Stadsblokken Hillside

River Rhine - Arnhem's Friend or Foe?!

The title of the Landscape Architecture Atelier 2005 at the Wageningen University was "landscape architecture by events – river Rhine, Arnhem's Friend or Foe?!". The project area was a stretch of about eight kilometers along the river Rhine in the surroundings of the city of Arnhem. The assignment was to develop a recreational nucleus on the floodplains or at the riverfront. After several excursions to the site, a workshop and an analysis of the area, the students had to choose their own proper spot for their designs. Christoph Hagenacker came to Wageningen University for this atelier to learn about the Dutch approach towards landscape architecture and water management issues. The atelier group consisted of Dutch and international students from all over the world and was a "melting pot" of different ideas and philosophies.

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The very first look

The area I selected for the recreational nucleus of "Stadsblokken Hillside" could be paraphrased as an "inner-city-water-landscape" called Stadsblokken and is situated on the floodplains between Arnhem-north and Arnhem-south. People usually cross the Stadsblokken area by one of the bridges, but are not actually accessing this space. Little free space for the river is found here because of the bottleneck situation as a result of the growth of the city. The river manifests itself as a dividing barrier between the two parts of Arnhem. The different characters of the two city sides become visible, not only in the density of housing, but also in the different changeover from wetlands to dry lands. The northern side with its steep and fortified drop down to the water opposes the smooth changeover up to the winter-dike in the south side. The river is the structuring principle of Stadsblokken but also of the city itself. For the future development of Arnhem, growth is expected. A recreational site must be able to react on those changes and innovations in order to keep it's functionality in the future.

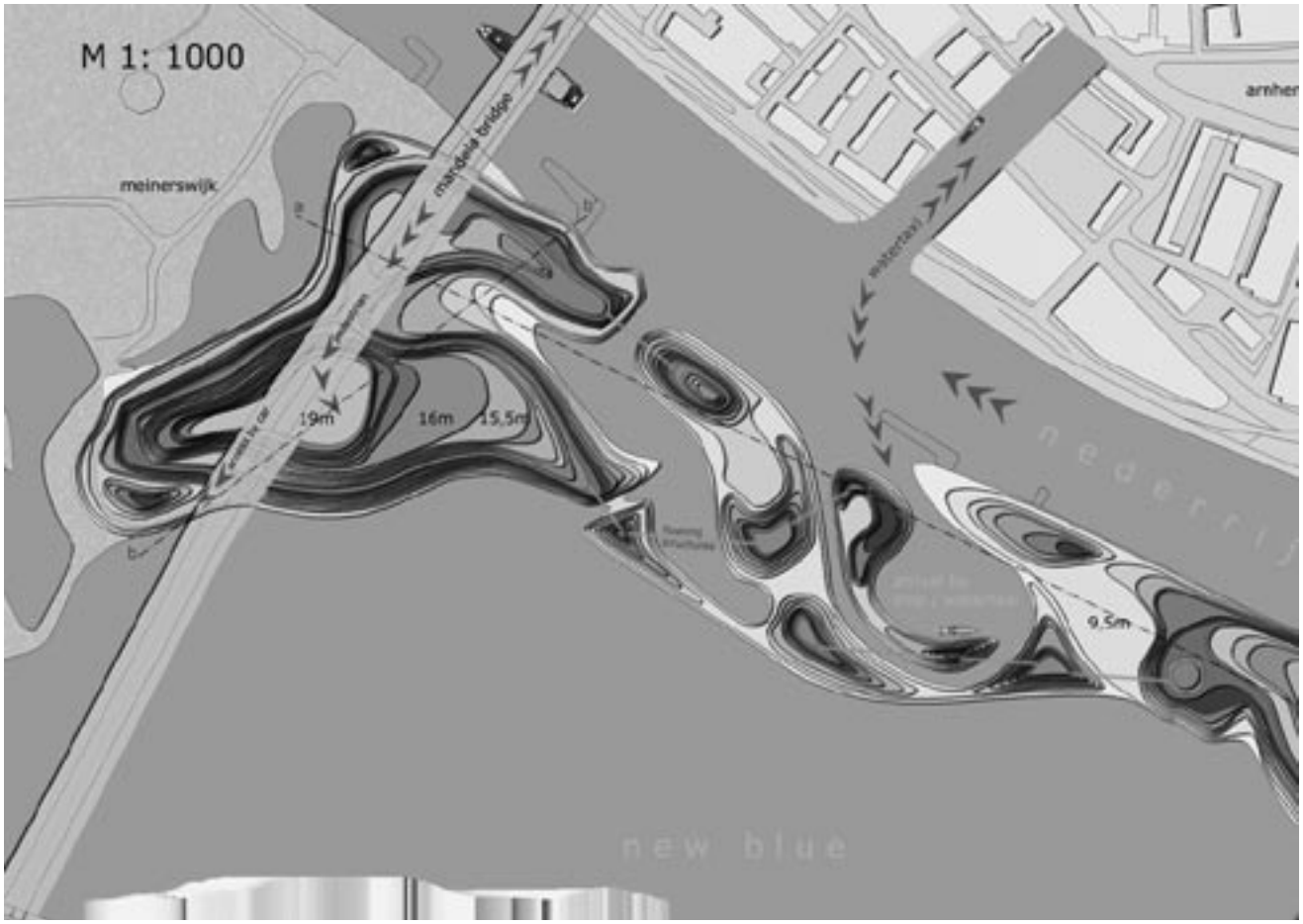
Attraction and extensivity

The proposed design for Stadsblokken works as a rather intensive and unusual attraction, in order to get the people of the two sides of Arnhem together there. By the common use of this piece of land a (mental) connection between the two sides can be achieved. The Meinerswijk area is located to the west and has a different character than Stadsblokken. Here the bottleneck opens again into a wider wetland zone. Soft recreation is already possible in this natural landscape with its many pools, old river branches and rare specimens of flora and fauna. By adding the "Stadsblokken Hillside" with a rather hard recreational program next to Meinerswijk, it is supposed to attract people by its unusual design, and guide them into the soft recreation area for walking, bird watching or cycling. The accessibility of both areas improves by the design, which is explained in the following paragraphs.

And a river runs through it!

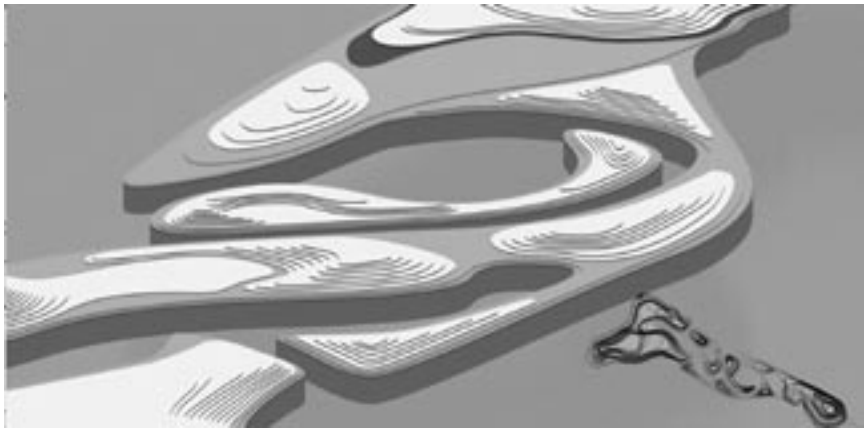
The starting point for the assigned recreational nucleus was the river. The Rhine dominates the scene. The river gives and the river takes, erosion and sedimentation are two important factors influencing the landscape. Periodic flooding of the floodplains throughout the seasons or even within days or hours is another major characteristic.
Today the canalized river is forced to stay in its bed and take the course that was predefined by man, due to the creation of hard edges like the system of dikes and other urban structures. The aim of those interventions was to control the river dynamics, in order to prevent harmful flooding and gain space for housing and agriculture. At the same time these regulations created problems that become more and more visible today. The narrow river beds, the bottleneck situation and the continuously growing amount of water that has to be transported by the rivers is threatening the existing dike system and settlements of the inner dike area.

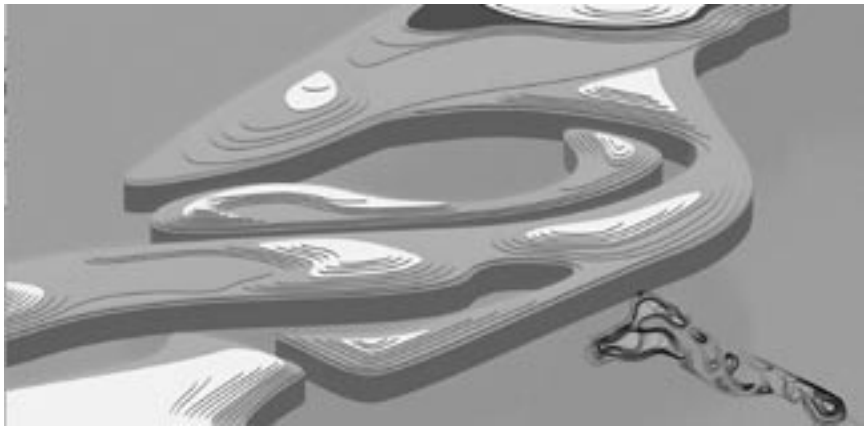
Instead of strengthening and heightening the dikes continuously, a new Dutch approach concerning issues of water management is put in action; the "Room for the River" policy. Looking at the assigned recreational nucleus from this point of view and trying to respect the river as a partner and not as an opponent, the wish for a design strongly influenced by water was formulated. One that is not only reacting on but even is interacting with the water dynamics. The aim of such an interaction between river, land and man, is the creation of an ephemeral landscape that can change over time, and provides a certain flexibility in use. The river has to be allowed to change and influence the design. By the design provided for recreation, a change is intended in perception and attitude towards the river.



Overview on the total plan with on the north side the centre of Arnhem.

View on one of the theatres.





Stadsblokken Hillside with three different waterlevels: 8,5, 10 and 12 metres above NAP.

The processes of sedimentation and erosion, the arrival of seeds that are transported by the river, the use of the area by people (housing, agriculture, etc.) and social changes have influenced and created the landscape and will continue changing it in the future. The specific phrenology of a (contemporary) landscape is the result of all the factors of the sites history and the interdependences between them. Concerning the design for the recreational site in Arnhem, the river becomes a respected protagonist in the recreational programme of "Stadsblokken Hillside".

Giving Shape

The basic idea of the design is the creation of "safe spots" for human recreational use during all seasons, but at the same time giving more room to the river. The old, dry ´green river´ at the south side of Stadsblokken is dug out and the ´new blue´ springs to live. This also strengthens the island character of Stadsblokken. Recreational functions which do not allow flooding are placed on newly constructed hills. The height of this ´landscape sculpture´ is raised in 50 cm steps up to the bridges. This makes the hillside accessible by just walking into the area from one of the bridges. Because of the hard edges of the terraces, created by using concrete blocks or stone gabions where amphitheatre situations are created or erosion is not welcome, the alternating water levels can be metered easily by everyone and a comfortable sitting position on the edges is granted. Besides the metering of the water levels like with a giant tide gauge, the implementation of such hard edges on parts of the "Sculpture Body" has the effect that relatively big areas are flooded one after another, at an instance when the water level rises over the edge. This means that the shape of the landscape sculpture can undergo quiet visible changes during one day that can even be seen by just crossing one of the bridges.
The elevations are connected to each other by a newly developed foot bridge

system, which consists of floating segments that can go up in high water situations and rest on the ground during low water levels. This infrastructural layer of the design also visualizes the river dynamics and creates a new quality of moving in the floodplains.
Other important programmatic elements are the open air theatres that are developed on the terraced hills by shaping them in the proper way. The three theatres have different orientations towards the sun and different sizes so they can be used for several purposes.

A vivid island

When arriving by ship or by water taxi the visitors are dropped at ´Arrival Island´. From there people can start exploring the area. In order to cross the water, which separates the small island and the main Stadsblokken peninsula, one of the floating footbridge structures must be used. By using one of those infrastructural installations during arrival, their working principle becomes clear to the visitor, even in low water situations where most of them are resting on the ground. The special way of moving, the untypical hillside, the events or concerts in the open air theatres and the dynamic processes of the rising and falling water levels with their erosion and sedimentation effects are the main program for the sculpture. All other activities of the visitors own initiatives are allowed and welcome!
The long run influence of the river and its dynamic processes find expression in the development of vegetation over the years to come. This process can be shown by using the stone gabions as a "platform". Those gabions (forming terraces and fixing soil like the concrete blocks in the theatre situations) should all be filled with the same grain sizes of rock in order to keep the comparability between them and their different developments, depending on the gradient of height and humidity. Pioneer vegetation will start growing on those platforms and succession will take place. During flood situations the river brings organic material that will get caught in the rough structures of the gabions. This organic material will work as a filter that fixes the sediments the river transports, and the processes of soil building start working. On rather erosive locations the river might only leave the emptied structure of a once filled gabion as a reminder of the past.

A process - not a finished end product

The implementation of the recreational nucleus itself, already offers possibilities of recreation during the years of construction.
For example this is the case when the "New Blue" is created by excavating the green river to ground water level. The result is a one by two meter deep water body with a slow current. That offers the opportunity of a water sports festival as an event. The excavated soil is placed roughly where it will be needed later on in order to create the sculpture. Now the site can be used by motor cross drivers and BMX bikers for one year.
The final phase of the construction would be the installation of the floating footbridges. After the first winters in which it was not possible to cross through the area at all times, the newly installed infrastructure ads a new functional and qualitative layer to the design. The first floods will be awaited by old and young – when will the new structures be usable for the first time?!

Periodic cycles and long run effect

The water related nucleus proposed for Stadsblokken interacts with the natural dynamics of the river. The change in time works on two different scales. In the long run the development of vegetation and erosion/sedimentation will change the face of the site, but even differences of water levels of one day can be metered easily by everyone, due to the formulation of terraces in the lower levels. The ecological aspects of water management benefit from the design, since more space is given to the river by reshaping the landscape. At the same time the area becomes a valuable recreational site for citizens and visitors of Arnhem. The event of a flood, which usually evokes negative images, gets a new dimension of positive connotation due to the possible use of the site during high water levels in summer and winter. The safe spots, connected by the floating structures, grant a permanent access of the site. The river is respected and people's recreational needs are satisfied.

Summary
Christoph Hagenacker is student from the university of Munich, Germany. In the autumn of 2005 he followed the landscape architecture atelier at Wageningen University. The assignment was to develop a recreational nucleus for the city of Arnhem somewhere along the river Rhine. He decided to let the river no longer be an opponent with devastating floods but used its power to let it determine the shape and development of his design. In this way he did not only created an island with different recreational activities where people of both sides of Arnhem could meet, but also turn the floods into a positive and useful characteristic of the river dynamics.