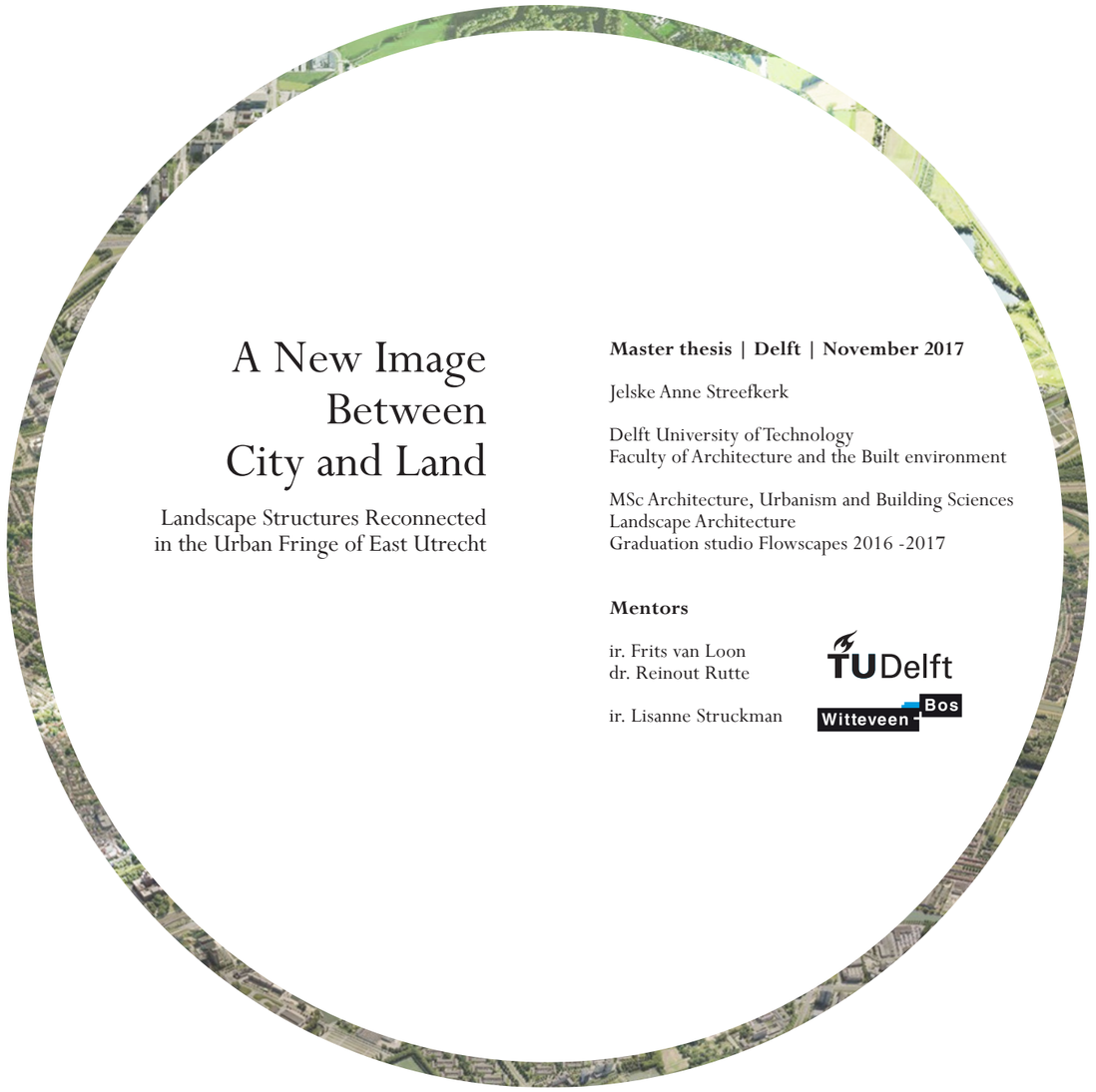
A New Image Between City and Land

Landscape Structures Reconnected in the Urban Fringe of East Utrecht



A New Image Between City and Land

Landscape Structures Reconnected in the Urban Fringe of East Utrecht

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Jelske Anne Streefkerk

Delft University of Technology
Faculty of Architecture and the Built environment

MSc Architecture, Urbanism and Building Sciences
Landscape Architecture
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Mentors

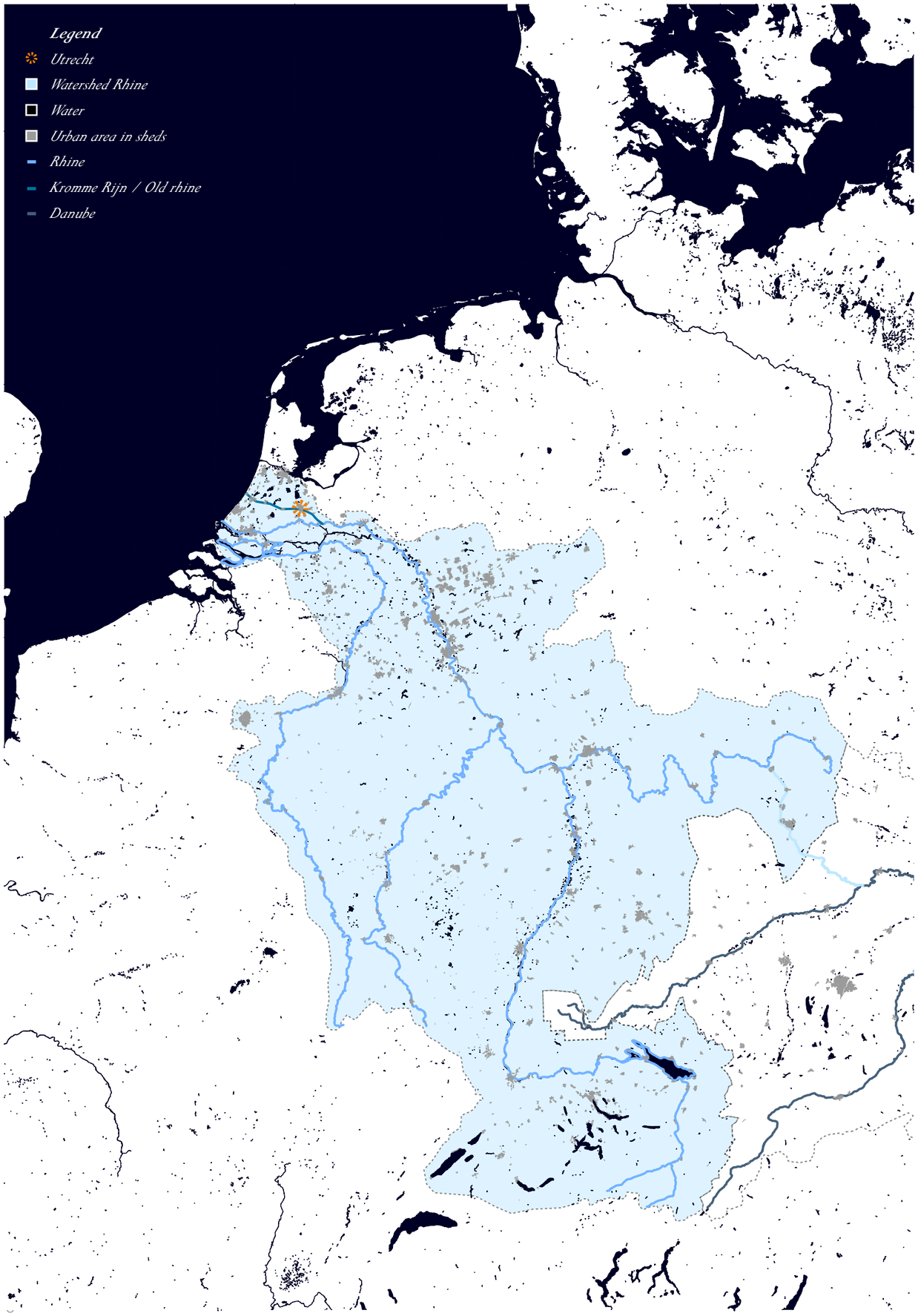
ir. Frits van Loon
dr. Reinout Rutte

ir. Lisanne Struckman

fig. 1 Chalcography of Utrecht seen from the Southwest (Bemuurde Weerd) around the 16th century.
C.H. Peters en H. Brugmans, Oud-Nederlandsche steden enz., 1909-1910, image by: Pieter Bast (ca.1550-1605)

fig. 2 Skyline photo of Utrecht seen from the Northeast around 2016: 'De Domtoren waakt over Utrecht'
Robert Oosterbroek – http://robertoosterbroek.nl/

In de actieradius van de stedeling is de stadsrand de plek waar je je het snelst echt even vrij en in het landschap voelt. Met de elektische bakfiets is de stadsrand snel te bereiken, in een timeslot tussen babyslaapje, college, mantelzorg of voetbaltraining door. (…) De mens is nooit ver weg, maar niet dominant en er zijn gelukkig latte's en broodjes mozzarella te krijgen (Steenhuis, M.).



As the second largest river of Europe the watershed of the Rhine -including its far-reaching branches- crosses the national territories of Swiss, Liechtenstein, Austria, France, Germany, Belgium, Luxembourg and finally a large area of the Netherlands as its downstream delta. Along its flow and in its surrounding catchment area many urban settlements profited in their development from the beneficial circumstances the river landscape offers. The river provided the border conditions for the inception of the cultivation and urbanization of the landscape because of the natural supply and drainage of water, the direct connection to other settlements to travel and trade and not the least it offered clear spatial thresholds, desirable from a defensive perspective. In this sense this river landscape functions as a system which provides humans with an indispensable infrastructure to urbanize the landscape: a landscape infrastructure distributing flows of man, goods, water and ecosystem.

This interpretation of the Rhine river system derives from the theoretical background of the graduation studio Flowscapes, of which this Master thesis is the end result. The name Flowscapes refers to the perspective on landscape as a continues process of flows, informed by the landscape, though forming it simultaneously. In this context I was fascinated by the human influence on the natural, gradually urbanizing landscape and the resulting tension between the urge for urban development on one hand and the strong human necessity for unbuilt landscape -both for leisure and more functional reasons such as health, climate and water management- on the other.

Often the process of urbanization is not seen as a flow but as an expanding object. An approach where city and land are two opposing objects, one repressing the other. This is what I call the 'Pie perception'. When a piece of the Landscape gets 'eaten' by the city, the lost nature is the victim which should be compensated. This compensation of 'nature' is realized in not urbanized space and not necessarily coherent to the landscape to which the lost piece used to be part of.

In this thesis the emphasizes is shifted towards an approach which seeks for a balance between the urban and the country territory trying to develop them as an integral processes. This is pursued by approaching city and land not as competitive objects but corporative flows: the 'Wave perception', refering to the entanglement of the water and air in a breaking wave, with an increasing amount of surface contact between the two elements symbolizing city and landscape.

As a focal point of this attempt I have chosen the zone of interface, where city and landscape meet: the urban fringe.

fig. 3 Catchment area of the Rhine river system and the location of Utrecht in its Delta area along the old riverbed, nowadays known as the Kromme Rijn.

object oriented
Pie perception

process oriented
Wave perception

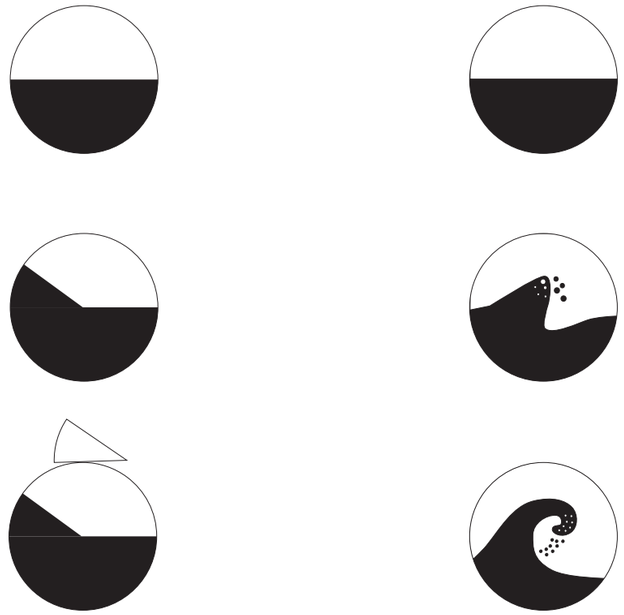


fig. 4 Comparison between an object oriented and a process oriented attitiude towards the relation between city and land.

Acknowledgment

This Master thesis was made possible with the help of many people. I particularly wish to thank my mentors Frits van Loon and Reinout Rutte for their engaged and personal mentoring and critical view upon the design process. The combination of having a design mentor and a research mentor has helped me a lot to deliver a coherent story.

Additionally the group of Landscape Architecture of Witteveen+Bos has helped me throughout the whole process in finetuning my design and story line. The feedback I derived from the presentation practises have been very constructive and helpful. In particular I want to thank Lisanne Struckman who always made time to discuss whatever was needed that moment.

Finally many of my family and friends have been of great support throughout the year, who I want to pay my gratitude to. I cannot be complete in this but I particularly want to name: Saskia, Chris, Stienske, Bob, Ivo, Lucas, Chantal, Maaike, Maria, Malou, Anne, Michelle, Julia, Elan, ManHin and Marina.

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Problematique

To start of the subject the urban fringe is discussed in the context of different discourses upon the subject. Where some see a disordered mess, others see the freedom and possibilities offered by margins and meshes in the regulations. In this project the focus is not on a judgment of these kind of areas but on the determination of a missed potential: the ability of fundamental landscape structures to order the connection between city and land. The reason why it is so hard to make use of this strength lies in the vagueness of the concept of the urban fringe. It appears difficult to pin down to a clear definition evident by the wide range of terminology and this unclearness makes it difficult for spatial planners and policymakers to develop and execute a coherent spatial urban fringe vision which justifies the genesis of this kind of defuse territories. From this notion the general aim of this thesis derives: the search for the possibilities to develop a design method for urban fringe areas which integrates city and land into a legible, enjoyable and meaningful landscapes. To do so the project focusses on a site specific case study. This way the method and the application of it could develop simultaneously into a possible future development of the area.

The location is the urban fringe of east Utrecht. Due to the presence of several mayor landscape structures this case is suitable to search for a method to exploit the potential of it. The introduction on the geographical location of the site results in the place specific problem statement: The urban fringe of east Utrecht is relatively compact and situated near the old city centre, thereby the area contains several cultural historic entities. However the area lacks spatial cohesion as well as an inviting appearance and pleasant public space. Therefor the place specific aim for the thesis is to develop the fringe area of east Utrecht into a vibrant and meaningful connection between the city and the country. Thereby current areal topics play a large role in the necessity of the development of a coherent future perspective and development plan.

Research Framework

Responding on the stated general and specific research question four research and design approaches are evaluated. Two of them about the stratification of (modified) landscapes in general (2+3) and two specifically concerning urban fringe areas (1+4): Cities Without Cities by Sieverts, T. (2004); The Land as Palimpsest by Corboz, A. (1983); The obligation of invention by Lassus, B. (1990); and Ecology on the edge by Tjallingii, S. P. (2000). By combining and overlapping the different perspectives and coined methods a roadmap is developed to organize the research on the understanding of the genius of the urban fringe of east Utrecht. The steps are named: indication, investigation, exploration and implication.

By applying this method first a general spatial indication is done to understand the build-up of the urban fringe in relation to the whole city. In the investigation first the site is visited to see which landscape structures are visible or hidden. From there a comprehensive research on these landscape layers results in an extended understanding of their historical context and its spatial coherence. This derives in the next step to explore in what kind of potential larger image these findings result. In the final step of this method the threads upon the potential result in the determination of the necessary places to intervene: the implication of the method. These places are guided along the -in the investigation discussed- blue (water) and grey (transport) infrastructures. This way the project is not determined by setting up red / green boarders (being an objective approach on urban/nature contrast) but by providing blue/grey conditioning structures guiding and balancing development along it.

Application of Method

The developed methodology is applied upon the case study of east Utrecht. The steps lead us to the implication of a coherent and site specific design strategy which makes the grey and blue landscape structures in the urban fringe of east Utrecht the structuring network for the furthers development of the area.

Demands of interventions

The interventions proposed for the intersections between the annual rings and the two guiding landscape structures, the Koningsweg and the Kromme Rijn, all have different demands. By determining their potentials and problems for each point a solution is proposed with certain boundary conditions. This is done in order of planned execution. Further study on the Waterlinieweg shows the possibility for a linear solution for this infrastructure barrier, followed by a spatial analysis of the current situation of the A27. After this also the two conditioning landscape structures themselves are spatially analysed.

Strategy & Design

Together the previous chapters provide the input for the finale which shows the result of the strategy and the design outcome step-by-step. First the bigger image which connects the separate projects is explained, then the systematic design intervention for the Koningsweg and Kromme Rijn are shown and finally this leads us to the elaboration of the two roof parks as a synthesis of the project.

Problematique

// Introduction on the Urban Fringe
// Geographical Context
// Problem Statement
//Research Question
// Current Areal Topics

The subject of the urban fringe is discussed in relation to the case study of east Utrecht, concluding in a problem statement and research question. Thereby the project is put in the light of current societal issues to make clear the relevance of developing a strategy to intervene.

The Disappearance of the City Frontier

Due to many modern developments the appearance of the urban frontier, in the embodiment of a wall or other physical barrier which defines being in or out the city, has disappeared. The defensive medieval city has become obsolete since inertia and ground-bound life where gradually overruled by the power of speed (e.g. Car – train – airplane) and virtual perception (e.g. Tv – film – satellites) (Nijenhuis, 2017). The legal in- or exclusion of land belonging to a municipality is nowadays only a virtual line, recorded in the cadastre. The interface between city and country has developed in most urban environments from a 'red-green' contradiction to an expansive gradient from dens built-up area to open land, where both urban and countryside characteristics are mixed by heterogeneous land use. Both concepts of city and country are not sufficient to define these kind of areas (Hamers, 2014, p. 308). Typical functions appearing in these areas are the ones which for whatever reason where unsuitable to have within the city, for instance by means of land prices, high space consumption, aesthetic rejection or a general awkward attitude towards certain affairs. Everyone knows these kind of vague areas where no one really knows the underlying thought of the spatial planning. Common features are for instance the presence of hardware stores, dead-end roads, scrap yards, messy allotments, graveyards, small-scale greenhouses whether or not used as caravan storage, fallow plots occasionally startled by a public event and announcement signs with new development plans depicted utopianly including highly satisfied future inhabitants.

fig. 1
fig. 2
fig. 5

Appellation of the Subject

It is clear that there is a common understanding of what these transition zones look like, however the concerning territory in the debate around the fading city-land contradiction is not an exact concept and in development through time. This becomes evident when we look into literature. It seems there is no consensus on the naming of the gradient zone between city and land. Different studies approach the subject with slightly different starting points, assumptions and research goals. This is testified by the wide range of neologisms already coined to appoint the notion as accurate as possible. To name a view: city a la carte, carpet metropolis, nonplace, urban field, peri-urban area, Zwischenstadt, shadowland, urban voids, terrain vague, etcetera (Frijters & Langeweg, 2004, p. 47). Most of them already suggest a certain scope of the appreciation of the phenomenon. Hamers and Rutte choose for a more neutral variant: the 'rurban-fringe' derived from 'rural-urban fringe' (2008, p. 61). It just names what it is without judgement or measurement. In this thesis i choose to use this term, but even shorter: just 'urban fringe'. Meanly to avoid more complexity than necessary, but also because the thesis is written in the context of Utrecht east: a fringe area developed from the perspective of the city of Utrecht.

Urban Fringe Attitudes

In various discourses different stands are taken towards the transition zone between city and country. Some with a nostalgia towards the classic town model in a green area and hence rejecting the blurred area (described by Frijters and Langeweg (2004, p. 16)). Others with a romantic view towards the 'fractal richness' and the 'anarchic dynamic' of the diffuse urban-rural landscape (described by Sieverts (2004, p. 48)). However there is also a middle ground between the two extremes. This discourse pursuits a more neutral and unprejudiced view upon the issue. Among others Frijters and Langeweg (2004) made a contribution with their research group of the 'ruimtelijk planbureau' (Dutch governmental spatial planning office), making a thorough analysis of the emergence, appearance and functioning of the 'shadowland' (translation from 'Tussenland' by Hamers and Rutte (2008)). In their study a clear structure is used: they analyse through time and scale the regional economic transformations, the spatial structures and the stakeholder formation. Their main conclusion is that the shadowland should not be evaluated by aesthetic or morphological values but by its economic and social value and by doing this revealing its preconditions and

Introduction on the Urban Fringe

fig. 5 Typical appearances for the urban fringe. *Top six photo's from Frijters & Langeweg (2004). Bottum six photo's from Kijk in de Vegte (2010)*

potential. This approach makes a strong point that the potential of these zones is that the informal appearance provides opportunities for marginal activities where there is no place for in the strictly planned city or countryside. Moreover since the small granularity and flexibility of these activities can responded more easily to market shifts and versatility causes less vulnerability, the area is more resilient (Frijters & Langeweg, 2004, pp. 280-283). So without considering the aesthetics or morphology, these areas are in economic and social sense very valuable already.

It sounds fair to say that a phenomenon which is not designed to be aesthetic but has developed organically, should not be evaluated on its aesthetics. However, among the moderate discourse pursuing to evaluate the urban fringe in an unbiased manner, Thomas Sieverts (2004) argues the appearance of the landscape certainly is important for a well-functioning urban fringe (though he uses a different and German term for the concept: 'Zwischenstadt'). He states that economic and functional objectives should not have the leading role in the design of the urban fringe. He continues that in the future the cultural and ecological qualities will turn out to be the decisive commercial factors since the 'hard' infrastructures are not site specific and therefore not contributing to its distinctiveness, which can create economic value (ibid., p. 51). In addition he also points out another important physical factor. He argues that in the changing socio-economic circumstances, the significance of the spatial legibility and intelligibility of the urban fringe are the two most important conditions for the difficult task of regenerating an identity of society and space for the daily life in the urban fringe. In short: 'the objective is to mediate between the clarity of the familiar personal environment for living and working and the complexity of the city region.' (ibid., p. 58). He sums up several reasons for this, briefly coming down to 1) countering the alienating effects of modernisation and globalisation by providing an identity and 2) generating a seizable image to create a platform for shared and coherent policies (to get things done) (ibid., pp. 58-61).

To get to a sufficient understanding and design of an urban fringe area Frijters & Langeweg and Sievert both make very relevant points. However the aims of their researches differ. Whereas Frijters & Langeweg provide a structured method to evaluate the conditions of the urban fringe area in an objective way, Sieverts also introduces a strategy for design. His strategy will be discussed in the next section about the research framework and compared to three others who have commonalities but different emphasize.

Urban Fringe Problem

For spatial planners and policymakers it seems difficult to get a grip on it, and to develop and execute a coherent spatial urban fringe vision which justifies the genesis of this kind of defuse territories. The conventional urban or rural design methods proof not to be sufficient (Frijters & Langeweg, 2004, p. 52; Sieverts, 2004, p. 8). Therefore this thesis explores, investigates and tests the possibilities to develop a design method for urban fringe areas which integrates city and land into a legible, enjoyable and meaningful landscapes. To do so the project focussed on a site specific case study. This way the method and the application of it could develop simultaneously into a possible future development of the area.

Case study

The site I choose to study is the east urban fringe of Utrecht. This location contains a very heterogenous pallet of space-use and has both urban and country features: a typical urban fringe so to say. What makes it highly interesting is the presence of several historic landscape structure which will later on be discussed. In the following part of this section the project area will be introduced in its geographical context. This results in a problem statement and additional research questions which are put in the context of current areal topics.

fig. 6 Appearance of the urban fringe of east Utrecht.

fig. 7 Urban fringe scenery in east Utrecht - Graveyard along railway track

fig. 8 Urban fringe scenery in east Utrecht - private space along railway track

The City of Utrecht

The city of Utrecht is situated very central in the Netherlands as well as in the centre of its likewise called county Utrecht of which it is the capital. Utrecht is surrounded by a large variety of landscape typologies. It is situated North of river Lek, which is a branch of the Rhine river system. A much smaller branch goes right through the city, the so called Kromme Rijn. The southeast of Utrecht is there for dominantly a river clay landscape with fertile grounds to cultivate fruit orchards. More eastwards a -for Dutch context- large relief is present: The Utrechtse heuvelrug. This wooded relief has the status of a national park. At the West and North side Utrecht is surrounded by The Green Heart of the Randstad. An primarily open peat landscape.

fig. 9

Because of its geographical central location, Utrecht is seen as the 'turntable' or 'epic-centre' of the transport infrastructure system of the Netherlands both for road traffic as the national railways. Utrecht central station is daily passed by 200.000 passengers and the three crossing ring roads (the ring is not circular but more of a U shape) are the main west-east and north-south connections of the country. Besides the intensively used fast lane traffic system, also the bicycle use is very high and well connected to the railway system, with the largest bicycle parking garage in the world with a capacity of 125.000 bikes.

fig. 10

The high amount of cyclist is not surprising though given that almost 10% of Utrechts inhabitant is student due to the presents of a university and academy. With a total population of 343.000 inhabitants Utreht is the smallest city of the four largest Dutch cities together forming the conurbation 'the Randstad' (the other cities are Den Haag, Rotterdam and Amsterdam). The city has a high percentage of highly educated inhabitants: 60%, in comparison with a national average of 30%. Hence the city is known for its higher education possibilities, concentrated at the Utrecht Science Park (USP) -also known as the Uithof- as campus and knowledge industry business park.

East Utrecht

The USP is located on the east side of Utrecht, just outside the ring road A27. In this it is an exception relative to the rest of the municipal boundary, which generally follows the A27 and does mostly not exceed on its east side. Furthermore the east side is surrounded by detached satellite villages: Houten, Bunnik, Zeist and Odijk.

Parallel to the A27 on its westside, another fast lane road passes through the city. This former ring road is called the Waterlinieweg and lies one kilometre westwards from the A27. The zone between the two roads contains a highly heterogenous land use: seventies urban expansion plans (Lunetten and Rijnsweerd), small-scale horticultural fields, allotments, bungalows, greenhouses with alternative functions, sports fields, a soccer stadium, even a mini camping and so on. All of this at a distance of only a bit more than one kilometre from the historic city centre. As mentioned in the previous chapter it has many elements of a typical urban fringe. However this seemingly typical urban fringe area hides more valuable cultural historic landscape structures then one would expect in the first place.

In the open area between Bunnik, USP and the national roads A27 and A12, the forest of Amelisweerd is situated. This country estate landscape is highly appreciated as recreation area by the citizens of Utrecht and the neighbouring villages. Another specificity is the presence of many overgrown fortresses surrounded by water, together forming a part of a historical military infrastructure: The new Dutch waterline. Though this is not the oldest military relic visible in the area. Right next to fortress Vechten a reconstruction is recently built of the former Roman military base 'Castellum Factio'. This Castellum used to be part of the Roman version of a defensive infrastructure: the Limes.

The presence of these different historical layer, together with the cluttered appearance of the area brought me to the place specific problem statement of my project.

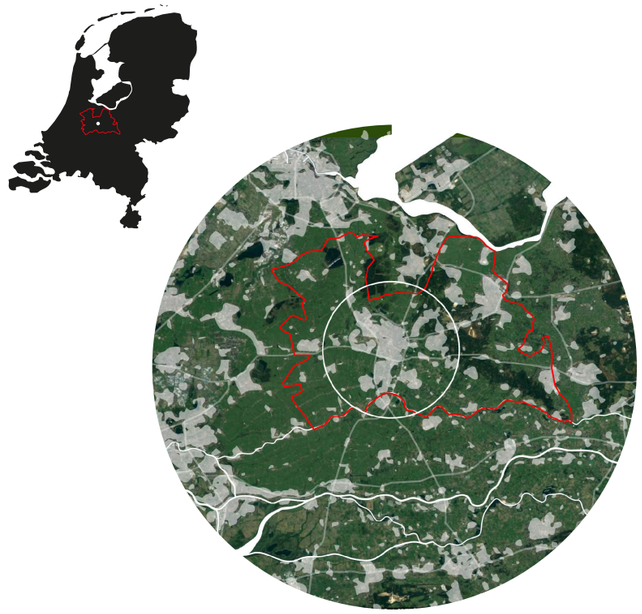


fig. 9 Geographical location of Utrecht in the likewise called county of Utrecht

fig. 10 Geographical location of Utrecht in relation to the international road network

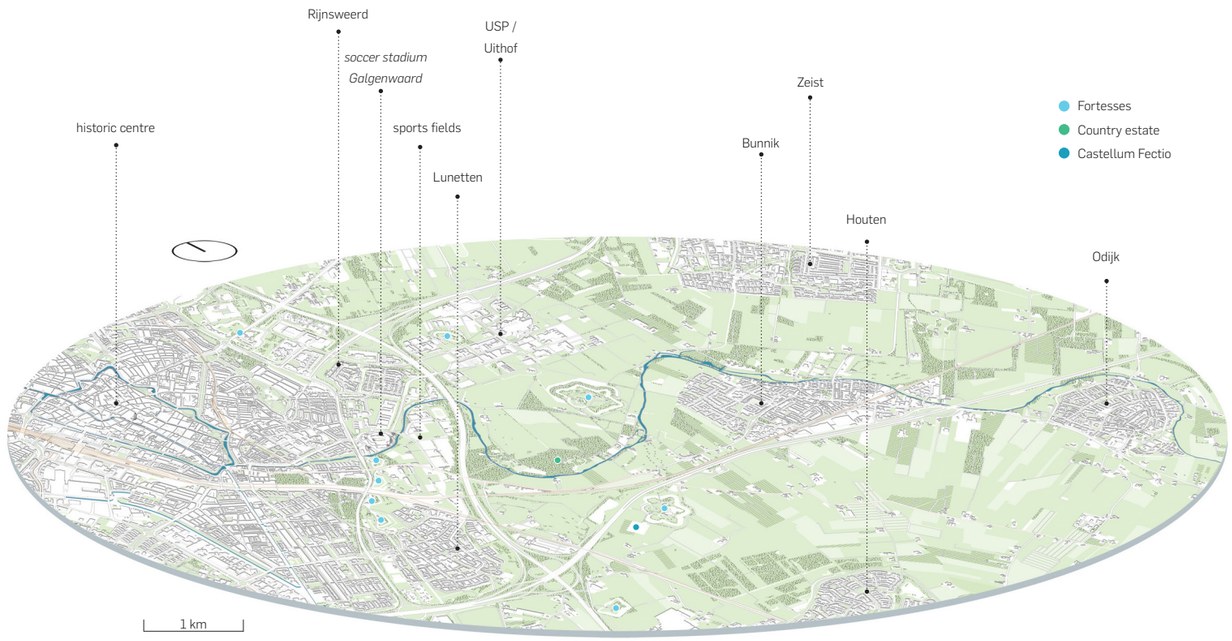


fig. 11 Areal overview showing the neighbouring satellite towns, the sport fields, the USP and the historic city centre.

Duality of the Problem

The assignment for the area is addressed in two statements both followed with a research question. This separation is the result of the duality of a general and a place specific problem. The first concerning the lack of a sufficient design method for urban fringe areas in general and the latter pointing out the poor utilization of the place specific potentials of east Utrecht, lying in unique historical landscape structures.

General Problem of Urban Fringe Areas

For spatial planners and policymakers it seems difficult to get a grip on urban fringe areas. Conventional urban or rural design methods proof not to be sufficient to develop and execute a coherent spatial vision and design which justifies the place specific genesis of this kind of defuse territories.

Place Specific Problem East Utrecht

The urban fringe of east Utrecht is relatively compact and situated near the old city centre, thereby the area contains several cultural historic landscape structures. However the area lacks spatial cohesion as well as an inviting appearance and pleasant public space, which exposes the undervaluation of the potential of the area.

General Research Question on Urban Fringe Areas

What can be a sufficient strategy to develop a coherent future perspective for an urban fringe area with an unplanned and defuse character, which justifice the place justifies genesis of the territory?

Place Specific Research Question east Utrecht

How to develop the fringe area of east Utrecht in such a way that the present historical landscape structures live up to their potential and result in a more coherent and meaningful connection between the city and the country?

One of the main features of urban fringe areas is the spatial pressure from multiple kinds of stakeholders causing conflicting claims. This becomes evident for the case of east Utrecht looking at current areal topics. In three issues the necessity of answering the stated research questions is explained, revealing the tension between different interests of multiple parties.

General Lack of Public Green Space

Research from the Altera institute of Wageningen university shows the amount of public green space near households is far below the national determent norm in Utrecht: 53 square meter per inhabitant in comparison to 75 square meter per inhabitant. Moreover, in comparison to Rotterdam (77) and Amsterdam (64) the municipality has the least square meters of accessible green space among the large Dutch cities (CBS, PBL, Wageningen UR, 2010).

Landscape as Pulling Factor for Knowledge Economy

A recent developed discourse within the field of landscape architecture has put its main focus on the relation of quality and prestige of landscape with opportunities for regional economic benefits. 'landscape is corporate identity' is the motto of the publication Blind Spot which advocates this new attitude towards the profession (Baas, Boeschoten, Gerretsen, Geuze, & Rutten, 2016). The quality of life, provided by the landscape is seen as a key success factor in 'the global battle for talent' in which all major cities are engaged. This way of thinking is very relevant to the East side of Utrecht because of the presence of the university and science park.

Plans for Broadening of A27 Causing Societal Tension

In the eighties of the previous century the plans to construct the state highway A27 along the east side of Utrecht were pushed through by the national government. Back then this caused a lot of tension since the route (so called tracé) went directly through the old estate forest of Amelisweerd. Stubborn protesters entrenching in the forest where brutally taken away by large force of riot police. Therefore it is not surprising the current plans of the national government to broaden the road with 30 meters encountering much resistance from the citizens. The friction is compensated by the state with a 250 meter wide roofpark located allong the Koningsweg.

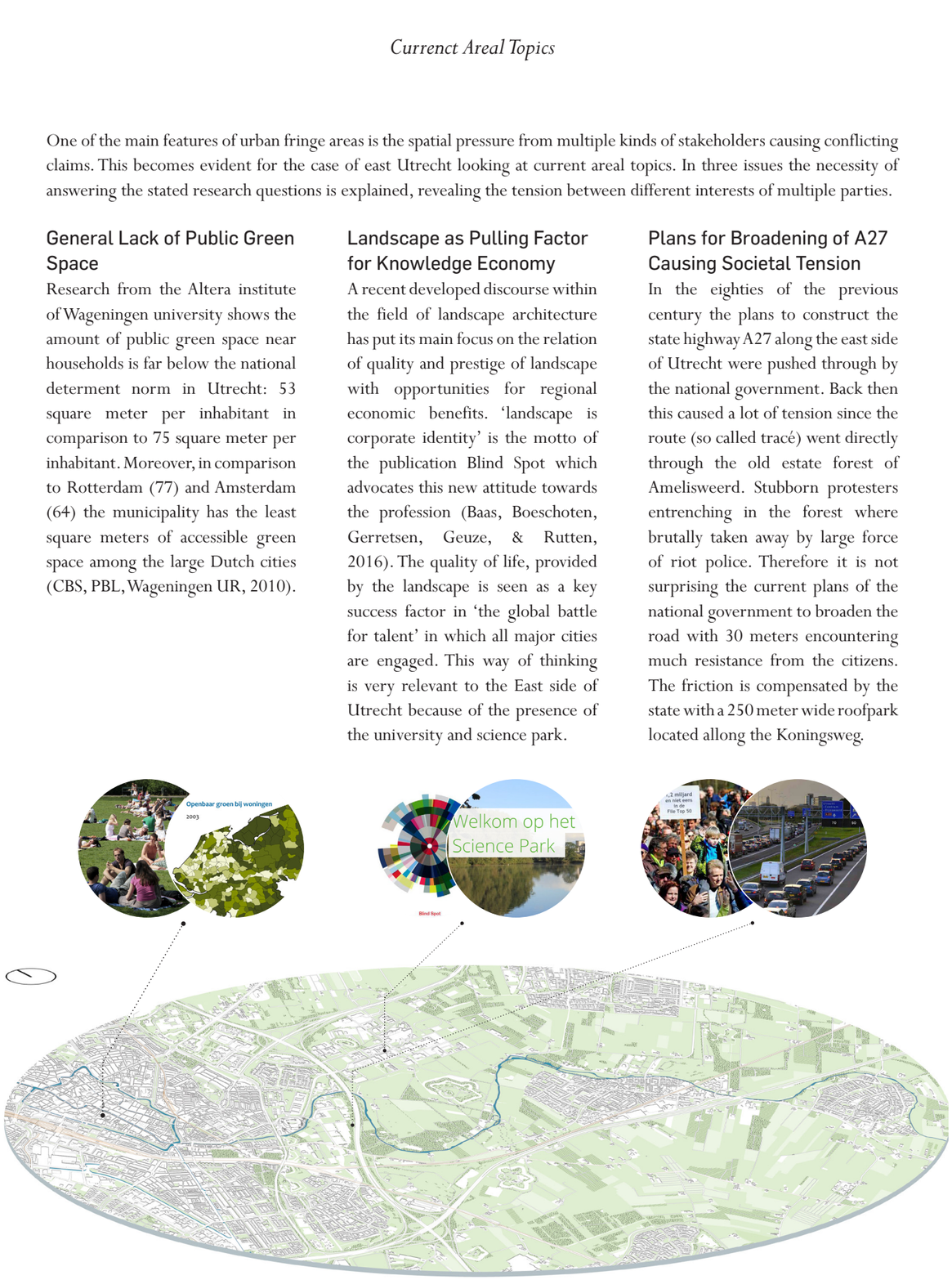
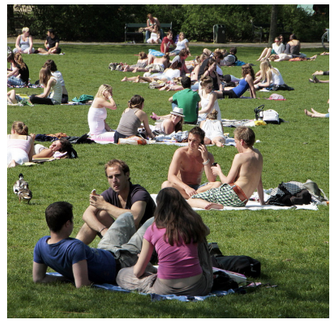
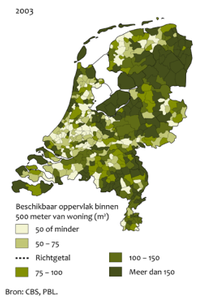
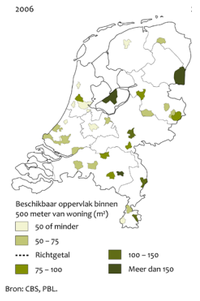


fig. 12 Areal overview with location of current areal topics







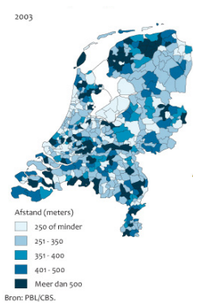


fig. 13 General lack of public green space

fig. 14 Landscape as pulling factor and brand

fig. 15 Societal tension due to broadening of A27 at the expense of nature

Research Framework

// Theory
// Method

Responding on the stated general and specific research question four research and design approaches are evaluated. Two of them about the stratification of modified landscapes in general (2+3) and two specifically concerning urban fringe areas (1+4).

1. Cities Without Cities. An Interpretation of the Zwischenstadt by Sieverts, T. (2004);
2. The Land as Palimpsest by Corboz, A. (1983);
3. The obligation of invention by Lassus, B. (1990);
4. Ecology on the edge: Landscape and ecology between town and country by Tjallingii, S. P. (2000).

According to these theories a method is developed to apply on the case of east Utrecht.

Big Image/Small Measures

To start off we continue on the previously discussed look of Sieverts on the assignment of the urban fringe. Sieverts (2004) sees a solution in making the urban fringe legible and intelligible to provide it with an image and to make it perceivable as substantive living environment and therefore worthy to cherish. In his book he is in search for a new type of planning which is responsive to the change and dynamics of the areas (ibid., p. 81). The strategy he proposes is to create this legibility and intelligibility by exploiting numerus smaller interventions in the small grain of the urban fringe -so relatively the complexity of the realization reduces-, but all according to a long term regional concept and image. Due to this step-by-step strategy, the end result is flexible and resilient to uncertainties. (ibid., pp. 81-82). The significance and scope of these small tasks, must be made perceptible, to enable them to be seen in a new strategic context and gain relevance. The visual image is for him the right tool for this: 'The persistent, small-scale and only in the long term effective work on the reality of the city requires to be corroborated by generating visual conceptions which show where small and imperceptible measures should lead. The principle of sustainability must be implanted in the consciousness by using key images, before it can be implanted in reality.'. These visual images should offer the politician and citizen orientation, coordination and motivation. In this combination they can have a key guiding role for implementation (ibid., p. 82). This is a tool for planning, but an even more interesting question is of course, what should be the content of these images? He adds to the previous that this tool is necessary, but that 'the relationship of people to their fellow human being, to the cultural quality of their city and to the nature of their environment' will be most decisive and therefore the social , cultural an ecological quality must be in the lead role (ibid., p. 126)

The Land as Palimpsest

From this pragmatic approach we continue to a much more philosophical interpretation of our living environment. The iconic work of Corboz 'The land as palimpsest' (1983) provides insights on how the modification of the land can enrich the experience of it by paying attention to what used to be there: reading the landscape as an accumulation of temporal superposed layers. The comparison to the palimpsest comes from the reuse of parchment with the former writings still visible. Corboz sees these old remains in the landscape as valuable starting points for new modification:

"The land, so heavily charged with traces and with past readings, seems very similar to a palimpsest. To set up new developments, to exploit more rationally certain lands, it is often necessary to modify their substance in an irreversible manner. But the land is not a throw-away wrapper or a consumer product which can be replaced. Every land is unique, whence the need to "recycle", […] to make it available again so that it meets today's needs before being done away within its turn." (Corboz, 1983).

The way this corresponds to Sieverts approach to the urban fringe lies in the emphasis of the particularity of every place. For Sieverts the elements which make a landscape unique are most valuable in developing the urban fringe areas and should be the input for the bigger image to be developed.

Inventive Analysis/Minimal Intervention

In line with Sievert approach to modify the landscape by separate interventions, Lassus (1990, 1998) advocates the obligation of the designer to make an essential and therefore minimal intervention to resolve the coherency of the landscape composition -though not specifically for the urban fringe-. He does not explicitly make use of multiple small interventions to serve a bigger image like Sievert, because the strategy has a different nuance. He stresses the modest attitude the landscape designer should have towards the site because one should be aware of the fact that the intervention is just one in a long history of modification of a place. Just like Corboz (1983) he endorses the idea of the land existing out of historic strata, each as significant as the other (Lassus, 1990, p. 144). Though unlike Corboz, he also connects a design strategy to this. He calls this strategy 'inventive analysis'. For this he introduces the concepts of: restoration; rehabilitation; and reinvention. This means that what is known of the site within the limits of the historical sources available should be restored. What is less well-known should be rehabilitated: by conceptual reconstruction. 'The aim is to evoke by material or by design the period of origin.' And the strata for which very minimal sources are available, the space should be reinvented, 'That is to say, using contemporary creation to establish a logic of articulation between successive compositions of place that have been used throughout history' (ibid., p. 144). The strata should be defined into timeframes whose organization is understood by the public (ibid., p. 145). The aim is to be able to discern what would be most appropriate to the specific relation between a place and practices of that place. This is where Lassus can be an addition to the strategy of Sievert.

From Set Borders to Guiding Structures

The reason to involve this theory lies at the core of this project. The preface concluded with the notion to aim for a project which counters the focus of an object approach -according the conflict between natural and urban environment- towards a process approach where the two develop collaborative. The previous discussed theories already elaborated on interpretation the landscape as a continues changing entity, however not yet coining the concrete elements which should have the lead in this. The theory of Tsjallingii resolves this problem. His main purpose is to revise the traditional role of ecology in urban planning as protected entity towards a carrying condition for controlled development of slow and fast lane activities. The design strategy Tjallingii advocates to apply this way of thinking is called the two networks approach. It 'provides a framework for spatial development and for managing flows as a basis for contrast, diversity and flexibility in urbanised regions.' (ibid., p. 114). This framework exists out of the grey traffic network and the blue water network. The traffic network has the ability to work as a very effective planning instrument in channelling human activities, either by stimulation or prevention. This applies for both urban (red) and rural (green) activities, so in this context the objective polarity between the two is irrelevant (ibid., p. 116). The water network on the other hand has the ability to accommodate both ecological and social/ economic functions. 'The water network can be seen as a carrier of functions like quiet recreation and wildlife.' but also 'It is able to create conditions for durable quality of green areas but also for sustainable production of drinking water and other water resources.' Because of multilateral values, the water structures become worthy to cherish and to protect form built-up area. Therefore the water network can be highly effective as a planning instrument. In this way Tjallingii compliments Sieverts theory about the importance of ecology in the urban fringe with even better reasons.

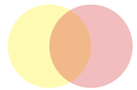
Together these theories complement each other and this brought me to an urban fringe design method which exists of four steps. The steps can guide the development of an interference strategy for urban fringe areas which aims to develop a more coherent urban fringe with emphasis on the stratification of the landscape and the structuring fueatures of specificly the grey and blue landscape structures. The steps are given a recognizable name which gives a rough understanding of their purpose.

I**ndication** of the urban fringe:
inventive analysis of the bigger image.
This is the start of the intervention process. To know what is relevant to research in the next two steps the larger spatial and social context needs to be indicated: What is the regional context, and what is the spatial distance towards the city hart in comparison to the other urban fringes surrounding it? What potentials does this bring to the area?

I**nvestigation** of the urban fringe:
inventive analysis of landscape layers, including the blue and grey structures.
The landscape layers should be explored through time and scale, so it becomes clear how they can function as carrying structure in a design: From what spatial elements is it composed and how did it evolve?

E**xploration** of the urban fringe:
with investigation in mind searching for a bigger and strong image for the area.
In the exploration the discovered qualities of the area are combined and translated into a potential bigger image for the area. This is the moment to imaging what could be possible for the area. Questions to be asked are: How can the potentials of the different landscape structures be combined? And how can this result in a coherent concept for the area?

Implication in the urban fringe:
with this bigger picture in mind, choosing strasegic minimal interventions along grey/blue structures.
According to the gained knowledge and the evolved future image for the area, a strategy can be developed. What are the crucial points to improve to develop the envisioned image? What is the right order to intervene?



Indication

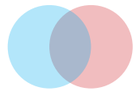
Inventive analysis of the bigger image

Investigation

Inventive analysis of the landscape layers through scales and time

Exploration

Searching for a bigger and stronger image for the area based on the potentials in the landscape layers



Implication

Intervene along grey/blue structures according to the new image

Application of Method

// Indication
// Investigation
// Exploration
// Implication

The developed methodology is applied upon the case study of east Utrecht. The steps lead us to the implication of a coherent and site specific design strategy which makes the grey and blue landscape structures in the urban fringe of east Utrecht the structuring network for the furthers development of the area.

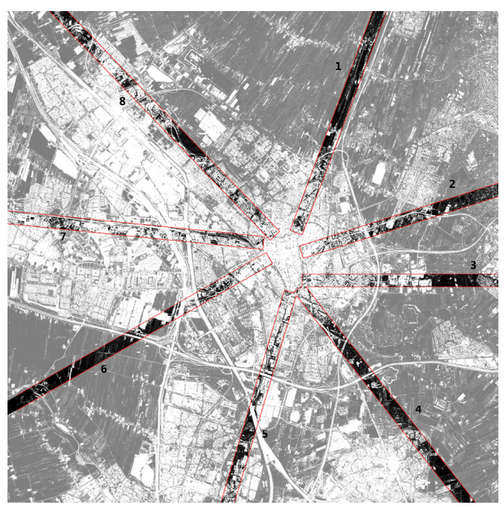
To determine the global spatial context compared to the whole city the amount of built and unbuilt area from a satellite photo is compared. The following steps are followed:

fig. 16

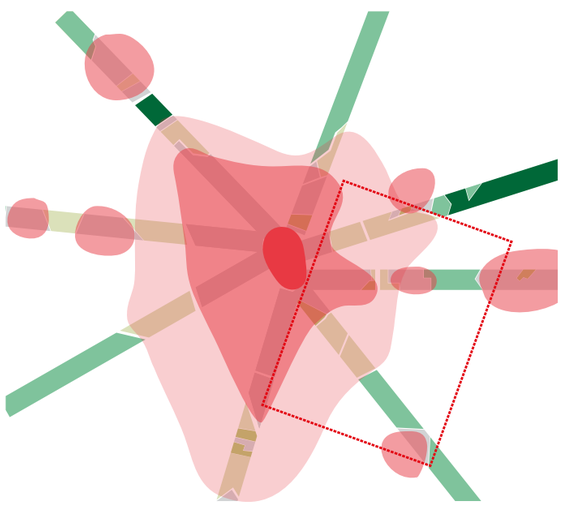
1. Composing a satellite photo from google maps frames in high resolution.
2. Making a rigid black / white image by setting a threshold value for the green spectrum of the photo.
3. Making three kilometres long and hundred meters wide radial cut-outs, starting from the common urban expansion lines: along the land roads departing from the old city gates.
4. Analysing the space-use in each stroke and categorizing the gradient between city centre and country side. fig. 17
5. Translating abstraction back into map, resulting in a highly reduced interpretation of the urban footprint in the surrounding land. fig. 16

2.

3. a



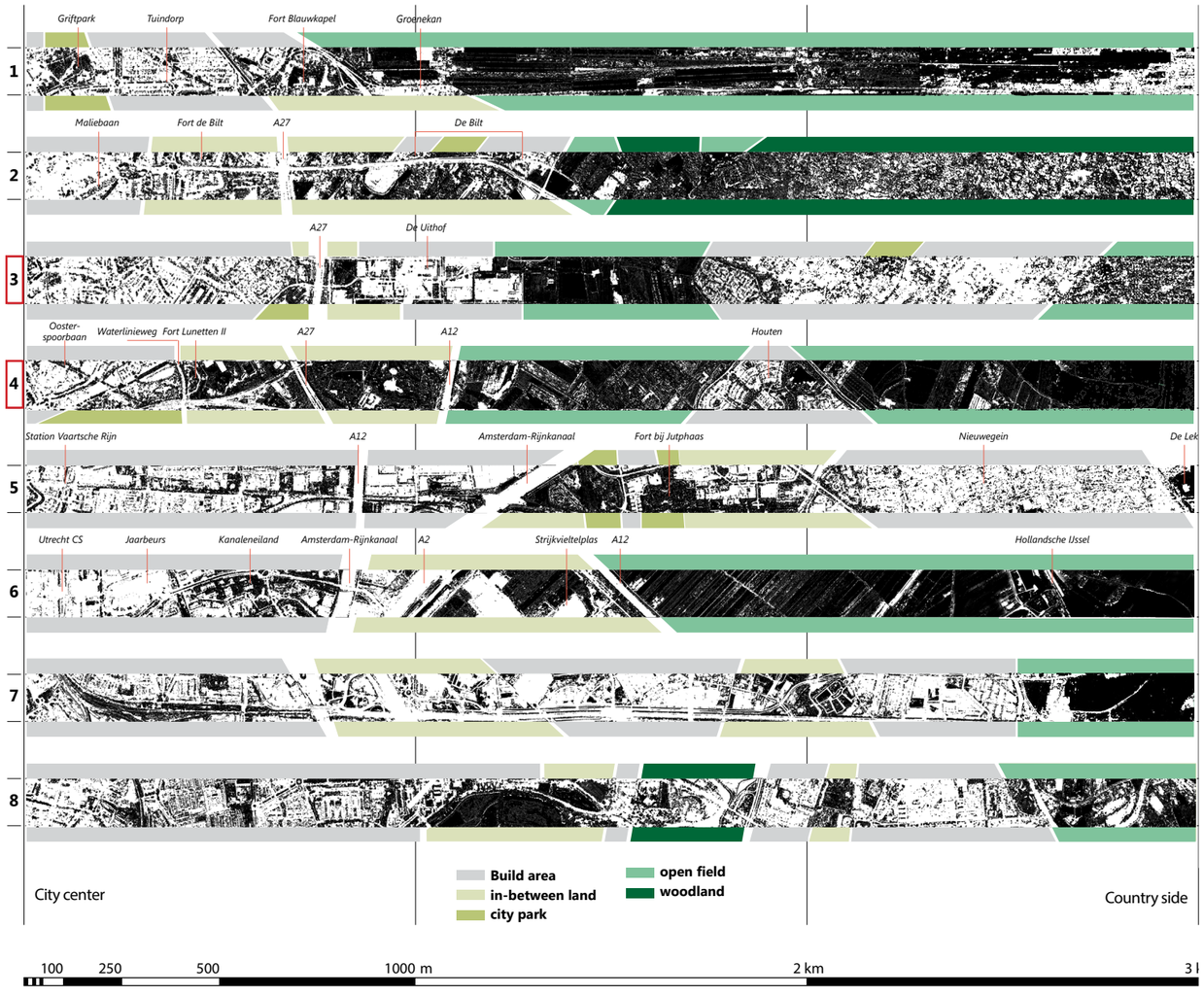
3. b



5.

fig. 16 Step by step transformation from high resolution satellite photo to abstract interpretation of transition between city centre, urban expiation and urban fringe.

In the fig. 16 and fig. 17 the described steps are applied on the case of Utrecht. The conclusions can been drawn from the final two steps where the gradient of east Utrecht, stroke 3 and 4, are compared to the other development directions. In this it can be confirmed the urban fringe zone of east Utrecht lies on close distance to the city centre in the context of the whole city. Within less than one kilometre already urban fringe zones appear and after only a bit further already the countryside can be experienced. Comparing this to west or south Utrecht this is about twice as close. This notion presumes the potential to let the surrounding landscape reach far into the urban tissue on this side of the city.



4.

fig. 17 Step four showing the process of determination of categories of territory

Field Study

During several site visits I took photos, which make unexpected collisions between different landscape layers visible. For each of the four examples shown in fig. 19 counts that at least three historical landscape layers are visible, which once you are aware of it bring a more valuable experience and understanding of the area.

Photo A is a panoramic view from the Waterlinieweg viaduct crossing a railway cluster. It shows clearly how the fast lane infrastructure landscape separates the fortresses. Though the overview which is provided because of the crossing of two fast lane structures (need for height difference) can be a plus since it gives an overview of a large area, all the way to Ameliseerd. However as a pedestrian this potential is now hard to experience as such, since the cars on the waterlinieweg are passing by with highspeed which evokes an uncomfortable experience.

Photo B is taken on the Koningsweg, just across the other viaduct of the waterlinieweg. The experience here is very green and the water is well visible. The presence of two fortresses of the Dutch waterline is not very evident though. You need to know before you see it.

More to the north at the south edge of the USP, photo C shows the ridged border between built and unbuilt territory. This makes the neighbouring country estate and another fortress of the Dutch waterline visible from far distance, though the fortress is not recognizable as entity.

In Photo D the collision of de country estate with the Krommen Rijn and elements of the Dutch waterline is visible. This can be experienced strolling down the historic towing path, continuing along the Kromme Rijn from the Waterlinieweg until Werkhoven.

fig. 18 Areal overview showing locations of analysed photos

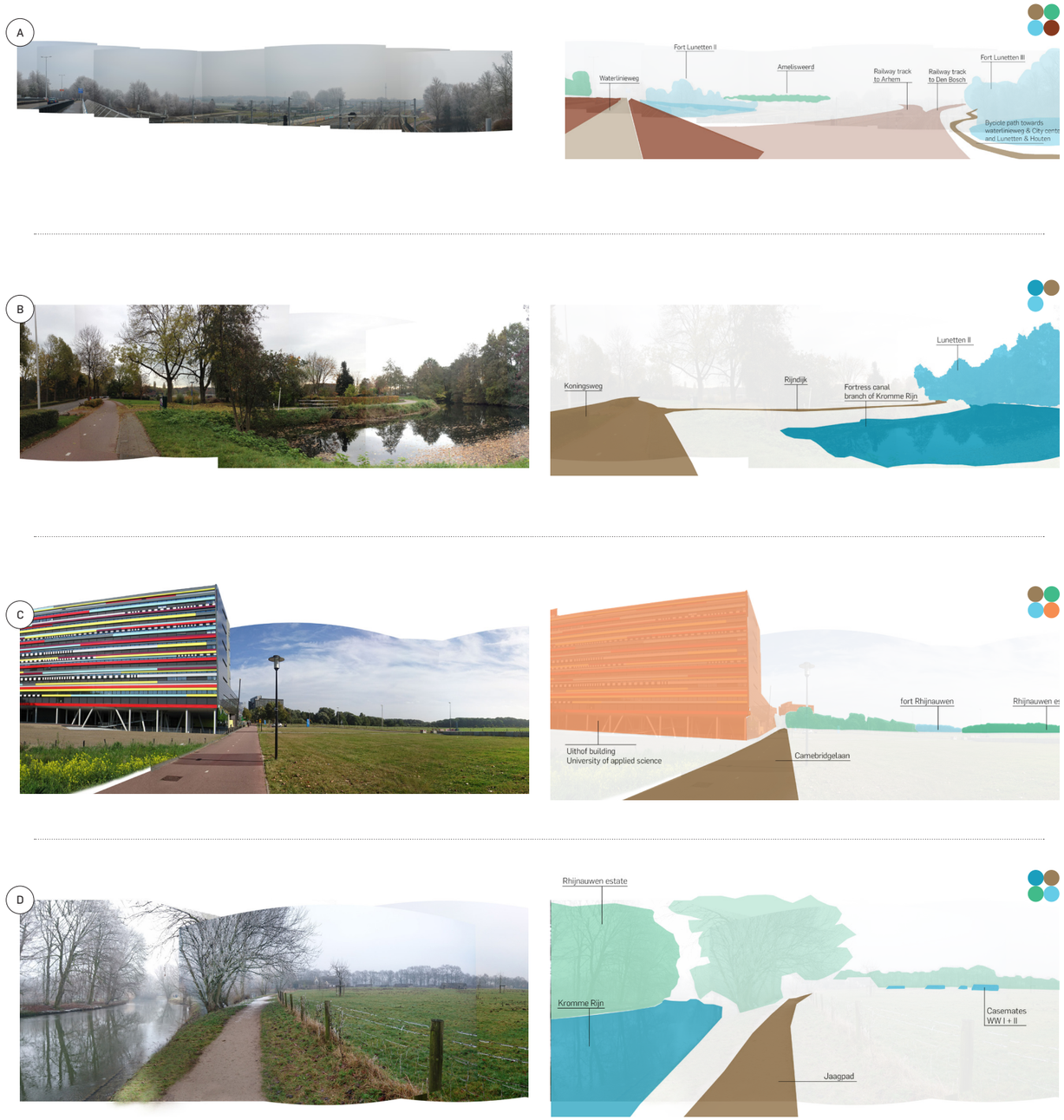


fig. 19 Selection of analysed photos taken during several site visits

Desk Study

The landscape layers that where recognizable on site are all part of larger landscape systems. These structures all have their own history of origin with many complex influences e.g. political / social / natural / cultural. In accordance with the discussed visions of Corboz (1983) and Lassus (1998), the aim is to get a thorough understanding of the different strata to provide the project with valuable leads to enhance the area. The development, value and interconnectivity of these different landscape structures is made insightful by cross-reference mappings accompanied by concise narratives.

Of course for every attempt to describe the genesis of a landscape, concessions in completeness are inevitable. Therefore the choice for four certain landscape structures to anatomized is determined by bias emerging from the discussed theories.

The combination of the method of Tjallingii (2000) concerning the grey-blue networks and of Corboz (1983) and Lassus (1998) concerning the value of stratified landscapes brought me to the choice to explore the narrative of the Kromme Rijn and the course of the eastwards old land road, nowadays known as the sequence of Gansstraat, Koningsweg, Koningslaan and Achterdijk. In addition the method longs for an iconic image for the area (Sieverts, 2004). Entities which are already strong points and also contribute to the stratification are the estate forest of Amelisweerd and the fortresses of the new Dutch waterline, which are there for engaged in this step of the process. Moreover these two layers also have had a large impact on the pattern of urban expansion. Therefore understanding their development brings insight in the form and appearance of the urban fringe.

fig. 20 Areal overview showing locations of elements of historical landscape structures

The Rhine as Border Condition

The river Rhine, together with the east European Danube formed the geographical boarder of the Roman empire around the beginning of the first century, at that time on the peak of its extent and power. Along this natural boarder the Romans constructed a continues patrol road called the Limes [Latin: limit]. This road was approximately every two hour of traveling by food staffed by an army base in the form of a so called Castellum.

The location of the current position of the centre of Utrecht was back then the splitting point of the Rhine into the continuation of the Rhine towards the North sea (and hence the connection to Britain) and the river Vecht towards the -back than undammed- Southern sea (and hence the connection to Scandinavia). Therefore this was a very strategic point and on a short distance three castella where situated (Blijdenstijn et al., 2015, pp. 89-91).

fig. 21 Cross-reference mapping of former river flow Rhine followed by the Roman Limes.

From Settlements to Formal City

After the fall of the Roman empire the castella got abandoned and in decay. However from the 7th century on the location of the old remains of the central castellum got inhabited alternating by Frisians and Franks, in the context of the Frisian–Frankish wars. At that time Dorestad was the dominant city of the area (current location of Wijk bij Duursteden) at the splitting of the Rhine and Lek. The hinterland flooded more and more around the beginning of the second millennium as the downstream meandering riverbed of the Rhine got silted up. Therefore ruling bishop decided to dam the Rhine (1122) and the Lek took over the function of the main stream. To keep Utrecht connected by water the Merwede canal was dug (Blijdenstijn et al., 2015, pp. 235-251).

Because of the high costs of all of this the taxes rose which caused a lot of resistance from the traders and citizens resulting into revolt. Under pressure the bishop compensated the citizens by the granting of a town charter (Rutte et al., 2016). The small settlements on the banks of the old Rhine and the Vecht could now form a collective by a surrounding city wall and canal. The latter still forming the strong image of the historic city centre of today.

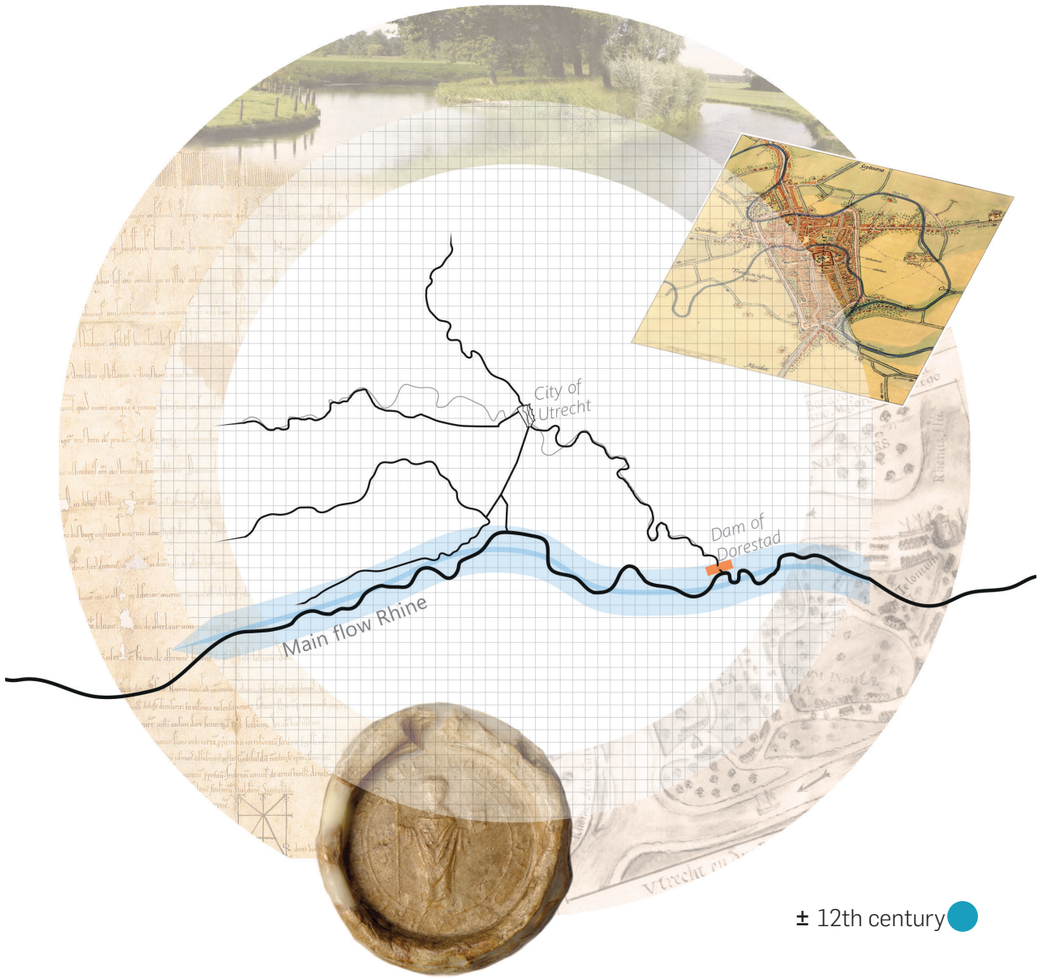


fig. 22 Cross-reference mapping of the chanced water course of the Rhine and the town charter as means of compensation.

Connecting Cities and Hinterland

For a long time the transportation of people and goods went mainly over water, for instance on the Kromme Rijn by means of towpath: a path along the watercourse where a man or horse pulled the sloop forward. The transportation over land was much less comfortable due to the poor road conditions and its dependence on weather. However from the 16the century onwards technics improved and scheduled transport services of goods and persons over land roads developed, indicated as wagon trail (Blijdenstijn et al., 2015, pp. 60-62). The city was connected to its hinterland and other cities from the city gates. 'Ledigerf' still reminds of the empty space in front of the eastern city gate, the location where the Kromme Rijn flows into the city heart. Due to the high amount of meanders of the Kromme Rijn and the interference with two sluices the towpath was inefficient, so a parallel but straighter land road started from this point following the old clay dike: the 'Wagenweg naar Wijk bij Duurstede' (De Jong, 1954, p. 50). From a writing from the late 18th century we can conclude this route was the winter alternative for the sand road on the north side of the river.

fig. 23 Cross-reference mapping of the connective postal and trading routes through the county, with the description of the clay road to Wijk bij Duursteden.

The Leisure of Nature

While the city developed the elite sought for rest and leisure in country estates just outside the urban life. The positioning of the estates often follow the boons of landscape structures such as the natural relief of the Utrechtse heuvelrug, prominent infrastructure lines such as the Amersfoortseweg or the presence of fresh water, such as the Kromme Rijn or Vecht. Among the latter tree estates are situated directly on the east side of Utrecht: Old Amelisweerd, New Amelisweerd and Rhijnauwen. This ensemble of estates was connected to the city by the previous described clay road. When the momentary ruling king Lodewijk Napoleon Bonaparte (the younger brother of Emperor Napoleon I) took residence in New Amelisweerd the clay road got an upgrade into a lawn, planted with oaks and planetrees and got the name kingsroad (koningsweg) (De Jong, 1954, p. 49). Nowadays the ensemble of the three estates is publicly accessible and well maintained with a recreation and leisure as main purpose. Testified by the popular pancake house, the youth hostel, the museum and the 'jaagpad' to name some of the main appealing factors.

fig. 24 Cross-reference mapping of country estate structures following the perks of landscape conditions

Artificial Boarder Condition

The new Dutch waterline is a 85 kilometre long line for military defence. The middle segment is passing Utrecht on its east flank. This landscape infrastructure is completely artificial, however relying on natural conditions: topography and water. It exists of inundation fields to flood on purpose to keep the enemy at distance and fortresses to overlook the fields and defend weak spots: land too high to inundate. The project has been built, developed, improved and in function over a period from 1815 till 1963. The Kromme Rhine provided inundation water. Due to the natural height of the river levees, the east of Utrecht was a weak spot in the line. Hence a high concentration of fortresses was necessary, positioned in a double line. Until the official defensive function of the Dutch waterline was finally withdrawn, each fortress was attributed with virtual 'prohibited rings'. Certain redial distances had ascending building restrictions to guaranty sight in times of attack. This has had a large impact on the possibilities for urban expansion (Blijdenstijn et al., 2015, pp. 124-138). For long the fortresses were isolated from visitors. This made them flora and fauna hotspots. Some now have a socially engaged function such as museum or social enterprise.

fig. 25 Cross-reference mapping of the New Dutch wateerline and its fortresses, now being of high ecological and social value.

After getting an understanding of the -for this project- most important landscape structures, we can zoom in to the area to see how their interrelationships work out on site.

To start the layers of the Kromme Rijn, the old clay road and the country estates are piled up. Each of these three structure is fundamentally formed as a connection between city and land, though each in its own way. The Kromme Rijn as fundamental condition of the position of the city, the road as a vector between city and inland destination and Amelisweerd as external base with reserved distance to the city however with direct visual (sightlines), physical (roads) and political (former power and prestige of nobility) connections to the city.

The structure of the Dutch waterline exists of two spatial layers: inundation fields and the fortresses surrounded by their prohibited rings. In contrast to the previous layers, these are specifically designed as collaborating network and to defend all the territory which lies behind it (on its west side).

The combination of the conditions brought by these four layers make the urban fringe form of east Utrecht very particular: an unbuilt triangle embraced by urban expansion plans: the USP and Lunetten. The potential lies in the landscape structures present in this triangle which are able to connect the land all the way to the heart of the city. The fortresses of the Dutch waterline do have the potential to enhance the Green Triangle, however as a landscape structure the Dutch waterline remains a separate entity.

fig. 26

fig. 27

Tree landscape structures formed by connecting city and land.

▲ The estate essamble as base for nobility to retreat from the city but stay visual, physical and political connected.

▲ Old land roads as a expanding network existing of lines between destinations. The old clay road as transit parallel to the Kromme Rijn.

▲ Kromme Rijn as the conditioning landscape for the geographical position of the historical city

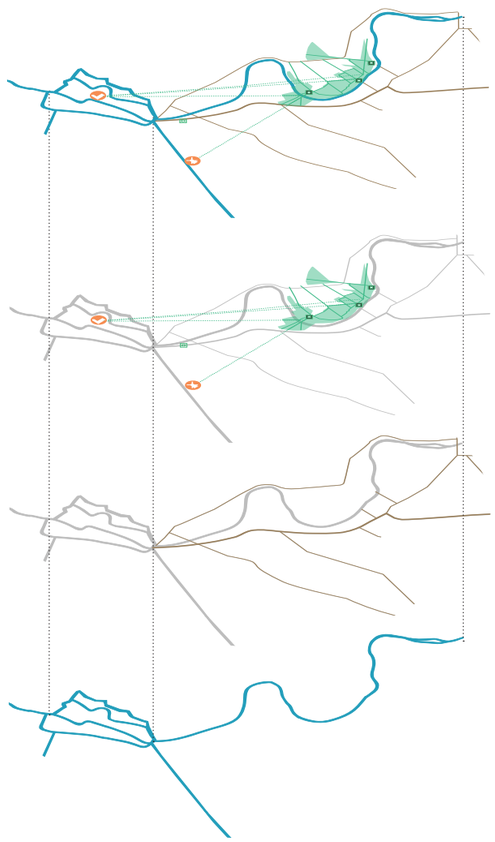
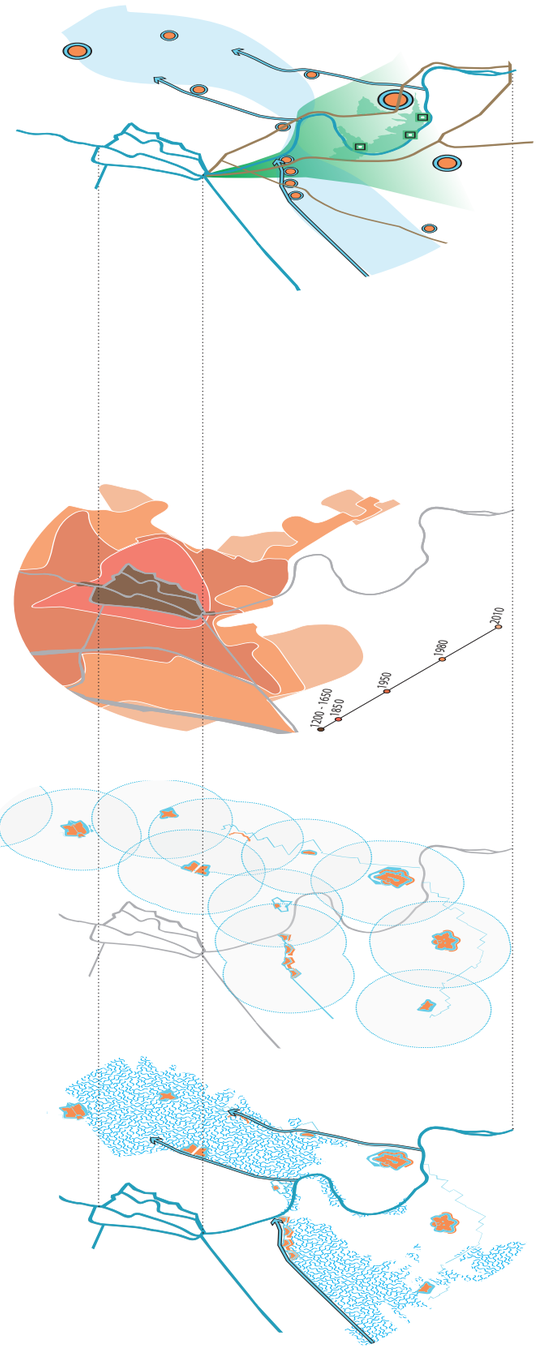


fig. 26 Stratification of landscape structures connecting city and land



Historical landscape structures have the potential to form a blue grey connection between city and land, carrying a green triangle with the estates in its hart. The prescence of the water line fortresses enhences the area in its ecological and social value.

▲ Large Urban expansion in east Utrecht was not possible until 1963, that moment the land had become fragmentated and used for other purposes. Resulting in a capricious urban fringe form.

▲ Due to this weak spot and the prominence of the city Utrecht a high density of fortresses is constructed, each with prohibited rings limiting the possibility of urban expansion.

▲ The inundation fields surrounding Utrecht have a direct connection to the Kromme Rijn. Though the presence of the river levees also are the weak spot of the line because of the raised land.

fig. 27 Stratification resulting in a potential concept

Radials and Intersections

The main thread to the potential of the urban fringe is caused by the intersection of perpendicular orientated transport infrastructures. These are designed to distribute as efficient as possible. The speed difference with the slow structures of the Kromme Rijn, Koningsweg and surrounding environment is therefore too large to merge, resulting in a physical barrier with only punctual crossings. These crossings are often dark, narrow and/or monofunctional making them uninviting and a threshold to pass.

fig. 28

fig. 29

Sollution

Problem

The bigger image of the green green triangle can be developed by a strong design for the Koningsweg en de Kromme Rijn with green nodes on the grey-blue intersections with the anual rings of the transport infrastructures.

▲ The annual rings of the fast-lane transport infrastructures form a barrier for the latent potential of the urban fringe

Thread

▲ Intersecting transport infrastructures make the landscape layers inaccessible, fragmentized and illegible.

Potential

▲ Historical landscape structures form a blue grey connection between city and land, carrying a green triangle with the estates in its hart. The prescence of the water line fortresses enhences the area in its ecological and social value.

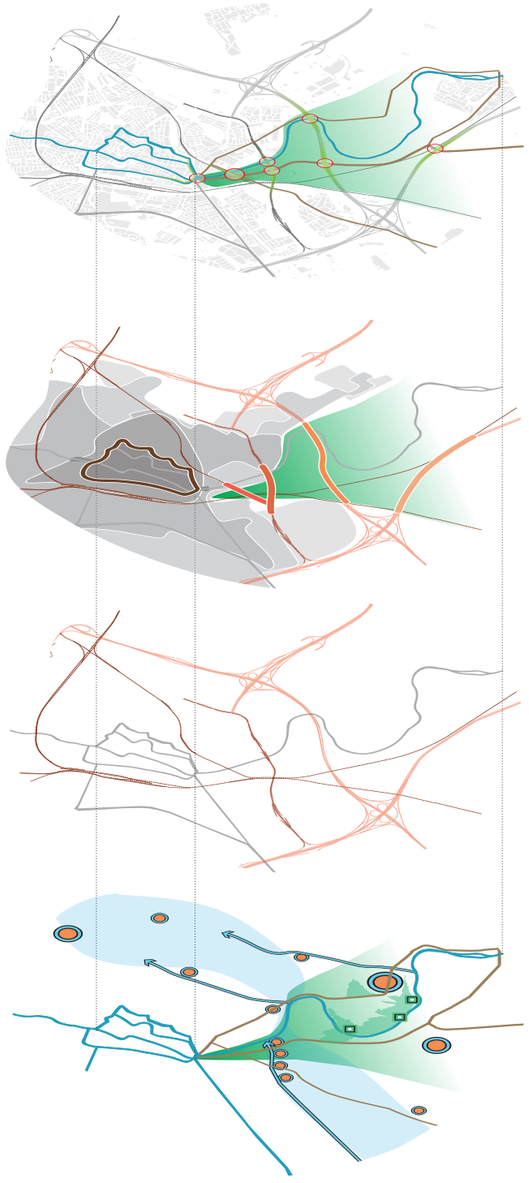


fig. 28 Stratification of landscape structures connecting city and land

fig. 28

The solution for the formation of the Green Triangle lies in resolving the intersections between the Kromme Rijn and Koningsweg with the annual rings of the fast lane infrastructures and making these blue and grey radials the backbones of the green area. The determined locations of intervention shown in fig. 29 will be analysed in the following chapter to search for the suitable solution for each subproject.

Future Perspectives for Annual Rings

In addition to this 'pointwise' and radial solution, I shortly want to elaborate on how this approach relates to, and can be enhanced by, resolving the barriers of the annual rings with a linear intervention. Hence a historic and a recent example of this are already present at the two oldest described annual rings: already in the early 19th century the old city wall has been redeveloped into a park (Zocherpark) and currently a contemporary version of this concept is happening at the Oosterspoorbaan. An obsolete railway track re-used as green cycling- and pedestrian path, reconnecting the surrounding urban fabric. These examples show how an annual ring which (partly) loses its function, can be reused for new and multifunctional purposes resolving the physical barrier.

As a landscape architect this offers a positive perspective on future technological developments which are promising concerning the reduction of fast lane infrastructure space consumption and their integration with other landscape structures.

Although we cannot predict the future, in the next chapter -after the descibtion of the interventions on the intersetion- a study is done on the possibility to continue this linear resolvement towards the next annual ring in line: the Waterlinieweg.

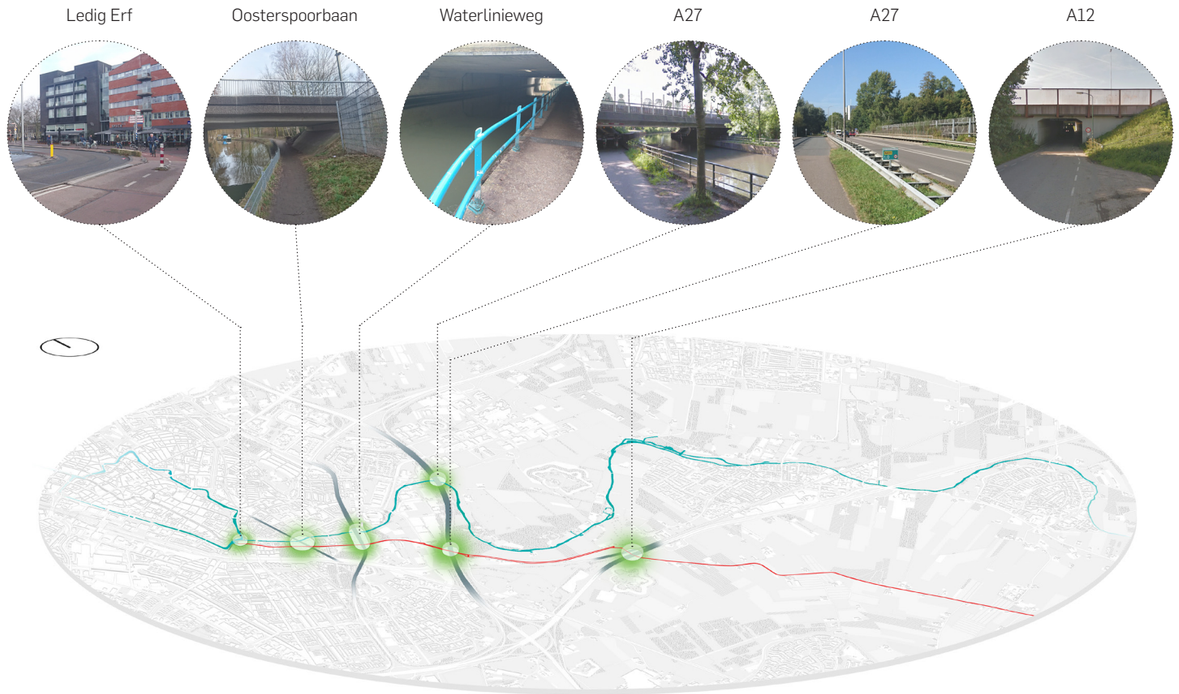


fig. 29 Areal overview showing the intersections of the fast lane infrastructures with the Koningsweg and the Kromme Rijn: the points to intervene.

Demands of Interventions

//Intersections
// Conditioning Structures

The interventions proposed for the intersections between the annual rings and the two guiding landscape structures, the Koningsweg and the Kromme Rijn, all have different demands. By determining their potentials and problems for each point a solution is proposed with certain boundary conditions. This is done in order of planned execution. Further study on the Waterlinieweg shows the possibility for a linear solution for this infrastructure barrier, followed by a spatial analysis of the current situation of the A27. After this also the two conditioning landscape structures themselves are spatially analysed.

Incremental Process

According to the discussed theory of Sieverts (2004), the interventions on the intersections are done step-by-step, in the context of the bigger image. The advantage of this strategy is that the process remains flexible and provides resilience in changing future situations. Initially attention is paid on how we experience these intersections moving along the conditioning landscape structures the Kromme Rijn and the Koningsweg. Additionally for the Oosterspoorbaan and the Waterlinieweg also an argumentation for the (continuation) of a linear solution is provided.

1

Oosterspoorbaan

Potential Explicitly connecting the realized linear refurbished railway track to the Koningsweg and the Kromme Rijn and thereby making it an inner-city connection towards the surrounding land.

Problem The linear improvement of the structure now stops on the point where it meets the Koningsweg. Thereby is the intersection with the Kromme Rijn not elaborately designed, making the crossing structures remain disconnected.

Solution Continuing the realized park on the other side of the Koningsweg and letting it bridge the rail cluster on its south, which connects it to the Houtensepad and Lunetten. Thereby connecting the park physically to the path along the Kromme Rijn in an explicit form.

2

A12

Potential Gate toward the Green Triangle

Problem The tunnel is unpleasantly narrow and dark.

Solution Broadening the tunnel at least by twice and designing it as iconic entity.

3A

A27 - south

Potential Just beside the point where the Konigsweg crosses the A27 the edge of the forest of Amelisweerd is situated. This gives the opportunity to strengthen the connection between the city and the country estate landscape.

Problem The A27 interrupts the origional visual axis of the country house nieuw Amelisweerd. Thereby the viaduct of the Koningsweg is very exposed to the nuisance and noise of the highway.

Solution A broad roof park would result in a much more pleasant and sheltered crossing of the A27 and brings the opportunity to restore the historic visual axis, making a better connection between the country estate and the city.

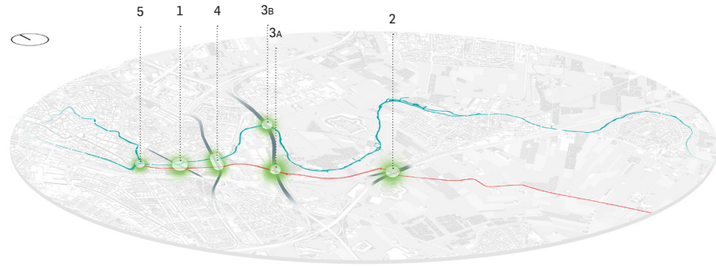


fig. 30 Areal overview showing the anticipated order of intervention on the intersecting points along the Koningsweg and the Kromme Rijn.

3B

A27 - north

Potential This location could be the main connection for slow traffic between the city and the USP. The route can engage the USP with the Kromme Rijn, a relation which is currently lacking.

Problem The passing underneath the A27 is very low and the boundary to the water is fenced. The passing is also not part of the commonly used rout between the city and the USP

Solution On this node the Kromme Rijn should have a leading role, showing the fundamental importance of the landscape structure in the development of the city. Thereby the water can make an improved connection of the USP to the city and the landscape.

4

Waterlinieweg

Potential Where the Koningsweg and the Kromme Rijn cross the annual ring of the Waterlinieweg, they also cross the series of the four Lunetten fortresses. The crossings can become the connection of the city with the waterline fortresses and exposure the social functions they accommodate.

Problem The space for a intervention is restricted. The zone between the fortresses and the road is narrow and the ramp along the road is steep and high.

Solution The solution depends on how the urban traffic will respond on the broadening of the A27 and the willingness of the municipality to give up space for fast lane traffic. To achieve the biggest improvement a linear strategy is preferable though demands large expenses. When this turns out infeasible a smaller development should resolve the essential problem for this particular project. In this case the soil base between the Koningsweg and the Waterline should be replaced by a bridge construction which opens up the barrier.

5

Ledig Erf

Potential The conditioning structures Kromme Rijn and Koningsweg collide at the Ledig Erf: the former empty square in front of the eastern city gate. This results in the opportunity to make this visual evident in the design of a public park, making it the entrance of the triangle.

Problem Two apartment blocs are recently built here. For the concept of the Green Triangle this is unfortunate since they blockout the visual connection between the Kromme Rijn and the Koningsweg.

Solution Refurbishing of the Ledig Erf as city park is the finale of the realisation of the main embodiment of the Green Triangle, by then being established as the well known image of east Utrecht.

The Waterlinieweg: a Linear Solution

The Waterlinieweg was built between 1939 and 1944 as the first urban beltway (segment) of the country. Since the Waterline fortresses where still in military function the road needed to be situated on the west side of Lunetten fortresses, hence the name 'Waterline road'. About 40 years later the national road A27 was constructed parallel to it, but the road kept its function and highway-like appearance. The plans on broadening the A27 seem to get realized so it is a relevant point whether the capacity of the Waterlinieweg could be downgraded from highway to city road. In fig. 31 the current situation is shown in map and schematic longitudinal section, showing the rampart of the road which -apart from the applied driving speed of 80 km/h- causes the physical barrier. Reducing the maximum driving speed to 50 km/h would make it possible to narrow and reduce the lanes. fig. 32 shows the mayor length of the road could also be reduces in height. The combination of the lowering and narrowing delivers a considerable amount of free space. This brings the opportunity to use this for the housing assignment the municipality has to deal with in the future. Though as a landscape architect I will not make an urban plan for this, a surface calculation shows a housing density of 50 households per hectare, provides the possibility to realize approximately 1000 households. Making the refurbished road serving multiple public and private functions makes the road of more value to its direct surroundings and an integral part of the urban fabric.

fig. 31

fig. 31 Current situation of Koningsweg accompanied with a schematic section showing the streched elevation and google streetview pictuters which show the high-way-like apperance

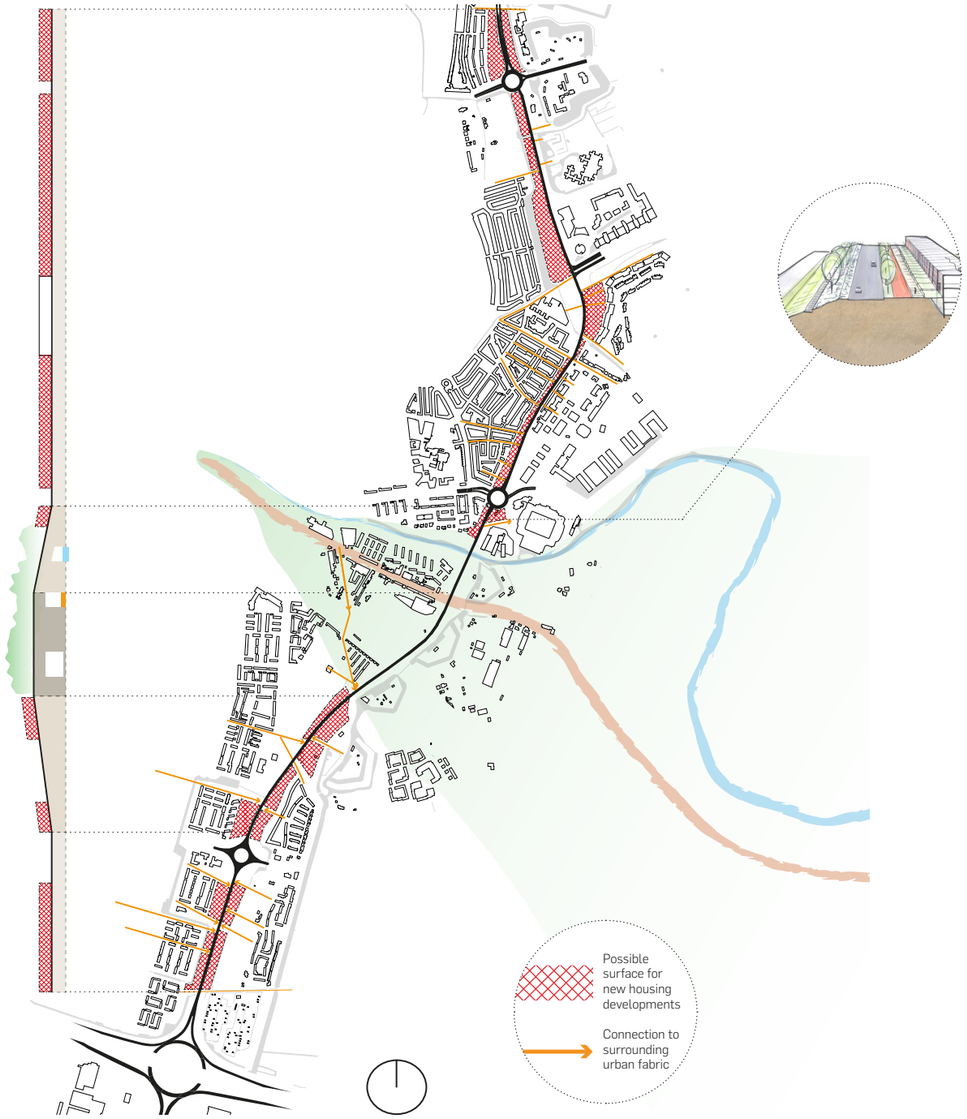
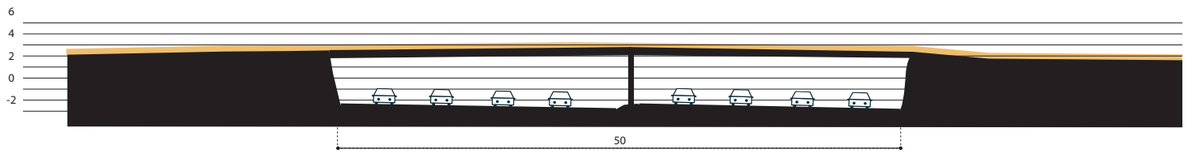


fig. 32 Proposal for narrowing and lowering of the Koningsweg, making it accessible for slow traffic and suitable for continuation of the urban fabric by space for houses and services.

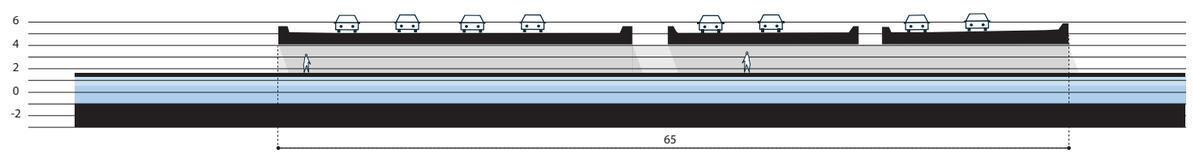
The A27 Fragmentizes the Landscape

On this annual ring the Koningsweg and Kromme Rijn are widely separated, though both cross the A27 on interesting points. As mentioned in the previous chapter the intersection of the Koningsweg and A27 is right next to the entrance of the forest which belongs to the country house Nieuw Amelisweerd. The construction of the A27 in 1982 had large affect upon the surface and continuation of the forest. Additionally to this the visual axis of Nieuw Amelisweerd -orientated straight upon the west- was interfered by the A27. The traditional connection between the country estates and the city was expressed by means of visual axes so this is an unfortunate loss. Slightly north from the intersection between A27 and the Koningsweg the virtual line originally continues.

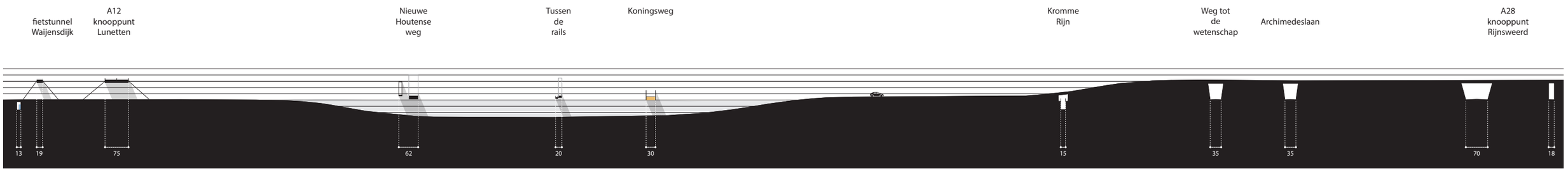
a. Cross section koningsweg



b. Cross section Krommerijn



c. longitudinal section A27



d. Current situation A27

fig. 33 Plan, longitudinal- and cross sections of current situation A27

The presence of the road is neither in advantage of the Kromme Rijn. The River passes underneath a viaduct with only a very minimal height, making the crossing dark and uninviting, while actually this could be a good connection to the south edge of the USP and north of the estate forest.

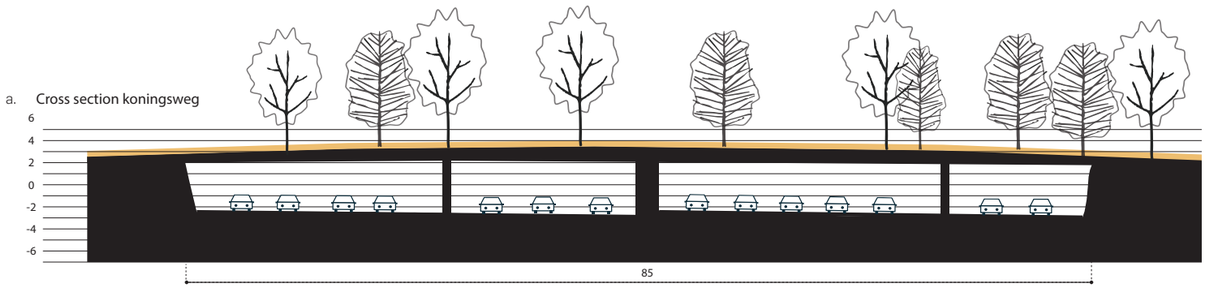
The planned broadening of the A27 results in more loss of surface, however it also provides direct motives to approach this construction project as a change to make up for the rigorousness used in 1982. With the reconstruction of the road the fragmentized and disturbed landscape structures of Amelisweerd, the Koningsweg and the Kromme Rijn could be resolved by means of roof parks crossing the highway on the location of the Koningsweg and the Kromme Rijn. This design solution is displayed on the following spread.

The solution of the roof park provides a more comfortable passing for slow traffic and provides the possibility to continue the appearance and characteristics of the surrounding landscape. Due to regulations the construction of a roof covering a highway has a maximum length of 250 meter. Compared to a tunnel a roof has much lower costs and cunstruction impact.

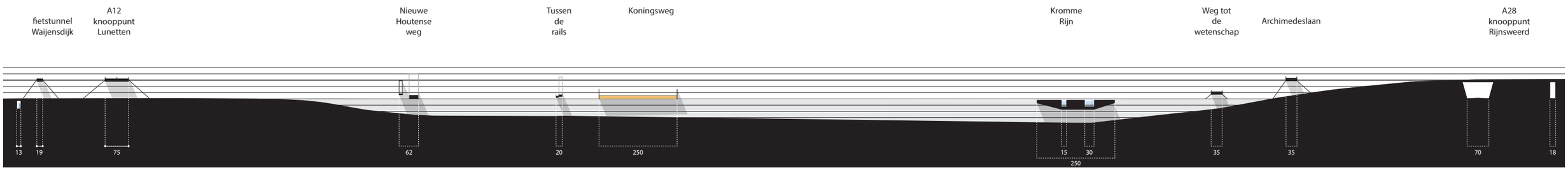
'Kings Cross' (De Koningskruising)

The roofpark of the Koningsweg provides the possibility to reconnect the fragmentized forest and axis of Amelisweerd, but also continuing the small scale archicultural landscape on the south of the Koningsweg.

a. Cross section koningsweg



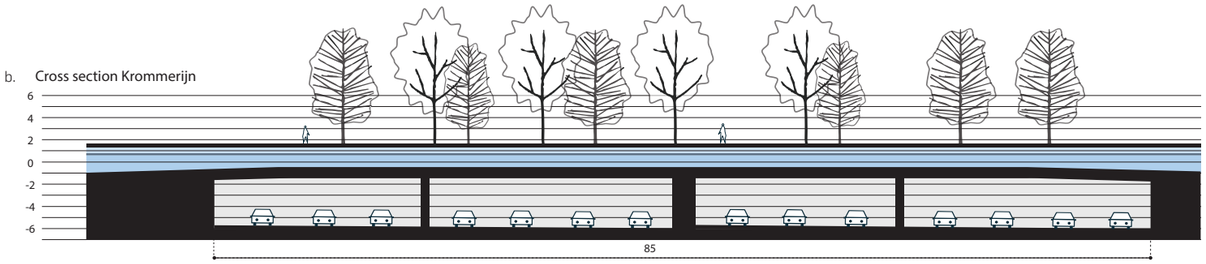
b. longitudinal section A27



The Curved Channel (Het Kromme kanaal)

To give the water a prominent position in contrast to the road, the preferred solution is a combination of a aqueduct and roof park. To be able to pass underneath the Kromme Rijn the A27 needs to be lowered for about 2 kilometres. North of the aqueduct the road climbs back on its original level: 14 meter over a distance of 1,1 kilometre, making the average slope less than 1,5%. The enhanced connection with the USP results in a design assignment for a by-pass of the Kromme Rijn along the USP and fortress Rhijnauwen which will be discussed later on.

b. Cross section Krommerijn



d. Proposed principles for intersection points

fig. 34 Plan, longitudinal- and cross sections of proposed new situation A27

Spatial involvement

Now that we have seen the diverse solutions for the intersections, the focus shifts to the two main landscape structures the Koningsweg and Kromme Rijn. According to the developed strategy they form the carrying structures of the Green Triangle, making it of mayor importance they provide in a coherent and continues experience of the surrounding environment. This map shows until how far the eye can reach moving along one of the two structures, for each structure first drawn seperately and subsequently merged together. Separately the maps show that the two structures are not involved into each other's visual fields, however this fusion map shows where the Kromme Rijn and Koningsweg share involved spaces, in the zone between Ledig Erf an Waterlinieweg an between The A27 and A12. Additionally this map shows the south edge of the proposed green triangle has a clear visual edge while the north boundary is much more defuse.

fig. 36
fig. 37
fig. 38

fig. 36 Spatial involvement of the Kromme Rijn and Koningsweg determined by tracing masses and visual boundaries.

fig. 37 The sequence of different profile typologies, often separated by an infrastructural annual ring visualized in schematic axometrics.

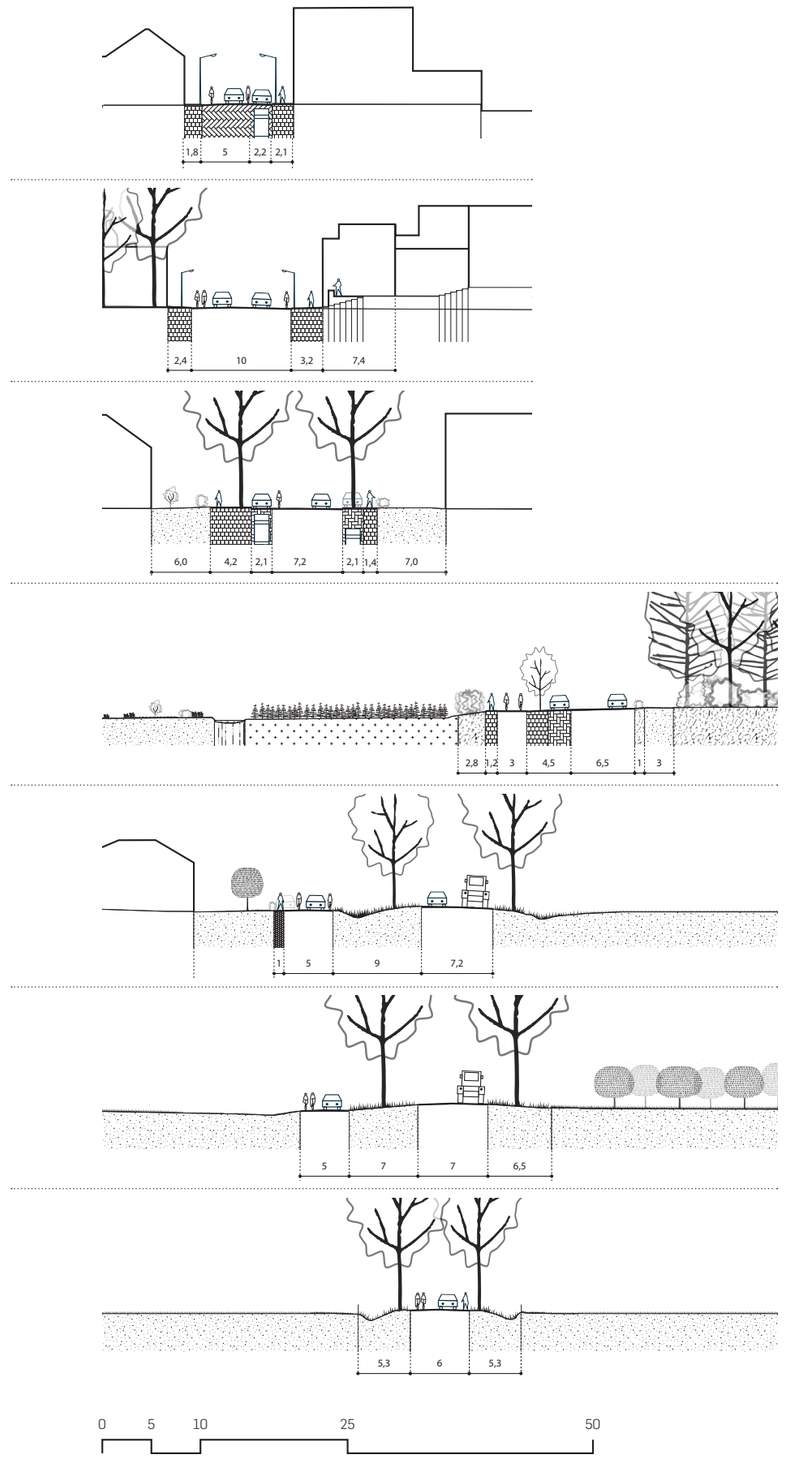


fig. 38 The sequence of different profile typologies visualized in sections

The Koningsweg Sequence

The profile of the Koningsweg develops from narrow to wide along certain principle profile built-ups. what is remarkable is the broadness of the profile without much refinement and the high amount of highly impermeable surface: mostly asphalt. even in zones where pavement would not be needed.

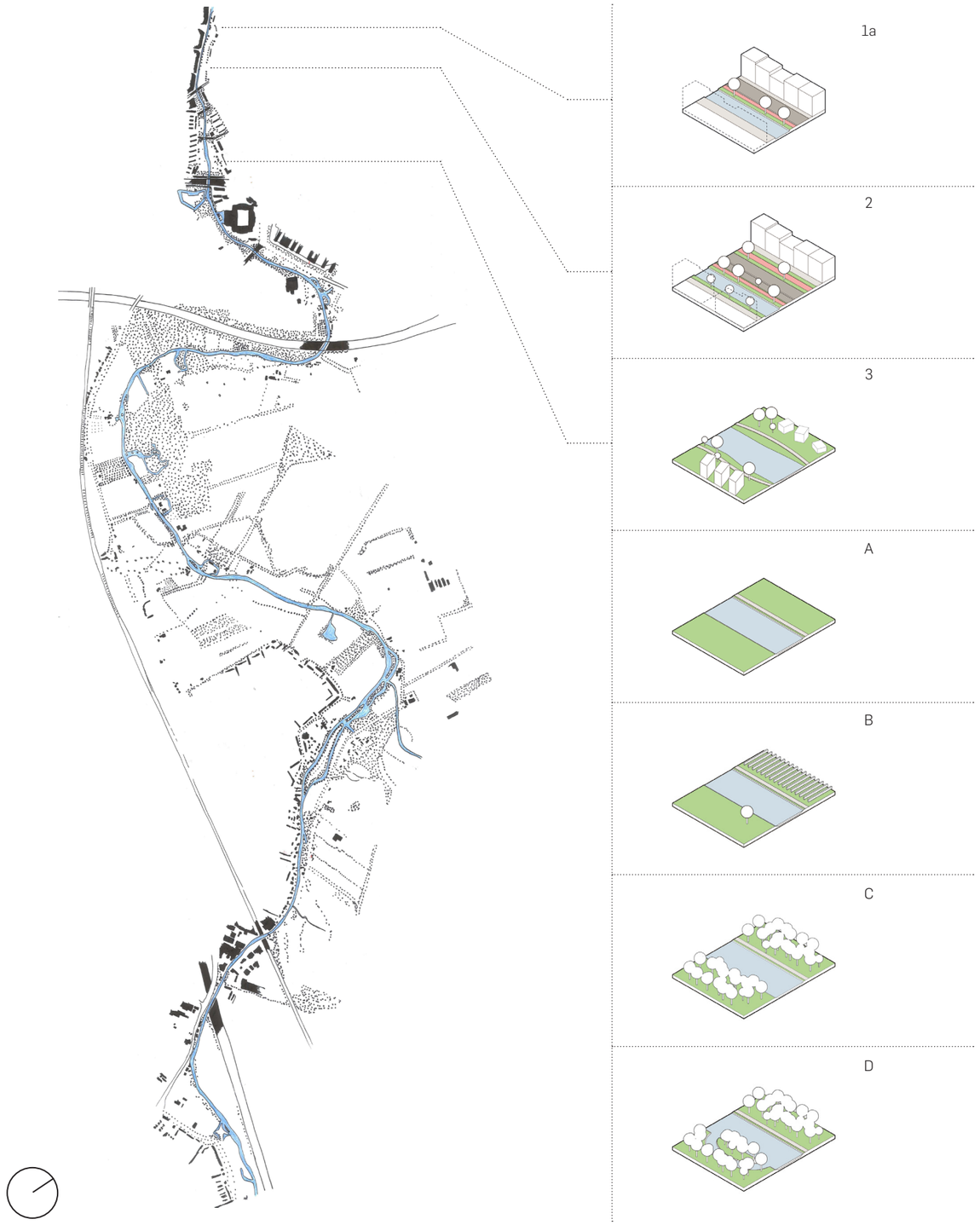


fig. 39 A small sequence of different profile typologies, followed by a patchwork of different surrounding landscapes visualized in schematic axometrics.

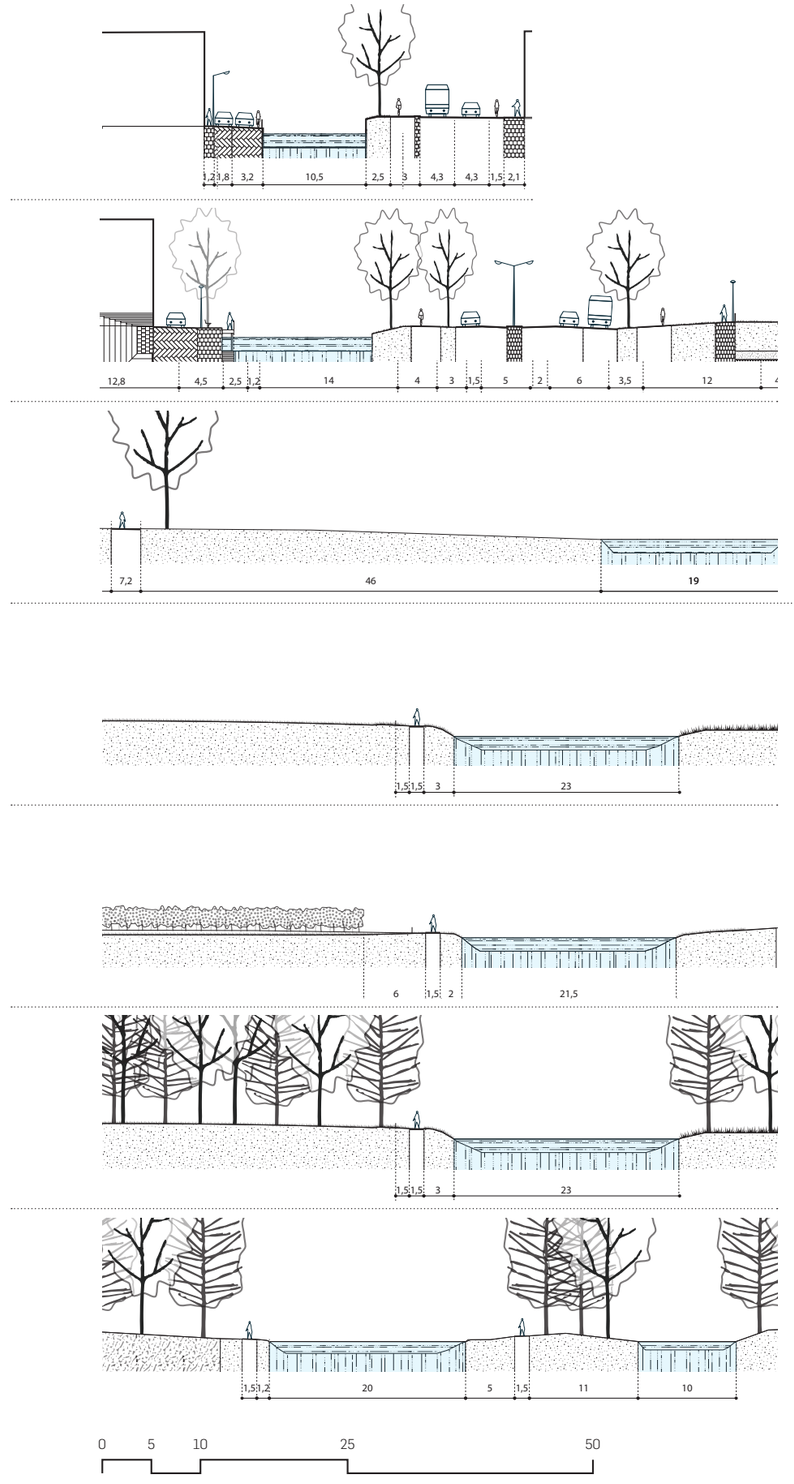


fig. 40 The different profile typologies visualized in sections

The Kromme Rijn Patchwork

The profile of the Kromme Rijn is a lot less consequent outside the city then it is inside. Up till the annual ring of the Oosterspoorbaan, the profile of the banks is very hard and unnatural. The distance to the water is even enlarged by a fence. The contrast is large when crossing the Oosterspoorbaan arriving in a very broad park profile, the Kromme Rijn park, with the river slightly curving through.

However when the Waterlinieweg is crossed, the determination of the profile becomes more and more of a patch work alternating between open field, orchards, forest and meanders. Along this zone a continuedly path is following the river, known for being a nice hiking route.

Strategy & Design

//The Bigger Image
// The Carrying Structures
// Design Synthesis

Together the previous chapters have given the input for this final one which shows the result of the strategy and the design outcome step-by-step. First the bigger image -which connects the sepparate projects- is explained, then the systamatic design intervention for the Koningsweg and Kromme Rijn are shown and finaly this leads us to the elaboration of the two roof parks as a synthesis of the project.

Branding the Urban Fringe

The concept of The Green Triangle results from the followed method which derived from the described various theories. The theory of Sieverts emphasized the importance of having a larger visual concept for an to be developed urban fringe area which can communicate between all the different stakeholder so everyone understand the purpose, coherency and necessity of al the separate smaller interventions. Although I do not have the expertise graphical logo design, figure fig. 41 is an example of how geographical and typographical information about the bigger concept can be translated in a catching logo which is recognizable as a brand.

The systamatic cohezion of the
fig. 42 interventions, based on the three different layers of the Kromme Rijn, Koningsweg and point of intersection, also contirbutes to a broadly understood concept making it easier to exects and develop even further when new desires pop-up

fig. 41 Example logo for to promote the execution of the project and to provoke a shared goal and vision

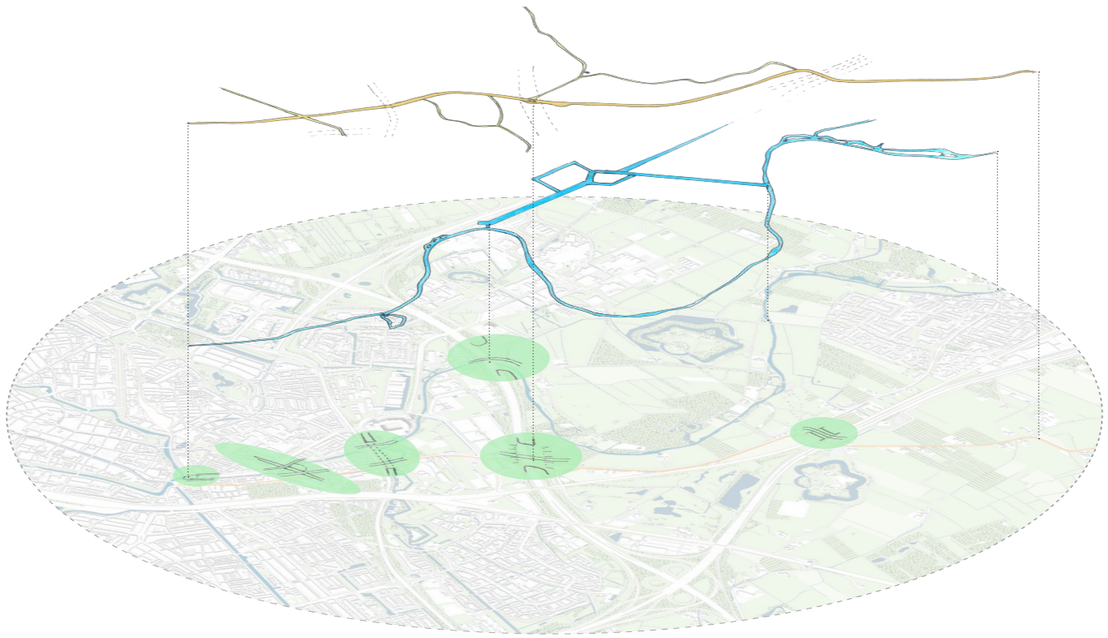


fig. 42 The three design layers, intersections, Kromme Rijn and Koningsweg

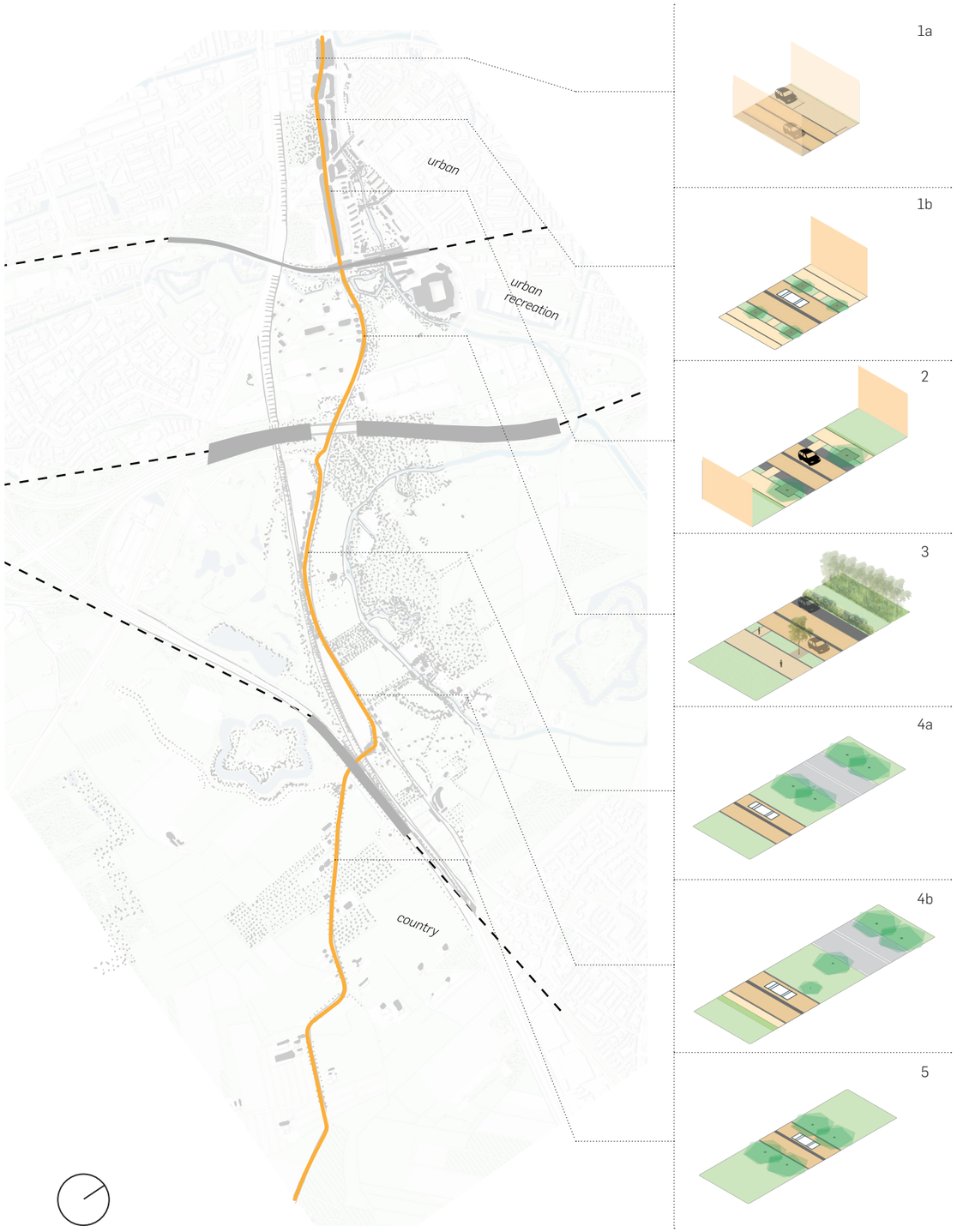


fig. 43 The modified sequence of different profile typologies.

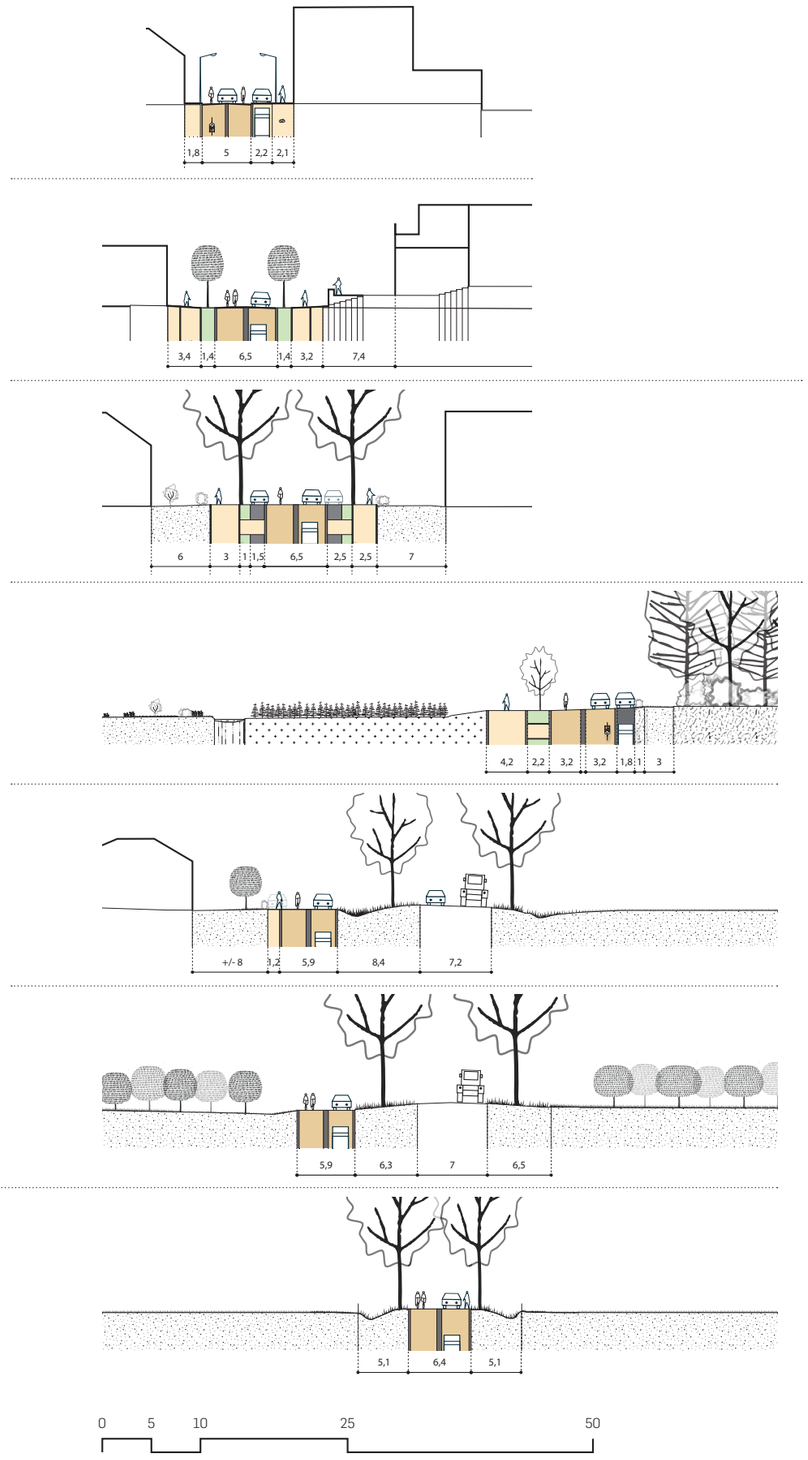


fig. 44 The modified sequence of different profile typologies visualized in sections

The Old Clay Road

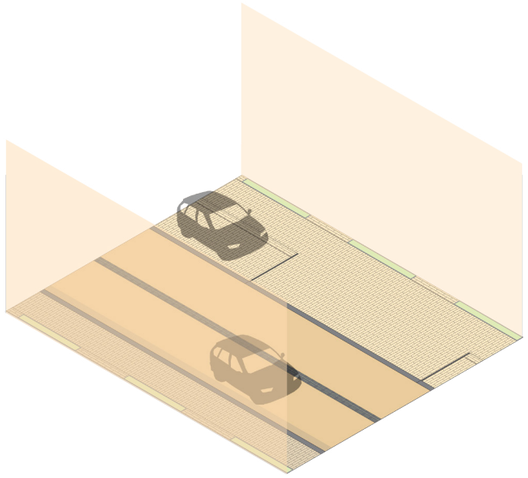
The whole length of the old clay road will eventually be transformed in a cohernet slowstrafiic streetscap. A so called bysicle street is achieved, by prioritizing cyclers above car traffic. The car is a guest in this space.

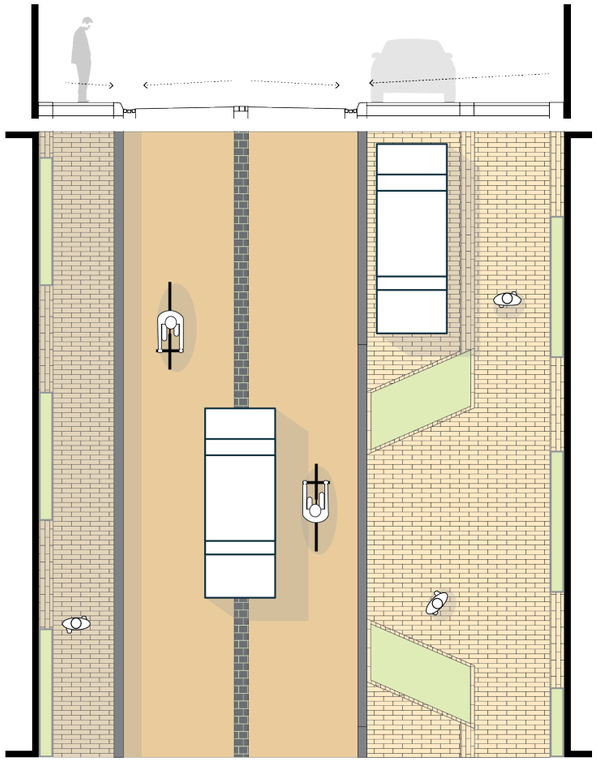
The sepparate segments responed to the zonig of the current profiles, but make them coherent due to a regorous application of determening materialization -which referece to the historic value of the road- and a continues lines of pavement.

Example segments

To elaborate further on the chosen composition and materialization two segments are shown here in detail. The dominant yellow sand colour of the material refers to the old clay road to Wijk bij Duursteden. The central line separating the two driving directions is made of cobble stones, referring to the historical limes and thereby making the street profile more permeable. Additionally it slows down overtaking cars.

1a

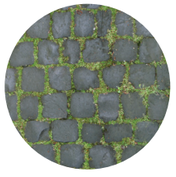




Baked stone
Waalformaat

pigmented
asphalt

Cobble stone strip

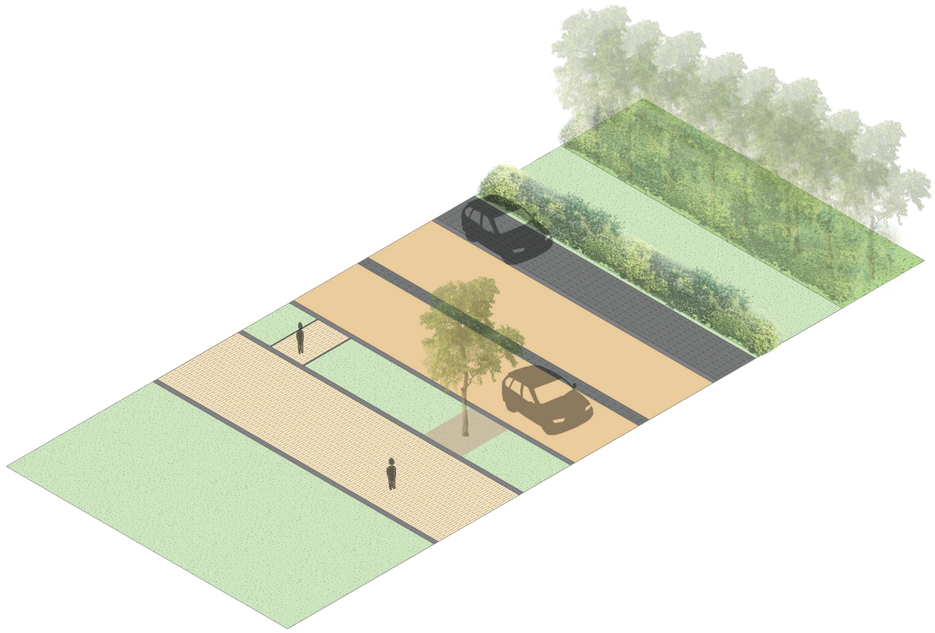


Anthracite restraining
strap

fig. 46 Applied materials

fig. 45 Arrangement, materialisation and drainage principle of the first segment (the Gansstraat)

3



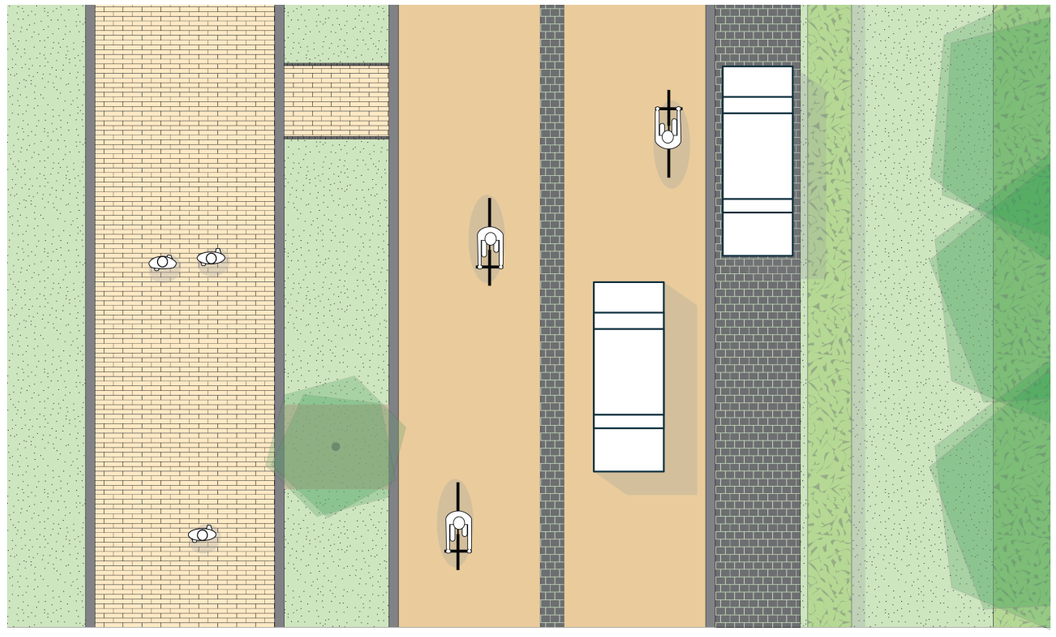


fig. 47 Arrangement and materialisation of the segment between the Waterlinieweg and the A27

Kromme Rijn

The interventions along the current profile of the Kromme Rijn are minimal since already on the east of the second annual ring, the Oosterspoorbaan, a pleasant park along the river starts. The greenery continues all the way along the Kromme Rijn towards the land, with interruptions of the other annual rings as exceptions.
This long continuation makes the experience of the Kromme Rijn inside the city even weaker because of the contrast.
Therefor on these places the accessibility of the water will be improved by means of a continues jetty.

Apart from this minimal intervention a much large intervention is done on the east side of the intersection between the Kromme Rijn and the A27. As mentioned before on this side the definition of the Green Triangle remains vague and defuse.
A the design solution which derives from these two points discussed on the following spread.

fig. 48 indicative location of the most urban river profiles

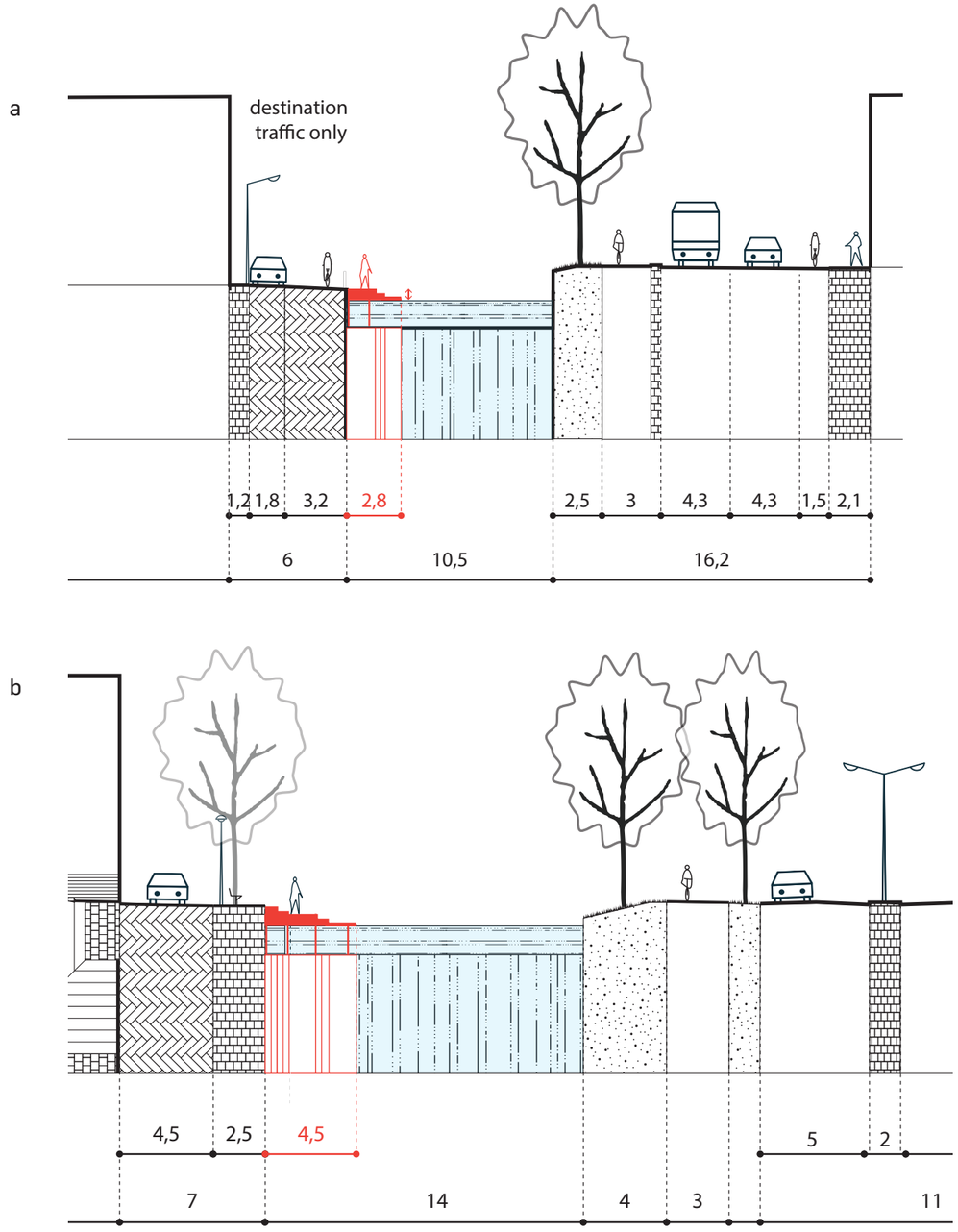


fig. 49 The improvement of the urban river profile: a pedestrian jetty to have a closer experiience of the water

The Koningsweg and its Detours

The surrounding landscape of the Koningsweg is made accessible for slow traffic by finishing former blind paths or making new loops through open fields. This enhances the experience of the area and in addition enlarges the feasibility for bottom-up initiatives from small scale agricultural entrepreneurs, already an ongoing trend in the area.

fig. 50 The sub-routings of the Koningsweg in relation to the surrounding landscape

The Kromme Rijn By-Pass

This large intervention follows from the aim of the intersection between A27 and the Kromme Rijn to reconnect the river landscape to the USP and from the notion of the defuse northern edge of the Green Triangle. A long canal derives from the outer corner of the Kromme Rijn meander, straight along the edge of the USP. This line collides with the monumental farm the Uithof, which is articulated by the water as an island. Here the main course of the canal bends towards the south, following the orientation of the inundation canal connected to the fortress Rhijnauwen. It continues till it collides again with the Kromme Rijn.
Apart from spatial cohesion, the large intervention can contribute to a activation of the south boarder of the USP and of the north side of the estate forest. The canal makes the water of the Kromme Rijn circular, which contributes to a higher recreational value. Along the USP it can now even becomes possible to accommodate a training facility for rowing.

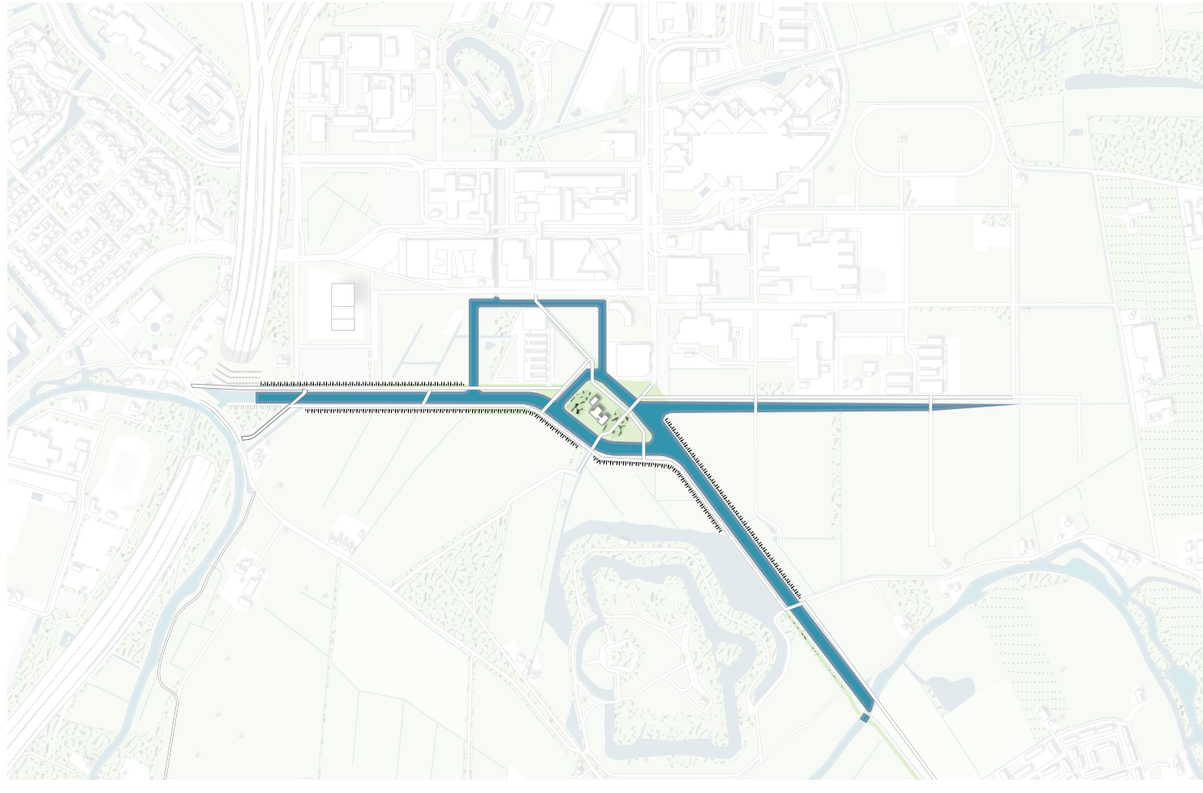


fig. 51 The sub-routings of the Koningsweg in relation to the surrounding landscape

De Koningskruising

fig. 52 The intersection between the A27 and the koningsweg becomes a atractive park and entrance to Amelisweerd along the historic visual axis

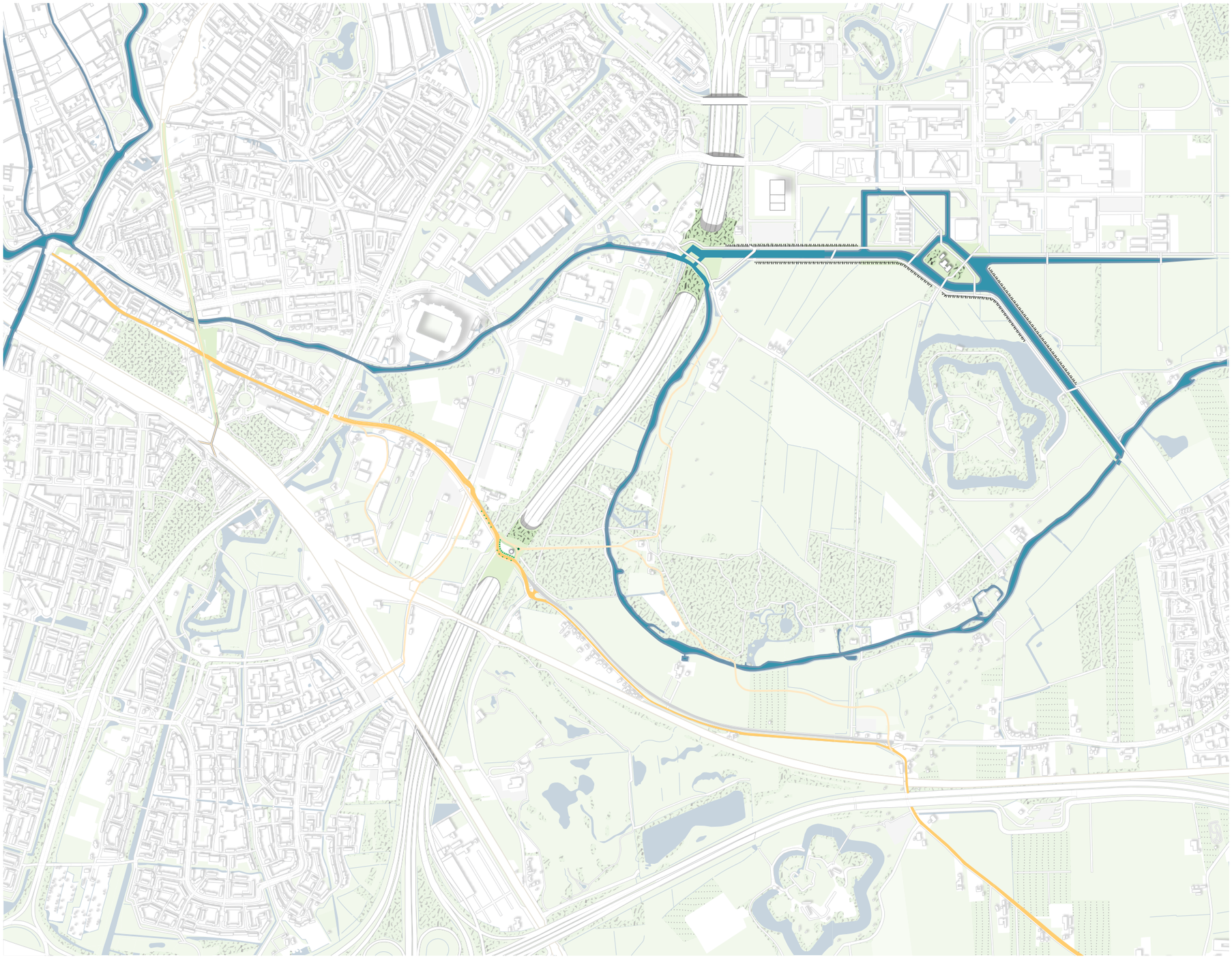
fig. 53 The bending road makes the passant aware of the special location.

Het Kromme Kanaal

fig. 54 The intersection between the A27 and the Kromme Rijn becomes the main route towards the Uithof and its sports facilities.

fig. 55 The connection between the canal and the river is made secondary to the structures themselves, this results in a small island making the passant aware of the special location.

Design Synthesis



The Green Triangle of east Utrecht

fig. 56 Synthesis map of the proposed future situation.

Reflection

This reflection is a critical summary of the gone through design process of the Landscape Architecture graduation studio Flowscapes. Two aspects will be discussed to reflect upon:

1. Subject in relation to theme of graduation studio
2. Case study in relation to spatial framework of graduation studio
3. The relationship between the project and the wider social context

Subject in Relation to Theme of Graduation Studio

At first-hand the theme of the graduation studio sounded somehow vague to me, since the scoop appeared very large and general: '*The studio explores infrastructure as a type of landscape and landscape as a type of infrastructure. The hybridization of the two concepts seeks to redefine infrastructure beyond its strictly utilitarian definition, while allowing landscape design to gain operative force in territorial transformation processes.*' (Graduationguide flowscapes 2016-2017).

However during the project the essence became more clear and this perspective of looking at landscape appeared very helpful for the interpretation of the urban fringe. In order to achieve this insight I tried to look at different layers of the landscape as interconnective systems both connected through time and space, however all with their own narrative. Through the whole process this interpretation of landscape layers provided a reduced view on the enormous amount of information without reducing its complexity.

fig. 57
fig. 58

Eventually the flowscapes interpretation of landscape also works through in the design. This is most evident in the strategy of resolving the Grey-blue nodes along the Koningsweg and the Kromme Rijn, situated at the crossings with the so called 'annual rings' of the transport infrastructures. These nodes can been seen as interface of different movements of flows in the landscape with different speeds. In the case of east Utrecht -and in many other urban fringe areas- the appearances of these different flows with different speeds are formed separately. Hence these flows do not mingling but form barriers and this is what makes the urban fringe landscape an incoherent assembly of separate flows which do not strengthen but weaken each others possibility of contributing in a meaningful surrounding.

In my design the aim is to eliminate the functioning as spatial barrier at the crossings of the flows and by doing so making all flows coherent and collaborating forming an urban fringe flowscape. At these crossings the construction of the fast lane infrastructure is adjusted to provide to slow lane infrastructure (both transport -Koningsweg- and water -Kromme Rijn-) in a pleasant space. This preference for slow traffic movement is based on the purpose of the project, to develop the urban fringe area of east Utrecht into a vibrant and meaningful connection between the city and the country and to let it become a destination in itself. In contrast to fast lane traffic, slow traffic is not only benefitting from a pleasant public space, it also contributes to it by making social contact and -safety possible. A car at moderate speed can partially still contribute to this, however the lager the speed difference with the other flows and places, the harder it is to mediate.

Case Study in Relation to Spatial Framework of Graduation Studio

The case study is also relevant in the given spatial framework of the studio being an small element of the Rhine Danube corridor. The way the case of east Utrecht relates to this XXL-Landscape structure runs all the way back to the Roman empire around the year 200, where the Rhine-Danube Corridor formed predominantly the North boarder of the Roman empire: The Roman Limes. As discussed in my project, the downstream riverbed of the Rhine meandered broadly through the area where Utrecht later established on the place of an old castellum (Roman army base). Relics of the Limes have been found by archaeologists and made visible in the landscape again. This rich history and placement in a very large context did not have a literal and expressive outcome in the end result of the project, but it provided the project a latent historical relevance to reinterpret the Kromme Rijn as a highly valuable landscape structure with the potential to be of much more value for the connection between the city and the land then it is today.

fig. 58

Social relevance: From objective approach to process approach

The preface introduced the line of thought in which I wanted to develop my project. The reason for this was the tension evoked by the construction of the A27 through Amelisweerd, and the broadening

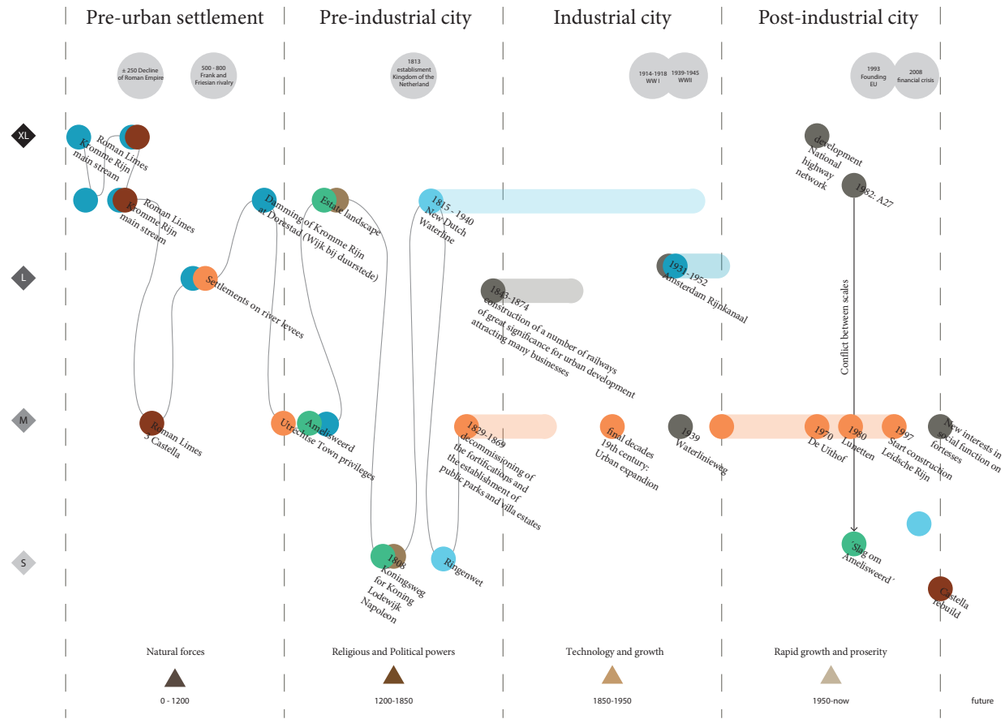


fig. 57 Overview diagram showing events through time and scale infuencing differnt landscape systems

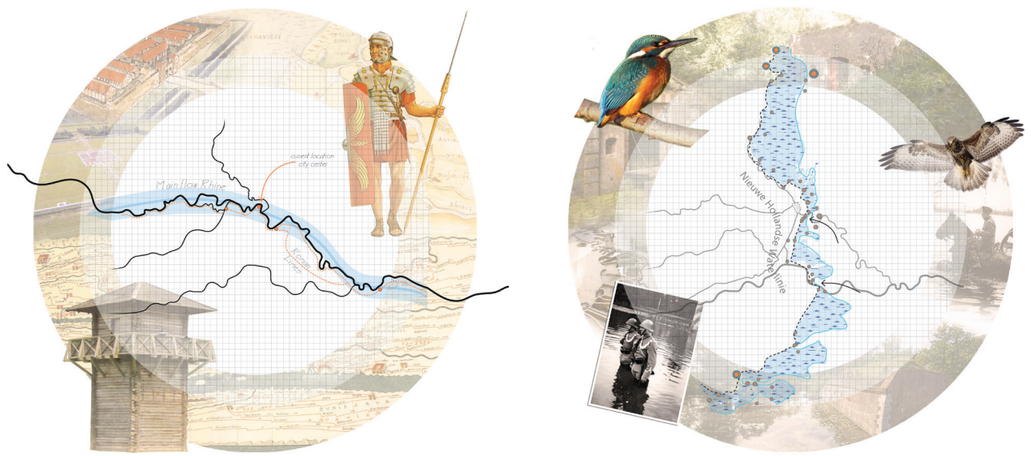


fig. 58 Two examples of visualistions of the stories behind the landscape systems, left the river, right the New Dutch Waterline.

of it which is discussed in the chapter on areal topics. Opponents are protecting their 'last piece of Utrechts nature' and the government is trying to calm them by composition of newly planted trees somewhere else and a single roof park. Both artefact and nature are approached as objects here and this results in a purely competitive discussion: the winner takes all.

This ongoing matter has brought a large personal dilemma in my project. What was my opinion on the matter as a landscape architect? And what then would be the resulting landscape? Did I have to choose for realism: the broadening will be executed with one roof park and that's it, or idolism: the road should not have been built there in the first place so tunnel it from node to node? Often scepticism was dominant: I do not have the expertise to judge all economic, social and political pros and cons of the execution nor the cancelling of the project. However in my final design I choose to be optimistic by placing the plans for the broadening in a larger development plan for a much larger territory, including the other landscape disturbing infrastructures and the boarder of the Uithof as well. In this design the roof parks do not function as compensation for the broadening but they become key points in a larger development plan, even being of connective value when in the far future commuters travel by drone or underground hyperloop and the national road network is no longer a physical barrier to the connection between city and land. When that point is reached, the connection between city and land can still be established and protected by the connective fundamental blue and gery landscape structures reaching from intercity to hinterland.

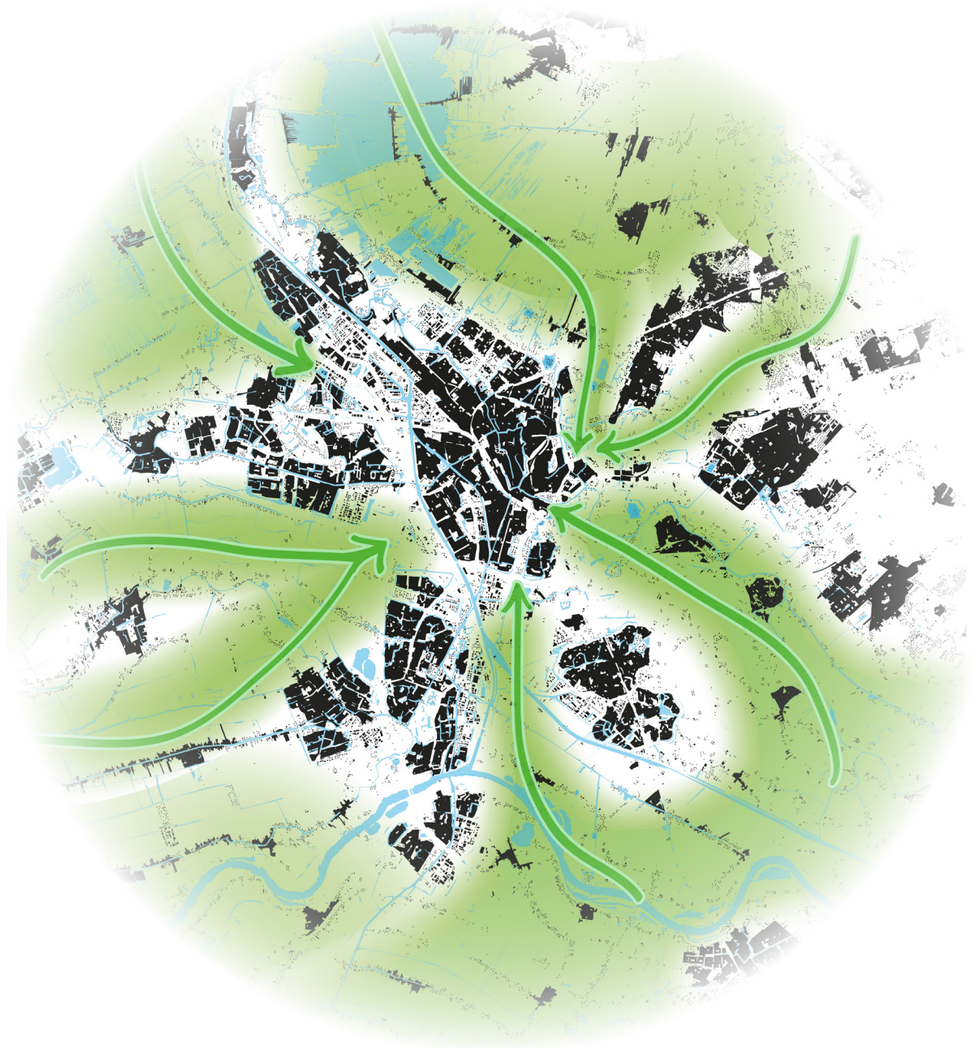


fig. 59 The possible future image of Utrecht being a green lob city

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