The metropolitan Landscape
How to structure the metropolitan developments in the haarlemmermeer with a park system.

Master Thesis
Barend Vreugdenhil
B1272381
02-10-2010 TuDelft

1st mentor: Maurits de Hoog
2d mentor: Saskia de Wit
3d mentor: Lidewij Tummers
Studio: Landscape metropolis
## Content

**Problem statement**
- The Haarlemmermeer 1
- Metropolitan developments 8
- Metropolitan Voids 10
- Social Relevance 14

**Theory**
- Metropolitan area's 18
- The Randstad 21

**Masterplan**
- 4 variants 28
- Proposal 32

**Agricultural park**
- references 41
- Strategy 46
- Boundary Hoofddorp 71
- Boundary Nieuw Vennep 74

**Polder Park Hillegom**
- Water park 86
- Boundary 90

**Conclusions**
- 97

**Literature List**
- 98

**Attachment**
- Scenarios (Design and Politics) 101
- Test variants (Master plan) 102
The Haarlemmermeer

The Haarlemmermeer is a polder and a municipal in between Amsterdam, Haarlem and Leiden. It is reclaimed in the eighteenth century. What I found interesting about the area is that although the polder is one municipal it is not a city in the classical sense. It is a collection of villages and (new) towns such as Hoofddorp and Nieuw Vennep in an open landscape.

The area has an important position in the Randstad because of its central location in the Northern wing of the Randstad and its location near Amsterdam. There is also an airport in the area: Schiphol.

The area has a lot of economic potential and the municipal is developing big projects such as Werkstad A4 to improve the economy.

The municipal also desires to improve the livability of the area besides focusing on the economy. Another project from the municipal is the West Flank, a combination of dwellings, nature development and leisure at the west of the Haarlemmermeer.

Another plan to increase the livability in the area is Park 21. This is a big park in the middle of the Haarlemmermeer. It should become the standard of parks in the 21st century.

The map on page 5 (Fig 3) is from a document of the municipal about Park21. I found it interesting that the West flank and park 21 are drawn as connections in between landscapes.

This is similar to maps from the Amsterdam Metropolitan region. These drawings touch one of the real problems of the Haarlemmermeer. The problem is in my opinion not so much found in the Haarlemmermeer itself but in the metropolitan developments of the Randstad.
If the area is not planned at all it might develop into a sea of housing, logistic centers and glass houses. On the other hand if you keep the area empty you might miss economic opportunities. The problem is not only the shortage of parks and natural elements in the area (although there are relatively few of these areas in the Haarlemmermeer), but the problem is how the urban developments can be structured in this area.
The area of the Haarlemmermeer used to be a system of lakes in a peaty area. Because the peat was dug out of the ground and lower areas flooded one big lake arose.

This lake was reclaimed in 1852 under Royal command. Since then there has been a lot of urbanization in the area. Interesting is that the urbanization from the second half of the 20th century is not so much a development from the center of a city towards the landscape, but a development throughout the whole area:

“The growth of the contemporary city in the periphery may be not so much an ‘explosion’ from the center, as a spontaneous emergence of urban mass around these newly dominant grids, whose coming to dominance as centralities in their own right has of course everything to do with increasing mobility’s and communicability’s in the second half of the 20th century (Graham and Marvin), but has also to do with an already existing structure of places in the periphery which provide the ‘seed-beds’ for growth.” (G bruyns, 2006)

Source: Maurits de Hoog, 2009
The question is how the Haarlemmermeer could react to the programmatic needs of the Randstad. The area might become an important urban void in the Randstad. However, there is also a big programmatic need for this area. One of the underlying problems is the development of the Randstad into an integrated metropolis, the structure of the new urbanization. The question is how the metropolitan developments in this area will be structured.

How will the Haarlemmermeer react to the program of the Randstad? Will it become one urban void, a pattern of open landscapes and urban areas or one urban area?
Problem Statement

The Haarlemmermeer is placed at a strategic position in the Randstad. It is close to Amsterdam and Haarlem and offers a lot of jobs to the area. A lot of the jobs in the Haarlemmermeer and in Amsterdam are related to Schiphol.

You can also see that the Haarlemmermeer is one of the fastest growing municipals in the Northern area of the Randstad (although its growth is nowhere near the growth of Almere).

The Haarlemmermeer will probably grow further in the future. The Haarlemmermeer will most likely grow with 30000 inhabitants in the near future. There is also a lot of urban pressure because of Schiphol. The question is how this urbanization will be structured. This is a generic problem with which more urban areas in the world struggle.

Classical and medieval cities were definite limited spaces in a seemingly unlimited landscape. These cities did not offer much space for green elements.

During the industrial revolution cities grew to a radius of 10-20 km from the center. During this period the city developed other relationships with the landscape. The city grew further towards the landscape and broke through his medieval walls.

‘When the urban agglomerations came to being in the nineteenth and the twentieth century the boundaries between the city and the countryside faded. There was an enormous expansion form the city towards to the landscape.’ Maps of these agglomerations show complex boundaries and different transitions between the open landscape and the city. (Tummers, 1997)

At some places open land was encapsulated in the city. Examples of this process are the commons in London or the parks in Paris. This technique is called inversion urbanism. Open land is designated in the urban regions and areas around this land will be developed.
Around 1850 a tendency came to being in America to incorporate green elements like parks in the rapidly expanding city. The green was as structuring elements in the metropolitan areas. Examples of these strategies are the park systems in Detroit and Kansas. A strategy that was used a lot in Europe was the creation of satellite cities.

In the twentieth century metropolitan models were made to control the amorphous growth of metropolitan regions. Examples of these models are green hearts, belts, wedges, lines etc.

This thesis will focus on the question how the Randstad could be structured by green elements and more precisely how these elements could structure the Haarlemmermeer.

A metropolitan area can be structured by a green system because it provides an open space in the build environment. This system on the other hand can also generate developments.

On this page you can see maps of Amsterdam, New York, den Hague and London. The composition of these maps consists of three elements. There is a big open space, which is surrounded by an urban area. Inside this open space important buildings are located such as the Albert hall in Hyde Park (London) and the Metropolitan Museum of Art in Central Park (New York).

These three important elements: the urban void, the urban wall around it and the special function is a way of designing that is called the inversion three step system (inversie drie-slagstelsel) in the preliminary structure plan of Zeist (1971). (Tummers, 1997)

The three steps are: assigning the area, design an urban wall and develop special function in the park.

These parks could also offer space for recreation and sport and institutions such as schools elderly houses or medical complexes depending on the scale of the park.

A park system can structure the metropolitan area because it forms open spaces inside the urban area and it can offer opportunities for areas to develop. These areas can also offer space for the inhabitants of the city to recreate. The inhabitants can have the feeling that they are outside the city and can re-charge from the busy city live.
In this chapter you can find collages about what parks and other landscape elements can offer to recreants in a city. I have elaborated on the following landscape elements: Accessible places with a lot of recreants, less accessible spaces and agriculture. There are of course a lot of other landscape elements and parks thinkable, but this three landscape elements will give a nice overview of what is possible at open spaces.

Accessible places
Urban voids near the city could be used for recreants of the city. These places can offer space for inhabitants of the nearby city to do their hobbies or sports. These places are easy accessible and can be used by a lot of people. These places can also offer space for hobbies and activities you can’t do at home.

Less accessible space
Urban voids can also be less accessible landscapes with importance for the ecology in the area. These areas can also be completely inaccessible for humans. These landscapes are quieter and offer space for city-people to recharge from the busy live inside the city.

Agriculture
The agriculture is in most modern societies mechanized and industrialized. The agricultural lands are production lands. These lands however could also offer space to recreants. People could for example go to the farmer to see how their food is produced.

The idea behind urban agriculture is to make the agriculture accessible to the city people and create a synergy between the agriculture and the city. One possibility is that people can see where the food comes from and even participate in the process.

Another possibility is that people grow crops themselves.
Figure 19: Accessible Urban Void near a City
Figure 20: Impression urban void, Agriculture
Figure 21: Impression inaccessible landscape
Social Relevance

Why would I want to plan the metropolis with a park system?
What’s the use of planning a metropolitan area like the Randstad?

First of all are these systems of open spaces beneficial for the living environment of big agglomerations. They could for example offer space to outside activities and sports and a place where people can recharge from the busy life in the city and offer space for special urban functions at the side of the park.

The recreational areas are also graded low at the moment by the people of the Randstad. (Atelier Zuidvleugel, 2007)

Secondly these systems of urban voids also have a positive effect on both the identity of the place as on the investment climate. The study ‘land in de stad’ shows that a well-designed system of urban voids could be an important part of the image of a city. The absence of a park system affects the quality of life and the ecology in a metropolitan area negatively.

“The presence of open spaces and especially waterfronts works as a stimulants for the investment climate and the attractiveness of a city.” (Tummers, 1997)

These parks can also generate developments and can offer space to big functions.

Finally the Randstad is a constellation of cities, towns and villages around an open area: the green heart.

It is developing into a metropolitan region. This is considered an ongoing process. The makeup and the form of the Randstad still offer room for different development strategies. According to planning documents of the government the nearness of green and open spaces to the cities is an element that could separate the Randstad from other European regions. A park system could also help to integrate the collection of cities and villages into a consistent metropolitan area.
The Haarlemmermeer

The landscape of the Haarlemmermeer is—at the moment—also not the ideal landscape for recreants from the city. The Haarlemmermeer consists for a big part of agricultural plots of a big scale. These plots have relative little qualities for leisure. The landscape is for huge parts empty, inaccessible for inhabitants, partly because the land is private and bears little functions for recreants. All by all you can say that the landscape is not very inviting.

On the other hand the landscape is very open, with a broad horizon. This is seen as a positive thing that’s needs to be protected. The landscape has also some cultural value as being one of the first polders from this scale.

All by all I think the landscape should be protected but should also have a meaning for the inhabitants so it is possible to protect it. It should offer qualities for the urban recreant.

“Experience in megalopolis has shown that when parks arise, they awaken an increasing demand by urbanities for the outdoors, for when new space is made available it quickly becomes crowded and inadequate. This response probably demonstrates that, although crowds have lived and can survive without parks, these answer a deep human yearning.” (Gottman, 1961)
The Future?

Source: http://blog.redfin.com/losangeles/2008/06/the_decline_of_the_far-flung_suburb.html
Research Question

How to structure metropolitan developments?

To answer this question it is important to know what a metropolitan area is, what kind of metropolitan patterns are possible and what that might mean for the Randstad.

This will be answered in the next chapters.

Secondly it will be important to know how the area of the Randstad will develop and how this will relate to the (future) green structure in the Haarlemmermeer.

Another important question will be how to structure the metropolitan developments in the Haarlemmermeer.

Important is to question which structure will be best for the Haarlemmermeer, which landscape types will be used in the system and which landscape elements can be used in the system. Another important question is which elements need to be added and/or developed.

It will also be interesting to question what this system will offer the inhabitants and the Haarlemmermeer will develop.

Aim

Develop a system of big open spaces for the Haarlemmermeer which will be the framework of future developments.
Although the city itself is five thousand years old, the metropolis is a new phenomenon, dating from a mere hundred years ago. Its scale alone differentiates it from any older type of urban settlement … even in a car it may take hours to move from center to periphery. Thus the city has swollen to a vast organism whose scale far transcends individual control (Lynch, 1962).

A metropolis is often described as a functional urban region with at least 1 million inhabitants. A functional urban region consists of one or more cores and a hinterland. The core contains at least 7 jobs per hectare and a minimum of 20000 jobs. The hinterland should have a population from which at least 10 percent of the people commute to the core. (p Hall, 1972)

But what does this number mean for the urban region? Are metropolises just big cities or are they different urban systems than classical cities?

Classical and medieval cities used to be structures with little place for greenery in an open seemingly endless landscape. “During the industrial revolution cities developed a different relation to the landscape. Cities grew to a radius of 10-20 km from the center. The boundaries between the city and the countryside faded. Maps of these agglomerations show complicated transitional forms between the open landscape and the city.” (Tummers, 1997).

This is visualized by a diagram of a wave by Tummers. The black is the urban. As you can see there are as well big parts of landscape in the gulf as dots, which can be seen as parks. The black dots on the right can be seen as satellite towns (for example the garden cities near London) from the metropolitan area.

Figure 25: (These Diagrams are based on the egg diagrams of Cedric Price)
According to Clemens Steenbergen metropolises are cities that opened their boundaries towards the landscape. Classical city can be defined as a definite limited space in an indefinite and limitless landscape, while the contemporary metropolis can be seen as a city that has reached his limits and has become a part of the landscape. (C. Steenbergen, 2008) “Cities have become an unstable, dynamic environment in which elements of the contemporary city re array themselves in an urban-landscape system.” (van de Velde, 2009)

You can argue if cities like Paris or London are really metropolises, since these cities have still a layout similar to an industrial city.

In my opinion however these cities are metropolises because these cities have developed a different relation towards the landscape, partly because of the scale of the city and because of the different transitional forms between the city and the landscape.
Metropolitan patterns

In this chapter I will elaborate further on the question which metropolitan patterns are possible. A metropolitan area can be seen as a city that grew out if his boundaries towards the landscape reached a certain scale and became in some ways a landscape itself.

Kevin Lynch has described five different models for metropolitan (1962, 79-98). Although these models are extreme scenarios, they can be used to compare different urban areas. These models are: the field, the galaxy, the compact city, the star and the ring. The first model, the field, is a very low dense urban landscape. Growth at the periphery is allowed and urban areas are built in the lowest density possible.

Older centers might be demolished and rebuild in lower densities. Different metropolitan regions might grow together in low dense urban fields. Advantages of this model are the nearness of open landscape, comfort, privacy and flexibility. A disadvantage might be that accidental communication will be minimized because of the lack of accidental communication.

The galaxy is a variant of this scenario. This model also contains a dispersion of build elements, but the build elements will be bundled near nodes in the infrastructural network in small units. These units will be separated by zero or low structural density.

This model has much of the same advantages as the urban sheet, but spontaneous communication will be enhanced if the concentrations are dense enough. A variant on this scenario is the satellite city, where smaller units will be developed around a strong core, an older metropolitan area. A radical different proposal than these two is the creation of a metropolis that is as dense as possible. ‘The metropolis will be packed in a continuous body, with an intensive peak of density and activity in the center’ (Lynch, 1962) with the possibilities from that time 20 million people could have lived in a circle with a radius of ten miles.
The advantage is that there is a big open space in close proximately around the city (at least within 10 miles). The disadvantage is that there might be problems with noise and pollution because of the density.

Another strategy will be to develop a compact core with low dense development around it. These areas could be developed around a radial structure of infrastructural lines. Tongues of open land will be kept in the periphery. The city will develop into a star shape settlement, with linear urban areas at the fringe.

This is similar to the way cities used to develop before the existing of individual transport. Advantages and disadvantages are similar to that of the compact city.

A disadvantage that may occur typically with this model is that infrastructural lines towards the center might be crowded. The last variant is the ring development. This variant is similar to the star shaped city and the core city. The difference is that an open space is kept in the middle of the metropolitan area. The Randstad is an example of the ring city.

When you look at patterns of metropolitan regions on a map instead of models, five basic patterns of metropolitan settlements could be drawn: the octopus, linear, satellite, constellation, ring and sheet. (lynch, 1962).

The satellite and the constellation are variations on the galaxy-type, while the octopus and the linear patterns are more similar to the compact and the star city. The ring and sheet are similar to the models.

accessibility to services and open land is high because of the linearity of the urban form. The Randstad is called a classical example of a ring city by Kevin Lynch, but it seems to develop into a more regular constellation. (Tummers, 1997; Schrijnen, P.M, S.)
Green systems

The scheme on this page contains combinations of an urban area with a green system.

Green systems can be divided in systems that separate developments and systems that integrate them. More information about this subject can be found in my theory paper.

The metropolitan areas are divided in areas with a strong core, a constellation of cores and cities and an urban field. It is important to note that most cities have both an integrating green system in the lower scale and a separating in the bigger scale.

Paris is an example of a city with an integrated park system on the scale of the city and a greenbelt on the metropolitan scale. Barcelona is also a compact city but has a more integrated park system on the metropolitan scale.

A combination of a satellite city and a greenbelt is London. The greenbelt in London is both used to integrate nearby satellites and to separate the satellite cities that are further away.

The Rhur area is an example of a constellation with an integrated green system. The park system is used to regenerate old industry and to create an integrated metropolitan region.

The green system in the Randstad on the contrary is used to restrict the urban in the green heart and to prevent cities to grow together.

Urban fields have almost always integrated green systems.

A park system might be the most suitable green structure for the Randstad. Since Green belts are mainly used in monocentric city models and the main purpose of that system is to restrict urban growth towards the countryside. An integrating park system seems to be more appropriate to develop the Randstad into an integrated metropolitan area.

Figure 32: Combination of Metropolitan regions with a green system
The randstad

"The Randstad keeps intriguing urban designers in the Western world. One potential Dutch Deltacity as an urban concentration seems to be of importance…. A strong point from the Randstad is the open and staggered landscape character. Two contrary choices can still be made in the spatial planning” (Tummers, 1998)

One of the choices is either to make the cities more compact or to spread the developments to other areas. Too much urban sprawl will ruin the openness of the Dutch landscape, which is a characteristic of the Dutch landscape. A combination is needed of densification of the cities and developing urban areas outside the cities.

Three scenarios are designed for the ‘Randstad 2040 structure vision’. The purpose from these scenario’s was to discuss the future of the Randstad. These scenarios are Wereldstad, Kuststad, and Buitenstad.

(These scenarios can be found in the attachment). All scenarios are based on different assumptions and tendencies:

Wereldstad
The scenario uses strong points of the Randstad. Important elements are: the knowledge economy, tourism, the airport. The scenario consists of a dense urban living environment with huge open landscapes. Amsterdam is given an important position in this scenario.

Kuststad
Most of the urbanization will take place in the Western part of the Randstad. A compact urban area combined with green and blue routes and big metropolitan parks will be created. New urban hubs will arise and new landscape. The Randstad is seen as a grand project.

Buitenstad
Future urbanization will happen at the higher grounds at the boundaries of the Randstad in the south and the east. The density will be low and most people will live in the landscape. This model draws ideas from broad acre city from Frank Loyd Wright.
Figure 34: Kuststad scenario, Design and Politics, BVR
Kuststad is in my opinion the best scenario for the Randstad, because the model is based on the idea of creating a park system to integrate the Randstad into one metropolitan area. This system is similar to the combination of a galaxy with a park system.

Wereldstad looks more like a galaxy model with a park system to separate the cities from each other. Buitenstad looks more like an urban field.

The concept of Kuststad is a metropolis that consists of an alternating pattern of inner landscapes and connections. It would be interesting to investigate how the system of inner landscapes and connections will work in the Haarlemmermeer.
How to structure the Haarlemmermeer?

In this chapter I will elaborate further on the question how a park system could be created in the Haarlemmermeer. I have developed four different models based on different scenarios: Connections, Polder park, A series of parks and One Connection. These models will either be more focused on the context of the Haarlemmermeer or on the Haarlemmermeer itself. They also range from more widespread to more concentrated models. (see page 30).

These models all have more or less the same amount of green area. This green area is a combination between the area that is used in planning documents for Park 21 and the area used for green developments on the outskirts of the Haarlemmermeer. These models are also inspired on the theory of the inversion and buffer technique. This theory is also an important element in the Kuststad design.

A region could grow at several ways: One way is that when cities are growing together, park is built in between them to keep the cities separated from each other. It forms a buffer between the cities. A second way is that areas are assigned to remain open spaces in the future agglomeration. This is called inversion urbanism. On the right you can see a scheme of these two different ways of development.

When looking at the Gooi area and Almere you can see both techniques used. The Gooi area grew more naturally under the pressure of suburbanization of Amsterdam. Almere on the contrary is completely planned. One of the starting points for the design was the choice of a poly nuclear structure with space for recreation in between the cores. At the moment Almere is a hybrid of both models.

The Buffer technique is characterized by a conservative way of thinking. The basic aim is to prevent cities growing together. The inversion technique can be seen as a more natural growth of an urban region. London and Paris naturally grew this way. It can also be seen as a strategy to develop a new kind of city.

The advantage of this system is that the green area seems to be bigger and that special buildings are orientated on the landscape as well as on the infrastructure. (Tummers, 1997)
Figure 37: The Gooi area (Hilversum, Naarden Bussum Hutzen etc.)

Figure 38: Master plan Almere (source: structure vision Almere)
Design approach: Relation urbanisation and landscape in the Haarlemmer

Variant 1: Buffer system

Variant 2: Polder park

Variant 3: Series of parks

Variant 4: One Connection

Central
A system of open spaces is designed to keep cities separated from each other. Connections are made from recreational areas nearby and in between cities. The connections are placed near important infrastructural lines. These connections will function as a system of green connections and lanes in between the urbanization.

**Figure 42: Variant 4, One Connection**

The concept of this system is simple. It is a big central open space in the Haarlemmermeer. When the area is completely urbanized this will function as a big park in the urban area. This system is inspired on the idea of inversion urbanism. The area that won't be built is assigned.

**surface area:** 2250 Ha

A big open space in the middle of the Haarlemmermeer won't be build. This open space will function as a connection between the Dune area and the Lake area. This design is -among other things- inspired on the project of Bvr for Park21.

**surface area:** 2250 Ha
I've tested these variants on several aspects. The complete test can be found in the attachment. In the end I chose to combine the first variant with the third. The reason I choose for the first variant is because almost all the inhabitants of the Haarlemmermeer will be living in walking distance to the park system and the park is well connected to the roads in the area. The reason for this is that the park system is widespread.

The biggest advantage of the third variant is that a diverse park system comes to being. The parks vary in scale and location. Therefore the park system will have a lot different parks with different characters and atmospheres. Some parks will develop into city parks while others are more likely to develop into regional parks.

The combination will also structure the metropolis well. Both inner-landscapes and connections in between the landscapes come to being. This is similar to the concept of the Kuststad proposal.

The system consists of a series of parks which are connected through park lines and landscape elements. The Ring-vaart (the Ring Canal) will be used as connections from the north of the area to the south. West-east lines from variant 1 will be used in the design as connections together with the fortification of Amsterdam.

Elements of the current landscape and relicts of older landscapes will be used in the park system, together with important elements such as the Floriande terrain and the Hoofdkanaal (main canal).
Figure 43: Impression South Side haarlemmermeer (A series of parks)
Master Plan

The park system will be designed to structure the metropolitan developments and to function as a framework for urbanization. On this page you can see the noise-contour of the airport of Schiphol.

This noise contour might become smaller in the future because of the improving air engineering technique. When this contour becomes smaller, there will be more area available for urbanization in the area. There will also be a big urban pressure because of the location of the Haarlemmermeer near Amsterdam and Schiphol.

The park system consists of parks and landscape elements. These parks and landscape elements will be connected by green lines: The Ringvaart a number of parks among infrastructural lines.

Other important parks and landscape elements will be used in the system for example: the Floriande terrain, the fortification of Amsterdam and the Hoofdkanaal (the main canal).

Connections of variant 1 will be used in the east-west direction. The Ringvaart will be used as connection line in the north-south direction. On the west side of the Haarlemmermeer a green connection is created to create the area north of the Haarlemmermeer with the area south of the Haarlemmermeer. This area will be designed in combination with water.

Scenario 1

This scenario is a realistic scenario for future urbanization in the Haarlemmermeer, although there is a lot of urbanization in the area. This scenario is for a large part inspired on the scenario Kuststad of Bvr from the book design and Politics.

Scenario 2

This scenario shows what happens when the urbanization is extreme. I have also used elements from the scenario Wereldstad. Under the noise contour of Schiphol a lot of companies will arise that are not affected by noise pollution, such as logistics or glass houses.

This scenario can be seen as a worst case scenario. As you can see from the map it is possible to expand my park system if it is necessary because of the urban pressures.

More agricultural parks can be created near the glass houses and the green lines can be extended.

Figure 44: Noise Contour Schiphol
Agricultural Park

The area in between Hoofdorp and Nieuw Vennep will be designed as an agricultural park. When you look at the plan for park 21 of Vista (a plan at the same site as the agricultural park in my master plan) you can see that while the first concept of the plan is based on the idea of a city park, newer documents from the municipal of the Haarlemmermeer show a shift in the design towards more agricultural land.

“The first layer of the design is the polder layer” (the design contains of several layers) “which keeps cultural and historical polder landscape recognizable, sensible and the agricultural polder culture alive. It forms the base for the implementation of broad agriculture, new nature and water management” (http://www.park21.info/parkconcept/polderlaag/25-10-2010)

I think it is a good development in the plan making to focus more on agriculture, because the plan elaborates better on the existing situation. This land could react better to the nearby urban area. There are a lot of examples of urban farming: recreants from the city could go to the farmers to see how products are made or to buy products from the region. They could even grow their own crops.

Nature development would also be important in this area and could be combined with the developing of more space for water. This would be necessary in order to create a more sustainable water system.

I will talk more about the agriculture and water management in the next chapters.

Figure 48: Concept Park21 Vista (http://www.park21.info/)

Figure 49: Current master plan Park21, Vista (http://www.park21.info/)
The infrastructure of the Haarlemmermeer is mainly based on car traffic. However, there is one infrastructural line which is only used for buses: the Zuidtangent. A path for cyclists is created next to this bus lane. An interesting note is the height difference between the bus lanes and the roads. The reason herefore is that the roads won't cross.

The green structure is largely combined with the water structure. It forms a pattern of green and urban in Hoofddorp and Nieuw vennep. Besides this there is room for sporting field and there is a large lake for recreation.
Analysis

Also important for my design is the train line at the east of the park. Near this line is a road. Further to the west is the main canal. There are roads on both sides of this canal. This place might be interesting for special function because it is located in between the main canal and a railway. It might be interesting to investigate the option of creating a station along the rail line.

When the area become more urbanized more stations might arise.

The area of Haarlem consist of much more stations than the area of the Haarlemmermeer. A station near the park might be possible. This could also be a station used for special occasions. This station could be a stop for the big urban functions.

The east side might be suitable for big urban functions. The other sides will be designed as a park or a forest. Because it borders (new) urban areas.

Legend:

- **Existing Station**
- **New Station**
- **My proposal for a new station**
Agricultural Park

The park will become an open area designed as a rectangle. The scale is based on the size of the plots, which are 1 km long. The rectangular shape and the big scale are important elements in the design of the Haarlemmermeer-polder.

Another reason for this shape is that the park is designed as a clear shape with clear boundaries. Everybody can see the difference of the park and the urban area. Because of this reason people will be less inclined to build in the park.

An example of this is the Central park in New York. Because of his clear shape and strong boundary nobody dares to build inside it. They will demolish the monumental image of one park inside the big city.

The park itself will remain an open landscape, trees and parks are placed at the sides of the parks. This park will be an open area surrounded with forest, parks and trees. This is similar to the Nidda dal and the Gooi area near Hilversum. Most of the city parks are designed this way. Because trees surrounding a big open area, you really have the feeling of being outside the city in the area.

The boundary of the park will be designed in different ways at the sides of the park. The west side of the park is used for tree nurturing and can offer room for plantations (for example: apple trees or trees with other fruits).

At the east side there is a row of trees next to the train rails. Metropolitan functions will be placed at the boundary at the east of the park.

The parks in the nineteenth century offered a place to new social and cultural functions such as museums and theatres. The agricultural parks could in a similar way offer space new social and cultural functions. It is possible to scale these functions again to functions such as theatres, stadiums, retail centers etc.

The other functions inside the parks all have –except for the metropolitan functions- to do with agriculture, nature and water management.

At the north and the south side parks are designed in combination with dwellings. Both parks are designed in a different way. The entrance of the park is placed on routes which connects the park with green routes inside the urban area.

There is place for meadows, cropping and a number of metropolitan functions like retail centers, a small theme park, hotels etc. There is also a big area used for water. On the next pages you can see references about this kind of areas.
Figure 57: Functional map, Agricultural park Haarlemmermeer

Legend:
- Metropolitan functions
- Meadows
- Water
- Trees/park/nursery
- Crops (biological)
- Crops
The westside of the area offers space to tree nurturing and plantations. On page 49 you can see references from the tree nurturing-woods. On these pages you can see references from Olmenhorst. This is an estate near Lisse which combines education and leisure with agriculture.

The estate consists of a plantation for apples and other kind of fruits, a restaurant and a shop. The company earns money by selling their own fruits and products (partly in their own shop) and by organizing festivities for both families, schools and companies. Every year a harvest day is organized. This festival attracted 15000 visitors last year. (Olmenhorst.nl)

At the moment 143000 people are living in the area. More than 10000 extra dwellings will be built on the west of the Haarlemmermeer. When the households consist of 2,2 people per household with 0,7 children that means that 167000 people will be living in the area with a total number of 117000 children. (CBS.nl)
References Olmenhorst
Figure 65: nurturing area near Dordrecht

Figure 66: Tents near a forest

Figure 67: Combintation Agricultural Park and a tree nurturing area

Figure 68: Forest (vaboput.nl)
Another agricultural company that offers opportunities for leisure activity is Ridammerhoeve, a goat farm in the Amsterdamse bos. This is a biological farm which concentrates for a large part on goats. Besides farming they also have a petting zoo, an educational center, a playground, a restaurant for visitors and a shop where they can sell their own products.

The farm focuses both on recreation and on education. School classes can go to this farm to learn more about agricultural processes. Besides this they also offer arrangements for company trips.

They also hire people that have problems finding work on the regular market because of mental problems. These people can work on their farm.

There are also farms that completely focus on health care in combination with agriculture. These kind of care farms can also have a place in the agricultural park.
References: Ridammerhoeve

Figure 71: www.ridammerhoeve.nl
Figure 72: www.ridammerhoeve.nl
Figure 73: www.ridammerhoeve.nl
Figure 74: www.ridammerhoeve.nl
Figure 75: www.ridammerhoeve.nl
Figure 76: noord holland.nl
Urban Agriculture

At the moment there is a lot of agricultural land near Hoofddorp and Nieuw Vennep. This area doesn't offer a lot of leisure activities for inhabitants, but on the other hand there are also other advantages of having agriculture nearby a city.

If food is produced near a city it doesn’t have to be transported. This is beneficial for CO2 reduction and for the environment, especially when the agriculture is biological.

I already told about some functions that could be combined with agriculture such as petting farms, Agricultural shops (where you can buy products produced in the area) and restaurants.

Another possibility is that inhabitants of the city grow their own vegetables near the city. In a lot of western societies the agriculture is mechanized and industrialized. People don’t know where their food comes from.

In Germany allotment gardens arose in the 19th century to offer good quality food for the poor inhabitants.

Since 1986 Collective gardens arose in Toronto in Canada. The main goal of these gardens was to provide healthy food for the poor inhabitants. These places were collectively managed and were a success. Besides that these gardens had a positive influence on the food supply, they also had a positive impact on the social structure of the area. In figure 77 you can see the farms in the area and the place for collective or private (biological) farming.
References

Urban Agriculture

Figure 78: Urban Agriculture, Maarschaikerweerd (http://dorineruter.wordpress.com)

Figure 79: Urban Agriculture in Cuba http://netwerkplatteland.wordpress.com

Figure 80: Allotment Gardens Toronto (http://foodcycles.org/2009/06/14/2)

Figure 81: Moestuin Maarschaikerweerd (http://netwerkplatteland.wordpress.com)
Besides agriculture there will also be more space in the area for water. Swampy area’s with space for nature development and helophyte filtering system will be made. On this page you can find references of how such areas might look like. On the next pages I will elaborate more on the water system in the Haarlemmermeer.

Figure 82: A combination of the area with water
Figure 83: Swampy Area (Nieuwe Dordtse Biesbosch, Beeldkwaliteitsplan Lola landscape architects, Dordrecht 2009)

Figure 84: Oostvaardersplassen (http://bureauwerk.web-log.nl/mijn_weblog/2010/06/index.html)

Figure 85: Water retention Bassin (http://www.strootman.net/site/nl/)

Figure 86: Wet land (Nieuwe Dordtse Biesbosch, Beeldkwaliteitsplan Lola landscape architects, Dordrecht 2009)
The Water System

The water system in the Netherlands in general is based on a system that brings water as fast as possible from urban areas to canals and rivers (flow system). In the Haarlemmermeer all water is collected in the Hoofdkaanal (main canal) and pumped into the drainage canals by four pumping stations.

Problems will occur with high and low water. When the water is high or when there is a lot of rain, the system might become overloaded and water can come to the surface.

Sometimes sewage water will be transferred to surface water without cleaning. This causes pollution.

Another problem arises when groundwater will come to the surface (seepage water). This water is relatively clean. Using the sewage system to transfer the water to the canals means that the relatively clean seepage water will be combined with the sewage water.

On the other hand if the water level is low, water from the canals needs to be brought into the area. It is even possible (although very unlikely in this area) that because water is transferred from one place of the area to the other, one place is too wet and another place too dry.

These areas can also be combined with nature development, because they will become swampy areas.

My proposal is to buffer more water inside the park, so the flow of water on the pumping stations is more constant and the water from these buffer places can be used if the groundwater is too low.
Figure 88: Flow System

Focus of the system is to get the water into the canals as fast as possible.

High water:
1. Water system might become overloaded
2. Sewage water might be transposed into cleaner water in canals
3. (relatively clean) seepage-water will be transferred to the sewage and combined with less clean water.

Low Water:
Water from the canals will be transferred into the area.

Figure 89: Circulation model

Water buffering areas are placed in the area. Water will be cleaned using a helofyte filtering system.
Peek buffering is possible.

High water:
1. The water will be buffered in the area itself. It won't be immediately transferred to the sewage system. There is no transposition of sewage water
2. If the area is too dry, water from these buffers can be used.
Metropolitan Functions

If the Netherlands will organize the Olympic Games in 2022, the Haarlemmermeer also wants to offer space to a stadium. The idea of building a stadium in the park fits to the metropolitan functions that could have a place in the park.
Amsterdam takes in an important place in the urban region in North West Europe. Because of its location, its history and -among other things- its name, the city attracts eight million visitors a year, this are both tourists and business people. The park is located near Amsterdam and Schiphol, so it might be possible to respond to the demand of Amsterdam as an important destination.

It is thinkable to place a congress center and a hotel near the park. On these pages you can find collages of the park with Ahoy and with the Amsterdam ray. Interesting about Ahoy is that it is also placed inside a park.

These congress centers are the largest congress centers of the Netherlands.
Figure 100: Location Rai Amsterdam (ckyscrapercity.com)
Figure 101: Location Rai Amsterdam (Google Earth)
Figure 102: Collage Ray, agricultural park
metropolitan Functions

Other functions that might be interesting are retail centers, because of the location in between two cities there are enough people in the catchment area for this kind of developments. This situation is comparable with Centro, a metropolitan park in the Rhur area. On the map you can see a collage of the most urban part of the park with the area. There are some highly urban functions in this area such as: a theme park, a museum, a retail center and an indoor stage.

Figure 103: Centro, Rhur Area (Google Earth)
Figure 104: Collage Centro, agricultural park
CentrO. CentrO. Park Gasometer Oberhausen

Konig Pilsener Arena

[type] Inside Stage
[open time] Variable
[info] www.centro.de

[type] SHOPPING CENTRE
[open time]
Monday - Wednesday : 10.00 - 20.00
Thursday : 10.00 - 21.00
Friday - Sunday : 10.00 - 20.00
[info] www.centro.de

[type] AMUSEMENT PARK
[open time]
Tuesday - Sunday : 10.00 - 18.00
[info] www.centropark.de

[type] MUSEUM
[open time]
[info] www.gasometer.de

Source: Park Analysis Park21
**metropolitan Functions**

It's also interesting to compare the area with big metropolitan areas. In figure 105. You can see a collage of New York with the area close to the park where new urbanization will take place. A total of 104 urban blocks can be placed in the area. The other map is a collage from the area with Hong Kong. The building shown is a congress centre, comparable with the Rai and Ahoi. The metropolitan area’s shown are of course different than the area in between Hoofddorp and Nieuw Vennep. Purely looking at the scale however it might be possible to create an high urban area at this place or to place big urban functions.

Figure 106: Collage New York, agricultural park

Figure 107: Aerial view New York (http://home.kpn.nl/maw583/homepage)
Figure 108: Hong Kong, www.cinp2010.com

Figure 109: Hongkong (Google Earth)

Figure 110: Collage Congress centre Hongkong, agricultural park
Figure 111: Impression
Figure 112: Possible Future Scenario, metropolitan functions on the east side of the park, special Urbanization near park.

Legend:
- Buildings
- Meadows
- Water
- Trees/park/nursery
- Crops (biological)
- Crops
Big Metropolitan functions could become visual elements in the park. Some might become more sculptural than others. On this page you can see four ways of placing the building in a park from which designers could choose.
A building could become a sculpture in the landscape and could become an important visual element. Care needs to be taken with designing the infrastructure towards the building.

A row of trees can be planted around the function to keep it out of sight. This could give a dramatic effect and can be used if a function is visually not that interesting or the relation with the park is not good.

This theme park is placed in CentrO. Trees surrounding the theme park keep large parts of the park out of sight. The ferry wheel on the other hand can be seen throughout the whole park and functions as an important visual element.

A building could be part of the boundary. The Gasometer in CentrO is built in between rails and a canal. The Gasometer gives a good impression of how such a building could look like.
Phasing

The land in the area is owned by a number of different people with different interests. This will influence the phasing of the park. The boundary of the park will be created as soon as possible. The rest of the park will evolve into the agricultural park.
In the first phase a lot of work will be done to design the boundaries of the park. Land from the government and relatively easy to buy land will also be developed.

The design of the boundary of the park will be fully executed. More developments will happen inside the park.
Phase 3
More land will be developed and the cities will grow further towards the park.

Phase 4
The park is fully developed. It’s an open area surrounded by trees, parks and forests.
Boundary Hoofddorp

At the south side of Hoofddorp a new park will be built in combination with dwellings.

This park is an element in the green connection in the west east direction in the Haarlemmermeer. The area will also function as transition from the urban area to the agricultural park. Routes from Hoofddorp towards the agricultural park go through this park. This park is also the boundary between the urban area of Hoofddorp and the open landscape of the agriculture park.

The park will be developed in combination with new dwellings. A hill will be created to diminish noise pollution for the inhabitants of the (new) urban areas.

The area north of the road is designed as an open park area with midrise dwellings. A game is played with the rectangularity of the Haarlemmermeer. The rectangular shapes can be found in the ground form of the group of trees. The route on the other hand creates a contrast with all the rectangularity of the Haarlemmermeer. It meanders through the squares and rectangular shapes in the park. This path also makes use of the height differences in the park.

The area on the south of the road will be designed in the opposite way. A dense planted wood is created and rectangular shapes are taken out of this wood and form open spaces. In these places you can find functions for the inhabitants near the park such as a playground, a soccer field etc.

A meandering route is also found in this area. This path brings the visitor from one open area to another. This makes the route feel like a logic movement.

Parts of the park are also influenced by the nearby landscape. The western part is for example orientated on the water, while the eastern part is more orientated on a traditional park with function for the inhabitants.

The route from Hoofddorp towards the agricultural park will lead the recreants over the traffic hill and through a bridge over the road into a more densely planted park. From this place people will enter the agricultural park. This route will continue through Nieuw Vennep. Because of these different elements an interesting and alternating route will be created.
Figure 123: Map Boundary Park Hoofddorp
Boundary park Hoofddorp: Impressions

Figure 128: Impression 1

Figure 129: Impression 3
The boundary of the agricultural park is designed in a different way at every side of the park. The boundary between Nieuw Vennep and the agricultural park is designed as a forest that gradually opens towards the agricultural park if you go to the agricultural park from Nieuw Vennep you enter a park or a forest. This forest opens gradually to the open field, which is the agricultural park.

At certain strategic points buildings will be built for example to accentuate view lines.

Reference: Nidda dal, Frankfurt

Figure 134: Nidda dal, Frankfurt (Google Earth)

Figure 135: Map, boundary Agricultural park and Nieuw Vennep
Figure 136: Impression, boundary Agricultural park and Nieuw Vennep
Water park Hillegom

The second area I looked at is the area in between Hillegom and Lisse. This area is part of the green/blue connection at the west of the Haarlemmermeer. This system connects the area at the north of the Haarlemmermeer to the south.

The area is a deep polder with a water system that consists of small plots. Because of this system the area has a human scale. There are a lot of different activities in this area. There is for example a small plot with flowers, but also grassland for horses. It is a diverse area with a variety of functions.

The area will be developed in combination with water. The area is a low polder. At certain places it is as low as the Haarlemmermeer. Allowing more water into the polder is a simple way of making the polder more interesting. The area will be more interesting for recreants of the city. A landscape comparable with the ‘less accessible landscape mentioned in chapter Urban Voids is imaginable.

The area will also have more ecological importance, especially for birds and animals that live in more swampy areas. The water will also be cleaner because of the creation of more helophytes. This will be beneficial for the ecological systems in the area and the life in the water.

In this chapter I will describe four ways of how this kind of areas can be created.
Water will be simply lead into the area. The lowest areas will be flooded. The area will become more dynamic and diverse. Subtle height differences will also become visible. A disadvantage is that the system is less controllable than the other systems. A problem might be if the whole area becomes flooded.

The canals in the area will be widened to offer more space to water. This seems to be a cheap solution to give more space to the water in the area. However because the river is higher than the rest of the polder new dikes need to build to prevent the polder from flooding. The area will be less diverse than the first variant.

Lowest part will be dug out. These parts will be filled with water. Two big lakes will arise in the area. An advantage is that the area is safe and that there are no new dikes needed (the lakes are dug out). The area on the other hand would also be less dynamic and diverse as the other designs.

Only therefore assigned plots will be dug out. A diverse area with a lot of different little lakes arises. The area is also relatively save, because only the assigned plots will be dug out and flooded. Interesting is that the plots are still visible in this variant. The subtle height differences of the ground unfortunately will not become visible like in variant 1.
I choose to combine the first and the fourth variant. On one side of the area plots are dug out, the other side is flooded. Because of this two areas come to being with slightly different atmosphere.

One area will become more diverse and dynamic, while the other area will become a place with a lot of different small lakes.

These areas will be connected with a route that uses high landscape elements such as the dikes and higher parts of the landscape.
The area could become a new center in the newly build environment like the agricultural park. Parks in general could generate new developments. Therefore it is interesting to see what can happen at the side of the park.

Several buildings are already placed at the sides of the area. Most of these buildings contain functions that you will typically find at the boundary of cities.

These functions need quite some space and need to good connected to the road. There are for example a lot of little logistic centers and small offices. Besides these functions there is also a museum, some dwellings, horse riding school and some other sport function placed near the park. Some of these functions such as the museum and the sport functions might be a good combination with the park.

A problem is that most of the buildings don’t make a friendly impression on visitors. One reason is the scale, the buildings are quite big, another reason is the robust architecture and another problem is that they look empty.

At the moment the urbanization at the side of the area seems to be more a threat for the future park than an opportunity. The urbanization at the boundary consists of brutal architecture and a clear boundary and transition between the urban and the park is missing.
Nr 1; Car museum

Nr 2; Vacant offices

Nr 3; Canal with small houses

Nr 4; a small neighbourhood, Partimonium

Nr 5; Logistic centre

Nr 6; Riding School
Boundary Water Park

If nothing is done about this more of these buildings will be built inside the park. Something like a boundary around the park needs to be created. This could also work as a transition between the urban area and the park.

If you demolish everything and then create a border, many things have to be moved and many buildings have to be demolished. This is both economically as in the sense of sustainability a bad solution. Moreover some functions could add something to the parks such as the riding school or the car museum.

Figure 148: It will be necessary to create a boundary for the park and a transition from the urban to park

Figure 149: Demolishing everything might be too drastic
Boundary Water Park

The best solution seems to be to create a border at the edge of the park and to evolve the buildup area into an urban area which fits better to the park. Energy needs to put in attracting the right functions and building a more visitor friendly urban area.

This would go partly automatically because the rent of the land around the park will increase and other companies will be interested in the land around the park. So some of the companies will move in the future anyway.

It would be important to attract functions with more synergy with a park and to invest in architecture and public space that would attract visitors. The urban area will be evolved into an area which fits better to a park. It would however not be unthinkable that big urban functions, comparable with the functions of the agricultural park will move to the park. The park could become a new center inside the urban tissue.

Figure 150: Functions with more synergy with the park should be attracted.

Figure 151: When this is combined with the creation of a solid boundary, the area might function as a park. Ground prices will rise, new functions will come and a new urban centre comes to being.
In the future the urban might fit better to the park and the park functions. It might even be possible that big urban functions will be build near the park which could also function as focus points and visual elements.
Figure 161: A possible future scenario
Masterplan

Some areas will be designed as ecological connections in combination with water. These areas will also be accessible for recreants, but less accessible than other areas. These places will offer important ecological areas for example birds and will function as places where people can redraw from the busy live in the city and recharge.

Other places will become part of the park system and will mainly be designed for recreants, such as the park lines, especially when they are close to a city.

One area will also be designed as an agricultural park. This park offers agriculture in combinations with functions regarding leisure time.

Landscape elements such as the Floriande terrain and the water defense line will also be used in the park system.

Other landscape elements such as the lakes will also be part of the recreational system. These lakes might become important places for (intense) water recreation. Also interesting in this system could be the function of the Amsterdamse Bos.
Atelier Zuidvleugel, 2007 Tussenruimte, Den Haag
atelier Zuidvleugel

Bank, H. ao., 2009, Designing Randstad 2040, design and politics 2,010 publishers, Rotterdam


Busquets, J., 2005, Barcelona, the urban evolution of a compact city, Lithografia Stella, Rovereto Italia


Hoog de, M. & Rick Vermeulen, nieuwe ritmes van de stad, Thoth, Bussum 2009,


Lang, R. E., 2003, Edgeless cities, Exploring the elusive metropolis, Bussum, Thoth

Lang, R. E., 2003, Edgeless cities, Exploring the elusive metropolis, Bussum, Thoth

Lola Landscape Architects, Nieuwe Dordtse Bieschbos, beeldkwaliteitsplan, 2009, Rotterdam

AtLuising, A & Teeuw, P, 2005 water duurzaam in het ontwerp Aeneas, Den Hague


Lynch, K., 1962, Site planning, Cambridge, Mit press


Sieverts, T., 1996, Het Montagelandschap landschapsarchitectuur van de stad, Delft, publicatiebureau Delft
Stassen, B, Het dna van almere: 16 interviews, 2008, Casla, Almere


van der Velde, R. & de Wit, S., 2009, The landscape form of the metropolis, 5 Metropolitan Form (Autumn 2009)

van der Werff, M. and others, 2005, Randstad, commuting and the definition of functional urban regions, polynet partners


Min. verkeer en waterstaat 1984, Structuurplan almere, Vrom 2008, Structuurvisie Randstad 2040, Den Haag, VROM

de Wit, S Dutch Lowlands morphogenesis of a cultural landscape Sun Amsterdam 2009


Websites/Internet:

bing maps
www.conruhr.org/page/ruhr_area/google earth
www.kids and trips.nl
www.metropoolregioamsterdam.nl
myworx.nl
www.noordholland.nl
olmenhorst.nl
www.park21.info
www.ridammerhoeve.nl
www.strootman.net
http://team.bk.tudelft.nl/Publications/2000/Ways%20to%20study%20preliminary%20Dutch%20versions/02Criteria%20HYBRIDE04.htm
www.trouw.nl
Attachment

Background information Design

Content:
- 3 Scenarios Design and Politics, designing the Randstad
- complete test park systems
Figure 164: Wereldstad, Design and Politics 2, Designing the Randstad, (Vrom, 2009)
Figure 165: Kuststad scenario, Design and Politics 2, Designing the Randstad, (VROM) 2009
Figure 166: Buitenstad, Design and Politics 2, Designing the Randstad, (VROM 2009)
Testing Variants

In this chapter you can find the complete test of the park systems. The variants will be tested on several aspects in order to find out which variant or which combination of variants will be the best starting point for the final design.

Metropolitan Structure

One test will be if the form of the system of open spaces is strong enough to structure the metropolitan developments. This test will simply be done by drawing the future urbanization in the area based on the Kuststad senario from BVR.

Another important element of this test is the relation between the park and the metropolitan form.

Connectivity

The second evaluation criteria will be the connectivity of the system of open spaces. The result show how well the system is imbedded in the current situation. This is done by doing a three step analysis.

Proximity

The third evaluation method will be to measure the proximity of the system to urban structures. This can be done by drawing the area of the parks from which inhabitants all inhabitants could walk to the park within 30 minutes

Scale / atmosphere

The fourth evaluation will be the atmosphere of the parks. By looking to parks of comparable scale and in comparable situation it might be able to draw conclusions for the atmosphere of these urban voids.

After this I will evaluate witch model would be most suitable for this area. This can also be a combination of two or more models.
Variant 1 Connections
Future Urbanisation

An advantage of this system is that connections between landscapes come to being. This is being desired in the structure vision Randstad 2040.

But the total amount of green seems to be too little to give form to the metropolitan developments in the Haarlemmermeer.

These lines could on the other become interesting connections inside the urban tissue.

There are also no inner Landscapes protected inside the Haarlemmermeer. That means that for the bigger landscapes you have to get out of the Haarlemmermeer.

Besides this the form of the Haarlemmermeer-polder will be completely lost. This park system in general elaborates little on the landscape of the Haarlemmermeer itself, although it does elaborates on the infrastructural lines in the area.
Connectivity

The park is very well connected to the main roads in the area, because the park is quite widespread. Most of the important roads are connected in the first step and some in the second step.
Proximity

The area from which pedestrians can reach the park is shown in light green with a dotted line.

The catchment area is:
160 km²

From which is urban:
25 km²

From which will be urban in the future according to the urbanization shown:
100 km²

As you can see almost the whole Haarlemmermeer is in the catchment area of the park. This means almost all the inhabitants from the Haarlemmermeer can walk to the park.
Atmosphere

The lines are relatively small, but looking at projects like Crai1oo, the begin park or parks near Almere (such as the cathedral park) you can see that a lot can happen on these plots.

A disadvantage of this system is that you always experience urbanization. This could be because of visual elements or because of noise pollution from example a nearby road.

When looking at the right map, a collage of parks and possible future urban you can conclude that the green lines are perhaps too small to structure the future urbanization.

Figure 171: Connections, test 4 Atmosphere Parks lower scale
Variant 2 Polder park
Future Urbanisation

The park system has a clear shape. It is a big rectangular in the middle of the Haarlemmermeer. A disadvantage is that are little connections between the landscapes.

Because of its rectangularity and scale it is quite easy to imagine how the park could respond to certain cultural elements of the Haarlemmermeer such as the scale and the form. On the other hand the form of the polder itself will probably be lost in the future.
Connectivity

The park is well connected to the main roads in the area. Most roads are connected in the first step, some in the second.
Proximity

The area from which pedestrians can reach the park is shown in light green with a dotted line.

The catchment area is:

50

Form which is urban:

16

From which will be urban in the future according to the urbanisation shown:

33

As you can see this variant scores worse on proximity than the previous design.
Atmosphere

On the pictures on the left you can see a collage of the area and the heath area near Hilversum. This area is in my opinion big enough to get really lost in. As you can see in the maps the scale of the park is big enough for this. It is even slightly bigger than that area.

Also interesting is the relation which this park could develop with the architecture at the boundaries of the park.

A disadvantage is that no one will walk this park in one day. So the park will automatically be divided in different places. This can also be a seen as a possible thing. Because of the different places people will come back to the park and can have favorite places inside this park.

A real threat to the park is that it is already fragmented by infrastructural elements. Either a lot of money will need to be invested into connections between parts of the park or the park will remain fragmented.
Variant 3 Serie of Parks
Future Urbanisation

The composition of the metropolis is comparable with the previous design. The difference is that the inner landscapes are smaller and more dispersed throughout the area.

This plan takes the current form polder the best in account of all the other plans, because it uses relicts and other landscape elements near the Haarlemmermeer in its system.

A disadvantage is that designed connections between the landscapes are almost completely missing. The Ringvaart and other landscape elements however could be used for this.
Connectivity

This park is the least best connected. One reason for this is that the urban voids are connected to the Ringvaart, which is curlier than the other roads. Another reason is that the Ringvaart has more sidewalks and partly because it is connected to the roads on the side of the Haarlemmermeer.
Proximity

The area from which pedestrians can reach the park is shown in light green with a dotted line.

The catchment area is:
140

Form which is urban:
17.25

From which will be urban in the future according to the urbanization shown:
55

This variant scores second best on this test
Figure 180: A series of Parks, test 4 Atmosphere Parks

- Oostvaardersplassen
- Weerwater Almere
- Amsterdamse bos
- Cathedral Almere
- City park in Hilversum
Atmosphere

The urban voids range in scale. Some are more likely to develop into urban parks. Others are more likely to become regional landscapes. Because the parks differ in scales and location, the park system could also offer a big variety in atmospheres and sorts of parks. The park in the middle for example could in my opinion develop as a big park in the middle of an urban area. Other parks could become landscape elements on the outskirts of the Haarlemmermeer and others could develop into city-parks.

In this picture you can see a collage of S'gravesande in combination with the Haarlemmermeer. This area was in my opinion also big enough to get the feeling of being outside the city.
Variant 4 One Connection
The composition of the metropolis is comparable with the ideas of the Kuststad design for the Randstad.

Big open landscapes are encapsulated in the metropolis together with connections. This park can be seen as one connection between the dune area and the lake area. Other advantages are comparable with variant 2.

A disadvantage of this system is that the form of the polder will be lost.
Connectivity

This park is the third best connected park. Almost all the roads from the south west to the north east are connected in the first step. This is mainly because the park is widespread in the contrary direction.
Proximity

The catchment area is:

50

Form which is urban:

15

From which will be urban in the future according to the urbanization shown:

35
City Edge, Hilversum

Park 21 design BVR

Heath Area near Hilversum

Centro, Oberhaussen

Begin Park, Almere

Figure 185: One Connection, test 4 Atmosphere Parks
Atmosphere

The park is big. This offers a lot of opportunities. You can get really lost in the park. A lot of advantages and disadvantages are comparable with variant 2. The park for example is big, but it is also already fragmented by infrastructural elements. Besides this it is questionable if it would really work as a connection because of the amount of infrastructural lines in between the areas. Another problem is that it is questionable if these kinds of connections are really useful for example ecological reasons.

Figure 186: One Connection, test 4 Atmosphere Parks lower scale
### Variant 1: Buffer system

**Pros:**
- An advantage of this system is that connections between landscapes come to being. This is being desired by the Dutch government in the Randstad 2040 document.
- The amount of green on the other hand seems to be too little to structure the urban developments in the Haarlemmermeer. Besides this, no inner landscapes will be designed in the Haarlemmermeer.
- The form of the Haarlemmermeer will also be almost completely lost in the future.
- The park is well connected to most of the roads in the Haarlemmermeer. Mainly because the park is widespread. Most of the urbanization is in the catchment area of the park system.
- A disadvantage is that the lines are relatively small. Although a lot of things are possible on this kind of plots, you always experience nearby urbanization either because of visual elements or because of noise.

**Cons:**
- The park has a clear shape. A disadvantage is the lack of connections between the landscapes. The shape of the Haarlemmerpolder will probably be lost in the future, although parts of the park can be designed as relics.
- The park is well connected in the area. Most of the important roads are connected in the first step.
- The park scores badly on proximity.
- The park has a big scale. You can get really lost in the park. Besides this, there is an interesting relation between the architecture and the landscape possible on the edge of the park.
- A disadvantage is that the park is already fragmented.

### Variant 2: Polder park

**Pros:**
- The park has a clear shape. A disadvantage is the lack of connections between the landscapes. The shape of the Haarlemmerpolder will probably be lost in the future, although parts of the park can be designed as relics.
- The park is well connected in the area. Most of the important roads are connected in the first step.
- The park scores badly on proximity.
- The park has a big scale. You can get really lost in the park. Besides this, there is an interesting relation between the architecture and the landscape possible on the edge of the park.
- A disadvantage is that the park is already fragmented.

### Variant 3: Serie of parks

**Pros:**
- The composition of the metropolis is comparable with that of the previous design. The difference is that the inner parks are a lot smaller. The plan elaborates best on the existing landscape compared to the other variants.
- Although some landscape elements might function as a connection between the parks, none is designed.
- The parks scores bad on connectivity with the roads inside the Haarlemmermeer.
- Interesting is that the parks vary a lot in size and location. Some could develop into local, regional parks or landscape elements.

### Variant 4: One Connection

**Pros:**
- The make up of the metropolis is comparable with the ideas of the Kuststad-scenario for the Randstad.
- A big open landscape is encapsulated in the urban area together with connections.
- Because the park is widespread in the east-west direction in the Haarlemmermeer, it connects with almost all the infrastructural lines from the north-south direction.
- The score for catchment area is low.
- The size of the park is the same as in variant 2. It also applies here that nobody will walk it in one day. Besides this, the area is also already fragmented by infrastructural elements.
Conclusions

The first variant scores high on connectivity and proximity. In this final conclusion I have also tried to include the costs of the park systems. I think that variant 3 will be the cheapest because a lot of landscape elements are used, while in the other variants a lot of new park needs to be created.

The 3rd and 4th variant scores high on 'structuring the metropolis'. The first variant scores low because I think the lines are too small. The variant scores lower because it lacks connections.

When looking at the atmosphere of the park. The 2d and 4th variant offers a big park. This is itself a positive thing, but I think that in this case it's better to develop more small parks, because the parks are already fragmented.

These different parks in this system can offer a bigger a variety of different atmospheres. This is why variant 3 scores best on this subjects.

Although these subjects are more subjective than the others, I think it is very important to take in account the metropolitan form and the atmosphere of the park system, for the goal is to create a park system that can structure the metropolitan developments.

Besides this all parks can be a bit bigger in my opinion when looking to the results of the future urbanization. They could also elaborate more on the existing landscape.

<table>
<thead>
<tr>
<th>Area</th>
<th>Costs</th>
<th>Structure Metropolis</th>
<th>Connection</th>
<th>Proximity</th>
<th>form/place/ atmosphere</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer</td>
<td>+/-</td>
<td>-</td>
<td>++</td>
<td>++</td>
<td>+/-</td>
</tr>
<tr>
<td>Central Park</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>One</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Parks</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>++</td>
</tr>
</tbody>
</table>

Figure 187: Schematic map combination variant 1 and 3

Figure 188: results testing parks