison of his work and the spatial situation in Amsterdam will be made. In section 4, the societal and spatial changes that influence the value and applicability are described, followed by a conclusion statement and recommendations for the development of the Amsterdam Ringzone.

This paper is supporting my graduation thesis in several ways. First, I gain understanding about precedents of design for a ring road zone that put the situation of Amsterdam in perspective. I can place the developments in Amsterdam in a time context. Also, studying Neutelings’ research gives an idea of how I can develop a general idea for the ring zone as a whole.

2 Ring Culture in Antwerp by Neutelings

Thirty years ago Willem Jan Neutelings conducted a research on the zone around the ring road of Antwerp. His line of reasoning starts from the functionalism movement in the 20th century. Cities are getting more and more separation between functions: the city center, business districts and residential areas. The rise of the car makes this city organization possible, but demands a major infrastructure development. Highways are built to connect different cities and different functions within that city. The zones surrounding it remain peripheral for some time, but with the rise of mass culture new functions appear in these zones: entertainment in concert halls, distribution of goods at superstores, physical fitness in sport parks, communication in motels, conference centres and outdoor recreation in allotment gardens – all functions for which space is lacking in the inner city and that benefit form high accessibility and exposure to the public.

Neutelings notices in this movement a generic pattern in multiple European cities ring zones: the transformation from peripheral highway zone to urban centrality of mass culture. The high accessibility of the ring road and strategic location between city center and suburbs is perfect for functions that attract ‘the masses’ to consume activities and products. In his research he states: “In European metropolises we observe a spontaneous rejuvenation cure, the ring mechanism. The ring mechanism is able to transform a peripheral zone into a spatial-programmatic element in the city. As soon as this ring zone reaches its critical mass, it becomes the ignition coil of its own ring culture” (Neutelings, 1988). This culture is supported by Neutelings’ observations (see table 1), structuring principles and elaborated by new building typologies for the ring zone (see table 2).

Fig 1. Development model for the ring zone of Antwerp, derived from Neutelings (1999)
Neutelings in context
The positive and opportunistic vision of Neutelings has to be placed within the period of time when the clear hierarchy of center en periphery is fading and are stitched together into one urban nebula. However, city planning in Europe still focuses on zones and different approaches in central en peripheral areas. This contributes to the rise of the infrastructural zones in-between. Neutelings is responding to the denial of architects and planners to acknowledge this process of deurbanisation and calls designing for these in-between zones a new important task (GUST, 1999).

Density of the void
Spatial paradox of empty spaces with potentiality of thousands (event location, advertisements, temporary events).

Kinetic perception
Motion is a major arranging mechanism in the composition of the ring and the built environment along it.

Urban foyer
Transit facilities, hotels, offices, stopping-off for travellers: rendezvous is first and only interface with the city.

Arcadian idyll
Rural areas still exits within the ring zone ‘letting of steam by temporarily escaping into a self-imposed primitivism’.

The phenomenon of modern functions along the ring road is already described and can be compared to the filling in of the 19th century old city fortifications in Vienna and Amsterdam, where functions for the bourgeois were installed (the Ringstraat in Vienna with the opera, academies and town halls and the Singelgracht in Amsterdam with the national museum and Leidseplein with cultural functions). Next to this Neutelings describes phenomena of the green recreation areas to escape the city life, modern city gates and transit location for visitors that only have a rendezvous with the city in the ring zone. The last two phenomena are more abstract. From the ring road you have a kinetic experience from the moving car and therefore the clear arrangements and architecture of the buildings along it: movement is the structuring principle. Lastly, there is a spatial paradox of the spaces, the open spaces seem empty, but can house thousands during an event.

With these phenomena in mind, Neutelings created a development model (see fig. 1) for the ring zone that extrapolates the already existing features of the ring culture. Here he places new architectural typologies (see table 2) in strategic locations on the open green strip along the ring.

Neutelings observed in Antwerp. However, in the Sint Franciscus hospital he recognizes the spatial paradox of just one industrial building that contains a variety of activities, but that buzz is not visible in the spatial appearance and layout – it’s just a box, an exit and a parking lot.

The situation in Amsterdam differs from Rotterdam, because the A10 ring road is closer to the city than in Rotterdam. To what extend do we recognize Neutelings’ phenomena along the Ring Amsterdam?

Table 1 Ring phenomenology aspects, derived from Neutelings (1999).

<table>
<thead>
<tr>
<th>Concentric shift of center</th>
<th>Absorbing the program of the modern time, taking over the role of the city center. Comparable to the 19th century rings of Amster- dam and Vienna with bourgeoisie culture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avenue of the dead</td>
<td>Modern city gate: separation between 19th century and 20th century, symbolic value of the fortifications. Taking the role of churches, gates – institutionalization along the highway.</td>
</tr>
<tr>
<td>Corridor/plaza</td>
<td>Outdoor public facilities, stopping off for travelers, rendezvous: first and only interface with the city.</td>
</tr>
<tr>
<td>Kinetic perception</td>
<td>Motion is a major arranging mechanism in the composition of the ring and the built environment along it.</td>
</tr>
<tr>
<td>Density of the void</td>
<td>Spatial paradox of empty spaces with potentiality of thousands (event location, advertisements, temporary events).</td>
</tr>
</tbody>
</table>

Table 2 Five typological studies for the ring, derived from Neutelings (1999).

<table>
<thead>
<tr>
<th>Distribution slab</th>
<th>Ordering products online, robot supermarket along highway where goods are stacked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plateau group</td>
<td>Filling in a valley with parking space and adding iconic buildings on top.</td>
</tr>
<tr>
<td>Spaghetti junction</td>
<td>Filling in a valley with functional space, building on top for expo, info, food, office</td>
</tr>
<tr>
<td>City vestibule</td>
<td>Central location with train, tram and parking. Facilities for commuters (food, breakfast etc.)</td>
</tr>
</tbody>
</table>
Concentric shift of center
The phenomenon of concentric shift of center that Provoost didn’t see in Rotterdam is very present in Amsterdam. In the 1980s Amsterdam saw the potentiality of the ring zone for the development of large economic sub centres (Kloos and Vlaanderen, 1988). The centres on the ring developed during that period: Zuider Zuidas, Arena, Telepoort Sloterdijk and Amstel became clusters of business and commercial activity. Neutelings describes this shift of center as follows: ‘Illustrative of this mechanism are the 19th century rings with their programme for bourgeois culture, such as in Amsterdam and Vienna. These too were peripheral zones that grew into the major urban centres they still are today.’ Looking at the large-scale entertainment that we find at the Arena Boulevard (grand cinema, soccer stadium, music arena, fast food restaurants) one can conclude that Neutelings’ mass culture is eminent and present today.

Density of the void
However, not only the presence of the highway contributed to the emergence of these centres of mass culture. It is a combination of the highway exits, train and metro stations that make these clustering of large scale functions possible (Bertolini and le Clercq, 2003). In the large capacity of these transport facilities we see Neutelings’ density of the void: the ‘promise’ of massive public activity in the large proportions of the buildings and infrastructure.

The increased use of the city by visitors in these major centres of activity is also identified by de Hoog and Vermeulen (2009). They state that the reach of the city center (Dijkstra et al., 1999). Currently, we see the same happening with the development of P+R locations along the ring road (fig.5). 

Architectural typologies
Regarding the architectural typologies that Neutelings designed, the influence on practice is little. The only interaction that buildings along the ring road have with the road is the thick, sound resistant facades. Only the bridge building (fig.6) on the Bos en Lommerweg by the PPKS office (realised in 2004) appeals to the imagination in relation to Neutelings ‘city vestibule’. The position on top of the highway and at the tram stop of Bos en Lommerweg has the potential to house a transit point from highway to city, especially because of the P+R function underneath the Bos en Lommer market. However, the property itself has had difficult times to find a suitable client and is not the lively transit hub of Neutelings imagination. 

Differences
Not all phenomena can be pointed out on the Amsterdam ring. The kinetic perception is barely present because the majority of the ring is covered with sound screens. On many parts of the ring you don’t perceive city at all, epically in the eastern part. However, the ‘spatial quality’ of the A10 as defined by Rijkswaterstaat (Must stedebouw, 2013) consists of the different decors or ‘chambers’ that are dissected while driving a ‘rondje ring’: the north is rural, the east has an industrial character, the south is highly urban and the west goes through residential areas. To what extend these characteristics can be regarded as spatial qualities is questionable, however we can conclude one of the biggest differences between Antwerp and Amsterdam: the diversity within the Amsterdam ring zone is much higher than in Antwerp. This might have influence on the possibility of a Ring Culture in Amsterdam.

The last ring phenomenon of Neutelings also has a questionable presence in Amsterdam. We see the development of urban foyers along the ring (many hotels, offices and stations) that function as rendezvous places for visitors. However, the city center remains to have a strong pull on social activity and meeting places.
Spatial explanation of the differences
In the next section the ideas of Neutelings will be reviewed in the light of today’s progressive insights. Before doing that, some conclusions can be drawn on the spatial differences and therefore a different manifestation of Ring Culture in Amsterdam.

In the book ‘4x Amsterdam’ de Hoog (2005) analyses the city by looking at different layers: of landscape, network and land use. By doing so, he describes four types of city within Amsterdam (fig.7): the grid city (orange), the water city (yellow), the polder city (green) and the ribbon developments along old roads (orange arrows). The ring zone is not defined as a zone, because it doesn’t form a uniform urban area when you analyse it by landscape layers. Also the historic developments of the areas is distributed in different project areas.

In terms of network, Amsterdam has a strong emphasis on the radial streets (Dijkstra et al., 1999). These are the active public spaces where many shops and other facilities are located. In West and South these streets are the connectors between inner ring and outer ring areas. This is also lacking in the situation in Antwerp, where city parts are much more separated. In the eastern part of the Amsterdam ring the situation has more similarities with the Antwerp case.

The current approach of the municipalities towards land use in the ring area is also different. Recently, Antwerp has started a large project about redesigning and developing the ring zone as a whole. In Amsterdam, the Ringzone is also subject of discussion, but from a different perspective: the housing task to realise 50,000 extra units towards 2040. Most of this densification has to land in the Ringzone, but the development of the areas is distributed in different project areas.

4 Evaluation of Neutelings design in the light of progressive insights
The last comment on the housing task of Amsterdam already shows a significant shift of vision compared to Neutelings’ time. In this section a description will be given about the major changes that puts the ideas of Neutelings in a different perspective.

The changes in 30 years time can be illustrated by evaluating Neutelings’ typologies. The distribution slab is a nice precursor of the rise of online shopping, but the land prices at the ring road are way to high for a distribution warehouse. The plateau group we can recognize in the Zuidasdock, but building right on top of the highway is often a very expensive operation. We see more often the realisation of parks and sport facilities on top. The temporary residence is still an attractive idea, however the rise of Airbnb makes it way to easy to rent an apartment in the city center. And at last, the spaghetti junction is lacking public transport connections.

All together, three trends have influence of the review of Neutelings ideas: the shift from temporary to permanent use of the Ringzone, the rise of TOD within the sustainable mobility paradigm and the shift from metropolitan logistic connections to public interaction environments.

Neutelings vision on mass culture at the ring contains a lot of functions that are used only a part of the time: people will come in to work or consume and leave again. The land price developments in the city are currently so intense that temporary use alone is not profitable: the Ringzone has become the area where permanent residential areas have to be realized.

At the same time the architectural interest in highway environments has shifted towards a new paradigm: the one of sustainable mobility (Banister, 2008). Studies have been conducted on the connection between transport and land use planning and one new way of doing that resulted from this is Transit Oriented Development (TOD). Working and residential areas should be concentrated around public transport locations and the view of Neutelings on the car infrastructure ring as a whole conflicts with this. We don’t develop infrastructure zones, but concentrate on the nodes now.

The final point is the most fundamental one. The book ‘De Hollandse Metropool’ conducts a study on the metropolitan environments in the Dutch Delta metropolis. Major investments in the 90s and 00s have been made into logistic connectivity: harbours,
stations, airports and auctions. These are all valuable investments for the economy of the region, but what really gives a city metropolitan quality are good urban environments for public interactions (de Hoog and Balz, 2012). A slightly different view but in the same line of reasoning can be found in the argument of Meyer (1998). He argues that infrastructure, funded with public money, should have open accessibility for everyone – not only the people that choose to use auto mobility.

5 Conclusions
Looking back at the vision that Neutelings had 30 years ago, we can conclude that the optimistic view that he had towards the future of the infrastructural zone in the city has turned out differently. The creative integrated designs he created don’t resemble the current atmosphere of the ring zone typologies: large buildings with large parking lots and little integration of architecture and road. As stated by de Hoog and Balz (2012) metropolitan atmosphere needs public interaction, not only logistic accessibility.

The problem with designing a ring culture by romanticizing the car is that the car becomes the determining element in the design. The scale of the car is not the human scale that we need so much for attractive environments. The ring culture of the future demands connection and integration of the world of the car and the world of the human scale public space.

However, here we can learn from Neutelings. In his observations he draws a parallel to the old Amsterdam Singelgracht-zone and Vienna’s Ringstraße, where public functions for the bourgeois (the masses) were realised. Maybe we shouldn’t focus on the programmatic similarities between these rings, but on the manifestation of public space. Combined with de Hoog and Balz (2012) vision on human interaction zones, the transformation task for the ring zone can be defined in the search for a new urban environment that introduces the human scale in the infrastructure zone. Just like the Singelgracht, the Ringzone can then be recognized as an axis for public life. The masses are already there in the form of infrastructure bundles of car, train and metro traffic – we only need add the structures that support the presence of humans next to cars.

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VISION

Starting points for the development model

Content of this chapter
1. Core belief
2. Towards 21st century Ring Culture
3. New mobility
4. My vision in the Structure Vision
Introduction

For my development model I need to formulate my vision on the ring road, both in terms of urban development and appearance of the road.

The question is to determine the direction and line of reasoning for the rest of the thesis. I do this in four parts.

The first part is about the flexibility of urban structure, which is kind of like a core belief for the whole approach of my project.

After that I define what Ring Culture in the 21st century means and also what it certainly doesn’t mean.

The third part is about changes in mobility: how can these give starting points for a strategy?

The last point is the positioning of the Ringzone in the Structure Vision of Amsterdam. I plead that it becomes one of the 5 major movements.

We have a choice in the way we organize mobility. These are maps of Tokyo and Amsterdam on the same scale: in Tokyo the metro stations and lines are highlighted, in Amsterdam the road infrastructure (Apple Maps, 2017).
Flexibility of urban structures

The examples of the change of function and the comparison to the plans of Paris show a different line of reasoning about highways: not their limitations, but their future perspectives. This can be explained by the ‘theory’ of the flexibility of urban structures. This idea is the starting point of my vision for the ring.

In the public debate the ring road is often described as a necessary evil. Its function for car traffic in the city is indispensable, but at the same time it causes a lot of pollution and noise nuisance. I believe that this view is way to narrow and focussed too much on the current use and appearance of the Ring.

The image on the right shows another way of looking at urban structures. It shows rhythms that correspond to different urban elements: users, function, buildings and public space. Users and functions change fast, people move, buildings are transformed to house new functions in a few years time. Buildings last longer, at least a couple of decades. Public space however, has two frequencies: its structure changes hardly, but its design very quickly. Places that are once a canal or street will not change into built-up area, but canals can change into streets. The way we use transport changes quickly, especially in the last 200 years. Our streets have been filled with a wide variety of vehicles, like horse coaches, cars, bicycles, trams and pedestrians. Every mobility revolution, increase of traffic or simply another position in the network for a public space causes a change in design of the space.

A good example is the transformation of the Wibautstraat in Amsterdam. This once used to be a railway, with final station Weesperpoort at the Singelgracht. The station was shut down in 1936 and the free space of the train tracks was changed to one of the busiest entrance streets of the city, a long time the ugliest street in Amsterdam. With the introduction of the metro in Amsterdam, it was relatively easy to open up the new street and build the metro underneath it – another change related to mobility, but the structure remains. The last step in the process is the recent upgrading of the street: many were surprised about the transformation of the formerly polluting four lane wide city road into a urban boulevard, with interesting functions along it and a street profile with trees and green verges.

Another example can be found in the Haussmann boulevards in Paris. In the late 19th century under the rule of Napoleon III it was very hard to move through the city. The city lacked open space and congestion and health issues were serious. These problems – and the fact that wide streets were perfect to move the military fast to suppress riots – were tackled with the introduction of boulevards into the street network. While the military reasons were questionable, fact is that later on the boulevard network turned out extremely helpful in a fast realisation of an electricity network in the city. Today the Parisian boulevards are a good example for how fast and slow traffic can use the same urban structure.

I see the same potential in the ring road of Amsterdam: a structure that will remain part of the public space, but that can adapt to new conditions, for instance of a changed mobility.
From 20th century Ring Culture ...

Keeping the previous point in mind, one last comparison to Neutelings’ design and the current developments in Antwerp is in place. In Antwerp the municipality, as well as the people are looking for a solution for their ring road. In the design of Neutelings, he saw the potential in the area in the specific use for mass culture. However, considering the current demand for new housing for the growing population of the city and the knowledge about mixed use make this plan a bit out-dated. Mass culture recreation, cultural functions, hotels and congress functions can’t be directed to one specific zone in the city, these functions are better located within the urban fabric. Besides that, the zone is in such a good location that not creating space for the city (and that means housing, not only public and commercial functions) would be a wrong choice, considering the high demands.

Let’s take a look at the current plans for Antwerp’s ring road. The civil movement has a proposal called ‘Ringland’ – a total coverage of the ring road and the realisation of 10 new neighbourhoods on top, all in the green environment of a ‘Groene Singel’. In the recent study by Alexander d’Hooghe ‘over de ring’ (November 2016) the coverage is also the central topic. In a way this plan is a denial of the above-described concept of flexibility of urban structures. Placing the road underground doesn’t motivate cleaner ways of mobility.

The spatial differences between Amsterdam and Antwerp have been described previously. Also the social context is different. Amsterdam doesn’t have this strong civil movement challenging the polluting effects of the road – Amsterdam accepts the necessity of the infrastructure.

This is illustrated by the design of a ‘Ringstad’ on top of the ring road, a proposal of former alderman Roel van Duijn. He thought the solution of the growing population of the city would be to overbuild the highway with housing. He relies on technical solutions for sound and pollution issues.

The Ringstad might be technically not worth the effort, but today we are able to build close to the highway in the form of buildings with double facades to protect the houses from sound and pollution. In a way, these projects also ‘accept’ the current state of the highway to remain for at least the coming decades.
Contrary to these precedents I think that in Amsterdam the discussion about the urban development around the ring should not be about how to mitigate the negative effects of the current function and use of the highway, but to look for interventions that can change the highway to a form that adds to the new step in the growth of the city.

In a way this refers back to an older ring structure: the Ringstraße is an example of redevelopment of fortifications. The old city walls of Vienna were not needed anymore in the 19th century and a design contest was organized to collect ideas for the new layout of this ring-shaped area in the city. It resulted in a design for a green boulevard with large buildings with public functions along it, in traditional architectural styles. The boulevard is a manifestation of the public life. It is a destination in itself and connects important urban centres (parks, squares, public buildings) and is accessible for all modalities (walking, cycling, car, public transport).

Inspired by the Ringstraße is the plan ‘Groningen Smart Energy City: The Ringstraat as a new urban environment’ (IABR-Atelier Groningen, 2016). It suggests that the ring road of Groningen in the future can function as a clean energy distribution network and proposes a new typology for the buildings along the ring. Also, with a clean energy economy, the ring road can transform from a car dominated environment into an environment for encounter and exchange – for public life. In the image you see a 19th century street life environment, combines with high-tech clean mobility solutions: electric cars and a light rail.

A second inspirational project where an old structure revivals as a sustainable, walkable public space is the project of Manhattan Green Line. The old diagonal of Broadway is transformed into a car free, highly attractive pedestrian space. There is no tunnel involved here - the starting point for this design is that there is already enough infrastructure dedicated to car traffic. The drivers will find different routes in town and change their behaviour to the new situation.

In my vision, the search for the integration of both city and highway has much more potential than spending time and money on hiding a structure, that can potentially change into something facilitating new and clean mobility.

The future of the ring road of Amsterdam is above the ground and inspired by the human scale, instead of the scale of the car. So no Ring Culture, no Ringland - I propose Ring street culture in 21st century Amsterdam.
Having said that, the question is how to justify the shift from highway to urban street. I’ll show some views on the future of (car) mobility in Amsterdam and references of successful alterations of highways in other cities. The goal of this is not to provide hard proof (I am not a traffic engineer who can foresee the future of mobility), but to give some arguments and trends that make my position acceptable.

**General analysis of the debate around mobility**

Every year in November the discussion about the road network arises. Because of bad weather the longest traffic jams of the year emerge. Every year the roads have been improved and widened, but still the problems remain.

In traffic the term latent demand is used to explain the phenomenon. The creation of more driving lanes creates a growing demand of car mobility. This is not so strange when you consider that you improve the facilities for car use — and that will attract more car use. The extra driving lanes will be used by new road users instead of giving more space to the current users. This is also seen in the approach of the government — instead of giving more space to the current users.

Besides my position towards the debate, there are some changes going on in terms of mobility around the city of Amsterdam.

**The A11**

With the realisation of the A5 connecting the A9 and the harbour, a second ring has emerged around Amsterdam. This is a luxury that Antwerp for instance doesn’t have. What does this tell us? Tijs van den Boomen calls this the Ring A11, a route for fast traffic around Amsterdam. This illustrates that the function of the A10 and also the access roads A2 and A4 is going to change. It fits in the trend of a growing city: in the 19th century the first cars drove straight through the inner city to pass Amsterdam, the A10 made it possible that transit traffic could go around the city instead of into the city. A similar function can be suitable for the A11: a route around the city for transit traffic, so the A10 can become an urban road instead of a transit highway.

Nowadays it is in a lot of situations still faster to take the A10 instead of using the ring A11 to pass Amsterdam. I plead for a strong division between these roads: take the ‘H’ out of the highway network and lower the speed drastically to make the A11 always the fastest option. This will push out the transit traffic and reduce the traffic on the A10 to only local and destination traffic.

**Modal shift in the city**

Amsterdam already has a low percentage of car traffic movements: only 20% of the trips are by car (Amsterdam, 2015) — the rest is cycling and public transport. It is widely known that increasing density in the city also means a faster shift to even lesser car trips: the cities with the highest density have the least car use (Newman and Kenworthy, 1989).

The decline of car use is also visible in the decrease of car owners in the city. Especially young people don’t own cars and can use for all trips either bicycle or public transport (Amsterdam, 2013). The new apartment buildings in the Ringpoortzone in West have empty parking garages: it is way too expensive to own a car in the city that you hardly use.

The aim for a sustainable future city should be to encourage these movements of less car use and ownership in the city. Clean mobility should be the standard and improvements in the city’s infrastructure should be based on that, instead of adding driving lanes.

**New mobility**

The modal shift towards more cycling and public transport use is strengthened by two mobility trends: the automatic shared vehicle, traffic on demand and e-bikes.

The automatic vehicle (AV) in combination with traffic on demand is a solution for one of the major disadvantages of public transport. In public transport you always have the problem of ‘the last mile’ from the station to your destination (Venhoeven and van den Boomen, 2012). When a system of automatic vehicles is connected to a digital system accessible from your phone, this problem disappears. You just share your location and destination and the fleet of automatic vehicles is responding to all these demands and making smart connections between people’s trips. The ring could be a good connector of the ‘old’ public transport network of train and metro for the longer distances and create transit hubs at stations in the Ringzone for AV’s. Also with the flexibility of urban structures in mind: automatic vehicle public transport facility can use the existing infrastructure of the A10.

Also the increased popularity and acceptance of the e-bike can put some new options on the table. With a growing city, distances increase. The e-bike can add 31% to the average trip distance (Fietsersbond 2013). Also attractive and safe bike infrastructure increases
the use of the bike. The ring A10 can also become a fast route for cyclists in the city if we shift it from car-only to multimodal.

**Slow city movement and clean(er) cars**

Making a street out of a highway demands a reduction of driving speed. Apart from a change in character of the road this also improves the air quality and nuisance in the surroundings; driving slower makes less noise and causes less pollution. If you combine this with the rise of the electric car, the highway can become an accessible road with maybe even sidewalks.

Driving slow means slim driving lanes (source: De Langzame Stad)

The rule of thumb in car noise is that under 60 km/h the main factor producing sound is the motor; above 60 km/h it is the contact between the tires and the road. So the best possible solution for a non-nuisance street would be a speed below 60 km/h with electric cars (with silent motors).

Another benefit of lowering the speed is the gain of space: slower cars need less space between them. Adding automatic driving to the equation could reduce the footprint per car drastically.

Cleaner and smarter cars: causing less nuisance and smaller footprint per car

**Conclusion**

These trends and motives on the topic of mobility will be taken into account in the development model. I act in my project on these notions:

1. The A10 will be free of transit traffic due to the realisation of the A11
2. The speed limit becomes 60 km/h max
3. Car ownership and use in the city will decline
4. The shift to electric cars and bicycles continues
5. New improvements to the city public transport network, for example with AV’s

Verder lezen in de Appendix
The previous observations and statements plead for a new role of the ring road in the city. It is important to relate this manifest to the existing plans of the municipality for the city.

The municipality has a strong tradition in strategic urban planning. The latest structure vision, ‘Stuur Visie Amsterdam 2040: Economisch Sterk en Duurzaam’, describes 4 major movements. I plead that Ring Culture should be a 5th.

**The Structure Vision 2040**

The structure vision distinguishes four ‘spatial development trends’ and connects these trends to spatial interventions that the municipality wants to do towards 2040.

1. Rediscovering the waterfront: het IJ Centraal. Waterfront development is a good investment that can connect city and region.
2. Extending the city center environment. The demand for the so-called ‘centrummilieu’ is larger then the current stock. Extending this environment can help answering the growing demand for this kind of areas.
3. Internationalisation Zuidflank. The strong economical axis between Schiphol-Zuidas-Bijlmer Arena-Utrecht. The part of the city facing the Randstad. Very busy and a lot of development potential.
4. Interwoven city and metropolitan landscape. Amsterdam has several green wedges were the landscape penetrates the urban fabric. Maintaining and preserving these landscapes is important for the livability of the city.

These 4 movements form the base for all plans in the city. Every neighbourhood design plan starts with positioning the location in the context of these 4 movements. They provide strategic guidance and direction to individual projects.

If we look at the development of the Waterfront overall supervision creates a coherent urban fabric, where each building is a part of a greater whole.

This is lacking in the current development that is happening in the proximity of the Ring. The projects have individual approaches and they are very focussed on the city center, not so much on their own surroundings. The projects are also not supported by investments in the urban structure in the area, but are only new fillings of existing parcels. In a way these projects seem just little vacuums or satellites of the city center, instead of a base for a new urban district.

Adding up all the observations and trends described above, the new role of the ring in the city should be one of the major movements, because it fits within a spatial trend just like the others and projects in the area need better guidelines and reference of how to relate to the ring road.
MAKING THE MODEL

How to get from a vision to spatial reality?

Content of this chapter
1. The post-it sessions
2. Core values
3. Translation to location
4. Design principles
5. Sketches
Introducing the post-it sessions

In the positioning towards the structure vision of Amsterdam, it becomes clear that not all areas have similar development perspectives. The 4 movements of the vision illustrate the differences in focus on the various city parts.

Also in my own process I encountered the enormous variety in options for the development of the zone. The vision gives some starting points to work with, such as the acceptance of the presence of a (large) road, enabled by assumptions about future mobility in the city and the use of it as a centrality in the development. The question is to what extend has the area to undergo radical changes? What changes are possible and where do we want to apply what?

All these questions I couldn’t answer from the vision only. I needed more ideas and an overview of these ideas, in order to work from conversion to diversion. In my research I have developed myself a lot of small ideas in my mind and talking to others (professionals and others) also provided new ideas. This process of collecting ideas resembles a bit the process of the making of a structure vision: you start with the general beliefs of the people making the plan, the positioning, and from this starting points you start collecting ideas from stakeholders. These ideas together can show what is most important to people and new combinations can be made.

To make this step in the process I used a (personally developed) method that I call ‘the post-it sessions’. In the diagram you can see how from many ideas a distillation could be made into several (structural) design guidelines and four themes that represent the most present ideas. These guidelines and themes occurred when analysing the ‘random’ design ideas – showing the essence of the combination of all ideas together.

The next exercise was to combine three of these ideas into a little strategic design. The idea ‘connecting green wedges’ was combined with ‘quarantine of the road’ and ‘accentuating the waterways’. Making a design with these three ideas on the actual ring road, resulted in the idea of ‘de Kleine Stelling’: accentuating the crossings of highway and waterway as a recreational hot spot and minimizing the influence of the ring road in other parts of it. I created 16 small design ideas by using this method.

The 16 designs are not immediately starting points for the development model. They can be if some coherence can be found in it. I categorized the designs based on the topic into ‘themes’ and based on the structural appearance into ‘types’: the design takes the road as a centrality (ring), it emphasises cross connections (dwars) or it is a combination of both (combi). This resulted into the formulation of 4 themes and 2 stories, which will be explained in the next two sections.

NB: The documentation of the post-it sessions can be found in the appendix.
In the collection of ideas I found a ordering of four themes where all the ideas could be categorized. These themes are:
1. New Amsterdam
2. Intermezzo
3. Multiway
4. Kleine Stelling

**New Amsterdam**
Ring Culture implies in the definition a new way of city planning. The urbanisation of the area feels a little bit as exploring new grounds, meaning also more an addition to the existing urban fabric than a transformation. The ring is now always mentioned as a separation between inside and outside, the goal of a New Amsterdam is to establish something in-between. This also means adding program that attracts people to the area to stay there, not only to pass through.

**Intermezzo**
As mentioned in the diagnosis and vision, the ring does not only have great accessibility by car, but also by train and metro. The ideas categorized under this theme are about using this to full extends. So making the Ringzone into an area that is used for transit, but also a great place to meet others from other places. It is a zone of transit and interaction at the same time.

This theme also positions the Ringzone as a facilitator for transport in Amsterdam as a whole. When you have to go somewhere within the city or leave the city, you will always pass through the Ringzone.

A side effect of this great connectivity could be that within the area distance is not a matter anymore. Because it becomes a transport hub for all parts of the city, it has ultimate proximity within the area itself. This is explained by the concept of ‘Ringzone as a Campus’.

**Ringzone as a campus**
In its function as the urban distribution road, the ring is often the reference point for commuters travelling to the city. Companies advertise with locations close to the ring and base their route directions on it. It seems as if your precise location becomes a bit irrelevant, once it is in the proximity of the Ring.

Let’s take this notion one step further. What if, not only from the perspective of a commuter in a car, but also from a city perspective your position on the Ring is irrelevant. This suggests that distances on the Ring become negligible. Moving on the Ring, from Sloterdijk to Zuid or from Science Park to Schinkel – distance is not an issue anymore.

If this would be the reality, Ring Culture can be like a campus, but on a city scale. On a campus institutions and businesses are located in close proximity of one another in an attractive environment, in order to enable cooperation and innovation.

Ring Culture can offer the perfect combination of proximity and accessibility. Easy to go there and even more easy to move around within it. With distance out of the equation, professional collaboration in the whole area can be taken to the next level. Holding office at the World Fashion Center, being able to have multiple appointments on one day on the Zuidas, Sloterdijk and Science Park.

Another aspect of a campus is the mix of functions. Modern campuses are not only a collection of academic buildings, but also offer housing, retail facilities and office areas.

This happens because mixing all these functions has already proven to be a key factor to success. The city center is a good example of an environment that has facilities in business, retail, academia, culture and housing. Also in other places in the city we find this successful interaction environments, just as the old city waterfront at the IJ, the combination of RAI and Zuidas, the Museum quarter, Roeterseiland, Science Park, etc.

Imagine Ring Culture as an area that contains several of these interaction environments, just as the old city within the ring road. With one big difference: moving through the Ring Culture is effortless and fast, whereas moving through the city center is becoming more and more a stressful and time consuming task. Remember that this was one of the major reasons that the Zuidas developed in the course of the 1990s: lack of fast connections to office locations in the city center.

You could say that all the areas within the Ring Culture are virtually connected by the infrastructure within the area. One large campus, tying together a large part of the city’s economic activity.

The programme of a campus is already there: hospitals, the two universities, established and emerging office locations. Also infrastructure is present: the A10 and the rail and metro. However, fast connections are not self-evident yet: travelling the ring by bike is an impossible task with missing links and unclear routing. Also the train and metro stations (especially at the west and eastern city districts) only function as a transfer, not as a destination – an opportunity that has to be taken. The advantage is that we can create this accessibility and negligence of specific place very easily, because of the already present infrastructure.

4 THEMES
Multiway

This idea comes mainly from observations that I made during the fieldwork, but it also occurred again within the post-it sessions. In the image below you can see that there is still a big difference in travel routes and time within the ring road itself. Public transport, cyclists, pedestrians and cars are not bundled, but separated. I found that it is actually quite complicated to travel parallel to the ring as a pedestrian, you are forced to ‘zigzag’ around the highway, or otherwise you have a route quite far away from it. The fast connections in the ring direction are only for cars and metro in the west and south side, and on the east only for the car – a metro or tram connection in the ring direction is lacking.

The idea of the multiway is to enable all modalities to travel easily in the same direction of the current A10. In some places this means adding modalities to the ring, in other places creating an extra route a bit further away.

Kleine Stelling

A lot of ideas showed the implementation of new green routes in the area. There are some parks in the area, but they are not logically connected. Also follows from the structure vision of Amsterdam that green connections to the landscape are not as good as they could be.

From the comparison of the Ring to the former defense works of Amsterdam, a new concept popped into mind: why can’t the Ringzone function as a smaller version of the current Stelling van Amsterdam? The idea behind that is a route of recreational networks, connecting all the old defense works of the Stelling van Amsterdam. In this theme green connections are used to also make the Ringzone a more pleasant place to stay and keeping the exits to the landscape open for all inhabitants of Amsterdam.

These themes are no strict frameworks for the development model, but they guided me through the process. Elements of it can be recognized in the different elaborations on the model.
In the collection of ideas I also saw that they could be categorized by following the structural principle of the idea: does it either emphasise the ring, or does it strengthen cross connections. For the P3 I distilled the principles into two stories, the one of the ‘Dwarsverband’ and the one of the ‘Ringgraat’.

**DWAR**

The first story is about fixing the city in and outside of the ring: “Making Amsterdam whole again”. In this story the ring road is seen as a barrier, a weakness, something that needs to be as small and discrete. That means that the area itself is rather irrelevant, the goal is to add the areas to existing urban areas: so extending the inner city to the outside, or the outside to the inside (principles ‘merge’ and ‘blend’). The same applies to the green wedges of the city – they need to be lead further into the city.

With this story we can address some key short and long-term projects. On the short term, so without major spatial interventions, crossings and underpasses can be improved. For the long term, either the ring road can become a very efficient, slim road, or the city can decide to organise the traffic system differently; creating long radial streets that connect directly to the A9 – the barrier of the ring will then be permanently dismantled.

**RING**

The second story is the opposite of the first: it is a celebration of the ring road. It becomes a centrality in the city and a destination, rather than a transit zone. Design principles that support this story are ‘adding extra lines’, closely related to the theme of the Multitway, and making ‘entrances on the road’ to give a reason to stop along the road.

The key projects on the short term focus on the public image of the ring. Before making large spatial interventions, organising the Amsterdam Marathon on the Ring instead of along the Amstel shows the new approach towards the Ring. On the long term, traffic routes need to be added to the ring, so logical tangent routes arise. The ring road will become even wider: a broad, central tangential boulevard through the city.

**Integration?**

The conclusion after the exercise of creating two extremes was that the challenge was to create a design that can do both: fixing broken connections, but also creating a strong ring road that functions as a centrality in the urban development. To determine how this could be done, I analysed the different parts of the ring according to how suitable they are to either do a ‘dwarverband’ or a ‘ringgraat’. This process is explained in the next section, ‘translation to location’. 
The goal for this project is to draw a development model for the areas around the Ring A10. This model shows one possibility to develop it. From the previous chapter I arrived at two extremes and my goal is to make the development model a balanced integration of the two stories, with respect to the local characters of the area.

To do this, we need a clear translation of the guidelines and two stories to the local character of the areas on the ring. This is the step between guidelines and development model, as described in the methodology diagram. It is about translating these tools to specific locations on the ring, in other words: “what goes where?” This results in a map in which for each location is evaluated whether the Ring or Dwars design principles apply best (and to what extent). This is the %-map.

To perform this exercise, I need a good subdivision of the area. The requirement of this subdivision is that each area has a clear, distinct local character. The assessment of which principle to apply I base on the local character of the area.

So the translation to location takes place in three steps: 1. How to define subdivisions of the Ring? 2. What is the local character of the subs? 3. Assessment of applicability of Ring or Dwars (%) on all subs 4. Conclusion and base for the development model

How to define subdivisions of the Ring?
Subdivisions can be made in infinite ways. In my literature research I came across two ways,

1. Rijkswaterstaat uses 4 compass points to divide the ring. They label the northern part as ‘land- schappelijk’, the east as ‘bedrijvig’, the south as ‘hoogstedelijk’ and the west ‘intersects neighbourhood’.

The division of Rijkswaterstaat is a good starting point, but not precise enough. For example, assessing the east as a whole as ‘bedrijvig’ is not even correct, considering the exits in Watergraafsmeer, those have a more residential character.

2. The book ‘Ring A10’ has divided it in 8 ‘walks’ and per walk they describe the present situation and projects done on the area. Also it features a photo reportage that uses the hectometre posts as structuring principle.

Here the structuring principle for the subdivision is a practical one: walkable distances and accessible start and end points to do the walk.

For me the structuring principle should be the distinction in spatial, local character and relation to the road. Each area should show coherence in these three topics. This is a different perspective than the two divisions mentioned above, so I needed my own research.

From this research (some examples shown on the right page) I concluded with a subdivision of 12 areas. In the next section the areas are described and assessed whether a ‘ring’ or a ‘dwars’ strategy would suit best.
Different local characters

Subdivision in 12 areas
The division is made based on the local characteristics of the area, in terms of 1) spatial coherence and demarcation and 2) relation to the highway. After that follows the assessment of whether to apply ‘ring’ or ‘dwars’ strategies.

Sloterdijk
1) The Haarlemmerdijkvaart is the southern border, the A10 the northern. The area is mainly office space and some hotels. The station of Sloterdijk is the center of the area. 2) In this area there are a lot of fly-overs of both rail and road. The buildings are not very closely located to the road.
50% Ring 50% Dwars. The conflict with the road is very little now and the fly-over constructions are not very suitable to add other traffic to and the centrality can better be focussed to the station. No emphasis needed in either direction.

Bos en Lommer
1) Until the Erasmusgracht. Spatial unity is clear because the street patterns continue in a similar fashion, regardless of the highway (the neighbourhood was there before the A10 and cut through by it). The Poortgebouw at Bos en Lommerweg is an attempt to connect the two areas again. 2) Very close, maybe too close (the Max Havelaar flats).
0% Ring 100% Dwars. The difference in scale of the old Kolenkit is not very suitable along a boulevard. The Poortgebouw is a good example of how the city can be pulled over the highway and gives the area emphasis in the ‘dwars’ direction.

Einsteinweg
1) While driving the spatial coherence is understandable as the places between the roundabouts. Also the area along it seems a bit ‘left over’, not part of a neighbourhood like Bos en Lommer. Also all three roundabouts/exits have a metrostation next to it. 2) The road is on a slope here, but not as high as at Sloterdijk. There is space in the verge for new development.
100% Ring 0% Dwars. This is the best place to start development from the centrality of the A10. Because of the roundabouts the road can be easily attached to the local network and the slopes can become sidewalks and entrances.

A4
1) The area between joint Nieuwe Meer and the passage of the Ringvaart towards Schiphol. Land use in the area is mainly grass land, allotment gardens and sports fields, the ‘friends’ of the highway. 2) Two lanes, one on each side of the train track. Very dominant in the area.
75% Ring 25% Dwars. The corridor has potential as an urban axis. The connection of Amsterdam to Schiphol can be much stronger and this development should go along this infrastructure axis.
**knooppunt Nieuwe Meer**

1) The areas around the joint of A10 west-zuid and A4 towards Schiphol, including the Schinkelbridge. The area is dominated by infrastructure and therefore badly accessible. 2) The highway dictates, the surroundings follow. The highway marks the division between city and green wedge Amsterdamse Bos/Nieuwe Meer.

0% Ring 100% Dwars. Here connecting the city and the landscape has more potential than creating a centrality on the highway.

**exit VU & exit RAI**

1) Because of the hierarchy in the southern part with Zuidas as the center, I describe here in one section both exits flanking the Zuidas. They are connected to large public buildings: the VU hospital and the RAI congress center. 2) A lot of traffic on these exits. Underpasses are clear, but ugly.

50% Ring 50% Dwars. The highway needs its height here, because of the bridges next to it. Because of the planned Zuidasdock on the other side, creating centrality on the road is not a very good idea.

**Zuid(as)**

1) It is a clear sub center in the city. The Zuidasdock shows the edges of the area. 2) The highway will go underground here.

25% Ring 75% Dwars. The emphasis will be to connect the Zuidas to the city on both sides. The train remains a strong line in the ring direction, could be used also for new slow traffic routes.

**knooppunt Amstel**

1) The green area around it determines this area. The Amstelbridge is a central element. 2) The highway is high here, because of the bridge. The joint takes up a lot of space (comparable size to the Zuidas).

0% Ring 100% Dwars. Emphasis the Amstel and connected recreational routes, not the highway.
A2
1) The area between A2 and railway. Now used for business park and allotment gardens. 2) The highway separates the Amstelscheg and the built-up environment.

75% Ring 25% Dwars. The ring direction (in this case along the A2) is strong in terms of highway and train, but there is no good street network in the area to connect it to the city. Also in the ‘dwars’ directions some connections should be made, but they can be lower in hierarchy.

Amstelkwartier
1) The area within the triangle of metrostation Overamstel, Sparklerweg and Van der Madeweg. This part of the business park Amstel will be transformed to a mixed use area. 2) Not very dominant. It runs through the business park, but the focus of residential development will be north of it (not next to it).

50% Ring 50% Dwars. The highway runs more along than through the area, so development should be centered more around the cores: the metro stations.

Oost
1) The ‘islands’ or spatial unities of Watergraafsmeer, Diemen and Duivendrecht. The spatial configuration of the highway is like a snake finding its way through the existing neighbourhoods. 2) The direct surroundings are green strips, empty spaces between the neighbourhoods. Also, the highway is very high here compared to the houses (height difference Betondorp-A10 is almost 10 meter).

25% Ring 75% Dwars. The road and surroundings are not very suitable for a central function of the road. Connecting an ongoing urban fabric from Watergraafsmeer to Zuid-Oost is more important here.

IJ
1) The collection of Science Park and Zeeburg, the land in the water. Separated from Watergraafsmeer by the train lines inbetween. 2) The highway is high above the ground and water.

25% Ring 75% Dwars. There are apart from the highway no ring direction connections here, so an addition would help. However also here the highway shouldn’t be the center of this new connection.

With the assessment of ability of the 12 areas to either have design interventions that emphasis the ring or its crossings, there is a pattern emerging. The areas around the joints coincide with the green wedges of the city and also the large claim that the infrastructure puts on the space here is not easily transformable into a street or a boulevard. The conclusion is that in these areas, around the joints, the city and highway are better to be separated. Integration is no always a good thing, sometimes space for infrastructure to change directions (what happens at the joints) is necessary.

At the locations of the circles, the traffic changes direction. These spots are less suitable for the realisation of urban environments.

Conclusion spatial translation

With the assessment of ability of the 12 areas to either have design interventions that emphasis the ring or its crossings, there is a patter emerging. The areas around the joints coincide with the green wedges of the city and also the large claim that the infrastructure puts on the space here is not easily transformable into a street or a boulevard. The conclusion is that in these areas, around the joints, the city and highway are better to be separated. Integration is no always a good thing, sometimes space for infrastructure to change directions (what happens at the joints) is necessary.

Compare to sound frequencies ‘buiken’ en ‘knoepen’. In the buiken the waves are apart (city apart from highway) and in the knoop they meet each other (city+highway make a new urban environment).

Relating this to the structure vision and the 4 movements can also give an explanation for these differences. The Zuidasdok is a clear result of trying to balance the extension of the city center, but at the same time facilitating the economic corridor of the Zuidoost.

On the east side the approach will be less focused on the highway itself because of the height differences and characteristics of the neighbourhoods, but still emphasis of the ring direction can add to the area.

So in all places the approach should be altered to the local conditions. From the post-it sessions I choose several design principles that have the most potential for the different areas along the ring. In the next section the chosen design principles are shown, linked to their emphasis of ‘ring’ or ‘dwars’, formulating the starting points for the development model.

At the locations of the circles, the traffic changes direction. These spots are less suitable for the realisation of urban environments.
**6x design principles**

### Extra lines
Adding extra lines to the ring emphasises it as a route in the city also for other modalities. Extra routes mean more activity on the street, that helps to make the area a central place. Comparable to radial city streets that have car, bycicles, tram and pedestrian zones next to each other.

Einsteinweg

### ‘DNA’ or ladder structure
Adding extra lines are not always in place as shown in the previous section. Although in most of the areas extra connections in the parallel direction would be good. These are a bit further away from the road, creating the image of a ladder with space for development in-between. By doing so you emphasise the coherence of the ring direction, without using the highway itself.

A4, A2, Oost

### New sub centers
Strengthening local nodes as destinations, instead of relying on connections to the city center. The attention of the city needs to be drawn into the direction of the ring.

Einsteinweg, Amstelkwartier, Zuid(as)

### Stitching
Filling the area with new urban fabric. Quite obvious one, but very important for all other design principles.

Applicable in all areas, except of A2 and A4 - there the new urban fabric will be more stand alone areas, not stitching existing fabric together again.

### Merge
Continuing characteristics of neighbouring areas into or outside of the ring. Can be as a green extension or a neighbourhood extension.

Applies to Bos en Lommer and Zuid(as) for a merge of the urban fabric and to the knooppunten Amstel en Nieuwe Meer for green extension of the wedges into the city.

### Rhythm
Similar to ‘Merge’, but focuses not on patches of green or urban areas, but in the accentuating of corridors. In some parts green corridors can be better defined (for instance the waterways) to make ‘dwars’ connections, and in other places active and dense urban fabric along the street suits better.

Applies to the whole Ringzone. Make stronger what’s already strong.
With the design principles and themes in mind, I started sketching on the development model. Here are some sketches that show the first steps in the translation of the themes and principles on the map.

1. Sketch from P2. More an inventarisation of the different characteristic (precedent of the 12 areas).

2. In this sketch the shape of the area has changed into the ‘H’ shape with the A1 and A2 included. Here I discovered the value of the porximity of the green wedges.
3. This more detailed sketch shows in red some interesting places that could develop as public transport hubs. Also the green network is investigated: these are now green loops in the parks and wedges. There is development around the roundabouts in West and a ladder-construction in east, in which the A10 gets a green character, and a street parallel through Watergraafsmeer emerges.

4. This sketch is a more abstract and massing based investigation. The base for the patterns of urbanisation are the underlying polder grids or long lines in the urban infrastructure. Urban development concentrates in the areas appointed by the Koors 2025.
DEVELOPMENT MODEL

An overview of the proposed strategic interventions for the development of the Ringzone

Content of this chapter
1. The Edge
2. The Grid Map
3. Making Ring Culture
Input for the model

This is the core of the final design product. It is a map of the Ringzone, in which the spatial interventions in structure and the location of programme will be shown. It doesn’t show a development path, but a development potential: what can be done in the locations of the Ringzone.

Input for the model is a combination of all the previous research. Below an overview of the main points of input.

- **Vision**: From the vision: taking the A10 out of the national highway network creates space for new ways of ‘Ring Street Culture’. This happens within the frame of the growth of the city in this area.

- **Themes**: From the post-it process I took the four themes and six guidelines as a starting point for the model.

- **Selected guidelines**: The goal of the development model is to show how all these ideas come together on the map. This is the strategy for the development of the Ringzone.

The exact Edge

To make the model I need a clear plan area. A little recap of the research on the Ringzone explains why I draw the borders of the area this way.

The main factor that determines whether there is Ring Culture, is the degree of connection with infrastructure. Ring Culture is formed by highly accessible environment of highway exits, metro and train stations. The area within a radius of 400 meters of railway and 250 meters to metro stations falls at least within the Ring Culture. This principle defines the boundary of the west side and the south east side.

**Based on infrastructure**

The Ring Culture is further determined by the relationship of the area with the other parts of the city. Atlas Amsterdam (1995) refers to interfaces between demarcated, ruimtelijke units, such as the canals, the belt ‘20 -’40 and the post-war expansions are. These interfaces are the transition zones between different parts of the city where many urban functions are housed that do not fit elsewhere. The process in which this placed to be that since the birth of the city less desirable or bulky functions still were relegated to the outskirts of cities. For the Singel canal had this feature for the post-war city, this is the zone around the A10.

**Based on urban logic (history)**

A more detailed observation of the border on the center side of the ring is from Jos Gadet (2011): “According to many, the mixed city is bordered by the A10 and the metro ring. This infrastructure bundle could also be the cause of the major socio-economic differences between the mixed pre-war and post-war city characterized by segregation. I think the cause is much earlier in the abrupt transition between the pre-war and postwar parts of Amsterdam.” These are the so-called ‘180-degree moments’: where the character...
of the framed street turns into a street through a free field with buildings. On the south side the end of the belt ‘20 -’40 and the beginning of Buitenveldert indicate the borders. Here the transition is less abrupt, due to the Plan Zuid which strongly orientated at the station.

On the west side can we see the 180-degree moments, especially if we look towards the side of the center. On the center side in Oost runs the border Hugo de Vries Avenue. This is indicative as it is on the east side of a general decrease in density which is not clearly visible in the plan, but spatially noticeable. In the pictures are some impressions of the low density low building height and building a complete stop from the Kruislaan and along the Weespertrikstraat.

Furthermore, the villages of Duivenrecht and Diemen are excluded from this study area, as well as the old Sloterpark. This choice is debatable since the old villages, despite their historical origins, but their ‘accidental’ central position within the contemporary city, just might be part of the Ring Culture. However, because of the spatial and functional differences (the villages are already residential and also do not have the emptiness that characterizes the rest of the transition zones) I didn’t include them in the research.
As an inspiration for the new block size in the Ringzone, I looked at cities that have large boulevards to see what block size goes well together with a large central street. In Barcelona the orderly grid by Cerda, approximately 113 m wide can be found along the Passeig de Gracia. In Buenos Aires along the Avenida 9 de Julio also this size appears. The Parisian Champs-Elysees is accompanied by less regular, but also large block sizes (>100 m) that again have smaller inner courtyards.

Another starting point was the block size of other new developments in the city. These blocks also have larger block sizes, with inner private spaces.

Taking these notions with me, I decided to start working with a 100 x 100 m grid size, as a neutral starting point for the new urban fabric.
The experiment with the 100x100 grid starts simple: just filling the area as a whole with the grid (1). Obviously not all of the Ringzone will be built-up area, so water and highway and railway infrastructure are cut out (2).

Also large existing city parks (Flevopark, Rembranderpark, Beatrixpark and Amstelpark) are retained. I didn’t take out the green areas at Nieuwe Meer and Amstel, because I want to investigate if housing can be realized there (3).

Next is the assessment of the current buildings. The buildings already drawn in the Koers 2025 plans are red; these I’ll integrate in my grid. In white the buildings that are part of the Koers 2025, but that don’t have specified plans yet: here I will apply my grid. The last category is the orange. These are existing buildings that are not under discussion for removal. The result is a decrease of my grid of about 50% (4).

The last step to come to a basic grid is cutting out the existing street structure that I preserve: the radial city streets, also known as the s-roads that connect city and ring road (5).

The image that occurs after performing these steps, gives an impression of how densification could look like on city scale. In my opinion, the grid melts together the pre and post war city and I found out after showing it to some people, they didn’t even notice that I added such a large amount of new urban fabric to the city. Comparing it to the visionary image of the municipality, this maps shows in more detail how this new city district relates to the existing urban fabric.
Making Ring Culture

The exercise of putting the grid into the Ringzone area shows the potential of urban development here. Obviously it is not possible to simple realise this development from one day to another; it is a process of years, even decades to create the conditions to transform the highway and add essential public transport and other infrastructure in the area.

In the next pages these necessary measures are described. In order to create some clarity at hand, the measures can be divided in several layers:

1. Green networks. The addition of a large number of extra housing needs a corresponding green-blue network as a base. The green network of the Ringzone can form altogether a green corridor through the city, connecting the green wedges - replacing the ring road connecting highways.

2. Highway reform. The road will have a new position and therefore new configuration. The approach is different in sections of the ring road. The 5 interventions are described here and these interventions are further elaborated in the Key Projects.

3. Public transport. The core of the interventions here are to compensate the decrease of car traffic. The line Schiphol-Zuid-Science Park-IJburg will form a new corridor, providing an alternative for traffic on the A4 and A10 Oost.

Adding up all the interventions and testing these on the grid map, results in a final map of the Ringzone on the next page.
Green networks

In the Structure Vision (2013) the municipality states that the connection of city and landscape can be improved. In the Ringzone, the connection between the different green wedges can be made (green lines). This will also connect the different parks, creating a green network in the direction of the ring.

New urban parks will be created on the so-called ‘kuppen van de scheggen’, the parts of the wedges that touch the city. This happens around the highway nodes and bridges of Nieuwe Meer and Amstel. Here the green routes will be accentuated and connected to make recreational routes so a ‘rondje park’ can be made.

Effects

Creating this green network in the Ringzone, will have two positive effects. First, it creates much more possibilities to create bigger recreational routes through the city. Instead of only a ‘rondje Sloterplas’ you can, through the new routes, combine Sloterplas, Rembrandtpark and Vondelpark in one well connected, green atmosphere. Or combine the two new urban parks on a cycling trip: around Nieuwe Meer, along the cycling path at the Zuidas (see image below) and Amstelpark.

Second, the ecological main network of Amsterdam largely coincides with the ring road. By strengthening green connections in the ring direction, the ecological network becomes better.

Necessary measures

However, the transformation of Nieuwe Meer and Amstel will have consequences for the allotment gardens at Nieuwe Meer and Amstel (red square in the map). Allotment gardens are part of the green network of the city, but in their current form they don’t allow free access so it can’t be used. With the realisation of the new parks, the allotment gardens need to be relocated: solutions can be to either integrate them in the new urban grid (comparable to Laan van Spartaan), in smaller portions spread out over the new park, relocate them further away from the city or intensify the existing allotment gardens (smaller plots).

Example of how cycling routes can be attached to large train infrastructure. This is a proposal for the Zuidasdok cycling routes (artist impression CID/Cees van Giessen)

Ecological main structure with missing links (gemeente Amsterdam)

Design for Laan van Spartaan, with integrated sportfields. A similar approach could work for integrating allotment gardens. (laanvanspartaan.nl)
Allotment gardens have to be relocated or integrated.

Boulevard

The intervention: The current highway transforms into an urban boulevard. This means lowering speed limits and allowing other modalities on the highway.

This strategy will be applied to the A10 West. The road will be part of the local network in the area.

Highway reform

The highway as it is today does not fit the urban development of Ring Culture. In Ring Culture the highway should be supportive to the urban fabric, not causing barriers and nuisance.

Five new configurations

Based on the different characteristics of the different areas along the ring, I propose five types of interventions. Some are alterations of the current network, others are additions to it.
through the roundabouts: Jan van Galenstraat, Lelylaan and Sneevlietweg. Entrances of the buildings will be on the boulevard, contrary to the current situation, where the buildings connect to the parallel streets of the A10.

Why here? This is the area where the most new developments are taking place and where the buildings are the closest to the road. Lowering speed and creating a boulevard will be the easiest and the most rewarding for the surroundings.

One of the key projects, 'Einsteinweg', is an elaboration on this intervention, showing the details of the intervention and the spatial quality.

**Multiway**

The intervention: Adding cycling connections to the road (bridges). The bridges over the Schinkel and Amstel are now only used for car and train/metro traffic, cyclists have to find another way over the water. To better connect the King Culture as a whole, I propose to make the bridges multimodal.

Why here? Creating a logical route to the Zuidas from the west and east side of the city. Also, the bridges offer a great view over the Nieuwe Meer and Amstel, but cyclists or pedestrians can never join. By adding these bridges for slow traffic, the bridges can become nice places to enjoy the view.*

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* This is a conceptual design. In the period between P4 and P5 I did some further research on the southern A10, resulting in a different final design, see chapter Key Projects.

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**Road splitting**

The intervention: On the south and south west side of the ‘H’ the driving directions are split: the train is in the middle. This configuration is effective in terms of spatial claim (bundling) but creates problems when the railway needs expansion. Also, this configuration makes it difficult to create stops and stations on the route. Relocating one of the driving directions further away from the railway and allowing traffic in two directions on the new road creates space on the former location of the road. I propose this intervention for the A4 between knooppunt Badhoevedorp and Nieuwe Meer.

Why here? I spend some time designing for knooppunt Nieuwe Meer (see Evaluation) and there I discovered that the bundling of the infrastructure in the area (the two directions of the A4 and the train line in-between) makes it complicated to create new urban fabric that is connected to the rest of the city. Therefore you need connections to both road and train and in the current bundling that is not possible. By relocating the roads further away from the train line, the train can be made accessible – and stations can be built. The roads take care of the car access of the area and together the conditions for urban development are created.

One of the key projects, 'Station Nieuwe Meer', is an elaboration on this intervention, showing the details of the intervention and the spatial quality.

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**Tunnel dok**

The intervention: Putting the majority of the traffic underground. This is the solution applied at the Zuidas, to reduce nuisance of the road, securing traffic flows by adding extra lanes in the tunnel and making station Zuid better accessible.

Why here? The Zuidas has become the biggest office district of Amsterdam, currently flourishing. However the public space around the offices is of relatively low quality, because the highway is a heavy barrier in the area. Removing it makes the area also better permeable for slow traffic.
Impact on travel times

In all five new configurations the maximum speed will be reduced. Currently the maximum speed on the A10 West is 80 km/h and 100 km/h on the other parts of the A10 and the connecting A4 and A2.

To get grip on the impact on the travel times make calculations easy I use for the current situation a general speed for all roads of 90 km/h. In my proposal the A10 West is downgraded to 50 km/h and the other parts to 70 km/h. The speed of 50 km/h is currently used for all inner city roads and 70 km/h is the current maximum speed on the Gooiseweg.

Within Amsterdam

Lets take the following situation: a trip from Guuzenveld to Zuid-Oost. It takes now, without traffic jams, 19 minutes to make the trip (note also the alternative via A10 Noord, only 5 minutes extra). From the 19 minutes and 17 km you spend 7 minutes and 11 km on the A10. With a lower speed (average 60 instead of 90) you spend 11 minutes on the A10. To the total trip time 4 minutes are added, making it 23 instead of 19.

Along Amsterdam

In the new situation, the inner ring is not meant for transit traffic anymore. This is however not a very ‘new’ situation, whereas route planners now already guide you around the city using A9 and A10 Noord. Lowering the speed limit on the inner ring, will even make travel times differences even larger, motivating drivers to ‘go the extra mile’ on the A9 to prevent the new ‘slow’ ring route through the city.

I am aware of the fact that lowering the speed limit is not the only measure that needs to be taken to prevent over crowded roads. Congestion tax might be a good starting point to further reduce this traffic.

Impact on road capacity

All the five configurations with their reduced speed limits are done in order to create a more suitable context for urban development. Of course less traffic is part of this movement.

However, the fast conclusion that lower speed means less capacity is not entirely true. From the research of ‘Langzame Stad’ appears that driving slower can even mean more capacity: less risks on traffic jams, a more fluent flow of traffic. Also, when driving slower, you can stay closer to the other cars - imagine the gain when automated driving is the new normal. “Slimming” down the road (which is done in Boulevard and Road Splitting, see Key Projects) will therefore not necessarily reduce the capacity too much.

Last but not least, in my strategy and vision capacity should not only be based on ‘car capacity’: from cars per hour to people per hour: in the equation the added public transport and cycling routes should be considered with it.

Maintaining the Ring as a fast way through the city

It must be said that besides that I change the configuration of the highway, the Ring should still be the fastest way through the city. Otherwise the local network will suffer from it.

I secure this by:

1. Not adding extra exits: the developments along the boulevard will be accessed by service roads that are connected to the local network at the roundabouts on the Ring West (see Key Project)
2. Maintaining a minimum of 2 driving lanes in each direction
Public transport reform

The reform of the highway obviously goes together with a reduction of capacity of the roads. I propose to solve the limitation of car accessibility with investments in the public transport network. This combination of car and metro system already is in place in the west and south part of the ring A10: here the metro line 50 is runs along the A10.

This construction of ‘ladders’ I already used to strengthen the Ringzone in terms of street network. I propose a similar approach to additions in public transport network: creating different options to travel in a certain direction.

Additions on the tram and metro network

In 2017 the Noord-Zuidlijn will be finished. This has a large influence on the system of metro and tram in the city. In the image below the new network is shown. The concept that the GVB uses for the new network fits nicely in my vision to put more emphasis on the ring structures in the city. The Noord-Zuidlijn will function as a backbone through the city, creating transit points to trams in perpendicular (ring) direction, for instance on along Singelgracht, Ceintuurbaan and of course the metroline 50.

1. Oostlijn

However what is lacking is a connection in the ring directions towards the east. In my grid map the southern part of the Watergraafsmeerpad is also appointed for urban development. This area is now hardly connected by public transport, only by the tram along the Middenweg, but that will only bring you to the central station. I propose a connection along the Kruislaan (the ladder added to the Ring A10), in the form of a new tramline. This line will connect the Sparklerweg to Zeeburg and IJburg, through Science Park. This improves accessibility of the area and can give a good alternative for people travelling from Zeeburg or IJburg towards Amstel or to Zuid.

2. Connection to Schiphol

Another essential public transport connection is a metro line to Schiphol. This has been proposed several times throughout the last decade, but never realised. In my plan this connection is essential for the accessibility of the urban development along the A4. With the ‘two roads’ intervention, the train track becomes approachable. Along the line to Schiphol, several stations can be added and facilitate urban development – the perfect office location between Schiphol and Zuidas, next to the new urban park Nieuwe Meer (see key project ‘Station Nieuwe Meer’).

3. Circuit Einsteinweg

The highway reform on the A10 West will be the change to an urban boulevard (further elaborated on in the key project ‘Einsteinweg’). The transition of the A10 can go along with creating test lanes for automatic vehicles. Connecting to the new metro line to Schiphol, this offers an alternative route into the city, next to the train and the Noord-Zuidlijn. It
also improves connectivity of station Lelylaan. With the boulevard and the increased density in the Ringspoorzone (between train and A10) the area has the potential to develop subcenters around between the roundabouts connecting to the Einsteinweg and the metrostations on the Jan van Galenstraat, Lelylaan and Sneevlietweg. An extra public transport facility along the new boulevard that connects to the existing tram network and maybe all the way to Sloterdijk and Vondelpark/Museumplein adds to the potential of the area.

Missing links
With these new routes, almost all parts of the ring are covered by at least two public transport options. However, there are still two weak links that could give a boost to connectivity in the Ringzone:

1. **The Zuidwestboog.** Trains can’t drive the same route as metro line 50. Building the Zuidwestboog at knooppunt Nieuwe Meer can make this possible.

2. **Closing the Ringlijn.** Often spoken of by the municipality. This is a metroconnection between Sloterdijk and Centraal. This would give the possibility to create a real ring line passing Sloterdijk, Centraal, Amstel, Zuid, Lelylaan and back to Sloterdijk.

**P+R 2.0 IN**
The municipality of Amsterdam is now using the Ring A10 as a transfer point for people entering the city. You have attractive options to park your car at RAI, Olympisch Stadion or Bos en Lommer.

However, in the concept where all highways on the ‘H’ are being changed, letting people drive all the way into the city along the Zuidas, seems in my model a strange practice. With the metro line to Schiphol added to the network, we can build both this line and the line to Gaasperplas as transfers to go to the city from P+R locations on the A9. The P+R’s at Sloterdijk and Zeeburg can keep their function as arrival P+R and Noord can be added with the completion of the Noord-Zuidlijn.

**CAR SHARE**
The trend in Amsterdam is that not everybody wants to own a car anymore. Parking places in the city are expensive and hard to find. However, sometimes a car can be convenient if you want to visit your grandmother on the countryside. The spots on the ring road can be perfect locations for this, reachable from all sides of the city within a cycle-able distance and excellent public transport accessibility. Using this location as car share locations would be a good option.
The combination of the approaches to the highway infrastructure and the public transport reform changes the network structure of the city. By changing the A10 West into a boulevard, adding slow traffic to the bridges and create a ladder structure along the A10 Oost, an on-going tangent route appears in the Ringzone area. It runs from the centers along the new Einsteinweg (former A10 West), via the multimodal Schinkelbridge, over the improved cycling connections around the Zuidas, to the multimodal Rozenoordbridge onto the new parallel street of the A10 Oost: the Verlengde Kruislaan. Interesting fact: these three axes are all historic references:

1. The Einsteinweg that I designed shows similar appearances as the boulevard that Van Eesteren envisioned, before they decided to make the A10 here.
2. The cycling connections along the Zuidas refer to the former ‘zuidelijke wandelweg’. This used to be a recreational zone outside of the 19th century city.
3. The Kruislaan is the heart of the Watergraafsmeer polder. All polders have two perpendicular main streets, here Kruislaan and Middenweg. The ‘natural’ urbanisation of a polder usually takes place along these axes, however in the Watergraafsmeer the Kruislaan has never developed itself as an active street.

The route is also connected with public transport routes, opposite to the current situation where only the car has this privilege. This ring route could develop itself, with all these additions, into a new important urban corridor in the city.

A larger network of ring and radials
The development of the Ring Route as an urban corridor combines well with the vision of Tijs van den Boomen to rearrange the names of radial streets in the city. Originally most radial streets are old connections between different towns and given the name of the town where it leads to: the Utrechtsestraat, Haarlemmerdijk, Hoofddorpsweg etc. This clarity is no longer present today; van den Boomen found that all these streets have sometimes more than 5 different names. He pleads for the renaming of these streets with one name.

Together with van den Boomen’s radials, my on-going Ring Route could form a larger network of ring and radials, comparable to the Singelgracht/Ceintuurbaan and the same radial streets (see image). Besides clarity this vision teaches us something more. It is similar to the renaming of the combination A9-A5-A10 Noord-A1 the ‘A11’ a way to stretch the city and the minds of its inhabitants. In the situation of the overcrowded city center, the renaming is obviously not the solution, but if renaming implies also further growth of the city all the way to and over the ring, it is one step in the right direction.

Adding a central axis through the city: 1. Boulevard Einsteinweg, 2. Improved cycling connections Zuidas, 3. Verlengde Kruislaan

Ring Route
Grid reform & program

The highway and public transport reform influence the orientation on the grid. In the first grid map, the grid was everywhere in the north-south direction and no differences in size. According to the highway and public transport reform I changed these two parameters.

Orientation of the grid
I rotated the grids towards the central element in the areas: the ring road or the new ring route (Verlengde Kruislaan, Oude en Nieuwe Haagweg).

Size of the grid
The boulevard and ladder streets are accentuated by adding a linear grid along it, emphasising the ring direction. The areas close to public transport connections have a large grid size. The other areas have a smaller grid size.

Program
In the map below a general division of functions is shown. The program is based on the proximity to public transport connections: there extra public functions and retail are added. The werk-woon environments are based on the current land use in the areas.
Estimated development potential

Alltogether, this final grid map is a combination of the Koers 2025 areas further defined and the addition of several extra areas that come up in my vision. The largest added areas are:
1. Along the A10 West
2. The area around the A4 Nieuwe Meer
3. Along the new corridor along the Oostlijn

These areas correspond with the three defined grid types, respectively the linear grid, the large grid and the small grid. To get an idea of how much extra housing units could be added here, I looked at three areas that can be seen as an example for the defined grid sizes: the project of UNStudio/Goudappel Cof Feng for the research of Stad en Snelweg (linear grid), the plan for the development of the Sluisbuurt on Zeeburg (large grid) and the Sportheldenbuurt on Zeeburg (small grid).

The plan of UNStudio for the area around A10 West/Lelylaan is a very dense, highly urban environment. They calculate with building heights of 8-15 floors and 90 m² per apartment: adding 8,400 units to the area. The strip that I drew along the A10 West is about twice as big as their area, resulting in a development potential of 16,000 along the A10 West.

The plan for the Sluisbuurt is used as a reference project for the large grid. The Sluisbuurt works with ‘de nieuwe Amsterdamse dichtheid’.

It has the traditional Amsterdam closed building blocks 5 floors high everywhere with continued facades. What’s new about it is that they add towers of 40-140 m high at certain points, resulting in a density of 5,000 units in the Sluisbuurt. This is a lower density than the linear grid, resulting in 200 units per hectare. In the area around the A4 Nieuwe Meer potentially 140 hectares can be developed. Some of this space will also be used for new networks and infrastructure, but an estimation of 20,000 in this area is possible.

For the area in Oost, I use a lower density reference: the Sportheldenbuurt on Zeeburg. It has 2,500 units resulting in a density of around 100 units per hectare. New potential space along the Kruislaan is 40 ha, adding 4,000 units to the Koers.

For the area in Oost, I use a lower density reference: the Sportheldenbuurt on Zeeburg. It has 2,500 units resulting in a density of around 100 units per hectare. New potential space along the Kruislaan is 40 ha, adding 4,000 units to the Koers.

Result

The Koers 2025 (brown areas in the drawing above) aims for 90,000 units in 2030. The areas discussed before can add 16,000 + 20,000 + 4,000 = 40,000 units more to the current goal of the Koers. The estimations here are of course very rough, but it illustrates the potential of the areas: an increase of 150%.

Current estimation of Koers 2025 numbers (maps.amsterdam.nl)
KEY PROJECTS

Showing the impact of the development model on three specific locations

Content of this chapter
1. Boulevard Einsteinweg
2. Verlengde Kruislaan
3. Station Nieuwe Meer
4. Renewed Rozenoordbridge
Three renewed situations of city meets highway

The key projects are an elaboration on the development model. I chose the locations for the key project because:

1. the projects are three different examples of how changes of the road structure of appearance can create room for urban development (see highway reform).
2. The projects show the local differences of the areas along the ring what that means for the strategy.

1 Boulevard Einsteinweg  
2 Verlengde Kruislaan  
3 Station Nieuwe Meer

Diagrams of the proposed interventions
Current situation

‘Kijk op de ruimtelijke kwaliteit van snelwegen’ describes the characteristics of the Ring West as ‘cutting through neighbourhoods’. The buildings stand close to the highway, because they were there before the road came, because they want to use the advertising possibilities along the road or (the new ones) to function as a sound barrier for the buildings behind it. This is the part of the ring that I appointed to be changed into an urban boulevard. A street allowing multiple modalities and connected to the local street network, instead of separated from it.

Let’s take a look at the current state of the A10 West. I chose a location a bit south of the Lelylaan, at the World Fashion Center (WFC). This complex houses many fashion brands in three towers and underneath there is a main entrance hall and a trade fair hall. Behind the building is a parking garage (two levels). The current entrance of the Fashion center is on the Koningsin Wilhelminaplein. The WFC is a good example of a building showing itself along the highway, but that is only accessible by taking the exit.

A major contrast to the large WFC we find on the other side of the A10. Here lies a strip of family houses, with their backyards at the Westlandgracht. The houses are accessed by a small street next to the A10 sound screens.

Opportunities of the area

When reducing the car traffic and therefore nuisance on the highway the road can have another configuration. The location offers space in the current buffer zone to develop. At the same time, this could be an interesting commercial space for the already existing office buildings along the route, such as the WFC.

Another observation on the A10 West is the lack of cycling connections in the north-south direction. In the picture below you see the route I cycled to get back to station Sloterdijk from the Heemstedestraat: an adventurous route and I lost track of it many times on the way. As one of the themes from the vision, the realisation of a multimodal route, this location offers the best chances for it.
The intervention

In the development model I proposed the transformation of the A10 West from highway into an urban boulevard. This enables buildings like the WFC to have entrances at this boulevard and make it a lively urban axis in the city. The changes that have to be made to the A10 are limiting the maximum speed to around 50 km/h to reduce the sound nuisance and width of the road. The middle part will be for ongoing traffic. This will be separated from the side roads by a strip of large trees. The side roads are different on each side.
On the side of the WFC, it will be a slow road that allows for drop off and cyclists on a shared surface. There will be a larger pedestrian area next to it. Small buildings are added to the WFC, allowing the development of new shops and workspaces, for instance for starting designers to expose their work. The main access of the WFC will also be on this side. The other side road gives access to the new buildings along the Westlandgracht. These will be for mixed use and will have their back side on the waterfront.

The ‘boulevard’ configuration can be adapted on the whole route of the A10 West, using the roundabouts to connect the new service roads to the local street network. The new boulevard can have the atmosphere comparable to the Parisian boulevard (hence the reference in the picture below) and accommodate a large part of the demand for new housing and office spaces in this part of the city.
Current situation

Looking at the eastern part of the city, the landscape structure is rather dominant. Watergraafsmeer is a classical polder, with two main streets running through it: Middenweg and Kruislaan, that are as old as the polder itself. The highway A10 Oost built on the Ringdijk closing of the polder on the south side.

Watergraafsmeer is a part of the city that does not have a very high density. The part of the polder close to the city has a green, residential character, the part close to the highway has a lot of sports fields in it and hardly any built up area.

The character of the A10 Oost is very different of that of the A10 West: it has no buildings very close to it and the area behind the sound screen is most of the time a green area for the neighbourhoods surrounding it. Proposing a likewise strategy that is making the A10 into a boulevard is not really in place here. The green structures are also of quite a good quality and benefit the neighbourhoods.

Opportunities for this area

Whereas the A10 Oost was recently widened due to the large commuter flows from IJburg and Almere, this route can not be made by using public transport. From IJburg or Zeeburg you have to the central station by tram first and transfer to the metro going to Amstel or Zuid station. This doesn’t make the use of public transport very attractive - could be improved.

Another opportunity is to invest in the urbanity of Watergraafsmeer as a whole. The low density of the area doesn’t correspond to today’s demands. Also the green strips along the highway are useful on a daily basis, but don’t function as urban parks.
... Verlengde Kruislaan

The intervention

Because of the analysis of the current characteristics of Watergraafsmeer, I decided to apply the "ladder"-technique here: strengthening the connections in the ring-direction, but don’t use the A10 for it. The Kruislaan has, due to its historic position and as a possible connector of new urban centres in the city, more potential to become an urban axis than the A10 Oost in this case.

The idea is to extend the current Kruislaan all the way to through the Amstelkwartier to connect it to the Ring at the Rozenoordbridge. When realising this, you can cycle in a straight line from Zeeburg, through Science Park, to the Bijlmerbajes all the way to the Zuidas. As mentioned in the development model, this connection will also be made by public transport, creating the on-going ring route for the city. By doing so, the Kruislaan can transform to an active city axis, best comparable to the IJburglaan with retail in the plinth and a tram in the middle.

Potential of the new situation

Urban development in Watergraafsmeer will be connected to the development of the ‘Verlengde Kruislaan’ and the highest density will be along this street. The A10 will remain its green surroundings and with the downgrading of the road it has the potential to develop a green corridor, comparable to the Ringdijk on the north side of Watergraafsmeer. This green corridor connects again two larger green structures, Amstelland and Diemerpark. With less traffic density, on the long term the sound screens can be removed and the area could potentially be a parkway, accessible for cars, but also for recreation. The balance can differ due to time of the week and busyness of traffic.

This project shows that the existing infrastructure of the ring road doesn’t have to be the central point in the development of the Ring Culture: sometimes, when studying closely the urban conditions, other opportunities arise.
Current situation

The A4 connects Schiphol to the Ring A10. It is one of the five entrances to the city by car. Along Nieuwe Meer the A4 is bundled together with the train: the train in the middle and the highway on two sides of it. In the area is not much going on, there are some sport fields of the city district Sloten, some allotment gardens and a small business park: Riekerhaven.

When you drive this part of the A4, you don't have the feeling that you are entering the city. It feels like driving through a peripheral area, the road is surrounded by trees and the only sign of urbanisation is the busi-
ness park.

Also, the infrastructure in the area is very dominant, as shown in the section. There is almost a 200 m wide strip dedicated to both highway and train. Of course this capacity is needed to keep the city accessible, but it also makes the recreational space of Nieuwe Meer badly accessible for the city. Is it know as a gay cruising area, furlher is it hardly utilized.

Opportunities for this area

In other cities, the area between the airport and the city are densely populated, because of the proximity of both international connections of the airport and the facilities of the city. An example of this development is Zurich, where the city stretches out all the way to the airport. This kind of development in Amsterdam has never really started, but can very well be possible.

Continuing the Noord-Zuidlijn to Schiphol is a great opportunity to involve the area around Nieuwe Meer in city development. The areas of Riekerpolder are already on the list for new housing projects, but are not very ambitious in number. A metroline connecting the area might be just the trigger to start this. Fact is, as can be seen in the montage experiment below, the area has the potential comparable in size of Zuidas, station Amstel, Roeterseiland and Oosterdok together.

Also the park ‘Oeverlanden’ at the Nieuwe Meer is big enough to create a park the size of the Vondelpark. Imagine that you can live or work 5 minutes from the airport and the biggest business district of the country, with the Vondelpark as your backyard.
... Station Nieuwe Meer

The intervention

The highway in this situation is preventing the area to develop on a large scale. The infrastructure bundle is too dominant and there is no space for a metro station. Therefore I propose the ‘two roads’ strategy here. In this intervention ‘two roads’ the highway is split into two bidirectional roads. The roads connect again to the A10 at knooppunt Nieuwe Meer.

The space between the train tracks and the relocated road at the position of the Oude Haagseweg creates possible development space in the area, without losing the quality of the park. The new district is developed attached to the new metrostops of the Noord-Zuidlijn.

The central qualities of Nieuwe Meer will be the strong combination between great accessibility to both city and airport and perpendicular to the infrastructure slow traffic streets will connect the stations to the park.

Current situation

Future situation

Current state

Future situation

New situation

1. Metro stop 1
2. Metro stop 2
3. Relocated road (new Oude Haagseweg)
4. Pedestrian/cycle street to the lake shore
5. City beach
6. Further development space (former allotment gardens)
7. Further development space (former sportsfields)
The area will be a mix of offices, retail businesses along the route from the station, as shown in the section. The replaced road will be slightly lower to make the connection to the park easy and smooth. The Nieuwe Meer shores will be transformed into an urban beach.
Potential of the new situation

If you separate the highway and the train, relocating one part of the highway a bit further away from the rails and making them bidirectional, a whole new situation emerges. The railroad becomes accessible and stations can be created, as proposed in the public transport reform in the development model. The new location of the roads is approximately 250 m away from the train. Within these 250 meters, there is space for two urban blocks of around 100x100 and access streets, along 1.5 km of the rail road. The southern road will be on the location of the current Oude Haagseweg and the northern road will be renamed the Nieuwe Haagseweg. The A4 will start only after knooppunt Badhoevedorp.

This gives the opportunity to create new office areas combined with residential program on the side of Nieuwe Meer. The size of potential urban area is huge: from the montage study it easily fits Zuïdas, Roetersseiland, Amstel, Oosterdok and the existing Riekerhaven business park. Also the accessibility of the area will be comparable to these areas, with two new metro stops along the railway. Next to the urbanisation around the metro stops, there is still space for green similar to the size of the Vondelpark.

This park is already drawn in the new green structure of the Ringzone. Nieuwe Meer transforms from an anonymous green area to a metropolitan park. This could give the area around the new station Nieuwe Meer a similar feel as Den Haag Centraal, where the Haagse Bos is used a lot by the people working in the offices around the station.

The banks of the Nieuwe Meer could become a beach for the city, also accessible by public transport. In a way the station Nieuwe Meer becomes a destination not only during the week, but also in the weekend for recreational purposes.
Current situation: underused left-over green area along the infrastructure bundle

New situation: the new street connecting the metro station to the Nieuwe Meer shores
In 2016 the decision about the final plans for the road widening and a 1 km tunnel in the A10 Zuid was taken. The motivation for these plans is the improving the flow of the increasing traffic on the road and mitigating the spatial inconvenience of a road through the central business district of Amsterdam.

Critique

These developments are not in line with my vision. They are another example of how the car in the city is given more space and with a small ‘tunneldok’ a minor area is compensated for it. The tracks will be widened over the whole course of the road, from Nieuwe Meer to Amstel. By improving the traffic flow, the inner ring becomes even more attractive for car users, opposite to what’s happening now: with the projects on the A9 the flow is improved on the second ring, thus seducing people (also by changing navigation signing) to use this road for transit traffic, instead of the A10.

The Zuidas project illustrates the willingness of policy and decision makers to invest largely in car infrastructure. In my opinion the project is showing that the notion of extra asphalt is going to solve problems, but I believe that within days after completion (more than 10 years ahead of us!) traffic jams will occur again - maybe not on the Zuidas itself, but because fresh asphalt attracts more traffic, the congestion will take place at a new bottleneck in the network.

New perspective

However, when we look at this project from the theory of the fastly changing design of public space, it is interesting to see what we could do in the future, when the road widening is completed, but in the mean time we have made other choices in how we organise mobility (congestion taxes, strong reduction of car use, etc.). As an example I looked at the Rozenoord bridge over the Amstel. Previously in this report I showed the conceptual design for a ‘Multiway’ bridge: where train, metro, car, cyclist and pedestrian all together pass the water using the same infrastructure. The bridge is a connector on a larger scale, connecting the east part of the city to Zuid, but at the same time, on a smaller scale, it offers the opportunity to move from one side of the Amstel to another.
... becoming the upside!

What if...

... the Rozenoord bridge could function as a connecting green element that offers a great overview over the Amstel river? An ‘ecoduct’, a pleasant and interesting passing way for pedestrians and cyclists, as a relic that reminds us of how we, in the past, were building all infrastructure submissive to the car?

In the sketch design on the next page can be seen how parts of the asphalt change into an interesting elevated park (potentially comparable to the Highline in New York, also a reused infrastructural object) and more space can be created for public transport infrastructure.

Designed by MVRDV in Seoul: an abandoned freeway transformed into a park.

Rozenoordbridge future: an elevated ‘ecoduct’ offering space for active mobility and offering a great view over the river Amstel.
EVALUATION

Looking back on the process and drawing conclusions from it

Content of this chapter
1. Reflection on key projects
2. Reflection on vision and positioning
3. Reflection on process and methods
4. Conclusion
Reflection on the key projects

The key projects presented in the previous chapter should be considered as examples of how the approach of seeing the highway as an urban structure that we can change if that is necessary, rather than a traffic machine that is not open to discussion. At the same time, working on the key projects affected the overall development model, for instance that looking at the A10 Oost led to the realisation that the ring is the only tangent connection between ‘vinexwijk’ [?]burg and the work district Zuidas/Amstel/etc. on the A10 Zuid corridor - which made me add the Oostlijn to the public transport reform map.

These interrelations can be explained by the findings earlier in the design process, when I concluded that in Amsterdam the local context around the A10 is very rich and variable. It was this spatial context that provided the inspiration for the key projects - not the overall vision on the area, that I took as my starting point for the design.

I also learned that ‘downgrading’ of the highway can take place in many ways. For all projects - with the current technology - a speed reduction is necessary because of environmental qualities and to show that this area is not a pass through zone, but a destination within the city.

Another thing that became clear was the variety of new urban environments that emerged from the key projects. The A10 West can, with some minor changes, start the transition to become a boulevard soon, by changing the profile of the road and opening up the now closed facades facing the highway. The Nieuwe Meer intervention is more radical: the new metroline is a condition without the project is not ‘ring culture’, but just another residential neighbourhood along the highway.

I summarized the characteristics of the different key project in the table below.

<table>
<thead>
<tr>
<th>Key project description</th>
<th>Spatial context</th>
<th>Highway configuration</th>
<th>Implication active/public transport</th>
<th>Spatial improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring West Einstein-boulevard</td>
<td>Dense urban environment, buildings close to the highway, infrastructural network from the ‘vinexwijk’</td>
<td>‘Slimming’ the existing highway, adding service roads and sidewalks connected to the local network</td>
<td>Creating corridor for cycling north-south direction, possibility for mobility on demand on the service roads</td>
<td>A boulevard with entrances on the road, making the Ring West part of the local network instead of only intersecting it</td>
</tr>
<tr>
<td>Ring Oost Kruislaan corridor</td>
<td>Lower-lying polder Watergraafsmeer; A10 Oost on the ring, radial focus of the roads connecting center and Zuid-Oost</td>
<td>No major changes on the road (only slimming on the long term and then creating a green pathway), but adding connections in the ring-direction</td>
<td>The A10 Oost connects new Uitbreiding to Zuidas, Schiphol etc; there is no proper public transport connection from Zeeburg Science Park to Amstel Zuidas. The upgrade of the Kruislaan will provide space for that connection</td>
<td>By adding the Kruislaan to the larger city network of major routes through the city the area becomes more interesting to develop. The spaces along the A10, now already used as green space, can become more coherent and attractive when developed as a green corridor</td>
</tr>
<tr>
<td>A4: Station Nieuwe Meer</td>
<td>No residential context new infrastructure bundle along the Nieuwei Meer (like in the Ring West)</td>
<td>Two roads: relocating one of the driving directions to open up access to the railway (thus the possibility to create a metro or train stop)</td>
<td>Possibility to intensify train traffic on this route and new cycling and pedestrian connections to the Nieuwe Meer park</td>
<td>Upgrading Nieuwe Meer to an urban park, comparable to the Amstelpark or Sloterpark and creating public transport access to the location</td>
</tr>
<tr>
<td>Ring Zuid New Roze- noordbrug</td>
<td>Major infrastructure bridge, only on one side an (unattractive) slow traffic crossing. With the Zuidasdijk extra lanes will be added here. Point where city dwellers can escape to the green area of Amstelland.</td>
<td>Wide car bridge. In the future, with a ‘slimmer’ road, space will open up to make the bridge a connection for cyclists and pedestrians too</td>
<td>Space for cycling and walking along the road. Also expansion possibilities for the train or metro on the long term</td>
<td>On the open space of the bridge a unique park can be created that connects Amstelpark and the Amsterdam and offers an interesting view over the river Amstel</td>
</tr>
</tbody>
</table>
Reflection on vision and positioning

My project was meant to be an urban exploration about the possible future of the ring road in the context of the growth of Amsterdam. The hypothesis that I formulated in the beginning was as follows:

“The A10 is forced to take its final position in the urban fabric, with possibly another function or capacity. The zones surrounding it will gradually transform from buffer zones with transit functions into central areas that are a destination in itself, where city and highway are integrated. This new urban typology has a unique identity, recognizable as 21st century Ring Culture.”

“...with possibly another function or capacity...”

The first part of the hypothesis hasn’t changed throughout the project, however there were many moments when I doubted the possibility to alter the function of the road. It is hard to see the current situation change where congested highways are the status quo. However, in order to be able to at least open up the possibility of urban life next to the road, to transform the buffers into central areas, basic changes are necessary.

I chose to take this critical position as a starting point and asking the question whether the highway function is still preferable in this location. My arguments for that were:

• The city is growing and the demand for dense urban environments (in which a highway by definition is not a part of) is so high that we need to invest in those.
• The creation of the A11 can guarantee the road connections on a national level.
• Concluding from that, I believe that with the development of residential program in the area the demand for networks of green, cycling and other facilities are more important than the demand for high speed highway use.
• However, this has to be made possible by creating good alternatives for the accessibility of the city from the region. This starts from creating better public transport connections in the agglomerations and policy measures to guide this transition from a car based mobility plan to a mobility plan with a more sustainable modal split.
• The final argument is about the technological development of car traffic. However I don’t see electrical and driverless cars as a solution for the problem (my solution lies in the spatial domain), I took certain aspects of these new technologies with me in the design: a) the assumption that (combined with policy measures) driverless cars need less asphalt space to maintain the same capacity and b) the assumption that electric cars (when driving at slower speed) cause less pollution and nuisance.

Also relating to the current discussion about car mobility shows that the downgrading of highways is still taboo. Even now that spatial quality and livability have become part of the discussion in the planning of infrastructure, capacity reductions are never in question, because of the fear for traffic jams and the related economical damage. The solution for the integration of spatial quality and (car)accessibility in other projects in current practice is always to cover or hide the highway, which obviously can mean great improvements for the surroundings, but what is missing is a critical reflection on the preferability of the road in that position and configuration.

Taking the position that not a technological solution for mitigating negative effects of the road, but a change of perspective and behavioural change will solve the problem, is a politically sensitive move. It demands a progressive government that choses environmental quality and sustainability over freedom of car use always and everywhere. According to many traffic experts, this kind of solutions like congestion taxes (precedent Stockholm) or road pricing are the only ways to push back car use and get back control on our road network, instead of letting the traffic flows control our ways of intervening.

“...this new typology has a unique identity...”

When I formulated the goals of the project at the very start, I had the feeling that I was going to design something utopian, a Ring Culture – the name suggests that this would be something totally new, never seen before and also quite far-fetched or science fiction.

During the process and mainly when starting on the grid map the project started to get more ‘down to earth’. The fact that the densification that the grid map showed didn’t even look very strange or unrealistic made me realise that probably simple interventions could also create better conditions for urbanity around the Ring A10.

So, the assumption that ‘Ring Culture’ would be one urban typology turns out to be not true according to this project. Epically in the Amsterdam context of different architectural and subsoil conditions, all the areas surrounding the road are very different. Also, the stadium of the city and highway integration is on a different level: from the A10 West we can tell now that a widening of that road is not going to happen because of the already very dense urban environment, whereas the A10 Oost has recently been added extra lanes and higher sound screens.

In the end the key projects all had their own characteristics, but constancy could be found in three elements:

1. All projects are in the first place creating extra development space for housing.
2. The current morphology is the base for the new environment. The height and relation of the road to the surroundings determines this base.
3. All projects respond to the dynamic in the surroundings.

The conclusion is that Ring Culture in Amsterdam has many faces, just as many as there are different areas along it. For example, the translation to location study showed 12 different locations along the ring: for now I just tried to show 3 examples.

This is on the one hand a specific notion for the ring of Amsterdam, but on the other hand a general notion on the transformation of larger urban structures: it cannot be done one way: every location asks for a local approach.
Reflection on project and methods

Evaluation of the process

Looking back on the whole process during the P4 preparations, I found that I actually quite well followed the steps that I defined for myself in the methodology diagram. I have been working on all 6 elements that I described in more or less this order. However, the intersecting lines within the circle are maybe even more important. With all the different research that I did, small portions of information influenced my ideas for all elements.

However I can explain the feeling that I lost a bit track of my research. In the end, the methodology diagram is a circle – the final product of this project is not a final one, but just one possible outcome.

The relationship between research and design

For my graduation project I decided to start with a location, rather than a theme. My goal was to say something about the possible future of the area around the ring road in Amsterdam, by studying the current situation extensively and form a vision and design guidelines.

Therefore, the project does not have a ‘traditional’ relationship between research and design, traditional meaning that the (theoretical) research leads to one analysis conclusion that than can be applied in a design. My project has an exploratory nature, meaning that there is not a strict theoretical research framework that leads to the design starting points. The project was meant to come up with new ideas and views, so the ‘end point’ of the research was not uniform, but very diverse. Therefore, the biggest challenge was to relate these different observations to the final design and strategy.

The bridging element between research and design in this project was the use of what I call the ‘creative sessions’. The research led me to a general positioning towards the matter: seeing the ring road as a structure in the city that, when you adapt the idea that car mobility is going to change, can have another position and function for the city as a whole. However, from this positioning the possibilities for development are unlimited.

Towards P5 I developed a method to deal with this wide range of possibilities. The creative sessions enabled a process where I could go from this wide range (all ideas written on post-its) towards a selection of guidelines and ideas. I did this by analyzing again my own ideas and ordering them on similarities and differences. This lead to a summary of all the ideas in 3 structural types (the ring, dwars and combi) and 4 themes. These formed the starting points for the design.

The relationship between the project and the wider social context

My exploration of the Ringzone went parallel with the project initiated by the BNA ‘Stad en Snelweg’, in which several teams of architects studied places on the ring roads of Amsterdam, Rotterdam and Utrecht. This project was the result of an emerging consciousness of municipalities and government that the growth of cities, the demand for accessibility and livability are conflicting more and more in the limited space that we have around our cities. At the same time, changing mobility can broaden the range of solutions. My project fits in this movement of exploring the possibilities of using our infrastructure in a different way. Carrying out projects like this can help to inspire people to search for new, integral solutions for infrastructure in our cities that are different from the current ways of dealing with it.

A second illustration of the wider social context of the project is the recent broadcasting of the TV series ‘Onzichtbaar Nederland’. In this series, and particularly the episode ‘Stad’ (1 december 2016), creates awareness about the changes that our landscape, infrastructure and cities have undergone through the years. Here also the influence of the changing mobility (type and amount) on the city is shown. My project approach, exploring the possibilities of the ring road as an urban structure rather than a functional object for car mobility fits within this line of reasoning.

The relationship between the theme of the graduation lab and the subject/case study

The project is conducted within the graduation lab of ‘The Design of the Urban Fabric’. The urban fabric theme studies the relations between tangible and intangible structures in different contexts, and is grounded in the Dutch tradition of urbanism.

It relates to the theme of the graduation lab on two scales: the structure of the ring road itself in its direct surroundings and the structure of the ring road within the development of the city. This is visible in the elaboration of the design; it is both a strategy for the ring road on a city level and three designs for specific locations on the ring road.

The relationship between the methodical line of approach of the graduation lab and the method

The two methods promoted by the graduation lab of Urban Fabrics are the application of design patterns and the use of scenarios.

In the formulation of the vision I used several themes to explore the possibilities of development of the Ringzone. This thematic exploration or framings (Kleine Stelling, New Amsterdam, etc.) can also be considered as a form of scenario use, because they show different possible paths of development.

Another method used in the lab is analogic reasoning. An analogy was the starting point of my project, seeing the developments around the ring road not as a stand-alone incident, but in relation to former developments of the city. Also I used the analogy of the ring road as a river, to order to create some new ideas that are ‘out of the box’ and outside of the current situation.
Conclusion

Regardless all the doubts, critique and difficulty to look beyond the status quo, after working for a year on the ring road of Amsterdam I am convinced that in a few decades from today we will see the Ringzone slowly changing into an urban environment where active forms of mobility and public transport take the lead.

The first steps have been taken: in the last years more sustainable alternative strategies are developed on the use of our ‘old’ car dominated infrastructure. At the same time, by research such as Stad en Snelweg, the first conversations between municipality and Rijkswaterstaat are started. The demographic pressure on the city and the already overloaded infrastructure networks will make us rethink the way we use and plan our cities. Whereas the housing task is now the most urgent in Amsterdam and the combination with the highway bypass very promising, in the near future also other cities with similar situations could follow this example, such as the Rotterdam highway A20/A13. You can see in the map that the new connection of the highways A13 and A16 in Rotterdam could offer similar solutions to the ‘old’ road that is bypassed.

How nice would it be, that on the ruins of the car infrastructure of the 20th century, a more green, attractive city network can develop, that gives the city more room to breath and reconnect the city with its green wedges. The city will still be the center of the region and commuters from the surrounding municipalities don’t know any better than that the access road to the city is in de first place a railway and only when no other options are available an electric car. Fast e-bike routes are the new city corridors and the areas around Sloterdijk, Amstel and Nieuwe Meer are well functioning neighbourhoods that attract people from other city districts or region. The city has taken its next step: whereas the modernistic extensions marked the urban growth in the 20th century, the 21st century urban development is barely visible on a topographical map - the only thing that gives away what changed, is the lack of that hard, red line of the highway determining shape and form of the city.

Rosa Stapel
January 2017
APPENDIX

Content of this chapter

1. Literature list
2. Meeting list
3. Post-it sessions extra
4. Extra montage excercises


Attended meetings & interviews

February 29 2016
Meeting about the transformation of the ring roads in the Netherlands, organized by CRa (College van Rijkadviseurs and Heesen) with the municipality of Rotterdam. The meeting is a presentation of the preliminary research ‘Goed voor de infra, goed voor de stad’ carried out by Michel Heesen commissioned by Rients Dijkstra (Rijkadviseur Infra en Stad). Several experts from the municipality of Rotterdam, the ministry of Infrastructuur and Milieu and Rijkswaterstaat debate about the possibility to do further research on the ring road of Rotterdam for better integration between city and highway.

March 8 2016
Informal talk with Frank van der Hoeven (TU Delft)
Frank van der Hoeven did PhD research on the possibilities of tunnels in the ring roads of Amsterdam and Rotterdam in 2001. I interviewed him about his current vision on the possibilities for the ring roads.

March 15 2016
Athens Workshop @TU
Students from different countries and studies gathered in Delft to think about the city and highway relation, in the context of the TU Delft team participating in the BNA research. I joined for one day and discussed the possible effects of changing mobility and policy measures for urban ring roads.

March 18 2016
Hans de Boer (TU Delft)
Hans de Boer works at the Delft Infrastructure and Mobility Institute and is one of the leaders in the BNA Research. He was also involved in the previous research on TOD in the Zaanstreek (the publication Onder Weg!) and we discussed my possible addition to the project as an Urbanism graduate student.

March 30 2016
Bouw, Woon, Leef Rond de Ring #2 @Pakhuis de Zwijger
This organized discussion was about the new developments in the Ringzone. Several architects and city makers explained about their Ringzone projects.

April 7 2016
Seminar @TU Stad en Snelweg
The preliminary presentation of the concepts of the teams working on the ring roads, combined with inspirational lectures by Rients Dijkstra, Taede Tillema and Maarten van Acker.

April 22 2016
Info meeting @Rijkswaterstaat
A meeting with the Amsterdam teams (UN Studio, NEXT Architects) and the Noord-West Nederland department of Rijkswaterstaat about their vision on the future of the A10.

May 26 2016
Meeting @BNA Stad en Snelweg
Update on the work of the Amsterdam teams for the representatives of the BNA, the municipality of Amsterdam and Rijkswaterstaat.

June 29 2016
Final Seminar @TU Stad en Snelweg
The final presentation of the designs of the 7 teams, combined with a debate featuring governmental and municipal stakeholders.

July 4
Hans de Boer

August 18 2016
Excursion Gaasperdammtunnel A9 by Rijkswaterstaat
Meeting Esther Reith @gemeente Amsterdam

September 16 2016
Excursion BNSP Ringspoorzone West with Rufus de Vries

September 22 2016
Meeting Eric van de Kooij @gemeente Amsterdam
Meeting Jerryt Krombeen @gemeente Amsterdam

October 27 2016
Meeting CRa@gemeente Amsterdam/Posad/RWS
Follow up research on the Stad en Snelweg BNA research, facilitating the dialogue between Rijkswaterstaat and gemeente Amsterdam about the future of the A10. Posad presented six scenarios for development of the Ring A10 Zone.
Comparing the rings of Amsterdam and Paris

This view is a comparison of the future plans for the Boulevard Peripherique projected on the Ring A10. This gives a nice opening to apply a similar view here: the one of a clean, liveable boulevard on the human scale.

**Wortd de péripherique straks een flaneerboulevard?**

Week in Week Out 8 2016. Parijs wil van haar boulevard peripherique een groene zaadboom planten. Wat gebeurt er in je straat Parijse voor Amsterdam? En andere punten waar jij moet staan voor auto's kunnen, gebieden?

**Wortd de Ring A10 straks een flaneerboulevard?**

Vergelijking

We schrijven 8 september 2016. Parijs wil van haar boulevard peripherique een groene zaadboom planten. Wat gebeurt er in je straat Parijse voor Amsterdam? En andere punten waar jij moet staan voor auto's kunnen, gebieden?

"Te groot om te vergelijken: het is de ene stad, de andere een en ander. Ook flink verschillende spreekwoorden bij de Europees Transportplan." (Van Parijs)

"In geen enkele metropool ligt de ring zo dicht bij het centrum": onzin. Vergeleken met de Ring A10: de boulevard in Parijse omgracht is niet zo dicht bij het centrum. De A10 in Amsterdam is dichter bij het centrum dan de Ring A10.

Seeing the Ring as a River

Framing the ring road as a river is an interesting exercise. In the history of the river and the city, we see a change of attitude towards the river: it has changed from sewer system and highway of boats into a central place for public life. Perhaps the ring road can face a similar change of attitude.

<table>
<thead>
<tr>
<th>Similarities between River and Ring</th>
<th>Differences between River and Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>River</td>
<td>Ring</td>
</tr>
<tr>
<td>UNDERPASSES</td>
<td>pedestrians under it</td>
</tr>
<tr>
<td>BRIDGES</td>
<td>clean</td>
</tr>
<tr>
<td>WIDTH</td>
<td>polluting</td>
</tr>
<tr>
<td>accessibility on special occasions</td>
<td>urbanized fringe</td>
</tr>
<tr>
<td>public space along it</td>
<td>buffer zone fringe</td>
</tr>
<tr>
<td>sometimes public space under it</td>
<td></td>
</tr>
</tbody>
</table>

Bridges are iconic, highway passages never are. Can the passages of the highway also become iconic? How do they feel the same? How to diversify the passages?

An ecoduct as a solution for integrating nature and highway on the countryside. Also for in the city?
Seeing the Ring as a River

Fixing complicated highway crossings in the city result in the highway on the highest level and water, cycling, pedestrian and public transport connections underneath it. An aquaduct is an example of another method to fix a complicated node.

Densification the ‘shores’ demand more connections. This is visible on the development of the former dock areas where the transformation to residential islands implied more (small) bridges. Now the lack of built surroundings lead to large sound screens as the easy solution.

Montage Nieuwe Meer

Testing the possibilities of urban development around the junction of Nieuwe Meer by montage of tunnel/dock or deck interventions.
POST IT SESSIONS

Het creatieve proces. Van alles door elkaar naar 2 of 3 destillaten

Ik begin op zoek naar een verhaal voor de Ringzone. Om daar te komen heb ik veel, uiteenlopend onderzoek gedaan. Het voornemen was om op de P3 met een aantal verhalen te komen die lijken kunnen geven aan het uiteindelijke product, om daar te komen heb ik het volgende gedaan:

1. Brainstorm
2. Collect ideas
3. Categorisation A
4. Categorisation B
5. Deduction in design tools
6. Translation
7. Evaluation
8. Writing storylines


Het beginpunt is de creativiteit, de losse ideeën. Ik heb zelf al een verzameling ideeën in mijn hoofd en daarnaast heb ik een kleine brainstorm georganiseerd, rondom drie vragen:

1. Hoe kan je ... de berm van de snelweg gebruiken?
2. Hoe kan je ... een 'mooie' snelweg maken?
3. Hoe kan je ... de Ringzone tot een sterk merk maken?

Workshop @Sarphatipark
**Doel:** ideeën uit brainstormen en eigen proces opschrijven

**Aanpak:** elk idee in een kleine tekening met kernwoorden. Verdeling in structuur, ingrijpendheid en schaal.
Doel: zo veel mogelijk ‘complete’ ontwerprichtingen genereren

Aanpak: steeds drie ‘ideeen’ combineren tot een schetsontwerp. De drie ideeen mogen juist ver uit elkaar liggen, maar ook juist samengaan. De categorisering van de ideeen helpt hierbij.
**Doel:** analyseren van de ideeën aan de hand van structuur

**Aanpak:** de combinaties sorteren volgens ring/dwars/radiaal. Vervolgens conclusies trekken uit overeenkomsten en verschillen
Doel: Analyseren van de combinaties

Aanpak: Uit de combinaties en andere inspiratie ontwerpprincipes afleiden die passen bij een aanpak voor RING, DWARS of COMBI. Er blijft ook wat over.
Doel: analyseren van de ideeën aan de hand van thema's
Aanpak: de combinaties sorteren volgens ring/dwars/放射al. Vervolgens conclusies trekken uit overeenkomsten en verschillen.
3. Contrast (patch)

Gebaseerd op ‘Landscape Ecology Principles’: contrast tussen twee gebieden zorgt voor beweging op het grensgebied.

Is grotendeels nu al het geval, niet op lijn van de ring, maar net ervoor (180°-momenten) – een andere typologie aan beide kanten. Misschien niet zo extreem.

4. Wildcard: boulevard bebouwing (corridor/patch)

Een variant waarin bebouwing zich met de voorzijde richt op de weg, i.v.m. met de achterkant.

Hier geldt de vergelijking met de ontwikkeling van de rivier in de stad.

Doel: vertalen van principes naar de kaart

Aanpak: ‘letterlijk’ intekenen principes in kaart (en evalueren)

1. Extra lijnen (corridor)


2. ‘Homogene’ gebiedsontwikkeling (patch)

Deze variant is een extreme variant van de plannen van de gemeente met de Ringzone: een specifieke ruimtelijke ontwikkeling waardoor de gebieden rondom de ring vergelijkbare karakters krijgen.

Dit zou kunnen gebeuren als straks alles uit dezelfde tijd komt (2000-2025). Echter zou dit ook kunnen leiden tot een distopia: stel dat niemand die woningen straks meer wil, dan is de barrière tussen binnen en buiten de Ring groter dan ooit tevoren.
1. Hechten (patch)
Het toevoegen van expliciet fijnmaziger netwerk, een nieuwe stedelijke structuur.
Het gaat om het creëren van een doorgaand stedelijk weefsel – om de verbinding te maken tussen binnen en buiten.
Welke maat is hierbij handig? De maat die nu gebruikt wordt is juist grover.

Doel: vertalen van principes naar de kaart
Aanpak: ‘letterlijk intrekken van principes in kaart (en evalueren)

2. Merge (patch)
Het doortrekken van sferen/milieus van binnen of buiten de ring
Je kiest uit wat je al hebt!
Geen nieuwe milieus
Het is het vingermodel, maar dan binnen de stad.

3. Ritme (corridor)
Bewust inzetten op groene en stedelijke assen, zodat voor ieder moment de beweging dwars op de ring logisch is.
Op deze manier maak je de Ring meer permeabel
Je kiest de route die op dat moment het beste past
4. Centrale assen (corridor)

Extreem variant, waarin het stedelijk verkeer wordt afgeruild via grote radiaalstraten, die uitkomen op de A9. Zo ontstaan er grote stadstraten die vergelijkbaar zijn met A4 / A2.

De Ringweg kan in het extreme scenario (deels) verdwijnen. Dan blijft het zuidelijke deel bestaan, maar in west en oost valt de ring eventueel weg.

Aansprekend omdat het aansluit op de vingerstad en het zorgt voor complete verwijdering van de barrière tussen binnen/buiten de ring.

5. ‘Blend’ (patch)

Volgens ‘Landscape Ecology Principles’ zorgt een gradient in grensgebied voor meer verkeer in de dwarsrichting.

Dit lijkt op de huidige situatie, waarin dichtheid, stedelijkheid etc. geleidelijk afnemen richting en voorbij de Ring.

Dit is in principe een logische ontwikkeling in een stad, maar in een metropool zou stedelijkheid zich juist moeten uitbreiden en weer randdom sub centra organiseren (vlg. Berlijn en Londen).

3. Dual systems (corridor/patch)

Tweeledige benadering. Een ervoor blijft de ring behouden als infrastructuur (in de bredere zin van het woord, dus snelweg voor alle modaliteiten en meerder voorzieningen), en een sterkere bundeling wordt nagestreefd (dus alles naast elkaar).

Anderzijds ontstaat er dus meer ruimte om de stad te laten groeien. Dit hoeft niet in lijn met de Ring.

Voordelen: vergroten van centrum!
1. In de knoop & ontvluchten tegelijk (node/corridor)

'DNA'-structuur: stedelijke en groene routes/plaatsen in de nabijheid van de Ring. Op deze manier benadrukt je de Ringzone als geheel, maar gebruik je niet de ringweg zelf als drager.

Er ontstaan plekken waar ze bij elkaar komen (‘in de knoop’) en daar ontstaan centra

>>> eigenlijk RING!

2. Kernen crop (node)

Het maken en versterken van individuele knoppen (zoals de Zuidas al is, maar zoals Amstel, Lelylaan en Sloterdijk ook kunnen zijn). Zo gaan we de ring bevullen. Het is van belang dat er ook een interessante identiteit gecreëerd wordt, die naast Centrum ook het bezoeken waard is.

Het moeten wel plekken zijn op de ring, waar de boel bij elkaar komt (duis multimodal)

>>> eigenlijk RING!

De twee combi-varianten (kernen crop en in de knoop/ontvluchten) zijn eigenlijk ook RING-varianten, omdat ze de Ringzone benadrukken als ‘ander’ gebied dan de omgeving. Dat doen de dwars-varianten helemaal niet.

Dus dan houd je alleen de Dual systems over – wat ook logisch is, aangezien dat de echte combinatie is.

Vervolg: eerst storylines schrijven voor Ring en Dwars, en kijken wat er overblijft voor Combi.

>>> Consequenties voor producten P4 - keuze maken:

optie 1: de confrontatie uitwerken tussen ring en dwars,
opzione 2: op zoek naar de ultieme combinatie...

Doel: conclusies trekken over de drie structuren
Aanpak: analyse alle tekeningen, eindconclusie
‘making Amsterdam whole again’

“de kracht van wat we al hebben”
“de scheggen verder de stad in”
“inclusieve stad”

RINGGRAAT

‘making the Ringroad great again’

“meest bereikbare stuk NL, dat moeten we vieren!”
“snel-weg voor iedereen, optimaal benutten”
“nieuwe stedelijke kwaliteit”

korte termijn + lange termijn

DWARSVERBAND

korte termijn + lange termijn

met onderdoorgangen

activiteiten en programma toevoegen

schegen de stad in, binnenstedelijk vooraf doorgestoken

(extreem scenario: verkeersafwikkeling via radiale, direct op A9)

Permanente langzaam verkeer routes aan de Ring vast

hoogstedeilig muren met de voorzijde aan de Ring