

An aerial photograph of a university campus. The campus features several large, multi-story buildings with flat roofs, interspersed with green lawns and trees. A winding river flows through the landscape in the upper left. The overall scene is a mix of urban development and natural greenery.

Professional Academy 2007

Dreijen Regeneration Study

Students:

Geert Ankersmit
Arjan Boekel
Arnout Bol
Jeroen Hamers
Antje Herrmann
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"Klok-building", The Dreijen - Wageningen

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Arboretum, The Dreijen - Wageningen

Preface

This year the students of the "Professional Academy", a combined theory and design class in landscape architecture, elaborated on a vision on the campus "de Dreijen" in Wageningen.

This campus will be left by the university within the coming decade, university functions mainly moving towards the new campus "de Born" in the North of the city. This creates many opportunities for new uses of the area, but also many questions on the future of the terrain. Different stakeholders have different ideas about "de Dreijen" and a first exchange of ideas between the University and the municipality of Wageningen have now started to bring the various interests into the picture. The search for an urban design or landscape architecture office to provide these future discussions with professional advice has now started.

To trigger these discussions and provide a source of inspiration for the future designs of "de Dreijen" the chair group landscape architecture of Wageningen University had decided to use one of the design classes as a testing ground for new ideas for this area. Eventually the subject "Professional Academy" was used as a design laboratory. This subject was chosen because in its didactic setup it combines several issues that were considered important for an appropriate design process for a site like "de Dreijen". It combines theory lessons on substantial issues of urban sustainability (prof. Jusuck Koh and prof. Sijbrand Tjallingii) and ecology (prof. Paul Opdam). These issues are supposed to be translated into designs on different scale levels. Designing on very different scale levels is another important part of this subject in order to create an integrated vision for a neighborhood that is nested in urban and regional contexts.

Between September and December 2007 the students of the Professional Academy worked on the vision for "de Dreijen" and came up with interesting results. Their "research by design" study brought about very different visions, but they all reflected the main theories learnt about urban sustainability and ecology. From the design studies of the students an array of general conclusions could be drawn that can be found at the end of this report.

The student's work reflects their education as Bachelors in landscape architecture who have dived into urbanism issues through this project for the first time. Hence they can not provide architectural solutions on building level and hence can also not simulate the costs of their interventions. It would be interesting, however, to ask specialists in building and construction engineering to simulate the costs for some of the student's design scenarios. This might provide the professionals working on the further research on "de Dreijen" with some first indications of the financial aspects of different scenarios.

The students who have worked on this project come from very different landscape architecture education backgrounds and also represent different cultural backgrounds. In the group of ten students six different nationalities were represented. That brought about lively discussions, different design approaches and ways to communicate design ideas. The language used by the students when they explain their individual design projects clearly represents this.

We are proud about the student's results which have been evaluated by the external critics prof. Sijbrand Tjallingii and Eric van der Meer (WUR, department V&B) to be interesting and valuable contributions to the discussions around the future of "de Dreijen". We would like to share ideas and knowledge we have gained through this process of research by design with many parties, such as the Raad van Bestuur of Wageningen University, the municipality of Wageningen, the design offices studying further on "de Dreijen" and whoever else might be interested.

The report will first give a general introduction on the academic field of landscape architecture and the didactic setup of the subject "Professional Academy" within our MSc course landscape architecture. After that the different stages of the design project are described ranging from regional to site scale on "de Dreijen". The report is concluded with general thoughts about the main design strategies and their consequences meant to offer a first frame of reference for other designers working on "de Dreijen" in the future.



1 INTRODUCTION



"Botanical centre", The Dreijen - Wageningen

1.1 What is landscape architecture?

"Landscape architecture is the discipline concerned with mankind's conscious shaping of his external environment. It involves planning, design and management of the landscape to create, maintain, protect and enhance places so as to be both functional, beautiful and sustainable (in every sense of the word), and appropriate to diverse human and ecological needs. The multifaceted nature of the landscape and mankind's interaction with it, means that the subject area is one of unusual breadth, drawing on and integrating concepts and approaches, not just of the two sides of the traditional divide between the creative arts and natural sciences, but incorporating many aspects of the humanities and technology as well" ECLAS (European Council of landscape architecture schools) definition of landscape architecture.

Landscape architecture as an academic discipline is in a specific position in between the arts and natural (geography, ecology, geology and soil science, etc.) as well as social sciences (environmental psychology and sociology, etc.). In drawing plans for the future the landscape architect has to consider theory from these sciences, but also historical and technological knowledge as well as moral and aesthetic/ artistic issues.



"Entrance north", The Dreijen - Wageningen

1.2 MSc landscape architecture in WUR

The master's students in landscape architecture during their two- year study at the same time acquire scientific knowledge as well as technical and artistic skills. The MSc in landscape architecture consists both of theoretical subjects as well as problem- based design classes. The theoretical classes comprise design theory, theory seminar, landscape architecture history and advanced design research methods. Next to that also subjects from other scientific fields within Wageningen or in other universities belong to the theoretical, scientific part of the MSc in landscape architecture.

The design classes often deal with real-world problems that are relevant issues within global or regional contexts and that have the potential to be solved through spatial design. The design classes also have a strong scientific focus and design decisions are expected to be based on scientific knowledge. This way students are prepared for their final thesis project, which normally is a design project but which is very rigidly based on scientific knowledge, be it from natural or social sciences.

1.3 The Professional Academy in the MSc

This course, covering period 1 and 2 of each academic year is a typical "research by design" class, combining a theory seminar where basic theoretical knowledge on sustainability, ecology and socio- cultural issues are discussed and guest scientists from these fields are invited (Paul Opdam, Sijbrand Tjallingii and others). The typical Wageningen approach to design that consequently combines scientific knowledge with design is applied and trained in this course.

The theoretical knowledge is put into design practice through working on a real world example that is brought in by external stakeholders. This real-world project always has to contain issues to be tackled that lie in the field of sustainability, ecology and socio- cultural issues and offer the opportunity to deal with the problem on different scale levels from regional down to site level. These "project- cases" are brought into the course by stakeholders like design offices, municipalities, ministries or others. The work process in the project is tutored by teachers from the landscape architecture chairgroup but is also under the auspices of the stakeholders.

Next to that the Prof. Academy also is the first class that starting Master's students can participate in. Many foreign students and students from other polytechnical schools or universities are advised to join this course because it also has a module of remedial education ("Dutch experience" where the students acquire basic knowledge on Dutch landscapes, landscape architecture and urban design) and the theory class makes the students acquainted with the typical Wageningen design approach. This approach emphasizes the legitimization of design decisions on scientific knowledge, which is rather different from many other design schools where design decisions much stronger rely on intuition and aesthetic reasoning.

Normally every year the real-world project that is brought in by external stakeholders changes. In 2006, for example, the students worked on a vision on Rotterdam's public spaces quality, a project guided by the foundation Architecture International and the landscape architecture office Paul van Beek. The last Prof. Academy in 2007 dealt with the problem of the site "de Dreijen" and will be discussed more detailed in this booklet.

1.4 "De Dreijen", a contested site

The University of Wageningen, during the last decades years has occupied many different sites in the city of Wageningen. One of them is the campus on "de Dreijen" which is also the nucleus of the University. In the "huis met de klok" the history of Wageningen University started. Later the Dreijen site got increasingly occupied with buildings of the University, especially during the post-war years. At the moment the site has various buildings from very different periods, housing many different chairgroups, most of them belonging to the Plant and genetic sciences.

But "de Dreijen" also accommodates part of the Arboretum and a collection of perennial plants in the Arboretumpark and the glasshouse.

The spreading of University facilities all over the town of Wageningen has been assessed in the 1990s and it was concluded that the University would benefit from a more centralized spatial setup. As a consequence the idea of "de Born" as the new central spot of the University was developed. Many chairgroups have already moved to the new premises and others are following. Also "de Dreijen" will be vacated in an expected time- frame of about five to ten years from now. First buildings are now left and have even been sold, such as the "Banana"-building at the Western edge of the area.

This development raises many questions about the future of the "de Dreijen" site. Several studies have been conducted and the structure plan of Wageningen municipality has mapped out "de Dreijen" as a future housing area, with a few commercial/ public functions in the Northwestern corner.

More specific studies have been done as well, such as the study of the Brink group on the values of buildings and their potential for re-use. A group of young landscape architects has made a thorough site analysis and came up with restructuring proposals and the office Nieuwland has developed several alternative visions on the future of the Arboretum.

The chairgroup landscape architecture also recognized this area as a very interesting study object for the students and first contacts were laid with the Facility and Real Estate management of WUR in 2006. In 2007 this lead to the agreement between the two parties to think together on the future of "de Dreijen" and include the students as a "think tank". The best way to include the design students as a think tank was to bring in the case

of "de Dreijen" in the Professional Academy course, with Wageningen University's Facility and Real Estate management as the main stakeholder. Mr. Erik van de Meer agreed to advise the design process together with Dipl. Ing, Sanda Lenzholzer who tutored the studio on every day basis.

In the first place there were plans to also include design professionals from the landscape/ urban design office

that was supposed to start a study on "de Dreijen" parallel with the student's design investigations. Selecting and hiring this office by the Raad van Bestuur was eventually shifted to a later point in time. This decision was taken because the communication process between WUR and Wageningen municipality on the future of "de Dreijen" had just started up and the development of a design strategy by an external office would have been premature.



"VWO Campus", The Dreijen - Wageningen

1.5 The assignment for the student's project

Students are asked to develop their own thoughts on the restructuring process of "de Dreijen" and embed it in a vision on the general developments of the region. This took place in different phases during which the students also worked their way through various scales.

Phase 1: First quick generation of a bold hypothesis/ imaginative concept to get the creative thinking process going. Conducting inventory and analysis for the larger project area is happening in group work. The students received the GIS- base maps and other digital material to make inventories of the area. Through field visits the students gained deeper insight on the region and experience and "feel" the actual site. Not only digital mapping played a role but also experience mapping or mental mapping as valuable research tools for the landscape architect.

Next to getting generally acquainted with region and site the students also focussed on a "specialist" issue. Three groups were formed that looked deeper into the issues of 1. water management, 2. ecological networks/ biodiversity and 3. energy/ sustainable urbanism on regional and local level (with a "real" specialist as a contact person). From there they formed their first "specialist" vision on the city of Wageningen and its role within the region.

Phase 2: The second phase comprised group work with new teams. The groups were reshuffled in such a way that all groups have a "specialist" of the three issues considered in the first phase. Together the students developed a vision on Wageningen in its regional context, combining the expertise of all "specialists". This phase lead to a plan of Wageningen and surroundings on scale 1:10.000.

Phase 3: Students again formed new teams to test three design scenarios on the Dreijen campus site. The scenarios to be developed dealt with the way the existing structures on the Dreijen campus can be handled: first scenario was "complete re-use", the second scenario was "tabula rasa" and the third scenario was an intermediate: "re-using parts". The teams will discussed their scenarios thorough role-play. Each student in different rounds played a "representative" of different stakeholders: WUR, the developers, the local authorities and environmental action groups. The process also encompassed an excursion

to sites of urban conversion projects. This phase lead to a plan of "de Dreijen" and surroundings on scale 1:5.000.

Phase 4: Students were supposed to come up with a second or adjusted original personal hypothesis or "manifest" on how to approach de Dreijen campus redevelopment and work this out through the development of

three design alternatives for de Dreijen in a "research by design" process. This phase lead to several plans of "de Dreijen" and surroundings on scale 1:2.000.

Phase 5: Students elaborated the "the best design alternative" for de Dreijen down to detail level for strategic points/ areas details and 3-D visualizations and sketched out the phasing for the design implementation.



"Banana-building", The Dreijen - Wageningen

2 RESULTS



"Chemistry-building", The Dreijen - Wageningen

Results of the student's design processes

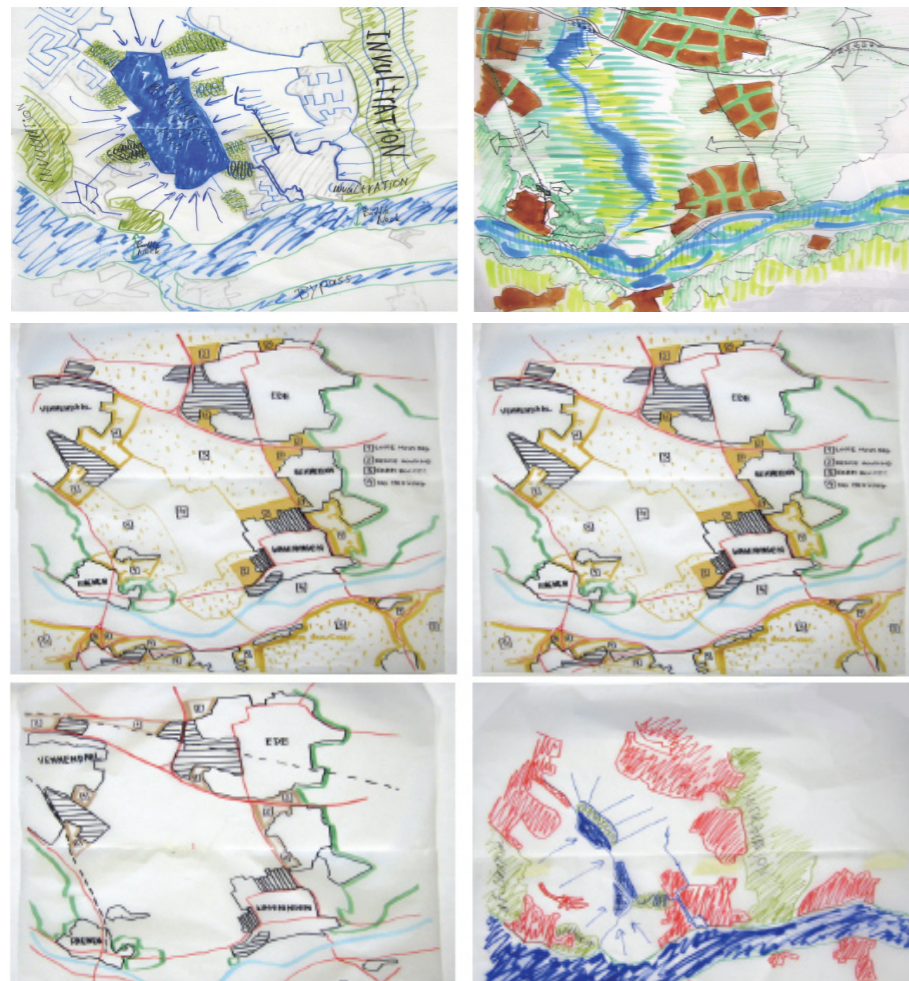
The designs of the students focused on different scale levels. The first three phases, conducted in team work, lead from a regional vision to a local plan for "de Dreijen" within Wageningen. The actual elaborations on site level were then worked out individually by each student. These results are of most prominent interest for the further development of "de Dreijen" and will be shown in detail on the following pages. Each student's work will be described according to the following order: 1. three alternatives, 2. main concept, 3. final plan, 4. illustrations of plan, 5. phasing and first evaluation of impact.

2.1 Structure plan of Wageningen

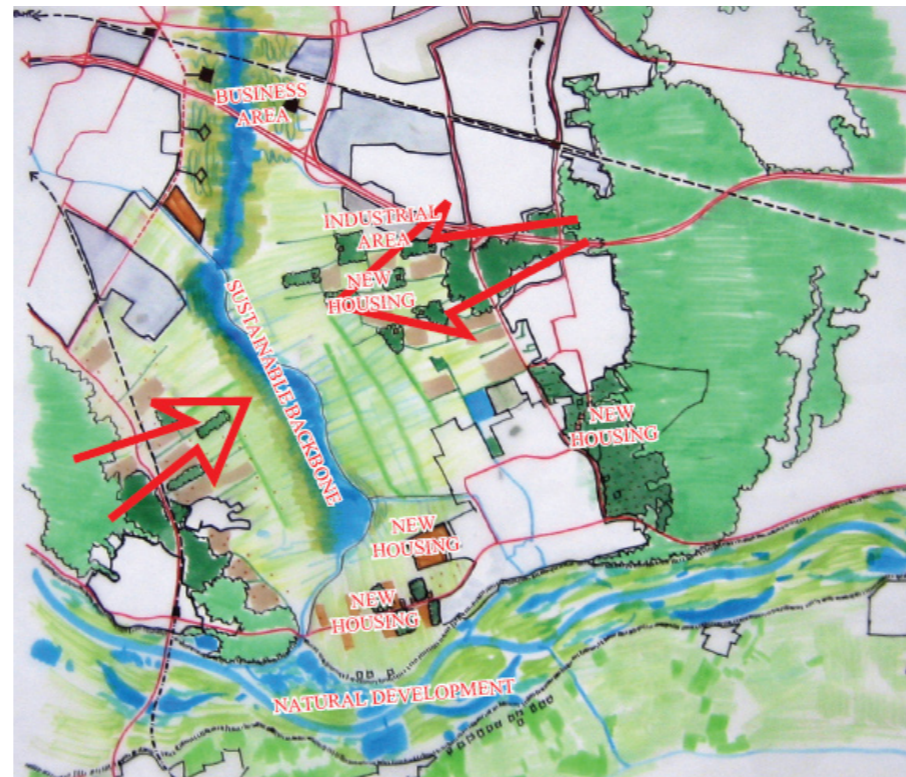
The assignment to develop a structure plan for Wageningen in its surroundings was approached by three teams in very different ways. One group tested extreme scenarios, another group looked at the city from different theoretical models and the third group based their approach on guidelines from the "Ecopolis". This theory was introduced by its author Sijbrand Tjallingii during the theory classes and found its repercussions in both the latter two teams thought.

The "to the max" -team

The group that approached the assignment through making scenarios wanted to simulate negotiation processes already in the plan- development process. They came up with the idea to take various issues (hydrology, ecology) and functions (industry, housing, etc.) that consume space and push them "to the max" in terms of space consumption. Next to that for all the extreme scenarios also compromised version of the "maximum" alternative was developed. All these scenarios were then evaluated according to synergies and conflicts. From the optimal version the eventual structure plan was elaborated. This plan included small city extensions and more new housing areas "fit" into the surrounding different landscape types. Next to that a main focus was put on water- treatment and -retention in the Binnenveld.



Scenario's: minimum and maximum versions



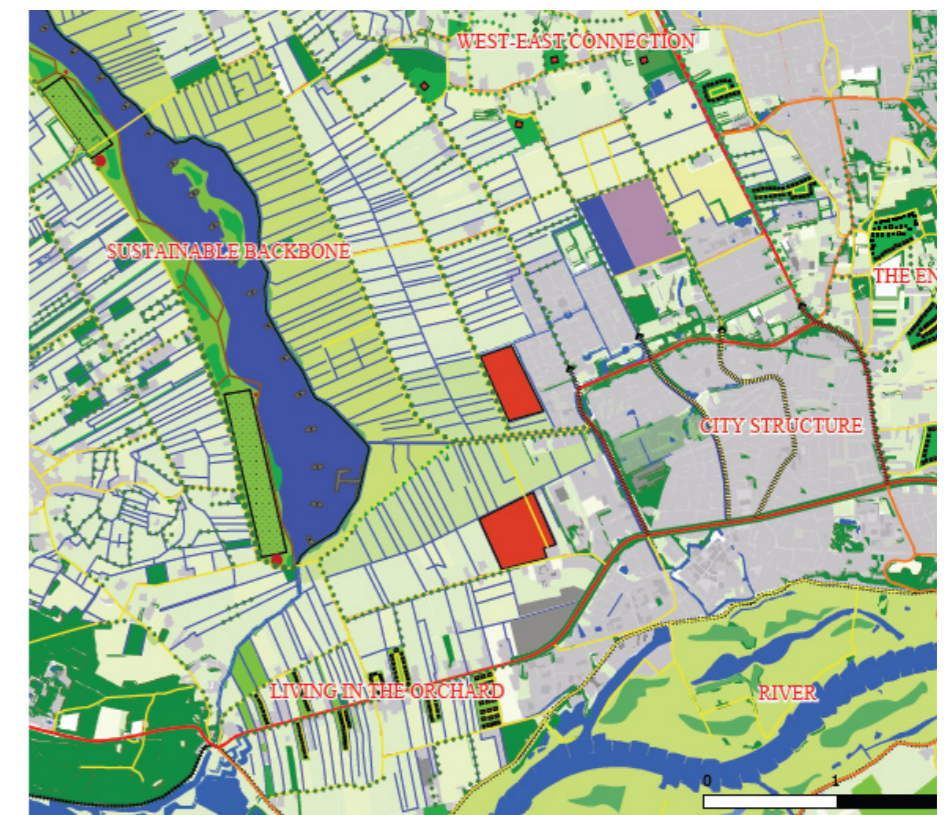
The final scenario



The watersystem

	ECO. MAX	ECO. MIN	HOUS. MAX	HOUS. MIN	HYDRO. MAX	HYDRO. MIN	INDUS. MAX	INDUS. MIN
AGR. MAX	-	-	-	0	-	0	-	+
AGR. MIN	-	0	0	+	0	+	0	+
ECO. MAX	-	-	+	+	-	-	-	-
ECO. MIN	-	0	+	+	-	0	-	0
HOUS. MAX	0	+	-	-	+	+	-	-
HOUS. MIN	+	+	-	0	+	+	-	0
HYDRO. MAX	+	+						
HYDRO. MIN	+	+						

Decision matrix



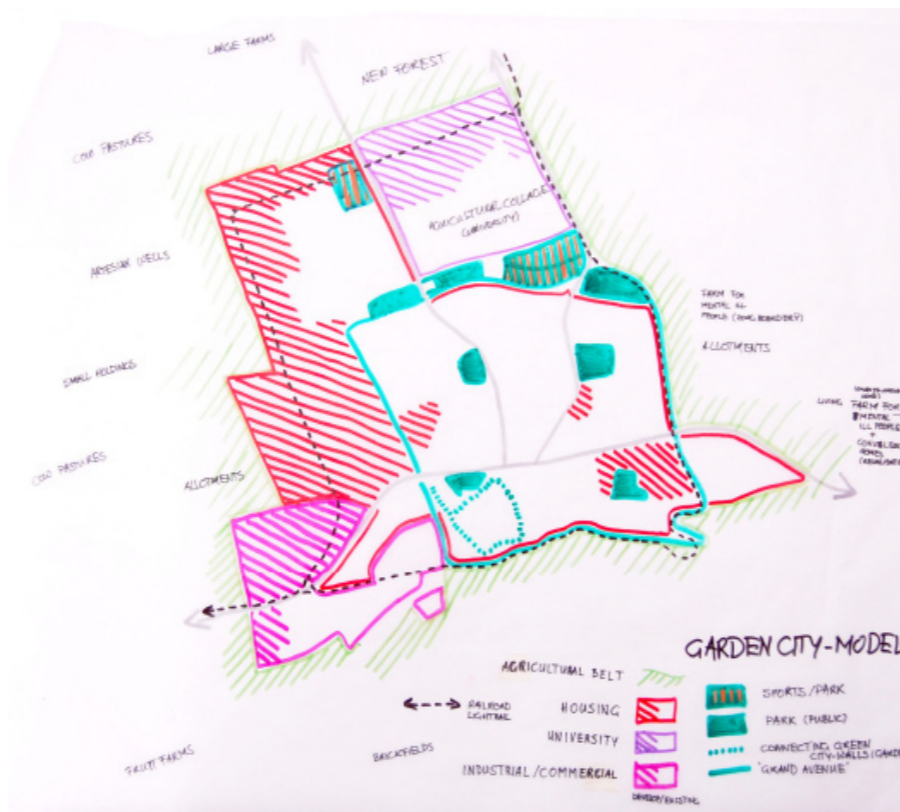
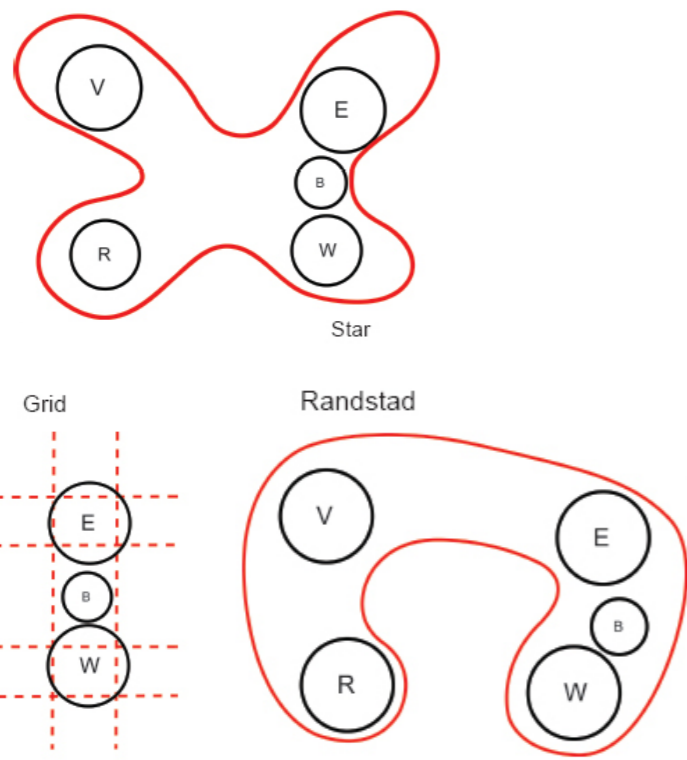
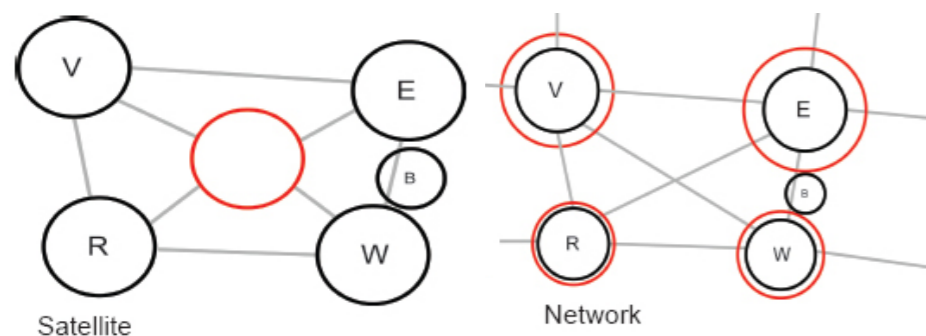
The masterplan

"CITY MODELS"

The "city models" -team

The group working on "city models" approached Wageningen in its surroundings from a theoretical perspective. They compared Wageningen and its situation to other cities in urban networks (Satellite cities, Randstad, Network city, grid model, etc.) and identified Wageningen as part of a network agglomeration. Also smaller scale models for urban developments like the Garden city and Ecopolis were studied and both were implemented on the city of Wageningen as guiding principles. As a conclusion the group proposed to use a mixture of Garden city and Ecopolis for the further development of Wageningen in its surroundings.

The five city models tested on Ede, Veenendaal, Rhenen, Benekom and Wageningen (WERV):



The Ecopolis model applied



The garden city model applied

Demands/Statements	Priority number	Satellite	Randstad	Star	Network	Grid
No urbanisation in the Binnenveld, for ecological and hydrological purposes	4	-	+	4	-	+
Robust ecological connection between Veluwe and Utrechtse Heuvelrug needs improvement for species migration	3	+	3	-	-	+
No urban development in the rural area, only in connection with cities	1	-	+	1	+	1
Green separation between cities, to prevent cities to melt together	2	+	2	-	-	+
Totals		5	5	1	9	5

Priority: 4 = high priority, 1 = low priority

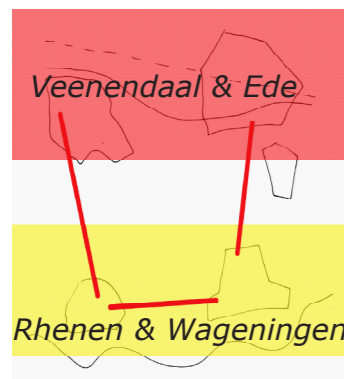
The decision taking

Conclusion:



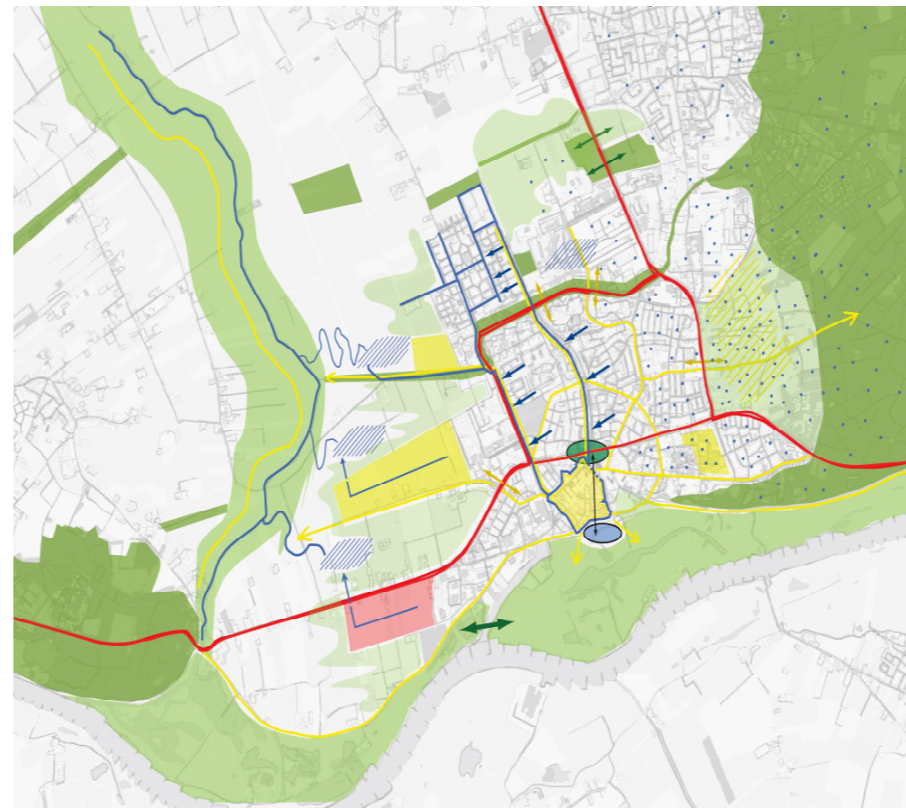
The "Fast- / slow lane" -team

The third group also took the theory of Ecopolis as a starting point, looking at the "fast lanes" and "slow lanes" that surround Wageningen. They concluded that the city is situated too far from "fast lanes" and proposed new connections. They tested different ways to relate the city to the traffic infrastructures in Ede and Veenendaal without too much disturbing the Binnenveld. This resulted in a plan that links Wageningen with a light-rail ring to the surrounding cities sparing the Binnenveld that is reserved for ecological development, recreation and water retention.



"Fast lane - cities" with high dynamic (global) functions

"Slow lane - cities" with low dynamic (local) functions



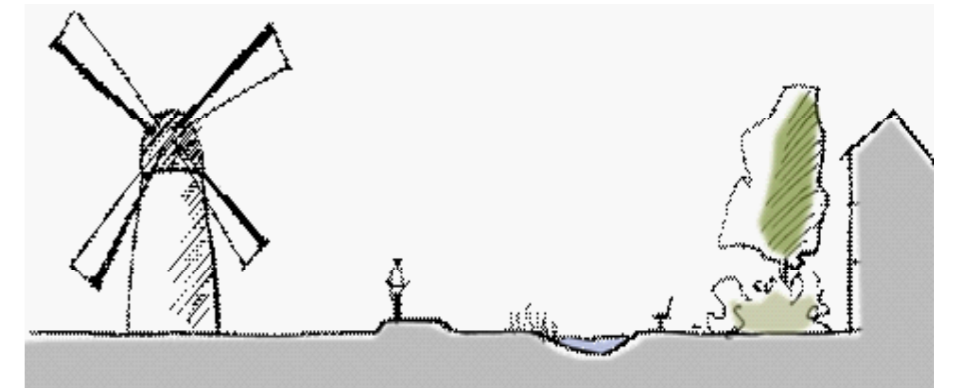
The structure plan for Wageningen



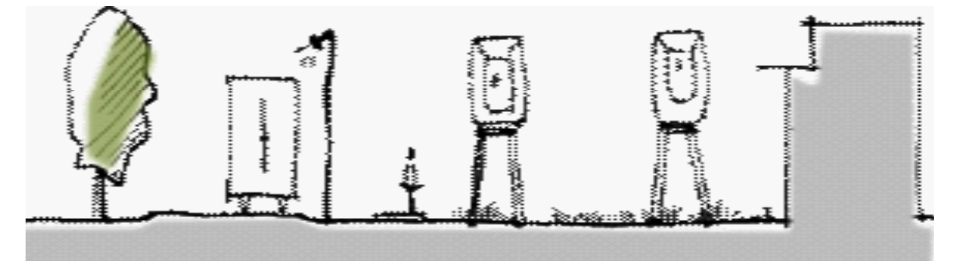
The WERV plan



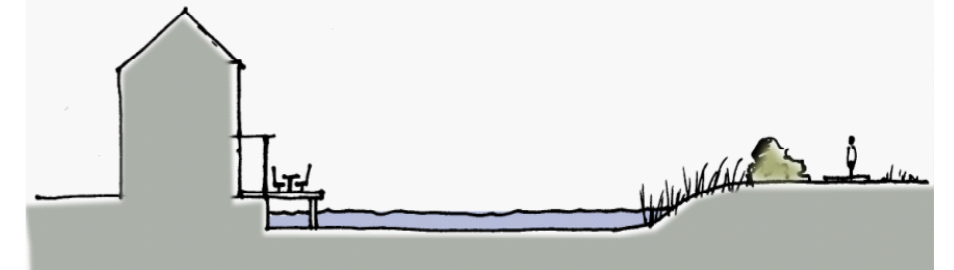
The final scenario



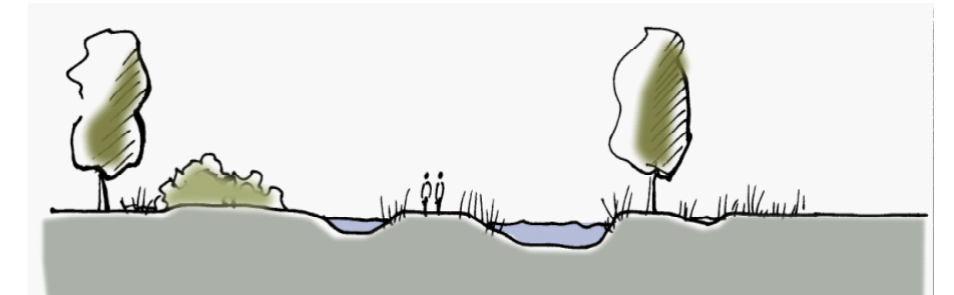
Slow lane phenomena



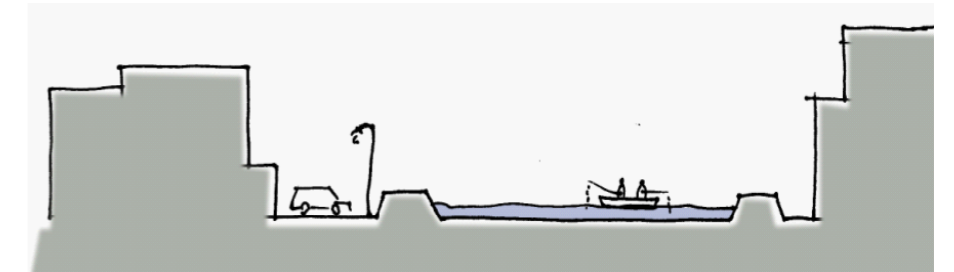
The fast-lane road and lightrail



Water combined with living



Water combined with nature



Water combined with recreation

2.2 First concepts for the Dreijen

The students had to think about the role of the Dreijen site within the context of Wageningen's urban fabric and in relation to the green surroundings nearby. In this process they also discussed about the re-use of buildings and three groups were formed that worked out different concepts that combined a vision on the building re-use ("tabula rasa", "maximum re-use", and "partly re-use") with their vision on de Dreijen in green and urban networks. From this they came up with a general concept and first designs that were discussed in a "role-play" that simulated typical political processes around new urban design projects. In this "role-play" the respective groups considered themselves an urban design office that presents their plan to a committee of commissioners, developers, politicians, neighbours, etc. that were represented by the other team members. Everybody had to think about plans from different perspectives and the discussions brought many typical issues ("how much does that cost?", "who maintains this?", etc.) to the surface. It was an important learning experience to base design decisions in the context of political discussions.

The “Housing- experiment team”

The team “housing- experiment” had based their concept on the “tabula rasa” scenario. They thought that Wageningen should not expand more to the surrounding landscape and rather realize as much housing in the city as possible. De Dreijen was considered a good site for this and because the existing buildings were not kept in their plan, a lot of space could be used to bring in new houses. But also the green character of the arboretum had to be kept. The Dreijen were also considered to be important as the nucleus of the University and the group chose to keep some university functions on de Dreijen. The housing sites were supposed to accommodate sustainable, experimental housing formes that could be “test fields” for new housing concepts. These test fields should be under the auspices of the university and would at the same time epitomize the main values that Wageningen University represents: quality of life.

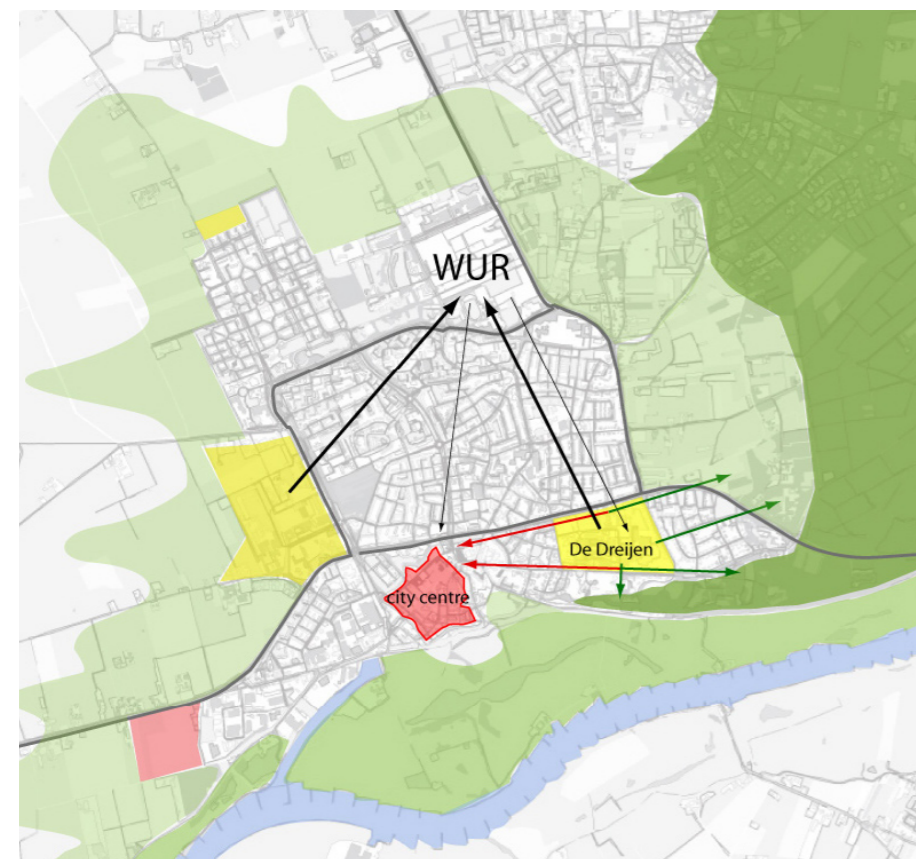


Reference pictures experimental houses



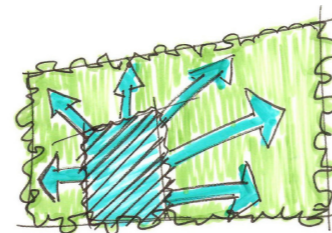
The concept

Analyses situation:

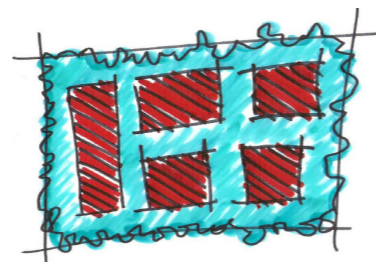


The Dreijen in city of Wageningen

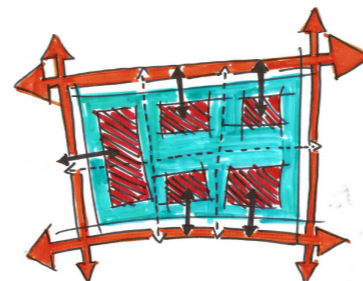
Design principles:



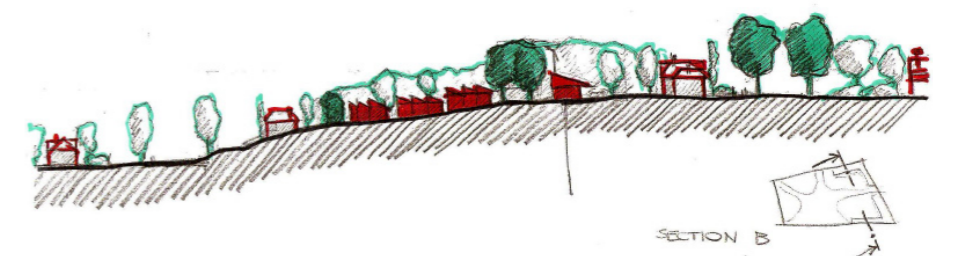
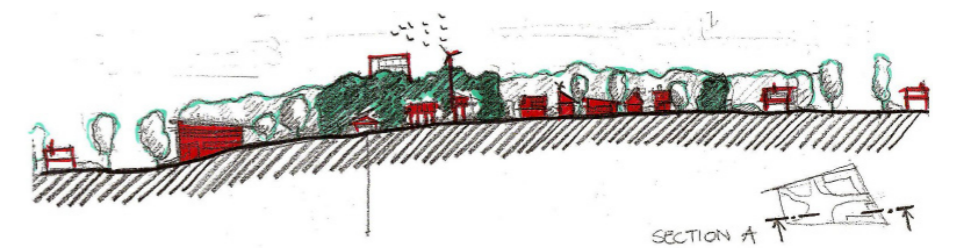
Expand green character of arboretum



Add housing zones to the area, like sustainable testing fields



Connect housing islands to roads, add slow traffic paths



Cross-sections new situation

"DOORSTEP"

The "Doorstep" team

The team coming up with the "doorstep" concept based their vision on the scenario "maximum re-use" for the existing buildings which naturally emphasized the two different part of de Dreijen: a heavily built-up East and a loosely built up Western part. At the same time the group saw that an opposite direction in the urban structure of Wageningen in that area could be observed: The denser city lies to the West and the landscapes of the Veluwe and the river to the East and the South. They intertwined the assumed contrast in the "doorstep" concept that considered de Dreijen to be a doorstep to both- towards the city and towards the green areas. They enhance the green character of the arboretum and the built-up character of the Eastern part of the site. They came up with proposals for a new mix of functions including cultural and commercial functions next to housing based on close examination of the existing functions in the surroundings that could keep de Dreijen what it is now: a lively place close to the city.



The concept



Grey vs. green



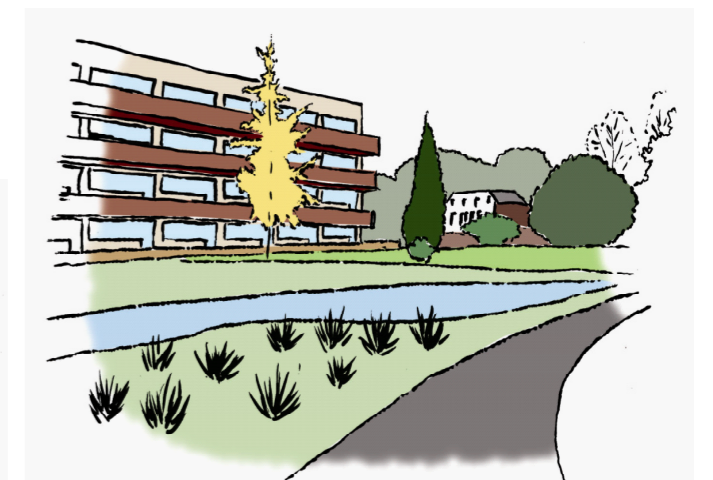
The final plan

Functions for "De Dreijen":

- Business
- Theater
- Park
- Events
- Art / Museum
- Cinema
- University
- Housing
- Student housin
- Hostel
- Temporary Living



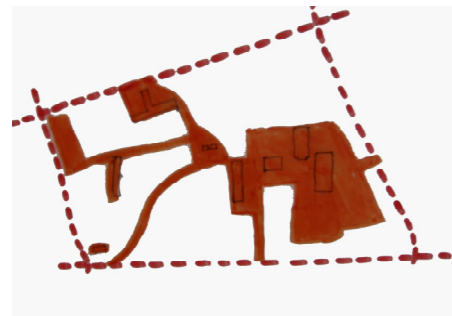
Different views on the new park



The "glocal city" team

The team "glocal city" built further on the theory of the "fast lanes" and "slow lanes" from the Ecopolis concept and combined it with an intermediate vision on the re-use of buildings. The group identified the main movement structures between the Dreijen site and other attractors in the city like the centre, the new campus, etc". These routes were becoming "fast lanes" with higher dynamics that structure the site and having adjacent functions with higher dynamics, such as cultural, commercial and student housing. The "slower" and lower dynamic functions were situated in the "lee sides" of the fast lanes, encompassing housing and silent types of recreation.

High dynamic:



- Studenthousing
- Multifunctional public+ housing
- Apartments
- Living upperfloor/ commercial groundfloor
- Café
- High dynamic office
- Art gallery
- WUR museum
- Parking under green
- Public square

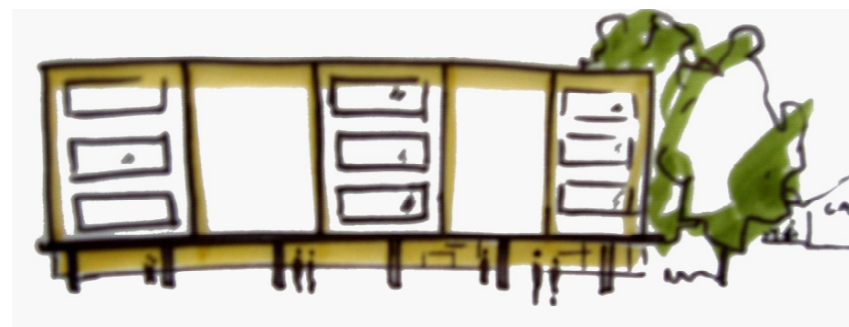
Low dynamic:



- Existing buildings
- Eco-living middelclass
- Eco-living highclass
- Housing
- Arboretum with some houses
- Eco-living middelclass
- Low dynamic office



The final plan



Sketch high dynamic function



Sketch high dynamic function



Sketch low dynamic function

LIVING IN THE PARK

GEERT ANKERSMIT

