

Design Group 1 The Rhine

The Rhine as Subject

Project area

Rhine riversides between Bad Honnef and Leverkusen

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Nowadays, large urban agglomerations are increasingly competing on a global scale for people and corporations. This implies great challenges: to create quality of life, jobs, attractive residential neighborhoods and good leisure facilities. These are the key words for describing the sustainability of a region, but attractive urban, rural and natural areas are of equal importance for sustainability. Like others, the Cologne/Bonn region also faces international competition. In order to remain competitive in the long term, it has to recall its original qualities and strengthen existing »talents«. The best place to do this is along the Rhine itself as the region's only internationally well-known showpiece and showcase. Its banks are the places, which the region can use to profess its loyalty to the river.

The name Rhineland, taken literally, explains the relationship between the river and its environment: the »land of the Rhine« was shaped by the natural forces of the river, and the Rhine is the connecting element between the heterogeneous riverside areas. The cultural landscape along the river as we know it today is in fact not really very old. In the 19th century, people obviously succeeded in »taming« the river by technical means, that is, by building dikes to drain backwaters and flood plains and to protect the latter from river floods. Only then did it become possible to colonize the riverbanks permanently, to build ports, factories and promenades. Since then the requirements of expansion and flood protection as well as infrastructural aspects have determined developments of the river and its environs.

Today technical control mechanisms seem to have reached their limits. In view of increasing flood risks, it appears advisable to reconsider the river as a subject with its own behavior and rhythms, as an original personality. In doing so the region should reorient itself to the river in terms of urban design and regional planning in order to improve the quality of its »riverside showcase displays«.

The design group was therefore asked to develop suggestions on how the river might be redeveloped according to its own needs and on how it could be allowed to shape its banks in its own natural way. The resulting concepts were to be combined with an urban design and landscaping vision for the future of the Rhine riverbanks.

- 1 Leverkusen
- 2 Köln
- 3 Wesseling
- 4 Niederkassel
- 5 Bornheim
- 6 Bonn
- 7 Königswinter
- 8 Bad Honnef



The project area

Dieter Prinz

Urban Development on the Rhine from a Regional Perspective

The Rhineland as a Metropolitan Region

The stretch of Rhineland to be covered by the Regionale 2010 represents an essential building block in the vision for, or model of, the Rhine-Ruhr metropolitan agglomeration as a network of urban and rural areas. In addition to the international criteria defined for such conurbations – economic and scientific productivity, diversity in terms of culture and cultivated rural areas, modern infrastructure and high quality of living –, the Rhineland also offers outstanding potential in terms of »talents« and opportunities for development.

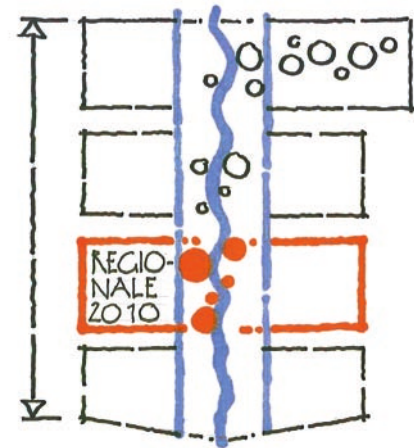
The Design Workshop, commissioned to assess the Rhine area between Bad Honnef and Leverkusen, was therefore briefed to include relevant background information in their considerations: the differences between this and adjoining regions, as well as supplementary characteristics and »talents«. It presents the view from a boat traveling downstream from Koblenz to Duisburg.

The identity of the Rhineland is a conglomerate of local identities, of distinctive independent characters under one regional roof, or on the common ground of the entire man-made landscape. This is why the aim has been formulated to heighten and strengthen local potentials, which will not only benefit local communities, but also serve and sharpen the profile of this region on both sides of one of Europe's big rivers.

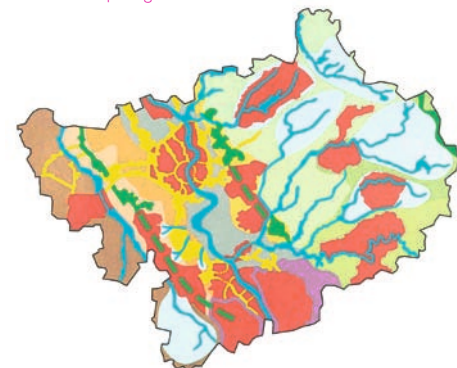
Bases for the Formulation of Development Goals for the Regionale 2010 Area under Review

1. Description of the Artificial Landscape Network (Masterplan Green by Regionale 2010)
 - ~ Subdivision of the area into distinct sections within the overall context
 - ~ Water structures
 - ~ Corridors
2. Rendering of the different area sections with different potentials and resources, and the related opportunities for development and requirements for their sustained continuation respectively
 - Integrating and linking functional potentials according to density, degree of utilization, economic performance and cultural value/activities

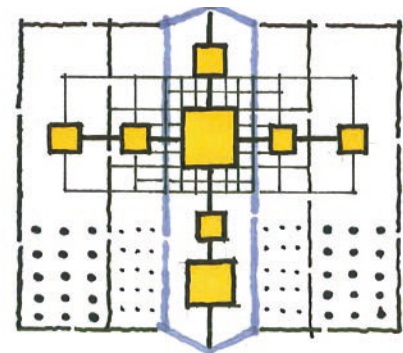
Starting from the assumption that in the near future these fields will experience growth in the area under review, one can also assume that developments must be controlled and directed in order to safeguard the functionality and harmony of living conditions in the different area sections.



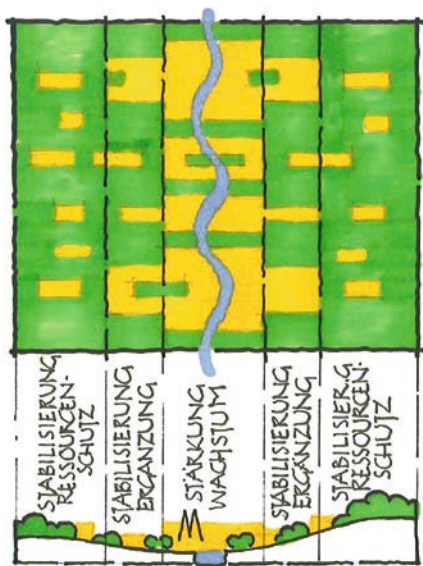
Metropolregion



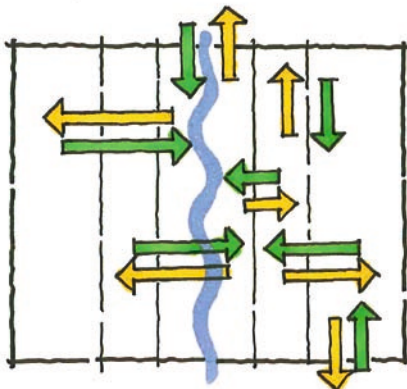
Kulturlandschaftsnetzwerk



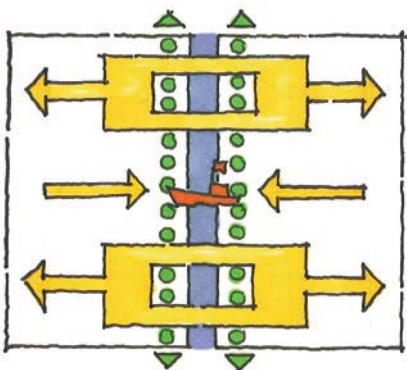
Kulturlandschaftliche Teilräume



Räumliches Leitbild



Regional denken



Brücken und Wege

Goal Number 1: Model of Spatial and Functional Development

Building on the characteristics of the different man-made landscapes, and on the potentials and resources of their individual areas, the Design Workshop proposes to assign the different jobs at hand according to the following criteria: development, stabilization/consolidation and protection/preservation.

This assignment structure is geared to strengthening the particularities of every area section and to controlling and directing demands for development in order to achieve a sustained balance between resource protection, on the one hand, and new developments dynamics on the other. Specific job assignments should not be understood as unchangeably fixed. They are designed to be continuously accompanied by scenarios indicating conceivable changes of functions and uses and thus pointing the way to future opportunities for developments and any possible limitations.

Goal Number 2: Thinking in Regions – Acting in Networks – Benefiting Local Communities

Implementing the model (goal number 1) on the way to an informal, yet clearly defined cooperation between urban, rural and regional authorities and institutions is a tall order. Any agreements concluded with the aim of sharing and distributing responsibilities and balancing local and regional interests require extensive, structured communication at every political and administrative level – as well as continuous information exchange and dialogue with the local people concerned.

We must create models to show that future benefits to local communities and to the entire region can only be achieved by regionally coordinated and concerted efforts and not by actions in competition with each other. We must develop a culture of competent planning and open debate, and we must win over increasing numbers of people convinced of and dedicated to the goals at hand.

Goal Number 3: Bridges and Paths

One characteristic of the area under review consists in the roads across the Rhine leading over »city bridges« that are integral parts of the urban maps of Cologne and Bonn and afford wonderful panoramic views of these cities. In between the cities, the two banks of the Rhine are connected by ferries. The Regionale project, »Rhine Boulevard«, is based on the existing riverside promenades, pedestrian and cyclist paths and integrates them into a continuous, »eventful boulevard« on both sides of the river, which in turn is connected to the local pedestrian and cyclist routes in the Rhine hinterland.

Goal Number 4: Countryside Spaces

Contrary to the fact that the larger part of the Rhine's riverbanks are covered by buildings, the remaining open areas convey the impression of vastness. The project not only aims to preserve the Rhine flood plains as retention areas and landscape prospects, but also to strengthen their continuity as a landscape theme and connect them to »landscaped bridges« – visual axes and sightlines through the countryside.

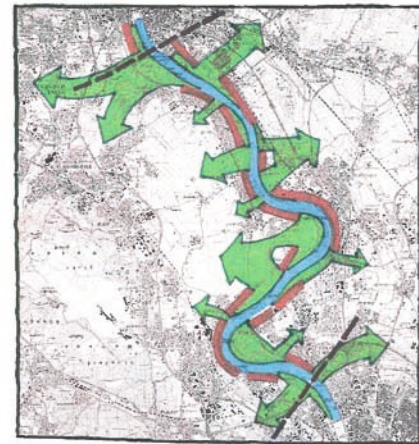
Goal Number 5: Recreation Areas

The spatial order of cities, settlement areas and local recreation areas forms the basis for designing attractive human habitats and environments and determines their value. In conceiving regional planning projects, it is therefore essential to design and develop them in such a way as to safeguard short distances between residential and recreational areas. Easy distances, a varied landscape design based on local particularities, opportunities for active recreation and for experiencing nature are very important qualities for any community.

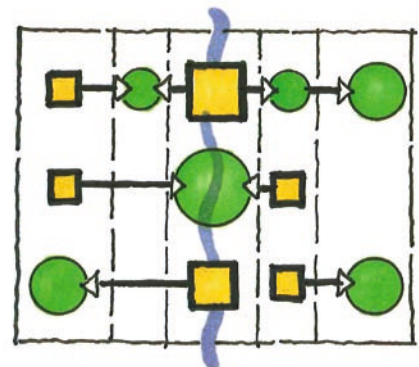
Goal Number 6: Urban Areas along the Rhine

The »front stalls«, that is, the riverbanks, belong to the public, to the people who live in the cities and the region, and to those who visit them. Here they find the highly attractive and much frequented places which shape the identity of the region and should create an international image of the region. These places are:

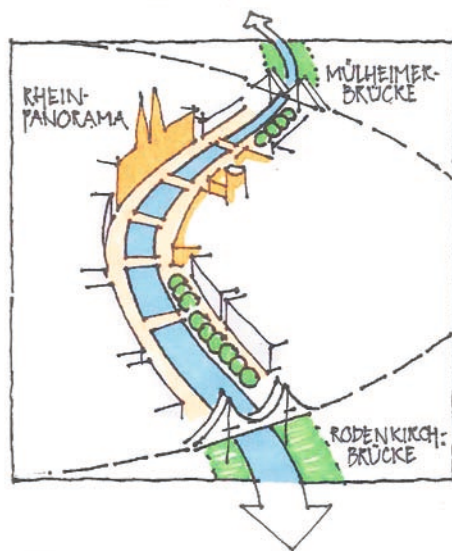
- ~ riverbank promenades,
- ~ squares, buildings and events of cultural and social significance,
- ~ broad pedestrian and cyclist paths, and
- ~ locations with enough space for large events of regional attraction.



Landschaftsräume



Freizeit- und Erholungsräume



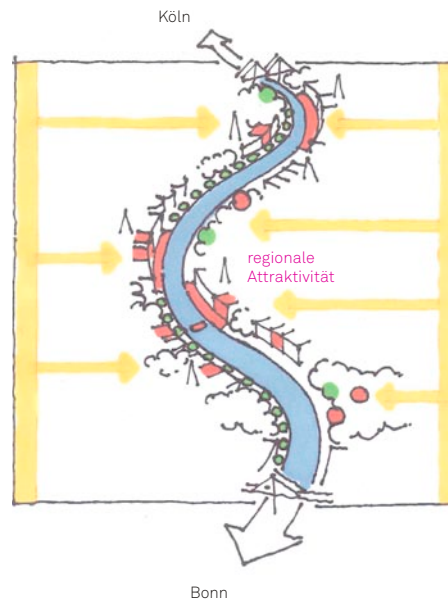
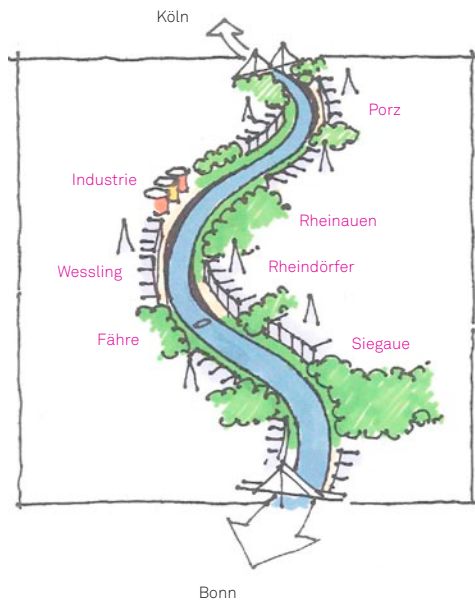
Beispiel Köln



Goal Number 7: Open Country along the Rhine

The changing water levels of the Rhine are a primary consideration for planners with regard to the stretches of open country along the river. Two measures are therefore necessary: first to create or define large landscaped flood-water retention areas (flood depressions), and second to integrate the river bed through landscaping into the countryside and the villages along the Rhine, when the river runs low. In addition, interventions must follow the same principle as for urban spaces, that is, they must be restricted to those which benefit the general public and the environment:

- ~ building uninterrupted pedestrian and cyclist paths,
- ~ creating short riverbank promenades in the villages,
- ~ designing ecologically compatible places with special connections to both the countryside and the river (destinations for leisure/walks/hikes),
- ~ redesigning the villages' river fronts,
- ~ constructing new buildings only with faithful reference to existing structures, or replacing old ones, and
- ~ conceiving the countryside and the river as an esthetic and functional unity.



Landschaftsräume am Rhein

Henri Bava, Dirk Christiansen, Undine Giseke, Daniel Lauber,
Hans-Jörg Reinicke, Marcus Schütte, Jorg Sieweke

The Dynamics of the Rhine

In the Middle Ages, it depended on the whims of the river, whether the city of Cologne could be said to lie on the left or the right bank of the Rhine, as the river occasionally did »change sides«. With comprehensive technical regulation in modern times, the Rhine has become an »object« judged mainly by its utility value. Today people live with the Rhine as a traffic artery, a recreation area and an economic location factor.

The dynamics of this river system as well as the mythological notion of the Rhine and the influence of its essence on the country it runs through have increasingly been forgotten.

The Rhine is now largely channeled. Its former sprawling system of main and side arms and riverside meadows has »shriveled«. The river is restricted to a one high-water stream running between terraced banks. The side arms which meandered through the lowland have disappeared. These lowest-lying areas are subject to recurring flooding. In spite of this, they are partly built up, in places also with factories such as in Wesseling.

What does the Rhine call for? How would the river behave?

Today, there is a return to respecting the river as a body defined by its own natural laws.

Is it possible to interpret the Rhine's flood plains as a space of negotiation between nature and the demands of a civilized society? What new correspondences between urban space and the space of the river will emerge if both parties negotiate with each other as peers? The conceptual approach presented here experiments with a change of perspective.

Riverside Meadow System and »Rheinwerthe': New Locations in the Front Stalls'

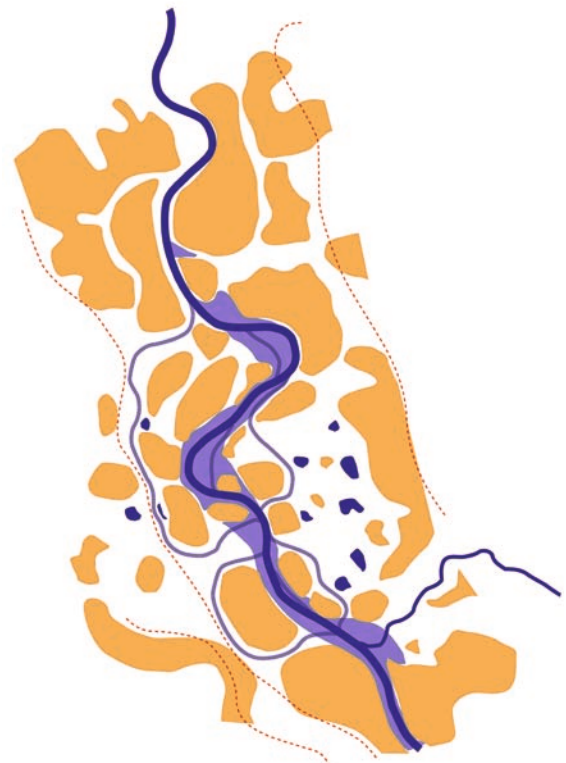
(The term »Werthe« means landscaped and stabilized islands in the river.) The design aims to redesign the Rhine region from a different perspective by creating a new flood-plain system and new Rhine islands. Restructuring the area based on the old natural landscape form should not be an end in itself, but should be treated a synergetic spatial concept geared towards serving the different interests as to its use.

We need concepts which give space and scope to the possible natural re-development of the Rhine and which at the same time create new locations along the riverbank, for example densely built-up urban locations »in the front stalls« overlooking new riverside pastures. This confrontation and encounter between Rhine flood plains and human settlements could define the characteristics of this region – an inimitable fusion of urbanity and nature.

New Types of »Rheinwerthe'

The meadows along the Rhine as well as the terraced hills on both sides (see red broken line) form the topographical borders of the river's »negotiating space«. A new lowland system will be created within this area. The settle-

Flood depressions and »Rheinwerthe'



ments near the river front will be surrounded by it like »new Rheinwerthe«, or Rhine islands. Villages that have so far been out-of-the-way, will be visibly linked again to the Rhine meadows. Backwaters will be reactivated. Together with newly dug depressions, they will become structural landscaping elements. When waterlevels rise, the backwaters will again become side arms of the Rhine. At other times, they will run dry – a landscape of meadows that »preserves« the memory of the river.

Scenarios: How would the Rhine develop?

The »Morphological Model for the Lower Rhine« shows a potentially natural shape of the Rhine unrestricted by human civilization. The area under review is located at the transition from the Mid-Rhine to the Lower Rhine region, where the river changes in character and hydrological dynamics. Here it becomes space-consuming. As the Rhine leaves the low mountains behind, its fall decreases so that the river is less »directed« and tends to spread out. High-water prognoses indicate potentially flooded areas, backwaters and stretches of lowland.

Scenario 1: »The Unleashed Rhine«

This scenario shows the spatial effects of an unbridled expansion of the river. Here the Rhine defends its territory against other zoning interests (regarding residential, traffic, agricultural, tourist/recreational and trade/industrial developments). The area thus marked may be seen as a »negotiation zone« between river and urbanized environment.

Scenario 2: »The Branched-out Rhine«

In this scenario, the urban agglomerations of Cologne and Bonn constrict the river with their spatial demands. In between these cities, the Rhine takes advantage of the open countryside space by forming side branches. Thus new places of contact with the river are created in the area between Cologne and Bonn.

Development Goals

Point of Departure

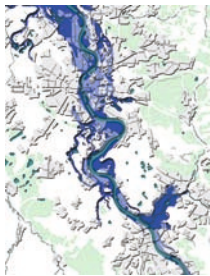
The essential spatial parameters in the project area are: the Rhine and its riverside susceptible to flooding (purple); the built-up areas (brown), often characterized by landed properties »scattered« and mingled with other properties; the areas of small fields in between Bonn and Cologne (yellow) and the artificial lakes/former gravel pits. Traffic infrastructures (here only roughly sketched in) are of great significance to the entire area.

At present, the area is subject to great development pressures. The Rhine banks are increasingly dominated by building developments, and the trend points towards a merging of existing urban settlements into an uninterrupted conurbation.

Green Corridors to the Rhine

In the future, existing settlements will be extended, and new ones will be developed, safeguarding landscape corridors leading to the Rhine. The riverside lowland susceptible to flooding – the aforementioned »negotiation zone« – will not be used for building. Alternative »aquatic« constructions

Morphological foundations in the project area



Worst floods in 500 years between Cologne and Bonn



"The Unleashed Rhine"



Point of departure

adapted to the flood-plain situation will respond to the existence of the river. Apart from extremely high floods, periods of severe drought will mark the environment in the future. Retention areas for ground-water regeneration and water reservoirs could help to check these extreme events and at the same time make attractive recreation areas available.

Flood Depressions and »Rheinwerthe«

The Rhine again becomes the structuring spatial element of the landscape. A new system of riverside meadows will be created, based on existing low-land areas and new flood depressions. This will result in an attractive alluvial landscape, the effects of which will be felt far back in the hinterland of the Rhine valley. Urban areas and extensions will be strictly defined as islands ('Rheinwerthe') with new connections to their rural surroundings and with clearly distinguishable boundaries.

Potential for Green Spaces

The new flood plains system extends the existing areas of »water-bound recreation« along the Rhine farther into the Rhine valley. In addition to the concave slopes of the river bends and the smaller islands, the riverside meadows will make the river visible also from the hinterland. The gravel pit lakes could be reused as additional »recreation and leisure islands«. The Rhine valley will thus become a varied landscape, inspired by the river.

Flood Depressions as Potential Green Spaces

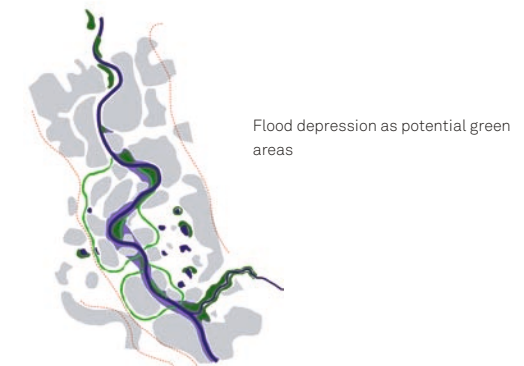
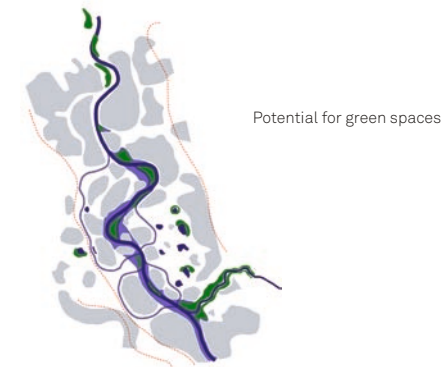
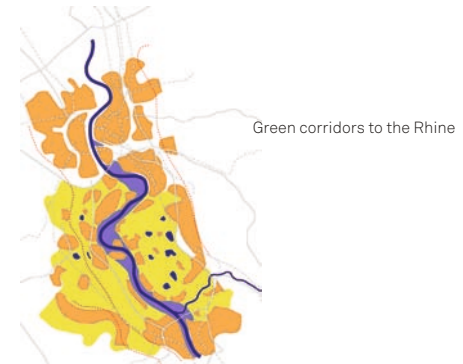
When the river runs low, the flood plains are transformed into »green reminders« of the river and a simply designed and clearly structured landscape. Parts of these lowlands are ecological biospheres, others local recreation areas, most of them, however, arable land with large fields that are always ploughed and sown »lengthwise«.

New Locations on the Rhine

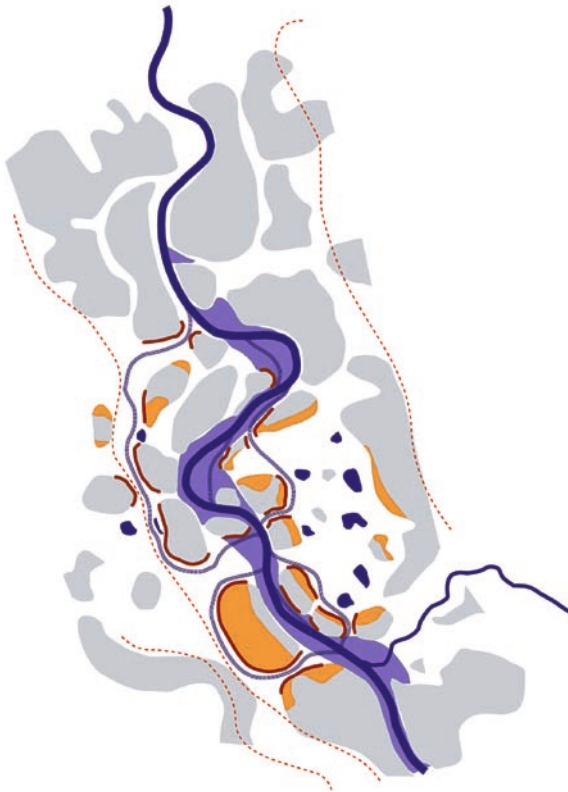
New urban locations with a »country feel« will be created along the redesigned flood plains. Depending on the situation, new residential quarters could be built here, or existing ones »rounded off« with new boundaries towards the countryside. The redevelopment of urban fringes is of special significance for the quality of the »new Rheinwerthe« islands.

Searching for new Green Corridors

The alignment of possible new flood control channels does not only depend on topographical conditions, but essentially on the questions what spaces can be »negotiated« locally and what perspectives and use they offer to the players involved.



New locations on the Rhine



- ~ New landscape corridors will only be established if and when they can be integrated with local economies, or if they improve the initial situation at least in one aspect, e.g. by making agricultural use possible outside periods of flooding,
- ~ strengthening existing ecological potentials,
- ~ offering the chance to form flood depressions,
- ~ enhancing the appearance of the countryside, and
- ~ developing new and extending existing »second-tier« locations.

Example 1

- ~ Green corridor through agricultural land with few spatial obstacles.
- ~ Clear separation of settlement and agricultural areas (southern corridor), and between urban fringe and recreation areas/nature reserves (northern corridor).

Example 2

- ~ Green corridor between settlement and industrial areas with multiple spatial obstacles – traffic infrastructure / industries (northern corridor) and strong fringe effects.
- ~ Separation of neighboring settlements (southern corridor).

Change in Perspective – Change in Approach?

In order to translate this project into reality and develop it further, we need an approach that does justice to the independence and character of the Rhine, yet also respects the fact that the Rhine region between Leverkusen and Bad Honnef is primarily a cultivated landscape shaped and marked by man.

The authors of the design are of the opinion that, in the mid-term future, it will be important for the region to get involved with the river and all its whims and equally important to lead it skillfully into acceptable channels. Every planning project concerned with the Rhine has to be future-oriented. This does not only involve »appearances«, but also – and primarily – viability and sustainability in the long term.

Just like the people living by it, the Rhine needs freedom in order to achieve this. It needs leeway to expand and develop, »expansion joints« which provide flexibility for further development.

However, this also means that the communities in the Rhine region must accept the risks that go hand in hand with getting involved with the river, and should redevelop it as a place of joyous play whose viability is safeguarded for the entire region through the responsibility of the individual communities.



Corridors, example 1



Corridors, example 2